



AGENDA

REGULAR MEETING OF THE BOARD OF DIRECTORS LA PUENTE VALLEY COUNTY WATER DISTRICT 112 N. FIRST STREET, LA PUENTE, CALIFORNIA THURSDAY DECEMBER 21, 2017 AT 5:30 PM

1. CALL TO ORDER

2. PLEDGE OF ALLEGIANCE

3. ROLL CALL OF BOARD OF DIRECTORS

President Hastings____ Vice President Rojas____ Director Aguirre____
Director Escalera____ Director Hernandez____

4. PUBLIC COMMENT

Anyone wishing to discuss items on the agenda or pertaining to the District may do so now. The Board may allow additional input during the meeting. A five-minute limit on remarks is requested.

5. ADOPTION OF AGENDA

Each item on the Agenda shall be deemed to include an appropriate motion, resolution or ordinance to take action on any item. Materials related to an item on this agenda submitted after distribution of the agenda packet are available for public review at the District office, located at the address listed above.

6. APPROVAL OF CONSENT CALENDAR

There will be no separate discussion of Consent Calendar items as they are considered to be routine by the Board of Directors and will be adopted by one motion. If a member of the Board, staff, or public requests discussion on a particular item, that item will be removed from the Consent Calendar and considered separately.

- A. Approval of Minutes of the Regular Meeting of the Board of Directors held on December 11, 2017.
- B. Receive and File the Water Production Report for November 2017.
- C. Approval to Attend the Association of Ground Water Agencies AGWA – AGWT Annual Conference on Monday and Tuesday, February 12 – 13, 2018, in Ontario, CA.

7. FINANCIAL REPORTS

- A. Summary of Cash and Investments for November 30, 2017.

Recommendation: Receive and File.

- B. Statement of District's Revenues and Expenses as of November 30, 2017.

Recommendation: Receive and File report.

- C. Statement of City of Industry Waterworks System's Revenues and Expenses as of November 30, 2017.

Recommendation: Receive and File Report.

8. PUBLIC HEARING ON THE ADOPTION OF INITIAL STUDY/MITIGATED NEGATIVE DECLARATION FOR THE PUENTE VALLEY OPERABLE UNIT INTERMEDIATE ZONE REMEDY PROJECT LOCATED WITHIN THE CITIES OF INDUSTRY AND LA PUENTE, CA.

9. ACTION/DISCUSSION ITEMS

- A. Consideration of Resolution No. 249 Adopting the Initial Study/Mitigated Negative Declaration for the Puente Valley Operable Unit Intermediate Zone Project.

Recommendation: Approve Resolution No. 249.

- B. Consideration of Agreement for Operations Services of a Water Treatment Facility with Northrop Grumman Systems Corporation for the PVOU IZ Project.

Recommendation: Authorize General Manager to Execute Agreement for Operations Services of a Water Treatment Facility for the PVOU IZ Project.

- C. Consideration of Agreement for Delivery and Beneficial Use of Treated Water with Northrop Grumman Systems Corporation and Suburban Water Systems for the PVOU IZ Project.

Recommendation: Authorize General Manager to Execute Agreement for Delivery and Beneficial Use of Treated Water for the PVOU IZ Project.

- D. Consideration of Resolution No. 250 Approving the Staff Restructuring Plan as Proposed by the District's Staff Assessment Ad Hoc Committee.

Recommendation: Approve Resolution No. 250.

- E. Consideration of Annual Cost of Living Adjustment for District Employees.

Recommendation: Board Discretion.

10. PROJECT ENGINEER REPORT

11. GENERAL MANAGER'S REPORT

12. OTHER ITEMS

- A. Upcoming Events.
B. Correspondence to the Board of Directors.

13. ATTORNEY'S COMMENTS

14. BOARD MEMBER COMMENTS

- A. Report on Events Attended.
- B. Other Comments.

15. FUTURE AGENDA ITEMS

16. CLOSED SESSION

Public Employee Performance Evaluation.
Position: General Manager.

17. REPORT ON CLOSED SESSION

18. ADDITIONAL ACTION/DISCUSSION ITEM

Consideration of Compensation Adjustment and Extension of Employment Contract for the District's General Manager.

Recommendation: Board Discretion.

19. ADJOURNMENT

POSTED: Monday, December 18, 2017.

President David Hastings, Presiding.

Any qualified person with a disability may request a disability-related accommodation as needed to participate fully in this public meeting. In order to make such a request, please contact Greg B. Galindo, Board Secretary, at (626) 330-2126 in sufficient time prior to the meeting to make the necessary arrangements.

Note: Agenda materials are available for public inspection at the District office or visit the District's website at www.lapuentewater.com.



**MINUTES OF THE REGULAR MEETING OF
THE BOARD OF DIRECTORS OF THE
LA PUENTE VALLEY COUNTY WATER DISTRICT**

A regular meeting of the Board of Directors of the La Puente Valley County Water District was held on Monday, December 11, 2017, at 5:30 p.m. at the District office, 112 N. First St., La Puente, California.

Meeting called to order:

President Hastings called the meeting to order at 5:31 p.m.

Pledge of Allegiance

President Hastings led the meeting in the Pledge of Allegiance.

Directors present:

David Hastings, President; William Rojas, Vice President; Charles Aguirre, Director; John Escalera, Director and Henry Hernandez, Director

Staff present:

Greg Galindo, General Manager & Cesar Ortiz, Production and Treatment Supervisor.

Others Present:

No others present.

Public Comment:

No public comment.

Adoption of Agenda:

President Hastings asked for the approval of the agenda.

Motion by Director Escalera seconded by Vice President Rojas, that the agenda be adopted as presented.

Motion approved by the following vote:

Ayes: Hastings, Rojas, Aguirre, Escalera and Hernandez.

Nays: None.

Consent Calendar:

President Hastings asked for the approval of the Consent Calendar.

- A. Approval of Minutes of the Regular Meeting of the Board of Directors held on November 27, 2017.
- B. Approval of Minutes of the Special Meeting of the Board of Directors held on December 4, 2017.

- C. Approval of District Expenses for the Month of November 2017.
- D. Approval of City of Industry Waterworks System Expenses for the Month of November 2017.
- E. Receive and File the District's Water Sales Report for November 2017.
- F. Receive and File the City of Industry Waterworks System's Water Sales Report for November 2017.

Motion by Director Aguirre, seconded by Vice President Rojas, to approve the Consent Calendar as presented.

Motion approved by the following vote:

Ayes: Hastings, Rojas, Aguirre, Escalera and Hernandez.

Nays: None.

Action/Discussion Items:

- A. Consideration to Lease 450 Acre-Feet of Main San Gabriel Groundwater Production Rights to the City of Industry Waterworks System.
 - Mr. Galindo summarized his staff report that was provided in the Board meeting agenda packet. He explained that the staff report provides the supporting information for the agenized actions items A, B & C. He reviewed the analysis included in the staff report, on the groundwater production rights leases that depicts the overall financial impact to the District from the recommended actions.

After further discussion, motion by Vice President Rojas seconded by Director Aguirre to authorize the General Manager to enter into a Lease Agreement with the City of Industry for 450 acre-feet of 2017-18, Main San Gabriel Groundwater Production Rights at a rate of \$726.18 per acre-foot.

Motion approved by the following vote:

Ayes: Hastings, Rojas, Aguirre, Escalera and Hernandez.

Nays: None.

- B. Consideration to Lease 250 Acre-Feet of Main San Gabriel Groundwater Production Rights to San Gabriel County Water District.

Motion by President Hastings seconded by Vice President Rojas to authorize the General Manager to lease 250 acre-feet of 2017-18, Main San Gabriel Groundwater Production Rights to San Gabriel County Water District at a rate of \$726.18 per acre-foot.

Motion approved by the following vote:

Ayes: Hastings, Rojas, Aguirre, Escalera and Hernandez.

Nays: None.

- C. Consideration to Lease 150 Acre-Feet of Main San Gabriel Groundwater Production Rights to Valley County Water District.

Motion by Vice President Rojas seconded by Director Aguirre to authorize the General Manager to lease 150 acre-feet of 2017-18, Main San Gabriel Groundwater Production Rights to Valley County Water District at a rate of \$726.18 per acre-foot.

Motion approved by the following vote:

Ayes: Hastings, Rojas, Aguirre, Escalera and Hernandez.

Nays: None.

- D. Review and Approve the Proposed District budget for Period Ending December 31, 2018.
 - Mr. Galindo presented the Draft 2018 District Budget Document. He summarized the document and reviewed with the Directors, portions of the Budget that were significantly updated from the 2017 Budget document.

- Mr. Galindo provided an in-depth analysis of the District's projected labor cost for 2018 through 2022 and stated that the impacts for the proposed Staff restructuring plan and salary schedule adjustments were included in the analysis.

After much discussion, motion by Vice President Rojas, seconded by Director Aguirre to approve the Proposed District's Budget for Period Ending December 31, 2018 as presented.

Motion approved by the following vote:

Ayes: Hastings, Rojas, Aguirre, Escalera and Hernandez.

Nays: None.

E. Discussion Regarding Potential Changes to the District's Employee Policies and Procedures Manual.

- Mr. Galindo presented a redlined version of the District's current Employee Policies and Procedures Manual that depicted revisions that he recommended the Board consider at a Board meeting in January 2018. Those sections included employee certification bonuses, vacation time accrual and pay-out, and a few other minor revisions.
- Mr. Galindo stated that staff will prepare a revised manual and have ACWA JPIA and District Counsel review it before being presented to the Board for consideration.

Discussion only, no action taken.

General Manager's Report:

- Mr. Galindo reported that agenized for the next Board of Director's meeting, is the public hearing for the PVOU IZ CEQA adoption, Definitive Agreements for the PVOU IZ Project, approval of the Staff Restructuring Plan and the General Manager's evaluation.

Information Items:

A. Upcoming Events.

- Mr. Galindo presented an update on the upcoming events and who will be attending.

B. Correspondence to the Board of Directors

- ACWA JPIA President's Special Recognition Award for having a low ratio of paid claims in the property program.

Attorney comments:

None.

Board member comments:

A. Report on events attended.

- President Hastings, Vice President Rojas and Director Escalera all reported that they had attended the SCWUA meeting on December 7, 2017.

B. Other comments.

Board had no other comments.

Future agenda items:

No future items.

Adjournment:

There is no further business or comment, the meeting was adjourned at 6:45 p.m.

David Hastings, President

Greg B. Galindo, Secretary

La Puente Valley County Water District

PRODUCTION REPORT - NOVEMBER 2017

LPVCWD PRODUCTION	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	2017 YTD	2016
Well No. 2	5.04	5.20	4.63	4.64	5.07	3.55	31.82	98.56	3.68	9.29	4.90		176.36	83.48
Well No. 3	6.02	6.39	5.75	5.52	5.91	4.08	36.39	114.28	4.26	10.84	5.77		205.21	97.68
Well No. 5	292.09	249.87	294.34	279.97	282.63	269.14	232.15	93.35	264.39	268.31	300.47		2826.71	3311.35
Interconnections to LPVCWD	12.47	2.12	2.48	1.34	3.50	2.03	2.63	2.48	7.57	9.67	2.33		48.62	92.57
Subtotal	315.62	263.58	307.20	291.47	297.11	278.79	302.98	308.67	279.90	298.11	313.47	0.00	3256.90	3585.07
Interconnections to SWS	228.61	192.37	199.71	167.83	155.62	134.09	143.72	142.94	138.12	159.48	180.46		1842.95	2121.26
Interconnections to COI	1.31	3.73	7.60	1.36	5.90	7.32	2.27	3.25	6.48	8.50	11.00		58.72	59.20
Interconnections to Others	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00
Subtotal	229.92	196.10	207.31	169.19	161.52	141.41	145.99	146.19	144.60	167.98	191.46	0.00	1901.67	2180.46
Total Production for LPVCWD	85.69	67.48	99.89	122.28	135.59	137.38	156.99	162.47	135.31	130.13	122.01	0.00	1355.23	1404.61
CIWS PRODUCTION														
COI Well No. 5 To SGVCW B5	141.77	140.36	148.65	141.95	148.08	143.18	150.02	143.73	138.43	141.27	140.31		1577.75	1647.30
Interconnections to CIWS														
SGVWC Salt Lake Ave	0.62	0.53	0.69	0.82	0.81	0.75	0.80	0.92	0.90	0.86	0.73		8.43	8.66
SGVWC Lomas Ave	84.10	66.19	83.11	105.86	106.07	117.29	135.81	127.72	127.13	126.19	90.14		1169.61	1295.72
SGVWC Workman Mill Rd	0.19	0.15	0.13	0.02	0.06	0.04	0.03	0.20	0.17	0.14	0.27		1.40	3.71
Interconnections from LPVCWD	1.31	3.73	7.60	1.36	5.90	7.32	2.27	3.25	6.48	8.50	11.00		58.72	59.20
Subtotal	86.22	70.60	91.53	108.06	112.84	125.40	138.91	132.09	134.68	135.69	102.14	0.00	1238.16	1367.29
Interconnections to LPVCWD	12.33	2.12	2.48	0.73	3.49	2.03	2.63	2.48	7.57	9.67	2.33		47.86	88.58
Total Production for CIWS	73.89	68.48	89.05	107.33	109.35	123.37	136.28	129.61	127.11	126.02	99.81	0.00	1190.30	1278.71

La Puente Valley County Water District - Water System Demand Comparison

Month	2013	2017	Difference 2017-2013 (%)	Accumulative Difference (%)
January	115.58	85.55	-26.0%	-26.0%
February	112.08	67.48	-39.8%	-32.8%
March	135.08	99.89	-26.0%	-30.3%
April	153.73	121.67	-20.9%	-27.5%
May	174.40	135.58	-22.3%	-26.2%
June	185.13	137.38	-25.8%	-26.1%
July	204.48	156.99	-23.2%	-25.5%
August	201.38	162.47	-19.3%	-24.6%
September	187.60	135.31	-27.9%	-25.0%
October	172.74	130.13	-24.7%	-25.0%
November	139.24	122.01	-12.4%	-24.0%
Totals	1781.44	1354.47	-426.97	-23.97%

City of Industry Waterworks - Water System Demand Comparison

Month	2013	2017	Difference 2017-2013 (%)	Accumulative Difference (%)
January	90.55	73.89	-18.4%	-18.4%
February	81.62	68.48	-16.1%	-17.3%
March	99.4	89.05	-10.4%	-14.8%
April	115.82	107.33	-7.3%	-12.6%
May	147.93	109.35	-26.1%	-16.3%
June	152.60	123.37	-19.2%	-16.9%
July	141.36	136.28	-3.6%	-14.7%
August	153.97	129.61	-15.8%	-14.8%
September	151.67	127.11	-16.2%	-15.0%
October	137.26	126.02	-8.2%	-14.3%
November	110.83	99.81	-9.9%	-13.9%
Totals	1383.01	1190.3	-192.71	-13.9%

Production data shown in acre feet (AF)

Association of Ground Water Agencies - American Ground Water Trust

AGWA – AGWT Annual Conference

“Everything aquifers and groundwater management”

Monday, February 12 and Tuesday, February 13, 2018

Gateway Hotel, 2200 East Holt Boulevard, Ontario, California 91761
(Formerly the Radisson Hotel)



Early bird rates (www.agwt.org/events)

EARLY BIRD RATES END Dec 31st

REGISTER NOW FOR DISCOUNT RATE

See website for field visit opportunity to Cadiz Water project



Background

The first AGWA/AGWT joint conference was held in Ontario, CA in 2000. Since then, this annual event has provided an important information exchange and networking opportunity for California's water agencies, utilities and water districts, and for all water professionals (scientific, engineering, managerial, legal, environmental, regulatory), end-users of water, and local and state elected officials involved with water policy issues. The focus of every program is on current groundwater management issues in California.

The program will be submitted for CA Drinking Water Operator Certification Program approval

Join these 2018 Conference Sponsors



Monday February 12 - 2018

7:30 – 8:30 REGISTRATION

8:30 – 8:45 WELCOME, OPENING REMARKS FROM AGWA AND AGWT

Anthony Zampello, Chairman, Association of Ground Water Agencies
Andrew Stone, Executive Director, American Ground Water Trust

8:45 – 9:15 KEYNOTE THE “WATER FIX”

Brandon Goshi, Manager of Water Policy and Strategy, Metropolitan Water District of Southern CA

9:15 – 10:45 LEGAL ISSUES: SOUTHERN CALIFORNIA GROUNDWATER

Panel moderator:

Bradley J. Herrema, Attorney, Brownstein Hyatt Farber Schreck, Santa Barbara, CA

Groundwater's value to California water purveyors has never been higher. With the effect of implementation of new groundwater regulations coming to bear, new legal issues are emerging. This session will include discussion on these emerging current issues, focusing on their application in Southern California.

Presentation panel to be announced soon

10:45 – 11:00

BREAK

11:00 – 12:30

MEASUREMENT AND MANAGEMENT OF GROUNDWATER PUMPING UNDER SGMA

Panel moderator:

David L. Jordan, Principal Hydrogeologist, INTERA Inc., Torrance, CA

SGMA requires measurement and reporting of groundwater pumping but leaves selection of methodology open to each GSA. This session will present information on direct measurement (metering) and indirect measurement (power records and remote sensing), along with insight into how some agencies are developing pumping allocations based on pumping data they are currently collecting.

DIRECT FLOW METERING – ON-FARM AND SGMA CONSIDERATIONS

Bob Anderson and Doug Baumwirt, Principal Hydrogeologists, GeoSyntec Consultants, Seattle, WA

METHODS FOR INDIRECT MEASUREMENT OF AGRICULTURAL PUMPING FOR SGMA

Dr. Abhishek Singh, Senior Water Resources Engineer, INTERA, INTERA Inc., CA

REMOTE SENSING DATA REQUIREMENTS AND METHODS FOR THE ESTIMATION OF AGRICULTURAL WATER CONSUMPTION FOR SGMA

Dr. Guillermo Martinez, Water Resources Engineer, INTERA, Austin, TX

DEVELOPMENT OF PUMPING ALLOCATION GUIDELINES FOR SGMA: A CASE STUDY

Bryan Bondy, President and Principal Hydrogeologist, Bondy Groundwater Consulting, Inc., Ventura, CA

12:30 – 1:40

LUNCH

1:40– 3:10

SGMA IMPLEMENTATION: FOX CANYON GROUNDWATER MANAGEMENT AGENCY AND BORREGO VALLEY GROUNDWATER SUSTAINABILITY AGENCY

Panel moderator:

Trey Driscoll, Principal Hydrogeologist, Dudek Engineering + Environmental, Encinitas, CA

SGMA allows each GSA to define what constitutes a “significant and unreasonable” impact to groundwater sustainability indicators. It authorizes the local GSA to define measurable objectives and interim milestones. It requires the GSP to define how progress toward achieving sustainability will be measured. This session focuses on how SGMA will be implemented at the local level starting with writing the GSP. Topics will include the critical role of the conceptual hydrogeologic model, approaches to defining “significant and unreasonable”, addressing concerns of stakeholders in interconnected basins, and methods for including operational flexibility in measurable objective and interim milestone development.

USING GROUNDWATER MODELS TO EVALUATE UNDESIRABLE RESULTS

Lindsay Swain, Senior Hydrogeologist, Dudek

SUSTAINABILITY INDICATORS AND UNDESIRABLE RESULTS UNDER SGMA

Jill Weinberger, PhD, Senior Hydrogeologist, Dudek

CASE STUDY: DEVELOPING A MONITORING NETWORK TO EVALUATE SUSTAINABILITY INDICATORS

Doug Baumwirt, Principal Geologist, Geosyntec

CASE STUDY: INITIAL STAKEHOLDER OUTREACH FOR THE BORREGO VALLEY GROUNDWATER BASIN

Geoff Poole, General Manager, Borrego Water District (Invited)

3:10 – 3:30

BREAK

3:30 – 5:00

INTEGRATING SURFACE WATER PROCESSES AND GROUNDWATER, AVOIDING DETRIMENTAL EFFECTS

Panel Moderator:

Stephen (Steve) Cullen, PhD, PG, Principal Hydrogeologist/Sr. VP, Daniel B. Stephens & Associates, Santa Barbara, CA

This session will be focused on the intersection between surface water and groundwater and will discuss concepts and incorporate project lessons learned with respect to instream flow maintenance, groundwater salt-loading and management, artificial recharge, non-point sources of contaminants, and increases in TDS due to irrigated agriculture consumptive use.

SANTA ANA RIVER WASTE LOAD ALLOCATION AND ITS GROUNDWATER IMPACTS

Mark Norton, PE, Water Resource & Planning Manager, Santa Ana Watershed Project Authority (SAWPA)

ENHANCING WATER FLOWS IN CALIFORNIA STREAM SYSTEMS FOR MAINTENANCE OF CRITICAL HABITAT

Speaker TBA, Water Resource Engineer, California State Water Resources Control Board

STORMWATER/GROUNDWATER CONJUNCTIVE USE IN THE SANTA CLARA RIVER WATERSHED

Tony Morgan, PG, CHG, Deputy General Manager/Groundwater & Water Resources Manager, United Water Cons. District

INTEGRATING SURFACE WATER AND GROUNDWATER THROUGH MANAGED AQUIFER RECHARGE

Amy Ewing, PG, Hydrogeologist, Daniel B. Stephens & Associates, Inc.

5:00 – 6:30 **RECEPTION** Cash-Bar (Hors D 'Oeuvres)



Tuesday February 13 - 2018

8:30 – 10:00

GROUND WATER ISSUES AND POTENTIAL SOLUTIONS THROUGH THE INTEGRATION OF SCIENCE AND POLICY

Panel Moderator:

Steven J. Sentes, Sr., Executive Director, Chino Basin Water Conservation District

Intensifying competition for existing water resources by industry, agriculture, and an ever growing and thirsty urban population makes managing groundwater supplies a critical challenge deserving immediate attention and focus. Affordable drinking water and environmental supplies can be severely impacted by overdraft and over allocation of the resource. Moving Into the 21st century the development of resilient and sustainable water supplies may be achieved through integrated Science and Policy.

CONSIDERATIONS IN DEVELOPMENT OF A CHINO BASIN WATER BANK

Ed Means, President, Means Consulting LLC, Orange County, CA

(Co-author recognition: Kirby Brill PE, John R. Thornton, Jim Cathcart and Sarina Sriboonlue)

NORTH BASIN GROUND WATER PROTECTION PROJECT

Roy Herndon, Chief Hydrogeologist, Orange County Water District, Fountain Valley, CA

GROUNDWATER RECHARGE IN THE SAN JOAQUIN VALLEY OPPORTUNITIES AND CHALLENGES

Alvar Escriva-Bou, Research Fellow, PPIC Water Policy Center, San Francisco, CA

10:00 - 10:30 KEYNOTE (Presenter to be announced)

10:30 – 10:50 BREAK

10:50 – 12:20

GROUNDWATER ISSUES BEYOND THE LOS ANGELES BASIN

Panel Moderator

Andrew Stone, Executive Director, American Ground Water Trust, Concord, NH

This session has a focus on three groundwater resources situations in arid zones of California where research, innovative technologies and management strategies are in play to characterize groundwater potential.

POLITICS vs. SCIENCE - UPDATE ON THE STATUS OF THE CADIZ WATER PROJECT

Scot Slater, President, Cadiz, Los Angeles, CA

CONFLICTS IN PROVIDING A RELIABLE GROUNDWATER SUPPLY AND GEOTHERMAL DEVELOPMENT ON THE EAST SLOPE OF THE SIERRAS

Mark Wildermuth, Principal Engineer, President, Wildermuth Environmental Inc., Lake Forest, CA

USGS RESEARCH IN GROUNDWATER BASINS IN THE MOJAVE

Alan Christensen, Hydrologist, US Geological Survey, San Diego, CA

12:20 – 1:20 LUNCH

1:20 – 2:50

ESTABLISHING WATER BUDGETS AND SAFE YIELD UNDER SGMA—WHEN ARE MODELS NEEDED?

Panel moderator:

Mark Williams, Vice president, GEOSCIENCE, Claremont, CA

This session will provide project case studies of all of the different approaches for determining water budgets and safe yield and provide a discussion of when ground water and surface water modeling tools are needed, and when other methods may be suitable. We will discuss the current approaches and present case studies of basin-wide modeling using lithologic models, watershed models, and groundwater models, and compare these tools to some of the more traditional approaches to estimating water balances and safe yield.

OVERVIEW OF CURRENT AND HISTORICAL APPROACHES FOR DETERMINING WATER BUDGETS AND SUSTAINABLE YIELD

Dr. Dennis Williams, Founder & President and Dr. Brian Villalobos, Principal Geohydrologist, Geoscience, Claremont, CA
ADVANTAGES OF USING SURFACE WATER MODELS AND GROUNDWATER MODELS FOR BASIN WATER BUDGET DETERMINATION.
Peter Leffler, Principal Hydrogeologist, Luhdorff & Scalmanini, Woodland, CA
CRITICAL CONSIDERATIONS IN MODELING FOR LONG-TERM SUSTAINABLE YIELD AND SUSTAINABLE GOAL INDICATORS
Dr. Johnson Yeh, Principal Geohydrologist, Geoscience, Claremont, CA

2:50 – 3:00 BREAK

3:00 – 4:30

**INNOVATIVE PROJECT APPROACHES TO DEVELOPING RESILIENT WATER SUPPLIES
IN THE FACE OF REGULATORY AND CLIMATIC CHALLENGES**

Panel moderator:
Samantha Adams, Principal Scientist, Vice President, Wildermuth Environmental, Lake Forest, CA

California water agencies face many challenges in planning to meet the future water demands of their customers: uncertainty of the impacts of climate change on supplies and their reliability, constantly evolving regulations, minimizing environmental impacts and financing capital improvements. In this session, case studies of innovative regulatory and project approaches to improving local water supply reliability in the face of these challenges will be presented. Panelists will discuss the technical, regulatory and economic demonstrations needed to obtain support from board members, regulators, customers, and other key stakeholders for these outside-the-box solutions.

CONVINCING YOUR LEADERSHIP TO PURSUE UNCONVENTIONAL MANAGEMENT AND REGULATORY COMPLIANCE STRATEGIES.
Nemesciano Ochoa, Assistant General Manager, Elsinore Valley Water District, Lake Elsinore, CA
BUILDING REGIONAL CONSENSUS AND REGULATORY SUPPORT FOR THE SAN JUAN WATERSHED PROJECT
Dan Ferons, General Manager, Santa Margarita Water District, Santa margarita, CA
EVOLUTION OF A MAXIMUM BENEFIT REGULATORY STRATEGY FOR SALT AND NUTRIENT MANAGEMENT IN THE SANTA ANA REGION
Hope Smythe, Executive Officer, Santa Ana Regional Water Quality Control Board, Riverside, CA

4:30 WRAP-UP, Continuing education sign-out and ADJOURN

↓Scroll down for registration information↓

↓Scroll down for registration information↓

ONTARIO CONFERENCE AND WORKSHOP – REGISTRATION OPTIONS:

AGWA/AGWT ANNUAL GROUNDWATER CONFERENCE
Monday and Tuesday, February 12 & 13, 2018
or, register on-line at www.agwt.org/events

Call to be an event sponsor (800 423 7748)

Two Day

One Day

EARLY BIRD RATES MUST BE PAID IN FULL BY 12/31/18

YOU MUST CHECK ONE:→

Early Bird Registration (two-day only)

Early Bird – AGWT or AGWA member

General Registration – Jan 1, 2017 and later

AGWT Member – Jan 1, 2017 and later

Full-Time Student (ID required at Registration)

Download of presentation ppts (Registrant Price)

Exhibit Table (personal registration also required)

Registration Includes: access to exhibits, reception, breaks and lunch(s)

Feb 12 AND 13

☐

☐ \$390

☐ \$365

☐ \$430

☐ \$405

☐ \$120

Feb 12 OR Feb 13

☐ or ☐

☐ \$235

☐ \$210

☐ \$80

☐ \$30

☐ \$300

Total for all checked boxes \$

Sept 11th Field trip to Cadiz water project (Only available to two-day registrants) [Space limited] See web-site for details. Check box ☐

OPTION #2 SPEAKER REGISTRATION ONLY! - AGWA/AGWT ANNUAL CONFERENCE

Speakers receive complimentary registration for the day of their presentation

Speaker Presentation Date

Feb 12 ☐

Feb 13 ☐

Attending (day not presenting)

Feb 12 ☐ - \$100

Feb 13 ☐ - \$100

Registration Includes: access to exhibits, reception, breaks and lunch(s)

Total for all checked boxes \$

Payment Information:

☐ CHECK [payable to: American Ground Water Trust] ☐ AMEX ☐ VISA/MC

☐ PO # _____

AMOUNT AUTHORIZED \$ _____

Name on Card _____

Card No. _____ Expiration Date _____

Billing Address (Street) _____

Billing (City/State/ Zip) _____

Cardholder Email _____

Company Name _____

Attendee Name _____

Attendee Email _____

Position/ Job Title _____

Address _____

City _____ State _____ Zip _____

Phone _____

MAIL TO:

American Ground Water Trust
50 Pleasant Street, Suite 2
Concord, NH 03301-4073

FAX: (603) 228-6557

TEL: (603) 228-5444

? QUESTIONS:

(800) 423-7748
9:00-4:00pm (EST)

Register on-line at www.agwt.org/events

[On-line registration or fax completed registration form to 603 228 6557 or scan and e-mail to \[trustinfo@agwt.org\]\(mailto:trustinfo@agwt.org\)](#)



Summary of Cash and Investments November 2017

La Puente Valley County Water District

Investments	Interest Rate (Apportionment Rate)	Beginning Balance	Receipts/ in Value	Change	Disbursements/ in Value	Change	Ending Balance
Local Agency Investment Fund	1.07%	\$ 2,001,942.18	\$	-	\$ -	\$	2,001,942.18
Raymond James Financial Services		\$ 507,699.18	\$	-	\$ 55.83	\$	507,643.35
Checking Account							
Well Fargo Checking Account (per General Ledger)		\$ 1,225,905.48	\$	423,866.69	\$ 313,953.31	\$	1,335,818.86
District's Total Cash and Investments:							\$ <u>3,845,404.39</u>

Industry Public Utilities

Checking Account	Beginning Balance	Receipts	Disbursements	Ending Balance
Well Fargo Checking Account (per General Ledger)	\$ 695,648.95	\$ 177,408.01	\$ 112,544.80	\$ 760,512.16
IPU's Total Cash and Investments:				\$ <u>760,512.16</u>

I certify that; (1) all investment actions executed since the last report have been made in full compliance with the Investment Policy as set forth in Resolution No. 237 and, (2) the District will meet its expenditure obligations for the next six (6) months.

A handwritten signature in blue ink, appearing to read "G.B. Galindo", is written over a light blue rectangular background.

, General Manager

Date: 12/15/2017

Greg B. Galindo

La Puente Valley County Water District (Treatment Plant Included)
Statement of Revenues and Expenses
For the Period Ending November 30, 2017
(Unaudited)

<u>DESCRIPTION</u>	LPVCWD YTD 2017	TP YTD 2017	COMBINED YTD 2017	COMBINED BUDGET 2017	92% OF BUDGET	COMBINED 2016
Total Operational Revenues	\$ 1,762,643	\$ -	\$ 1,762,643	\$ 1,925,600	92%	\$ 1,897,789
Total Non-Operational Revenues	389,828	1,108,958	1,498,786	3,367,500	45%	1,823,685
TOTAL REVENUES	2,152,470	1,108,958	3,261,428	5,293,100	62%	3,721,474
Total Salaries & Benefits	894,241	259,265	1,153,506	1,269,800	91%	1,175,969
Total Supply & Treatment	676,970	740,230	1,417,199	1,639,400	86%	1,486,410
Total Other Operating Expenses	153,450	87,835	241,284	403,300	60%	294,555
Total General & Administrative	291,694	21,628	313,322	507,200	62%	367,578
TOTAL EXPENSES	2,016,353	1,108,958	3,125,311	3,819,700	82%	3,324,512
TOTAL OPERATIONAL INCOME	136,117	-	136,117	1,473,400	9%	396,962
Total Capital Improvements	(17,626)	-	(17,626)	(2,085,000)	1%	(69,922)
Total Capital Outlay	(70,330)	-	(70,330)	(82,000)	86%	(145,725)
TOTAL CAPITAL OPERATIONS	(87,955)	-	(87,955)	(2,167,000)	4%	(215,646)
Total Developer	81,095	-	81,095	15,000	541%	8,292
OPERATING INCOME	129,257	-	129,257	(678,600)		189,607
Non-Cash Items (Dep. & OPEB)	(291,728)	(610,833)	(902,561)	1,007,000	-90%	52,385
NET INCOME (LOSS)	\$ (162,471)	\$ (610,833)	\$ (773,304)	\$ 328,400	-235%	\$ 241,992

La Puente Valley County Water District
Statement of Revenues and Expenses
For the Period Ending November 30, 2017
(Unaudited)

Description	NOVEMBER 2017	YTD 2017	ANNUAL BUDGET 2017	92% OF BUDGET	YEAR END 2016
Operational Revenues					
Water Sales	\$ 80,914	\$ 1,102,469	\$ 1,209,500	91.15%	\$ 1,179,947
Service Charges	45,684	548,692	598,000	91.75%	601,298
Surplus Sales	3,528	32,134	36,000	89.26%	30,558
Customer Charges	2,752	30,946	29,200	105.98%	31,429
Fire Service	1,330	47,711	52,700	90.53%	53,902
Miscellaneous Income	115	690	200	345.00%	655
Total Operational Revenues	134,323	1,762,643	1,925,600	91.54%	1,897,789
Non-Operational Revenues					
Management Fees	-	136,553	257,000	53.13%	253,500
Taxes & Assessments	8,875	120,841	195,000	61.97%	215,708
Other O & M Fees	4,695	60,206	62,000	97.11%	68,259
Rental Revenue	2,937	32,051	33,300	96.25%	33,969
Interest Revenue	-	-	10,000	0.00%	13,992
Miscellaneous Income	325	40,177	36,500	110.07%	75,860
Recycled Water System (Grant Revenue)	-	-	415,000	0.00%	-
Recycled Water System (Loan Proceeds)	-	-	1,000,000	0.00%	-
Total Non-Operational Revenues	16,832	389,828	2,008,800	19.41%	661,288
TOTAL REVENUES	151,155	2,152,470	3,934,400	54.71%	2,559,077
Salaries & Benefits					
Total District Wide Labor	46,874	442,457	472,600	93.62%	448,209
Directors Fees & Benefits	9,663	107,869	106,900	100.91%	102,802
Benefits	13,161	122,494	140,900	86.94%	100,078
OPEB Payments	2,294	124,346	165,200	75.27%	163,062
Payroll Taxes	3,820	40,345	45,300	89.06%	38,934
Retirement Program Expense	(949)	56,730	73,900	76.77%	57,493
Total Salaries & Benefits	74,864	894,241	1,004,800	89.00%	910,577
Supply & Treatment					
Purchased & Leased Water	56	421,839	386,600	109.12%	475,464
Power	14,161	138,746	154,700	89.69%	135,678
Assessments	-	102,458	174,200	58.82%	86,920
Treatment	239	3,885	10,000	38.85%	6,363
Well & Pump Maintenance	486	10,042	56,700	17.71%	21,490
Total Supply & Treatment	14,941	676,970	782,200	86.55%	725,916
Other Operating Expenses					
General Plant	1,164	27,495	35,600	77.23%	23,830
Transmission & Distribution	9,243	52,662	76,500	68.84%	46,997
Vehicles & Equipment	3,345	21,534	28,100	76.63%	12,758
Field Support & Other Expenses	3,836	26,890	45,500	59.10%	74,084
Regulatory Compliance	963	24,869	34,100	72.93%	25,177
Recycled Water Short Term Loan Payment	-	-	-	N/A	-
Recycled Water Loan Payment	-	-	-	N/A	-
Total Other Operating Expenses	18,551	153,450	219,800	69.81%	182,846

La Puente Valley County Water District
Statement of Revenues and Expenses
For the Period Ending November 30, 2017
(Unaudited)

Description	NOVEMBER 2017	YTD 2017	ANNUAL BUDGET 2017	92% OF BUDGET	YEAR END 2016
General & Administrative					
District Office Expenses	1,490	38,947	65,600	59.37%	35,904
Customer Accounts	737	17,077	20,000	85.39%	19,804
Insurance	-	56,054	89,000	62.98%	61,400
Professional Services	718	110,561	183,000	60.42%	163,869
Training & Certification	372	28,132	30,000	93.77%	21,850
Public Outreach & Conservation	665	14,512	37,000	39.22%	13,266
Other Administrative Expenses	1,157	26,411	29,600	89.22%	26,684
Total General & Administrative	5,138	291,694	454,200	64.22%	342,776
TOTAL EXPENSES	113,495	2,016,353	2,461,000	81.93%	2,162,115
TOTAL OPERATIONAL INCOME	37,661	136,117	1,473,400	9.24%	396,962
Capital Improvements					
Zone 3 Improvements	-	(7,022)	(85,000)	8.26%	-
Service Line Replacements	-	(10,431)	(25,000)	41.73%	(47,395)
Valve Replacements	-	(13)	(15,000)	0.09%	(3,107)
Fire Hydrant Repair/Replacements	-	(159)	(5,000)	3.18%	(3,673)
Main & 1st Street Building Retrofit	-	-	(55,000)	0.00%	-
Phase 1 - Recycled Water System	-	-	(1,700,000)	0.00%	(15,747)
Phase 2 - Recycled Water System	-	-	(200,000)	0.00%	-
Total Capital Improvements	-	(17,626)	(2,085,000)	0.85%	(69,922)
Capital Outlay					
Communications Systems Upgrade	-	-	-	N/A	(12,944)
Meter Read Collection System Equipment	-	(30,598)	(45,000)	68.00%	-
New Pick-Up & Backhoe	-	(39,731)	(37,000)	107.38%	(132,780)
Total Capital Outlay	-	(70,330)	(82,000)	85.77%	(145,725)
TOTAL CAPITAL OPERATIONS	-	(87,955)	(2,167,000)	4.06%	(215,646)
Developer					
Developer Fees	-	81,095	5,000	1621.90%	8,292
Developer Contributions	-	-	10,000	0.00%	-
Total Developer	-	81,095	15,000	540.63%	8,292
OPERATING INCOME	37,661	129,257	(678,600)		189,607
Add Back Capitalized Assets	-	87,955	2,167,000	4.06%	215,646
Less Depreciation Expense	(34,517)	(379,683)	(414,200)	91.67%	(361,474)
Less OPEB Expense - Not Funded	-	-	(12,800)	0.00%	20,223
NET INCOME (LOSS)	\$ 3,144	\$ (162,471)	\$ 1,061,400	-15.31%	\$ 64,003

Treatment Plant
Statement of Revenues and Expenses
For the Period Ending November 30, 2017
(Unaudited)

Description	NOVEMBER 2017	YTD 2017	ANNUAL BUDGET 2017	92% OF BUDGET	YEAR END 2016
Non-Operational Revenues					
Reimbursements from CR's	\$ 67,773	\$ 1,108,958	\$ 1,358,700	82%	\$ 1,162,397
Miscellaneous Income	-	-	-	N/A	-
Total Non-Operational Revenues	67,773	1,108,958	1,358,700	82%	1,162,397
Salaries & Benefits					
Total District Wide Labor	18,344	259,265	265,000	98%	265,392
Contract Labor	-	-	-	N/A	-
Total Salaries & Benefits	18,344	259,265	265,000	98%	265,392
Supply & Treatment					
NDMA, 1,4-Dioxane Treatment	2,943	193,342	195,600	99%	143,768
VOC Treatment	20,132	25,374	17,600	144%	35,449
Perchlorate Treatment	1,571	313,540	332,600	94%	342,688
Other Chemicals	3,074	16,591	16,600	100%	13,231
Treatment Plant Power	12,146	160,601	204,800	78%	160,313
Treatment Plant Maintenance	509	15,226	70,000	22%	29,404
Well & Pump Maintenance	-	15,555	20,000	78%	35,641
Total Supply & Treatment	40,376	740,230	857,200	86%	760,495
Other Operating Expenses					
General Plant	1,353	12,734	45,000	28%	12,414
Vehicles & Equipment	918	9,707	6,500	149%	9,356
Field Support & Other Expenses	-	-	15,000	0%	-
Regulatory Compliance	6,735	65,394	117,000	56%	89,940
Total Other Operating Expenses	9,006	87,835	183,500	48%	111,710
General & Administrative					
District Office Expenses	-	-	20,000	0%	-
Insurance	-	9,757	18,000	54%	9,506
Professional Services	47	11,871	15,000	79%	15,296
Total General & Administrative	47	21,628	53,000	41%	24,801
TOTAL EXPENSES	67,773	1,108,958	1,358,700	82%	1,162,397
TOTAL OPERATIONAL INCOME	-	-	-	N/A	-
Capital Outlay					
Scada Computer	-	-	-	N/A	-
Total Capital Outlay	-	-	-	N/A	-
Depreciation Expense	(61,083)	(610,833)	(733,000)	83%	177,989
Total Non-Cash Items (Dep. & OPEB)	(61,083)	(610,833)	(733,000)	83%	177,989
NET INCOME (LOSS)	\$ (61,083)	\$ (610,833)	\$ (733,000)	83%	\$ 177,989

INDUSTRY PUBLIC UTILITIES - WATER OPERATIONS
Statement of Revenue and Expenses Summary
For the Period Ending November 30, 2017
(Unaudited)

DESCRIPTION	NOVEMBER 2017	FISCAL YTD 2017-2018	BUDGET FY 2017-2018	42% OF BUDGET	FY END 2016-2017
Total Operational Revenues	\$ 214,075	\$ 917,454	\$ 1,959,100	46.83%	\$ 1,919,277
Total Non-Operational Revenues	-	-	27,500	0.00%	57,344
TOTAL REVENUES	214,075	917,454	1,986,600	46.18%	1,976,621
Total Salaries & Benefits	52,201	256,534	629,700	40.74%	614,212
Total Supply & Treatment	2,079	62,657	804,060	7.79%	716,709
Total Other Operating Expenses	12,410	50,069	157,500	31.79%	166,293
Total General & Administrative	1,528	71,966	317,890	22.64%	245,348
Total Other & System Improvements	616	8,158	93,000	8.77%	132,828
TOTAL EXPENSES	68,835	449,384	2,002,150	22.45%	1,875,389
OPERATING INCOME	145,241	468,071	(15,550)	-3010.10%	101,232
NET INCOME (LOSS)	\$ 145,241	\$ 468,071	\$ (15,550)	-3010.10%	\$ 101,232

INDUSTRY PUBLIC UTILITIES - WATER OPERATIONS

Statement of Revenue and Expenses For the Period Ending November 30, 2017 (Unaudited)

DESCRIPTION	NOVEMBER 2017	FISCAL YTD 2017-2018	BUDGET FY 2017-2018	42% OF BUDGET	FY END 2016-2017
Operational Revenues					
Water Sales	\$ 142,262	\$ 613,231	\$ 1,250,000	49.06%	\$ 1,201,582
Service Charges	56,981	251,673	600,000	41.95%	604,883
Customer Charges	1,665	8,140	21,000	38.76%	20,115
Fire Service	13,168	44,410	88,100	50.41%	92,696
Miscellaneous Income	-	-	-	N/A	-
Total Operational Revenues	214,075	917,454	1,959,100	46.83%	1,919,277
Non-Operational Revenues					
Contamination Reimbursement	-	-	27,500	0.00%	38,462
Developer Fees	-	-	-	N/A	14,568
Miscellaneous Income	-	-	-	N/A	4,314
Total Non-Operational Revenues	-	-	27,500	0.00%	57,344
TOTAL REVENUES	214,075	917,454	1,986,600	46.18%	1,976,621
Salaries & Benefits					
Administrative Salaries	14,803	71,293	179,100	39.81%	165,274
Field Salaries	18,978	93,059	224,000	41.54%	225,518
Employee Benefits	11,608	57,602	139,000	41.44%	139,630
Pension Plan	4,403	21,420	51,600	41.51%	49,805
Payroll Taxes	2,411	11,744	29,000	40.50%	27,928
Workman's Compensation	-	1,415	7,000	20.22%	6,058
Total Salaries & Benefits	52,201	256,534	629,700	40.74%	614,212
Supply & Treatment					
Purchased Water - Leased	-	-	367,890	0.00%	496,961
Purchased Water - Other	1,510	7,241	14,400	50.28%	14,069
Power	-	48,369	125,000	38.70%	107,347
Assessments	-	5,515	132,770	4.15%	91,367
Treatment	-	-	7,000	0.00%	4,589
Well & Pump Maintenance	569	1,532	157,000	0.98%	2,376
Total Supply & Treatment	2,079	62,657	804,060	7.79%	716,709
Other Operating Expenses					
General Plant	100	2,653	10,500	25.27%	5,313
Transmission & Distribution	9,871	33,710	60,000	56.18%	67,558
Vehicles & Equipment	-	-	30,000	0.00%	31,515
Field Support & Other Expenses	2,009	7,549	27,000	27.96%	26,761
Regulatory Compliance	430	6,156	30,000	20.52%	35,146
Total Other Operating Expenses	12,410	50,069	157,500	31.79%	166,293

INDUSTRY PUBLIC UTILITIES - WATER OPERATIONS

Statement of Revenue and Expenses For the Period Ending November 30, 2017 (Unaudited)

DESCRIPTION	NOVEMBER 2017	FISCAL YTD 2017-2018	BUDGET FY 2017-2018	42% OF BUDGET	FY END 2016-2017
General & Administrative					
Management Fee	-	45,518	183,890	24.75%	180,285
Office Expenses	682	4,346	20,500	21.20%	22,806
Insurance	-	9,586	25,500	37.59%	12,323
Professional Services	-	2,465	45,000	5.48%	4,739
Customer Accounts	632	6,295	16,000	39.34%	15,748
Public Outreach & Conservation	14	2,408	25,000	9.63%	4,688
Other Administrative Expenses	200	1,348	2,000	67.41%	4,758
Total General & Administrative	1,528	71,966	317,890	22.64%	245,348
Other Expenses & System Improvements (Water Operations Fund)					
Transfer to Capital or Expense	-	-	-	N/A	-
Developer Capital Contributions	-	-	-	N/A	(135,303)
Developer Project - Andrews School #2	-	-	-	N/A	72,134
Developer Project - Don Julian Unit D	-	-	-	N/A	893
Developer Project - 13936-38 Valley Blvd	-	-	-	N/A	62,277
Net Developer Project Activity	-	-	-	-	-
Master Plan Update / Hydraulic Model	-	-	-	N/A	11,359
Other System Improvements (Materials)	-	-	-	N/A	223
FH Laterals	-	208	9,000	2.32%	83
Service Line Replacements	-	1,091	30,000	3.64%	71,893
Valve Replacements	-	13	25,000	0.05%	660
Plant Electrical System Improvements	-	-	20,000	0.00%	-
Meter Installations - Industry Hills	616	6,846	-	0.00%	24,818
Meter Read Collection System	-	-	-	0.00%	23,792
SCADA System Assessment & Upgrades	-	-	9,000	0.00%	-
Total Other & System Improvements	616	8,158	93,000	8.77%	132,828
TOTAL EXPENSES	68,835	449,384	2,002,150	22.45%	1,875,389
OPERATING INCOME	145,241	468,071	(15,550)	N/A	101,232

Memo



To: Honorable Board of Directors
From: Greg Galindo, General Manager
Date: 12/21/2017
Re: Adoption of Mitigated Negative Declaration for the PVOU IZ Remedy Project

Summary

As reported to the Board of Directors on November 27, 2017, through the Project Engineer's Report, an update was provided on the CEQA Initial Study/Mitigated Negative Declaration (IS/MND) for the PVOU IZ Project. The CEQA IS/MND document was filed and received by the State Clearinghouse on November 15, 2017, which formally opened the 30-day comment period for all interested parties. In addition, District staff published the Notice of Intent with the San Gabriel Valley Tribune and posted the document on the District website. To further ensure that all key stake holders in the San Gabriel Valley were informed of the Notice of Intent, staff and the Northrop team reached out to the following stakeholders:

- City of La Puente
- City of Industry
- California Department of Toxic Substances
- San Gabriel Basin Water Quality Authority
- Main San Gabriel Basin Watermaster
- Office of Supervisor Hilda Solis
- Office of Congresswoman Grace Napolitano
- Office of Congresswoman Judy Chu
- Office of State Senator Ed Hernandez
- Office of State Assemblywoman Blanco Rubio
- SWRCB DDW
- San Gabriel Valley Municipal Water District
- Three valley Municipal Water District
- Upper San Gabriel Valley Municipal Water District
- USEPA

On December 15, 2017, the State Clearinghouse advised that the review period had closed on December 14, 2017, and no comments were submitted by that date. The public review process of the proposed IS/MND will culminate with a public hearing of the LPVCWD's Board of Directors on December 21, 2017, at 5:30 P.M. at 112 N First Street, La Puente, CA 91744 to consider adoption of a Final MND.

The determination of the IS/MND was that although the proposed PVOU IZ Project could have a significant effect on the environment, there will not be a significant effect in this case because mitigation measures have been added to the project.

Enclosed is the CEQA IS/MND for your reference along with the Mitigation Measures and Monitoring Plan.

Recommendation

Adopt Resolution No. 249 to Adopt the Mitigated Negative Declaration for the PVOU IZ Remedy Project.

Respectfully Submitted,

Greg B. Galindo

General Manager

Enclosures (3)

- Draft Initial Study/Mitigated Negative Declaration
- Mitigation Measures and Monitoring Plan
- Resolution No. 249

**NORTHROP GRUMMAN SYSTEMS
CORPORATION PUENTE VALLEY
OPERABLE UNIT, INTERMEDIATE
ZONE INTERIM REMEDY PROJECT
DRAFT INITIAL STUDY/MITIGATED
NEGATIVE DECLARATION**

DRAFT INITIAL STUDY/MITIGATED
NEGATIVE DECLARATION



Lead Agency:

La Puente Valley County Water
District
112 North 1st Street
La Puente, California 91744

Proponent:

Northrop Grumman Systems
Corporation
980 Fairview Park Drive
Falls Church, Virginia 22042

Consultant:

Stantec Consulting Services Inc.
290 Conejo Ridge Avenue
Thousand Oaks, California 91361

November 13, 2017

| .

**NORTHROP GRUMMAN SYSTEMS CORPORATION PUENTE VALLEY OPERABLE UNIT, INTERMEDIATE
ZONE INTERIM REMEDY PROJECT DRAFT INITIAL STUDY/MITIGATED NEGATIVE DECLARATION**

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**NORTHROP GRUMMAN SYSTEMS CORPORATION PUENTE VALLEY OPERABLE UNIT, INTERMEDIATE
ZONE INTERIM REMEDY PROJECT DRAFT INITIAL STUDY/MITIGATED NEGATIVE DECLARATION**

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ABBREVIATIONS

µg/L	micrograms per Liter
µg/m ³	micrograms per cubic meter
1,1-DCA	1,1- dichloroethane
1,1-DCE	1,1-dichloroethene
AB	Assembly Bill
AQMP	Air Quality Management Plan
ARARs	Applicable or Relevant and Appropriate Requirements
BAU	Business as Usual
CAAQS	California Ambient Air Quality Standards
CAGN	Coastal California Gnatcatcher
CalEEMod	California Emissions Estimator Model
Cal/EPA	California Environmental Protection Agency
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CDFW	California Department of Fish and Wildlife
CDM	Camp Dresser & McKee Inc.
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CESA	California Endangered Species Act
CFCs	Chlorofluorocarbons
CH ₄	Methane
CIWS	City of Industry Waterworks System
CMA	Congestion Management Agency
CMP	Congestion Management Program
CMWNP	Compliance and Monitoring Well Network Plan
CNDDB	California Natural Diversity Database
CO	carbon monoxide
CO ₂ e	carbon dioxide equivalent
COPCs	chemicals of potential concern
CUPA	Certified Unified Program Agency
CWA	Clean Water Act
dBA	A-weighted decibel
DDW	State Water Resources Control Board, Division of Drinking Water
DPW	Department of Public Works
DZ	Deep Zone
EIR	Environmental Impact Report

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ABBREVIATIONS

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EPCRA	Emergency Planning and Community Right-to-Know Act
ESD	Explanation of Significant Differences
FAA	Federal Aviation Administration
Farmland	Prime Farmland, Unique Farmland, or Farmland of Statewide Importance
FESA	Federal Endangered Species Act
GHGs	Greenhouse Gases
gpm	gallons per minute
HCP	Habitat Conservation Plans
HDPE	High Density Polyethylene
HFCs	Hydrofluorocarbons
I	Industrial
IROD	Interim Record of Decision
IS/MND	Initial Study/Mitigated Negative Declaration
IX	ion exchange
IZ	Intermediate Zone
LACDPH	Los Angeles County Department of Public Health
LACFCD	Los Angeles County Flood Control District
LACFD	Los Angeles County Fire Department
LACSD	Los Angeles County Sanitation District
LD	Low Density Residential
LGAC	liquid-phase granular activated carbon
LIZ	lower IZ
LOS	Level of Service
LPVCWD	La Puente Valley County Water District
LSTs	localized significance thresholds
MBTA	Migratory Bird Treaty Act
Metro	Metropolitan Transportation Authority
mg/L	milligrams per liter
MOV	mouth of the valley
NAAQS	National Ambient Air Quality Standards
NCCP	Natural Community Conservation Plans
NO ₂	nitrogen dioxide
NPDES	National Pollutant Discharge Elimination System
NPL	National Priority List
O ₃	Ozone
OHHEA	Office of Environmental Health Hazard Assessment
OSHA	Occupational Safety and Health Administration
OUs	operable units
Pb	Lead

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ABBREVIATIONS

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PBWA	Puente Basin Water Agency
PCE	Tetrachloroethene
PFCs	perfluorocarbons
PFDR	Pre-Final Design Report
PHG	California Public Health Goal
ppm	parts per million
PRC	Public Resources Code
PVOU	Puente Valley Operable Unit
PVSC	Puente Valley Steering Committee
RAOs	Remedial Action Objectives
RCC	Reinforced Cement Concrete
RCRA	Resource Conservation and Recovery Act
ROD	record of decision
ROW	railroad right-of-way
RPW	relatively permanent waters
RTP	Regional Transportation Plan
RWQCB	California Regional Water Quality Control Board, Los Angeles Region
San Gabriel	
VWC	San Gabriel Valley Water Company
SCAB	South Coast Air Basin
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SCE	Southern California Edison
SF ₆	sulfur hexafluoride
SO ₂	sulfur dioxide
SR	California State Route
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
SZ	Shallow Zone
TCE	Trichloroethene
TDH	Total Dynamic Head
TNW	traditional navigable waters
TPH	total petroleum hydrocarbons
TSCA	Toxic Substances Control Act
UIZ	upper intermediate zone
USACE	United States Army Corps of Engineers
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
V/C	volume-to-capacity
VOCs	volatile organic compounds



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ABBREVIATIONS

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WARM	warm freshwater habitat
WATCH Manual	Work Area Traffic Control Handbook
Watermaster	Main San Gabriel Basin Watermaster
WDR	Wastewater Discharge Requirement
WILD	wildlife habitat
WQA	San Gabriel Basin Water Quality Authority

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PROJECT SUMMARY
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1.0 PROJECT SUMMARY

The proposed Project is comprised of the extraction and treatment of groundwater and conveyance to La Puente Valley County Water District (LPVCWD) for potable end use in conformance with applicable permits. The Project consists of utilizing six existing groundwater extraction wells (IZ-East, IZ-1, IZ-2, MZ-1, MZ-2 and MZ-3); installation of one additional groundwater extraction well, IZ-West (located in a landscape island within the parking lot of PRL Glass at 13658 Nelson Avenue, City of Industry); a proposed treatment plant; conveyance infrastructure (to link the existing conveyance pipeline with the new water treatment plant); minor water system improvements downstream of the treatment plant and compliance, sentinel, and monitoring wells.

Groundwater in the San Gabriel Basin (Basin) has been the subject of environmental investigation since 1979, when groundwater contaminated with volatile organic compounds (VOCs) was first detected. In May 1984, the Basin was placed on United States Environmental Protection Agency's (USEPA's) National Priorities List (Superfund). USEPA subsequently divided the Basin into eight different operable units, one of which is the Puente Valley Operable Unit (PVOU). The PVOU is located within the southeastern portion of the San Gabriel Valley, about 25 miles from the Pacific Ocean, in eastern Los Angeles County.

Between 1993 and 2001, the Puente Valley Steering Committee (PVSC), which represented the parties responding to an USEPA request for assessment, was actively engaged in evaluating the nature and extent of groundwater contamination in the PVOU. In September 1998, USEPA issued an interim record of decision (IROD) setting forth the means by which groundwater contamination in the PVOU would be addressed. The IROD selected "Alternative 3" from the Interim Remedial Investigation/Feasibility Study, which included migration control in the shallow and intermediate groundwater zones at the mouth of the valley (MOV), as the most appropriate remedy for the overall protection of human health and the environment.

The PVOU encompasses the Puente Basin and a portion of the Main San Gabriel Basin where Puente Valley opens into the Main San Gabriel Basin. The transition area is referred to as the MOV area. The Puente and Main San Gabriel Basins collect infiltration on the valley floors and runoff from the surrounding highlands, recharging the groundwater aquifer. Groundwater generally flows towards the Whittier Narrows, the Main San Gabriel Basin's only outlet, which hydraulically connects the Main San Gabriel Basin to the Central Basin to the south. This flow system is influenced by water supply production well fields, spreading basins, and other recharge operations.

The PVOU area is divided into three principal aquifer units: the Shallow Zone (SZ), Intermediate Zone (IZ), and Deep Zone (DZ). The IZ includes water-bearing strata in the interval between the SZ and the DZ as defined in the Explanation of Significant Differences (ESD), and is characterized

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by a lower hydraulic head than the SZ (USEPA, 2005). The IZ includes two aquifer units: the upper IZ (UIZ) and lower IZ (LIZ).

The IROD defined chemicals of potential concern (COPCs) for the PVOU, most of which were VOCs. The IROD selected containment of groundwater with COPCs in the SZ and IZ at the MOV as the most appropriate remedy (USEPA, 1998). The IZ Interim Remedy is classified as an interim action because it is intended to control the migration of COPCs over an eight-year operational period. USEPA will use information collected during operation of the interim remedy to help determine the need for additional actions and/or the nature of the final remedy.

The treatment plant will be designed to allow for an end use of the treated groundwater as potable use as proposed herein, as well as temporary discharge to surface water during remedy start-up, system commissioning testing, and periodic system maintenance. The proposed end use is to deliver treated water to LPVCWD, with LPVCWD distributing the treated groundwater to other water purveyors, including Suburban Water Systems (SWS). LPVCWD has the existing capacity to accept the full flow of treated water from the Project. The Project also includes minor water system improvements downstream of the treatment plant and installation of a waste brine line from the water treatment plant to an existing Los Angeles County Sanitation District (LACSD) facility.

1.1 LOCATION

The IZ Interim Remedy is located in the cities of Industry and La Puente, and an unincorporated area of Los Angeles County. Contaminated groundwater from the IZ aquifer will be extracted by a series of extraction wells and conveyed via piping system from the wells to a water treatment plant to be located at 111 Hudson Avenue in the City of Industry, California. Figure 1 shows the regional location of the Project site. Figure 2 shows the location of the existing and proposed wells, proposed conveyance pipes and proposed water treatment site.

1.2 GENERAL ENVIRONMENTAL SETTING

The PVOU encompasses the Puente Basin and a portion of the Main San Gabriel Basin where the Puente Valley opens into the Main San Gabriel Basin. The transition area where the Puente Valley opens into the Main San Gabriel Basin is referred to as the MOV area. The Puente and Main San Gabriel Basins are natural groundwater reservoirs filled with unconsolidated and semi-consolidated alluvial deposits that overlie relatively impermeable rock. The water-bearing deposits range widely in thickness from less than 25 feet in the extreme eastern portion and Puente Valley perimeter to approximately 1,300 feet in the MOV area.

In the PVOU, the groundwater flow occurs along a relatively narrow and shallow section parallel to the valley axis in the vicinity of San Jose Creek, then flows out of the valley toward the Main San Gabriel Basin. Groundwater in the eastern portion of the basin generally flows to the west and southwest toward the Whittier Narrows. In the western portion of the basin, west of the Rio

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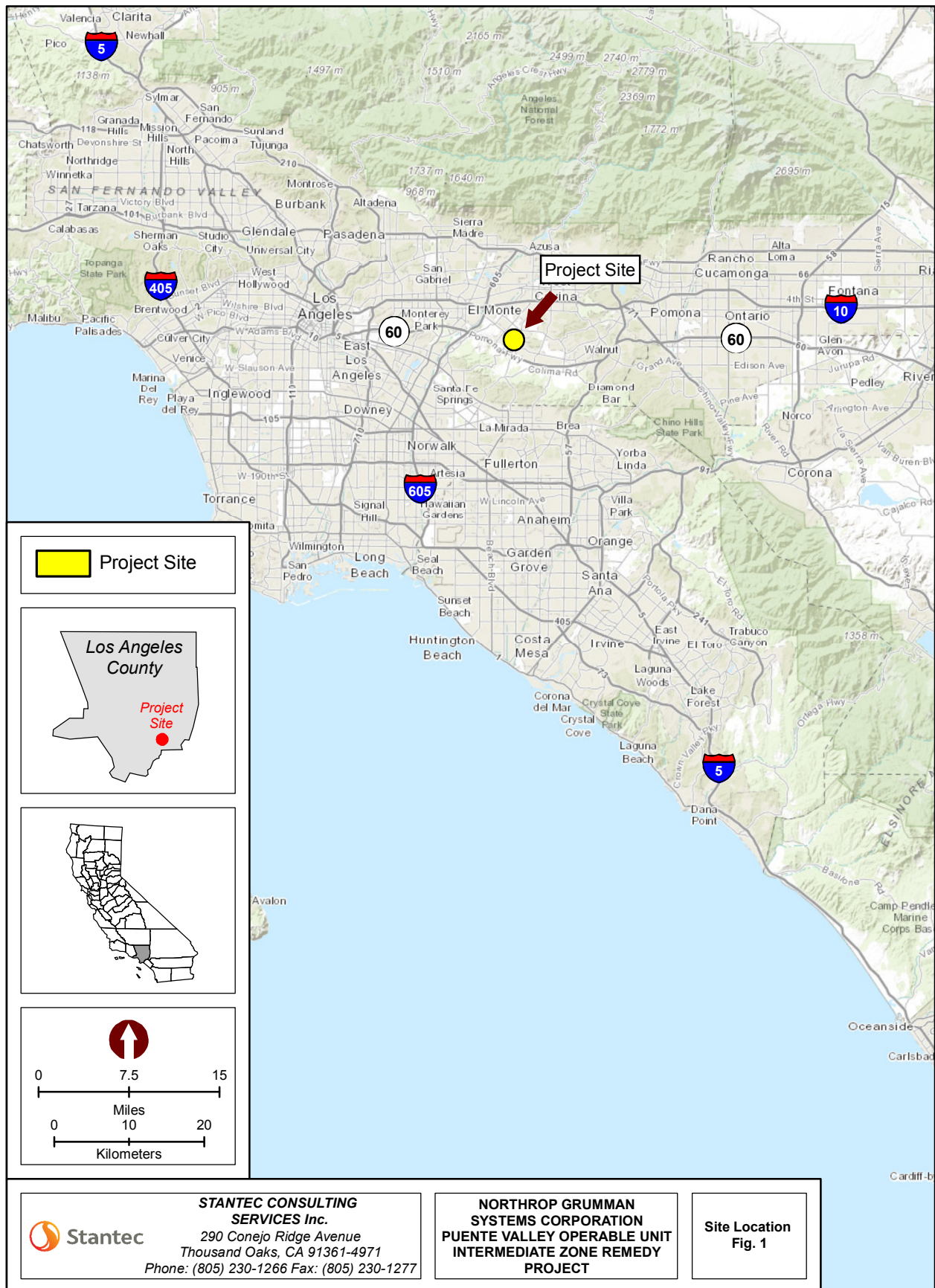
Hondo, groundwater flow is toward the major production wells in Alhambra and Monterey Park. Outflow from the basin occurs at Whittier Narrows, which hydraulically connects the Main San Gabriel Basin to the downstream Central Basin.

The groundwater gradients and flow directions in the UIZ and LIZ are influenced by the large water supply production well fields, spreading basins, and other recharge operations in the central area of the basin. The IZ Interim Remedy is intended to address groundwater contamination in the UIZ and LIZ in the MOV area of the PVOU that is generally located to the north of San Jose Creek and to the west of Hacienda Boulevard.

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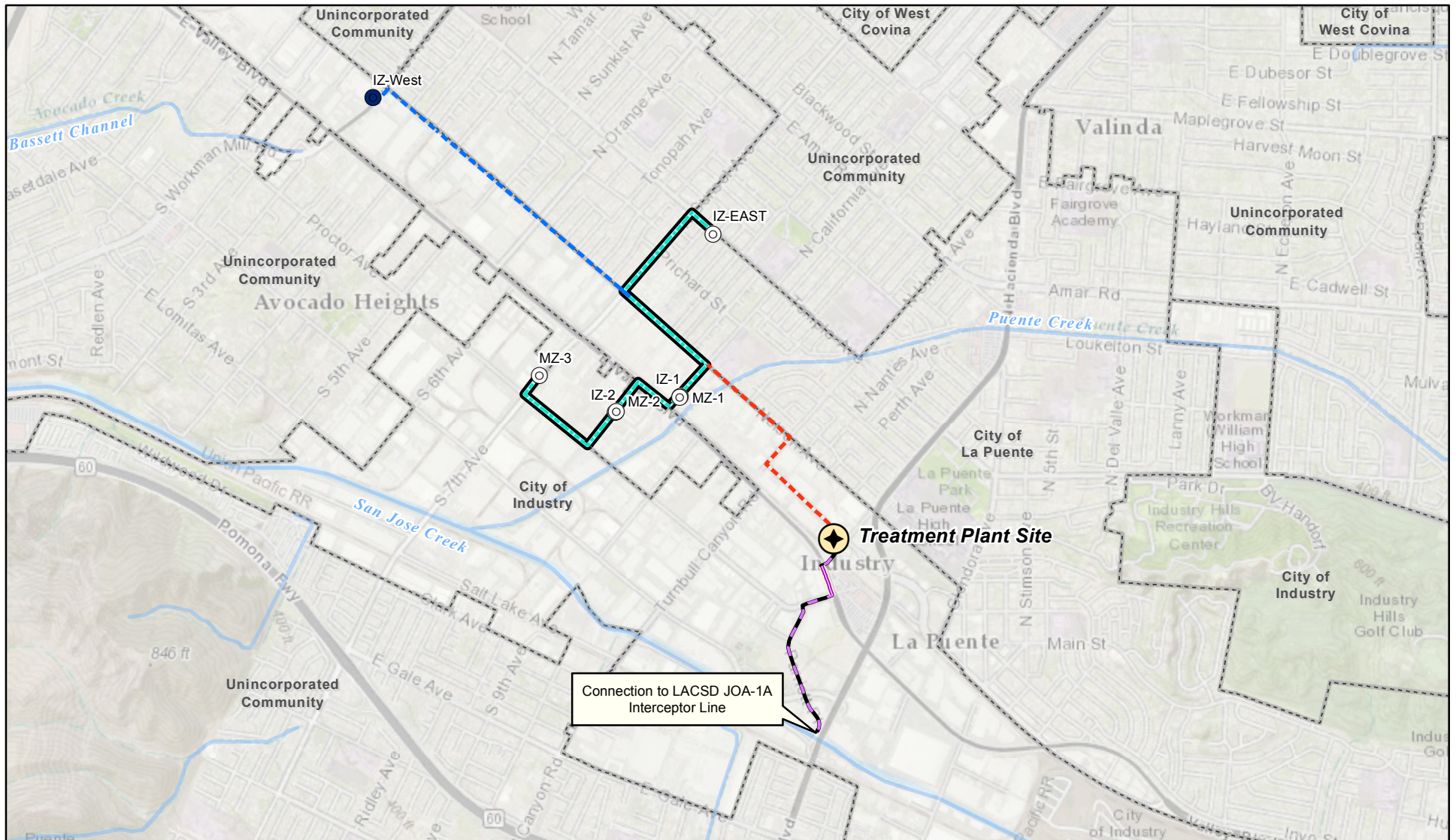
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Legend

- IZ-West Extraction Well
- Existing IZ Extraction Well
- ⬇ Treatment Plant Site (111 Hudson Ave.)
- ▭ City Boundaries
- Wastewater Line
- Existing Wastewater Line
- IZ-West Conveyance Pipeline
- Groundwater Pipeline
- Existing Pipeline
- Rivers & Creeks



0 2,500 Feet



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**NORTHROP GRUMMAN
SYSTEMS CORPORATION
PUENTE VALLEY OPERABLE UNIT
INTERMEDIATE ZONE REMEDY
PROJECT**

**IZ Interim Remedy
Infrastructure Map**

Fig. 2

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Within the MOV area of the PVOU the following eight water supply production wells are actively pumped, have been recently operated, or recently installed but not yet operated:

- San Gabriel Valley Water Company (San Gabriel VWC) wells B11B, B9B, B24A, B24B, and B24C are active production wells;
- San Gabriel VWC well B7E is infrequently used for standby production;
- San Gabriel VWC well B11A has been out of service since at least 2005; and
- SWS well 147-W3 has been operated until December 2016 and is currently on stand-by.

There are two active or recently active (B11B, and 147-W3) and one inactive (B11A) water supply production wells that have screens within the IZ in the MOV area. Well B11B, active production well, is owned and operated by San Gabriel VWC. Well 147-W3, currently on stand-by, is owned and operated by SWS. When operating, pumping from these two water supply production wells (B11B, and 147-W3) creates a cone of depression in the UIZ and a larger cone of depression in the LIZ. In 2007, Northrop Grumman reached agreement with San Gabriel VWC to continue pumping B7C and B11B until the IZ Interim Remedy starts operation. Northrop Grumman and San Gabriel VWC amended the agreement in 2016 to allow for early destruction of well B7C. Pursuant to USEPA's request and agreement with Northrop Grumman, San Gabriel VWC properly destroyed well B7C in October 2016. San Gabriel VWC's well B11B continues to operate in the PVOU. Thereafter, well B11B is to be shut down and replaced by other wells of San Gabriel VWC, including B24 wells which are not screened in the IZ.

1.3 HISTORICAL PERSPECTIVE

USEPA issued an IROD for the PVOU in September 1998 that specified performance criteria for the PVOU remedy. Specifically, the performance criteria dictated that the IZ Interim Remedy use hydraulic control to prevent VOCs from migrating beyond the B7 Well Field Area at concentrations above the Applicable or Relevant and Appropriate Requirements (ARARs).

The anticipated remedy in the IROD included:

- Groundwater extraction from four wells in the IZ at a combined flow of 1,000 gallons per minute (gpm);
- Extracted groundwater treatment for VOCs at a single, 1,700-gpm treatment plant centrally located near the extraction system;
- Discharge of treated groundwater to surface waters or to a water supply line for potable use; and
- Installation of a groundwater monitoring system to provide compliance with the Remedial Action Objectives (RAOs) and performance criteria, as well as an early warning system for the groundwater treatment plant.

Due to the presence of 1,4-dioxane and perchlorate in groundwater in the PVOU, USEPA modified the IROD by issuing an ESD on 14 June 2005 (USEPA, 2005). The ESD revised the

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performance criteria in the IROD, and added requirements to treat perchlorate and to contain and treat 1,4-dioxane, as required. The ESD also authorized discharge of extracted water to surface water following treatment, subject to compliance with effluent limits set forth in the ESD.

Following the IROD and ESD, construction activities were performed to advance the interim remedy. Six extraction wells (IZ-1, IZ-2, IZ-East, MZ-1, MZ-2, and MZ-3) were constructed and tested by Camp Dresser & McKee Inc. (CDM) to facilitate design and construction of the IZ Interim Remedy with approval of USEPA (CDM, 2006, 2007a). Following installation of the six extraction wells, the City of Industry required the installation of a portion of the IZ Interim Remedy, approximately 300 feet of pipeline and four vaults along California Avenue just north of Valley Boulevard, in advance of the Alameda Corridor East (ACE) project, a railroad grade separation project (CDM and Orion, 2009).

1.4 PROJECT OBJECTIVES

LPVCWD is the intended water purveyor that will receive the treated water from the Project for delivery (potable use) and is the contractor that will operate the treatment plant. LPVCWD will convey water to other agencies, including SWS. Operation of the treatment plant and acceptance of treated groundwater will be part of Definitive Agreements between LPVCWD and Northrop Grumman, and between LPVCWD, SWS and Northrop Grumman, respectively, the execution of which is a discretionary action subject to California Environmental Quality Act (CEQA) compliance. LPVCWD will have responsibilities as Northrop Grumman's contract-operator to ensure quality of water for discharge and would have additional and independent responsibilities as a public water supplier to ensure water quality for use in public water supply systems.

Under the proposed Definitive Agreements, an average flow rate of 1,200 gpm of treated water based on a monthly average will be made available by LPVCWD to SWS. To assure that all of the treated water will go to potable use, LPVCWD has agreed to accept all treated water, that meets Drinking Water Standards to the extent permitted by applicable law, regulations and governmental approvals, thereby ensuring continuous potable demand for the treated water. Northrop Grumman is retaining ownership of the extraction system and treatment plant, as well as responsibility to comply with cleanup performance criteria and USEPA requirements for surface discharge. Northrop Grumman is designing the treatment process and investing in facilities for potable supply and for temporary discharges to surface water.

LPVCWD's objectives for the Project include approval of the new groundwater treatment and extraction facilities and; use of treated water as a drinking water supply under applicable California Division of Drinking Water (DDW) requirements and Main San Gabriel Basin Watermaster's (Watermaster's) Rules and Regulations. Northrop Grumman's objectives for the Project include certainty in the cost effective, continuous and uninterrupted operation of the treatment project and requisite control over physical components of extraction and treatment facilities.



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1.5 SCHEDULE

1.5.1 Construction Schedule

Northrop Grumman anticipates that the construction phase of the Project will begin once the permitting documents and design phase have been completed. Construction of the Project is anticipated to have an approximate 12 to 18 month duration.

1.5.2 Operation Schedule

The Project is expected to be operated for eight years. However, operation may continue beyond the eight year period.

1.6 PERMITS, APPROVALS AND AGREEMENTS

The following permits, agreements and regulatory review processes are anticipated in order to construct and operate the Project. Some of these permits and approvals are not subject to CEQA compliance since the Project involves procurement of federal, ministerial and/or legally exempt permits. In addition, under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Section 121(e)(1), 42 U.S.C. Section 9621(e), no federal, state, or local permit is required for the portion of any CERCLA removal or remedial action conducted entirely on-site. CERCLA requires meeting the substantive provisions of permitting regulations that are ARARs (OSWER, 1992). Per the ESD, "ARARs include only substantive, not administrative, requirements, pertain only to on-site activities, and are frozen at the time of the ROD, or ESD." Permit applications would be filed for on-site activities to demonstrate compliance with the specific standards and rules of relevant agencies.

The IROD sets forth ARARs for discharge to surface water. For the PVOU, an on-site discharge to surface water must meet substantive National Pollutant Discharge Elimination System (NPDES) requirements but need not obtain an NPDES permit nor comply with the administrative requirements of the permitting process (ESD, 2005).

Per the ESD, off-site activities must comply with all applicable federal, state, and local laws, including both substantive and administrative requirements that are in effect when the activity takes place. Delivery of treated water into a public supply is considered to be an off-site activity and must meet all legal requirements for drinking water in existence at the time the water is served, including obtaining necessary state water supply permits (ESD, 2005).

1.6.1 Compliance, Sentinel, and Other Monitoring Wells

Existing compliance, sentinel, and monitoring wells are located in existing rights-of-way within City of La Puente, City of Industry, and unincorporated portions of Los Angeles County. These

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locations allow for continuous access for groundwater monitoring. Northrop Grumman would secure encroachment permits from the agencies when access to the wells impacts traffic.

1.6.2 City of Industry

The extraction wells IZ-1, MZ-1, MZ-3, and IZ-West within the UIZ and LIZ in the MOV Area and associated conveyance piping would be in the City of Industry. The connection to the storm drain for temporary discharge to surface water, and the conveyance piping from the treatment plant to the LACSD industrial sewer line for the reverse osmosis (RO) waste concentrate would be located in City of Industry. The treatment plant will be located on a property (111 Hudson Avenue) within City of Industry.

Approvals and Permits will be secured from City of Industry Planning and Engineering Departments as needed for the following:

- Encroachment and building permits for use of and construction in City of Industry rights-of-way;
- Excavation permits for construction in City rights-of-way;
- Bridge crossing for the pipeline that will be attached to the bridges owned by City of Industry that cross Puente Creek and San Jose Creek, likely via County of Los Angeles Department of Public Works (DPW); and
- Construction and building permits for site development and construction of the treatment plant, via County of Los Angeles DPW.

The 111 Hudson Avenue property and treatment plant will be developed and constructed in compliance with applicable design standards such as landscaping, setback, and traffic flow requirements.

Northrop Grumman obtained a license agreement and necessary construction permits from City of Industry to allow Northrop Grumman to construct and maintain the existing pipeline within public rights-of-way. The agreements were updated in 2016 to include the new pipeline segments that will be installed in the City of Industry.

1.6.3 City of La Puente

Extraction well IZ-East and associated pipelines are located in City of La Puente. An encroachment permit was obtained for installation of this well. Northrop Grumman also obtained a license agreement and necessary construction permits with City of La Puente for the existing groundwater conveyance pipeline. The agreements were updated in 2016 to include the new pipeline segments that will be installed in the City of La Puente.

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1.6.4 Los Angeles County

Extraction wells IZ-2 and MZ-2 and associated pipeline are located in unincorporated portions of Los Angeles County. Encroachment permits were obtained for installation of these wells.

Los Angeles County Flood Control District (LACFCD) manages storm drains within the County. Northrop Grumman obtained a permit for each crossing of the storm drain system by the existing groundwater conveyance pipeline.

Completion of a formal pipeline license agreement with Los Angeles County for construction and maintenance of pipeline within its jurisdiction is anticipated before construction of new pipelines to cover both new and existing pipelines.

A storm drain connection permit application will be submitted to City of Industry, which will forward it to LACFCD for review via a "City Services Request." The City of Industry is a listed discharger in the MS4 permit. LACFCD will therefore permit the temporary discharge of treated water during remedy start-up, system commissioning testing, and periodic system maintenance. LACFCD may also be asked to review and approve the design for the physical connection to the City of Industry storm drain.

Because City of Industry contracts building and safety services from Los Angeles County, Northrop Grumman may submit a permit application for construction of the treatment plant, including design drawings, to County of Los Angeles DPW as needed.

1.6.5 Los Angeles County Department of Public Health (LACDPH)

Prior to construction of extraction, compliance, sentinel, and other monitoring wells, well construction permits were obtained from the LACDPH. A well construction permits was also obtained for extraction well IZ-West in advance of the well installation.

1.6.6 Los Angeles County Sanitation District (LACSD)

The treatment plant will generate wastewater from the RO system and backwash of the liquid-phase granular activated carbon (LGAC) and ion exchange (IX) media. Northrop Grumman will obtain an industrial wastewater permit from the LACSD via application to City of Industry. The LACSD has previously indicated that, because of the high total dissolved solids (TDS) levels in the RO system waste concentrate wastewater, the wastewater must be piped to a sewer that connects to the LACSD Carson treatment plant. The nearest connection to this sewer is approximately 4,500 feet south of the 111 Hudson Avenue site near the intersection of Hacienda and Salt Lake Avenues.

Preliminary discussions with LACSD have been initiated. The LACSD permit process will include the following submittals/steps:

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- Will-Serve Letter Request to LACSD;
- LACSD review and preparation of Will-Serve Letter approving flow and quality;
- Sewer connection Industrial Waste permit application to LACSD; and
- Submittal of construction plans detailing the conveyance pipeline from the treatment plant to the LACSD point of connection.

1.6.7 Southern California Edison (SCE)

Permits were obtained from SCE for electrical service for extraction wells IZ-2, MZ-2, MZ-3, and IZ-East. The power drops and meters were installed at these locations.

Permits were obtained for electrical service to extraction wells IZ-1 and MZ-1. However, the permits have expired and new permits from SCE will be required for the power drop and meters for these wells. Permits will be required for the power drop and meters for extraction well IZ-West and for electrical service to the treatment plant.

1.6.8 Federal Aviation Administration (FAA)

The future treatment plant location at 111 Hudson Avenue is across the street from City of Industry Civic Financial Center Heliport at the intersection of Hudson Avenue and Stafford Street. The heliport is owned by the Successor Agency and is used by the Los Angeles County Sheriff's Department. Height limits for nearby structures are determined by the FAA.

Northrop Grumman will coordinate with the FAA during the treatment plant design process and complete the required notifications, as needed. The FAA will evaluate and determine if the treatment plant structures pose a hazard to air navigation. The FAA may provide limits and will determine if obstruction marking and/or lighting are necessary. The FAA will require a minimum of 45 days to complete this process.

1.6.9 Union Pacific Railroad

An encroachment permit will be obtained before constructing the segment of wastewater conveyance pipeline (i.e., brine line) within the Union Pacific Railroad right-of-way from 111 Hudson Avenue to the LACSD point of connection.

1.6.10 State Water Resources Control Board, Division of Drinking Water (DDW)

DDW reviews all plans for water treatment systems and distribution facilities that will be used for public water supply. DDW enforces water quality standards and water facilities design criteria. As discussed in earlier sections, a water supply permit will be acquired for potable use of treated groundwater from the IZ Interim Remedy. The permit will include operation by LPVCWD in accordance with provisions listed in the issued drinking water supply permit.. LPVCWD will be designated as the holder of the Policy 97-005 permit.

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Before issuing the permit, DDW will require demonstration that the extraction and treatment system will be protective of public health for users of the water. Technical reports and plans will be prepared by LPVCWD with assistance from Northrop Grumman.

The Policy 97-005 documentation will be prepared as two separate submittals, the first of which will be a Policy 97-005 Report that includes the following:

1. Source water assessment;
2. Raw water quality characterization;
3. Source protection measures;
4. Assessment of monitoring and treatment;
5. Assessment of human health risks; and
6. Identification of alternatives.

The final draft sections of the Policy 97-005 Report will be submitted following USEPA and DDW review and approval of the Final Design Report (FDR).

The second submittal, which will consist of the permit Application and an Addendum to the initial Policy 97-005 Report, will be submitted after system start-up and will include the start-up test results, including pumping and sampling of the extraction wells. Upon receipt of these data, 9 to 12 months are anticipated to be required for DDW to review the information, hold public review and hearing, respond to public comments, and finalize the permit.

1.6.11 Main San Gabriel Basin Watermaster (Watermaster)

Water rights in the Main San Gabriel Basin have been established pursuant to an adjudication and judgment in Los Angeles Superior Court Case 924128 (Judgment). The Court maintains continuing jurisdiction such that extractions from the Main San Gabriel Basin are restricted and overdraft is corrected with artificial recharge of supplemental water. Pursuant to that authority, the Watermaster manages groundwater in the PVOU. The Watermaster's role and responsibilities in management of groundwater quality in the Main San Gabriel Basin are described in Section 45 of the Judgment and Section 28 of the Watermaster Rules and Regulations. Section 45 of the Judgment permits the Watermaster to take actions "to encourage, assist and accomplish the cleanup and improvement of degraded water quality in the Basin by non-parties." Section 28 of the Watermaster Rules authorizes the Watermaster to take a variety of actions to "preserve and restore the quality of Ground Water within the Basin," including the approval of the construction and operation of "Ground Water Treatment Facilities."

LPVCWD will seek and obtain approvals from Watermaster for the Project as necessary, including Watermaster's review and administrative approval for operation of the extraction wells and the treatment plant for the IZ Interim Remedy. Approval under Section 28 will be obtained from Watermaster as required and applicable.

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1.6.12 South Coast Air Quality Management District (SCAQMD)

The decarbonator in the RO treatment process will include a blower to strip carbon dioxide from the process water (downstream of treatment processes) and emit it to the atmosphere. SCAQMD requirements may apply to this treatment unit. This would include SCAQMD Regulation XIV Rule 1401 for new source review. A permit to construct and operate the decarbonator is not expected to be required, given the relatively small amount of carbon dioxide emissions. However, SCAQMD is considering whether decarbonators for water treatment should be exempt from permitting and/or be subject to greenhouse gas emission threshold quantities that could trigger permitting. If required, a permit application to construct and operate the decarbonator will be submitted to SCAQMD, and the SCAQMD will provide ARARs for discharge to the atmosphere.

1.6.13 California Regional Water Quality Control Board, Los Angeles Region (RWQCB)

1.6.13.1 Discharges to Surface Water

Discharges to surface waters are regulated by the RWQCB through the issuance of NPDES permits. The NPDES permit requirements include a monitoring and reporting program and Waste Discharge Requirements that specify effluent limitations for flow and water quality. Water quality effluent limitations take the form of both concentration and load-based thresholds, and are generally based on Basin Plan Objectives; they are occasionally adjusted to allow for dilution credits, site specific objectives, and/or total maximum daily load waste-load allocations.

USEPA has incorporated the substantive NPDES requirements into ARARs for surface water discharge. These ARARs are published in the ESD (ESD, 2005). The ESD notes that, consistent with CERCLA, an on-site discharge to surface waters must meet the substantive NPDES requirements, but the project would not need to secure an NPDES permit nor comply with the administrative requirements of the permitting process. The IROD clarifies that discharge to surface water is considered an on-site activity under the IROD. Though a NPDES permit is not required under the IROD, Northrop Grumman may apply for a NPDES permit to coordinate the discharge with the RWQCB and to demonstrate compliance with NPDES requirements.

Treated groundwater will be discharged to surface water (San Jose Creek) via the storm drain during remedy start-up, system commissioning testing, and periodic system maintenance. As described previously, the connection and discharge will need to be permitted by the City of Industry and LACFCD.

1.6.13.2 Treatment Plant Property Soil Cleanup

As part of the 2015 acquisition of the treatment plant property at 111 Hudson Avenue, Northrop Grumman performed a Phase 2 Environmental Site Assessment to supplement and confirm

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historical soil, soil vapor, and groundwater information. The Los Angeles RWQCB issued a letter to the Site owner in January 1996 indicating that no further assessment or remediation would be required. Petroleum hydrocarbons were detected in soil samples during the 2015 assessment, and Northrop Grumman has proposed to the RWQCB that an estimated 250 to 500 cubic yards be remediated where elevated petroleum hydrocarbons were detected. Northrop Grumman submitted a soil remediation work plan to the RWQCB, which was approved on 3 May 2017. The work was performed in July 2017, and Northrop Grumman submitted a Completion Report for Remediating Hydrocarbon-Containing Soil to RWQCB on 3 August 2017 (Geosyntec, 2017a). On 24 October 2017, RWQCB issued a No Further Requirements Letter.

1.6.14 San Gabriel Basin Water Quality Authority (WQA)

The WQA was created and authorized by the State of California to address the need for coordinated and accelerated groundwater cleanup programs in the San Gabriel Basin, including the PVOU, in part by coordinating the plans and activities of state and federal agencies and others involved in the cleanup. The WQA engages the existing rules, regulations, and standards of agencies of the State to coordinate and promote the reasonable and beneficial use of water produced and treated under mandate from USEPA.

The WQA is under the direction and leadership of a seven-member board. The board is comprised of one member from each of the three overlying municipal water districts, one from a city with prescriptive water pumping rights, one from a city without prescriptive water pumping rights, and two members representing water producers in the San Gabriel Basin. The three municipal water districts are: 1) the San Gabriel Valley Municipal Water District; 2) the Three Valleys Municipal Water District; and 3) the Upper San Gabriel Valley Municipal Water District.

The WQA allocates certain federal matching grant funds to groundwater remediation projects, and has an administrative role in approving payment of construction costs and operation and maintenance costs that are eligible for matching funds.

1.6.15 Definitive Agreements: LPVCWD and SWS

The Definitive Agreements include an agreement between LPVCWD, SWS and Northrop Grumman, for LPVCWD and SWS to accept treated water and an agreement between LPVCWD and Northrop Grumman to operate the treatment plant.

Components of the agreement between Northrop Grumman and LPVCWD include improvements to existing infrastructure to accommodate the design flow rates from the treatment plant and facilitate delivery of treated water to SWS. Treated IZ Interim Remedy water is planned to be delivered to LPVCWD's 14-inch and/or City of Industry Waterworks System's (CIWS) 18-inch diameter waterlines on Hudson Avenue in the City of Industry.

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These Definitive Agreements would not be executed until LPVCWD takes the necessary actions to comply with CEQA.

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2.0 PROJECT DESCRIPTION

2.1 PROJECT TITLE

Puente Valley Operable Unit, Intermediate Zone Interim Remedy Project (Project)

2.2 LEAD AGENCY

La Puente Valley County Water District (LPVCWD).

2.3 PROJECT COMPONENTS

This section provides a description of each of the following proposed Project components:

- Groundwater extraction system;
- Water conveyance system;
- Water treatment plant;
- Influent characterization;
- End-use of the treated water;
- Performance criteria;
- Water system improvements downstream of the treatment plant; and
- Monitoring of compliance and sentinel wells.

2.3.1 Groundwater Extraction System

Figure 2 presents a plan view of existing and proposed IZ Interim Remedy components. The extraction system includes six existing groundwater extraction wells: IZ-East, IZ-1, IZ-2, MZ-1, MZ-2, and MZ-3. Wells IZ-1 and IZ-2 extract groundwater from the LIZ aquifer unit, and extraction wells MZ-1, MZ-2, and MZ-3 extract groundwater from the UIZ aquifer unit. Well IZ-East extracts groundwater from both the UIZ and the LIZ aquifer units. The existing extraction wells contain submersible pumps that will extract and discharge groundwater into the untreated groundwater conveyance piping system. The stainless steel pumps are 480-volt three-phase and range from 15 to 75 horsepower. Some of the submersible pumps may be replaced following inspection prior to the IZ Interim Remedy start up. The extraction well design for these six wells was provided in the Final Remedial Design Work Plan for the Installation of Extraction Wells (100 percent design; CDM, 2007c). Field activities and results of data collected during installation and testing of these six groundwater extraction wells were documented in a Technical Memorandum dated 30 October 2007 (CDM, 2007a).

The locations of the six existing groundwater extraction wells were selected based on data from groundwater monitoring wells and groundwater modeling (CDM, 2006). All wells have been installed within public rights-of-way. Existing extraction wells are constructed with either 8- or 10-

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inch diameter steel casing, with 40 to 60 feet of stainless steel screen. Screen intervals were based on: lithology identified during drilling and confirmed by geophysical logging, analytical results of aquifer tests completed in the pilot boreholes of IZ-East and IZ-1, and groundwater monitoring well data.

One additional groundwater extraction well (IZ-West) will be installed, for added plume containment at the western margin of the chemicals of concern plume (Geosyntec, 2016a). A numerical groundwater flow model (model) was constructed and calibrated based on available data (Geosyntec, 2016b). The model was accepted by USEPA on 8 April 2016 and the design includes the capacity to treat flow from IZ-West. The model simulations indicate that to meet the objectives of the IZ Interim Remedy, IZ-West should be located on or near Puente Avenue, south of the intersection with Nelson Avenue in the City of Industry (Figure 2). A location in a landscape island within the parking lot of a local business (PRL Glass at 13658 Nelson Avenue, City of Industry) on the west side of Puente Avenue is selected for IZ-West. Northrop Grumman obtained an easement with the PRL Glass property owner to install IZ-West at 13644 Nelson Avenue. The easement was executed between PRL Glass property owner and Northrop Grumman on 6 June 2017.

Electrical panels, connections, and ancillary components have been installed at four of the existing wells. Similar equipment will be installed for groundwater extraction wells MZ-1, IZ-1, and IZ-West.

The numerical groundwater model was also used to develop the preliminary design flow rates. Groundwater flow modeling suggests that the extraction of approximately 1575 gpm would be sufficient to meet the performance criteria for the IZ Interim Remedy without regard to pumping rates by purveyors within the vicinity of the IZ extraction wells.

2.3.2 Water Conveyance Infrastructure

Conveyance to the Water Treatment Plant

The Project proposes the use of existing and new water conveyance infrastructure (Figure 2). The existing groundwater conveyance system is comprised of piping ranging from four to 12 inches in diameter, which collects groundwater extraction from the six existing groundwater extraction wells. All groundwater extraction wells, with the exception of IZ-East, are manifolded to a single 12-inch diameter trunk line that presently terminates at the intersection of North Sunset and East Nelson Avenues. Groundwater extraction well IZ-East is conveyed via an eight-inch diameter pipe that terminates at the same location. These existing conveyance pipelines would continue to be used during operation of the Project.

The following two conveyance pipelines would be constructed to augment the existing water conveyance infrastructure:

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1. An approximately 5,500 foot-long cement mortar lined and coated steel or high density polyethylene (HDPE) untreated water pipeline to connect IZ-West to the existing untreated conveyance system. An alignment along a public right-of-way such as East Nelson Avenue between Workman Mill Road/North Puente and California Avenues or similar is planned; a portion of this conveyance piping, at the intersection of Nelson and Sunset Avenues was constructed in December 2016 to February 2017. Another portion of the conveyance piping, at the intersection of Nelson and Puente Avenues was constructed in June/July 2017. These portions of the conveyance piping were constructed in advance of street improvements to be performed by the City of Industry at the intersections.
2. An approximately 4,500 foot-long, 14-inch diameter cement mortar lined and coated steel or HDPE pipeline connecting the existing 12-inch diameter untreated water pipeline at the intersection of East Nelson and California Avenues to the water treatment plant on Hudson Avenue. An alignment along a public right-of-way such as Stafford Street, North Unruh Avenue, and East Nelson Avenue or similar is planned;

Conveyance from the Water Treatment Plant

Discharge Conveyance

An approximately 4,500 foot-long, six-inch diameter high density polyethylene wastewater pipeline would convey wastewater generated from operation of the treatment plant RO system, backwash of LGAC and IX media rinsing used in the treatment process to an existing LACSD/Carson treatment plant connection. The pipeline would cross the Union Pacific Railroad right-of-way, but is otherwise planned to be installed within the public right-of-way of Hudson Avenue, Valley Boulevard, Proctor Avenue and Parriott Place. A portion of the waste water discharge line in Valley Boulevard was installed in 2016 in advance of street improvements completed by the City of Industry.

An approximately 50-foot long, 24-inch diameter cement mortar lined pipeline would connect the water treatment plant to an existing adjacent storm drain line for temporary discharge to San Jose Creek (during treatment plant start-up activities).

Potable Water Conveyance

Proposed water pipeline alignments to deliver the water from the PVOU IZ treatment facility to LPVCWD for delivery to SWS are described below. All proposed connections are within existing rights-of-way and would consist mainly of additional interconnections, and a new pump station.

