PALMDALE WATER DISTRICT

A CENTURY OF SERVICE

February 19, 2020

AGENDA FOR REGULAR MEETING OF THE BOARD OF DIRECTORS OF THE PALMDALE WATER DISTRICT to be held at the District's office at 2029 East Avenue Q, Palmdale

MONDAY, FEBRUARY 24, 2020

6:00 p.m.

NOTES: To comply with the Americans with Disabilities Act, to participate in any Board meeting please contact Dawn Deans at 661-947-4111 x1003 at least 48 hours prior to a Board meeting to inform us of your needs and to determine if accommodation is feasible.

Additionally, an interpreter will be made available to assist the public in making **comments** under Agenda Item No. 4 and any action items where public input is offered during the meeting if requested at least 48 hours before the meeting. Please call Dawn Deans at 661-947-4111 x1003 with your request. (PWD Rules and Regulations Section 4.03.1 (c))

Adicionalmente, un intérprete estará disponible para ayudar al público a hacer **comentarios** bajo la sección No. 4 en la agenda y cualquier elemento de acción donde se ofrece comentarios al público durante la reunión, siempre y cuando se solicite con 48 horas de anticipación de la junta directiva. Por favor de llamar Dawn Deans al 661-947-4111 x1003 con su solicitud. (PWD reglas y reglamentos sección 4.03.1 (c))

Agenda item materials, as well as materials related to agenda items submitted after distribution of the agenda packets, are available for public review at the District's office located at 2029 East Avenue Q, Palmdale (Government Code Section 54957.5). Please call Dawn Deans at 661-947-4111 x1003 for public review of materials.

PUBLIC COMMENT GUIDELINES: **The prescribed time limit per speaker is three-minutes. Please refrain from public displays or outbursts such as unsolicited applause, comments, or cheering. Any disruptive activities that substantially interfere with the ability of the District to carry out its meeting will not be permitted, and offenders will be requested to leave the meeting. (PWD Rules and Regulations, Appendix DD, Sec. IV.A.)**

Each item on the agenda shall be deemed to include any appropriate motion, resolution, or ordinance to take action on any item.

1) Pledge of Allegiance/Moment of Silence.

2) Roll Call.

3) Adoption of Agenda.

4) Public comments for non-agenda items.

5) Presentations:

5.1) None at this time.

6) Action Items - Consent Calendar (The public shall have an opportunity to comment on any action item on the Consent Calendar as the Consent Calendar is considered collectively by the Board of Directors prior to action being taken.)

6.1) Approval of minutes of regular meeting held February 10, 2020.

6.2) Payment of bills for February 24, 2020.

6.3) Approval to declare District equipment as surplus and offering same for sale and/or lease returns. (Potential revenue – Facilities Manager Bligh/Resource and Facilities Committee)

7) Action Items – Action Calendar (The public shall have an opportunity to comment on any action item as each item is considered by the Board of Directors prior to action being taken.)

7.1) Consideration and possible action on update to the District's Standard Specifications for Water Distribution Construction. (No Budget Impact – Engineering/Grant Manager Rogers/Resource and Facilities Committee)

7.2) Consideration and possible action on award of contract for a Well Rehabilitation Prioritization Program to Kyle Groundwater. ($139,992.00 – Budgeted – Budget Line Item No. 1-02-5070-007 – Engineering/Grant Manager Rogers/Resource and Facilities Committee)

7.3) Consideration and possible action on approval of Resolution No. 20-4 being a Resolution of the Board of Directors of the Palmdale Water District Approving an Amendment to Appendix M – Bid Procurement and Change Order Policy of the Palmdale Water District's Rules and Regulations. (No Budget Impact – Engineering/Grant Manager Rogers/Resource and Facilities Committee)

7.4) Consideration and possible action on updates to Water Use Efficiency Rebate Programs including the implementation of a new Smart Controller Rebate Program and increases to the rebate amounts for the current High Efficiency Toilet Rebate and High Efficiency Clothes Washer Rebate Programs. (Budgeted under Department Rebate Programs – Resource and Analytics Supervisor Bolanos/Resource and Facilities Committee).

7.5) Consideration and possible action on authorization of the following conferences, seminars, and training sessions for Board and staff attendance within budget amounts previously approved in the 2020 Budget:

a) None at this time.

8) Information Items:

8.1) Finance Reports:

a) Status report on Cash Flow Statement and Current Cash Balances as of December 2019. (Financial Advisor Egan/Finance Committee)

b) Status report on Financial Statements, Revenue, and Expense and Departmental Budget Reports for December 2019. (Finance Manager Williams/Finance Committee)

c) Status report on committed contracts issued. (Finance Manager Williams/Finance Committee)

d) Other financial items including payment transactions, billing and collection statistics, accounts receivable aging report, revenue projections, and the Rate Assistance Program status. (Finance Manager Williams/Finance Committee)

8.2) Reports of Directors:

a) Meetings; Standing Committee/Assignment Reports; General Report.

8.3) Report of General Manager.

a) February 2020 written report of activities through January 2020.

8.4) Report of General Counsel.

9) Board members' requests for future agenda items.

10) Adjournment.

DENNIS D. LaMOREAUX,
General Manager

DDL/dd

P A L M D A L E W A T E R D I S T R I C T

B O A R D M E M O R A N D U M

DATE: February 18, 2020 **February 24, 2020**

TO: BOARD OF DIRECTORS **Board Meeting**

FROM: Mr. Chris Bligh, Facilities Manager

VIA: Mr. Adam Ly, Assistant General Manager
Mr. Dennis D. LaMoreaux, General Manager

RE: ***AGENDA ITEM NO. 6.3 – APPROVAL TO DECLARE DISTRICT EQUIPMENT AS SURPLUS AND OFFERING SAME FOR SALE AND/OR LEASE RETURNS. (POTENTIAL REVENUE – FACILITIES MANAGER BLIGH/RESOURCE AND FACILITIES COMMITTEE)***

Recommendation:
Staff and the Resource and Facilities Committee recommend the Board declare District equipment as surplus and either offer same for sale or as a lease return.

Alternative Options:
The Board can choose to not surplus this equipment.

Impact of Taking No Action:
The District would keep inefficient equipment in its fleet.

Background:
The following vehicle is recommended for surplus and auction:

- Vehicle V-11: 1978 Trailer Mounted Miller Welder

Strategic Plan Element:
This work is part of Strategic Element 3 – Systems Efficiency.
This item directly relates to the District's Mission Statement.

Budget:
The impact to the Budget will be positive depending on the sale/lease return of the equipment.

P A L M D A L E W A T E R D I S T R I C T

B O A R D M E M O R A N D U M

DATE: February 18, 2020 **February 24, 2020**

TO: BOARD OF DIRECTORS **Board Meeting**

FROM: Mr. Scott L. Rogers, Engineering/Grant Manager

VIA: Mr. Adam Ly, Assistant General Manager
Mr. Dennis D. LaMoreaux, General Manager

RE: ***AGENDA ITEM NO. 7.1 – CONSIDERATION AND POSSIBLE ACTION ON UPDATE TO THE DISTRICT'S STANDARD SPECIFICATIONS FOR WATER DISTRIBUTION CONSTRUCTION. (NO BUDGET IMPACT – ENGINEERING/GRANT MANAGER ROGERS/RESOURCE AND FACILITIES COMMITTEE)***

Recommendation:
Staff and the Resource and Facilities Committee recommend the Board approve the update of the District's Standard Specifications for Water Distribution Construction.

Alternative Options:
Do not update the Standard Specifications.

Impact of Taking No Action:
The District will be operating with outdated construction specifications.

Background:
The District's Standard Specifications for Water Distribution Construction were last updated with minor revisions in 2008. The 2020 Update includes revisions for submitting design plans electronically for review, updating the public notice of upcoming construction into Spanish, updated text to refer to specific sections, includes references to most current American Water Works Association (AWWA) standards, and reorganization of the standard details. The attached revision incorporates up-to-date construction standards by AWWA. Specific revisions will be reviewed at the Committee meeting.

Strategic Plan Initiative/Mission Statement:
This work is part of Strategic Initiative No. No. 3 – Systems Efficiency and No. 5 – Regional Leadership.

This item directly relates to the District's Mission Statement.

Budget:
No impact to budget.

Supporting Documents:
- Standard Specifications for Water Distribution Construction dated January 2020

PALMDALE WATER DISTRICT

STANDARD SPECIFICATIONS FOR

WATER DISTRIBUTION SYSTEM CONSTRUCTION

January 2020

PALMDALE WATER DISTRICT

2029 EAST AVENUE Q, PALMDALE, CA 93550

661-947-4111

www.palmdalewater.org

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SECTION 1

GENERAL PROVISIONS

1-01 General.

These specifications are to be used to establish standards of work, materials, and construction procedures for improvements to the water system of the Palmdale Water District. These specifications are intended to establish general requirements and technical standards for all pipeline work within the District. Interpretation, if any, is subject to District discretion.

1-02. Supplementary Specifications.

Wherever reference is made within these documents to certain standard specifications, the reference shall be construed to mean the standards, with all subsequent amendments, changes, or additions as thereafter adopted and published that are in effect at the date of approval of the plans and specifications. Standard specifications and documents referenced herein, and their abbreviations include, without limitation, the following:

AASHTO	American Association of State Highway and Transportation Officials
ACI	American Concrete Institute
AI	The Asphalt Institute
AISC	American Institute of Steel Construction, Inc.
AISI	American Iron and Steel Institute
	ANSI American National Standards Institute (formerly USASI, USAS, ASA)
ASCE	American Society of Civil Engineers
ASME	American Society of Mechanical Engineers
ASTM	American Society for Testing and Materials
AWS	American Welding Society
AWWA	American Water Works Association
MIL	Military Specification (leading symbol)
NFPA	National Fire Protection Association
OSHA	Occupational Safety and Health Administration, U.S. Dept. of Labor
SSPC	Steel Structures Painting Council State
Spec.	California Standard Specifications, Department of Transportation, Division of Highways
UL	Underwriters' Laboratories, Inc.

1-03. Definition of Terms.

Whenever in these specifications or other documents where these specifications govern, and the following terms are used and they shall be defined as follows:

a) Acceptance.

Shall mean that the water system has received final completion as defined herein, the one (1) year guarantee period has passed, and all repairs necessary during the one (1) year guarantee period have been made to the satisfaction of the District.

b) Agreement.

The written Agreement between the District and the Applicant providing for the construction of the improvement by the Applicant or his/her Contractor.

c) Applicant.

Shall mean any property owner, firm, or corporation who makes application for District service or enters into an Agreement with the District.

d) Board.

The Board of Directors of the Palmdale Water District.

e) Contract.

A written Agreement executed by and between the Applicant and the Contractor covering the performance of the work.

f) Contractor.

The individual, partnership, association, corporation, entity (public or private), or combination thereof, who has entered into a Contract with the Applicant or into a Public Contract with the District for performance of the work pursuant to these specifications. Except as to Public Contracts, wherever reference is made to Contractor in the Specifications, such reference shall include the Contractor in his/her own capacity and in his/her capacity as authorized agent and representative of the Applicant. Accordingly, where the Specifications require the Contractor to perform certain acts, or hold the Contractor responsible for certain costs, expenses or liabilities, or the like, such requirements and responsibilities shall be equally applicable to and binding upon the Applicant.

g) District.

The Palmdale Water District.

h) Engineer.

A registered civil engineer appointed by the District acting either directly or through his properly authorized engineers.

i) Final Completion.

Shall mean the water system is complete and active, street improvements are complete and required title insurance policies for easements, if any, are provided. The date of final completion shall initiate the beginning of the one-year guarantee period. See Section 1-14 for other requirements.

j) Fire System Activation Letter.

The letter informing Los Angeles County Fire Department that the water system and fire hydrants are available for protection. Two sets of as-built drawings must be submitted, easement documents must be recorded, and title insurance policies to said easements provided prior to issuance of letter. Also, pipe identification wires and compound meters shall be tested if included in the project.

k) Inspector - Owner's Representative.

The personal representative of the District acting on the behalf of the District Engineer and/or District Manager.

l) Plans.

The official scale and full-size approved detail drawings, or exact reproductions thereof, which show location, character, dimensions, elevations, and details of the work.

m) Specifications.

The STANDARD SPECIFICATIONS FOR WATER DISTRIBUTION SYSTEM CONSTRUCTION of the Palmdale Water District. Should job-specific specifications, approved by the District, conflict with these Specifications, the job-specific specifications shall govern.

n) Standard Drawings.

The Standard Drawings, a part of the STANDARD SPECIFICATIONS FOR WATER DISTRIBUTION SYSTEM CONSTRUCTION of the Palmdale Water District, unless otherwise qualified.

o) Work.

All labor, materials, equipment, transportation, supervision, or other facilities necessary to complete the improvement provided for in the Agreement of Public Contract.

p) Private Contract Work.

Work done pursuant to a Contract between the Contractor and the Applicant.

q) Public Contract Work.

Work done pursuant to a Contract between the Contractor and the District.

r) Private Engineer.

A registered civil engineer employed by the Applicant.

s) Approved, Directed, Satisfactory, Proper, Acceptable, Required, Necessary, and Or Equal.

Shall be defined as considered approved, directed, satisfactory, proper, acceptable, required, necessary, or equal in the opinion of the District.

1-04. Abbreviations.

The abbreviations used in the plans and specifications are abbreviations the meanings of which are established by general usage through the industry and those defined in subsection 1-02 herein.

1-05. Inspection of Work.

The District will provide inspection for all work. The inspection fee will be determined in accordance with the “Palmdale Water District Rules and Regulations” and must be paid to the District before beginning construction activity.

Prior to beginning any construction operations, the developer shall give the District at least forty-eight (48) hours advance written notice of the name and contractor's license number of the contractor who will perform the work and a written request for a pre-job meeting with the location for same to be determined by District staff. The contractor shall notify the District's Engineering Manager forty-eight (48) hours in advance of any work to be done in order that inspection services may be provided.

All work shall be performed only with the approval of the District's authorized representative, and any work done in the absence of said District's authorized representative shall be subject to rejection. The Contractor shall give sufficient notice to the District's authorized representative in advance of backfilling or otherwise covering any part of the work so that the District's authorized representative may, if he wishes, observe such part of the work before it is concealed.

District inspection is available between 7:00 a.m. and 4:30 p.m., Monday through Friday, except District holidays. If the Contractor wishes to work on holidays, weekends, or at other hours than stated in this paragraph, the Developer shall submit a written request for said hours at least forty-eight (48) hours in advance and shall obtain the written permission of the District's Engineering Manager. The Developer shall bear the full cost of approved inspection outside of normal District working hours. Said costs will be billed to the developer and must be paid to the District on a monthly basis.

Inspection by the District will not in any way reduce the Developer's or Contractor's responsibility for the work.

All costs for re-testing and re-inspection which are necessitated by defective materials and/or workmanship shall be at the sole expense of the Contractor and or Applicant.

1-06. Plans Submitted by Private Engineers.

First submittal of water improvement plans shall include a letter for District file and record purposes. All documents can be electronic (PDF, CAD). The following described documents, drawings, and materials required by the District to start processing the request:

a) A Conceptual Plan showing how the project will be served;

b) One (1) print of an approved tentative map;

c) One (1) copy of the conditions of approval of said tentative tract map;

d) Full name, address, and telephone number of the developer;

e) Name, address, and telephone number of the tract engineer of record and the name of the project engineer representing the firm on the subject project;

f) Two (2) prints of the tentative map on which the approved, preliminary water system, including required connections to sources of supply, are legibly shown;

g) A plan check fee determined in accordance with the “Palmdale Water District Rules and Regulations”;

h) Copies of any other maps, plans, surveys, fire department requirements, improvements, etc. that will help expedite the preliminary plan check and which will be required by Palmdale Water District prior to approving plans.

A complete set of plans shall include the following:

1) A cover sheet containing the following:

   a) Benchmark;

   b) General Notes;

   c) One (1) inch equals Two hundred (200) feet map showing lot lines, lot numbers, existing and proposed water mains, water main sizes, valves, fire hydrant locations, sheet numbers, and easements;

   d) Vicinity Map;

   e) List of Materials;

   f) Name, address, and telephone number of Engineer and Developer; and

   g) Approval and revision blocks.

2) Plan and profile sheets containing, but not limited to, the following:

   a) Horizontal scale of one (1) inch equals forty (40) feet;

   b) Vertical scale of one (1) inch equals four (4) feet;

   c) Locations of all existing utilities;

   d) Existing and future surface profiles;

   e) Approval and revision blocks;

   f) North arrow;

g) Curb, gutter, and sidewalk;

h) Property lines, lot lines, and tract boundaries;

i) Complete dimensioning for entire right-of-way of subject street and adjoining streets;

j) Stationing, where applicable, relative to street centerline as shown on the corresponding street improvement plans for the project;

k) All proposed valves, fittings, and appurtenances;

l) Profile view showing all sewer and utility crossings, the proposed water main, valves, fittings, air/vacs, and transitions;

m) Details for transitions including all stationing, and elevations necessary to define pipe alignment and separation from other utilities or improvements;

n) Label and dimensioning for proposed water main.

District design criteria for new water system improvements include the following:

1) Water mains shall be ten (10) feet from curb of face, five (5) feet horizontal, and one (1) foot vertical separation from other utilities. For sewer, see Sheet W-10;

2) Project shall have two (2) points of connection/sources of supply;

3) All water mains must loop (no dead ends);

4) Valves shall be located at right-of-way and property line prolongations;

5) All easement lines shall be valved at both ends, have no service connections, and must be ductile iron pipe;

6) High points shall have air/vacuum release valves;

7) No fittings closer than six (6) feet from curb face;

8) All systems will require retaining glands with mechanical joints;

9) Fire hydrants to be located on the same side of the street as the main wherever possible. Blue dots to be placed six (6) inches from centerline toward fire hydrant.

Plans for private contract work shall be checked by the District and shall be approved by the District prior to starting work.

Plans submitted to the District for approval shall have thereon the name and registration number of the private engineer who prepared the plans or the name of the engineering firm with the name and registration number of the private engineer under whose direction the plans were prepared. Such plans shall be free of advertising, insignia, labels, emblems, seals, or other markings not relevant to the work. Plans are to be presented in a neat, concise, and professional condition.

Upon District's approval of the plans, a single set of original mylars will be sent to the District for signature. Approval of plans by the District will not relieve the Applicant or private engineer of any responsibility because of errors in the plans either by commission or omission. Such errors, when brought to the attention of the private engineer by the District, shall be promptly remedied as herein provided.

After plans have been approved and filed, changes may be made in the plans only upon approval of the District. In order to obtain such approval, the private engineer shall first submit two sets of prints showing the proposed changes. After approval of changes, four prints of the approved revised plans shall be submitted to the District.

If construction operations are not started within twelve (12) months of the date of approval, the plans must be re-submitted for plan check prior to construction. The re-submitted plans will be checked for conformance with the criteria current at the time of re-submittal. The cost of rechecking plans will be paid by the developer as determined above.

The private engineer shall prepare "RECORD DRAWINGS" on prints of the latest revised plans showing clearly all changes in location and elevation of constructed improvement prior to the project being considered complete. These drawings shall show the configuration, manufacturer, and date of manufacture of all valves.

The private engineer shall submit the "RECORD DRAWINGS" to the District Manager for final inspection and approval. Upon receipt of such approval, the private engineer shall correct and deliver the "as-built" original tracings to the District's Engineering Manager not later than thirty (30) days after receipt of such approval.

1-07. Easement Document Requirements.

All easement documents are to be prepared and submitted on the District's approved format and provided along with plans submitted for plan check review.

Prior to the approval of water system plans, the easement documents must be approved as to form.

Grant deeds for easements are required to be executed by the grantor, re-submitted to the District, and have the Affidavit of Acceptance by the District attached to same prior to the tie-in of the water system.

All required easements will be recorded and a Title Insurance Policy for same in the minimum amount of $25,000.00 provided to the District prior to issuance of the Fire System Activation Letter.

1-08. Compliance with Laws and Regulations.

The Contractor shall keep himself informed of all laws, ordinances, and regulations in any manner affecting those employed on the work, or the materials used in the work, and of all orders and decrees of bodies or tribunals having any jurisdiction or authority over the same. He shall at all times and at no expense to the District observe and comply with, and shall require all his agents, employees, contractors, and subcontractors to observe and comply with all such applicable laws, ordinances, regulations, orders, and decrees in effect or which may become effective before completion of the work.

Unless otherwise explicitly provided in these specifications, all permits, and licenses required by other agencies necessary to the prosecution of the work shall be secured by the contractor.

1-09. Protection of Persons and Property.

The Contractor shall provide for the protection of all persons and property as herein specified. Attention is called to "General Industry Safety Orders" and "Construction Safety Orders" of the California State Department of Industrial Relations, Division of Industrial Safety, to which the Contractor is required by law to conform. He shall provide himself with copies of these rules and orders. To the extent applicable, the Contractor shall also comply with the provisions of the Safety and Health Regulations for construction promulgated by the Secretary of Labor under Section 107 of the Contract Work Hours and Safety Standards Act, as set forth in Title 29 C.F.R.

The Contractor shall take all necessary measures to protect the work and prevent accidents during the construction. He shall provide and maintain sufficient night lights, barricades, guards, temporary sidewalks, temporary bridges, danger signals, watchmen, and necessary appliances and safeguards to properly safeguard life and property. He shall also protect all excavations, equipment, and materials with barricades and danger signals so that the public will not be endangered.

The Contractor shall so conduct his operations as to offer the least possible obstruction and inconvenience to traffic, and he shall have under construction no greater amount of work then he can handle properly with due regard for the rights of the public. All traffic shall be permitted to pass through the work with as little delay and inconvenience as possible unless otherwise authorized by the County of Los Angeles, the City of Palmdale or Caltrans.

Convenience of abutting property owners shall be provided for as far as practicable. Convenient access to mailboxes, driveways, houses, and buildings adjoining the work, as well as fire hydrants, shall be maintained and temporary approaches to intersections shall be provided and kept in good condition. When a section of surfacing, pavement, or a structure has been completed, it shall be opened for use by traffic at the request of the District. In order that unnecessary delay to the traveling public may be avoided, the Contractor, when so ordered, shall provide competent flagmen whose sole duty shall consist of directing traffic either through or around the work.

Care should be taken to preserve and protect all public and private property and facilities in and around the work site. The Contractor shall be liable for the complete cost of repairing or replacing all such property and facilities damaged or destroyed during the progress of the work.

No valve or other control on the existing system shall be operated for any purpose by the Contractor unless said operation is under the direct supervision of District personnel. Any operation of District facilities without direct supervision of District personnel will be cause for the District to stop work on the project and will be regarded as tampering with a public water system (U.S. Code 300i-1) and could result in imprisonment or fine to the Contractor or Developer responsible. Any damage resulting from said operation will be repaired at the Contractor's expense. Otherwise the District will operate all valves, hydrants, blow-offs, and curb-stops on the existing system. The District Inspector shall be notified 48 hours prior to the construction of tie-ins to existing lines.

1-10. Public Notice.

a) Notice of Starting Work:

The Contractor shall provide and distribute to all occupants along the streets of the proposed work, printed notices 8-1/2 inches x 11 inches in size, with wording similar to that showing on the following page 1-12.

b) Notice of Temporary Shutdown:

Notice shall be given for temporary interruption of service to existing customers no later than twenty-four (24) hours prior to said interruption. Said note to be printed on 8-1/2 inches x 11 inches paper in a format to be approved by the District prior to distribution.

PUBLIC NOTICE

[Contractor's Company Name] will be conducting construction work on your street on [Day of Week, Month, Date] between [XX a.m.- XX p.m] for the next [X months or days]. As work starts at [Intersection Street Name] proceeds along your street and ends at [Intersection Street Name], we will seek your cooperation and appreciate your understanding.

We ask that you please:

1. **Remain alert when driving/walking by the construction site.**
2. **Keep children away from the construction area.**
3. **Report your concerns to [construction superintendent's name] at [contact number].**

The work is being performed by [Contractor Company Name] and supervised by [superintendent's name], who can be contacted at [address, and telephone number]. [Contractor Company Name] is being contracted by Palmdale Water District (PWD) for this project. PWD's Project Manager is [name], who can be contacted at [telephone number].

If you have a concern after normal business office hours or have a water emergency, please call PWD's emergency line at 661-947-4114.

Thank you for your cooperation,

[Contractor's Company Name]

NOTICIA PÚBLICA

Nombre de la firma llevará a cabo trabajos de construcción en su calle el día de la semana, mes, fecha entre las XX a.m.- XX p.m. Le agradecemos de antemano su cooperación durante este tiempo.

Te pedimos que por favor:

1. **Permanezca alerta al conducir/caminar por el sitio de construcción.**
2. **Mantenga a los niños alejados del área de construcción.**
3. **Informe sus inquietudes al supervisor de construcción al número de contacto.**

El trabajo se está realizando por el nombre de la empresa, el nombre del superintendente, la dirección y el número de teléfono.
Si tiene alguna inquietud después del horario normal de oficina o una emergencia de agua, llame al 661-947-4114.

Gracias por su cooperación,

Nombre de la Firma

1-11. Materials and Workmanship.

Unless otherwise specified, all materials incorporated in the work shall be new. Materials not otherwise designated by detailed specifications shall be of the best commercial quality, suitable for the purpose intended and approved by the District. Equipment, pipe, fittings, etc. must be transported to the site and installed without damage.

All workmanship shall be in conformance with the best trade practices. Particular attention shall be given to the appearance of exposed work. Any work or workmanship not conforming to the best practices shall be subject to rejection.

The District practices zero tolerance for graffiti, and it is the Contractor's responsibility to protect and maintain facilities are graffiti-free until acceptance.

1-12. Project Clean-Up.

An orderly job shall be maintained at all times. Tools, rubbish, and materials shall be picked up and stored in a workmanlike manner at all times. There shall be removed from the vicinity of the completed work all material, etc., used during construction. Surfaces shall be returned to a condition acceptable to the District. All excess material shall be disposed of as directed by the District or removed from the work site.

1-13. Guarantee.

All parts of the work shall be guaranteed against defective materials or workmanship and against settlement of backfill and any resulting damage to resurfacing for a period of one year from the date of final completion of the work.

The expiration of the one (1) year guarantee period does not limit the developer's liability for work which is done contrary to the plans and specifications. Any Performance Bond provided in accordance with Subsection 1-21 of these Specifications shall remain in full force and effect for the guarantee period.

When such defect or settlement is discovered requiring repairs to be made under this guarantee, all such repair work shall be done at no expense to the District within ten (10) days after written notice has been given by the District. Should the Contractor or Applicant fail to repair the work as directed within ten (10) days thereafter, the District may make the necessary repairs and charge the Developer or Applicant with the actual cost of all labor and materials required.

In the event such defect or settlement is discovered requiring immediate corrective action to be taken in the opinion of the District Manager, the District shall have the right to repair or replace same and to take whatever other action the District deems appropriate to correct same and to charge the Developer with the actual cost incurred by the District.

1-14. Final Completion.

As a necessary condition to, and prior to District recognition of final completion of the work, the Applicant shall submit in duplicate to the District:

a) An itemized cost breakdown of the work including cost per foot, and total footage installed, for each size and type of pipe installed; cost per each and total number of fire hydrants installed; and cost per each and total number installed for each size of service lateral and meter installed.

b) A bill of sale conveying, at no cost, to the District all facilities installed.

c) All easement documents recorded, and title insurance policies issued.

d) A letter requesting a final walk-through or punch list and the completion of all items on said punch list.

1-15. Equal Opportunity.

During the performance of the public contract, the Contractor agrees as follows:

The Contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. The Contractor will take affirmative action to ensure that applicants are employed and that employees are treated, during employment, without regard to their race, color, religion, sex, or national origin. Such action shall include, but not be limited to, the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of any or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to post in a conspicuous place available to employees and applicants for employment, notices setting forth the provisions of this Equal Opportunity clause.

The Contractor shall, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, or national origin.

The Contractor shall send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding a notice advising the said labor union or worker's representative of the Contractor's commitments under this section and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

When applicable to the project, the Contractor will comply with all provisions of Executive Order No. 11246 of September 24, 1965 and of the rules, regulations, and relevant orders of the Secretary of Labor.

a) The Contractor will furnish all information and reports required by Executive Order No. 11246 of September 24, 1965 and by the rules, regulations, and orders of the Secretary of Labor or pursuant thereto and will permit access to his books, records, and accounts by the administering agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.

b) In the event of the Contractor's noncompliance with the Equal Opportunity clause of this Section or with any of the said rules, regulations, or orders, the Contract may be canceled, terminated, or suspended in whole or in part, and the Contractor may be declared ineligible for further Government federally assisted construction contracts in accordance with procedure authorized in Executive Order No. 11246 of September 24, 1965 or by rule, regulation, or order of the Secretary of Labor, or as provided by law.

c) The Contractor will include this Equal Opportunity clause in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to Section 204 of Executive Order No. 11246 of September 24, 1965 so that such provisions will be binding upon each subcontractor or vendor. The Contractor will take such action with respect to any subcontract or purchase order as the administering agency may direct as a means of enforcing such provisions including sanctions for noncompliance; provided, however, that in the event the Contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the administering agency, the Contractor may request the United States to enter into such litigation to protect the interests of the United States.

The Equal Opportunity requirements of Executive Order No. 11246 are not applicable to Federally assisted contracts:

1) Which do not exceed ten-thousand dollars ($10,000)

2) Where work is to be performed entirely outside the United States and no recruitment of workers within the United States is involved; or

3) Which are specifically exempt by the Secretary of Labor.

1-16. Trench Shoring and Sheeting.

In the event the work will entail construction of any trench or trenches or excavation or excavations which will be five (5) feet or deeper and into which a person will be required to descend, prior to commencing such construction, the Contractor shall obtain a permit from the California Division of Industrial Safety pursuant to Section 6501 of the California Labor Code. Said permit shall be posted at the job site prior to opening of the excavation. A copy of said permit shall be provided to the District prior to the start of construction or excavation requiring same.

In addition, and with respect to Public Contract work involving a Public contract price in excess of twenty-five thousand dollars ($25,000.00), if any such trenches or excavations will be entailed in the work, prior to commencing such construction, the Contractor shall also submit to the District for approval a detailed plan showing the design of shoring, bracing, sloping, or other provisions to be made for worker protection from the hazard of caving ground during the excavation of such trench or trenches. If such plan varies from the shoring system standards established in Title 8, Article 6, California Division of Industrial Safety Orders, the plan shall be prepared at Contractor's expense by a private engineer registered as a civil or structural engineer.

1-17. Preservation of Monuments.

All historical monuments, benchmarks, survey marks, and stakes shall be preserved. If such monuments are damaged or destroyed during construction, they shall be repaired or replaced at no expense to the District.

1-18. Dust Control.

The work shall be conducted to provide control as follows:

a) No fuel shall be used nor shall any work be conducted which shall emit into the atmosphere any smoke, which is defined as equal to Ringelmann No. 2, or darker.

b) No work shall be conducted which will emit into the atmosphere any flying dust or dirt which is hazardous to humans or which might constitute a nuisance. Any dirt, dust, or mud that accumulates on streets is to be removed by the end of each workday.

1-19. Sanitation.

Temporary chemical toilet facilities shall be provided for the use of all workmen. Each toilet building shall be maintained in a sanitary condition at all times, and at the completion of the construction, shall be removed from the site. Pit-type privies shall not be used.

Pure, cool drinking water with individual drinking cups or a sanitary bubbler fountain shall be available at all times.

1-20. Shop Drawings.

The Contractor shall submit to the District four (4) copies of any shop and erection drawings required by the plans or specifications. The District will, within fifteen (15) days, return two copies to the Contractor marked "Disapproved", "Approved", or "Approved as Revised". In the last case, all revisions will be clearly shown on the returned copy, which shall be considered as an approved drawing, and only drawings or prints which are approved shall be used for manufacture.

Revisions shown on the shop drawings shall be considered as changes necessary to meet the requirements of the plans and specifications and shall not be taken as the basis of claims for extra charges. When delay is caused by the re-submission of shop drawings, Contractor shall not be entitled to any damages or extension of time on account of such delay. The corrections on prints marked "Approved as Revised" shall be made on the originals as soon as practicable and new prints submitted. District's approval shall be considered as applying only to the general arrangement, and such approval of the revisions to detail shall not relieve the Contractor from entire responsibility for correctness of details and dimensions. Contractor shall correct any misfits due to any errors in the drawings. Any fabrication or other work performed in advance of the receipt of approved shop drawings shall be done entirely at the Contractor's expense.

1-21. Contract Bonds.

a) Public Contracts. Simultaneously with the execution of the Agreement, the Applicant shall furnish to the District a bond insuring performance of and full payment for, the work pursuant to the Agreement, Contract, and Specifications in an amount equal to one hundred percent (100%) of the contract price. Insuring performance of the guarantee shall be set forth in Subsection 1-12 of the Specifications in an amount equal to fifty percent (50%) of the contract price. The bond shall be issued by a surety acceptable to the District and shall be released as to insuring such performance and payment of the work immediately upon acceptance of the work by the District and

shall be released as to insuring such performance of the guarantee one (1) year after the District's acceptance of the work.

b) Other Contracts. The Contractor shall furnish to the County of Los Angeles or to the City of Palmdale any bonds specified in the approval document for the improvements issued by the applicable jurisdiction.

The District shall notify the appropriate agency upon final completion of the work to allow the agency to release construction bonds held to the extent the agency's policy dictates.

SECTION 2

PIPELINE MATERIALS

2-01. General.

The work of this section shall include furnishing and installing all pipe, fittings, joints, together with all material, equipment, labor, transportation, supervision, and other items of expense necessary for or incidental to the installation of pressure water mains and appurtenances in accordance with the plans and specifications.

All materials shall be carefully examined at the job site by the Contractor and District Inspector. The pipe and appurtenances shall be new.

2-02. Scope.

This section defines the materials to be used for pipelines, fittings, joints, and appurtenances.

2-03. Cement Mortar Lined and Coated Steel Pipe.

Cement mortar lined and coated steel pipe (CMLC Pipe) and fittings shall be furnished and installed in accordance with the plans. Pipe, including special fittings, shall be manufactured in accordance with AWWA C205-12, *Cement Mortal Protective Lining and Coating for Steel Water Pipe – 4 inch and larger – Shop Applied*, of latest revision and Fed. Spec. SS-P-385 except as further specified in these specifications.

The pipe shall consist of the following component parts: a welded sheet steel or plate steel cylinder with joints formed integrally with the steel cylinder or with the steel joint rings welded to the ends; a five-sixteenth (5/16) inch cement mortar-lining; a one-half (1/2) inch concentric exterior mortar coating; a self-centering bell and spigot joint with a circular pre-formed rubber gasket so designed that the joint will be watertight under all conditions of service.

Steel for cylinders shall be hot-rolled low carbon steel sheets conforming to ASTM A-570 Gr 33. The minimum acceptable yield strength of the steel shall be 33,000 psi, and the minimum wall thickness of any size pipe shall be 10 gauge. Diameter indicated or specified shall be net inside diameter plus or minus one-quarter (1/4) inch after cement mortar-lining. Type II cement shall be used for all mortar-linings and coating.

The exterior of the pipe shall be cement mortar coated. Cement mortar-coating shall be applied in accordance with AWWA C205-12, *Cement Mortal Protective Lining and Coating for Steel Water Pipe – 4 inch and larger – Shop Applied*, of latest revision and Fed. Spec. SS-P-385.

Cathodic protection for CMLC Pipe is required as specified.

a) Joints.

(1) Rubber Gasket Joints. Rubber gasket joints shall conform to Fed. Spec. SS-P-385 and be made in accordance with Standard Drawings W-9.

(2) Lap Welded Field Joints. Where indicated on the drawings, lap joints shall comply with AWWA C206-11, *Field Welding of Steel Pipes* of latest revision. See Standard. Drawing No. W-9

(3) Flanged Ends. Pipe section ends required to be fitted with flanges for special fittings and connections, as shown on the drawings, shall utilize flanges which comply with the requirements of AWWA C207-13, *Steel Pipe Flanges for Waterworks Service* of latest revision Class "D" for steel hub flanges. No plate flanges shall be used. All flanged spools shall be positioned and tack-welded in place prior to completing the weld. Flange bolts installed underground shall be either galvanized or cadmium plated, thoroughly coated with NO-OX Grease and wrapped with 8 mil polyethylene sheet. (AWWA C105/A21.5-10, *Polyethylene Encasement for Ductile Iron Pipe Systems* of latest revision). Gaskets for flanged joints shall be one sixteenth (1/16) inch thick for up to twenty-four (24) inch pipe, one-eighth (1/8) inch thick for pipe larger than twenty-four (24) inches. Rubber gaskets shall not be used for flanged connections. Nuts and bolts shall have hex heads.

b) Fittings for Steel Pipe.

All bends, ells, tees, crosses, reducers, and other fittings for mains twelve (12) inches and smaller shall be either Class 150 or Class 250 Steel Flanged Fittings and shall conform to AWWA Standard C207-13, *Steel Pipe Flanges for Waterworks Service, Sizes 4-inch through 114-inch*, of latest revision and shall be cement mortar lined and coated per AWWA Standard C205-12 or latest revision; or epoxy lined as approved by the District. Fittings for mains larger than twelve (12) inches may be fabricated in accordance to AWWA Standard C208-12, *Dimensions for Fabricated Steel Water Pipe Fittings.*

2-04. Ductile Iron Pipe.

Ductile iron pipe shall be designed in accordance with the latest revision of ANSI/AWWA C150/A21.50-14 of latest revision, *Thickness Design for Ductile Iron Pipe*, for a minimum 250 psi (or project requirements, whichever is greater) rated working pressure plus a 100 psi minimum surge allowance; a safety factor of 2.

Ductile iron pipe shall be manufactured in accordance with the latest revision of ANSI/AWWA C151/A21.51-09, *Ductile Iron Pipe, Centrifugally Cast,* of latest revision. Each pipe shall be subjected to a hydrostatic pressure test of at least 500 psi at the point of manufacture.

Pipe shall have standard asphaltic pipe coating on the exterior and a double thickness cement mortar lining on the interior in accordance with ANSI/AWWA C104/A21.4-13, *Cement-Mortar Lining for Ductile-Iron Pipe and Fittings*, of latest revision.

Manufacturers certificates indicating that pipe has been double lined must be submitted with each pipe delivery.

The class or nominal thickness, net weight without lining, and name of manufacturer shall be clearly marked on each length of pipe. Additionally, the letters "DI" or "Ductile" and the country where the pipe was cast shall be either cast or stamped on to the pipe.

a) Joints.

All pipe shall be furnished with either Push-On Type Joints, such as "Tyton" or "Fastite", or Mechanical Joints. Joints shall be in accordance with ANSI/AWWA C111/A21.11-12*, Rubber-Gasket Joints for Ductile Iron Pipe and Fittings,* of latest revision, and be furnished complete with all necessary accessories.

Push on Restraint: When restraining push on joints adjacent to restrained fittings, a harness restraint device shall be used. All harnesses shall have a pressure rating equal to that of the pipe on which it is used through 14”. Harness assemblies, including the bolts, shall be manufactured of ductile iron conforming to ASTM A536-80. Harness shall be manufactured by EBBA Iron, Inc. or approved equal.

b) Fittings for Ductile Iron Pipe.

Fittings shall be ductile iron. Ductile iron fittings shall conform to the latest revisions of either ANSI/AWWA C110/A21.10-12 *Ductile Iron and Gray Iron Fittings* of latest revisions or ANSI/AWWA C153/A21.53-11 *Ductile Iron Compact Fittings* of latest revision. Fittings shall have a standard asphaltic coating on the exterior and a double thickness

cement mortar lining on the interior in accordance with ANSI/AWWA C104/A21.4-13, *Cement Mortar Lining for Ductile-Iron Pipe and Fittings* of latest revision.

All fittings and accessories shall be furnished with Mechanical Joints in accordance with ANSI/AWWA C111/A21.11-12, *Rubber Gasket Joints for Ductile Iron Pressure Pipe and Fittings* of latest revision. Retaining glands will be required on all Mechanical Joint fittings. The design of all connections between ductile iron pipe and other types of pipe shall be submitted to the District for approval prior to ordering the connection materials.

c) Mechanical Restrained Joints.

Restrained joint fittings shall be provided at all tees, crosses, reducers, bends, caps, plugs, and valves such that the pipe is fully restrained in any one given direction.

Mechanical Restrained Joints shall meet Uni-B-13 for PVC and be UL/FM approved through 12" for both ductile iron and PVC. The restraint mechanism shall consist of individually activated gripping surfaces to maximize restraint capability.

Twist-off nuts, sized the same as the tee-head bolts, shall be used to insure proper activating of restraining devices. The gland shall be manufactured of ductile iron conforming to ASTM A536-80. The retainer-gland shall have a pressure rating equal to that of the pipe on which it is used through 14" with a minimum safety factor of 2. See Standard Drawings W-21, W-22, and W-23. Gland shall be Megalug by EBBA Iron, Inc. or approved equal.

d) Installation of Ductile Iron Pipe and Fittings.

All pipe, fittings, and accessories shall be installed and tested in accordance with the latest revision of AWWA Standard C600-10, *Installation of Ductile Iron Mains and Their Appurtenances*, of latest revision. Newly installed ductile iron water mains shall be disinfected in accordance with the latest revision of AWWA Standard C651-14 *Disinfecting Water Mains*, of latest revision prior to placing in service.

e) Connections.

All connections for water service shall be made with malleable iron double strap service saddle as shown on Standard Drawing No. W-1 and W-1A and stated in Section 5-08.

f) Short Pipe Lengths.

Short lengths of pipe no less than one half the length of a standard pipe section shall be used only where necessary to permit the deflections required for abrupt changes of grade or short radius curves. If short lengths of pipe are required to necessitate placing a valve or fitting on station, the short length shall be installed a minimum of one full pipe length away from said fitting, otherwise joint restraints will be required.

2-05. Polyvinyl Chloride (PVC) Pipe.

Polyvinyl Chloride (PVC) pipe and joints shall be designed and manufactured in accordance with ANSI/AWWA Standard C900-07, *Polyvinyl Chloride (PVC) Pressure Pipe, and Fabricated Fittings 4-inch through 12 inch for Water Transmission and Distribution*, of latest revision, and Appendix A of said Standard. All pipe shall have a dimension ratio (DR) as shown on the approved plans. If the DR is not specified, DR 18 shall be installed.

Pipe markings shall be in accordance with ANSI/AWWA Standard C900-07, *Polyvinyl Chloride (PVC) Pressure Pipe and Fabricated Fittings, 4-inch through 12-inch for Water Distribution*, of latest revision including the seal (mark) of the testing agency which verified the suitability of the pipe material for potable-water service. An affidavit of compliance to specifications shall be provided for all delivered materials.

a) Fittings for Polyvinyl Chloride (PVC) Pipe.

Fittings shall be ductile-iron and shall conform to the latest revision of either ANSI/AWWA Standard C110/A21.10-12, *Ductile Iron and Gray Iron Fittings*, of latest revision or ANSI/AWWA C153/A21.53-11, *Ductile Iron Compact Fittings* of latest revision Class 350. Fitting shall be cement mortar lined per ANSI/AWWA Standard C104/A21.5-13, *Cement-Mortar Lining for Ductile Iron Pipe and Fittings* of latest revision.