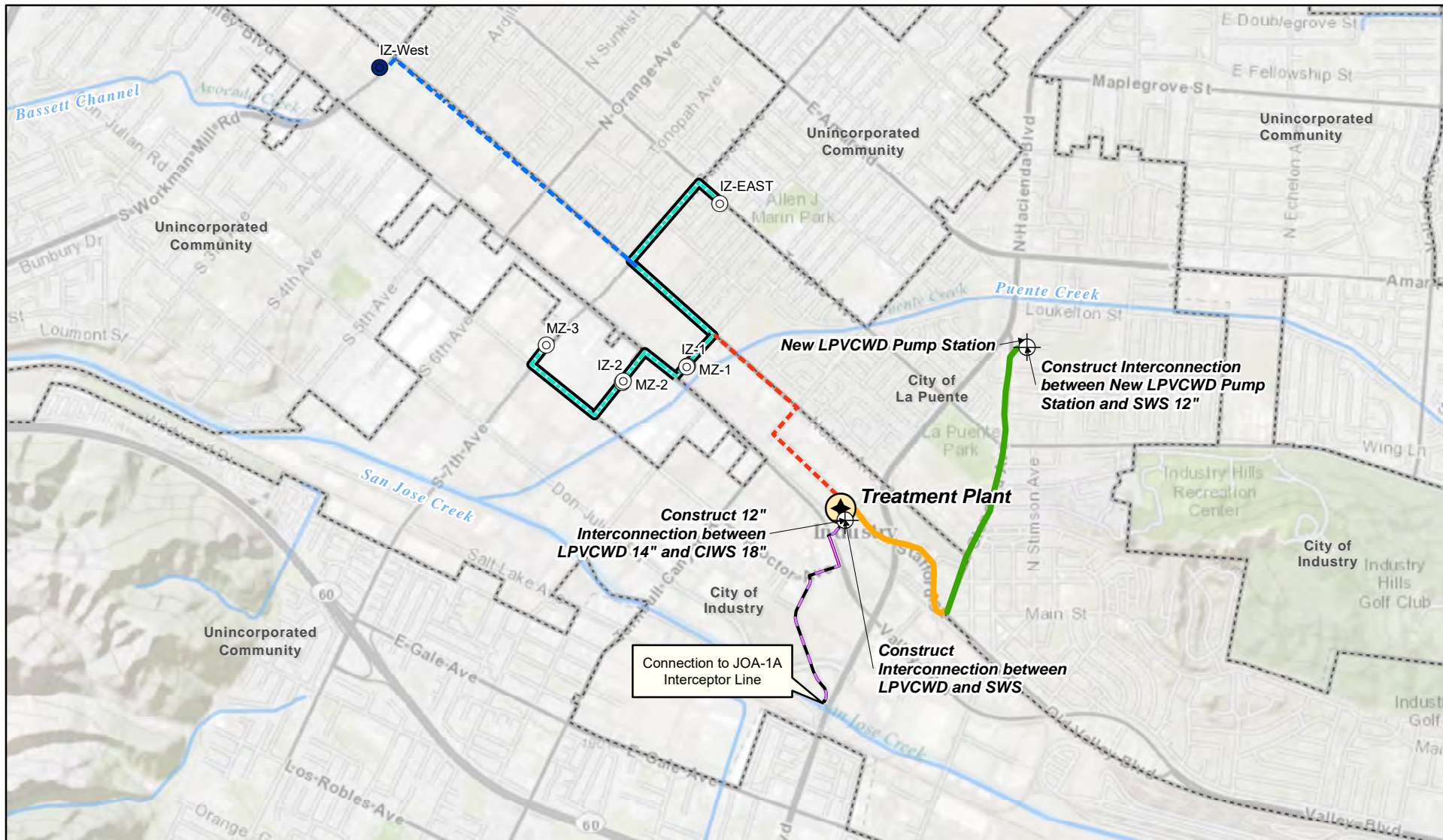
The main proposed improvements are shown in Figure 3. The proposed improvements are presented in more detail in Appendix C.

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Legend

- | | | |
|-------------------------------------|---------------------------------|--------------------------------|
| ● IZ Extraction Well | — Wastewater Line | — 12" LPW Waterline (existing) |
| ⊙ Existing IZ Extraction Well | — Existing Wastewater Line | — 14" LPW Waterline (existing) |
| ⊕ Treatment Plant (111 Hudson Ave.) | --- IZ-West Conveyance Pipeline | ⊕ Interconnection |
| City Boundaries | --- Groundwater Pipeline | |
| | — Existing Pipeline | |
| | — Rivers & Creeks | |

LPVCWD = La Puente Valley County Water District
 CIWS = City of Industry Waterworks System
 SWS = Suburban Water Systems

0 2,500 Feet



**STANTEC CONSULTING
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**NORTHROP GRUMMAN SYSTEMS
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**Water Distribution
 Infrastructure**

Fig. 3

Source: Geosyntec Consultants, November 2017

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2.3.3 Water Treatment Plant

The proposed water treatment plant would be constructed and operated on an approximate two-acre site located at 111 Hudson Avenue, in City of Industry that Northrop Grumman has acquired. The site was selected based on proximity to existing infrastructure (i.e., groundwater extraction wells, untreated water conveyance pipelines, treated water pipeline infrastructure), size, and land use suitability.

The estimated total pumping rate from the extraction wells will be approximately 635 acre-feet per quarter [which translates to an average of 1,575 gpm]. To accommodate variations in pumping rates and allow a factor of safety, the water treatment plant will be sized for flow rates up to 805 acre-feet per quarter (2,000 gpm). Figure 4 shows a plan view and components of the proposed water treatment plant.

The water treatment plant will be designed to treat VOCs, perchlorate, 1,4-dioxane, and inorganic constituents. The following processes will treat the targeted constituents:

- Two-stage lead/lag LGAC vessels for treatment of VOCs and 1,2,3-trichloropropane;
- Two-stage lead/lag IX resin vessels for treatment of perchlorate;
- Ultra-violet light/hydrogen peroxide advanced oxidation system for treatment of 1,4-dioxane;
- An RO polishing system for treatment of inorganics to meet secondary drinking water standards.

The water treatment processes will treat extracted groundwater sufficiently to meet standards for potable water. The groundwater treatment will require permitting under Policy 97-005 when used as a potable water source. The two-stage LGAC and IX systems include a primary (lead) unit and a redundant secondary (lag) unit to comply with DDW requirements for redundancy.

The RO polishing step will address inorganic constituents such as nitrate to meet primary drinking water standards and TDS to meet secondary aesthetic drinking water standards. The RO treatment will be located downstream of the other treatment units. A portion of the extracted groundwater will be lost as a waste-concentrate stream due to operation of the RO system. The waste concentrate stream will be discharged to an industrial sewer operated by the LACSD and ultimately treated and discharged to the ocean. Due to the water loss associated with use of this technology, the remedy will be operated to minimize the amount of flow through the RO system while maintaining compliance with water quality performance criteria.

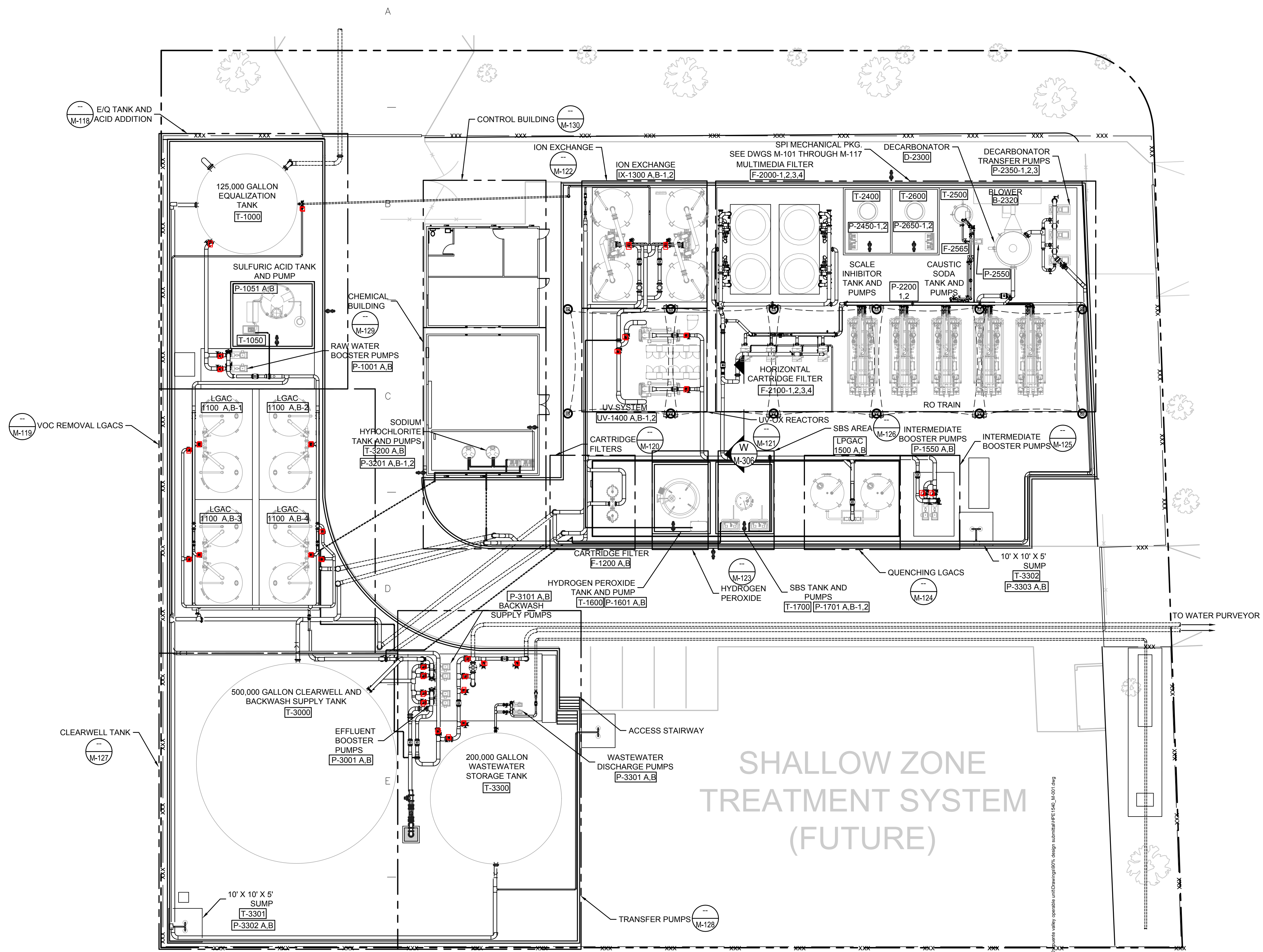
Northrop Grumman will be responsible, in consultation with LPVCWD, for design and construction of the water treatment plant. The detailed design information of the treatment plant, 90 percent design drawings, capital and operation and maintenance cost estimate, and technical specifications were submitted to USEPA on 6 February 2017 in the Pre-Final Design Report (PFDR) (Geosyntec, 2017b). Once constructed, LPVCWD will operate the water treatment plant.

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SHALLOW ZONE
TREATMENT SYSTEM
(FUTURE)

Northrop Grumman Systems Corporation

TITLE:		PROJECT:		INTERMEDIATE ZONE INTERIM REMEDIATION SYSTEM	
SITE:		PUENTE VALLEY OPERABLE UNIT, CALIFORNIA			
<div><div></div><div></div></div>		<div><div></div><div></div></div>		THIS DRAWING MAY NOT BE ISSUED FOR PROJECT TENDER OR CONSTRUCTION, UNLESS SEALED.	
				DRAWING NO.: SIGNATURE	
				DATE	

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NORTHROP GRUMMAN SYSTEMS CORPORATION
PUENTE VALLEY OPERABLE UNIT
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Treatment Facility Plan
Fig. 4



PRE

SHEET 1

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2.3.4 Influent Characterization

Comprehensive subsurface characterization efforts have been conducted to provide an understanding of water quality and the distribution of chemicals of potential concern (COPC) concentrations. The overall approach to estimating the total influent concentration was to generate estimates of concentrations based on existing extraction well and monitoring well data, pumping rates based on simulations with the model (Geosyntec, 2016b), and, finally, combination of this information using a weighting approach that accommodates a range of uncertainty and reflects the spatial distribution of water quality. The approach is detailed in the PFDR (Geosyntec, 2017b).

This approach was refined in the PFDR to more thoroughly reflect the following:

- Monitoring well data were used for the purpose of estimating total system influent concentrations for certain constituents over the operational life of the remedy;
- The uncertainty in influent concentrations is accounted for by performing statistical analysis of the data; and
- The total pumping rates from the high and low concentration zones of the plume are better constrained than the specific pumping rates at individual extraction wells (which will likely be modified over the course of system final design, start-up, and operational performance monitoring). Therefore, the influent concentration estimate was based on a spatial analysis of the flow field through the plume that does not rely on the specific pumping rate(s) from individual wells.

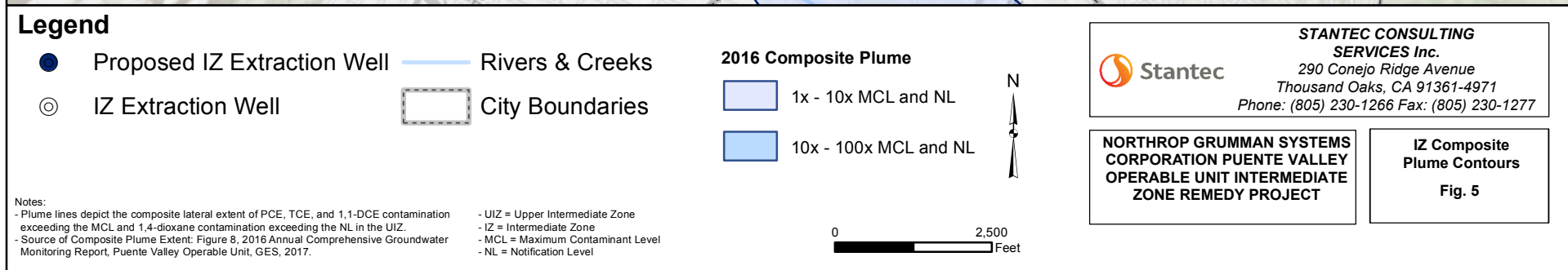
The most frequently detected COPCs in the groundwater of the PVOU are tetrachloroethene (PCE), trichloroethene (TCE), 1,1-dichloroethene (1,1-DCE), 1,1-dichloroethane (1,1-DCA), 1,2,3-trichloropropane (TCP) and 1,4-dioxane. Figure 5 presents a composite extent of the plume based on groundwater sampling conducted in 2016.

In addition to the organic constituents, perchlorate and other inorganic constituents in IZ groundwater impact the treatment plant design and operation. TDS concentrations are above the secondary, aesthetic standard maximum contaminant level for drinking water (MCL) for drinking water of 500 milligrams per liter (mg/L). Selenium occurs naturally in the groundwater at concentrations above the California Toxic Rule criterion of 0.005 mg/L for discharge to surface waters. At some locations in the PVOU, nitrate is above its MCL of 10 mg/L, as it is elsewhere in groundwater within California, likely due to historic agricultural practices. In addition, hexavalent chromium [Cr(VI)] has also been detected in the IZ, as it is throughout the basin, although anticipated extracted concentrations are below its MCL of 10 micrograms per liter (µg/L) that was adopted in 2014, before being rescinded for additional evaluation in 2017. These inorganic constituents will be treated in the IZ Interim Remedy to meet their corresponding standards and criteria.

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Complete influent characterization is provided in the PFDR. Monitoring results are summarized in the Annual Comprehensive Groundwater Monitoring Reports; the 2016 Annual Comprehensive Groundwater Monitoring Report was submitted by GES on 17 February 2017 (GES, 2017).



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2.3.5 Treated Water End-Use

The planned end-use option for the treated water of the IZ Interim Remedy is potable use. The IROD indicated treated water from the IZ Interim Remedy may be discharged to surface water or provided to a municipal supply system (i.e., for potable use).

Definitive Agreements between LPVCWD, SWS, and Northrop Grumman, to deliver treated IZ Interim Remedy water to SWS, LPVCWD customers, and/or other water purveyors for potable supply, have been prepared in draft form. The treated IZ Interim Remedy water will be used by LPVCWD for distribution to SWS or their customers for potable supply. All water supplied by municipal water systems from the IZ Interim Remedy would be beneficially used within the systems where it is served.

The RO treatment process would result in a waste-concentrate stream that will be discharged to the industrial sewer system. Thus, the total extraction of water and the ensuing replacement water obligation by a responsible agency would exceed the total amount of water served for beneficial uses. Based on preliminary design calculations, the waste-concentrate stream will be an estimated 85 acre-feet per quarter of the estimated 635 extracted acre-feet per quarter.

2.3.6 Performance Criteria under the IROD and ESD

The two performance criteria for the IZ Interim Remedy are defined in Attachment 1 of the ESD (USEPA, 2005). In accordance with the ESD and Consent Decree, the selected remedial action (RA) must prevent groundwater in the MOV area with concentrations greater than or equal to the Containment Levels from: 1) migrating beyond its lateral extent as measured at the time the IZ RA containment system is Operational and Functional, and; 2) migrating vertically into the deep zone. Table 2 of Attachment 1 of the ESD lists the Containment Levels for COPCs.

Table 2 of the ESD includes VOCs, total petroleum hydrocarbons (TPH), and 1,4-dioxane. According to the ESD, the treatment technologies used in the PVOU remedy “will have to be capable of effectively and reliably removing VOCs, 1,4-dioxane, and possibly perchlorate, if treatment is necessary.” For surface water discharge, the ESD specifies that perchlorate must be treated if concentrations exceed the ARAR, which was selected to be consistent with the contemporary California Public Health Goal (PHG) of 6 µg/L in 2005. For discharge of the remedy water to a drinking water facility, the ESD states the treated groundwater “must meet all applicable federal, state, and local drinking water standards in existence at the time the water is served.”

The ESD specifies that compliance with the performance criteria for the RA containment system requires monitoring of the lateral and vertical migration of COPCs in the IZ in compliance monitoring wells. As specified in the ESD, monitoring of vertical compliance is required in the DZ down-gradient of the IZ containment system. Additionally, the RA must intercept COPCs in IZ groundwater to prevent them from continuing to impact the B7 Well Field. COPC concentrations in the B7 Well Field must be reduced, as defined in the IROD. The ESD requires sentinel wells be

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installed laterally and vertically up-gradient of the RA containment system to provide advance warning of varying conditions that could adversely impact the containment system and/or treatment plant. Examples of conditions to be detected by sentinel well monitoring include concentrations that are likely to cause the influent water to exceed the design limits of the treatment plant or the presence of previously undetected chemicals that could not be adequately treated by the constructed treatment plant.

The data collected from monitoring and extraction wells will be analyzed in conjunction with other parameters (e.g., capture zone analysis, groundwater flow directions, hydrogeology, and treatment plant influent concentrations) to evaluate whether the RA containment system meets the Performance Criteria, and whether applicable drinking water standards or discharge ARARs for the treated groundwater are more likely than not to be exceeded. A groundwater model is to be used to support these analyses as appropriate (Consent Decree, 2009).

Response actions or additional remedial actions may be required under the following circumstances (Consent Decree, 2009; ESD, 2005):

- Chemicals are detected above the Containment Levels in a compliance monitoring well with initial concentrations less than the Containment Levels;
- An increasing concentration trend, as defined by Attachment 1 to the ESD, is observed in a compliance monitoring well with initial concentrations greater than the Containment Levels;
- USEPA determines that groundwater concentrations in compliance, sentinel, or other monitoring wells indicate that it is more likely than not that applicable drinking water standards, or the treatment plant discharge ARARs, will be exceeded; or
- USEPA determines that groundwater concentrations in compliance, sentinel, or other monitoring wells, in conjunction with other parameters such as capture zone analysis, hydrogeological interpretations, etc., indicate that it is more likely than not that the Performance Criteria will not be achieved or maintained.

2.3.7 Temporary and Intermittent Discharge of Treated Water to San Jose Creek

As proposed herein, the use of remedy water would be for municipal water supply. Treated groundwater will be discharged to surface water (San Jose Creek) via a storm drain temporarily during remedy start-up, system commissioning testing, and periodic system maintenance. The discharge line from the treatment plant will be connected to the storm drain located on the south side of Hudson Avenue, just downstream of catch basin 2217226. The outfall of the storm drain pipe is into San Jose Creek, which is a Reinforced Cement Concrete (RCC) channel with 100-foot bottom width. Within San Jose Creek water flows northwesterly for approximately 3,450 feet to the confluence with Puente Creek. San Jose Creek continues downstream in a northwesterly direction for approximately 8,050 feet as a lined RCC channel, ranging in bottom width between 100 and 140 feet. San Jose Creek then transitions to a soft-bottom channel for 6,900 feet, with bottom width ranging from 140 to 170 feet. San Jose Creek confluent with the San Gabriel River north of the Interstate 605 and California 60 freeway interchange. Water flows

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through the San Gabriel River spreading grounds for approximately 5,450 feet in a southwesterly direction. Within this portion of the San Gabriel River the soft-bottom dirt channel is 500 feet wide and contains four drop structures to promote inundation and infiltration of surface water. Beyond the last drop structure the San Gabriel River is a dirt channel with bottom width ranging between 150 feet and 550 feet that flows 6,000 feet to the southwest to Whittier Narrows Dam. Under normal low-flow conditions the dam is operated to allow surface water to continue downstream through its gates (Figure 6).

The vast majority of water discharged to surface waters would be beneficially used for recharge within the Main San Gabriel Basin or in the downstream Central Basin. Surface discharges will be avoided whenever possible during periods when losses are likely to occur, but some losses may be unavoidable, resulting in a need for replacement water from a responsible agency.

Selenium occurs naturally in groundwater of the PVOU and is anticipated at concentrations up to 15 µg/L in influent water. Selenium will be removed by the RO treatment system to meet applicable permit requirements for surface water discharge (i.e., NPDES permitting requirements; see Section 1.6.13).

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Legend

- Whittier Narrows Dam

24 Inch Diameter RCP to New Stormdrain Connection

Reinforced Concrete Channel (100 foot width)

48-75 Inch Diameter Reinforced Concrete
- Soft Bottom Dirt Channel (500 foot width)

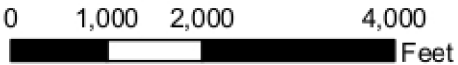
Soft Bottom Channel (140-170 foot width)

City Boundaries

New Air Gap and Catch Basin
- Treatment Plant

Flow Direction

Notes:
Flow Path & Pipe Diameter Source: Los Angeles Department of Public Works
Open Channel Bed and Bank Material Source: Los Angeles Department of Public Works and Aerial Photography



NORTHROP GRUMMAN SYSTEMS CORPORATION PUENTE VALLEY OPERABLE UNIT INTERMEDIATE ZONE REMEDY PROJECT	Flow Path of Proposed Site Discharge to Surface Water Fig. 6
STANTEC CONSULTING SERVICES Inc. 290 Conejo Ridge Avenue Thousand Oaks, CA 91361-4971 Phone: (805) 230-1266 Fax: (805) 230-1277	

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2.3.8 Water System Improvements Downstream of Treatment Plant

A new booster pump station would be installed at the existing LPVCWD Hudson Site at the following coordinates (34° 1' 58.97"N -117° 56' 58.95"W). LPVCWD's preliminary assessment identifies that the pump station should consist of four variable speed pumps, each having a motor rating of 25 horsepower.

2.3.9 Groundwater Monitoring System

Existing and proposed groundwater monitoring wells have been installed in accordance with the Compliance and Monitoring Well Network Plan (CMWNP) for the IZ Interim Remedy (CDM Smith, 2012). Monitoring wells will be monitored under oversight of USEPA and DDW to ensure containment to meet the performance criteria of the ESD and DDW requirements for the 97-005 permit, respectively.

In accordance with ESD and DDW requirements, selected sentinel monitoring wells will be located up- gradient of the RA containment system extraction wells. Potential compliance and sentinel monitoring wells for the current six RA containment system extraction wells (MZ-1/IZ-1, MZ-2/IZ-2, MZ-3, and IZ-East) and the new extraction well (IZ-West) to meet the Performance Criteria included in the ESD (USEPA, 2005) were proposed by Northrop Grumman in the Revised Compliance/General Monitoring Plan submitted to USEPA on 7 June 2016.

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3.0 DISCUSSION OF ENVIRONMENTAL SETTING, IMPACTS AND MITIGATION MEASURES

Environmental Factors Potentially Affected

This Initial Study/Mitigated Negative Declaration (IS/MND) has been prepared in compliance with the California Environmental Quality Act (CEQA) pursuant to Public Resources Code (PRC) Section 21000, et seq. and the State CEQA Guidelines (California Code of Regulations Section 15000, et seq.). Specifically, the preparation of an Initial Study is guided by Section 15063 of the State CEQA Guidelines. This Project is evaluated based upon its effect on seventeen major categories of environmental factors. LPVCWD has not received requests from any native American tribes to be notified of projects undergoing CEQA review with LPVCWD as Lead Agency. As a result, the native American tribal notification requirements pursuant to Assembly Bill 52 are not applicable to the Project. LPVCWD has fulfilled its Lead Agency obligations under Assembly Bill 52 and tribal cultural resources are not evaluated further as part of the IS/MND.

The environmental factors checked below would be potentially affected by the proposed Project in that at least one impact that is a "Potentially Significant" as indicated by the resource checklists of this IS/MND.

- | | |
|--|--|
| <input type="checkbox"/> Aesthetics | <input type="checkbox"/> Land Use and Planning |
| <input type="checkbox"/> Agricultural and Forest Resources | <input type="checkbox"/> Mineral Resources |
| <input type="checkbox"/> Air Quality | <input type="checkbox"/> Noise |
| <input checked="" type="checkbox"/> Biological Resources | <input type="checkbox"/> Population and Housing |
| <input type="checkbox"/> Cultural Resources | <input type="checkbox"/> Public Services |
| <input type="checkbox"/> Geology and Soils | <input type="checkbox"/> Recreation |
| <input type="checkbox"/> Greenhouse Gas Emissions | <input checked="" type="checkbox"/> Transportation and Traffic |
| <input type="checkbox"/> Hazards and Hazardous Materials | <input type="checkbox"/> Utilities and Service Systems |
| <input type="checkbox"/> Hydrology and Water Quality | <input type="checkbox"/> Mandatory Findings of Significance |

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The IS/MND fully addresses potential impacts to the environment, as described by CEQA, as “the physical conditions which exist within the area which will be affected by a proposed Project including land, air, water, flora, fauna, noise, objects of historic or aesthetic significance.” A detailed analysis of environmental impacts will be presented for each resource area (listed above) utilizing the model Environmental Checklist Form found in Appendix G of the CEQA Guidelines Section 15063(f). Impacts to the environment for construction and operation of the Project will be assessed and described, and the level of significance of impacts will be measured against criteria that have been established by regulation, accepted standards, or other definable criteria. The use of a MND is only permissible if all potentially significant environmental impacts assessed in the IS are rendered less than significant with incorporation of mitigation measures.

Each environmental resource area is reviewed by analyzing a series of questions (i.e., Initial Study Checklist) regarding level of impact posed by the Project. Substantiation is provided to justify each determination. One of four following conclusions is then provided as a determination of the analysis for each of the major environmental factors.

No Impact. A finding of no impact is made when it is clear from the analysis that the project would not affect the environment.

Less than Significant Impact. A finding of a less than significant impact is made when it is clear from the analysis that a project would cause no substantial adverse change in the environment and no mitigation is required.

Less than Significant Impact with Mitigation Incorporated. A finding of a less than significant impact with mitigation incorporated is made when it is clear from the analysis that a project would cause no substantial adverse change in the environment when mitigation measures are successfully implemented by the project proponent. In this case, LPVCWD is the project proponent and would be responsible for implementing measures identified in a Mitigation Monitoring Program.

Potentially Significant Impact. A finding of a potentially significant impact is made when the analysis concludes that the proposed project could cause a substantial adverse change in the environment for one or more of the environmental resources assessed in the checklist. In this case, typically preparation of an Environmental Impact Report (EIR) would be required.

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3.1 AESTHETICS

3.1.1 Setting

The Project is situated in an industrial, commercial and residential (north of E Nelson Avenue) setting within an urbanized area. The dominant view in the general area includes the Puente Hills to the south, Legg Lake to the west, the San Jose Hills to the northeast, and the San Gabriel Mountains located as a backdrop to the north of the Project. Two small parks are located within 0.35 miles of the Project. The western end of the Project is located near Basset County Park and the eastern end of the Project is located near La Puente Park. Dominant views to the immediate south of the Project include one and two story buildings surrounded by asphalt with some tall ornamental trees. Dominant views to the immediate north of the Project include primarily one story residential homes with tall, ornamental trees.

According to California's Scenic Highway Program, no officially designated-scenic routes, eligible scenic routes, or scenic vistas occur in the immediate vicinity of the Project. The nearest eligible route is California State Route (SR) 57 located approximately seven miles southeast of the Project between SR 90 and SR 60 near the City of Industry.

3.1.2 Impact Analysis

Issues	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
<u>AESTHETICS:</u> Would the project:				
a) Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

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a) Have a substantial adverse effect on a scenic vista?

No Impact.

Impact Discussion

The proposed Project is not located in an area with a designated scenic vista. The visual quality of the areas surrounding the Project site consists predominately of industrial development with some commercial and public facility developments (i.e., police station and the City of Industry Civic Financial Center). Therefore, the Project has no impact on a scenic vista.

b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

No Impact.

Impact Discussion

The proposed Project is not located within an officially designated State Scenic Highway. The nearest officially designated scenic highway to the proposed Project is State Route (SR) 2, which is approximately 18 miles northwest of the Project. The nearest eligible route is (SR 57 located approximately seven miles southeast of the Project. Therefore, no impact to scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway would occur as a result of the Project.

c) Substantially degrade the existing visual character or quality of the site and its surroundings?

Less than Significant Impact.

Impact Discussion

The proposed Project would involve the construction of an extraction well, groundwater pipeline, brine line, conveyance pipeline and treatment plant. Visual impacts to the surrounding community would occur temporarily during the construction phase. Because the pipelines would be placed underground within the existing right-of-way along the proposed alignment, operation of the pipelines would not affect the visual character of the community in the vicinity of the Project. The proposed treatment facility is proposed to be located on a vacant lot (111 Hudson Avenue). Although construction of a new treatment facility would introduce a new structure, this would not significantly impact the surrounding area as the current area is zoned as industrial. The area surrounding the proposed treatment plant consists of industrial, commercial, and public use development. Further, as part of the overall site design along Stafford Street and Hudson Avenue, the treatment plant would be setback 30 feet from the curb and landscaped. A wall and landscaping would be outside the treatment plant and would shield the Water Treatment plant from the street. All of the proposed Project elements are structures common to

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the urban environment, and are not anticipated to significantly impact the visual character of the surrounding community. Therefore, impacts to the existing visual character or quality of the site and its surroundings would be less than significant.

d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

Less than Significant Impact.

Impact Discussion

The proposed Project would be located within the existing public rights-of-way for pipelines and a vacant lot for the treatment facility, zoned as Industrial (I) under the City of Industry General Plan (City of Industry General Plan 2011a). These areas are surrounded by industrial, commercial, public use and residential development. During the construction phase, activities would occur during daylight hours. Operation of the extraction wells and pipelines would occur below ground and therefore would not create a new source of substantial light or glare. Operation of the treatment facility would provide a new source of light and glare; however, it would be general lighting within the property boundary and would correspond with the existing industrial lighting and use of the area. The lighting would all be downward and inward oriented as is required by the City of Industry. As a result, there would be less than significant impact on light-sensitive receptors.

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3.2 AGRICULTURE AND FORESTRY RESOURCES

3.2.1 Setting

The Project site and surrounding areas occur within an urban context which does not support agricultural land uses or forestry resources. There are no agricultural or forestry resources within the City of Industry or the City of La Puente. Additionally, there are no areas set aside solely for agricultural purposes or defined as forestry lands on or adjacent to the Project site.

3.2.2 Impact Analysis

Issues	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
AGRICULTURE AND FORESTRY RESOURCES: Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526, or timberland zoned Timberland Protection (as defined by Government Code section 51104(g)))?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Result in the loss of forest land or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of farmland to non-agricultural use or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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- a) *Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?*

No Impact.

Impact Discussion

See impact discussion e) below.

- b) *Conflict with existing zoning for agricultural use, or a Williamson Act contract?*

No Impact.

Impact Discussion

See impact discussion e) below.

- c) *Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526, or timberland zoned Timberland Protection (as defined by Government Code section 51104(g)))?*

No Impact.

Impact Discussion

See impact discussion e) below.

- d) *Result in the loss of forest land or conversion of forest land to non-forest use?*

No Impact.

Impact Discussion

See impact discussion e) below.

- e) *Involve other changes in the existing environment which, due to their location or nature, could result in conversion of farmland to non-agricultural use or conversion of forest land to non-forest use?*

No Impact.

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Impact Discussion

The proposed Project is located in an urbanized area with no agricultural land use designations or forestry land use designations or operations in the vicinity of the Project area. Construction and operations of the proposed Project would not convert Prime Farmland, Unique Farmland or Farmland of Statewide Importance; conflict with existing zoning for agricultural use, or a Williamson Act contract; conflict with existing zoning of forest land, timberland or timberland zoned Timberland Protection; or involve other changes in the existing environment which could result in the conversion of Farmland, to non-agricultural use. Therefore, no impacts would occur from the construction and operation of the proposed Project.

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3.3 AIR QUALITY

3.3.1 Setting

The Project site is located in the South San Gabriel Valley region of the South Coast Air Basin (SCAB). The proposed water treatment plant, well, and water conveyance pipelines are located in commercial/industrial areas. The new pump station will be located in an existing booster pump station that is located in City of Industry. The nearest sensitive receptors to the proposed water treatment plant are residences located more than 700 feet to the northeast.

Regulatory oversight authority regarding air quality at the local, state, and federal levels rests with the South Coast Air Quality Management District (SCAQMD), California Air Resources Board (CARB), and United States Environmental Protection Agency (USEPA), respectively.

Regulatory Framework

Ambient air quality is determined by comparing pollutant levels in ambient air samples to national and state standards. These standards are established by the USEPA and CARB at levels determined to be protective of public health and welfare, with an adequate margin of safety. California Ambient Air Quality Standards (CAAQS) were established in 1967, whereas National Ambient Air Quality Standards (NAAQS) were first established by the federal Clean Air Act of 1970. California standards are generally more stringent than national standards.

Air quality standards specify the upper limits of pollutant concentrations, over defined durations, in ambient air, consistent with the management goal of preventing specific harmful effects. There are national and state standards for the “criteria pollutants” ozone (O₃), carbon monoxide (CO), nitrogen dioxide (NO₂), fine particulate matter with an aerodynamic diameter of less than 2.5 microns (PM_{2.5}), airborne respirable particulate matter with an aerodynamic diameter of less than 10 microns (PM₁₀), sulfur dioxide (SO₂), and lead (Pb). Federal/National and State Ambient Air Quality Standards are presented in Table 3.3-1.

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Table 3.3-1 National and California Ambient Air Quality Standards

Pollutant	Averaging Time	California Standard*	National Standard*
Ozone (O ₃)	1 Hour	0.09 ppm (180 µg/m ³)	--
	8 Hour	0.070 ppm (137 µg/m ³)	0.075 ppm (147 µg/m ³)
Respirable Particulate Matter (PM ₁₀)	24 Hour	50 µg/m ³	150 µg/m ³
	Annual Mean	20 µg/m ³	--
Fine Particulate Matter (PM _{2.5})	24 Hour	--	35 µg/m ³
	Annual Mean	12 µg/m ³	15 µg/m ³
Carbon Monoxide (CO)	1 Hour	20 ppm (23 µg/m ³)	35 ppm (40 mg/m ³)
	8 Hour	9.0 ppm (10 mg/m ³)	9.0 ppm (10 mg/m ³)
Nitrogen Dioxide (NO ₂)	1 Hour	0.18 ppm (339 µg/m ³)	100 ppb (188 µg/m ³)
	Annual Mean	0.030 ppm (57 µg/m ³)	0.053 ppm (100 µg/m ³)
Sulfur Dioxide (SO ₂)	1 Hour	0.25 ppm (655 µg/m ³)	75 ppb (196 µg/m ³)
	3 Hour	--	--
	24 Hour	0.04 ppm (105 µg/m ³)	0.14 ppm
	Annual Mean	--	0.030 ppm
Lead (Pb)	30 Day Average	1.5 µg/m ³	--
	Calendar Quarter	--	1.5 µg/m ³
	Rolling 3-Month Average	--	0.15 µg/m ³
Visibility reducing particles	8 Hour	10 mile visibility standard, extinction of 0.23 per kilometer	--
Sulfates	24 Hour	25 µg/m ³	--
Hydrogen sulfide (H ₂ S)	1 Hour	0.03 ppm (42 µg/m ³)	--
Vinyl chloride	24 Hour	0.01 ppm (265 µg/m ³)	--
Source: CARB Ambient Air Quality Standards Chart, CARB 2013a.			
Notes:* ppm = parts per million; µg/m ³ = micrograms per cubic meter; "--" = no standard.			

The USEPA and CARB determine the air quality attainment status of designated areas by comparing local ambient air quality measurements from state or local ambient air monitoring stations with the CAAQS and NAAQS. These attainment designations are determined on a pollutant-by-pollutant basis. Consistent with federal requirements, an unclassifiable designation is treated as an attainment designation. Table 3.3-2 presents the federal and state attainment status for the SCAB.

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Table 3.3-2 Attainment Status of South Coast Air Basin

Pollutant	State Designation	Federal Designation
Ozone (O ₃)	Non-Attainment	Non-Attainment (Extreme)
Particulate Matter (PM ₁₀)	Non-Attainment	Attainment
Particulate Matter (PM _{2.5})	Non-Attainment	Non-Attainment (Serious)
Carbon Monoxide (CO)	Unclassified/Attainment	Unclassifiable/ Attainment
Nitrogen Dioxide (NO ₂)	Unclassified/Attainment	Unclassifiable/ Attainment
Sulfur Dioxide (SO ₂)	Attainment	Attainment
Lead (Pb)	Attainment	Unclassified/Attainment
Hydrogen Sulfide (H ₂ S)	Unclassified	*
Sulfates	Attainment	*
Visibility Reducing Particles	Unclassified	*
Source: CARB, 2013b		
Notes: (*) = Not Identified/ No Status.		

As shown in Table 3.3-2, the Project site is located in an area designated nonattainment for both the federal and state standards for O₃ and PM_{2.5} and the state standard for PM₁₀. Because the SCAB currently exceeds several state and federal ambient air quality standards, the SCAQMD is required to implement strategies to reduce pollutant levels to recognized acceptable standards.

The SCAQMD in conjunction with the Southern California Association of Governments (SCAG), CARB, USEPA, and a number of other stakeholders, prepared the 2016 Air Quality Management Plan (AQMP) (SCAQMD, 2017). The purpose of the 2016 AQMP is to provide a comprehensive and integrated program to lead the SCAB into compliance with the national 24-hour and annual PM_{2.5} AAQS. In addition, the 2016 AQMP outlines the plan toward meeting the national 1-hour and 8-hour ozone standards.

The 2016 AQMP accounts for projected population growth, predicted future emissions in energy and transportation demand, and determined control strategies for the eventual achievement of AAQS attainment designation. These control strategies involve a combination of regulatory and incentive approaches via partnerships at all levels of government.

The 2016 AQMP includes policies that are consistent with the SCAQMD and specify review according to the recommendations of SCAQMD guidelines. Other policies are aimed at reducing transportation emissions and emissions from major stationary sources.

The proposed Project would be subject to the following general SCAQMD rules and regulations:

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- Regulation II – Permits
 - Rule 201 Permit to Construct
 - Rule 203 Permit to Operate
- Regulation IV - Prohibitions
 - Rule 401 – Visible Emissions
 - Rule 402 – Nuisance
 - Rule 403 – Fugitive Dust

3.3.2 Impact Analysis

The SCAQMD has adopted regional and localized significance thresholds (LSTs) to determine the significance of a project's potential air quality impacts. Separate thresholds of significance have been adopted for the construction and operation phases of projects. The LSTs were developed by the SCAQMD to assist lead agencies in analyzing localized air quality impacts from projects. LST look-up tables for one, two, and five acre proposed projects emitting CO, nitrogen oxides (NO_x), PM_{2.5} or PM₁₀ were prepared for easy reference according to source receptor area. The LST methodology and associated mass rates are not applicable to mobile sources travelling over the roadways. It should be noted that SCAQMD does not require compliance with LSTs for new construction projects; more importantly, LSTs are a voluntary approach to be implemented at the discretion of local agencies (SCAQMD, 2008).

Table 3.3-3 below presents the regional significance thresholds and LSTs applicable to the proposed Project and used for purposes of this analysis. Because installation of the water conveyance pipelines involves mobile sources operating along linear roadways and limited construction activities are necessary at the proposed booster station site, LSTs have only been applied to the water treatment plant site for purposes of this analysis. These LSTs are based on a one-acre site with a 200 meter receptor distance. Use of the one-acre and 200 meter site criteria represents a conservative approach as dispersion of proposed emissions over the approximate 1.82 acre site and distance of 220 meters to sensitive receptors would be greater than that assumed.

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Table 3.3-3 SCAQMD Air Quality Significance Thresholds (Mass Daily Thresholds)

Regional Thresholds (lbs/day)	VOC	NO_x	SO_x	CO	PM₁₀	PM_{2.5}	Lead (Pb)
Construction	75	100	150	550	150	55	3
Operation	55	55	150	550	150	55	3
Localized Thresholds (lbs/day)¹	VOC	NO_x	SO_x	CO	PM₁₀	PM_{2.5}	Lead (Pb)
Construction	n/a	123	n/a	2,110	60	20	n/a
Operation	n/a	123	n/a	2,110	15	5	n/a
SOURCE: SCAQMD Air Quality Significance (Mass Daily) Thresholds, 2015 SCAQMD Mass Rate LST Lookup Tables, Appendix C, 2008							
Notes:							
1. Localized significance thresholds are from the SCAQMD lookup tables for Source Area 11 assuming a one acre project site and a distance to the nearest sensitive receptor of 200 meters (site size is 1.82 acres and residences are located 220 meters northeast of the proposed water treatment plant).							

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Issues	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
<u>AIR QUALITY:</u> Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Create objectionable odors affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

a) Conflict with or obstruct implementation of the applicable air quality plan?

Less than Significant Impact.

Impact Discussion

Emissions below the SCAQMD mass emissions thresholds of significance presented in Table 3.3-3 would not be expected to conflict with or obstruct implementation of the applicable air quality plan. Proposed Project construction and operation emissions were calculated using the California Emissions Estimator Model (CalEEMod) version 2016.3.1 (CalEEMod, 2016). CalEEMod is a statewide land use emissions computer model designed to provide a uniform platform for government agencies, land use planning, and environmental professionals to quantify potential criteria air pollutant emissions associated with both construction and operations from a variety of land use projects.

The model quantifies direct emissions from construction and operations including vehicle use, off-road equipment, fugitive dust, off-gas from asphalt and landscaping maintenance. Default data (i.e., emission factors, trip lengths, meteorology, source inventory, etc.) have been provided by the various California air districts to account for local requirements and conditions.

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The model is an accurate and comprehensive tool for quantifying air quality impacts from land use projects throughout California.

The Project would result in emissions of criteria air pollutants during construction primarily from off-road equipment and on-road vehicle exhaust, fugitive dust from grading/soil disturbing activities, and off-gas from re-paving streets after pipeline installation. Operation phase emissions of criteria air pollutants are limited to vehicle exhaust from site workers and operation/maintenance of the treatment plant. Emissions from treatment plant operation are limited as a majority of equipment will be electrically powered and the treatment/remediation process is a closed system.

The decarbonator (part of the RO treatment process) would include a blower to strip carbon dioxide from the process water and emit it to the atmosphere. SCAQMD requirements may apply to this treatment unit. This would include SCAQMD Regulation XIV Rule 1401 for new source review. If required, a permit application would be submitted to SCAQMD, and the SCAQMD would provide ARARs for discharge to the atmosphere. Estimated Project construction and operation emissions are summarized below in Tables 3.3-4 and 3.3-5, respectively. Detailed emissions estimates and assumptions are provided in Appendix A (Project Emissions Estimates).

Table 3.3-4 Project Construction Emissions in Comparison to SCAQMD Significance Criteria

Component	Emissions (lbs/day)						
	VOC	NO _x	SO _x	CO	PM ₁₀	PM _{2.5}	Lead (Pb)
Well Installation	1.30	14.55	0.02	8.10	0.76	0.58	--
Pipeline Installation and Re-paving	3.65	31.42	0.05	25.66	2.92	1.91	--
New Pump Station Construction	0.47	4.87	0.01	2.74	0.39	0.25	--
Water Treatment Plant	2.86	20.78	0.03	16.00	6.84	3.85	--
Peak Day Regional Emissions ¹	8.28	71.62	0.11	52.5	10.91	6.59	--
Peak Day Localized Emissions ²	2.86	20.78	0.03	16.00	6.84	3.85	
Regional Thresholds Construction	75	100	150	550	150	55	3
Localized Thresholds Construction	n/a	123	n/a	2,110	60	20	n/a
Decarbonator	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Exceeds Thresholds?	No	No	No	No	No	No	n/a
Source: Project Emissions Estimates (Appendix A)							
Notes:							
1. Peak regional emissions conservatively assume well installation, pipeline installation, re-paving, pump station construction, and water treatment plant construction occur simultaneously.							
2. Peak localized emissions applicable to construction of the water treatment plant.							

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Table 3.3-5 Project Operation Emissions in Comparison to SCAQMD Significance Criteria

Component	Emissions (lbs/day)						
	VOC	NO _x	SO _x	CO	PM ₁₀	PM _{2.5}	Lead (Pb)
Project Operation Emissions ¹	1.85	0.58	<0.01	0.88	0.18	0.07	--
Regional Thresholds Operation	55	55	150	55	55	150	55
Localized Thresholds Operation	n/a	123	n/a	2,110	15	5	n/a
Exceeds Thresholds?	No	No	No	No	No	No	n/a
Source: Project Emissions Estimates (Appendix A)							
Notes:							
1. Operation emissions assumed to be limited to the water treatment plant. Assumes no criteria air pollutant emissions from operating the water conveyance pipelines and booster pumps.							

As shown in Tables 3.3-4 and 3.3-5, Project construction and operation emissions are below the applicable SCAQMD regional and localized mass emissions thresholds of significance. Considering Project mass emissions are below the thresholds of significance, the Project would not conflict with or obstruct implementation of the 2016 AQMP and impacts would be less than significant.

b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?

Less than Significant Impact.

Impact Discussion

Emissions below the SCAQMD mass emissions thresholds of significance presented in Table 3.3-3 would not be expected to violate any air quality standard or contribute substantially to an existing or projected air quality violation. As shown in Tables 3.3-4 and 3.3-5, Project construction and operation emissions are below the applicable SCAQMD regional and localized mass emissions thresholds of significance. Considering Project mass emissions are below the thresholds of significance, the Project would not violate any air quality standard or contribute substantially to an existing or projected air quality violation and impacts would be less than significant.

c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?

Less than Significant Impact.

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Impact Discussion

By its very nature, air pollution is largely a cumulative impact. The SCAQMD's application of thresholds of significance for criteria air pollutants is relevant to the determination of whether a project's individual emissions would have a cumulatively significant impact on air quality. If a project's emissions are less than the thresholds of significance for criteria air pollutants the project would not be expected to result in a cumulatively considerable air quality impact. As shown in Tables 3.3-4 and 3.3-5, Project construction and operation emissions are below the applicable SCAQMD regional and localized mass emissions thresholds of significance. Considering Project mass emissions are below the thresholds of significance, the Project would not result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is non-attainment under an applicable federal or state ambient air quality standard and impacts would be less than significant.

d) Expose sensitive receptors to substantial pollutant concentrations?

Less than Significant Impact.

Impact Discussion

As shown in Tables 3.3-4 and 3.3-5, Project construction and operation emissions are below the applicable SCAQMD localized mass emissions thresholds of significance. Considering localized Project mass emissions are below the thresholds of significance, the Project would not expose sensitive receptors to substantial pollutant concentrations and impacts would be less than significant.

e) Create objectionable odors affecting a substantial number of people?

Less than Significant Impact.

Impact Discussion

Construction of the proposed Project does not include any source of potentially objectionable odors that could affect a substantial number of people. There is a potential for odors to be created as a result of operating the water treatment plant. However, the proposed treatment system is a closed system except for the emission of carbon. The treated water would have no odor. The treatment plant would require infrequent change out of the granular activated carbon which is limited to a very short duration (e.g., three to four hours once or twice annually). This would not cause odor. As granular activated carbon is removed, it will be placed into sealed containers for transport to an appropriate receiving facility for disposal. Considering the short-term duration and distance of over 700 feet to the nearest sensitive receptors, potential odors from operating the water treatment plant would be negligible. As such, the proposed Project would not create objectionable odors affecting a substantial number of people and potential impacts would be less than significant.

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3.4 BIOLOGICAL RESOURCES

3.4.1 Setting

The Project will be constructed within previously disturbed lands that lack native vegetation. The proposed and existing extraction wells, pipelines and treatment plant are located within in developed (i.e., street rights-of-way, residential, industrial, and institutional areas) and/or previously disturbed areas with non-native annual grassland (i.e., proposed treatment plant located within an empty lot). Ornamental trees and shrubs are interspersed throughout the Project.

3.4.2 Impact Analysis

Issues	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
<u>BIOLOGICAL RESOURCES:</u> Would the Project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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Issues	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
<u>BIOLOGICAL RESOURCES:</u> Would the Project:				
f) Conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

a) Have a substantial adverse effect, either directly or through habitat modifications, on any species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

Less than Significant Impact with Mitigation Incorporated.

Impact Discussion

The United States Fish and Wildlife Service (USFWS) and the California Department of Fish and Wildlife (CDFW), list species as threatened or endangered under the Federal and State Endangered Species Acts (FESA and CESA, respectively). A literature review was conducted to assist in determining the existence or potential occurrence of special status plants and animal species within the proposed Project limits and in the Project vicinity. The literature review revealed that no occurrence records for plant or wildlife species listed by the State and/or Federal government as endangered or threatened were identified within the Project limits. In addition, a review of the California Natural Diversity Database or "CNDDB" (CDFW 2015) indicated no recent records (i.e., occurrences within one mile of the Project over the past 30 years) of any special status species within one mile of the Project site. However, the literature review indicated that the Project site is located approximately three miles southwest of designated critical habitat for the Coastal California Gnatcatcher (CAGN). No suitable habitat for CAGN occurs within the Project or within 500 feet of the Project. As mentioned earlier, the Project site and surrounding area does not contain suitable habitat for special status species to potentially occur. The Project site is not within a known migratory corridor for such species. Therefore, the implementation of the Project is not expected to result in impacts to threatened or endangered species.

Treated water is proposed to be temporarily discharged to San Jose Creek located immediately south of the Project during remedy start-up, system shake-down, and periodic system maintenance. This reach of San Jose Creek is also channelized and no suitable habitat for special status species occurs within the channelized (reinforced concrete) portion of the channel. Approximately two miles downstream of the proposed discharge point, San Jose Creek

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becomes a soft bottom creek. San Jose Creek is located within hydrological unit 405.41 of the Los Angeles County Regional Water Quality Control Board (LARWQCB) Water Quality Control Plan or "Basin Plan", (LARWQCB 1995). San Jose Creek is identified in the Basin Plan as having intermittent beneficial uses for warm freshwater habitat ("WARM") and existing beneficial uses for wildlife habitat ("WILD"). The WARM designation means that the creek may intermittently support warm water ecosystems that may include, but are not limited to, preservation and enhancement of aquatic habitats, vegetation, fish, and wildlife (including invertebrates). The WILD designation means that the creek supports wildlife habitats that may include, but are not limited to, the preservation and enhancement of vegetation and prey species used by waterfowl and other wildlife.

The discharge may result in some minor changes to water quantity and quality in the soft bottom natural area of the channel. These changes may include turbidity in the water column as a result of re-suspension of sediments. The changes in the volume of water as a result of the discharge may also result in minor but temporary erosion, which may impact the aquatic biota such as macro-invertebrates and aquatic insects. The additional volume of discharge water may also temporarily displace aquatic vegetation associated with the creek. These impacts may also temporarily impact common wildlife such as birds that may be depending upon the creek for food and shelter.

Based on the temporary nature of treated water discharged to San Jose Creek, distance of the soft bottom natural area of the creek from the discharge point, paucity of special status species occurrence in the project area (CDFW 2015), and the meeting of NPDES requirements for the discharge of the treated water, impacts to potential aquatic and wildlife species that may be associated with the San Jose Creek ecosystem is expected to be less than significant.

The Migratory Bird Treaty Act (MBTA) of 1918 (16 U.S.C. 703-711) and Section 3503 of the California Fish and Game Code protects migratory nesting birds. The Project site supports non-native, ornamental trees that may be potentially used by birds for nesting activities. Construction activities occurring in close proximity to the trees has the potential to adversely impact nesting birds, if present during construction. This is a potentially significant impact.

Mitigation Measures

3.4-1: Nesting Bird Impacts Avoidance

Vegetation removal is not proposed to occur for this Project. However, birds may nest in trees and shrubs adjacent to proposed construction activities (e.g. landscaping occurs primarily along sidewalks immediately adjacent to proposed pipelines in existing roads). Nesting birds can be adversely affected from noise or human activity generated during construction. To ensure compliance with California Department of Fish and Game and the MBTA, and to avoid potential impacts to nesting birds, the proposed construction activities within 500 feet of suitable nesting habitat (i.e., landscaped areas) should either occur outside of the general nesting season

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(February 1 through August 31) or if construction occurs during the bird nesting season, a pre-construction nesting bird survey will be conducted by a qualified biologist prior to the start of construction. Should nesting birds be found or "active" nests be located, an exclusionary buffer shall be established by the biologist. The buffer may be up to 500 feet in diameter, depending on the species of nesting bird detected. The buffer ("no work area") shall be clearly marked in the field by construction personnel under guidance of the biologist, and the construction shall not be conducted within this zone until the biologist determines that the young have fledged or the nest is no longer active.

Residual Impacts

With implementation of Mitigation Measure 3.4-1, the Project would have a less than significant impact with mitigation incorporated to candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife.

b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish or U.S. Fish and Wildlife Service?

Less than Significant Impact.

Impact Discussion

Riparian habitat refers to the trees, other vegetation, and physical features normally found on the banks and floodplains of rivers, streams, and other bodies of fresh water. Riparian habitat includes willows, mule fat, and other vegetation typically associated with the banks of a stream or lake shorelines and may be consistent with United States Army Corps of Engineers (USACE) definitions. In most situations, wetlands associated with a stream or lake would fall within the limits of the riparian habitat. Thus, defining the limits of CDFW jurisdiction based on riparian habitat will automatically include any wetland areas and may include additional areas that do not meet USACE criteria for soils and/or hydrology (e.g., where riparian woodland canopy extends beyond the banks of a stream away from frequently saturated soils).

The Project site is predominantly developed with little to no vegetation. The Project site and immediate surrounding areas do not support riparian or wetland vegetation. Treated water is proposed to be temporarily discharged to San Jose Creek located immediately south of the Project. This reach of San Jose Creek is channelized and does not support riparian habitat or other sensitive natural communities. The natural areas of the creek occur approximately two miles downstream of the proposed area for treated water discharge, where San Jose Creek supports a soft bottom channel and associated riparian habitat. Potential indirect, temporary impacts to the aquatic ecosystem of the creek in this area from discharge of treated water have been discussed in Impacts Analysis a) above.

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Based on the lack of riparian vegetation at the project site, distance between natural riparian areas of San Jose Creek and project site, temporary/indirect nature of disturbance to the creek from discharge of treated water and the meeting of NPDES requirements for the discharge of the treated water, impacts to riparian habitat or other sensitive natural communities would be less than significant.

- c) *Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?*

Less than Significant Impact.

Impact Discussion

The USACE Regulatory Branch regulates activities that discharge dredged or fill materials into “waters of the U.S.” under Section 404 of the Federal Clean Water Act (CWA) and Section 10 of the Rivers and Harbors Act. “Waters of the U.S.” is a broad term and can be divided into three categories: territorial seas, tidal waters, or non-tidal waters. This permitting authority applies to all “waters of the U.S.” where the material (1) replaces any portion of “waters of the U.S.” with dry land or (2) changes the bottom elevation of any portion of any “waters of the U.S.”

The USACE generally asserts jurisdiction over “waters of the U.S.” that are: traditional navigable waters (TNW), wetlands adjacent to TNWs, non-navigable tributaries of TNWs that are relatively permanent waters (RPW) where the tributaries typically flow year-round or have continuous flow at least seasonally (typically three months), and wetlands that abut such tributaries. For certain waters including non-navigable tributaries that are not RPWs, the USACE bases their jurisdictional assertion on a fact-specific analysis to determine if a ‘significant nexus’ exists with a TNW. A significant nexus analysis assesses the flow characteristics and function of the tributary itself and the functions performed by all wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical and biological integrity of downstream traditional navigable waters. A significant nexus includes consideration of hydrologic and ecologic factors.

The CDFW has jurisdictional authority over wetland resources associated with rivers, streams, and lakes pursuant to the California Fish and Game Code (§1600–1616). Pursuant to Section 1602 of the California Fish and Game Code; CDFW regulates any work that will (1) substantially divert or obstruct the natural flow of any river, stream, or lake; (2) substantially change or use any material from the bed, channel, or bank of any river, stream, or lake; or (3) deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake. Because the CDFW includes streamside habitats (such as riparian vegetation) under its jurisdiction that, under the federal definition, may not qualify as wetlands on a particular project site, its jurisdiction may be broader than that of the USACE.

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Under the jurisdictional criteria defined above, San Jose Creek and Puente Creek are potentially subject to USACE and CDFW jurisdiction. Although San Jose creek is not navigable, it is likely an RPW in most years. In addition, it is a tributary to navigable waters. Both Puente Creek and San Jose creek flow into the San Gabriel River, which subsequently drains into the Pacific Ocean. However, the Project does not include the introduction of fill into the waters or any wetlands. Nor would it affect either. Therefore, it is expected that USACE and CDFW would not claim jurisdiction.

The Project proposes to discharge treated water through a pipeline to San Jose Creek. In addition, a proposed subsurface pipeline would convey pumped groundwater, which will traverse Puente Creek. This pipeline will be located within an existing bridge crossing. Neither of these pipeline structures will be located within potential state and federal jurisdictional areas of San Jose and Puente Creeks. No major modification of creek bed, bank or riparian areas is proposed. The indirect, minor and temporary nature of impacts to San Jose Creek natural areas downstream of the Project have been discussed in responses to questions a) and b) above, but impacts will have no adverse effect on federally protected wetlands through direct removal, filling, hydrological interruption, or other means.

Therefore, the implementation of the project will not have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act and therefore, impacts would be less than significant.

d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

Less than Significant Impact.

Impact Discussion

The Project site is located in a predominantly industrial setting, surrounded by developed areas. The Project actions are primarily proposed to occur in previously disturbed areas that lack habitat suitable for wildlife and native plants. Due to these settings, it is highly unlikely that the Project site is utilized as a wildlife movement corridor. While San Jose Creek may be utilized by common urban wildlife for movement, the portion of the channel adjacent to the Project site is channelized, which greatly limits its potential for wildlife movement. Wildlife movement up and down the channel by small urban wildlife may be accommodated when the flow in the channel is low. As identified earlier, the Basin Plan recognizes San Jose Creek as having intermittent beneficial uses as a freshwater habitat for fish and wildlife and may also be beneficially used as a wildlife habitat. These functions and values are likely restricted to the natural areas of the creek that support the soft bottom channel with riparian habitat, which occur approximately two miles downstream of the Project site. As discussed in responses to Questions a) and b)

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earlier, the potential impacts from discharge of treated water into San Jose Creek is temporary, indirect and minor.

Therefore, based on the lack of native resident or migratory fish and native resident or migratory wildlife corridors within and near the Project and the intermittent nature of San Jose Creek as a freshwater habitat for fish and wildlife, interference to the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites by the Project would be less than significant.

e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

No impact.

Impact Discussion

The City of Industry's Municipal Code does not have any specific ordinances that provide special protection for trees, other plant or animal species, or natural habitat areas. However, the City of Industry has adopted a water conservation ordinance pursuant to Assembly Bill (AB) 1881. All new and rehabilitated landscaped areas are required to meet the provisions of Chapter 13.18 of the City's Municipal Code. Since all new development must follow these regulations, the Project would not cause conflicts with the existing ordinance (City of Industry General Plan Update Initial Study 2014a). The City of La Puente does not have any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance. (City of La Puente General Plan 2004b). In addition, the construction and operation of the Project does not include the removal of landscaping, in particular, trees. Therefore, no impact would occur.

f) Conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan?

No impact.

Impact Discussion

The proposed Project site or Project area is not located within an area where there are draft or adopted Habitat Conservation Plans (HCP), Natural Community Conservation Plans (NCCP), or any other local, regional, or state habitat conservation plans in effect. Because no such conservation plans are in effect in the Project area, the Project site is not subject to the requirements of such plans and is therefore subject to regulation by local, State, and Federal laws on a case-by-case basis for biological resources. As there is no adopted HCP, NCCP, or other approved local, regional, or state HCP applicable to the Project, there would be no impact.

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3.5 CULTURAL RESOURCES

3.5.1 Setting

The San Gabriel Basin, including areas surrounding the proposed Project, has a rich Native American history including the Tongva Indians, also known as the Gabrielinos because of their association with the Mission San Gabriel in the late eighteenth century (Welch 2006). By the late 1700s the Spanish established a set of missions throughout California, with Mission San Gabriel built in 1771. By the mid-1800s the La Puente Rancheria of Mission San Gabriel was parceled out to several Mexican citizens. By the early 1900s the La Puente Valley was known for its abundance of citrus, walnut, and avocado crops with a growing industry of oil, banking, and communications.

3.5.2 Impact Analysis

Issues	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
<u>CULTURAL RESOURCES:</u> Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Disturb any human remains, including those interred outside of formal cemeteries?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?

No Impact.

Impact Discussion

The proposed Project would not cause any adverse change to aboveground historical resources (buildings or structures that are, or could be, eligible for the National Register of Historic Places or the California Register of Historical Resources). Construction of the new water treatment plant would be placed on a vacant lot and no structures would be demolished.



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Construction of the pipelines will be aligned within existing rights-of-way and would not impact any structures. Therefore, no impacts to historical structures are expected and no mitigation is required.

b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?

Less than Significant Impact.

Impact Discussion

A records search performed for a previously published Class III investigation¹ showed that there have been eight previous archaeological investigations within one mile of the proposed Project area. The Class III field survey found no resources within the general vicinity of the proposed Project area. In the unlikely event archaeological resources are discovered during construction, work activities shall cease in accordance with applicable law until a qualified archaeologist can assess the potential significance of such finds; therefore, potential impacts to archaeological resources would be less than significant.

c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

No Impact.

Impact Discussion

The underlying geologic formations generally consist of Younger (Holocene) undivided alluvial fan and valley deposits overlaying Lower Fernando Formation (Pliocene) found at depths of 100 to 200 feet. The surficial sediments underlying the proposed Project area are not anticipated to have high paleontological sensitivity or contain scientifically significant paleontological resources. There are no known unique geologic features within the proposed Project area and none are anticipated to be present. Therefore, there would be no impacts to unique paleontological resource or site or unique geologic feature.

d) Disturb any human remains, including those interred outside of formal cemeteries?

Less than Significant Impact.

¹ Express Archaeological Solutions, "A Class III Archaeological Investigation of the Puente Valley Operable Unit Phase I Monitoring Well Construction Project, Los Angeles County, California". May 7, 2000.

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Impact Discussion

The proposed Project would not impact any known cemeteries. Although unlikely, in the event human remains are discovered during construction, work activities shall cease until the Los Angeles County coroner is contacted and the age of the remains can be determined. If the remains are determined to be historical a qualified archaeologist can assess the potential significance of the remains in accordance with applicable law. If the remains are determined to be Native American, the appropriate Native Americans as identified by the Native American Heritage Commission as provided in California Public Resources Code §5097.98 shall be notified. Therefore, potential disturbance to human remains, including those interred outside of formal cemeteries would be less than significant.

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3.6 GEOLOGY AND SOILS

3.6.1 Setting

The Puente Valley is a tributary basin to the Main San Gabriel Basin bounded by the San Gabriel Mountains to the north, the Raymond Basin to the northwest, and a system of low hills to the south, southwest, and southeast divided by the Whittier Narrows. Within the Puente Valley, San Jose Creek subsurface sediments are dominated by alluvial sedimentary deposits derived from consolidated marine sedimentary rocks of the Puente and San Jose Hills. These deposits range in thickness from less than 25 feet in the eastern portion of Puente Valley to approximately 1,300 feet in the northwest and predominately contain fine-grained lenses inter-fingered with coarser-grained lenses. The underlying bedrock of Puente Valley is primarily of relatively impermeable consolidated marine sedimentary rocks.

The San Gabriel basin is bounded by the Sierra Madre-Duarte faults and the Raymond fault on the north, the East Montebello fault on the west, and the Puente Hills and San Jose Hills faults on the south and east (Yeats 2001). The margins of the San Gabriel Valley basin have been the site of five earthquakes between 1987 and 1991; the 1987 Whittier Narrow earthquake, the 1988 Pasadena earthquake along the Raymond fault, the 1991 Sierra Madre earthquake, and the 1988 and 1990 Upland earthquakes along a buried fault northeast of the San Jose Hills. However, the exact geometry and location of the fault systems are unclear as the basin is underlain by several subsurface faults (Caltrans 2009).

The proposed Project engineering designs will be developed to meet current California Building Standards Code, California Uniform Building Code and the California Government Code (Section 8875-8875.10) which includes multiple earthquake and ground shaking safety standards for both new and retrofit construction.

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3.6.2 Impact Analysis

Issues	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
<u>GEOLOGY AND SOILS:</u> Would the project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving?				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
ii) Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iv) Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building code (1997), creating substantial risks to life or property?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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- a) *Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving?*
 - i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault?

Less than Significant Impact.

Impact Discussion

The proposed Project is not located within the boundaries of a state-designated Alquist-Priolo Earthquake Fault Zone (CDC, 2015). However, the area overlies the Little Puente Hill Fault and the Walnut Creek Fault. These faults, however, are not known to be active. As such, the proposed Project would not expose people or structures to potential substantial adverse effects, including the risk of loss, injury or death involving the rupture of a known earthquake fault. Therefore, the potential impact would be less than significant.

- ii. Strong seismic ground shaking?

Less than Significant Impact.

Impact Discussion

Seismically activity on area faults may result in ground shaking at the proposed Project site. Southern California is a seismically active area and the proposed Project site would not have a greater potential for seismic activity than other nearby locations. Additionally, proposed structures, pipelines, and associated elements will be designed and constructed to meet applicable state and local building code standards. Therefore, the proposed Project would have a less than significant impact in exposing people or structures to potential adverse effects from strong seismic ground shaking.

- iii. Seismic-related ground failure, including liquefaction?

Less than Significant Impact.

Impact Discussion

Seismic-related ground failure, including liquefaction, occurs when saturated, granular deposits of low relative density are subject to extreme shaking and, as a result, lose strength or stiffness due to increased pore water pressure. The consequences of liquefaction may include settlement or uplift of structures, and an increase in lateral pressure on buried structures. The majority of the proposed Project is within a liquefaction seismic hazard zone as designated by the California Department of Conservation Division of Mines and Geology (CDC, 1999). As

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defined in California Public Resources Code Section 2693(c) the proposed Project is in an area where historic occurrences of liquefaction, or local geological, geotechnical and groundwater conditions indicate a potential for permanent ground displacements.

A site specific liquefaction evaluation provided in Appendix G of the 90% Design Report (Geosyntec, 2017b) has indicated that seismic induced settlements are possible in the design seismic event. However, the proposed Project design will be conducted in accordance with applicable local and state building codes and will include mitigations for this anticipated liquefaction in the form of appropriate foundation design or ground improvement.

Therefore, the potential impact from ground failure including liquefaction would be reduced to less than significant by employing these standards.

iv. *Landslides?*

No Impact.

Impact Discussion

The proposed Project is located within an area of relatively flat terrain not adjacent to a designated hillside area. Therefore, the proposed Project is not located in an area susceptible to landslides and no impact would occur.

b) *Result in substantial soil erosion or the loss of topsoil?*

Less than Significant Impact.

Impact Discussion

The construction and operation of the proposed Project would occur along existing paved streets and previously disturbed areas. The proposed treatment facility would be built on a vacant lot that is relatively flat and will be designed to meet the City of Industry's stormwater management standards. During construction activities, erosion impacts could occur as a result of grading, excavation or building construction. Procurement of a Construction General Permit and development of an associated Stormwater Pollution Prevention Plan (SWPPP) would occur prior to construction to reduce the potential for soil erosion impacts during construction.

Therefore, potential impacts that would result from substantial soil erosion would be reduced to less than significant employing existing standards. No new mitigation would be required.

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- c) *Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?*

Less than Significant Impact

Impact Discussion

As discussed above, the proposed Project is characterized by relatively flat topography with no landslide hazards. While the proposed Project site may experience liquefaction in the design event, this hazard will be addressed in the design as described in detail above. Additionally, remedial grading will be required at the site to prepare the subgrade soils to accommodate foundations for the proposed structures. Therefore, the application of state and local building codes will reduce the potential impact of construction and operation of the proposed Project relative to these concerns to less than significant.

- d) *Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building code (1997), creating substantial risks to life or property?*

Less than Significant Impact.

Impact Discussion

The term expansive soils refers to soils which exhibit volumetric expansion when water content is increased and volumetric contraction when water content is decreased, potentially causing damage to foundations. During the site specific investigations (Geosyntec, 2017b) laboratory testing indicated that near surface soils have a medium expansion potential. Expansive soils could result in a vertical movement of lightly loaded foundations or pavements. For lightly loaded foundations, the foundation design will consider the potential for soil expansion as required by state and local building codes. Therefore, the proposed Project would have a less than significant impact relative to creating substantial risks to life or property as a result of expansive soils.

- e) *Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?*

No Impact.

Impact Discussion

The proposed Project area does not contain soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems. The proposed Project does not include the use of septic tanks. Construction and operation of the proposed Project would not affect any existing, or hinder further use of, septic tanks or alternative wastewater disposal systems, or

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the soils that would adequately support those systems. Therefore, no impacts related to soil compatibility with septic or other alternative wastewater systems would occur.

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3.7 GREENHOUSE GAS EMISSIONS

3.7.1 Setting

Greenhouse Gases (GHGs) are defined as any gas that absorbs infrared radiation in the atmosphere. Common GHGs include water vapor, carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), chlorofluorocarbons (CFCs), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulfur hexafluoride (SF₆), ozone (O₃), and aerosols. GHGs are emitted by both natural processes and human activities, and lead to the trapping and buildup of heat in the atmosphere near the earth's surface, commonly known as the "Greenhouse Effect." There is increasing evidence that GHGs and the Greenhouse Effect are leading to global warming and climate change (USEPA, 2015).

Climate change refers to any significant change in measures of climate (e.g., temperature or precipitation) lasting for an extended period of time (decades or longer). Climate change may result from natural processes, such as changes in the sun's intensity; natural processes within the climate system (such as changes in ocean circulation); human activities that change the atmosphere's composition (such as burning fossil fuels) and the land surface (such as urbanization). "The potential adverse impacts of global warming include the exacerbation of air quality problems, a reduction in the quality and supply of water to the State from the Sierra snowpack, a rise in sea levels resulting in the displacement of thousands of coastal businesses and residences, damage to marine ecosystems and the natural environment, and an increase in the incidences of infectious diseases, asthma, and other human health-related problems." (California Health & Safety Code, Division 25.5, Part 1).

Regulatory Framework

In September 2006, the Global Warming Solutions Act of 2006 (AB 32) was signed into law by former Governor Arnold Schwarzenegger. AB 32 and subsequent Statutes establish a statewide GHG emission reduction target of require that statewide GHG emissions be reduced to 1990 levels by the year 2020 and 40 percent below 1990 levels by 2030. The law requires this reduction to be accomplished through a variety of measures, including an enforceable statewide cap on greenhouse gas emissions that has been phased-in since 2013. AB 32 directs California Air Resources Board (CARB) to develop and implement regulations to reduce statewide greenhouse gas emissions from stationary sources.

CARB adopted the AB 32 Scoping Plan on December 12, 2008. The Scoping Plan provides the outline for future actions to reduce California's GHG emissions and establishes a schedule for CARB and other state agencies to adopt implementing regulations and other initiatives to reduce GHG emissions.

One of the most significant measures called for in the Scoping Plan is the statewide cap on emissions from the largest sources of GHG emissions. The cap-and-trade regulation was

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approved by CARB on December 16, 2010, following public review and comment. This regulation calls for a phased program starting in 2012, which includes electricity producers, electricity imports, and large industrial facilities (those with greater than 25,000 metric tons carbon dioxide per year). Starting in 2015, distributors of transportation fuels, natural gas, and other fuels will be included in the cap-and-trade program. The plan is expected to be updated in 2016.

Facilities covered in the cap-and-trade program are not given a specific limit on their GHG emissions but must supply a sufficient number of allowances (each covering the equivalent of one metric of carbon dioxide equivalent [CO₂e]) to cover their annual emissions. Each year, the total number of allowances issued in the state drops, requiring covered facilities to find the most cost-effective and efficient approaches to reducing their emissions. Facilities without sufficient allowances to cover their annual emissions must acquire additional allowances or offsets. By the end of the program in 2020, there will be a reduction in GHG emissions sufficient to reach the same level of emissions as the state experienced in 1990, as required under AB 32. Originally slated to expire in 2020, Governor Jerry Brown signed legislation on July 25, 2017 to extend the cap and trade regulation until 2030.

City of Industry has not adopted a GHG reduction plan or climate action plan.

3.7.2 Impact Analysis

The SCAQMD applies a significance threshold of 10,000 metric tons of CO₂e emissions per year for industrial land uses to characterize greenhouse gas/climate change impacts. To determine a project's total emissions per year, the project's construction emissions are divided by its anticipated lifetime and added to the project's annual operating emissions per SCAQMD guidance for industrial projects (SCAQMD, 2015).

Issues	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
GREENHOUSE GASES: Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

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- a) *Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?*

Less than Significant Impact.

Impact Discussion

Construction activities associated with the proposed Project would require the operation of on-road vehicles and conventional off-road construction equipment that would emit GHG emissions from engine exhaust. In the Operation phase, GHG emissions would primarily result from site worker operation of on-road vehicles and from indirect electrical consumption to operate the water treatment plant and booster pumps and carbon dioxide from the decarbonator. GHG emissions for the proposed Project have been estimated using the California Emissions Estimator Model (CalEEMod) version 2016.3.1 (CalEEMod, 2016). Detailed GHG emissions estimates for the proposed Project are included in Appendix A (Project Emissions Estimates). Table 3.7-1, below, presents a summary of the estimated total GHG emissions as a result of implementing the proposed Project.

Table 3.7-1 Total Estimated Project GHG Emissions

Project Phase	Total Metric Tons			
	CO ₂	CH ₄	N ₂ O	CO ₂ e
Construction Emissions ¹	631.66	0.14	0.00	635.05
Operation Emissions	495.95	1.80	0.02	546.43
Total Project Emissions	1,127.61	1.93	0.02	1,181.48
Draft SCAQMD Threshold				10,000
Project Emissions Exceed SCAQMD Threshold?				No
Notes: 1. Total construction emissions were added to operation phase emissions without amortizing them over 30 years pursuant to SCAQMD guidelines to provide a conservative analysis.				

As shown above in Table 3.7-1, the proposed Project's estimated 1,181.48 metric tons of CO₂e emissions is below the 10,000 metric tons CO₂e significance threshold. As such, the proposed Project would not generate greenhouse gas emissions, either directly or indirectly, that would have a substantial adverse effect on the environment and potential impacts would be less than significant.

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b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Less than Significant Impact.

Impact Discussion

Large industrial facilities (those with emissions greater than 25,000 metric tons CO₂ per year) are subject to compliance with AB 32's cap-and-trade program. Because the proposed Project would emit less than 25,000 metric tons CO₂ per year, it is not subject to compliance with AB 32's cap-and-trade program. In addition, City of Industry has not adopted a Climate Action Plan. The proposed Project would not conflict with measures identified by the California Air Pollution Control Officer's Association to reduce GHG emissions nor would it conflict with policies in the City of Industry's 2014 General Plan (City of Industry, 2014) for the purposes of reducing GHG emissions. Therefore, the proposed Project would not conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases and potential impacts would be less than significant.

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3.8 HAZARDS AND HAZARDOUS MATERIALS

3.8.1 Setting

There are various federal, state and local programs that regulate the use, storage, transportation, and disposal of hazardous materials and hazardous wastes. These programs can reduce the risk that hazardous substances may pose to people and businesses under normal daily circumstances and as a result of emergencies and disasters.

Federal and State

Resource Conservation and Recovery Act

The Resource Conservation and Recovery Act (RCRA) of 1976 is the principal federal law that regulates the generation, management, transportation and disposal of hazardous waste. Hazardous waste management includes the treatment, storage, and disposal of hazardous waste. Treatment is any process that changes the physical, chemical, or biological character of the waste to reduce its potential as an environmental threat. Treatment can include neutralizing the waste, recovering energy or material resources from the waste, rendering the waste less hazardous, or making the waste safer to transport, dispose of, or store.

RCRA gave the USEPA the authority to control hazardous waste from "cradle to grave," that is, from generation to ultimate disposal. The 1986 amendments to RCRA enabled USEPA to address environmental problems that could result from underground tanks storing petroleum and other hazardous substances. It should be noted that RCRA focuses only on active and future facilities and does not address abandoned or historical sites.

Comprehensive Environmental Response, Compensation, and Liability Act

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980, commonly known as Superfund, was enacted to protect water, air, and land resources from the risks created by past chemical disposal practices such as abandoned and historical hazardous wastes sites. Through the act, USEPA was given power to seek out those parties responsible for any release and to compel appropriate cleanup activities. This federal law created a tax on the chemical and petroleum industries that went to a trust fund for cleaning up abandoned or uncontrolled hazardous waste sites. CERCLA also enabled the revision of the National Contingency Plan, which provided the guidelines and procedures needed to respond to releases and threatened releases of hazardous substances, pollutants, or contaminants. The National Contingency Plan also established the National Priority List (NPL) of sites, which are known as Superfund sites.

Superfund Amendments and Reauthorization Act

CERCLA was amended by the Superfund Amendments and Reauthorization Act on October 17, 1986. Title 5 of this regulation requires that each community establish a local emergency planning committee to develop an emergency plan to prepare for and respond to a chemical

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emergency. The emergency plan is reviewed by the State Emergency Response Commission and publicized throughout the community. The Certified Unified Program Agency (CUPA) is responsible for coordinating hazardous material and disaster preparedness planning and appropriate response efforts with city departments as well as local and state agencies. The CUPA with responsibility for the project site is the Los Angeles County Fire Department (LACFD). The goal is to improve public- and private-sector readiness and to mitigate local impacts resulting from natural or man-made emergencies.

Emergency Planning and Community Right-to-Know Act

The Emergency Planning and Community Right-to-Know Act (EPCRA) was enacted by Congress as the national legislation on community safety. This law helps local communities protect public health, safety, and the environment from chemical hazards. The primary purpose of EPCRA is to inform communities and citizens of chemical hazards in their areas by requiring businesses to report the locations and quantities of chemicals stored onsite to state and local agencies. These reports help communities prepare to respond to chemical spills and similar emergencies. Section 3131 of EPCRA requires manufacturers to report releases to the environment (air, soil, and water) of more than 600 designated toxic chemicals; report offsite transfers of waste for treatment or disposal at separate facilities; pollution prevention measures and activities; and participate in chemical recycling. These annual reports are submitted to the USEPA and state agencies. The USEPA maintains and publishes a database that contains information on toxic chemical releases and other waste management activities by certain industry groups and federal facilities. This online, publicly available, national digital database is called the Toxics Release Inventory, and was expanded by the Pollution Prevention Act of 1990.

Toxic Substances Control Act

The Toxic Substances Control Act (TSCA) of 1976 was enacted by Congress to give USEPA the ability to track the 75,000 industrial chemicals currently produced or imported into the United States. Under TSCA, USEPA screens these chemicals and can require reporting or testing of any that may pose an environmental or human health hazard. It can ban the manufacture and import of chemicals that pose an unreasonable risk. Also, USEPA has mechanisms in place to track the thousands of new chemicals that industry develops each year with either unknown or dangerous characteristics. It then can control these chemicals as necessary to protect human health and the environment. The act supplements other federal statutes, including the Clean Air Act and the Toxic Release Inventory under EPCRA.

Occupational Safety and Health Administration Regulation 29 CFR Standard 1926.62

The Occupational Safety and Health Administration (OSHA) Regulation 29 CFR Standard 1926.62 regulates the demolition, renovation, or construction of buildings involving lead materials. It includes requirements for the safe removal and disposal of lead and the safe demolition of buildings containing lead-based paint or other lead materials.

Responsible agencies that regulate hazardous materials and waste include:

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United States Environmental Protection Agency

USEPA is the primary federal agency that regulates hazardous materials and waste. In general, USEPA works to develop and enforce regulations that implement environmental laws enacted by congress. The agency is responsible for researching and setting national standards for a variety of environmental programs, and delegates to states and tribes the responsibility for issuing permits and for monitoring and enforcing compliance. USEPA programs promote handling hazardous wastes safely, cleaning up contaminated land, and reducing trash. Under the authority of the RCRA and in cooperation with state and tribal partners, the Waste Management Division manages a hazardous waste program, an underground storage tank program, and a solid waste program that includes development of waste reduction strategies such as recycling.

California Environmental Protection Agency

Cal/EPA was created in 1991 by Governor's Executive Order. The six boards, departments, and offices were placed under the Cal/USEPA umbrella to create a cabinet-level voice for the protection of human health and the environment and to assure the coordinated deployment of state resources. Cal/EPA oversees hazardous materials and hazardous waste compliance throughout California.

California Department of Toxic Substances Control

California Department of Toxic Substances Control is a department of Cal/EPA, which carries out the RCRA and CERCLA programs in California to protect people from exposure to hazardous substances and wastes. The department regulates hazardous waste, cleans up existing contamination, and looks for ways to control and reduce the hazardous waste produced in California primarily under the authority of RCRA and in accordance with the California Hazardous Waste Control Law (California Health and Safety Code Division 20, Chapter 6.5) and the Hazardous Waste Control Regulations (Title 22, California Code of Regulations, Divisions 4 and 4.5). Permitting, inspection, compliance, and corrective action programs ensure that people who manage hazardous waste follow state and federal requirements and other laws that affect hazardous waste specific to handling, storage, transportation, disposal, treatment, reduction, cleanup, and emergency planning.

Local

City of Industry

As a major industrial center, the City of Industry contains business that store and use hazardous materials. Additionally, the City functions as a transportation corridor with major rail lines and numerous freeways carrying high volumes of truck and train traffic, which can pose real threats in the event of a spill or unauthorized release.

The Health Hazardous Materials Division of the LACFD oversees, plans, and responds to issues related to hazardous materials and waste for the City.

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3.8.2 Impact Analysis

Issues	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
HAZARDS AND HAZARDOUS MATERIALS: Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the Project Area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the Project Area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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- a) *Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?*

Less than Significant Impact.

Impact Discussion

Construction of the proposed Project would involve the use of hazardous materials typical of construction projects such as fuel and lubricants. Operation of the proposed Project would involve extraction and conveyance of non-hazardous classified contaminated groundwater, with the water being treated in the water treatment plant. The water treatment system would utilize sulfuric acid, hydrogen peroxide, sodium bisulfite, sodium hydroxide, sodium hypochlorite, anti-scalant, acid and caustic cleaners. Associated brine waste would not be considered a hazardous material.

Transport, use, or disposal of these hazardous substances during construction and operation would occur in accordance with applicable regulations designed to protect the public and environment, therefore, no significant impacts to the public or environment through the routine transport, use or disposal of hazardous waste and/or materials is anticipated. There would be a less than significant impact complying with existing standards and regulations. No new mitigation would be required.

- b) *Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?*

Less than Significant Impact.

Impact Discussion

Construction of the water conveyance pipelines will occur within public road right of ways which may also contain other utility pipelines. Disturbing existing utility lines, such as a natural gas or crude oil during pipeline installation has the potential to result in a release of hazardous materials that could create a hazard to the public or environment. To minimize potential damage to any existing utilities, the contractor would not be allowed to excavate until all utility owners are notified, all substructures are clearly identified and all permits have been secured (USA Dig Alert, encroachment permits, building permits, etc.).

As described in the response to impact a) above, operation of the water treatment plant would involve the use of some chemicals. A release of any of these materials could create a hazard to the public or the environment. In addition to transporting, storing, and handling these materials in accordance with applicable safety regulations, LPVCWD would be required to prepare a Hazardous Materials Business Plan. LACFD also conducts Uniform Fire Code inspections and assists in reducing risks associated with the use of hazardous materials in the community. LACFD



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also has a dedicated hazardous materials response team. The hazardous materials control and safety programs and available emergency response resources of LACFD, along with LACFD periodic inspections to ensure regulatory compliance, would reduce any potential risk associated with a release within the city (General Plan Update Draft EIR, 2014).

The nearest residences to the water treatment plant site are located more than 700 feet northeast. Although the proposed Project does include the use of some hazardous materials, compliance with existing rules and regulations and distance to sensitive receptors would reduce the potential to create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. Potential impacts would be less than significant. No new mitigation would be required.

c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

No Impact.

Impact Discussion

No portion of the proposed Project is located within a quarter-mile of a school. Therefore, the proposed Project would not emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school. No impact would occur.

d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

No Impact.

Impact Discussion

While the groundwater aquifer below the Project site is listed on the hazardous materials sites compiled pursuant to Government Code Section 65962.5, the land on which the Project will be built and operated is not identified on that list. Therefore, no impact would occur.

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the Project Area?

No Impact.

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Impact Discussion

The proposed Project is not located within the airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport and would not result in a safety hazard for people residing or working in the Project area; therefore, construction and operation of the proposed Project will have no impact.

f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the Project Area?

No Impact.

Impact Discussion

The proposed Project is not located within the vicinity of a private airstrip and would not result in a safety hazard for people residing or working in the Project area; therefore, construction and operation of the proposed Project will have no impact. See section 3.16 for a discussion regarding potential impacts to the City of Industry Civic Financial Center Heliport at the intersection of Hudson Avenue and Stafford Street (adjacent to the proposed water treatment plant site).

g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Less than Significant Impact.

Impact Discussion

The proposed Project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. As discussed previously, LACFD has a dedicated hazardous materials response team. The hazardous materials control and safety programs and available emergency response resources of LACFD, along with LACFD periodic inspections to ensure regulatory compliance, would reduce any potential risk associated with commercial and industrial businesses within the city. The proposed Project falls within the industrial business sector of the city and therefore, would be consistent with this program. Pipeline installation would occur in compliance with an encroachment permit and related conditions to ensure emergency access along roadways is maintained during construction. Potential impacts would be less than significant.

h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?

No Impact.



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Impact Discussion

The proposed Project is not located within a designated wildfire hazard area; therefore, construction and operation of the proposed Project will have no impact to expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residents are intermixed with wildlands.

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3.9 HYDROLOGY AND WATER QUALITY

3.9.1 Setting

Water supply to the City of Industry is provided by six separate water agencies: LPVCWD, Rowland Water District, San Gabriel Valley Water Company, Suburban Water Systems, Walnut Valley Water District, and City of Industry Waterworks System. The City of Industry also uses reclaimed water from the San Jose Creek Water Reclamation Plant, which is located on the western boundary of the City.

The City of Industry lies within the San Gabriel River Watershed, which drains to the Pacific Ocean through the San Gabriel River, including numerous storm drainage structures and the Walnut and San Jose Creeks in or near the City of Industry. The watershed in Los Angeles County is under the authority of the Los Angeles RWQCB. The County of Los Angeles Department of Public Works leads the planning and implementation of the San Gabriel River Watershed Plan.

The primary receiving water body for the majority of the City of Industry is San Jose Creek, a concrete channelized structure that traverses east-west through the entire City. The San Jose Creek (through the City of Industry to the San Gabriel River) is a CWA Section 303(d) impaired water body according to the Los Angeles RWQCB. The primary pollutant/stressor identified is coliform bacteria, with additional secondary pollutants/stressors of selenium, ammonia, sulfates, pH values, and toxicity.

Regulatory Setting

The following is the regulatory setting relative to Hydrology and Water Quality for the proposed Project.

The NPDES regulations require that municipal separate storm sewer system (MS4 Permit) discharges and industrial (including construction) stormwater discharges to surface water which are regulated under the NPDES permit program. NPDES stormwater permits are required for most municipalities, certain industrial facilities, and construction activities that result in a land disturbance of one acre or more. In California, the SWRCB and local RWQCBs have assumed the responsibility of implementing the NPDES permit program.

As noted above, USEPA has incorporated the substantive NPDES requirements into ARARs for surface water discharge. These ARARs are published in the ESD (ESD, 2005). The ESD notes that, consistent with CERCLA, an on-site discharge to surface waters must meet the substantive NPDES requirements, but need not obtain an NPDES permit nor comply with the administrative requirements of the permitting process. The IROD clarifies that discharge to surface water is considered an on-site activity under the IROD. Though a NPDES permit is not required under the IROD, the Project may apply for a NPDES permit to coordinate the discharge with the RWQCB and to demonstrate compliance with NPDES requirements.

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The Sanitation Districts' Wastewater Ordinance requires any business that desires to discharge industrial wastewater to the Districts' sewage system to first obtain an industrial wastewater discharge permit.

3.9.2 Impact Analysis

Issues	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
<u>HYDROLOGY AND WATER QUALITY:</u> Would the project:				
a) Violate any water quality standards or waste discharge requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f) Otherwise substantially degrade water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Place housing within a 100-year flood hazard area as mapped on a federal flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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Issues	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
j) Inundation by seiche, tsunami, or mudflow?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

a) *Violate any water quality standards or waste discharge requirements?*

Less than Significant Impact.

Impact Discussion

A Storm Water Pollution Prevention Plan (SWPPP) would be prepared to address any potential discharge requirements during construction. The water generated during the operation of the Project would be treated to meet all applicable water quality rules, regulations and standards (e.g., substantive requirements of NPDES (discussion provided above), CWA, California Water Code, and Basin Plan for the Los Angeles Region, Maximum Contaminant Levels and Title 22 drinking water standards). Therefore, impacts would be less than significant to water quality from construction or operation of the proposed Project. No new mitigation would be required.

b) *Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?*

Less than Significant Impact.

Impact Discussion

The intent of the proposed Project includes protection and promotion of the beneficial use of groundwater supplies in the San Gabriel Valley, remediation of existing groundwater contamination, limiting migration of contaminated groundwater within the PVOU portion of the San Gabriel Basin, and an integrated cleanup with creation of a reliable and safe water supply for the Basin. The proposed Project would extract contaminated groundwater, treat the water to



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applicable water quality standards, and use the treated water as a supplement to the existing water purveyors' sources.

(1) Pumping Patterns and Groundwater Levels

The IZ Remedy Project is intended to extract water within a limited area of the Basin, with extraction rates limited to what is necessary to control the lateral migration of contaminants within the IZ. Existing production wells in the geographic vicinity draw only a small portion of their water from the IZ. The vast majority of water supply for these wells comes from the deeper aquifer. Upon operation of the IZ, the San Gabriel VWC's well drawing from the IZ will be shut down, and all of San Gabriel VWC's water production within the vicinity of the PVOU will be from the deeper aquifers. The deep aquifers are relatively unaffected by the production of water in the IZ; the recharge and water supply for these aquifers are influenced more by water recharge operations in the main part of the Basin.

With respect to nearby wells producing from the IZ, such as Suburban 147-W3, the IZ Remedy Project has been designed to account for baseline conditions in the IZ. Those conditions show that groundwater fluctuations caused by existing pumping are far greater than any influence on groundwater levels that would be caused by the IZ Remedy Project. Therefore, these effects are less than significant.

The proposed Project would not substantially deplete groundwater supplies or interfere substantially with groundwater recharge. The proposed Project would extract groundwater from the IZ, which is a confined aquifer zone, separated from the SZ and the water table aquifer by a low permeability aquitard. The presence of this low permeability aquitard would limit the influence of the proposed Project on the groundwater table in the SZ. The IZ Interim Remedy would not be operated in a manner that would adversely affect the SZ, and similarly the planned containment remedies for the SZ would not be operated in a manner that would adversely affect the IZ.

Furthermore, the water levels in the Main San Gabriel Basin are known to vary by 100 to 175 feet over the past 30 years of feet due to a large climate cycle. In the MOV, the groundwater table has historically fluctuated by several tens of feet over a cycle period. The influence of the proposed Project on the groundwater table would be minimal compared to these historical fluctuations. All but one of the existing production wells that may remain active (production well 147-W3), are screened in the Deep Zone. The high transmissivity of the Deep Zone and the presence of a low permeability aquitard between the IZ and the Deep Zone would limit the influence of the proposed Project on the production rate of the nearby wells screened in the Deep Zone. Similarly, when operating, production well 147-W3 produces most of the extracted groundwater from the Deep Zone, so that the influence of the proposed Project on its production rate would be minimal. In model simulations presented in the draft Watermaster application, the recent pumping rate of 147-W3 can be maintained concurrent with the anticipated pumping from the Project extraction wells.

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Further, as described above in Section 1.6.11, the Watermaster manages groundwater in the Main San Gabriel Basin. The Watermaster administers and enforces the provisions of the Judgment and the responsibility for efficient management of the quantity and quality of the Basin's groundwater. Northrop Grumman and LPVCWD will seek and obtain approvals from Watermaster for the project as necessary, including Watermaster's review and administrative approval for operation of the extraction wells. Compliance with the Watermaster's regulations will further ensure that the Project will not substantially deplete groundwater supplies or interfere substantially with groundwater recharge.

(2) Regional Water Supply

The supply of groundwater in the Basin is affected by two different court judgments. With respect to the Main San Gabriel Basin, the water supplies within the Main Basin are sustained as necessary with replenishment of "supplemental water." Pursuant to the terms of the Judgment, the Watermaster determines annually the "operating safe yield" of the Basin, which is the amount of water may be pumped from the Basin each year without creating a replacement water obligation. Production in excess of this amount is replaced with water purchased from "Responsible Agencies," which supply supplemental water from either imported sources or recycled water sources. The Responsible Agencies are Upper San Gabriel Valley Municipal Water District (USGVMWD), San Gabriel Valley Municipal Water District and Three Valleys Municipal Water District.

The second Judgment concerns the San Gabriel River. The waters of the San Gabriel River are apportioned between the Main San Gabriel Basin (referred to as the Upper Basin) and the Central Basin (referred to as the Lower Basin) pursuant to the terms of the judgment in City of Long Beach vs. San Gabriel Valley Water Company, et al. (Los Angeles County Superior Court, 1964). Pursuant to that Judgment, the Upper Basin must provide on average a usable flow of 98,300 acre-feet per year to the Lower Basin. Usable flow is delivered as 1) supply on municipal systems in the Lower Basin from water pumped in the Upper Basin, 2) Surface flow across the Whittier Narrows that is recharged in the Central Basin, or 3) underground flow across the Whittier Narrows. If the flow from these sources is inadequate, then supplemental water either in the form of recycled water or as imported water is purchased by the Upper Basin for delivery to the Lower Basin.

Whether the production of contaminated groundwater by the IZ Interim Remedy Project would significantly impact the supply of groundwater in the Basin can also be determined by evaluating the end use of the treated groundwater produced by the IZ Interim Remedy Project. On a temporary basis during remedy start-up, system commissioning testing, and periodic system maintenance, the treated water may be discharged to San Jose Creek. The vast majority of that discharged water will recharge either the Main San Gabriel Basin or the lower Central Basin.

If water is recharged within the Main San Gabriel Basin, it effectively replaces the contaminated groundwater produced from the Basin by the IZ Interim Remedy Project. If the water recharges

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downstream in the lower Central Basin, it constitutes “usable flow” and satisfies a part of the adjudicated obligation of the Upper Area (e.g., the Main Basin) to the Lower Area. Under rare circumstances a small portion of such discharged water will not recharge into either basin and that water must be replaced by a Responsible Agency under the Main San Gabriel Judgment.

The treated water produced by the IZ Interim Remedy Project may be purchased by water agencies who are considered “overlying” parties under the Judgment. The overlying parties which may purchase water from the IZ Interim Remedy currently rely on groundwater sources to meet the vast majority of their demands. If they use water from the IZ Interim Remedy it would most likely reduce use of water from an alternative groundwater source. Accordingly, such a use would not increase regional demands for water nor increase total groundwater use. In this instance, the supply of water from the IZ Interim Remedy Project would have no effect on total water production nor total replenishment operations in the Basin. In the case of overlying users, San Gabriel VWC, City of Industry, LPVCWD or SWS, the water production would most often create a replenishment obligation for USGVMWD, but would offset a replenishment obligation for USGVMWD related to other existing groundwater production within the Basin. In rare instances, the availability of water from the IZ Interim Remedy might offset a shortage of groundwater available to a purveyor. In this case, the use of water from the IZ Interim Remedy would displace use of imported water by the purveyor. This does not increase total water use because the imported water otherwise used by the purveyor would be used for replenishment by the Watermaster of the groundwater produced by the Project.

Regardless of the end use of the treated groundwater, the IZ Interim Remedy Project will produce waste concentrate (“brine”). The groundwater flow intercepted by the IZ Interim Remedy Project has inorganic constituents in excess of the Basin plan and the aesthetic criteria for municipal water supplies. This high TDS water would, absent the Project, flow into the larger body of water in the central part of the Main Basin and blend with the lower TDS water. However, when intercepted in this manner, the high TDS of the pumped groundwater must be reduced in order to make beneficial use of the treated water, which will result in a waste concentrate stream from the RO treatment process (i.e., brine). That waste stream is conservatively estimated to be 226 gallons per minute per 2000gpm of water per 90% design. Replenishment of that amount of water is discussed in the subsection (3) below.

(3) Significance of Potential Impact on Water Supplies

Water that is lost during temporary surface water discharge and water that is discharged to the sewer from the RO treatment process will create a new regional demand on groundwater supply. This demand would be supplied by a Responsible Agency chosen by the Watermaster. The total increased use would be up to 110 acre-feet per year plus incidental losses during surface discharge. Each of the Agencies prepares an Urban Water Management Plan detailing its ability to meet existing obligations and future water demands. Those plans demonstrate that each of the agencies have adequate water supplies to meet future water demands, such as the future water demand of the Project. Further, the Judgment and the Watermaster Rules

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provide a legal framework aimed at assuring an adequate supply of water in the Basin. Based on compliance with that framework and the above technical analysis, the IZ Interim Remedy Project would not significantly impact the supply of water in the Basin.

In addition, the proposed Project would benefit the current groundwater supplies and recharge efforts by treating the contaminated groundwater and limiting migration of groundwater contamination in the PVOU. Potential impacts to groundwater supply or recharge would be less than significant.

- c) *Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?*

No Impact.

Impact Discussion

Pipelines would be constructed along public streets and rights-of-way and the treatment facility within a zoned industrial parcel, and would not permanently alter the drainage pattern of the area. Construction of the proposed Project would not alter the course of a stream or river; additionally, an erosion control plan would be developed and implemented for all the Project components, to minimize the potential for erosion or siltation on- or off-site. None of the proposed construction methods are anticipated to substantially increase the rate or amount of surface runoff, or result in flooding on- or off-site. Operation of the proposed Project would not affect the course of a stream or river. Therefore, no impact is anticipated.

- d) *Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?*

No Impact.

Impact Discussion

See impact discussion for c above.

- e) *Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?*

Less than Significant Impact.

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Impact Discussion

Operation of the proposed Project includes the treatment of groundwater to applicable water quality standards prior to discharge during the demonstration period. Additional sources of polluted runoff are not anticipated to occur. The proposed treatment facility would be built on a vacant lot and after construction the lot would be mostly paved with the exception of landscaping. During construction activities, erosion impacts could occur as a result of grading, excavation or building construction. Procurement of a Construction General Permit and development of an associated Stormwater Pollution Prevention Plan (SWPPP) would occur prior to construction to reduce the potential for soil erosion impacts or loss of topsoil and to develop preferential pathways for stormwater during construction.

Therefore, potential impacts to stormwater systems from increased runoff volumes or polluted runoff due to construction and operation of the proposed Project would be less than significant.

f) *Otherwise substantially degrade water quality?*

No Impact.

Impact Discussion

The proposed Project has been designed to not cause contamination in the IZ that could degrade the groundwater produced by nearby production wells. The proposed Project would benefit groundwater quality through extraction and treatment of contaminated groundwater and limiting migration of groundwater contamination in the PVOU. In accordance with the ESD and Consent Decree, the proposed Project would prevent migration of COPCs vertically into the Deep Zone and prevent COPCs in IZ groundwater from continuing to impact production wells in the PVOU area (the "B7 Well Field"). The proposed Project would intercept COPCs in the IZ groundwater up-valley of the B7 Well Field and therefore prevent further migration of COPCs. In addition, the proposed Project would decrease the existing downward hydraulic gradient between the IZ and the Deep Zone, thereby preventing vertical migration and potential water quality degradation of the Deep Zone. Finally, the concurrent operation of the SZ containment remedies, which will extract groundwater from the SZ, would prevent the migration of SZ groundwater into the IZ. The IZ Interim Remedy will comply with DDW requirements to ensure a safe supply of treated water, including by assessing the vulnerability of the groundwater to contaminating activities in the area.

Further, the IZ Interim Remedy Project is subject to approval by the Watermaster and USEPA. As discussed in Section 1.6 of this Initial Study, those approvals are subject to regulatory frameworks designed to avoid significant impacts to groundwater quality.

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The design of the IZ Interim Remedy Project and compliance with the USEPA's and Watermaster's regulatory programs will mitigate any potential impacts to groundwater quality by the IZ Interim Remedy Project.

Therefore, no impacts to substantially degrade water quality would be expected.

g) Place housing within a 100-year flood hazard area as mapped on a federal flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?

No Impact.

Impact Discussion

The proposed Project does not include the development/placement of housing; therefore, no impact is anticipated.

h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?

No Impact.

Impact Discussion

The proposed Project is not located within a 100-year flood hazard area; therefore, no structures would impede or redirect flood flows. No impact would occur as a result of construction and operation of the proposed Project.

i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?

Less than Significant Impact.

Impact Discussion

As noted above, the proposed Project components are located outside of the 100 year and 500 year floodplains. With the exception of the proposed well and associated water conveyance pipeline, proposed Project components are located outside of dam inundation areas. The well and associated water conveyance pipeline is located within the Puddingstone Dam Inundation Area. However, these Project facilities would not expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam. Potential impacts would be less than significant.

j) Inundation by seiche, tsunami, or mudflow?

No Impact.



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Impact Discussion

The proposed Project area is not subject to seiche- or tsunami-related inundation, as it is not located within the range of a seiche hazard zone or tsunami hazard zone. Therefore, there would be no impact from construction and operation of the proposed Project.

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3.10 LAND USE AND PLANNING

3.10.1 Setting

The Project is mainly located within area governed by the City of Industry's General Plan, although portions of the Project lie within La Puente and unincorporated Los Angeles County (City of Industry General Plan 2014a, La Puente General Plan 2004a).

With respect to the City of Industry's planning documents, the Project is located within the "Employment" land use designation of the City's General Plan and the City's Industrial (I) zone.

Based in the Letter dated June 23, 2015, signed by Brian James, Planning Director of the City of Industry on June 24, 2015, the proposed Project would be consistent with those land use designation and zoning in the City of Industry. The letter also indicates that the Project as proposed would not require a Conditional Use Permit.

In general, the Project is located near commercial, industrial, and institutional areas to the east, west and south, with residential areas to the north.

3.10.2 Impact Analysis

Issues	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
LAND USE AND PLANNING: Would the project:				
a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

a) *Physically divide an established community?*

No Impact.

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Impact Discussion

No new installation of wells or pipelines is proposed in residential areas. An existing IZ-East Extraction well is located within a residential area and an existing pipeline is located along 7th Avenue in a residential area. A portion of the proposed groundwater pipeline and the IZ-West Conveyance pipeline will be installed along E. Nelson Avenue. Residential areas are located on the northeastern side of E. Nelson Avenue; however, construction activities will be contained within the right-of-way of the street and will not physically divide an established community. The proposed treatment plant is located within an Industrial zone. All construction activities will be temporary in nature and will not permanently divide the community. Therefore, the proposed Project would have no impact on an established community.

- b) *Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?*

Less Than Significant Impact

Impact Discussion

The proposed Project would be compatible with the goals and policies of the City of Industry and La Puente General Plans (City of Industry General Plan 2014b; La Puente General Plan 2014d). Based on the letter dated June 23, 2015, signed by Brian James, Planning Director of the City of Industry; incorporated herein and attached hereto as Appendix B, the proposed Project has been found to be consistent with the City's applicable land use designation and zoning and does not require the approval of a Conditional Use Permit.

The City of Industry General Plan is intended to continue to be a business and employment hub accommodating uses such as manufacturing, assembly, machining, distribution, warehousing, retail, and offices. Institutional uses are also encouraged as needed to further accommodate the employment uses.

The City of La Puente General Plan is intended to create opportunities for new commercial business growth, preserve and enhance the quality of residential neighborhoods and infrastructure, and accommodate and attract industrial businesses. The proposed IZ-West Conveyance pipeline, groundwater pipeline, and brine pipeline will not impact business growth or reduce the quality of residential areas as these are proposed for underground installation along existing roads. The proposed IZ-West extraction well within an industrial zone of the City of Industry will not impact business growth as the well will be installed in an existing developed area that will not significantly reduce the acreage available for development. The proposed treatment plant is located within an Industrial zone and meets the overall goals and policies for uses within industrial zones for the City of Industry General Plan. Therefore, the proposed Project

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will result in a less than significant impact to any applicable land use plan, policy, or regulation of an agency with jurisdiction over the Project.

c) *Conflict with any applicable habitat conservation plan or natural community conservation plan?*

No Impact.

Impact Discussion

There are no HCPs, NCCPs, or any other local, regional, or state habitat conservation plans in the City of Industry or the City of La Puente (City of Industry General Plan Update Initial Study 2014b; City of La Puente General Plan 2014c). The nearest conservation plans are regional conservation plans in the County of Los Angeles. Because the pipeline located within unincorporated Los Angeles County is an existing pipeline and no new activity is proposed, County of Los Angeles conservation and regional conservation plans are not applicable. Therefore, the Project would not conflict with any applicable habitat conservation plan or natural community conservation plan; no impact would occur.

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3.11 MINERAL RESOURCES

3.11.1 Setting

There are currently no ordinances or plans governing mineral use within the City of Industry or the City of La Puente.

3.11.2 Impact Analysis

Issues	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
MINERAL RESOURCES: Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?

No Impact.

Impact Discussion

The proposed Project is not located within the vicinity of a known Mineral Resource Zone as designated by the County of Los Angeles and no Mineral Resource Zones are identified within the City of La Puente or City of Industry General Plans. Neither the construction nor operation of the proposed Project would result in a loss of availability of a known mineral source. Therefore, there are no impacts to known mineral resources from construction and operation of the proposed Project.

b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?

No Impact.

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Impact Discussion

As stated above, the proposed Project is not located in an area of known Mineral Resource Zone containing locally important mineral resources as designated by the County or Cities. Therefore, there are no impacts from the construction and operation of the proposed Project that would result in a loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan.

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3.12 NOISE

3.12.1 Setting

Noise is defined as unwanted sounds, and it is known to have several adverse effects on people, including hearing loss, speech and sleep interference, psychological responses, and annoyance. As a result, the federal government, the State of California, and local jurisdictions have established noise criteria to control noise and protect public health and safety.

The decibel (dB) is the preferred unit used to measure sound levels utilizing a logarithmic scale to account for large ranges in audible sound intensities. A general rule for the decibel scale is that a ten dB increase in sound is perceived as a doubling of loudness by the human ear. Environmental noise levels are typically stated in terms of decibels on the A-weighted scale (dBA). The A-weighted decibel (dBA) is a method of sound measurement which assigns weighted values to selected frequency bands in an attempt to reflect how the human ear responds to sound. The range of human hearing is from zero dBA (the threshold of hearing) to about 140 dBA which is the threshold of pain.

Existing Noise Sources

The City of Industry is devoted to industrial commercial uses, which are less sensitive to noise than other land uses. Existing sources of noise in the proposed Project area primarily originate from roadways and commercial or industrial land uses as well as the nearby rail line and helicopter pad on an intermittent basis. Traffic and truck noise is generated on regional and local roadways within the City of Industry. Stationary sources of noise include commercial and industrial equipment and activities. Industrial and warehousing operations are major noise sources in the City of Industry. In addition to onsite mechanical equipment, which generates noise, warehousing and industrial land uses generate substantial truck traffic, which results in additional noise on local roadways in the vicinity of industrial operations.

Nearby Sensitive Noise Receptors

The nearest sensitive receptors to the proposed water treatment plant site are residences located approximately 700 feet to the northeast. There are residences located north of and parallel to East Nelson Avenue adjacent to the proposed water conveyance pipelines. One of the two existing booster pump stations proposed to be upgraded with a replacement pump is located adjacent to residential land uses.

Noise Regulations

State of California Building Code. California's noise insulation standards are codified in the California Building Code and apply to new construction for the purpose of ensuring compatibility between interior and exterior noise sources.

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State of California Land Use Compatibility Criteria. Provides a tool to gauge the compatibility of new land uses relative to noise levels; identifies normally acceptable, conditionally acceptable designation acceptable and clearly unacceptable noise levels for various land uses.

City of Industry

City of Industry Municipal Code. The City of Industry regulates noise nuisances under Chapter 1.30, which addresses public nuisances; and under Chapter 17.12, which addresses noise from entertainment uses. The City does not have a Noise Ordinance prescribing maximum permissible noise levels. For CEQA analyses and corresponding mitigation recommendations, the City defers to the County of Los Angeles's Noise Ordinance.

City of Industry General Plan. The City incorporates the state mandated noise element into the Safety Element of the 2014 General Plan. The Safety Element includes the following goal and policies related to noise.

Goal

S6 An environment where noise does not adversely affect sensitive land uses.

Policies

- S6-1 Coordinate with Caltrans, San Gabriel Valley Council of Governments, Southern California Association of Governments, neighboring jurisdictions, and other transportation providers in the preparation and maintenance of transportation and land use plans to minimize noise impacts and provide appropriate mitigation measures.
- S6-2 Address noise impacts through the effective enforcement of the noise ordinance, project and environmental review, and compliance with state and federal noise standards.
- S6-3 Consider the noise levels likely to be produced by any new businesses or substantially expanded business activities locating near existing noise-sensitive uses such as schools, community facilities, and residences, as well as adjacent to established businesses involving vibration-sensitive activities.

Los Angeles County

County of Los Angeles Code

The County of Los Angeles regulates noise through the County Code, Title 12, Chapter 12.08 (Noise Control). Pursuant to the County Code, the county restricts noise levels generated at a property from exceeding certain noise levels for extended periods of time.

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Exterior Noise Standards

The county applies the Noise Control Ordinance standards summarized in the table below to non-transportation fans, blowers, pumps, turbines, saws, engines, and other like machinery. These standards do not gauge the compatibility of developments in the noise environment, but provide restrictions on the amount and duration of noise generated at a property, as measured at the property line of the noise receptor. The county's noise ordinance is designed to protect people from objectionable non-transportation noise sources such as music, construction activity, machinery, pumps, and air conditioners. The noise standards in Table 3.13-1 below, unless otherwise indicated, apply to all property within a designated noise zone.

Table 3.13-1 County of Los Angeles Exterior Noise Standards

Noise Zone	Time Period	Maximum Permissible Noise Level (dBA) ^{1,2}				
		L ₅₀	L ₂₅	L ₀₈	L ₀₂	L _{max}
Noise-Sensitive Area	Anytime	45	50	55	60	65
Residential Properties	10pm to 7am	45	50	55	60	65
	7am to 10pm	50	55	60	65	70
Commercial Properties	10pm to 7am	55	60	65	70	75
	7am to 10pm	60	65	70	75	80
Industrial Properties	Anytime	70	75	80	85	90

Source: County of Los Angeles Municipal Code, Section 12.08.390.

Notes:

1. L₅₀, L₂₅, L₀₈, L₀₂ = the A-weighted noise levels that are exceeded 50 %, 25 %, 8 %, and 2 % of the time during the measurement period. L_{max} = the A-weighted maximum noise level during the measurement period.
2. According to Section 12.08.390, if the ambient noise levels exceed the exterior noise standards in the above table, then the ambient noise level becomes the noise standard. If the source of noise emits a pure tone or impulsive noise, the exterior noise levels limits shall be reduced by five decibels.
3. If the measurement location is on a boundary property between two different zones, the noise limit shall be the arithmetic mean of the maximum permissible noise level limits of the subject zones; except when an intruding noise source originates on an industrial property and is impacting another noise zone, the applicable exterior noise level shall be the daytime exterior noise level for the subject receptor property.

Construction Noise

The County prohibits the operation of any tools or equipment used in construction, drilling, repair, alteration, or demolition work between weekday hours of 7 PM and 7 AM, or at any time on Sundays or holidays, such that the sound therefrom creates a noise disturbance across a residential or commercial real-property line, except for emergency work of public service utilities or by variance. Table 3.13-2 summarizes the County's maximum noise levels that may not be exceeded during construction activities.

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Table 3.13-2 County of Los Angeles Construction Noise Limits

	Single-Family Residential	Multi-Family Residential	Semi-Residential/Commercial
Mobile Equipment. Maximum noise levels for nonscheduled, intermittent, short-term operation (less than 10 days) of mobile equipment			
Daily, except Sundays and legal holidays, 7 AM to 8 PM	75 dbA	80 dbA	85 dbA
Daily, 8 PM to 7 AM and all day Sunday and legal holidays	60 dbA	64 dbA	70 dbA
Stationary Equipment. Maximum noise level for repetitively scheduled and relatively long-term operation (periods of 10 days or more) of stationary equipment			
Daily, except Sundays and legal holidays, 7 AM to 8 PM	60 dBA	65 dBA	70 dBA
Daily, 8 PM to 7 AM and all day Sunday and legal holidays	50 dBA	55 dBA	60 dBA
Source: County of Los Angeles Municipal Code, Section 12.08.440.			

3.12.2 Impact Analysis

Issues	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
<u>NOISE:</u> Would the project:				
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Exposure of persons to or generation of excessive ground borne vibration or ground borne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) For a project located within an airport land	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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Issues	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the Project Area to excessive noise levels?				
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the Project Area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

a) *Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?*

Less than Significant Impact.

Impact Discussion

Noise would be generated during proposed Project construction primarily from operating conventional construction equipment associated with well drilling, pipeline installation, water treatment plant installation, and new pump station installation. Only pipeline installation occur in close proximity to sensitive receptors. Construction activities would occur between the hours of 7 AM to 7 PM, unless otherwise approved through variance or as an encroachment permit condition. Pipeline installation would progress in a linear manner with construction activities taking place at one location for short time periods. However, some portions of the pipe may be installed in sections that are not consistently linear. This would allow for installation at times when construction is already taking place within the City of industry and provides an opportunity of installation. Construction of a new pump station is expected to produce minimal noise over a short-term duration.

Operation phase noise would include activities associated with the water treatment plant and pump station. The pipelines will be installed in the subsurface and will not generate any noise during operation. As noted above, the water treatment plant site is located within an industrial area removed from nearby sensitive noise receptors as is the new pump station.

Considering the above, the proposed Project would not expose persons to or generate noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies. Potential impacts would be less than significant.

b) *Exposure of persons to or generation of excessive ground borne vibration or ground borne noise levels?*



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Less than Significant Impact.

Impact Discussion

As discussed above in response to impact discussion a), only pipeline installation will occur in close proximity to sensitive receptors. This activity does not involve sources of substantial ground borne vibration such as the use of impact devices or a substantial number of tracked off-road equipment. Project operation does not include any source of excessive ground borne vibration. Therefore, exposure of persons to or generation of excessive ground borne vibration or ground borne noise levels would have a less than significant impact.

- c) *A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?*

Less than Significant Impact.

Impact Discussion

Operation of the proposed water treatment plant, and pump station would not include noise sources that would be expected to substantially increase ambient noise levels in the project vicinity above levels existing without the project. Therefore, impacts are expected to be less than significant.

- d) *A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?*

Less than Significant Impact.

Impact Discussion

See response to impact discussion a).

- e) *For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the Project Area to excessive noise levels?*

No Impact.

Impact Discussion

The proposed Project is not located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport and would not expose people residing or working in the Project area to excessive noise levels; therefore, no impact would occur as a result of construction or operation of the proposed Project.

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f) *For a project within the vicinity of a private airstrip, would the project expose people residing or working in the Project Area to excessive noise levels?*

Less than Significant Impact.

Impact Discussion

The proposed Project is not located within the vicinity of a private airstrip but is located near the City of Industry Civic Financial Center Heliport at the intersection of Hudson Avenue and Stafford Street (adjacent to the proposed water treatment plant site). Water treatment plant personnel may be exposed to noise from adjacent helicopter operations. However, the noise from infrequent helicopter operations would not be expected to exceed the industrial noise zone standards shown in Table 3.13-2. The proposed Project would not expose people residing or working in the Project area to excessive noise levels from a private airstrip and potential impacts would be less than significant.

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3.13 POPULATION AND HOUSING

3.13.1 Setting

According to the City of Industry Population and Housing Section of the General Plan EIR, the Southern California Association of Governments reports a population of less than 500 (219) residents in 2010 for the City (City of Industry, 2014d). The City of Industry was founded with the intent of providing an environment for industry and commerce to thrive without conflicting with sensitive land uses, such as residential. The City's General Plan and Zoning Code do not designate any land for residential use: only 57 dwelling units and two group homes currently exist within the City, and these are considered legal nonconforming uses (City of Industry, 2014e). According to the City of La Puente General Plan, the California Department of Finance reports a population of 42,650 in 2013 for the City (City of La Puente, 2014c).

3.13.2 Impact Analysis

Issues	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
POPULATION AND HOUSING: Would the project:				
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

a) *Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?*

Less than Significant Impact.

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Impact Discussion

The Project does not include new construction, including but not limited to, residential, commercial, or manufacturing uses that would have the potential to induce population growth in the area. It is anticipated that the work force needed to support construction and operation of the proposed Project would come from the region and not substantially increase the population of the area. Upon completion of the construction phase of the Project reclaimed treated water will be distributed to additional water agencies by LPVCWD. This potable water will serve as an additional source of potable water to help meet existing water demand and would not result in substantial population growth. Potential impacts would be less than significant.

b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?

No Impact.

Impact Discussion

The proposed Project does not include any components that would cause the displacement of substantial numbers of existing housing, or necessitate the construction of replacement housing. No Impact to existing housing would occur as a result of the Project.

c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

No Impact.

Impact Discussion

The proposed Project does not include any components that would cause the displacement of a substantial number of people, or necessitate the construction of replacement housing. No Impact associated with the displacement of people would occur as a result of the Project.

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3.14 PUBLIC SERVICES

3.14.1 Setting

Growth and development can directly impact the delivery of critical city services to residents, visitors and workers. Public Services throughout the Cities of Industry and La Puente include law enforcement, fire protection, schools and medical facilities.

The County of Los Angeles Fire Department and Los Angeles County Sheriff's Department cover both the City of Industry and La Puente for law enforcement and fire protection, respectively.

The City of Industry has one High School and one middle School within the City limits. William Workman High School, 16030 East Temple Avenue and Torch Middle School located at 751 North Vineland Avenue.

The City of Industry maintains two 18-hole golf courses. The City of La Puente maintains two parks; La Puente Park and the Puente Creek Nature Education Center.

3.14.2 Impact Analysis

Issues	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
<u>PUBLIC SERVICES:</u> Would the project:				
a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impact, in order to maintain acceptable service ratios for any of the public services:				
Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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- a) *Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impact, in order to maintain acceptable service ratios for any of the public services:*
- i. Fire protection?
 - ii. Police protection?
 - iii. Schools?
 - iv. Parks?
 - v. Other public facilities?

No Impact.

Impact Discussion

The proposed Project would not induce an increase in population or create structures that would result in an increased need for any of the public services listed above (i.e., fire protection, public, schools, parks, or other public facilities). Creation of an additional extraction well and a water treatment plant, including associated conveyance infrastructure will require construction workers that may require public services while staying in the area; however, this increase would be minimal and temporary. Current emergency services would be sufficient to cover an incremental increase in demand for emergency, criminal and firefighting services associated with the proposed Project without then need to alter existing or construct new public service facilities. Since the Project would not permanently increase the population of the surrounding area there would be no impacts associated with an increased need for schools in the area. The proposed Project would not conflict with any policies and goals set for in the City of Industry and City of La Puente General Plans. As the proposed Project would not require the provision of new or physically altered governmental facilities, no impact would occur.

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3.15 RECREATION

3.15.1 Setting

As a largely developed, business-oriented City with a limited population, the City of Industry does not serve the recreational needs of a residential base. The City does not have a department devoted exclusively to recreation and does not maintain developed “parks” in a traditional sense. However, this does not mean that the City is void of recreational or green areas. The City of Industry has approximately 790 acres of land designated for recreation and open space, including two private golf courses, the Pacific Palms Resort, a former Duck Farm property, and a privately held open area for the Wildwood Mobile Home Park (City of Industry General Plan, 2014b).

The primary recreational facility in the City of La Puente is La Puente Park. The park is approximately 22 acres and is bordered by Glendora, Temple Avenue and Hacienda Boulevard. The City has approximately 0.57 acres of park space for every 1,000 residents (La Puente General Plan, 2004b).

The proposed Project does not fall within any areas designated by a General Plan as recreational or open space.

3.15.2 Impact Analysis

Issues	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
<u>RECREATION:</u> Would the project:				
a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

a) *Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?*

No Impact.



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Impact Discussion

The proposed Project does not involve any component that would increase the use of parks or recreation facilities. No Impacts associated with the increased use or substantial physical deterioration of existing neighborhoods, regional parks or other recreational facilities would occur as a result of the Project.

b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

No Impact.

Impact Discussion

The proposed Project does not include recreational facilities or require the construction or expansion of recreation facilities which might have an adverse physical effect on the environment. No impacts would occur.

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3.16 TRANSPORTATION AND TRAFFIC

3.16.1 Setting

For purposes of this section, the public roadway network surrounding the proposed Project is referred to as the Project area. The Project area is served by an extensive transportation system, including major freeways, highways, airport, and rail facilities. The proposed Project includes an approximately 4,500 foot-long, six-inch diameter high density polyethylene wastewater pipeline that would cross an active Union Pacific Railroad line/railroad right-of-way (ROW). The Project area is not located within an airport land use plan or within two miles of a private airstrip or public use airport.

The Metropolitan Transportation Authority (Metro) serves as the Congestion Management Agency (CMA) for Los Angeles County. State statute requires that a congestion management program be developed, adopted and updated biennially for every county that includes an urbanized area and shall include every city and the county government within that county. The CMA is responsible for developing, adopting, and updating the Congestion Management Program (CMP).

The CMP became effective with the passage of Proposition 111 in 1990 and it addresses the impact of local growth on the regional transportation system. The first CMP for Los Angeles County was adopted in 1992. Statutory elements of the CMP include Highway and Roadway System monitoring, multi-modal system performance analysis, the Transportation Demand Management Program, the Land Use Analysis Program and local conformance for all the county's jurisdictions.

On October 28, 2010, the Metro Board adopted the 2010 CMP for Los Angeles County. The 2010 CMP summarizes the results of 18 years of CMP highway and transit monitoring and 15 years of monitoring local growth. CMP implementation guidelines for local jurisdictions are also contained in the 2010 CMP.

The Regional Transportation Plan (RTP) is a component of the Regional Comprehensive Plan and Guide prepared by SCAG to address regional issues, goals, objectives, and policies for the Southern California region. The RTP sets broad goals for the region and provides strategies to reduce issues related to congestion and mobility. The RTP program helps to implement the Circulation Element of the City of Industry's General Plan.

The Circulation Element of the City of Industry General Plan (City of Industry, June 2014) governs circulation, infrastructure, and maintenance of roadway levels of service. The standard measure used to gauge traffic congestion is Level of Service (LOS). LOS uses field data (volume-to-capacity [V/C] ratios) to report the flow and mobility of vehicles along road segments and delays at intersections. LOS is then rated from "A", indicating free-flow traffic and minimal delays, to "F", indicating traffic exceeding capacity, with stop-and-go gridlock. The City of

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Industry's Circulation Element Policy C1-2 is to "Maintain a peak-hour LOS D at intersections identified on the Roadway Classification Plan." State maintained roadways within the project area are within the California Department of Transportation (Caltrans) District 7 jurisdiction. The Circulation element identifies that any modifications to the State maintained roadways will require approval from Caltrans. The City of Industry does not have established truck routes within the City.

3.16.2 Impact Analysis

The following roadway has the potential to be impacted by conveyance pipelines that may be constructed to augment the existing water conveyance infrastructure:

1. East Nelson Avenue public road rights-of-way between intersections with Workman Mill Road/North Puente and California Avenues, Mason Way or similar;
2. Stafford Street and North Unruh Avenue public road rights-of-way or similar;
3. The public road right-of-way at the intersection of East Nelson and California Avenues;
4. Hudson Avenue public road right-of-way; south west of Hudson Avenue and Stafford Street; and
5. Valley Boulevard, Proctor Avenue and Parriott Place public road rights-of-way;

The construction period of the proposed Project is short-term (approximately 18 months) which would have temporary minor alterations to the current traffic patterns. The proposed Project includes the installation of pipeline conveyance within the public road right-of-way alignment. Encroachment permits are required for access within the public road right-of-way. They will be processed through the City of Industry and the City of La Puente as appropriate.

Issues	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
<u>TRANSPORTATION AND TRAFFIC:</u> Would the project:				
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

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Issues	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?				
b) Conflict with an applicable congestion management program, including but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
g) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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- a) *Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?*

Less than Significant Impact.

Impact Discussion

The construction period of the proposed Project is short-term (approximately 18 months) which would have temporary minor alterations to the current traffic patterns. The proposed Project includes the installation of pipeline conveyance and extraction wells within the public road right-of-way alignment. Encroachment permits are required for access within the public road right-of-way. The encroachment permits will stipulate road or lane closure requirements, work hours, and roadway accessibility. The construction work area associated with the installation of the pipelines would consist of an area approximately one to two traffic lanes in width within a short street block length. A section of the roadway would be temporarily blocked (per the Work Area Traffic Control Handbook (WATCH Manual) and the encroachment permit) as the installation of the pipeline progresses along the public road right-of-way. After the pipeline is installed and the open hole or trench is backfilled and paved, the section of roadway would reopen. The size of the work area would be limited to maintain through traffic in accordance with the stipulations dictated in the encroachment permits.

The changes to traffic patterns and service during the construction phase would be temporary and limited to the immediate area in which construction activities are occurring and are therefore not expected to significantly affect traffic flow. All physical changes to traffic patterns, (i.e., lane closures) would be coordinated with local jurisdictions and /or METRO, as appropriate, to minimize impacts to motorists, public transportation patrons, and pedestrians.

Worst case construction of the proposed Project, which includes the construction of both the well/pipeline and new treatment components occurring at the same time, would cause approximately 36 additional construction related vehicles (e.g., equipment, worker vehicles, and haul trucks) to be added to the street system throughout a day. The addition of approximately 36 vehicles throughout a day, during a worst-case construction scenario, is not anticipated to result in a substantial increase in traffic that would result in congestion with the affected street system.

Operation of the proposed Project would generate up to 16 additional daily vehicle trips (e.g., worker vehicles) to be added to the street system throughout a day.

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No significant adverse environmental impacts associated with traffic load or congestion is anticipated to result from construction and operation of the Proposed Project. Therefore, impacts are considered to be less than significant.

b) Conflict with an applicable congestion management program, including but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?

Less than Significant Impact.

Impact Discussion

The CMP was created statewide as a result of Proposition 111 and has been implemented locally by the Metropolitan Transportation Authority (Metro). The latest CMP was reviewed to determine whether any of the roadways within the Project area are part of the facilities designated within the CMP highways and roadway system. None of the roadways within the vicinity of the proposed Project were found to be included with the CMP system. During construction, haul routes would include surrounding highways, all of which are within the CMP. However, construction activities would not add enough peak-hour trips to the existing CMP system to trigger further analysis as set forth by the CMP. Therefore, potential impacts would be less than significant.

c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?

Less Than Significant Impact With Mitigation Incorporated.

Impact Discussion

The proposed Project would not generate air traffic. The proposed treatment plant location is across the street from City of Industry Civic Financial Center Heliport at the intersection of Hudson Avenue and Stafford Street. The heliport is owned by the Successor Agency and is used by the Los Angeles County Sheriff's Department. Construction and operation of the water treatment plant has the potential to adversely affect heliport operation, particularly if proposed structures exceed safe height limits determined by the FAA. This is a potentially significant impact.

Mitigation Measures

3.16-1: Federal Aviation Administration Coordination

Northrop Grumman will coordinate with the FAA during the treatment plant design process and complete the required notifications, as applicable. The FAA will evaluate and determine if the

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treatment plant structures pose a hazard to air navigation. The FAA may provide limits and will determine if obstruction marking and/or lighting are necessary.

Residual Impacts

Mitigation Measure 3.16-1 would require Northrop Grumman to implement applicable limits and marking/lighting identified by FAA to ensure potential hazards to air navigation are mitigated. Residual impacts would therefore be less than significant with mitigation incorporated.

d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

No Impact.

Impact Discussion

Construction of the proposed Project would temporarily alter existing street/traffic patterns within sections of roadway within the Project area. These temporary changes to traffic patterns and service during the construction phase would be temporary and limited to the immediate area in which construction activities are occurring. All physical changes to traffic patterns (i.e., lane closures) would be coordinated with local jurisdictions and/or Metro, as appropriate, to minimize impacts to motorists, public transportation patrons, and pedestrians. No design features (e.g. sharp curves or dangerous intersections) or incompatible uses are proposed as part of the operation of the proposed Project. The proposed project includes the use of heavy duty trucks during construction and periodically during operation (primarily for equipment/materials deliveries and periodic waste disposal activities). The City of Industry does not have any roadway restrictions for trucks operating in the City.

No significant adverse environmental impacts associated with an increase of hazards due to a design feature are anticipated to result from construction and operation of the proposed Project. Therefore, there would be no impact.

e) Result in inadequate emergency access?

Less than Significant Impact.

Impact Discussion

The Project does not include any component that would result in inadequate emergency access to the site or surrounding areas. All physical changes to traffic patterns, (i.e., lane closures) would be coordinated with local jurisdictions and/or Metro, as appropriate, to minimize impacts to motorists, public transportation patrons, and pedestrians. In addition, construction activities performed within public streets would be coordinated with local police and fire protection services, and carried out in accordance with all applicable local emergency access

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standards, such that any temporary lane closures would not significantly impact emergency services.

No significant adverse environmental impacts associated with inadequate emergency access are anticipated to result from construction and operation of the Proposed Project. Therefore, impacts would be less than significant.

f) *Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?*

No Impact.

Impact Discussion

The proposed Project would not involve elements that conflict with adopted policies supporting alternative transportation. Therefore, no impacts to alternative transportation would result from the proposed Project and no mitigation is required.

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3.17 UTILITIES AND SERVICE SYSTEMS

3.17.1 Setting

The proposed Project, located within the Cities of Industry and La Puente, is based on an Interim Record of Decision by the USEPA to contain and treat chemicals of potential concern (COPCs) within the groundwater of the Puente Basin. Therefore, the entire project is based on treatment, supply, and supply of treatment water to one water purveyor and within the requirements of the USEPA, other regulatory agencies, and regional ordinances and general plans.

3.17.2 Impact Analysis

Issues	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
UTILITIES AND SERVICE SYSTEMS: Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
g) Comply with federal, state, and local statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

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- a) *Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?*

Less than Significant Impact.

Impact Discussion

The proposed Project would generate treated water that would be temporarily discharged to San Jose Creek during remedy start up, system shake down, and periodic system maintenance. The water treatment system has been designed to meet surface discharge limits. Brine waste would be conveyed through an industrial line to an existing LACSD facility for treatment. Potential impacts would be less than significant.

- b) *Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?*

Less than Significant Impact.

Impact Discussion

One of the project objectives is to construct and operate a new water treatment facility. The potential environmental impacts of this Project component are analyzed throughout Section 3.0 of this Initial Study. The proposed Project would not require or result in the construction of new wastewater treatment facilities or expansion of wastewater facilities, the construction of which could cause significant environmental effects. The Project would require the extension of an existing brine line to connect to existing facilities. However, the limited brine waste produced as a byproduct of the water treatment system will be conveyed to an existing LACSD facility for treatment. The treatment volume demand is expected to be within LACSD treatment capacity. Impacts would be less than significant.

- c) *Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?*

No Impact.

Impact Discussion

The proposed Project would require an adjacent connection to an existing storm water drainage facility for the temporary discharge to San Jose creek of treated ground water during remedy start-up, system shake-down, and periodic system maintenance. The proposed Project does not include a component that would require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects. No impact would occur.



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d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?

No Impact.

Impact Discussion

For the reasons discussed in Section 3.9 of this Initial Study, the Project would not cause a significant impact to water supplies.

(e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

Less than Significant Impact.

Impact Discussion

Limited brine waste produced as a byproduct of the water treatment system will be conveyed to an existing LACSD facility for treatment. The treatment volume demand is expected to be within LACSD treatment capacity. Potential impacts would be less than significant.

The Project is expected to have one restroom. The sewer line lateral from the restroom will connect to existing lines that previously served many restrooms and are expected to be more than adequate to serve the one proposed restroom.

e) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?

Less than Significant Impact.

Impact Discussion

Construction and operation of the proposed Project would generate minimal solid waste. Potential impacts would be less than significant.

f) Comply with federal, state, and local statutes and regulations related to solid waste?

Less than Significant Impact.

Impact Discussion

Construction and operation of the proposed Project would generate minimal solid waste such as resin, carbon etc. Such waste would be handled in accordance with applicable regulatory requirements. Potential impacts would be less than significant.



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3.18 MANDATORY FINDINGS OF SIGNIFICANCE

- a. *Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?*

The Project does not have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory.

- b. *Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)*

There are no past projects, the effects of current projects or the effects of probable future projects that when considered with this project would be cumulatively considerable.

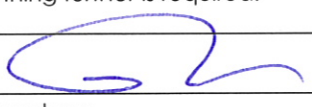
- c. *Does the project have environmental effects, which will cause substantial adverse effects on human beings, either directly or indirectly?*

The Project does not have any environmental effects, which will cause substantial adverse effects on human beings, either directly or indirectly.

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DETERMINATION
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4.0 DETERMINATION

ENVIRONMENTAL DETERMINATION	
On the basis of this initial evaluation: I find that the proposed Puente Valley Operable Unit, Interim Zone Remedy Project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.	<input type="checkbox"/>
I find that although the proposed Puente Valley Operable Unit, Intermediate Zone Remedy Project could have a significant effect on the environment, there will not be a significant effect in this case because the mitigation measures described on an attached sheet have been added to the project. A MITIGATED NEGATIVE DECLARATION will be prepared. Attached Mitigation Measures and Monitoring Program.	<input checked="" type="checkbox"/>
I find that the proposed Puente Valley Operable Unit, Interim Zone Remedy Project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.	<input type="checkbox"/>
I find that the proposed Puente Valley Operable Unit, Interim Zone Remedy Project MAY have a significant effect on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets, if the effect is a "potentially significant impact" or "potentially significant unless mitigated." An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.	<input type="checkbox"/>
I find that although the proposed Puente Valley Operable Unit, Interim Zone Remedy Project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION , nothing further is required.	<input type="checkbox"/>
 Signature: _____	11-14-17 Date: _____

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LIST OF PREPARERS
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5.0 LIST OF PREPARERS

Quality Assurance / Quality Control	Michael Weber	Stantec Consulting Services Inc.
Project Manager	Kurt Schlyer	Stantec Consulting Services Inc.
Assistant Project Manager	StephAnnie Roberts	Stantec Consulting Services Inc.
Document Management	StephAnnie Roberts	Stantec Consulting Services Inc.
Graphics Design	Hubert Switalski	Stantec Consulting Services Inc.
Aesthetics	Kristin Smith	Stantec Consulting Services Inc.
Agriculture and Forestry Resources	Thomas Fardig	Stantec Consulting Services Inc.
Air Quality	Michael Weber	Stantec Consulting Services Inc.
Biological Resources	Kristin Smith	Stantec Consulting Services Inc.
Cultural Resources	Julie Broughton	Stantec Consulting Services Inc.
Geology and Soils	Julie Broughton	Stantec Consulting Services Inc.
Greenhouse Gas Emissions	Michael Weber	Stantec Consulting Services Inc.
Hazards and Hazardous Materials	StephAnnie Roberts	Stantec Consulting Services Inc.
Hydrology and Water Quality	StephAnnie Roberts	Stantec Consulting Services Inc.
Land Use and Planning	Kurt Schlyer/Kristin Smith	Stantec Consulting Services Inc.
Mineral Resources	Julie Broughton	Stantec Consulting Services Inc.
Noise	StephAnnie Roberts	Stantec Consulting Services Inc.
Population and Housing	Thomas Fardig	Stantec Consulting Services Inc.
Public Services	Thomas Fardig	Stantec Consulting Services Inc.
Recreation	Thomas Fardig	Stantec Consulting Services Inc.
Transportation and Traffic	Kristy Edblad	Stantec Consulting Services Inc.
Utilities and Service System	Julie Broughton	Stantec Consulting Services Inc.

**NORTHROP GRUMMAN SYSTEMS CORPORATION PUENTE VALLEY OPERABLE UNIT, INTERMEDIATE
ZONE INTERIM REMEDY PROJECT DRAFT INITIAL STUDY/MITIGATED NEGATIVE DECLARATION**

LIST OF PREPARERS
November 13, 2017

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Appendix A Project Emissions Estimates
November 13, 2017

Appendix A PROJECT EMISSIONS ESTIMATES

PVOU IZ Iterim Remedy - Water Treatment Plant - Los Angeles-South Coast County, Annual

PVOU IZ Iterim Remedy - Water Treatment Plant
Los Angeles-South Coast County, Annual

1.0 Project Characteristics**1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	79.38	1000sqft	1.82	79,384.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	33
Climate Zone	9			Operational Year	2020
Utility Company	Southern California Edison				
CO2 Intensity (lb/MW hr)	702.44	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Treatment plant lot = 79,384 square feet

Construction Phase -

Vehicle Trips - 16 workers/day during operation. Trip rate = $16/79.384 = \text{trip rate}/1,000 \text{ ft}^2/\text{day} = 0.20$

Area Coating -

Table Name	Column Name	Default Value	New Value
tblProjectCharacteristics	OperationalYear	2018	2020
tblVehicleTrips	ST_TR	1.32	0.20
tblVehicleTrips	SU_TR	0.68	0.20
tblVehicleTrips	WD_TR	6.97	0.20

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2018	0.2940	2.0288	1.6728	3.0700e-003	0.0610	0.1129	0.1738	0.0202	0.1087	0.1289	0.0000	264.2408	264.2408	0.0439	0.0000	265.3380
Maximum	0.2940	2.0288	1.6728	3.0700e-003	0.0610	0.1129	0.1738	0.0202	0.1087	0.1289	0.0000	264.2408	264.2408	0.0439	0.0000	265.3380

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2018	0.2940	2.0288	1.6728	3.0700e-003	0.0610	0.1129	0.1738	0.0202	0.1087	0.1289	0.0000	264.2406	264.2406	0.0439	0.0000	265.3378
Maximum	0.2940	2.0288	1.6728	3.0700e-003	0.0610	0.1129	0.1738	0.0202	0.1087	0.1289	0.0000	264.2406	264.2406	0.0439	0.0000	265.3378

[illegible]

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	1-1-2018	3-31-2018	0.7014	0.7014
2	4-1-2018	6-30-2018	0.7148	0.7148
3	7-1-2018	9-30-2018	0.7226	0.7226
		Highest	0.7226	0.7226

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.3237	1.0000e-005	1.0200e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.9700e-003	1.9700e-003	1.0000e-005	0.0000	2.1000e-003
Energy	7.7700e-003	0.0707	0.0594	4.2000e-004		5.3700e-003	5.3700e-003		5.3700e-003	5.3700e-003	0.0000	362.9988	362.9988	0.0133	3.8500e-003	364.4794
Mobile	6.5900e-003	0.0357	0.1004	3.4000e-004	0.0267	3.5000e-004	0.0270	7.1500e-003	3.2000e-004	7.4800e-003	0.0000	30.9879	30.9879	1.6900e-003	0.0000	31.0301
Waste						0.0000	0.0000		0.0000	0.0000	19.9804	0.0000	19.9804	1.1808	0.0000	49.5006
Water						0.0000	0.0000		0.0000	0.0000	5.8237	76.1574	81.9811	0.6013	0.0148	101.4162
Total	0.3381	0.1064	0.1607	7.6000e-004	0.0267	5.7200e-003	0.0324	7.1500e-003	5.6900e-003	0.0129	25.8041	470.1461	495.9502	1.7971	0.0186	546.4283

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.3237	1.0000e-005	1.0200e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.9700e-003	1.9700e-003	1.0000e-005	0.0000	2.1000e-003

Energy	7.7700e-003	0.0707	0.0594	4.2000e-004		5.3700e-003	5.3700e-003		5.3700e-003	5.3700e-003	0.0000	362.9988	362.9988	0.0133	3.8500e-003	364.4794
Mobile	6.5900e-003	0.0357	0.1004	3.4000e-004	0.0267	3.5000e-004	0.0270	7.1500e-003	3.2000e-004	7.4800e-003	0.0000	30.9879	30.9879	1.6900e-003	0.0000	31.0301
Waste						0.0000	0.0000		0.0000	0.0000	19.9804	0.0000	19.9804	1.1808	0.0000	49.5006
Water						0.0000	0.0000		0.0000	0.0000	5.8237	76.1574	81.9811	0.6013	0.0148	101.4162
Total	0.3381	0.1064	0.1607	7.6000e-004	0.0267	5.7200e-003	0.0324	7.1500e-003	5.6900e-003	0.0129	25.8041	470.1461	495.9502	1.7971	0.0186	546.4283

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/1/2018	1/2/2018	5	2	
2	Grading	Grading	1/3/2018	1/8/2018	5	4	
3	Building Construction	Building Construction	1/9/2018	10/15/2018	5	200	
4	Paving	Paving	10/16/2018	10/29/2018	5	10	

Acres of Grading (Site Preparation Phase): 1

Acres of Grading (Grading Phase): 1.5

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	1	7.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Grading	Graders	1	6.00	187	0.41
Grading	Rubber Tired Dozers	1	6.00	247	0.40
Grading	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Building Construction	Cranes	1	6.00	231	0.29
Building Construction	Forklifts	1	6.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Paving	Pavers	1	6.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	3	8.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	3	8.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	33.00	13.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	13.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
--	-----	-----	----	-----	---------------	--------------	------------	----------------	---------------	-------------	----------	-----------	-----------	-----	-----	------

Category	tons/yr										MT/yr					
Fugitive Dust					5.8000e-003	0.0000	5.8000e-003	2.9500e-003	0.0000	2.9500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.8100e-003	0.0208	8.0800e-003	2.0000e-005		9.5000e-004	9.5000e-004		8.8000e-004	8.8000e-004	0.0000	1.5743	1.5743	4.9000e-004	0.0000	1.5866
Total	1.8100e-003	0.0208	8.0800e-003	2.0000e-005	5.8000e-003	9.5000e-004	6.7500e-003	2.9500e-003	8.8000e-004	3.8300e-003	0.0000	1.5743	1.5743	4.9000e-004	0.0000	1.5866

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.0000e-005	4.0000e-005	4.1000e-004	0.0000	9.0000e-005	0.0000	9.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0871	0.0871	0.0000	0.0000	0.0872
Total	4.0000e-005	4.0000e-005	4.1000e-004	0.0000	9.0000e-005	0.0000	9.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0871	0.0871	0.0000	0.0000	0.0872

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					5.8000e-003	0.0000	5.8000e-003	2.9500e-003	0.0000	2.9500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.8100e-003	0.0208	8.0800e-003	2.0000e-005		9.5000e-004	9.5000e-004		8.8000e-004	8.8000e-004	0.0000	1.5743	1.5743	4.9000e-004	0.0000	1.5866

Total	1.8100e-003	0.0208	8.0800e-003	2.0000e-005	5.8000e-003	9.5000e-004	6.7500e-003	2.9500e-003	8.8000e-004	3.8300e-003	0.0000	1.5743	1.5743	4.9000e-004	0.0000	1.5866
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Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.0000e-005	4.0000e-005	4.1000e-004	0.0000	9.0000e-005	0.0000	9.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0871	0.0871	0.0000	0.0000	0.0872
Total	4.0000e-005	4.0000e-005	4.1000e-004	0.0000	9.0000e-005	0.0000	9.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0871	0.0871	0.0000	0.0000	0.0872

3.3 Grading - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					9.8300e-003	0.0000	9.8300e-003	5.0500e-003	0.0000	5.0500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.9900e-003	0.0341	0.0135	3.0000e-005		1.5900e-003	1.5900e-003		1.4600e-003	1.4600e-003	0.0000	2.5787	2.5787	8.0000e-004	0.0000	2.5988
Total	2.9900e-003	0.0341	0.0135	3.0000e-005	9.8300e-003	1.5900e-003	0.0114	5.0500e-003	1.4600e-003	6.5100e-003	0.0000	2.5787	2.5787	8.0000e-004	0.0000	2.5988

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.0000e-005	8.0000e-005	8.2000e-004	0.0000	1.8000e-004	0.0000	1.8000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.1742	0.1742	1.0000e-005	0.0000	0.1744
Total	9.0000e-005	8.0000e-005	8.2000e-004	0.0000	1.8000e-004	0.0000	1.8000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.1742	0.1742	1.0000e-005	0.0000	0.1744

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					9.8300e-003	0.0000	9.8300e-003	5.0500e-003	0.0000	5.0500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.9900e-003	0.0341	0.0135	3.0000e-005		1.5900e-003	1.5900e-003		1.4600e-003	1.4600e-003	0.0000	2.5787	2.5787	8.0000e-004	0.0000	2.5988
Total	2.9900e-003	0.0341	0.0135	3.0000e-005	9.8300e-003	1.5900e-003	0.0114	5.0500e-003	1.4600e-003	6.5100e-003	0.0000	2.5787	2.5787	8.0000e-004	0.0000	2.5988

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.0000e-005	8.0000e-005	8.2000e-004	0.0000	1.8000e-004	0.0000	1.8000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.1742	0.1742	1.0000e-005	0.0000	0.1744
Total	9.0000e-005	8.0000e-005	8.2000e-004	0.0000	1.8000e-004	0.0000	1.8000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.1742	0.1742	1.0000e-005	0.0000	0.1744

3.4 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2592	1.7428	1.3877	2.2000e-003		0.1058	0.1058		0.1022	0.1022	0.0000	184.2346	184.2346	0.0371	0.0000	185.1618
Total	0.2592	1.7428	1.3877	2.2000e-003		0.1058	0.1058		0.1022	0.1022	0.0000	184.2346	184.2346	0.0371	0.0000	185.1618

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	6.0900e-003	0.1628	0.0458	3.4000e-004	8.1900e-003	1.1300e-003	9.3200e-003	2.3600e-003	1.0800e-003	3.4400e-003	0.0000	32.8466	32.8466	2.2500e-003	0.0000	32.9030
Worker	0.0183	0.0156	0.1682	4.0000e-004	0.0362	3.3000e-004	0.0365	9.6000e-003	3.0000e-004	9.9100e-003	0.0000	35.9302	35.9302	1.3500e-003	0.0000	35.9640

Total	0.0244	0.1784	0.2140	7.4000e-004	0.0444	1.4600e-003	0.0458	0.0120	1.3800e-003	0.0134	0.0000	68.7769	68.7769	3.6000e-003	0.0000	68.8670
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Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2592	1.7428	1.3877	2.2000e-003		0.1058	0.1058		0.1022	0.1022	0.0000	184.2344	184.2344	0.0371	0.0000	185.1616
Total	0.2592	1.7428	1.3877	2.2000e-003		0.1058	0.1058		0.1022	0.1022	0.0000	184.2344	184.2344	0.0371	0.0000	185.1616

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	6.0900e-003	0.1628	0.0458	3.4000e-004	8.1900e-003	1.1300e-003	9.3200e-003	2.3600e-003	1.0800e-003	3.4400e-003	0.0000	32.8466	32.8466	2.2500e-003	0.0000	32.9030
Worker	0.0183	0.0156	0.1682	4.0000e-004	0.0362	3.3000e-004	0.0365	9.6000e-003	3.0000e-004	9.9100e-003	0.0000	35.9302	35.9302	1.3500e-003	0.0000	35.9640
Total	0.0244	0.1784	0.2140	7.4000e-004	0.0444	1.4600e-003	0.0458	0.0120	1.3800e-003	0.0134	0.0000	68.7769	68.7769	3.6000e-003	0.0000	68.8670

3.5 Paving - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	5.0900e-003	0.0523	0.0450	7.0000e-005		3.0500e-003	3.0500e-003		2.8100e-003	2.8100e-003	0.0000	6.1073	6.1073	1.8700e-003	0.0000	6.1540
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	5.0900e-003	0.0523	0.0450	7.0000e-005		3.0500e-003	3.0500e-003		2.8100e-003	2.8100e-003	0.0000	6.1073	6.1073	1.8700e-003	0.0000	6.1540

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.6000e-004	3.1000e-004	3.3100e-003	1.0000e-005	7.1000e-004	1.0000e-005	7.2000e-004	1.9000e-004	1.0000e-005	2.0000e-004	0.0000	0.7077	0.7077	3.0000e-005	0.0000	0.7084
Total	3.6000e-004	3.1000e-004	3.3100e-003	1.0000e-005	7.1000e-004	1.0000e-005	7.2000e-004	1.9000e-004	1.0000e-005	2.0000e-004	0.0000	0.7077	0.7077	3.0000e-005	0.0000	0.7084

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Off-Road	5.0900e-003	0.0523	0.0450	7.0000e-005		3.0500e-003	3.0500e-003		2.8100e-003	2.8100e-003	0.0000	6.1073	6.1073	1.8700e-003	0.0000	6.1540
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	5.0900e-003	0.0523	0.0450	7.0000e-005		3.0500e-003	3.0500e-003		2.8100e-003	2.8100e-003	0.0000	6.1073	6.1073	1.8700e-003	0.0000	6.1540

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.6000e-004	3.1000e-004	3.3100e-003	1.0000e-005	7.1000e-004	1.0000e-005	7.2000e-004	1.9000e-004	1.0000e-005	2.0000e-004	0.0000	0.7077	0.7077	3.0000e-005	0.0000	0.7084
Total	3.6000e-004	3.1000e-004	3.3100e-003	1.0000e-005	7.1000e-004	1.0000e-005	7.2000e-004	1.9000e-004	1.0000e-005	2.0000e-004	0.0000	0.7077	0.7077	3.0000e-005	0.0000	0.7084

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Mitigated	6.5900e-003	0.0357	0.1004	3.4000e-004	0.0267	3.5000e-004	0.0270	7.1500e-003	3.2000e-004	7.4800e-003	0.0000	30.9879	30.9879	1.6900e-003	0.0000	31.0301
Unmitigated	6.5900e-003	0.0357	0.1004	3.4000e-004	0.0267	3.5000e-004	0.0270	7.1500e-003	3.2000e-004	7.4800e-003	0.0000	30.9879	30.9879	1.6900e-003	0.0000	31.0301

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	15.88	15.88	15.88	70,307	70,307
Total	15.88	15.88	15.88	70,307	70,307

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	16.60	8.40	6.90	59.00	28.00	13.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.547726	0.045437	0.201480	0.122768	0.016614	0.006090	0.019326	0.029174	0.002438	0.002359	0.005005	0.000677	0.000907

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	286.0688	286.0688	0.0118	2.4400e-003	287.0923
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	286.0688	286.0688	0.0118	2.4400e-003	287.0923
NaturalGas Mitigated	7.7700e-003	0.0707	0.0594	4.2000e-004		5.3700e-003	5.3700e-003		5.3700e-003	5.3700e-003	0.0000	76.9300	76.9300	1.4700e-003	1.4100e-003	77.3871
NaturalGas Unmitigated	7.7700e-003	0.0707	0.0594	4.2000e-004		5.3700e-003	5.3700e-003		5.3700e-003	5.3700e-003	0.0000	76.9300	76.9300	1.4700e-003	1.4100e-003	77.3871

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Light Industry	1.44161e+006	7.7700e-003	0.0707	0.0594	4.2000e-004		5.3700e-003	5.3700e-003		5.3700e-003	5.3700e-003	0.0000	76.9300	76.9300	1.4700e-003	1.4100e-003	77.3871
Total		7.7700e-003	0.0707	0.0594	4.2000e-004		5.3700e-003	5.3700e-003		5.3700e-003	5.3700e-003	0.0000	76.9300	76.9300	1.4700e-003	1.4100e-003	77.3871

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Light Industry	1.44161e+006	7.7700e-003	0.0707	0.0594	4.2000e-004		5.3700e-003	5.3700e-003		5.3700e-003	5.3700e-003	0.0000	76.9300	76.9300	1.4700e-003	1.4100e-003	77.3871
Total		7.7700e-003	0.0707	0.0594	4.2000e-004		5.3700e-003	5.3700e-003		5.3700e-003	5.3700e-003	0.0000	76.9300	76.9300	1.4700e-003	1.4100e-003	77.3871

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	897833	286.0688	0.0118	2.4400e-003	287.0923
Total		286.0688	0.0118	2.4400e-003	287.0923

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	897833	286.0688	0.0118	2.4400e-003	287.0923
Total		286.0688	0.0118	2.4400e-003	287.0923

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.3237	1.0000e-005	1.0200e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.9700e-003	1.9700e-003	1.0000e-005	0.0000	2.1000e-003
Unmitigated	0.3237	1.0000e-005	1.0200e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.9700e-003	1.9700e-003	1.0000e-005	0.0000	2.1000e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0368					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.2869					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.0000e-004	1.0000e-005	1.0200e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.9700e-003	1.9700e-003	1.0000e-005	0.0000	2.1000e-003
Total	0.3237	1.0000e-005	1.0200e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.9700e-003	1.9700e-003	1.0000e-005	0.0000	2.1000e-003

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
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SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0368					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.2869					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.0000e-004	1.0000e-005	1.0200e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.9700e-003	1.9700e-003	1.0000e-005	0.0000	2.1000e-003
Total	0.3237	1.0000e-005	1.0200e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.9700e-003	1.9700e-003	1.0000e-005	0.0000	2.1000e-003

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	81.9811	0.6013	0.0148	101.4162
Unmitigated	81.9811	0.6013	0.0148	101.4162

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			

General Light Industry	18.3566 / 0	81.9811	0.6013	0.0148	101.4162
Total		81.9811	0.6013	0.0148	101.4162

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	18.3566 / 0	81.9811	0.6013	0.0148	101.4162
Total		81.9811	0.6013	0.0148	101.4162

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	19.9804	1.1808	0.0000	49.5006
Unmitigated	19.9804	1.1808	0.0000	49.5006

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	98.43	19.9804	1.1808	0.0000	49.5006
Total		19.9804	1.1808	0.0000	49.5006

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	98.43	19.9804	1.1808	0.0000	49.5006
Total		19.9804	1.1808	0.0000	49.5006

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
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Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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User Defined Equipment

Equipment Type	Number
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11.0 Vegetation

PVOU IZ Iterim Remedy - Water Treatment Plant - Los Angeles-South Coast County, Winter

PVOU IZ Iterim Remedy - Water Treatment Plant**Los Angeles-South Coast County, Winter****1.0 Project Characteristics****1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	79.38	1000sqft	1.82	79,384.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	33
Climate Zone	9			Operational Year	2020
Utility Company	Southern California Edison				
CO2 Intensity (lb/MW hr)	702.44	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Treatment plant lot = 79,384 square feet

Construction Phase -

Vehicle Trips - 16 workers/day during operation. Trip rate = $16/79.384 = \text{trip rate}/1,000 \text{ ft}^2/\text{day} = 0.20$

Area Coating -

Table Name	Column Name	Default Value	New Value
tblProjectCharacteristics	OperationalYear	2018	2020
tblVehicleTrips	ST_TR	1.32	0.20
tblVehicleTrips	SU_TR	0.68	0.20
tblVehicleTrips	WD_TR	6.97	0.20

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2018	2.8560	20.7841	15.9964	0.0293	5.8890	1.0727	6.8421	2.9774	1.0355	3.8542	0.0000	2,776.8237	2,776.8237	0.5438	0.0000	2,788.0539
Maximum	2.8560	20.7841	15.9964	0.0293	5.8890	1.0727	6.8421	2.9774	1.0355	3.8542	0.0000	2,776.8237	2,776.8237	0.5438	0.0000	2,788.0539

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2018	2.8560	20.7841	15.9964	0.0293	5.8890	1.0727	6.8421	2.9774	1.0355	3.8542	0.0000	2,776.8237	2,776.8237	0.5438	0.0000	2,788.0539
Maximum	2.8560	20.7841	15.9964	0.0293	5.8890	1.0727	6.8421	2.9774	1.0355	3.8542	0.0000	2,776.8237	2,776.8237	0.5438	0.0000	2,788.0539

[illegible]

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.7742	8.0000e-005	8.1600e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.0174	0.0174	5.0000e-005		0.0185
Energy	0.0426	0.3872	0.3253	2.3200e-003		0.0294	0.0294		0.0294	0.0294		464.6619	464.6619	8.9100e-003	8.5200e-003	467.4231
Mobile	0.0369	0.1923	0.5424	1.8200e-003	0.1495	1.9100e-003	0.1514	0.0400	1.7900e-003	0.0418		185.1759	185.1759	0.0102		185.4316
Total	1.8537	0.5796	0.8758	4.1400e-003	0.1495	0.0314	0.1809	0.0400	0.0313	0.0713		649.8551	649.8551	0.0192	8.5200e-003	652.8732

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.7742	8.0000e-005	8.1600e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.0174	0.0174	5.0000e-005		0.0185
Energy	0.0426	0.3872	0.3253	2.3200e-003		0.0294	0.0294		0.0294	0.0294		464.6619	464.6619	8.9100e-003	8.5200e-003	467.4231
Mobile	0.0369	0.1923	0.5424	1.8200e-003	0.1495	1.9100e-003	0.1514	0.0400	1.7900e-003	0.0418		185.1759	185.1759	0.0102		185.4316
Total	1.8537	0.5796	0.8758	4.1400e-003	0.1495	0.0314	0.1809	0.0400	0.0313	0.0713		649.8551	649.8551	0.0192	8.5200e-003	652.8732

[illegible]

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/1/2018	1/2/2018	5	2	
2	Grading	Grading	1/3/2018	1/8/2018	5	4	
3	Building Construction	Building Construction	1/9/2018	10/15/2018	5	200	
4	Paving	Paving	10/16/2018	10/29/2018	5	10	

Acres of Grading (Site Preparation Phase): 1

Acres of Grading (Grading Phase): 1.5

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	1	7.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Graders	1	6.00	187	0.41
Grading	Rubber Tired Dozers	1	6.00	247	0.40
Grading	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Building Construction	Cranes	1	6.00	231	0.29
Building Construction	Forklifts	1	6.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Paving	Pavers	1	6.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36

Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	3	8.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	3	8.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	33.00	13.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	13.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					5.7996	0.0000	5.7996	2.9537	0.0000	2.9537			0.0000			0.0000
Off-Road	1.8061	20.7472	8.0808	0.0172		0.9523	0.9523		0.8761	0.8761		1,735.3630	1,735.3630	0.5402		1,748.8690
Total	1.8061	20.7472	8.0808	0.0172	5.7996	0.9523	6.7518	2.9537	0.8761	3.8298		1,735.3630	1,735.3630	0.5402		1,748.8690

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0489	0.0369	0.3978	9.5000e-004	0.0894	8.0000e-004	0.0902	0.0237	7.4000e-004	0.0245		94.4461	94.4461	3.5500e-003		94.5349
Total	0.0489	0.0369	0.3978	9.5000e-004	0.0894	8.0000e-004	0.0902	0.0237	7.4000e-004	0.0245		94.4461	94.4461	3.5500e-003		94.5349

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					5.7996	0.0000	5.7996	2.9537	0.0000	2.9537			0.0000			0.0000
Off-Road	1.8061	20.7472	8.0808	0.0172		0.9523	0.9523		0.8761	0.8761	0.0000	1,735.3630	1,735.3630	0.5402		1,748.8690
Total	1.8061	20.7472	8.0808	0.0172	5.7996	0.9523	6.7518	2.9537	0.8761	3.8298	0.0000	1,735.3630	1,735.3630	0.5402		1,748.8690

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0489	0.0369	0.3978	9.5000e-004	0.0894	8.0000e-004	0.0902	0.0237	7.4000e-004	0.0245		94.4461	94.4461	3.5500e-003		94.5349
Total	0.0489	0.0369	0.3978	9.5000e-004	0.0894	8.0000e-004	0.0902	0.0237	7.4000e-004	0.0245		94.4461	94.4461	3.5500e-003		94.5349

3.3 Grading - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					4.9143	0.0000	4.9143	2.5256	0.0000	2.5256			0.0000			0.0000
Off-Road	1.4972	17.0666	6.7630	0.0141		0.7947	0.7947		0.7311	0.7311		1,421.2605	1,421.2605	0.4425		1,432.3219
Total	1.4972	17.0666	6.7630	0.0141	4.9143	0.7947	5.7090	2.5256	0.7311	3.2568		1,421.2605	1,421.2605	0.4425		1,432.3219

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0489	0.0369	0.3978	9.5000e-004	0.0894	8.0000e-004	0.0902	0.0237	7.4000e-004	0.0245		94.4461	94.4461	3.5500e-003		94.5349
Total	0.0489	0.0369	0.3978	9.5000e-004	0.0894	8.0000e-004	0.0902	0.0237	7.4000e-004	0.0245		94.4461	94.4461	3.5500e-003		94.5349

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					4.9143	0.0000	4.9143	2.5256	0.0000	2.5256			0.0000			0.0000
Off-Road	1.4972	17.0666	6.7630	0.0141		0.7947	0.7947		0.7311	0.7311	0.0000	1,421.2605	1,421.2605	0.4425		1,432.3219
Total	1.4972	17.0666	6.7630	0.0141	4.9143	0.7947	5.7090	2.5256	0.7311	3.2568	0.0000	1,421.2605	1,421.2605	0.4425		1,432.3219

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0489	0.0369	0.3978	9.5000e-004	0.0894	8.0000e-004	0.0902	0.0237	7.4000e-004	0.0245		94.4461	94.4461	3.5500e-003		94.5349
Total	0.0489	0.0369	0.3978	9.5000e-004	0.0894	8.0000e-004	0.0902	0.0237	7.4000e-004	0.0245		94.4461	94.4461	3.5500e-003		94.5349

3.4 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.5919	17.4280	13.8766	0.0220		1.0580	1.0580		1.0216	1.0216		2,030.8389	2,030.8389	0.4088		2,041.0596
Total	2.5919	17.4280	13.8766	0.0220		1.0580	1.0580		1.0216	1.0216		2,030.8389	2,030.8389	0.4088		2,041.0596

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0623	1.5969	0.4788	3.3500e-003	0.0832	0.0114	0.0946	0.0240	0.0109	0.0349		356.3948	356.3948	0.0257		357.0377
Worker	0.2018	0.1524	1.6410	3.9200e-003	0.3689	3.2900e-003	0.3722	0.0978	3.0300e-003	0.1009		389.5901	389.5901	0.0147		389.9566
Total	0.2641	1.7492	2.1198	7.2700e-003	0.4521	0.0147	0.4668	0.1218	0.0139	0.1357		745.9849	745.9849	0.0404		746.9943

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.5919	17.4280	13.8766	0.0220		1.0580	1.0580		1.0216	1.0216	0.0000	2,030.8389	2,030.8389	0.4088		2,041.0596

Total	2.5919	17.4280	13.8766	0.0220		1.0580	1.0580		1.0216	1.0216	0.0000	2,030.8389	2,030.8389	0.4088		2,041.0596
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Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0623	1.5969	0.4788	3.3500e-003	0.0832	0.0114	0.0946	0.0240	0.0109	0.0349		356.3948	356.3948	0.0257		357.0377
Worker	0.2018	0.1524	1.6410	3.9200e-003	0.3689	3.2900e-003	0.3722	0.0978	3.0300e-003	0.1009		389.5901	389.5901	0.0147		389.9566
Total	0.2641	1.7492	2.1198	7.2700e-003	0.4521	0.0147	0.4668	0.1218	0.0139	0.1357		745.9849	745.9849	0.0404		746.9943

3.5 Paving - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0182	10.4525	8.9926	0.0135		0.6097	0.6097		0.5618	0.5618		1,346.4360	1,346.4360	0.4113		1,356.7186
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	1.0182	10.4525	8.9926	0.0135		0.6097	0.6097		0.5618	0.5618		1,346.4360	1,346.4360	0.4113		1,356.7186

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0795	0.0600	0.6465	1.5400e-003	0.1453	1.3000e-003	0.1466	0.0385	1.1900e-003	0.0397		153.4749	153.4749	5.7800e-003		153.6193
Total	0.0795	0.0600	0.6465	1.5400e-003	0.1453	1.3000e-003	0.1466	0.0385	1.1900e-003	0.0397		153.4749	153.4749	5.7800e-003		153.6193

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0182	10.4525	8.9926	0.0135		0.6097	0.6097		0.5618	0.5618	0.0000	1,346.4360	1,346.4360	0.4113		1,356.7186
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	1.0182	10.4525	8.9926	0.0135		0.6097	0.6097		0.5618	0.5618	0.0000	1,346.4360	1,346.4360	0.4113		1,356.7186

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
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Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0795	0.0600	0.6465	1.5400e-003	0.1453	1.3000e-003	0.1466	0.0385	1.1900e-003	0.0397	153.4749	153.4749	5.7800e-003	153.6193		
Total	0.0795	0.0600	0.6465	1.5400e-003	0.1453	1.3000e-003	0.1466	0.0385	1.1900e-003	0.0397	153.4749	153.4749	5.7800e-003	153.6193		

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0369	0.1923	0.5424	1.8200e-003	0.1495	1.9100e-003	0.1514	0.0400	1.7900e-003	0.0418	185.1759	185.1759	0.0102	185.4316		
Unmitigated	0.0369	0.1923	0.5424	1.8200e-003	0.1495	1.9100e-003	0.1514	0.0400	1.7900e-003	0.0418	185.1759	185.1759	0.0102	185.4316		

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	15.88	15.88	15.88	70,307	70,307
Total	15.88	15.88	15.88	70,307	70,307

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	16.60	8.40	6.90	59.00	28.00	13.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.547726	0.045437	0.201480	0.122768	0.016614	0.006090	0.019326	0.029174	0.002438	0.002359	0.005005	0.000677	0.000907

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0426	0.3872	0.3253	2.3200e-003		0.0294	0.0294		0.0294	0.0294		464.6619	464.6619	8.9100e-003	8.5200e-003	467.4231
NaturalGas Unmitigated	0.0426	0.3872	0.3253	2.3200e-003		0.0294	0.0294		0.0294	0.0294		464.6619	464.6619	8.9100e-003	8.5200e-003	467.4231

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
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Land Use	kBTU/yr	lb/day										lb/day					
General Light Industry	3949.63	0.0426	0.3872	0.3253	2.3200e-003		0.0294	0.0294		0.0294	0.0294		464.6619	464.6619	8.9100e-003	8.5200e-003	467.4231
Total		0.0426	0.3872	0.3253	2.3200e-003		0.0294	0.0294		0.0294	0.0294		464.6619	464.6619	8.9100e-003	8.5200e-003	467.4231

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Light Industry	3.94963	0.0426	0.3872	0.3253	2.3200e-003		0.0294	0.0294		0.0294	0.0294		464.6619	464.6619	8.9100e-003	8.5200e-003	467.4231
Total		0.0426	0.3872	0.3253	2.3200e-003		0.0294	0.0294		0.0294	0.0294		464.6619	464.6619	8.9100e-003	8.5200e-003	467.4231

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.7742	8.0000e-005	8.1600e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.0174	0.0174	5.0000e-005		0.0185

Unmitigated	1.7742	8.0000e-005	8.1600e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.0174	0.0174	5.0000e-005		0.0185
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6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.2016					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.5718					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	7.7000e-004	8.0000e-005	8.1600e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.0174	0.0174	5.0000e-005		0.0185
Total	1.7742	8.0000e-005	8.1600e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.0174	0.0174	5.0000e-005		0.0185

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.2016					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.5718					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	7.7000e-004	8.0000e-005	8.1600e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.0174	0.0174	5.0000e-005		0.0185
Total	1.7742	8.0000e-005	8.1600e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.0174	0.0174	5.0000e-005		0.0185

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
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Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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User Defined Equipment

Equipment Type	Number
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11.0 Vegetation

PVOU IZ Iterim Remedy - Water Treatment Plant - Los Angeles-South Coast County, Summer

PVOU IZ Iterim Remedy - Water Treatment Plant
Los Angeles-South Coast County, Summer

1.0 Project Characteristics**1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	79.38	1000sqft	1.82	79,384.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	33
Climate Zone	9			Operational Year	2020
Utility Company	Southern California Edison				
CO2 Intensity (lb/MW hr)	702.44	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Treatment plant lot = 79,384 square feet

Construction Phase -

Vehicle Trips - 16 workers/day during operation. Trip rate = $16/79.384 = \text{trip rate}/1,000 \text{ ft}^2/\text{day} = 0.20$

Area Coating -

Table Name	Column Name	Default Value	New Value
tblProjectCharacteristics	OperationalYear	2018	2020
tblVehicleTrips	ST_TR	1.32	0.20
tblVehicleTrips	SU_TR	0.68	0.20
tblVehicleTrips	WD_TR	6.97	0.20

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2018	2.8340	20.7806	16.0945	0.0296	5.8890	1.0725	6.8421	2.9774	1.0354	3.8542	0.0000	2,810.7397	2,810.7397	0.5440	0.0000	2,821.9512
Maximum	2.8340	20.7806	16.0945	0.0296	5.8890	1.0725	6.8421	2.9774	1.0354	3.8542	0.0000	2,810.7397	2,810.7397	0.5440	0.0000	2,821.9512

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2018	2.8340	20.7806	16.0945	0.0296	5.8890	1.0725	6.8421	2.9774	1.0354	3.8542	0.0000	2,810.7397	2,810.7397	0.5440	0.0000	2,821.9512
Maximum	2.8340	20.7806	16.0945	0.0296	5.8890	1.0725	6.8421	2.9774	1.0354	3.8542	0.0000	2,810.7397	2,810.7397	0.5440	0.0000	2,821.9512

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Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.7742	8.0000e-005	8.1600e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.0174	0.0174	5.0000e-005		0.0185
Energy	0.0426	0.3872	0.3253	2.3200e-003		0.0294	0.0294		0.0294	0.0294		464.6619	464.6619	8.9100e-003	8.5200e-003	467.4231
Mobile	0.0379	0.1861	0.5759	1.9200e-003	0.1495	1.9000e-003	0.1514	0.0400	1.7800e-003	0.0418		194.5446	194.5446	0.0103		194.8029
Total	1.8547	0.5734	0.9093	4.2400e-003	0.1495	0.0314	0.1809	0.0400	0.0312	0.0713		659.2238	659.2238	0.0193	8.5200e-003	662.2445

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.7742	8.0000e-005	8.1600e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.0174	0.0174	5.0000e-005		0.0185
Energy	0.0426	0.3872	0.3253	2.3200e-003		0.0294	0.0294		0.0294	0.0294		464.6619	464.6619	8.9100e-003	8.5200e-003	467.4231
Mobile	0.0379	0.1861	0.5759	1.9200e-003	0.1495	1.9000e-003	0.1514	0.0400	1.7800e-003	0.0418		194.5446	194.5446	0.0103		194.8029
Total	1.8547	0.5734	0.9093	4.2400e-003	0.1495	0.0314	0.1809	0.0400	0.0312	0.0713		659.2238	659.2238	0.0193	8.5200e-003	662.2445

[illegible]

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/1/2018	1/2/2018	5	2	
2	Grading	Grading	1/3/2018	1/8/2018	5	4	
3	Building Construction	Building Construction	1/9/2018	10/15/2018	5	200	
4	Paving	Paving	10/16/2018	10/29/2018	5	10	

Acres of Grading (Site Preparation Phase): 1

Acres of Grading (Grading Phase): 1.5

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	1	7.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Graders	1	6.00	187	0.41
Grading	Rubber Tired Dozers	1	6.00	247	0.40
Grading	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Building Construction	Cranes	1	6.00	231	0.29
Building Construction	Forklifts	1	6.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Paving	Pavers	1	6.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36

Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	3	8.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	3	8.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	33.00	13.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	13.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					5.7996	0.0000	5.7996	2.9537	0.0000	2.9537			0.0000			0.0000
Off-Road	1.8061	20.7472	8.0808	0.0172		0.9523	0.9523		0.8761	0.8761		1,735.3630	1,735.3630	0.5402		1,748.8690
Total	1.8061	20.7472	8.0808	0.0172	5.7996	0.9523	6.7518	2.9537	0.8761	3.8298		1,735.3630	1,735.3630	0.5402		1,748.8690

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0442	0.0334	0.4321	1.0100e-003	0.0894	8.0000e-004	0.0902	0.0237	7.4000e-004	0.0245		100.2952	100.2952	3.7600e-003		100.3892
Total	0.0442	0.0334	0.4321	1.0100e-003	0.0894	8.0000e-004	0.0902	0.0237	7.4000e-004	0.0245		100.2952	100.2952	3.7600e-003		100.3892

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					5.7996	0.0000	5.7996	2.9537	0.0000	2.9537			0.0000			0.0000
Off-Road	1.8061	20.7472	8.0808	0.0172		0.9523	0.9523		0.8761	0.8761	0.0000	1,735.3630	1,735.3630	0.5402		1,748.8690
Total	1.8061	20.7472	8.0808	0.0172	5.7996	0.9523	6.7518	2.9537	0.8761	3.8298	0.0000	1,735.3630	1,735.3630	0.5402		1,748.8690

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0442	0.0334	0.4321	1.0100e-003	0.0894	8.0000e-004	0.0902	0.0237	7.4000e-004	0.0245		100.2952	100.2952	3.7600e-003		100.3892
Total	0.0442	0.0334	0.4321	1.0100e-003	0.0894	8.0000e-004	0.0902	0.0237	7.4000e-004	0.0245		100.2952	100.2952	3.7600e-003		100.3892

3.3 Grading - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					4.9143	0.0000	4.9143	2.5256	0.0000	2.5256			0.0000			0.0000
Off-Road	1.4972	17.0666	6.7630	0.0141		0.7947	0.7947		0.7311	0.7311		1,421.2605	1,421.2605	0.4425		1,432.3219
Total	1.4972	17.0666	6.7630	0.0141	4.9143	0.7947	5.7090	2.5256	0.7311	3.2568		1,421.2605	1,421.2605	0.4425		1,432.3219

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0442	0.0334	0.4321	1.0100e-003	0.0894	8.0000e-004	0.0902	0.0237	7.4000e-004	0.0245		100.2952	100.2952	3.7600e-003		100.3892
Total	0.0442	0.0334	0.4321	1.0100e-003	0.0894	8.0000e-004	0.0902	0.0237	7.4000e-004	0.0245		100.2952	100.2952	3.7600e-003		100.3892

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					4.9143	0.0000	4.9143	2.5256	0.0000	2.5256			0.0000			0.0000
Off-Road	1.4972	17.0666	6.7630	0.0141		0.7947	0.7947		0.7311	0.7311	0.0000	1,421.2605	1,421.2605	0.4425		1,432.3219
Total	1.4972	17.0666	6.7630	0.0141	4.9143	0.7947	5.7090	2.5256	0.7311	3.2568	0.0000	1,421.2605	1,421.2605	0.4425		1,432.3219

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0442	0.0334	0.4321	1.0100e-003	0.0894	8.0000e-004	0.0902	0.0237	7.4000e-004	0.0245		100.2952	100.2952	3.7600e-003		100.3892
Total	0.0442	0.0334	0.4321	1.0100e-003	0.0894	8.0000e-004	0.0902	0.0237	7.4000e-004	0.0245		100.2952	100.2952	3.7600e-003		100.3892

3.4 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.5919	17.4280	13.8766	0.0220		1.0580	1.0580		1.0216	1.0216		2,030.8389	2,030.8389	0.4088		2,041.0596
Total	2.5919	17.4280	13.8766	0.0220		1.0580	1.0580		1.0216	1.0216		2,030.8389	2,030.8389	0.4088		2,041.0596

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0598	1.5933	0.4356	3.4400e-003	0.0832	0.0112	0.0945	0.0240	0.0107	0.0347		366.1832	366.1832	0.0241		366.7860
Worker	0.1823	0.1376	1.7822	4.1600e-003	0.3689	3.2900e-003	0.3722	0.0978	3.0300e-003	0.1009		413.7176	413.7176	0.0155		414.1056
Total	0.2421	1.7309	2.2179	7.6000e-003	0.4521	0.0145	0.4666	0.1218	0.0138	0.1356		779.9009	779.9009	0.0396		780.8916

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.5919	17.4280	13.8766	0.0220		1.0580	1.0580		1.0216	1.0216	0.0000	2,030.8389	2,030.8389	0.4088		2,041.0596

Total	2.5919	17.4280	13.8766	0.0220		1.0580	1.0580		1.0216	1.0216	0.0000	2,030.8389	2,030.8389	0.4088		2,041.0596
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Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0598	1.5933	0.4356	3.4400e-003	0.0832	0.0112	0.0945	0.0240	0.0107	0.0347		366.1832	366.1832	0.0241		366.7860
Worker	0.1823	0.1376	1.7822	4.1600e-003	0.3689	3.2900e-003	0.3722	0.0978	3.0300e-003	0.1009		413.7176	413.7176	0.0155		414.1056
Total	0.2421	1.7309	2.2179	7.6000e-003	0.4521	0.0145	0.4666	0.1218	0.0138	0.1356		779.9009	779.9009	0.0396		780.8916

3.5 Paving - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0182	10.4525	8.9926	0.0135		0.6097	0.6097		0.5618	0.5618		1,346.4360	1,346.4360	0.4113		1,356.7186
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	1.0182	10.4525	8.9926	0.0135		0.6097	0.6097		0.5618	0.5618		1,346.4360	1,346.4360	0.4113		1,356.7186

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0718	0.0542	0.7021	1.6400e-003	0.1453	1.3000e-003	0.1466	0.0385	1.1900e-003	0.0397		162.9797	162.9797	6.1100e-003		163.1325
Total	0.0718	0.0542	0.7021	1.6400e-003	0.1453	1.3000e-003	0.1466	0.0385	1.1900e-003	0.0397		162.9797	162.9797	6.1100e-003		163.1325

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0182	10.4525	8.9926	0.0135		0.6097	0.6097		0.5618	0.5618	0.0000	1,346.4360	1,346.4360	0.4113		1,356.7186
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	1.0182	10.4525	8.9926	0.0135		0.6097	0.6097		0.5618	0.5618	0.0000	1,346.4360	1,346.4360	0.4113		1,356.7186

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
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Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0718	0.0542	0.7021	1.6400e-003	0.1453	1.3000e-003	0.1466	0.0385	1.1900e-003	0.0397	162.9797	162.9797	6.1100e-003	163.1325		
Total	0.0718	0.0542	0.7021	1.6400e-003	0.1453	1.3000e-003	0.1466	0.0385	1.1900e-003	0.0397	162.9797	162.9797	6.1100e-003	163.1325		

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0379	0.1861	0.5759	1.9200e-003	0.1495	1.9000e-003	0.1514	0.0400	1.7800e-003	0.0418	194.5446	194.5446	0.0103	194.8029		
Unmitigated	0.0379	0.1861	0.5759	1.9200e-003	0.1495	1.9000e-003	0.1514	0.0400	1.7800e-003	0.0418	194.5446	194.5446	0.0103	194.8029		

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	15.88	15.88	15.88	70,307	70,307
Total	15.88	15.88	15.88	70,307	70,307

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	16.60	8.40	6.90	59.00	28.00	13.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.547726	0.045437	0.201480	0.122768	0.016614	0.006090	0.019326	0.029174	0.002438	0.002359	0.005005	0.000677	0.000907

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0426	0.3872	0.3253	2.3200e-003		0.0294	0.0294		0.0294	0.0294		464.6619	464.6619	8.9100e-003	8.5200e-003	467.4231
NaturalGas Unmitigated	0.0426	0.3872	0.3253	2.3200e-003		0.0294	0.0294		0.0294	0.0294		464.6619	464.6619	8.9100e-003	8.5200e-003	467.4231

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
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Land Use	kBTU/yr	lb/day										lb/day					
General Light Industry	3949.63	0.0426	0.3872	0.3253	2.3200e-003		0.0294	0.0294		0.0294	0.0294		464.6619	464.6619	8.9100e-003	8.5200e-003	467.4231
Total		0.0426	0.3872	0.3253	2.3200e-003		0.0294	0.0294		0.0294	0.0294		464.6619	464.6619	8.9100e-003	8.5200e-003	467.4231

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Light Industry	3.94963	0.0426	0.3872	0.3253	2.3200e-003		0.0294	0.0294		0.0294	0.0294		464.6619	464.6619	8.9100e-003	8.5200e-003	467.4231
Total		0.0426	0.3872	0.3253	2.3200e-003		0.0294	0.0294		0.0294	0.0294		464.6619	464.6619	8.9100e-003	8.5200e-003	467.4231

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.7742	8.0000e-005	8.1600e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.0174	0.0174	5.0000e-005		0.0185

Unmitigated	1.7742	8.0000e-005	8.1600e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.0174	0.0174	5.0000e-005		0.0185
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6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.2016					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.5718					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	7.7000e-004	8.0000e-005	8.1600e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.0174	0.0174	5.0000e-005		0.0185
Total	1.7742	8.0000e-005	8.1600e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.0174	0.0174	5.0000e-005		0.0185

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.2016					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.5718					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	7.7000e-004	8.0000e-005	8.1600e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.0174	0.0174	5.0000e-005		0.0185
Total	1.7742	8.0000e-005	8.1600e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.0174	0.0174	5.0000e-005		0.0185

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
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Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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User Defined Equipment

Equipment Type	Number
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11.0 Vegetation

PVOU IZ Iterim Remedy - Pipeline Installation, Booster Station Pump Upgrades, Well Installation - Los Angeles-South Coast County, Annual

PVOU IZ Iterim Remedy - Pipeline Installation, Booster Station Pump Upgrades, Well Installation Los Angeles-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	30.00	1000sqft	0.69	30,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	33
Climate Zone	9			Operational Year	2020
Utility Company	Southern California Edison				
CO2 Intensity (lb/MW hr)	702.44	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - pipelines, booster station pump upgrade and well installation

Land Use - Conservatively assumes 30,000 square feet of pipeline installation (up to 15,000 linear feet with average 2 foot trench width), booster pump stations are existing facilities, well is a negligible land use amount

Construction Phase - Per RD/RA workplan schedule

Off-road Equipment - Component-specific equipment assumptions

Off-road Equipment - component-specific equipment assumptions

Off-road Equipment - Component-specific equipment assumptions

Off-road Equipment - drill rig, forklift, loader, and off-highway truck assumed

Trips and VMT -

Vehicle Trips -

Area Coating -

Energy Use -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	100.00	86.00
tblConstructionPhase	NumDays	5.00	128.00
tblConstructionPhase	NumDays	100.00	30.00
tblOffRoadEquipment	OffRoadEquipmentType	Cranes	Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Bore/Drill Rigs
tblOffRoadEquipment	OffRoadEquipmentType		Signal Boards
tblOffRoadEquipment	OffRoadEquipmentType		Concrete/Industrial Saws
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Cranes
tblOffRoadEquipment	OffRoadEquipmentType		Welders
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	UsageHours	6.00	4.00
tblOffRoadEquipment	UsageHours	6.00	4.00
tblOffRoadEquipment	UsageHours	8.00	4.00
tblProjectCharacteristics	OperationalYear	2018	2020

2.0 Emissions Summary

2.1 Overall Construction
Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2018	0.2948	2.7102	1.9614	4.1200e-003	0.0864	0.1372	0.2236	0.0220	0.1283	0.1503	0.0000	367.4170	367.4170	0.0920	0.0000	369.7166
Maximum	0.2948	2.7102	1.9614	4.1200e-003	0.0864	0.1372	0.2236	0.0220	0.1283	0.1503	0.0000	367.4170	367.4170	0.0920	0.0000	369.7166

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2018	0.2948	2.7102	1.9614	4.1200e-003	0.0864	0.1372	0.2236	0.0220	0.1283	0.1503	0.0000	367.4166	367.4166	0.0920	0.0000	369.7162
Maximum	0.2948	2.7102	1.9614	4.1200e-003	0.0864	0.1372	0.2236	0.0220	0.1283	0.1503	0.0000	367.4166	367.4166	0.0920	0.0000	369.7162

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
2	4-1-2018	6-30-2018	0.1847	0.1847
3	7-1-2018	9-30-2018	0.2785	0.2785
		Highest	0.2785	0.2785

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Well Installation	Building Construction	1/1/2018	4/30/2018	5	86	
2	Pipeline Installation	Trenching	5/1/2018	10/25/2018	5	128	
3	Re-paving	Paving	5/1/2018	10/25/2018	5	128	
4	Booster Pump Installation	Building Construction	10/26/2018	12/6/2018	5	30	

Acres of Grading (Site Preparation Phase): 0**Acres of Grading (Grading Phase): 0****Acres of Paving: 0.69****Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0****OffRoad Equipment**

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Re-paving	Cement and Mortar Mixers	0	6.00	9	0.56
Well Installation	Off-Highway Trucks	1	4.00	402	0.38
Well Installation	Forklifts	1	4.00	89	0.20
Well Installation	Bore/Drill Rigs	1	8.00	221	0.50
Well Installation	Tractors/Loaders/Backhoes	1	4.00	97	0.37
Pipeline Installation	Signal Boards	4	8.00	6	0.82
Pipeline Installation	Concrete/Industrial Saws	1	8.00	81	0.73
Pipeline Installation	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Pipeline Installation	Off-Highway Trucks	2	4.00	402	0.38
Pipeline Installation	Cranes	1	4.00	231	0.29
Pipeline Installation	Welders	1	6.00	46	0.45
Well Installation	Cranes	1	4.00	231	0.29
Re-paving	Pavers	1	7.00	130	0.42
Re-paving	Rollers	1	7.00	80	0.38
Re-paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37

Booster Pump Installation	Cranes	1	4.00	231	0.29
Booster Pump Installation	Forklifts	1	4.00	89	0.20
Booster Pump Installation	Tractors/Loaders/Backhoes	0	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Well Installation	5	13.00	5.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Pipeline Installation	11	28.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Re-paving	3	8.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Booster Pump Installation	2	13.00	5.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Well Installation - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0514	0.5965	0.3108	9.1000e-004		0.0247	0.0247		0.0227	0.0227	0.0000	83.1960	83.1960	0.0259	0.0000	83.8435
Total	0.0514	0.5965	0.3108	9.1000e-004		0.0247	0.0247		0.0227	0.0227	0.0000	83.1960	83.1960	0.0259	0.0000	83.8435

Unmitigated Construction Off-Site

Vendor	1.0100e-003	0.0269	7.5700e-003	6.0000e-005	1.3500e-003	1.9000e-004	1.5400e-003	3.9000e-004	1.8000e-004	5.7000e-004	0.0000	5.4323	5.4323	3.7000e-004	0.0000	5.4416
Worker	3.1000e-003	2.6500e-003	0.0285	7.0000e-005	6.1300e-003	6.0000e-005	6.1800e-003	1.6300e-003	5.0000e-005	1.6800e-003	0.0000	6.0864	6.0864	2.3000e-004	0.0000	6.0921
Total	4.1100e-003	0.0296	0.0361	1.3000e-004	7.4800e-003	2.5000e-004	7.7200e-003	2.0200e-003	2.3000e-004	2.2500e-003	0.0000	11.5187	11.5187	6.0000e-004	0.0000	11.5337

3.3 Pipeline Installation - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1709	1.5110	1.0533	2.1300e-003		0.0789	0.0789		0.0746	0.0746	0.0000	185.2686	185.2686	0.0462	0.0000	186.4229
Total	0.1709	1.5110	1.0533	2.1300e-003		0.0789	0.0789		0.0746	0.0746	0.0000	185.2686	185.2686	0.0462	0.0000	186.4229

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.9300e-003	8.4900e-003	0.0914	2.2000e-004	0.0707	1.8000e-004	0.0709	0.0178	1.6000e-004	0.0179	0.0000	19.5112	19.5112	7.3000e-004	0.0000	19.5295
Total	9.9300e-003	8.4900e-003	0.0914	2.2000e-004	0.0707	1.8000e-004	0.0709	0.0178	1.6000e-004	0.0179	0.0000	19.5112	19.5112	7.3000e-004	0.0000	19.5295

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1709	1.5110	1.0533	2.1300e-003		0.0789	0.0789		0.0746	0.0746	0.0000	185.2683	185.2683	0.0462	0.0000	186.4226
Total	0.1709	1.5110	1.0533	2.1300e-003		0.0789	0.0789		0.0746	0.0746	0.0000	185.2683	185.2683	0.0462	0.0000	186.4226

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.9300e-003	8.4900e-003	0.0914	2.2000e-004	0.0707	1.8000e-004	0.0709	0.0178	1.6000e-004	0.0179	0.0000	19.5112	19.5112	7.3000e-004	0.0000	19.5295
Total	9.9300e-003	8.4900e-003	0.0914	2.2000e-004	0.0707	1.8000e-004	0.0709	0.0178	1.6000e-004	0.0179	0.0000	19.5112	19.5112	7.3000e-004	0.0000	19.5295

3.4 Re-paving - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0476	0.4890	0.4031	5.8000e-004		0.0299	0.0299		0.0275	0.0275	0.0000	53.3331	53.3331	0.0166	0.0000	53.7482
Paving	9.0000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0485	0.4890	0.4031	5.8000e-004		0.0299	0.0299		0.0275	0.0275	0.0000	53.3331	53.3331	0.0166	0.0000	53.7482