All fittings and accessories shall be furnished with mechanical joints in accordance with the latest revision of ANSI/AWWA Standard C111/A21.11-12, *Rubber Gasket Joints for Ductile Iron Pressure Pipe and Fittings* of latest revision. All fitting joints shall have Mechanical Restrained Joints.

The design of all connections between Polyvinyl Chloride (PVC) Pipe and other types of pipe shall be submitted to the District for approval prior to ordering the connection materials.

Mechanical Restrained Joints: Restrained joint fittings shall be provided at all tees, crosses, reducers, bends, caps, plugs, and valves such that the pipe is fully restrained in any one given direction.

Mechanical Restrained Joints shall meet Uni-B-13 for PVC and be UL/FM approved through 12" for both ductile iron and PVC. The restraint mechanism shall consist of individually activated gripping surfaces to maximize restraint capability. Twist-off nuts, sized the same as the tee-head bolts, shall be used to insure proper activating of restraining devices. The gland shall be manufactured of ductile iron conforming to ASTM A536-80. The retainer-gland shall have a pressure rating equal to that of the pipe on which it is used through 14" with a minimum safety factor of 2. See Standard Drawings W-18, W-19, and W-20. Gland shall be Megalug by EBBA Iron, Inc. or approved equal.

b) Curves and Bends.

Changes in alignment and grade may be made by deflecting the pipe units at joints as provided herein and pipe units shorter than standard length may be required. Pipe joints shall not be deflected more than half of the manufacturer's recommendation. Pipe with factory installed couplings shall be deflected not more than half the allowable deflection for field installed couplings.

If necessary, alternate methods of providing curves in pipelines other than shown on the plans may be submitted to the District for approval.

Where no radius is given at minor Points of Intersection, the deflection angle shall be accomplished by making the deflection at one or more couplings as required.

Short lengths of pipe no less than one half the length of a standard pipe section shall be used only where necessary to permit the deflections required for abrupt changes of grade or short radius curves. If short lengths of pipe are required to necessitate placing a valve or fitting on station, the short length shall be installed a minimum of one full pipe length away from said fitting, otherwise Mechanical Restrained Joint will be required.

c) Identification Wire.

Identification wire shall be installed with all Polyvinyl Chloride (PVC) Pipe. The wire shall be insulated 14-gauge copper and shall be installed as detailed on Standard Drawing No. W-8. The wire shall be placed on the top of the pipe on the centerline of the pipe. The wire shall be fastened securely at four (4) foot intervals and at each joint or fitting with an eight (8) inch length of two (2) inch wide duct tape or other approved method. All splices to be encapsulated with rubber sealing tape per Duet Industries or approved equal and shall be in hydrant pads where possible. See Standard Drawing W-8.

The wire shall be tested prior to issuance of Fire System Activation Letter to ensure continuity. Testing must be witnessed by the District Inspector.

d) Connections.

All connections for water service shall be made with a Jones Model No. J-969 or approved equal bronze service saddle set with double stainless steel straps as shown on Standard Drawing No. W-1 and W-1A and stated in section 5-07.

e) Underground Marking Tape.

Underground marking tape shall be installed with all PVC pipe. The tape shall be placed one (1) foot above the pipe with the lettering facing up. It shall be six (6) inches wide, blue in color, with the following wording: "Caution -Water Line Buried Below", stretchable, and constructed of six (6) ply high-density copolymer. The tape shall be Terra Tape Extra Stretch 540 or approved equal meeting the requirements listed above.

f) Push on Restraint.

When restraining push on joints adjacent to restrained fittings, a harness restraint device shall be used. All harnesses shall have a pressure rating equal to that of the pipe on which it is used through 14”. Harness assemblies, including the bolts, shall be manufactured of ductile iron conforming to ASTM A536-80. Harness shall be manufactured by EBBA Iron, Inc. or approved equal.

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SECTION 3

VALVES, FIRE HYDRANTS, AND APPURTENANCES

3-01. Gate Valves.

Unless otherwise specified, no gate valves larger than ten (10) inch shall be used.

All gate valves must equal or exceed the requirements of the latest revision of standards for gate valves and resilient-seated gate valves, AWWA C500-09, *Metal-Seated Gate Valves for Water Supply Service*, of latest revision or AWWA C509-09, *Resilient-Seated Gate Valves for Water Supply Service*, of latest revision and shall further be Mueller, Stockham, Clow, Kennedy, A.P. Smith, American, or approved equal.

Valves supplied shall be resilient seated wedge, with O-ring seals, non-rising stems, two (2) inch operation nut, opening left.

Valves specified "with handwheels" shall be supplied with operating handwheels instead of two (2) inch operating nut.

Valve ends shall conform to AWWA standard; flanged ends per AWWA C110/A21.10-12, *Ductile Iron and Gray Iron Fittings* of latest revision, as required for steel pipe; or mechanical joints as required for ductile iron and polyvinyl chloride (PVC) pipe.

Valves shall be suitable for buried service and horizontal mounting. Valves shall be adequately anchored for thrust in accordance with the requirements of these specifications and as shown in the Standard Drawing W-4.

a) Gate Valves Two and One-half (2-1/2) Inches and Smaller.

Valves shall conform to Fed. Spec. WW-V-54, Type III, Class C, and style as required. Valves shall be supplied with operating handwheels.

3-02. Check Valves.

Check valves shall have an unrestricted opening with an adjustable controlled closure rate so that valve slamming is reduced to an absolute minimum upon instantaneous shut-off. Valves shall be mounted vertically between ANSI required class flanges. Body shall be cast iron or steel. Disc and shaft shall be stainless steel 18-8 or 303. It shall be complete with hydraulic or pneumatic cushion chamber, counterweight, and accumulator for hydraulic operators. Seat ring shall be replaceable and shall be Viton or Teflon. Valves shall be Prince Cushion Valves, Apco Cushioned Check Valves, or approved equal. Check valves two and one-half (2-1/2) inches and smaller shall be Walworth, or approved equal.

3-03. Plug Valves.

Plug valves shall be used only where specified.

Plug valves shall be lubricated, have a semi-steel body, and tapered plug with dry film coating on seating surface with adjustable 3-bolt gland assembly sealed by double o-rings. The plug shall be removable through the top of the valve. The valves shall be designed for the working pressures shown on the plans. Valves shall be Rockwell, Dezurick, or approved equal.

Unless approved otherwise, valves shall have flanged ends and shall be equipped for totally enclosed worm gear operating with a two (2) inch square operating nut where called for on plans. Other valves shall be lever operated. Valves shall be equipped with lubricator extensions as indicated on the plans.

3-04. Butterfly Valves.

Butterfly valves, if shown on the plans, shall meet AWWA C504-15, *Rubber-Seated Butterfly Valves* of latest revision for rubber seated, tight closing valves. Valves shall be flanged-pattern short body, and shall be cast iron, shaft or stainless steel 18-8 Type 304, disc of Ni-Resist Type 1. They shall be Class 150 unless noted on the plans. Valve operators shall be waterproof, suitable for buried service and equipped with a two (2) inch square operating nut. Where possible, operators shall be placed on the side of the pipeline nearest the curb, opposite centerline of street. Valves shall be adequately anchored for thrust in accordance with the requirements of these specifications and as shown in the Standard Drawing W-4. Concrete pads shall be poured under butterfly valves adequately anchored for thrust.

All butterfly valves shall be field tested in the presence of the inspector prior to installation for compliance with Section 5 of AWWA C504-15, *Rubber-Seated Butterfly Valves*, of latest revision. This includes performance, leak, and hydrostatic testing. Factory certification is not an acceptable substitute for the field testing. Any valves not tested will be rejected.

Contractor shall coordinate pipe manufacture to insure free movement of valve disc within the pipe.

3-05. Combination Air and Vacuum Valve Assemblies and Blow-off Assemblies.

a) General.

Combination air and vacuum valves and blow-off valves shall be installed in the pipeline at locations shown on the plans. The tap for the air valves and/or blow-off valves shall be made in a level section of pipe, no closer than twenty-four (24) inches from any machined section of pipe, rubber gasketed joint, or flanged joint.

Where practical, connections to steel pipe for combination valve assemblies and/or blow-off assemblies shall be made with a 3,000 lb. half weld-on coupling welded to the pipe in the shop at time of fabrication.

Where it is necessary to make the connection in the field, additional care shall be exercised to minimize the damage to mortar-linings. Wherever connections can be made dry, the coupling shall be welded to the pipe and the mortar lining repaired. The exterior concrete lining shall be repaired, and two heavy coats of coal tar enamel paint applied to all exposed steel fittings in conformance with AWWA C203-15. *Coal-Tar Protective Coatings & Linings for Steel Water Pipe*, of latest revision.

b) Combination Air and Vacuum Valve Assemblies.

The Contractor shall install in the water main combination air and vacuum valve assembly as shown on Standard Drawing W-16 at locations detailed on the plans and sized in accordance with manufacturers recommendations. Generally, one (1) inch assemblies are used for eight (8) inch and smaller mains, and two (2) inch assemblies for larger mains.

c) Blow-off Valve Assemblies.

The Contractor shall install blow-off assemblies as detailed on the plans. Valves and fittings shall equal or exceed the pressure rating of the pipe to which they are attached. Materials and required fittings are shown on Standard Drawings W-6, W-6A, and W-7. The blow-off valves shall be adequately sized for blow-down of water lines.

d) Tapping Valves.

Tapping valves shall be Mueller, A.P. Smith, Clow, or approved equal, and shall have flanged end connection with the appropriate adapters.

3-06. Fire Hydrant Assemblies.

a) General.

Fire hydrant assemblies shall include the connection to the main and shall consist of fire hydrant and appurtenances in accordance with these specifications and as shown on the Standard Drawings W-2, W-2A, W-3, or W-3A.

b) Location.

Fire hydrant risers shall be located on lot lines or at intersections a minimum of five (5) feet beyond curb radius ends and shall set back from face of curb two (2) feet. Distances in each case are measured from the centerline of the fire hydrant riser.

Gate valves shall be located adjacent to the water main.

c) Materials.

Fire hydrants shall be six (6) inches x four (4) inches by two and one-half (2-1/2) inches Clow Model 850 or equal. All valve operating stem ends shall be equipped with pentagonal dummy nuts the same size as the nozzle cap ends.

Fire hydrants shall be cast iron. All hydrants must conform to AWWA C503 and in all cases must be approved by the County of Los Angeles, Forester, and Fire Warden. Fire hydrant tops shall be tapped for two and one-half (2-1/2) inch I.P.T.

Fire hydrant risers and runners shall be a full six (6) inches inside diameter pipe. Type of pipe shall be ten (10) ga. CMLC steel as described in Section 2-04 of these specifications when installed with asbestos cement or steel pipe. The run shall be ductile iron as described in Section 2-05 for all other materials. The bury shall be ductile iron with an eight (8) hole patterned flange.

All required bolts, nuts, and gaskets shall be provided. Bolt holes shall be seven-eighths (7/8) inches in diameter, and bolts shall be three-quarter (3/4) inches by three (3) inches machined bolts. Bolts at hydrant flange shall be Cad-Plated hollow bolts, installed with nuts on bottom. Only hexagonal nuts and bolts will be permitted. All bolts provided must be a minimum length of at least three threads past nut when tightened.

All hydrants shall be painted with one (1) coat of red primer and two (2) finish coats of Rust-Oleum Safety Yellow or approved equal. The Contractor shall apply an additional finish coat after installation.

3-07. Location of Appurtenances.

The District reserves the right to direct the location of all valve marker posts, air release valve assemblies, and blow-off valve assemblies within the road right-of-way or easement to ensure proper drainage and to minimize interference with traffic.

3-08. Valve Boxes and Covers.

Valve boxes for buried valves shall be installed with eight (8) inch Schedule 40 PVC pipe risers. The entire valve box assembly shall be per Standard Drawing No. W-5.

3-09. Concrete Meter Boxes.

Concrete meter boxes shall be furnished and installed as shown on the plans or in the Standard Drawings. Meter boxes shall be as manufactured by Eisel Enterprises, Inc., or approved equal.

Meter boxes shall be furnished according to the following schedule:

a) Three-quarter (3/4) inch water service and meter: Eisel No. W437MB, or equal.

b) One (1) inch water service and meter: Eisel No. W438MB, or equal.

c) One and one-half (1-1/2) inch or two (2) inch water service and meter: Eisel No.W66BMB, or equal.

d) Two (2) inch blow-off assembly: Eisel No. W437MB, or equal.

e) Water sampling station: Brook No. 3RT or equal.

3-10. Flexible Couplings.

Flexible couplings shall have all stainless-steel nuts and bolts and be either stainless steel bodies or all epoxy lined and coated. They shall be Rockwell, Smith-Blair, Baker, Dayton, or approved equal. Flanged couplings adapters shall be Rockwell, Smith-Blair, Baker, Dayton, or approved equal. Clamp type mechanical couplings shall be as manufactured by the Victaulic Company of America, Gustin-Bacon, or equal and shall be for pipe with grooved ends for water service and able to withstand a pressure equal to the strength of the pipe to which they are attached. All flexible couplings shall be protected by coating with NO-OX Grease.

3-11. Reduced Pressure Detector Assembly (RPDA).

All projects that are required to provide on-site fire protection will be required to install a reduced pressure detector assembly (RPDA) that is sized appropriately to meet the projects on-site fire protection requirements. RPDAs shall also be field tested by a certified testing firm prior to issuance of Fire System Activation Letter. Testing shall be done at one-year intervals thereafter until the project is accepted.

3-12. Large Meters (3" and Larger).

Large meter assemblies, when required, shall be completely contained in a vault and include sufficient valving and by-pass capabilities to allow the meter to be serviced, removed, or tested without interrupting water service to the customer. Serial number of the large meters shall be clearly labelled on the body of the meter or within the register. The large meter and vault must be fully detailed on improvement plans. The vault shall have the following features:

a) A steel hot-dipped, galvanized, removable lid with a spring-loaded access hatch;

b) A ladder; and

c) A concrete floor sloped to a sump constructed per Standard Drawing W-12.

The large meter, registers, and automatic reading system shall be manufactured and assembled as a complete unit and shall be accompanied by certification from the manufacturer that the automatic reading system is appropriate and an integral part of same. Certification of bench test accuracy shall be provided at the time of delivery of the unit. The remote readers shall accurately reflect the actual meter readings.

Large meters shall also be field tested for accuracy by a certified testing firm prior. Testing shall be done at one-year intervals thereafter until the project is accepted. All registers of the meter shall comply with the AWWA C715-18, *Cold-Water Meters – Electromagnetic and Ultrasonic Type For Revenue Applications,* standard for accuracy, of latest revision. All flanged bolts and appurtenances shall be painted a minimum of two (2) coats of automotive grade non-lead red primer.

3-13. Flange Insulation Kits.

Flange insulation kits are required at connections between ductile mains and steel mains or services. Flange insulation kits shall be installed as shown on approved plans or as directed by the District and shall be Calpico, Inc. rubber-coated gasket kits or approved equal.

SECTION 4

PIPELINE INSTALLATION

4-01. Scope.

This section covers the installation of pipelines and appurtenances, including trenching, laying, backfill, compaction, restoring street surfaces, and clean-up.

4-02. Shop Drawings.

Wherever proposals for alternate methods or materials, special conditions, require approval of the District, detailed shop, fabrication, or erection drawings shall be provided by the Contractor for District approval as specified in Section 1-20 to accommodate the rate of construction.

4-03. Control of Water.

The Contractor shall furnish, install, and operate all necessary machinery, appliances, and equipment to keep excavation sufficiently free from water during construction of the work to permit proper laying and jointing and shall dispose of water so as not to cause injury to public or private property or to cause a nuisance or a menace to the public.

4-04. Excavation.

The Contractor shall perform all excavations for pipelines and appurtenances of whatever substances encountered to the depths indicated or otherwise required. Excavated material suitable for backfilling shall be piled in an orderly manner a minimum of two (2) feet from the excavated banks to avoid overloading and to prevent slides or cave-ins. Such grading shall be done as may be necessary to prevent surface water from flowing into trenches. Any water accumulating therein shall be removed by pumping or other approved means. Such sheeting and shoring shall be installed as may be necessary for protection of the work and safety of personnel in accordance with O.S.H.A. requirements. Excavations in earth and in rock shall be carried to six (6) inches below bottom of pipe. Bell holes and depressions for couplings, valves, and the like shall be excavated the same distances below these installations. The materials excavated shall be used in the backfill or removed and disposed of by Contractor as required and specified by the Engineer.

The overnight use of trench plates will be allowed only upon written request by Contractor or Developer subject to approval by the District's General Manager. Trench plates shall be non-skid, a minimum of one-inch thick, and rated for H.D.-20 loading or greater. The excavation beneath the plate shall be shored, and the plates must be either pinned to the existing surface and ramped with temporary asphalt or counter-sunk flush to the surface. If two or more adjoining plates are to be used, they shall be tack-welded together. In the event that pending inclement weather or other conditions, as determined by the District, may adversely affect the use of plates, said

plates shall be removed, and the excavation shall be backfilled, and the surface secured with temporary asphalt. The placement of trench plates shall be in accordance with the requirements of and meet the approval of the governmental agencies having jurisdiction.

Unless otherwise approved by the District prior to the beginning of construction, the length of open trench shall not exceed 500 feet including excavation, pipeline installing, and backfill in any one location. Minimum trench width shall be as required for proper assembly and joint inspection, but in no case less than twelve (12) inches greater than nominal pipe diameter. Maximum allowable width of trench for all pipelines measured at the top of the pipe shall be the outside diameter of the pipe (exclusive of all bells or collars) plus sixteen (16) inches, and such maximum shall be inclusive of all timbers. All open trenches will be backfilled to the compaction requirements and to the satisfaction of the District Inspector by the end of each workday.

4-05. Location of Existing Facilities.

Contractor shall excavate and locate existing utilities and culverts prior to excavation. All pavement shall be cut or sawed a minimum eight (8) inches wider than the trench prior to trenching.

4-06. Depth of Pipe.

Unless otherwise shown on the plans, all water mains shall have a coverage of forty-two (42) inches between the top of the pipe and the top of finished surface.

4-07. Changes in Line and Grade.

The alignment of the pipeline is shown on the plans.

In the event obstructions not shown on the plans are encountered during the progress of the work, which will require alterations to the plans, the Developer's Engineer shall submit proposed changes to the District for approval. The Contractor shall not make any deviation from the specified line or grade without prior approval by the District.

4-08. Handling and Storing Materials.

During storage, handling, and transporting, every precaution shall be taken to prevent damage to pipe. Pipe shall be handled only by means of fabric slings or other approved methods for the pipe used.

Valves, fittings, hydrants, and other accessories shall be loaded and unloaded by lifting with hoist or skidding, so as to avoid shock or damage. Under no circumstances shall such materials be dropped. Any disapproved materials shall be removed from the job site immediately.

In distributing the material at the site of work, each piece shall be unloaded opposite the place where it is to be laid in the trench.

Steel and ductile iron pipe shall be handled so that the lining and coating will not be damaged. If, however, any part of the coating is damaged, repair shall be made by the Contractor at his expense to manufacturer's specifications.

4-09. Installing Pipe.

The Contractor is required to coordinate all installation of the various utilities so that the storm drain, sewer and curb and gutter are constructed prior to the water main installation. The Contractor shall, after excavating the trench and preparing the proper bedding for the pipe, furnish all necessary facilities for properly lowering and placing sections of the pipe in the trench without damage and shall properly install the pipe. The sections of pipe shall be fitted together correctly and shall be laid true to line and grade in accordance with elevations established by the Engineer. In the absence of curb and gutter, construction stakes shall be set by a registered civil engineer or licensed land surveyor indicating line and grade and location of all valves, fire hydrants and appurtenances. The maximum stake interval shall be fifty (50) feet. The full length of the barrel of the pipe shall have a uniform bearing upon six (6) inches of bedding material, but if the pipe has a projecting bell, suitable excavation shall be made to receive the bell which shall not bear on the subgrade. The requirement for closely fitting the bottom of the pipe to the bedding material for the width shown on the drawings will be strictly enforced.

Pipe shall be laid uphill. Pipe shall be true in alignment, both vertical and horizontal, and shall not show any undue settlement after laying. No pipe shall be laid which is damaged, cracked, checked, or spalled, or has any other defect deemed by the District to make it unacceptable. All such sections shall be permanently removed from the work.

At all times when the work of installing pipe is not in progress, all openings into the ends of the installed pipelines shall be kept tightly closed with suitable bulkheads to prevent the entrance of animals, foreign materials, and water.

The pipe trench shall be kept free from water at all times, and the Contractor shall take all necessary precautions to prevent the pipe from floating due to water entering the trench from any source, shall assume full responsibility for any damage due to this cause, and shall, at his expense, restore and replace the pipe to its specified condition and grade if it is displaced due to floating or due to any other reason.

All pipelines adjoining concrete structures shall have a flexible joint at eighteen (18) inches from the face of such concrete structures.

Before lowering and while suspended or standing vertically at trench side, the pipe shall be inspected for defects. Any defective, damaged, or unsound material shall be rejected.

a) Ductile Iron or Polyvinyl Chloride (PVC) Pipe.

Pipe shall be laid true to line and grade. Pipe shall be installed in accordance with AWWA C603-05, *Installation of Asbestos-Cement Pressure Pipe*, of latest revision. All pipe on curves shall be assembled straight and laid over. The maximum joint deflection shall be as hereinbefore specified. The rubber rings shall be checked after installation with a gauge supplied by the manufacturer to ensure that the ring is properly seated. If, for any reason, the ring is not properly seated, the joint shall be pulled apart and satisfactorily remade.

At all locations where pipe is to be encased or cradled in concrete, the pipe shall be wrapped with a minimum of two (2) layers of fifteen (15) pound, asphalt-impregnated roofing felt in such a manner that the concrete does not form a bond with the pipe.

Identification wire shall be installed with all non-metallic pipe. The wire shall be insulated, 14-gauge copper, and shall be installed as detailed on Standard Drawing No. W-8. The wire shall be placed on the top of the pipe and the centerline of the pipe. The wire shall be fastened securely at intervals of four (4) feet and at each joint or fitting with an eight (8) inch length of two (2) inch wide duct tape or other approved method.

Underground marking tape shall be installed with all non-metallic pipe. The tape shall be placed one (1) foot above the pipe with the lettering facing up. It shall be six (6) inches wide, blue in color, with the following wording: "Caution - Water Line Buried Below", stretchable, and constructed of six (6) ply high-density copolymer. The tape shall be Terra Tape Extra Stretch 540 or approved equal meeting the requirements listed above.

b) Steel Pipe.

Jointing sections of welded steel pipe with rubber gasket joints shall be accomplished by placing the rubber gasket in the spigot groove before the section is lowered into the trench and lubricating the bell end of the last section laid with an approved lubricant to reduce the friction of the entering gasket. The spigot end shall then be inserted in the bell end of the pipe in place and forced into position without injury to the pipe or gasket. Care shall be taken to ensure that the spigot is fully entered into the bell and a "feeler" gauge used to check the position of the rubber gasket. Just prior to joining the two ends together, each end of pipe shall be "buttered" with cement mortar in such a manner and in sufficient quantity to completely fill the space between the respective mortar linings. The mortar shall be composed of one (1) part of Portland Cement of the same type used in the lining and coating, two (2) parts of sand by volume, and one-eighth (1/8) part fire clay with sufficient water added to give the mixture a stiff consistency. The

mixture shall not be held over one (1) hour then shall be discarded and no re-tempering by addition of water shall be allowed. Epoxy concrete adhesive shall be applied to the metal prior to coating of field fabrications or minor repairs on both coating and lining that the District may allow. After the jointing is completed, the pipe interior shall be swabbed to remove all excess mortar by drawing an approved type swab or squeegee through the pipe. After the field joints have been completed and inspected, the joint exterior shall be thoroughly cleaned.

Pipe bonding devices to provide electrical continuity shall be installed in accordance with the pipe manufacturers recommendations.

The outside joint recess shall be grouted with cement mortar after a fabric diaper has first been placed around the joint and tightened securely to prevent leakage while the mortar is being poured. The diaper shall be made of heavy-duty polyethylene fabric or other approved material of sufficiently close weave to prevent cement loss from the mortar. The fabric shall be hemmed on each edge and shall contain a metal strap within each hem sufficiently longer than the circumference of the pipe to allow a secure attachment of the diaper to the pipe. The diaper shall be centered on the joint and positioned to provide a mortar coating of the pipe ends equal in thickness to the mortar coating on the pipe. The mortar shall be the same as for the interior joints except that it shall contain sufficient water to produce a creamy consistency. Prior to placing the mortar, the joint and diaper shall be moistened with water. The joints shall be poured and rodded or manipulated by hand to remove air bubbles from one side only until the mortar comes up to the top of the diaper on the opposite side. The mortar shall completely fill the outside annular space between the ends of the pipes around the entire circumference of the joint. If required by the District, the diaper shall be removed, and the grouted joint inspected after the adjacent pipe sections have been sufficiently covered with backfill material to bring the pipe to a normal in-place temperature. The joint shall be repaired, if necessary, and given a heavy coating of Hunt Process Concrete Curing Compound or curing compound (Hunter equal) at the earliest practicable time after the mortar has hardened sufficiently.

Field welded joints shall be in conformance with AWWA C206-11, *Field Welding of Steel Water Pipe*, of latest revision.

4-10. Foundation Rock.

Where ground water is encountered or the native material does not afford a solid foundation for pipe subgrade as specified herein, the Contractor shall excavate to such depths below the subgrade as the District decides is necessary and shall construct a stable base by placing foundation rock upon

which pipe bedding can be prepared. Foundation rock shall be three-quarter (3/4) inch aggregate base material.

4-11. Protective Coatings.

All otherwise uncoated buried steel surfaces, including nuts and bolts, shall be thoroughly coated with NO-OX Grease and then be wrapped with 8 mil polyethylene sheet per AWWA C-105/A21.5-10, *Polyethylene Encasement for Ductile Iron Pipe Systems*, of latest revision.

4-12. Shop Painting.

All exposed ferrous metal surfaces, including any pipe supports, shall be shop painted unless otherwise shown on the plans.

a) Surface Preparation.

All rust, loose scale, and foreign matter shall be removed from surfaces to be coated by wire brushing or sandblasting. Oil and grease shall be removed with cleaning solvent, and surfaces shall be dry.

b) Coating.

Surfaces which will be in contact with the earth and are to receive a field applied coating as specified elsewhere shall be shop-painted in accordance with AWWA C203-15, *Coal Tar Protective Coatings and Linings for Steel Water Pipe*, of latest revision.

Exposed surfaces shall be shop-painted with one coat of red primer.

4-13. Anchor and Thrust Blocks.

Anchor and thrust blocks shall be installed at fittings and valves and, where directed by the District, in accordance with details shown on Standard Drawing W-4. Excavations and forms for thrust and anchor blocks shall be examined by the District's authorized representative prior to placement of concrete. Thrust blocks shall be constructed of five-sack concrete and shall bear against undisturbed soil and shall be allowed to cure until an adequate strength has been obtained, at least forty-eight (48) hours, prior to pressurizing the pipe. No quick setting additives shall be used. Any flanged fittings coming in contact with concrete shall be thoroughly wrapped, including the bolts and nuts, with a layer of 8 mil polyethylene film. Form work shall be constructed of sandbags wherever necessary to confine the concrete to the prescribed dimensions for the block.

4-14. Hydrostatic Tests.

After the pipe backfill has been completed and accepted, the pipe shall be subjected to a hydrostatic pressure test as hereinafter specified. The District shall be notified twenty-four (24) hours prior to testing. An Inspector shall be present at all tests.

Each water main shall be filled with potable water and shall be tested in sections of convenient lengths as determined by the range of elevations within the test section which shall result in test pressure within the limits hereinafter specified. Testing against valves will not be permitted.

The test pump and gauge shall be connected to the water main at a location other than the highest point in the line in order to facilitate release of air from the high point. The gauge shall be approved by the District.

The test pressure at the location of the testing equipment shall be computed on the basis of the relative elevations of the test gauge and the lowest point in the pipe section being tested and shall result in a pressure equal to the pressure classification of the pipe plus 50 psi at the lowest point in said pipe section. The test pressure at the highest point in the pipe test section shall not be less than 110 percent of pressure classification.

This test shall be made on all sections of water main in order that all pipe, valves, fittings, fire hydrants, connections, and water services may receive the test. The test pressure shall be maintained continuously by pumping for a period of one (1) hour. Pumping shall then be discontinued for one (1) hour and the drop in pressure read on the dial of the gauge at the end of the second hour and recorded. The initial test pressure shall then be restored by pumping, and the quantity of water pumped into the line to accomplish this shall be measured accurately. If there is any sign of leakage or failure at any point on the line during the test, the test shall be discontinued until the same has been repaired after which the test shall be repeated until the pipe section tested shall have met the above requirements. The test shall be performed and accepted only in the presence of District's authorized representative. The following table summarizes the maximum allowable leakage rate for various pipe materials:

PIPE MATERIAL	ALLOWABLE LEAKAGE (PER MILE, PER HOUR)
STEEL (NON-WELDED)	$\frac{(D)\sqrt{T}}{36.75}$
DUCTILE IRON & PVC	$\frac{(D)\sqrt{T}}{25.00}$

D = DIAMETER IN INCHES

T = TEST PRESSURE (PSI)

Contractor shall furnish and install, at his own expense, all corporation stops, temporary pipe, fittings, connections, equipment, bulkheads, R.P.B.D.'s, and bracing required for the tests and shall be responsible for any and all damage resulting from failure under test of material furnished and installed by him, or from faulty workmanship, negligence, or improper test methods.

All defective joints, cracked, or defective pipe, fittings, valves, hydrants, or service connections shall be removed and replaced by Contractor with sound material. Tests shall be rejected until satisfactory results are obtained as determined by the District.

Before applying the specified test pressure, care shall be taken to insure the expulsion, through hydrants, air release valves, services, or by other suitable means, of all air within the pipe and appurtenances to be tested.

4-15. Disinfection of Water Mains and Services.

All water mains, water services, attached appurtenances, and temporary connections, if any, shall be disinfected in accordance with AWWA C601-81, *Standard for Disinfecting Water Mains*, of latest revision and the following requirements:

Chlorine shall be applied to the water in sufficient quantity to produce a dosage of not less than 50 ppm in all sections of the line, services, and appurtenances. Treated water shall be retained in the system for a period of twenty-four (24) hours minimum and shall produce not less than twenty-five (25) ppm in all sections being disinfected at the end of the twenty-four (24) hour period. Chlorination shall be done using a chlorine gas/water or sodium

hypochlorite solution. Chlorine dosage not-to-exceed one hundred (100) ppm under normal conditions.

The chlorinated water may be used later, if practicable, for water settling operations in connection with backfilling, for testing other mains, or if not so used, Contractor shall properly dechlorinate and dispose of the water. District will not be responsible for loss or damage resulting from such disposal.

Contractor shall install corporation valves in accordance with Standard Drawing W-1 of the proper size wherever necessary to chlorinate or sample and/or dispose of any chlorinated water. There shall be no separate payment for tapping and installing connections which are for filling, testing, sampling, or chlorination or flushing only.

Temporary taps for bacteriological samples shall be installed every 500 feet on main lines where there are no other outlets available for sampling.

Disinfecting the main and services, hydrostatic testing, and preliminary retention may run concurrently for the required twenty-four (24) hour period, but in the event there is leakage and repairs are necessary, additional disinfection may be required.

During the chlorination process, all valves and accessories shall be operated.

After the required period of retention of the chlorine or hypochlorite solution, a District representative will test the water for residual chlorine and any further tests which may be required.

After chlorination, the water shall be flushed from the line at its extreme ends until the replacement water is chemically and bacteriologically equal to the permanent source of water supply. One set of samples for bacterial analysis will be taken not less than twenty-four (24) hours later by the District and sent to the District's laboratory for analysis. The disinfection will not be considered complete until the supply is in conformance with the public health standards for drinking water and pseudomonas aeruginosa is no greater than the water source. The number of samples required will be as determined by the District, and the cost of processing shall be borne by the Developer.

If the tests are not satisfactory, Developer shall provide additional disinfection as required at no extra cost to the District.

4-16. Water.

District will provide water at the standard metered rate to perform all necessary operations. No other water shall be used unless test results are provided proving the water meets all applicable quality standards at point of connection to system. Contractor shall bear the cost of any necessary testing and connections and install any necessary facilities to obtain water, unless stated on the drawings.

4-17. Excavation of Pipeline Trench.

a) Trench excavation shall be per Section 4-04.

b) Placing of Pipe Zone Bedding and Backfill Material.

All pipe zone backfill from a depth of six (6) inches below the bottom of the pipe to twelve (12) inches above the top of the pipe shall be imported fill sand having a minimum sand equivalency of 30 per ASTM 2419. The six (6) inch bedding layer shall be placed and compacted to a minimum of 90% of the maximum density of the material at optimum moisture content. The pipe shall then be installed after which the remaining imported pipe zone material up to twelve (12) inches above the top of the pipe shall be placed and compacted in lifts, if necessary, to said relative compaction of 90%.

c) Backfilling Pipe Trenches Above the Pipe Zone.

Backfill in pipe trenches above the pipe zone shall be a structural fill accomplished by filling and compacting the trench in lifts of depths that will permit obtaining a minimum compaction of 90% of the maximum density of the material at optimum moisture content.

All backfill materials shall be placed in such a manner as to not disturb the pipe or damage its coating. Impact, free fall, hydro hammer, or similar compaction equipment shall not be used for compaction in water system trenches. Slurry or cement-treated backfill material will not be allowed in trench with the exception of cross gutters, etc. as determined by the District Inspector or by written permission by the General Manager.

d) Trench Backfill Compaction Tests.

The Developer will retain the services of an independent geotechnical engineering firm having a State of California licensed laboratory to make soils compaction tests at any point or points or depths as required by the District as the trench is backfilled. The minimum number of tests shall be shown on the plans. In the event any of said tests indicate that the trench compaction is less than the compaction above described, the Contractor will be required, at his own expense, to remove placed trench material in the zone or zones directed by the District. Contractor shall replace and compact said trench material to meet the requirements of this specification. Re-tests will be required on re-compacted material. No compaction tests shall be spotted by the District until all utilities have been installed.

e) Trench Resurfacing.

Trench resurfacing, where required, shall be accomplished in accordance with the requirements of and meet the approval of the

governmental agencies having jurisdiction, such as the Los Angeles County Road Department, the City of Palmdale, or Caltrans.

f) Trench Width.

The trench width shall be the outside diameter of the pipe (exclusive of all bells or collars) plus sixteen (16) inches.

4-18. Valves.

All main line valves shall be located on the property line or utility easement prolongation in the street unless otherwise indicated by the District.

All valve box risers shall be of eight (8) inch Schedule 40 PVC pipe. All valve risers shall be adjusted so that the valve box lid will be flush with the finished street grade per Standard W-5.

Valves shall be installed plumb and in alignment with the pipe. Each valve shall be operated prior to its installation to assure proper functioning.

4-19. Fire Hydrants.

a) Location.

Hydrants shall be located as shown or as directed and in a manner to provide complete accessibility and also in such a manner that the possibility of damage from vehicles or injury to pedestrians will be minimized. When placed behind the curb, the centerline of the hydrant barrel shall be set twenty-four (24) inches behind the face of curb unless specifically stated on approved plans.

The installation of the hydrants shall be in accordance with Standard Drawing No. W-2, W-2A, W-3, or W-3A.

b) Position.

All hydrants shall stand plumb and shall have their nozzles facing the curb at an angle of forty-five (45) degrees. Hydrants installed where there is no curb shall have the four (4) inch nozzle facing the street. Hydrants shall be set to the established grade as shown in Standard Drawings W-2, W-2A, W-3, or W-3A.

c) Fire Hydrant Barricades.

When required, fire hydrant barricades shall not obstruct the outlets and shall be constructed per Standard Drawing W-14 or W-15.

4-20. Connections to Existing Water Lines.

No connection to the existing system shall be made until after the new system has been completed and fully accepted by the District.

In the locations shown on the drawings, the Contractor shall cut and machine existing water pipes and install the new fittings and lines as specified or noted. The Contractor shall make all connection within a maximum shutdown period required by the District. If, in the opinion of the District, the connection cannot be accomplished within the required shutdown period, the connection shall be made at night or on weekends. The District will supervise operation of all existing valves necessary for the shutdown.

Contractor shall be responsible for handling dewatering from existing main, prevent cross contamination of existing water system, dechlorination, and disposal of water.

4-21. Hot Tapping of Existing Water Line.

Pressure taps are allowed only as shown on approved plans.

All hot taps shall either be performed by the District or an experienced licensed contractor specializing in said work. Contractors must have a proved ability and experience to perform hot taps, hold a current underground contractor's license, and carry sufficient insurance as determined by the District and be approved by the District prior to commencing said work.

Existing mains to be tapped must be cleaned. The area required to be cleaned shall be either the diameter of the hot tap plus seven (7) inches or the full diameter of the main to be tapped when full circle reinforcement is required. The following steps are then required prior to hot tapping:

a) Steel Mains.

The nozzle shall be welded to the main after cleaning. It shall then be blind flanged and air tested to 100 psi. The pressure must hold for a minimum of three minutes. The test must be done in the presence of a District Inspector.

After passing the air test, the reinforcement ring shall be placed and welded continuously on edges to the existing main and to the nozzle pipe.

b) Ductile Iron and PVC Mains.

Mechanical tapping sleeves are required. After cleaning, the sleeve shall be bolted to the main and a blind flange placed on the nozzle. An air test shall then be performed as described above.

SECTION 5

SERVICE LINES

5-01. Location of Service Lines.

a) The trench for a single service diameter size ranging from (3/4") to (2") shall have a minimum width of ten (10) inches and a depth of thirty (30) inches below the existing or finished grade throughout the length of service. Services larger than two (2) inches shall be detailed in supplementary drawings which will be furnished to the Contractor if such larger size is specified.

b) Services in existing, paved streets shall be installed by boring under the pavement, where practicable.

c) Size of services shall be as shown on the plans, as specified, or as determined by the District.

d) In general, each service shall start at the new water main and shall extend to the meter location at an elevation determined by Standard Drawing W-1 or W-1A and the existing grade at the meter location. Each service shall be connected to the corporation valve at the main and an angle valve shall be installed at its end in the meter box location.

e) The locations of the meter boxes shall be as indicated on the plans or as directed by the Inspector. No meter box shall be installed closer than five (5) feet from the edge of a driveway apron.

f) Single service lines shall not be less than five (5) horizontal feet from sewer laterals.

g) In no case shall a service or other tap be made in a main closer than twenty-four (24) inches to a bell, coupling, joint, fitting, or another service tap.

h) A single service line is required for each metered connection. However, two individual services may be installed in a single twenty-four (24) inch wide trench excavated approximately along the projection of a lot line common to any two (2) lots. In such cases, service taps on the main shall not be less than two (2) feet apart.

i) Meter will be purchased from the District and installed by Contractor. Water services shall be installed by Contractor only when indicated on the plans.

j) Services shall be tested and disinfected in the same manner as specified elsewhere herein for water mains. These operations shall be performed concurrently with the testing and disinfecting of the water mains where practicable.

5-02. Corporation Valves and Angle Valves.

All corporation valves and angle valves shall be same size as the service size. Corporation valves shall have male iron pipe threads on the inlet.

All valves shall have a circular waterway of service line diameter. All nuts, washers, and contact surfaces shall be faced to a true fit. All tapers shall be carefully ground and show no leakage under hydrostatic test. All valves shall be finished in a neat and workmanlike manner, and the thickness of metal shall be equal around the axis of the circular way. All burrs on the inside of valves shall be carefully removed leaving a clean, smooth waterway. All valves, including copper tubing connections, shall be field tested with the water main as noted above.

All valves shall be sand cast of high-grade bronze conforming to ASTM B62. District shall have the right to take one or more from each lot and have same analyzed.

5-03. Copper Tubing.

Copper tubing shall be required for all services. It shall be seamless copper water tube, Type K, cold drawn, and annealed of the size shown on the plans. It shall be true, smooth, clean on both inside and outside, and free from any cracks, seams, or other defects. It shall be truly cylindrical, of the full specified outside and inside diameters and of uniform thickness of metal and shall conform to ASTM B88. The tubing shall be continuous between the main line and the meter with no splices permitted. All copper tubing shall be wrapped with 20 mil tape within 18” of the water main inclusive of corporation valve.

5-04. Fittings.

All fittings shall have copper flare connections. All joints shall be made in accordance with manufacturers recommendations.

5-05. Connections to Asbestos Cement Mains.

All connections for water services shall be made with a bronze double strap service clamp as shown on Standard Drawing W-1 and W-1A.

5-06. Connections to Cement Mortar Lined and Coated Steel Mains.

Where practical, connections for water services shall be made with 3,000 lb. weld-on half coupling, welded to the pipe in the shop at time of pipe fabrication. After coupling is welded to the pipe, it shall be covered by mortar coating, so no bare metal is left exposed. Where it is necessary to make the connection in the field, additional care shall be exercised to minimize the damage to mortar linings.

5-07. Connections to Polyvinyl Chloride (PVC).

All connections for water services shall be made with a bronze service saddle positioned as shown on Standard Drawing W-1 and W-1A; Jones Model No. J-969 or approved equal.

5-08. Connections to Ductile Iron Mains.

All connections for water services shall be made with a bronze service saddle with double stainless-steel straps, positioned as shown on Standard Drawing W-1 and W-1A; Jones Model No. J-969, or approved equal.

5-09. Water Meters.