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.8400e-003	2.4300e-003	0.0261	6.0000e-005	5.6100e-003	5.0000e-005	5.6600e-003	1.4900e-003	5.0000e-005	1.5400e-003	0.0000	5.5746	5.5746	2.1000e-004	0.0000	5.5799
Total	2.8400e-003	2.4300e-003	0.0261	6.0000e-005	5.6100e-003	5.0000e-005	5.6600e-003	1.4900e-003	5.0000e-005	1.5400e-003	0.0000	5.5746	5.5746	2.1000e-004	0.0000	5.5799

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0476	0.4890	0.4031	5.8000e-004		0.0299	0.0299		0.0275	0.0275	0.0000	53.3330	53.3330	0.0166	0.0000	53.7481

Paving	9.0000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0485	0.4890	0.4031	5.8000e-004		0.0299	0.0299		0.0275	0.0275	0.0000	53.3330	53.3330	0.0166	0.0000	53.7481

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.8400e-003	2.4300e-003	0.0261	6.0000e-005	5.6100e-003	5.0000e-005	5.6600e-003	1.4900e-003	5.0000e-005	1.5400e-003	0.0000	5.5746	5.5746	2.1000e-004	0.0000	5.5799
Total	2.8400e-003	2.4300e-003	0.0261	6.0000e-005	5.6100e-003	5.0000e-005	5.6600e-003	1.4900e-003	5.0000e-005	1.5400e-003	0.0000	5.5746	5.5746	2.1000e-004	0.0000	5.5799

3.5 Booster Pump Installation - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	5.6200e-003	0.0630	0.0280	5.0000e-005		3.1600e-003	3.1600e-003		2.9000e-003	2.9000e-003	0.0000	4.9967	4.9967	1.5600e-003	0.0000	5.0356
Total	5.6200e-003	0.0630	0.0280	5.0000e-005		3.1600e-003	3.1600e-003		2.9000e-003	2.9000e-003	0.0000	4.9967	4.9967	1.5600e-003	0.0000	5.0356

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.5000e-004	9.3900e-003	2.6400e-003	2.0000e-005	4.7000e-004	7.0000e-005	5.4000e-004	1.4000e-004	6.0000e-005	2.0000e-004	0.0000	1.8950	1.8950	1.3000e-004	0.0000	1.8983
Worker	1.0800e-003	9.2000e-004	9.9400e-003	2.0000e-005	2.1400e-003	2.0000e-005	2.1600e-003	5.7000e-004	2.0000e-005	5.9000e-004	0.0000	2.1232	2.1232	8.0000e-005	0.0000	2.1252
Total	1.4300e-003	0.0103	0.0126	4.0000e-005	2.6100e-003	9.0000e-005	2.7000e-003	7.1000e-004	8.0000e-005	7.9000e-004	0.0000	4.0182	4.0182	2.1000e-004	0.0000	4.0234

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	5.6200e-003	0.0630	0.0280	5.0000e-005		3.1600e-003	3.1600e-003		2.9000e-003	2.9000e-003	0.0000	4.9967	4.9967	1.5600e-003	0.0000	5.0356
Total	5.6200e-003	0.0630	0.0280	5.0000e-005		3.1600e-003	3.1600e-003		2.9000e-003	2.9000e-003	0.0000	4.9967	4.9967	1.5600e-003	0.0000	5.0356

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
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Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.5000e-004	9.3900e-003	2.6400e-003	2.0000e-005	4.7000e-004	7.0000e-005	5.4000e-004	1.4000e-004	6.0000e-005	2.0000e-004	0.0000	1.8950	1.8950	1.3000e-004	0.0000	1.8983
Worker	1.0800e-003	9.2000e-004	9.9400e-003	2.0000e-005	2.1400e-003	2.0000e-005	2.1600e-003	5.7000e-004	2.0000e-005	5.9000e-004	0.0000	2.1232	2.1232	8.0000e-005	0.0000	2.1252
Total	1.4300e-003	0.0103	0.0126	4.0000e-005	2.6100e-003	9.0000e-005	2.7000e-003	7.1000e-004	8.0000e-005	7.9000e-004	0.0000	4.0182	4.0182	2.1000e-004	0.0000	4.0234

PVOU IZ Iterim Remedy - Pipeline Installation, Booster Station Pump Upgrades, Well Installation - Los Angeles-South Coast County, Winter

PVOU IZ Iterim Remedy - Pipeline Installation, Booster Station Pump Upgrades, Well Installation

Los Angeles-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	30.00	1000sqft	0.69	30,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	33
Climate Zone	9			Operational Year	2020
Utility Company	Southern California Edison				
CO2 Intensity (lb/MW hr)	702.44	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - pipelines, booster station pump upgrade and well installation

Land Use - Conservatively assumes 30,000 square feet of pipeline installation (up to 15,000 linear feet with average 2 foot trench width), booster pump stations are existing facilities, well is a negligible land use amount

Construction Phase - Per RD/RA workplan schedule

Off-road Equipment - Component-specific equipment assumptions

Off-road Equipment - component-specific equipment assumptions

Off-road Equipment - Component-specific equipment assumptions

Off-road Equipment - drill rig, forklift, loader, and off-highway truck assumed

Trips and VMT -

Vehicle Trips -

Area Coating -

Energy Use -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	100.00	86.00
tblConstructionPhase	NumDays	5.00	128.00
tblConstructionPhase	NumDays	100.00	30.00
tblOffRoadEquipment	OffRoadEquipmentType	Cranes	Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Bore/Drill Rigs
tblOffRoadEquipment	OffRoadEquipmentType		Signal Boards
tblOffRoadEquipment	OffRoadEquipmentType		Concrete/Industrial Saws
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Cranes
tblOffRoadEquipment	OffRoadEquipmentType		Welders
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	UsageHours	6.00	4.00
tblOffRoadEquipment	UsageHours	6.00	4.00
tblOffRoadEquipment	UsageHours	8.00	4.00
tblProjectCharacteristics	OperationalYear	2018	2020

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2018	3.6492	31.4153	24.5476	0.0467	1.2187	1.7031	2.9218	0.3071	1.5995	1.9066	0.0000	4,534.5897	4,534.5897	1.0972	0.0000	4,562.0202
Maximum	3.6492	31.4153	24.5476	0.0467	1.2187	1.7031	2.9218	0.3071	1.5995	1.9066	0.0000	4,534.5897	4,534.5897	1.0972	0.0000	4,562.0202

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2018	3.6492	31.4153	24.5476	0.0467	1.2187	1.7031	2.9218	0.3071	1.5995	1.9066	0.0000	4,534.5897	4,534.5897	1.0972	0.0000	4,562.0202
Maximum	3.6492	31.4153	24.5476	0.0467	1.2187	1.7031	2.9218	0.3071	1.5995	1.9066	0.0000	4,534.5897	4,534.5897	1.0972	0.0000	4,562.0202

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Well Installation	Building Construction	1/1/2018	4/30/2018	5	86	

2	Pipeline Installation	Trenching	5/1/2018	10/25/2018	5	128
3	Re-paving	Paving	5/1/2018	10/25/2018	5	128
4	Booster Pump Installation	Building Construction	10/26/2018	12/6/2018	5	30

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0.69

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Re-paving	Cement and Mortar Mixers	0	6.00	9	0.56
Well Installation	Off-Highway Trucks	1	4.00	402	0.38
Well Installation	Forklifts	1	4.00	89	0.20
Well Installation	Bore/Drill Rigs	1	8.00	221	0.50
Well Installation	Tractors/Loaders/Backhoes	1	4.00	97	0.37
Pipeline Installation	Signal Boards	4	8.00	6	0.82
Pipeline Installation	Concrete/Industrial Saws	1	8.00	81	0.73
Pipeline Installation	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Pipeline Installation	Off-Highway Trucks	2	4.00	402	0.38
Pipeline Installation	Cranes	1	4.00	231	0.29
Pipeline Installation	Welders	1	6.00	46	0.45
Well Installation	Cranes	1	4.00	231	0.29
Re-paving	Pavers	1	7.00	130	0.42
Re-paving	Rollers	1	7.00	80	0.38
Re-paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Booster Pump Installation	Cranes	1	4.00	231	0.29
Booster Pump Installation	Forklifts	1	4.00	89	0.20
Booster Pump Installation	Tractors/Loaders/Backhoes	0	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Well Installation	5	13.00	5.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Pipeline Installation	11	28.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Re-paving	3	8.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Booster Pump Installation	2	13.00	5.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Well Installation - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1954	13.8711	7.2274	0.0212		0.5741	0.5741		0.5282	0.5282		2,132.7422	2,132.7422	0.6640		2,149.3410
Total	1.1954	13.8711	7.2274	0.0212		0.5741	0.5741		0.5282	0.5282		2,132.7422	2,132.7422	0.6640		2,149.3410

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0240	0.6142	0.1842	1.2900e-003	0.0320	4.3900e-003	0.0364	9.2200e-003	4.2000e-003	0.0134		137.0749	137.0749	9.8900e-003		137.3222
Worker	0.0795	0.0600	0.6465	1.5400e-003	0.1453	1.3000e-003	0.1466	0.0385	1.1900e-003	0.0397		153.4749	153.4749	5.7800e-003		153.6193
Total	0.1035	0.6742	0.8306	2.8300e-003	0.1773	5.6900e-003	0.1830	0.0478	5.3900e-003	0.0531		290.5498	290.5498	0.0157		290.9415

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1954	13.8711	7.2274	0.0212		0.5741	0.5741		0.5282	0.5282	0.0000	2,132.7422	2,132.7422	0.6640		2,149.3410
Total	1.1954	13.8711	7.2274	0.0212		0.5741	0.5741		0.5282	0.5282	0.0000	2,132.7422	2,132.7422	0.6640		2,149.3410

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0240	0.6142	0.1842	1.2900e-003	0.0320	4.3900e-003	0.0364	9.2200e-003	4.2000e-003	0.0134		137.0749	137.0749	9.8900e-003		137.3222
Worker	0.0795	0.0600	0.6465	1.5400e-003	0.1453	1.3000e-003	0.1466	0.0385	1.1900e-003	0.0397		153.4749	153.4749	5.7800e-003		153.6193

Total	0.1035	0.6742	0.8306	2.8300e-003	0.1773	5.6900e-003	0.1830	0.0478	5.3900e-003	0.0531		290.5498	290.5498	0.0157		290.9415
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3.3 Pipeline Installation - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.6710	23.6089	16.4585	0.0333		1.2321	1.2321		1.1662	1.1662		3,190.9941	3,190.9941	0.7953		3,210.8755
Total	2.6710	23.6089	16.4585	0.0333		1.2321	1.2321		1.1662	1.1662		3,190.9941	3,190.9941	0.7953		3,210.8755

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1712	0.1293	1.3924	3.3200e-003	1.1293	2.7900e-003	1.1320	0.2834	2.5700e-003	0.2859		330.5613	330.5613	0.0124		330.8723
Total	0.1712	0.1293	1.3924	3.3200e-003	1.1293	2.7900e-003	1.1320	0.2834	2.5700e-003	0.2859		330.5613	330.5613	0.0124		330.8723

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.6710	23.6089	16.4585	0.0333		1.2321	1.2321		1.1662	1.1662	0.0000	3,190.9941	3,190.9941	0.7953		3,210.8755
Total	2.6710	23.6089	16.4585	0.0333		1.2321	1.2321		1.1662	1.1662	0.0000	3,190.9941	3,190.9941	0.7953		3,210.8755

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1712	0.1293	1.3924	3.3200e-003	1.1293	2.7900e-003	1.1320	0.2834	2.5700e-003	0.2859		330.5613	330.5613	0.0124		330.8723
Total	0.1712	0.1293	1.3924	3.3200e-003	1.1293	2.7900e-003	1.1320	0.2834	2.5700e-003	0.2859		330.5613	330.5613	0.0124		330.8723

3.4 Re-paving - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					

Off-Road	0.7439	7.6402	6.2989	9.1300e-003		0.4674	0.4674		0.4300	0.4300		918.5883	918.5883	0.2860		925.7375
Paving	0.0141					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.7580	7.6402	6.2989	9.1300e-003		0.4674	0.4674		0.4300	0.4300		918.5883	918.5883	0.2860		925.7375

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0489	0.0369	0.3978	9.5000e-004	0.0894	8.0000e-004	0.0902	0.0237	7.4000e-004	0.0245		94.4461	94.4461	3.5500e-003		94.5349
Total	0.0489	0.0369	0.3978	9.5000e-004	0.0894	8.0000e-004	0.0902	0.0237	7.4000e-004	0.0245		94.4461	94.4461	3.5500e-003		94.5349

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7439	7.6402	6.2989	9.1300e-003		0.4674	0.4674		0.4300	0.4300	0.0000	918.5883	918.5883	0.2860		925.7375
Paving	0.0141					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.7580	7.6402	6.2989	9.1300e-003		0.4674	0.4674		0.4300	0.4300	0.0000	918.5883	918.5883	0.2860		925.7375

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0489	0.0369	0.3978	9.5000e-004	0.0894	8.0000e-004	0.0902	0.0237	7.4000e-004	0.0245		94.4461	94.4461	3.5500e-003		94.5349
Total	0.0489	0.0369	0.3978	9.5000e-004	0.0894	8.0000e-004	0.0902	0.0237	7.4000e-004	0.0245		94.4461	94.4461	3.5500e-003		94.5349

3.5 Booster Pump Installation - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3744	4.1976	1.8665	3.6500e-003		0.2104	0.2104		0.1936	0.1936		367.1928	367.1928	0.1143		370.0506
Total	0.3744	4.1976	1.8665	3.6500e-003		0.2104	0.2104		0.1936	0.1936		367.1928	367.1928	0.1143		370.0506

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0240	0.6142	0.1842	1.2900e-003	0.0320	4.3900e-003	0.0364	9.2200e-003	4.2000e-003	0.0134		137.0749	137.0749	9.8900e-003		137.3222
Worker	0.0795	0.0600	0.6465	1.5400e-003	0.1453	1.3000e-003	0.1466	0.0385	1.1900e-003	0.0397		153.4749	153.4749	5.7800e-003		153.6193
Total	0.1035	0.6742	0.8306	2.8300e-003	0.1773	5.6900e-003	0.1830	0.0478	5.3900e-003	0.0531		290.5498	290.5498	0.0157		290.9415

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3744	4.1976	1.8665	3.6500e-003		0.2104	0.2104		0.1936	0.1936	0.0000	367.1928	367.1928	0.1143		370.0506
Total	0.3744	4.1976	1.8665	3.6500e-003		0.2104	0.2104		0.1936	0.1936	0.0000	367.1928	367.1928	0.1143		370.0506

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

Vendor	0.0240	0.6142	0.1842	1.2900e-003	0.0320	4.3900e-003	0.0364	9.2200e-003	4.2000e-003	0.0134		137.0749	137.0749	9.8900e-003		137.3222
Worker	0.0795	0.0600	0.6465	1.5400e-003	0.1453	1.3000e-003	0.1466	0.0385	1.1900e-003	0.0397		153.4749	153.4749	5.7800e-003		153.6193
Total	0.1035	0.6742	0.8306	2.8300e-003	0.1773	5.6900e-003	0.1830	0.0478	5.3900e-003	0.0531		290.5498	290.5498	0.0157		290.9415

PVOU IZ Iterim Remedy - Pipeline Installation, Booster Station Pump Upgrades, Well Installation - Los Angeles-South Coast County, Summer

PVOU IZ Iterim Remedy - Pipeline Installation, Booster Station Pump Upgrades, Well Installation

Los Angeles-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	30.00	1000sqft	0.69	30,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	33
Climate Zone	9			Operational Year	2020
Utility Company	Southern California Edison				
CO2 Intensity (lb/MW hr)	702.44	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - pipelines, booster station pump upgrade and well installation

Land Use - Conservatively assumes 30,000 square feet of pipeline installation (up to 15,000 linear feet with average 2 foot trench width), booster pump stations are existing facilities, well is a negligible land use amount

Construction Phase - Per RD/RA workplan schedule

Off-road Equipment - Component-specific equipment assumptions

Off-road Equipment - component-specific equipment assumptions

Off-road Equipment - Component-specific equipment assumptions

Off-road Equipment - drill rig, forklift, loader, and off-highway truck assumed

Trips and VMT -

Vehicle Trips -

Area Coating -

Energy Use -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	100.00	86.00
tblConstructionPhase	NumDays	5.00	128.00
tblConstructionPhase	NumDays	100.00	30.00
tblOffRoadEquipment	OffRoadEquipmentType	Cranes	Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Bore/Drill Rigs
tblOffRoadEquipment	OffRoadEquipmentType		Signal Boards
tblOffRoadEquipment	OffRoadEquipmentType		Concrete/Industrial Saws
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Cranes
tblOffRoadEquipment	OffRoadEquipmentType		Welders
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	UsageHours	6.00	4.00
tblOffRoadEquipment	UsageHours	6.00	4.00
tblOffRoadEquipment	UsageHours	8.00	4.00
tblProjectCharacteristics	OperationalYear	2018	2020

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2018	3.6279	31.3992	24.7017	0.0469	1.2187	1.7031	2.9218	0.3071	1.5995	1.9066	0.0000	4,560.9107	4,560.9107	1.0982	0.0000	4,588.3645
Maximum	3.6279	31.3992	24.7017	0.0469	1.2187	1.7031	2.9218	0.3071	1.5995	1.9066	0.0000	4,560.9107	4,560.9107	1.0982	0.0000	4,588.3645

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2018	3.6279	31.3992	24.7017	0.0469	1.2187	1.7031	2.9218	0.3071	1.5995	1.9066	0.0000	4,560.9107	4,560.9107	1.0982	0.0000	4,588.3645
Maximum	3.6279	31.3992	24.7017	0.0469	1.2187	1.7031	2.9218	0.3071	1.5995	1.9066	0.0000	4,560.9107	4,560.9107	1.0982	0.0000	4,588.3645

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Well Installation	Building Construction	1/1/2018	4/30/2018	5	86	

2	Pipeline Installation	Trenching	5/1/2018	10/25/2018	5	128
3	Re-paving	Paving	5/1/2018	10/25/2018	5	128
4	Booster Pump Installation	Building Construction	10/26/2018	12/6/2018	5	30

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0.69

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Re-paving	Cement and Mortar Mixers	0	6.00	9	0.56
Well Installation	Off-Highway Trucks	1	4.00	402	0.38
Well Installation	Forklifts	1	4.00	89	0.20
Well Installation	Bore/Drill Rigs	1	8.00	221	0.50
Well Installation	Tractors/Loaders/Backhoes	1	4.00	97	0.37
Pipeline Installation	Signal Boards	4	8.00	6	0.82
Pipeline Installation	Concrete/Industrial Saws	1	8.00	81	0.73
Pipeline Installation	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Pipeline Installation	Off-Highway Trucks	2	4.00	402	0.38
Pipeline Installation	Cranes	1	4.00	231	0.29
Pipeline Installation	Welders	1	6.00	46	0.45
Well Installation	Cranes	1	4.00	231	0.29
Re-paving	Pavers	1	7.00	130	0.42
Re-paving	Rollers	1	7.00	80	0.38
Re-paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Booster Pump Installation	Cranes	1	4.00	231	0.29
Booster Pump Installation	Forklifts	1	4.00	89	0.20
Booster Pump Installation	Tractors/Loaders/Backhoes	0	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Well Installation	5	13.00	5.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Pipeline Installation	11	28.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Re-paving	3	8.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Booster Pump Installation	2	13.00	5.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Well Installation - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1954	13.8711	7.2274	0.0212		0.5741	0.5741		0.5282	0.5282		2,132.7422	2,132.7422	0.6640		2,149.3410
Total	1.1954	13.8711	7.2274	0.0212		0.5741	0.5741		0.5282	0.5282		2,132.7422	2,132.7422	0.6640		2,149.3410

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0230	0.6128	0.1676	1.3200e-003	0.0320	4.3200e-003	0.0363	9.2200e-003	4.1300e-003	0.0134		140.8397	140.8397	9.2700e-003		141.0716
Worker	0.0718	0.0542	0.7021	1.6400e-003	0.1453	1.3000e-003	0.1466	0.0385	1.1900e-003	0.0397		162.9797	162.9797	6.1100e-003		163.1325
Total	0.0948	0.6670	0.8697	2.9600e-003	0.1773	5.6200e-003	0.1829	0.0478	5.3200e-003	0.0531		303.8194	303.8194	0.0154		304.2041

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1954	13.8711	7.2274	0.0212		0.5741	0.5741		0.5282	0.5282	0.0000	2,132.7422	2,132.7422	0.6640		2,149.3410
Total	1.1954	13.8711	7.2274	0.0212		0.5741	0.5741		0.5282	0.5282	0.0000	2,132.7422	2,132.7422	0.6640		2,149.3410

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0230	0.6128	0.1676	1.3200e-003	0.0320	4.3200e-003	0.0363	9.2200e-003	4.1300e-003	0.0134		140.8397	140.8397	9.2700e-003		141.0716
Worker	0.0718	0.0542	0.7021	1.6400e-003	0.1453	1.3000e-003	0.1466	0.0385	1.1900e-003	0.0397		162.9797	162.9797	6.1100e-003		163.1325

Total	0.0948	0.6670	0.8697	2.9600e-003	0.1773	5.6200e-003	0.1829	0.0478	5.3200e-003	0.0531		303.8194	303.8194	0.0154		304.2041
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3.3 Pipeline Installation - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.6710	23.6089	16.4585	0.0333		1.2321	1.2321		1.1662	1.1662		3,190.9941	3,190.9941	0.7953		3,210.8755
Total	2.6710	23.6089	16.4585	0.0333		1.2321	1.2321		1.1662	1.1662		3,190.9941	3,190.9941	0.7953		3,210.8755

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1547	0.1167	1.5122	3.5300e-003	1.1293	2.7900e-003	1.1320	0.2834	2.5700e-003	0.2859		351.0332	351.0332	0.0132		351.3623
Total	0.1547	0.1167	1.5122	3.5300e-003	1.1293	2.7900e-003	1.1320	0.2834	2.5700e-003	0.2859		351.0332	351.0332	0.0132		351.3623

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.6710	23.6089	16.4585	0.0333		1.2321	1.2321		1.1662	1.1662	0.0000	3,190.9941	3,190.9941	0.7953		3,210.8755
Total	2.6710	23.6089	16.4585	0.0333		1.2321	1.2321		1.1662	1.1662	0.0000	3,190.9941	3,190.9941	0.7953		3,210.8755

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1547	0.1167	1.5122	3.5300e-003	1.1293	2.7900e-003	1.1320	0.2834	2.5700e-003	0.2859		351.0332	351.0332	0.0132		351.3623
Total	0.1547	0.1167	1.5122	3.5300e-003	1.1293	2.7900e-003	1.1320	0.2834	2.5700e-003	0.2859		351.0332	351.0332	0.0132		351.3623

3.4 Re-paving - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					

Off-Road	0.7439	7.6402	6.2989	9.1300e-003		0.4674	0.4674		0.4300	0.4300		918.5883	918.5883	0.2860		925.7375
Paving	0.0141					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.7580	7.6402	6.2989	9.1300e-003		0.4674	0.4674		0.4300	0.4300		918.5883	918.5883	0.2860		925.7375

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0442	0.0334	0.4321	1.0100e-003	0.0894	8.0000e-004	0.0902	0.0237	7.4000e-004	0.0245		100.2952	100.2952	3.7600e-003		100.3892
Total	0.0442	0.0334	0.4321	1.0100e-003	0.0894	8.0000e-004	0.0902	0.0237	7.4000e-004	0.0245		100.2952	100.2952	3.7600e-003		100.3892

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7439	7.6402	6.2989	9.1300e-003		0.4674	0.4674		0.4300	0.4300	0.0000	918.5883	918.5883	0.2860		925.7375
Paving	0.0141					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.7580	7.6402	6.2989	9.1300e-003		0.4674	0.4674		0.4300	0.4300	0.0000	918.5883	918.5883	0.2860		925.7375

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0442	0.0334	0.4321	1.0100e-003	0.0894	8.0000e-004	0.0902	0.0237	7.4000e-004	0.0245		100.2952	100.2952	3.7600e-003		100.3892
Total	0.0442	0.0334	0.4321	1.0100e-003	0.0894	8.0000e-004	0.0902	0.0237	7.4000e-004	0.0245		100.2952	100.2952	3.7600e-003		100.3892

3.5 Booster Pump Installation - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3744	4.1976	1.8665	3.6500e-003		0.2104	0.2104		0.1936	0.1936		367.1928	367.1928	0.1143		370.0506
Total	0.3744	4.1976	1.8665	3.6500e-003		0.2104	0.2104		0.1936	0.1936		367.1928	367.1928	0.1143		370.0506

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0230	0.6128	0.1676	1.3200e-003	0.0320	4.3200e-003	0.0363	9.2200e-003	4.1300e-003	0.0134		140.8397	140.8397	9.2700e-003		141.0716
Worker	0.0718	0.0542	0.7021	1.6400e-003	0.1453	1.3000e-003	0.1466	0.0385	1.1900e-003	0.0397		162.9797	162.9797	6.1100e-003		163.1325
Total	0.0948	0.6670	0.8697	2.9600e-003	0.1773	5.6200e-003	0.1829	0.0478	5.3200e-003	0.0531		303.8194	303.8194	0.0154		304.2041

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3744	4.1976	1.8665	3.6500e-003		0.2104	0.2104		0.1936	0.1936	0.0000	367.1928	367.1928	0.1143		370.0506
Total	0.3744	4.1976	1.8665	3.6500e-003		0.2104	0.2104		0.1936	0.1936	0.0000	367.1928	367.1928	0.1143		370.0506

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

Vendor	0.0230	0.6128	0.1676	1.3200e-003	0.0320	4.3200e-003	0.0363	9.2200e-003	4.1300e-003	0.0134		140.8397	140.8397	9.2700e-003		141.0716
Worker	0.0718	0.0542	0.7021	1.6400e-003	0.1453	1.3000e-003	0.1466	0.0385	1.1900e-003	0.0397		162.9797	162.9797	6.1100e-003		163.1325
Total	0.0948	0.6670	0.8697	2.9600e-003	0.1773	5.6200e-003	0.1829	0.0478	5.3200e-003	0.0531		303.8194	303.8194	0.0154		304.2041

**NORTHROP GRUMMAN SYSTEMS CORPORATION PUENTE VALLEY OPERABLE UNIT, INTERMEDIATE
ZONE INTERIM REMEDY PROJECT DRAFT INITIAL STUDY/MITIGATED NEGATIVE DECLARATION**

Appendix B Land Use Consistency Letter
November 13, 2017

Appendix B LAND USE CONSISTENCY LETTER

Technical Memorandum



To: Klaus Rohwer, Equipoise Corporation
Nisha Dattaray, Northrop Grumman Systems Corp.

From: Roy Frausto, Compliance Officer / Project Engineer

Date: April 14, 2017 (Revised)

Re: **Analysis of Connection to Suburban Water Systems to Convey PVOU Intermediate Zone Project Water**

♦ *Objective*

La Puente Valley County Water District (LPVCWD) has completed an analysis of a connection between LPVCWD and Suburban Water Systems (SWS) to convey water from the Puente Valley Operable Unit Intermediate Zone (PVOU IZ) project. The objective is to accommodate the delivery of the PVOU IZ project's effluent water into the LPVCWD and/or City of Industry Waterworks System (CIWS) distribution system and convey to a connection delivery point to SWS. A summary of the existing water systems and the required system improvements for delivering the water to SWS are provided herein.

♦ *Existing LPVCWD Zone 1 Analysis*

The LPVCWD Zone 1 water service area is currently supplied by its BPOU Treatment Facility. Water from this Treatment Facility is delivered to an existing one-hundred-thousand (100,000) gallon reservoir and then boosted using three booster pumps at the Hudson Booster Station (which also serves the entire LPVCWD system dependent demands of Zones 2, 3 and 4). Water is pumped from the Hudson Reservoir through Zone 1 to the Main Street Reservoirs. The highest water surface elevation in the Main Street Reservoir is at 488 feet. Assuming the water surface in the Hudson Reservoir is 328 feet, the pumps should add a minimum of 160 feet of head (not considering frictional head losses) as shown in the calculation below:

$$488 \text{ feet} - 328 \text{ feet} = 160 \text{ feet}$$

The dependent demand of the Hudson Booster Station under near Maximum Day Demand (MDD) conditions is 2,492 gpm. Pump capacities for the Hudson Booster Station based on recent Edison hydraulic efficiency test results and are summarized in **Table 1** below.

Table 1 – Hudson Booster Station Capacity

Booster Station	Booster Pump Designation	Suction Zone	Discharge Zone	Horse Power	SCE Efficiency Test/Year	Capacity (gpm)	Total Head (ft.)	Design Flow (gpm)
Hudson Booster Station	Booster 1	Hudson Tank	PZ 1	75	Yes/2014	1,170	164.4	1,250
	Booster 2	Hudson Tank	PZ 1	75	Yes/2014	975	160	1,250
	Booster 3	Hudson Tank	PZ 1	150	N/A	---	---	1,700

Two pumps producing 2,145 gpm cannot achieve the dependent MDD requirement in Zone 1 and dependent Zones. In the event of a MDD, Booster #3 would activate to meet the demand requirements.

💧 *PVOU IZ Water Conveyance and Proposed Pipeline Alignments*

Water from the PVOU IZ treatment facility can be conveyed to a proposed PVOU IZ Booster Station through existing Zone 1 LPVCWD 14" and 16" pipelines as show in **Figure 1**.

Figure 1 – PVOU IZ Water Conveyance to Proposed PVOU IZ Booster Station



By utilizing the existing LPVCWD pipeline infrastructure, PVOU IZ water can be delivered to SWS through the existing LPVCWD 14" and 16" pipelines, a proposed PVOU IZ Booster Station to be located at 15629 Hudson Avenue (LPVCWD Hudson site), and a new interconnection from the proposed PVOU IZ Booster Station effluent to an existing SWS watermain located at Hudson Avenue.

The improvements required for the delivery of treated water are summarized below and are identified in **Figure 2**.

- Construction of a 16" Hot Tap at the LPVCWD's 16" ACP waterline on the 1500 block of Hudson Avenue.
- 15629 Hudson Avenue – Installation of a new pump station equipped with a Variable Frequency Drive (VFD) motor control.
- 12" Influent Piping – Approximate 70 linear feet will be constructed from the 16" Hot Tap to the suction side of the booster station.
- 12" Effluent Piping – Approximate 70 linear feet will be constructed from the discharge side of the booster station to the existing 12" SWS waterline

Note that this memorandum only covers required waterlines to deliver water from LPVCWD to SWS's interconnection, however the assumed layout of the new SWS waterline is also displayed in **Figure 2** for informational purposes. A separate memo and/or summary of required infrastructure will be submitted by SWS.

Figure 2 – Interconnection of PVOU IZ Water to SWS



◆ *Proposed PVOU IZ Booster Pump Station for SWS Analysis*

For purposes of design efficiency, the proposed PVOU IZ Booster Station will be designed to use PVOU IZ water conveyed from the PVOU IZ Treatment Plant effluent to LPVCWD's Zone 1 through a 16" distribution line as its source of influent water to minimize the pumping requirements for Total Dynamic Head (TDH).

Note that a 1,750 gpm max influent flow will be used for this analysis to account for maximum redundancy (assuming SWS cannot take PVOU IZ water at another interconnection). In the event that SWS can commit to take a flow at another location, the overall sizing of the pump station can be reduced by using a different max influent flow.

Head Loss

The friction head loss throughout the waterline to connect the proposed PVOU IZ Booster Station effluent water to SWS waterlines on Hacienda Blvd. will be estimated by using the pipe diameter, pipe length and roughness factor. Minor losses due to bends, valves, and/or tees will be assumed and estimated. The resulting losses for 1,750 gpm are shown in **Table 2** below:

Table 2 – Pipe Head Loss at 1,750 gpm

Description	Watermain	Qty.	Flow (gpm)	Diameter (in.)	Length (ft.)	C Factor	Loss (ft.)
Linear Loss	14" DIP	1	1,750	12	*500	140	3.18
Minor Losses Assumed and Estimated							10
Sub-Total Losses							13.18
15% Misc. Losses							1.97
							15.2

*Based on estimated length to connect to existing Suburban watermain on Hacienda Blvd.

Total Dynamic Head (TDH)

The elevation of the proposed pump station is approximately 331 feet above mean sea level (AMSL), and the approximate elevation of SWS's existing waterline on Hacienda Blvd. is 329 feet AMSL. Per SWS's data, the hydraulic grade line (HGL) at their Hacienda Blvd waterline location is 555 feet. The HGL for the existing 16" LPVCWD distribution waterline on Hudson Ave. is 476 feet. The required TDH to deliver water to SWS's existing 555 zone is calculated below (suction losses will be assumed to be 5 psi):

Pressure Head: 555 ft. – 476 ft. = 79 ft.

Head and Suction Losses = 26.8 ft.

Elevation Head: 329 ft. – 331 ft. = –2 ft.

Total Dynamic Head: 79 ft. + 26.8 ft. – 2 ft. = **103.8 ft.**

Factoring in a 10% contingency, a **TDH of 115 feet** will be used to appropriately size a motor.

Motor Size

Having calculated a TDH of 115 feet, the motor will be sized to adequately support a maximum design flow rate of 1,750 gpm with an assumed motor efficiency of 70%. Based on the variability of flow, the pump station envisioned will consist of four (4) variable speed pumps having 500 gpm maximum capacities. Using this analysis, the required Motor Size for each pump is calculated below:

$$\text{Brake Horse Power: } \frac{500 \text{ gpm} * 115 \text{ ft.}}{3960 * 0.7} = \mathbf{20.74}$$

Per the calculated Brake Horse Power, four booster pumps will be utilized, each having a motor horsepower rating of **25 HP**.

Edison Feed

The current Edison feed at the LPVCWD Hudson site is composed of a trip unit with an amperage frame of 600 amps. The rated current for the 75 HP booster pumps and 150 HP booster pump is 125 amps each and 250 amps, respectively.

The estimated required power for the proposed PVOU IZ Booster Station will require a 460/3/60 supply service. Using a “rule of thumb” calculation for 3-phase, 460 volt motors, the calculation below describes the estimated rated current for the proposed pump station:

$$25 \text{ HP} * \left(\frac{1.25 \text{ amps}}{\text{HP}} \right) = \mathbf{31.25 \text{ amps}}$$

$$\text{Total Estimated Rated Current: } 31.25 \text{ amps} * 4 \text{ booster pumps} = \mathbf{125 \text{ amps}}$$

Using a 20% contingency, the total estimated rated current required is **150 amps**. **Table 3** below summarizes the amperage usage for each LPVCWD Hudson Booster pump along with the proposed PVOU IZ Booster Station:

Table 3 – Hudson Site Booster Pumps

Pump Name	HP	Amps
Hudson Booster 1 (Existing)	75	125
Hudson Booster 2 (Existing)	75	125
Hudson Booster 3 (Existing)	150	250
PVOU IZ Booster Station (Proposed)	100	150
TOTALS	400	650

As shown in **Table 3**, the total amperage load at the LPVCWD Hudson site exceeds the maximum load rate of 600 amps. However, with the assumption that the proposed PVOU IZ Booster Station only draws a maximum of 150 amps, the entire LPVCWD Hudson site can be operated in a fashion without exceeding the trip amperage rate of 600 amps to accommodate the proposed booster station. Specifically, LPVCWD will only operate Hudson Booster’s No. 1 and No. 2 as part of

normal day-to-day operation, and only activate Hudson Booster No. 3 in the event of a fire flow demand (appropriate programming settings will be in-place). In doing so, the normal amperage usage, including the proposed PVOU IZ Booster Station, would total to 450 amps. **Note that the cost estimate line item for electrical upgrades in the Cost Analysis section accounts for this scenario only.** In the event that the proposed PVOU IZ Booster Station requires a larger or separate service, a new cost analysis for electrical upgrades will need to be conducted.

💧 *Building/Housing Modification*

Currently, the building that exists at the LPVCWD Hudson site may be modified to house the proposed PVOU IZ Booster Station. In the event that the current building cannot be modified, a separate housing structure will be required. Further investigation will be required to adequately size a housing structure after final PVOU IZ Booster Station dimensions' have been identified. However, for purposes of cost estimating, a line item for building/housing modification has been included in the Cost Analysis section.

💧 *Cost Analysis*

Table 4 below summarizes the cost for integrating the new SWS interconnection at the LPVCWD Hudson site:

Table 4 – Cost Analysis

Item #	Description	Quantity	Unit	Unit Cost	Total Cost
1	Packaged Pump Station w/ Freight and Install	1	LS	\$ 350,000.00	\$ 350,000.00
2	Building/Housing Modification	1	LS	\$ 50,000.00	\$ 50,000.00
4	16" Hot Tap w/ Valve	1	LS	\$ 8,000.00	\$ 8,000.00
5	12" Influent Piping	70	LF	\$ 280.00	\$ 19,600.00
6	12" Effluent Piping	70	LF	\$ 280.00	\$ 19,600.00
7	Electrical Upgrades	1	LS	\$ 50,000.00	\$ 50,000.00
8	SCADA Integration	1	LS	\$ 20,000.00	\$ 20,000.00
Subtotal					\$ 517,200.00
Admin and Engineering		15%			\$ 77,580.00
Construction Contingency		10%			\$ 51,720.00
Total					\$ 646,500.00

💧 *Conclusion*

As identified, by utilizing the existing LPVCWD pipeline infrastructure, PVOU IZ water can be delivered to SWS through the existing LPVCWD 14" and 16" pipelines, a proposed PVOU IZ Booster Station to be located at 15629 Hudson Avenue (LPVCWD Hudson site), and a new interconnection from the proposed PVOU IZ Booster Station effluent to an existing SWS watermain located at Hudson Avenue.

The proposed PVOU IZ Booster Station will be sized with an overall smaller footprint (by reducing the pumping requirements for TDH) by tapping into the LPVCWD 16" distribution line on Hudson Ave. as its source of influent water. ***In addition, the size of the proposed PVOU IZ Booster Station's pumps and motors can be further reduced if SWS can commit to take flow at another interconnection location. Specifically, if SWS were to take a portion of the 1,750 gpm flow at another location, the pumps, motors, and amperage feed requirements would decrease and in-turn reduce the cost for line item 1 on Table 4.***

Given that the electrical service at LPVCWD's Hudson site is equipped with a trip unit with an amperage frame of 600 amps, the entire LPVCWD Hudson site can be operated in a fashion to accommodate the proposed PVOU IZ Booster Station by operating Hudson Booster's No. 1 and No. 2 as part of normal day-to-day operation, and only activate Hudson Booster No. 3 in the event of a fire flow demand. In doing so, the normal amperage usage, including the proposed PVOU IZ Booster Station would total to 450 amps.

As previously identified, the existing building at the LPVCWD Hudson site may be modified to house the proposed pump station. However, a separate housing structure may be required to house the pump station in the event that the existing building cannot be modified.

The objective goal to accommodate the development of the PVOU project's effluent water into the LPVCWD and/or City of Industry Waterworks System (CIWS) distribution system with a connection delivery point of the project water to SWS can adequately be achieved by integrating the aforementioned identified improvements.

If you have any questions or comments, please feel free to call me at (626) 330-2126 or email me at RFrausto@lapuentewater.com.

Respectfully Submitted,

Roy Frausto

Roy Frausto
La Puente Valley County Water District

**NORTHROP GRUMMAN SYSTEMS CORPORATION PUENTE VALLEY OPERABLE UNIT, INTERMEDIATE
ZONE INTERIM REMEDY PROJECT DRAFT INITIAL STUDY/MITIGATED NEGATIVE DECLARATION**

Appendix C Analysis of Connection to Suburban Water Systems to Convey PVOU Intermediate Zone
Project Water REvised April 14, 2017
November 13, 2017

**Appendix C ANALYSIS OF CONNECTION TO SUBURBAN
WATER SYSTEMS TO CONVEY PVOU
INTERMEDIATE ZONE PROJECT WATER REVISED
APRIL 14, 2017**



Northrop Grumman Systems Corporation
Corporate Real Estate Department- D2
One Space Park Drive
Redondo Beach, CA 90278

June 23, 2015

Brian James
Planning Director
City of Industry Planning Department
15625 East Stafford Street
Suite 100
City of Industry, CA 91744

Re: 111 Hudson Avenue, City of Industry, California (the "Property")

Dear Mr. James:

On June 8, 2015, Northrop Grumman Systems Corporation (Northrop Grumman) received final approval from the Successor Agency to the Industry Urban-Development Agency ("Successor Agency") concerning Northrop Grumman's proposed purchase of the Property located at 111 Hudson Avenue, City of Industry, California. Northrop Grumman's proposed use of the Property is to construct and operate a facility to process and treat groundwater to produce clean water (the "Facility") as part of its coordinated and regulated efforts to restore essential drinking water supplies in the San Gabriel Valley. (The Facility is further described in Exhibit E to the Purchase Agreement between Northrop Grumman and the Successor Agency, which exhibit is enclosed with this letter.) The Successor Agency's approval commences the sixty-day due diligence period under the Purchase Agreement. This letter helps Northrop Grumman complete its due diligence related to land use matters.

As part of Northrop Grumman's due diligence, we would like to confirm that Northrop Grumman's proposed Facility would be consistent with and allowed under (1) the "Employment" land use designation of the City's General Plan, and (2) the Industrial zoning for the Property. In that regard, Section 7.15(b) of the Purchase Agreement provides that "As of the Effective Date, the property is properly zoned for the 'Improvements' to be completed by Developer described on Exhibit 'E' attached hereto and incorporated herein by this reference." This confirmation is limited only to land use. Construction of the project would of course be subject to the normal application, submittal of construction documents, plan check approvals, and permits.

For your convenience, we have added a concurrence signature block below confirming that Northrop Grumman's proposed Facility would be consistent with and allowed under the land use designation of the City's General Plan as well as the Industrial zoning for the Property. Please note that Northrop Grumman has a limited due diligence period pursuant to the

Brian James
June 23, 2015
Page 2

Purchase Agreement and time is of the essence. Please return a signed original to the following address:

Northrop Grumman Systems Corporation
Corporate Real Estate Department- D2
One Space Park Drive
Redondo Beach, CA 90278

Thank you for your assistance and please let us know if you need any further information. We sincerely appreciate the City's support as Northrop Grumman works to restore essential drinking water supplies in the San Gabriel Valley.

Sincerely,




A.J. Paz
Corporate Director of Real Estate

Enclosures

cc: Elizabeth Brown
Andrea Chang

Concurrence:



Brian James
Planning Director
City of Industry
Date: 6/24/15

EXHIBIT “E”
IMPROVEMENTS

Construction of a modern groundwater treatment plant (the “**Plant**”) to treat contaminated groundwater from the Puente Valley Operable Unit. The Plant will be designed to reduce volatile organic compounds, 1, 4-dioxane, and perchlorate to meet or exceed applicable drinking water standards using two-stage liquid-phase granular activated carbon, advanced oxidation employing ultraviolet light and hydrogen peroxide and ion exchange resin and will treat an expected flow rate of approximately 1,500 gallons per minute. A modular reverse osmosis system will be used to treat total dissolved solids and nitrate as necessary. The equipment for these processes, as well as for safely storing water and chemicals, will be purchased and installed on the Property.

Table 1
Land Use Designations

<i>Land Use Designation</i>	<i>Allowable Uses ¹</i>	<i>Max FAR ²</i>
Employment	<ul style="list-style-type: none"> - A variety of business and employment uses including industrial manufacturing, assembly, printing, machining, milling, welding, research and development, distribution, warehousing, storage, and supporting office uses - The uses permitted in the Commercial land use designation when zoned appropriately 	0.5 FAR
Commercial	<ul style="list-style-type: none"> - A mixture of commercial (retail, service, tourist-serving), medical, professional office, entertainment, fitness, and dining uses - The uses permitted in the Employment land use designation when zoned appropriately 	0.5 FAR (commercial) 1.0 FAR (office)
Recreation/Open Space	<ul style="list-style-type: none"> - Commercial recreation such as golf courses, resorts, equestrian facilities, exposition centers - Open space such as parks, trails, bikeways, indoor and outdoor recreational facilities, and interpretive centers - Commercial nurseries 	N/A
Institutional	<ul style="list-style-type: none"> - Public schools and school offices and maintenance facilities - Publicly owned and maintained facilities including civic centers, governmental institutions and facilities, post offices, museums, transportation facilities, and libraries. - Quasi-Public Uses such as public utility facilities, power generation facilities, and electrical substations - Hospitals, nursing homes, comprehensive subacute and skilled nursing care, and long term residential care 	N/A

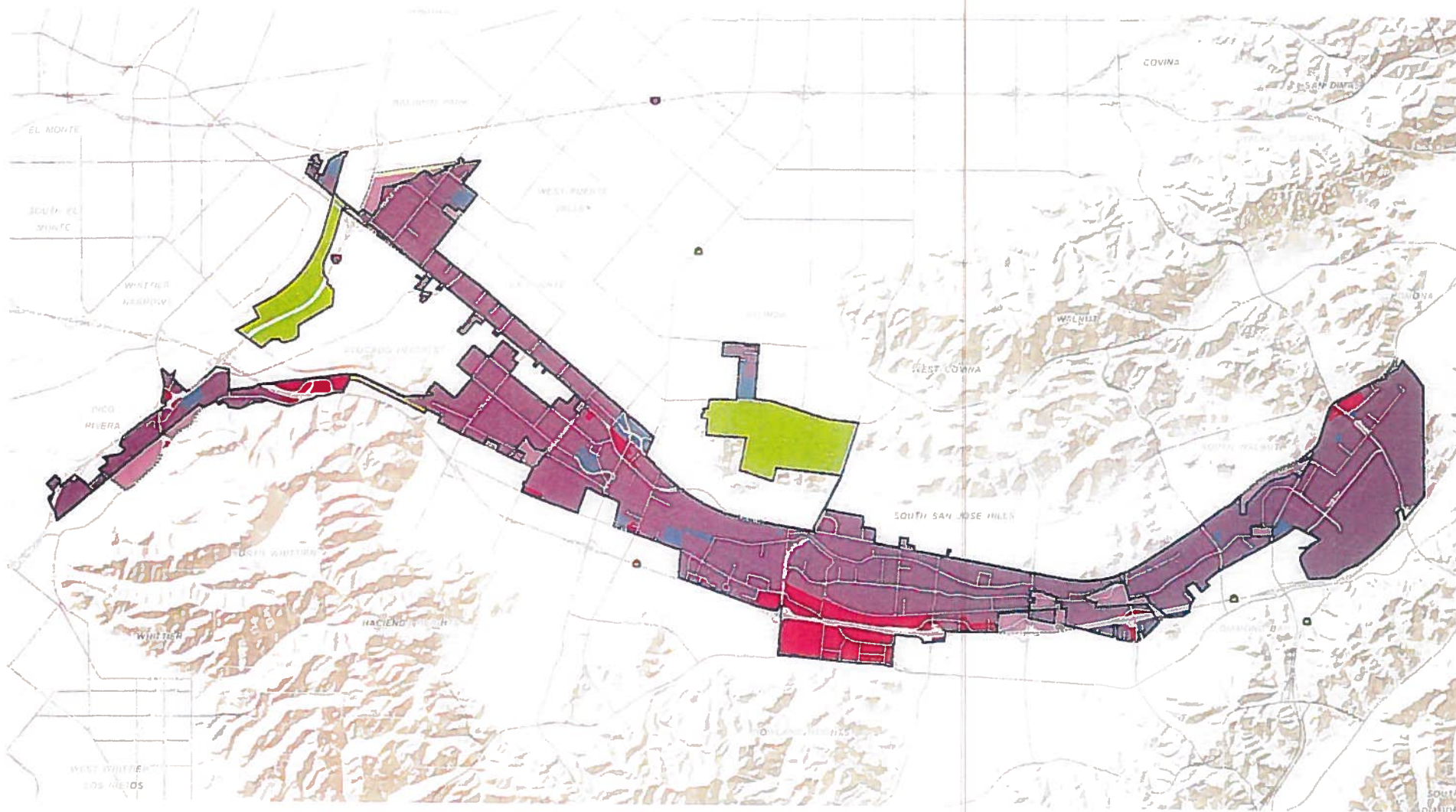
¹ Uses such as railways, roadways, waterways, utilities, and flood control channels are accommodated within each land use designation.

² When more than one parcel shares common parking, landscape, access, and maintenance, the maximum FAR is determined based on the perimeter of an entire project. This means that individual parcels within the project may exceed the maximum FAR as long as the FAR for the entire project complies with the maximum FAR.



This image shows the City of Industry looking from its eastern end to the west circa 2004.

Valley Boulevard separates the City of Industry's employment and commercial uses from the residential communities to the north.



General Plan		General Plan Sphere	
	Employment		Employment
	Commercial		Commercial
	Institutional		Institutional
	Recreation & Open Space		Recreation & Open Space

	City of Industry
	Sphere of Influence Boundary

MITIGATION MONITORING AND REPORTING PLAN

Mitigation Measure	Action(s) Required	Required Time of Compliance	Implementation Responsibility	Verification Responsibility	Verification Method	Compliance Date
Biological Resources						
3.4-1	<p>3.4-1: Nesting Bird Impacts Avoidance</p> <p>Vegetation removal is not proposed to occur for this Project. However, birds may nest in trees and shrubs adjacent to proposed construction activities (e.g. landscaping occurs primarily along sidewalks immediately adjacent to proposed pipelines in existing roads). Nesting birds can be adversely affected from noise or human activity generated during construction. To ensure compliance with California Department of Fish and Game and the MBTA, and to avoid potential impacts to nesting birds, the proposed construction activities within 500 feet of suitable nesting habitat (i.e., landscaped areas) should either occur outside of the general nesting season (February 1 through August 31) or if construction occurs during the bird nesting season, a preconstruction nesting bird survey will be conducted by a qualified biologist prior to the start of construction. Should nesting birds be found or "active" nests be located, an exclusionary buffer shall be established by the biologist. The buffer may be up to 500 feet in diameter, depending on the species of nesting bird detected. The buffer ("no work area") shall be clearly marked in the field by construction personnel under guidance of the biologist, and the construction shall not be conducted within this zone until the biologist determines that the young have fledged or the nest is no longer active.</p>	Prior to and during construction, if conducted between February 1 and August 31	Northrop Grumman Systems Corporation	La Puente Valley County Water District	Review of Northrop Grumman Systems Corporation written documentation demonstrating compliance prior to construction	

Puente Valley Operable Unit, Intermediate Zone Interim Remedy Project

Transportation and Traffic						
3.16-1	3.16-1: Federal Aviation Administration Coordination Northrop Grumman will coordinate with the FAA during the treatment plant design process and complete the required notifications, as applicable. The FAA will evaluate and determine if the treatment plant structures pose a hazard to air navigation. The FAA may provide limits and will determine if obstruction marking and/or lighting are necessary.	Prior to Construction	Northrop Grumman Systems Corporation	La Puente Valley County Water District	Review of Northrop Grumman Systems Corporation written documentation demonstrating completion and result of FAA coordination and clearance prior to construction	



RESOLUTION NO. 249

RESOLUTION OF THE BOARD OF DIRECTORS OF LA PUENTE VALLEY COUNTY WATER DISTRICT ADOPTING A MITIGATED NEGATIVE DECLARATION FOR THE PUENTE VALLEY OPERABLE UNIT INTERMEDIATE ZONE REMEDY PROJECT

WHEREAS, Northrop Grumman Systems Corporation ("Northrop") has been identified by the United States Environmental Protection Agency ("EPA") as a "potentially responsible party" in the Puente Valley Operable Unit Intermediate Zone ("PVOU IZ") in the Main San Gabriel Groundwater Basin ("Basin"), and consequently plans to construct a groundwater extraction and treatment facility and appurtenant improvements to fulfill its remedial obligations under a Consent Decree with EPA;

WHEREAS, the Basin serves as a water source for the La Puente Valley County Water District (the "District");

WHEREAS, the District has experience and expertise in the extraction and treatment of groundwater for potable use and has agreed to manage and operate said groundwater treatment facility for Northrop pursuant to written agreement;

WHEREAS, the District's partnership with Northrop in the PVOU IZ will enhance water supply reliability for the District and neighboring water purveyors, and generate revenue that will provide funding for capital improvement projects to offset the cost of water service to the District's customers;

WHEREAS, the aforementioned groundwater extraction and treatment facility and appurtenant improvements consists specifically of the utilization of six existing groundwater extraction wells and the construction and installation of one additional groundwater extraction well, a proposed treatment plant, conveyance infrastructure, minor water system improvements downstream of the treatment plant, and compliance, sentinel, and monitoring wells (hereinafter collectively referred to as the "Project");

WHEREAS, the Project is located in various portions of the Cities of Industry and La Puente, with the water treatment plant to be constructed at 111 Hudson Avenue in the City of Industry, California 91744;

WHEREAS, the Project constitutes a "project" as defined by the California Environmental Quality Act ("CEQA"), and the District is the appropriate lead agency for making determinations under CEQA;

WHEREAS, Stantec Consulting Services Inc. was engaged to assist the District with the preparation of the necessary environmental documentation to support the Project;

WHEREAS, an initial study was prepared for the Project and concluded that the Project as proposed could have a significant impact on the environment, but the District revised the Project so the environmental impacts would be reduced to an insignificant level through the mitigation measures incorporated into the Project;

WHEREAS, the District therefore authorized the preparation and circulation of a Mitigated Negative Declaration for the Project in accordance with the requirements of CEQA;

WHEREAS, the District, as lead agency for the Project, gave Notice of Intent to Adopt a Mitigated Negative Declaration in accordance with Section 15072 of the CEQA Guidelines and provided a public review period of not less than thirty (30) days beginning November 18, 2017, in accordance with Section 15073 of the CEQA Guidelines;

WHEREAS, the Project was assigned State Clearinghouse No. 2017111072;

WHEREAS, no comments on the Project were received, and the Mitigated Negative Declaration and related materials which constitute the record of proceedings upon which this Resolution is based are located at the District's office, the custodian of those documents being the General Manager of the District;

WHEREAS, at a duly noticed public meeting on December 21, 2017, the District's Board of Directors considered the proposed Final Mitigated Negative Declaration together with any and all comments received during the public review process.

NOW, THEREFORE, BE IT RESOLVED, that the Board of Directors of La Puente Valley County Water District has reviewed the Final Mitigated Negative Declaration and the record before it and finds:

(i) That the Mitigated Negative Declaration is adequate and complete in that it addresses all potential environmental effects of the Project;

(ii) That there is no substantial evidence in the record that the Project will have a significant effect on the environment as proposed with the incorporation of the subject mitigation measures in that all potential significant environmental effects will be reduced to an acceptable level or that such effects have been eliminated or reduced to a level of insignificance by the mitigation measures identified in the Mitigation Monitoring Program of the Mitigated Negative Declaration;

(iii) That the Mitigated Negative Declaration complies with CEQA; and

(iv) That these findings reflect the independent judgment and analysis of the Board of Directors of La Puente Valley County Water District.

BE IT FURTHER RESOLVED, that the Board of Directors of La Puente Valley County Water District hereby adopts the Mitigation Monitoring Program for the Project attached hereto as Exhibit "A."

BE IT FURTHER RESOLVED, that the General Manager and District staff are hereby directed to file a Notice of Determination with the State Office of Planning and Research and the Los Angeles County Clerk-Recorder pursuant to the provisions of Section 15075 of the CEQA Guidelines.

BE IT FURTHER RESOLVED, that the General Manager and District staff are hereby further authorized to take such other steps and actions as may be necessary to implement and carry out the purpose and intent of this Resolution.

ADOPTED this 21st day of December, 2017.

David Hastings, Board President

ATTEST:

Greg B. Galindo, Board Secretary

EXHIBIT A

MITIGATION MONITORING AND REPORTING PLAN

Mitigation Measure	Action(s) Required	Required Time of Compliance	Implementation Responsibility	Verification Responsibility	Verification Method	Compliance Date
Biological Resources						
3.4-1	<p>3.4-1: Nesting Bird Impacts Avoidance</p> <p>Vegetation removal is not proposed to occur for this Project. However, birds may nest in trees and shrubs adjacent to proposed construction activities (e.g. landscaping occurs primarily along sidewalks immediately adjacent to proposed pipelines in existing roads). Nesting birds can be adversely affected from noise or human activity generated during construction. To ensure compliance with California Department of Fish and Game and the MBTA, and to avoid potential impacts to nesting birds, the proposed construction activities within 500 feet of suitable nesting habitat (i.e., landscaped areas) should either occur outside of the general nesting season (February 1 through August 31) or if construction occurs during the bird nesting season, a preconstruction nesting bird survey will be conducted by a qualified biologist prior to the start of construction. Should nesting birds be found or "active" nests be located, an exclusionary buffer shall be established by the biologist. The buffer may be up to 500 feet in diameter, depending on the species of nesting bird detected. The buffer ("no work area") shall be clearly marked in the field by construction personnel under guidance of the biologist, and the construction shall not be conducted within this zone until the biologist determines that the young have fledged or the nest is no longer active.</p>	Prior to and during construction, if conducted between February 1 and August 31	Northrop Grumman Systems Corporation	La Puente Valley County Water District	Review of Northrop Grumman Systems Corporation written documentation demonstrating compliance prior to construction	

Puente Valley Operable Unit, Intermediate Zone Interim Remedy Project

Transportation and Traffic						
3.16-1	3.16-1: Federal Aviation Administration Coordination Northrop Grumman will coordinate with the FAA during the treatment plant design process and complete the required notifications, as applicable. The FAA will evaluate and determine if the treatment plant structures pose a hazard to air navigation. The FAA may provide limits and will determine if obstruction marking and/or lighting are necessary.	Prior to Construction	Northrop Grumman Systems Corporation	La Puente Valley County Water District	Review of Northrop Grumman Systems Corporation written documentation demonstrating completion and result of FAA coordination and clearance prior to construction	

STAFF REPORT



Meeting Date: December 21, 2017

To: Honorable Board of Directors

From: Greg B. Galindo, General Manager

Subject: Puente Valley Operable Unit Intermediate Zone Project (PVOU IZ)
Definitive Agreements

Purpose - *1) Enter into an agreement with Northrop Grumman Systems Corporation to provide water treatment operations services. 2) Enter into an agreement with Northrop Grumman Systems Corporation and Suburban Water System to receive and deliver treated water.*

Recommendation - *Authorize the General Manager to 1) execute the agreement with Northrop Grumman Systems Corporation for Operations Services of the Proposed PVOU IZ Groundwater Treatment Facility 2) execute the agreement with Northrop Grumman System Corporation and Suburban Water Systems for the Delivery and Beneficial Use of Treated Water. Referred to hereafter as the Definitive Agreements.*

Fiscal Impact - *The District shall be reimbursed or compensated for all costs related to its involvement with the PVOU IZ Project. Beginning sometime in 2019 or early 2020, the District anticipates annual revenue of approximately \$140,000, from treatment plant operations services and water wheeling fees, as a result of entering into the Definitive Agreements.*

Summary

Northrop Grumman (Northrop) was among a number of entities identified by the U.S. EPA as “potentially responsible parties” in the Puente Valley Operable Unit (“PVOU”) in the Main San Gabriel Basin. Northrop subsequently entered into a consent decree in 2009 with the EPA under which Northrop was required to clean up groundwater from the PVOU’s “intermediate zone.” Northrop has since developed plans to remediate that groundwater through a system of groundwater extraction wells, collection pipelines and a groundwater treatment facility. To date, Northrop has installed six remedy wells, with a seventh remedy well in the process of being installed. Water produced from these wells will be treated at a new groundwater treatment facility, which has been designed and shall be constructed at 111 Hudson Avenue, in the City of Industry, that will treat the extracted groundwater up to a maximum of 2,000 gallons per minute.

In 2014, District staff became interested in the PVOU IZ Project for the potential benefits it could provide to the District’s Customers. District staff determined that the new groundwater treatment facility would improve the District’s water supply reliability and potentially provide additional revenue from the delivery of treated water. District staff and the Board of Directors also identified the project as an opportunity to further assist and expedite the groundwater contamination efforts in the Main San Gabriel Basin.

In October 2014, the District, the Puente Basin Water Agency and Northrop approved a Term Sheet for participation in the Puente Valley Operable Unit Intermediate Zone project (“PVOU IZ Project”). The Term Sheet set forth the general terms upon which the District would agree to operate the PVOU IZ Water Treatment Facility and to receive potable water from said facility. The provisions of the Term Sheet greatly assisted in facilitating negotiations until a fully negotiated formal agreement could be developed.

To further facilitate the PVOU IZ Project the same parties entered into a Participation Agreement for the PVOU IZ Project. The Participation Agreement was an interim agreement, which described the parties’ respective obligations concerning certain permits and design work for the project that were to be completed parties could proceed with the final Definitive Agreements that would govern the actual construction and operation of the project.

Toward the end of 2016, the PVOU IZ Project was modified as a result of potential impacts from the PVOU on a well owned by neighboring Suburban Water Systems. Since that time the District has been working with Northrop and Suburban Water Systems to finalize terms of involvement in the PVOU IZ Project. The result of these efforts was the development of two definitive agreements, one to address the operations of the PVOU IZ Groundwater Treatment Facility and one to address the delivery of treated water from this facility.

Staff has been providing regular updates to the Board of Directors on the PVOU IZ Project and has previously provided an overview of the draft Definitive Agreements, that are now finalized and enclosed for the Board’s consideration. Staff and District Counsel have reviewed the final forms of both Definitive Agreements, which are substantively similar to previous versions of the agreements that were reviewed by the District’s PVOU IZ Ad Hoc Committee. At the December 21, 2018 Board of Directors meeting, staff will summarize key provisions of the Definitive Agreements.

The final design of the PVOU IZ Treatment System was submitted to EPA on October 31, 2017, and construction of the system is planned to begin by April of 2018. Construction of the plant is anticipated to be completed by April 2019 with treatment system prove-out to begin soon thereafter. The proposed treatment facility will be located adjacent to the District’s water distribution system. The proposed PVOU IZ groundwater treatment facility will utilize treatment processes that are very familiar to the District’s staff with the exception of the reverse osmosis treatment process.

The proposed PVOU IZ groundwater treatment facility is estimated to require an estimated 5,096 annual staff hours to properly operate and manage the new facility and the delivery of water it produces. The additional 5,096 staff hours results in approximately 2.5 full time equivalent staff positions. In April of 2017, the President of the District’s Board of Directors created an Ad Hoc Committee to assess the District’s current staff and make recommendations for changes in staffing levels and structure that would best position the District to accommodate the additional work load from its involvement with the PVOU IZ project. The Ad Hoc Committee recommendations were formalized in a staffing assessment and restructuring proposal report, which the Board will also consider at the December 21, 2018 Board meeting.

Fiscal Impact

Since the District's initial involvement in the PVOU IZ Project, the District has been reimbursed for its staff time and for other related services in support of the PVOU IZ Project. There has been no fiscal impact to date from our involvement, other than reallocation of staff time that would have otherwise been utilized for District business. As we look forward into 2018, construction on the treatment facility is set to begin in the Spring and is expected to be completed by Spring of 2019. After construction, the treatment facility will then be proved out over the course of several months. During the next 18 months the District will continue its involvement with the project and be reimbursed for its time and for any services in support of the project.

Beginning sometime in 2019 or 2020, the District anticipates annual revenue of approximately \$140,000, from treatment plant operations services and water wheeling fees, as a result of entering into the Definitive Agreements. All necessary cost related to the operation of the PVOU IZ Groundwater Treatment Facility shall be reimbursed by Northrop. Staff is certain that the District's involvement will result in a positive financial impact for the District's Customers.

Recommendation

Authorize the General Manager to 1) execute the agreement with Northrop Grumman Systems Corporation for Operations Services of the Proposed PVOU IZ Groundwater Treatment Facility 2) execute the agreement with Northrop Grumman System Corporation and Suburban Water Systems for the Delivery and Beneficial Use of Treated Water.

Respectfully Submitted,

Greg B. Galindo

General Manager

Enclosure

- Agreement for Operation Services of a Water Treatment Facility between the District and Northrop Grumman Systems Corporation
- Agreement for Delivery and Beneficial Use of Treated Water between the District, Suburban Water Systems and Northrop Grumman Systems Corporation.

AGREEMENT FOR OPERATION SERVICES OF A WATER TREATMENT FACILITY

This Agreement for Operation Services of a Water Treatment Facility (the “Agreement”) is dated as of December ___, 2017 by and between La Puente Valley County Water District (“LPVCWD”) and Northrop Grumman Systems Corporation (“Northrop Grumman”), and shall be effective as of the Effective Date as hereinafter defined. (At times, LPVCWD and Northrop Grumman may be referred to collectively herein as the “Parties” and individually as a “Party.”)

SECTION 1 RECITALS

1.1 Northrop Grumman is a Delaware corporation. It and other businesses, their predecessors and individuals have been identified by the United States Environmental Protection Agency (“EPA”) as “potentially responsible parties” in the Puente Valley Operable Unit (“PVOU”) in the Main San Gabriel Groundwater Basin (“Basin”). (Terms defined in this Section 1 are also defined in Section 2.)

1.2 LPVCWD is a county water district formed pursuant to California Water Code Section 30000 et seq. LPVCWD’s water system serves approximately 2,500 potable water service connections that reside within its 2.5 square miles of service area. LPVCWD’s service area covers portions of the City of La Puente and the City of Industry. The LPVCWD serves its customers through a water system comprised of 33 miles of pipeline, 3 reservoirs, five pressure zones, 13 booster pumps, 4 wells and a groundwater treatment facility.

1.3 Pursuant to a Consent Decree with EPA, Northrop Grumman is required to achieve performance criteria concerning groundwater contamination at a depth interval referred to as the “Intermediate Zone” in the PVOU, and Northrop Grumman will be implementing an

interim remedy for the PVOU (“Interim Remedy”) consisting of extraction wells in the Intermediate Zone (the “Remedy Wells”), pipelines leading from those wells to a treatment facility (the “Collection Pipelines”), a treatment facility (“Treatment Facility”), certain distribution and discharge pipelines, and other ancillary components of an overall treatment system (collectively, the “Subject Facilities.”)

1.4 To meet its obligations relative to those performance criteria, Northrop Grumman seeks to contract with LPVCWD for LPVCWD to operate and maintain the Subject Facilities in accordance with best industry practices, as the same may evolve over time, to ensure that the Subject Facilities are capable of operating on a near continuous basis in accordance with the design rates of flow.

1.5 The Subject Facilities will be capable of producing water that can be used for beneficial use, including but not limited to potable use (“Treated Water”). Northrop Grumman’s objectives are to contain the lateral and vertical extent of the PVOU IZ plume as it exists at the time the Subject Facilities are certified by the EPA to be operational and functional and make Treated Water available to LPVCWD for distribution to eligible users for beneficial re-use.

1.6 Certain improvements will need to be made to LPVCWD’s water system as well as the water system operated by Suburban Water Systems (“Suburban”) for those entities to receive and beneficially use the Treated Water. Northrop Grumman, LPVCWD and Suburban have entered into a separate agreement titled “Agreement for Delivery and Beneficial Use of Treated Water” to be executed concurrently with this Agreement regarding those improvements and other matters related to the beneficial use of the Treated Water (the “Water Delivery Agreement”).

1.7 On December ___, 2017, LPVCWD, acting as the lead agency under the California Environmental Quality Act (Cal. Public Resources Code Section 21000 *et seq.*) adopted the Initial Study/Mitigated Negative Declaration for the Intermediate Zone Interim Remedy Project.

SECTION 2 DEFINITIONS

2.1 Agreement. This Agreement for Operation Services for a Water Treatment Facility between LPVCWD and Northrop Grumman.

2.2 Basin. The Main San Gabriel Groundwater Basin.

2.3 Brine. Waste concentrate from the Treatment Facility's reverse osmosis.

2.4 Brine Line. Conveyance pipeline for the Brine to an industrial sewer line of the Sanitation Districts of Los Angeles County.

2.5 Brine Line Meter. The meter that will measure the amount of Brine discharged to the industrial sewer line of the Sanitation Districts of Los Angeles County.

2.6 Collection Pipelines. The pipelines leading from the Remedy Wells to the Treatment Facility.

2.7 Consent Decree. The Consent Decree entered by the U.S. District Court for the Central District of California on August 21, 2009 (Civil Action No. 09-0866 (ABC)).

2.8 DDW. State Water Resources Control Board, Division of Drinking Water.

2.9 DDW Approval. DDW's approval for LPVCWD to operate the Subject Facilities, including an amendment to LPVCWD's existing DDW water supply permit to utilize the Treated Water.

2.10 Delivery Point. The location of the flow meter on the pipeline connecting the effluent from the Treatment Facility to LPVCWD's water system conveyance pipeline.

2.11 Discharge Pipeline. The connection between the Treatment Facility and a storm drain owned by the County of Los Angeles.

2.12 Drinking Water Standards. The primary and secondary MCLs set by EPA and DDW, and the Notification Levels set by DDW, and any other applicable standard imposed by DDW in the permit to be issued for the PVOU IZ Interim Remedy.

2.13 Effective Date. The date when LPVCWD adopts the CEQA document as set forth in Section 1.7.

2.14 EPA. The United States Environmental Protection Agency.

2.15 EPA Approval. Written documentation from EPA approving this Agreement in accordance with the Consent Decree.

2.16 ESD. The Explanation of Significant Differences for the PVOU dated June 14, 2005.

2.17 gpm. Gallons per minute.

2.18 Interim Remedy. The actions undertaken by Northrop Grumman to implement the intermediate zone remedy in the PVOU pursuant to the Consent Decree, the Statement of Work attached to the Consent Decree, and applicable work plans approved by EPA.

2.19 Intermediate Zone or PVOU IZ. The aquifer zone as defined by the ROD and ESD, and as characterized hydrostratigraphically in the *Conceptual Site Model Report, SZ-South and IZ Interim Remedies, Puente Valley Operable Unit* (14 August 2015).

2.20 Judgment. The Judgment entered by the Los Angeles County Superior Court in the action entitled Upper San Gabriel Valley Municipal Water District v. City of Alhambra, Case No. 924128, regarding the rights and other matters concerning the extraction of groundwater from the Basin.

2.21 LPVCWD. La Puente Valley County Water District.

2.22 MCL. MCL means a maximum contaminant level set by EPA or DDW, including as defined in Health & Safety Code §116275(f) and as set forth in 22 CCR Ch. 15, Articles 4, 5.5 and 16.

2.23 Notification Level. The notification level set by DDW, as defined in Health & Safety Code §116455(c)(3).

2.24 Northrop Grumman. Northrop Grumman Systems Corporation and any and all corporate predecessors and successors.

2.25 PVOU. Puente Valley Operable Unit.

2.26 Remedy Wells. Those extraction wells in the Intermediate Zone required to implement the Interim Remedy.

2.27 ROD. The Interim Record of Decision for the PVOU dated September 28, 1998.

2.28 RWQCB. The Regional Water Quality Control Board, Los Angeles Region.

2.29 Subject Facilities. The Remedy Wells, the Collection Pipelines, Treatment Facility, the Discharge Pipeline, the Brine Line, and other ancillary components of the overall treatment system contemplated by this Agreement as more specifically set forth in Exhibit “A” hereto.

2.30 Suburban. Suburban Water Systems, a privately owned water utility, and any and all corporate predecessors and assigns.

2.31 Three Parties. Collectively, Northrop Grumman, LPVCWD and Suburban.

2.32 Treatment Facility. The facility to be built by Northrop Grumman and operated and maintained by LPVCWD that will remedy contaminated groundwater from the PVOU IZ in accordance with the Interim Remedy.

2.33 Treatment Site. The real property located at 111 Hudson Avenue, City of Industry, California, which is owned by Northrop Grumman.

2.34 Treated Water. The water produced by the Treatment Facility.

2.35 Watermaster. The Main San Gabriel Basin Watermaster.

2.36 Watermaster Approvals. Watermaster's approval of applications submitted by LPVCWD under Section 28 of the Watermaster Rules and, if and as required by Watermaster, Watermaster's approval of this Agreement and the Water Delivery Agreement.

2.37 Watermaster Rules. The Main San Gabriel Basin Watermaster's Rules and Regulations established pursuant to the Judgment.

2.38 WQA. The San Gabriel Basin Water Quality Authority.

SECTION 3 DESIGN AND CONSTRUCTION OF SUBJECT FACILITIES

3.1 Northrop Grumman has installed six of the Remedy Wells and plans to install a seventh Remedy Well. The Remedy Wells are designed to extract groundwater for the purpose of removing contamination and to mitigate the contaminant plume in the PVOU IZ. Water from these wells will be treated at the Treatment Facility to be constructed by Northrop Grumman on the Treatment Site.

3.2 The Treatment Facility shall be designed to treat extracted groundwater so that the Treated Water will comply with applicable drinking water standards set by EPA and DDW, including secondary drinking water standards for total dissolved solids, chloride, and sulfate. In addition, Treated Water shall have a slightly positive Langlier Saturation Index and a calcium carbonate precipitation potential between 4 and 10 milligrams per liter.

3.3 The Treatment Facility shall produce Treated Water in accordance with applicable cleanup performance objectives for the PVOU IZ. The system will be designed to treat extracted groundwater in an amount up to 2,000 gallons per minute (gpm). The Treated Water flow rate will be less than that amount because of outages and discharge of Brine. It is estimated that

Treated Water will range (on average) between 1,200 and 1,750 gpm, but may decline over time as the Project is implemented. To maximize cleanup performance, the goal is to operate on a continuous basis (24 hours a day, 7 days a week). Treated Water will be made available to LPVCWD and Suburban. The Treatment Plant will also have the capability to discharge Treated Water and Brine to a facility owned by the Sanitations District of Los Angeles County pursuant to applicable permits. Northrop Grumman will only extract as much groundwater from the PVOU IZ as necessary to meet the remedial requirements of its Consent Decree with EPA.

3.4 At its cost, Northrop Grumman shall complete the design and construction of the Subject Facilities, (which are further described in Exhibit “A” hereto.) Northrop Grumman shall reasonably cooperate with LPVCWD on the design of the Subject Facilities referenced in this Section 3.4, including allowing LPVCWD the opportunity to review and comment on the design. However, Northrop Grumman shall have final authority over the design of the Subject Facilities.

3.5 In connection with its construction of the Remedy Wells, Northrop Grumman shall install metering devices on all Remedy Wells in accordance with the standard practice of the Watermaster.

3.6 The Treatment Facility includes unit processes that are supplied by equipment manufacturers providing performance guarantees to ensure the adequacy and operating efficiency of the unit processes. The procurement of these systems includes warranty, spare parts, training and other support services that are essential to the functionality of these systems. The Parties shall cooperate in the preparation of purchase agreements with these manufacturers. Northrop Grumman shall have final responsibility for these purchase contracts, and the

performance guarantees provided by the manufacturers shall inure to the benefit of Northrop Grumman and LPVCWD.

3.7 Northrop Grumman shall reasonably cooperate with LPVCWD with respect to the construction of the Subject Facilities, including allowing LPVCWD the opportunity to review and provide input on construction plans and bids. However, Northrop Grumman shall have final authority over all construction issues.

3.8 Northrop Grumman shall comply with all applicable laws and regulations in the design and construction of the Subject Facilities, including conditions that regulatory agencies may establish for the treatment and re-use of water.

3.9 Provided that LPVCWD complies with all applicable laws concerning waste streams generated by the Subject Facilities, such waste streams shall be owned by and will be the responsibility of Northrop Grumman. LPVCWD shall not be listed or identified as a generator on any waste manifest for any waste generated from operation of the Subject Facilities, and shall not incur any immediate or long-term liability in connection with said wastes.

SECTION 4 PERMITTING, OPERATION AND MAINTENANCE OF SUBJECT FACILITIES

4.1 At its cost, Northrop Grumman shall obtain all permits and government approvals necessary to operate the Subject Facilities, except LPVCWD shall obtain the Watermaster Approvals and the permit(s) and approval(s) from DDW necessary to operate the Treatment Facility. Northrop Grumman shall reimburse LPVCWD for its reasonable costs incurred in obtaining said permit(s) and approval(s) from Watermaster and DDW. The Parties shall

reasonably cooperate with each other in their respective efforts to obtain the permits and approvals in this Section 4.1.

4.2 Northrop Grumman shall take all actions after completion of construction of the Subject Facilities that are necessary to confirm that the Subject Facilities are operational in accordance with any and all applicable permits, approvals, and regulatory compliance standards. After the Subject Facilities are deemed to be operational, LPVCWD shall operate and maintain the Subject Facilities in the manner provided in this Agreement. Northrop Grumman may issue reasonable requests, guidance and advice to LPVCWD on operational and maintenance issues. Subject to Section 4.5 below, LPVCWD shall have final authority over decisions regarding the operation and maintenance of the Subject Facilities that are necessary to meet its obligations under this Agreement.

4.3 LPVCWD shall operate and maintain the Subject Facilities to meet the following requirements:

(a) LPVCWD shall operate and maintain the Subject Facilities to produce Treated Water of suitable quality for the intended use. This includes meeting separate standards for: (i) surface discharge; (ii) recharge; or (iii) distribution into the water systems of LPVCWD or Suburban.

(b) LPVCWD shall operate and maintain the Subject Facilities in accordance with industry standards and best practices in order to (i) maximize the amount of Treated Water delivered to Suburban and LPVCWD and (ii) minimize the amount of Brine generated by the Treatment Facility.

(c) LPVCWD shall operate and maintain the Subject Facilities in compliance with all applicable laws, regulations, agency orders and standards, and the operating permits described in Section 4.1 of this Agreement, including but not limited to all applicable testing, monitoring and reporting requirements.

(d) LPVCWD acknowledges that near continuous operation (accounting for temporary shutdowns due to ordinary repair and maintenance) of the Subject Facilities is required at the time that the EPA certifies the Subject Facilities are operational and functional to achieve and maintain compliance with the performance criteria adopted by EPA in the ROD, as modified by the ESD. LPVCWD shall use best efforts to operate and maintain the Subject Facilities in a manner that will achieve those performance criteria. However, Northrop Grumman shall have sole responsibility to (i) negotiate the performance criteria for the Subject Facilities with EPA and (ii) satisfy all requirements imposed by EPA and any other regulatory agency concerning the remediation of the groundwater contamination in the PVOU IZ, including those set forth in the ROD, the ESD and the Consent Decree.

4.4 LPVCWD shall calibrate and maintain metering devices on all Remedy Wells in accordance with the standards and practices of Watermaster.

4.5 Consistent with its obligations to meet the performance criteria adopted by EPA in the ROD, as modified by the ESD, Northrop Grumman shall issue written directions to LPVCWD as to which Remedy Wells to extract contaminated groundwater and the rate of extraction from those Remedy Wells. Subject to satisfying those performance criteria, LPVCWD shall operate and maintain the Remedy Wells and Collection Pipelines as it deems necessary to satisfy its obligations under this Agreement. With respect to any extraordinary

repair or rehabilitation of any of the Remedy Wells, LPVCWD shall submit a proposal for such work to Northrop Grumman in the manner provided in Section 5.3 of this Agreement. Northrop Grumman, in its sole discretion, may approve LPVCWD's proposal or enter into a contract with a third party for performance of said work. LPVCWD shall have no obligation to perform any work involving the installation of an entirely new Remedy Well.

4.6 The Parties shall cooperate with each other to obtain approval from EPA, the Watermaster, and the RWQCB for temporary surface discharge of any Treated Water to the storm drain (owned by the County of Los Angeles) or other point of recharge in cases of emergency, start-up of the Treatment Facility, system commissioning testing of the Treatment Facility, periodic maintenance of the Treatment Facility, and/or other cases in which applicable law, regulation or agency order precludes LPVCWD from accepting all Treated Water or making it available to Suburban or itself. During such temporary periods when LPVCWD is precluded from accepting Treated Water within its distribution facilities or making it available to Suburban or itself, LPVCWD shall operate the Subject Facilities in accordance with applicable laws and regulations concerning alternative discharge of Treated Water to ensure continuous operation of the Subject Facilities.

4.7 LPVCWD's relationship to Northrop Grumman shall be as an independent contractor. LPVCWD shall employ all personnel required to perform services under this Agreement. Such personnel shall be under LPVCWD's exclusive direction and control and shall not be deemed to be employees of Northrop Grumman for any purpose.

4.8 LPVCWD shall be solely responsible for and shall pay all wages, salaries, fringe benefits and other amounts due to its employees in connection with performing work under this

Agreement. Because LPVCWD shall act as an independent contractor under this Agreement, LPVCWD shall be responsible for all reports and obligations respecting its employees relating to social security, income tax withholding, unemployment compensation, and workers' compensation.

4.9 LPVCWD shall purchase all supplies necessary to perform its obligations under the Agreement, including operating and maintaining the Subject Facilities. Title to all such supplies shall be in Northrop Grumman's name, and such supplies shall be received and held in inventory by LPVCWD. Such supplies shall be used by LPVCWD solely in connection with the operation and maintenance of the Subject Facilities. Security for such supplies shall be the responsibility of LPVCWD, whether stored at the Treatment Site or on property owned by LPVCWD. LPVCWD's written proposal for the provision of security and insurance for said supplies shall be submitted to Northrop Grumman for its consideration and prior approval.

4.10 Subject to Section 5.3 of this Agreement, LPVCWD shall be responsible for entering into the third party contracts (e.g., chemical suppliers, maintenance service providers, and engineers) reasonably necessary to operate the Treatment Facility in accordance with the requirements of this Agreement. LPVCWD shall provide Northrop Grumman copies of such third party contracts promptly after execution of the contracts.

4.11 LPVCWD shall operate the Treatment Facility according to all applicable laws and regulations and best industry practice concerning operational efficiency, as the same may change from time to time during this Agreement. LPVCWD shall formulate the necessary training programs, organize operations and maintenance systems, including Standard Operating Procedures and Unit Process Guidelines, and develop maintenance and asset management

systems and standards for the Subject Facilities. Those Standard Operating Procedures and Unit Process Guidelines shall be consistent with the Operating and Maintenance Manual to be approved by EPA and DDW, which shall be prepared by Northrop Grumman in consultation with LPVCWD. LPVCWD shall perform acceptance tests and conduct training and certification programs. LPVCWD shall provide monthly operational status reports to Northrop Grumman. Upon reasonable written request, Northrop Grumman retains the right to receive and review additional information, including but not limited to, remote viewing access to the main treatment system's Programmable Logic Controller, concerning LPVCWD's operation of the Treatment Facility.

4.12 Northrop Grumman's employees and contractors shall have access to the Subject Facilities upon providing 24-hours' notice (by email or in writing) to LPVCWD. Northrop Grumman shall be responsible for its employees and contractors complying with all applicable laws, regulations and LPVCWD's operating rules concerning the Subject Facilities.

4.13 Northrop Grumman shall provide LPVCWD with a reserve water account only for the purposes described in Sections 4.13 through 4.14 below (the "Reserve Water Account"). Northrop Grumman shall provide 1,600 acre feet of water in the Reserve Water Account for the Initial Term of this Agreement (as defined in Section 12.1, below). For each Extension Option exercised by Northrop Grumman pursuant to Section 12.1, below, the amount of the Reserve Water Account for that Extension Option period shall equal 200 acre feet multiplied by the number of years of the Extension Option period. If there is any amount remaining in the Reserve Water Account at the end of the Initial Term, then up to a maximum of 400 acre feet of water shall carry over into any Extension Option period. Likewise, any remaining amount at the end of any Extension Option period shall carry over into any subsequent Extension Option period up to

the same maximum amount of 400 acre feet. Upon termination of this Agreement, any amount that may be remaining in the Reserve Water Account shall be forfeited. Under no circumstances shall LPVCWD sell any water in the Reserve Water Account to any third party.

4.14 LPVCWD shall use its best efforts to deliver to Suburban 5.3 acre feet of Treated Water per day, or an average flow rate of 1,200 gpm based on a monthly average (the “Minimum Delivery Amount”). In those circumstances where LPVCWD does not deliver the Minimum Delivery Amount to Suburban the following provisions shall apply:

(a) If LPVCWD receives less than the Minimum Delivery Amount at the Delivery Point in any month, and LPVCWD does not deliver the entirety of said amount in Treated Water to Suburban, then an amount equivalent to the difference between the amount of water LPVCWD receives at the Delivery Point and the amount of Treated Water LPVCWD delivers to Suburban shall be deducted from the Reserve Water Account, and LPVCWD shall have no monetary obligation to Northrop Grumman.

(b) If LPVCWD receives the Minimum Delivery Amount at the Delivery Point in any month, and LPVCWD does not deliver the Minimum Delivery Amount in Treated Water to Suburban, then an amount equivalent to the difference between the Minimum Delivery Amount and the amount of Treated Water LPVCWD delivers to Suburban shall be deducted from the Reserve Water Account, and LPVCWD shall have no monetary obligation to Northrop Grumman.

(c) If the Reserve Water Account has been reduced to a zero balance, or there is insufficient water in the Reserve Water Account for a deduction pursuant to Section 4.14(a) or 4.14(b), above, then LPVCWD shall pay (a) Northrop Grumman the amount of the Replacement

Water Fee described in Exhibit B hereto, (b) Northrop Grumman the amount of LPVCWD's avoided costs described in Section 7.3 of the Water Delivery Agreement, and (c) the Watermaster Assessments described in Section 7.2 of the Water Delivery Agreement, for the amount of water that is inadequately deducted from the Reserve Water Account. Said payments shall be due and owing thirty (30) calendar days after either shortfall occurs.

4.15 LPVCWD shall provide written notice to Northrop Grumman of any amount deducted from the Reserve Water Account within ten (10) calendar days. In the case of an interruption in the water supply or a shut-down of the Treatment Facility, LPVCWD shall use commercially reasonable efforts to remedy the situation in an expeditious manner.

SECTION 5 COSTS ASSOCIATED WITH THE OPERATION OF THE SUBJECT FACILITIES

5.1 Northrop Grumman shall be responsible for all costs and fees associated with the operation and maintenance of the Subject Facilities, including the cost of: (a) extraction of contaminated water from the Remedy Wells; (b) treatment of contaminated water at the Treatment Facility; (c) operation and maintenance of the Subject Facilities, including necessary supplies therefor; (d) insurance; (e) repairs to the Subject Facilities; and (f) delivering the Treated Water to the Delivery Point.

5.2 Other than the Management Fee described in Section 5.8, the costs and fees described in Section 5.1 of this Agreement may be incurred directly by LPVCWD and shall be reimbursed by Northrop Grumman as provided in Sections 5.3, 5.7 and 6.2. Northrop Grumman's obligation to pay such fees and costs shall extend only to: (a) LPVCWD's labor costs directly related to the operation and maintenance of the Subject Facilities, including regulatory compliance monitoring and reporting, based on the hourly rates set forth on Exhibit C

to this Agreement and as increased annually in accordance with the consumer price index for urban wage earners and clerical workers in Los Angeles, Riverside, and Orange Counties; (b) LPVCWD's reasonable out of pocket costs (which shall not include overhead); and (c) fees charged to LPVCWD by a third party consultant, vendor or supplier in accordance with Section 5.3, below.

5.3 Except for an expense for ordinary maintenance and supplies costing less than \$20,000, which expenses shall be incurred pursuant to LPVCWD's purchasing policy, a copy of which is attached hereto as Exhibit D, or expenses necessitated by an emergency condition, LPVCWD shall not enter into a contract with a third party for supplies, services or work concerning the Subject Facilities unless Northrop Grumman provides prior written approval. In support of a request for such approval, LPVCWD shall submit to Northrop Grumman the following information: (a) a detailed scope of work, which shall include performance goals, schedule objectives, staffing and personnel requirements, and deliverables; and (b) an estimated total not-to-exceed cost with supporting documentation, including competitive bids where appropriate.

5.4 Except as set forth in the Water Delivery Agreement, Northrop Grumman shall not be responsible for any costs incurred by LPVCWD or Suburban in connection with the carriage, handling or distribution of Treated Water in any water system downstream of the Delivery Point.

5.5 LPVCWD shall reasonably cooperate with Northrop Grumman's efforts to obtain funding grants from the WQA or other governmental entities for costs to design, construct or operate the Subject Facilities.

5.6 Except for the first annual operating budget described below, LPVCWD shall establish an annual operating budget (“Annual Operating Budget”) for the Subject Facilities and provide that budget to Northrop Grumman for its review and approval by October 1st of each year. The Annual Operating Budget shall identify all fees and costs to be borne by Northrop Grumman pursuant to this Section 5. LPVCWD shall provide Northrop Grumman with budget updates on a quarterly basis after Northrop Grumman’s written approval of the Annual Operating Budget. Upon Northrop Grumman’s reasonable request, LPVCWD and Northrop Grumman shall meet to review any invoices sent by LPVCWD pursuant to Section 6, below, or any other financial matters. LPVCWD shall provide Northrop Grumman with the first Annual Operating Budget ninety (90) days before the estimated date for commencement of operations of the Subject Facilities, as determined by Northrop Grumman in accordance with Section 5.8 below. The first Annual Operating Budget shall cover the remainder of the calendar year in which that budget is submitted and the entire following calendar year.

5.7 Except for those services provided as part of the Management Fee when said fee is being paid pursuant to Section 5.8 below, Northrop Grumman shall reimburse LPVCWD for its fees and costs incurred in connection with the design, permitting and construction of the Subject Facilities in the manner provided in Section 5.2(b) of the Water Delivery Agreement, so long as LPVCWD complies with the following additional requirements: (a) LPVCWD provides, within sixty (60) days after the Effective Date of this Agreement, Northrop Grumman with a quarterly scope of work and budget (“T&M Budget”) if no Annual Operating Budget has been established, and (b) LPVCWD’s fees and costs are consistent with the T&M Budget as approved by Northrop Grumman.

5.8 Northrop Grumman shall pay LPVCWD an annual management fee of \$215,000.00 for the management and administration of the Subject Facilities, which fee shall be increased on an annual basis at a rate of 2% (the “Management Fee”). The Management Fee shall compensate LPVCWD for (a) the time and labor incurred by LPVCWD and certain LPVCWD employees, contractors and consultants pursuant to Exhibit E hereto, and (b) the risks assumed by LPVCWD under this Agreement as described in Exhibit E hereto. The Management Fee shall be paid beginning one year prior to the day of commencement of operations of the Subject Facilities, which date Northrop Grumman shall provide to LPVCWD in a written notice in the form attached hereto as Exhibit F (the “One-Year Notice”). The Management Fee shall be included in the calculation of the Annual Operating Budget prepared pursuant to Section 5.6. Upon commencement of payment of the Management Fee, LPVCWD shall not separately invoice Northrop Grumman, and Northrop Grumman shall not therefore be obligated to pay, for any of the services described in Exhibit E. If Northrop Grumman decides, in its sole discretion, that the estimated date for commencement of operations of the Subject Facilities will be materially delayed, then Northrop Grumman may, upon thirty (30) days’ written notice to LPVCWD, suspend paying the Management Fee, which will then obligate Northrop Grumman to reimburse LPVCWD for the services set forth in Exhibit E pursuant to Section 5.2, above. Northrop Grumman may resume paying the Management Fee upon providing thirty (30) days’ written notice to LPVCWD. If Northrop Grumman is paying the Management Fee, then the only other fees and costs incurred by LPVCWD in operating the Subject Facilities for which Northrop Grumman shall be responsible are reimbursements pursuant to Section 5.2 of this Agreement. The Management Fee shall be paid by Northrop Grumman to LPVCWD in advance in quarterly installments.

SECTION 6 BILLING AND PAYMENT PROVISIONS FOR PROJECT COSTS FOR OPERATIONS AND MAINTENANCE

6.1 Upon Northrop Grumman's written approval of the Annual Operating Budget, Northrop Grumman shall wire to a dedicated bank account held solely in LPVCWD's name on a quarterly basis an amount equal to twenty-five percent (25%) of the approved Annual Operating Budget. LPVCWD shall not commingle the funds in the dedicated bank account with any other funds held by LPVCWD. LPVCWD shall use funds wired by Northrop Grumman to the dedicated bank account only to pay for the fees and costs described in Section 5.1 of the Agreement. Upon written request by Northrop Grumman, LPVCWD shall provide copies of the bank statements for this account to Northrop Grumman.

6.2 LPVCWD shall issue a monthly statement to Northrop Grumman for the fees and costs described in Section 5 that are incurred in connection with the operation and maintenance of the Subject Facilities during the previous month, including, when applicable, the quarterly installment of the annual Management Fee (the "Monthly Statement"). As to fees and costs incurred pursuant to Section 5.2(a), except for those services included as part of the Management Fee when said Management Fee is being paid, the Monthly Statement shall identify the services and work performed by LPVCWD, including the appropriate backup documentation identifying the person or persons working on the matter, a description of the work performed, the hourly rate or rates charged, the total hours devoted to the work by each person, and the total amount of fees. Such backup documentation shall also include invoices from third parties such as vendors, contractors and consultants, to the extent incurred pursuant to Sections 5.2(b) and 5.2(c). All statements, invoices and backup documentation shall be sent to Northrop Grumman's project manager or other representative designated by Northrop Grumman, and may be sent by LPVCWD via e-mail. If the fees and costs reflected in the Monthly Statement are consistent

with an approved Annual Operating Budget, then LPVCWD may withdraw funds from the dedicated bank account described in Section 6.1 to pay for such fees and costs.

6.3 Northrop Grumman may object to any charge(s) invoiced by LPVCWD in a Monthly Statement in writing within thirty (30) days of receipt thereof, or the Monthly Statement shall be deemed accepted and no longer subject to objection or dispute. If Northrop Grumman timely objects, LPVCWD may revise the monthly statement to remove such charges or LPVCWD may withdraw the disputed amount from the dedicated bank account and Northrop Grumman may invoke the dispute resolution process described in Section 14 of this Agreement. If Northrop Grumman prevails in any such dispute, the disputed amount previously withdrawn by LPVCWD pending the resolution of the dispute shall be reimbursed by LPVCWD either by direct payment to Northrop Grumman or an offset against charges in future invoices, which Northrop Grumman shall decide in its sole discretion.

6.4 Prior to Northrop Grumman's approval of the Annual Operating Budget, the parties shall meet to reconcile the actual fees and costs incurred by LPVCWD during the preceding year and the amount of the funds deposited by Northrop Grumman in the dedicated bank account during the preceding year. Any difference between LPVCWD's actual fees and costs and Northrop Grumman's annual deposit shall be added to or subtracted from the Annual Operating Budget for the ensuing year.

SECTION 7 DATA SUBMISSION AND INSPECTION

7.1 LPVCWD shall provide Northrop Grumman, on a weekly basis or such other frequency as Northrop Grumman may reasonably determine, copies of pumping rates on a well-by-well basis, all water quality data, all reports and submissions to DDW and EPA, the amount

of Treated Water delivered to LPVCWD and Suburban, the amount of Brine discharged through the Brine Line as measured at the Brine Line Meter, and any other information reasonably necessary for Northrop Grumman to demonstrate compliance with the Consent Decree to the EPA.

7.2 Upon reasonable notice, LPVCWD shall permit Northrop Grumman, EPA and their authorized representatives full access at reasonable times to inspect the Subject Facilities and all records, including but not limited to, financial records maintained by LPVCWD concerning the operation and maintenance of the Subject Facilities.

SECTION 8 GOVERNMENTAL APPROVALS

8.1 Upon the Effective Date of this Agreement, the Parties acknowledge that the terms and conditions set forth in Sections V of the Participation Agreement dated September 1, 2015 between the Parties hereto and Puente Basin Water Agency has been fully satisfied.

8.2 Upon issuance, LPVCWD shall comply with the: (a) applicable commitments and representations in the applications for the DDW approval and Watermaster Approvals; and (b) the terms and conditions in the DDW Approval, the Watermaster Approvals and all other laws, regulations and governmental approvals and permits related to the receipt and beneficial use of the Treated Water.

8.3 Upon issuance, Northrop Grumman shall comply with the EPA Approval, the Watermaster Approvals and each of the governmental approvals and permits listed on Exhibit G to this Agreement.

8.4 Each Party shall use its best efforts to take the actions necessary to maintain the approvals described in Sections 8.2 and 8.3 of this Agreement in full force and effect. Each Party shall notify the other Party promptly when any approval has been withdrawn or is no longer in effect.

SECTION 9 INDEMNITY

9.1 LPVCWD shall indemnify, defend and hold harmless Northrop Grumman, including its officers, directors, employees, successors, parent companies, affiliate companies and assigns from and against all claims, losses, costs, expenses, liability, awards, judgments, and decrees (collectively, "Liabilities") arising from, connected with, or resulting out of: (a) LPVCWD's gross negligence or willful misconduct in the operation or maintenance of any of the Subject Facilities; (b) employment related claims asserted by any LPVCWD employee involved with operation of the Subject Facilities; or (c) claims asserted by any vendor under a contract with LPVCWD for which Northrop Grumman did not provide prior approval, except those related to contracts under \$20,000 or those necessitated by an emergency condition pursuant to Section 5.3.

9.2 In agreeing to operate the Subject Facilities for Northrop Grumman, LPVCWD is not assuming, accepting, or incurring any responsibilities or liabilities in any shape or form, whether express or implied, for any EPA Superfund Activities including the Interim Remedy, the ROD, the Consent Decree or any other groundwater cleanup requirements for or related to the PVOU IZ, and Northrop Grumman shall indemnify, defend and hold harmless LPVCWD, including its officers, directors, employees, successors and assigns from and against any and all Liabilities resulting therefrom that may be issued or imposed by EPA or any other regulating governmental agency upon LPVCWD resulting from its involvement in the PVOU IZ or its

obligations under this Agreement, except that Northrop Grumman's indemnity of LPVCWD under this Section 9.2 shall not exceed Liabilities determined to be attributable to LPVCWD's grossly negligent or willful actions or omissions causing a release of contaminants into, or exacerbating existing contamination in, the PVOU IZ pursuant to the dispute resolution provisions of Section 14 hereunder.

9.3 Northrop Grumman shall indemnify, defend and hold harmless LPVCWD, including its officers, directors, employees, successors and assigns from and against all Liabilities arising from, connected with, or resulting out of: (a) LPVCWD's certification of an environmental review document under the California Environmental Quality Act in connection with the Subject Facilities and its execution of this Agreement; (b) Northrop Grumman's gross negligence in the design or construction of the Subject Facilities; (c) the water quality of the Treated Water, unless determined to be caused by LPVCWD's gross negligence or willful misconduct; (d) any and all waste produced by the Subject Facilities; or (e) Northrop Grumman's implementation of the Interim Remedy. (Claims described in this Section 9 shall be referred to hereinafter as an "Indemnified Claim." The Party obligated to provide the indemnity pursuant to Sections 9 shall be hereinafter referred to as the "Indemnifying Party," and the Party entitled to receive the indemnity shall be referred to as the "Indemnified Party.")

9.4 The Indemnifying Party shall defend with competent outside counsel reasonably satisfactory to the Indemnified Party, protect and hold harmless the Indemnified Party, its officers, directors, employees, attorneys, successors and assigns, from and against all Indemnified Claims in any administrative, judicial or other forum, including without limitation awards of damages, interest, fines, charges, penalties and expenses resulting therefrom (including all expenses, but not limited to, attorneys' and expert witness fees and costs incurred

in connection with defending against any of the foregoing or in asserting or enforcing this indemnity) of any kind whatsoever paid, incurred or suffered by, or asserted against, the Indemnified Party or its officers, directors, employees, agents, successors or assigns. The Indemnified Party agrees to cooperate fully and completely with the Indemnifying Party and with outside counsel provided by the Indemnifying Party in resolving any legal matter that arises pursuant to this indemnity. The Indemnified Party further agrees that the Indemnifying Party may resolve or settle such matter to which this indemnity applies with the Indemnified Party's permission or approval, which the Indemnified Party will not unreasonably withhold.

9.5 The Indemnified Party shall tender an Indemnified Claim to the Indemnifying Party within a reasonable time after becoming aware of the existence of the Indemnified Claim, but, in any event, the tender shall be deemed timely if submitted within twenty (20) calendar days after the Indemnified Party becomes aware thereof, or if submitted at a later time, only so long as the Indemnifying Party is not unduly prejudiced by any such delay. Within thirty (30) calendar days of the Indemnifying Party's receipt of notice of an Indemnified Claim, the Indemnifying Party shall notify the Indemnified Party that it: (a) accepts the claim and will indemnify the Indemnified Party pursuant to the terms and conditions of the indemnity contained herein; or (b) accepts the claim and simultaneously exercises its right to dispute resolution pursuant to Section 9.6, below. If the Indemnifying Party invokes the dispute resolution process, then it shall provide a defense to the Indemnified Party in accordance with Section 9.6 until and unless an arbitrator rules that the Indemnifying Party is not obligated to provide an indemnity or defense for the claim to the Indemnified Party. The Indemnifying Party will be deemed to have unconditionally accepted the Indemnified Claim if a timely response or if no response is provided within 30 days of receipt of notice of an Indemnified Claim.

9.6 If the Indemnified Party timely presents an Indemnified Claim, the Indemnifying Party may conditionally accept the Indemnification Claim so as to bear the costs of defense in the proceeding with a reservation of rights with regard to its indemnification obligation. If a determination is thereafter made by agreement of the Parties or by an arbitrator selected by the Parties pursuant to a dispute resolution proceeding pursuant to Section 14 of this Agreement that the Indemnifying Party is absolved from any indemnification obligation, the Indemnifying Party may by written notice immediately withdraw from the costs of defense and turn the defense over to the Indemnified Party.

9.7 Any disputes regarding the obligations to provide indemnification shall be subject to the dispute resolution proceedings of this Agreement. If a specific finding and/or conclusion is made in any dispute resolution proceeding that the Indemnified Party made an Indemnified Claim in bad faith, the Indemnifying Party may recover from the Indemnified Party the costs of defense expended by the Indemnifying Party from the date of its conditional acceptance to the date of its withdrawal. If the Indemnifying Party refuses to accept the defense of a claim tendered by the Indemnified Party and a finding or conclusion is made in a dispute resolution proceeding that the Indemnifying Party had a duty to indemnify the Indemnified Party, the Indemnified Party may recover from the Indemnifying Party the costs of defense and all related costs including any damages, penalties and costs incurred in or as a result of the defense.

9.8 The Parties' respective rights and obligations under Sections 9.1 through 9.7 shall survive the termination of this Agreement.

SECTION 10 OWNERSHIP

10.1 The Treatment Site and the Subject Facilities upstream of the Delivery Point are owned solely by Northrop Grumman.

10.2 In its sole discretion, Northrop Grumman may use the Treatment Site for any purpose so long as such other use does not significantly interfere with LPVCWD's ability to perform its obligations under this Agreement.

10.3 If this Agreement is terminated by either Party pursuant to Section 12 of this Agreement, that termination shall have no effect on the ownership of the Subject Facilities or the Treatment Site as described in this Section 10.

SECTION 11 INSURANCE

11.1 LPVCWD shall obtain and keep in force during the term of the Agreement the minimum insurance coverages set forth in Exhibit H to this Agreement.

11.2 LPVCWD shall obtain insurance policies that provide exclusive coverage for the Subject Facilities and satisfies the criteria for such policies that are described in Exhibit H hereto. Such policies must be approved by Northrop Grumman in writing prior to LPVCWD purchasing such policies.

11.3 Each of the policies described in Exhibit H of this Agreement shall name Northrop Grumman as an additional insured. The costs associated with obtaining the policies described in Section 11.2 of this Agreement and any additional incremental costs to LPVCWD for existing policies to include coverage for the Subject Facilities and LPVCWD's personnel shall be paid by Northrop Grumman in accordance with the provisions of Section 6 of this

Agreement. Declaration pages of the policies identified in this Section 11.1 shall be delivered to Northrop Grumman promptly upon commencement of operations of the Subject Facilities and upon renewals. LPVCWD shall not take any actions to cause any change in the policies described in this Section 11 that would materially affect Northrop Grumman's coverage thereunder without its prior written consent, which consent shall not be unreasonably withheld.

SECTION 12 TERM, EXPIRATION AND TERMINATION OF THE AGREEMENT

12.1 This Agreement for LPVCWD to operate the Subject Facilities shall commence on the Effective Date and shall continue for a period of eight (8) years after EPA has certified that the Interim Remedy under the Consent Decree is operational and functional (the "Initial Term"). If EPA and all other government agencies with jurisdiction over the PVOU IZ remedy have not determined within 180 calendar days before the end of the Initial Term that Northrop Grumman may cease operation of the Subject Facilities at the conclusion of the Initial Term, then Northrop Grumman may, in its sole discretion, unilaterally extend the term of this Agreement by three (3) years on the same terms and conditions as provided herein by giving written notice to LPVCWD ninety (90) days before the end of the Initial Term (an "Extension Option"). Thereafter, Northrop Grumman may exercise, in its sole discretion, additional Extension Options by providing written notice to LPVCWD 60 days before the expiration of the term of the Extension Option until EPA and all other government agencies with jurisdiction over the PVOU IZ remedy have determined that Northrop Grumman may cease operation of the Subject Facilities. Such additional Extension Options may be three (3) to ten (10) years in duration at Northrop Grumman's election. The Parties shall cooperate in good faith with each other regarding additional terms and conditions for any Extension Option.

12.2 This Agreement may be terminated earlier upon the following:

(a) Northrop Grumman receives an order to permanently cease the production of water from the Remedy Wells issued by EPA or any other governmental agency with jurisdiction over contamination in the PVOU IZ;

(b) Any of the governmental permits or approvals listed on Exhibit G hereto is not granted by the relevant governmental agency; or

(c) Denial of Northrop Grumman's or LPVCWD's application for the Watermaster Approvals, the EPA Approval, or the DDW Approval.

12.3 If the conditions described in Section 12.2 (a) or (b) occur, then Northrop Grumman may, in its sole discretion, terminate the Agreement upon providing the other Party with ninety (90) calendar days' notice. If the conditions described in Section 12.2(c) occur, then either Northrop Grumman or LPVCWD may terminate this Agreement upon providing the other Party with sixty (60) calendar days' notice.

12.4 In the event of the termination of this Agreement pursuant to Section 12.2 above, LPVCWD shall be entitled to payment for its services and costs through the termination date pursuant to Section 5 of this Agreement. Any disputes between the Parties regarding payments due LPVCWD or credits or reimbursements due to Northrop Grumman shall be resolved by negotiation or dispute resolution pursuant to Section 14.

12.5 This Agreement may be terminated by either Party on the basis of a material breach by the other Party, but only after the dispute resolution process described in Section 14 herein has been completed and an agreement or determination is made to that effect.

SECTION 13 INDEPENDENT CONTRACTOR

13.1 At all times, LPVCWD shall act under this Agreement as an independent contractor. Nothing in this Agreement shall create a joint venture, partnership, agency, or formal business organization of any kind between the Parties. LPVCWD shall not make any representation, express or implied, that LPVCWD is an agent or legal representative of Northrop Grumman, nor will LPVCWD assume or incur liability or obligations of any kind of any third party in the name or on behalf of Northrop Grumman without the prior written approval of Northrop Grumman.

SECTION 14 DISPUTE RESOLUTION

14.1 Jurisdiction. All disputes between the Parties regarding the rights and obligations of the Parties in this Agreement are subject to the dispute resolution procedures set forth herein.

14.2 Notice. The dispute resolution provision is invoked by providing notice to the other Party. The notice shall describe the nature of the dispute, including, if appropriate, the dollar amount in controversy. For cost disputes, notice must be given within thirty (30) calendar days after the cost has been invoiced by LPVCWD. For all other disputes, the notice must be given promptly, but in no event later than ninety (90) calendar days after the dispute arises, unless otherwise agreed to by the Parties.

14.3 Meet and Confer. Within thirty (30) calendar days after receipt of the notice of dispute, the Parties shall meet and confer to resolve the dispute. If the Parties are unable to resolve the dispute in good faith within sixty (60) calendar days after receipt of the notice of dispute, either Party may submit the dispute to arbitration by providing a written notice of arbitration (“Notice of Arbitration”) to the other Party.

14.4 Arbitrator. LPVCWD and Northrop Grumman shall attempt to mutually agree on a single arbitrator from a list of approved American Arbitration Association (AAA) or JAMS Arbitrators. If the Parties are unable to mutually agree on an arbitrator within thirty (30) calendar days after service of a Notice of Arbitration, then the arbitrator shall be selected by lot according to the following procedures. LPVCWD shall submit five (5) names, ranked from one (highest) to five (lowest) in terms of acceptability from the AAA or JAMS list, and simultaneously Northrop Grumman shall submit five (5) names from those lists. If any name appears on both lists, that person shall be deemed selected; provided that if more than one name appears on both lists, the person with the lowest numerical combined ranking score shall be selected and if two or more have the same score, the selection shall be availability or by lot. If no name appears on both lists, new lists shall be submitted by each Party until an arbitrator is selected. The selected arbitrator shall accept his or her appointment in writing. Within thirty (30) calendar days after the arbitrator is selected, each party to the dispute shall submit to the arbitrator and serve on the other Party a short statement of the dispute and a proposed discovery and hearing schedule.

14.5 Preliminary Hearing. Within sixty (60) calendar days after selection of the arbitrator, the arbitrator shall schedule a preliminary hearing. At the preliminary hearing the arbitrator shall decide discovery, briefing and scheduling issues and set dates, including a final hearing date. In resolving discovery issues the arbitrator shall consider expedition, cost effectiveness, fairness and the needs of the parties for adequate information with respect to the dispute.

14.6 Arbitration Hearing. The arbitration hearing shall be scheduled no later than ninety (90) calendar days after the initial preliminary hearing unless the Parties mutually agree to extend the date or the arbitrator extends the date.

14.7 Procedural Rules. The procedural rules of AAA or JAMS, depending on the arbitrator selected, will govern the arbitration process.

14.8 Decision of the Arbitrator Final. The arbitrator shall make a written decision specifying the factual findings and legal reasoning in support of the decision within sixty (60) calendar days after the arbitration hearing. The arbitrator's decision is final and binding and there shall be no right to appeal the decision, except as otherwise expressly permitted by California law. The arbitrator may order any relief that could be granted by a court in accordance with applicable law, including but not limited to specific performance, temporary restraining orders, injunctive relief, and attorneys' fees, except that the arbitrator shall have no authority to award punitive damages.

14.9 Time for Completion. The arbitration shall be completed within 150 calendar days of the preliminary hearing, unless the Parties mutually agree to extend the date or the arbitrator extends the date.

14.10 Fees and Costs. The arbitrator shall award costs, including attorneys' fees, to the prevailing Party. The fees and costs of the arbitrator shall be paid by the losing Party.

SECTION 15 WAIVER

15.1 No waiver by a Party of any provision of this Agreement shall be valid unless it is in writing and signed by an authorized representative of such Party. The waiver by any Party of

any failure on the part of another Party to perform any of its obligations under this Agreement shall not be construed as a waiver of any future or continuing failure or failures.

SECTION 16 AMENDMENT OF THE AGREEMENT

16.1 No amendment of this Agreement shall be binding upon the Parties unless it is in writing and executed by duly authorized representatives of all the Parties.

SECTION 17 GOVERNING LAW

17.1 This Agreement and any dispute arising hereunder shall be governed by the substantive and procedural laws of the State of California, except, however, that California's Choice of Law provisions shall not apply.

SECTION 18 INTEGRATED AGREEMENT

18.1 This Agreement represents the final Agreement between the Parties concerning the matters addressed in this Agreement and supersedes all prior agreements, negotiations and discussions between the Parties hereto and/or their respective counsel with respect to such matters.

SECTION 19 COMPUTATION OF TIME

19.1 In computing any period of time under this Agreement, where the last day would fall on a Saturday, Sunday, or federal or California state holiday, the period shall run until 5 p.m. Pacific Time on the next working day. All time periods of thirty (30) days or longer are calendar days unless otherwise specified.

SECTION 20 COUNTERPARTS

20.1 This Agreement will be executed in counterparts each of which shall be deemed an original, and all of which, taken together, shall constitute one and the same instrument.

SECTION 21 ASSIGNMENT

21.1 Neither Party shall assign or otherwise transfer its rights or obligations hereunder without the other Party's prior written consent, except that Northrop Grumman may, in its sole discretion, transfer its rights and obligations under this Agreement to another Potentially Responsible Party that assumes full and complete legal responsibility for the IZ Remedy under any future Consent Decree or other administrative order.

SECTION 22 INDEPENDENT COUNSEL

22.1 Each of the Parties represents and warrants that, in connection with the negotiation and execution of this Agreement, it has been represented by independent counsel of its own choosing, that it has not relied upon the advice or counsel of the other Party's independent counsel in the negotiation or drafting of this Agreement, that it has executed this Agreement after receiving the advice of such independent counsel, that its representative has read and understands the provisions and terms of this Agreement, and that it has had an adequate opportunity to conduct an independent investigation of all facts and circumstances with respect to all matters that are the subject of this Agreement. Northrop Grumman shall reimburse LPVCWD for its reasonable attorneys' fees, experts' fees, and costs incurred in connection with the negotiation and preparation of this Agreement and the Water Delivery Agreement.

SECTION 23 FURTHER ACTIVITIES

23.1 The Parties agree to execute and deliver all further documents and agreements and perform all further acts that may be reasonable and necessary to design, construct, operate and maintain the Subject Facilities and otherwise carry out the provisions of this Agreement.

SECTION 24 JOINT DRAFTING AND NEGOTIATION

24.1 This Agreement has been jointly negotiated and drafted and the language of the Agreement shall not be construed in favor of or against any particular Party based on the Parties' respective roles in the drafting process.

SECTION 25 SECTION HEADINGS

25.1 Section headings used in this Agreement are for reference only and shall not affect the construction of this Agreement.

SECTION 26 NO THIRD PARTY BENEFICIARIES

26.1 No third party, including but not limited to federal or state agencies, shall be entitled to claim or enforce any rights hereunder.

SECTION 27 SEVERABILITY

27.1 In the event that any provision of this Agreement is determined by an arbitrator pursuant to the dispute resolution provisions of Section 14 or a court of competent jurisdiction to be invalid, said provision shall be modified in a manner that is both consistent with the intent of the Parties and legally valid, if possible. The remainder of this Agreement shall not be affected thereby.

SECTION 28 SUCCESSORS AND ASSIGNS

28.1 All covenants and agreements contained in this Agreement by or on behalf of any of the Parties hereto shall bind and inure to the benefit of their respective successors and permitted assigns, whether so expressed or not. Any change in ownership or corporate or other legal status, including, but not limited to, any transfer of assets or real or personal property, shall in no way alter the status or responsibilities of the Parties under this Agreement.

SECTION 29 ORGANIZATION/AUTHORIZATION

29.1 The Parties hereby respectively represent and warrant to the other that each of them is a duly organized or constituted entity, with all requisite power to carry out its obligations under this Agreement, and that the execution, delivery and performance of this Agreement have been duly authorized by all necessary corporate action, will not result in a violation of such Party's organizational documents, and that no further action is necessary to make this Agreement and all transactions contemplated hereby valid and binding on the Parties in accordance with its terms. The corporate signatories hereto represent and warrant that they are authorized to execute and deliver this Agreement on behalf of their respective corporate entities.

SECTION 30 NOTICE

30.1 Whenever, under the terms of this Agreement, written notice is required to be given or a document is required to be sent by or to a Party, it shall be directed to the addresses specified below, unless otherwise permitted in this Agreement.

With respect to LPVCWD:

Greg B. Galindo
General Manager
La Puente Valley County Water District
112 North 1st Street
La Puente, CA 91744

With a copy to:

Roland Trinh, Esq.
Lagerlof, Senecal, Gosney & Kruse LLP
301 N. Lake Avenue, 10th Floor
Pasadena, CA 91101

With respect to Northrop Grumman:

Northrop Grumman Systems Corporation
Manager of Environmental Remediation
101 Continental Boulevard
Mailstop D2/XE6D21
El Segundo, CA 90245

With a copy to:

Northrop Grumman Systems Corporation
Corporate (Attn: Law Department)
2980 Fairview Park Drive
Falls Church, VA 22042

Northrop Grumman Systems Corporation
Corporate Procurement
101 Continental Boulevard
M/S: D5-121A
El Segundo, CA 90245

30.2 Notice is deemed effective when delivered in person or by overnight courier with proof of delivery, or upon receipt of registered or certified mail. Either Party may change its designated contact for notice purposes by written notice to the other Party.

SECTION 31 REMEDIES

31.1 The Parties agree that money damages alone may be an inadequate remedy for any breach or threatened breach of this Agreement and further agree that the provisions of this Agreement may be enforced by specific performance or a preliminary, permanent, mandatory or prohibitory injunction pursuant to Section 14 above and without limiting any other remedy that a Party may have.

SECTION 32 PUBLIC STATEMENTS

32.1 Unless as may be required by law, no Party, including its employees, agents and consultants, shall make any statement, verbal, written or electronic, to any individual associated with any newspaper, publication of general circulation, or media outlet, or otherwise disseminate any document to the general public, including but not limited to press releases, newsletters and articles (a “Public Statement”), that discusses this Agreement or the Subject Facilities without receiving the prior written approval of the other Party to this Agreement. Said approval may be withheld in any Party’s sole discretion, although the Parties shall cooperate in good faith with each other with respect to any proposed Public Statement.

IN WITNESS WHEREOF, this Agreement has been executed as follows:

LA PUENTE VALLEY COUNTY WATER DISTRICT

_____, 2017

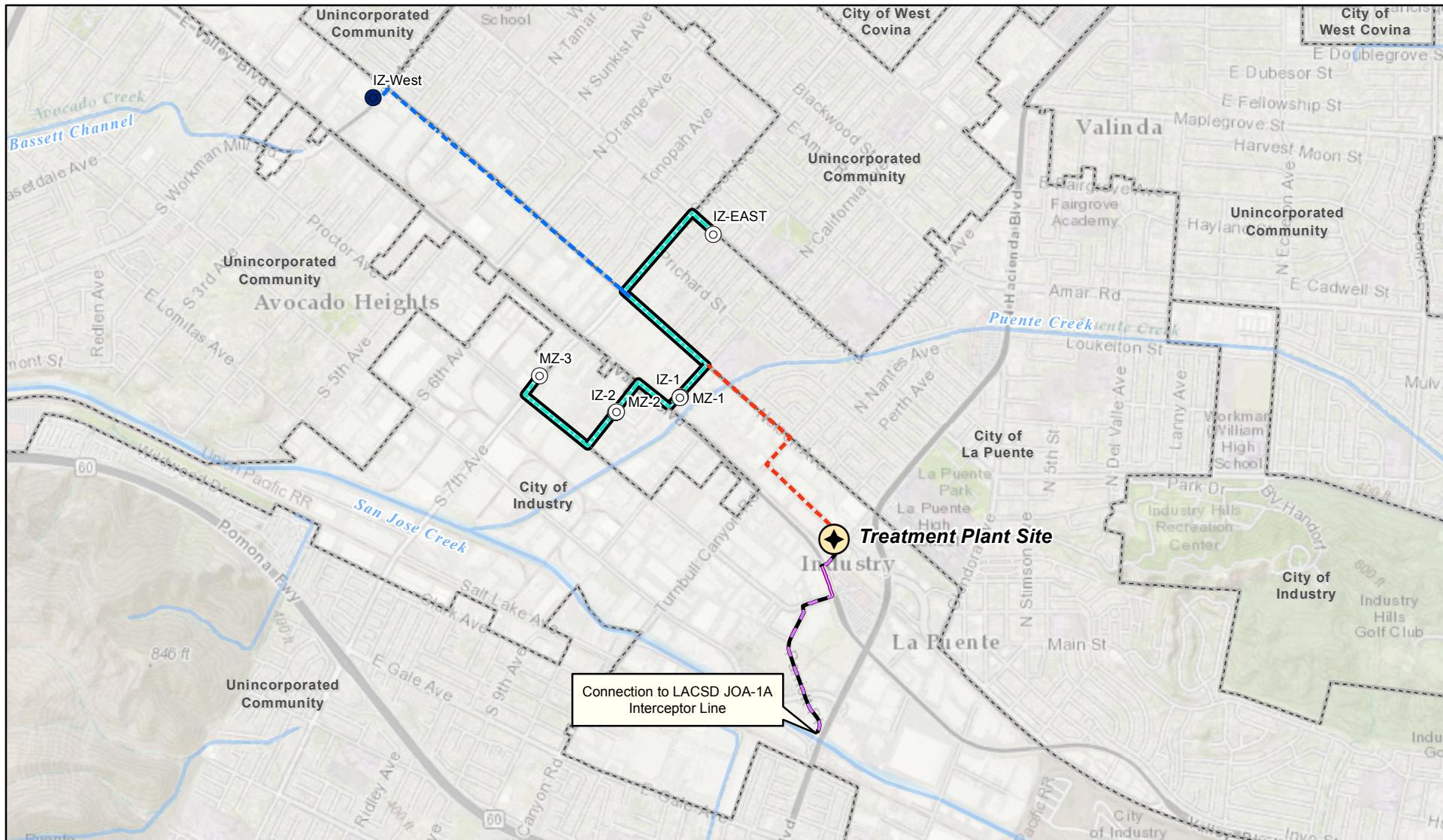
By: Greg B. Galindo
Its: General Manager

NORTHROP GRUMMAN SYSTEMS CORPORATION

_____, 2017

By: David J. Pollack
Its: Director of Procurement

EXHIBIT A



Legend

- IZ-West Extraction Well
- Existing IZ Extraction Well
- ★ Treatment Plant Site (111 Hudson Ave.)
- City Boundaries
- Wastewater Line
- Existing Wastewater Line
- IZ-West Conveyance Pipeline
- Groundwater Pipeline
- Existing Pipeline
- Rivers & Creeks



0 2,500 Feet

Intermediate Zone (IZ) Interim Remedy Infrastructure Map

IZ Interim Remedy
Puente Valley Operable Unit

Geosyntec
consultants

Exhibit

A

October 2017

1. DETAILED DESCRIPTION AND DESIGN BASIS OF THE REMEDIAL SYSTEM

1.1 Introduction

This section, based on the IZ Interim Remedy Final Design Report, provides detailed descriptions of the components of the IZ Interim Remedy, which is organized into the following main subsections:

- Groundwater Extraction and Conveyance System;
- Treatment Plant;
- Discharge of Treated Groundwater;
- Discharge of Wastewater;
- Utility Requirements; and
- Security.

In addition to the information presented in this section, Appendix B of the Final Design Report contains a detailed process control description that describes how the system will operate, including control logic, process control set points, and alarms and notifications. To provide detailed information regarding how the system will be constructed, Technical Specifications are provided in Appendix C and Design Drawings are provided in Appendix D. Appendix E contains calculations of the anticipated flow rates, concentrations, and mass loading rates in the influent to the treatment plant. Appendix F presents hydraulic model calculations for the conveyance pipeline. Appendix G is the Geotechnical Investigation Report containing geotechnical findings and recommendations for the development of the 111 Hudson Avenue (the treatment plant site) property. Appendix H presents structural design calculations for the treatment plant equipment foundations. Appendices I and J contain the design submittals from two of the treatment systems manufacturers, Calgon Carbon Corporations (Calgon) and Trojan Technologies (Trojan).

1.2 Groundwater Extraction and Conveyance System

1.2.1 General

The following subsections describe details regarding the components of the groundwater extraction and conveyance system.

1.2.2 Groundwater Extraction Well Locations

The criteria for selecting the groundwater extraction well locations are presented in the Final Remedial Design Work Plan for the Installation of Extraction Wells, Intermediate Zone Remedy, submitted to USEPA on 20 November 2007 [Camp Dresser & McKee Inc. (CDM), 2007]. There are six existing groundwater extraction wells (MZ-1, MZ-2, MZ-3, IZ-1, IZ-2, and IZ-East). The design and location of these six existing extraction wells are based on data derived from numerous groundwater monitoring wells and extensive numeric groundwater modeling and flow simulations [CDM, 2008]. Existing extraction wells IZ-1, MZ-1, and MZ-3 are located in rights-of-way within

the City of Industry. Existing extraction well IZ-East is located in a right-of-way within the City of La Puente. Existing extraction wells IZ-2 and MZ-2 are located in rights-of-way within unincorporated portions of Los Angeles County. A map showing the locations of the six existing extraction wells is presented in Figure 3-1.

One additional groundwater extraction well (IZ-West) is being installed, for added plume containment at the western margin of the COC plume [Geosyntec, 2016b]. A numerical groundwater flow model (model) was constructed and calibrated based on available data [Geosyntec, 2015b]. The model was accepted by USEPA on 8 April 2016 and the design includes the capacity to treat flow from IZ-West. The model simulations indicate that to meet the objectives of the IZ Interim Remedy, IZ-West should be located on or near Puente Avenue, south of the intersection with Nelson Avenue in the City of Industry (Figure 3-1). A location in a landscape island within the parking lot of a local business (PRL Glass at 13658 Nelson Avenue, City of Industry) on the west side of Puente Avenue is selected for IZ-West (see Appendix D, Drawing W-403). Northrop Grumman has executed an easement agreement with the property owner to install IZ-West at 13658 Nelson Avenue. A copy of the executed easement agreement was provided to USEPA in June 2017. Installation of the IZ-West well started in October 2017.

1.2.3 Groundwater Extraction Well Construction

The six existing extraction wells (IZ-1, IZ-2, IZ-East, MZ-1, MZ-2, and MZ-3) were constructed and tested by CDM between July 2006 and August 2007. Groundwater extraction wells IZ-1 and IZ-2 are designed to extract groundwater from the LIZ, extraction wells MZ-1, MZ-2, and MZ-3 are designed to extract groundwater from the UIZ, and extraction well IZ-East is designed to extract groundwater from both the UIZ and the LIZ. The basis of design for the existing extraction wells is provided in the Final Remedial Design Work Plan for the Installation of Extraction Wells, Intermediate Zone Remedy [CDM, 2007]. The existing extraction wells are constructed in accordance with the USEPA-approved workplan (refer to USEPA approval letter dated 17 January 2007) with either an 8- or 10-inch diameter pump house casing with 40 to 60 ft of screen placed in the appropriate lithologic unit(s) as identified during drilling and confirmed by review of electric logging. Extraction well screen intervals were also selected based on analytical results of aquifer tests completed in the pilot boreholes of IZ-East and IZ-1, and from groundwater monitoring wells screened in the same lithologic unit as the nearby extraction wells. Table 3-1 provides a summary of the well construction details for each of the existing groundwater extraction wells.

Based on the IZ-West Extraction Well Installation Work Plan approved by USEPA on 2 August 2016 [Geosyntec, 2016b], IZ-West is proposed to extract water from UIZ and LIZ (similar to IZ-East). The actual well screen intervals will be based on findings from a pilot boring to evaluate the specific lithology at the IZ-West location. In accordance with the IZ-West Extraction Well Installation Work Plan, the final construction details will be developed following completion of a pilot borehole at the IZ-West location. The well will be operated as needed to support containment of the down-gradient edge, or “toe” of the COC plume. Design drawings for IZ-West were submitted to USEPA and DDW on 9 August 2016 with revised drawings submitted to USEPA and

DDW on 18 October 2016 to address USEPA comments. The IZ-West design drawings are included in the Design Drawings in Appendix D.

1.2.4 Groundwater Extraction Pumping Rate

Based on results of the groundwater modeling, the total flow rate under normal operating conditions is expected to be approximately 1,575 gpm (Appendix E). It is anticipated that this total flow rate will be used under normal operating conditions for either a six-well or a seven-well system (using five or six of the existing extraction wells, as well as IZ-West operating at the down-gradient edge of the plume). This total extraction rate has the capacity to accommodate a range of potential capture extents (Appendix E). As detailed in Appendix E, the range of extraction scenarios will allow the remedy to achieve the Performance Criteria listed in Section 1.3, i.e., prevent groundwater in the IZ at the MOV greater than or equal to the containment levels listed in Table 2 of the ESD from “(1) *migrating beyond its lateral extent as measured at the time the intermediate zone Remedial Action containment system is Operational and Functional; and (2) migrating vertically into the deep zone*”. In addition, the groundwater extraction evaluation presented in Appendix E will also allow the IZ Interim Remedy to intercept COCs in the IZ to prevent them from continuing to impact the B7 Well Field Area with the operation of the MZ wells and IZ-1, which would contain most of groundwater flowing from the southern part of the plumes. The extraction rates for the remedy wells might be further refined following IZ-West installation and testing and will be presented for approval as part of the start-up plan for the IZ Interim Remedy.

To accommodate potential fluctuations in pumping rates, system downtime during maintenance, and allow a factor of safety, the treatment plant is sized for flow rates up to 2,000 gpm. The operational changes expected to occur beyond eight years of the IZ Interim Remedy, due to changes in the COC distribution and potential decrease of the number of operating extraction wells, are expected to result in decreasing pumping rates. The treatment system is designed to operate continuously at a minimum total extraction rate of 500 gpm that is based on the turn-down capabilities and hydraulic requirements of the treatment processes. Extraction rates lower than 500 gpm would require that the treatment plant operate in batch mode. Batch mode operation of the treatment plant is achievable with elevated operational attention.

1.2.5 Groundwater Extraction Well Pumps

Groundwater extraction will be accomplished by submersible pumps capable of pumping water through the conveyance lines to the treatment plant. Submersible pumps were installed in each of the existing wells, and those pumps will be integrated into the PVOU IZ after they are tested during the construction project and found to meet the performance requirements. IZ-West will also be equipped with a submersible pump. The detailed performance requirements for each of the existing extraction pumps is presented in Appendix E, Groundwater Extraction Evaluation, and for the IZ-West pump in Appendix C, Technical Specifications, Division 43. Appendix F presents the hydraulic model calculation outputs for the extraction wells and conveyance pipeline network.

1.2.6 Groundwater Extraction Wellhead and Wellhead Vaults

The wellheads for groundwater extraction wells IZ-1, MZ-1, IZ-2, IZ-East, MZ-2, and MZ-3 are located subgrade in pre-fabricated steel and precast concrete vaults as shown in the as-built drawings, Appendix A of the Revised PDR [Geosyntec, 2014a].

The design of the wellhead and equipment for IZ-West was submitted to USEPA and DDW on 9 August 2016. DDW approved the design on 29 September 2016. USEPA provided comments on 11 October 2016 and the revised design was submitted on 18 October 2016. The revised design drawings are also provided in the attached Design Drawings (Appendix D). IZ-West has an aboveground well completion, a subsurface valve vault with instrument ports, and associated aboveground electrical and control equipment. Furthermore, the IZ-West well will include the following:

- A well casing air vent, vault vent, and an air release valve vented above grade;
- A water-to-waste discharge port with quick disconnect;
- An Ultra Mag flow meter to monitor the volumetric flow rate of extracted groundwater;
- A check valve to prevent backflow into the extraction well;
- A ball valve to isolate the extraction well;
- A pressure transmitter to monitor the pressure in the pipeline;
- A water-level sensor in the vault to protect against vault flooding;
- A 1-inch diameter port to meet the Watermaster's monitoring requirement for checking flowmeter readings;
- A sampling station located in close proximity to the vault installed in a 12-inch diameter vented security bollard;
- An above grade control panel and electrical meter; and
- A radio transmitter for communication with the central control panel to be located at the treatment plant.

1.2.7 Conveyance Pipelines

A map of the conveyance pipelines is presented in Figure 3-1 and detailed in the Design Drawings (Appendix D). A summary of the pipelines is as follows:

- Influent pipelines – The pipelines from the existing extraction wells IZ-1, MZ-1, IZ-2, IZ-East, MZ-2, and MZ-3 merge to connect to each other adjacent to SGVWD's B7 Facility at the intersection of Sunset and Nelson Avenues, City of Industry, California. A new pipeline will be installed to connect IZ-West to the existing pipeline approximately in the middle of the Sunset Avenue and Nelson Avenue intersection. The piping/valves for the network of the existing extraction wells were recently modified so that the buried pipeline leading to the B7 Facility is cut and capped.

The extracted groundwater will then flow in a section of the existing pipeline on Nelson Avenue, between Sunset Avenue and California Avenue. From that point, a new

conveyance pipeline will route the extracted groundwater to the treatment plant at 111 Hudson Avenue, City of Industry, California. These segments and their approximate lengths are listed in Table 3-2. A portion of this conveyance piping, at the intersection of Nelson and Sunset Avenues was constructed in December 2016 to February 2017. Another portion of the conveyance piping, at the intersection of Nelson and Puente Avenues was constructed in June and July 2017. These portions of the conveyance piping were constructed in advance of street improvements to be performed by the City of Industry at the intersections.

As presented in Appendix D - Design Drawings, a portion of the conveyance pipeline for the future SZ-South remediation system is designed to be installed in a common trench with the IZ Interim Remedy conveyance pipeline. This common trench portion will be along Nelson Avenue, Unruh Avenue, and Stafford Street. The installation of the two pipelines in a common trench, with engineering controls for separation, will considerably reduce impacts to traffic and the associated disruptions to communities and businesses in this area during construction.

- Treated water pipeline – A pipeline will be constructed to convey the treated water to two connection points with existing LPVCWD water mains located in Hudson Avenue adjacent to the treatment plant property.
- Wastewater discharge line (“Brine Line”) – A discharge pipeline will be constructed to convey wastewater to the connection to the Los Angeles County Sanitary Districts (LACSD) sewer to the south of the treatment plant. A portion of the waste water discharge line in Valley Boulevard was installed in 2016 in advance of street improvements completed by the City of Industry.

The design drawings for the pipelines are provided in the Design Drawings (Appendix D).

1.3 Treatment Plant

1.3.1 Introduction

The IZ Interim Remedy groundwater treatment plant will be located at 111 Hudson Avenue in the City of Industry, California (Figure 3-1). The property is near the existing conveyance pipelines and extraction wells. Further details regarding the treatment plant are provided in the following subsections. A detailed Process Control Description for the treatment plant is provided in Appendix B.

1.3.2 Treatment Plant Site Grading and Foundations

A geotechnical investigation was performed in support of the treatment plant design and construction permitting process. Results of the geotechnical investigation findings are included in Appendix G of this report. The geotechnical investigation indicates that the site is located within zone of potential liquefaction and site specific analysis estimated that seismically induced

settlements due to potential liquefaction hazards range from approximately 2.0 to 6.0 inches at the treatment plant site. Therefore, ground improvement is recommended at the site to reduce the potential for seismically induced settlements.

Applicable national and state codes and regulations are considered for designing the site development plans, including the Federal Occupational Safety and Health Standards Act, the California State Industrial Safety Orders, the California Building Code, 2013, the International Building Code, 2012, and the American Water Works Association, D100-11. Regional seismic design criteria are also considered in designing the site development plans, including:

• Site Class	C
• Mapped Short Period Spectral Response Acceleration, S_s	2.162 g
• Mapped 1-second Spectral Response Acceleration, S_1	0.765 g
• Design Short Period Spectral Response Acceleration, SD_s	1.442 g
• Design 1-second Spectral Response Acceleration, SD_1	0.663 g
• Moment Magnitude, M	7.0
• Mapped MCEG Peak Ground Acceleration, PGA	0.791 g
• Site Class Adjusted MCEG Peak Ground Acceleration, PGA_M	0.791 g

The foundations and excavation design conform to the finding and recommendation provided in Appendix G, the Geotechnical Investigation Report and the structural design calculations for the treatment plant foundations were performed based on these findings and are presented in Appendix H.

In accordance with the Geotechnical Investigation Report (Appendix G) and the structural design parameters shown in the design drawings (Appendix D), allowable bearing capacity for isolated shallow foundations without over-excavation is 2,200 pounds per square foot (psf). Allowable bearing capacity for isolated shallow foundations with over-excavation is 2,500 psf, which may be increased by 380 psf with each additional foot of width. Allowable bearing capacity for mat or raft foundations with over-excavation is 2,200 psf. Allowable bearing capacity of mat or flexible tank foundations of at least 10 ft in diameter is 4,000 psf.

Fill and backfill soils will be free of organic materials, debris, or other deleterious substances, and should not contain fragments greater than three inches in diameter. Fill material will be granular and well-graded, and contain less than 30 percent fines (materials that can pass No. 200 sieve). Exposed surfaces at the bottom of excavations will be scarified to a minimum depth of 6 inches, moisture conditioned (zero to four percent above optimum moisture content) and compacted in place to 95 percent of relative density per ASTM D1577. The fill materials will be placed in lifts

within 8 inches of the un-compacted thickness, and will be mechanically compacted to at least 95 percent of relative compaction per ASTM International (ASTM) Standard D 1557.

Open surfaces of the treatment site are designed to be surfaced with asphalt paving (for the access and service roads) or structural concrete (for the treatment system containment areas). The asphalt road base and upper twelve inches of subgrade materials will be compacted to 95 percent of relative compaction. Bituminous asphalt will be used for the surface paving of the access and service roads.

For structural concrete, the concrete will be composed of typical Portland cement, and fine aggregate and coarse aggregate from approved sources. All reinforced concrete will have a strength of 4,000 pounds per square inch (psi), with a maximum slump of 4 ± 1 inches and maximum water to cement ratio of 0.45. The concrete mix will produce a plastic, workable mixture in accordance with the applicable specifications and suitable to the specific conditions of placement. Concrete work throughout will be constructed as a monolith as feasible and constructible. The structural concrete and grout of homogeneous structure, when hardened, will have the required strength, water-tightness, and resistance to weathering, as specified in the Technical Specifications (Appendix C).

Anchor bolts, nuts, and washers will be hot-dip galvanized, unless noted otherwise. Remolded expansion joint filler is designed to be $\frac{3}{4}$ -inch and will conform to ASTM 1751 standards. Joint sealant is designed to be $\frac{1}{4}$ -inch deep and chemical resistant. Expansion anchors are designed to be Hilti Kwik Bolt 3 carbon steel. Grout will be five-star no-shrink cementitious structural grout.

Concrete reinforcing steel is designed to meet the following minimum concrete cover requirements:

- Concrete cast against earth: 3 inches;
- Cast in-place concrete exposed to earth or weather: 1-½ inches for No. 5 and smaller; 2 inches for No. 6 or larger; and
- Precast concrete exposed to earth or weather: $\frac{3}{4}$ -inch for No. 11 or smaller; 1-½ inches for No. 14 & No. 18.

Dowels will be provided at pour and construction joints, and be the same size and spacing as the reinforcing shown for the subsequent construction, unless otherwise noted. Bars will be free of rust, grease, or other materials that may impair the bonding. All rebar will be cold bent in accordance with applicable standards. All reinforcing steel laps or species will be well staggered and the minimum lap will be 48 inches.

1.3.3 Treatment Plant Layout Considerations

A significant amount of care and advance planning has gone into the treatment plant layout. Several constraints and operability considerations were considered, including:

- Driveways and equipment access – A service driveway is maintained through the site and around the site perimeter to facilitate treatment media and chemical delivery and future equipment maintenance. The treatment processes are generally oriented in a way that will allow for access to pumps, media vessels, and chemical storage tanks.
- Treatment Process Sequence, Orientation, and Location – The treatment process unit operations are sequenced and positioned to streamline piping runs and provide optimum access for serviceability.
- Secondary Containment – The treatment processes are located inside concrete berms, and the individual chemical storage tanks are located in separate concrete bermed areas to segregate chemicals.
- Control and Chemical Buildings – The Control Building is located outside of the main secondary containment berm, near an entrance and along the driveway for easy access. The Control Building has been arranged to contain space for the operations personnel to view data, store files, and generally use as a base for ongoing site activities. In addition, two separate structures are included to separate the Chemical Building (for sodium hypochlorite feed system) from the electrical and control components in the Control Building. The Chemical Building has excess room to allow for storage of equipment and spare parts, if needed.
- Canopy – A flexible canopy system is included to protect the UV/Ox and RO systems from direct sunlight. The canopy is limited in size so that it does not impede access to other equipment.
- Lighting – Area-specific and general lighting are provided to facilitate safe operation and provide night-time security.
- Landscaping – Drought-tolerant landscaping is provided around the perimeter of the treatment plant to allow limited infiltration of stormwater and address City of Industry's aesthetic requirements and help the treatment plant blend into its surroundings.

1.3.4 Treatment Plant Expected Flowrates

The treatment plant is expected to operate at a normal average flow of approximately 1,575 gpm, with the ability to accommodate up to 2,000 gpm to account for potential uncertainty in extraction well pumping rates and to allow for a factor of safety.

1.3.5 Treatment Plant Influent Water Quality

Comprehensive subsurface characterization has been conducted to understand the water quality and the distribution of COCs [Geosyntec, 2015a]. The overall approach to estimating the total influent concentration was to generate estimates of concentrations based on existing extraction well and monitoring well data, pumping rates based on simulations with the model [Geosyntec,

2015b], and, finally, combination of this information using a weighting approach that accommodates a range of uncertainty and reflects the spatial distribution of water quality.

The approach presented herein is a refinement of previous approaches presented in the Revised PDR [Geosyntec, 2014a]. This refined approach more thoroughly reflects the following:

- Monitoring well data to provide a broader basis than extraction well data alone for the purpose of estimating total system influent concentrations for certain constituents over the operational life of the remedy;
- The uncertainty in influent concentrations is accounted for by performing statistical analysis of the data; and
- The total pumping rates from the high and low concentration zones of the plume are better constrained than the specific pumping rates at individual extraction wells (which will likely be modified over the course of system final design, start-up, and operational performance monitoring). Therefore, the influent concentration estimate was refined by performing a spatial analysis of the flow field through the plume that does not rely on the specific pumping rate(s) from individual wells.

The influent water quality was estimated for both a six-well system (excluding IZ-West) and seven-well system (including IZ-West). For both systems, low and high influent concentration estimates were calculated that represent the anticipated operational range. In addition, a contingency scenario was considered for design purposes, which includes a flow rate of 2,000 gpm and takes into account higher concentrations. The treatment plant is designed based on the contingency scenario model outputs, with flexibility to address the expected range of conditions (e.g., number of operating extraction wells, concentration estimate ranges, and flowrate range).

The influent concentrations used in the design are summarized in Table 3-3. The detailed approach for developing the influent concentrations is provided in Appendix E.

1.3.6 Influent Equalization Tank

The influent Equalization Tank system provides hydraulic retention and helps to control the groundwater feed rate to the treatment plant, as well as to reduce the frequency of cycling, stopping, and restarting of the influent booster pump system. It consists of a 125,000-gallon tank, approximately 29.75 ft in diameter and 30 ft in height, providing approximately 6 ft of freeboard above the maximum water storage level. The Equalization Tank will be constructed of lined carbon-steel and will include an epoxy coating compatible with drinking water uses and NSF approved criteria.

The Equalization Tank will receive raw water from the extraction wells through a 14-inch diameter pipeline and the effluent from Equalization Tank will be delivered to the initial cartridge filter system through two centrifugal booster pumps. The volume of the Equalization Tank will provide

approximately 60 minutes of hydraulic retention time at the maximum treatment plant flow rate of 2,000 gpm.

1.3.7 Influent Booster Pump System

The influent booster pump system draws from the influent Equalization Tank and provides the pressure to move water through the initial cartridge filter system, LGAC, IX, UV/Ox, and catalytic LGAC treatment processes, at which point intermediate booster pumps are included to overcome the multimedia filters and add the RO feed pressure. The influent booster pump system consists of duplex centrifugal booster pumps. The duplex-pump system will provide higher reliability and greater flow range flexibility than a single pump system. Each pump will be capable of operation up to 2,000 gpm and will be equipped with variable frequency drives to adjust the flowrates. The pumps may be operated individually, in parallel, or in rotation.

1.3.8 Initial Cartridge Filtration System

The initial cartridge filtration system is intended to remove particulates that might enter the conveyance piping during startup times of the groundwater extraction wells before the process water enters the LGAC system. The cartridge filtration system consists of two carbon steel cartridge filter vessels and a filter drain pump. Each filter vessel holds several 10-micron filter cartridges that can be removed and replaced when the pressure differential across the filter reaches a set maximum level. The cartridge filters will receive effluent from the Equalization Tank via the booster pumps, and the effluent from the cartridge filters will flow to the LGAC vessels, with an intermediate stage of pH and scale control. The filtration system will also include a filter drain line to drain the filter housings into the sump system when filter replacement is needed.

Each cartridge filter vessel can receive the system maximum flow rate of 2,000 gpm. The two filter vessels provide redundancy and allow for continuous operation of the treatment plant when one filter vessel is being serviced. Design parameters for the cartridge filters are provided in Table 3-4.

1.3.9 Scale and pH Control System

The estimated influent water quality (Table 3-3) indicates elevated concentrations of sparingly soluble salts including calcium carbonate, calcium sulfate, barium sulfate, and silica. These minerals can contribute to scaling of process piping and treatment equipment. The scale and pH control system is intended to reduce the scaling potential by keeping the sparingly soluble compounds soluble. It is comprised of a double-walled 2,000-gallon polyethylene sulfuric acid storage tank and two metering pumps. The goal is to achieve a Langelier Saturation Index (LSI) rating that is neutral to undersaturated with calcium carbonate and associated salts to prevent excessive scaling.

Sulfuric acid will be stored in the sulfuric acid storage tank and added to the effluent from the initial cartridge filter system through controlled metering pumps. A sulfuric acid dose of

approximately 78 mg/L is estimated for mineral control based on the projected influent water chemistry. A static mixer within the conveyance pipeline will assist with blending of sulfuric acid within the piping prior to entry into the LGAC system.

The sulfuric acid tank will provide approximately two to eight weeks of storage capacity under the anticipated dosing conditions (78 mg/L). Design parameters for sulfuric acid storage capacity are further described in Table 3-5.

1.3.10 Liquid-Phase Granular Activated Carbon System

LGAC is a proven technology for effectively removing VOCs through adsorption onto the carbon media, as the groundwater passes through the LGAC beds. VOCs in solution will remain sorbed onto the media until the LGAC has become saturated. When LGAC saturation occurs, the exhausted carbon media will be vacuumed out from the associated vessel and returned to the manufacturer for reactivation.

A lead/lag LGAC vessel configuration will be used to provide a double-barrier treatment process and an increased contact time that will result in a 20 to 40 percent reduction in LGAC usage as compared to operation as single, separate vessels. The lead-lag configuration provides redundancies that allow for off-line maintenance of one dual vessel system while the other units remain in service. This redundancy will result in a higher level of operational efficiency by allowing carbon change-out in vessel(s) with spent LGAC while the other vessel(s) continue the treatment. Through the LGAC change-out on the lead vessel, the lag vessel will be moved into the lead position. The LGAC system will consist of four parallel pairs of down-flow lead/lag vessels (for total of eight vessels), and each pair has two 40,000-pound carbon steel LGAC vessels. The LGAC vessels will receive the effluent from the initial cartridge filtration system. The effluent from the LGAC vessels will flow to the secondary cartridge filters. The four parallel pairs of LGAC vessels will operate at the maximum design flow of 2,000 gpm, with each pair capable of operating in a range from 250 to 1,100 gpm in series (lead/lag) configuration.

The LGAC system was designed based on the estimated influent concentrations (Table 3-3) anticipated at a typical design flow rate of approximately 1,575 gpm and a maximum design flow rate of 2,000 gpm. Michigan Technological University-based Adsorption Design Software (AdDesignS) was used by Evoqua Water Technologies LLC (Evoqua) to predict adsorption capabilities of the LGAC with the Pore and Surface Diffusion Model. The modeling focused on six primary VOC compounds (TCE, PCE, 1,1-DCA, 1,1-DCE, 1,2,3- TCP, and cis-1,2-DCE). Based on anticipated influent conditions, a comparison was made with respect to regulatory requirements to determine the percent removal recommended for the LGAC system for each primary constituent (Table 3-6).

Consequently, at the maximum design flow rate of 2,000 gpm (500 gpm per lead/lag vessel pair), results of the modeling indicate that 1,1-DCA will break through 40,000 pounds of LGAC in approximately 72 days as indicated in Appendix C of the Revised PDR [Geosyntec, 2014a]. Assuming weekly sampling and a two-week laboratory turnaround time, the longest period

between breakthrough and notification of breakthrough would be 21 days. Allowing eight days for the operator to react and arrange for carbon change-out, the minimum time that contaminants would be entering a lag vessel is 29 days. Since each vessel is designed to operate for at least 72 days prior to contaminant breakthrough, a buffer of 43 days (72 days – 29 days) exists for each pair of lead/lag vessels.

Backwashing of the LGAC system will occur after the initial LGAC fill and subsequently after each LGAC change-out to remove carbon fines and entrapped air. Treated water will be used for backwashing purposes. Backwash water supply will be delivered from the 500,000-gallon Clearwell Tank which also serves as the backwash supply tank. Backwash wastewater will be transferred to an on-site Wastewater Storage Tank prior to discharge to the LACSD sewer. The LGAC manufacturer has recommended a backwash rate of 1,200 gpm for 30 minutes. A summary of the design parameters for the LGAC system are presented in Table 3-7.

1.3.11 Secondary Cartridge Filtration System

The secondary cartridge filtration system is intended to remove carbon fines and particulates in the extracted groundwater before it enters the IX treatment system. Similar to the initial cartridge filters, the secondary system consists of two 10-micron carbon steel cartridge filter vessels, and a filter drain pump. The cartridge filters will receive effluent from the LGAC vessels and the effluent from the cartridge filters will flow to the IX vessels. The secondary filtration system will also include a filter drain line to drain the filter housings into the sump system when filter replacement is needed.

Each cartridge filter vessel can receive the system maximum flow rate of 2,000 gpm. The two filter vessels provide redundancy and allow for continuous operation of the treatment plant when one filter vessel is being serviced. Design parameters for the secondary cartridge filters are similar to the initial cartridge filters, and are provided in Table 3-4.

1.3.12 Ion Exchange Treatment System

The IX treatment system is intended to remove perchlorate from the groundwater. Ion exchange occurs when groundwater flows through a synthetic resin to adsorb perchlorate and other ionic contaminant while releasing regenerant ions of the same charge back into the groundwater. Treatment goals for the IX treatment system are summarized in Table 3-8. Calgon's design package for the IX system is provided in Appendix I.

The IX treatment system consists of two parallel trains of paired (lead/lag) Calgon Model 12 vessels (total of four vessels). Each vessel will contain approximately 353 cubic ft of single-use perchlorate selective resin. The IX treatment vessels will receive effluent from the cartridge filters and the effluent from IX treatment system will flow to the UV/Ox treatment system. Backwash supply for the IX treatment vessels will be delivered from the 500,000-gallon Clearwell and Backwash Supply Tank.

The surface of the resin medium is designed to prefer perchlorate to the regenerant ions. Based on this engineered arrangement, operation of the IX system will result in immediate adsorption of perchlorate onto the resin and desorption of regenerant ions from the resin by the perchlorate, ultimately reaching the ion exchange capacity. The selected IX resin (Calgon's CalRes 2109, or equivalent) has a high selectivity for perchlorate over typical ions such as chloride and sulfate. Groundwater will contact the resin through down-flow vessels in a lead/lag configuration. Similar to the LGAC system, when the lead IX vessel resin is exhausted, it will be replaced with fresh resin and the lag vessel configured to operate in the lead position. Spent resin will be disposed of at a permitted disposal/treatment facility.

According to the manufacturer, the maximum rated continuous treatment flowrate for a single Model 12 vessel is recommended to be 1,980 gpm, although the vessels can accommodate 2,000 gpm on a temporary basis. However, at the maximum design flow of 2,000 gpm, the two parallel trains of dual-vessels would be operated at 1,000 gpm each. At lower flows, it is anticipated that one dual-vessel system will operate while the other remains in stand-by or is maintained off line. This redundancy will result in a higher level of operational efficiency.

Backwashing for IX system vessels is also recommended following each replacement of resin within the vessel. This removes fines from the virgin media, allows the resin to stratify within the vessel and assists with the removal of air from the bed. Table 3-9 also includes the design parameters for IX resin backwashing.

To prevent resin from being a source of contaminants such as N-nitrosodimethylamine (NDMA) or other nitrosamines, newly placed resin will be pre-washed before delivery to the treatment plant. In addition, the initial forward rinse (approximately four bed volumes) of the resin will be discharged to the Wastewater Storage Tank. The off-site and on-site rinsing process has been developed based on industry practices and LPVCWD's experience at other treatment plants. However, if trace nitrosamines are still present in IX system effluent, it will be treated by the downstream UV/Ox system (Section 3.3.12).

The IX resin usage rate is estimated to be approximately 4.25 cubic ft per day at a flowrate of 2,000 gpm. During parallel operation of the IX trains at the average flowrate of 1,575 gpm, the IX resin usage rate will be approximately 1.7 pounds per day per lead vessel, thereby allowing for approximately 210 days between vessel changeouts.

1.3.13 Ultraviolet Light and Hydrogen Peroxide Advanced Oxidation System

The UV/Ox system manufactured by Trojan has been selected as the treatment technology to remove 1,4-dioxane. Design of the UV/Ox system is based on the estimated influent concentrations (Table 3-3) anticipated at a typical design flow rate of approximately 1,575 gpm and a maximum design flow rate of 2,000 gpm. The Trojan system is also capable of treating NDMA in the event it is leached from the upstream IX vessels. Trojan's design package for the UV System is provided in Appendix J.

Projected influent quality to be received by the UV/Ox system is presented in Table 3-10. Although they are not UV/Ox treatment targets, the concentrations of alkalinity, TDS, total organic carbon, total suspended solids, iron, and manganese are included in Table 3-10 because they can scavenge hydroxyl radicals or degrade the UV lamp transmittance, which would reduce the UV/Ox performance in removing 1,4-dioxane. The concentrations have been reviewed by Trojan in preparation of the design. The treatment goal for the UV system is 0.5 µg/L of 1,4-dioxane, with further details summarized in Table 3-11.

The Trojan UV/Ox system uses a photochemical process that relies on hydrogen peroxide (H₂O₂) and UV light to destroy organic compounds including 1,4-dioxane. Constituents like NDMA are removed by UV photolysis alone where absorption of UV photons by NDMA and subsequent release of energy drives the process. Other compounds like 1,4-dioxane are not readily removed by UV photolysis alone and hydroxyl radicals are needed for their removal. Hydroxyl radicals can be generated through UV photolysis of H₂O₂.

The UV/Ox system includes a double-walled 6,500-gallon high density linear polyethylene (HDPE) chemical storage tank for storage of the H₂O₂ solution, two metering pumps, and four Trojan D72AL75 UV reactors configured in two trains with each train consisting of two reactor chambers. The UV reactor chambers each contain 144 UV lamps. The UV/Ox reactor vessels will receive the effluent from the IX resin vessels after hydrogen peroxide addition, and the effluent from the UV/Ox reactor vessels will flow to the catalytic LGAC vessels for removal of residual H₂O₂.

The power provided to the 144 lamps in each reactor chamber can be adjusted to operate from 60 percent to 100 percent of the design maximum capacity in two percent increments, depending on the concentration of 1,4-dioxane in the influent water. Furthermore, each of the reactor chambers will include a UV intensity sensor and a temperature switch. Maintenance of the UV/Ox system is anticipated to be minimal including monthly manual cleanings and annual checks for equipment wear. A summary of the designed UV/Ox system is provided in Table 3-12.

Hydrogen peroxide will be stored in a storage tank and added to the UV/Ox influent through two metering pumps. The H₂O₂ will be stored at 50 percent concentration in the storage tank and injected upstream of the UV reactors. A static mixer within the conveyance pipeline will assist with blending of H₂O₂ within the piping prior to entry into the UV/Ox system. H₂O₂ analyzers will be located upstream and downstream of the UV reactors for adjustment of chemical dosing rates. The chemical feed pump, tank sizing, and storage implications for the H₂O₂ components of the design are summarized in Table 3-13.

1.3.14 Catalytic LGAC System and Sodium Bisulfite System

The catalytic LGAC system and sodium bisulfite (SBS) system are intended to quench residual H₂O₂ in the effluent from the UV/Ox system. The treatment goal is to mitigate residual H₂O₂ to less than 0.5 mg/L. The catalytic LGAC system consists of two parallel 20,000-pound SA-516-70 LGAC vessels that contain coconut shell-based carbon, and an effluent hydrogen peroxide

analyzer. Backwash supply for the catalytic LGAC vessels will be delivered from the Clearwell and Backwash Supply Tank.

The SBS system consists of a 500-gallon double-walled polyethylene tank and four metering pumps. The catalytic LGAC quenching system has been designed for redundancy. If H_2O_2 exceeds 0.5 mg/L in the effluent from the LGAC quenching system, SBS will be added for additional removal of H_2O_2 . The effluent from the quenching process will flow to the multimedia filter vessels in the RO pretreatment system.

Preliminary calculations for the SBS chemical dosing and storage tank capacity are shown in Table 3-14. Table 3-15 presents the catalytic LGAC quenching system design criteria.

1.3.15 Intermediate Booster Pump System

The intermediate booster pump system consists of two horizontal in-line duplex pumps, with each pump capable of supplying 200 ft of head pressure and operation up to 2,000 gpm. The intermediate booster pumps are included to move the water through the RO pre-treatment multimedia filters and supply the needed RO feed pressure. The pumps are intended to be operated in rotation, with the goal for the system to provide approximately 90 psi pressure at the effluent of the multimedia filters.

1.3.16 Reverse Osmosis Treatment System

1.3.16.1 General

The following subsections describe the components of the RO treatment process, including pretreatment, cleaning, and post-treatment.

1.3.16.2 Reverse Osmosis Pretreatment System

Potential suspended solids, carried over from the organics removal processes, and sparingly dissolved inorganics, including calcium carbonate, calcium sulfate, barium sulfate, and silica, can foul RO membranes. The RO pretreatment system is intended to remove compounds that could foul the RO membranes. Table 3-16 provides the estimated RO feed water quality.

The RO pretreatment system consists of four multimedia pressure filters, a scale inhibitor tank, two scale inhibitor pumps, and four horizontal cartridge filters. Suspended solids will be removed by the multimedia pressure filters followed by horizontal cartridge filters, for protection from dissolved inorganics. The multimedia filters will receive the effluent from the intermediate booster pumps under pressure (roughly 95 psi). The effluent from the multimedia filters will flow to the horizontal cartridge filters after addition of scale inhibitor, or to the decarbonator in RO post-treatment system without addition of scale inhibitor. Scale inhibitor will be stored in the storage tank and added to the effluent from the multimedia filters through the metering pumps. The effluent from the horizontal cartridge filters will be delivered to the RO trains through centrifugal pumps.

TDS and parameters in the RO pretreatment effluent will exceed the finished water goals. This allows a portion of the pretreated groundwater to bypass the RO treatment process and be blended in the finished water at a ratio that will meet established quality targets. Table 3-17 presents the design criteria for the RO pretreatment system.

1.3.16.3 Reverse Osmosis System

TDS cannot be removed with mechanical filtration or standard carbon filtration, and an RO system is one of the most effective means of removing TDS and other constituents [e.g., Cr(VI), selenium, and nitrate]. In an RO system, the TDS level increases on the high-pressure side of the membrane as water permeates through the membrane to the low-pressure side.

The designed RO system consists of ten RO membrane trains, and ten centrifugal feed pumps. Each membrane train consists of five pressure vessels housing the RO membrane elements. The RO system will receive the effluent from the horizontal cartridge filters in the RO pretreatment system through centrifugal feed pumps. The effluent from the RO membrane trains will flow to the decarbonator in the RO post-treatment system. The concentrate from the RO membrane trains will flow to the Wastewater Storage Tank. The individual trains will be connected by a common pipe manifold that will contain a permeate (process water) line and a concentrate wastewater (brine) line. The capacity of individual trains must be matched to the expected range of permeate flows. The flow of permeate is a function of several factors, including raw water flowrate, raw water quality, and desired product water quality.

There is a wide range of potential RO feed flow recommendations based on extraction well pumping and product water quality targets. Table 3-18 provides a summary of two RO system production calculation scenarios at the maximum flow rate of 2,000 gpm and based on projected maximum TDS and selenium influent concentrations and the product water goals. The potential increase in concentration of total dissolved solids due to addition of pH and scale control agents has been accounted for in the RO mass balance calculations. The two anticipated operation scenarios presented in Table 3-18, are as below:

- Scenario 1: During startup testing period that product water is discharged to the storm drain system, meeting the selenium concentration goal 5 µg/L in the effluent is evaluated to govern the RO feed flow; and
- Scenario 2: After startup testing is complete and during normal operations that product water is intended to meet potable water usage standards, meeting the TDS concentration goal of 500 mg/L in the product water is evaluated to govern the RO feed flow.

The RO system is configured to operate over a flow range of 500 to 2,000 gpm, while maintaining cross flow and other membrane design parameters. If the minimum water quality scenario is discounted (i.e., by assuming it would only apply to operation of a single extraction well), then a 200 to 250 gpm train capacity may be feasible. The RO membrane design parameters are summarized in Table 3-19.

1.3.16.4 Clean-In-Place System

The clean-in-place (CIP) system is to clean the five pressure vessels in a single RO train and consists of a 1,000-gallon CIP tank, and a horizontal centrifugal pump. The CIP system will receive the effluent from the RO membrane trains and the solution from the CIP tank will flow to RO membrane trains through a centrifugal pump.

The CIP system will be permanently piped. Equipment associated with the membrane CIP system will be skid mounted. The system components are sized assuming each stage within a given train will be cleaned individually. Design criteria for the CIP system are presented in Table 3-20. The cleaning solution will be dosed with chemicals, heated and mixed/recirculated with required temperature and concentration/pH. Once within specified limits, the solution will be valved to the appropriate stage within the train and recirculated through the pressure vessels and cleaning feed/return headers. The CIP tank will be fed with dry or liquid chemical. Low volumes of chemical solutions will be transferred from a delivery container using a small diaphragm metering pump, with outlet connected to the pump recirculation line. An eductor will be fitted on a bypass of the recirculation line to permit the addition of dry chemicals or higher volumes of liquid chemicals to the tank.

1.3.16.5 Reverse Osmosis Post-Treatment System

Effluent from the RO trains will be corrosive, with a negative LSI of approximately 5.3. Partial stabilization of RO effluent will occur from blending with RO bypass water. Pre-acidification of the raw water supply ahead of the organics removal processes will result in blended water with roughly 30 mg/L of residual carbon dioxide and a negative LSI.

The RO post-treatment system is intended to stabilize the treated groundwater through forced decarbonation coupled with the addition of a small amount of caustic soda. This system's treatment goals are as follows:

- pH of 7.7;
- Total alkalinity of 160 mg/L as calcium carbonate;
- Total hardness of 275 mg/L as calcium carbonate; and
- LSI of +0.1 to +0.2.

The RO post-treatment system consists of a blower, a decarbonator, two centrifugal transfer pumps, a double-walled caustic soda storage tank, and two soda ash pumps. The decarbonator will receive the effluent from both RO membrane trains and the RO-bypass from the multimedia filters. Air will be added to the decarbonator through a blower. Caustic soda will be stored in a storage tank and added to the effluent from the decarbonator through two metering pumps. The effluent from the decarbonator will be delivered to the Clearwell and Backwash Supply Tank through dedicated centrifugal transfer pumps. Design criteria for the RO post-treatment system are summarized in Table 3-21.

1.3.17 Clearwell and Backwash Supply Tank

The Clearwell and Backwash Supply Tank is designed to achieve the following objectives:

- Provide more than four hours of hydraulic retention at the maximum design groundwater treatment rate of 2,000 gpm;
- Achieve a free chlorine residual in the treated water;
- Deliver backwash water to treatment system components; and
- Deliver treated water to LPVCWD.

The Clearwell and Backwash Supply Tank system consists of a 500,000-gallon tank, two centrifugal product-water discharge pumps, and two centrifugal backwash supply pumps. The tank is designed to be approximately 59.5 ft in diameter and 30 ft in height, providing approximately 6 ft of free board above the maximum water storage level. The Clearwell and Backwash Supply Tank will receive the effluent from the decarbonator through centrifugal transfer pumps after addition of caustic soda and chlorination. Effluent from the Clearwell and Backwash Supply Tank will be delivered either as treated water to LPVCWD, backwash supply for the treatment system components, or recirculate to the Equalization Tank or discharge to the storm drain (bypass/overflow).

For backwash or flushing, piping will be tied into the following treatment units:

- VOC LGAC system;
- IX treatment system;
- Multimedia filters (RO pre-treatment); and
- Catalytic LGAC system (for hydrogen peroxide quenching).

Treated water from the Clearwell and Backwash Supply Tank will be received by an existing 14-inch and/or 18-inch diameter potable water pipeline located adjacent to the treatment plant on Hudson Avenue. Each of the two product-water discharge booster pumps will be capable of transferring up to 2,000 gpm of water and can overcome the maximum pressure within the existing LPVCWD potable water mains. The pumps may be operated individually, in parallel, or in rotation to increase pump life.

A chlorine injection system, consisting of two chemical tanks and four metering pumps, is designed to inject sodium hypochlorite (NaOCl) into the treated water stream. The chlorination system can inject sodium hypochlorite in to the influent and/or effluent of the Clearwell and Backwash Supply Tank, as needed. The bulk chemical consists of 12.5 percent NaOCl stored in two double-walled 500-gallon tanks. The NaOCl dosing rate is anticipated to be adjusted such to achieve an average target chlorine residual of 1.0 mg/L in the Clearwell Tank effluent, with an expected residual chlorine concentration ranging between 0.75 to 1.5 mg/L.

The NaOCl feed can be trimmed for system flexibility to achieve adequate free chlorine residual during potential periods when SBS doses are elevated. As stated in Section 3.3.13, the effluent of

the LGAC H_2O_2 quenching system could contain up to 0.5 mg/L H_2O_2 . If it is determined that the residual H_2O_2 poses a problem for the RO system, SBS will be utilized to quench the H_2O_2 residual. The required dose of NaOCl at the Clearwell and Backwash Supply Tank will be impacted by the amount of SBS being added upstream of the chlorination system. Sizing calculations for the NaOCl storage tank and feed pumps are shown in Tables 3-22 (a), (b), and (c) for free chlorine residual targets of 0.75, 1.0, and 1.5 mg/L, respectively, and as a function of potential SBS dosing following the catalytic LGAC.

The ability to add the NaOCl to the effluent of the Clearwell and Backwash Supply Tank is necessary to ensure an adequate NaOCl residual prior to discharge into the potable water supply. Post-Clearwell Tank, NaOCl feed rate estimates and associated storage requirements are provided at various flow rates and free chlorine residual concentrations in Table 3-23.

1.3.18 Wastewater Storage Tank

The Wastewater Storage Tank system will store wastewater from backwashing the LGACs, IX, and multimedia filter systems, and as well as concentrate from the RO system. It consists of a 200,000-gallon tank, and two centrifugal wastewater discharge pumps. The tank will be a lined steel tank at approximately 38.75 ft in diameter and 30 ft in height, providing approximately 6 ft of free board above the maximum wastewater storage level. Effluent from the Wastewater Storage Tank will be discharged to an existing LACSD sewer line on Salt Lake Avenue, City of Industry, California, via two centrifugal pumps and the wastewater discharge conveyance pipeline described in Section 3.5. The anticipated volume of wastewater generated from each operational event is presented in Table 3-24.

1.4 Discharge of Treated Groundwater

The planned end-use option for the treated groundwater of the IZ Interim Remedy is to provide product water that meets standards for potable use, to LPVCWD's existing 14-inch and/or 18-inch diameter water mains located adjacent to the treatment plant on Hudson Avenue. The design details for the connection to LPVCWD's water mains provided in Appendix D, Design Drawings. During normal operations, the flowrate of the treated water to LPVCWD's water main(s) will be approximately 80 percent of the influent flowrate based on the RO system's permeate recovery. Thus, for normal operating conditions of 1,575 gpm influent flowrate, approximately 1,260 gpm of treated product water will be produced.

1.5 Discharge of Wastewater

The treatment plant will generate wastewater from the RO system and backwash of LGAC, IX, and multimedia filter treatment processes. Northrop Grumman summarized the wastewater quality, average flow rate, and peak flow rate in a Will-Serve Letter Request to LACSD on 12 September 2013. In September and October 2013, Northrop Grumman met with LACSD to identify the possible points of connection for the treatment plant wastewater. LACSD indicated that, because of the high TDS levels in the RO system wastewater, the wastewater must be piped

to its gravity-drain JOA-1A District 21 Interceptor that connects to the Carson wastewater treatment plant. The connection to this sewer is approximately 4,500 ft south of 111 Hudson Avenue (the treatment plant site) near the intersection of Parriott Place and Salt Lake Avenue, City of Industry, California.

Appendix D contains drawings for the wastewater conveyance pipeline, including the portions that were installed in summer 2016 on an expedited basis in Valley Boulevard. The expedited pipeline in Valley Boulevard was necessitated by the City of Industry's upcoming street improvement project, after which there will be a moratorium on in-street work that would preclude in-street construction activities.

1.6 Utility Requirements

The treatment plant will be serviced by potable water, electricity, and sanitary sewer. A natural gas connection is not needed and is therefore not planned for the treatment plant.

Potable water for site usage will be supplied via a service connection to an existing water main located adjacent to the treatment plant in Stafford Avenue. The service-water line will include the appropriate backflow preventer(s) and will be used to supply water for media backwashing during initial startup activities and to supply potable water for personnel use including drinking water, irrigation, and chemical showers.

Electricity will be provided by Southern California Edison (SCE) from a new transformer and an electrical service connection to be installed at the east side of the treatment plant property. The requested electrical service will be 480/277-volt, 3 phase, and wye service. This service voltage is selected based on the size of loads and provides cost-effective electrical distribution, and is typical for industrial applications with loads of such size.

The treatment plant does not incorporate a redundant power supply (e.g., generators), since a power failure at the treatment plant would likely be regional in nature and the extraction wells would likely shutdown, thus eliminating the need for plant operation. Battery backups are planned for critical control system components, such as alarm callouts, computers, and emergency lighting.

A sanitary sewer connection is required for sanitary facilities provided in the Control Building only. The sanitary sewer connection will be sized in accordance with the requirements of the City of Industry and the LACSD.

Preliminary telecommunication requirements for the treatment plant will include up to two voice lines, and up to two data communication lines. Two phone lines were selected to allow simultaneous operator communication with auto-dialer alarm callout. Typically, only one data line would be used at a time, but two data communication lines will provide redundant data connections. Telecommunications services are available from major telecommunications service providers in the City of Industry.

1.7 Security

The design of the IZ Interim Remedy contains the following security features:

- IZ-West Extraction Well;
 - Locked wellhead vault;
 - Locked instrument vault;
 - Locked control panel;
 - Intrusion detection on the control panel;
 - Locked water sampling station; and
 - Vent lines and air release valve installed in secure fenced area within PRL Glass's fenced property.
- Treatment Plant;
 - Steel fence of at least 6 ft tall around entire site;
 - Locked entry gates;
 - Locked control building; and
 - Video surveillance system.

This level of security at the treatment plant will be maintained during construction and operation of the IZ Interim Remedy.

EXHIBIT B

EXHIBIT B

Replacement Water Fee

The amount of the Replacement Water Fee provided in Section 4.14(c) of the Operations Agreement shall be equal to the payment that Northrop Grumman is obligated to make to Suburban based on sections 4.2 and 4.3 of a private agreement between Northrop Grumman and Suburban. Those relevant provisions are repeated below:

4.2 After the commencement of the delivery of Treated Water to Suburban pursuant to the Water Delivery Agreement, Northrop Grumman shall pay Suburban an amount determined in accordance with Section 4.3, below, for each month in which the amount of water delivered by LPVCWD and accepted by Suburban is less than a monthly average of 1200 gpm (“Minimum Delivery Amount”) as determined pursuant to Section 6 of the Water Delivery Agreement. The Parties acknowledge that pursuant to the Water Delivery Agreement LPVCWD will provide written notice to Northrop Grumman and Suburban of the amount delivered for the preceding month and whether that amount was less than the Minimum Delivery Amount (referred to as the “Shortfall Amount” in Section 6.2 of the Water Delivery Agreement).

4.3 If LPVCWD provides a notice of a Shortfall Amount (defined for purposes of this Agreement as a “Monthly Delivery Shortfall”), then Suburban shall send to Northrop Grumman an invoice (the “Shortfall Invoice”) for the cost to purchase an amount of replacement water equal to the amount of Monthly Delivery Shortfall. The cost of such replacement water shall be determined as follows: (a) the amount of the Monthly Delivery Shortfall in acre feet, (b) multiplied by the lowest price for available water that is being charged by Walnut Valley Water District and Upper San Gabriel Valley Municipal Water District during the month that the Monthly Delivery Shortfall occurred, (c) less Suburban’s avoided costs as defined in Section 7.4 of the Water

Delivery Agreement, and (d) less Suburban's actual costs to produce Main San Gabriel Basin rights including all Watermaster assessments during the month of the Monthly Delivery Shortfall.

EXHIBIT C

EXHIBIT C

La Puente Valley County Water District **Staff Hourly Billing Rates as of January 1, 2018**

POSITION	HOURLY RATE	OVERTIME RATE
General Manager	\$ 112.60	N/A
Compliance Manager	\$ 86.37	N/A
Treatment Supervisor	\$ 85.00	\$ 98.87
Treatment Operator II	\$ 77.95	\$ 90.17
Treatment Operator I	\$ 71.38	\$ 81.69
Maintenance Technician	\$ 67.06	\$ 76.11

EXHIBIT D

EXHIBIT D



La Puente Valley County Water District

Purchasing Policy

PURPOSE

The purpose of this Policy is to establish a comprehensive set of purchasing policies for the La Puente Valley County Water District ("District") that will assure continuity and uniformity in its purchasing operations, and provide guidelines for purchasing supplies and services.

1. Policy

The District is committed to purchasing supplies, services and equipment in a fair, open and equitable manner that provides the best overall value to the District. Each employee responsible for the procurement of goods and services for the District must follow these guidelines.

2. Conflict of Interest

No Employee or Director of the District shall participate in the process of purchasing any supplies, services and equipment, or participate in the selection, award, or administration of a contract if a conflict of interest, real or apparent, would be involved. Such a conflict would arise when:

- An Employee, Officer or Director;
- Any member of his or her immediate family;
- His or her partner; or
- An organization that employs, or is about to employ, any of the above:

has a financial interest in the firm or organization selected for award of such a contract for supplies, services, or equipment.

No Employee or Director of the District may accept, directly or indirectly, any gift, rebate, money, or anything else of value whatsoever from any person or entity if the gift, rebate, money or item of value is intended as a reward or inducement for conducting business, placing orders with, or otherwise using the employee's or Director's position to favor the contributor.

No Employee or Director of the District shall aide or assist a vendor or bidder in securing a contract to furnish commodities, equipment or services, or, favor one vendor or bidder over another, or give or withhold information from any vendor or bidder not given or withheld from all other vendors or bidders, or willfully mislead any vendor or bidder in regards to an offer or

bid specification, or knowingly certify to a greater level of service performed, or commodities or equipment furnished, than has respectively been performed or received.

3. General Provisions

The basic purchasing policy of the District is to obtain goods and services for operation at the lowest possible overall cost. This includes maintaining a purchasing system that ensures maximum use of fair and open competition and receipt of the best value for funds available, consistent with applicable laws and regulations. The purchasing functions are decentralized, with each Department responsible for compliance with District policies and procedures. Purchasing responsibility and authority shall be delegated to a level consistent with good business practice and sound financial management policy.

The following apply to all purchases made by the District:

- A. No purchase will be approved or undertaken unless an appropriation has been established, either through the adopted annual budget or Board approval of additional appropriations. It is the responsibility of the General Manager and Department Heads to maintain control of budgets that have been designated as their responsibility.
- B. All purchases shall be of the quality deemed necessary to suit the intended purpose.
- C. Competitive bidding is established based on type of purchase and/or established dollar limits. To the extent competitive bidding is required by this Policy, or, if in the discretion of the General Manager competitive bidding is deemed to serve the best interests of the District, the General Manager shall have the sole and exclusive authority to determine the manner in which the competitive bidding process shall be undertaken, with the objective that the bid process be fair and open to qualified bidders in order to obtain the best value for the District.
- D. Purchases shall not be split to avoid required procedures or established dollar limits. Purchases of like items or services should be considered on an annual basis.
- E. The emergency purchase of goods is authorized under certain conditions, as defined in Section 4-F.

4. Purchasing and Approval Authority

Purchasing authority is defined as the authority to make a purchase or enter into an agreement once all applicable purchasing procedures have been followed.

The Board of Directors ("Board") delegates purchasing and approval authority in certain amounts as specified in this Policy to the General Manager. The General Manager may then delegate appropriate authority to staff as outlined in this Policy.

- A. Management Authority Levels. Purchasing and approval authority is established as shown below:

Position	Regular Level	Emergency Level
General Manager	Up to \$50,000 per contract, purchase order or invoice	Up to \$100,000
Department Heads	Up to \$10,000	Up to \$25,000

- B. Regular Procurement Standards and Procedures. For acquisition or leasing of personal property; repair or modification of District equipment or structures; or obtaining labor, materials or services as identified in the budget, the following shall apply:

Dollar Amount	Procedure	Approval
\$0-2,500	Best value discretion	Department Heads or General Manager
\$2,501-\$10,000	Obtain 2 written quotes	Department Heads or General Manager
\$10,001 - \$50,000	Obtain 3 written quotes	General Manager
>\$50,000	Competitive / Formal Bid	Board of Directors

Exception: In the circumstance where the District is making purchases from a supplier on a regular basis on store credit, a written quote may be waived for purchases under \$10,000.

- C. Capital Projects Standards and Procedures. For acquisition of personal property, repair or modification of District equipment or structures, or obtaining labor, materials or services associated with Capital Projects (as that term is identified and defined in the District's budget), the following shall apply:

Dollar Amount	Procedure	Approval
\$0-25,000	Obtain 2 written quotes	General Manager
\$25,001 - \$125,000	Obtain 3 written quotes	Board of Directors
>\$125,000	Competitive / Formal Bid	Board of Directors

- D. Capital Project Change Order Standards and Procedures. The following shall apply to each Change Order (not cumulative Change Orders on the same project):

Dollar Amount	Procedure	Approval
Up to 10% of Project Costs and no greater than \$25,000	General Manager Review	General Manager
Greater than 10% of Project Cost and/or greater than \$25,000	Notify Board of Directors	Board of Directors

- E. Contractual Services Standards and Procedures. The following shall apply to professional services such as engineering consultant(s), accountants, auditors, IT support, etc. as identified in the District's budget:

Dollar Amount	Procedure	Approval
\$0-10,000	Obtain a minimum of 1 written proposal	Department Head or General Manager
\$10,001 - \$25,000	Obtain a minimum of 2 written proposals	General Manager
>\$25,000	3 written proposals	Board of Directors

- F. Standards and Procedures for Emergency Purchasing Procurement. The following shall apply during emergency situations:

Dollar Amount	Procedure	Approval
\$0-100,000	Inform Board of Directors at the next or special meeting	General Manager
>\$100,000	Inform Board of Directors at the next or special meeting	Board of Directors ratification

Definition of Emergency: Those events which require immediate and/or extraordinary action to protect the public health, safety, welfare and property of the public, the District, or the District's employees, as determined by the General Manager. Ratification must be made by the Board at the next regular Board meeting or the earliest special meeting that can be called. In cases where notification is required, a written memo shall be provided explaining the emergency and stating the reasons for the approval by the General Manager.

- G. Credit Card Purchases. Credit cards are issued to certain District staff as needed. All purchases must be in accordance with authorized authority within the budget and purchasing policies. Credit card purchases may be made for gasoline, travel expenses, training seminars and for supplies or services that will not be billed by a vendor. Credit cards may not be used for employees' personal purchases. If the credit card is inadvertently used for personal expenditures, the employee must immediately notify the General Manager and reimburse the District for the charges.
- H. Exceptions. Certain purchases of goods not subject to competitive offers include goods and services that can be obtained from only one vendor or one known source as the result of standardization, unique performance capabilities or intellectual property requirements, manufacturing processes, compatibility requirements or certain market conditions. These purchases may include proprietary items sold directly from the manufacturer, items that have only one distributor authorized to sell in any particular geographical area, or a specific product that has been proven to be the only product acceptable ("sole source" goods).

Other purchases that are not readily adaptable to the verbal competitive price quotes or informal or formal bidding processes do not require competitive offers. These items may

include, but are not limited to, water or water rights, debt service payments, and real property. Appropriate approvals and documentation must still be obtained for these types of purchases.

Examples include:

Water	Water rights
Advertisements and notices	Postage
Subscriptions	Trade circulars or books
Travel expenses	Fuel
Copying/Print services	Medical payments (Physicians/labs)
Membership dues	Attorney and legal services

EXHIBIT E

EXHIBIT E

MEMO



To: Mr. James L'Esperance, PE, Northrop Grumman Corporation
From: Greg B. Galindo, General Manager
Date: December 4, 2017
Subject: Agreement for Operations Services of a Water Treatment Facility - (Section 5.8) Management Fee

With respect to the Management Fee (Section 5.8 of the Agreement for Operations Services of a Water Treatment Facility), the following services and support for the PVOU IZ Project will be provided in return for the Management Fee:

1. Management services provided by the District's General Manager, including, managerial expertise and oversight of the PVOU IZ treatment plant commissioning and operations, as well as:
 - a. Training of District personnel to operate the treatment plant.
 - b. Review of plant performance and implementation of changes in operation to improve efficiency and/or changes as required by regulatory agencies, and provide recommendations to Northrop for efficiency improvements when identified.
 - c. Interaction with regulatory agencies on treatment plant operational goals (e.g., remediation and performance), with Watermaster as project liaison, and coordinate with in-basin water purveyors as needed.
 - d. Education of and interface with the District's Governing Board of Directors on PVOU IZ related matters and areas of impact.
2. Accounting and finance support services:
 - a. Accounts payable services for project related expenses.
 - b. Tracking and reporting of expense categories.
 - c. Annual financial audit in accordance with government accounting standards and compliance with all California local government accounting regulations.
 - d. Preparation of annual treatment plant budget and monthly financial reporting.
 - e. Preparation of financial reports as requested by Northrop.
3. Human resource support services:
 - a. Employee benefits management.
 - b. Employee and Labor Relations.
 - c. Federal and State employment law compliance.
 - d. Recruitment and employment of qualified treatment plant staff.
4. District Legal Counsel services:
 - a. Preparation and/or review of District contracts related to or impacted by the project (e.g., material / chemical supply vendor contracts, equipment service provider contracts, employment and labor related staffing issues).

- b. Counsel to the District's Board of Directors on PVOU IZ project related matters and actions.
 - c. Other legal services as needed to support the initial launch as well as the continuation of the project at the conclusion of the initial term.
- 5. Community outreach efforts:
 - a. Attendance of project related community events to properly represent the District's involvement in the PVOU IZ (e.g., EPA community outreach events).
 - b. Interaction with local and State legislative and other elected officials.
 - c. Preparation and distribution of customer outreach material related to the project to address District customer concerns and to gain and maintain public support for the District's involvement with the Project.
- 6. District Board of Directors official action and oversight:
 - a. Official Board actions related to and required for the project (e.g. CEQA certification).
 - b. Continuing education and review of the PVOU IZ project to enable informed official action on items pertaining to the project and adequate response to inquiries and concerns addressed to individual board directors.
- 7. Risk Management:
 - a. The assumption of risk involved with being a partner and operating the project that is not otherwise addressed or addressable by the definitive agreements. Voluntarily participation in a superfund project results in a potential for liability that the District cannot foresee. The District will naturally be a key party to any issues or potential liability that arises from managing and operating the treatment plant.
 - b. Risk associated with stranded labor costs. The potential of having labor costs stranded while the plant may be down for an issue out of the District's control. Specifically, the potential risk of full time employees on the clock but not billed to the project if the plant is non-operational for reasons beyond the District's control.

EXHIBIT F

EXHIBIT F

Northrop Grumman Systems Corporation ("Northrop Grumman") is providing this notice to La Puente Valley County Water District pursuant to Section 5.8 of the Agreement For Operations Services Of A Water Treatment Facility ("Agreement") that Northrop Grumman intends to commence operation of the Subject Facilities (as that term is defined in Section 2.29 of the Agreement) within one year of the date of this notice.

Dated: _____, 2017

Authorized Representative of
Northrop Grumman Systems Corporation

EXHIBIT G

**Substantive Permitting and Utility Service Requirements
Puente Valley Operable Unit, Intermediate Zone Interim Remedy, California**

Item No.	Permit Agency	Permit is Applicable to:			Permit Description
		IZ-West and IZ-1/MZ-1 Extraction Wells	Pipeline	Treatment Plant	
1	City of Industry 15651 East Stafford Street City of Industry, CA 91744	x	x	x	Encroachment and building permits
			x	x	Excavation permits
				x	Zoning approval
				x	Storm drain connection
				x	Construction and building permits
2	City of La Puente Planning & Building/Safety Division 15900 E. Main Street La Puente, CA 91744		x		Encroachment Permit & Traffic Control
3	Los Angeles County Baldwin Park Permit Office Baldwin Park, CA 91706		x	x	Construction and Encroachment Permit
			x		Flood Control District Permits
				x	Storm drain connection (via City of Industry)
			x		License Agreement
4	Los Angeles County Department of Public Health (LACDPH) Bureau of Environmental Protection Water & Sewage/Mountain & Rural Programs 5050 Commerce Drive Baldwin Park, CA 91706	x			Application for Well Construction
5	Southern California Edison (SCE)	x		x	Electric Power Connection [power drops to remaining Extraction Wells IZ-1 and MZ-1 and IZ-West] and treatment plant.
6	Federal Aviation Administration (FAA)			x	FAA study
7	Union Pacific Railroad		x		Encroachment and Crossing Permits for conveyance piping for discharge from the treatment plant to LACSD point of connection
8	State Water Resources Control Board, Division of Drinking Water (DDW) Drinking Water Program 500 North Central Avenue Glendale, CA 91203	x	x	x	DDW Policy 97-005 permit
9	Main San Gabriel Basin Watermaster (Watermaster) 725 N. Azusa Ave. Azusa, CA 91702	x	x	x	Watermaster permit and approval
10	South Coast Air Quality Management District (SCAQMD) 21865 East Copley Drive Diamond Bar, CA 91765-0000			x	Authority to Construct/ Permit to Operate for Decarbonator
11	California Regional Water Quality Control Board, Los Angeles Region (RWQCB) Well Investigation Program Los Angeles RWQCB 320 W. 4th Street, Suite 200 Los Angeles, CA 90013-2343			x	NPDES permitting Soil cleanup work plan approval
12	Los Angeles County Sanitation Districts (LACSD) Los Angeles County Sanitation Districts 1955 Workman Mill Road Whittier, CA 90601			x	Industrial wastewater permit (wastewater from RO system and backwash of LGAC and IX media)

EXHIBIT H

EXHIBIT H: INSURANCE REQUIREMENTS

LPVCWD shall obtain and maintain in full force and effect, with sound and reputable insurers during the term of this Agreement, the following insurance coverages:

- (a) Commercial General Liability insurance against all hazards, covering claims for bodily injury, death, and property damage, including premises and operations, products, services and completed operations, personal and advertising injury, contractual, and broad-form property damage liability coverages with a minimum limit of liability for bodily/personal injury, including death resulting therefrom, on an occurrence basis of \$2 million and \$2 million in the aggregate, and with a minimum limit of liability for property damage on an occurrence basis of \$2 million and \$2 million in the aggregate;
- (b) Umbrella Liability insurance that follows the form of the Commercial General Liability Insurance, with a limit of at least 10 million per occurrence and \$10 million in the aggregate;
- (c) Automobile Liability insurance against liability arising from the ownership, maintenance or use of all owned, non-owned and hired automobiles and trucks with a minimum limit of liability for bodily injury of \$2 million per occurrence and \$2 million in the aggregate, and with a minimum limit of liability for property damage of \$2 million per accident and \$2 million in the aggregate;
- (d) Worker's Compensation insurance as required by the laws applicable to employees that provide any services under the Agreement;

- (e) Employer's Liability insurance with a minimum limit of \$1 million for each accident, and \$1 million for disease for each employee, including death at any time resulting therefrom, not caused by accident, and not less than \$1 million aggregate limit of liability per policy year;
- (f) Errors and Omissions Liability insurance on a claims-made basis with a minimum limit of \$5 million per claim and \$5 million in the aggregate providing coverage for claims arising out of the performance of services under this Agreement (including but not limited to coverage for regulatory and other claims arising out of the delivery and beneficial use of the Treated Water, such as claims alleging water not meeting applicable drinking water standards, the accidental failure to supply water, and/or failure to comply with applicable laws, regulations and/or governmental approvals). LPVCWD shall renew and keep Errors and Omissions Liability coverage in force for the term of this Agreement and a minimum of two years from the time this Agreement expires;
- (g) To the extent not otherwise covered by the policies listed above, Environmental and Pollution Liability and Remediation Expense insurance written on an occurrence basis with a minimum limit of \$5 million per occurrence and \$10 million in the aggregate, including without limitation mold coverage and coverage for the cost of remediation and clean-up of contaminants, crisis management/image restoration, business interruption and emergency expenses, as well as liability for bodily injury and property damage, after the release or discharge of pollutants and other on-site or off-site contamination;

- (h) Crime insurance including, but not limited to, Public Employee Theft, Depositors Forgery or Alteration, Computer and Funds Transfer fraud coverages with a minimum limit of liability of \$500,000 per single loss and \$500,000 in the aggregate; and.
- (i) Privacy and Network Security/Cyber insurance with a minimum limit of \$2 million per claim/incident and \$2 million in the aggregate, covering first party expenses (e.g., forensic investigation, privacy notification, business interruption, crisis management, PR firm, repairing and restoring a computer system and other remediation costs) and third party liability (e.g., claims alleging unauthorized access to confidential or personally identifiable information and claims alleging denial of service) for all losses arising directly or indirectly out of any acts, errors or omissions or breach of contract resulting in any of the following: (1) loss or disclosure of confidential or personally identifiable information in hard copy or electronic form; (2) loss of digital assets or data; (3) data security breach; (4) denial or loss of computer service and/or network outages; and (5) cyber extortion; LPVCWD shall renew and keep this coverage in force for the term of this Agreement and a minimum of two years from the time this Agreement expires.

The limits listed herein shall be for no less than any one year policy period. Coverage for third party claims will include defense expenses, damages, and settlements.