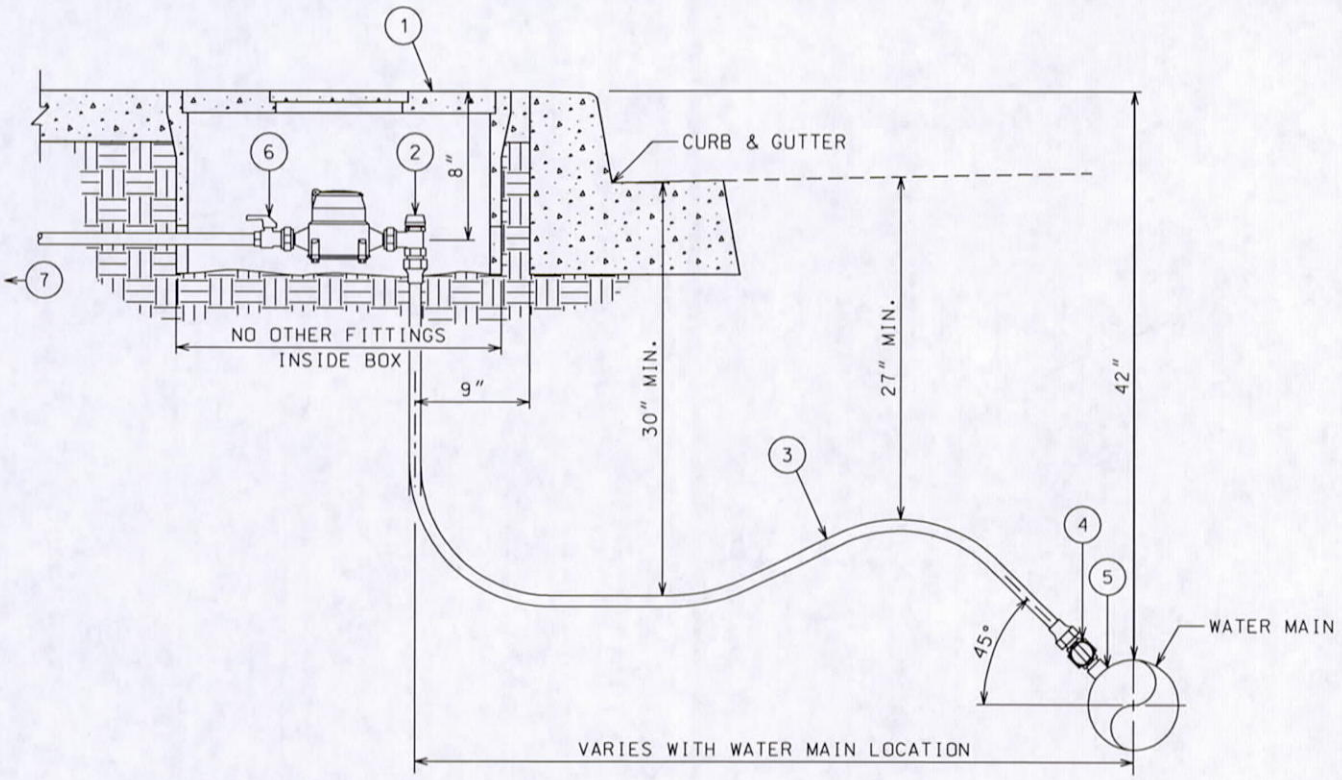
All water meters shall include an approved Automatic Meter Reading System. Water meters shall be purchased from the Water District. Meters must be paid for and ordered from the District a minimum of thirty days prior to date of need.

5-10. Pressure Regulators.

All services at 80 psi or greater must be equipped with pressure regulators. Regulators may not be installed within the meter box. All pressure regulators shall be installed on the property and are maintained by the property owner.

5-11. Cross Connection Protection.

All cross-connection protection shall conform to District Ordinance No. 88-1. In addition, all plumbing between meter and backflow prevention assembly must be visually inspected and approved by Cross Connection Specialist or District Inspector. Said assemblies shall be placed as close as practical to meter. Backflows to be tested within seven (7) days of activation of service and submitted to the District for approval.



KEY NOTES:

1. ALL METER BOXES WILL BE SET BEHIND CURB SECTION EXCEPT IN THE ABSENCE OF SIDEWALK & CURB SECTION. METER BOX THEN WILL BE SET IN A CONCRETE PAD 12" THICK & 12" WIDE AROUND BOX WITH C.I. LID. SET METER BOX SO THERE IS 2" TO 4" BETWEEN BACK OF CURB & METER BOX. METER BOX TO BE SET TO SIDEWALK GRADE. NO METER BOX SHALL BE LOCATED CLOSER THAN 5'-0" FROM EDGE OF DRIVEWAY APRON.

MATERIAL DESCRIPTION

(1) 12" x 20" x 12" EISEL METER BOX NO. W437MB W/ 2-PIECE COVER NO. W437PC AND READING LID NO. W437RL FOR 3/4" SERVICES AND NO W348MB W/ 2-PIECE COVER NO. W438PC AND READING LID NO. W438RL FOR 1" SERVICES OR APPROVED EQUAL.

(2) BALL ANGLE METER VALVE W/ LOCKWING (FORD NO. BA43-232W-G-NL COMPRESSION CORP.) FOR 3/4" & 1" TUBING OR APPROVED EQUAL.

(3) TYPE "K" SOFT COPPER TUBING SERVICE LINE.

(4) 3/4" & 1" BALL TYPE CORPORATION VALVE WITH MALE I.P.T. ON THE INLET (MUELLER NO. B-25028N COMPRESSION CORP.) OR APPROVED EQUAL. SET CORPORATION VALVE AT 45° ON 3/4" AND 1" SERVICE CONNECTIONS.

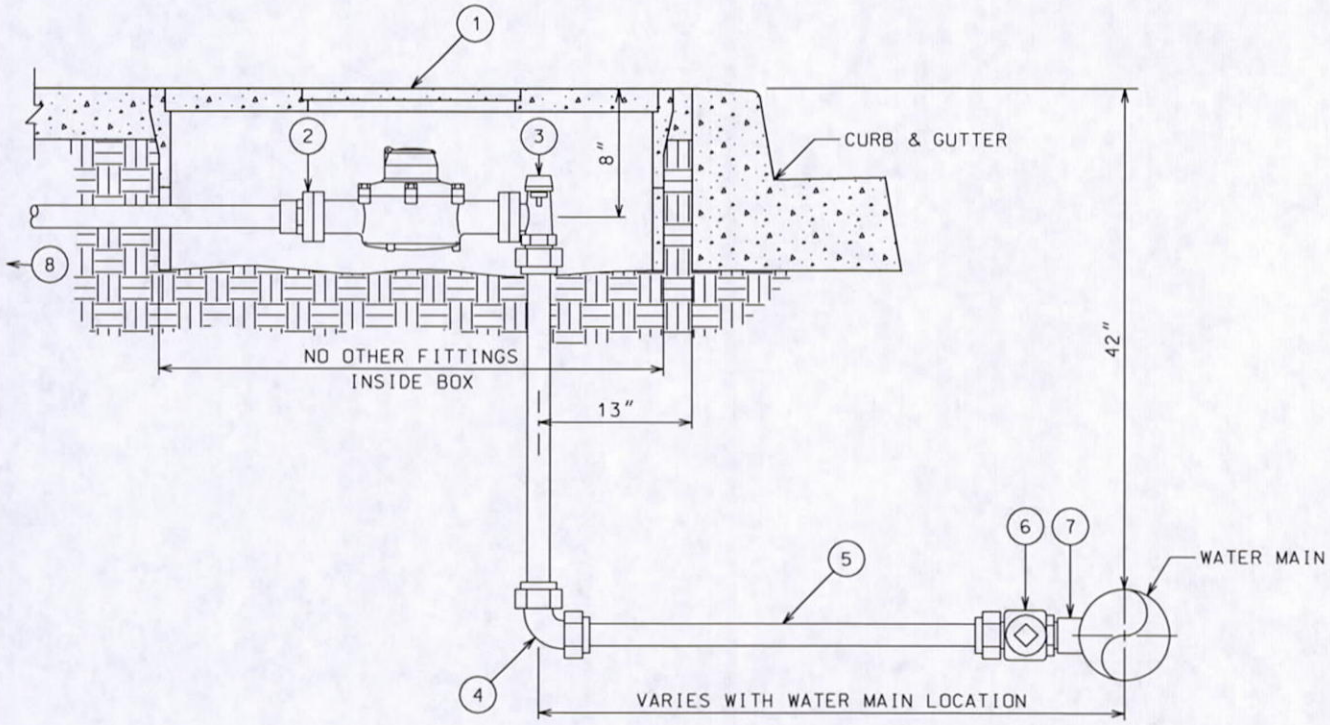
(5) 3000 LB. WELD ON HALF COUPLING FOR 3/4" & 1" SERVICE CONNECTIONS ON STEEL PIPE. DOUBLE STRAP BRONZE SERVICE SADDLES FOR 3/4" & 1" SERVICE CONNECTION ON ASBESTOS CEMENT PIPE (FORD NO.202B) OR APPROVED EQUAL. DOUBLE STRAP MALLEABLE IRON SADDLES WITH DIELECTRIC BUSHINGS FOR DUCTILE IRON PIPE. BRONZE SERVICE SADDLES W/ DOUBLE STAINLESS STEEL STRAPS FOR P.V.C. PIPE. ALL SADDLES TO BE GREASED AND WRAPPED. WRAP SERVICE WITH 10 MIL TAPE WITHIN 18" OF CORP FOR D.I. PIPE.

(6) CUSTOMER SHUT-OFF VALVE JONES NO. E-1908 FOR 3/4" AND 1" SVCS OR APPROVED EQUAL.

(7) APPROVED BACKFLOW PREVENTION DEVICE IS REQUIRED FOR NON-RESIDENTIAL USE.

PALMDALE WATER DISTRICT

DATE: DEC. 2019 MRW APPROVED:	TYPICAL SERVICE CONNECTION (3/4" AND 1")	W-1



KEY NOTES:

1. ALL METER BOXES WILL BE SET BEHIND CURB SECTION EXCEPT IN THE ABSENCE OF SIDEWALK & CURB SECTION. METER BOX THEN WILL BE SET IN A CONCRETE PAD 12" THICK & 12" WIDE AROUND BOX WITH C.I. LID. SET METER BOX SO THERE IS 2" TO 4" BETWEEN BACK OF CURB & METER BOX. METER BOX TO BE SET TO SIDEWALK GRADE. NO METER BOX SHALL BE LOCATED CLOSER THAN 5'-0" FROM EDGE OF DRIVEWAY APRON.

MATERIAL DESCRIPTION

(1) 17" x 30" x 12" EISEL METER BOX NO. W66BMB AND 17 5/8" x 30 1/2" 2-PIECE COVER NO. W66BPC AND READING LID NO. W66BRL OR APPROVED EQUAL.

(2) METER FLANGE COUPLING (FORD NO. CF31) OR APPROVED EQUAL WITH FULL-FACE OR DROP-IN GASKET.

(3) BALL ANGLE METER VALVE WITH LOCKWING (JONES NO. E-1975W) FOR 1 1/2" & 2" TUBING OR APPROVED EQUAL WITH FULL-FACE OR DROP-IN GASKET.

(4) COMPRESSION 90° ELBOW COUPLING (JONES NO. E-2611) OR APPROVED EQUAL.

(5) TYPE "K" SOFT COPPER TUBING SERVICE LINE AND COMPRESSION FITTINGS WILL BE USED.

(6) 1 1/2" OR 2" BALL TYPE CORPORATION VALVE WITH MALE I.P.T. ON THE INLET (JONES NO. J-1935 COMPRESSION) OR APPROVED EQUAL. SET CORPORATION VALVE HORIZONTAL ON 1 1/2" & 2" SERVICE CONNECTIONS.

(7) 3000 LB. WELD ON HALF COUPLING FOR 1 1/2" & 2" SERVICE CONNECTIONS ON STEEL PIPE. DOUBLE STRAP BRONZE SERVICE SADDLES FOR 1 1/2" & 2" SERVICE CONNECTION ON ASBESTOS CEMENT PIPE (FORD NO. 202B) OR APPROVED EQUAL. DOUBLE STRAP MALLEABLE IRON SADDLES WITH DIELECTRIC BUSHINGS FOR DUCTILE IRON PIPE. BRONZE SERVICE SADDLE W/ DOUBLE STAINLESS STEEL STRAPS FOR P.V.C. PIPE. ALL SADDLES TO BE GREASED AND WRAPPED. WRAP SERVICE WITH 10 MIL TAPE WITHIN 18" OF CORP FOR D.I. PIPE.

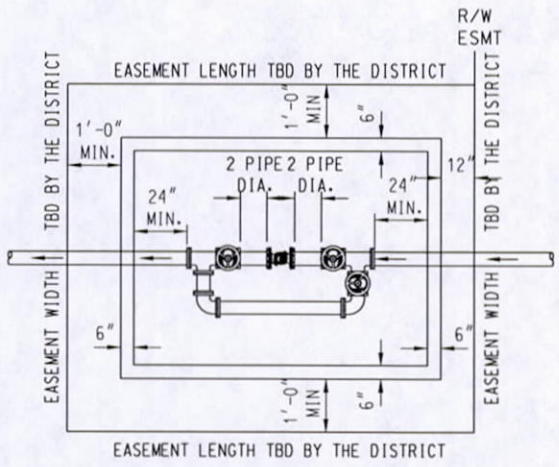
(8) APPROVED BACKFLOW PREVENTION DEVICE IS REQUIRED FOR NON-RESIDENTIAL USE.

PALMDALE WATER DISTRICT

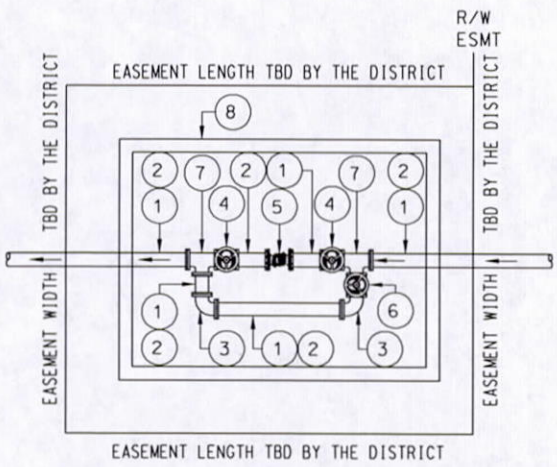
DATE: DEC. 2019 MRW APPROVED:	TYPICAL SERVICE CONNECTION (1 1/2" AND 2")	W-1A

MATERIAL DESCRIPTION

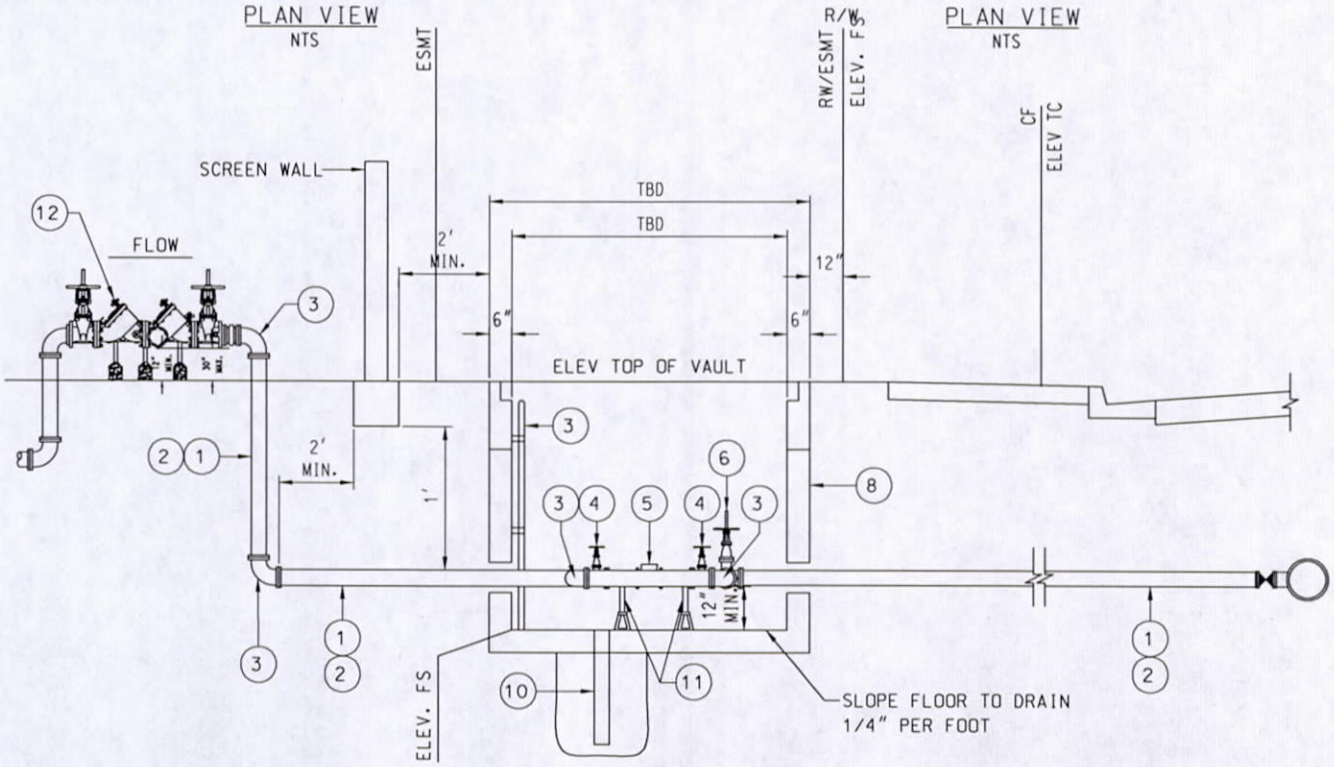
1. STEEL PIPE, 10 GA., CML & CMC
2. SLIP ON WELD FLANGE
3. FLANGED 90° ELBOW, C.I., CL150, CML
4. FLANGED GATE VALVE CL150 W/WHEEL HANDLE
5. LARGE METER, MODEL OCTAVE ULTRASONIC WITH ITRON "ERT" AUTOMATIC METER READING SYSTEM.
6. GATE VALVE, FLANGED, 150 PSI WWP W/ WHEEL HANDLE O.S. & Y. (OUTSIDE SCREW YOKE AND HANDLE) AND LOCKING HANDLE.
7. FLANGED TEE, C.I., CL150, CML
8. CONCRETE VAULT, MODEL JENSEN PRECAST OR APPROVED EQUAL.
9. LADDER, HOT-DIPPED GALVANIZED IRON.
10. SUMP DRAIN PER PWD STD. W-12
11. ADJUSTABLE STEEL SUPPORTS.
12. REDUCED PRESSURE-PRINCIPLE BACKFLOW PREVENTER



PLAN VIEW
NTS



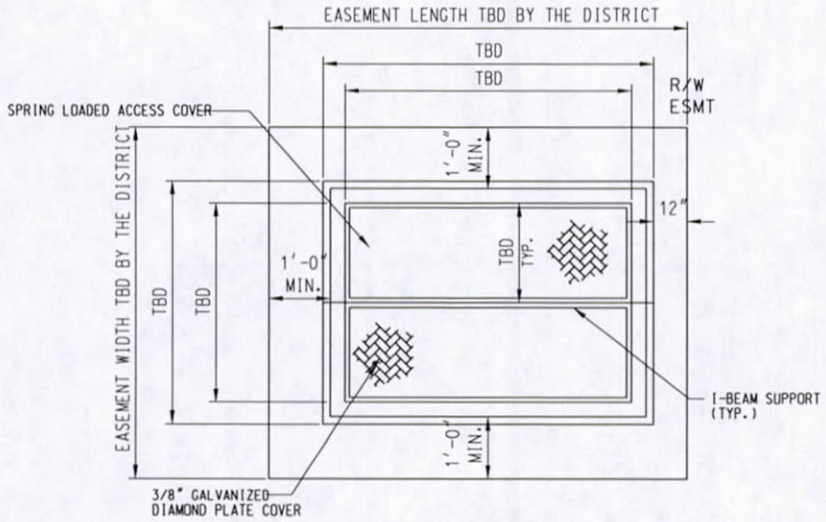
PLAN VIEW
NTS



PROFILE VIEW
NTS

PALMDALE WATER DISTRICT

DATE: DEC. 2019 MRW APPROVED:	TYPICAL LARGE METER SERVICE CONNECTION (3" - 10")	W-1B



PLAN VIEW VAULT COVER

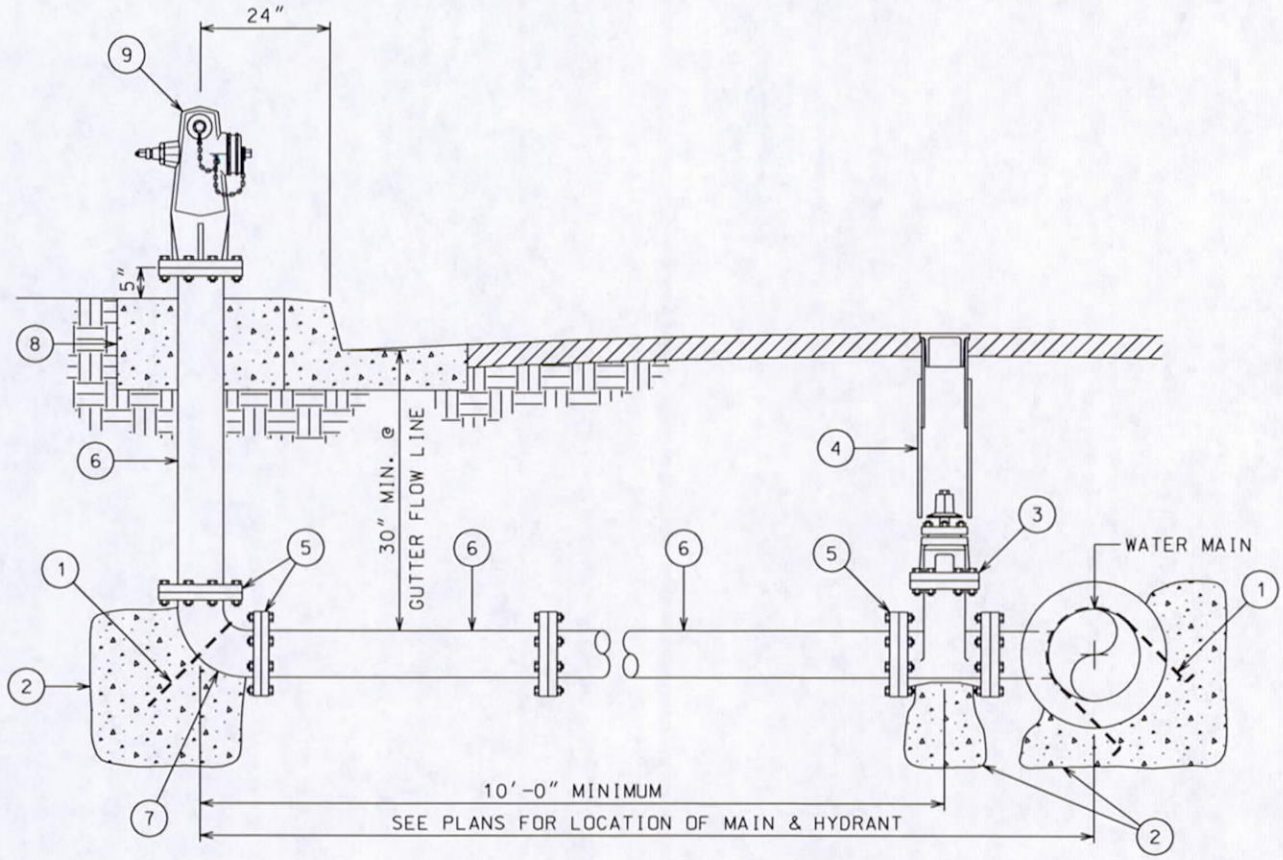
NTS

NOTES:

1. FRAME AND COVER TO BE HOT DIPPED GALVANIZED AFTER FABRICATION.
2. VAULT AND LID SUBMITTAL TO BE PROVIDED BY CONTRACTOR AND APPROVED BY DISTRICT PRIOR TO INSTALLATION.
3. VAULT LID SHALL BE RATED FOR H-20 LOADING.
4. EASEMENT SHALL BE GRANTED TO THE PALMDALE WATER DISTRICT FOR ACCESS, MAINTENANCE, AND INCIDENTAL PURPOSES.
5. AREA WITHIN AND ADJACENT TO THE VAULT EASEMENT SHALL BE GRADED TO DIRECT FLOWS AWAY FROM THE VAULT.
6. METER MUST BE SET IN A HORIZONTAL POSITION AT LEAST TWO (2) DIAMETERS OF STRAIGHT PIPE REQUIRED AT INLET END.
7. SCREEN WALL, IF REQUIRED, MUST BE LOCATED OUTSIDE DISTRICT EASEMENT. NO JOINTS WITHIN 2' OF FOOTING EDGE.
8. REDUCUED-PRESSURE PRINCIPLE BACKFLOW PREVENTER TO BE MAINTAINED BY OWNER/DEVELOPER.

PALMDALE WATER DISTRICT

DATE: DEC. 2019 MRW APPROVED:	TYPICAL LARGE METER SERVICE CONNECTION (3" - 10")	W-1B CONTINUED



KEY NOTES:

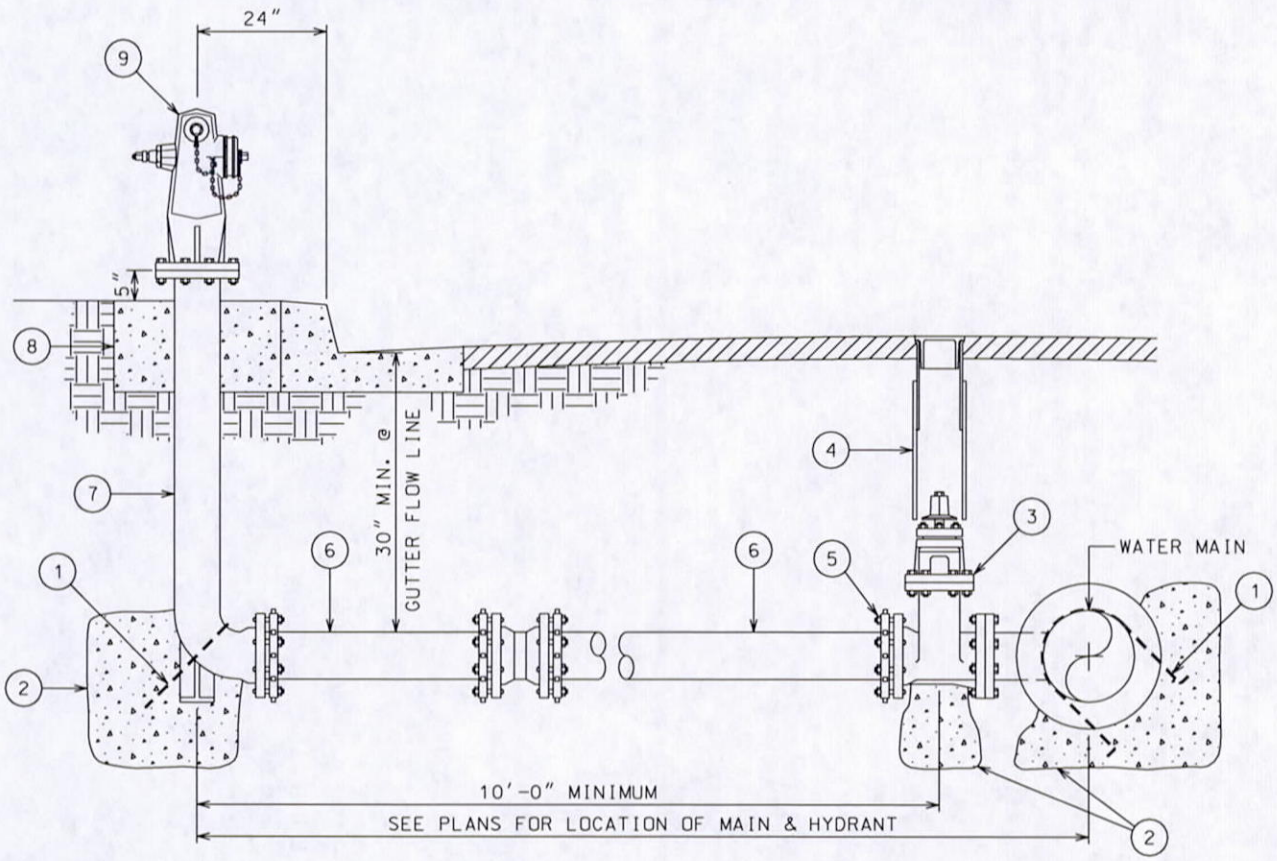
1 CENTERLINE OF RISER SHALL BE 2 FEET BEHIND CURB FACE. NO FIRE HYDRANT SHALL BE INSTALLED CLOSER THAN 5 FEET FROM THE EDGE OF ANY DRIVEWAY APRON OR CURB RETURN. ALL UNCOATED METAL SURFACES (INCLUDING NUTS AND BOLTS) INSTALLED UNDERGROUND SHALL BE THOROUGHLY COATED W/ NO-OX GREASE AND THEN WRAPPED WITH 8 MIL POLYETHYLENE SHEET (AWWA C-105) ALL HYDRANTS SHALL BE PAINTED WITH ONE COAT OF RED PRIMER AND TWO COATS OF RUSTOLEUM SAFETY YELLOW OR APPROVED EQUAL. INTERMEDIATE PIPE JOINTS IN LATERAL SHALL BE FLANGED. PIPE SHALL BE INSTALLED HORIZONTAL OR SLOPING DOWNWARD FROM MAIN TO PROVIDE MINIMUM COVER.

MATERIAL DESCRIPTION

(1) ANCHOR ROD PER STD. W-4
(2) USE 2000 PSI MIN. CONCRETE FOR THRUST BLOCKS AND HYDRANT PAD. PLACE CONCRETE ON UNDISTURBED OR COMPACTED SOIL. THRUST BLOCKS MUST MEET REQUIREMENTS OF STD. W-4.
(3) 6" FLG. GATE VALVE CL 150.
(4) VALVE BOX PER STD. W-5.
(5) 6" SLIP-ON WELD FLANGE CL 150.
(6) 6 5/8" O.D. STL. PIPE 10 GA. C.M.L.& C. EXTEND NON-SHRINK MORTAR COATING WITH EXPANDED GALVANIZED LATH REINFORCEMENT TO MEET FLG. TAPER THICKNESS AND TO MEET FLG. HUB.
(7) 6" FLG. 90° ELBOW, STL., C.M.L.C., CL 150 FLG.
(8) 36" x 36" x 12" CONCRETE PAD WITH SIDEWALK FINISH TO BE SLOPED 1/4" PER FOOT TOWARDS THE CURB. IN THE ABSENCE OF A CONCRETE CURB OR WHERE TYPE "E" CURB (ROLLED) IS USED. SET BOTTOM OUTLET 24" ABOVE CROWN OF ROAD AND INSTALL BARRICADES PER STD. W-14.
(9) 6" x 4" x 2 1/2" FIRE HYDRANT (CLOW 850 O.A.E.) SET F.H. OUTLETS AT 45° TO STREET. INSTALL BOLTS WITH HEADS UP. (HOLLOW BOLTS REQUIRED)

PALMDALE WATER DISTRICT

DATE: DEC. 2019 MRW APPROVED:	6" x 4" x 2 1/2" FIRE HYDRANT (FOR STEEL OR A.C. PIPE)	W-2



KEY NOTES:

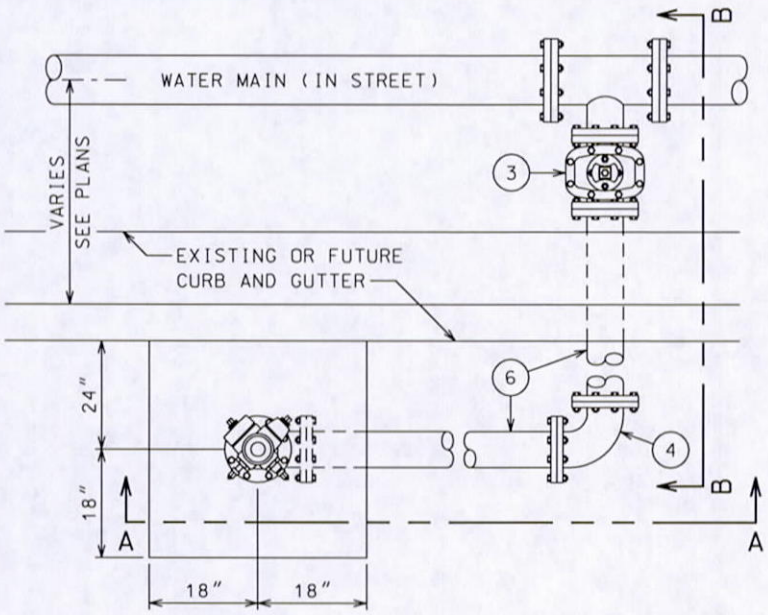
1 CENTERLINE OF RISER SHALL BE 2 FEET BEHIND CURB FACE. NO FIRE HYDRANT SHALL BE INSTALLED CLOSER THAN 5 FEET FROM THE EDGE OF ANY DRIVEWAY APRON OR CURB RETURN. ALL UNCOATED METAL SURFACES (INCLUDING NUTS AND BOLTS) INSTALLED UNDERGROUND SHALL BE THOROUGHLY COATED W/ NO-OX GREASE AND THEN WRAPPED WITH 8 MIL POLYETHYLENE SHEET (AWWA C-105) ALL HYDRANTS SHALL BE PAINTED WITH ONE COAT OF RED PRIMER AND TWO COATS OF RUSTOLEUM SAFETY YELLOW OR APPROVED EQUAL. INTERMEDIATE PIPE JOINTS IN LATERAL SHALL BE RESTRAINED WITH A MECHANICAL JOINT SLEEVE WITH RETAINING GLANDS OR JOINT RESTRAINT. PIPE SHALL BE INSTALLED HORIZONTAL OR SLOPING DOWNWARD FROM MAIN TO PROVIDE MINIMUM COVER.

MATERIAL DESCRIPTION

① ANCHOR ROD PER STD. W-4
② USE 2000 PSI MIN. CONCRETE FOR THRUST BLOCKS AND HYDRANT PAD. PLACE CONCRETE ON UNDISTURBED OR COMPACTED SOIL. THRUST BLOCKS MUST MEET REQUIREMENTS OF STD. W-4.
③ 6" FLG. GATE VALVE CL 150.
④ VALVE BOX PER STD. W-5.
⑤ 6" RETAINING GLAND CL 150.
⑥ 6.90" O.D. DUCTILE IRON PIPE CL 350 D.C.M.L.
⑦ 6" M.J. DUCTILE IRON HYDRANT BURY (8HOLE) WITH RETAINING GLAND OR 6" DUCTILE IRON SPOOL AND 6" M.J. x FLG. 90° ELBOW. D.I., D.C.M.L., CL 350 WITH RETAINING GLAND.
⑧ 36" x 36" x 12" CONCRETE PAD WITH SIDEWALK FINISH TO BE SLOPED 1/4" PER FOOT TOWARDS THE CURB. IN THE ABSENCE OF A CONCRETE CURB OR WHERE TYPE "E" CURB (ROLLED) IS USED. SET BOTTOM OUTLET 24" ABOVE CROWN OF ROAD AND INSTALL BARRICADES PER STD. W-14.
⑨ 6" x 4" x 2 1/2" FIRE HYDRANT (CLOW 850 O.A.E.) SET F.H. OUTLETS AT 45° TO STREET. INSTALL BOLTS WITH HEADS UP. (HOLLOW BOLTS REQUIRED)

PALMDALE WATER DISTRICT

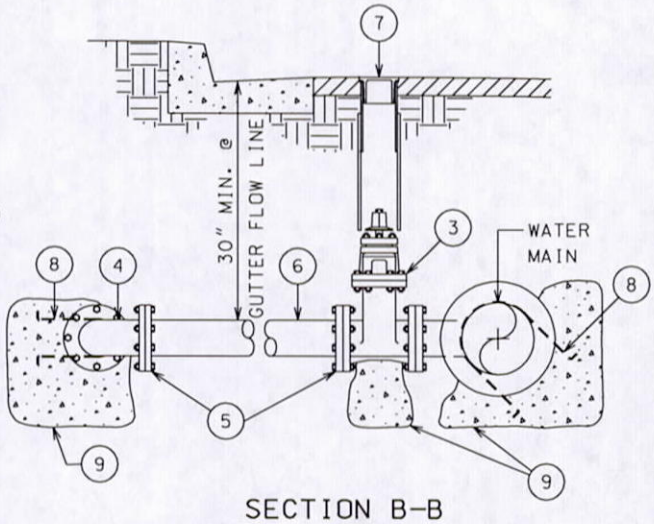
DATE: DEC. 2019 MRW APPROVED:	6" x 4" x 2 1/2" FIRE HYDRANT (FOR DUCTILE IRON PIPE OR C-900 PVC PIPE)	W-2A



PROPERTY LINE

PLAN VIEW

SECTION A-A



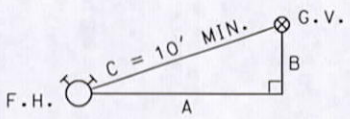
SECTION B-B

KEY NOTES:

1 CENTERLINE OF RISER SHALL BE 2 FEET BEHIND CURB FACE. NO FIRE HYDRANT SHALL BE INSTALLED CLOSER THAN 5 FEET FROM THE EDGE OF ANY DRIVEWAY APRON OR CURB RETURN. ALL UNCOATED METAL SURFACES (INCLUDING NUTS AND BOLTS) INSTALLED UNDERGROUND SHALL BE THOROUGHLY COATED W/ NO-OX GREASE AND THEN WRAPPED WITH 8 MIL POLYETHYLENE SHEET (AWWA C-105) ALL HYDRANTS SHALL BE PAINTED WITH ONE COAT OF RED PRIMER AND TWO COATS OF RUSTOLEUM SAFETY YELLOW OR APPROVED EQUAL. INTERMEDIATE PIPE JOINTS IN LATERAL SHALL BE FLANGED. PIPE SHALL BE INSTALLED HORIZONTAL OR SLOPING DOWNWARD FROM MAIN TO PROVIDE MINIMUM COVER.

MATERIAL DESCRIPTION

① SEE STANDARD W-2 FOR FIRE HYDRANT REQUIREMENTS.
② SET FIRE HYRANT OUTLETS AT 45° TO STREET.
③ 6" FLANGED GATE VALVE CL 150.
④ 6" FLG. 90° ELBOW, STL., C.M.L.C., CL 150 FLG.
⑤ 6" SLIP-ON WELD FLANGE, CL 150.
⑥ $6^{5}/_{8}$" O.D. STEEL 10 GA. MIN. C.M.L.C.
⑦ VALVE BOX PER STD. W-5.
⑧ ANCHOR ROD PER STD. W-4.
⑨ USE 2000 PSI MINIMUM CONCRETE FOR THRUST BLOCKS AND CONCRETE PAD. PLACE CONCRETE AGAINST UNDISTURBED OR COMPACTED SOIL. THRUST BLOCKS MUST MEET REQUIREMENTS OF STD. W-4. IN THE ABSENCE OF A CONCRETE CURB OR WHERE TYPE "E" CURB (ROLLED) IS USED, SET BOTTOM OUTLET 24" ABOVE CROWN OF ROAD AND INSTALL BARRICADES PER P.W.D. STD. W-14.

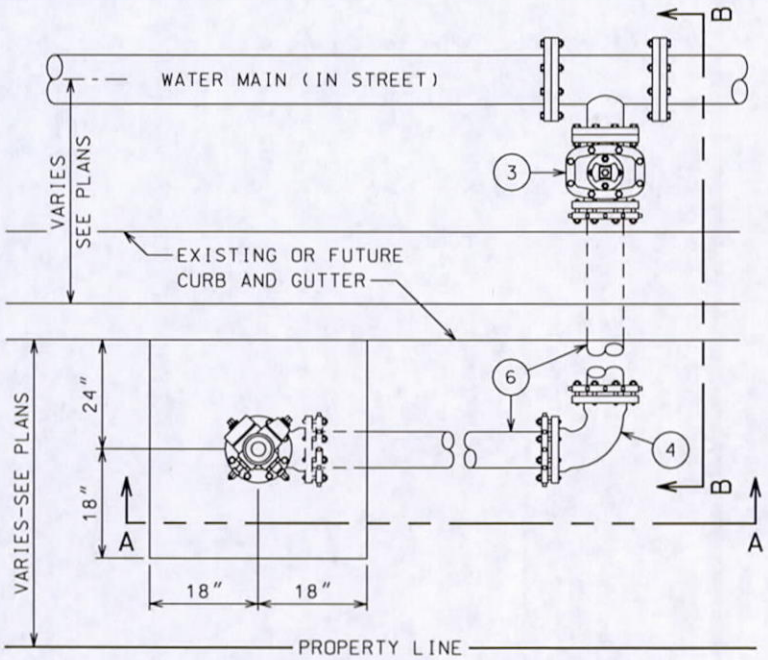


$\sqrt{A^2 + B^2} = C$

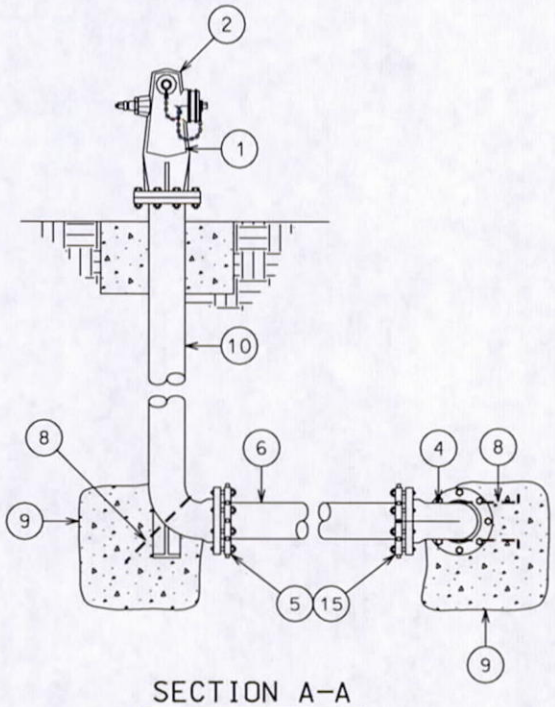
FORMULA FOR FIGURING HYDRANT FROM VALVE LOCATION

PALMDALE WATER DISTRICT

DATE: DEC. 2019 MRW APPROVED:	PARALLEL FIRE HYDRANT (FOR STEEL OR A.C. PIPE)	W-3



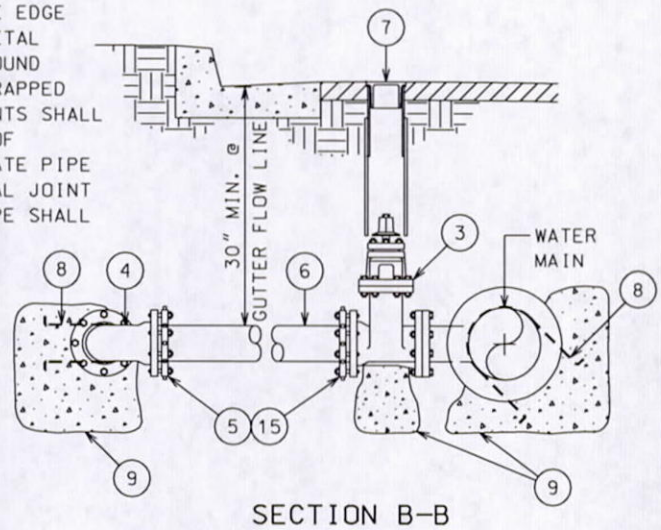
PLAN VIEW



SECTION A-A

KEY NOTES:

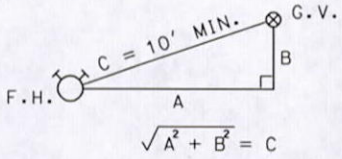
1 CENTERLINE OF RISER SHALL BE 2 FEET BEHIND CURB FACE. NO FIRE HYDRANT SHALL BE INSTALLED CLOSER THAN 5 FEET FROM THE EDGE OF ANY DRIVEWAY APRON OR CURB RETURN. ALL UNCOATED METAL SURFACES (INCLUDING NUTS AND BOLTS) INSTALLED UNDERGROUND SHALL BE THOROUGHLY COATED W/ NO-OX GREASE AND THEN WRAPPED WITH 8 MIL POLYETHYLENE SHEET (AWWA C-105) ALL HYDRANTS SHALL BE PAINTED WITH ONE COAT OF RED PRIMER AND TWO COATS OF RUSTOLEUM SAFETY YELLOW OR APPROVED EQUAL. INTERMEDIATE PIPE JOINTS IN LATERAL SHALL BE RESTRAINED WITH A MECHANICAL JOINT SLEEVE WITH RETAINING GLANDS OR JOINT RESTRAINT. PIPE SHALL BE INSTALLED HORIZONTAL OR SLOPING DOWNWARD FROM MAIN TO PROVIDE MINIMUM COVER. FOR C-900 PIPE USE TRACER WIRE PER P.W.D. STD. W-8.



SECTION B-B

MATERIAL DESCRIPTION:

(1) SEE STANDARD W-2A FOR FIRE HYDRANT REQUIREMENTS.
(2) SET FIRE HYRANT OUTLETS AT 45° TO STREET.
(3) 6" FLG. x M.J. GATE VALVE CL 150 WITH RETAINING GLAND.
(4) 6" M.J. 90° ELBOW, D.I., D.C.M.L., CL 350 WITH RETAINING GLAND.
(5) ALL M.J. FITTINGS SHALL HAVE RETAINING GLANDS.
(6) 6.90" O.D. DUCTILE IRON PIPE CL 350 D.C.M.L.
(7) VALVE BOX PER STD. W-5.
(8) ANCHOR ROD PER STD. W-4.
(9) USE 2000 PSI MINIMUM CONCRETE FOR THRUST BLOCKS AND CONCRETE PAD. PLACE CONCRETE AGAINST UNDISTURBED OR COMPACTED SOIL. THRUST BLOCKS MUST MEET REQUIREMENTS OF STD. W-14. IN THE ABSENCE OF A CURB OR WHERE TYPE "E" CURB(ROLLED) IS USED, SET BOTTOM OUTLET 24" ABOVE CROWN OF ROAD AND INSTALL BARRICADES PER STD. W-14.
(10) 6" M.J. DUCTILE IRON HYDRANT BURY (8 HOLES) WITH RETAINING GLAND OR 6" DUCTILE IRON SPOOL AND 6" M.J. X FLG. 90° ELBOW, D.I., D.C.M.L., CL 350 WITH RETAINING GLAND.



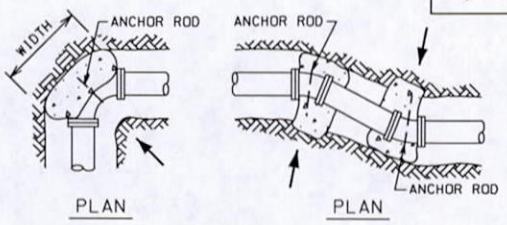
$\sqrt{A^2 + B^2} = C$

FORMULA FOR FIGURING HYDRANT FROM VALVE LOCATION

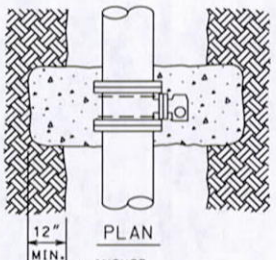
PALMDALE WATER DISTRICT

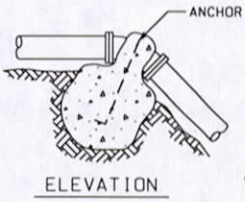
DATE: DEC. 2019 MRW APPROVED:	PARALLEL FIRE HYDRANT (FOR DUCTILE IRON PIPE OR C-900 PVC PIPE)	W-3A

→ = DIRECTION OF RESULTANT THRUST

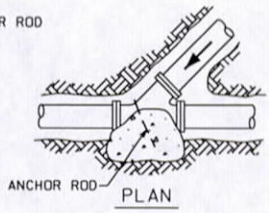


BENDS

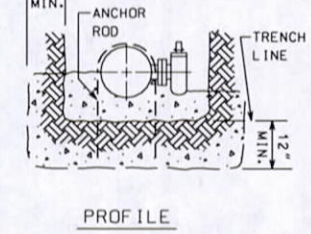




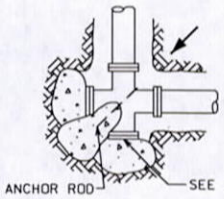
VERTICAL BEND
(SEE NOTE 5)

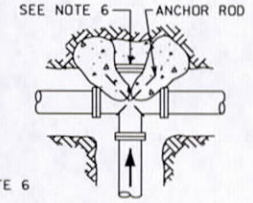


WYE

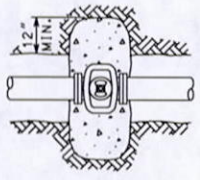


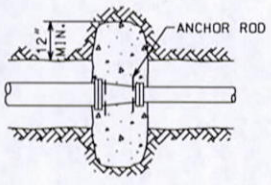
BUTTERFLY VALVES

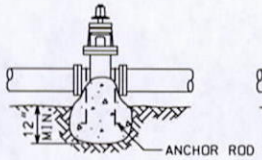




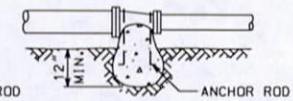
CROSSES



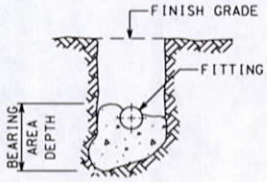




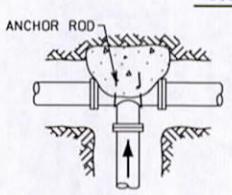
VALVES
(ALL TYPES EXCEPT BFV)

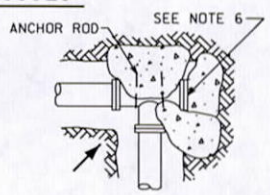


REDUCERS



FITTING SECTION
(TYPICAL)





TEES

TABLE I				
* MINIMUM BEARING AREAS IN SQ. FT.				
MAIN SIZE	** TEE	90° BEND	45° BEND	22½° BEND
6"	4	4	4	3
8"	5	7	4	3
10"	9	12	6	4
12"	12	16	9	6

* BASED ON 150 PSI W.W.P. PRESSURE AND SOIL BEARING LOADS OF 2000 PSF. THE RATIO OF WIDTH TO HEIGHT SHALL NOT EXCEED 1½ TO 1.

** TEES. PLUG. CAPS AND HYDRANTS.

TABLE II		
*** SOIL TYPE	**** MAX. ALLOWABLE SOIL BEARING VALUES	FACTORS FOR INCREASING AREAS IN TABLE I
LOOSE SAND	500 PSF	4
SOFT SANDY CLAY	1000 PSF	2
ADOBE	1000 PSF	2
COMPACT FINE SAND	2000 PSF	1
COMPACT COARSE SAND	2000 PSF	1
MEDIUM STIFF CLAY	2000 PSF	1

*** THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE SAFE SOIL BEARING VALUES AND THE POSITION AND SIZE OF BEARING AREAS.

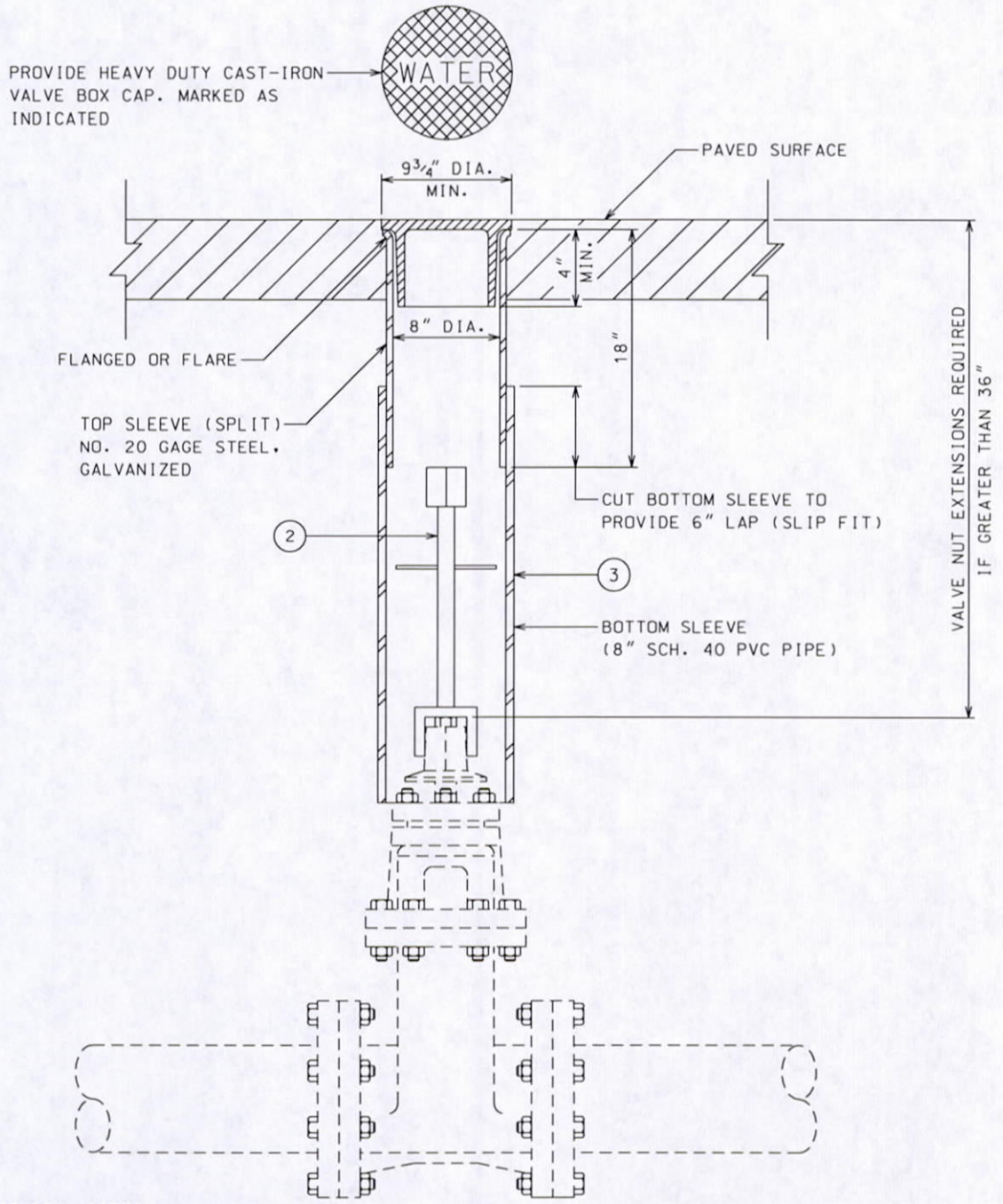
**** BASED ON 2 FEET MINIMUM DEPTH OF COVER OVER PIPE.

GENERAL NOTES:

1. ALL ANCHOR AND THRUST BLOCKS SHALL BEAR AGAINST UNDISTURBED OR COMPACTED SOIL.
2. MINIMUM ALLOWABLE WATER PRESSURE FOR DESIGN OF THRUST BLOCKS IS 150 PSI. BEARING AREA INCREASES DIRECTLY WITH INCREASE IN PRESSURE.
3. ALL CONCRETE USED IN THRUST BLOCKS SHALL ATTAIN 2000 PSI STRENGTH.
4. ANCHOR RODS SHALL BE A MINIMUM OF ½" DIAMETER REINFORCING STEEL AND SHALL BE USED FOR ALL THRUST BLOCKS. ENCASE RODS IN 2000 PSI CONCRETE. EXPOSED PORTIONS OF RODS SHALL BE THOROUGHLY COATED IN NO-OX GREASE AND WRAPPED W/ 8 MIL POLYETHYLENE SHEET (AWWA C-105).
5. USE ANCHOR BLOCKS AT VERTICAL BENDS WHEN PIPE IS ABOVE OR BELOW GROUND. SIZE OF BLOCK AND ROD SHALL BE AS SHOWN ON THE PLANS OR AS DETERMINED BY THE ENGINEER IN THE FIELD.
6. USE 30 POUND FELT TO INSURE COLD JOINT OR 8 MIL POLYETHYLENE WRAP PER AWWA C105.

PALMDALE WATER DISTRICT

DATE: DEC. 2019 MRW APPROVED:	CONCRETE THRUST BLOCKS	W-4

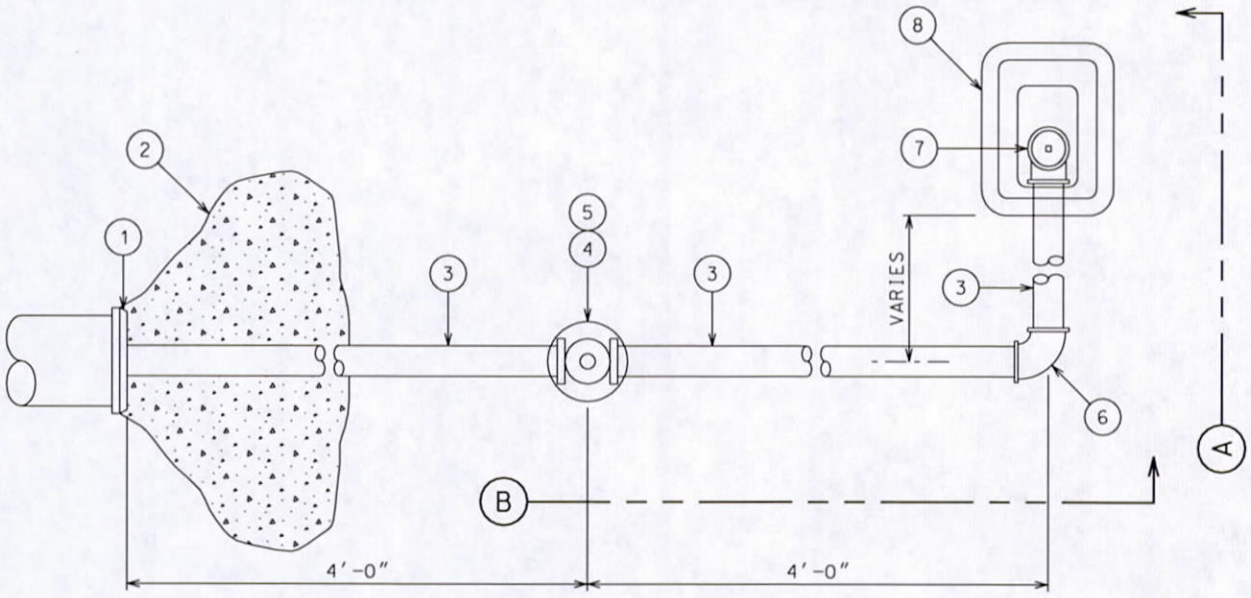


GENERAL NOTES:

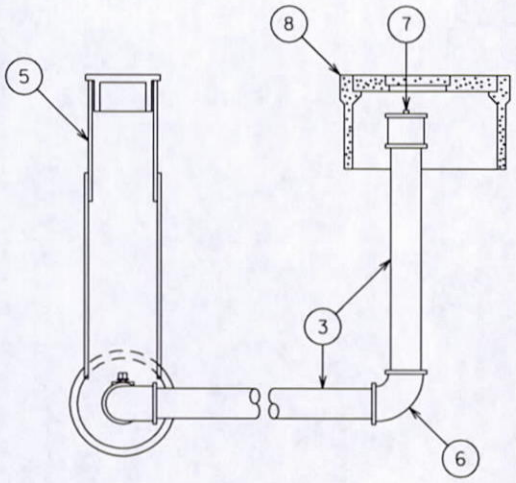
1. ALL VALVE BOXES LOCATED IN UNIMPROVED STREETS OR DIRT AREA SHALL BE ENCLOSED IN 24" x 24" x 12" CONCRETE PAD.
2. VALVE NUT EXTENSION - 1¼" DIAMETER GALVANIZED STEEL PIPE WITH 2" SQUARE BOX AT BASE AND 2" SQUARE OPERATING NUT AT TOP AND ¼" CENTERING PLATE CUT ¼" SMALLER THAN THE INSIDE DIAMETER OF VALVE RISER.
3. ALL VALVE RISERS SHALL BE ADJUSTED SO THAT THE VALVE BOX LID WILL BE FLUSH WITH THE FINISHED STREET GRADE.
4. VALVE MARKERS ARE REQUIRED WHEREVER VALVES ARE CONSTRUCTED IN UNIMPROVED STREETS OR EASEMENTS. MARKERS SHALL BE PLACED AS CLOSE AS PRACTICABLE TO VALVES. MARKERS SHALL FACE VALVES AND BE ORIENTED PERPENDICULAR TO THE MAINLINE. DISTANCE AND DIRECTION TO THE VALVE SHALL BE CLEARLY SHOWN ON THE MARKER.

PALMDALE WATER DISTRICT

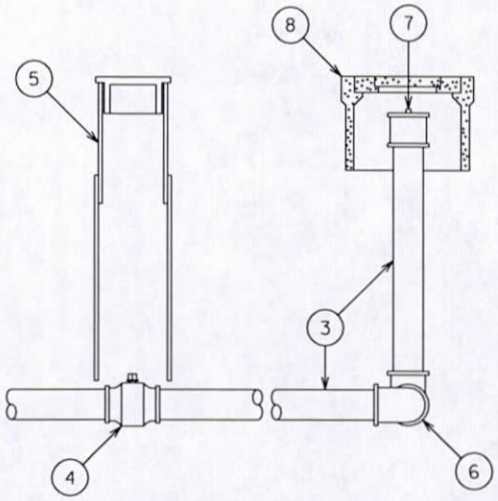
DATE: DEC. 2019 MRW APPROVED:	TYPICAL VALVE BOX INSTALLATION (IMPROVED OR UNIMPROVED ROADS)	W-5



PLAN VIEW
N.T.S.



SECTION A
N.T.S.



SECTION B
N.T.S.

KEY NOTES:

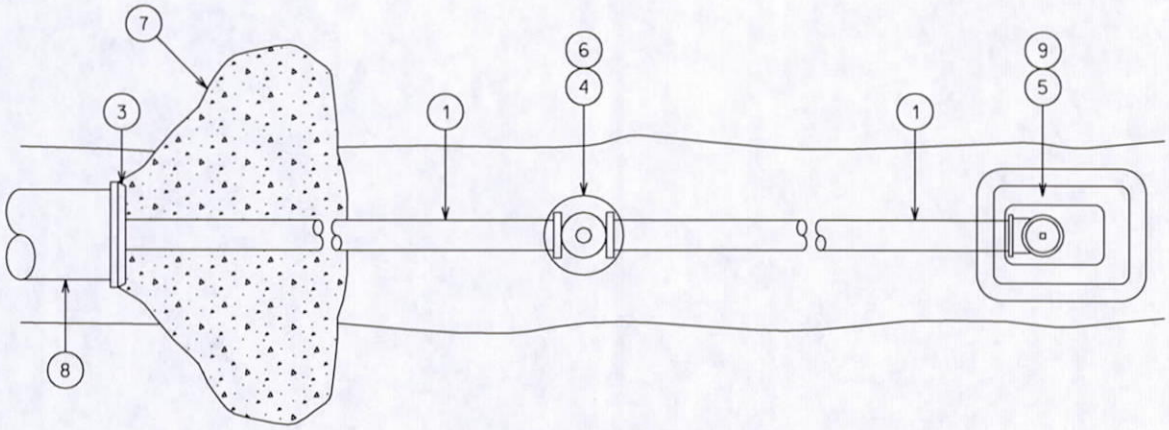
1. DUCTILE PIPE WILL REQUIRE A DIELECTRIC BUSHING.
2. 10 MIL TAPE REQUIRED FROM END CAP TO 1 FT PAST CONCRETE OR 18" MIN.

MATERIAL DESCRIPTION:

(1) 2" TAPPED CAP OR BLIND FLANGE
(2) CONCRETE THRUST BLOCK PER P.W.D. STD. W-4.
(3) 2" BRASS ALLOY LEAD FREE (LF) PER NSF/ANSI 61 AND 372.
(4) 2" LF BRASS BALL STRAIGHT SVC VALVE (JONES NO. J-1900W OR APPROVED EQUAL).
(5) VALVE BOX PER STD. W-5 (NOTE: VALVE RISER IS NOT TO REST ON PIPE).
(6) 2" 90° ELBOW BRASS ALLOY LEAD FREE (LF) PER NSF/ANSI 61 AND 372.
(7) 2" COUPLING WITH SQUARE HEAD PLUG BRASS ALLOY LEAD FREE (LF).
(8) SET NO. W438 METER BOX 1 1/2" TO 2" BEHIND THE CURB SECTION. IN THE ABSENCE OF CURB, SET METER BOX ADJACENT TO RIGHT-OF-WAY LINE WITH CONCRETE PAD PER STD. W-1.

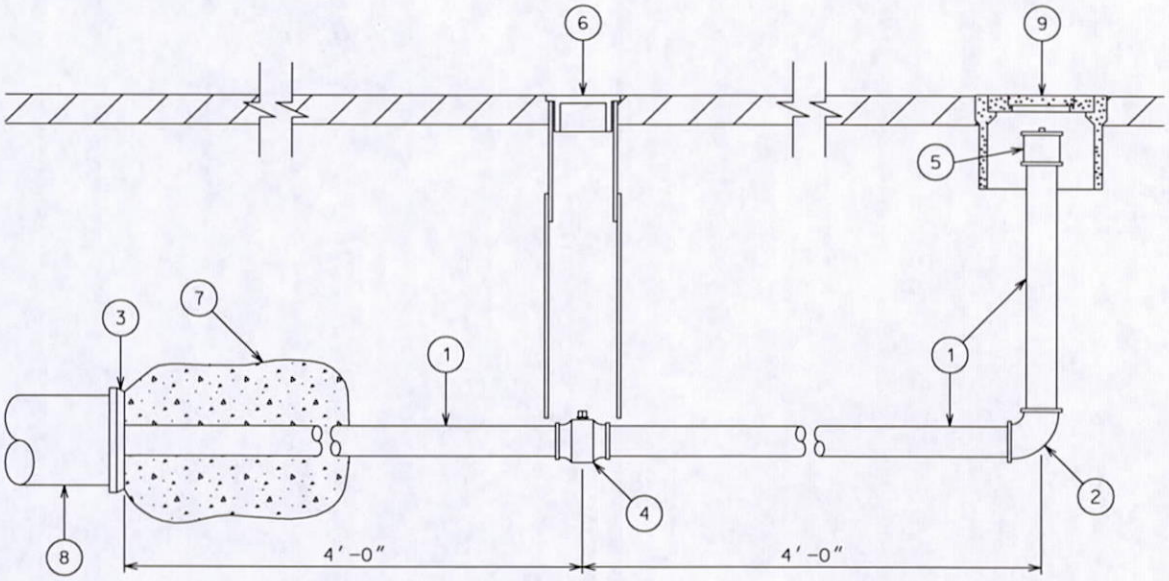
PALMDALE WATER DISTRICT

DATE: DEC. 2019 MRW APPROVED:	2" TEMPORARY BLOW-OFF ASSEMBLY (BEHIND CURB IN PARKWAY)	W-6



PLAN VIEW

N.T.S.



SECTION VIEW

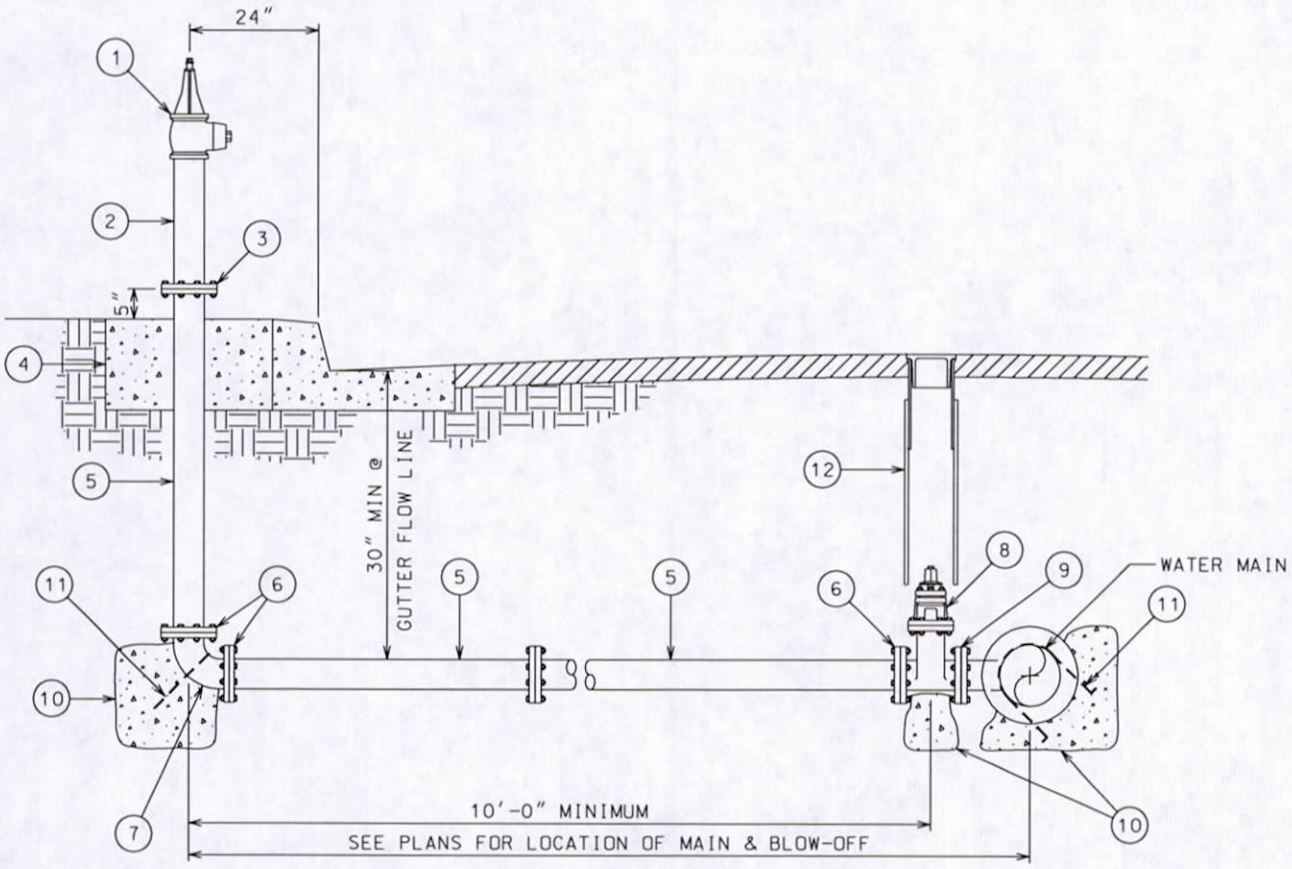
N.T.S.

GENERAL NOTES:

1. 2" BRASS ALLOY LEAD FREE (LF) PER NSF/ANSI 61 AND 372.
2. 2" BRASS ALLOY LEAD FREE (LF) PER NSF/ANSI 61 AND 372.
3. 2" LF BRASS TAPPED CAP OR BLIND FLANGE.
4. 2" LF BRASS BALL STRAIGHT SVC VALVE (JONES NO. J-1900W OR APPROVED EQUAL).
5. 2" LF BRASS COUPLING WITH SQUARE HEAD PLUG.
6. VALVE BOX PER STD. W-5 (NOTE: VALVE RISER IS NOT TO REST ON PIPE).
7. CONCRETE THRUST BLOCK PER STD. W-4.
8. SET NO. W438 METER BOX 1½" TO 2" BEHIND THE CURB SECTION. IN THE ABSENCE OF CURB, SET METER BOX ADJACENT TO RIGHT-OF-WAY LINE WITH CONCRETE PAD PER STD. W-1.
9. DUCTILE PIPE WILL REQUIRE A DIELECTRIC BUSHING.
10. 10 MIL TAPE REQUIRED FROM END CAP TO 1 FT PAST CONCRETE OR 18" MIN.

PALMDALE WATER DISTRICT

DATE: DEC. 2019 MRW APPROVED:	2" TEMPORARY BLOW-OFF ASSEMBLY (IN THE STREET)	W-6A



KEY NOTES:

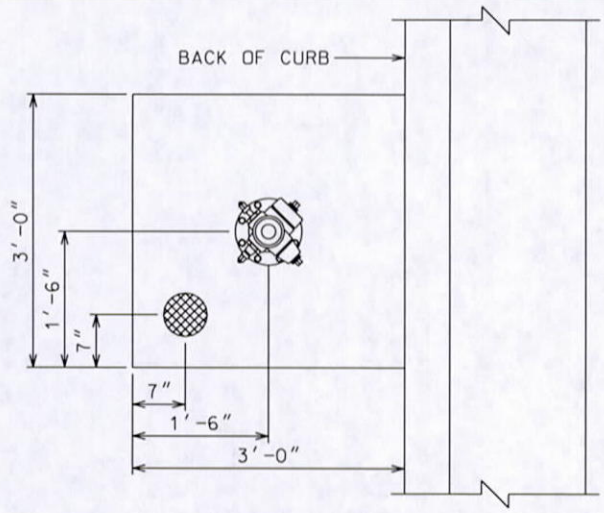
1. IN THE ABSENCE OF A CURB OR WHERE TYPE "E" CURB (ROLLED) IS USED. SET OUTLET 24-INCHES ABOVE CROWN OF ROAD AND INSTALL BARRICADES PER STD. W-14.
2. CENTERLINE OF RISER SHALL BE 2 FEET BEHIND CURB FACE.
3. NO BLOW-OFF SHALL BE INSTALLED CLOSER THAN 5 FEET FROM EDGE OF ANY DRIVEWAY APRON OR CURB RETURN.
4. ALL UNCOATED METAL SURFACES (INCLUDING NUTS AND BOLTS) INSTALLED UNDERGROUND SHALL BE THOROUGHLY COATED W/ NO-OX GREASE AND THEN BE WRAPPED WITH 8 MIL POLYETHYLENE SHEET (AWWA C-105).
5. ALL BLOW-OFFS SHALL BE PAINTED WITH ONE COAT OF RED PRIMER AND TWO COATS OF RUST-OLEUM FOREST GREEN OR APPROVED EQUAL.
6. INTERMEDIATE PIPE JOINTS IN LATERAL SHALL BE FLANGED. PIPE SHALL BE INSTALLED HORIZONTAL OR SLOPING DOWNWARD FROM MAIN TO PROVIDE MINIMUM COVER.

MATERIAL DESCRIPTION:

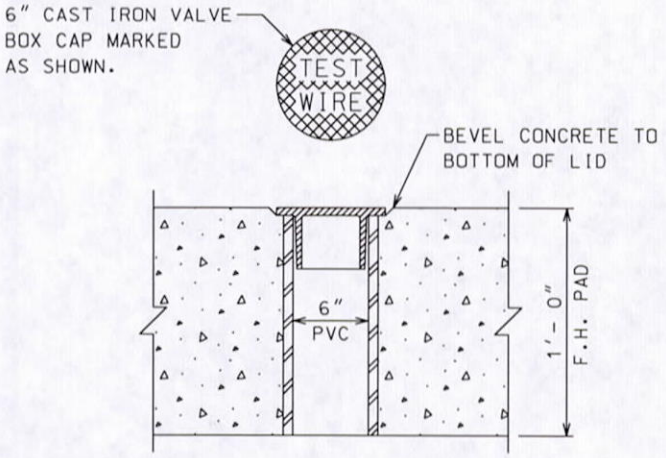
(1) 4" x 2½" WHARF HEAD. (JONES MODEL NO. J-344 H.P. O.A.E.)
(2) 4" x 18" L.F. BRASS NIPPLE.
(3) 4" COMPANION FLANGE CL 125. INSTALL BOLTS WITH HEADS UP. (HOLLOW BOLTS REQUIRED)
(4) 36" x 36" x 12" CONCRETE PAD WITH SIDEWALK FINISH TO BE SLOPED ¼" PER FOOT TOWARDS THE CURB.
(5) 4½" STL. PIPE 10 GA. MIN. C.M.L.& C. EXTEND NON-SHRINK MORTAR COATING WITH EXPANDED GALVANIZED LATH REINFORCEMENT TO MEET FLG. TAPER THICKNESS AND TO MEET FLG. HUB
(6) 4" SLIP-ON WELD FLANGE.
(7) 4" FLG. 90° ELBOW. STL., C.M.L.C., CL 150 FLG.
(8) 4" FLG. GATE VALVE CL 150.
(9) 4" FLG INSULATION KIT (WHEN WATER MAIN IS DUCTILE IRON)
(10) USE 2000 PSI MINIMUM CONCRETE FOR THRUST BLOCKS AND CONCRETE PAD. PLACE CONCRETE ON UNDISTURBED OR COMPACTED SOIL. THRUST BLOCKS MUST MEET REQUIREMENTS OF P.W.D. STD. W-4.
(11) ANCHOR ROD PER STD. W-4.
(12) VALVE BOX PER P.W.D. STD. W-5.

PALMDALE WATER DISTRICT

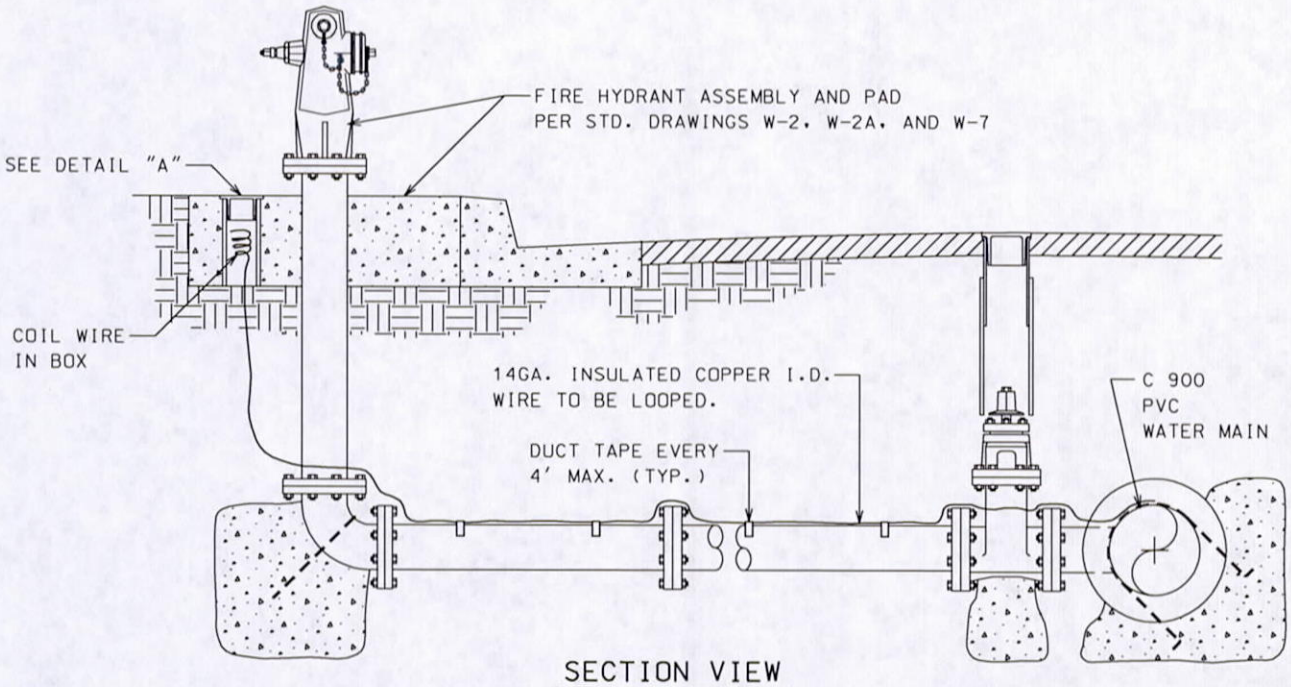
DATE: DEC. 2019 MRW APPROVED:	4" BLOW-OFF ASSEMBLY	W-7



PLAN VIEW
N.T.S.



DETAIL "A"
N.T.S.



SECTION VIEW
N.T.S.

GENERAL NOTES:

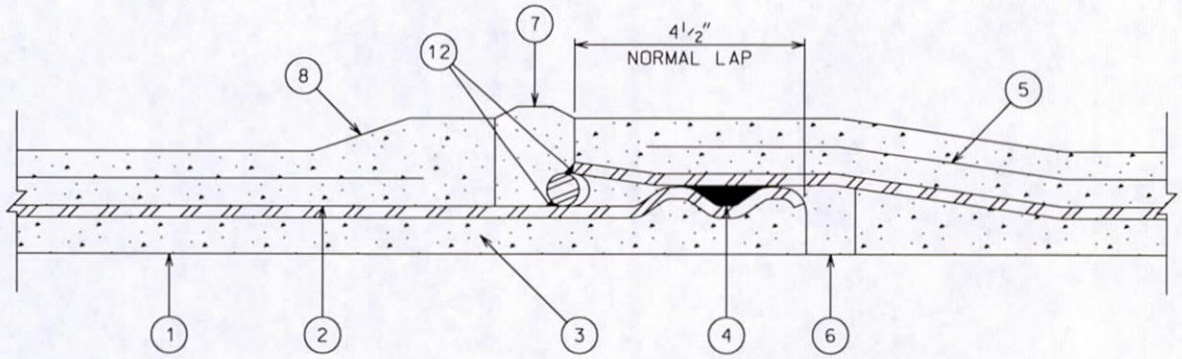
1. WIRE MUST BE LAID ON TOP OF PIPE AND FASTENED SECURELY AT 4' MAX. INTERVALS WITH AN EIGHT INCH LENGTH OF DUCT TAPE OR OTHER APPROVED METHOD.

2. SPLICES TO BE MADE WITH BUTT CONNECTORS AND ARE TO BE ENCAPSULATED WITH RUBBER SEALING TAPE (POLYISOBUTELENE) PER DUET INDUSTRIES OR OTHER APPROVED TYPE.

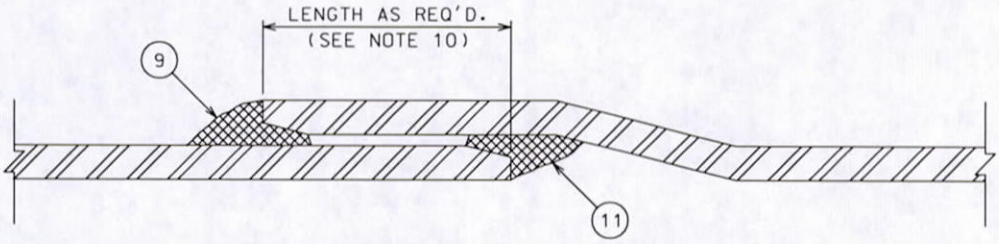
3. INSTALL TEST STATION AT ALL DEAD ENDS OR POINT OF CONNECTION.

PALMDALE WATER DISTRICT

DATE: DEC. 2019 MRW APPROVED:	INSTALLATION OF IDENTIFICATION WIRE (C-900 PVC PIPE)	W-8



TYPICAL RUBBER GASKET JOINT



TYPICAL LAP-WELDED SLIP JOINT

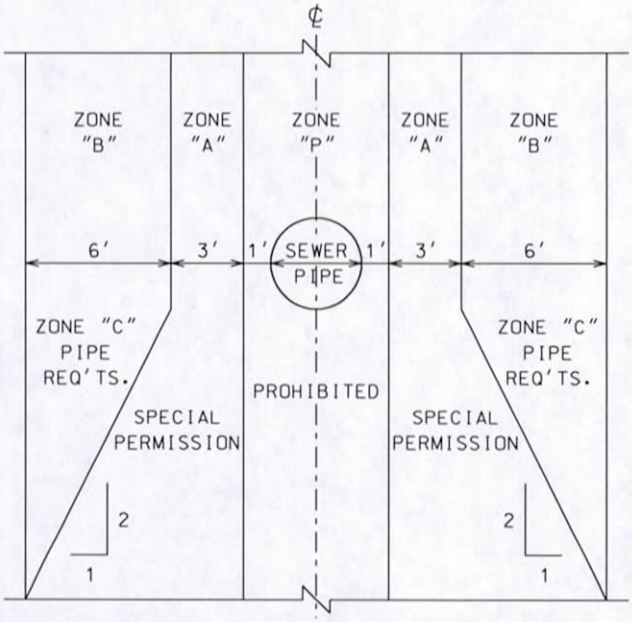
GENERAL NOTES:

1. I.D. PIPE
2. O.D. CYLINDER
3. CEMENT MORTAR LINING
4. RUBBER GASKET
5. WIRE REINFORCEMENT
6. CEMENT MORTAR - PLACE IN FIELD - STEEL TROWEL FINISH FOR PIPE 24" DIAMETER & LARGER. BALL FINISHED FOR LESS THAN 24" DIAMETER.
7. CEMENT GROUT PLACED IN FIELD WITH FACTORY SUPPLIED DIAPERS.
8. CEMENT MORTAR COATING
9. OUTSIDE WELD
10. NORMAL LAP - 1 1/2 INCHES. 10TH JOINT LAP - 3 INCHES (NOT TO BE WELDED UNTIL 9 JOINTS ON EACH SIDE HAVE BEEN WELDED).
11. INSIDE WELD MAY BE SUBSTITUTED FOR OUTSIDE WELD.
12. CONTINUITY CONNECTOR.

PALMDALE WATER DISTRICT

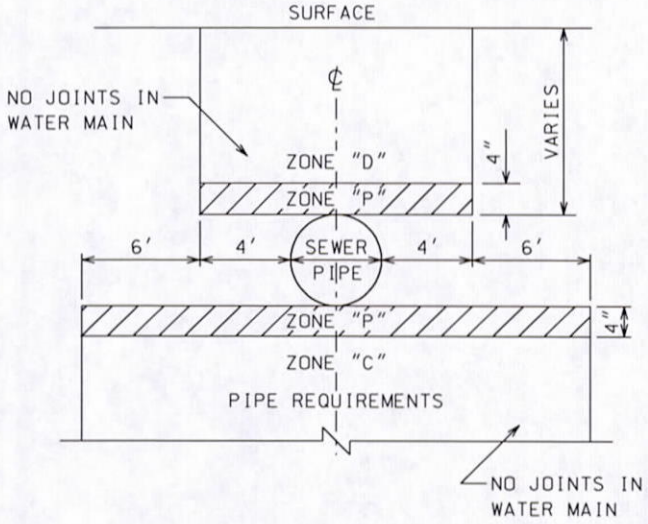
DATE: DEC. 2019 MRW APPROVED:	TYPICAL STEEL PIPE JOINT DETAILS	W-9

PARALLEL CONSTRUCTION



SPECIAL CONSTRUCTION WILL BE REQUIRED IF HORIZONTAL CLEARANCE BETWEEN PRESSURE WATER MAIN AND SEWER LINE IS LESS THAN 10 FEET. SEE THE ZONE ABOVE CORRESPONDING TO CONSTRUCTION REQUIREMENTS BELOW.

PERPENDICULAR CONSTRUCTION



SPECIAL CONSTRUCTION WILL BE REQUIRED IF VERTICAL CLEARANCE BETWEEN PRESSURE WATER MAIN AND SEWER LINE IS LESS THAN 1 FOOT AT CROSSING. SEE THE ZONE ABOVE CORRESPONDING TO CONSTRUCTION REQUIREMENTS BELOW.