LPVCWD's liability insurance shall be endorsed to add Northrop Grumman and each of its now existing and future direct and indirect subsidiaries as additional insureds. Northrop Grumman's additional insured status will not be dependent upon allegations of acts, errors or omissions

against LPVCWD. The Liability Coverage listed above shall be deemed and expressly provide that they are primary and non-contributory, and the policies will not include insured vs. insured, contractual liability, or liquidated damages exclusions to the extent that such exclusions would limit coverage for claims by or against Northrop Grumman and/or its subsidiaries. The Workers' Compensation Coverage include a waiver of subrogation rights against Northrop Grumman and its subsidiaries.

LPVCWD shall provide Northrop Grumman with certificates of insurance evidencing the coverages required hereunder and identified above promptly upon commencement of operations of the Subject Facilities and upon renewals. Upon written request at any time during the term of this Agreement, LPVCWD will provide complete copies of the insurance policies. Each policy required hereunder shall provide that LPVCWD shall receive thirty (30) days' advance written notice in the event of a cancellation, non-renewal or material change in such policy. (Within three (3) business days of receipt of such notice from the insurance carrier, LPVCWD shall provide a copy of such notice to Northrop Grumman.) Nothing herein shall be interpreted to limit LPVCWD's obligation to maintain the insurance identified above, or the requirement that the policies must be approved by Northrop Grumman in writing prior to the purchase of the policies. The insurance coverages carried by LPVCWD may be maintained in whole or in part in the form of self-insurance by LPVCWD, or in the form of the participation by LPVCWD in a joint powers agency or other program providing pooled insurance.

In the event that any service under this Agreement is to be rendered by persons or third parties other than LPVCWD's employees, LPVCWD shall arrange to furnish Northrop Grumman with evidence of insurance for such persons or third parties subject to the same terms and conditions

as set forth above and applicable to LPVCWD prior to the commencement of service by such person(s) or third parties.

AGREEMENT FOR DELIVERY AND BENEFICIAL USE OF TREATED WATER

This Agreement for Delivery and Beneficial Use of Treated Water (the “Agreement”) is dated as of December __, 2017 by and between La Puente Valley County Water District (“LPVCWD”), Suburban Water Systems (“Suburban”) and Northrop Grumman Systems Corporation (“Northrop Grumman”) and shall be effective as of the Effective Date as hereinafter defined. (At times, LPVCWD, Suburban and Northrop Grumman may be referred to collectively herein as the “Parties” and individually as a “Party.”)

SECTION 1 RECITALS

1.1 Northrop Grumman is a Delaware corporation. It and a number of other businesses, their predecessors and individuals have been identified by the United States Environmental Protection Agency (“EPA”) as “potentially responsible parties” in the Puente Valley Operable Unit (“PVOU”) in the Main San Gabriel Groundwater Basin (“Basin”). (Terms defined in this Section 1 are also defined in Section 2, below.)

1.2 LPVCWD is a county water district formed pursuant to California Water Code Section 30000 *et seq.* LPVCWD’s water system serves approximately 2,500 potable water service connections that reside within its 2.5 square miles of service area. LPVCWD’s service area covers portions of the City of La Puente and the City of Industry. LPVCWD serves its customers through a water system comprised of 33 miles of pipeline, 3 reservoirs, five pressure zones, 13 booster pumps, 4 wells and a groundwater treatment facility.

1.3 Suburban is a privately owned water utility operating under the jurisdiction of the California Public Utilities Commission and the California State Water Resources Control Board, Division of Drinking Water.

1.4 Pursuant to a Consent Decree with EPA, Northrop Grumman is required to achieve performance criteria concerning groundwater contamination at a depth interval referred to as the “Intermediate Zone” in the Basin, and Northrop Grumman will be implementing an interim remedy for the PVOU (“Interim Remedy”) consisting of extraction wells in the Intermediate Zone (the “Remedy Wells”), pipelines leading from those wells to a treatment facility (the “Collection Pipelines”), a treatment facility (“Treatment Facility”), certain distribution and discharge pipelines, and other ancillary components of an overall treatment system (collectively, the “Subject Facilities.”) Northrop Grumman is obligated under the Consent Decree to operate this interim remedy for a period of eight (8) years after EPA certifies that the remedy is operational and functional.

1.5 The Subject Facilities will be capable of producing water that can be utilized for beneficial use, including but not limited to potable water (“Treated Water”). Northrop Grumman’s objective is to contain the lateral and vertical extent of the PVOU IZ plume as it exists at the time the Subject Facilities are certified by the EPA to be operational and functional and make Treated Water available to LPVCWD for distribution in accordance with this Agreement and applicable law.

1.6 Northrop Grumman and LPVCWD have entered into a separate agreement regarding LPVCWD’s operation of the Subject Facilities titled Agreement for Operation Services of a Water Treatment Facility (the “Northrop Grumman/LPVCWD Agreement”) which will be executed concurrently with this Agreement.

1.7 On December __, 2017, LPVCWD, acting as the lead agency under the California Environmental Quality Act (Cal. Public Resources Code Section 21000 *et seq.*) adopted the Initial Study/Mitigated Negative Declaration for the Intermediate Zone Interim Remedy Project.

SECTION 2 DEFINITIONS

- 2.1 Agreement. This Agreement for Delivery and Beneficial Use of Treated Water.
- 2.2 AF. Acre feet (a measurement for a quantity of water).
- 2.3 Basin. The Main San Gabriel Groundwater Basin.
- 2.4 Brine Line. Conveyance pipeline for the waste concentrate (i.e., “brine”) from the Treatment Facility’s reverse osmosis to an industrial sewer line operated by the Sanitation Districts of Los Angeles County.
- 2.5 Collection Pipelines. The pipelines leading from the Remedy Wells to the Treatment Facility.
- 2.6 Consent Decree. The Consent Decree entered by the U.S. District Court for the Central District of California on August 21, 2009 (Civil Action No. 09-0866 (ABC)).
- 2.7 DDW. State Water Resources Control Board, Division of Drinking Water.
- 2.8 DDW Approval. DDW’s approval for LPVCWD to operate the Subject Facilities, including an amendment to LPVCWD’s existing DDW water supply permit to utilize the Treated Water.
- 2.9 Delivery Point. The location of the flow meter on the conveyance pipeline connecting the Treatment Facility effluent to LPVCWD’s water system conveyance pipeline.
- 2.10 Discharge Pipeline. The pipeline connecting the Treatment Facility and a storm drain owned by the County of Los Angeles.
- 2.11 Drinking Water Standards. The primary and secondary MCLs set by EPA and DDW, the Notification Levels set by DDW, and any other applicable standard imposed by DDW in the permit to be issued for the PVOU IZ Interim Remedy.
- 2.12 Effective Date. The date on which the last party executes this Agreement.

- 2.13 EPA. The United States Environmental Protection Agency.
- 2.14 ESD. The Explanation of Significant Differences for the PVOU dated June 14, 2005.
- 2.15 gpm. Gallons per minute.
- 2.16 Interim Remedy. The actions undertaken by Northrop Grumman to implement the intermediate zone remedy in the PVOU pursuant to the Consent Decree, the Statement of Work attached to the Consent Decree, and applicable work plans approved by EPA.
- 2.17 Intermediate Zone or PVOU IZ. The aquifer zone as defined by the ROD and ESD, and as characterized hydrostratigraphically in the *Conceptual Site Model Report, SZ-South and IZ Interim Remedies, Puente Valley Operable Unit* (14 August 2015).
- 2.18 IPU. Industry Public Utilities, which is the water system owned by the City of Industry and managed and operated by LPVCWD.
- 2.19 Judgment. The Judgment entered by the Los Angeles County Superior Court in the action entitled Upper San Gabriel Valley Municipal Water District v. City of Alhambra, Case No. 924128, regarding the rights and other matters concerning the extraction of groundwater from the Basin.
- 2.20 LPVCWD. La Puente Valley County Water District.
- 2.21 MCL. MCL means a maximum contaminant level set by EPA or DDW, including as defined in Health & Safety Code §116275(f) and as set forth in 22 CCR Ch. 15, Articles 4, 5.5 and 16.
- 2.22 Notification Level. The notification level set by DDW, as defined in Health & Safety Code §116455(c)(3).
- 2.23 Northrop Grumman. Northrop Grumman Systems Corporation and any and all

corporate predecessors and successors.

2.24 Northrop Grumman/LPVCWD Agreement. The separate agreement between Northrop Grumman and LPVCWD, concurrently executed with this Agreement, regarding LPVCWD's operation of the Treatment Facility.

2.25 PVOU. Puente Valley Operable Unit.

2.26 Remedy Wells. Those extraction wells in the Intermediate Zone required to implement the Interim Remedy.

2.27 ROD. The Interim Record of Decision for the PVOU dated September 28, 1998.

2.28 RWQCB. The Regional Water Quality Control Board, Los Angeles Region.

2.29 Subject Facilities. The Remedy Wells, the Collection Pipelines, Treatment Facility, the Discharge Pipeline, the Brine Line, and other ancillary components of the overall treatment system contemplated by this Agreement.

2.30 Suburban. Suburban Water Systems.

2.31 Treatment Facility. The facility to be built by Northrop Grumman and operated and maintained by LPVCWD that will treat groundwater from the PVOU as part of the Interim Remedy.

2.32 Treatment Facility Intake Meter. The meter to be located on the pipeline leading to the equalization tank at the Treatment Facility, which meter will measure the amount of groundwater delivered to the Treatment Facility.

2.33 Treated Water. The water produced by the Treatment Facility.

2.34 Treatment Site. The real property located at 111 Hudson Avenue, City of Industry, California, which is owned by Northrop Grumman.

2.35 Watermaster. The Main San Gabriel Basin Watermaster.

2.36 Watermaster Approval. Watermaster's approval of an application submitted by LPVCWD under Section 28 of the Watermaster Rules and, if and as required by Watermaster, Watermaster's approval of this Agreement and the Northrop Grumman/LPVCWD Agreement.

2.37 Watermaster Rules. The Main San Gabriel Basin Watermaster's Rules and Regulations established pursuant to the Judgment.

SECTION 3 DESCRIPTION OF THE SUBJECT FACILITIES

3.1 Northrop Grumman has installed six of the Remedy Wells and plans to install a seventh Remedy Well (which may be screened at multiple depths). The Remedy Wells are designed to extract groundwater for the purpose of removing contamination and to contain the contaminant plume in the PVOU IZ. Water from these wells will be delivered to the Treatment Facility as measured by the Treatment Facility Intake Meter. Such water will be treated at the Treatment Facility to be constructed by Northrop Grumman on the Treatment Site.

3.2 The Treatment Facility shall be designed to treat extracted groundwater so that the Treated Water will comply with Drinking Water Standards. In addition, Treated Water shall have a slightly positive Langlier Saturation Index and a calcium carbonate precipitation potential between 4 and 10 milligrams per liter.

3.3 The Treatment Facility shall produce Treated Water to achieve applicable cleanup performance objectives for the PVOU IZ. The system will be designed to treat extracted groundwater in an amount up to 2,000 gallons per minute (gpm). The Treated Water flow rate will be less than that amount due to outages and discharge of waste products. It is estimated that Treated Water will range (on average) between 1,200 and 1,750 gpm, but may decline over time as the Interim Remedy is implemented. To maximize cleanup performance, the goal is to operate on a continuous basis (24 hours a day, 7 days a week). Treated Water will be made

available by LPVCWD to Suburban and LPVCWD in accordance with this Agreement and applicable law. The Treatment Facility will also have the capability to discharge Treated Water to a local Los Angeles County Flood Control District facility pursuant to applicable permits. Northrop Grumman will only extract as much groundwater from the PVOU IZ as necessary to meet the remedial requirements of its Consent Decree with EPA.

SECTION 4 GOVERNMENTAL APPROVAL

4.1 Watermaster Approval

(a) The Parties shall cooperate with each other with respect to the application for the Watermaster Approval, including, but not limited to, supporting the application before the Watermaster and providing any technical information requested by LPVCWD. Further, each Party shall coordinate and inform the other Parties prior to outreach and communications with Watermaster regarding the application, including disclosure of draft documents.

(b) If permitted by the Watermaster, Northrop Grumman shall be a co-applicant with LPVCWD for the application for the Watermaster Approval. If Northrop Grumman is not permitted to be a co-applicant, then LPVCWD shall be the sole applicant and Northrop Grumman shall file with the Watermaster the document(s) necessary to demonstrate its support and commitment for the project described in LPVCWD's application. (For purposes of this Agreement only, the application described in this Section 4 shall be referred to as the "LPVCWD/Northrop Grumman Application.")

(c) The LPVCWD/Northrop Grumman Application shall seek the approvals and permits from the Watermaster necessary to construct and operate the Remedy Wells, Collection Pipelines and Treatment Plant in accordance with the applicable provisions of the Judgment and Watermaster Rules. Northrop Grumman and LPVCWD shall cooperate with each

other in determining the type of Watermaster approvals to request in the LPVCWD/Northrop Grumman Application.

(d) Northrop Grumman shall prepare the LPVCWD/Northrop Grumman Application and retain the consultant(s) necessary to conduct the technical studies to support the LPVCWD/Northrop Grumman Application. LPVCWD shall promptly review and comment on all drafts of the LPVCWD/Northrop Grumman Application and supporting studies provided by Northrop Grumman.

(e) Northrop Grumman shall prepare all documents and studies necessary to respond to any comments on the LPVCWD/Northrop Grumman Application that may be raised by the Watermaster. LPVCWD shall promptly review and comment on drafts of such responsive documents.

(f) Northrop Grumman shall be responsible for paying any and all fees charged by the Watermaster in connection with the LPVCWD/Northrop Grumman Application.

4.2 DDW Approval

(a) LPVCWD shall file an application for approval as the operator of the Treatment Plant and purveyor of the Treated Water. (This permit application shall be referred to herein as the “DDW Permit Application.”)

(b) The Parties shall coordinate and cooperate with each other with respect to the preparation and filing of the DDW Permit Application, including prompt review of all drafts of the DDW Permit Application before filing with DDW. Each of LPVCWD and Suburban shall provide any technical information concerning its existing water system necessary to prepare the DDW Permit Application and each Party shall promptly respond to any comments or requests for additional information that may be made by DDW. Each Party shall support the DDW Permit

Application before DDW. Each Party shall coordinate and inform the other Parties prior to outreach and communications with DDW regarding the DDW Permit Application, including disclosure of draft documents.

(c) In pursuing the DDW Permit Application, the appropriate Party shall secure the necessary approvals from DDW, including without limitation, conditional approval letters describing the process-design standards and staffing requirements, for the Treatment Facility and related facilities.

4.3 EPA Approval

(a) Northrop Grumman shall continue to seek approval from EPA for the Interim Remedy. LPVCWD and Suburban shall support Northrop Grumman's request for that approval.

(b) Northrop Grumman shall provide EPA with notice of this Agreement upon the Parties' execution hereof.

(c) The Parties shall cooperate with each other in connection with EPA's review of the application to the Watermaster, the DDW Permit Application, and the applications for the "Other Approvals" identified in Section 4.4, below.

4.4 Other Governmental Approvals

(a) Except as otherwise addressed in Sections 4.1 through 4.3 concerning the Watermaster Approval, the DDW Permit Application, and the EPA approvals, Northrop Grumman shall: (1) apply for and promptly pursue all permits and approvals legally required to construct and operate the Subject Facilities; and (2) take the actions necessary to satisfy the substantive portions of the permitting regulations that apply to the Subject Facilities but for which permits are not legally required under the Comprehensive Environmental Response,

Compensation and Liability Act (42 U.S.C. Section 9601 *et seq.*) (collectively, the “Other Approvals”). LPVCWD and Suburban shall support Northrop Grumman’s applications for the Other Approvals.

SECTION 5 WATER SYSTEM IMPROVEMENTS

5.1 Other than the Water System Improvements described in Sections 5.2(b) and 5.3 below, Northrop Grumman shall, at its sole cost, promptly prepare and manage the design and engineering work for all aspects of the Subject Facilities to the extent necessary to operate and construct the Subject Facilities.

5.2 LPVCWD Water System Improvements. The following improvements to LPVCWD’s existing water system are anticipated (and are additionally described and depicted on Exhibit A hereto) (the “LPVCWD Water System Improvements”):

(a) As part of the construction of the Treatment Facility, Northrop Grumman shall oversee, manage, and pay for the design, permitting, and construction of the following water system improvements, which LPVCWD shall have final design approval of:

- 1) Interconnections at the Treatment Facility, including:
 - a) Metered connection to LPVCWD’s 14-inch distribution/transmission line.
 - b) Metered connection from LPVCWD’s system to IPU’s 18-inch transmission line.

(b) LPVCWD shall promptly manage, design, and construct the following water system improvements to enable its water system to convey up to 1,750 gpm of water to Suburban:

- 1) Upgrade of the 16-inch interconnection at Industry Hills Pump

Station No. 1 between LPVCWD and IPU.

2) Construct a 16" Hot Tap at LPVCWD's 16" Asbestos Cement Pipe waterline in close proximity to its facility located at Hudson Avenue and Glendora Avenue.

3) Install a new pump station at LPVCWD's facility located at Hudson Avenue and Glendora Avenue, equipped with a Variable Frequency Drive (VFD) motor control, to provide 1,750 gpm capacity for Treated Water.

4) Modify the building/housing at LPVCWD's facility located at Hudson Avenue and Glendora Avenue to integrate the new pump station.

5) Install approximately 70 linear feet of 12" Influent Piping from the 16" Hot Tap to the suction side of the booster station.

6) Install approximately 70 linear feet of 12" Effluent Piping from the discharge side of the booster station to a new 12" Suburban waterline.

7) Construct a metered connection from LPVCWD's system at its site at Hudson Avenue and Glendora Avenue to the Suburban system.

8) Provide electrical upgrades and Supervisory Control and Data Acquisition (SCADA) integration associated with the above improvements.

(c) LPVCWD shall be responsible for obtaining all necessary permits and governmental approvals necessary for the design, construction and operation of the water system improvements described in Section 5.2(b). Northrop Grumman and Suburban shall reasonably cooperate with LPVCWD in obtaining such permits and approvals.

(d) Northrop Grumman and Suburban shall reasonably cooperate with LPVCWD with respect to the design and construction of the water system improvements described in Section 5.2(b), including providing prompt input on drafts of the design documents,

engineering documents and construction bid packages. However, LPVCWD shall have final decision making authority over all design and construction issues.

(e) Northrop Grumman shall reimburse LPVCWD up to \$700,000 for its reasonable costs incurred in connection with the design, permitting, and construction of the LPVCWD Water System Improvements described in Section 5.2(b), subject to the following:

1) LPVCWD complies with the cost reimbursement procedures set forth in Section 8.1.

2) LPVCWD and Northrop Grumman shall in good faith meet and confer in the event the costs of said improvements exceed \$700,000, although said obligation to meet and confer shall not be interpreted as an obligation on Northrop Grumman to pay any costs that exceed \$700,000.

(f) The LPVCWD Water System Improvements described in this Section 5.2 shall be designed and constructed in accordance with all applicable laws and regulations.

5.3 Suburban Water System Improvements

(a) Suburban shall cause the design and construction of improvements described below (and additionally depicted on Exhibit B hereto) (“Suburban Water System Improvements”).

1) A new connection to LPVCWD’s system at Suburban’s Plant 128 located at Hudson Avenue and Glendora Avenue in the City of La Puente.

2) A new connection to LPVCWD’s system at the Treatment Facility located at Hudson Avenue and Stafford Street in the City of Industry.

(b) Suburban shall be responsible for obtaining all necessary permits and governmental approvals necessary for the design, construction and operation of the Water

Systems Improvements described in this Section 5.3. Northrop Grumman and LPVCWD shall reasonably cooperate with Suburban in obtaining such permits and approvals.

(c) Northrop Grumman and LPVCWD shall reasonably cooperate with Suburban with respect to the design and construction of the water system improvements described in this Section 5.3, including providing prompt input on drafts of the design documents, engineering documents and construction bid packages for the Suburban Water System Improvements. However, Suburban shall have final authority over all such design and construction issues.

(d) Northrop Grumman shall reimburse Suburban up to \$650,000 for its reasonable costs incurred in connection with the design, permitting and construction of said Suburban Water System Improvements, subject to the following:

1) Suburban complies with the cost reimbursement procedures set forth in Section 8.1.

2) Suburban and Northrop Grumman shall in good faith meet and confer in the event costs of said improvements exceed \$650,000, although said obligation to meet and confer shall not be interpreted as an obligation on Northrop Grumman to pay any costs that exceed \$650,000.

(e) Suburban shall design and construct the water system improvements described in this Section 5.3 in accordance with all applicable laws and regulations.

SECTION 6 DELIVERY OF TREATED WATER

6.1 In its capacity as purveyor of the Treated Water pursuant to this Agreement, LPVCWD shall cause delivery of the Treated Water to the following points:

(a) If to LPVCWD – at the Delivery Point.

(b) If to Suburban – at the interconnections described at Section 5.3(a) of this Agreement.

6.2 Subject to the applicable provisions of the Northrop Grumman/LPVCWD Agreement, LPVCWD shall deliver to Suburban a quantity of Treated Water equal to 5.3 AF per day or an average flow rate of 1,200 gpm based on a monthly average (the “Minimum Delivery Amount”) so long as the amount of water delivered to the Delivery Point equals the Minimum Delivery Amount. The Treated Water shall meet Drinking Water Standards. If during any calendar month LPVCWD produces more Treated Water from the Treatment Facility than the Minimum Delivery Amount (“Surplus Water”), then LPVCWD may, in its sole discretion, purchase such Surplus Water for its own use or deliver the Surplus Water to Suburban in accordance with Section 7.4 of this Agreement. If less water is delivered to LPVCWD at the Delivery Point than the Minimum Delivery Amount during a calendar month (the “Shortfall Amount”), then LPVCWD shall, subject to the applicable provisions of the Northrop Grumman/LPVCWD Agreement, deliver the Shortfall Amount to Suburban. Under no circumstances shall LPVCWD have any obligation under this Agreement to deliver to Suburban a quantity of Treated Water in a given month that exceeds the amount of water delivered to LPVCWD at the Delivery Point. In satisfying its obligations under this Section 6.2, LPVCWD may use its existing storage facilities to store Treated Water for delivery to Suburban.

6.3 LPVCWD shall make Treated Water available to Suburban in accordance with:
(a) scheduling procedures and water services regulations established at LPVCWD’s discretion;
and (b) applicable laws, regulations, permits and other government approvals.

6.4 Based on its monthly reading of the meters at the applicable delivery points described in Section 6.1, LPVCWD shall provide written notice to Northrop Grumman by the

first day of each month of the amount of Treated Water delivered for the immediately preceding month to each of the delivery points described in Section 6.1 of this Agreement. The Parties acknowledge that the Watermaster will be testing the meter at the delivery points on a bi-annual basis. Any additional testing or calibration shall be performed by LPVCWD and paid for by Northrop Grumman. The Parties shall accept any variation from 100% in metering that is acceptable to Watermaster.

6.5 Beginning forty-five (45) calendar days after LPVCWD commences delivery of Treated Water to Suburban, LPVCWD shall, on a monthly basis, provide a written notice to Northrop Grumman and Suburban of the amount delivered to Suburban for the immediately preceding month and whether that amount was less than the Minimum Delivery Amount. Any disputes regarding LPVCWD's measurement of the amount of Treated Water delivered to Suburban shall be resolved in accordance with the provisions of Section 15 of this Agreement.

SECTION 7 ACCEPTANCE OF AND PAYMENTS FOR TREATED WATER

7.1 LPVCWD shall accept all Treated Water that meets Drinking Water Standards to the extent permitted by applicable law, regulations and governmental approvals. Suburban shall accept all Treated Water that meets Drinking Water Standards that is made available to it by LPVCWD to the extent permitted by applicable law, regulations and governmental approval. Neither LPVCWD nor Suburban shall have any obligation to accept Treated Water which does not meet Drinking Water Standards.

7.2 As operator of the Treatment Plant, LPVCWD shall charge any entity receiving the Treated Water that is not otherwise directly charged an assessment by the Watermaster, an amount that is equal to the following applicable Assessments that may be charged by the Watermaster for the production of water from the Basin:

- (a) Administrative Assessment;
- (b) In-Lieu Assessment;
- (c) Water Resources Development Assessment;
- (d) Replacement Water Assessment; and
- (e) Any other Assessments, except those associated with the water which is

considered waste stream as a result of the treatment process, which shall be paid by Northrop Grumman.

7.3 If LPVCWD purchases the Treated Water, then LPVCWD shall pay \$49.00 per acre foot of Treated Water to Northrop Grumman (which is the Parties' estimate of LPVCWD's avoided costs for power and chemicals).

7.4 For Treated Water delivered to Suburban, Suburban shall pay \$49.00 per acre foot to LPVCWD (which is the Parties' estimate of Suburban's avoided costs for power and chemicals). LPVCWD shall pay this amount to Northrop Grumman. Suburban shall pay all Watermaster assessments directly to Watermaster.

7.5 Northrop Grumman shall pay to LPVCWD a wheeling fee of \$12.00 per AF of groundwater delivered to the new interconnections described in Section 5.3(a), above, up to the Minimum Delivery Amount.

SECTION 8 COST REIMBURSEMENT

8.1 Cost Reimbursement

(a) Northrop Grumman will reimburse LPVCWD and Suburban for all reasonable fees and costs incurred by their respective consultants, engineers, and employees in performing any work necessary to satisfy their obligations described in Sections 4 and 5 of this Agreement, including preparation and review of permit applications, environmental review

documents, technical studies, design work, and engineering work. Prior to hiring outside consultants or engineers, LPVCWD and Suburban will notify Northrop Grumman of their intention to retain such consultants and provide sufficient information to allow Northrop Grumman an opportunity to provide appropriate input during the selection process.

(b) Northrop Grumman will reimburse LPVCWD and Suburban for reasonable costs associated with its in-house staff working on the matters described in Sections 4 and 5 of this Agreement. Northrop Grumman will provide reimbursement at the rates set forth in Exhibit C to this Agreement. Such reimbursable time shall not extend to project management oversight or other non-technical administrative activities.

(c) Northrop Grumman's obligation to reimburse LPVCWD or Suburban for any costs is conditioned on substantial compliance with the following procedures: (1) before the commencement of any activity or incurring any obligation to reimburse, Northrop Grumman shall receive: (a) a detailed scope of work, which shall include performance goals, schedule objectives, staffing and personnel requirements, third party support requirements, and deliverables, and; (b) an estimated total not-to-exceed cost with supporting documentation, including competitive bids where appropriate; and (2) Northrop Grumman approves in writing, before the commencement of any activity or incurring any obligation to reimburse, both the scope of work and the not-to-exceed cost.

(d) LPVCWD and Suburban shall each submit its reimbursement requests to Northrop Grumman on a monthly basis. The reimbursement request shall identify the previously approved scope of work to which the reimbursement request applies and include the appropriate backup documentation identifying the person working on the matter, the description of the work performed, and the total amount of fees. Such backup documentation should include invoices

submitted by outside consultants and time reported by LPVCWD's or Suburban's staff. Northrop Grumman shall reimburse LPVCWD and Suburban for all reasonable and reimbursable charges within sixty (60) calendar days of receipt of a reimbursement request that complies with this Agreement.

(e) All scopes of work and other written information concerning any cost reimbursement shall be sent in writing to Northrop Grumman's project manager or other representative designated by Northrop Grumman (the "Northrop Grumman Project Representative"). The Northrop Grumman Project Representative shall respond within twenty (20) calendar days of receipt, and the response may be a request by Northrop Grumman for additional time to issue a reimbursement or provide a substantive response. However, under no circumstances will Northrop Grumman fail to provide a final response within forty-five (45) calendar days of receipt of any cost reimbursement request. The Northrop Grumman Project Representative shall be responsible for approvals and payments required under this Section 8. Northrop Grumman shall solely bear the costs it incurs in performing its obligations under this Agreement.

SECTION 9 WATERMASTER ASSESSMENTS

9.1 All Remedy Wells shall be designated as LPVCWD's production facilities under the terms of the Judgment and all metered production at the Delivery Point shall be reported to the Watermaster as production by LPVCWD. LPVCWD shall be responsible for accounting with the Watermaster and for paying assessments levied by the Watermaster for all water that is metered at the delivery points described in Section 6.1 of this Agreement, except those assessments charged to Suburban by the Watermaster. LPVCWD may pay the Watermaster assessments by using the funds collected pursuant to Section 7.2(a) through (e) of this

Agreement.

9.2 Except for that water that is metered at the delivery points described in Section 6.1 of this Agreement, Northrop Grumman shall reimburse LPVCWD or directly pay for all assessments levied by the Watermaster on the production of any other groundwater produced from the Remedy Wells. The Parties shall seek to avoid payment of the Watermaster's Replacement Water Assessment by cooperating with each other in obtaining approval of a cyclic storage account or an exchange of water that would replace water extracted and discharged into the Discharge Pipeline or Brine Line from the Treatment Facility.

9.3 The Parties shall work together to obtain approval from the Watermaster for waiver of any assessments imposed on the production of any Treated Water that is discharged to surface water. If such assessments are not waived, then Northrop Grumman shall pay the applicable assessments levied by the Watermaster for such water.

SECTION 10 OWNERSHIP OF REAL PROPERTY AND FACILITIES

10.1 The Parties acknowledge that: (a) the Treatment Site and the Subject Facilities are owned solely by Northrop Grumman; (b) the LPVCWD Water System Improvements described in Section 5.2 of this Agreement will be owned solely by LPVCWD; and (c) the Suburban Water System Improvements described in Section 5.3 will be owned solely by Suburban.

10.2 Any termination of this Agreement will have no effect on the ownership of the Subject Facilities, the Treatment Site, or the water system improvements described in this Agreement.

SECTION 11 GOVERNMENTAL APPROVALS

11.1 Upon approval, LPVCWD and Suburban shall comply with the: (a) applicable commitments and representations in the applications for the DDW Approval and Watermaster

Approval; and (b) the terms and conditions in the DDW Approval, the Watermaster Approval and all other laws, regulations and governmental approvals and permits concerning their receipt and beneficial use of the Treated Water.

11.2 Upon approval, Northrop Grumman shall comply with the DDW Approval, the Watermaster Approval and each of the governmental approvals and permits listed on Exhibit D to this Agreement.

11.3 Each Party shall use its best efforts to take the actions necessary to maintain the approvals described in Sections 11.1 and 11.2 of this Agreement in full force and effect. Each Party shall notify the other Parties promptly when any approval has been withdrawn or is no longer in effect.

SECTION 12 INDEMNITY

12.1 LPVCWD shall indemnify and hold harmless Northrop Grumman, including its officers, directors, employees, successors, parent companies, affiliated companies and assigns from and against all claims, losses, costs, expenses, liability, awards, judgments, and decrees (collectively, “Liabilities”) arising from, connected with, or resulting out of LPVCWD’s gross negligence in the operation or maintenance of the LPVCWD Water System Improvements described in Section 5.2 of this Agreement that adversely affects the quality or delivery of the Treated Water.

12.2 Suburban shall indemnify and hold harmless Northrop Grumman, including its officers, directors, employees, successors, parent companies, affiliated companies and assigns from and against all Liabilities arising from, connected with, or resulting out of Suburban’s gross negligence in the operation or maintenance of the Suburban Water System Improvements described in Section 5.3 of this Agreement that adversely affects the quality or delivery of the

Treated Water.

12.3 Northrop Grumman shall indemnify and hold harmless LPVCWD and/or Suburban, including its respective officers, directors, employees, successors, parent companies, affiliated companies and assigns from and against all Liabilities arising from, connected with, or resulting out of: (a) LPVCWD's certification of an environmental review document under the California Quality Environmental Act in connection with the Subject Facilities and its execution of this Agreement; (b) Northrop Grumman's gross negligence in the design or construction of the Subject Facilities; or (c) Northrop Grumman's gross negligence in its implementation of the Interim Remedy. (Claims described in this Section 12 shall hereinafter be referred to individually as an "Indemnified Claim" and collectively as "Indemnified Claims". The Party obligated to provide the indemnity shall hereinafter be referred to as the "Indemnifying Party," and the party or parties entitled to receive the indemnity shall be referred to as the "Indemnified Party.")

12.4 The Indemnifying Party shall indemnify, defend with competent outside counsel reasonably satisfactory to the Indemnified Party, protect and hold harmless the Indemnified Party, its officers, directors, employees, successors, parent companies, affiliated companies and assigns, from and against all Indemnified Claims, in any administrative, judicial or other forum, of any kind whatsoever paid, incurred or suffered by, or asserted against, the Indemnified Party or its officers, directors, employees, successors, parent companies, affiliated companies or assigns, including without limitation awards of damages, interest, fines, charges, penalties and expenses resulting therefrom (including, but not limited to, attorneys' and expert witness fees and costs incurred in connection with defending against any Indemnified Claim or in asserting or enforcing this indemnity). The Indemnified Party agrees to cooperate fully and completely with

the Indemnifying Party and with outside counsel provided by the Indemnifying Party in resolving any legal matter that arises pursuant to this indemnity. The Indemnified Party further agrees that the Indemnifying Party may resolve or settle such matter to which this indemnity applies with the Indemnified Party's permission or approval, which the Indemnified Party will not unreasonably withhold.

12.5 The Indemnified Party shall tender an Indemnified Claim to the Indemnifying Party within a reasonable time after becoming aware of the existence of the Indemnified Claim, but, in any event, the tender shall be deemed timely if submitted within twenty (20) calendar days after the Indemnified Party becomes aware thereof, or if submitted at a later time, only so long as the Indemnifying Party is not unduly prejudiced by any such delay. Within thirty (30) calendar days of the Indemnifying Party's receipt of notice of an Indemnified Claim, the Indemnifying Party shall notify the Indemnified Party that it: (a) accepts the claim and will indemnify the Indemnified Party pursuant to the terms and conditions of the indemnity contained herein; or (b) conditionally accepts the claim and simultaneously exercises its right to dispute resolution pursuant to Section 15, below. If the Indemnifying Party invokes the dispute resolution process, then it shall provide a defense to the Indemnified Party until, and unless, an arbitrator rules that the Indemnifying Party is not obligated to provide an indemnity or defense against the claim to the Indemnified Party. The Indemnifying Party will be deemed to have unconditionally accepted the Indemnified Claim if no response is provided within 30 days of receipt of notice of an Indemnified Claim.

12.6 If the Indemnified Party timely presents an Indemnified Claim, the Indemnifying Party may conditionally accept the Indemnified Claim so as to bear the costs of defense in the proceeding with a reservation of rights with regard to its indemnification obligation. If a

determination is thereafter made by agreement of the Parties or by an arbitrator selected by the Parties pursuant to a dispute resolution proceeding pursuant to Section 15 of this Agreement that the Indemnifying Party is absolved from any indemnification obligation, the Indemnifying Party may by written notice immediately withdraw from the costs of defense and turn the defense over to the Indemnified Party.

12.7 Any disputes regarding the obligations to provide indemnification shall be subject to the dispute resolution proceedings of this Agreement. If a specific finding and/or conclusion is made in any dispute resolution proceeding that the Indemnified Party made an Indemnified Claim in bad faith, the Indemnifying Party may recover from the Indemnified Party the costs of defense expended and any indemnification provided by the Indemnifying Party from the date of its conditional acceptance to the date of its withdrawal. If the Indemnifying Party refuses to accept the defense of a claim tendered by the Indemnified Party and a finding or conclusion is made in a dispute resolution proceeding that the Indemnifying Party had a duty to indemnify the Indemnified Party, the Indemnified Party may recover from the Indemnifying Party its costs of defense and all related costs, including any damages, penalties and costs, incurred as a result of the Indemnifying Party's failure to provide a defense.

12.8 The Parties' respective rights and obligations under Sections 12.1 through 12.7 shall survive the termination of this Agreement.

SECTION 13 TERM, EXPIRATION AND TERMINATION OF THE AGREEMENT

13.1 This Agreement shall commence on the Effective Date and shall continue for a period of eight (8) years after EPA has certified that the Interim Remedy under the Consent Decree is operational and functional (the "Initial Term"). If EPA and all other government agencies with jurisdiction over the PVOU IZ remedy have not determined within 180 calendar

days before the end of the Initial Term that Northrop Grumman may cease operation of the Subject Facilities at the conclusion of the Initial Term, then Northrop Grumman may, in its sole discretion, unilaterally extend the term of this Agreement by three (3) years on the same terms and conditions as provided herein by giving written notice to LPVCWD and Suburban ninety (90) days before the end of the Initial Term (an “Extension Option”). Thereafter, Northrop Grumman may exercise, in its sole discretion, additional Extension Options by providing written notice to LPVCWD and Suburban sixty (60) days before the expiration of the term of the Extension Option until EPA and all other government agencies with jurisdiction over the PVOU IZ remedy have determined that Northrop Grumman may cease operation of the Subject Facilities. Such additional Extension Options may be three (3) to ten (10) years in duration at Northrop Grumman’s election. The Parties shall negotiate in good faith with each other regarding additional terms and conditions for any Extension Option.

13.2 This Agreement shall terminate earlier upon the following, subject to Section 13.3:

(a) Northrop Grumman receives an order to permanently cease the production of water from the Remedy Wells issued by EPA or any other governmental agency with jurisdiction over contamination in the PVOU IZ;

(b) Any of the governmental permits or approvals listed on Exhibit D hereto is not granted by the relevant governmental agency; or

(c) Denial of Northrop Grumman’s or LPVCWD’s application for the Watermaster Approval or the DDW Approval.

13.3 If the conditions described in Sections 13.2(a) and 13.2(b) occur, then Northrop Grumman may, in its sole discretion, terminate the Agreement upon providing the other Parties

with ninety (90) calendar days' notice. If the conditions described in 13.2(c) occur, then either Northrop Grumman or LPVCWD or Suburban may terminate this Agreement upon providing the other Parties with sixty (60) calendar days' notice.

13.4 This Agreement may be terminated by a Party on the basis of a material breach by any other Party, but only after the dispute resolution process described in Section 15 herein has been completed and an agreement or determination is made to that effect.

SECTION 14 RELATIONSHIP OF PARTIES

14.1 Nothing in this Agreement shall constitute, create, or be interpreted as a joint venture, partnership, agency, or formal business organization of any kind among the Parties. Neither LPVCWD nor Suburban shall make any representation, express or implied, that LPVCWD or Suburban is an agent or legal representative of Northrop Grumman, nor will LPVCWD or Suburban assume or incur liability or obligations of any kind of any third party in the name or on behalf of Northrop Grumman, without the prior written approval of Northrop Grumman.

SECTION 15 DISPUTE RESOLUTION

15.1 Jurisdiction. All disputes between the Parties regarding the rights and obligations of the Parties in this Agreement are subject to the dispute resolution procedures set forth herein.

15.2 Notice. The dispute resolution provision is invoked by providing notice to the other Party or Parties to the dispute. The notice shall describe the nature of the dispute including, if appropriate, the dollar amount in controversy. For cost disputes, notice must be given within thirty (30) calendar days after the cost has been invoiced. For all other disputes, the notice must be given promptly, but in no event later than ninety (90) calendar days after the dispute arises, unless otherwise agreed to by the Parties to the dispute.

15.3 Meet and Confer. Within thirty (30) calendar days after receipt of the notice of dispute, the Parties to the dispute shall meet and confer to resolve the dispute. If the Parties are unable to resolve the dispute in good faith within sixty (60) calendar days after receipt of the notice of dispute, any Party to the dispute may submit the dispute to arbitration by providing a written notice of arbitration (“Notice of Arbitration”) to the other Party or Parties to the dispute.

15.4 Arbitrator. The Parties to a dispute shall attempt to mutually agree on a single arbitrator from a list of approved American Arbitration Association (AAA) or JAMS arbitrators. If the Parties are unable to mutually agree on an arbitrator within thirty (30) calendar days after service of a Notice of Arbitration, then the arbitrator shall be selected according to the following procedures. Each Party to the dispute shall submit five (5) names, ranked from one (highest) to five (lowest) in terms of acceptability from the AAA or JAMS list. If any names appear on each Party’s list, that person shall be deemed selected; provided that if more than one name appears, the person with the lowest numerical combined ranking score shall be selected and if two or more have the same score, the selection shall be availability or by lot. If no name appears on the lists, new lists shall be submitted by each Party until an arbitrator is selected. The selected arbitrator shall accept his or her appointment in writing. Within thirty (30) calendar days after the arbitrator is selected, each Party to the dispute shall submit to the arbitrator and serve on the other Party or Parties to the dispute a short statement of the dispute and a proposed discovery and hearing schedule.

15.5 Preliminary Hearing. Within sixty (60) calendar days after selection of the arbitrator, the arbitrator shall schedule a preliminary hearing. At the preliminary hearing the arbitrator shall decide discovery, briefing and scheduling issues and set dates, including a final hearing date. In resolving discovery issues the arbitrator shall consider expedition, cost

effectiveness, fairness and the needs of the Parties to the dispute for adequate information with respect to the dispute.

15.6 Arbitration Hearing. The arbitration hearing shall be scheduled no later than ninety (90) calendar days after the initial preliminary hearing unless the Parties to the dispute mutually agree to extend the date or the arbitrator extends the date. The arbitration shall take place in the County of Los Angeles unless otherwise agreed by the Parties to the dispute.

15.7 Procedural Rules. The procedural rules of AAA or JAMS, depending on the arbitrator selected, will govern the arbitration process.

15.8 Decision of the Arbitrator Final. The arbitrator shall make a written decision specifying the factual findings and legal reasoning in support of the decision within sixty (60) days after the arbitration hearing. The arbitrator's decision is final and binding and there shall be no right to appeal the decision, except as otherwise expressly permitted by California law. The arbitrator may order any relief that could be granted by a court in accordance with applicable law, including but not limited to specific performance, temporary restraining orders, injunctive relief, and attorneys' fees, except the arbitrator shall have no authority to award punitive damages.

15.9 Time For Completion. The arbitration shall be completed within 150 calendar days of the preliminary hearing, unless the Parties to the dispute mutually agree to extend the date or the arbitrator extends the date.

15.10 Fees and Costs. The arbitrator shall award costs, including attorneys' fees, to the prevailing party. The fees and costs of the arbitrator shall be paid by the losing party.

SECTION 16 WAIVER

16.1 No waiver by a Party of any provision of this Agreement shall be valid unless it is in writing and signed by an authorized representative of such Party. The waiver by any Party of any failure on the part of another Party to perform any of its obligations under this Agreement shall not be construed as a waiver of any future or continuing failure or failures.

SECTION 17 AMENDMENT OF THE AGREEMENT

17.1 No amendment of this Agreement shall be binding upon the Parties unless it is in writing and executed by duly authorized representatives of all of the Parties.

SECTION 18 GOVERNING LAW

18.1 This Agreement and any dispute arising hereunder shall be governed by the substantive and procedural laws of the State of California, except, however, that California's Choice of Law provisions shall not apply.

SECTION 19 INTEGRATED AGREEMENT

19.1 This Agreement represents the final agreement between and among the Parties with respect to the matters addressed in this Agreement and supersedes all prior agreements, negotiations and discussions between the Parties and/or their respective counsel related to such matters.

SECTION 20 COMPUTATION OF TIME

20.1 In computing any period of time under this Agreement, where the last day would fall on a Saturday, Sunday, or federal or California state holiday, the period shall run until 5 p.m. Pacific Time on the next working day. All time periods are calendar days unless otherwise specified.

SECTION 21 COUNTERPARTS

21.1 This Agreement may be executed in counterparts each of which shall be deemed an original, and all of which, taken together, shall constitute one and the same instrument.

SECTION 22 ASSIGNMENT

22.1 No Party shall assign or otherwise transfer its rights or obligations hereunder without the other Parties' prior written consent, except that Northrop Grumman may, in its sole discretion, transfer its rights and obligations under this Agreement to another Potentially Responsible Party in the PVOU that assumes full and complete legal responsibility for the IZ Remedy under any future Consent Decree or other administrative order.

SECTION 23 INDEPENDENT COUNSEL

23.1 Each of the Parties represents and warrants that, in connection with the negotiation and execution of this Agreement, it has been represented by independent counsel of its own choosing, that it has executed this Agreement after receiving the advice of such independent counsel, that it has not relied upon the advice or counsel of another Party's independent counsel in the negotiation or drafting of this Agreement, that its representative has read and understands the provisions and terms of this Agreement, and that it has had an adequate opportunity to conduct an independent investigation of all facts and circumstances with respect to all matters that are the subject of this Agreement.

SECTION 24 FURTHER ACTIVITIES

24.1 The Parties agree to execute and deliver all further documents and perform all further acts that may be reasonable and necessary to carry out the provisions of this Agreement.

SECTION 25 JOINT DRAFTING AND NEGOTIATION

25.1 This Agreement has been jointly negotiated and drafted and the language of the Agreement shall not be construed in favor of or against any particular Party based on the Parties' respective roles in the drafting process.

SECTION 26 SECTION HEADINGS

26.1 Section headings used in this Agreement are for reference only and shall not affect the construction of this Agreement.

SECTION 27 NO THIRD PARTY BENEFICIARIES

27.1 No third party, including but not limited to federal or state agencies, shall be entitled to claim or enforce any rights hereunder.

SECTION 28 SEVERABILITY

28.1 In the event that any provision of this Agreement is determined by an arbitrator pursuant to the dispute resolution provisions of Section 15 or a court of competent jurisdiction to be invalid, said provision shall be modified in a manner that is both consistent with the intent of the Parties and legally valid, if possible. The remainder of this Agreement shall not be affected thereby.

SECTION 29 SUCCESSORS AND ASSIGNS

29.1 All covenants and agreements contained in this Agreement by or on behalf of any of the Parties hereto shall bind and inure to the benefit of their respective successors and permitted assigns, whether so expressed or not. Any change in ownership or corporate or other legal status, including, but not limited to, any transfer of assets or real or personal property, shall in no way alter the status or responsibilities of the Parties under this Agreement.

SECTION 30 ORGANIZATION/AUTHORIZATION

30.1 Each Party hereby represents and warrants to the other Parties that it is a duly organized or constituted entity, with all requisite power to carry out its obligations under this Agreement, and that the execution, delivery and performance of this Agreement have been duly authorized by all necessary corporate or other action, will not result in a violation of such Party's organizational documents, and that no further action is necessary to make this Agreement and all transactions contemplated hereby valid and binding on such Party in accordance with the terms of this Agreement. Each signatory hereto represents and warrants that he or she is authorized to execute and deliver this Agreement on behalf of the Party on whose behalf he or she signs.

SECTION 31 NOTICE

31.1 Whenever, under the terms of this Agreement, written notice is required to be given or a document is required to be sent by or to a Party, it shall be directed to the addresses specified below, unless otherwise notified.

With respect to LPVCWD:

Greg B. Galindo
General Manager
La Puente Valley County Water District
112 North 1st Street
La Puente, CA 91744

With a copy to:

Roland Trinh, Esq.
Lagerlof, Senecal, Gosney & Kruse LLP
301 N. Lake Avenue
10th Floor
Pasadena, CA 91101

With respect to Northrop Grumman:

Northrop Grumman Systems Corporation
Manager of Environmental Remediation
101 Continental Boulevard
Mailstop D2/XE6D21
El Segundo, CA 90245

With a copy to:

Northrop Grumman Systems Corporation
Corporate (Attn: Law Department)
2980 Fairview Park Drive
Falls Church, VA 22042

Northrop Grumman Systems Corporation
Corporate Procurement
101 Continental Boulevard
M/S: D5-121A
El Segundo, CA 90245

With respect to Suburban Water Systems:

Richard Rich
Managing Director
Suburban Water Systems
1325 North Grand Avenue, Suite 100
Covina, CA 91724

With a copy to:

Craig S. Bloomgarden
Manatt, Phelps & Phillips
11355 W. Olympic Blvd.
Los Angeles, CA 90064

31.2 Notice is deemed effective when delivered in person or by overnight courier service with proof of delivery, or upon receipt of registered or certified mail. Either Party may change its designated contact for notice purposes by written notice to the other Parties.

SECTION 32 REMEDIES

32.1 The Parties agree that money damages alone may be an inadequate remedy for any breach or threatened breach of this Agreement and further agree that the provisions of this Agreement may be enforced by specific performance or a preliminary, permanent, mandatory or prohibitory injunction pursuant to Section 15 above and without limiting any other remedy that a Party may have.

SECTION 33 PUBLIC STATEMENTS

33.1 Except as may be required by law, no Party, including its employees, agents and consultants, shall make any statement, verbal, written or electronic, to any individual associated with any newspaper, publication of general circulation, or media outlet, or otherwise disseminate any document to the general public, including but not limited to press releases, newsletters and articles (a "Public Statement"), that discusses or describes this Agreement or the Subject Facilities without receiving the prior written approval of all other Parties to this Agreement. Said approval may be withheld in any Party's sole discretion, although the Parties shall cooperate with each other with respect to any proposed Public Statement.

IN WITNESS WHEREOF, this Agreement has been executed as of the date first set forth above.

LA PUENTE VALLEY COUNTY WATER DISTRICT

_____, 2017

By: Greg B. Galindo
Its: General Manager

SUBURBAN WATER SYSTEMS

_____, 2017

By: Richard Rich
Its: Managing Director

NORTHROP GRUMMAN SYSTEMS CORPORATION

_____, 2017

By: Nancy W. Wong
Its: Manager of Procurement

EXHIBIT A



 GREG GALINDO GENERAL MANAGER	 12-5-17 DATE	ORDER BY ROY FRAUSTO APPROVED BY GREG GALINDO	LA PUENTE VALLEY COUNTY WATER DISTRICT	EXHIBIT A	1 OF 3
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 GREG GALINDO GENERAL MANAGER	 DATE 12-5-17	DESIGNED BY ROY FRAUSTO APPROVED BY GREG GALINDO	LA PUENTE VALLEY COUNTY WATER DISTRICT	EXHIBIT A	2 OF 3
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GLENDORA AVENUE



Google earth
Image Landsat / Copernicus

HUDSON AVENUE

80 ft



Greg Galindo
GREG GALINDO
GENERAL MANAGER
12-5-17
DATE



ORDER BY
ROY FRAUSTO
APPROVED BY
GREG GALINDO

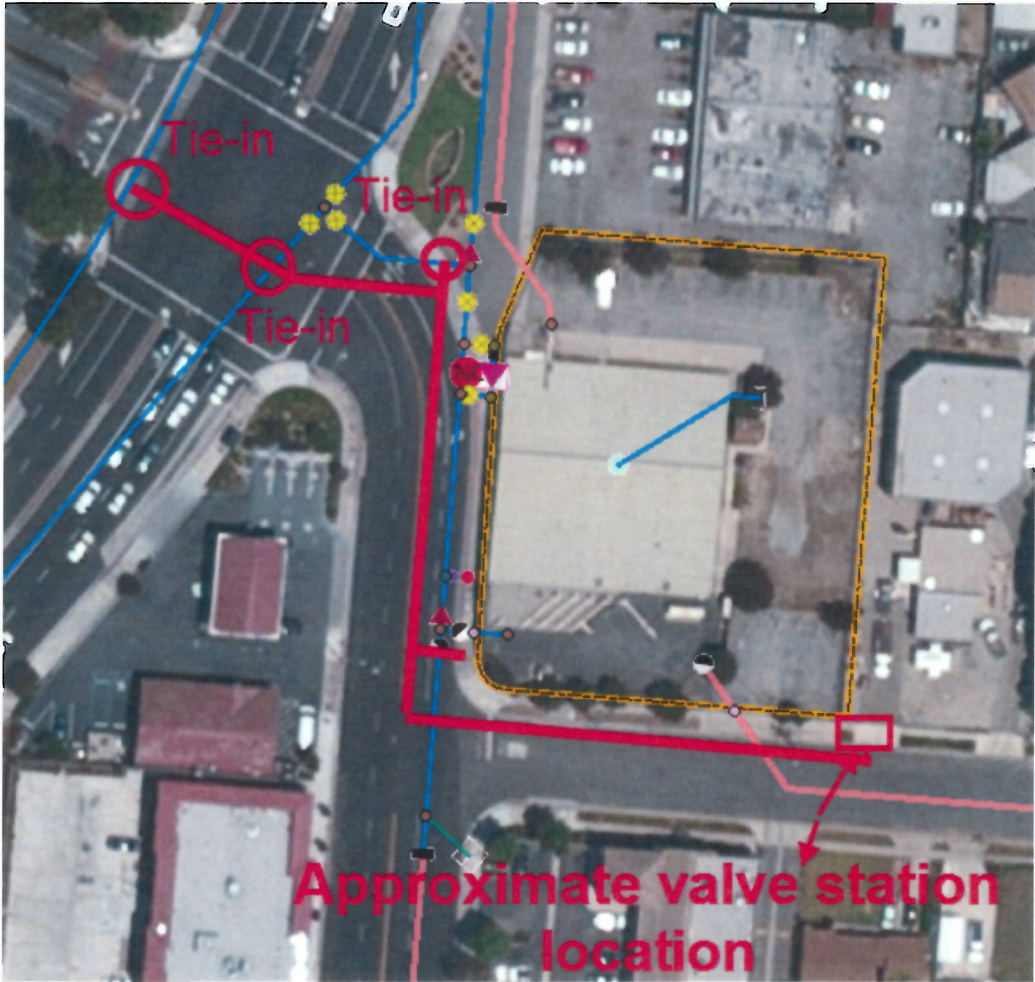
LA PUENTE VALLEY
COUNTY WATER DISTRICT

EXHIBIT A

3
OF 3

EXHIBIT B

LPV Connection @ Plant 128 (Hudson and Glendora)



LPV Connection @ Treatment Plant (Hudson and Stafford)



Example of Connection

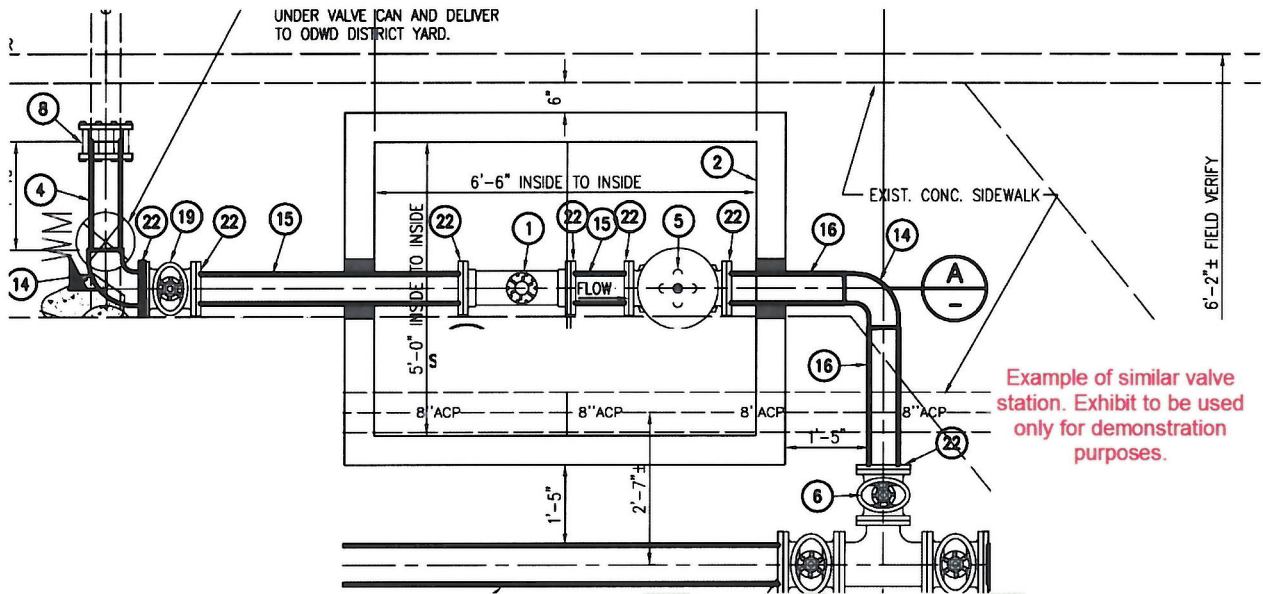


EXHIBIT C

EXHIBIT C

La Puente Valley County Water District **Staff Hourly Billing Rates as of January 1, 2018**

POSITION	HOURLY RATE	OVERTIME RATE
General Manager	\$ 112.60	N/A
Compliance Manager	\$ 86.37	N/A
Treatment Supervisor	\$ 85.00	\$ 98.87
Treatment Operator II	\$ 77.95	\$ 90.17
Treatment Operator I	\$ 71.38	\$ 81.69
Maintenance Technician	\$ 67.06	\$ 76.11

EXHIBIT D

**Substantive Permitting and Utility Service Requirements
Puente Valley Operable Unit, Intermediate Zone Interim Remedy, California**

Item No.	Permit Agency	Permit is Applicable to:			Permit Description
		IZ-West and IZ-1/MZ-1 Extraction Wells	Pipeline	Treatment Plant	
1	City of Industry 15651 East Stafford Street City of Industry, CA 91744	x	x	x	Encroachment and building permits
			x	x	Excavation permits
				x	Zoning approval
				x	Storm drain connection
				x	Construction and building permits
2	City of La Puente Planning & Building/Safety Division 15900 E. Main Street La Puente, CA 91744		x		Encroachment Permit & Traffic Control
3	Los Angeles County Baldwin Park Permit Office Baldwin Park, CA 91706		x	x	Construction and Encroachment Permit
			x		Flood Control District Permits
				x	Storm drain connection (via City of Industry)
			x		License Agreement
4	Los Angeles County Department of Public Health (LACDPH) Bureau of Environmental Protection Water & Sewage/Mountain & Rural Programs 5050 Commerce Drive Baldwin Park, CA 91706	x			Application for Well Construction
5	Southern California Edison (SCE)	x		x	Electric Power Connection [power drops to remaining Extraction Wells IZ-1 and MZ-1 and IZ-West] and treatment plant.
6	Federal Aviation Administration (FAA)			x	FAA study
7	Union Pacific Railroad		x		Encroachment and Crossing Permits for conveyence piping for discharge from the treatment plant to LACSD point of connection
8	State Water Resources Control Board, Division of Drinking Water (DDW) Drinking Water Program 500 North Central Avenue Glendale, CA 91203	x	x	x	DDW Policy 97-005 permit
9	Main San Gabriel Basin Watermaster (Watermaster) 725 N. Azusa Ave. Azusa, CA 91702	x	x	x	Watermaster permit and approval
10	South Coast Air Quality Management District (SCAQMD) 21865 East Copley Drive Diamond Bar, CA 91765-0000			x	Authority to Construct/ Permit to Operate for Decarbonator
11	California Regional Water Quality Control Board, Los Angeles Region (RWQCB) Well Investigation Program Los Angeles RWQCB 320 W. 4th Street, Suite 200 Los Angeles, CA 90013-2343			x	NPDES permitting Soil cleanup work plan approval
12	Los Angeles County Sanitation Districts (LACSD) Los Angeles County Sanitation Districts 1955 Workman Mill Road Whittier, CA 90601			x	Industrial wastewater permit (wastewater from RO system and backwash of LGAC and IX media)



RESOLUTION NO. 250

RESOLUTION OF THE BOARD OF DIRECTORS OF THE LA PUENTE VALLEY COUNTY WATER DISTRICT APPROVING A STAFF RESTRUCTURING PLAN AND ADOPTING NEW AND REVISED JOB DESCRIPTIONS AND SALARY SCHEDULE

WHEREAS, the mission of the La Puente Valley County Water District (the "District") is to provide its customers with high quality water that meets or exceeds all local, state and federal standards and to provide courteous and responsive customer service at the most reasonable cost; and

WHEREAS, the District has entered into an agreement with Northrop Grumman Systems Corporation to provide management and operations services for the Puente Valley Operable Unit Intermediate Zone (PVOU IZ) Project groundwater treatment facility; and

WHEREAS, the District will need to train and restructure its employment staff to provide said management and operations services for the PVOU IZ groundwater treatment facility (the "PVOU IZ Project"); and

WHEREAS, the President of the Board of Directors of the District established a Staffing Assessment Ad Hoc Committee to evaluate the District's employee staff and make recommendations for changes that would best position the District to continue its current operations and accommodate the additional services contemplated for the PVOU IZ Project, as well as identify other staffing issues such as inefficiencies, performance enhancement, and succession planning; and

WHEREAS, the Staffing Assessment Ad Hoc Committee prepared a report which detailed its evaluation of District staff and proposed a staff restructuring plan, which report is attached hereto as Exhibit "A" (the "Report");

WHEREAS, the Board of Directors of the La Puente Valley County Water District agrees with the findings of the Report, and desires to take the recommended actions set forth in the Report;

NOW, THEREFORE, BE IT RESOLVED, that the La Puente Valley County Water District hereby abolishes the following staff positions as recommended by the Report, effective January 1, 2018:

- Customer Service/ Accounting Supervisor
- Field Operations Assistant
- Lead Water Service Worker
- Water Production & Treatment Operator II
- Water Production & Treatment Operator I
- Water Service Worker II

BE IT FURTHER RESOLVED, that the Board of Directors of the La Puente Valley County Water District hereby abolishes the following staff position as recommended by the Report, effective January 1, 2019:

- Board Secretary/Office Administrator

BE IT FURTHER RESOLVED, that the Board of Directors of the La Puente Valley County Water District hereby establishes the following staff positions, and adopts their respective job descriptions as attached hereto as Exhibit “B”, effective January 1, 2018, as recommended by the Report:

- Office Manager
- Lead Water System Operator (Treatment)
- Lead Water System Operator (Distribution)
- Water System Operator II
- Water System Operator I
- Water System Maintenance Worker
- Lead Customer Support & Accounting Clerk

BE IT FURTHER RESOLVED, that the Board of Directors of the La Puente Valley County Water District hereby revises the following staff positions and their respective job descriptions, which job descriptions are attached hereto as Exhibit “C”, effective January 1, 2018, as recommended by the Report:

- Rename the position of Project Engineer/Compliance Officer to Engineering & Compliance Manager.
- Rename the position of Water Production & Treatment Supervisor to Water Treatment & Supply Supervisor.
- Rename the position of Billing Clerk II to Customer Support & Accounting Clerk II.
- Rename the position of Billing Clerk I to Customer Support & Accounting Clerk I.

BE IT FURTHER RESOLVED that the Board of Directors of the La Puente Valley County Water District hereby adopts a new salary schedule for all staff positions of the District as attached hereto as Exhibit “D”, effective January 1, 2018, as recommended by the Report;

BE IT FURTHER RESOLVED that the Board of Directors of the La Puente Valley County Water District hereby adopts a new District organizational chart as attached hereto as Exhibit “E”, as recommended by the Report; and

BE IT FURTHER RESOLVED that the Board of Directors of the La Puente Valley County Water District hereby authorizes the General Manager to carry out any other recommendations made by the Report that may be necessary to best position the District to fulfill its adopted mission as a County Water District.

ADOPTED this 21st day of December, 2017.

David Hastings, Board President

ATTEST:

Greg B. Galindo, Board Secretary



EXHIBIT A

Staffing Assessment Ad Hoc Committee Report



*Staffing Assessment
Ad Hoc Committee Report*

***STAFFING ASSESSMENT &
RESTRUCTURING PROPOSAL***

November 8, 2017

Ad Hoc Committee Members:

David Hastings, President

John Escalera, Director

Staff Contributors:

Greg B. Galindo, General Manager

Gina Herrera, Customer Service & Accounting
Supervisor

Roy Frausto, Project Engineer & Compliance Officer

Cesar Ortiz, Treatment & Production Supervisor

Keith Bowman, Distribution Supervisor

Report Prepared By:

Greg Galindo, General Manager

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Enclosures

FIGURE 1 – CURRENT ORGANIZATIONAL CHART

FIGURE 2 – PROPOSED ORGANIZATIONAL CHART

TABLE 1 – PVOU IZ ESTIMATED STAFF HOURS FOR MANAGEMENT AND OPERATIONS

TABLE 2 – LIST OF SURVEYED POSITIONS FOR SALARY SURVEY

TABLE 3 THROUGH TABLE 13 – CAMPARISON OF SURVEYED POSITIONS TO CURRENT DISTRICT POSITIONS

TABLE 14 – COMPARISON OF SALARY RANGE AVERAGE FOR SURVEYED POSITIONS TO PROPOSED SALARY RANGES (POSITIONS AS PROPOSED IN RESTRUCTURING)

TABLE 15 – NEW SALARY SCHEDULE FOR PROPOSED RESTRUCTURING

TABLE 16 – PERCENTAGE OF STAFF TIME (2014 – 2017) FOR WORK RELATED TO THE DISTRICT, CIWS AND BPOU

TABLE 17 – ANALYSIS OF FISCAL IMPACT FROM STAFF RESTRUCTURING

UPDATED AND PROPOSED JOB DESCRIPTIONS

Staffing Assessment Ad Hoc Committee Report

STAFFING ASSESSMENT & RESTRUCTURING PROPOSAL

I. INTRODUCTION

The La Puente Valley County Water District's (District) mission is "to provide its customers with high quality water for residential, commercial, industrial and fire protection uses that meets or exceeds all local, state and federal standards and to provide courteous and responsive service at the most reasonable cost." In October 2014, the District's Board of Directors authorized execution of a term sheet with Northrop Grumman (Northrop) to operate a groundwater treatment system to carry out a US Environmental Protection Agency (EPA) Superfund remediation requirement in the San Gabriel Valley, known as the Puente Valley Operable Unit Intermediate Zone Project (PVOU IZ). In September 2015, the District entered into a Participation Agreement with Northrop Grumman to assist with the permitting and design of the PVOU IZ Project. Since that time the District has been working with Northrop Grumman to move the project forward. The final design of the PVOU IZ Treatment System was submitted to EPA on October 31, 2017, and construction of the system is planned to begin by April of 2018. Construction of the plant is anticipated to be completed by April 2019 with treatment system prove-out to begin soon thereafter. The District is very near executing the definitive agreements to operate the new plant and to receive treated water from this plant into its system and deliver a portion of this water to neighboring Suburban Water Systems (Suburban).

The proposed treatment facility will be located adjacent to the District's water distribution system. This opportunity provides the customers of the District a benefit by improving water supply reliability along with additional revenues that can be used to offset other water service related costs to help stabilize the District's rates for water service. The proposed PVOU IZ groundwater treatment facility will utilize treatment processes that are familiar to the District's staff with the exception of the reverse osmosis treatment process.

The proposed PVOU IZ groundwater treatment facility will require an estimated 5,096 annual staff hours to properly operate and manage the new facility and the delivery of water it produces. **Table 1** provides a detail on the type of activity and estimated staff hours to carry out these activities. The additional 5,096 staff hours results in approximately 2.5 full time equivalent (FTE) staff positions. The District currently has 14.2 FTE positions to carry out the day to day operations of the District, the City of Industry Waterworks System and the BPOU Treatment Plant Operations. The existing agreement between the District and the City of Industry to operate and manage the neighboring City of Industry Waterworks System requires approximately 5 FTE positions. This agreement's current term expires in 2024. The District's

Baldwin Park Operable Unit (BPOU) Sub-project Treatment Facility requires approximately 2 FTE positions to properly manage and operate. There is no significant change anticipated in amount of staffing hours required to operate the BPOU Treatment Facility over the next decade.

Table 1

Position	Est. Hours Per Week	Hours Per Year	Duties
General Manager	5	260	Review operations and maintenance activities. Implement /change operational procedures to ensure operational efficiency goals are met. Provide interface to Board of Directors. Interface with regulatory agencies. Ensure proper resources are available to meet the requirements of plant operations. Contract administration.
Compliance Officer	8	416	Ensure water quality monitoring and reporting permit provisions are met. Ensures permit provisions for the various permits issued for plant are met. Coordinates safety inspection and training. Prepares or oversees the preparation of required regulatory agency reports.
Treatment & Production Supervisor	15	780	Cheif Operator Duties. Assists with the oversight of the performance of plant operators and maintenance personnel. Plans and implements water quality monitoring and maintenance activities. Performs shift operator duties. Reviews water quality and operational data to ensure proper plant operation. Assist in the preparation of compliance reports. Also acts as central control operator of scada system. Performs on-call duty for after hours operations.
Treatment Operator 2	40	2,080	Performs shift operator duties at plant and central control operator. Collects water quality samples. Assist in maintenance duties. Performs on-call duty.
Treatment Operator 1	15	780	Performs shift operator duties at plant. Collects water quality samples according to schedule. Assist in maintenance duties of the plant. Performs on-call duty for after hours operations.
Maintenance Tech	10	520	Performs maintenance activities at the tretment plant as needed.
Administrative Staff	5	260	Administering accounts payable/receivable for project related expenses and water delivery accounting. HR related duties. Contract administration & insuranceprogram management.
Total	98	5,096	

II. AD HOC COMMITTEE PROCESS

In April of 2017, the President of the District's Board of Directors created an Ad Hoc Committee. The Board of Directors President, David Hastings, appointed himself and Director, John Escalera as members of the Ad Hoc Committee with Director Charlie Aguirre as an alternate. The main purpose of the Committee was to assess our current staff and make recommendations for changes in staffing levels and structure that would best position the District to accommodate

the additional work load from its anticipated involvement with the PVOU IZ project. In addition, the Ad Hoc Committee was to identify any other staffing issue(s) that should be addressed, such as inefficiencies, performance enhancement and succession planning.

To summarize, the Committee focused on addressing the following:

- Ensure proper staffing to meet new obligations
- Ensure key positions have reliable support staff
- Utilize strengths of staff and address weaknesses
- Achieve a higher level of customer service
- Ensure efficiency and productivity
- Maintain or improve morale
- Incorporate succession plan as much as possible
- Integrate technology where appropriate

The Ad Hoc Committee met several times with key staff over the course of months to review information, review current performance strengths and weaknesses, discuss options and formulate recommendations. Below is a timeline of the Ad Hoc Committee meetings and summary of the subject matter for each.

- **Committee Meeting #1: June 1, 2017** – Ad Hoc Committee attendees: President Hastings and Director Escalera met with Staff members (General Manager, Greg Galindo; Accounting and Customer Service Supervisor, Gina Herrera; Production and Treatment Supervisor, Cesar Ortiz; Distribution Supervisor, Keith Bowman and Project Engineer and Compliance Officer, Roy Frausto).

Summary: Staff presented an overview of the current staff structure along with the roles and responsibilities for each respective position. The Committee discussed critical functions that the District carries out and the strengths and weaknesses that staff members in attendance perceived for each of their areas of responsibility. Staff also provided an overview of the process that they went through, which involved a number of meetings on staffing needs, strengths and weaknesses. Staff then presented an overview of what they thought the Committee process should be and the scope of the assessment.

Direction: The Ad Hoc Committee agreed with the next step in the process and another meeting was set.

- **Committee Meeting #2: June 21, 2017** – Ad Hoc Committee attendees: President Hastings and Director Escalera met with Staff members (General Manager, Greg Galindo and Project Engineer and Compliance Officer, Roy Frausto).

Summary: Staff provided a summary of the previous meeting and presented information on the proposed PVOU IZ treatment facility and extraction facilities. Staff also provided the estimated amount of staff time required to properly manage, operate and maintain these facilities. The Committee discussed at length the potential issues with current staffing levels and competencies. Also discussed was the level of certifications that might be required to operate the new plant and the distribution system based on the new facilities and water delivery operations. The Committee also discussed operational efficiencies, coverage issues, administrative functions and potential efficiencies that would benefit the District's customers. To conclude, the Committee discussed potential changes that could address some of the areas of concern that were identified along with the potential financial impacts.

Direction: The Committee requested additional information on staff restructuring and cost impacts from proposed changes. In addition, the Committee requested the General Manager to survey salaries of other neighboring public water agencies to compare to the current and proposed positions of the District. Another meeting was set.

- **Committee Meeting #3: July 12, 2017** – Ad Hoc Committee attendees: President Hastings and Director Escalera met with Staff members (General Manager, Greg Galindo and Project Engineer and Compliance Officer, Roy Frausto).

Summary: Staff provided a summary of the previous meeting and presented information on the proposed salaries for each position. The Committee discussed the proposed structure and impacts of salary adjustments. They also discussed the succession for each key position at the District.

Direction: The Committee requested additional information on salaries of other agencies and cost impacts from proposed changes. Another meeting was set.

- **Committee Meeting #4: July 25, 2017** – Ad Hoc Committee attendees: President Hastings and Director Escalera met with Staff members (General Manager, Greg Galindo).

Summary: Staff provided a summary of the previous meeting and presented information on the salary survey conducted by the General Manager. The Committee discussed the proposed structure and adjustment to certain salaries. The Committee also discussed the appropriate communication of the proposed changes with staff.

Direction: Members of the Ad Hoc Committee directed staff to prepare new job descriptions for various positions and a final salary schedule for each. Members agreed with staff that a draft report that would summarize the Committees work and

recommendations should be prepared. Another meeting was to be set once staff finished preparing job descriptions and report.

- **Committee Meeting #5: October 10, 2017** – Ad Hoc Committee attendees: President Hastings and Director Escalera met with Staff members (General Manager, Greg Galindo and Project Engineer and Compliance Officer, Roy Frausto).

Summary: Staff presented a draft Ad Hoc Committee report for the Ad Hoc Committee's review. The report presented is to be provided to the entire Board once approved by the Ad hoc Committee. There was lengthy discussion on the proposals and the timing of the reorganization. Staff also reviewed the new salary schedule that is proposed to become effective on January 1, 2018.

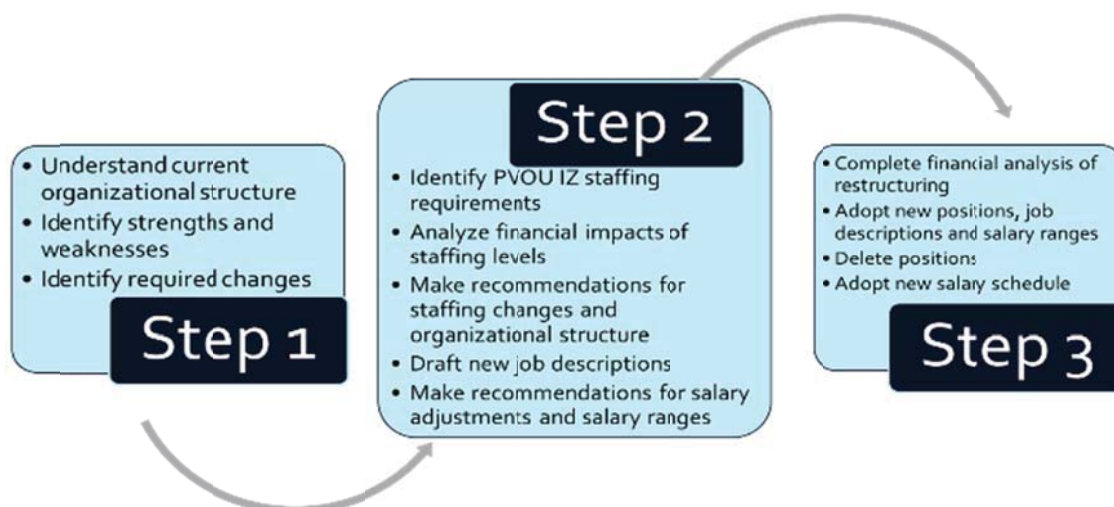
Direction: The members of the Ad Hoc Committee directed staff to finalize the report and job descriptions and prepare to present to the entire Board of Directors.

Committee Meeting #6: November 1, 2017 – Ad Hoc Committee attendees: President Hastings and Director Escalera met with Staff members General Manager, Greg Galindo; Accounting and Customer Service Supervisor, Gina Herrera; Production and Treatment Supervisor, Cesar Ortiz; Distribution Supervisor, Keith Bowman and Project Engineer and Compliance Officer, Roy Frausto).

Summary: Staff presented the final draft of the Ad Hoc Committee report which included the final proposed job descriptions and salary schedule.

Direction: The members of the Ad Hoc Committee approved the final draft of the report and directed staff to present to the entire Board of Directors on November 13, 2017.

III. COMMITTEE PROCESS SUMMARIZED



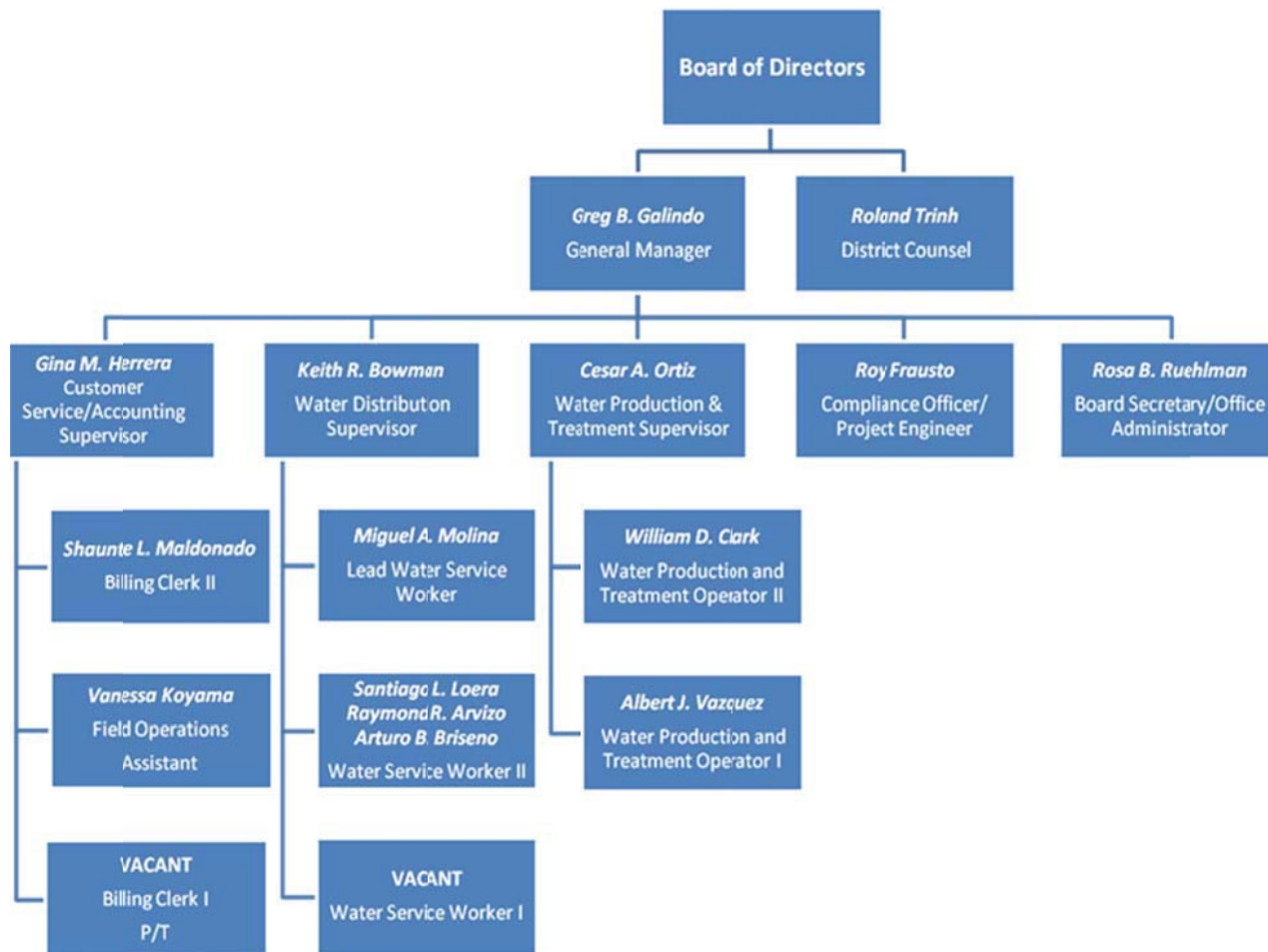
IV. CURRENT STRUCTURE

The District currently employs 13 full-time employees and 2 part-time employees. To carry out its mission and its contractual obligations, the District focusses on five primary functions:

1. Governance
2. Customer Service
3. Administration and Finance
4. Operations
5. Engineering and Compliance

To carry out these functions, the structure currently utilized is a result of past restructuring efforts that were implemented to address specific needs and to provide a clear span of control. The last significant change in the organization's structure occurred in 2014 after the departure of one employee that held the position of Field Superintendent. **Figure 1** depicts the District's current organizational structure and current employees.

Figure 1



V. AREAS OF CONCERN AND OPPORTUNITIES TO IMPROVE EFFICIENCY

Through the Ad Hoc Committee process, the following areas of concern and efficiency improvements were identified as needing to be addressed:

- Knowledge/Technical Know How to Provide Back-up Treatment Operations
- Use of Available Technology
- Monthly Compliance Reporting
- Safety Training Management
- Human Resource Program Administration
- Preparing Special Financial Analysis
- Time to Complete Special Projects
- Limited Workforce to Handle Simultaneous Leak Events
- Scada System Reporting Functions
- Cross Connection Control Program
- Policy Review and Development
- Record Retention Organization

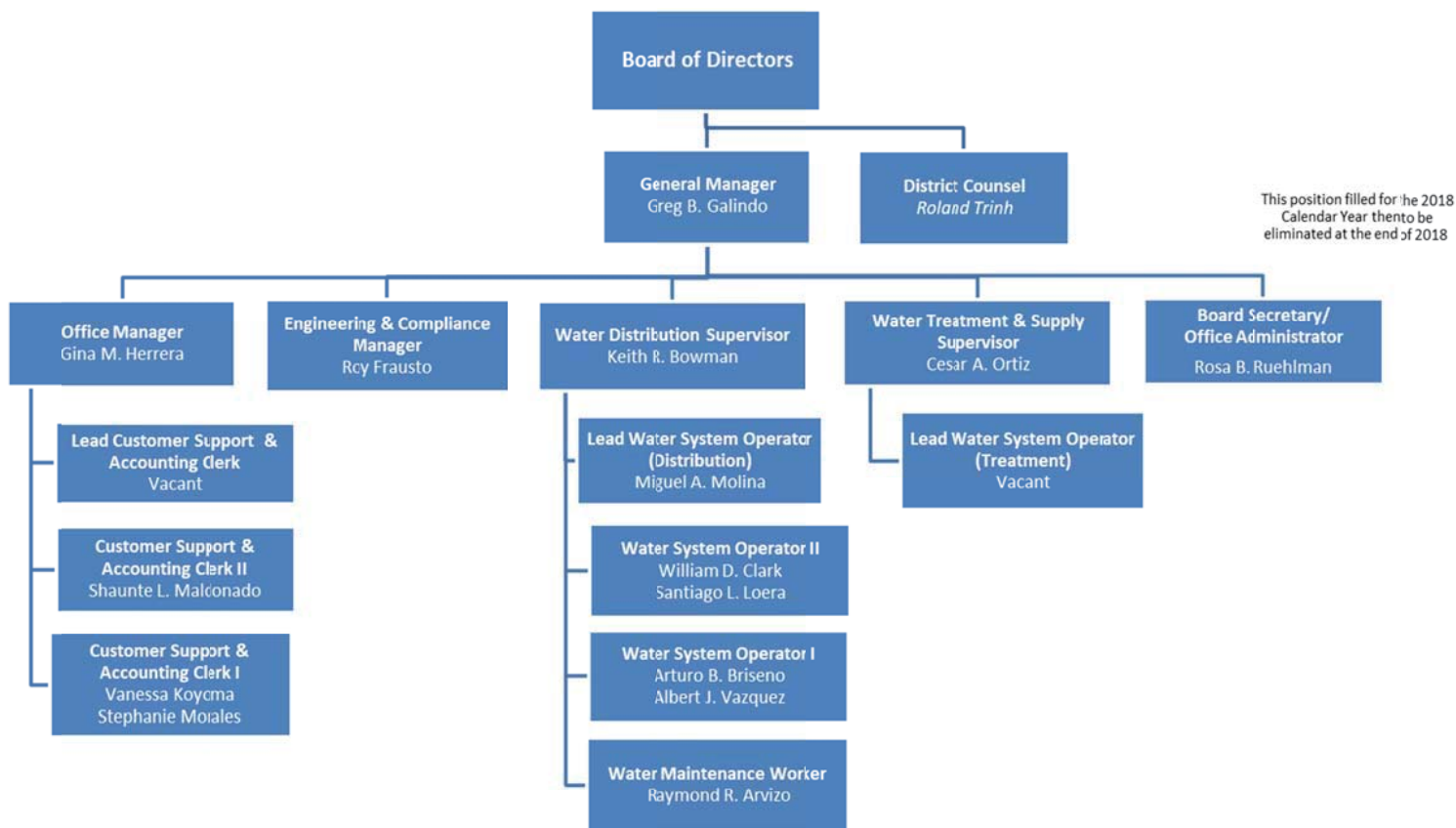
VI. RECOMMENDED OBJECTIVES AND SUPPORTING RATIONALE

Through the Ad Hoc Committee process, the following objectives were identified that were aimed at addressing the areas of concern and to improve efficiency of the organization:

1. Through training and/or hiring, improve the expertise and capabilities of treatment operators to provide necessary support for current treatment operations and the addition of the PVOU responsibilities.
2. Restructure field positions to ensure distribution and treatment related duties can be performed by all field personnel. This shall maximize cross training and improve expertise in both distribution maintenance and treatment operations.
3. Expand the use of technology to streamline business processes, such as month end reports for production and compliance reporting.
4. Reassigning the Board and human resource related duties and functions of the Board Secretary & Office Administrator position to the General Manager and other staff who are capable of efficiently performing these duties.
5. Restructure customer service and accounting positions to improve efficiency, accommodate an increase in accounts payable processing and provide coverage for billing and AP/AR processing.
6. Utilize leadership training to provide support for supervisors.

To accomplish this, the staffing structure shown as **Figure 2** on the following page is recommended in order to meet these objectives:

Figure 2



VII. RECOMMENDED ACTIONS TO BE TAKEN BY BOARD FOR STAFF RESTRUCTURING

In order to enact the new recommended staff structure, the following actions are recommended that the full Board of Directors take and make effective January 1, 2018:

1. Rename the position of Project Engineer/Compliance Officer to Engineering & Compliance Manager. Adopt new job description and salary range for this position (new job description is enclosed).
2. Rename the position of Water Production & Treatment Supervisor to Water Treatment & Supply Supervisor. Adopt new job description and salary range for this position (new job description is enclosed).

3. Rename the position of Billing Clerk II to Customer Support & Accounting Clerk II. Adopt new job description and salary range for this position (new job description is enclosed).
4. Rename the position of Billing Clerk I to Customer Support & Accounting Clerk I. Adopt new job description and salary range for this position (new job description is enclosed).
5. Create the following positions and adopt job descriptions and salary ranges for each:
 - Office Manager
 - Lead Water Systems Operator (Treatment)
 - Lead Water System Operator (Distribution)
 - Water System Operator II
 - Water System Operator I
 - Water Maintenance Worker
 - Lead Customer Support & Accounting Clerk
(proposed job descriptions are enclosed)
6. Delete the following positions
 - Board Secretary/Office Administrator
 - Customer Service/ Accounting Supervisor
 - Field Operations Assistant
 - Lead Water Service Worker
 - Water Production & Treatment Operator II
 - Water Production & Treatment Operator I
 - Water Service Worker II
7. Adopt a new organizational chart for the District (**Figure 2**)
8. Adopt a new salary schedule for all positions of the District (**Table 15**)

Management plans to leave the new Lead Water Systems Operator (Treatment) position and the Lead Customer Support & Accounting Clerk position vacant until an existing employee can be promoted to this position or a new qualified employee is hired for the position. Management plans to have both of these positions filled before the PVOU IZ treatment facility is constructed. With these changes, field supervisors will have more flexibility to assign distribution or treatment related duties to Water System Operators, which will greatly assist in meeting the other objectives detailed in Section VI. In addition, the operator on-call schedule should be modified to reduce the number of times in a year field supervisor cover on-call duty and to provide more cross training in treatment and supply operations.

VIII. SALARY SURVEY AND PROPOSED NEW SALARY STRUCTURE

Management completed a salary survey of all county water districts in Los Angeles County and public retail water agencies within a 15-mile radius of the District. Salary data from the State Controller's Government Compensation in California website (<http://publicpay.ca.gov/>) was collected and analyzed for positions that were similar to the current and proposed positions of the District. The State Controller data provides salary ranges for each position. A list of agencies, the positions and salary ranges for each is provided in **Table 2**. The vast majority of the data obtained was reported by the agencies for the 2015-2016 fiscal year. For accurate comparison to the District's proposed salaries for January 1, 2018, these salary ranges were adjusted by 3.5% to account for the regional consumer price index change for 2016 (1.5%) and 2017 (2%). Provided in **Table 2** through **Table 13** are detailed salaries for positions that closely resemble the District positions and the average of these salaries as compared to the District salary for these comparable positions.

Management did not survey all of the benefits for each agency to compare the total compensation of, since there was much variability in the pension and post-employment benefits. The Ad Hoc Committee's goal was to compare the salaries only and recommend adjustments to salary ranges, where appropriate, so that the salary range for each District position was at least at the average of the surveyed positions. The rationale for this was to have salary ranges that were competitive with at least half of the positions within our regional area. Making the District's salaries more competitive along with the District's benefits, the Ad Hoc Committee's position was that this would be effective in retaining current employees and attract new employees if needed, while maintaining reasonable labor costs that would help maintain affordable water rates for our customers. After review of the survey, the Ad Hoc Committee recommended salary ranges for the proposed positions shown in **Figure 2**. **Table 14** details the average of the surveyed salary ranges as compared to the recommended salary range for the proposed positions. **Table 15** depicts the proposed new salary schedule for the positions shown in **Figure 2**.

IX. USE OF TECHNOLOGY

Objective No. 3 in Section VI will play a significant role in achieving a higher level of efficiency and accountability. Currently, the District utilizes the following essential computer software to carry out the District's business efficiently:

- Microsoft Office – written communication, reporting, database management and analysis
- QuickBooks – accounting
- Continental Utility Billing – billing and customer information

- Neptune Insight – meter reading and water usage analysis
- Spatial Wave Field Mapplet – GIS and work flow tracking
- TSheets – time tracking, accounting and reporting
- Wonderware – SCADA system interface
- Asana – work task tracking
- AutoCAD – Design, edit and review system utility infrastructure

Through the assessment, staff discussed areas where efficiency could be gained. It was identified, that although we do utilize technology, there is additional software and functions within existing software that can be utilized to provide more efficiency.

For example, water production and treatment data, water quality data management and permit compliance tracking software can be added to significantly reduce the amount of staff hours managing this type of data and to streamline compliance reporting. In addition, SCADA software has functions that can be better utilized to reduce staff time in tracking and preparing treatment and production data.

Recently, the District deployed water meter radio read collectors for the District and CIWS. The meter reading data collected can be accessed from work stations at the main office. Customer service staff is gaining familiarity with the new software and identifying how the usage data can be best used (e.g., identifying and notifying customer of leaks during the bi-monthly billing period, rather than at the end). Additional collectors will be needed to collect radio reads from all meters in the system. This will reduce meter reading time, but most importantly be a very useful tool in carrying out the Districts and CIWS's water conservation programs.

Staff identified the following actions that should be taken in the next 18 months to best utilize available technology to improve efficiency and performance of staff:

1. Utilize a water quality data management software service.
2. Utilize a permit compliance tracking software.
3. Maximize use of the meter read collections software.
4. Update the SCADA software and utilize the reporting functions.
5. Update GIS software to maximize use of available functions.

X. TIME LINE

Considering the schedule of the PVOU IZ Project, the changes that have been described in this report are recommended to be instituted January 1, 2018 so that the impacted staff can transition to the new job responsibilities before the obligation to operate the PVOU IZ treatment facility is in effect. A detailed recommended schedule is shown below:

By December 2017:

- Adopt new job description and salary range for renamed positions, to be effective January 1, 2018
- Approve the creation of new positions and adopt salary ranges for each to be effective January 1, 2018
- Adopt 2018 Budget for labor incorporating the fiscal changes
- Approve, to be effective January 1, 2018, the deletion of the positions of Customer Service/ Accounting Supervisor, Field Operations Assistant, Lead Water Service Worker, Water Production & Treatment Operator II, Water Production & Treatment Operator I and Water Service Worker II
- Approve, to be effective January 1, 2019, the deletion of the position of Board Secretary/Office Administrator ⁽¹⁾
- Adopt a new organizational chart for the District
- Adopt a new salary schedule for the District

(1) In September 2017, the employee currently occupying this position informed the General Manager of their plan to retire on December 31, 2018. Although the Ad Hoc Committee 's recommendation is to eliminate this position effective January 1, 2018, considering this employee's length of service to the District, the transition to eliminate this position can be delayed/modified to accommodate the employee's retirement schedule.

In January 2018:

- Appropriate employees will assume the new or modified positions.
 - Office Manager
 - Engineering & Compliance Manager
 - Water Treatment & Supply Supervisor
 - Lead Water System Operator (Distribution)
 - Water System Operator II
 - Water System Operator I
 - Water Maintenance Worker
 - Lead Customer Service & Accounting Clerk
 - Customer Support & Accounting Clerk II
 - Customer Support & Accounting Clerk I
- The following positions would be created but left vacant for a period of time. Filling these positions will be determined based upon need and performance.
 - Lead Water System Operator (Treatment)
 - Lead Customer Service & Accounting Clerk

During Calendar Year 2018:

- Transition duties of the Board Secretary/Office Administrator to the General Manager, Office Manager and Engineering & Compliance Manager.
- Fill the position of Lead Water System Operator (Treatment)
- Fill the position of Lead Customer Service & Accounting Clerk
- Implement new water quality data management and compliance tracking software
- Maximize use of the meter read collection system and software

December 31, 2018:

- Board Secretary/Office Administrator retirement

During Calendar Year 2019:

- Update the SCADA software and utilize the reporting functions

XI. FISCAL IMPACT

The restructuring plan and salary adjustments have been analyzed to identify the financial impact to the District. As the Board is aware, the time District staff spends on work tasks for the CIWS and the BPOU are reimbursable. Management has closely tracked the hours spent on tasks for the District, CIWS and BPOU. **Table 16** below provides a summary of the percentage of work hours over the last three years for the District, CIWS and BPOU, along with the average annual hours required to fulfill all of the District's responsibilities. Included in the work hours for the District are any paid time off (i.e., sick, vacation, holidays) provided to District employees. Hourly billing rates for District staff, which are invoiced to CIWS and BPOU, include the full burdened labor rate for each employee. The fully burdened hourly labor rate for each employee incorporates the cost for holidays, vacation time, sick time, taxes, pension, health insurance and funding of post-employment benefits.

Table 16

Departments	LPVCWD %	CIWS %	BPOU %	Average Annual Hours
Administrative (Management)	57%	37%	5%	2,230
Administrative (Board, Cust. Service, Accounting)	61%	33%	5%	8,744
Compliance & Engineering	65%	19%	16%	2,188
Distribution	49%	44%	7%	31,076
Treatment & Production	26%	17%	57%	10,406
Staff Combined	50%	35%	14%	54,644

When the PVOU IZ treatment facility begins to operate, the recommended restructuring along with implementation of a new salary schedule, will not have the same percentage impact on the District, CIWS and BPOU. Staff has analyzed the impacts from the proposed changes and compared them to the projected labor budgets for the District, CIWS and BPOU for the next three years. Staff also projected PVOU IZ labor budget for the next three years based upon the current project schedule.

Tables 17 below details the labor costs (all cost except health benefits) for the District, CIWS, BPOU and PVOU projected for calendar years 2018 through 2021. The projections in Table 17 are predicated on the percent of work time shown in Table 16.