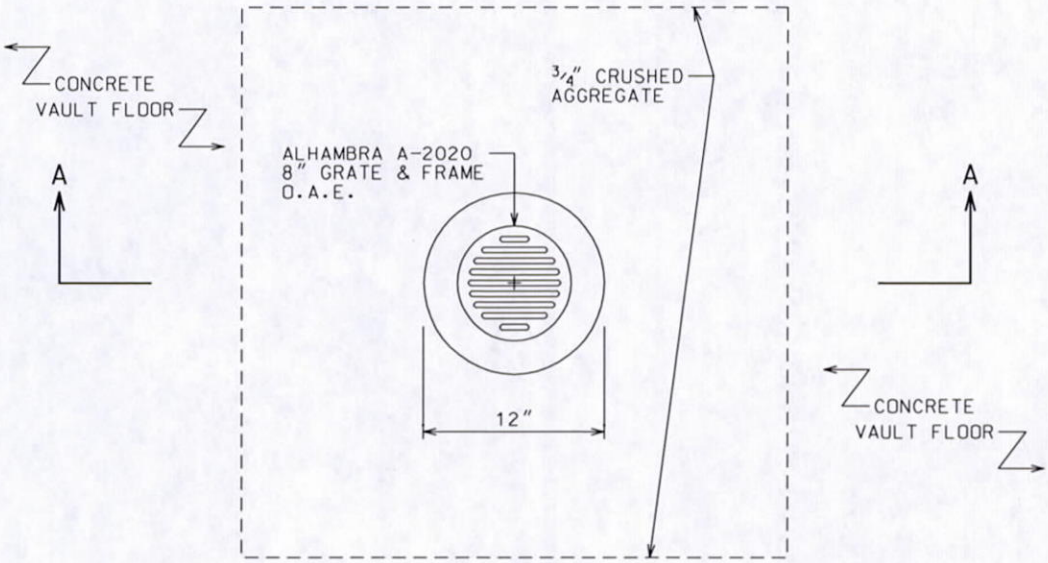
ZONE	WATER MAIN CONSTRUCTION REQUIREMENTS
A	NO WATER MAINS PARALLEL TO SEWERS SHALL BE CONSTRUCTED WITHOUT APPROVAL FROM THE HEALTH AGENCY.
B	USE THE FOLLOWING TYPES OF PIPE: DUCTILE IRON PIPE, C.M.L. WITH HOT DIP BITUMINOUS COATING OR STEEL PIPE 10 GA. (MIN.), C.M.L. & C.M.C. WITH WELDED JOINTS.
C	NO JOINTS WITHIN 10 FEET OF OUTER EDGES OF SEWER LINE. PIPE REQUIREMENTS: DUCTILE IRON PIPE, C.M.L. WITH HOT DIP BITUMINOUS COATING OR STEEL PIPE 10 GA. (MIN.), C.M.L. & C.M.C. WITH WELDED JOINTS. PIPE SHALL BE 20 FT LENGTHS
D	NO JOINTS WITHIN 4 FEET OF EITHER SIDE OF SEWER LINE. USE THE FOLLOWING TYPES OF PIPE: DUCTILE IRON PIPE, C.M.L. WITH HOT DIP BITUMINOUS COATING OR STEEL PIPE 10 GA. (MIN.), C.M.L. & C.M.C. WITH WELDED JOINTS.
P	PROHIBITED ZONE - NO WATER MAINS ARE ALLOWED TO BE INSTALLED WITHIN THIS ZONE.

GENERAL NOTES:

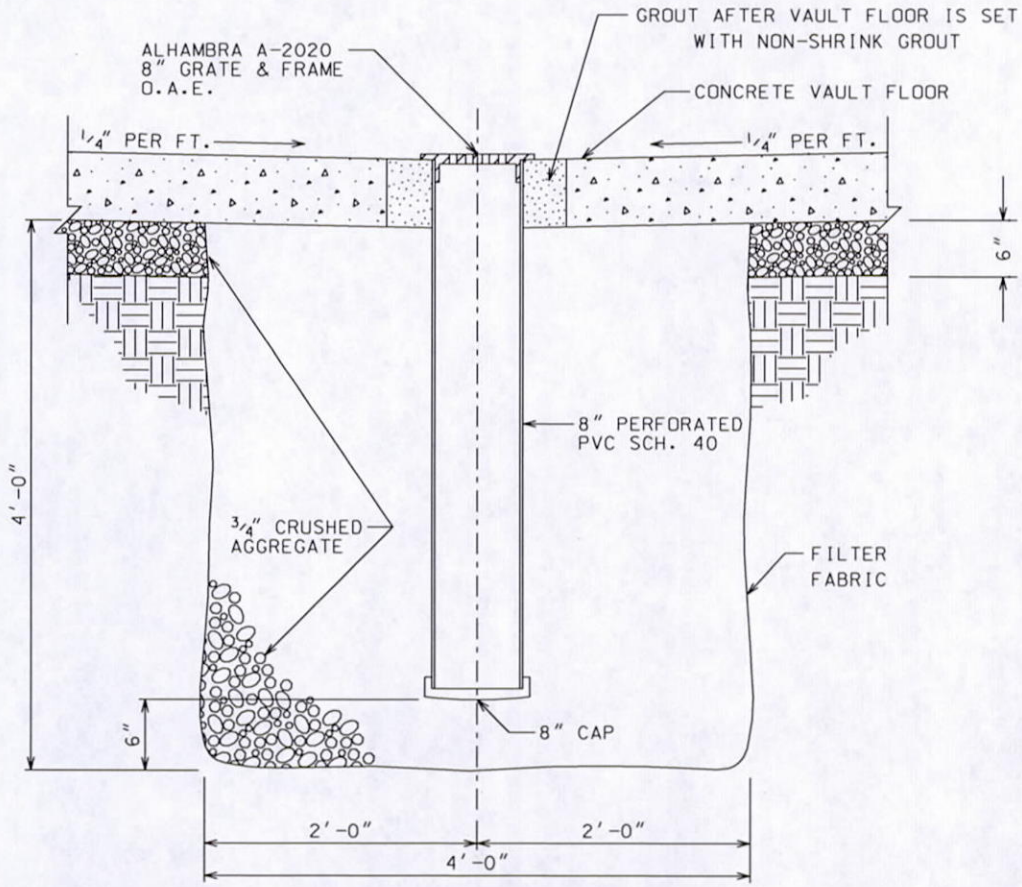
1. WATER MAINS AND SEWER LINES SHALL NOT BE INSTALLED IN THE SAME TRENCH.
2. SEPARATION DISTANCES SPECIFIED SHALL BE MEASURED FROM THE OUTER EDGES OF PIPE.
3. THE "CALIFORNIA WATERWORKS STANDARDS" SETS FORTH THE MINIMUM SEPARATION REQUIREMENTS FOR WATER MAINS AND SEWER LINES. THESE STANDARDS ARE CONTAINED IN SECTION 64630, TITLE 22, CALIFORNIA ADMINISTRATIVE CODE.

PALMDALE WATER DISTRICT

DATE: DEC. 2019 MRW APPROVED:	DESIGN REQUIREMENTS FOR WATER MAINS IN THE VICINITY OF SANITARY SEWERS	W-10



PLAN VIEW
N.T.S.

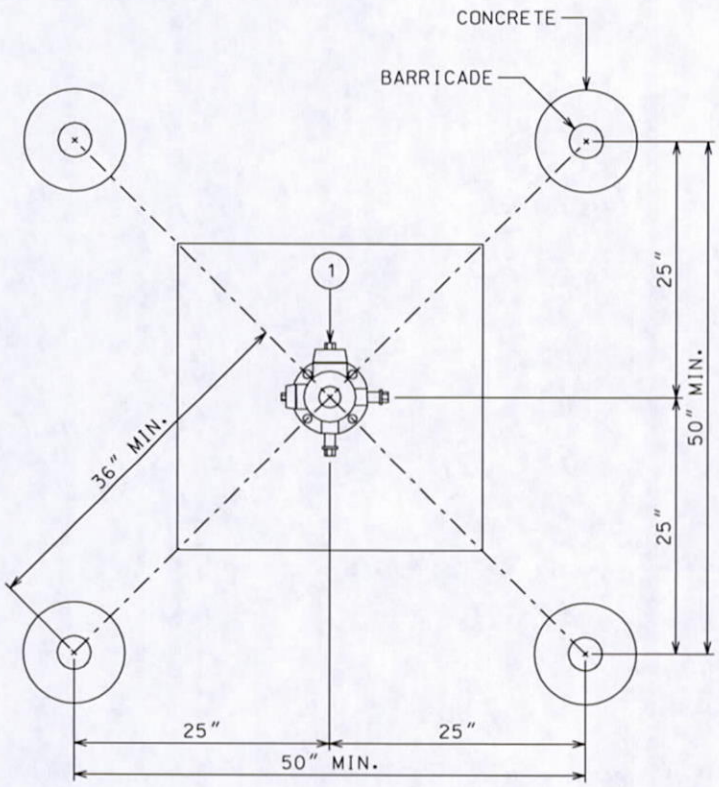


SECTION A-A
N.T.S.

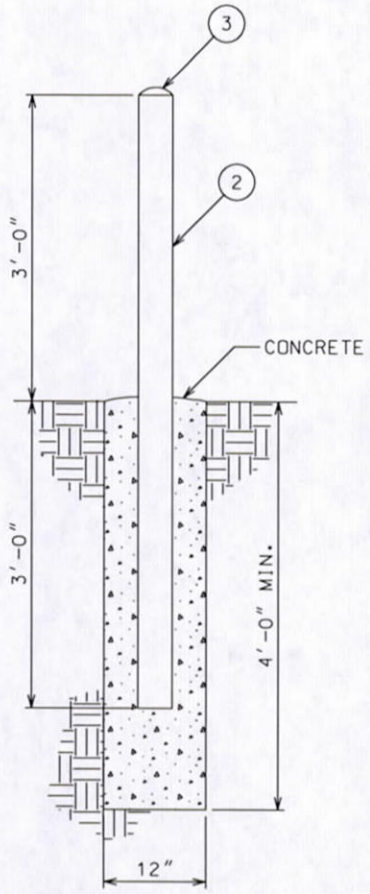
PALMDALE WATER DISTRICT

DATE: DEC. 2019 MRW APPROVED:	SUMP DETAIL FOR METER VAULTS (TO BE LOCATED PER APPROVED PLAN)	W-12

STREET WITHOUT CONCRETE CURB



BARRICADE PLAN
TYPICAL PER L.A. CO. FIRE DEPARTMENT
N.T.S.



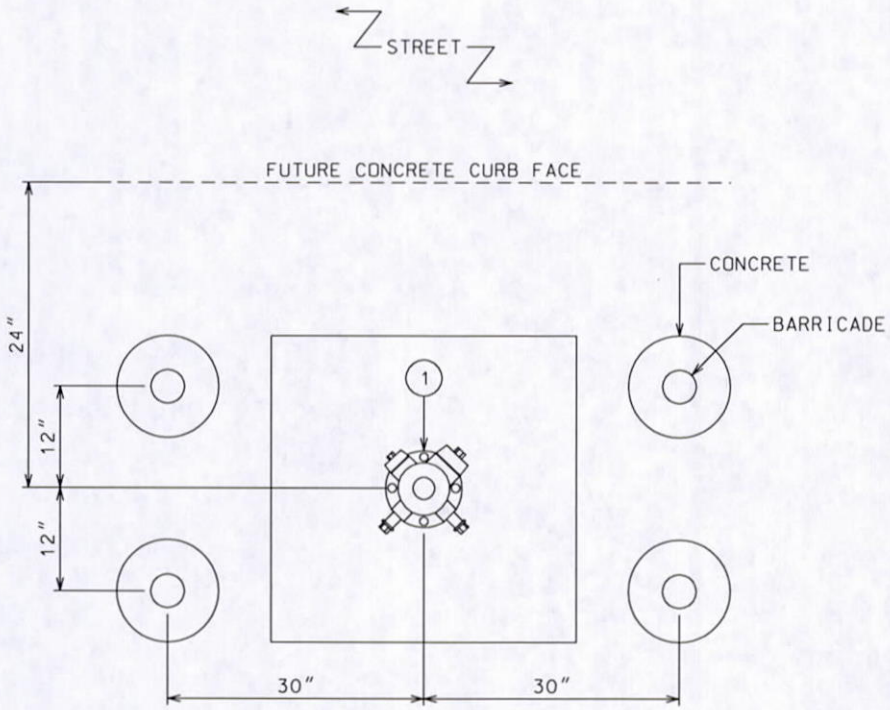
BARRICADE DETAIL
N.T.S.

GENERAL NOTES:

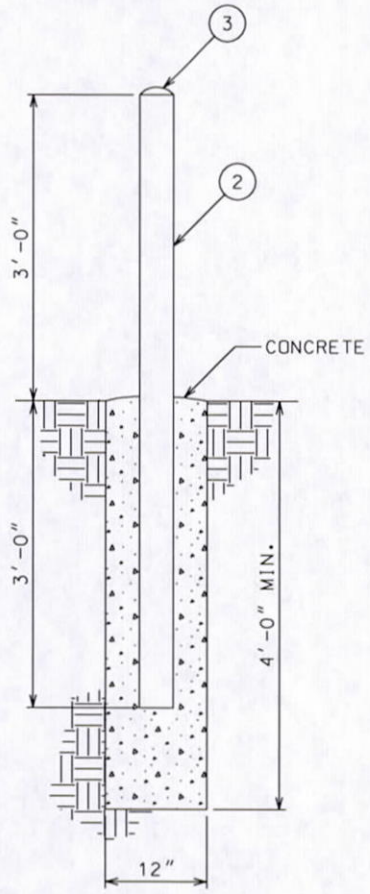
1. WATER DEVICE (HYDRANT SHOWN) BEING PROTECTED.
2. 6' OF 4" STANDARD STEEL PIPE SCHEDULE 40 CONCRETE FILLED
3. CONCRETE CAP
4. FOUR BARRICADES ARE TO BE USED UNLESS OTHERWISE SPECIFIED.
5. THE EXACT LOCATION OF BARRICADES MAY BE CHANGED BY THE DISTRICT REPRESENTATIVE IN THE FIELD.
6. THE STEEL PIPE ABOVE THE GROUND SHALL BE PAINTED A MINIMUM OF ONE FIELD COAT OF RED PRIMER AND TWO COATS OF RUST-OLEUM SAFETY YELLOW OR APPROVED EQUAL.
7. 25" BARRICADE SPACING SHALL BE WIDENED AS REQUIRED TO PROVIDE CLEARANCE FOR ATTACHMENTS TO FIRE HYDRANT OUTLETS.

PALMDALE WATER DISTRICT

DATE: DEC. 2019 MRW APPROVED:	TYPICAL BARRICADES DETAIL (STREET WITHOUT CONCRETE CURB)	W-14



TEMPORARY BARRICADE PLAN
TYPICAL PER L.A. CO. FIRE DEPARTMENT
N.T.S.



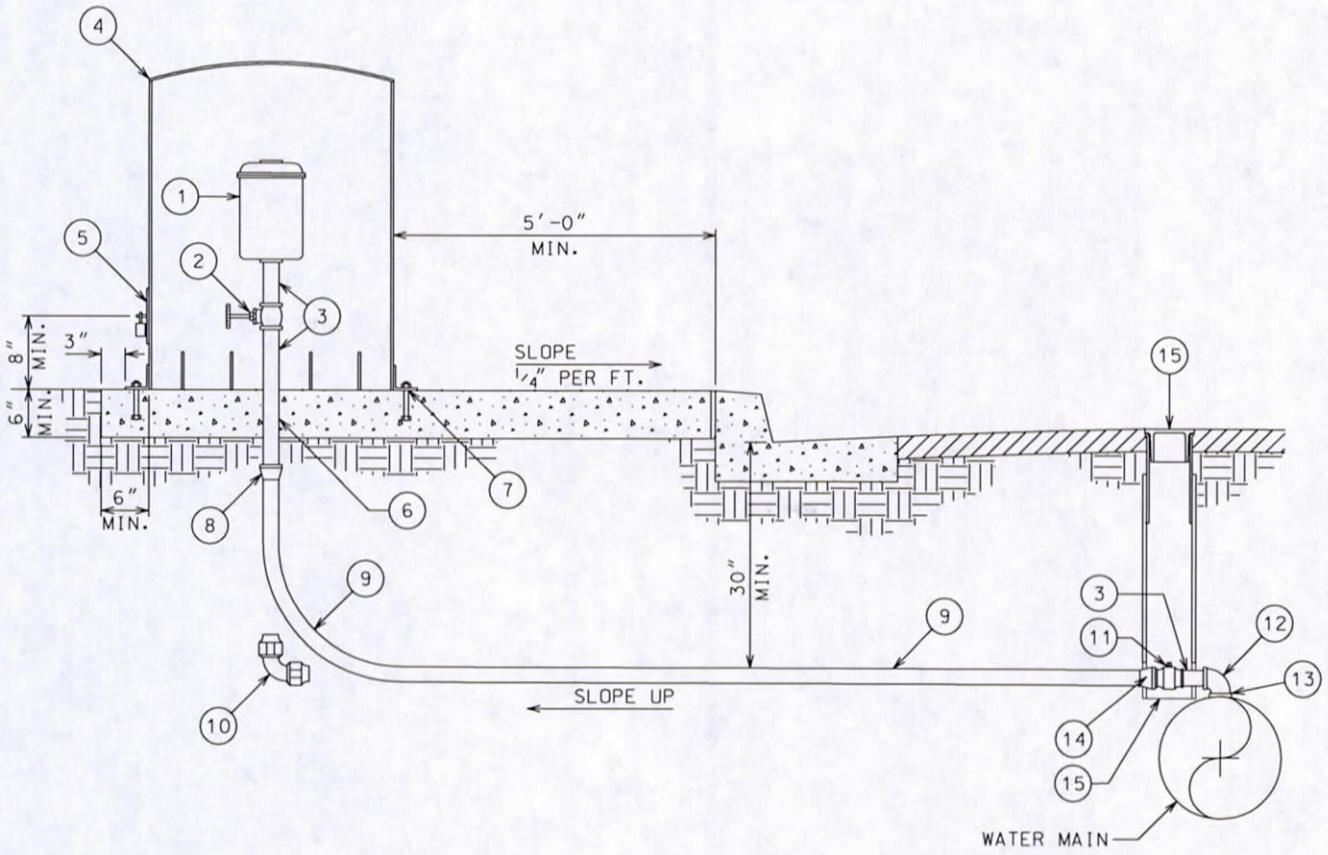
BARRICADE DETAIL
N.T.S.

GENERAL NOTES:

1. FIXTURE BEING PROTECTED.
2. 6' OF 4" STANDARD STEEL PIPE SCHEDULE 40 CONCRETE FILLED
3. CONCRETE CAP
4. FOUR BARRICADES ARE TO BE USED UNLESS OTHERWISE SPECIFIED.
5. THE EXACT LOCATION OF BARRICADES MAY BE CHANGED BY THE DISTRICT REPRESENTATIVE IN THE FIELD.
6. THE STEEL PIPE ABOVE THE GROUND SHALL BE PAINTED A MINIMUM OF ONE FIELD COAT OF RED PRIMER AND TWO COATS OF RUST-OLEUM SAFETY YELLOW OR APPROVED EQUAL.

PALMDALE WATER DISTRICT

DATE: DEC. 2019 MRW APPROVED:	TYPICAL TEMPORARY BARRICADES DETAIL FOR FIRE HYDRANTS	W-15



KEY NOTES:

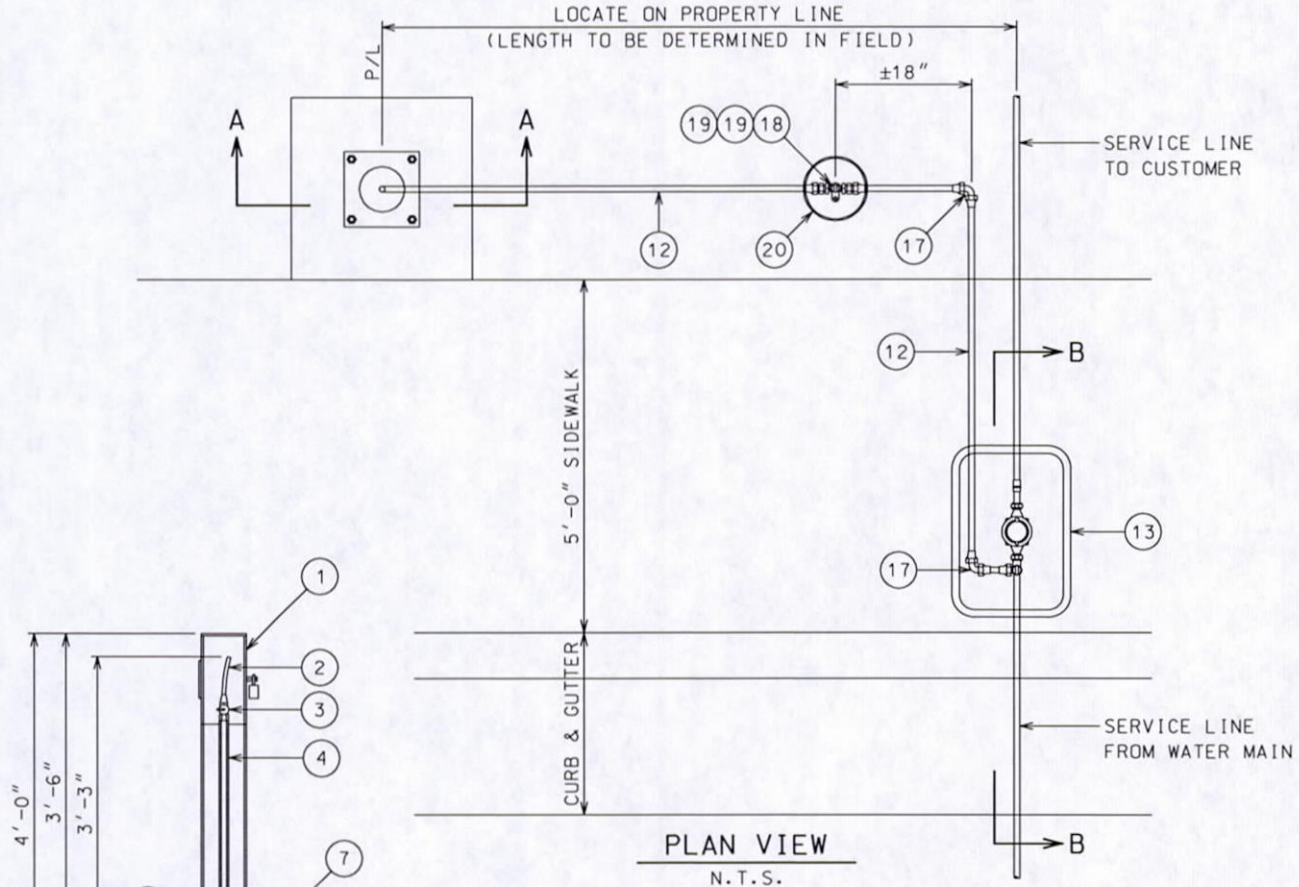
1. WHEN WATER MAIN IS REQUIRED TO BE HOT TAPPED USE M.I.P. x M.I.P. CORPORATION VALVE.
2. IF NO CURB AND GUTTER OR IF TYPE "E" CURB (ROLLED). INSTALL BARRICADES PER STANDARD W-14 AS REQUIRED (RUST-OLEUM SAFETY YELLOW).
3. ALL VALVES AND PIPING ABOVE GROUND SHALL BE INSULATED.
4. PAINT VALVE ASSEMBLY ABOVE GROUND, AND STEEL COVER (INSIDE AND OUTSIDE), WITH TWO COATS OF RED PRIMER AND TWO COATS OF RUSTOLEUM FOREST GREEN OR APPROVED EQUAL.
5. USE PROPER CLASS FITTINGS FOR WATER WORKING PRESSURE (CLASS 150 MINIMUM).
6. SEE PLANS FOR VALVE SIZES AND USE SAME SIZE FITTINGS AND NIPPLE LENGTHS TO SUIT (NO CLOSE NIPPLES).
7. ALL EDGES AGAINST OTHER CONCRETE TO HAVE PREFORMED JOINT FILLER.
8. ALL PIPING AND APPURTENANCES WILL BE AIR VACUUM VALVE SIZE.
9. 36" x 36" x 6" CONCRETE PAD WITH SIDEWALK FINISH TO BE SLOPED 1/4" PER FOOT TOWARDS THE CURB.

MATERIAL DESCRIPTION:

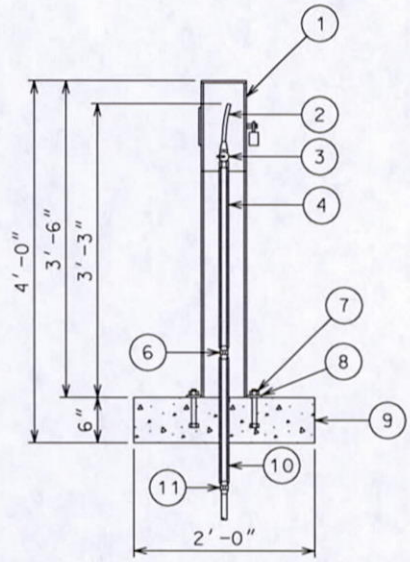
(1) COMBINATION AIR AND VACUUM RELEASE VALVE A.R.I. D-040.
(2) GATE VALVE, BRASS
(3) BRASS NIPPLE
(4) A.R.I. VALVE ENCLOSURE
(5) 6" x 6" DOOR WITH WELDED HINGES AND PADLOCK HASP. PADLOCK TO BE SUPPLIED BY DISTRICT.
(6) PROTECT PIPE WITH 20 MIL TAPE
(7) 3" x 3" x 1/4" ∠ , 3" LONG WITH 9/16" DIA. HOLE WELDED TO STEEL COVER (4 REQUIRED)
(8) COUPLING, F.I.P. x COMPRESSION FOR 2", FIP x COMP. FOR 1"
(9) USE TYPE "K" COPPER TUBING.
(10) COMPRESSION 90° ELBOW REQUIRED FOR 1 1/2" AND 2" ASSEMBLIES.
(11) BALL STRAIGHT SVC VALVE (JONES NO. J-1900W, OR APPROVED EQUAL)
(12) 90° STREET ELBOW, BRASS
(13) CONNECTIONS SHALL BE MADE WITH MATERIALS SPECIFIED IN P.W.D. STD. W-1.
(14) MIP x COMPRESSION ADAPTER FOR 2", MIP x COMP. ADAPTER FOR 1".
(15) VALVE BOX PER P.W.D. STD. W-5 (NOTCH VALVE RISER AROUND PIPE)

PALMDALE WATER DISTRICT

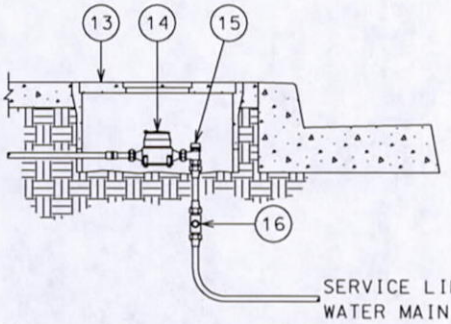
DATE: DEC. 2019 MRW APPROVED:	AIR AND VACUUM RELEASE VALVE (TYPICAL 1" THROUGH 2" COMBINATION)	W-16



PLAN VIEW
N.T.S.



SECTION A-A
N.T.S.



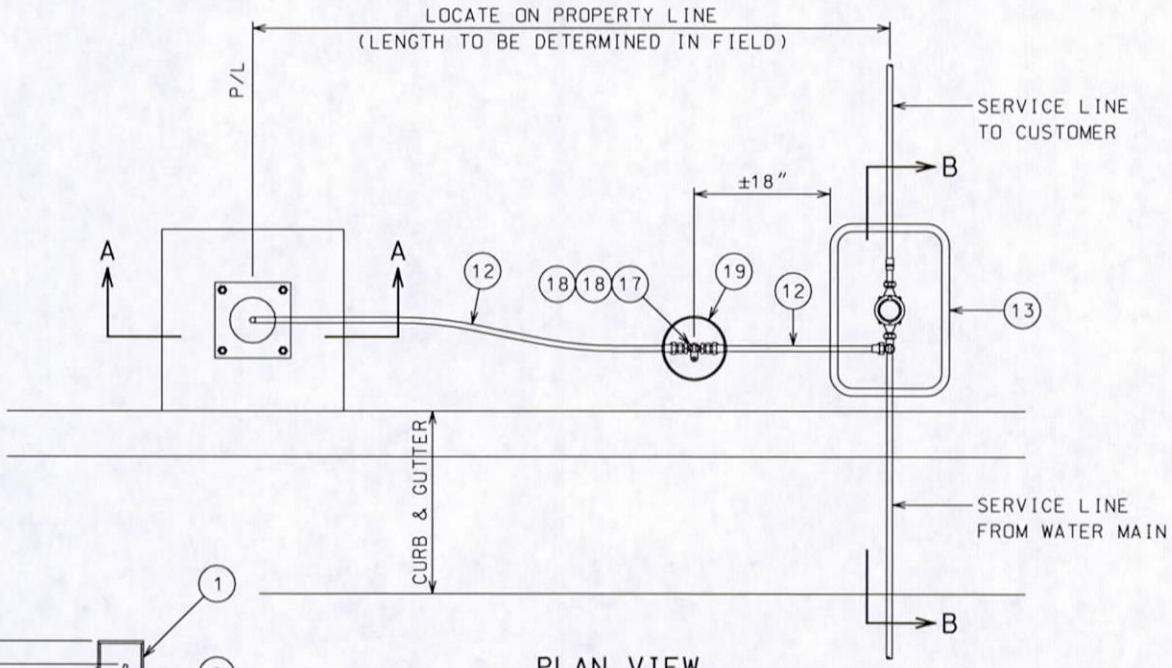
SECTION B-B
N.T.S.

MATERIAL DESCRIPTION:

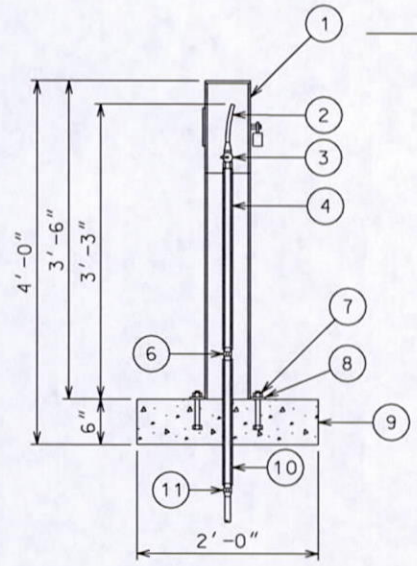
1. 6" DIA. STL. PIPE WITH 12" HINGED DOOR & CLASP FOR LOCKING (PADLOCK TO BE SUPPLIED BY THE DISTRICT).
2. 3/8" COPPER TUBE
3. 3/4" BALL VALVE WITH 3/4" x 3/8" BRASS BUSHING & 3/8" M.I.P. x COMP. ADAPTER.
4. 3/4" x 30" L.F. BRASS NIPPLE WITH PIPE INSULATION.
5. NO ITEM
6. 3/4" L.F. BRASS COUPLING
7. 4 - 1/2" ANCHOR BOLTS
8. 10" x 10" x 3/16" BASE PLATE
9. 24" x 24" x 6" CONCRETE PAD
10. 3/4" x 18" L.F. BRASS NIPPLE WITH PIPE INSULATION
11. 3/4" F.I.P. x COMP. ADAPTER
12. 3/4" TYPE "K" SOFT COPPER TUBING
13. METER BOX
14. METER
15. ANGLE STOP WITH COMPRESSION INLET (SIZE VARIES).
16. VARIES" x 3/4" COMPRESSION TEE
17. 3/4" COMPRESSION 90° ELBOW
18. 3/4" STRAIGHT STOP
19. 3/4" M.I.P. x COMP. ADAPTER
20. IRRIGATION CONTROL VALVE BOX

PALMDALE WATER DISTRICT

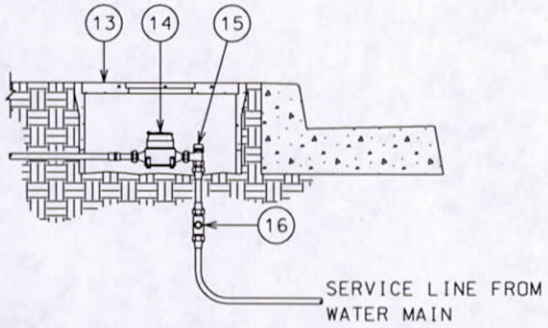
DATE: DEC. 2019 MRW APPROVED:	BACTERIOLOGICAL TEST STATION (TEST STATION BEHIND SIDEWALK)	W-17



PLAN VIEW
N.T.S.



SECTION A-A
N.T.S.



SECTION B-B
N.T.S.

KEY NOTES:

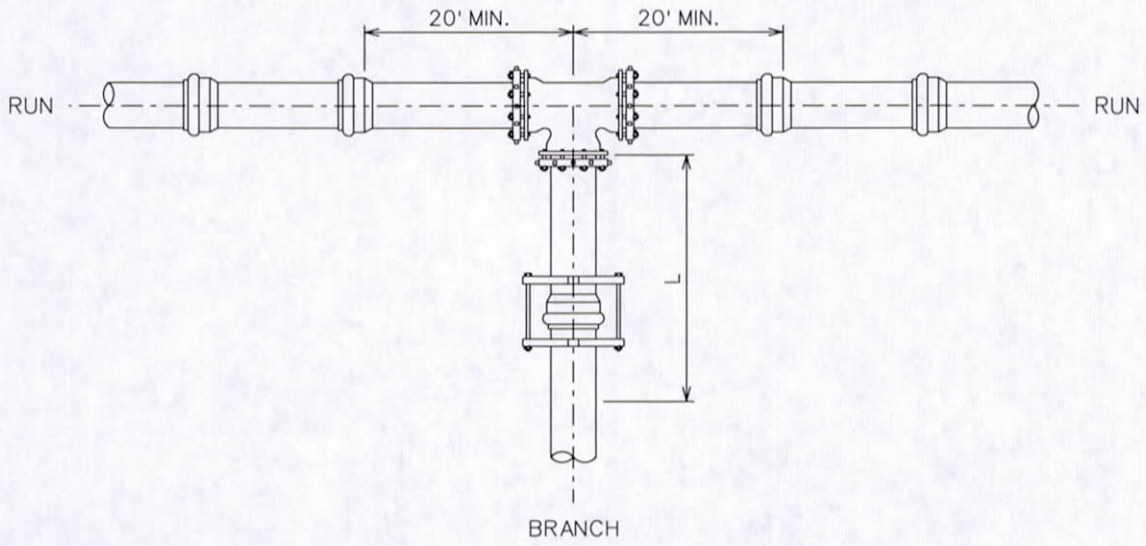
IF NO CURB AND GUTTER OR IF TYPE "E" CURB (ROLLED), INSTALL BARRICADES PER P.W.D. STD. W-14 AS REQUIRED (RUSTOLEUM SAFETY YELLOW)

MATERIAL DESCRIPTION:

① 6" DIA. STL. PIPE WITH 12" HINGED DOOR & CLASP FOR LOCKING (PADLOCK TO BE SUPPLIED BY THE DISTRICT).
② 3/8" COPPER TUBE
③ 3/4" BALL VALVE WITH 3/4" x 3/8" BRASS BUSHING & 3/8" M.I.P. x COMP. ADAPTER.
④ 3/4" x 30" L.F. BRASS NIPPLE WITH PIPE INSULATION.
⑤ NO ITEM
⑥ 3/4" L.F. BRASS COUPLING
⑦ 4 - 1/2" ANCHOR BOLTS
⑧ 10" x 10" x 3/16" BASE PLATE
⑨ 24" x 24" x 6" CONCRETE PAD
⑩ 3/4" x 18" L.F. BRASS NIPPLE WITH PIPE INSULATION
⑪ 3/4" F.I.P. x COMP. ADAPTER
⑫ 3/4" TYPE "K" SOFT COPPER TUBING
⑬ METER BOX
⑭ METER
⑮ ANGLE STOP WITH COMPRESSION INLET (SIZE VARIES).
⑯ VARIES" x 3/4" COMPRESSION TEE
⑰ 3/4" COMPRESSION 90° ELBOW
⑱ 3/4" STRAIGHT STOP
⑲ 3/4" M.I.P. x COMP. ADAPTER
⑳ IRRIGATION CONTROL VALVE BOX

PALMDALE WATER DISTRICT

DATE: DEC. 2019 MRW APPROVED:	BACTERIOLOGICAL TEST STATION (TEST STATION FOR NO SIDEWALK OR SIDEWALK WIDER THAN 5')	W-17A



RUN SIZE

BRANCH SIZE	4	6	8	10	12	14	16	18	20	24
4	*	*	*	*	*	*	*	*	*	*
6		*	*	*	*	*	*	*	*	*
8			*	*	*	*	*	*	*	*
10				*	*	*	*	*	*	*
12					13	*	*	*	*	*
14						24	13	*	*	*
16							36	25	14	*
18								47	37	16
20									58	39
24										79

* - FOR THIS CONDITION NEED ONLY RESTRAIN THE BRANCH OUTLET OF THE TEE.

RESTRAINED LENGTHS, "L" (IN FEET)

1. RESTRAIN THE TWO MECHANICAL JOINTS ON THE RUN SIDES OF THE TEE. THERE SHOULD BE A FULL 20' LENGTH OF PIPE INSTALLED ON EACH SIDE OF THE RUN.

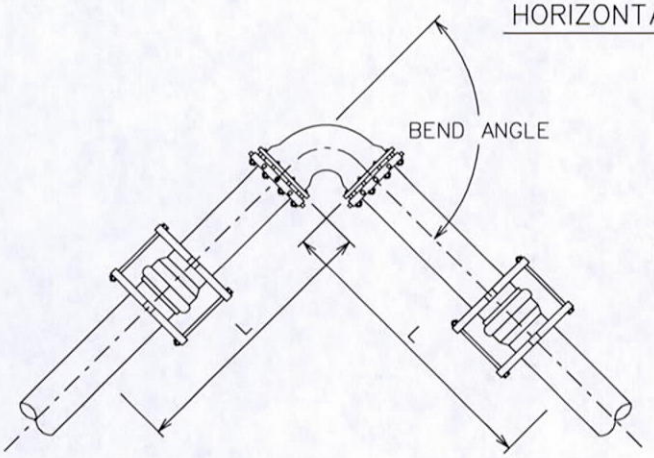
2. ALL JOINTS WITHIN THE LENGTH "L" ON THE BRANCH MUST BE RESTRAINED. USE RETAINER GLAND AT MECHANICAL JOINTS AND HARNESS ON PUSH-ON PIPE PER P.W.D. SPECIFICATION.

3. FOR TEST PRESSURES AND LAYING CONDITIONS SEE SECTION OF GENERAL NOTES FOR USE OF RESTRAINED JOINT LENGTHS ON STANDARD DRAWING W-20.

PALMDALE WATER DISTRICT

DATE: DEC. 2019 MRW APPROVED:	STANDARD TEE RESTRAINT (FOR C-900 PVC PIPE)	W-18

HORIZONTAL BEND

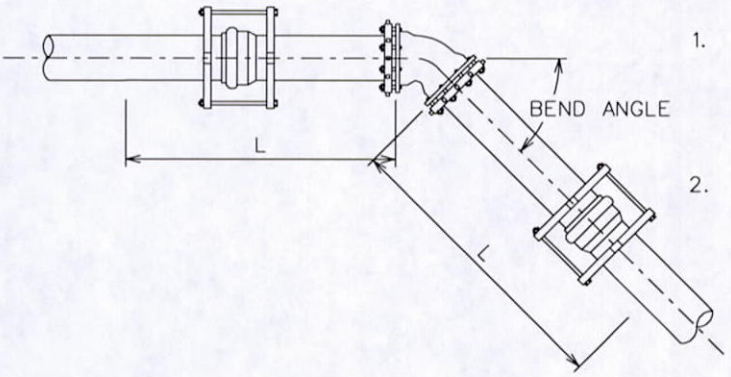


1. ALL JOINTS WITHIN LENGTH "L" MUST BE RESTRAINED. USE RETAINER GLAND AT MECHANICAL JOINTS AND HARNESS WITH PUSH-ON PIPE PER P.W.D. SPECIFICATION.
2. FOR TEST PRESSURES AND LAYING CONDITIONS SEE SECTION OF GENERAL NOTES FOR USE OF RESTRAINED JOINT LENGTHS ON STANDARD DRAWING W-20.

RESTRAINED LENGTHS, "L" (IN FEET)

BEND ANGLE \ RUN SIZE	4	6	8	10	12	14	16
11.25	3	3	3	4	4	5	5
22.5	3	5	7	7	9	10	11
45	7	11	13	15	18	20	23
90	17	24	31	37	43	49	55

VERTICAL BEND



1. ALL JOINTS WITHIN LENGTH "L" MUST BE RESTRAINED. USE RETAINER GLAND AT MECHANICAL JOINTS AND HARNESS WITH PUSH-ON PIPE PER P.W.D. SPECIFICATION.
2. FOR TEST PRESSURES AND LAYING CONDITIONS SEE SECTION OF GENERAL NOTES FOR USE OF RESTRAINED JOINT LENGTHS ON STANDARD DRAWING W-20.

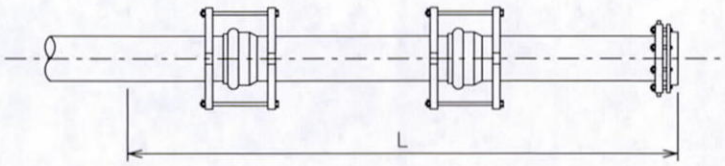
RESTRAINED LENGTHS, "L" (IN FEET)

BEND ANGLE \ RUN SIZE	4	6	8	10	12	14	16
11.25	5	7	9	11	13	15	17
22.5	11	15	19	23	27	31	35
45	23	31	40	48	56	64	72

PALMDALE WATER DISTRICT

DATE: DEC. 2019 MRW APPROVED:	STANDARD BEND RESTRAINT (FOR C-900 PVC PIPE)	W-19

DEAD END P.V.C. PIPE



1. ALL JOINTS WITHIN LENGTH "L" MUST BE RESTRAINED. USE RETAINER GLAND AT MECHANICAL JOINTS AND HARNESS WITH PUSH-ON PIPE PER P.W.D. SPECIFICATION.
2. FOR TEST PRESSURES AND LAYING CONDITIONS SEE GENERAL NOTES BELOW.

PIPE SIZE

4	6	8	10	12	14	16
52	73	96	115	136	155	174

RESTRAINED LENGTHS, "L" (IN FEET)

RESTRAINED JOINT LENGTHS USAGE GENERAL NOTES

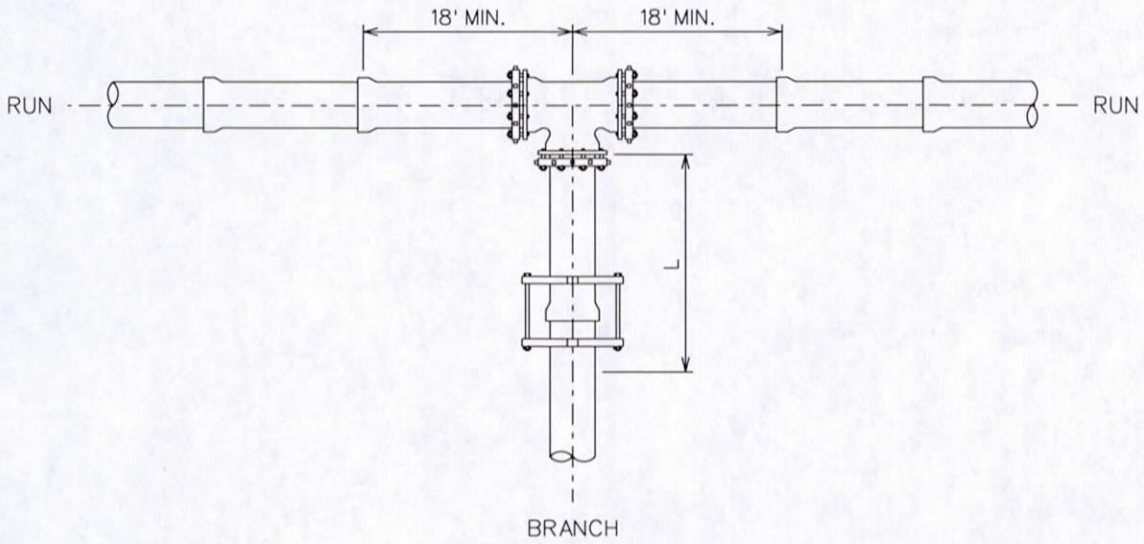
RESTRAINED LENGTH CALCULATIONS ARE BASED ON THE FOLLOWING DESIGN CRITERIA TYPICALLY USED WITH BACKFILL IN P.W.D.:

1. FORTY-TWO (42) INCHES MINIMUM DEPTH OF COVER.
2. A MINIMUM SAFETY FACTOR OF 1.5
3. SOIL TYPE PER P.W.D. SPECIFICATION.
4. PIPE ZONE BACKFILL FROM A DEPTH OF SIX (6) INCHES MINIMUM UNDER THE PIPE TO TWELVE (12) INCHES ABOVE THE TOP OF PIPE SHALL BE IMPORTED FILL SAND HAVING A MINIMUM SAND EQUIVALENCY OF SAE-30. PIPE ZONE AND TRENCH BACKFILL MATERIALS SHALL BE PLACED AND COMPACTED TO A MINIMUM OF 90% OF THE MAXIMUM DENSITY OF THE MATERIAL AT OPTIMUM MOISTURE CONTENT.
5. 200 PSI TEST PRESSURES FOR FOUR (4) THROUGH SIXTEEN (16) INCH SIZE PIPES.

IF ACTUAL CONDITIONS DIFFER FROM THOSE LISTED ABOVE OR THE REQUIRED RESTRAINED LENGTH CANNOT BE MET, THE RESTRAINED JOINT LENGTH SHALL BE DETERMINED BY THE DISTRICT ENGINEER.

PALMDALE WATER DISTRICT

DATE: DEC. 2019 MRW APPROVED:	STANDARD DEAD END RESTRAINT (FOR C-900 PVC PIPE)	W-20



RUN SIZE

BRANCH SIZE	4	6	8	10	12	14	16	18	20	24
4	*	*	*	*	*	*	*	*	*	*
6		*	*	*	*	*	*	*	*	*
8			*	*	*	*	*	*	*	*
10				*	*	*	*	*	*	*
12					13	*	*	*	*	*
14						24	13	*	*	*
16							36	25	14	*
18								47	37	16
20									58	39
24										79

* - FOR THIS CONDITION NEED ONLY RESTRAIN THE BRANCH OUTLET OF THE TEE.

RESTRAINED LENGTHS, "L" (IN FEET)

1. RESTRAIN THE TWO MECHANICAL JOINTS ON THE RUN SIDES OF THE TEE. THERE SHOULD BE A FULL 18' LENGTH OF PIPE INSTALLED ON EACH SIDE OF THE RUN.

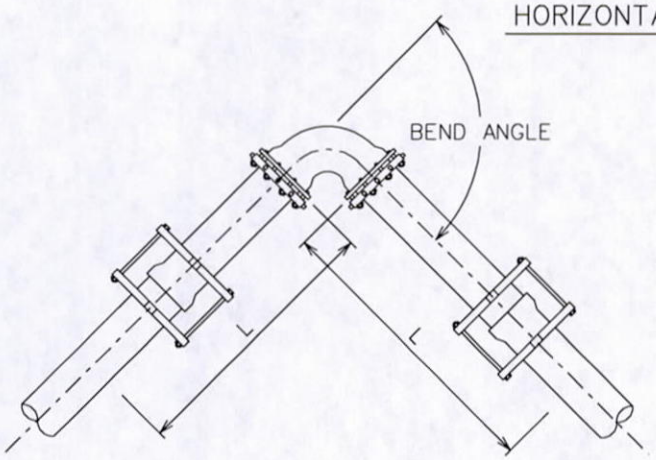
2. ALL JOINTS WITHIN THE LENGTH "L" ON THE BRANCH MUST BE RESTRAINED. USE RETAINER GLAND AT MECHANICAL JOINTS AND HARNESS ON PUSH-ON PIPE PER P.W.D. SPECIFICATION.

3. FOR TEST PRESSURES AND LAYING CONDITIONS SEE SECTION OF GENERAL NOTES FOR USE OF RESTRAINED JOINT LENGTHS ON STANDARD DRAWING W-23.

PALMDALE WATER DISTRICT

DATE: DEC. 2019 MRW APPROVED:	STANDARD TEE RESTRAINT (FOR DUCTILE IRON PIPE)	W-21

HORIZONTAL BEND

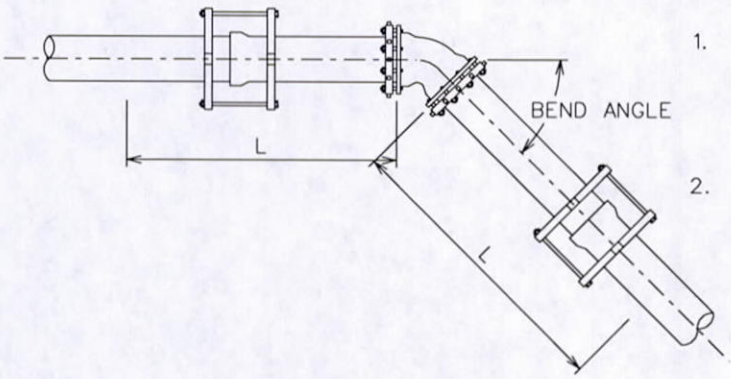


1. ALL JOINTS WITHIN LENGTH "L" MUST BE RESTRAINED. USE RETAINER GLAND AT MECHANICAL JOINTS AND HARNESS WITH PUSH-ON PIPE PER P.W.D. SPECIFICATION.
2. FOR TEST PRESSURES AND LAYING CONDITIONS SEE SECTION OF GENERAL NOTES FOR USE OF RESTRAINED JOINT LENGTHS ON STANDARD DRAWING W-23.

RESTRAINED LENGTHS, "L" (IN FEET)

BEND ANGLE \ RUN SIZE	4	6	8	10	12	14	16
11.25	3	3	3	4	4	4	5
22.5	3	4	7	7	8	9	10
45	7	9	12	15	17	19	21
90	16	23	29	35	40	45	51

VERTICAL BEND



1. ALL JOINTS WITHIN LENGTH "L" MUST BE RESTRAINED. USE RETAINER GLAND AT MECHANICAL JOINTS AND HARNESS WITH PUSH-ON PIPE PER P.W.D. SPECIFICATION.
2. FOR TEST PRESSURES AND LAYING CONDITIONS SEE SECTION OF GENERAL NOTES FOR USE OF RESTRAINED JOINT LENGTHS ON STANDARD DRAWING W-23.

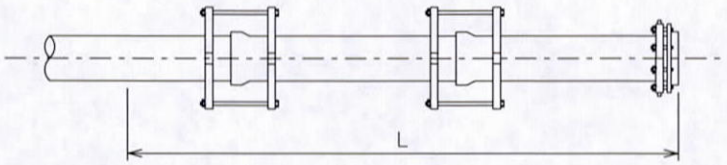
RESTRAINED LENGTHS, "L" (IN FEET)

BEND ANGLE \ RUN SIZE	4	6	8	10	12	14	16
11.25	3	5	7	8	8	10	11
22.5	7	11	12	15	17	20	22
45	15	19	25	31	36	41	46

PALMDALE WATER DISTRICT

DATE: DEC. 2019 MRW APPROVED:	STANDARD BEND RESTRAINT (FOR DUCTILE IRON PIPE)	W-22

DEAD END DUCTILE IRON PIPE



1. ALL JOINTS WITHIN LENGTH "L" MUST BE RESTRAINED. USE RETAINER GLAND AT MECHANICAL JOINTS AND HARNESS WITH PUSH-ON PIPE PER P.W.D. SPECIFICATION.
2. FOR TEST PRESSURES AND LAYING CONDITIONS SEE GENERAL NOTES BELOW.

PIPE SIZE

4	6	8	10	12	14	16
33	47	61	73	86	98	111

RESTRAINED LENGTHS, "L" (IN FEET)

RESTRAINED JOINT LENGTHS USAGE GENERAL NOTES

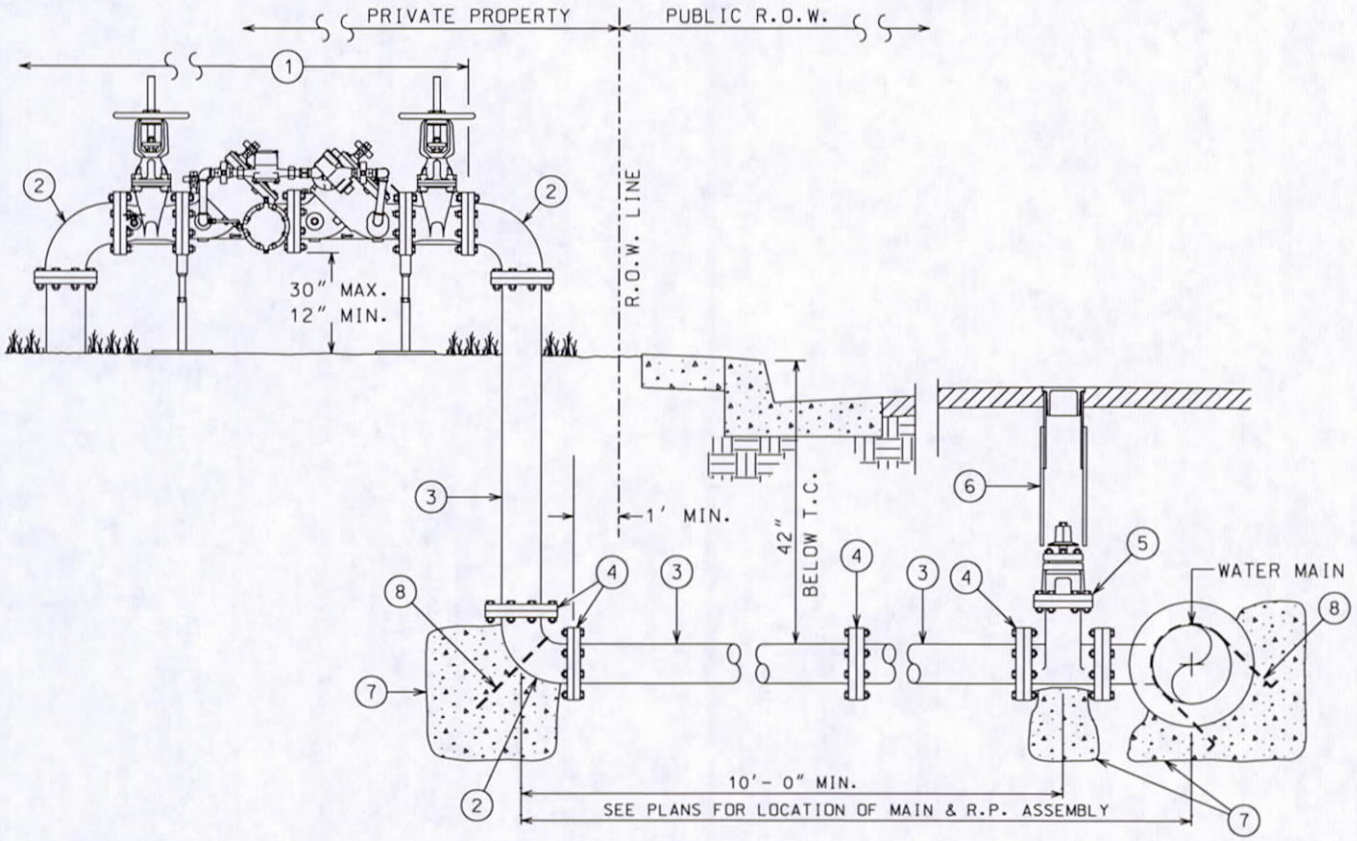
RESTRAINED LENGTH CALCULATIONS ARE BASED ON THE FOLLOWING DESIGN CRITERIA TYPICALLY USED WITH BACKFILL IN P.W.D.;

1. FORTY-TWO (42) INCHES MINIMUM DEPTH OF COVER.
2. A MINIMUM SAFETY FACTOR OF 1.5
3. SOIL TYPE PER P.W.D. SPECIFICATION.
4. PIPE ZONE BACKFILL FROM A DEPTH OF SIX (6) INCHES MINIMUM UNDER THE PIPE TO TWELVE (12) INCHES ABOVE THE TOP OF PIPE SHALL BE IMPORTED FILL SAND HAVING A MINIMUM SAND EQUIVALENCY OF SAE-30. PIPE ZONE AND TRENCH BACKFILL MATERIALS SHALL BE PLACED AND COMPACTED TO A MINIMUM OF 90% OF THE MAXIMUM DENSITY OF THE MATERIAL AT OPTIMUM MOISTURE CONTENT.
5. 200 PSI TEST PRESSURES FOR FOUR (4) THROUGH SIXTEEN (16) INCH SIZE PIPES.

IF ACTUAL CONDITIONS DIFFER FROM THOSE LISTED ABOVE OR THE REQUIRED RESTRAINED LENGTH CANNOT BE MET, THE RESTRAINED JOINT LENGTH SHALL BE DETERMINED BY THE DISTRICT ENGINEER.

PALMDALE WATER DISTRICT

DATE: DEC. 2019 MRW APPROVED:	STANDARD DEAD END RESTRAINT (FOR DUCTILE IRON PIPE)	W-23



KEY NOTES:

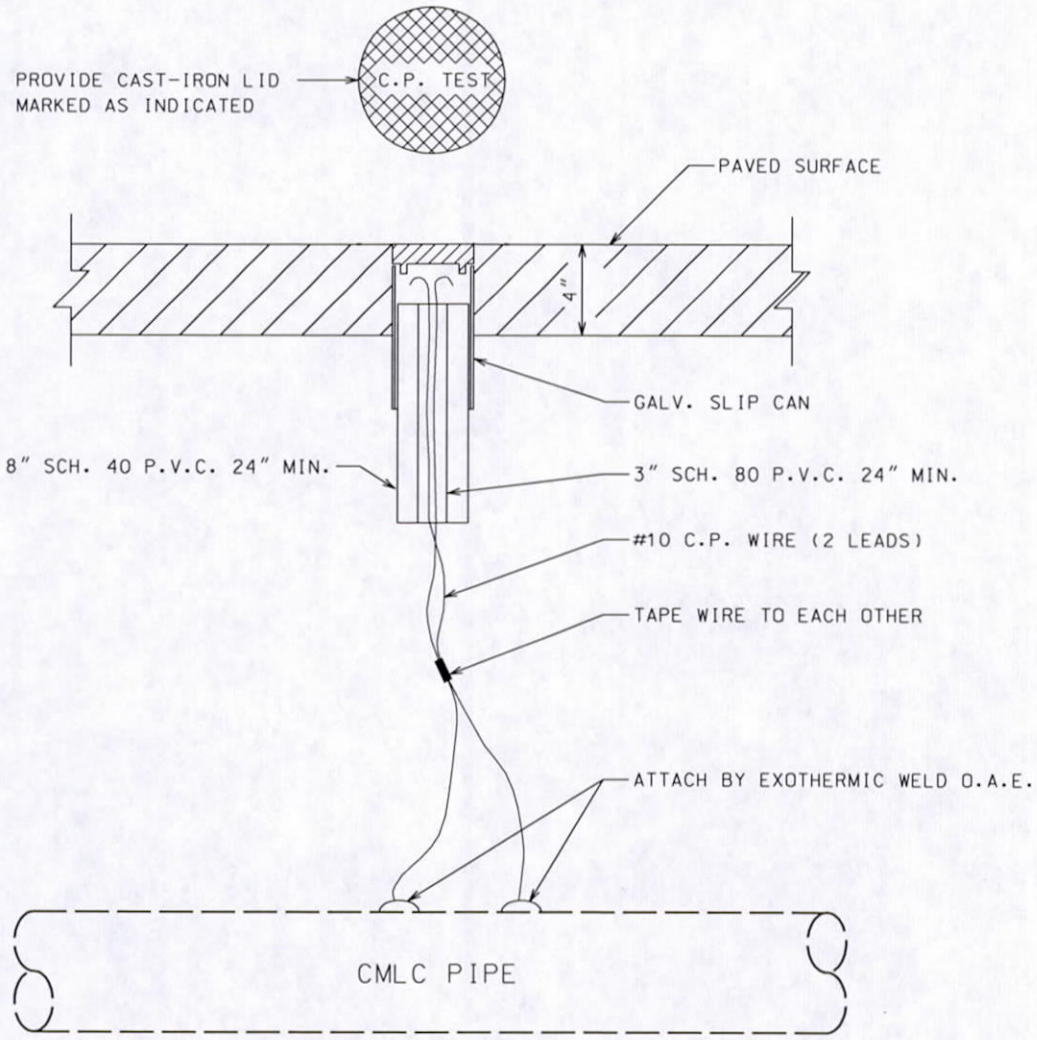
1. PROPERTY OWNER SHALL BE RESPONSIBLE FOR MAINTENANCE INCLUDING REPAIR OR REPLACEMENT AND MUST PROVIDE RESULTS OF REQUIRED ANNUAL BACKFLOW TEST TO THE DISTRICT.
2. METER ATTACHED TO REDUCED PRESSURE DETECTOR ASSEMBLY (RPDA) SHALL BE OWNED AND MAINTAINED BY THE DISTRICT. RPDA METER TO BE ACCESSIBLE TO THE DISTRICT AT ALL TIMES.
3. ALL UNCOATED METAL SURFACES (INCLUDING NUTS AND BOLTS) INSTALLED UNDERGROUND SHALL BE THOROUGHLY COATED W/ NO-OX GREASE AND THEN BE WRAPPED WITH 8 MIL POLYETHYLENE SHEET (AWWA C-105).
4. INTERMEDIATE PIPE JOINTS IN LATERAL SHALL BE FLANGED. PIPE SHALL BE INSTALLED HORIZONTAL OR SLOPING DOWNWARD FROM MAIN TO PROVIDE MINIMUM COVER.
5. IF THE ABSENCE OF A CURB OR WHERE TYPE "E" CURB (ROLLED) IS USED. INSTALL BARRICADES PER P.W.D. STD. W-14 AS REQUIRED.

MATERIAL DESCRIPTION:

(1) REDUCED PRESSURE DETECTOR ASSEMBLY (RPDA) FEBCO MODEL 826YD O.A.E.
(2) 90° FLANGED ELBOW STL., C.M.L.C., CL150 FLG.
(3) STL. PIPE 10 GA. MIN. C.M.L.& C. EXTEND NON-SHRINK MORTAR COATING WITH EXPANDED GALVANIZED LATH REINFORCEMENT TO MEET FLG. TAPER THICKNESS AND TO MEET FLG. HUB.
(4) SLIP-ON ELD FLANGE CL 150.
(5) FLG. GATE VALVE CL 150.
(6) VALE BOX PER P.W.D. STD. W-5.
(7) USE 2000 PSI MIN. CONCRETE FOR THRUST BLOCKS. PLACE CONCRETE ON UNDISTURBED OR COMPACTED SOIL. THRUST BLOCKS MUST MEET REQUIREMENTS OF P.W.D. STD. W-4.
(8) ANCHOR ROD PER P.W.D. STD. W-4.

PALMDALE WATER DISTRICT

DATE: DEC. 2019 MRW APPROVED:	REDUCED PRESSURE DETECTOR ASSEMBLY	W-24



KEY NOTES:

1. ALL VALVE BOXES LOCATED IN UNIMPROVED STREETS OR DIRT AREA SHALL BE ENCLOSED IN 24" x 24" x 12" THICK CONCRETE PAD.
2. PUT LARGE LOOP KNOT IN CABLE WITH HEAVY SLACK.
3. TEST BEFORE AND AFTER BACKFILL BY DISTRICT.

PALMDALE WATER DISTRICT

DATE: DEC. 2019 MRW APPROVED:	TYPICAL C.P. TEST STATION (IMPROVED OR UNIMPROVED ROADS)	W-26

P A L M D A L E W A T E R D I S T R I C T

B O A R D M E M O R A N D U M

DATE: February 18, 2020 **February 24, 2020**

TO: BOARD OF DIRECTORS **Board Meeting**

FROM: Mr. Scott Rogers, Engineering Manager

VIA: Mr. Adam Ly, Assistant General Manager
Mr. Dennis D. LaMoreaux, General Manager

RE: ***AGENDA ITEM NO. 7.2 – CONSIDERATION AND POSSIBLE ACTION ON AWARD OF CONTRACT FOR A WELL REHABILITATION PRIORITIZATION PROGRAM WITH KYLE GROUNDWATER. ($139,992.00 – BUDGETED – BUDGET LINE ITEM NO. 1-02-5070-007 – CONSULTANTS – ENGINEERING/GRANT MANAGER ROGERS/RESOURCE AND FACILITIES COMMITTEE)***

Recommendation:

Staff and the Resource and Facilities Committee recommend the Board authorize staff to enter into a contract with Kyle Groundwater for the hydrogeological services related to the development of a Well Rehabilitation Prioritization Plan, well rehabilitation master specifications, bid support, and baseline testing.

Alternative Options:

The Board's only alternative is to continue with previous reactive maintenance.

Impact of Taking No Action:

The potential impact from taking no action is the reduction in water supply from the District's groundwater wells, not fully utilizing the District's water rights, and increased capital and operating costs.

Background:

The District owns, operates and maintains 23 active groundwater supply wells, which pump from the Antelope Valley adjudicated basin where the District is limited to just under 5,000 acre-feet per year (AFY). It is important to maximize this withdrawal each year due to the cost difference between pumped groundwater and the cost of State Project water and treatment. Having wells that can maximize the water right is an important goal of the District. A new well can cost over $2 million and take up to 2 years to design and construct. This work will reduce capital and operating costs through proactive well rehabilitation. These wells were generally drilled between 1947 and 1992 and have depths from 400 to 1,000 feet with an average production capacity of a little over 550 gallons per minute (gpm), where flow rates range from 70 to 1,900 gpm. Over time, the capacities of these wells have generally decreased due to plugging of the well screens.

The program is to evaluate the District's existing wells to determine when a well has reached its useful life and a new well must be drilled to replace it. As part of the Well Rehabilitation Prioritization Plan, the plan will account for future wells near the future Palmdale Regional Groundwater Recharge and Recovery Project.

As a result, it is important that PWD establish a rehabilitation program to maximize the useful life of each well. The Well Rehabilitation Prioritization Plan project will provide an organized, comprehensive rehabilitation plan that will optimize the useful life of PWD's existing domestic water groundwater production assets, provide technical specifications, and development of a work plan for future well rehabilitation projects.

On January 15, 2020, staff received three proposals from Geoscience, Kyle Groundwater, and Wood Rodgers with Kennedy Jenks declining to submit a proposal. Proposals were independently evaluated by staff using evaluation criteria listed in the Request for Proposals. Based on the evaluations, Kyle Groundwater was selected as the top-ranked, most qualified firm.

Strategic Plan Initiative/Mission Statement:

This item is under Strategic Initiative No. 1 – Water Resource Reliability and No. 3 – Systems Efficiency.

This item directly relates to the District's Mission Statement.

Budget:

This item is budgeted under Budget Item No. 1-02-5070-007 – Consultants.

Supporting Documents:

- RFP Well Rehabilitation Prioritization Plan
- Kyle Groundwater Proposal

PALMDALE WATER DISTRICT
A CENTURY OF SERVICE

EST. 1918

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ALESHIRE & WYNDER LLP
Attorneys

ACWA
PROUD MEMBER

December 19, 2019

REQUEST FOR PROPOSALS FOR
WELL REHABILITATION PRIORITIZATION PROGRAM

TO: ATTACHED LIST

SERVICE REQUESTED: PREPARATION OF A WELL REHABILITATION PRIORITIZATION PLAN (PLAN) FOR PWD'S 25 WATER WELLS. THE PLAN WILL EVALUATE THE CONDITION OF EACH WELL, DEVELOP WELL REHABILITATION METHODS AND SPECIFICATIONS, PRIORITIZE THE REHABILITATION OF PWD'S ACTIVE WELLS AND ESTABLISH REHABILITATION GUIDELINES FOR EACH WELL.

PROPOSAL DUE DATE: JANUARY 10, 2020, 5:00 P.M. TO:

PALMDALE WATER DISTRICT
ATTN: SCOTT ROGERS, ENGINEERING MANAGER
2029 EAST AVENUE Q
PALMDALE CA 93550

The Palmdale Irrigation District was formed in 1918 under the provisions of Division 11 of the Water Code of the State of California to supply irrigation water to the approximately 4,500 acres of agricultural land within its boundaries. Under this Code, the District's primary functions were, and continue to be, to acquire, control, conserve, store, and distribute water for the beneficial use of inhabitants and water users within the District.

The Palmdale Water District (District) is an independent special district governed by a five-member Board of Directors who serve the public by division. Special districts provide accountability and a means to vote selectively and provide customers the opportunity to express their preferences more precisely. The most basic virtue of a special district is to allow citizens to customize government to suit their needs.

The District meets the demands of nearly 28,000 accounts or a population of 115,000 by providing water from groundwater wells and a 35 million gallon per day (MGD) surface water treatment plant that receives water from the State Water Project. The groundwater supply is an adjudicated basin where the District is limited to just under 5,000 acre-feet per year (AFY). It is important to maximize this withdrawal each year due to the price of State Project water and treatment. Having wells that can maximize the water right is an important goal of the District. The program is to evaluate the District's existing wells to determine when a well has reached its useful life and a new well must be drilled to replace it.

The District has also embarked on a significant project to start replenishing the groundwater basin with a combination of State Project water and recycled water. A joint powers authority was formed with the City of Palmdale to form the Palmdale Recycled Water Authority (PRWA). PRWA has worked with a consultant to determine the location of spreading basins and new wells to provide a potable water system into the future. Combining the objectives of the District and PRWA is another important project that must be considered in the evaluation of well placement in the future.

Attachments:

- Attachment 1 - Scope of Work
- Attachment 2 - Existing Well Profile Schematic
- Attachment 3 - Well Data Inventory Summary

Scope of Services:

The Palmdale Water District is seeking a firm to:

- Provide project management and quality control to produce the best quality product that can be used by the PWD in future years.
- Provide data analysis of existing PWD data and the necessary acquisition of data necessary to perform the data analysis.
- Provide the Well Rehabilitation Prioritization Plan and make recommendations.
- Develop well rehabilitation specification documents.
- Provide bid support services
- Initial Well and Performance Testing (Optional Services)

Proposals:

Proposals submitted shall include the following items:

- History of firm and qualifications of personnel assigned to the work
- Similar completed and current projects
- Project reference list with client contact information
- Fee estimate as identified in the scope of services

- Timeline for completion of each task in the scope of services
- Additional value-added services

Evaluation of Proposals:

The following areas of evaluation will be considered, but not limited to, during review of the proposals:

- Experience and qualifications of assigned personnel;
- Approach and compliance with proposal requirements;
- Past record of performance on similar projects;
- Efforts related to project management, cost control, work quality, and ability to complete work timely;
- Previous project references.

Additional Information:

Additional questions to be directed to Scott Rogers, Engineering Manager:

(661) 456-1020
srogers@palmdalewater.org.

Costs for developing proposals are the responsibility of the proposing firms. Palmdale Water District shall not be responsible for any costs associated with the development of proposals.

Palmdale Water District reserves the right to reject any or all proposals and to waive any informality or minor irregularity in any proposal.

Well Rehabilitation Prioritization Program – RFP Company Distribution List:

Wood Rodgers, Inc. Attn: Joshua Sobolew (909) 670-7629 jsobolew@WoodRodgers.com	**Kyle Groundwater, Inc.** Attn: Russ Kyle (626) 379-7569 Russel.kyle@kylegroundwater.com
Geoscience Attn: Chris Coppinger ccopinger@geoscience-water.com	**Kennedy Jenks** Attn: Paul Chau (626) 568-4311 PaulChau@kennedyjenks.com

ATTACHMENT 1

SCOPE OF SERVICES

Task 1 - Project Management and Quality Control

The Consultant shall provide project management services, such as schedule management, budget management, sub-consultant coordination, and maintaining the quality of all work product consistent with applicable industry standards and the RFP.

The Consultant shall provide the following:

- Prepare for and attend the project kick off meeting.
- Prepare a Project Management Plan with team member contacts, schedule, fee/budget, and sample invoice.
- Prepare and submit monthly status reports including an updated project schedule, current status of the project tasks, and project financials.
- Prepare, schedule, and attend monthly progress meetings to review the current status of the Project.
- Prepare agendas and provide meeting minutes for all progress meetings. For each deliverable review, provide a review comment spreadsheet including Consultant's response and action on each review comment.
- Perform quality assurance and quality control (QA/QC) reviews for the Project.
- Coordinate and manage sub-consultant(s) as applicable

Task 2 - Data Analysis and Data Acquisition

The Consultant shall evaluate all PWD well records which may include:

- Well completion reports
- Well drilling logs
- Video survey logs
- Pump efficiency tests
- Pump curves
- Rossum sand tests
- Well spinner logs
- Water quality data
- Well maintenance records

A summary of available data for each well is included in Appendix B. The selected Consultant will be provided with this information after execution of a contact. The Consultant shall be responsible for the acquisition of any missing critical well data that is not currently available.

After the Data Analysis and Acquisition phase is complete, the Consultant shall prepare a condition assessment for each well. Finally, the Consultant shall submit a baseline efficiency and production summary report for each well. These findings will be further evaluated and summarized in the Well Rehabilitation Prioritization Plan report.

Task 3 - Well Rehabilitation Prioritization Plan and Recommendations

The Consultant shall develop a Well Rehabilitation Prioritization Plan to evaluate the condition of each well, develop well rehabilitation methods and specifications, prioritize the rehabilitation of PWD's active wells, and establish rehabilitation criteria and guidelines for each well. As part of the development of the plan, the Consultant shall develop criteria to rank the wells. The criteria can include, but not limited to,

the following: well information, sand production, water quality, yield loss, increased capacity potential and supply significance to system operations.

This Plan will serve as the basis for the rehabilitation of PWD's wells in a proactive manner in order to maximize the useful life, production, and efficiency of each well. The Plan will also be used to develop and identify specific well rehabilitation methods and specifications for each well based on age, type of construction, water quality, and other related factors. The Plan will also provide recommendations for changes to PWD's current well design standards and specifications.

Based on the results of the condition assessment, the Consultant shall identify and prioritize wells for rehabilitation. The Consultant shall consider the feasibility of a successful rehabilitation method and provide a rehabilitation cost benefit analysis. The rehabilitation cost benefit analysis will consider the age of the well, condition of the screens, type of screen, water quality constraints, electrical equipment constraints, and well specific capacity constraints. Through discussions with PWD staff, specific well sites will be identified as critical to the PWD system.

Those well sites identified as not suitable for rehabilitation will be considered for future replacement based on criteria recommended by the consultant and approved by PWD staff. The Consultant shall also provide recommendations for preventative maintenance activities and schedule for each well.

The Consultant shall prepare a comprehensive Plan that includes all data collected, condition assessments, criteria used to determine the feasibility for rehabilitation and/or replacement, a ranked priority list for well rehabilitation, and a list of well site replacements. The Plan shall be structured in a way that it can be easily updated by PWD based on current well data, which would allow for an updated priority ranking to be generated after the project is completed. The report shall include a summary of rehabilitation methods and techniques that are applicable to PWD's well field.

The Plan shall also include a review of PWD's current domestic water well design standards and specifications and provide recommendations that will optimize future well operational efficiencies.

The Consultant shall provide a Draft Plan for PWD's review and comment. The Consultant will conduct three onsite workshop meetings at the 50%, 70%, and 90% completion levels to review the Draft Plan and obtain PWD's comments. After addressing PWD's comments, the Consultant shall prepare the Final Well Rehabilitation Prioritization Plan. The Consultant shall submit three (3) copies of the Final Plan along with the electronic working files (MS Word, Excel) and the final digital copy that allows PWD to update the well data and rankings. At the 90% level, Consultant will provide the necessary training to PWD staff to use the working files.

Task 4 - Well Rehabilitation Specifications

The Consultant shall prepare a set of technical specifications and associated details for each proposed well rehabilitation method. These methods may include mechanical rehabilitation methods such as surge block (single or double disk), brush, airburst, sonar-jet, etc., and/or chemical rehabilitation methods that use either mineral acids and/or organic acids. A protocol for removing the well from service and placing it back into service shall be included in the specifications.

The Consultant shall also prepare technical specifications for routine well maintenance activities that include, but are not limited to:

- Removal and inspection of pump and motor
- Pre-cleaning video inspection
- Cleaning alternatives

- Post-cleaning video inspection
- Well pump and motor inspection with draft template report
- Re-assembly/re-installation of the pump and motor
- Pump test of well pump
- Other recommended activities

The Consultant shall provide three (3) copies of the Draft Specifications at the 70% and 90% completion phases for PWD's review and comment. The Consultant shall conduct two onsite workshop meetings at the 70% and 90% submittal phase to review the Draft Specifications and obtain PWD's comments. The Consultant shall submit three (3) copies of the Final Specifications along with the electronic files (both Microsoft Word and PDF format).

Task 5 - Bid Support Services

The Consultant shall prepare a complete set of technical specifications, bid schedule, and provide bid support services for the rehabilitation of the top three highest-priority wells as follows:

- Prepare Technical Specifications.
- Prepare the Project drawings, including all applicable standard drawings and other attachments
- Prepare Schedule of Pay Items
- Assemble the bid package
- Attend a pre-bid conference and assist PWD in conducting the conference
- If necessary, prepare addenda to interpret, clarify, and amend the bid documents.
- PWD will advertise the bid package through Planet Bids and will review and tabulate all bids. If necessary, the PWD Project Manager will prepare a Board Action Item and request Board approval.
- Consultant shall provide technical support throughout the duration of the well rehabilitation project on a Time and Materials basis.

Task 6 - Baseline Testing Services (Optional Service)

The consultant shall perform well and pump performance testing for up to six of PWD wells. The purpose of the testing is to collect and document the "baseline" condition of the wells, which were previously prioritized for rehabilitation and/or repair using the 90% well prioritization plan. The work shall consist of the following tasks.

- Consultant shall work with PWD to make a final decision on which six wells will be selected for performance baseline testing. Based on the preliminary results of the 90% submittal of the well prioritization plan, PWD will need to verify that the selected wells have operable pumping equipment, meters, gauges, a water sampling spigot, and a treaded port for a Rossum sand tester. In order to establish a representative static condition, the selected wells will not operate for a minimum of 12 hours prior to conducting the performance tests, and nearby wells that are known to influence water levels in the well being tested will not be pumped during the full duration of the performance test.
- Consultant shall collect data during well and pump performance testing for the six wells selected. The data will provide information about static and pumping water levels, sand production, and well and pump efficiency, which are necessary to document baseline conditions of the well and pump. Additionally, baseline water quality samples can be collected by PWD and submitted to the District's analytical laboratory if there are known water quality problems with a selected well. In order to complete the work for all six wells within two days (i.e., 3 wells per day), the pumping

test will be one hour in duration. Consultant shall assume the PWD will coordinate and escort consultant's staff to each well site, perform all the tasks required to operate each well, and remain onsite during the duration of each performance test. Consultant shall provide the following equipment for testing: electric sounder, Rossum sand tester, and handheld water quality meters. The procedures for data collection during the well and pump performance test will include the following scenarios and steps:

Under Non-Pumping Conditions

1. Verify that the well is not being operated.
2. Locate available port and install Rossum sand tester (clean and empty) onto the discharge pipe.
3. Identify an access tube (sounding or camera) that is suitable to collect static and pumping water levels in the well, and measure and record the stickup height to the nearest 0.01-foot.
4. Record depth to static water level to the nearest 0.01-foot.
5. Record flowmeter, discharge line pressure, and electrical meter values (under non-pumping conditions).
6. Locate water quality sampling port/spigot and verify that it is functioning properly.
7. Record recovering water levels (following 1-hour pump test).

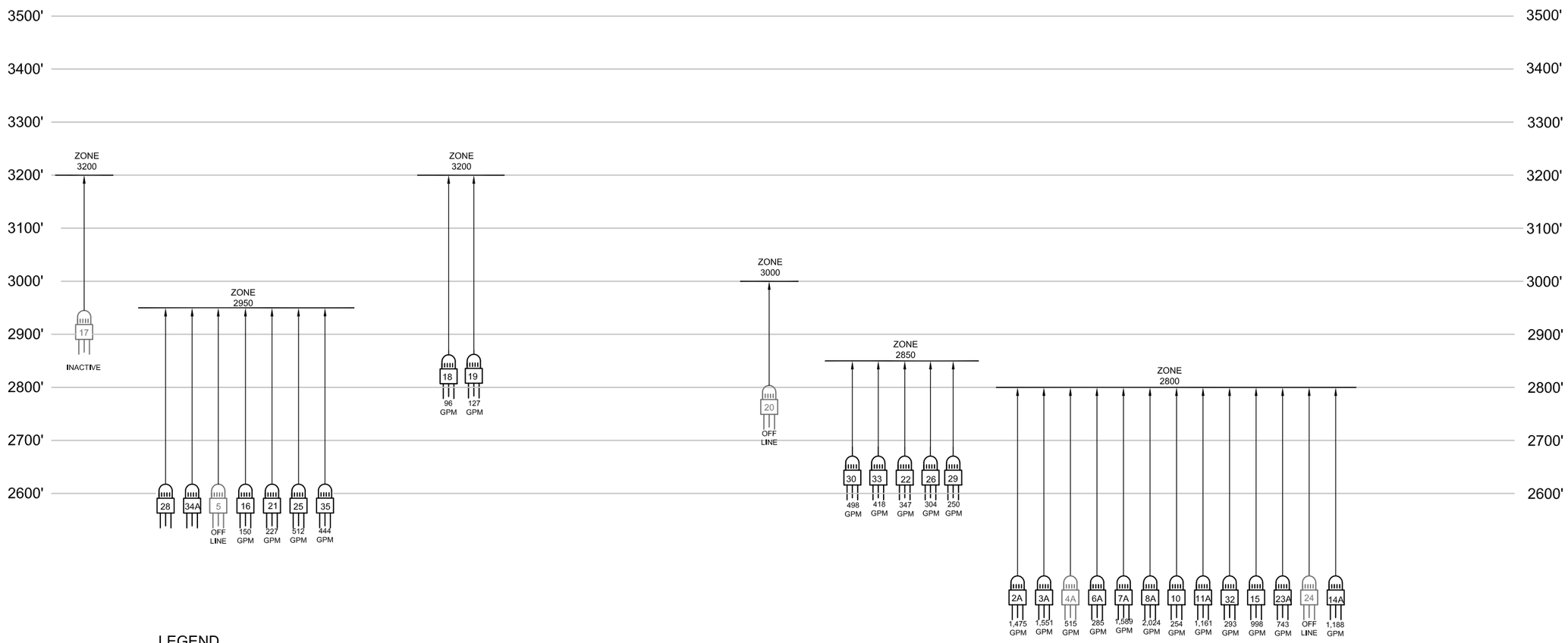
Under Pumping Conditions

8. Measure and record elapsed time, pumping water levels, flow rate, flowmeter totalizer, drawdown from static water level, sand production, turbidity, discharge line pressure, revolutions per minute, and field water quality parameters.
9. If necessary, Consultant may need to collect water quality sample(s) and release to PWD for analysis.

<u>Measurement Schedule</u>

- The times specified are elapsed times from when the pump is started or stopped.
- Elapsed time, water level (pumping and recovering), flow rate, and totalizer measurements will be collected. The anticipated measurements intervals will follow the schedule below:
  ➢ 2, 4, 6, 8, 10, 15, 20, 25, 30, 40, 50, and 60 minutes.
- Sand production measurements will be made at the following times:
  ➢ 5-minute intervals.
- Field parameters for electrical conductivity, total dissolved solids (TDS), pH, dissolved oxygen, temperature, and turbidity will be collected at the following times:
  ➢ 15, 30, and 60 minutes.

- All measured data shall be recorded on field forms during each performance test and provided with all the calculation sheets to PWD.
- Upon completion of the well and pump performance testing, Consultant shall prepare a brief letter report summarizing the details of the work and results from the six selected wells. Data connected from the performance test will be analyzed to document the baseline condition of the well and pumping equipment.