Table 17

Entity	Salary & OT	Payroll Taxes	Pension (Pers)	Total	%Change from previous year
District 2017	\$ 485,500	\$ 47,400	\$ 73,900	\$ 606,800	6.6%
District 2018	\$ 550,621	\$ 64,904	\$ 63,043	\$ 678,568	11.8%
District 2019	\$ 536,436	\$ 64,720	\$ 69,650	\$ 670,806	-1.1%
District 2020	\$ 528,624	\$ 66,662	\$ 71,740	\$ 667,026	-0.6%
District 2021	\$ 544,483	\$ 68,662	\$ 73,892	\$ 687,037	3.0%
CIWS 2017	\$ 403,100	\$ 29,000	\$ 51,600	\$ 483,700	3.4%
CIWS 2018	\$ 410,987	\$ 29,714	\$ 56,532	\$ 497,233	2.8%
CIWS 2019	\$ 419,644	\$ 30,235	\$ 62,590	\$ 512,469	3.1%
CIWS 2020	\$ 431,627	\$ 31,095	\$ 63,057	\$ 525,779	2.6%
CIWS 2021	\$ 444,575	\$ 32,028	\$ 64,949	\$ 541,552	3.0%
BPOU 2017	\$ 160,413	\$ 12,659	\$ 24,793	\$ 197,865	13.6%
BPOU 2018	\$ 164,695	\$ 12,997	\$ 25,455	\$ 203,147	2.7%
BPOU 2019	\$ 142,213	\$ 11,215	\$ 23,011	\$ 176,439	-13.1%
BPOU 2020	\$ 134,973	\$ 10,635	\$ 22,287	\$ 167,895	-4.8%
BPOU 2021	\$ 139,697	\$ 11,007	\$ 23,067	\$ 173,772	3.5%
PVOU 2016	\$ -	\$ -	\$ -	\$ -	
PVOU 2017	\$ 20,000	\$ 1,499.50	\$ 163.27	\$ 21,663	
PVOU 2018	\$ 30,790	\$ 2,308	\$ 3,352	\$ 36,451	68.3%
PVOU 2019	\$ 108,145	\$ 8,441	\$ 17,587	\$ 134,173	268.1%
PVOU 2020	\$ 178,465	\$ 14,065	\$ 29,085	\$ 221,616	65.2%
PVOU 2021	\$ 184,712	\$ 14,558	\$ 30,103	\$ 229,373	3.5%
Combined 2016	\$ 1,004,556	\$ 78,002	\$ 128,216	\$ 1,210,774	
Combined 2017	\$ 1,069,013	\$ 90,559	\$ 150,456	\$ 1,310,028	8.2%
Combined 2018	\$ 1,157,093	\$ 109,924	\$ 148,382	\$ 1,415,400	8.0%
Combined 2019	\$ 1,206,437	\$ 114,612	\$ 172,839	\$ 1,493,887	5.5%
Combined 2020	\$ 1,273,690	\$ 122,457	\$ 186,170	\$ 1,582,317	5.9%
Combined 2021	\$ 1,313,467	\$ 126,254	\$ 192,012	\$ 1,631,734	3.1%

As the Table shows, the change in cost for District labor from the restructuring, as compared to the preceding years, is 11.8% in 2018, -1.1% in 2019, -1% in 2020 and 3% in 2021. Please note that hours of effort for each entity or operable unit will vary on required effort (i.e., capital projects, special projects, plant start-up schedule).

XII. COMMUNICATION TO STAFF

In August 2017, management discussed the proposed changes being recommended by the Ad Hoc Committee and provided them the rationale/reasoning for these changes. Each current employee, with the exception of the Board Secretary/Office Administrator, that occupies a position that will be deleted, will be offered a position that closely resembles their current position. None of these employees will have their salaries reduced through this process. Most all of these employees will have positions with a salary range that is higher than their current.

Staff members that will be requested to assume additional responsibilities have indicated their willingness to do so. Field employees in non-supervisory roles have not expressed disagreement to the proposed changes, but some employees have concerns if significant changes are made to their day to day job assignments. Management along with the field supervisors will need to assign work in a manner to balance efficiency with staff development so that Objectives No. 1 & 2 stated in Section VI can be achieved.

FIGURE 1

Organizational Chart

CURRENT

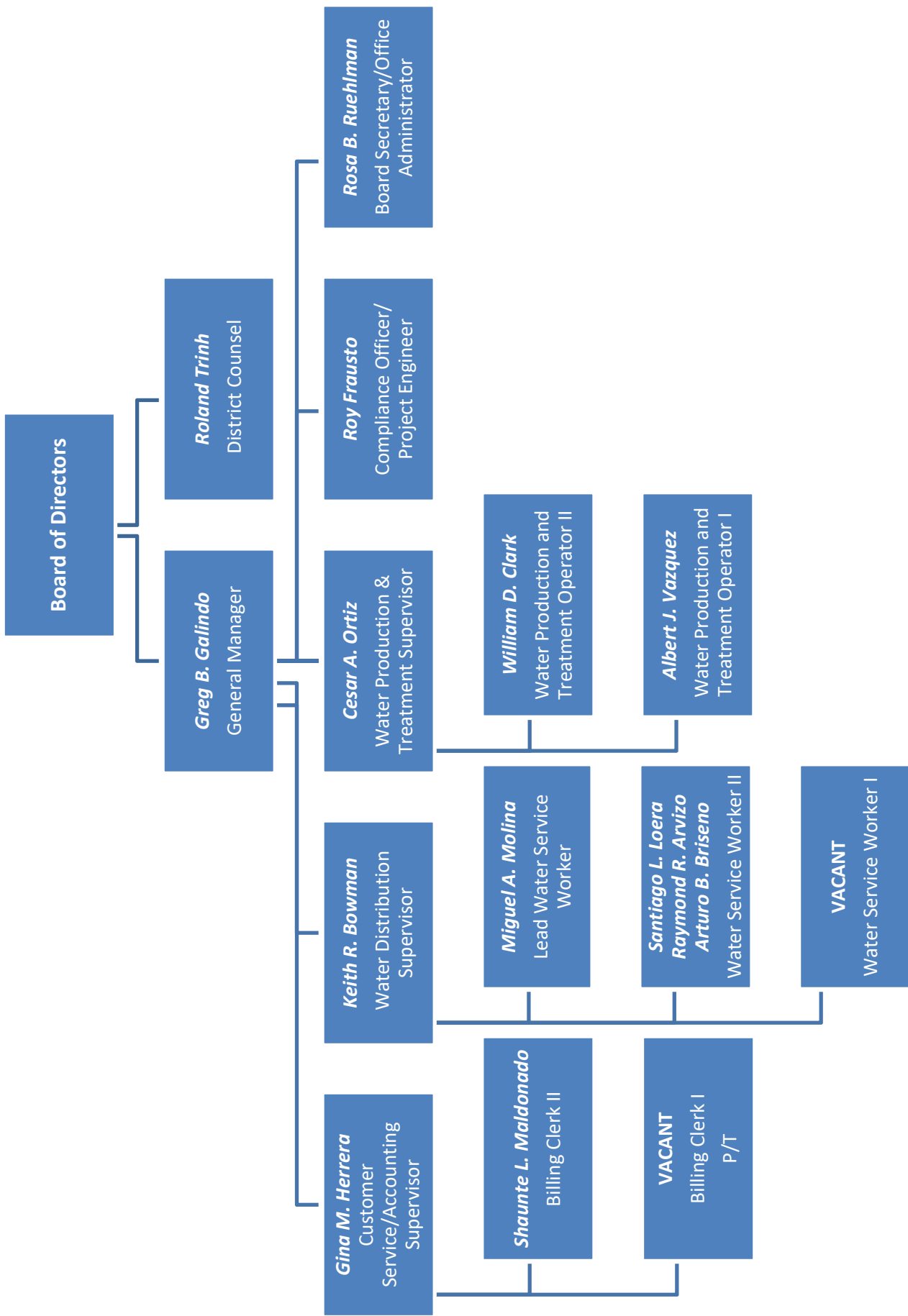


FIGURE 2

Organizational Chart

January 1, 2018

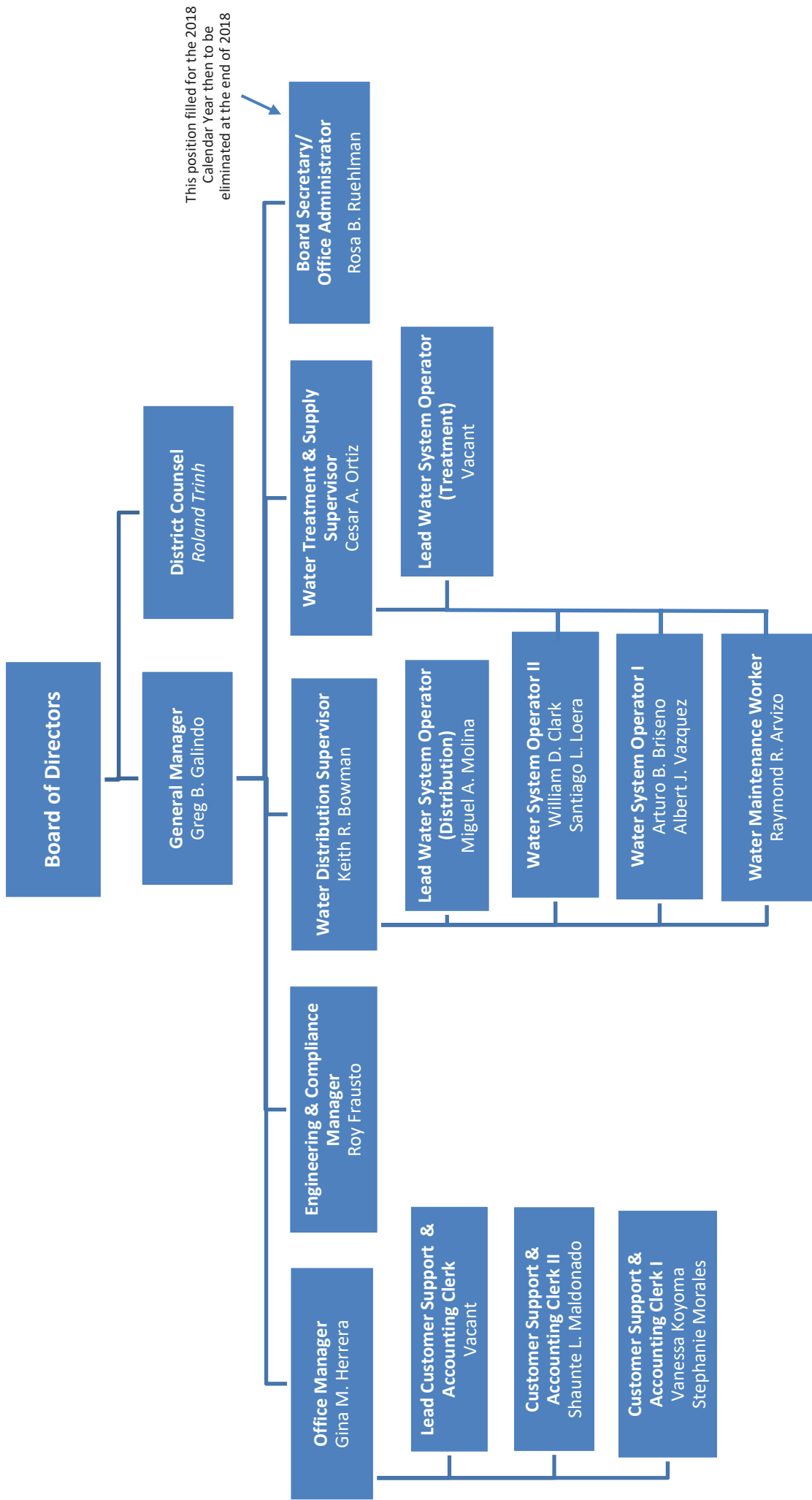


TABLE 1 – PVOU IZ ESTIMATED STAFF HOURS FOR MANAGEMENT AND OPERATIONS

Position	Est. Hours Per Week	Hours Per Year	Duties
General Manager	5	260	Review operations and maintenance activities. Implement /change operational procedures to ensure operational efficiency goals are met. Provide interface to Board of Directors. Interface with regulatory agencies. Ensure proper resources are available to meet the requirements of plant operations. Contract administration.
Compliance Officer	8	416	Ensure water quality monitoring and reporting permit provisions are met. Ensures permit provisions for the various permits issued for plant are met. Coordinates safety inspection and training. Prepares or oversees the preparation of required regulatory agency reports.
Treatment & Production Supervisor	15	780	Chief Operator Duties. Assists with the oversight of the performance of plant operators and maintenance personnel. Plans and implements water quality monitoring and maintenance activities. Performs shift operator duties. Reviews water quality and operational data to ensure proper plant operation. Assist in the preparation of compliance reports. Also acts as central control operator of scada system. Performs on-call duty for after hours operations.
Treatment Operator 2	40	2,080	Performs shift operator duties at plant and central control operator. Collects water quality samples. Assist in maintenance duties. Performs on-call duty.
Treatment Operator 1	15	780	Performs shift operator duties at plant. Collects water quality samples according to schedule. Assist in maintenance duties of the plant. Performs on-call duty for after hours operations.
Maintenance Tech	10	520	Performs maintenance activities at the treatment plant as needed.
Administrative Staff	5	260	Administering accounts payable/receivable for project related expenses and water delivery accounting. HR related duties. Contract administration & insurance program management.
Total	98	5,096	

TABLE 2 – LIST OF SURVEYED POSITIONS FOR SALARY SURVEY

LPVCWD Salary Survey Data

2015 - 2016 Salaries Reported on CA State Controller Website <http://publicpay.ca.gov/> (Rounded to nearest \$500)

LA County Retail Water Districts and Public Retail Water Agencies within 15 Mile Radius

Agency	Position	Salary Start	Mid	Salary End
Alhambra	Cashier II	\$ 38,100	\$ 43,848	\$ 49,596
Alhambra	Clerical Assistant	\$ 38,100	\$ 43,848	\$ 49,596
Alhambra	Utility Worker II	\$ 45,276	\$ 52,044	\$ 58,812
Alhambra	Customer Service	\$ 48,636	\$ 55,992	\$ 63,348
Alhambra	Senior Utility Worker	\$ 48,636	\$ 55,992	\$ 63,348
Alhambra	Pump Operator II	\$ 51,024	\$ 58,764	\$ 66,504
Alhambra	Utility Maintenance Supervisor	\$ 59,664	\$ 68,652	\$ 77,640
Alhambra	Customer Service Manager	\$ 68,160	\$ 78,426	\$ 88,692
Alhambra	Utilities Manager	\$ 131,484	\$ 131,484	\$ 131,484
Alhambra	Deputy Director Utilities	\$ 107,580	\$ 122,166	\$ 136,752
Anaheim	Customer Service Rep II	\$ 47,500	\$ 52,750	\$ 58,000
Anaheim	Meter Reader	\$ 47,000	\$ 53,000	\$ 59,000
Anaheim	Water Production Apprentice	\$ 54,000	\$ 58,500	\$ 63,000
Anaheim	Customer Service Rep	\$ 54,500	\$ 60,250	\$ 66,000
Anaheim	Sr. Utilities Services Rep	\$ 57,000	\$ 63,250	\$ 69,500
Anaheim	Water Production Technician	\$ 66,000	\$ 70,000	\$ 74,000
Anaheim	Water Production Technician Supervisor	\$ 87,000	\$ 87,000	\$ 87,000
Anaheim	Water System Operator	\$ 72,500	\$ 80,250	\$ 88,000
Anaheim	Senior Water System Operator	\$ 76,000	\$ 84,250	\$ 92,500
Anaheim	Accountant	\$ 67,500	\$ 82,250	\$ 97,000
Anaheim	Utilities Service Supervisor	\$ 71,000	\$ 86,500	\$ 102,000
Anaheim	Utilities System Operator	\$ 93,000	\$ 101,000	\$ 109,000
Anaheim	Water Field Superintendent	\$ 90,500	\$ 110,250	\$ 130,000
Anaheim	Water Production Superintendent	\$ 90,500	\$ 110,250	\$ 130,000
Anaheim	Water Systems Operations Superintendent	\$ 1,000	\$ 72,250	\$ 143,500
Anaheim	Water Field Operations Manager	\$ 127,500	\$ 155,250	\$ 183,000
Anaheim	Water AGM	\$ 155,000	\$ 188,750	\$ 222,500
Anaheim	Utilities GM	\$ 200,000	\$ 264,500	\$ 329,000
Arcadia	Maintenance Worker	\$ 40,836	\$ 45,900	\$ 50,964
Arcadia	Water Production I	\$ 47,340	\$ 53,226	\$ 59,112
Arcadia	Equipment Operator	\$ 48,504	\$ 54,540	\$ 60,576
Arcadia	Water Production II	\$ 52,260	\$ 58,746	\$ 65,232
Arcadia	Utilities Crew Supervisor	\$ 60,576	\$ 68,124	\$ 75,672
Arcadia	Utilities Superintendent	\$ 91,344	\$ 102,714	\$ 114,084
Azusa	Water Distribution II	\$ 49,220	\$ 54,524	\$ 59,828
Azusa	Water Production I	\$ 54,745	\$ 60,644	\$ 66,543
Azusa	Water Production II	\$ 59,161	\$ 65,536	\$ 71,910
Azusa	Water Distribution System Worker III	\$ 61,562	\$ 68,196	\$ 74,829
Azusa	Water Production III	\$ 64,116	\$ 71,025	\$ 77,934
Azusa	Water Distribution Crew Supervisor	\$ 71,327	\$ 79,013	\$ 86,699
Azusa	Water Distribution Supervisor	\$ 86,787	\$ 96,139	\$ 105,490

LPVCWD Salary Survey Data

2015 - 2016 Salaries Reported on CA State Controller Website <http://publicpay.ca.gov/> (Rounded to nearest \$500)

LA County Retail Water Districts and Public Retail Water Agencies within 15 Mile Radius

Agency	Position	Salary Start	Mid	Salary End
Azusa	Water Production Supervisor	\$ 86,787	\$ 96,139	\$ 105,490
Azusa	Director of Water Operations	\$ 108,974	\$ 120,717	\$ 132,460
Azusa	Director of Utilities	\$ 189,353	\$ 189,353	\$ 189,353
Azusa	Water System Engineer	\$ 86,500	\$ 95,750	\$ 105,000
Brea	Admin Clerk II	\$ 39,500	\$ 45,000	\$ 50,500
Brea	Account Technician I	\$ 40,000	\$ 45,500	\$ 51,000
Brea	Account Technician II	\$ 47,000	\$ 53,500	\$ 60,000
Brea	Water Distribution I	\$ 48,500	\$ 55,250	\$ 62,000
Brea	Water Distribution II	\$ 51,500	\$ 58,750	\$ 66,000
Brea	Water Distribution Crew Leader	\$ 64,000	\$ 73,000	\$ 82,000
Brea	Senior Accountant	\$ 74,000	\$ 84,250	\$ 94,500
Brea	Finance Manager	\$ 104,000	\$ 118,500	\$ 133,000
Brea	Water Distribution Supervisor	\$ 104,500	\$ 119,250	\$ 134,000
Buena Park	Office Assistant	\$ 36,000	\$ 40,500	\$ 45,000
Buena Park	Senior Office Assistant	\$ 37,500	\$ 42,250	\$ 47,000
Buena Park	Account Clerk	\$ 38,500	\$ 43,500	\$ 48,500
Buena Park	Senior Account Clerk	\$ 43,000	\$ 48,750	\$ 54,500
Buena Park	Water Service Technician	\$ 43,000	\$ 49,000	\$ 55,000
Buena Park	Senior Water Service Technician	\$ 47,500	\$ 53,750	\$ 60,000
Buena Park	Senior Accounting Technician	\$ 51,000	\$ 57,750	\$ 64,500
Buena Park	Lead Water Service Technician	\$ 55,500	\$ 64,750	\$ 74,000
Buena Park	Accountant	\$ 60,000	\$ 68,000	\$ 76,000
Buena Park	Water Services Superintendent	\$ 82,000	\$ 90,500	\$ 99,000
Buena Park	Finance Manager	\$ 99,500	\$ 110,000	\$ 120,500
Buena Park	Field Operations Manager	\$ 104,500	\$ 115,500	\$ 126,500
Buena Park	Utilities Manager	\$ 104,000	\$ 115,250	\$ 126,500
Calleguas	Project Manager	\$ 94,000	\$ 109,500	\$ 125,000
Castaic Lake	Utility worker I	\$ 47,000	\$ 52,000	\$ 57,000
Castaic Lake	Utility worker II	\$ 54,500	\$ 60,250	\$ 66,000
Castaic Lake	Senior Utility Worker	\$ 63,000	\$ 69,750	\$ 76,500
Castaic Lake	Senior Production Operator	\$ 69,000	\$ 76,500	\$ 84,000
Castaic Lake	Production Operator II	\$ 73,000	\$ 80,750	\$ 88,500
Castaic Lake	Water Resource Planner	\$ 88,500	\$ 98,000	\$ 107,500
Castaic Lake	Utility Maintenance Supervisor	\$ 92,000	\$ 102,500	\$ 113,000
Castaic Lake	Production Supervisor	\$ 93,000	\$ 103,000	\$ 113,000
Cerritos	Account Clerk	\$ 46,500	\$ 52,000	\$ 57,500
Cerritos	Accounting Technician	\$ 50,500	\$ 56,500	\$ 62,500
Cerritos	Operator	\$ 54,500	\$ 60,750	\$ 67,000
Cerritos	Accountant	\$ 69,000	\$ 77,750	\$ 86,500
Cerritos	Water Supervisor	\$ 69,500	\$ 78,000	\$ 86,500
Cerritos	Water Superintendent	\$ 98,000	\$ 110,250	\$ 122,500

LPVCWD Salary Survey Data

2015 - 2016 Salaries Reported on CA State Controller Website <http://publicpay.ca.gov/> (Rounded to nearest \$500)
LA County Retail Water Districts and Public Retail Water Agencies within 15 Mile Radius

Agency	Position	Salary Start	Mid	Salary End
Cerritos	Utilities Manager - Assistant CM	\$ 146,000	\$ 164,000	\$ 182,000
Chino	Account Clerk I	\$ 37,000	\$ 41,000	\$ 45,000
Chino	Account Clerk II	\$ 40,000	\$ 44,500	\$ 49,000
Chino	Customer Service Rep	\$ 42,000	\$ 46,500	\$ 51,000
Chino	Maintenance Worker	\$ 42,000	\$ 46,500	\$ 51,000
Chino	Maintenance Worker II	\$ 42,000	\$ 46,500	\$ 51,000
Chino	Water Distribution Operator	\$ 44,000	\$ 48,500	\$ 53,000
Chino	Maintenance Lead Worker	\$ 46,000	\$ 51,000	\$ 56,000
Chino	Accounting Technician	\$ 46,500	\$ 51,500	\$ 56,500
Chino	Water System Operator	\$ 50,000	\$ 55,500	\$ 61,000
Chino	Water Quality Technician	\$ 53,000	\$ 59,000	\$ 65,000
Chino	Accountant	\$ 61,000	\$ 67,250	\$ 73,500
Chino	Assistant Water Utilities Supervisor	\$ 61,000	\$ 67,500	\$ 74,000
Chino	Billing Supervisor	\$ 61,000	\$ 67,500	\$ 74,000
Chino	Accountant II	\$ 63,000	\$ 70,000	\$ 77,000
Chino	Senior Accountant	\$ 67,000	\$ 74,000	\$ 81,000
Chino	Billing Manager	\$ 68,000	\$ 78,000	\$ 88,000
Chino	Water Utilities Supervisor	\$ 74,000	\$ 85,000	\$ 96,000
Chino	Water Manager	\$ 90,000	\$ 103,000	\$ 116,000
Chino Hills	Office Assistant	\$ 38,000	\$ 41,750	\$ 45,500
Chino Hills	Maintenance Worker I	\$ 39,000	\$ 42,750	\$ 46,500
Chino Hills	Maintenance Worker II	\$ 42,000	\$ 46,500	\$ 51,000
Chino Hills	Admin Assistant I	\$ 43,000	\$ 47,750	\$ 52,500
Chino Hills	Senior Maintenance Worker	\$ 46,500	\$ 51,750	\$ 57,000
Chino Hills	Senior Accounting Technician	\$ 48,000	\$ 53,000	\$ 58,000
Chino Hills	Admin Assistant II	\$ 50,000	\$ 55,500	\$ 61,000
Chino Hills	Water Quality Technician I	\$ 50,000	\$ 55,500	\$ 61,000
Chino Hills	Accountant I	\$ 56,000	\$ 62,000	\$ 68,000
Chino Hills	Water Quality Technician II	\$ 60,000	\$ 66,250	\$ 72,500
Chino Hills	Accountant II	\$ 63,000	\$ 70,000	\$ 77,000
Chino Hills	Billing Supervisor	\$ 68,000	\$ 75,500	\$ 83,000
Chino Hills	Accounting Supervisor	\$ 77,000	\$ 85,250	\$ 93,500
Chino Hills	Customer Service Supervisor	\$ 77,028	\$ 85,264	\$ 93,500
Chino Hills	Water Production Supervisor	\$ 77,000	\$ 85,250	\$ 93,500
Chino Hills	Water Distribution Supervisor	\$ 77,000	\$ 85,500	\$ 94,000
Chino Hills	Assistant Finance Director	\$ 103,000	\$ 114,000	\$ 125,000
Chino Hills	Water Manager	\$ 103,000	\$ 114,000	\$ 125,000
Citrus Heights Water	Project Manager	\$ 82,500	\$ 97,250	\$ 112,000
Covina	Office Assistant I	\$ 29,696	\$ 33,345	\$ 36,993
Covina	Office Assistant II	\$ 35,467	\$ 39,828	\$ 44,188
Covina	Water Worker	\$ 40,695	\$ 45,691	\$ 50,687

LPVCWD Salary Survey Data

2015 - 2016 Salaries Reported on CA State Controller Website <http://publicpay.ca.gov/> (Rounded to nearest \$500)
LA County Retail Water Districts and Public Retail Water Agencies within 15 Mile Radius

Agency	Position	Salary Start	Mid	Salary End
Covina	Water Quality Tech	\$ 42,063	\$ 47,236	\$ 52,408
Covina	Water Pump Operator	\$ 46,310	\$ 52,006	\$ 57,701
Covina	Water Crew Leader	\$ 48,114	\$ 54,026	\$ 59,938
Covina	Water Foreman	\$ 58,217	\$ 65,377	\$ 72,536
Covina	Water Services Supervisor	\$ 64,847	\$ 74,865	\$ 84,883
Covina	Director of Public Works	\$ 111,866	\$ 130,933	\$ 150,000
Cresenta Valley	Utility Worker I	\$ 43,428	\$ 50,814	\$ 58,200
Cresenta Valley	Maintenance Worker I	\$ 45,588	\$ 53,745	\$ 61,902
Cresenta Valley	Utility Worker II	\$ 48,312	\$ 56,532	\$ 64,752
Cresenta Valley	System Operator	\$ 51,900	\$ 60,708	\$ 69,516
Cresenta Valley	Plant Maintenance Specialist	\$ 58,764	\$ 68,754	\$ 78,744
Cresenta Valley	Supervisor Dist.	\$ 61,848	\$ 72,424	\$ 83,000
Cresenta Valley	Supervisor Treatment/Production	\$ 61,848	\$ 72,424	\$ 83,000
Cresenta Valley	Superintendent	\$ 81,912	\$ 95,340	\$ 108,768
Cresenta Valley	Secretary Treasurer	\$ 93,732	\$ 111,066	\$ 128,400
Cresenta Valley	GM	\$ 148,000	\$ 148,000	\$ 148,000
Cucamonga	Associate Engineer	\$ 80,500	\$ 92,500	\$ 104,500
Downey	Water System Operator I	\$ 38,749	\$ 43,376	\$ 48,003
Downey	Water System Operator II	\$ 38,749	\$ 43,376	\$ 48,003
Downey	Water System Lead Worker	\$ 49,251	\$ 55,133	\$ 61,015
Downey	Water System Supervisor	\$ 60,479	\$ 67,702	\$ 74,924
Downey	Assistant Superintendent Water / San	\$ 69,217	\$ 77,482	\$ 85,747
East Valley Water	Associate Engineer	\$ 86,000	\$ 90,500	\$ 95,000
Eastern Municipal	Civil Engineer I	\$ 92,000	\$ 103,000	\$ 114,000
Eastern Municipal	Civil Engineer II	\$ 99,000	\$ 111,000	\$ 123,000
El Monte	Maintenance Worker	\$ 39,942	\$ 44,251	\$ 48,560
El Monte	Maintenance Lead Worker	\$ 46,456	\$ 51,458	\$ 56,460
El Monte	Shift Operator	\$ 50,000	\$ 55,000	\$ 60,000
El Monte	Sr Shift Operator	\$ 54,495	\$ 60,360	\$ 66,225
El Monte	Water System Supervisor	\$ 95,000	\$ 95,000	\$ 95,000
El Monte	Public Works / Utilities Director	\$ 156,000	\$ 156,000	\$ 156,000
El Toro	Project Engineer	\$ 98,000	\$ 117,500	\$ 137,000
Fullerton	Water Service Worker	\$ 36,161	\$ 41,156	\$ 46,151
Fullerton	Equipment Operator	\$ 38,000	\$ 43,169	\$ 48,337
Fullerton	Water Utility Lead Service Worker	\$ 46,877	\$ 53,352	\$ 59,827
Fullerton	Water Production Operator	\$ 49,224	\$ 56,037	\$ 62,849
Fullerton	Water Distribution Supervisor	\$ 68,569	\$ 75,958	\$ 83,346
Fullerton	Water Quality Specialist	\$ 69,628	\$ 79,247	\$ 88,866
Fullerton	Water Superintendent	\$ 96,593	\$ 107,002	\$ 117,410
Fullerton	Water System Manager	\$ 113,474	\$ 125,703	\$ 137,931
Glendora	Maintenance Worker	\$ 39,617	\$ 43,886	\$ 48,155

LPVCWD Salary Survey Data

2015 - 2016 Salaries Reported on CA State Controller Website <http://publicpay.ca.gov/> (Rounded to nearest \$500)

LA County Retail Water Districts and Public Retail Water Agencies within 15 Mile Radius

Agency	Position	Salary Start	Mid	Salary End
Glendora	Water System Operator II	\$ 43,293	\$ 47,958	\$ 52,623
Glendora	Equipment Operator	\$ 43,933	\$ 48,667	\$ 53,401
Glendora	Water System Operator II	\$ 47,521	\$ 52,642	\$ 57,762
Glendora	Lead Maintenance Worker	\$ 48,349	\$ 53,559	\$ 58,768
Glendora	Senior Water System Operator	\$ 52,170	\$ 57,792	\$ 63,414
Glendora	Water Superintendent	\$ 64,505	\$ 71,456	\$ 78,407
Glendora	Water Division Manager	\$ 91,338	\$ 101,180	\$ 111,021
Jurupa CS Dist.	Engineering Manager	\$ 107,800	\$ 119,400	\$ 131,000
District	Accounting Assistant	\$ 38,315	\$ 45,069	\$ 51,822
District	Administrative Assistant	\$ 38,315	\$ 45,069	\$ 51,822
District	Facilities Operator	\$ 39,000	\$ 53,302	\$ 67,603
District	Facilities Supervisor	\$ 59,000	\$ 70,067	\$ 81,134
District	GM	\$ 98,500	\$ 127,661	\$ 156,821
La Canada Irrigation	Field Person	\$ 44,000	\$ 44,000	\$ 44,000
La Canada Irrigation	Accounting Clerk	\$ 51,000	\$ 51,000	\$ 51,000
La Canada Irrigation	Distribution Operator	\$ 55,000	\$ 55,000	\$ 55,000
La Canada Irrigation	Senior Distribution Operator	\$ 60,000	\$ 60,000	\$ 60,000
La Canada Irrigation	Office Manager	\$ 78,552	\$ 78,552	\$ 78,552
La Canada Irrigation	AGM	\$ 110,000	\$ 110,000	\$ 110,000
La Canada Irrigation	GM	\$ 166,296	\$ 166,296	\$ 166,296
La Habra City	Water Service Tech I	\$ 33,000	\$ 39,500	\$ 46,000
La Habra City	Water Service Tech II	\$ 35,500	\$ 42,750	\$ 50,000
La Habra City	Water Service Tech III	\$ 40,000	\$ 48,000	\$ 56,000
La Habra City	Water Service Tech IV	\$ 41,000	\$ 49,000	\$ 57,000
La Habra City	Water Service Tech V	\$ 47,000	\$ 56,500	\$ 66,000
La Habra City	Water Manager	\$ 101,000	\$ 113,250	\$ 125,500
La Habra Heights	Utility Worker I	\$ 44,376	\$ 50,532	\$ 56,688
La Habra Heights	Utility Worker II	\$ 53,712	\$ 61,146	\$ 68,580
La Habra Heights	Utility Worker III	\$ 66,024	\$ 75,168	\$ 84,312
La Habra Heights	Superintendent	\$ 91,848	\$ 104,568	\$ 117,288
La Habra Heights	Office Manager	\$ 100,392	\$ 114,306	\$ 128,220
La Habra Heights	GM	\$ 122,304	\$ 139,254	\$ 156,204
La Mirada	Project Manager	\$ 79,500	\$ 89,250	\$ 99,000
La Palma	Account Clerk	\$ 36,000	\$ 42,000	\$ 48,000
La Palma	Water Service Worker II	\$ 41,500	\$ 48,750	\$ 56,000
La Palma	Accounting Technician	\$ 45,000	\$ 52,500	\$ 60,000
La Palma	Water Supervisor	\$ 62,500	\$ 72,750	\$ 83,000
La Palma	Accounting Supervisor	\$ 63,000	\$ 73,500	\$ 84,000
Las Virgenes	Water Worker I	\$ 41,000	\$ 49,250	\$ 57,500
Las Virgenes	Water Worker II	\$ 46,000	\$ 54,750	\$ 63,500
Las Virgenes	Customer Service Rep	\$ 46,500	\$ 55,250	\$ 64,000

LPVCWD Salary Survey Data

2015 - 2016 Salaries Reported on CA State Controller Website <http://publicpay.ca.gov/> (Rounded to nearest \$500)

LA County Retail Water Districts and Public Retail Water Agencies within 15 Mile Radius

Agency	Position	Salary Start	Mid	Salary End
Las Virgenes	Water Worker III	\$ 53,000	\$ 63,000	\$ 73,000
Las Virgenes	Senior Customer Service Rep	\$ 57,000	\$ 68,000	\$ 79,000
Las Virgenes	Senior Plant Operator	\$ 67,000	\$ 79,750	\$ 92,500
Las Virgenes	Senior Water Dist. Operator	\$ 67,000	\$ 79,750	\$ 92,500
Las Virgenes	Customer Service Supervisor	\$ 84,500	\$ 97,250	\$ 110,000
Las Virgenes	Treatment & Production Supervisor	\$ 88,500	\$ 101,750	\$ 115,000
Las Virgenes	Senior Engineer	\$ 92,000	\$ 106,000	\$ 120,000
Las Virgenes	Associate Engineer	\$ 92,000	\$ 106,000	\$ 120,000
Las Virgenes	Customer Service Manager	\$ 102,000	\$ 122,500	\$ 143,000
Long Beach	Water Utility Mechanic I	\$ 38,500	\$ 45,500	\$ 52,500
Long Beach	Water Utility Mechanic II	\$ 40,500	\$ 47,750	\$ 55,000
Long Beach	Accounting Technician	\$ 42,500	\$ 50,000	\$ 57,500
Long Beach	Water Utility Mechanic III	\$ 48,500	\$ 57,250	\$ 66,000
Long Beach	Water Treatment II	\$ 53,000	\$ 62,750	\$ 72,500
Long Beach	Water Treatment III	\$ 60,500	\$ 71,250	\$ 82,000
Long Beach	Administrative Analyst II	\$ 63,000	\$ 74,500	\$ 86,000
Long Beach	Water Utility Supervisor	\$ 58,920	\$ 73,710	\$ 88,500
Long Beach	Water Treatment IV	\$ 67,000	\$ 78,951	\$ 90,901
Long Beach	Senior Accountant	\$ 68,000	\$ 80,250	\$ 92,500
Long Beach	Accountant III	\$ 68,151	\$ 80,576	\$ 93,000
Long Beach	Administrative Analyst III	\$ 68,151	\$ 80,576	\$ 93,000
Long Beach	Civil Engineer Associate	\$ 70,500	\$ 83,250	\$ 96,000
Long Beach	Water Treatment Supervisor	\$ 74,000	\$ 87,000	\$ 100,000
Long Beach	Civil Engineer	\$ 84,000	\$ 99,114	\$ 114,227
Long Beach	Water Operations Superintendent	\$ 115,000	\$ 115,000	\$ 115,000
Long Beach	Director of Finance	\$ 129,000	\$ 129,000	\$ 129,000
Long Beach	water Treatment Superintendent	\$ 139,000	\$ 139,000	\$ 139,000
Long Beach	Director of Operations	\$ 167,500	\$ 167,500	\$ 167,500
Long Beach	AGM	\$ 223,000	\$ 223,000	\$ 223,000
Long Beach	GM	\$ 259,000	\$ 259,000	\$ 259,000
Mission Springs	Engineering Projects Manager	\$ 80,000	\$ 91,500	\$ 103,000
Monte Vista	Utility Service Worker I	\$ 41,000	\$ 47,500	\$ 54,000
Monte Vista	Utility Service Worker II	\$ 47,340	\$ 54,735	\$ 62,129
Monte Vista	Water System Operator II	\$ 54,849	\$ 63,409	\$ 71,968
Monte Vista	Accounting Technician	\$ 57,595	\$ 66,581	\$ 75,566
Monte Vista	Utility Crew Lead	\$ 57,595	\$ 66,581	\$ 75,566
Monte Vista	Water System Operator III	\$ 61,900	\$ 71,562	\$ 81,224
Monte Vista	Accountant	\$ 62,000	\$ 71,622	\$ 81,244
Monte Vista	Controller	\$ 82,243	\$ 95,087	\$ 107,931
Monte Vista	Maintenance Superintendent	\$ 82,243	\$ 95,087	\$ 107,931
Monte Vista	Water Systems Supervisor	\$ 82,243	\$ 95,087	\$ 107,931

LPVCWD Salary Survey Data

2015 - 2016 Salaries Reported on CA State Controller Website <http://publicpay.ca.gov/> (Rounded to nearest \$500)

LA County Retail Water Districts and Public Retail Water Agencies within 15 Mile Radius

Agency	Position	Salary Start	Mid	Salary End
Monte Vista	Maintenance	\$ 123,406	\$ 142,657	\$ 161,907
Monte Vista	Manager of Finance & Admin	\$ 123,406	\$ 142,657	\$ 161,907
Monte Vista	GM	\$ 251,000	\$ 251,000	\$ 251,000
Monterey Park	Water Utility Maintenance Worker	\$ 43,440	\$ 49,506	\$ 55,572
Monterey Park	Water Distribution Lead Worker	\$ 51,468	\$ 58,656	\$ 65,844
Monterey Park	Water Production System Operator	\$ 51,468	\$ 58,656	\$ 65,844
Monterey Park	Senior Water Production Operator	\$ 59,640	\$ 67,968	\$ 76,296
Monterey Park	Water Distribution Crew Supervisor	\$ 59,640	\$ 67,968	\$ 76,296
Monterey Park	Water Distribution Supervisor	\$ 72,840	\$ 83,010	\$ 93,180
Monterey Park	Water Production Supervisor	\$ 72,840	\$ 83,010	\$ 93,180
Monterey Park	Water Utility Manager	\$ 101,796	\$ 116,010	\$ 130,224
Newhall County	Water System Worker I	\$ 42,943	\$ 47,571	\$ 52,198
Newhall County	Customer Service Rep II	\$ 45,134	\$ 49,998	\$ 54,861
Newhall County	Accounting Clerk II	\$ 47,436	\$ 52,548	\$ 57,659
Newhall County	Water System Worker II	\$ 49,856	\$ 55,228	\$ 60,600
Newhall County	Water Production & Quality II	\$ 57,881	\$ 64,118	\$ 70,355
Newhall County	Water Quality Technician	\$ 57,881	\$ 64,118	\$ 70,355
Newhall County	Field Services Supervisor	\$ 64,000	\$ 70,850	\$ 77,700
Newhall County	Water System Maintenance Supervisor	\$ 6,400	\$ 42,050	\$ 77,700
Newhall County	Accounting Manager	\$ 72,523	\$ 85,215	\$ 97,906
Newhall County	Superintendent	\$ 72,523	\$ 85,215	\$ 97,906
Newhall County	Director of Operations	\$ 95,824	\$ 112,594	\$ 129,363
Newhall County	Director of Finance/Admin	\$ 136,593	\$ 136,593	\$ 136,593
Newhall County	GM	\$ 180,000	\$ 180,000	\$ 180,000
Norwalk	Water Service Worker I	\$ 46,080	\$ 52,213	\$ 58,346
Norwalk	Water Service Worker II	\$ 56,184	\$ 63,589	\$ 70,994
Norwalk	Assistant Engineer	\$ 67,500	\$ 76,250	\$ 85,000
Norwalk	Water Utilities Supervisor	\$ 72,120	\$ 81,529	\$ 90,938
Norwalk	Utilities Manager & Project Manager	\$ 94,000	\$ 107,000	\$ 120,000
Orchardale Water	Serviceman I	\$ 42,792	\$ 50,070	\$ 57,348
Orchardale Water	Customer Service Rep	\$ 43,908	\$ 51,378	\$ 58,848
Orchardale Water	Foreman	\$ 63,500	\$ 74,272	\$ 85,044
Orchardale Water	Serviceman III	\$ 63,672	\$ 74,502	\$ 85,332
Orchardale Water	Admin of Dist. Services	\$ 79,776	\$ 93,341	\$ 106,906
Orchardale Water	Superintendent	\$ 84,348	\$ 98,688	\$ 113,028
Orchardale Water	Finance Manager	\$ 91,272	\$ 106,794	\$ 122,316
Orchardale Water	GM	\$ 132,348	\$ 154,854	\$ 177,360
Palmdale Water	Service Worker I	\$ 44,054	\$ 48,797	\$ 53,539
Palmdale Water	Service Worker II	\$ 53,539	\$ 59,311	\$ 65,083
Palmdale Water	Operation Technician I	\$ 56,222	\$ 62,275	\$ 68,328
Palmdale Water	Operation Technician II	\$ 61,984	\$ 68,661	\$ 75,338

LPVCWD Salary Survey Data

2015 - 2016 Salaries Reported on CA State Controller Website <http://publicpay.ca.gov/> (Rounded to nearest \$500)

LA County Retail Water Districts and Public Retail Water Agencies within 15 Mile Radius

Agency	Position	Salary Start	Mid	Salary End
Palmdale Water	Senior Systems Worker	\$ 65,083	\$ 72,093	\$ 79,102
Palmdale Water	Plant Operator II	\$ 68,328	\$ 75,691	\$ 83,054
Palmdale Water	Systems Supervisor	\$ 79,102	\$ 87,630	\$ 96,158
Palmdale Water	Water Quality Specialists	\$ 79,102	\$ 87,630	\$ 96,158
Palmdale Water	Project Manager	\$ 87,000	\$ 96,500	\$ 106,000
Palmdale Water	Operations Manager	\$ 100,963	\$ 111,842	\$ 122,720
Palmdale Water	AGM	\$ 142,064	\$ 155,314	\$ 168,563
Palmdale Water	GM	\$ 219,893	\$ 219,893	\$ 219,893
Pasadena	Laborer	\$ 40,000	\$ 44,050	\$ 48,100
Pasadena	Customer Service Rep	\$ 40,310	\$ 45,334	\$ 50,357
Pasadena	Office Assistant	\$ 41,000	\$ 46,063	\$ 51,126
Pasadena	Senior Office Assistant	\$ 43,701	\$ 49,140	\$ 54,579
Pasadena	Customer Service Specialist	\$ 49,587	\$ 55,755	\$ 61,922
Pasadena	Water Troubleshooter	\$ 53,017	\$ 58,799	\$ 64,581
Pasadena	Water System Operator	\$ 56,198	\$ 62,326	\$ 68,454
Pasadena	Customer Service Supervisor	\$ 71,525	\$ 80,466	\$ 89,407
Pasadena	Water Systems Crew Supervisor	\$ 75,055	\$ 84,437	\$ 93,818
Pasadena	Water System Superintendent	\$ 102,500	\$ 115,318	\$ 128,135
Pasadena	Customer Service Manager	\$ 108,000	\$ 122,000	\$ 136,000
Pasadena	Water Quality Manager	\$ 110,000	\$ 123,500	\$ 137,000
Pasadena	AGM Water and Power	\$ 169,000	\$ 189,500	\$ 210,000
Pasadena	Assistant General Manager - Water & Power	\$ 168,000	\$ 189,000	\$ 210,000
Pico Rivera	Water System Operator I	\$ 42,852	\$ 49,554	\$ 56,256
Pico Rivera	Water System Operator II	\$ 46,632	\$ 53,928	\$ 61,224
Pico Rivera	Water System Operator III	\$ 51,396	\$ 59,430	\$ 67,464
Pico Water	Water Maintenance I	\$ 40,596	\$ 44,958	\$ 49,320
Pico Water	Water Maintenance II	\$ 46,860	\$ 52,248	\$ 57,636
Pico Water	Accounting/Office Assistant	\$ 55,992	\$ 62,034	\$ 68,076
Pico Water	Water Maintenance Lead	\$ 57,492	\$ 63,054	\$ 68,616
Pico Water	Office Manager	\$ 66,348	\$ 70,470	\$ 74,592
Pico Water	Production Supervisor	\$ 67,932	\$ 73,758	\$ 79,584
Pico Water	Field Superintendent	\$ 78,420	\$ 84,504	\$ 90,588
Pico Water	GM	\$ 133,422	\$ 133,422	\$ 133,422
Pomona	Water Utility I	\$ 42,000	\$ 46,500	\$ 51,000
Pomona	Water Utility II	\$ 46,320	\$ 51,312	\$ 56,304
Pomona	Water System Operator I	\$ 48,660	\$ 53,910	\$ 59,160
Pomona	Water Utility Crew Leader	\$ 53,724	\$ 59,508	\$ 65,292
Pomona	Water System Operator III	\$ 62,256	\$ 68,988	\$ 75,720
Pomona	Water Treatment Plant Operator III	\$ 65,460	\$ 72,504	\$ 79,548
Pomona	Water Operations Crew Chief	\$ 75,900	\$ 84,078	\$ 92,256
Pomona	Water Treatment & Quality Crew Chief	\$ 75,900	\$ 84,078	\$ 92,256

LPVCWD Salary Survey Data

2015 - 2016 Salaries Reported on CA State Controller Website <http://publicpay.ca.gov/> (Rounded to nearest \$500)

LA County Retail Water Districts and Public Retail Water Agencies within 15 Mile Radius

Agency	Position	Salary Start	Mid	Salary End
Pomona	Water Distribution Supervisor	\$ 88,020	\$ 97,506	\$ 106,992
Pomona	Water Production Supervisor	\$ 88,020	\$ 97,506	\$ 106,992
Pomona	Water Treatment & Quality Supervisor	\$ 88,020	\$ 97,506	\$ 106,992
Pomona	Water & Wastewater Operations Director	\$ 124,550	\$ 145,731	\$ 166,912
Quartz Hill	Maintenance	\$ 39,000	\$ 44,000	\$ 49,000
Quartz Hill	Serviceman I	\$ 50,419	\$ 54,028	\$ 57,637
Quartz Hill	Administrative Clerk II	\$ 50,136	\$ 54,312	\$ 58,488
Quartz Hill	Secretary II	\$ 52,800	\$ 58,146	\$ 63,492
Quartz Hill	Office Supervisor	\$ 60,700	\$ 64,832	\$ 68,964
Quartz Hill	Crew Leader	\$ 68,515	\$ 72,114	\$ 75,712
Quartz Hill	AGM	\$ 115,147	\$ 115,147	\$ 115,147
Quartz Hill	GM	\$ 158,447	\$ 158,447	\$ 158,447
Rancho Ca WD	Associate Engineer	\$ 86,000	\$ 100,000	\$ 114,000
Rowland	General Services Worker	\$ 47,136	\$ 52,500	\$ 57,864
Rowland	Customer Service Rep I	\$ 49,272	\$ 54,876	\$ 60,480
Rowland	Maintenance I	\$ 55,008	\$ 61,266	\$ 67,524
Rowland	Water System Operator I	\$ 56,940	\$ 63,954	\$ 70,968
Rowland	Maintenance II	\$ 63,264	\$ 70,470	\$ 77,676
Rowland	Water System Operator II	\$ 65,808	\$ 73,308	\$ 80,808
Rowland	Maintenance Crew Leader	\$ 71,160	\$ 79,266	\$ 87,372
Rowland	Senior Water System Operator	\$ 74,976	\$ 83,514	\$ 92,052
Rowland	Water System Supervisor	\$ 83,616	\$ 93,131	\$ 102,646
Rowland	Field Ops Supervisor	\$ 83,616	\$ 93,132	\$ 102,648
Rowland	Accounting/Customer Serv Manager	\$ 93,336	\$ 103,962	\$ 114,588
Rowland	Production Superintendent	\$ 100,416	\$ 111,846	\$ 123,276
Rowland	Water Distribution Superintendent	\$ 100,416	\$ 111,846	\$ 123,276
Rowland	Project Manager	\$ 121,000	\$ 126,000	\$ 131,000
Rowland	Director of Operations	\$ 123,156	\$ 137,178	\$ 151,200
Rowland	Director of Admin	\$ 126,468	\$ 140,862	\$ 155,256
Rowland	GM	\$ 168,972	\$ 187,434	\$ 205,896
Rubidoux CS Dist.	Engineer Assistant	\$ 88,000	\$ 100,500	\$ 113,000
Valley Water	Project Manager	\$ 93,500	\$ 105,750	\$ 118,000
Water	Accountant Clerk	\$ 45,288	\$ 50,166	\$ 55,044
Water	Office Clerk	\$ 45,288	\$ 50,166	\$ 55,044
Water	Water Service Worker I	\$ 46,080	\$ 51,048	\$ 56,016
Water	Billing Clerk	\$ 49,464	\$ 54,792	\$ 60,120
Water	Production Operator	\$ 57,744	\$ 63,966	\$ 70,188
Water	Production Operator	\$ 57,744	\$ 63,966	\$ 70,188
Water	Water Service Worker III	\$ 58,704	\$ 65,028	\$ 71,352
Water	Distribution Supervisor	\$ 74,724	\$ 82,776	\$ 90,828
Water	Production Supervisor	\$ 74,724	\$ 82,776	\$ 90,828

LPVCWD Salary Survey Data

2015 - 2016 Salaries Reported on CA State Controller Website <http://publicpay.ca.gov/> (Rounded to nearest \$500)

LA County Retail Water Districts and Public Retail Water Agencies within 15 Mile Radius

Agency	Position	Salary Start	Mid	Salary End
Water	Finance & Admin Manager	\$ 98,688	\$ 109,320	\$ 119,952
Water	AGM	\$ 114,048	\$ 126,336	\$ 138,624
Water	GM	\$ 129,420	\$ 143,364	\$ 157,308
South Montebello	Water Worker	\$ 48,000	\$ 48,000	\$ 48,000
South Montebello	Bookkeeper	\$ 48,800	\$ 48,800	\$ 48,800
South Montebello	Distribution Operator II	\$ 70,000	\$ 70,000	\$ 70,000
South Montebello	Compliance Officer	\$ 75,000	\$ 75,000	\$ 75,000
South Montebello	Corporate Secretary	\$ 84,459	\$ 84,459	\$ 84,459
South Montebello	Operations Supervisor	\$ 102,838	\$ 102,838	\$ 102,838
South Montebello	GM	\$ 128,475	\$ 128,475	\$ 128,475
South Pasadena	Water Utility I	\$ 40,000	\$ 44,500	\$ 49,000
South Pasadena	Water Utility II	\$ 43,000	\$ 47,500	\$ 52,000
South Pasadena	Management Aide	\$ 43,000	\$ 47,750	\$ 52,500
South Pasadena	Senior Account Clerk	\$ 43,000	\$ 47,750	\$ 52,500
South Pasadena	Accounting Technician	\$ 46,500	\$ 51,500	\$ 56,500
South Pasadena	Pump Operator	\$ 49,000	\$ 54,250	\$ 59,500
South Pasadena	Treatment Operator	\$ 49,000	\$ 54,250	\$ 59,500
South Pasadena	Sr. Treatment Operator	\$ 54,000	\$ 59,750	\$ 65,500
South Pasadena	Water Operations Manager	\$ 79,500	\$ 93,000	\$ 106,500
South Pasadena	Assistant Finance Director	\$ 92,000	\$ 107,500	\$ 123,000
Three Valleys	Project Manager	\$ 93,000	\$ 121,000	\$ 149,000
Valley County	Customer Service Rep I	\$ 42,168	\$ 48,744	\$ 55,320
Valley County	Utility Service Worker II	\$ 51,240	\$ 59,238	\$ 67,236
Valley County	Executive Assistant/Board Liaison	\$ 53,796	\$ 62,196	\$ 70,596
Valley County	Senior Accounting Technician	\$ 53,796	\$ 62,196	\$ 70,596
Valley County	Field Services Supervisor	\$ 56,508	\$ 65,322	\$ 74,136
Valley County	Treatment & Production Operator II	\$ 56,508	\$ 65,322	\$ 74,136
Valley County	Utility Service Supervisor	\$ 59,304	\$ 68,556	\$ 77,808
Valley County	Treatment & Production Supervisor	\$ 77,376	\$ 89,448	\$ 101,520
Valley County	Finance & Customer Service Manager	\$ 84,360	\$ 97,518	\$ 110,676
Valley County	Operations & Maintenance Manager	\$ 90,000	\$ 103,662	\$ 117,324
Valley County	GM	\$ 138,000	\$ 138,000	\$ 138,000
Walnut Valley	Admin Secretary	\$ 41,976	\$ 53,754	\$ 65,532
Walnut Valley	Accounts Clerk I	\$ 42,084	\$ 53,910	\$ 65,736
Walnut Valley	Utility Service Worker I	\$ 44,412	\$ 56,880	\$ 69,348
Walnut Valley	Utility Service Worker II	\$ 48,828	\$ 62,532	\$ 76,236
Walnut Valley	Pump Operator II	\$ 50,128	\$ 70,436	\$ 90,744
Walnut Valley	Utility Service Worker Lead	\$ 58,128	\$ 74,436	\$ 90,744
Walnut Valley	Senior Accountant	\$ 61,500	\$ 78,756	\$ 96,012
Walnut Valley	Production & Storage Lead	\$ 70,296	\$ 90,030	\$ 109,764
Walnut Valley	Customer Service Manager	\$ 80,172	\$ 102,468	\$ 124,764

LPVCWD Salary Survey Data

2015 - 2016 Salaries Reported on CA State Controller Website <http://publicpay.ca.gov/> (Rounded to nearest \$500)

LA County Retail Water Districts and Public Retail Water Agencies within 15 Mile Radius

Agency	Position	Salary Start	Mid	Salary End
Walnut Valley	Production Manager	\$ 81,000	\$ 103,000	\$ 125,000
Walnut Valley	Field Superintendent	\$ 90,204	\$ 115,284	\$ 140,364
Walnut Valley	Finance Manager	\$ 90,204	\$ 115,284	\$ 140,364
Walnut Valley	Director of Finance	\$ 109,752	\$ 140,262	\$ 170,772
Walnut Valley	AGM	\$ 133,584	\$ 170,736	\$ 207,888
Walnut Valley	GM	\$ 157,344	\$ 201,102	\$ 244,860
Western Municipal	Safety & Risk Manager	\$ 95,000	\$ 112,500	\$ 130,000
Whittier	Office Specialist	\$ 32,517	\$ 37,011	\$ 41,505
Whittier	Customer Service Clerk	\$ 36,794	\$ 41,874	\$ 46,953
Whittier	Water Utility Worker I/II	\$ 41,413	\$ 47,138	\$ 52,862
Whittier	Senior Water Utility Worker	\$ 47,690	\$ 54,277	\$ 60,863
Whittier	Water Treatment I/II	\$ 49,387	\$ 56,204	\$ 63,021
Whittier	Water Production Specialist	\$ 54,835	\$ 62,409	\$ 69,982
Whittier	Water Distribution Supervisor	\$ 68,798	\$ 79,115	\$ 89,432
Whittier	Water Production Supervisor	\$ 68,798	\$ 79,115	\$ 89,432
Whittier	Water Manager	\$ 97,406	\$ 112,013	\$ 126,620
Yorba Linda Water	Office Clerk	\$ 36,000	\$ 40,000	\$ 44,000
Yorba Linda Water	Customer Service Rep I	\$ 40,000	\$ 45,000	\$ 50,000
Yorba Linda Water	Customer Service Rep II	\$ 45,500	\$ 50,500	\$ 55,500
Yorba Linda Water	Maintenance Worker I	\$ 46,000	\$ 50,750	\$ 55,500
Yorba Linda Water	Operations Assistant	\$ 46,000	\$ 50,750	\$ 55,500
Yorba Linda Water	Maintenance Distribution Operator II	\$ 53,000	\$ 58,750	\$ 64,500
Yorba Linda Water	Accounting Assistant	\$ 55,500	\$ 61,500	\$ 67,500
Yorba Linda Water	Maintenance Distribution Operator III	\$ 61,000	\$ 67,750	\$ 74,500
Yorba Linda Water	Engineering Technician II	\$ 65,000	\$ 71,750	\$ 78,500
Yorba Linda Water	Sr. Maintenance Distribution Operator	\$ 71,000	\$ 78,500	\$ 86,000
Yorba Linda Water	Sr. Plant Operator	\$ 71,000	\$ 78,500	\$ 86,000
Yorba Linda Water	Customer Service Supervisor	\$ 74,500	\$ 82,750	\$ 91,000
Yorba Linda Water	Sr. Accountant	\$ 86,000	\$ 95,500	\$ 105,000
Yorba Linda Water	Water Maintenance Superintendent	\$ 86,000	\$ 95,500	\$ 105,000
Yorba Linda Water	Water Production Superintendent	\$ 90,500	\$ 100,250	\$ 110,000
Yorba Linda Water	Sr. Project Manager	\$ 105,000	\$ 116,250	\$ 127,500
Yorba Linda Water	Engineering Manager	\$ 121,000	\$ 134,250	\$ 147,500
Yorba Linda Water	Finance Manager	\$ 121,000	\$ 134,250	\$ 147,500
Yorba Linda Water	Operations Manager	\$ 121,000	\$ 134,250	\$ 147,500
Yorba Linda Water	GM	\$ 187,000	\$ 189,500	\$ 192,000

TABLE 3 - Salary Comparison

Project Engineer

Agency	Position	Salary Start	Mid	Salary End
South Montebello	Compliance Officer	\$ 75,000	\$ 75,000	\$ 75,000
Yorba Linda Water	Engineering Technician II	\$ 65,000	\$ 71,750	\$ 78,500
Norwalk	Assistant Engineer	\$ 67,500	\$ 76,250	\$ 85,000
East Valley Water	Associate Engineer	\$ 86,000	\$ 90,500	\$ 95,000
Long Beach	Civil Engineer Associate	\$ 70,500	\$ 83,250	\$ 96,000
La Mirada	Project Manager	\$ 79,500	\$ 89,250	\$ 99,000
Mission Springs	Engineering Projects Manager	\$ 80,000	\$ 91,500	\$ 103,000
Cucamonga	Associate Engineer	\$ 80,500	\$ 92,500	\$ 104,500
Azusa	Water System Engineer	\$ 86,500	\$ 95,750	\$ 105,000
Palmdale Water	Project Manager	\$ 87,000	\$ 96,500	\$ 106,000
Castaic Lake	Water Resource Planner	\$ 88,500	\$ 98,000	\$ 107,500
Citrus Heights Water	Project Manager	\$ 82,500	\$ 97,250	\$ 112,000
Rubidoux CS Dist.	Engineer Assistant	\$ 88,000	\$ 100,500	\$ 113,000
Eastern Municipal	Civil Engineer I	\$ 92,000	\$ 103,000	\$ 114,000
Rancho Ca WD	Associate Engineer	\$ 86,000	\$ 100,000	\$ 114,000
San Bernardino Valley Water	Project Manager	\$ 93,500	\$ 105,750	\$ 118,000
Las Virgenes	Senior Engineer	\$ 92,000	\$ 106,000	\$ 120,000
Las Virgenes	Associate Engineer	\$ 92,000	\$ 106,000	\$ 120,000
Eastern Municipal	Civil Engineer II	\$ 99,000	\$ 111,000	\$ 123,000
Calleguas	Project Manager	\$ 94,000	\$ 109,500	\$ 125,000
Rowland	Project Manager	\$ 121,000	\$ 126,000	\$ 131,000
Three Valleys	Project Manager	\$ 93,000	\$ 121,000	\$ 149,000

Min	\$ 65,000.00	\$ 71,750.00	\$ 75,000.00
Max	\$ 121,000.00	\$ 126,000.00	\$ 149,000.00
Average	\$ 86,318.18	\$ 97,556.82	\$ 108,795.45

CPI Adjust to 2017	\$ 89,339.32	\$ 100,971.31	\$ 112,603.30
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LPVCWD	Project Engineer & Compliance Officer	\$ 76,886	\$ 86,491.00	\$ 96,096.00
	% From Average	-11%	-11%	-12%

TABLE 4 - Salary Comparison

Water Treatment Supervisor

Agency	Position	Salary Start	Mid	Salary End
Downey	Water System Supervisor	\$ 60,479	\$ 67,702	\$ 74,924
Pico Water	Production Supervisor	\$ 67,932	\$ 73,758	\$ 79,584
Cresenta Valley	Supervisor Treatment/Production	\$ 61,848	\$ 72,424	\$ 83,000
Anaheim	Water Production Technician Supervisor	\$ 87,000	\$ 87,000	\$ 87,000
Whittier	Water Production Supervisor	\$ 68,798	\$ 79,115	\$ 89,432
San Gabriel County Water	Production Supervisor	\$ 74,724	\$ 82,776	\$ 90,828
Monterey Park	Water Production Supervisor	\$ 72,840	\$ 83,010	\$ 93,180
Chino Hills	Water Production Supervisor	\$ 77,000	\$ 85,250	\$ 93,500
El Monte	Water System Supervisor	\$ 95,000	\$ 95,000	\$ 95,000
Palmdale Water	Systems Supervisor	\$ 79,102	\$ 87,630	\$ 96,158
Long Beach	Water Treatment Supervisor	\$ 74,000	\$ 87,000	\$ 100,000
Valley County	Treatment & Production Supervisor	\$ 77,376	\$ 89,448	\$ 101,520
Rowland	Water System Supervisor	\$ 83,616	\$ 93,131	\$ 102,646
Azusa	Water Production Supervisor	\$ 86,787	\$ 96,139	\$ 105,490
Pomona	Water Production Supervisor	\$ 88,020	\$ 97,506	\$ 106,992
Pomona	Water Treatment & Quality Supervisor	\$ 88,020	\$ 97,506	\$ 106,992
Las Virgenes	Treatment & Production Supervisor	\$ 88,500	\$ 101,750	\$ 115,000
Monte Vista	Water Systems Supervisor	\$ 82,243	\$ 95,087	\$ 107,931
Castaic Lake	Production Supervisor	\$ 93,000	\$ 103,000	\$ 113,000
Rowland	Production Superintendent	\$ 100,416	\$ 111,846	\$ 123,276
Walnut Valley	Production Manager	\$ 81,000	\$ 103,000	\$ 125,000

Min	\$ 60,479.00	\$ 67,701.50	\$ 74,924.00
Max	\$ 100,416.00	\$ 111,846.00	\$ 125,000.00
Average	\$ 80,366.71	\$ 89,956.05	\$ 99,545.38

CPI Adjust to 2017	\$ 83,179.55	\$ 93,104.51	\$ 103,029.47
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LPVCWD	Production & Treatment Supervisor Current			
	Range	\$ 65,000	\$ 73,082.50	\$ 81,165.00
	% From Average	-22%	-22%	-21%

TABLE 5 - Salary Comparison

Cust Service & Accounting Super

Agency	Position	Salary Start	Mid	Salary End
Quartz Hill	Office Supervisor	\$ 60,700	\$ 64,832	\$ 68,964
Pico Water	Office Manager	\$ 66,348	\$ 70,470	\$ 74,592
La Canada Irrigation	Office Manager	\$ 78,552	\$ 78,552	\$ 78,552
La Palma	Accounting Supervisor	\$ 63,000	\$ 73,500	\$ 84,000
South Montebello	Corporate Secretary	\$ 84,459	\$ 84,459	\$ 84,459
Chino	Billing Manager	\$ 68,000	\$ 78,000	\$ 88,000
Alhambra	Customer Service Manager	\$ 68,160	\$ 78,426	\$ 88,692
Pasadena	Customer Service Supervisor	\$ 71,525	\$ 80,466	\$ 89,407
Yorba Linda Water	Customer Service Supervisor	\$ 74,500	\$ 82,750	\$ 91,000
Chino Hills	Accounting Supervisor	\$ 77,000	\$ 85,250	\$ 93,500
Chino Hills	Customer Service Supervisor	\$ 77,028	\$ 85,264	\$ 93,500
Newhall County	Accounting Manager	\$ 72,523	\$ 85,215	\$ 97,906
Orchardale Water	Admin of Dist. Services	\$ 79,776	\$ 93,341	\$ 106,906
Las Virgenes	Customer Service Supervisor	\$ 84,500	\$ 97,250	\$ 110,000
Valley County	Finance & Customer Service Manager	\$ 84,360	\$ 97,518	\$ 110,676
Rowland	Accounting/Customer Serv Manager	\$ 93,336	\$ 103,962	\$ 114,588
San Gabriel County Water	Finance & Admin Manager	\$ 98,688	\$ 109,320	\$ 119,952
South Pasadena	Assistant Finance Director	\$ 92,000	\$ 107,500	\$ 123,000
Walnut Valley	Customer Service Manager	\$ 80,172	\$ 102,468	\$ 124,764
Chino Hills	Assistant Finance Director	\$ 103,000	\$ 114,000	\$ 125,000
La Habra Heights	Office Manager	\$ 100,392	\$ 114,306	\$ 128,220
Pasadena	Customer Service Manager	\$ 108,000	\$ 122,000	\$ 136,000

Min	\$ 60,700	\$ 64,832	\$ 68,964
Max	\$ 108,000	\$ 122,000	\$ 136,000
Average	\$ 81,183	\$ 91,311	\$ 101,440

CPI Adjust to 2017	\$ 84,024.08	\$ 94,507.19	\$ 104,990.31
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LPVCWD	Customer Service & Accounting Supervisor			
	Current Salary Range	\$ 63,596	\$ 71,540	\$ 79,483
	% From Average	-24%	-24%	-24%

TABLE 6 - Salary Comparison

Water Distribution Supervisor

Agency	Position	Salary Start	Mid	Salary End
Valley County	Field Services Supervisor	\$ 56,508	\$ 65,322	\$ 74,136
Downey	Water System Supervisor	\$ 60,479	\$ 67,702	\$ 74,924
Monterey Park	Water Distribution Crew Supervisor	\$ 59,640	\$ 67,968	\$ 76,296
Alhambra	Utility Maintenance Supervisor	\$ 59,664	\$ 68,652	\$ 77,640
Newhall County	Field Services Supervisor	\$ 64,000	\$ 70,850	\$ 77,700
Newhall County	Water System Maintenance Supervisor	\$ 6,400	\$ 42,050	\$ 77,700
Valley County	Utility Service Supervisor	\$ 59,304	\$ 68,556	\$ 77,808
Kinneloa Irrigation District	Facilities Supervisor	\$ 59,000	\$ 70,067	\$ 81,134
Cresenta Valley	Distribution Supervisor	\$ 61,848	\$ 72,424	\$ 83,000
La Palma	Water Supervisor	\$ 62,500	\$ 72,750	\$ 83,000
Fullerton	Water Distribution Supervisor	\$ 68,569	\$ 75,958	\$ 83,346
Covina	Water Services Supervisor	\$ 64,847	\$ 74,865	\$ 84,883
Orchardale Water	Foreman	\$ 63,500	\$ 74,272	\$ 85,044
Cerritos	Water Supervisor	\$ 69,500	\$ 78,000	\$ 86,500
Azusa	Water Distribution Crew Supervisor	\$ 71,327	\$ 79,013	\$ 86,699
Long Beach	Water Utility Supervisor	\$ 58,920	\$ 73,710	\$ 88,500
Whittier	Water Distribution Supervisor	\$ 68,798	\$ 79,115	\$ 89,432
Pico Water	Field Superintendent	\$ 78,420	\$ 84,504	\$ 90,588
San Gabriel County Water	Distribution Supervisor	\$ 74,724	\$ 82,776	\$ 90,828
Norwalk	Water Utilities Supervisor	\$ 72,120	\$ 81,529	\$ 90,938
Las Virgenes	Senior Water Dist. Operator	\$ 67,000	\$ 79,750	\$ 92,500
Monterey Park	Water Distribution Supervisor	\$ 72,840	\$ 83,010	\$ 93,180
Chino Hills	Water Distribution Supervisor	\$ 77,000	\$ 85,500	\$ 94,000
El Monte	Water System Supervisor	\$ 95,000	\$ 95,000	\$ 95,000
Chino	Water Utilities Supervisor	\$ 74,000	\$ 85,000	\$ 96,000
Palmdale Water	Systems Supervisor	\$ 79,102	\$ 87,630	\$ 96,158
Buena Park	Water Services Superintendent	\$ 82,000	\$ 90,500	\$ 99,000
Anaheim	Utilities Service Supervisor	\$ 71,000	\$ 86,500	\$ 102,000
Rowland	Water System Supervisor	\$ 83,616	\$ 93,131	\$ 102,646
Rowland	Field Ops Supervisor	\$ 83,616	\$ 93,132	\$ 102,648
Yorba Linda Water	Water Maintenance Superintendent	\$ 86,000	\$ 95,500	\$ 105,000
Azusa	Water Distribution Supervisor	\$ 86,787	\$ 96,139	\$ 105,490
Pomona	Water Distribution Supervisor	\$ 88,020	\$ 97,506	\$ 106,992
Castaic Lake	Utility Maintenance Supervisor	\$ 92,000	\$ 102,500	\$ 113,000
Monte Vista	Maintenance Superintendent	\$ 82,243	\$ 95,087	\$ 107,931

Min	\$ 6,400.00	\$ 42,050.00	\$ 74,136.00
Max	\$ 95,000.00	\$ 102,500.00	\$ 113,000.00
Average	\$ 70,294.06	\$ 80,456.19	\$ 90,618.31

CPI Adjust to 2017	\$ 72,754.35	\$ 83,272.15	\$ 93,789.96
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LPVCWD

Distribution Supervisor Supervisor Current

Range	\$ 63,596	\$ 71,539.50	\$ 79,483.00
% From Average	-13%	-14%	-15%

TABLE 7 - Salary Comparison

Water Treatment Operator II

Agency	Position	Salary Start	Mid	Salary End
Palmdale Water	Operation Technician II	\$ 61,984	\$ 68,661	\$ 75,338
Palmdale Water	Plant Operator II	\$ 68,328	\$ 75,691	\$ 83,054
Alhambra	Pump Operator II	\$ 51,024	\$ 58,764	\$ 66,504
Walnut Valley	Pump Operator II	\$ 50,128	\$ 70,436	\$ 90,744
El Monte	Sr Shift Operator	\$ 54,495	\$ 60,360	\$ 66,225
Valley County	Treatment & Production Operator II	\$ 56,508	\$ 65,322	\$ 74,136
Newhall County	Water Production & Quality II	\$ 57,881	\$ 64,118	\$ 70,355
Arcadia	Water Production II	\$ 52,260	\$ 58,746	\$ 65,232
Azusa	Water Production II	\$ 59,161	\$ 65,536	\$ 71,910
Whittier	Water Production Specialist	\$ 54,835	\$ 62,409	\$ 69,982
Chino Hills	Water Quality Technician II	\$ 60,000	\$ 66,250	\$ 72,500
Downey	Water System Operator II	\$ 38,749	\$ 43,376	\$ 48,003
Glendora (2016)	Water System Operator II	\$ 43,293	\$ 47,958	\$ 52,623
Glendora (2016)	Water System Operator II	\$ 47,521	\$ 52,642	\$ 57,762
Pico Rivera	Water System Operator II	\$ 46,632	\$ 53,928	\$ 61,224
Monte Vista	Water System Operator II	\$ 54,849	\$ 63,409	\$ 71,968
Rowland	Water System Operator II	\$ 65,808	\$ 73,308	\$ 80,808
Whittier	Water Production Specialist	\$ 54,835	\$ 62,409	\$ 69,982
Chino Hills	Water Quality Technician II	\$ 60,000	\$ 66,250	\$ 72,500
Downey	Water System Operator II	\$ 38,749	\$ 43,376	\$ 48,003
Glendora (2016)	Water System Operator II	\$ 43,293	\$ 47,958	\$ 52,623
Glendora (2016)	Water System Operator II	\$ 47,521	\$ 52,642	\$ 57,762
Pico Rivera	Water System Operator II	\$ 46,632	\$ 53,928	\$ 61,224
Monte Vista	Water System Operator II	\$ 54,849	\$ 63,409	\$ 71,968
Rowland	Water System Operator II	\$ 65,808	\$ 73,308	\$ 80,808
Castaic Lake	Production Operator II	\$ 73,000	\$ 80,750	\$ 88,500
Long Beach	Water Treatment II	\$ 53,000	\$ 62,750	\$ 72,500

Min	\$ 38,749.00	\$ 43,376.00	\$ 48,003.00
Max	\$ 73,000.00	\$ 80,750.00	\$ 90,744.00
Average	\$ 54,116.41	\$ 61,395.94	\$ 68,675.48

CPI Adjust to 2017	\$ 56,010.48	\$ 63,544.80	\$ 71,079.12
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LPVCWD	Water Production and Treatment Operator II Current Range	\$ 56,115	\$ 63,123.50	\$ 70,132.00
	% From Average	0%	-1%	-1%

TABLE 8 - Salary Comparison

Water Distribution Lead Op

Agency	Position	Salary Start	Mid	Salary End
Quartz Hill	Crew Leader	\$ 68,515	\$ 72,114	\$ 75,712
Orchardale Water	Foreman	\$ 63,500	\$ 74,272	\$ 85,044
Glendora (2016)	Lead Maintenance Worker	\$ 48,349	\$ 53,559	\$ 58,768
Buena Park	Lead Water Service Technician	\$ 55,500	\$ 64,750	\$ 74,000
Rowland	Maintenance Crew Leader	\$ 71,160	\$ 79,266	\$ 87,372
Yorba Linda Water	Maintenance Distribution Operator III	\$ 61,000	\$ 67,750	\$ 74,500
La Canada Irrigation	Senior Distribution Operator	\$ 60,000	\$ 60,000	\$ 60,000
Chino Hills	Senior Maintenance Worker	\$ 46,500	\$ 51,750	\$ 57,000
Palmdale Water	Senior Systems Worker	\$ 65,083	\$ 72,093	\$ 79,102
Buena Park	Senior Water Service Technician	\$ 47,500	\$ 53,750	\$ 60,000
Whittier	Senior Water Utility Worker	\$ 47,690	\$ 54,277	\$ 60,863
Orchardale Water	Serviceman III	\$ 63,672	\$ 74,502	\$ 85,332
Anaheim	Sr. Utilities Services Rep	\$ 57,000	\$ 63,250	\$ 69,500
Monte Vista	Utility Crew Lead	\$ 57,595	\$ 66,581	\$ 75,566
Walnut Valley	Utility Service Worker Lead	\$ 58,128	\$ 74,436	\$ 90,744
La Habra Heights	Utility Worker III	\$ 66,024	\$ 75,168	\$ 84,312
Covina	Water Crew Leader	\$ 48,114	\$ 54,026	\$ 59,938
Brea	Water Distribution Crew Leader	\$ 64,000	\$ 73,000	\$ 82,000
Azusa	Water Distribution System Worker III	\$ 61,562	\$ 68,196	\$ 74,829
Covina	Water Foreman	\$ 58,217	\$ 65,377	\$ 72,536
La Habra City	Water Service Tech III	\$ 40,000	\$ 48,000	\$ 56,000
La Habra City	Water Service Tech IV	\$ 41,000	\$ 49,000	\$ 57,000
San Gabriel County Water	Water Service Worker III	\$ 58,704	\$ 65,028	\$ 71,352
Pomona	Water System Operator III	\$ 62,256	\$ 68,988	\$ 75,720
Pico Rivera	Water System Operator III	\$ 51,396	\$ 59,430	\$ 67,464
Monte Vista	Water System Operator III	\$ 61,900	\$ 71,562	\$ 81,224
Las Virgenes	Water Worker III	\$ 53,000	\$ 63,000	\$ 73,000
Pomona	Water Utility Crew Leader	\$ 53,724	\$ 59,508	\$ 65,292
Fullerton	Water Utility Lead Service Worker	\$ 46,877	\$ 53,352	\$ 59,827
Long Beach	Water Utility Mechanic III	\$ 48,500	\$ 57,250	\$ 66,000

Min	\$ 40,000.00	\$ 48,000.00	\$ 56,000.00
Max	\$ 71,160.00	\$ 79,266.00	\$ 90,744.00
Average	\$ 56,215.53	\$ 63,774.38	\$ 71,333.23

CPI Adjust to 2017	\$ 58,183.08	\$ 66,006.49	\$ 73,829.90
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LPVCWD

Lead Water Service Worker Current Range	\$ 56,115	\$ 63,123.50	\$ 70,132.00
% From Average	-4%	-4%	-5%

TABLE 9 - Salary Comparison

Water Treatment Operator I

Agency	Position	Salary Start	Mid	Salary End
Downey	Water System Operator I	\$ 38,749	\$ 43,376	\$ 48,003
Covina	Water Quality Tech	\$ 42,063	\$ 47,236	\$ 52,408
Pico Rivera	Water System Operator I	\$ 42,852	\$ 49,554	\$ 56,256
Covina	Water Pump Operator	\$ 46,310	\$ 52,006	\$ 57,701
Arcadia	Water Production I	\$ 47,340	\$ 53,226	\$ 59,112
Pomona	Water System Operator I	\$ 48,660	\$ 53,910	\$ 59,160
South Pasadena	Pump Operator	\$ 49,000	\$ 54,250	\$ 59,500
South Pasadena	Treatment Operator	\$ 49,000	\$ 54,250	\$ 59,500
El Monte	Shift Operator	\$ 50,000	\$ 55,000	\$ 60,000
Chino Hills	Water Quality Technician I	\$ 50,000	\$ 55,500	\$ 61,000
Chino	Water System Operator	\$ 50,000	\$ 55,500	\$ 61,000
Fullerton	Water Production Operator	\$ 49,224	\$ 56,037	\$ 62,849
Whittier	Water Treatment I/II	\$ 49,387	\$ 56,204	\$ 63,021
Chino	Water Quality Technician	\$ 53,000	\$ 59,000	\$ 65,000
Monterey Park	Water Production System Operator	\$ 51,468	\$ 58,656	\$ 65,844
Azusa	Water Production I	\$ 54,745	\$ 60,644	\$ 66,543
Palmdale Water	Operation Technician I	\$ 56,222	\$ 62,275	\$ 68,328
Pasadena	Water System Operator	\$ 56,198	\$ 62,326	\$ 68,454
Crescenta Valley	System Operator	\$ 51,900	\$ 60,708	\$ 69,516
San Gabriel County Water	Production Operator	\$ 57,744	\$ 63,966	\$ 70,188
Newhall County	Water Quality Technician	\$ 57,881	\$ 64,118	\$ 70,355
Rowland	Water System Operator I	\$ 56,940	\$ 63,954	\$ 70,968
Anaheim	Water Production Technician	\$ 66,000	\$ 70,000	\$ 74,000
Anaheim	Water System Operator	\$ 72,500	\$ 80,250	\$ 88,000
Anaheim	Utilities System Operator	\$ 93,000	\$ 101,000	\$ 109,000

Min	\$	38,749.00	\$	43,376.00	\$	48,003.00
Max	\$	93,000.00	\$	101,000.00	\$	109,000.00
Average	\$	53,607.32	\$	59,717.78	\$	65,828.24

CPI Adjust to 2017	\$	55,483.58	\$	61,807.90	\$	68,132.23
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LPVCWD	Water Production and Treatment						
	Operator I Current Range	\$	51,128	\$	57,513.00	\$	63,898.00
	% From Average		-8%		-7%		-6%

TABLE 10 - Salary Comparison

Water Distribution Op II

Agency	Position	Salary Start	Mid	Salary End
Downey	Water System Operator II	\$ 38,749	\$ 43,376	\$ 48,003
La Habra City	Water Service Tech II	\$ 35,500	\$ 42,750	\$ 50,000
Chino	Maintenance Worker II	\$ 42,000	\$ 46,500	\$ 51,000
Chino Hills	Maintenance Worker II	\$ 42,000	\$ 46,500	\$ 51,000
South Pasadena	Water Utility II	\$ 43,000	\$ 47,500	\$ 52,000
Glendora (2016)	Water System Operator II	\$ 43,293	\$ 47,958	\$ 52,623
Whittier	Water Utility Worker I/II	\$ 41,413	\$ 47,138	\$ 52,862
Long Beach	Water Utility Mechanic II	\$ 40,500	\$ 47,750	\$ 55,000
La Palma	Water Service Worker II	\$ 41,500	\$ 48,750	\$ 56,000
Pomona	Water Utility II	\$ 46,320	\$ 51,312	\$ 56,304
Pico Water	Water Maintenance II	\$ 46,860	\$ 52,248	\$ 57,636
Glendora (2016)	Water System Operator II	\$ 47,521	\$ 52,642	\$ 57,762
Alhambra	Utility Worker II	\$ 45,276	\$ 52,044	\$ 58,812
Azusa	Water Distribution II	\$ 49,220	\$ 54,524	\$ 59,828
Newhall County	Water System Worker II	\$ 49,856	\$ 55,228	\$ 60,600
Pico Rivera	Water System Operator II	\$ 46,632	\$ 53,928	\$ 61,224
Monte Vista	Utility Service Worker II	\$ 47,340	\$ 54,735	\$ 62,129
Yorba Linda Water	Maintenance Distribution Operator II	\$ 53,000	\$ 58,750	\$ 64,500
Cresenta Valley	Utility Worker II	\$ 48,312	\$ 56,532	\$ 64,752
Palmdale Water	Service Worker II	\$ 53,539	\$ 59,311	\$ 65,083
Brea	Water Distribution II	\$ 51,500	\$ 58,750	\$ 66,000
Valley County	Utility Service Worker II	\$ 51,240	\$ 59,238	\$ 67,236
La Habra Heights	Utility Worker II	\$ 53,712	\$ 61,146	\$ 68,580
Castaic Lake	Utility worker II	\$ 54,500	\$ 60,250	\$ 66,000
South Montebello	Distribution Operator II	\$ 70,000	\$ 70,000	\$ 70,000
Norwalk	Water Service Worker II	\$ 56,184	\$ 63,589	\$ 70,994
Monte Vista	Water System Operator II	\$ 54,849	\$ 63,409	\$ 71,968
Palmdale Water	Operation Technician II	\$ 61,984	\$ 68,661	\$ 75,338
Walnut Valley	Utility Service Worker II	\$ 48,828	\$ 62,532	\$ 76,236
Rowland	Maintenance II	\$ 63,264	\$ 70,470	\$ 77,676
Rowland	Water System Operator II	\$ 65,808	\$ 73,308	\$ 80,808

Min	\$ 35,500	\$ 42,750	\$ 48,003
Max	\$ 70,000	\$ 73,308	\$ 80,808
Average	\$ 49,474	\$ 55,833	\$ 62,192

CPI Adjust to 2017	\$ 51,205.79	\$ 57,787.29	\$ 64,368.79
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LPVCWD	Water Service Worker II Current Range	\$ 49,050	\$ 55,175	\$ 61,300
	% From Average	-4%	-5%	-5%

TABLE 11 - Salary Comparison

Water Distribution Op I

Agency	Position	Salary Start	Mid	Salary End
Chino	Maintenance Worker	\$ 42,000	\$ 46,500	\$ 51,000
Chino Hills	Maintenance Worker I	\$ 39,000	\$ 42,750	\$ 46,500
Yorba Linda Water	Maintenance Worker I	\$ 46,000	\$ 50,750	\$ 55,500
Cresenta Valley	Maintenance Worker I	\$ 45,588	\$ 53,745	\$ 61,902
Palmdale Water	Service Worker I	\$ 44,054	\$ 48,797	\$ 53,539
Orchardale Water	Serviceman I	\$ 42,792	\$ 50,070	\$ 57,348
Quartz Hill	Serviceman I	\$ 50,419	\$ 54,028	\$ 57,637
Monte Vista	Utility Service Worker I	\$ 41,000	\$ 47,500	\$ 54,000
Walnut Valley	Utility Service Worker I	\$ 44,412	\$ 56,880	\$ 69,348
La Habra Heights	Utility Worker I	\$ 44,376	\$ 50,532	\$ 56,688
Cresenta Valley	Utility Worker I	\$ 43,428	\$ 50,814	\$ 58,200
Brea	Water Distribution I	\$ 48,500	\$ 55,250	\$ 62,000
Chino	Water Distribution Operator	\$ 44,000	\$ 48,500	\$ 53,000
Pico Water	Water Maintenance I	\$ 40,596	\$ 44,958	\$ 49,320
La Habra City	Water Service Tech I	\$ 33,000	\$ 39,500	\$ 46,000
Buena Park	Water Service Technician	\$ 43,000	\$ 49,000	\$ 55,000
Fullerton	Water Service Worker	\$ 36,161	\$ 41,156	\$ 46,151
San Gabriel County Water	Water Service Worker I	\$ 46,080	\$ 51,048	\$ 56,016
Norwalk	Water Service Worker I	\$ 46,080	\$ 52,213	\$ 58,346
Chino	Water System Operator	\$ 50,000	\$ 55,500	\$ 61,000
Pasadena	Water System Operator	\$ 56,198	\$ 62,326	\$ 68,454
Anaheim	Water System Operator	\$ 72,500	\$ 80,250	\$ 88,000
Downey	Water System Operator I	\$ 38,749	\$ 43,376	\$ 48,003
Pico Rivera	Water System Operator I	\$ 42,852	\$ 49,554	\$ 56,256
Pomona	Water System Operator I	\$ 48,660	\$ 53,910	\$ 59,160
Rowland	Water System Operator I	\$ 56,940	\$ 63,954	\$ 70,968
Newhall County	Water System Worker I	\$ 42,943	\$ 47,571	\$ 52,198
South Pasadena	Water Utility I	\$ 40,000	\$ 44,500	\$ 49,000
Pomona	Water Utility I	\$ 42,000	\$ 46,500	\$ 51,000
Long Beach	Water Utility Mechanic I	\$ 38,500	\$ 45,500	\$ 52,500
Castaic Lake	Utility worker I	\$ 47,000	\$ 52,000	\$ 57,000
Whittier	Water Utility Worker I/II	\$ 41,413	\$ 47,138	\$ 52,862

Min \$ 33,000 \$ 39,500 \$ 46,000

Max \$ 72,500 \$ 80,250 \$ 88,000

Average \$ 44,945 \$ 50,815 \$ 56,684

CPI Adjust to 2017 \$ 46,518.11 \$ 52,593.15 \$ 58,668.20

LPVCWD Water Service Worker I Current Range \$ 42,401 \$ 47,695 \$ 52,989

% From Average -9% -9% -10%

TABLE 12 - Salary Comparison
Customer Support II

Agency	Position	Salary Start	Mid	Salary End
Chino	Account Clerk II	\$ 40,000	\$ 44,500	\$ 49,000
Brea	Account Technician II	\$ 47,000	\$ 53,500	\$ 60,000
Newhall County	Accounting Clerk II	\$ 47,436	\$ 52,548	\$ 57,659
Chino Hills	Admin Assistant II	\$ 50,000	\$ 55,500	\$ 61,000
Brea	Admin Clerk II	\$ 39,500	\$ 45,000	\$ 50,500
Quartz Hill	Administrative Clerk II	\$ 50,136	\$ 54,312	\$ 58,488
Newhall County	Customer Service Rep II	\$ 45,134	\$ 49,998	\$ 54,861
Yorba Linda Water	Customer Service Rep II	\$ 45,500	\$ 50,500	\$ 55,500
Anaheim	Customer Service Rep II	\$ 47,500	\$ 52,750	\$ 58,000
Covina	Office Assistant II	\$ 35,467	\$ 39,828	\$ 44,188
Las Virgenes	Customer Service Rep	\$ 46,500	\$ 55,250	\$ 64,000
Quartz Hill	Secretary II	\$ 52,800	\$ 58,146	\$ 63,492

Min	\$ 35,467	\$ 39,828	\$ 44,188
Max	\$ 52,800	\$ 58,146	\$ 64,000
Average	\$ 45,581	\$ 50,986	\$ 56,391

CPI Adjust to 2017	\$ 47,176	\$ 52,770	\$ 58,364
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LPVCWD	Billing Clerk II			
	Current Salary range	\$ 40,322	\$ 45,357	\$ 50,391
	% From Average	-15%	-14%	-14%

TABLE 13 - Salary Comparison

Customer Support I

Agency	Position	Salary Start	Mid	Salary End
Covina	Office Assistant I	\$ 29,696	\$ 33,345	\$ 36,993
Yorba Linda Water	Office Clerk	\$ 36,000	\$ 40,000	\$ 44,000
Chino	Account Clerk I	\$ 37,000	\$ 41,000	\$ 45,000
Buena Park	Office Assistant	\$ 36,000	\$ 40,500	\$ 45,000
Chino Hills	Office Assistant	\$ 38,000	\$ 41,750	\$ 45,500
Whittier	Customer Service Clerk	\$ 36,794	\$ 41,874	\$ 46,953
La Palma	Account Clerk	\$ 36,000	\$ 42,000	\$ 48,000
Buena Park	Account Clerk	\$ 38,500	\$ 43,500	\$ 48,500
South Montebello	Bookkeeper	\$ 48,800	\$ 48,800	\$ 48,800
Alhambra	Clerical Assistant	\$ 38,100	\$ 43,848	\$ 49,596
Yorba Linda Water	Customer Service Rep I	\$ 40,000	\$ 45,000	\$ 50,000
Pasadena	Customer Service Rep	\$ 40,310	\$ 45,334	\$ 50,357
Brea	Account Technician I	\$ 40,000	\$ 45,500	\$ 51,000
La Canada Irrigation	Accounting Clerk	\$ 51,000	\$ 51,000	\$ 51,000
Chino	Customer Service Rep	\$ 42,000	\$ 46,500	\$ 51,000
Pasadena	Office Assistant	\$ 41,000	\$ 46,063	\$ 51,126
Chino Hills	Admin Assistant I	\$ 43,000	\$ 47,750	\$ 52,500
San Gabriel County Water	Office Clerk	\$ 45,288	\$ 50,166	\$ 55,044
Valley County	Customer Service Rep I	\$ 42,168	\$ 48,744	\$ 55,320
Cerritos	Account Clerk	\$ 46,500	\$ 52,000	\$ 57,500
Orchardale Water	Customer Service Rep	\$ 43,908	\$ 51,378	\$ 58,848
San Gabriel County Water	Billing Clerk	\$ 49,464	\$ 54,792	\$ 60,120
Alhambra	Customer Service	\$ 48,636	\$ 55,992	\$ 63,348
Walnut Valley	Accounts Clerk I	\$ 42,084	\$ 53,910	\$ 65,736
Las Virgenes	Customer Service Rep	\$ 46,500	\$ 55,250	\$ 64,000
Anaheim	Customer Service Rep	\$ 54,500	\$ 60,250	\$ 66,000

Min	\$ 29,696	\$ 33,345	\$ 36,993
Max	\$ 54,500	\$ 60,250	\$ 66,000
Average	\$ 41,971	\$ 47,163	\$ 52,355

CPI Adjust to 2017	\$ 43,440	\$ 48,814	\$ 54,188
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LPVCWD	Billing Clerk I			
	Current Salary range	\$ 34,442	\$ 38,742	\$ 43,041
	% From Average	-21%	-21%	-21%

TABLE 14 – COMPARISON OF SALARY RANGE AVERAGE FOR SURVEYED POSITIONS TO PROPOSED SALARY RANGES (POSITIONS AS PROPOSED IN RESTRUCTURING)

La Puente Valley County Water District

Salary Schedule - Proposed Compared to Survey Average

Position	Time	Proposed		Survey Average		Difference (Current - Avg)		% Difference	
		Begin	End	Begin	End	Begin	End	Begin	End
General Manager	Annual	\$ 114,832	\$ 145,039	Not Surveyed	Not Surveyed	NA	NA	NA	NA
	Month	\$ 9,569	\$ 12,087	Not Surveyed	Not Surveyed	NA	NA		
	Hour	\$ 55.21	\$ 69.73	Not Surveyed	Not Surveyed	NA	NA		
Engineering & Compliance Manager	Annual	\$ 83,600	\$ 104,500	\$ 88,044	\$ 112,603	\$ (4,444)	\$ (8,103)	-5.3%	-7.8%
	Month	\$ 6,967	\$ 8,708	\$ 7,337	\$ 9,384	\$ (370)	\$ (675)		
	Hour	\$ 40.19	\$ 50.24	\$ 42.33	\$ 54.14	\$ (2.14)	\$ (3.90)		
Board Secretary / Office Admin.	Annual	NA	NA	Not Surveyed	Not Surveyed	NA	NA	NA	NA
	Month	NA	NA	Not Surveyed	Not Surveyed	NA	NA		
	Hour	NA	NA	Not Surveyed	Not Surveyed	NA	NA		
Office Manager	Annual	\$ 79,600	\$ 99,500	\$ 82,807	\$ 104,990	\$ (3,207)	\$ (5,490)	-4.0%	-5.5%
	Month	\$ 6,633	\$ 8,292	\$ 6,901	\$ 8,749	\$ (267)	\$ (458)		
	Hour	\$ 38.27	\$ 47.84	\$ 39.81	\$ 50.48	\$ (1.54)	\$ (2.64)		
Treatment & Supply Supervisor	Annual	\$ 79,600	\$ 99,500	\$ 81,973	\$ 103,029	\$ (2,373)	\$ (3,529)	-3.0%	-3.5%
	Month	\$ 6,633	\$ 8,292	\$ 6,831	\$ 8,586	\$ (198)	\$ (294)		
	Hour	\$ 38.27	\$ 47.84	\$ 39.41	\$ 49.53	\$ (1.14)	\$ (1.70)		
Water Distribution Supervisor	Annual	\$ 71,200	\$ 89,000	\$ 71,700	\$ 93,790	\$ (500)	\$ (4,790)	-0.7%	-5.4%
	Month	\$ 5,933	\$ 7,417	\$ 5,975	\$ 7,816	\$ (42)	\$ (399)		
	Hour	\$ 34.23	\$ 42.79	\$ 34.47	\$ 45.09	\$ (0.24)	\$ (2.30)		

Position	Time	Proposed		Survey Average		Difference (Current - Avg)		% Difference	
		Begin	End	Begin	End	Begin	End	Begin	End
Lead Water System Operator (Treatment)	Annual	\$ 64,800	\$ 81,000	\$ 63,159	\$ 83,559	\$ 1,641	\$ (2,559)	2.5%	-3.2%
	Month	\$ 5,400	\$ 6,750	\$ 5,263	\$ 6,963	\$ 137	\$ (213)		
	Hour	\$ 31.15	\$ 38.94	\$ 30.37	\$ 40.17	\$ 0.79	\$ (1.23)		
Lead Water System Operator (Distribution)	Annual	\$ 61,600	\$ 77,000	\$ 57,339	\$ 73,830	\$ 4,261	\$ 3,170	6.9%	4.1%
	Month	\$ 5,133	\$ 6,417	\$ 4,778	\$ 6,152	\$ 355	\$ 264		
	Hour	\$ 29.62	\$ 37.02	\$ 27.57	\$ 35.50	\$ 2.05	\$ 1.52		
Water System Operator II (WPTII)	Annual	\$ 57,600	\$ 72,000	\$ 55,198	\$ 71,079	\$ 2,402	\$ 921	4.2%	1.3%
	Month	\$ 4,800	\$ 6,000	\$ 4,600	\$ 5,923	\$ 200	\$ 77		
	Hour	\$ 27.69	\$ 34.62	\$ 26.54	\$ 34.17	\$ 1.15	\$ 0.44		
Water System Operator II (WDII)	Annual	\$ 57,600	\$ 72,000	\$ 54,679	\$ 68,132	\$ 2,921	\$ 3,868	5.1%	5.4%
	Month	\$ 4,800	\$ 6,000	\$ 4,557	\$ 5,678	\$ 243	\$ 322		
	Hour	\$ 27.69	\$ 34.62	\$ 26.29	\$ 32.76	\$ 1.40	\$ 1.86		
Water System Operator I (WPTI)	Annual	\$ 52,800	\$ 66,000	\$ 50,463	\$ 64,369	\$ 2,337	\$ 1,631	4.4%	2.5%
	Month	\$ 4,400	\$ 5,500	\$ 4,205	\$ 5,364	\$ 195	\$ 136		
	Hour	\$ 25.38	\$ 31.73	\$ 24.26	\$ 30.95	\$ 1.12	\$ 0.78		
Water System Operator I (WDI)	Annual	\$ 52,800	\$ 66,000	\$ 45,844	\$ 58,668	\$ 6,956	\$ 7,332	13.2%	11.1%
	Month	\$ 4,400	\$ 5,500	\$ 3,820	\$ 4,889	\$ 580	\$ 611		
	Hour	\$ 25.38	\$ 31.73	\$ 22.04	\$ 28.21	\$ 3.34	\$ 3.53		
Water System Maintenance Worker (WDI)	Annual	\$ 47,200	\$ 59,000	\$ 45,844	\$ 58,668	\$ 1,356	\$ 332	2.9%	0.6%
	Month	\$ 3,933	\$ 4,917	\$ 3,820	\$ 4,889	\$ 113	\$ 28		
	Hour	\$ 22.69	\$ 28.37	\$ 22.04	\$ 28.21	\$ 0.65	\$ 0.16		
Lead Customer Support & Accounting Clerk	Annual	\$ 50,400	\$ 63,000	\$ 48,757	\$ 62,696	\$ 1,643	\$ 304	3.3%	0.5%
	Month	\$ 4,200	\$ 5,250	\$ 4,063	\$ 5,225	\$ 137	\$ 25		
	Hour	\$ 24.23	\$ 30.29	\$ 23.44	\$ 30.14	\$ 0.79	\$ 0.15		
Customer Support & Accounting Clerk II	Annual	\$ 45,600	\$ 57,000	\$ 46,493	\$ 58,365	\$ (893)	\$ (1,365)	-2.0%	-2.4%
	Month	\$ 3,800	\$ 4,750	\$ 3,874	\$ 4,864	\$ (74)	\$ (114)		
	Hour	\$ 21.92	\$ 27.40	\$ 22.35	\$ 28.06	\$ (0.43)	\$ (0.66)		
Field Operations Assistant	Annual	NA	NA	NA	NA	NA	NA	NA	NA
	Month	NA	NA	NA	NA	NA	NA		
	Hour	NA	NA	NA	NA	NA	NA		
Assistant to the General Manager	Annual	NA	NA	NA	NA	NA	NA	NA	NA
	Month	NA	NA	NA	NA	NA	NA		
	Hour	NA	NA	NA	NA	NA	NA		
Customer Support & Accounting Clerk I	Annual	\$ 36,400	\$ 52,000	\$ 42,810	\$ 54,187	\$ (6,410.42)	\$ (2,187)	-17.6%	-4.2%
	Month	\$ 3,033	\$ 4,333	\$ 3,568	\$ 4,516	\$ (534.20)	\$ (182)		
	Hour	\$ 17.50	\$ 25.00	\$ 20.58	\$ 26.05	\$ (3.08)	\$ (1.05)		

TABLE 15 – NEW SALARY SCHEDULE FOR PROPOSED RESTRUCTURING

La Puente Valley County Water District

Salary Schedule - Proposed January 2018

Range	Position	Time	Proposed		
			Begin	Mid	End
GM	General Manager	Annual	\$ 114,832	\$ 129,936	\$ 145,039
		Month	\$ 9,569	\$ 10,828	\$ 12,087
		Hour	\$ 55.21	\$ 62.47	\$ 69.73
ECM	Engineering & Compliance Manager	Annual	\$ 83,600	\$ 94,050	\$ 104,500
		Month	\$ 6,967	\$ 7,838	\$ 8,708
		Hour	\$ 40.19	\$ 45.22	\$ 50.24
OM	Office Manager	Annual	\$ 79,600	\$ 89,550	\$ 99,500
		Month	\$ 6,633	\$ 7,463	\$ 8,292
		Hour	\$ 38.27	\$ 43.05	\$ 47.84
WTS	Water Treatment & Supply Supervisor	Annual	\$ 79,600	\$ 89,550	\$ 99,500
		Month	\$ 6,633	\$ 7,463	\$ 8,292
		Hour	\$ 38.27	\$ 43.05	\$ 47.84
WDS	Water Distribution Supervisor	Annual	\$ 71,200	\$ 80,100	\$ 89,000
		Month	\$ 5,933	\$ 6,675	\$ 7,417
		Hour	\$ 34.23	\$ 38.51	\$ 42.79
OA	Board Secretary / Office Administrator (range only valid through 2018)	Annual	\$ 64,962	\$ 73,483	\$ 82,003
		Month	\$ 5,414	\$ 6,124	\$ 6,834
		Hour	\$ 31.23	\$ 35.33	\$ 39.42
LWT	Lead Water System Operator (Treatment)	Annual	\$ 64,800	\$ 72,900	\$ 81,000
		Month	\$ 5,400	\$ 6,075	\$ 6,750
		Hour	\$ 31.15	\$ 35.05	\$ 38.94
LWD	Lead Water System Operator (Distribution)	Annual	\$ 61,600	\$ 69,300	\$ 77,000
		Month	\$ 5,133	\$ 5,775	\$ 6,417
		Hour	\$ 29.62	\$ 33.32	\$ 37.02
WSOII	Water System Operator II	Annual	\$ 57,600	\$ 64,800	\$ 72,000
		Month	\$ 4,800	\$ 5,400	\$ 6,000
		Hour	\$ 27.69	\$ 31.15	\$ 34.62
WSOI	Water System Operator I	Annual	\$ 52,800	\$ 59,400	\$ 66,000
		Month	\$ 4,400	\$ 4,950	\$ 5,500
		Hour	\$ 25.38	\$ 28.56	\$ 31.73
WMW	Water System Maintenance Worker	Annual	\$ 47,200	\$ 53,100	\$ 59,000
		Month	\$ 3,933	\$ 4,425	\$ 4,917
		Hour	\$ 22.69	\$ 25.53	\$ 28.37
LCS	Lead Customer Support & Accounting Clerk	Annual	\$ 50,400	\$ 56,700	\$ 63,000
		Month	\$ 4,200	\$ 4,725	\$ 5,250
		Hour	\$ 24.23	\$ 27.26	\$ 30.29
CSII	Customer Support & Accounting Clerk II	Annual	\$ 45,600	\$ 51,300	\$ 57,000
		Month	\$ 3,800	\$ 4,275	\$ 4,750
		Hour	\$ 21.92	\$ 24.66	\$ 27.40
CSI	Customer Support & Accounting Clerk I	Annual	\$ 36,400	\$ 44,200	\$ 52,000
		Month	\$ 3,033	\$ 3,683	\$ 4,333
		Hour	\$ 17.50	\$ 21.25	\$ 25.00

TABLE 16 – PERCENTAGE OF STAFF TIME (2014 – 2017) FOR WORK RELATED TO THE DISTRICT, CIWS AND BPOU

Departments	LPVCWD %	CIWS %	BPOU %	Average Annual Hours
Administrative (Management)	57%	37%	5%	2,230
Administrative (Board, Cust. Service, Accounting)	61%	33%	5%	8,744
Compliance & Engineering	65%	19%	16%	2,188
Distribution	49%	44%	7%	31,076
Treatment & Production	26%	17%	57%	10,406
Staff Combined	50%	35%	14%	54,644

TABLE 17 – ANALYSIS OF FISCAL IMPACT FROM STAFF RESTRUCTURING

Entity	Salary & OT	Payroll Taxes	Pension (Pers)	Total	% Change from previous year
District 2017	\$ 485,500	\$ 47,400	\$ 73,900	\$ 606,800	6.6%
District 2018	\$ 550,621	\$ 64,904	\$ 63,043	\$ 678,568	11.8%
District 2019	\$ 536,436	\$ 64,720	\$ 69,650	\$ 670,806	-1.1%
District 2020	\$ 528,624	\$ 66,662	\$ 71,740	\$ 667,026	-0.6%
District 2021	\$ 544,483	\$ 68,662	\$ 73,892	\$ 687,037	3.0%
CIWS 2017	\$ 403,100	\$ 29,000	\$ 51,600	\$ 483,700	3.4%
CIWS 2018	\$ 410,987	\$ 29,714	\$ 56,532	\$ 497,233	2.8%
CIWS 2019	\$ 419,644	\$ 30,235	\$ 62,590	\$ 512,469	3.1%
CIWS 2020	\$ 431,627	\$ 31,095	\$ 63,057	\$ 525,779	2.6%
CIWS 2021	\$ 444,575	\$ 32,028	\$ 64,949	\$ 541,552	3.0%
BPOU 2017	\$ 160,413	\$ 12,659	\$ 24,793	\$ 197,865	13.6%
BPOU 2018	\$ 164,695	\$ 12,997	\$ 25,455	\$ 203,147	2.7%
BPOU 2019	\$ 142,213	\$ 11,215	\$ 23,011	\$ 176,439	-13.1%
BPOU 2020	\$ 134,973	\$ 10,635	\$ 22,287	\$ 167,895	-4.8%
BPOU 2021	\$ 139,697	\$ 11,007	\$ 23,067	\$ 173,772	3.5%
PVOU 2016	\$ -	\$ -	\$ -	\$ -	
PVOU 2017	\$ 20,000	\$ 1,499.50	\$ 163.27	\$ 21,663	
PVOU 2018	\$ 30,790	\$ 2,308	\$ 3,352	\$ 36,451	68.3%
PVOU 2019	\$ 108,145	\$ 8,441	\$ 17,587	\$ 134,173	268.1%
PVOU 2020	\$ 178,465	\$ 14,065	\$ 29,085	\$ 221,616	65.2%
PVOU 2021	\$ 184,712	\$ 14,558	\$ 30,103	\$ 229,373	3.5%
Combined 2016	\$ 1,004,556	\$ 78,002	\$ 128,216	\$ 1,210,774	
Combined 2017	\$ 1,069,013	\$ 90,559	\$ 150,456	\$ 1,310,028	8.2%
Combined 2018	\$ 1,157,093	\$ 109,924	\$ 148,382	\$ 1,415,400	8.0%
Combined 2019	\$ 1,206,437	\$ 114,612	\$ 172,839	\$ 1,493,887	5.5%
Combined 2020	\$ 1,273,690	\$ 122,457	\$ 186,170	\$ 1,582,317	5.9%
Combined 2021	\$ 1,313,467	\$ 126,254	\$ 192,012	\$ 1,631,734	3.1%

**Updated and New Job Descriptions are provided as Exhibit B and Exhibit C to
Resolution No. 250**



EXHIBIT B

New Job Descriptions



JOB DESCRIPTION

OFFICE MANAGER

Date: January 1, 2018

Reports to: General Manager

Supervises: Customer Support & Accounting Staff

FLSA: Exempt

Salary Range: OM

DEFINITION

Under general/administrative direction, the Office Manager plans, organizes, and directs the customer service and accounting functions of the District and performs a variety of highly responsible administrative, secretarial and clerical duties in support of District's Board of Directors; assists the General Manager with the protection of District assets and the maintenance of budget controls.