LEGEND

GROUNDWATER WELL

19 EXISTING / OPERATIONAL

PROPOSED

INACTIVE / OFFLINE

Groundwater Well Data Summary

Well No.	Location	Backup Power	hp	TDH	Normal Capacity (gpm)
2A	39400 20th Street East	Yes	400	733.9	1,475
3A	2163 E. Avenue P-8	Yes	500	747.4	1,551
4A	2475 E. Avenue P-8	Yes	200	733.5	777.5
5	1036 Barrel Springs Rd.	Yes	No SCE Tests Available		
6A	39455 10th Street East	No	125	727.6	285
7A	39395 25th Street East	Yes	500	752.0	1,589
8A	2200 E. Avenue P	No	600	763.3	2,024
10	3701 E. Avenue P-8	No	100	671.8	254
11A	39501 15th Street East	No		767.8	1,161
14A	39401 20th Street East	Yes	250	577.9	1,188
15	1003 E. Avenue P	No		793.5	998
16	4125 E. Avenue S-8	No	40	443.1	150
17	718 Denise Ave.	No	No SCE Tests Available		
18	4640 Barrel Springs Rd.	Yes	5	77.7	96
19	4640 Barrel Springs Rd.	Yes	5	87.9	127
20	5680 Pearblossom Hwy.	No	60	406.0	227
21	36525 52nd Street East	No	30	370.1	227
22	Avenue S/55th Street East	No	75	296.7	347
23A	2202 E. Avenue P-8	Yes	250	753.3	743
24	2701 E. Avenue P-8	No	No SCE Tests Available		
25	37520 70th Street East	Yes	75	406.4	512
26	4701 Katrina Pl.	No	50	434.1	304
28	Future Well				
29	37700 67th Street East	Yes	40	410.3	250
30	7392 E. Avenue R	No	150	453.2	498
32	37301 35th Street East	No	60	482.9	293
33	7160 E. Avenue R	No	75	497.2	418
34A	Future Well				
35	36549 60th Street East	No	75	453.5	444

Palmdale Water District
Existing Well Profile Schematic

DECEMBER 2019

Attachment 3
Well Data Inventory Summary

Well ID	Pressure Zone	Street Address	Pump & Motor Tests Records	Pump Curves and Motor Cut Sheets	Well Maintenance Records	Well Video Logs	Well Completion Reports	Well Design Drawings and Specs	Annual Operating Cost	Well Site Photos	Well Quality Data	Rossum Sand T. Data.	Well Spinner Log	Last Rehabilitation Year& Action Taken
2A	2800	39400 20th St. East	12+	3	5	2 CD 4 VHS	1968	X	X	X	X	X	3	2010 Rehab pump and motor
3A	2800	2163 East Ave. P-8	12+	2	5	5 CDs 4 VHS	1960	X	X	X	X			2012 Rehab pump New motor 2016
4	2800	2475 East Ave. P-8	8+	1	1	7 VHS	1970	X	X	X	X		1	2001 Installed new pump & motor
5	2950	1036 Barrel Springs Rd.	2	4	1	1 VHS	Acquired in 1963							Removed from service in 2003
6A	2800	36455 10th St. East	12+	2	6	6 CDs 4 VHS	1983	X	X	X	X	X	2	2018 Installed new pump and motor
7A	2800	39395 25th St. East	12+	3	4	9 CD	1985	X	X	X	X	X	1	2018 installed new pump & column, Rebuilt motor
8A	2800	2200 East Ave. P	12+	2	4	7 CDs 1 VHS	1987	X	X	X	X	X	5	2017 Installed new pump & Rebuilt motor
9	2800	3347 East Ave. S.	2	1	2	3 VHS	Acquired in 1961 Abandon in 1997						Small part of a copy of 1	Abandoned
10	2800	3701 East Ave. P-8	12+	3	6	6 CDs 3 VHS	Org. 1928 to 297' 1947 to 696'	X	X	X	X	X	1	2017 Liner installed New pump & motor
11A	2800	39501 15th St. East	2 SCG 2 SCE	2	6	10 CDs 5 VHS	1963	X	X	X	X	X		2011 Liner installed 2014 rebuilt pump & gearhead
12	2850	36824 N. 40th St. East	1	2	0	`	Acquired in 1957? Abandon in 1991							Abandon / Tank is still onsite
14A	2800	39401 20th St. East	10+	2	4	4 CDs	1965	X	X	X	X	X		2014 new pump w/ sand separator, rebuilt motor
15	2800	1003 East Ave. P	2 SCG 2 SCE	3	3	6 CDs	1960	X	X	X	X			2016/2017 rebuilt pump & gearhead
16	2850	4125 East Ave S-4	10+	3	4	3 CDs 4 VHS	1960	X	X	X	X	X		2010 new pump & motor
17	2900	718 Denise Ave.	4	3	2	2 VHS	1956		X	X				1997 Mineral fouling-removed from service
18	3000	4640 Barrel Springs Rd.	8+	2	3	2 CDs	1954	X	X	X	X	X		2016 New casing, pump & 3Hp motor
19	3000	4640 Barrel Springs Rd.	8+	2	1	2 CDs	1961	X	X	X	X	X		2013 installed new pump & 7.5hp motor
20	2950	5680 Pearblossom Hwy.	8+	1	1	1 VHS	Acquired in 1977 Drilled in 20's?	X	X	X	X			2010 casing failed during rehab
21	2950	36525 52nd St. East	10+	3	3	2 CDs	1960	X	X	X	X			2013 new pump & motor
22	2850	5401 East Ave. S	8+	2	3	3 CDs 2 VHS	1974	X	X	X	X			2016 Installed new pump & motor
23A	2800	2202 East Ave. P-8	10+	1	4	3 VHS	1991	X	X	X	X	X	3	2012 Rebuilt pump & motor
24	2800	2701 East Ave. P-8	8+	2	2		1985	X		X			2	2004 Geological Plugging/ Drillers mud

Attachment 3
Well Data Inventory Summary

Well ID	Pressure Zone	Street Address	Pump & Motor Tests Records	Pump Curves and Motor Cut Sheets	Well Maintenance Records	Well Video Logs	Well Completion Reports	Well Design Drawings and Specs	Annual Operating Cost	Well Site Photos	Well Quality Data	Rossum Sand T. Data.	Well Spinner Log	Last Rehabilitation Year& Action Taken
25	2850	37520 70th St. east	10+	3	4	4 CDs	1989	X	X	X	X			2019 liner installed, 2016 New pump & motor
26	2850	4701 Katrina Place	10	2	3	3 CDs 6 VHS	1989	X	X	X	X	X	1	2016 Rebuilt pump & motor
27	2850	575' west of 70th St. on R12				1 CD	1989			X			2	2008 Well Destruction
28	2850	1534' South of Ave. S / 650' West of 70th	1				1989				X			Unequipped
29	2850	37700 67th St. East	6	2	2	5 CDs	1989	X	X	X	X			2018 installed new pump & motor
30	2850	7392 East Ave. R	10	2	2	6 CDs	1989	X	X	X	X	X		2016 Rehab pump & Installed new motor
31		600' south of Palmdale / 50' West of 70th					1990			X	X		1	1991 Abandoned
32	2800	37301 35th St. East	10	2	3	5 CDs	1990	X	X	X	X	X	1	2013 Installed new pump & motor
33	2850	7160 East Ave. R	10	2	2	5 CDs 1 VHS	1991	X	X	X	X		9	2008 Rebuilt pump, installed new motor
34	2850	3000' South of Ave. S / 101'West of Cannon Ct.			3		1992				X		2	Unequipped
35	2950	36549 60th St. East	10	2	3	5 CDs	1992		X		X	X	10	2018 installed new pump & motor

Proposal
Professional Consulting Services to Develop a Well Rehabilitation Prioritization Program

PREPARED FOR:

Palmdale Water District

January 10, 2020

KYLE Groundwater
557 E. Pasadena Street, Ste. 2
Pomona, CA 91767 | 626-379-7569
www.kylegroundwater.com

KYLE Groundwater

January 10, 2020

Mr. Scott L. Rogers, PE
Engineering Manager
Palmdale Water District
2029 East Avenue Q
Palmdale, CA 93550

Re: Proposal to Provide Professional Consulting Services to Develop a Well Rehabilitation Prioritization Program

Dear Mr. Rogers:

KYLE Groundwater, Inc. (KGI) is pleased to provide Palmdale Water District (PWD) with this proposal to provide professional consulting services to develop a well rehabilitation prioritization program. This proposal is in response to the Request for Proposal issued on December 19, 2019.

As principal-in-charge for this project, I can pledge that we are submitting this proposal as a statement of our commitment to provide the experienced leadership and expertise necessary to ensure successful development of a well rehabilitation prioritization program for the PWD. We have chosen DRP Engineering, Inc. (DRP) as our subconsultant to provide engineering support and quality assurance and control assistance for this project. Our team has a history of seamlessly working together on water infrastructure projects in Southern California, allowing for an efficient, integrated, and effective team.

We offer the PWD a group of highly qualified personnel with a deep understanding of this projects' needs, and possessing the know-how to successfully meet project goals. Our PIC/PM served as project manager during development of two (2) regional-scale well rehabilitation prioritization programs for the Long Beach Water Department and the City of Riverside which included thorough evaluation of approximately 90 wells. Additionally, he served as project manager and design lead for the Los Angeles Department of Public Works during installation of several municipal water supply wells in the Palmdale area.

We appreciate the opportunity to develop a mutually beneficial working relationship with Palmdale Water District and encourage you to contact our references to confirm the caliber of our work. Please do not hesitate to call should you require any additional information.

Sincerely,

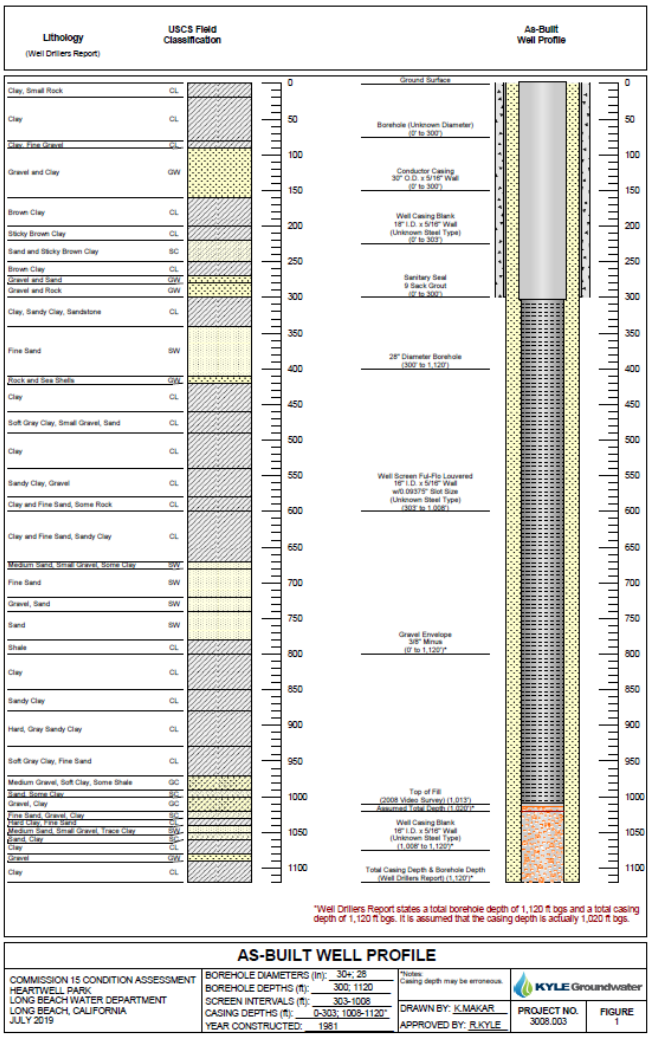
Russell Kyle, PG, CHG
President / Principal Hydrogeologist

KYLE Groundwater, Inc.
557 E. Pasadena Street, Suite 2
Pomona, CA 91767
(626) 379-7569

SECTION I. PROJECT UNDERSTANDING AND APPROACH

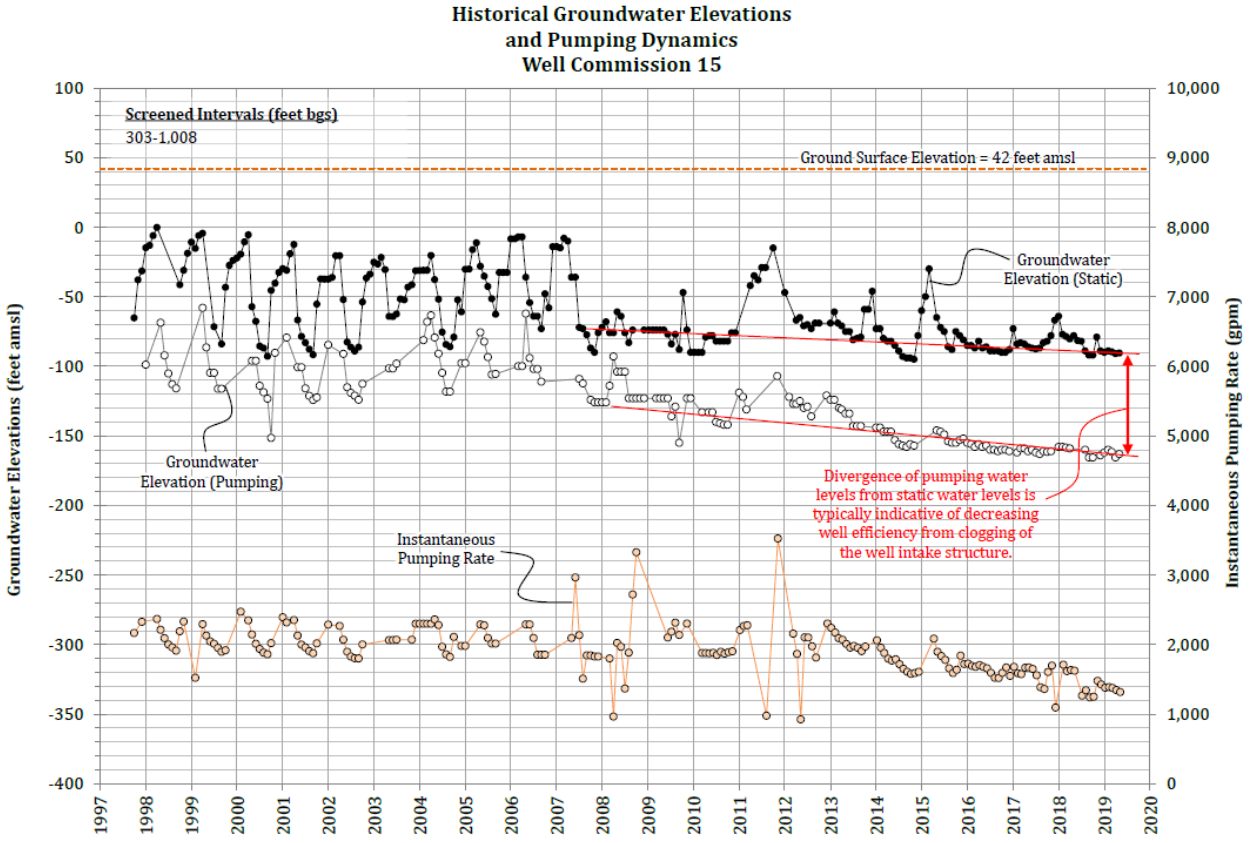
Palmdale Water District (PWD) meets the water demand of its almost 28,000 service connections through a combination of treated surface water from the State Water Project (SWP), and groundwater pumped from water supply wells. PWD's 23 active groundwater production wells account for approximately 40 percent of water supplied to its customers, the majority of which is pumped directly into the distribution system following disinfection. The remainder is disinfected, pumped into storage tanks, and boosted to nearby pressure zones. In addition to the wells, PWD's water storage and distribution system consists of 21 reservoirs, 17 booster stations, 14 pressure-reducing stations, and several hundred miles of pipeline.

Under the December 2015 adjudication of the Antelope Valley Groundwater Basin, PWD was assigned a groundwater production right of approximately 2,770 acre-feet per year (AFY), and a ramp down allowance through the year 2023. Additionally, PWD benefits from a share of unused water rights from the Federal Government in the amount of 1,370 AFY until the year 2025. Following 2025, PWD will be limited to pumping of the base water rights provided by the adjudication. However, PWD is also entitled to a return flow credit equal to 39.1% of all SWP water utilized by PWD, estimated to range from between 4,900 and 6,000 AFY.



It is our understanding that PWD's primary goal for this project is to prepare a roadmap to maximize local water supply sources and reduce reliance on costly imported water. This planning document will guide PWD in decision making for future well maintenance and well replacement projects designed to optimize and maintain production capacity. It will identify those wells that are in most need of rehabilitation and that stand the best chance for success at the lowest cost. It will also identify wells that should be operated to failure while planning for replacement.

Our systematic approach to well rehabilitation prioritization planning on a regional level is based on sound scientific principles and have been honed through years of experience with similar projects. The first step is to acquire all available well data from which to develop comprehensive histories for each well and pump, including tabular and graphical summaries of construction details, operational details, and historical performance dynamics. Additionally, it is critically important to meet with PWD's experienced operations personnel to query first-hand operational information that may not be available in written form. This is likely to include operational concerns such as sand or gravel production, air entrainment, breaking of suction, evidence of biofouling or encrustation on pumping components, structural issues, and past well rehabilitation efforts and results.

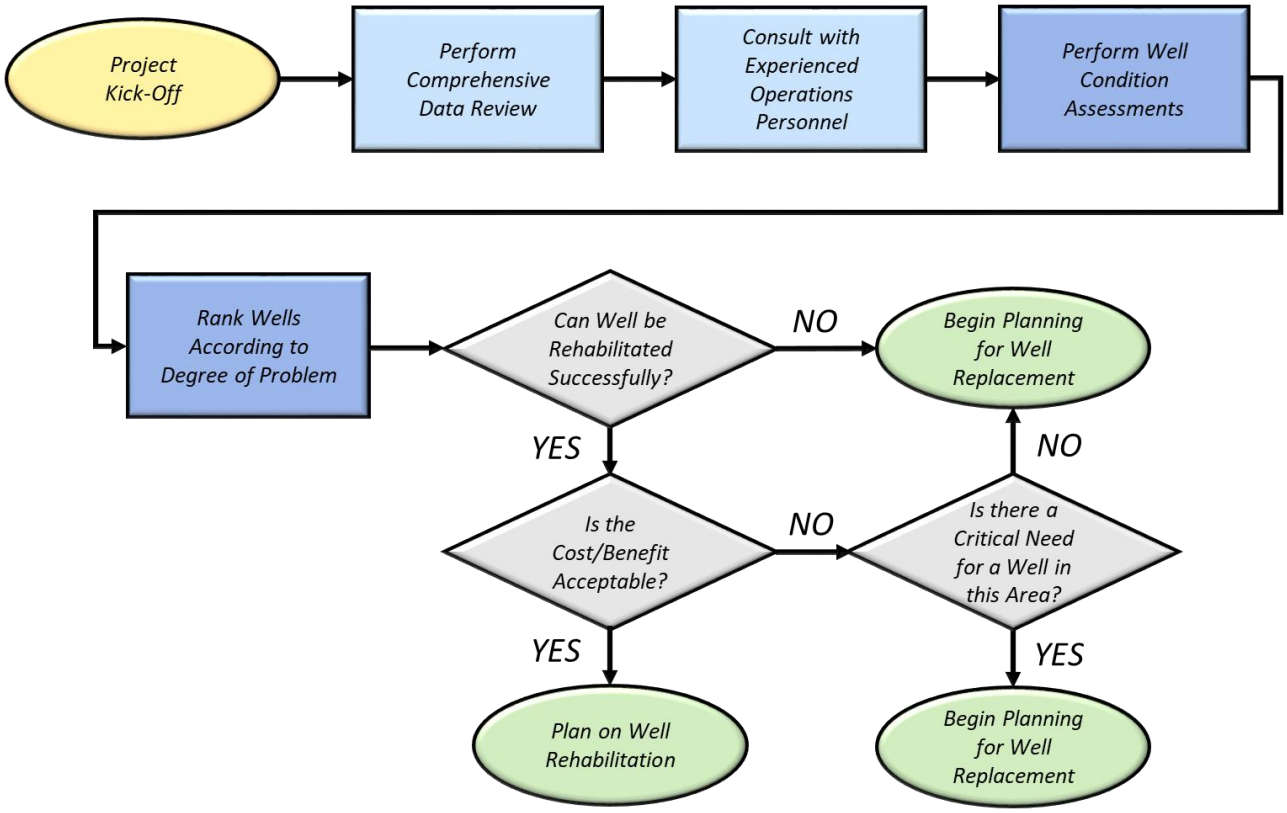


Condition assessments will then be prepared for each well based on the available information, primarily including visual information from historical downhole video surveys, and an evaluation of historical trends in well production parameters, including instantaneous pumping rate, specific capacity, and power consumption. The remaining useful life of each well will be estimated based on age, design, materials of construction, groundwater quality, pumping dynamics, and operational protocols. Pumping dynamics will be evaluated in the context of regional static and pumping groundwater elevations to identify causes of production loss and/or water level decline, as applicable. The three primary causes of declining well production are typically as follows:

1. Wells that exhibit stable static water levels, declining pumping water levels, and declining specific capacity are likely impacted by local degradation effects (i.e., well clogging, etc.).
2. Wells that exhibit declining static and pumping groundwater levels are likely impacted by regional groundwater level decline.
3. Wells that exhibit stable water levels and specific capacity, but declining production and/or increasing power consumption may be experiencing pump-related issues.

The process by which the wells are prioritized is summarized by the decision matrix shown on the following page. The condition of each well will be ranked relative to other wells based on a variety of criteria that will be assigned a raw criteria score and criteria weighting factor. The product of individual criteria scores and their respective weighting factors will result in a total weighted score and an overall ranking as to well condition. Those wells considered to be in the worst condition and with the greatest risk of structural failure would be ranked higher than wells in relatively good condition.

The wells will then be evaluated and ranked as to the probability of successful rehabilitation efforts and whether or not the benefit of rehabilitation outweighs the cost and risk. The probability of success will be based on many factors, including the degree of clogging, how long the condition has remained unchecked, suitability of the well design and condition to rehabilitation efforts, the degree of complexity and expense, and whether or not prior rehabilitation events have been successful. Those wells ranked higher on this list will be the wells most in need of rehabilitation that have the greatest probability of success at the least cost. A final consideration will be the importance of any particular well within the system, as determined by PWD, such as a well that serves as critical supply to a treatment plant and/or particular pressure zone. In these cases, wells ranked lower on the final ranked list may take precedence over other wells when considering plans for rehabilitation.

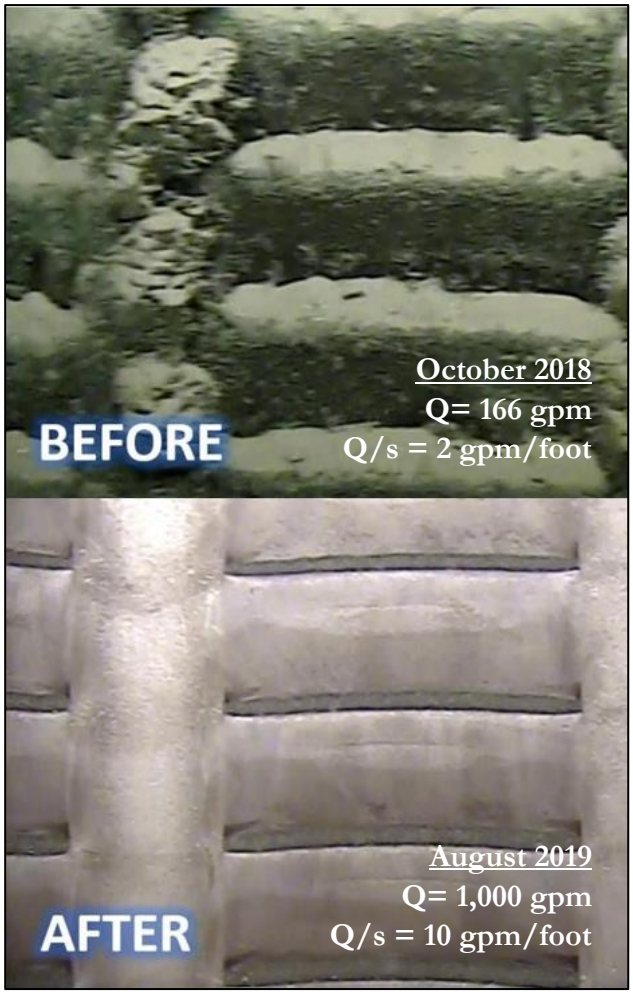


A subset of wells will ultimately be identified as having limited remaining useful service life, significant structural issues, and/or for which well rehabilitation efforts would be impossible or prohibitively expensive. In these cases, the recommendation would be to run the well to failure and proactively plan for replacement.

Well Rehabilitation Considerations

Each and every well is different, requires specialized care, and will respond differently to the various processes utilized during rehabilitation and redevelopment, and each well will undoubtedly present unforeseen complications during execution of the work. As such, well rehabilitation specifications should be tailored to each well on a case by case basis. We recognize however that there are major tasks that are generally included in the majority of well rehabilitation activities. These tasks will be included within our technical specifications with the intent that each task should be selected and refined to complement any particular well following a careful condition assessment.

Our recommended program of rehabilitation and redevelopment includes the following sequence of tasks that have been designed to effectively disperse mechanical and chemical energy throughout the well screen and near-well zone. In order to loosen and dislodge materials within the filter media and near-well zone, a mechanical brushing procedure is recommended. The brushes would consist of spirally-wound nylon, polypropylene or polyethylene bristles mounted on a 6-inch minimum diameter weighted core. It is recommended that the weighted brushes be attached to the sand line of a rig equipped with a variable-speed rotating arm capable of a minimum 6-foot continuous revolution (i.e., 12-feet of vertical movement) and 10 strokes per minute, thus providing a minimum of 120 feet of vertical movement per minute.



Following brushing, we recommend a program of pre-development through use of a focused intake pumping apparatus to open the gravel envelope and near-well zone in such a way as to allow effective penetration of chemicals. Following pre-development, a two-phase chemical cleaning program is employed, including application of chemical dispersant to further open up the gravel envelope and near-well zone, followed by chemical cleaning through use of acids and/or surfactants. All chemicals are applied to the well screen by injection into a surge block while simultaneously distributing the chemical. After an appropriate amount of contact time for the chemical, initial redevelopment will begin. Initial redevelopment will consist of focused-intake pumping through a 10-foot-long double surge block. This method has proven to be more effective than the more typical airlift development as high rates of continuous flow can be achieved through a relatively small interval of well screen.

Following initial redevelopment, the well will be redeveloped by pumping and surging with the goal of maximizing instantaneous production and specific capacity, and minimizing sand production.

The KGI team consists of local groundwater experts and have been successfully performing well siting, permitting, design, and inspection of well installation and rehabilitation projects for more than 20 years, including preparation of several regional-scale well rehabilitation planning documents. It is our mission to surpass project goals and exceed our clients' expectations by applying innovative thinking to develop optimal technical solutions for a project. Our general methodology is to combine our years of hard-earned experience with a scientifically based approach to produce a well rehabilitation planning document that will serve as a source of information and guidance for years to come, and developed in such a way as to become a living document that can be updated and revised as new information becomes available.

SECTION II. SCOPE OF WORK

1.0 Project Management and Quality Control

The KGI team will prepare for and attend a kickoff meeting with PWD personnel to discuss the proposed scope of work. The primary objective of the project kick-off meeting will be to meet face-to-face with key members of the project team to make sure that the intent, objectives, tasks, budgets, schedules, milestones, deliverables, and data needs are properly understood and addressed. The kick-off meeting also introduces and identifies those individuals responsible for implementing each part of the work and provides a forum for discussion of critical-path tasks, and how those tasks can be efficiently executed. A Project Management Plan will be presented at the meeting and will include a baseline project schedule, contact information, budget table, and sample invoice. Pertinent members of the project team will attend up to nine (9) monthly project progress meetings, as necessary, throughout the duration of the project. Meeting agendas will be prepared for all project meetings and meeting minutes will be provided to PWD within five (5) working days. Monthly project progress reports will be submitted with all invoices, including a discussion of task progress, anticipated issues, and project schedule.

Sound hydrogeological and engineering criteria will be used throughout administration of the project and all data, calculations, conclusions, and interpretations will be vetted through a rigorous multi-level QA/QC process. Our project manager and applicable team members will identify problems as they arise and will provide timely recommendations regarding an appropriate response. Essential factors which determine the success of any given project include scope, schedule, and budget. We will effectively manage these three fundamental factors to bring the project to a successful conclusion both on schedule and within budget. Comment spreadsheets will be provided with each deliverable as a means of tracking comments received and actions taken.

2.0 Data Acquisition & Analysis

KGI will acquire and review readily available well and pump data, reports, published literature, and models pertaining to PWD's well field, including location of facilities, details of well construction, static and pumping groundwater levels, instantaneous pumping rates, specific capacity data, historical plant efficiency tests, flowmeter surveys, groundwater quality data, and existing well pump curves. Details of prior well modification, repair, and rehabilitation efforts will also be reviewed. Historical video surveys will be reviewed in an effort to directly evaluate any biological and/or chemical processes that may be occurring, and any structural issues that may be present. Additionally, KGI will meet with and interview PWD's experienced operations personnel to query first-hand operational information such as sand or gravel production, air entrainment, breaking of suction, evidence of biofouling or encrustation on pumping components, structural issues, and undocumented well rehabilitation/repair efforts and results.

KGI will review all data in the context of developing operational and condition assessments for each well from which detailed well histories and baseline summaries will be developed. These well histories will be presented to PWD for review and comment prior to proceeding with preparing the well rehabilitation prioritization plan.

3.0 Well Rehabilitation Prioritization Plan & Recommendations

KGI will utilize information and conclusions from the data review in Task 2.0 to assess, prioritize and rank the wells according to the methodology described in Section I. The plan will include all data collected presented in tabular and graphical formats (e.g., historical charts and well as-built drawings), condition assessments for each well, a description of the ranking and prioritization process (including justification of scoring and weighting), ranked priority lists, and a summary of rehabilitation methods and planning level costs pertinent to PWD's well

field. Ranking lists will be designed to be updatable by PWD personnel as conditions change (i.e., wells are rehabilitated and/or replaced). The plan will also include a review of current PWD well design standards in the context of well efficiency and longevity and provide comments and recommendations.

KGI will submit three (3) bound copies and an electronic (i.e., PDF) copy of the prioritization plan at the 50%, 70% and 90% DRAFT stage for review and comment. Workshops will be held at the PWD offices following submittal of each draft report to field questions and address comments before moving forward with subsequent versions. Upon incorporation of comments, three (3) bound copies of the FINAL plan will be provided along with native and PDF formats. Following submittal of the final plan, KGI will conduct a workshop for PWD personnel to provide training on future update and refinement of the plan.

4.0 Well Rehabilitation Technical Specifications

KGI will prepare a comprehensive set of technical specifications for common well rehabilitation, redevelopment, testing, and maintenance procedures. It is proposed that these specifications will be presented in a modular fashion such that a bid-ready set of specifications can readily be assembled and combined with front-end documentation with minimal modification. Typical items to be included in the technical specifications will include the following:

- Pump removal and inspection
- Diagnostics
  - Efficiency testing
  - Pre-rehabilitation video surveys
  - CITM surveys
  - Depth-specific water quality sampling
  - Sidewall sampling and analysis
- Well casing repair
  - Patches
  - Liners
- Mechanical cleaning
  - Brushing
  - Jetting
  - Percussive
  - Bailing/airlifting
- Chemical cleaning
  - Surfactants and dispersants
  - Acids
  - Application methods
- Well redevelopment
  - Pre-development (prior to chemical cleaning)
  - Initial redevelopment by swabbing and pumping
  - Final redevelopment by pumping and surging
- Aquifer testing
  - Step drawdown test
  - Constant rate drawdown test
  - Recovery test
  - Flowmeter survey
- Post-rehabilitation downhole video surveys
- Well disinfection
- Repair and reinstallation of pump
- Startup testing

KGI will submit three (3) bound copies and an electronic (i.e., PDF) copy of both the 70% and 90% DRAFT versions of the plans and specifications to PWD for review and comment. Workshops will be held at the PWD offices following submittal of each draft report to field questions and address comments before moving forward with subsequent versions. Upon incorporation of comments, three (3) bound copies of the FINAL technical specifications will be provided along with native and PDF formats.

5.0 Bid Support Services

KGI will prepare technical plans and specifications for rehabilitation, redevelopment, and testing of the three (3) top ranked production wells, assist PWD with modification of front-end contractual documents, prepare detailed bid schedules with specific line items showing units and unit quantities for the work, and will assemble the completed bid package and ready it for bidding. Engineer's estimates of construction costs will be prepared based on recent winning bids and materials costs for similar work within the Southern California area. Critical items to be included in the technical specifications typically include the following:

- Site requirements (i.e., preparation, noise monitoring and mitigation, dust control, waste disposal, BMPs, power, lighting, construction water source, security, sanitation facilities, staging, parking, and traffic control)
- Regulatory and permitting requirements
- Discharge requirements
- Hydrogeologic conditions
- Mobilization, demobilization, site preparation, preservation, and site restoration
- Equipment, materials, and records to be furnished by the contractor
- Pump removal, assessment, and storage procedures
- Preliminary diagnostic procedures (i.e., video and CITM surveys)
- Well rehabilitation procedures (mechanical and chemical)
- Well redevelopment procedures (pre-, initial and final)
- Aquifer testing
- Post-rehabilitation downhole video surveys
- Well disinfection
- Pump repair, modification, and reinstallation

KGI will submit a 100% DRAFT version of the bid package to PWD for review and comment in electronic format. Upon incorporation of comments, a FINAL bid-ready version of the technical specifications will be provided to PWD in native and PDF formats, including professional stamps and signatures.

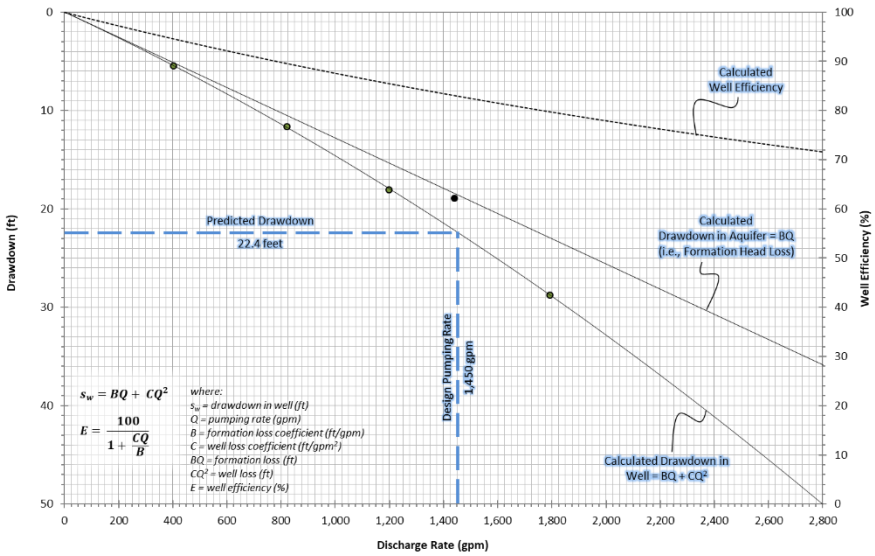
Upon entering the bid phase, KGI will prepare for and attend a pre-bid meeting with PWD and prospective drilling contractors to discuss key points within the technical plans and specifications, and to answer questions regarding site conditions, staging, preliminary well design, schedule and other hydrogeologic or contractual matters. During the bidding process, KGI will respond to bidder's questions and prepare bid addenda as necessary (assumes up to three [3] RFIs and addenda). Once the bidding process is complete, KGI will evaluate bids and will provide recommendations regarding award. KGI's project manager will be available to provide technical support throughout the duration of well rehabilitation on a Time and Materials basis.

6.0 Baseline Testing Services (Optional)

KGI will provide optional services to conduct testing and data analysis (as described in the RFP) for up to six (6) wells identified by KGI and PWD within the 90% well rehabilitation prioritization plan. The purpose of this testing is to determine baseline well and pump efficiency from which gauge the success of any given well and/or pump rehabilitation event.

Well Efficiency

Well efficiency is a metric from which to judge well performance as measured by the ratio of actual specific capacity to theoretical specific capacity, and can be calculated by determining two components of head loss during pumping, 1) aquifer loss, and 2) well loss. The discovery by Henri Darcy in 1886 that groundwater flow within an aquifer is laminar and that head loss varies by the first power of the flow velocity and discharge rate allows for calculation of head losses within an aquifer during pumping at any given flow rate. Head loss from turbulent flow as groundwater moves through the gravel envelope and well screen openings is referred to as well loss and varies by the square of the velocity (i.e., discharge rate). Combining these terms results in the equation for total drawdown within an aquifer as follows: $S_w = BQ + CQ^2$, where S_w is total drawdown within the well, BQ is the head loss from laminar flow within the aquifer, and CQ^2 is head loss from turbulent flow within the well intake structure. In order to calculate the aquifer and well loss coefficients, it is necessary to measure predictable drawdown trends in the well at differing pumping rates, as is accomplished through step drawdown aquifer testing. As such, it should be noted that the 1-hour test cycle stipulated in the RFP will not provide sufficient data from which to calculate well efficiency, and a test of approximately 2 to 3 hours will be needed. However, the goal of conducting three well tests in one working day is still acheivable.



Pump Efficiency

The overall pumping plant efficiency (OPE) and is a measure of the efficiency of all pump components at the design pumping rate and total dynamic head. This parameter, sometimes referred to as wire-to-water, is calculated from the ratio of water horsepower to input horsepower. Water horsepower is the horsepower required to pump water against a specified head at 100% OPE. Input horsepower is calculated from data collected during efficiency testing. OPE testing can be conducted in conjunction with the well efficiency testing described above and will involve collecting an additional subset of data, including system pressures and power usage. OPE will be calculated for each of the step of the well efficiency testing described above.

Analysis and Reporting

KGI will provide field inspection and direction during testing and will provide the field equipment outlined in the RFP. We assume that the six (6) wells will be tested over a period of two (2) working days and that PWD will install the Rossum centrifugal sand tester (provided by KGI), and provide all necessary pumping equipment (i.e., flow control valves and system pressure meters), needed for testing. All data will be collected by KGI and recorded on standard field forms. Following testing, KGI will provide a brief letter report summarizing the work and presenting the calculated well and pump efficiency baselines.

SECTION III. STATEMENT OF QUALIFICATIONS

KYLE GROUNDWATER, INC.

KYLE Groundwater, Inc. (KGI) is a California Corporation located in Pomona. Our company was founded in early 2018 by Mr. Russell Kyle in response to demand for experienced and innovative hydrogeological solutions from our Southern California clients. Since that time, we have established a local client base of seven water agencies and purveyors and are continuing to grow. We have a reputation of approaching each of our projects with fresh eyes and providing a superior and customized work product. Mr. Kyle, a Professional Geologist and Certified California Hydrogeologist, holds the philosophy that an honest, well-thought-out, innovative, and scientifically-based approach coupled with a high-quality work product, leads to successful projects. The number and variety of successful projects over the course of his career is testament to that fact. Over the course of his career, Mr. Kyle has provided hydrogeologic design, construction, and inspection services for over 145 new water supply wells and has successfully evaluated and rehabilitated dozens of wells to stabilize structural abnormalities, recover lost production and improve poor water quality.

Water Wells

- Siting
- Feasibility Studies
- Design
- Technical Plans & Specifications
- Construction Management
- Inspection
- Peer Review

Groundwater Exploration

- Exploratory Drilling
- Test Wells
- Monitoring Wells
- Depth-Specific Sampling
- Well Canvassing

Permitting Support

- Water Supply Studies
- Source Assessments
- Domestic Water Supply Permit
- NPDES
- Control Zone Compliance
- Setback Compliance

Well Rehabilitation and Redevelopment

- Well Condition Assessment
- Well Efficiency Testing
- Down-Hole Video Interpretation
- Flow Profiling
- Water Quality Assessment
- Mechanical and Chemical Treatment
- Well Modification
- Well Repair
- Liner Design
- Technical Plans & Specifications
- Construction Management
- Inspection

Groundwater Basin Studies

- Regional Studies
- Groundwater Quality Characterization
- Perennial Yield Estimates
- Artificial Recharge Feasibility
- Well Field Optimization
- Groundwater Protection

PROJECT EXPERIENCE

Our team has the experience and expertise to deliver the highly-specialized hydrogeological and engineering services needed for this project. The following pages include a selection of reference projects that demonstrate a proven track record with recent project-relevant experience. Key members of our team outlined in this proposal held significant roles within these reference projects. The client references listed in this section can attest to the quality of our services, delivery capability, and our level of ownership. In addition to the projects presented on the following project summaries, key members of our project team were also instrumental in the following projects. This experience highlights the depth of knowledge and experience held by our team within southern California.

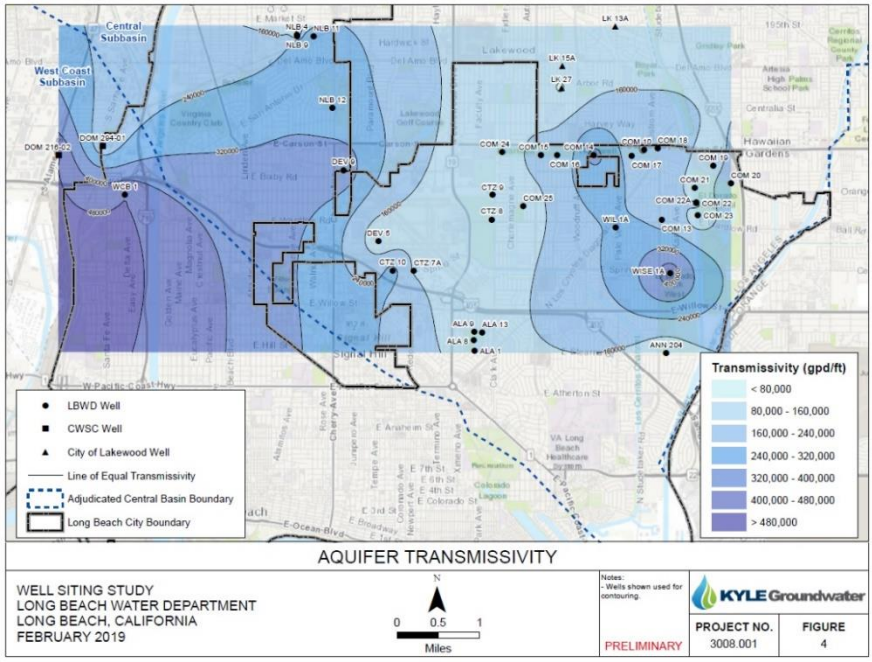
- **Development of a Well Rehabilitation Master Plan – Long Beach Water Department – Long Beach, California.** Mr. Kyle served as project manager and technical lead during development of a regional-scale well rehabilitation master plan which included condition assessment and prioritization ranking LBWD's production well field, consisting of 31 active wells. This project identified those wells that were most likely to respond favorably to well rehabilitation at the least cost, in addition to identifying production wells that were at the end of their useful life and in need of replacement. This project was integral to a subsequent regional-scale well siting study and identification of well sites needed for replacement wells.
- **Development of a Well Rehabilitation and Replacement Program – City of Riverside Public Utilities - City of Riverside, California.** Mr. Kyle served as project manager and technical lead during development of a regional-scale well rehabilitation prioritization program for the City of Riverside Public Utilities well field, consisting of 55 actively pumping wells. This project involved a thorough evaluation and ranking of each well as to rehabilitation feasibility and estimated remaining well life. An additional component of the project was preparation of a standard well rehabilitation specification document, an evaluation of the City's current monitoring network and protocols, and development of a ground water monitoring program.
- **Well Assessments – City of Riverside Public Utilities – Riverside, California.** Mr. Kyle performed well condition assessments and developed well rehabilitation recommendations for three (3) production wells for RPU (Van Buren 1 and 2, and the Stiles well). The well condition assessments included review of historical data, including multiple downhole video surveys, static and pumping groundwater levels, instantaneous pumping rates, specific capacity, and sand production. The data were analyzed to effectively evaluate the current condition of the three wells and develop programs for rehabilitation and redevelopment.
- **Rehabilitation of Citizens Well 7A and Commission Well 20 – Long Beach Water Department – Long Beach, California.** LBWD performed rehabilitation and redevelopment of two municipal water supply wells to restore lost production and improve efficiency. Mr. Kyle and Ms. Makar were key in providing construction management and inspection during the project. Rehabilitation of Well 20 was very successful and restored production to levels greater than when the well was first constructed, despite significant structural issues with the aging and corroded well casing and screen.
- **Downey Wells 2, 8, 11, 17, 18, and 29 Condition Assessment – City of Downey – Downey, California.** Mr. Kyle and Ms. Makar were key in performing condition assessments for three water supply wells and developing tailored well rehabilitation and retrofit programs. The evaluation included a review of well construction details, video surveys, performance characteristics, hydrogeological conditions, and well and pumping plant efficiency testing. Well rehabilitation consisted of mechanical and chemical cleaning followed by redevelopment and testing. Ms. Makar provided field inspection for successful rehabilitation of three (3) wells. In particular, Well 11 responded well and demonstrated a significant increase in plant efficiency and an estimated annual electrical savings of $69,000 per year.