EXAMPLES OF ESSENTIAL DUTIES

The following are duties performed by employees in this class. Duties listed are not meant to be all-inclusive. Other duties may be required as assigned.

- Plan, prioritize and supervise accounting, billing, data processing, and customer service and collection activities.
- Oversees and participates in processing customer accounts, preparing and recording changes in service, closing of customer accounts, completing new customer account information and closing of customer accounts.
- Performs the District's accounting functions for revenues, expenditures, capital, and reserves. Maintains cash receipts, cash disbursements journal, and the general ledger. Tracks the District's checking account and investment account activities.
- Maintains the District's accounting system (currently in QuickBooks) in accordance with approved accounting standards, policies and procedures.
- Accounts Receivable- Prepares accurate and timely billings to the District's wholesale municipal and industrial customers, District's reimbursable activities and the District's retail customers in accordance with the approved District Ordinances and contracts.
- Accounts Payable- Prepares and processes payments to District creditors in accordance with approved policies and procedures.
- Reviews, verifies and processes employee time reports; calculated and processes payroll; prepares payroll register, payments, and processes related reports.
- Prepares monthly financial reports to track actual revenues and expenditures versus the approved annual budget.
- Maintains a system of internal controls in accordance with the generally accepted accounting standards and in accordance with the recommendations from the District's auditors.

- Perform human resource functions, including: recruitment, classification, benefits administration, retirement system, training and development, personnel records, employee programs and events and Workers' Compensation.
- Assists the Secretary to the District's elected Board of Directors, with performing statutory duties in accordance with the California Water Code.
- Assists with the preparation of minutes, agenda packets, reports, and supporting documents, posts agendas and meeting notices in accordance with Brown Act requirements.
- Creates and maintains the event calendars; coordinates, arranges and confirms meetings.
- Plans, organizes, directs and evaluates the performance of assigned staff; establishes performance requirements and personal development targets; regularly monitors performance and provides coaching for performance improvement and development; recommends compensation and provides other rewards to recognize performance; subject to management concurrence, takes disciplinary actions to address performance deficiencies, in accordance with District personnel rules and policies.
- Serves as travel coordinator for Board of Directors and District staff; receives requests for business and conference travel; makes travel arrangements in accordance with District policies and procedures; prepares and processes conference registrations; prepares travel itineraries; examines supporting documentation, and ensures that District funds are used in accordance with the District's established policies and procedures.
- Responsible for maintaining permanent records of the District including; maintaining the District's ordinances and resolutions; maintaining meeting notices, personnel records; financial records, human resources correspondences, and other pertinent records.
- Assists in the preparation of staff reports, personnel policies and procedures, and other policies of the District and special projects as assigned.
- Accomplish assigned duties using safe work practices.
- Attends Board of Director meetings as directed by the General Manager.
- Establish and maintain cooperative working relationships with co-workers, outside agencies, and the public.

OTHER DUTIES

- Serves as a liaison with vendors, contractors, and debtors.
- Coordinates details of outside audits of District financial records.
- Provides advice and consultation on the development of District financial resources, programs, and policies.
- Communicates with customers, face-to-face and via the telephone, to discuss and resolve problems and concerns.
- Performs other duties as assigned.

JOB STANDARDS / SPECIFICATIONS

Knowledge of:

- Principles and practices of budgeting, accounting, finance, and the development and maintenance of fiscal controls.

- Laws, rules, ordinances, and legislative processes controlling District financial functions and operations.
- Principles and practices of auditing.
- Computerized management information and fiscal systems.
- Organization and functions of local government agencies, including public utilities.
- Rules, regulations applicable to the noticing and conduct of public meetings and related recording requirements.
- Principles and practices of public human resources administration.
- Cost estimating and contract administration.
- Theory and methods of data processing systems.
- Proper supervisory methods and techniques.
- Modern office practices and procedures and the operation of standard office equipment.
- Proper work safety standards.

Ability to:

- Plan, coordinate, and perform professional accounting work related to the maintenance and development of District financial, accounting, budgeting, and management information systems.
- Assist with District budget development and fiscal controls.
- Maintain and update ledgers and journals.
- Supervise, train and evaluate staff.
- Interpret, analyze, and apply Federal, State, and local laws and regulations pertaining to the administration of office support functions.
- Analyze situations and make sound recommendations in support of District goals.
- Develop and implement policies and procedures relating to District office support functions.
- Organize data, maintain records, and prepare reports.
- Review and comprehend technical financial information.
- Utilize computer systems and software packages.
- Identify and effectively train subordinate staff.
- Operate PCs, business office machines and data entry terminals.
- Deal tactfully and courteously with customer inquiries.
- Prepare financial reports.
- Establish and maintain cooperative relationships with those contacted during the course of work.

TYPICAL PHYSICAL ACTIVITIES

- Work at a desk for an extended period of time.
- May include but not limited to standing, climbing, walking, lifting, bending, pulling and/or pushing, grasping, reaching, stooping and crouching, sitting, typing, walking, reading, writing, color determination, speaking and listening for extended periods of time.
- Travels by automobile in conducting District business.
- Work in an office environment, lift and move objects up to 15 pounds such as large binders, books, and small office equipment.

- Sufficient finger/hand coordination and dexterity to operate and adjust office equipment.
- Regularly uses a telephone for communication.
- Use office equipment such as computers, copiers, and FAX machines.
- Sits for extended time periods.
- Hearing and vision within normal ranges with or without correction.

ENVIRONMENTAL FACTORS

- Exposure to the sun: 10% or less work time spent outside a building and exposed to the sun.
- Irregular or extended work hours: Occasionally required to change working hours or work overtime.

DESIRABLE QUALIFICATIONS

Any combination of education and experience that would likely provide the necessary knowledge and abilities is qualifying.

A typical way to obtain the knowledge and abilities would be:

Experience: Seven years of increasingly responsible experience in, accounting, financial analysis, budgeting and utility customer services utilizing computerized customer file systems, including at least two years in a management or supervisory capacity.

Education: High school diploma or equivalent with college level course work relevant to the position. A Bachelor's degree in Business Administration, Finance, Accounting, or closely related field from an accredited college or university is highly desirable; bilingual (English – Spanish) is also desirable.

LICENSE CERTIFICATE REGISTRATION REQUIREMENTS

Possession of a valid California Class C Driver License is required at the time of appointment.

Failure to obtain or maintain such required license may be cause for disciplinary action.

The District may allow an appropriate amount of time of obtain required certifications.

I have reviewed this Job Description for the Office Manager with the General Manager and agree with its contents.

Employee Signature

Date

General Manager Signature

Date

The specific statements shown in each section of this job description are not intended to be all-inclusive. They represent typical elements and criteria necessary to successfully perform the job.



JOB DESCRIPTION

LEAD WATER SYSTEM OPERATOR (TREATMENT)

Date: January 1, 2018

**Reports to: Water Treatment & Supply Supervisor and Water Distribution Supervisor
(Dependent upon assignment)**

FLSA: Non- Exempt

Salary Range: LWT

Other: Safety Sensitive Position

DEFINITION

Reporting to the Water Treatment & Supply Supervisor, the Lead Water System Operator is responsible for the operations and maintenance of the treatment plant(s), well field(s), booster stations, flow control valves, and chemical feed systems. Responsibilities also include, regulatory compliance, water quality monitoring, backflow device inspection, customer service, and perform other work as required. This is a Journeyman position. This position will serve as a "Shift Operator" for water treatment and water distribution activities as defined in California Code of Regulations, Title 22, Chapter 13, Operator Certification.

EXAMPLES OF ESSENTIAL DUTIES

The following are duties performed by employees in this class. Duties listed are not meant to be all-inclusive. Other duties may be required as assigned.

- Shift operator for groundwater treatment plant(s). Performs activities related to water system maintenance, disinfection, chemical feed, water quality, water supply, and production.
- Establish and maintain cooperative working relationships with co-workers, outside agencies, and the public.
- Analyzes and evaluates equipment, troubleshoots malfunctions and monitors water supply operations for the entire water system within the District.
- Performs skilled and semi-skilled work in the operation of water supply facilities.
- Performs treatment and production rounds on a daily basis.
- Responsible for the collection of water quality samples as applicable for distribution, source and treatment processes.
- Responsible for the daily entries of the computerized monthly pumping treatment plant reports for each plant facility and submittal of report at month end.
- Operates and maintains plant equipment including computer control system, alarm signals, chemical feed systems, and filter systems.
- Make adjustments in plant operation as needed due to seasonal changes, quality changes, maintenance schedules, or special programs/circumstances. Installs, inspects, operates, and provides ongoing maintenance and repair of water supply systems, equipment, chemical feed systems, and facilities.

- Accomplish assigned duties using safe work practices.
- Trains and instructs less experienced employees on work procedures, standards and safety related programs
- Demonstrates a working knowledge and understanding of all safety practices for handling liquid and gaseous chemicals.
- Answer customer service calls.
- Oversees backflow, bacteriological and water quality reports and other duties as assigned.
- Adheres to the policies, procedures, and standards related to maintenance and operations.
- Ensures compliance with requirements and standards
- Operates a Supervisory Control and Data Acquisition (SCADA) system.
- Perform best management practices for water system releases.
- Respond to water distribution, production and treatment system emergencies.
- Perform related duties as assigned.
- Performs after hour on-call duties for water production and treatment system related calls.

OTHER DUTIES

- Performs repairs and maintenance on water distribution facilities (e.g., waterline repair, valve maintenance, fire hydrant testing and maintenance, flushing).
- Responds to customer service inquiries.
- Performs other duties as assigned.

JOB STANDARDS / SPECIFICATIONS

Knowledge of:

- Principles, methods and tools employed in water production facilities, pumps, and motors.
- Demonstrated knowledge, skill and experience with water supply, water quality, water systems maintenance, processes, including disinfection, pump/plant maintenance, and lubrication.
- Methods, materials, and equipment used in water system installation, maintenance, and repair work.
- Installation, maintenance, repair, and testing of water meters and water service lines.
- Demonstrates a working knowledge and understanding of all safety practices for handling liquid and gaseous chemicals.
- Work safety standards and regulations.
- District policies, rules, regulations, and procedures.
- Database applications related to maintenance, operations, and construction.
- Recordkeeping practices and procedures.
- Office practices and procedures and the operation of standard office equipment.
- Proper supervisory methods and techniques.
- Legal requirements for state and federal bacteriological and other water quality reports.

Ability to:

- Stand, climb, walk, lift, bend, pull and/or push, grasp, reach, stoop and crouch, sit, type, read, write, color determination, speak and listen for extended periods of time.
- Must be able to work standby shifts and respond to routine and emergency after-hour calls.
- Perform a variety of maintenance work at water treatment plants, pumping stations, and associated facilities.
- Perform mechanical and electrical repairs
- Operate PCs.
- Maintain and update plant and maintenance records and logs.
- Operate motor vehicles and power-driven equipment used in water service work.
- Perform skilled installation, servicing, and repair of meters and service lines.
- Read and interpret water distribution maps, plans and As-Builts.
- Establish and maintain cooperative relationships with those contacted during the course of work.
- Deal tactfully and courteously with the public.
- Communicate clearly and concisely, both orally and in writing.

TYPICAL PHYSICAL ACTIVITIES

- Must be able to carry, push, pull, reach, and lift equipment and parts weighing up to 65 pounds.
- Stoops, kneels, crouches, crawls, and climbs during field maintenance and repair work.
- Works in an environment with exposure to dust, dirt, and significant temperature changes between cold and heat.
- Communicates orally with District staff in face-to-face, one-to-one settings.
- Operates District vehicles and various equipment.
- Regularly uses a telephone and radio for communication.
- Uses office equipment such as computer terminals and copiers.
- Stands and walks for extended time periods.
- Hearing and vision within normal ranges with or without correction.

ENVIRONMENTAL FACTORS

- Exposure to the sun: 50% to 100% work time spent outside a building and exposed to the sun.
- Work above floor level: Some work done on ladders or other surfaces from 4 to 12 feet above the ground.
- High temp: Considerable work time spent in high temperatures.
- Low temp: Considerable work time spent in low temperatures.
- Wetness: More than 10% of the work time getting part or all of the body and/or clothing wet.
- Noise: Occasionally there are unusually loud sounds.
- Slippery surfaces: Occasional work on unusually slippery surfaces.
- Dust: Works in or around areas with minor amounts of dust.
- Oil: Some parts of the body in contact with oil or grease occasionally.

- Irregular or extended work hours: Occasionally required to change working hours or work overtime.

DESIRABLE QUALIFICATIONS

- Any combination of education and experience that would likely provide the necessary knowledge and abilities is qualifying.
- A typical way to obtain the knowledge and abilities would be:
- Experience: Seven years of responsible work experience in performing water treatment operations and water supply facility operations, with at least two years of experience in a lead or supervisory capacity.
- Training/Education: High school graduation, or satisfactory equivalent, preferably supplemented by college level course work in water supply, water treatment, supervision, public administration, construction management or related subjects.

LICENSE CERTIFICATE REGISTRATION REQUIREMENTS

- Valid California Class C Driver License is required at the time of appointment.
- Grade III Water Treatment Operator Certificate issued by the California Water Resources Control Board. Grade IV Water Treatment Operator Certificate preferred. Ability to obtain a Grade IV within 18 months upon notification of this requirement.
- Grade III Water Distribution Operator certificate issued by the California Water Resources Control Board. Grade IV Water Distribution Operator Certificate preferred.
- AWWA Cross-Connection Control Specialist Certificate.
- Cal OSHA 10 Hour Construction Safety (certificate of course completion).

Failure to obtain or maintain such required license(s) may be cause for disciplinary action.

The District may allow an appropriate amount of time to obtain required certifications, as specified and agreed upon at the time of assuming position.

I have reviewed the Job Description for Lead Water System Operator (Treatment) with the General Manager and agree with its contents.

Employee Signature Date

General Manager Signature Date

The specific statements shown in each section of this job description are not intended to be all- inclusive. They represent typical elements and criteria necessary to successfully perform the job.



JOB DESCRIPTION

LEAD WATER SYSTEM OPERATOR (DISTRIBUTION)

Date: January 1, 2018

**Reports to: Water Distribution Supervisor & Water Treatment & Supply Supervisor
(Dependent upon assignments)**

FLSA: Non- Exempt

Salary Range: LWD

Other: Safety Sensitive Position

DEFINITION

Reporting to the Water Distribution Supervisor and under general supervision, perform the full range of operation, maintenance, installation, and repair assignments with minimal supervision and training and provide coordination and work direction for a field crew and training for less experienced staff. This position will serve as a "Shift Operator" for water treatment and water distribution activities as defined in California Code of Regulations, Title 22, Chapter 13, Operator Certification.

EXAMPLES OF ESSENTIAL DUTIES

The following are duties performed by employees in this class. Duties listed are not meant to be all-inclusive. Other duties may be required as assigned.

- Oversee and participate in performing a variety of duties associated with the installation, maintenance, and repair of the water distribution system including: main line repair, service line installation, replacement, and repair; main line valve installation, replacement and repair; water main line flushing; pipe cutting; line tapping; water meter installation, replacement, reading, repair and testing; and main line and hydrant valve turning and flushing.
- Operate a variety of tools and equipment including backhoes, dump trucks, jackhammers, pavement saws, compressors, pneumatic tools, and hand and power tools.
- Provides work direction and training to field maintenance, repair, and installation crew.
- Verify the work of assigned staff for accuracy, proper work methods, techniques, and compliance with applicable standards and specifications.
- Maintain safe traffic control around work areas in accordance to the latest edition of the Work Area Traffic Control Handbook (WATCH) and/or other traffic standards.
- Perform best management practices for water system releases.
- Shift operator for groundwater treatment plant(s). Performs activities related to water system maintenance, disinfection, chemical feed, water quality, water supply, and production.
- Operates a Supervisory Control and Data Acquisition (SCADA) system.

- Establish and maintain cooperative working relationships with co-workers, outside agencies, and the public.
- Trains and instructs less experienced employees on work procedures, standards and safety related programs
- Answer customer service calls.
- Respond to water distribution, production and treatment system emergencies.
- Performs after hour on-call duties for water production and treatment system related calls.
- Perform related duties as assigned.

OTHER DUTIES

- Performs other duties as assigned.

JOB STANDARDS / SPECIFICATIONS

Knowledge of:

- Methods, materials, and equipment used in water system installation, maintenance, and repair work.
- Installation, maintenance, repair, and testing of water meters and water service lines.
- Methods, materials, equipment used in basic plant facilities maintenance work.
- Demonstrated knowledge, skill and experience with water supply, water quality, water systems maintenance, processes, including disinfection, pump/plant maintenance, and lubrication.
- Demonstrates a working knowledge and understanding of all safety practices for handling water treatment chemicals.
- District policies and procedures related to services and public interaction.
- Principles and practices of work direction, coordination, and training.
- Work safety standards and regulations.
- Recordkeeping practices and procedures.

Ability to:

- Perform skilled installation, servicing, and repair of meters and service lines.
- Stand, climb, walk, lift, bend, pull and/or push, grasp, reach, stoop and crouch, sit, type, read, write, color determination, speak and listen for extended periods of time.
- Read and interpret water distribution maps, plans and As-Builts.
- Provide work direction, coordination, and training for other staff.
- Deal tactfully and courteously with the public.
- Perform a variety of maintenance work at water treatment plants, pumping stations, and associated facilities.
- Establish and maintain cooperative relationships with those contacted during the course of work.
- Maintain and update plant and maintenance records and logs.
- Operate a variety of equipment, including but not limited to a backhoe.
- Operate PCs.
- Operate motor vehicles and power-driven equipment used in water service work.
- Communicate clearly and concisely, both orally and in writing.

- Must be able to work standby shifts and respond to routine and emergency after-hour calls.

TYPICAL PHYSICAL ACTIVITIES

- Must be able to carry, push, pull, reach, and lift equipment and parts weighing up to 65 pounds.
- Stoops, kneels, crouches, crawls, and climbs during field maintenance and repair work.
- Works in an environment with exposure to dust, dirt, and significant temperature changes between cold and heat.
- Communicates orally with District staff in face-to-face, one-to-one settings.
- Operates District vehicles and various equipment.
- Regularly uses a telephone and radio for communication.
- Uses office equipment such as computer terminals and copiers.
- Stands and walks for extended time periods.
- Hearing and vision within normal ranges with or without correction.

ENVIRONMENTAL FACTORS

- Exposure to the sun: 50% to 100% work time spent outside a building and exposed to the sun.
- Work above floor level: Some work done on ladders or other surfaces from 4 to 12 feet above the ground.
- High temp: Considerable work time spent in high temperatures.
- Low temp: Considerable work time spent in low temperatures.
- Wetness: More than 10% of the work time getting part or all of the body and/or clothing wet.
- Noise: Occasionally there are unusually loud sounds.
- Slippery surfaces: Occasional work on unusually slippery surfaces.
- Dust: Works in or around areas with minor amounts of dust.
- Oil: Some parts of the body in contact with oil or grease occasionally.
- Irregular or extended work hours: Occasionally required to change working hours or work overtime.

DESIRABLE QUALIFICATIONS

- Any combination of education and experience that would likely provide the necessary knowledge and abilities is qualifying.
- A typical way to obtain the knowledge and abilities would be:
- Experience: Five years of responsible work experience in the installation, maintenance, and repair of water systems, including some experience with field customer relations and performing water treatment operations and water supply facility operations, with at least one year of experience in a lead capacity.
- Training/Education: High school graduation, or satisfactory equivalent, preferably supplemented by college level course work in water supply, water treatment, supervision, public administration, construction management or related subjects.

LICENSE CERTIFICATE REGISTRATION REQUIREMENTS

- Valid California Class C Driver License is required at the time of appointment.
- Grade III Water Distribution Operator certificate issued by the California Water Resources Control Board. Grade IV Water Distribution Operator Certificate preferred. Ability to obtain a Grade IV within 18 months upon notification of this requirement.
- Grade II Water Treatment Operator Certificate issued by the California Water Resources Control Board. Grade III Water Treatment Operator Certificate preferred
- Cal OSHA 10 Hour Construction Safety (certificate of course completion).

Failure to obtain or maintain such required license(s) may be cause for disciplinary action.

The District may allow an appropriate amount of time to obtain required certifications, as specified and agreed upon at the time of assuming position.

I have reviewed the Job Description for Lead Water System Operator (Distribution) with the General Manager and agree with its contents.

Employee Signature

Date

General Manager Signature

Date

The specific statements shown in each section of this job description are not intended to be all- inclusive. They represent typical elements and criteria necessary to successfully perform the job.



JOB DESCRIPTION

WATER SYSTEM OPERATOR II

Date: January 1, 2018

**Reports to: Water Distribution Supervisor & Water Treatment & Supply Supervisor
(Dependent upon assignments)**

FLSA: Non- Exempt

Salary Range: WSOII

Other: Safety Sensitive Position

DEFINITION

Under general supervision, perform the full range of water system operation, maintenance, installation, and repair assignments. This position also performs operations and maintenance duties at groundwater treatment plants, well field, booster stations, flow control valves, and chemical feed systems. This is a Journeyman position. This position will serve as a "Shift Operator" for water treatment and water distribution activities as defined in California Code of Regulations, Title 22, Chapter 13, Operator Certification.

EXAMPLES OF ESSENTIAL DUTIES

The following are duties performed by employees in this class. Duties listed are not meant to be all-inclusive. Other duties may be required as assigned.

- Participate in performing a variety of duties associated with the installation, maintenance, and repair of the water distribution system including: main line repair, service line installation, replacement, and repair; main line valve installation, replacement and repair; water main line flushing; pipe cutting; line tapping; water meter installation, replacement, reading, repair and testing; and main line and hydrant valve turning and flushing.
- Operate a variety of tools and equipment including backhoes, dump trucks, jackhammers, pavement saws, compressors, pneumatic tools, and hand and power tools.
- Maintain safe traffic control around work areas in accordance to the latest edition of the Work Area Traffic Control Handbook (WATCH) and/or other traffic standards.
- Perform best management practices for water system releases.
- Shift operator for groundwater treatment plant(s). Performs activities related to water system maintenance, disinfection, chemical feed, water quality, water supply, and production.
- Operates a Supervisory Control and Data Acquisition (SCADA) system.
- Establish and maintain cooperative working relationships with co-workers, outside agencies, and the public.
- Trains and instructs less experienced employees on work procedures, standards and safety related programs

- Responds to customer inquiries.
- Respond to water distribution, production and treatment system emergencies.
- Performs after hour on-call duties for water production and treatment system related calls.
- Perform related duties as assigned.

OTHER DUTIES

- Performs other duties as assigned.

JOB STANDARDS / SPECIFICATIONS

Knowledge of:

- Methods, materials, and equipment used in water system installation, maintenance, and repair work.
- Installation, maintenance, repair, and testing of water meters and water service lines.
- Methods, materials, equipment used in basic plant facilities maintenance work.
- Demonstrated knowledge, skill and experience with water supply, water quality, water systems maintenance, processes, including disinfection, pump/plant maintenance, and lubrication.
- Demonstrates a working knowledge and understanding of all safety practices for handling water treatment chemicals.
- District policies and procedures related to services and public interaction.
- Principles and practices of work direction, coordination, and training.
- Work safety standards and regulations.
- Recordkeeping practices and procedures.

Ability to:

- Perform skilled installation, servicing, and repair of meters and service lines.
- Stand, climb, walk, lift, bend, pull and/or push, grasp, reach, stoop and crouch, sit, type, read, write, color determination, speak and listen for extended periods of time.
- Read and interpret water distribution maps, plans and As-Builts.
- Provide work direction, coordination, and training for other staff.
- Deal tactfully and courteously with the public.
- Perform a variety of maintenance work at water treatment plants, pumping stations, and associated facilities.
- Establish and maintain cooperative relationships with those contacted during the course of work.
- Maintain and update plant and maintenance records and logs.
- Operate a variety of equipment, including but not limited to a backhoe.
- Operate PCs.
- Operate motor vehicles and power-driven equipment used in water service work.
- Communicate clearly and concisely, both orally and in writing.
- Must be able to work standby shifts and respond to routine and emergency after-hour calls.

TYPICAL PHYSICAL ACTIVITIES

- Must be able to carry, push, pull, reach, and lift equipment and parts weighing up to 65 pounds.
- Stoops, kneels, crouches, crawls, and climbs during field maintenance and repair work.
- Works in an environment with exposure to dust, dirt, and significant temperature changes between cold and heat.
- Communicates orally with District staff in face-to-face, one-to-one settings.
- Operates District vehicles and various equipment.
- Regularly uses a telephone and radio for communication.
- Uses office equipment such as computer terminals and copiers.
- Stands and walks for extended time periods.
- Hearing and vision within normal ranges with or without correction.

ENVIRONMENTAL FACTORS

- Exposure to the sun: 50% to 100% work time spent outside a building and exposed to the sun.
- Work above floor level: Some work done on ladders or other surfaces from 4 to 12 feet above the ground.
- High temp: Considerable work time spent in high temperatures.
- Low temp: Considerable work time spent in low temperatures.
- Wetness: More than 10% of the work time getting part or all of the body and/or clothing wet.
- Noise: Occasionally there are unusually loud sounds.
- Slippery surfaces: Occasional work on unusually slippery surfaces.
- Dust: Works in or around areas with minor amounts of dust.
- Oil: Some parts of the body in contact with oil or grease occasionally.
- Irregular or extended work hours: Occasionally required to change working hours or work overtime.

DESIRABLE QUALIFICATIONS

- Any combination of education and experience that would likely provide the necessary knowledge and abilities is qualifying.
- A typical way to obtain the knowledge and abilities would be:
- Experience: four years of responsible work experience in the installation, maintenance, and repair of water systems, including some experience with field customer relations and performing water treatment operations and water supply facility operations.
- Training/Education: High school graduation, or satisfactory equivalent, preferably supplemented by college level course work in water supply, water treatment, supervision, public administration, construction management or related subjects.

LICENSE CERTIFICATE REGISTRATION REQUIREMENTS

- Valid California Class C Driver License is required at the time of appointment.
- Grade III Water Distribution Operator certificate issued by the California Water

- Resources Control Board.
- Grade II Water Treatment Operator Certificate issued by the California Water Resources Control Board. Grade III Water Treatment Operator Certificate preferred.
- Cal OSHA 10 Hour Construction Safety (certificate of course completion).

Failure to obtain or maintain such required license(s) may be cause for disciplinary action.

The District may allow an appropriate amount of time to obtain required certifications, as specified and agreed upon at the time of assuming position.

I have reviewed the Job Description for Water System Operator II with the General Manager and agree with its contents.

Employee Signature Date

General Manager Signature Date

The specific statements shown in each section of this job description are not intended to be all- inclusive. They represent typical elements and criteria necessary to successfully perform the job.



JOB DESCRIPTION

WATER SYSTEM OPERATOR I

Date: January 1, 2018

**Reports to: Water Distribution Supervisor & Water Treatment & Supply Supervisor
(Dependent upon assignments)**

FLSA: Non- Exempt

Salary Range: WSOI

Other: Safety Sensitive Position

DEFINITION

Under direct supervision, performs unskilled and semi-skilled work in water system operation, maintenance, installation, and repair assignments. This position also performs unskilled and semi-skilled work in operations and maintenance at groundwater treatment plants, well field, booster stations, flow control valves, and chemical feed systems. This is a Journeyman position. This position will serve as a "Shift Operator" for water treatment and water distribution activities as defined in California Code of Regulations, Title 22, Chapter 13, Operator Certification.

EXAMPLES OF ESSENTIAL DUTIES

The following are duties performed by employees in this class. Duties listed are not meant to be all-inclusive. Other duties may be required as assigned.

- Participate in performing a variety of duties associated with the installation, maintenance, and repair of the water distribution system including: main line repair, service line installation, replacement, and repair; main line valve installation, replacement and repair; water main line flushing; pipe cutting; line tapping; water meter installation, replacement, reading, repair and testing; and main line and hydrant valve turning and flushing.
- Operate a variety of tools and equipment including backhoes, dump trucks, jackhammers, pavement saws, compressors, pneumatic tools, and hand and power tools.
- Maintain safe traffic control around work areas in accordance to the latest edition of the Work Area Traffic Control Handbook (WATCH) and/or other traffic standards.
- Perform best management practices for water system releases.
- Shift operator for groundwater treatment plant(s). Performs activities related to water system maintenance, disinfection, chemical feed, water quality, water supply, and production.
- Operates a Supervisory Control and Data Acquisition (SCADA) system.
- Establish and maintain cooperative working relationships with co-workers, outside agencies, and the public.
- Responds to customer inquiries.

- Respond to water distribution, production and treatment system emergencies.
- Performs after hour on-call duties for water production and treatment system related calls.
- Perform related duties as assigned.

OTHER DUTIES

- Performs other duties as assigned.

JOB STANDARDS / SPECIFICATIONS

Knowledge of:

- Methods, materials, and equipment used in water system installation, maintenance, and repair work.
- Installation, maintenance, repair, and testing of water meters and water service lines.
- Methods, materials, equipment used in basic plant facilities maintenance work.
- Demonstrated knowledge, skill and experience with water supply, water quality, water systems maintenance, processes, including disinfection, pump/plant maintenance, and lubrication.
- Demonstrates a working knowledge and understanding of all safety practices for handling water treatment chemicals.
- District policies and procedures related to services and public interaction.
- Work safety standards and regulations.
- Recordkeeping practices and procedures.

Ability to:

- Perform skilled installation, servicing, and repair of meters and service lines.
- Stand, climb, walk, lift, bend, pull and/or push, grasp, reach, stoop and crouch, sit, type, read, write, color determination, speak and listen for extended periods of time.
- Read and interpret water distribution maps, plans and As-Builts.
- Deal tactfully and courteously with the public.
- Perform a variety of maintenance work at water treatment plants, pumping stations, and associated facilities.
- Establish and maintain cooperative relationships with those contacted during the course of work.
- Maintain and update plant and maintenance records and logs.
- Operate a variety of equipment, including but not limited to a backhoe.
- Operate PCs.
- Operate motor vehicles and power-driven equipment used in water service work.
- Communicate clearly and concisely, both orally and in writing.
- Must be able to work standby shifts and respond to routine and emergency after-hour calls.

TYPICAL PHYSICAL ACTIVITIES

- Must be able to carry, push, pull, reach, and lift equipment and parts weighing up to 65 pounds.

- Stoops, kneels, crouches, crawls, and climbs during field maintenance and repair work.
- Works in an environment with exposure to dust, dirt, and significant temperature changes between cold and heat.
- Communicates orally with District staff in face-to-face, one-to-one settings.
- Operates District vehicles and various equipment.
- Regularly uses a telephone and radio for communication.
- Uses office equipment such as computer terminals and copiers.
- Stands and walks for extended time periods.
- Hearing and vision within normal ranges with or without correction.

ENVIRONMENTAL FACTORS

- Exposure to the sun: 50% to 100% work time spent outside a building and exposed to the sun.
- Work above floor level: Some work done on ladders or other surfaces from 4 to 12 feet above the ground.
- High temp: Considerable work time spent in high temperatures.
- Low temp: Considerable work time spent in low temperatures.
- Wetness: More than 10% of the work time getting part or all of the body and/or clothing wet.
- Noise: Occasionally there are unusually loud sounds.
- Slippery surfaces: Occasional work on unusually slippery surfaces.
- Dust: Works in or around areas with minor amounts of dust.
- Oil: Some parts of the body in contact with oil or grease occasionally.
- Irregular or extended work hours: Occasionally required to change working hours or work overtime.

DESIRABLE QUALIFICATIONS

- Any combination of education and experience that would likely provide the necessary knowledge and abilities is qualifying.
- A typical way to obtain the knowledge and abilities would be:
- Experience: two years of responsible work experience in the installation, maintenance, and repair of water systems, including some experience with field customer relations and performing water treatment operations and water supply facility operations.
- Training/Education: High school graduation, or satisfactory equivalent, preferably supplemented by college level course work in water supply, water treatment, supervision, public administration, construction management or related subjects.

LICENSE CERTIFICATE REGISTRATION REQUIREMENTS

- Valid California Class C Driver License is required at the time of appointment.
- Grade II Water Distribution Operator certificate issued by the California Water Resources Control Board.
- Grade II Water Treatment Operator Certificate issued by the California Water Resources Control Board. Grade III Water Treatment Operator Certificate preferred.

- Cal OSHA 10 Hour Construction Safety (certificate of course completion).

Failure to obtain or maintain such required license(s) may be cause for disciplinary action.

The District may allow an appropriate amount of time to obtain required certifications, as specified and agreed upon at the time of assuming position.

I have reviewed the Job Description for Water System Operator I with the General Manager and agree with its contents.

Employee Signature _____ Date _____

General Manager Signature _____ Date _____

The specific statements shown in each section of this job description are not intended to be all- inclusive. They represent typical elements and criteria necessary to successfully perform the job.



JOB DESCRIPTION

WATER SYSTEM MAINTENANCE WORKER

Date: January 1, 2018

**Reports to: Water Distribution Supervisor & Water Treatment & Supply Supervisor
(Dependent upon assignments)**

FLSA: Non- Exempt

Salary Range: WMW

Other: Safety Sensitive Position

DEFINITION

Under direct supervision, this position performs unskilled and semi-skilled work in water maintenance and production. Work may include, but is not limited to, reading of meters; maintenance and repair of valves, mains, and meters; the installation of water lines and meters; the maintenance and operation of water storage and production facilities; and handling customer service inquiries.

EXAMPLES OF ESSENTIAL DUTIES

The following are duties performed by employees in this class. Duties listed are not meant to be all-inclusive. Other duties may be required as assigned.

- Assists with the installation, testing, and repair of meters.
- Assists with the repair of meter services such as gate valves, meter connections, angle stops, service pipes, and corporation stops.
- Cleans weeds and bushes and trims trees on meter services.
- Assists with a variety of maintenance and repair on water distribution systems and lines.
- May contact customers regarding high bills and field test meters.
- May check on customer complaints regarding low pressure, high pressure, and water quality.
- Assists with field work involving positive displacement, turbine, flow, and compound meters.
- Cleans dead-end lines by discharging water until no apparent odor, taste, or color exists.
- Performs leak tests to locate leaks in service lines.
- Installs laterals.
- Shuts services off, seals services, and/or removes meters, as directed.
- Establish and maintain cooperative working relationships with co-workers, outside agencies, and the public.
- May collect water quality samples for laboratory testing.
- Shuts down main-lines in emergencies.
- Distributes customer notices.

- Participate in after hours on-call duty on a rotating basis.
- Respond to water distribution, production and treatment system emergencies.

OTHER DUTIES

- Performs other duties as assigned.

JOB STANDARDS / SPECIFICATIONS

Knowledge of:

- Principles, methods, and tools employed in water distribution facilities, pumps and motors; materials, and equipment used in water system installation, maintenance, and repair work.
- Installation, maintenance, repair, and testing of water meters, hydrants, all types of valves, pipe laying fitting plumbing, concrete work and water service lines.
- District policies and procedures related to services and public interaction.
- Proper work safety standards.
- Principles and practices of work direction, coordination, and training.
- Methods, materials, equipment used in basic plant facilities maintenance work.

Ability to:

- Operate a PC.
- Perform skilled installation, servicing, and repair of meters and service lines.
- Operate motor vehicles and power-driven equipment used in water service work.
- Deal tactfully and courteously with the public.
- Perform a variety of basic maintenance work at water treatment plants, pumping stations, and associated facilities.
- Must be able to work standby shifts and respond to routine and emergency after-hour calls.
- Once trained, to be on standby for a continuous period of seven days at scheduled intervals and respond to emergency calls within thirty minutes.
- Maintain and update plant and maintenance records and logs.
- Communicate clearly and concisely, both orally and in writing.

TYPICAL PHYSICAL ACTIVITIES

- Must be able to carry, push, pull, reach, and lift equipment and parts weighing up to 65 pounds.
- Stoops, kneels, crouches, crawls, and climbs during field maintenance and repair work.
- Works in an environment with exposure to dust, dirt, and significant temperature changes between cold and heat.
- Communicates orally with District staff in face-to-face, one-to-one settings.
- Operates District vehicles and various equipment.
- Regularly uses a telephone and radio for communication.
- Uses office equipment such as computer terminals and copiers.
- Stands and walks for extended time periods.
- Hearing and vision within normal ranges with or without correction.

ENVIRONMENTAL FACTORS

- Exposure to the sun: 50% to 100% work time spent outside a building and exposed to the sun.
- Work above floor level: Some work done on ladders or other surfaces from 4 to 12 feet above the ground.
- High temp: Considerable work time spent in high temperatures.
- Low temp: Considerable work time spent in low temperatures.
- Wetness: More than 10% of the work time getting part or all of the body and/or clothing wet.
- Noise: Occasionally there are unusually loud sounds.
- Slippery surfaces: Occasional work on unusually slippery surfaces.
- Dust: Works in or around areas with minor amounts of dust.
- Oil: Some parts of the body in contact with oil or grease occasionally.
- Irregular or extended work hours: Occasionally required to change working hours or work overtime.

DESIRABLE QUALIFICATIONS

- Any combination of education and experience that would likely provide the necessary knowledge and abilities is qualifying.
- A typical way to obtain the knowledge and abilities would be:
- Experience: Some relative work experience in the installation, maintenance, and repair of water systems.
- Training/Education: High school graduation, or satisfactory equivalent, preferably supplemented by college level course work in water supply, water treatment or related subjects.

LICENSE CERTIFICATE REGISTRATION REQUIREMENTS

- Valid California Class C Driver License is required at the time of appointment.
- Grade II Water Distribution Operator certificate issued by the California Water Resources Control Board.
- Grade I Water Treatment Operator Certificate issued by the California Water Resources Control Board.
- Cal OSHA 10 Hour Construction Safety (certificate of course completion).

Failure to obtain or maintain such required license(s) may be cause for disciplinary action.

The District may allow an appropriate amount of time to obtain required certifications, as specified and agreed upon at the time of assuming position.

I have reviewed the Job Description for Water System Maintenance Worker with the General Manager and agree with its contents.

Employee Signature

Date

General Manager Signature

Date

The specific statements shown in each section of this job description are not intended to be all- inclusive. They represent typical elements and criteria necessary to successfully perform the job.



JOB DESCRIPTION

LEAD CUSTOMER SUPPORT & ACCOUNTING CLERK

Date: January 1, 2018

Reports to: Office Manager

FLSA: Non- Exempt

Salary Range: LCS

DEFINITION

Under the general supervision of the Office Manager, this position performs unskilled and semi-skilled work for the collection of information to begin, discontinue and maintain water service, answers customer inquiries, processes payments and follows up on delinquent accounts; processes meter reading data. Performs fiscal and statistical recordkeeping; perform bookkeeping and recordkeeping assignments. Leads and directs customer support and accounting clerks.

ESSENTIAL FUNCTIONS

The following are duties performed by employees in this class. Duties listed are not meant to be all-inclusive. Other duties may be required as assigned.

- Answer customer calls, receive payments and greet office visitors, providing a variety of information.
- Performs data entry, utilizing a computer word processing programs.
- Performs bookkeeping/accounting.
- Performs water utility billing.
- Performs filing and recordkeeping.
- Prepares a variety correspondence.
- Receives and process payments.
- Prepares, organizes and completes field service work orders in a timely manner.
- Proofreads various documents for accuracy.
- Performs duties in a professional manner and works well with others or in a team setting.
- Assist with administering the District water conservation programs.
- Answers customer's questions regarding water use and water conservation.
- Establish and maintain cooperative working relationships with co-workers, outside agencies, and the public.
- Regular attendance and adherence to prescribed work schedule to conduct job responsibilities.
- Provides direction and training to customer support staff.
- Analyzes original documents and prepares journal entries.
- Monitors cash accounts and records monthly disbursements.
- Prepares summaries of overhead expenses for District operations and maintenance functions.
- Assists with the preparation of financial statements and reports.

OTHER DUTIES

- Performs related duties as assigned.

JOB STANDARDS/SPECIFICATIONS

Knowledge of:

- Purposes, methods, practices, and principles of District financial and statistical recordkeeping work.
- Basic knowledge of laws and statutes controlling maintenance of District financial records and financial statements.
- Purposes and practices of outside audits.
- Computerized management information and fiscal systems.
- Principles of training and first line supervision.
- District organization, functions and policies.
- Principles of customer service and customer relations.
- Basic English usage, spelling, grammar and punctuation.
- Modern office practices, equipment, and procedures.
- Business correspondence and filing systems.
- Personal computer operation and related software applications including basic level Microsoft Office, e-mail and web-based communication tools.
- Advanced record keeping methods including computer based records.
- Basic mathematics.
- Correct English usage, spelling, grammar, and punctuation.
- Water delivery and distribution systems.
- Principles and methods used in reading, testing, and calibrating meters.
- Water conservation practices and principles.

Ability to:

- Learn to Operate PC, business office machines and data entry terminals.
- Deal tactfully and courteously with customers inquiries.
- Read and write.
- Make basic arithmetical computations.
- Follow oral and written directions.
- Type at a rate of 30 words per minute from clear, legible copy.
- Prepare and organize a variety of information.
- Effectively maintain good relations during public contacts.

TYPICAL PHYSICAL ACTIVITIES

- Work at a desk for an extended period of time.
- Work in an office environment, lift and move objects up to 15 pounds such as large binders, books, and small office equipment.
- Sufficient finger/hand coordination and dexterity to operate and adjust office equipment.
- Regularly uses a telephone for communication.
- Use office equipment such as computers, copiers, printers and fax machines.
- Sits for extended time periods.

- Standing, walking, lifting, bending, pulling, reaching, stooping, crouching, climbing, sitting, typing, reading, writing and color determination.
- Speaking and listening for extended periods of time.
- Hearing and vision within normal ranges with or without correction.

ENVIRONMENTAL FACTORS

- Exposure to sun: 10% or less work time spent outside a building and exposed to the sun.
- Occasionally required to change working hours or work overtime.

DESIRABLE QUALIFICATIONS

Any combination of education and experience that would likely provide the necessary knowledge and abilities is qualifying.

A typical way to obtain the knowledge and abilities would be:

Education: High School graduation, or satisfactory equivalent.

Experience: Five years of experience in performing customer service work, bookkeeping and or customer bill processing, preferably including experience in working in a water utility.

LICENSE CERTIFICATE REGISTRATION REQUIREMENTS

Possession of a valid California Class C Driver License may be required at the time of appointment.

Failure to obtain or maintain such required license(s) may be cause for disciplinary action.

I have reviewed the Job Description for Lead Customer Support & Accounting Clerk with the General Manager and agree with its contents.

Employee Signature

Date

General Manager Signature

Date

The specific statements shown in each section of this job description are not intended to be all-inclusive. They represent typical elements and criteria necessary to successfully perform the job.



EXHIBIT C

Revised Job Descriptions



JOB DESCRIPTION

ENGINEERING & COMPLIANCE MANAGER

Date: January 1, 2018

Reports to: General Manager

Salary Range: ECM

Manages: Programs, Professional Services and Staff (as assigned)

FLSA: Exempt

Other: Safety Sensitive Position

DEFINITION

Reporting to the General Manager, the Engineering & Compliance Manager plans, organizes, manages, directs, and supervises the engineering operations and functions of the District. The Engineering & Compliance Manager is a managerial position distinguished by the position's responsibility for exercising a wide latitude of independent decision making and responsibilities for essential District functions.

EXAMPLES OF ESSENTIAL DUTIES

The following are duties performed by employees in this class. Duties listed are not meant to be all-inclusive. Other duties may be required as assigned.

- Manage and implement department goals, objectives, policies and work standards for the District's engineering activities; directs, develops and participates in the preparation of programs, projects and reports relating to the District's goals.
- Provides technical information and policy guidance on engineering matters to the General Manager and Board of Directors; coordinates and manages design and construction activities; evaluates and approves contract construction work.
- Prepares and/or directs the preparation of engineering and water quality studies, analyses, and reports.
- Ensure compliance with Federal, State and County codes and regulations; stays abreast of new trends in the field of design engineering, project management, water treatment, supply and distribution operations.
- Serve as liaison to regulatory agencies; interpretation of laws, regulations, rules and ordinances; environmental protection program implementation; performing technical computations; and preparation of permit applications and regulatory reports required to operate the District's water production, treatment and distribution facilities.
- Plan and administer the District's capital improvement program, selection of consultants, project bidding and management; development of grant funding or other funding by outside agencies or organizations; evaluates alternative courses of action and makes recommendations regarding engineering activities and works closely with operations and distribution regarding the District's capital improvement projects.

- Maintain, compose and administer all documents related to public contracts and projects (notice to proceed, certified payrolls, daily inspection logs, notice of completion, and CEQA filings).
- Administer the District's Safety Programs.
- Assist with the administration of the District's Property, Liability and Workman's Comp Insurance Programs.
- Develop work standards, emergency plans, and development/capacity fee reports.
- Perform hydraulic analysis's using EPANET (or other approved District software) to model fire flow demands, directional flow, and other water related data.
- Manages/Supervises assigned staff to accomplish projects and objectives.
- Represents the District in inter-agency, industry association, community and professional meetings represents meetings and conferences to ensure District interests are communicated on issues of concern to District.
- Routinely makes presentations regarding engineering, construction, and water quality issues to the Board of Directors and other organizations.
- Be called upon to respond to emergency call-out.

OTHER DUTIES

- Prepares the annual Consumer Confidence Report.
- Update and maintain District's GIS mapping and asset allocation system.
- Manages and oversees construction inspection activities for water related construction projects.
- Monitors and responds to water system alarms (SCADA) on as needed basis.
- Attends Board of Director meetings as directed by the General Manager.
- Serves as a liaison with vendors and contractors.
- Communicates with customers, face-to-face and via the telephone, to discuss and resolve problems and concerns.
- Performs other duties as assigned.

JOB STANDARDS / SPECIFICATIONS

Knowledge of:

- Civil engineering principles and practices related to administration, planning, design, construction and operation of water supply, storage, transmission and distribution systems and facilities.
- Principles of management, administration, finance, and controls in a utility organization.
- Water production, treatment, and distribution systems including their design, operation, maintenance, equipment, and related material.
- Engineering economics and construction project management.
- Pertinent Federal, State, and local laws and regulations.
- State, County, City, Utility and Department organizational relationships.
- Personal computers and engineering related software applications including Auto CAD and GIS.
- Engineering project administration procedures and practices.
- Engineering maps and records; and symbols used on maps, plans and blueprints.

- Safety standards and regulations applicable to the water utility industry.

Ability to:

- Drafts maps, plans, charts, graphs and technical drawings in Auto CAD, ink or pencil, as required.
- Accurately perform moderately complex drafting, engineering designs, estimates and computations.
- Apply direct engineering principles and practices to the solution of specific engineering problems for the District.
- Interpret and analyze technical information, make independent judgments, and implement recommendations through subordinate staff.
- Plan, organize, administer, coordinate, and direct the activities of multiple engineering related functions.
- Exercise tact and deal effectively with co-workers, officials and representatives of other jurisdictions, departments, and the general public.
- Perform technical research and provide reliable advice on engineering problems or projects.
- Communicate clearly and concisely, both orally and in writing.
- Operate a vehicle observing legal and defensive driving practices.
- Operate standard office equipment, personal computers, Internet, Microsoft Office software products, and engineering related software including Auto Cad and GIS. Prepare and check complete maps, estimates and materials of assigned projects.
- Keep accurate construction records and prepare required reports.
- Complete inspections insuring compliance with District standards.
- Locate and mark facilities in the field.
- Observe proper safety precautions.
- Respond to emergency call-out Work independently with limited supervision.
- Stand, climb, walk, lift, bend, pull and/or push, grasp, reach, stoop and crouch, sit, type, read, write, speak and listen for extended periods of time.

TYPICAL PHYSICAL ACTIVITIES

- Work at a desk for an extended period of time.
- May include but not limited to standing, climbing, walking, lifting, bending, pulling and/or pushing, grasping, reaching, stooping and crouching, sitting, typing, walking, reading, writing, color determination, speaking and listening for extended periods of time.
- Travels by automobile in conducting District business.
- Must be able to carry, push, pull, reach, and lift equipment and parts weighing up to 30 pounds.
- Stoops, kneels, crouches, crawls, and climbs during field inspection work.
- At times may work in an environment with exposure to dust, dirt, and significant temperature changes between cold and heat.
- Communicates orally with District staff in face-to-face, one-to-one settings.
- Regularly uses a telephone and radio for communication.
- Uses office equipment such as computer terminals and copiers.
- Hearing and vision within normal ranges with or without correction.

- Sufficient finger/hand coordination and dexterity to operate and adjust office equipment.

ENVIRONMENTAL FACTORS

- Exposure to the sun: 10% or less work time spent outside a building and exposed to the sun.
- Irregular or extended work hours: Occasionally required to change working hours or work overtime.
- High temp: Some work time spent in high temperatures.
- Low temp: Some work time spent in low temperatures.
- Noise: Occasionally there are unusually loud sounds.
- Slippery surfaces: Occasional work on unusually slippery surfaces.
- Dust: Works in or around areas with minor amounts of dust.

DESIRABLE QUALIFICATIONS

Experience: Five years of experience in performing complex/technical task in the areas of engineering, water quality and compliance.

Training/Education: Bachelor's degree (B.S.) from an accredited college or university with major course work in civil engineering or a related field; Master's degree in a similar field is desirable.

LICENSE, CERTIFICATE, REGISTRATION, REQUIREMENTS

Possession of a valid California Class C Driver License is required at the time of appointment.

Possession of a Grade II Water Treatment Operator certificate issued by the State Water Resources Control Board - Division of Drinking Water or the ability to obtain within 1 year.

Possession of a Grade II Water Distribution Operator certificate issued by the State Water Resources Control Board - Division of Drinking Water or the ability to obtain within 1 year.

Possession of an AWWA Cross-Connection Control Specialist Certificate (preferred)

CalOSHA 10 Hour Construction Safety (certificate of course completion).

Failure to obtain or maintain such required license(s) may be cause for disciplinary action.

The District may allow an appropriate amount of time to obtain required certifications, as specified and agreed upon at the time of hire.

I have reviewed the Job Description for Engineering & Compliance Manager with the General Manager and agree with its contents.

Employee Signature Date

General Manager Signature Date

The specific statements shown in each section of this job description are not intended to be all- inclusive. They represent typical elements and criteria necessary to successfully perform the job.



JOB DESCRIPTION

WATER TREATMENT & SUPPLY SUPERVISOR

Date: January 1, 2018

Reports to: General Manager

Salary Range: WTS

Supervises: Water System Operators

FLSA: Non- Exempt

Other: Safety Sensitive Position

DEFINITION

Reporting to the General Manager, the Water Treatment & Supply Supervisor plans, organizes and supervises the operations and maintenance of treatment plant(s), well field(s), booster stations, flow control valves, and storage facilities. Responsibilities also include regulatory compliance and water quality monitoring. This position will serve as a "Shift Operator" for water treatment and water distribution activities as defined in California Code of Regulations, Title 22, Chapter 13, Operator Certification.

EXAMPLES OF ESSENTIAL DUTIES

The following are duties performed by employees in this class. Duties listed are not meant to be all-inclusive. Other duties may be required as assigned.

- Plans, organizes and oversees the operations of the water pumping, treatment and supply facilities.
- Makes operational decisions that affect water quantity and/or water quality.
- Establish and maintain cooperative working relationships with co-workers, outside agencies, vendors, contractors and the public.
- Plans, organizes, directs and evaluates the performance of assigned staff; establishes performance requirements and personal development targets; regularly monitors performance and provides coaching for performance improvement and development; recommends compensation and provides other rewards to recognize performance; subject to management concurrence, takes disciplinary actions to address performance deficiencies, in accordance with District personnel rules and policies.
- Responsible for operation of the District's Supervisory Control and Data Acquisition System (SCADA) used to monitor and control the water system.
- Analyzes and evaluates equipment, troubleshoots malfunctions, and monitors water supply operations for the entire water system.
- Performs production and treatment facility rounds and inspections.
- Responsible for implementation and administration of the cross-connection control program.
- Ensures the collection of water quality samples as applicable for distribution, source and treatment process.

- Investigates and resolves reported incidents of problems with distribution system, including water quality issues and system maintenance.
- Performs safety inspections.
- Compiles information for and prepares monthly water quality and operations reports.
- Ensures compliance with applicable Local, County, State and Federal regulations and standards.
- Perform best management practices for water system releases.
- Respond to water distribution, production and treatment system emergencies.
- Requisitions necessary tools, equipment and supplies.
- Performs after hour on-call duties for water production and treatment system related calls.

OTHER DUTIES

- Performs repairs and maintenance on water distribution facilities (e.g., waterline repair, valve maintenance, fire hydrant testing and maintenance, flushing).
- Responds to customer service inquiries.
- Participates in the preparation of the department's budget.
- Performs other duties as assigned.

JOB STANDARDS / SPECIFICATIONS

Knowledge of:

- Principles, methods and tools employed in water production facilities, pumps, and motors.
- Demonstrated knowledge, skill and experience with water supply, water quality, water systems maintenance, processes, including disinfection, pump/plant maintenance, and lubrication.
- Demonstrates a working knowledge and understanding of all safety practices for handling liquid and gaseous chemicals.
- Work safety standards and regulations.
- District policies, rules, regulations, and procedures.
- Database applications related to maintenance, operations, and construction.
- Recordkeeping practices and procedures.
- Office practices and procedures and the operation of standard office equipment.
- Proper supervisory methods and techniques.
- Legal requirements for state and federal bacteriological and other water quality reports.

Ability to:

- Supervise, train and evaluate assigned staff.
- Ability to standing, climbing, walking, lifting, bending, pulling and/or pushing, grasping, reaching, stooping and crouching, sitting, typing, walking, reading, writing, color determination, speaking and listening for extended periods of time.
- Must be able to work standby shifts and respond to routine and emergency after-hour calls.
- Perform a variety of maintenance work at water treatment plants, pumping stations,

and associated facilities.

- Establish and maintain cooperative relationships with those contacted during the course of work.
- Perform mechanical and electrical repairs
- Maintain and update plant and maintenance records and logs.
- Read and interpret water distribution maps, plans and As-Builts.
- Operate a variety of light equipment.
- Perform skilled installation, servicing, and repair of meters and service lines.
- Deal tactfully and courteously with the public.
- Operate PCs.
- Operate motor vehicles and power-driven equipment used in water service work.
- Communicate clearly and concisely, both orally and in writing.

TYPICAL PHYSICAL ACTIVITIES

- Must be able to carry, push, pull, reach, and lift equipment and parts weighing up to 65 pounds.
- Stoops, kneels, crouches, crawls, and climbs during field maintenance and repair work.
- Works in an environment with exposure to dust, dirt, and significant temperature changes between cold and heat.
- Communicates orally with District staff in face-to-face, one-to-one settings.
- Operates District vehicles and various equipment.
- Regularly uses a telephone and radio for communication.
- Uses office equipment such as computer terminals and copiers.
- Stands and walks for extended time periods.
- Hearing and vision within normal ranges with or without correction.

ENVIRONMENTAL FACTORS

- Exposure to the sun: 40% to 100% work time spent outside a building and exposed to the sun.
- Work above floor level: Some work done on ladders or other surfaces from 4 to 12 feet above the ground.
- High temp: Considerable work time spent in high temperatures.
- Low temp: Considerable work time spent in low temperatures.
- Wetness: More than 10% of the work time getting part or all of the body and/or clothing wet.
- Noise: Occasionally there are unusually loud sounds.
- Slippery surfaces: Occasional work on unusually slippery surfaces.
- Dust: Works in or around areas with minor amounts of dust.
- Oil: Some parts of the body in contact with oil or grease occasionally.
- Irregular or extended work hours: Occasionally required to change working hours or work overtime.

DESIRABLE QUALIFICATIONS

- Any combination of education and experience that would likely provide the necessary knowledge and abilities is qualifying.
- A typical way to obtain the knowledge and abilities would be:

- Experience: Seven years of responsible work experience in performing water treatment operations and water supply facility operations, with at least two years of experience in a lead or supervisory capacity.
- Training/Education: High school graduation, or satisfactory equivalent, preferably supplemented by college level course work in water supply, water treatment, supervision, public administration, construction management or related subjects.

LICENSE CERTIFICATE REGISTRATION REQUIREMENTS

- Valid California Class C Driver License is required at the time of appointment.
- Grade III Water Treatment Operator Certificate issued by the California Water Resource Control Board. Grade IV Water Treatment Operator Certificate preferred. Ability to obtain a Grade IV within 18 months upon notification of this requirement.
- Grade III Water Distribution Operator certificate issued by the California Water Resource Control Board. Grade IV Water Distribution Operator Certificate preferred. Ability to obtain a Grade IV within 18 months upon notification of this requirement.
- AWWA Cross-Connection Control Specialist Certificate.
- Cal OSHA 10 Hour Construction Safety (certificate of course completion).

Failure to obtain or maintain such required license(s) may be cause for disciplinary action.

The District may allow an appropriate amount of time to obtain required certifications, as specified and agreed upon at the time of assuming position.

I have reviewed the Job Description for Water Treatment & Supply Supervisor with the General Manager and agree with its contents.

Employee Signature	Date
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General Manager Signature	Date
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The specific statements shown in each section of this job description are not intended to be all- inclusive. They represent typical elements and criteria necessary to successfully perform the job.



JOB DESCRIPTION

CUSTOMER SUPPORT & ACCOUNTING CLERK II

Date: January 1, 2018

Reports to: Office Manager

FLSA: Non- Exempt

Salary Range: CSII

DEFINITION

Under the general supervision of the Office Manager, this position performs unskilled and semi-skilled work for the collection of information to begin, discontinue and maintain water service, answers customer inquiries, processes payments and follows up on delinquent accounts; processes meter reading data. Performs fiscal and statistical recordkeeping; perform bookkeeping and recordkeeping assignments.

ESSENTIAL FUNCTIONS

The following are duties performed by employees in this class. Duties listed are not meant to be all-inclusive. Other duties may be required as assigned.

- Answer customer calls, receive payments and greet office visitors, providing a variety of information.
- Performs data entry, utilizing a computer word processing programs.
- Performs bookkeeping/accounting.
- Performs water utility billing.
- Performs filing and recordkeeping.
- Prepares a variety correspondence.
- Receives and process payments.
- Prepares, organizes and completes field service work orders in a timely manner.
- Proofreads various documents for accuracy.
- Performs duties in a professional manner and works well with others or in a team setting.
- Answers customer's questions regarding water use and water conservation.
- Establish and maintain cooperative working relationships with co-workers, outside agencies, and the public.
- Regular attendance and adherence to prescribed work schedule to conduct job responsibilities.
- Provides direction and training to less experienced customer support staff.
- Analyzes original documents and prepares journal entries.
- Monitors cash accounts and records monthly disbursements.
- Prepares summaries of overhead expenses for District operations and maintenance functions.
- Assists with the preparation of financial statements and reports.

OTHER DUTIES

- Performs related duties as assigned.

JOB STANDARDS/SPECIFICATIONS

Knowledge of:

- Purposes, methods, practices, and principles of District financial and statistical recordkeeping work.
- Basic knowledge of laws and statutes controlling maintenance of District financial records and financial statements.
- Purposes and practices of outside audits.
- Computerized management information and fiscal systems.
- Principles of training.
- District organization, functions and policies.
- Principles of customer service and customer relations.
- Basic English usage, spelling, grammar and punctuation.
- Modern office practices, equipment, and procedures.
- Business correspondence and filing systems.
- Personal computer operation and related software applications including basic level Microsoft Office, e-mail and web-based communication tools.
- Advanced record keeping methods including computer based records.
- Basic mathematics.
- Correct English usage, spelling, grammar, and punctuation.
- Water delivery and distribution systems.
- Principles and methods used in reading, testing, and calibrating meters.
- Water conservation practices and principles.

Ability to:

- Learn to Operate PC, business office machines and data entry terminals.
- Deal tactfully and courteously with customers inquires.
- Read and write.
- Make basic arithmetical computations.
- Follow oral and written directions.
- Type at a rate of 30 words per minute from clear, legible copy.
- Prepare and organize a variety of information.
- Effectively maintain good relations during public contacts.

TYPICAL PHYSICAL ACTIVITIES

- Work at a desk for an extended period of time.
- Work in an office environment, lift and move objects up to 15 pounds such as large binders, books, and small office equipment.
- Sufficient finger/hand coordination and dexterity to operate and adjust office equipment.
- Regularly uses a telephone for communication.
- Use office equipment such as computers, copiers, printers and fax machines.
- Sits for extended time periods.

- Standing, walking, lifting, bending, pulling, reaching, stooping, crouching, climbing, sitting, typing, reading, writing and color determination.
- Speaking and listening for extended periods of time.
- Hearing and vision within normal ranges with or without correction.

ENVIRONMENTAL FACTORS

- Exposure to sun: 10% or less work time spent outside a building and exposed to the sun.
- Occasionally required to change working hours or work overtime.

DESIRABLE QUALIFICATIONS

Any combination of education and experience that would likely provide the necessary knowledge and abilities is qualifying.

A typical way to obtain the knowledge and abilities would be:

Education: High School graduation, or satisfactory equivalent.

Experience: Three years of experience in performing customer service work, bookkeeping and or customer bill processing, preferably including experience in working in a water utility.

LICENSE CERTIFICATE REGISTRATION REQUIREMENTS

Possession of a valid California Class C Driver License may be required at the time of appointment.

Failure to obtain or maintain such required license(s) may be cause for disciplinary action.

I have reviewed the Job Description for Customer Support & Accounting Clerk II with the General Manager and agree with its contents.

Employee Signature

Date

General Manager Signature

Date

The specific statements shown in each section of this job description are not intended to be all-inclusive. They represent typical elements and criteria necessary to successfully perform the job.



JOB DESCRIPTION

CUSTOMER SUPPORT & ACCOUNTING CLERK I

Date: January 1, 2018

Reports to: Office Manager

FLSA: Non- Exempt

Salary Range: CSI

DEFINITION

Under the direct supervision of the Office Manager, this position performs unskilled and semi-skilled work for the collection of information to begin, discontinue and maintain water service, answers customer inquiries, processes payments and follows up on delinquent accounts; processes meter reading data. Performs fiscal and statistical recordkeeping; perform bookkeeping and recordkeeping assignments.

ESSENTIAL FUNCTIONS

The following are duties performed by employees in this class. Duties listed are not meant to be all-inclusive. Other duties may be required as assigned.

- Answer customer calls, receive payments and greet office visitors, providing a variety of information.
- Performs data entry, utilizing a computer word processing programs.
- Performs bookkeeping/accounting.
- Performs water utility billing.
- Performs filing and recordkeeping.
- Prepares a variety correspondence.
- Receives and process payments.
- Prepares, organizes and completes field service work orders in a timely manner.
- Proofreads various documents for accuracy.
- Performs duties in a professional manner and works well with others or in a team setting.
- Answers customer's questions regarding water use and water conservation.
- Establish and maintain cooperative working relationships with co-workers, outside agencies, and the public.
- Regular attendance and adherence to prescribed work schedule to conduct job responsibilities.
- Monitors cash accounts and records monthly disbursements.
- Prepares summaries of overhead expenses for District operations and maintenance functions.

OTHER DUTIES

- Performs related duties as assigned.

JOB STANDARDS/SPECIFICATIONS

Knowledge of:

- Purposes, methods, practices, and principles of District financial and statistical recordkeeping work.
- Basic knowledge of laws and statutes controlling maintenance of District financial records and financial statements.
- Computerized management information and fiscal systems.
- Principles of training.
- District organization, functions and policies.
- Principles of customer service and customer relations.
- Basic English usage, spelling, grammar and punctuation.
- Modern office practices, equipment, and procedures.
- Business correspondence and filing systems.
- Personal computer operation and related software applications including basic level Microsoft Office, e-mail and web-based communication tools.
- Basic mathematics.
- Correct English usage, spelling, grammar, and punctuation.
- Water delivery and distribution systems.
- Principles and methods used in reading, testing, and calibrating meters.
- Water conservation practices and principles.

Ability to:

- Learn to Operate PC, business office machines and data entry terminals.
- Deal tactfully and courteously with customers inquiries.
- Read and write.
- Make basic arithmetical computations.
- Follow oral and written directions.
- Type at a rate of 30 words per minute from clear, legible copy.
- Prepare and organize a variety of information.
- Effectively maintain good relations during public contacts.

TYPICAL PHYSICAL ACTIVITIES

- Work at a desk for an extended period of time.
- Work in an office environment, lift and move objects up to 15 pounds such as large binders, books, and small office equipment.
- Sufficient finger/hand coordination and dexterity to operate and adjust office equipment.
- Regularly uses a telephone for communication.
- Use office equipment such as computers, copiers, printers and fax machines.
- Sits for extended time periods.
- Standing, walking, lifting, bending, pulling, reaching, stooping, crouching, climbing, sitting, typing, reading, writing and color determination.
- Speaking and listening for extended periods of time.
- Hearing and vision within normal ranges with or without correction.

ENVIRONMENTAL FACTORS

- Exposure to sun: 10% or less work time spent outside a building and exposed to the sun.
- Occasionally required to change working hours or work overtime.

DESIRABLE QUALIFICATIONS

Any combination of education and experience that would likely provide the necessary knowledge and abilities is qualifying.

A typical way to obtain the knowledge and abilities would be:

Education: High School graduation, or satisfactory equivalent.

Experience: Some experience in performing customer service work, bookkeeping and or customer bill processing, preferably including experience in working in a water utility.

LICENSE CERTIFICATE REGISTRATION REQUIREMENTS

Possession of a valid California Class C Driver License may be required at the time of appointment.

Failure to obtain or maintain such required license(s) may be cause for disciplinary action.

I have reviewed the Job Description for Customer Support & Accounting Clerk I with the General Manager and agree with its contents.

Employee Signature

Date

General Manager Signature

Date

The specific statements shown in each section of this job description are not intended to be all-inclusive. They represent typical elements and criteria necessary to successfully perform the job.



EXHIBIT D

New Salary Schedule

La Puente Valley County Water District

Salary Schedule - Proposed January 2018

Range	Position	Time	Proposed		
			Begin	Mid	End
GM	General Manager	Annual	\$ 114,832	\$ 129,936	\$ 145,039
		Month	\$ 9,569	\$ 10,828	\$ 12,087
		Hour	\$ 55.21	\$ 62.47	\$ 69.73
ECM	Engineering & Compliance Manager	Annual	\$ 83,600	\$ 94,050	\$ 104,500
		Month	\$ 6,967	\$ 7,838	\$ 8,708
		Hour	\$ 40.19	\$ 45.22	\$ 50.24
OM	Office Manager	Annual	\$ 79,600	\$ 89,550	\$ 99,500
		Month	\$ 6,633	\$ 7,463	\$ 8,292
		Hour	\$ 38.27	\$ 43.05	\$ 47.84
WTS	Water Treatment & Supply Supervisor	Annual	\$ 79,600	\$ 89,550	\$ 99,500
		Month	\$ 6,633	\$ 7,463	\$ 8,292
		Hour	\$ 38.27	\$ 43.05	\$ 47.84
WDS	Water Distribution Supervisor	Annual	\$ 71,200	\$ 80,100	\$ 89,000
		Month	\$ 5,933	\$ 6,675	\$ 7,417
		Hour	\$ 34.23	\$ 38.51	\$ 42.79
OA	Board Secretary / Office Administrator <i>(range only valid through 2018)</i>	Annual	\$ 64,962	\$ 73,483	\$ 82,003
		Month	\$ 5,414	\$ 6,124	\$ 6,834
		Hour	\$ 31.23	\$ 35.33	\$ 39.42
LWT	Lead Water System Operator (Treatment)	Annual	\$ 64,800	\$ 72,900	\$ 81,000
		Month	\$ 5,400	\$ 6,075	\$ 6,750
		Hour	\$ 31.15	\$ 35.05	\$ 38.94
LWD	Lead Water System Operator (Distribution)	Annual	\$ 61,600	\$ 69,300	\$ 77,000
		Month	\$ 5,133	\$ 5,775	\$ 6,417
		Hour	\$ 29.62	\$ 33.32	\$ 37.02
WSOII	Water System Operator II	Annual	\$ 57,600	\$ 64,800	\$ 72,000
		Month	\$ 4,800	\$ 5,400	\$ 6,000
		Hour	\$ 27.69	\$ 31.15	\$ 34.62
WSOI	Water System Operator I	Annual	\$ 52,800	\$ 59,400	\$ 66,000
		Month	\$ 4,400	\$ 4,950	\$ 5,500
		Hour	\$ 25.38	\$ 28.56	\$ 31.73
WMW	Water System Maintenance Worker	Annual	\$ 47,200	\$ 53,100	\$ 59,000
		Month	\$ 3,933	\$ 4,425	\$ 4,917
		Hour	\$ 22.69	\$ 25.53	\$ 28.37
LCS	Lead Customer Support & Accounting Clerk	Annual	\$ 50,400	\$ 56,700	\$ 63,000
		Month	\$ 4,200	\$ 4,725	\$ 5,250
		Hour	\$ 24.23	\$ 27.26	\$ 30.29
CSII	Customer Support & Accounting Clerk II	Annual	\$ 45,600	\$ 51,300	\$ 57,000
		Month	\$ 3,800	\$ 4,275	\$ 4,750
		Hour	\$ 21.92	\$ 24.66	\$ 27.40
CSI	Customer Support & Accounting Clerk I	Annual	\$ 36,400	\$ 44,200	\$ 52,000
		Month	\$ 3,033	\$ 3,683	\$ 4,333
		Hour	\$ 17.50	\$ 21.25	\$ 25.00

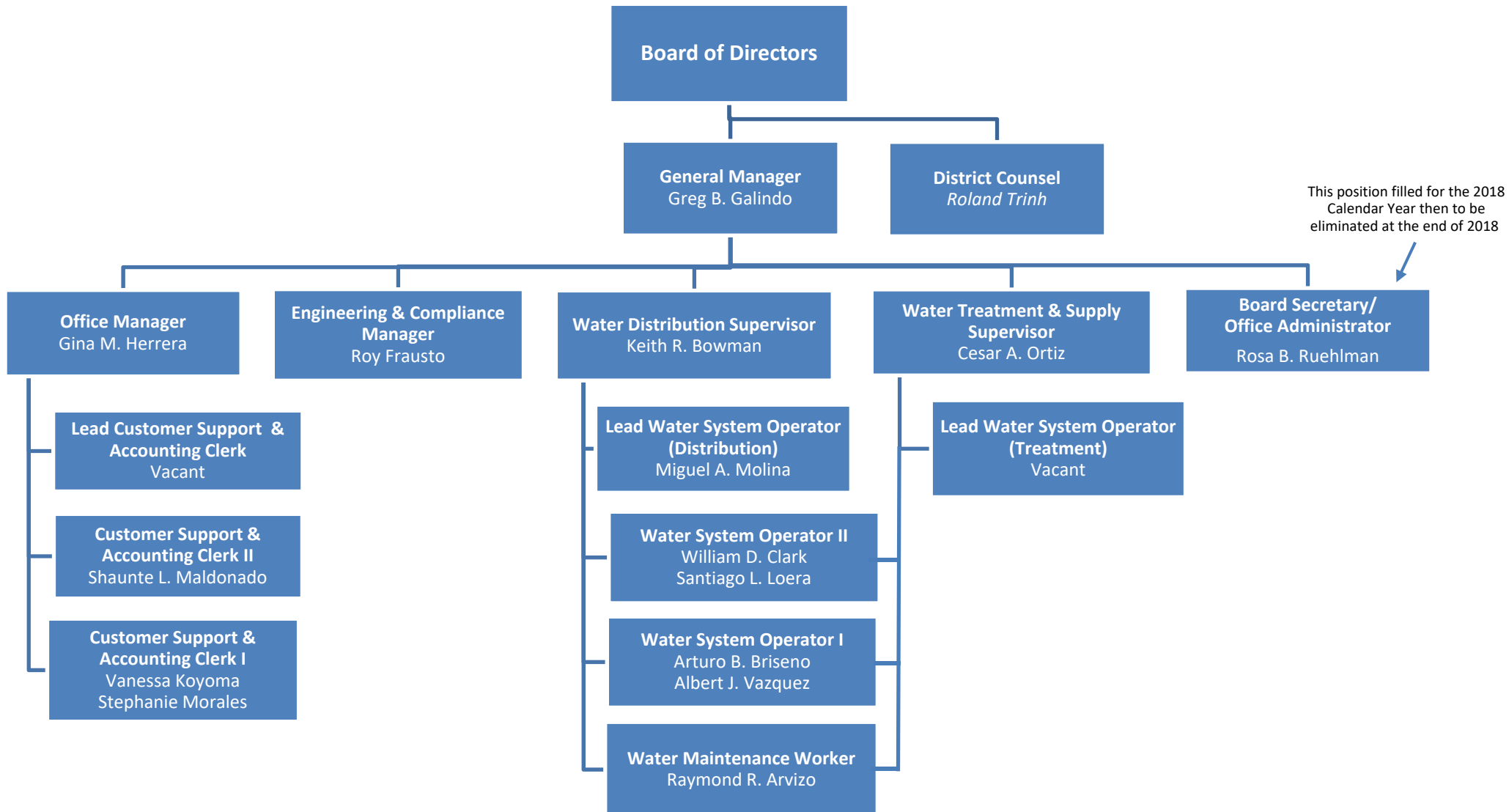


EXHIBIT E

District Organizational Chart

Organizational Chart

January 1, 2018



Memo



To: Honorable Board of Directors

From: Greg B. Galindo, General Manager

Date: December 19, 2017

Re: 2018 Cost of Living Adjustment and Salary Schedule Adjustment

Summary

As customary of this District, a cost of living adjustment (COLA) of all District Employees salaries is considered each year. It is the duty of the General Manager to recommend to the Board what increase is in the best interest of the District. In past years, this recommendation has been based on the increase of the Consumer Price Index (CPI) for urban wage earners and clerical workers in our region. Although, this is the basis for the recommendation other factors are considered, such as the change in the cost for providing health benefits for District employees.

Over this past year, the annual average of the CPI for our region increased by an estimated 2.71%. For your reference, I have attached the data from the U.S. Department of Labor detailing the historical CPI for our region and the average for US Cities. In addition, I have included a table depicting the District's COLA calculations for the past several years.

For calendar year 2017, The Board of Directors decided to forgo a COLA to employee salaries in order to minimize the impact of the increasing cost for employee health benefits. However, the Board did adjust the ranges for each position by 1.5%. In preparing my recommendation for the 2018 COLA, I analyzed the fiscal impact the adjustment to salaries will have along with the change in the cost of providing benefits to the employees. In 2018, I project that the cost of providing health benefits for each employee will increase by an average of 5.5% and the cost of providing pension benefits for employees will increase slightly as well.

Recommendation

For calendar year 2018, I recommend that up to a 2% COLA be applied to all employee salaries, providing that the adjustment does not result in the employee's salary exceeding the salary range for their respective position. At the December 21st Board of Director's meeting the Board will consider a staff restructuring plan and will consider adopting a new salary schedule as a result of the restructuring plan. No other adjustment to the salary schedule is recommended.

Thank you for your consideration on this matter. If you have any question, please feel free to contact me.

Enclosures:

1. Summary of CPI and Changes to COLA

Los Angeles - Riverside- Orange County

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual	HALF1	HALF2	Annual % Change
2006	198.30	199.90	200.80	202.90	205.00	204.20	204.50	205.00	205.30	203.50	203.30	202.90	203.0	201.9	204.1	4.16%
2007	204.50	206.63	208.93	210.20	211.15	209.61	209.44	209.24	209.85	211.26	212.84	212.28	209.7	208.5	210.8	3.30%
2008	213.83	214.23	216.49	217.91	219.70	222.44	223.25	221.23	220.29	218.73	214.08	211.01	217.8	217.4	218.1	3.87%
2009	212.45	213.23	213.01	213.41	214.45	216.15	216.13	216.63	217.30	217.47	216.62	216.23	215.3	213.8	216.7	-1.15%
2010	217.29	217.09	218.16	218.48	218.79	218.22	218.37	218.75	218.43	219.34	218.69	219.62	218.4	218.0	218.9	1.48%
2011	221.54	222.81	225.77	227.05	226.84	225.46	224.28	224.67	226.10	226.12	225.79	224.44	225.1	224.9	225.2	3.04%
2012	226.25	227.59	230.28	230.02	230.18	228.92	228.45	230.23	231.09	233.43	230.43	228.94	229.6	228.87	230.43	2.03%
2013	230.65	232.98	233.20	232.03	232.39	232.38	232.19	232.25	232.82	232.74	231.60	231.59	232.2	232.3	232.2	1.13%
2014	232.58	233.89	235.50	235.72	236.65	236.88	236.96	236.50	236.45	235.92	233.90	232.33	235.3	235.20	235.34	1.31%
2015	231.06	232.98	235.99	235.70	238.82	237.79	239.89	238.76	237.32	237.47	237.19	236.79	236.6	235.4	237.9	0.58%
2016	238.61	238.26	239.15	239.54	240.32	240.52	240.58	240.27	240.85	241.93	240.81	240.85	240.1	239.40	240.88	1.48%
2017	242.74	244.25	244.93	245.42	246.15	245.90	246.68	247.26	248.55	249.24	249.68	249.07	246.7	244.9	248.4	2.71%

- Estimated

National Average

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual	HALF1	HALF2	Annual % Change
2006	194.00	194.20	195.30	197.20	198.20	198.60	199.20	199.60	198.40	197.00	196.80	197.20	197.14	196.25	198.03	3.23%
2007	197.56	198.54	200.61	202.13	203.66	203.91	203.70	203.20	203.89	204.34	205.89	205.78	202.77	201.07	204.47	2.85%
2008	206.74	207.25	209.15	210.70	212.79	215.22	216.30	215.25	214.94	212.18	207.30	204.81	211.05	210.31	211.80	4.09%
2009	205.70	206.71	207.22	207.93	208.77	210.97	210.53	211.16	211.32	211.55	212.00	211.70	209.63	207.88	211.38	-0.67%
2010	212.57	212.54	213.53	213.96	214.12	213.84	213.90	214.21	214.31	214.62	214.75	215.26	213.97	213.43	214.51	2.07%
2011	216.40	217.54	220.02	221.74	222.95	222.52	222.69	223.33	223.69	223.04	222.81	222.16	221.57	220.20	222.95	3.56%
2012	223.22	224.32	226.30	227.01	226.60	226.04	225.57	227.06	228.18	227.97	226.60	225.89	226.23	225.58	226.88	2.10%
2013	226.52	228.68	229.32	228.95	229.40	230.00	230.08	230.36	230.54	229.74	229.13	229.17	229.32	228.81	229.84	1.37%
2014	230.04	230.87	232.56	233.44	234.22	234.70	234.53	234.03	234.17	233.23	231.55	231.55	232.91	232.64	233.18	1.56%
2015	228.29	229.42	231.06	231.52	232.91	233.80	233.81	233.37	232.66	232.37	231.72	230.79	231.81	231.17	232.45	-0.47%
2016	231.06	230.97	232.21	233.44	234.44	235.29	234.77	234.90	235.50	235.73	235.22	235.39	234.08	232.90	235.25	0.98%
2017	236.85	237.48	237.66	238.43	238.61	238.81	238.62	239.45	240.94	240.57	240.67	240.39	239.04	237.97	240.10	2.12%

- Estimated

Summary of CPI Changes and Cost of Living Adjustments

2014 CPI Increase Calculation

	2012	2013	Point Change	Point Change / 2012	Percentage Change
CPI Annual Average	229.649	232.234	2.585	0.0113	1.13%

2015 CPI Increase Calculation

	2013	2014	Point Change	Point Change / 2013	Percentage Change
CPI Annual Average	232.234	235.273	3.039	0.0131	1.31%

2016 CPI Increase Calculation

	2014	2015	Point Change	Point Change / 2014	Percentage Change
CPI Annual Average	235.273	236.646	1.373	0.0058	0.58%

2017 CPI Increase Calculation

	2015	2016	Point Change	Point Change / 2015	Percentage Change
CPI Annual Average	236.646	240.140	3.494	0.0148	1.48%

2018 CPI Increase Calculation

	2016	2017	Point Change	Point Change / 2016	Percentage Change
CPI Annual Average	240.140	246.657	6.517	0.0271	2.71%

Based on US Department of Labor -Bureau of Labor and Statistics' Consumer Price Index-
Urban Wage Earners and Clerical Workers (Los Angeles, Riverside and Orange Counties)

2014 Approved COLA	2015 Approved COLA	2016 Approved COLA	2017 COLA	2018 Recommended COLA
1.00%	1.35%	1.00%	0.00%	2.00%
-0.13%	0.04%	0.42%	-1.48%	-0.71%
Adjusted downward to cover increase in benefits	Board approved a 1.35 % which was .04% over the CPI Increase	Board approved a 1% which was .42% over the CPI Increase	Adjusted downward to cover increase in benefits	Adjusted downward to cover increase in benefits

Upcoming Events



To: Honorable Board of Directors
From: Rosa Ruehlman, Office Administrator RR
Date: 12/21/17
Re: Upcoming Board Approved Events for 2017-18

Day/Date	Event	<u>Aguirre</u>	<u>Escalera</u>	<u>Hastings</u>	<u>Hernandez</u>	<u>Rojas</u>
	There are no more events remaining in 2017					
Monday & Tuesday, February 12 - 13, 2018	Association of Groundwater Agencies AGWA – AGWT at Gateway Hotel in Ontario, CA					

SGVWA – San Gabriel Valley Water Association Quarterly Luncheons, are held on the Second Wednesday of February, May, August and November at 8:00 or 11:30 am (Location and Time are to be determined)

SCWUA – Southern California Water Utilities Association Luncheons are typically held on the fourth Thursday of each month with the exception of December due to the Christmas holiday and are held at the Pomona Fairplex in Pomona, CA. (Dates are subject to change)

Upcoming Meeting:

- No other meetings at this time.

Board Member Training and Reporting Requirements:

NEXT DUE DATE

Schedule of Future Training and Reporting for 2016	<u>Aguirre</u>	<u>Escalera</u>	<u>Hastings</u>	<u>Hernandez</u>	<u>Rojas</u>
Ethics 1234 2 year Requirement	11/22/18	12/01/18	12/01/18	10/11/18	9/26/19
Sexual Harassment 2 Year Requirement	05/09/19	11/28/19	05/09/19	10/10/18	05/09/19
Form 700 Annual Requirement	04/01/18	04/01/18	04/01/18	04/01/18	04/01/18
Form 470 Short Form Semi Annual Requirement	07/31/18	07/31/18	07/31/18	07/31/18	07/31/18

If you have any questions on the information provided or would like additional information, please contact me at your earliest convenience.