LONG BEACH WATER DEPARTMENT

COLLECTION MAIN AND NEW WELL SITE STUDY

Location:	Long Beach, CA
Personnel:	Russell Kyle, Project Manager Kimberly Makar, Hydrogeology/GIS
Client:	Long Beach Water Department
	Patrizia Hall, PE
	Patrizia.hall@lbwater.org
	562-570-2332
Completion Date:	Ongoing (Est. Completion: February 2020)

The Long Beach Water Department (LBWD) provides potable drinking water to the City of Long Beach from both groundwater and imported water sources. The majority of imported water is treated surface water sourced from the Metropolitan Water District of Southern California (MWD). The remaining portion, more than half of that supplied, is produced from groundwater wells that deliver water to the Long Beach Groundwater Treatment Plant (GWTP) via LBWD's Groundwater Collection System, consisting of approximately 23 miles of pipeline. LBWD currently owns and operates 27 groundwater supply wells located throughout the city, not including two (2) recently constructed wells in the process of equipping.



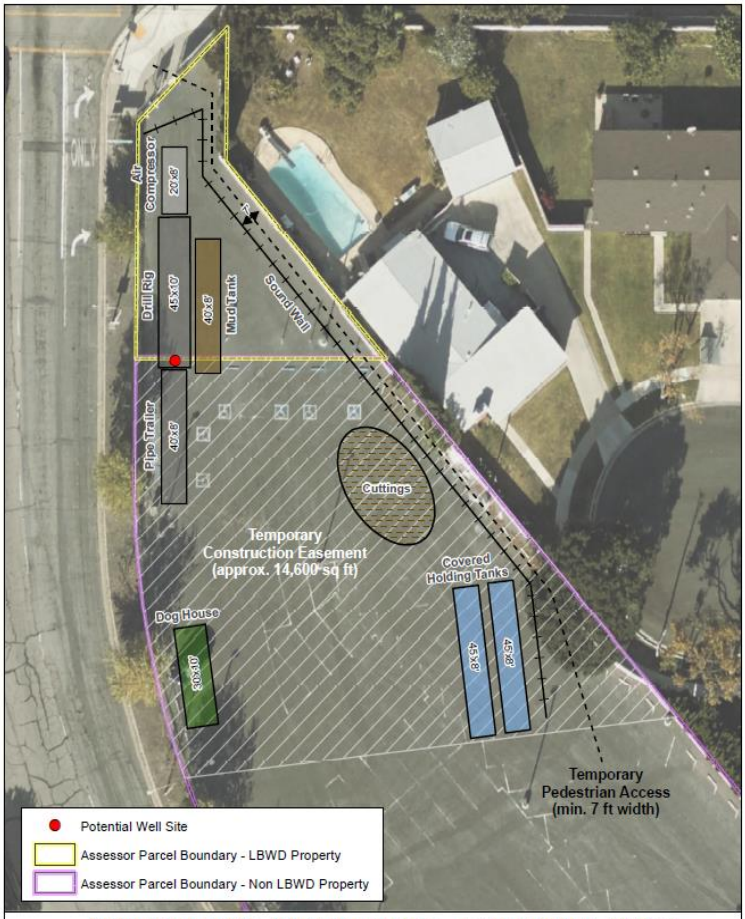
In an effort to increase water supply reliability, LBWD is seeking to optimize local water supply sources and maintain a production well field capacity of 32,692 acre-feet per year (AFY) by the year 2032. This represents LBWD's current water rights allocation within the Central Basin. Optimization of these water rights will require rehabilitation of 19 existing wells to increase production from existing sources of supply, and construction of at least seven (7) new groundwater wells, not including LBWD's two (2) most recent wells, both of which have been drilled and constructed, and are in the well equipping phase.

The purpose of this well siting study was to evaluate areas favorable for installation of new production wells within the Central and West Coast Basins and relatively close to existing LBWD collection mains, performing an

assessment of hydrogeologic and engineering feasibility, and an evaluation of how new wells can be incorporated into the groundwater collection system.

Groundwater quality and elevation data from nearby monitoring and production wells were analyzed, including five groundwater quality constituents. Buffers around sites of environmental concern, existing wells, and active hazardous liquid pipelines were used to eliminate possible areas for a new potable well. Potential sites were identified within areas that did not fall within those buffers and were within a one-mile radius of the collection main pipeline. Field reconnaissance will be performed to identify construction constraints at each potential well site. The sites were ranked based upon a scientific approach and weighted decision matrix. A short list of potential well sites were further assessed using by incorporating anticipated well locations and capacities into LBWD's hydraulic model to assess the ability of the system to accommodate additional flow from the new wells, including minimum and maximum capacity scenarios.

LBWD further requested KGI provide specific well siting and permitting support for a select group of wells such that construction and permitting feasibility could be assessed in more detail, and the possibility of moving the sites forward toward construction could be accelerated. This included field meetings with DDW representatives to discuss specific well location parameters, including sanitary setbacks, control zone requirements, and nearby potentially contaminating activities. A total of four (4) well sites have been budgeted by LBWD and two (2) well sites were immediately pushed forward to the design and construction phase. KGI is currently providing follow-on support to assess construction and permitting feasibility for a number of additional well sites.



WOODRUFF AVE. AND WILLOW ST. - EQUIPMENT LAYOUT

WELL SITING STUDY
LONG BEACH WATER DEPARTMENT
LONG BEACH, CALIFORNIA
NOVEMBER 2018

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KYLE Groundwater

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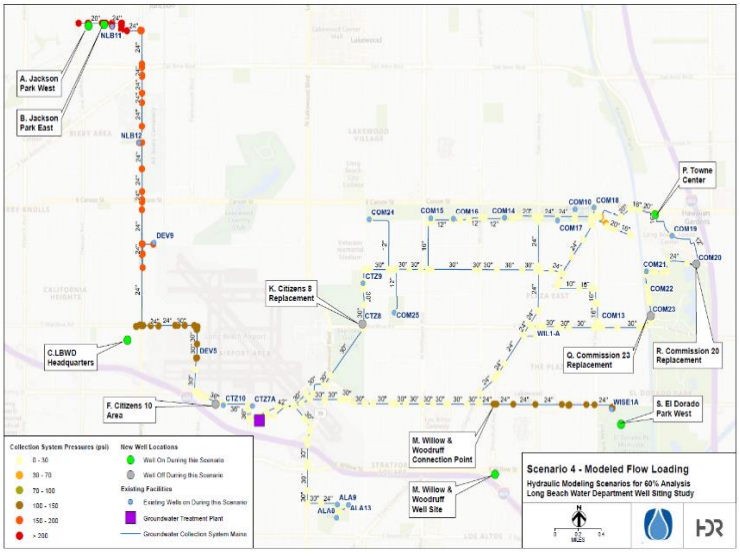


LONG BEACH WATER DEPARTMENT

REHABILITATION OF WELLS CITIZENS 9 AND WILSON 1A

Location:	Long Beach, CA
Personnel:	Russell Kyle, Project Manager/Hydrogeologist Kimberly Makar, Field Inspection
Client:	Patrizia Hall, PE
	Patrizia.hall@lbwater.org
	562-570-2332
	Patrizia Hall, PE
Completion Date:	Est. ~ June 2020
Total Cost:	$219,502

In an effort to increase local water supply reliability, the Long Beach Water Department (LBWD) is seeking to optimize local water supply sources and maintain a production well field capacity of 32,692 acre-feet per year (AFY) through the year 2032. This requires ongoing rehabilitation of existing wells to increase production from existing sources of supply, and construction of several new groundwater wells.

Rehabilitation of Wells Wilson 1A and Citizens 9 is part of the ongoing effort to maintain and optimize the capacity of local resources. The KGI team was tasked with resident engineering, and providing full-time construction management and inspection services. This included development of a well rehabilitation and redevelopment plan, evaluation of the existing pump and motor, and electrical and site upgrades.

Well Citizens 9 has been successfully rehabilitated and redeveloped from a historical low pumping rate of 166 gpm to approximately 1,000 gpm, a 500% increase. Likewise, the specific capacity of the well at those pumping rates has increased by 400% from approximately 2 gpm/foot to 10 gpm/foot.

CITY OF RIVERSIDE PUBLIC UTILITIES

WELL CONDITION ASSESSMENTS AND PEER REVIEW

Location:	Riverside, CA
Personnel:	Russell Kyle, Project Manager Kimberly Makar, Hydrogeology
Client:	City of Riverside Public Utilities
	Leo Ferrando
	Lferrando@riversideca.gov
	951-826-5694
Completion Date:	December 2018

KGI has recently performed well condition assessments and developed well rehabilitation recommendations for three (3) production wells for the City of Riverside Public Utilities (RPU). The well condition assessments included review of historical data, including multiple downhole video surveys, static and pumping groundwater levels, instantaneous pumping rates, specific capacity, and sand production. The data were analyzed to effectively evaluate the current condition of the two wells. Based on the findings and conclusions of the well condition assessments, a mild to moderate programs of well rehabilitation and redevelopment were recommended for two wells, while it was recommended to leave the third well alone due to severe structural issues.

One of the wells was found to be producing appreciable quantities of sand and gravel material which subsequently eroded holes within the pump column piping. Recommendations were provided to help assess the problem and modifications to the pump were recommended to mitigate sand production.

Additionally, KGI has provided professional peer review and served as RPU's representative during siting and design of a new municipal water supply well in San Bernardino. Two pilot boreholes have been drilled and tested to determine a location and design adequate to meet water quality standards and production capacity. KGI has borehole lithology, geophysical borehole survey logs, isolated aquifer zone testing results, and well design recommendations provided by another consultant. Recommendations have been made regarding an appropriate well design that serves the best interest of RPU while minimizing capital cost.

SUBURBAN WATER SYSTEMS

PLANT 409 WELL 3 REHABILITATION, REDEVELOPMENT, AND TESTING

Location:	La Mirada, CA
Personnel:	Russell Kyle, Project Manager/Hydrogeologist Kimberly Makar, Field Inspection
Client:	Suburban Water Systems
	Jorge Lopez, PE
	jlopez@swwc.com
	626-543-2518
Completion Date:	August 2018

Suburban Water Systems Plant 409 Well 3 has undergone repeated rehabilitation events to restore declining instantaneous production rates, although the exact nature of well and/or pump rehabilitation was not clear. KGI was tasked with assessing the condition of the well, developing a rigorous well rehabilitation and redevelopment plan, and providing recommendations for a well maintenance and operations plan to optimize pumping efficiency and minimize down time due to rehabilitation events.

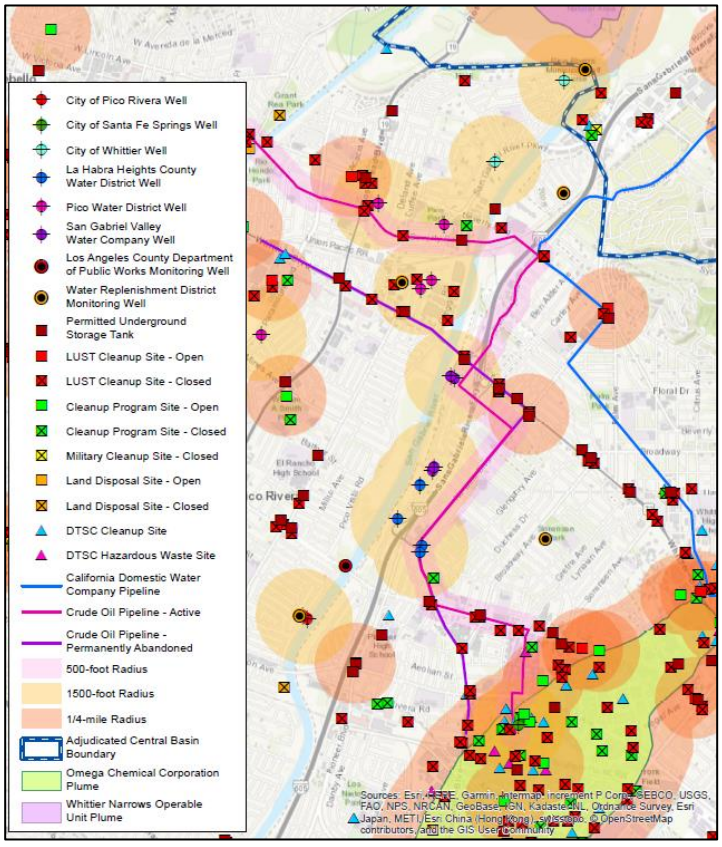
Results of the evaluation revealed that the specific capcity of the well had declined from 32 gpm/foot to 7 gpm/foot. Bacterial growth was found to be a contributing factor to declining production and was likley exacerbated by both poor well screen design and continuous operation of the well under high drawdown conditions. A full rehabilitation program was developed and executed, including mechanical and chemical cleaning, redevelopment, and testing.

The project was completed successfully, on time and within budget, while coordinating with Suburban, and multiple contractors and regulatory requirements. The well rehabilitation and redevelopment program resulted in an increase in both instantaneous pumping rate and well efficiency.

PUENTE BASIN WATER AUTHORITY
CENTRAL BASIN WELL SITING STUDY

Location:	Carson, CA
Personnel:	Russell Kyle, Project Manager/Hydrogeologist Kimberly Makar, Permitting/GIS
Client:	Puente Basin Water Agency
	Tom Coleman
	tcoleman@rowlandwater.com
	562-697-1726
Completion Date:	December 2019

The Puente Basin Water Agency (PBWA) is a Joint Powers Authority consisting of Rowland Water District and Walnut Valley Water District that was formed to coordinate the development, utilization, and protection of water supply, with an emphasis on supply reliability and diversity. PBWA is seeking to develop a source of potable groundwater supply in the Whittier area of the Central Basin. This water will be conveyed through an existing California Domestic Water Company (Cal Domestic) transmission pipeline.



A Well Siting Study was conducted Spring 2018 to evaluate areas favorable for installation of new production wells within the Central Basin, and within relative proximity to the existing Cal Domestic pipeline.

Groundwater quality and elevation data from nearby monitoring and production wells were analyzed, including eight groundwater quality constituents. Buffers around sites of environmental concern, existing wells, active and abandoned oil pipelines, and known contaminant plumes were used to eliminate possible areas for a new potable well. Potential sites were identified within areas that did not fall within those buffers and were within a one-mile radius of the Cal Domestic pipeline. Field reconnaissance was performed to identify construction constraints at each potential well site. The sites were ranked based upon a scientific approach and weighted decision matrix. A detailed evaluation of the top two sites was performed and included a higher level of review for construction feasibility, design, and cost.

SOUTH MONTEBELLO IRRIGATION DISTRICT

PERMITTING, DESIGN, AND INSTALLATION OF WELL NO. 8*

Location:	Montebello, CA
Personnel:	Russell Kyle, Project Manager/Hydrogeologist Kimberly Makar, Permitting/GIS
Client:	South Montebello Irrigation District
	Jordan Betancourt
	j.betancourt@pacbell.net
	323-721-4735
Completion Date:	Ongoing (Est. Completion: February 2020)

Mr. Kyle was the technical lead for a new well installation to be located adjacent to the Rio Hondo Spreading Basins within the Montebello Forebay area of the Central Basin. An assessment of the proposed well site was conducted, including anticipated well capacity and groundwater quality, preliminary design, construction logistics, and identification of construction constraints and required permits.

Specific project tasks included preparation of a preliminary design report, technical plans and specifications, and comprehensive well permitting (including CEQA, NPDES, the Domestic Water Supply Permit Amendment, and DWSAP documents). Permitting proved challenging given that the well did not initially meet DDW's 50-foot control zone requirement but the well was ultimately permitted for drilling and operation and has entered the construction phase, for which KGI is currently providing construction management and inspection services.

Given the location of the well within the Montebello Forebay, PFOA and PFOS constituents are a very real problem. As such, KGI collected depth-specific samples during isolated aquifer zone testing such that an assessment of the concentration of these constituents from the completed well could be estimated. Sampling and analysis was successfully completed under very difficult conditions, resulting in representative results over a very short turn-around time. The well has been constructed and is anticipated to produce in excess of 3,000 gpm. Advanced knowledge of the presence of PFOA and PFOS within the groundwater has precipitated planning of a centralized treatment system.

*Portions of preliminary design and permitting were performed by key team members while working with another firm.

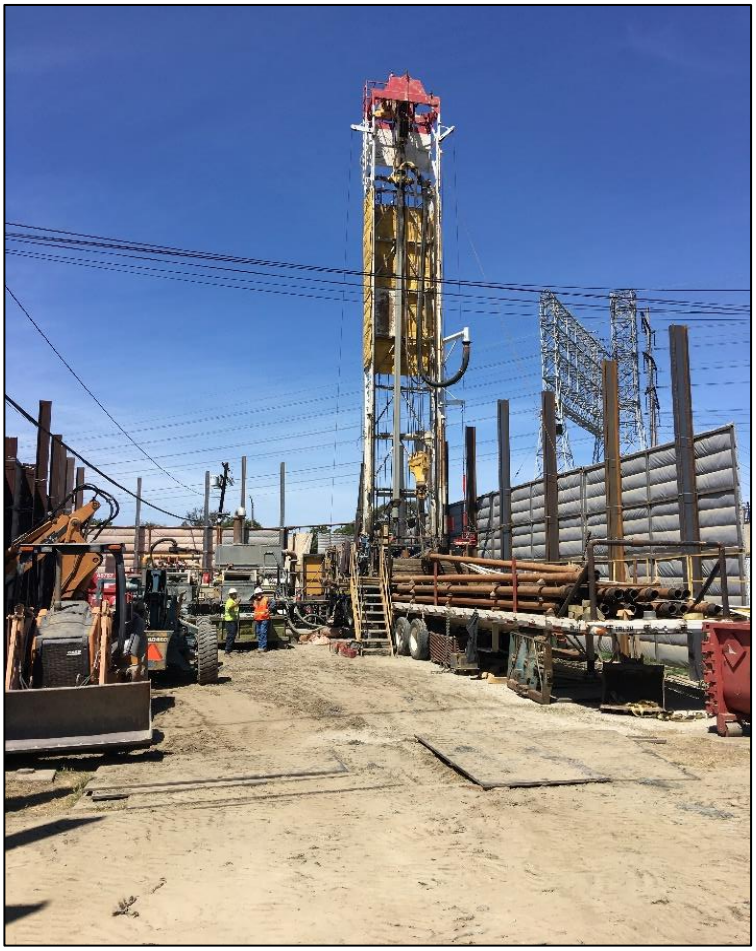
LONG BEACH WATER DEPARTMENT

WEST COAST BASIN WELL 1*

Location:	Long Beach, CA
Personnel:	Russell Kyle, Project Manager/Hydrogeologist Kimberly Makar, Field Inspection
Client:	Long Beach Water Department
	Patrizia Hall, PE
	Patrizia.hall@lbwater.org
	562-570-2332
Completion Date:	2017

The Long Beach Water Department (LBWD) installed a new potable water supply well in the westernmost portion of the City in an effort to take advantage of untapped groundwater rights within the West Coast Basin. This well is currently the only well within the system which will likely not be treated by LBWD's centralized water treatment facility as the well is located a significant distance from that facility. As such, the final well water quality was of paramount import.

A preliminary groundwater quality assessment for the area surrounding the well site was performed and potentially problematic constituents were identified prior to construction. Design, construction management, and inspection services were provided during the project. Despite significant constructability and logistical issues (e.g., noise constraints, discharge limitations, and small construction footprint), the well was successfully competed and was tested at 2,000 gpm with a specific capacity of approximately 100 gpm/ft.

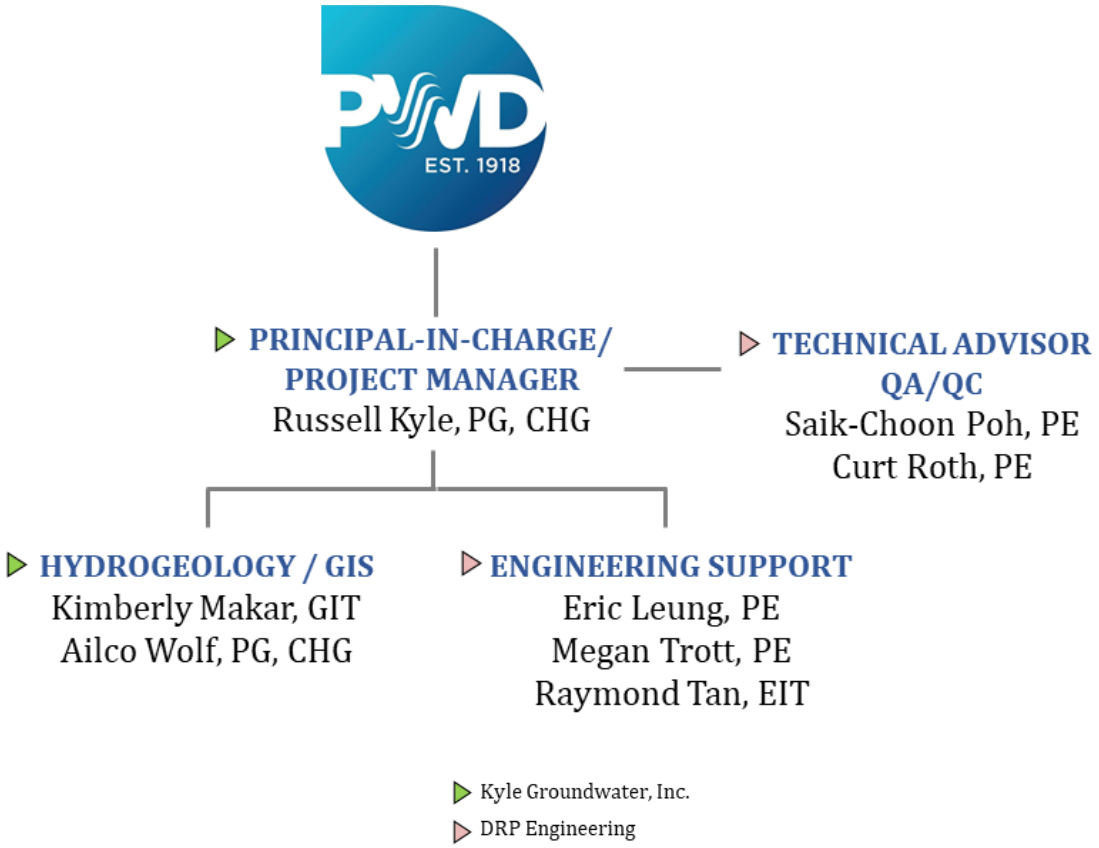


*This project was performed by key team members while working with another firm.

SECTION IV. PROJECT TEAM

This section outlines our team organizational structure, as well as the qualifications and responsibilities of our team's key members. Bringing more than 20 years of local water supply experience to this project, Mr. Russell Kyle will serve as our Principal-in-Charge (PIC) and Project Manager (PM) and will coordinate directly with PWD and other team members throughout the course of the project. Mr. Kyle has recent experience with successfully completing several regional-scale well rehabilitation prioritization projects and was the PM and lead during execution of similar projects for the Long Beach Water Department and City of Riverside. We have subcontracted with DRP Engineering for supporting project management. Mr. Curt Roth of DRP Engineering will serve along with Mr. Saik-Choon Poh as technical advisor and QA/QC review. All work will be conducted by or under the direct supervision of a California Professional Geologist (PG), Certified Hydrogeologist (CHG), and/or Professional Engineer (PE).

Each member of our project team is identified in the organizational chart below along with their respective roles for this project. Brief biographical sketches for key personnel are included in the following pages and resumes are included in Attachment A. Each member of our team will be available for the duration of the project and will not be reassigned without prior written approval from PWD.



RUSSELL KYLE, PG, CHG

PROJECT MANAGER (KYLE GROUNDWATER)

Project Responsibilities: Mr. Kyle will provide project management and be the contact with PWD's Project Manager throughout the entirety of the project. He will coordinate with staff and subconsultants on a regular basis to ensure the project is completed on time, within budget, and is of the utmost quality.

Mr. Kyle has 20 years of experience with a wide variety of groundwater resource related projects for public and private clients within the western United States, Mexico, and Africa, with a focus on groundwater resources development in Southern California. The scope of his technical experience includes groundwater basin evaluations, water supply studies, well siting investigations, artificial recharge feasibility evaluations, well field condition assessments, well rehabilitation, desalination feedwater supply studies, and geophysical surveys. Over the course of his career he has been responsible for siting and installation of more than 145 water supply wells and 70 monitoring wells and exploratory borings, including management of field inspectors, coordination with drilling contractors and regulatory agencies, permitting, well design, and construction management. He served as PM and project lead during preparation of large-scale regional well rehabilitation prioritization studies for the Long Beach Water Department and City of Riverside and is currently working on a regional-scale well siting study for Long Beach Water Department. Mr. Kyle will bring that knowledge and proficiency to bear in support of this project.

References:	*Ms. Patrizia Hall, PE* *Division Engineer* *Long Beach Water Department* *562-244-9195*	*Mr. Ronald A. Sorensen, PG, CHG, PGP* *Water Resource Manager* *California Water Service Company* *310-257-1487*

SAIK-CHOON POH, PE

TECHNICAL ADVISOR AND QA/QC (DRP)

Project Responsibilities: Mr. Poh will serve as technical advisor and will provide quality assurance to the project.

Mr. Poh specializes in environmental and civil engineering and has experience in water, stormwater, and wastewater conveyance and treatment facilities. Mr. Poh has served as a senior manager in the water industry for 15 years and has successfully managed and led project teams that have developed and delivered a wide range of projects from feasibility studies, master plans, predesigns, detailed designs and services during construction. Mr. Poh, who is NASSCO certified, has substantial recent design and construction management experience and has recently served as project manager on two ongoing On-Call Water Main contracts.

KIMBERLY MAKAR, GIT

HYDROGEOLOGY / GIS / INSPECTION (KYLE GROUNDWATER)

Project Responsibilities: Ms. Makar will work with Mr. Kyle to provide supporting hydrogeology, GIS, and inspection.

Ms. Makar is a geologist with seven years of experience in the water resource and mining industries. She began her career as a manager of the dewatering program at an open-pit copper mine in Nevada, for which she was responsible for developing and executing multi-million-dollar groundwater dewatering programs. Since 2014 she has been providing professional consulting services to the water resources industry in Southern California with an emphasis on new well installation and well rehabilitation. She is currently providing technical support for a regional well siting study in the Long Beach and Lakewood area, and is providing CMI during rehabilitation of two municipal water wells in Long Beach. She will bring that local knowledge and experience to bear on this project.

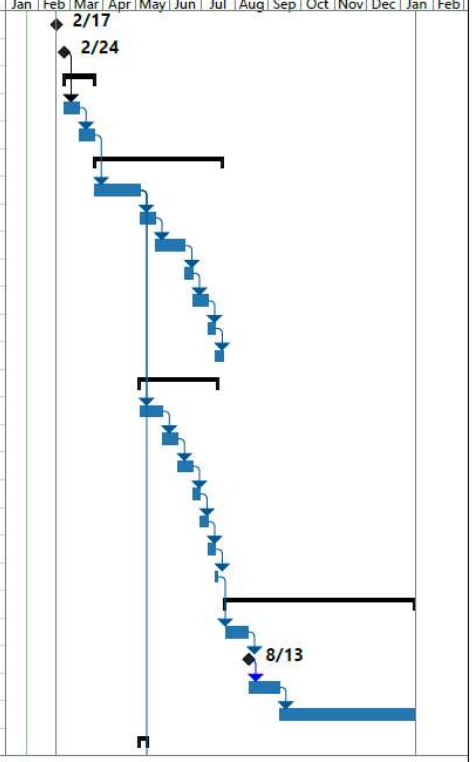
SECTION V. PRELIMINARY PROJECT SCHEDULE

We have developed a realistic project schedule based on our team's experience in delivering projects of a similar type and scope, the scope of work identified in the RFP, and a contract award date of March 1, 2020. Our intimate knowledge of the assessment and prioritization process allows our team to identify critical-path items and reduce the length of time required for a project of this nature.

Preliminary Project Schedule

Preliminary Project Schedule
Palmdale Water District
Development of a Well Rehabilitation Prioritization Program

ID	Task Name	Duration	Start	Finish
1	Contract Award	1 day	Mon 2/17/20	Mon 2/17/20
2	Project Kick-Off Meeting	1 day	Mon 2/24/20	Mon 2/24/20
3	**Task 2 - Data Analysis and Acquisition**	**20 days**	**Tue 2/25/20**	**Mon 3/23/20**
4	Acquire and Review Data	10 days	Tue 2/25/20	Mon 3/9/20
5	Prepare Well Histories	10 days	Tue 3/10/20	Mon 3/23/20
6	**Task 3 - Well Rehabilitation Prioritization Plan**	**85 days**	**Tue 3/24/20**	**Mon 7/20/20**
7	Prepare 50% Plan	30 days	Tue 3/24/20	Mon 5/4/20
8	PWD Review	10 days	Tue 5/5/20	Mon 5/18/20
9	Prepare 70% Plan	20 days	Tue 5/19/20	Mon 6/15/20
10	PWD Review	5 days	Tue 6/16/20	Mon 6/22/20
11	Prepare 90% Plan	10 days	Tue 6/23/20	Mon 7/6/20
12	PWD Review	5 days	Tue 7/7/20	Mon 7/13/20
13	Prepare Final Plan	5 days	Tue 7/14/20	Mon 7/20/20
14	**Task 4 - Plans and Technical Specifications**	**52 days**	**Tue 5/5/20**	**Wed 7/15/20**
15	Prepare 50% Specifications	15 days	Tue 5/5/20	Mon 5/25/20
16	PWD Review	10 days	Tue 5/26/20	Mon 6/8/20
17	Prepare 70% Specifications	10 days	Tue 6/9/20	Mon 6/22/20
18	PWD Review	5 days	Tue 6/23/20	Mon 6/29/20
19	Prepare 90% Specifications	5 days	Tue 6/30/20	Mon 7/6/20
20	PWD Review	5 days	Tue 7/7/20	Mon 7/13/20
21	Prepare Final Specifications	2 days	Tue 7/14/20	Wed 7/15/20
22	**Task 5 - Bid Support Services**	**126 days**	**Thu 7/23/20**	**Thu 1/14/21**
23	Assemble Technical Specifications	15 days	Thu 7/23/20	Wed 8/12/20
24	Pre-Bid Meeting	1 day	Thu 8/13/20	Thu 8/13/20
25	Bid Period	20 days	Fri 8/14/20	Thu 9/10/20
26	Technical Support (T&M)	90 days	Fri 9/11/20	Thu 1/14/21
27	**Task 6 - Baseline Testing (Optional)**	**5 days**	**Tue 5/5/20**	**Mon 5/11/20**



10-Jan-19 Page 1 KYLE Groundwater

SECTION VI. FEE PROPOSAL & RATE SCHEDULE

We pride ourselves on providing innovative hydrogeological and engineering solutions to our clients and are confident we can provide PWD with a successful well rehabilitation prioritization project that will result in a valuable planning document for years to come. Our cost proposal is inclusive of all anticipated costs, includes a work plan with a breakdown of labor by project task, and is included on the following page. The following rate schedule serves as the basis for our cost proposal.

Labor Classification	Hourly Rate
Technical Advisor / QA/QC	$190
Principal Hydrogeologist	$165
Principal Engineer	$165
Project Hydrogeologist	$135
Staff Hydrogeologist	$125
Project Engineer	$120
GIS Technician	$115
Field Inspector	$105
Clerical	$75

Non-Labor Charges:

Mileage = $0.575 per mile (i.e., the allowable IRS rate)

Field visit (day) = $30

Field visit (overnight) = $120

Transducer rental = $25 per day

Rates subject to change effective January 1, 2021.

PALMDALE WATER DISTRICT

Cost Proposal to Provide Professional Consulting Services to Develop a Well Rehabilitation Prioritization Program

		Principal Hydrogeologist	Project Hydrogeologist	Staff Hydrogeologist	GIS Technician	Field Inspector	Clerical	Technical Advisor	Principal Engineer	Project Engineer	Labor	Direct Costs	Total Cost
	Hourly Rate:	$165	$135	$125	$115	$105	$75	$190	$165	$120			
1.0	**PROJECT MANAGEMENT AND QUALITY CONTROL**												
1.1	Prepare for and attend project kick-off meeting and up to nine (9) progress meetings.	40	20					12	12		$ 13,560	$ 1,220	$ 14,780
1.2	Provide for project management, including monthly progress reports and QA/QC.	24	24	12				12			$ 10,980	$ -	$ 10,980
2.0	**DATA ACQUISITION AND ANALYSIS**												
2.1	Acquire and review available well and pump data, interview operations personnel, prepare well histories for 23 wells.	24	40	40	24			8	16	16	$ 23,200	$ 122	$ 23,322
3.0	**WELL REHABILITATION PRIORITIZATION PLAN**												
3.1	Prepare well rehabilitation prioritization plan (assumes 50%, 70%, 90% Draft and 100% Final).	40	40	60	24		8	12	16	16	$ 29,700	$ 400	$ 30,100
3.2	Prepare for and conduct three (3) workshops at PWD for each draft report.	18		9					8		$ 5,415	$ 366	$ 5,781
4.0	**WELL REHABILITATION TECHNICAL SPECIFICATIONS**												
4.1	Prepare well rehabilitation specifications (assumes 50%, 70%, 90% Draft and 100% Final).	40	60	80	16		8				$ 27,140	$ 400	$ 27,540
4.2	Prepare for and conduct three (3) workshops at PWD for each draft specification.	18		9							$ 4,095	$ 366	$ 4,461
5.0	**BID SUPPORT SERVICES**												
5.1	Assemble technical specifications for rehabilitation of three (3) wells.	20	24	24	12		4				$ 11,220	$ 200	$ 11,420
5.2	Provide assistance during bidding, including attendance at pre-bid meeting, response to RFIs and RFCs, preparation of addenda, and recommendations of award.	12	16								$ 4,140	$ 122	$ 4,262
	TOTAL HOURS AND COST (NON-OPTIONAL):	***236***	***224***	***234***	***76***		***20***	***44***	***52***	***32***	***$ 129,450***	***$ 3,196***	***$ 132,646***
6.0	**BASELINE TESTING SERVICES (OPTIONAL)**												
6.1	Conduct baseline well and pump efficiency testing and analysis, and prepare brief letter report.	12		16		24					$ 6,500	$ 846	$ 7,346
	TOTAL COST (OPTIONAL):	***12***		***16***		***24***					***$ 6,500***	***$ 846***	***$ 7,346***
	TOTAL HOURS AND COST:	***248***	***224***	***250***	***76***	***24***	***20***	***44***	***52***	***32***	***$ 135,950***	***$ 4,042***	***$ 139,992***

KYLE Groundwater, Inc.

DRP Engineering, Inc.

ATTACHMENT A

Resumes

KYLE Groundwater

RUSSELL KYLE, PG, CHG

TITLE
Principal Hydrogeologist

REGISTRATIONS/ CERTIFICATIONS
Registered Professional Geologist, California No. 7648

Certified Hydrogeologist, California No. 822

EDUCATION
MS, Environmental Hydrogeology, California State University – Los Angeles, 2006

BS, Geology, California Polytechnic University – Pomona, 1996

PROFESSIONAL AFFILIATIONS
American Water Works Association – Chair of CA/NV Water Well Technology Committee

Voting Member of the American Water Works Association National Well Standards Committee

Mr. Kyle has 20 years of experience with a wide variety of groundwater resource related projects for public and private clients within the western United States, Mexico, and Africa, with a focus on groundwater resources development in Southern California. The scope of his technical experience includes groundwater basin evaluations, water supply studies, well siting investigations, artificial recharge feasibility evaluations, well field condition assessments, well rehabilitation, desalination feedwater supply studies, and geophysical surveys. Over the course of his career he has been responsible for installation of more than 145 water supply wells and 70 monitoring wells and exploratory borings, including management of a team of field inspectors, coordination with drilling contractors and regulatory agencies, well design, and construction management. Recent notable projects include installation of a potable water supply wells for California Water Service Company, Golden State Water Company, and Long Beach Water Department, and development of well rehabilitation, replacement, prioritization plans for the Long Beach Water Department, California Water Service Company, and City of Riverside. He is also active within the water resources community and is currently serving as Chair to the AWWA CA-NV Water Well Technology Committee, and as a voting member of the AWWA National Well Standards Committee.

SELECTED EXPERIENCE

Development of a Well Rehabilitation Master Plan – Long Beach Water Department – Long Beach, California. Mr. Kyle served as project manager and technical lead during development of a regional-scale well rehabilitation master plan which included condition assessment and prioritization ranking LBWD's production well field, consisting of 31 active wells. This project identified those wells that were most likely to respond favorably to well rehabilitation at the least cost, in addition to identifying production wells that were at the end of their useful life and in need of replacement. This project was integral to a subsequent regional-scale well siting study and identification of well sites needed for **replacement wells**

Development of a Rehabilitation and Monitoring Program – Riverside Public Utilities - City of Riverside, California. Mr. Kyle provided project management and technical support for development of a rehabilitation program for the City of Riverside Public Utilities well field, consisting of 55 actively pumping wells. This project involved a thorough evaluation and ranking of each well as to rehabilitation feasibility and estimated remaining well life. An additional component of the project was an evaluation of the City's current monitoring network and protocols, and development of a ground water monitoring program.

Rehabilitation of Citizens Well 9 and Wilson Well 1A – Long Beach Water Department – Long Beach, California. Mr. Kyle is serving as project manager to provide construction management, inspection, and engineering services during rehabilitation of two municipal water supply wells. The project includes physical and chemical cleaning of each well, redevelopment and testing, and retrofitting of the well pump, motor, and electrical.

Rehabilitation of Citizens Well 7A and Commission Well 20 – Long Beach Water Department – Long Beach, California. Mr. Kyle served as project manager provide construction management, inspection, and engineering services during rehabilitation of

two municipal water supply wells. The project included physical and chemical cleaning of each well, redevelopment and testing, and retrofitting of the well pump, motor, and electrical. Rehabilitation of Well 20 was successful despite significant structural issues with the aging and corroded well casing and screen, and resulted in greater performance than when the well was constructed.

Well Assessments – City of Riverside Public Utilities (RPU) – Riverside, California. Mr. Kyle performed well condition assessments and developed well rehabilitation recommendations for three (3) production wells for RPU (Van Buren 1 and 2, and the Stiles well). The well condition assessments included review of historical data, including multiple downhole video surveys, static and pumping groundwater levels, instantaneous pumping rates, specific capacity, and sand production. The data were analyzed to effectively evaluate the current condition of the three wells and develop programs for rehabilitation and redevelopment.

Wells W and Z – Indio Water Authority – Indio, California. Mr. Kyle an evaluation of Wells W and Z with the goal of assessing the feasibility of reducing hexavalent chromium concentrations below the California MCL through well modification rather than application of expensive water quality treatment. The work involved time-series, variable-flow, and depth-specific water quality and flow profile testing. Results suggested that well modification may result in a positive outcome which led to follow-on verification testing through use of inflatable pneumatic packers. This testing also indicated that favorable results could be achieved but further work was placed on hold due to revocation of the MCL.

Wells 3B and U – Indio Water Authority – Indio, California. Wells U and 3B had been out of service and idle for several years due to elevated hexavalent chromium. IWA decided to put the wells back in service when the 10 ug/L MCL was rescinded and Mr. Kyle was tasked with evaluating the wells and preparing a recommended course of action and associated work plan to rehabilitate and redevelop the wells. A plan for evaluating depth-specific water quality was also developed as it is the desire of IWA to evaluate the wells as to feasibility of improving water quality by well modification should the hexavalent chromium MCL be reinstated. Both wells have been successfully rehabilitated.

Well No. 9 Efficiency Testing – City of Torrance – Torrance, California. Mr. Kyle conducted well and pumping plant efficiency testing on a well which was exhibiting a decline in production capacity. Results of the testing revealed the pumping plant to be operating efficiently but a low well efficiency, likely due to clogging of the well intake structure, gravel envelope, and near-well zone. Recommendations were provided regarding an appropriate course of action.

Plant 409 Well 3 Rehabilitation and Redevelopment – Suburban Water Systems – La Mirada, California. Mr. Kyle provided groundwater expertise to evaluate historical well data and develop a plan for rigorous well rehabilitation and redevelopment of an important water source in La Mirada, California. Results of the evaluation revealed that the efficiency of the pumping plant had declined significantly, likely due to clogging of the gravel envelope and near-well zone due to bacterial growth, poor design, and continuous operation of the well under high-drawdown conditions. Recommendations were provided regarding an appropriate course of action. A full rehabilitation and

redevelopment program was developed, including mechanical and chemical cleaning, redevelopment, and testing. Well rehabilitation resulted in an increase in instantaneous pumping rate and well efficiency.

Well No. 9 Rehabilitation and Redevelopment – City of Torrance – Torrance, California. Mr. Kyle conducted well and pumping plant efficiency testing on a well which was exhibiting a decline in production capacity. Results of the testing revealed an efficiently operating pump but very low well efficiency, likely due to clogging of the well intake structure, gravel envelope, and near-well zone. A full rehabilitation and redevelopment program was developed, including mechanical and chemical cleaning, redevelopment, testing, and pump refurbishment, and is currently underway at the direction of Mr. Kyle. Well rehabilitation resulted in a doubling of well efficiency from 31% to 69% and a 33% increase in specific capacity.

Santa Maria Mira Flores Well No. 2 – Golden State Water Company – Santa Maria, California. Mr. Kyle performed a detailed assessment of a water supply well that developed several holes within the blank well casing adjacent to a coarse-grained aquifer. The purpose of the evaluation was to assess possible water quality changes in the well due to the casing holes, and to develop a cost effective plan for a long-lasting repair. The evaluation includes a review of well construction details, performance characteristics, hydrogeological conditions, historical groundwater quality, downhole video surveys, and CITM surveys. Ultimately, the recommendation was to leave the well in its current condition as the risk of damage through the repair process was too great.

Los Osos Rosina Well No. 1 – Golden State Water Company – Los Osos, California. Mr. Kyle conducted a detailed assessment of a water supply well that has suffered from a sharp decline in specific capacity. The assessment includes an evaluation of well condition, historical performance data, water quality, and well and pump efficiency testing. The purpose of the assessment is to develop a well rehabilitation and redevelopment scope of work suitable for obtaining contractor cost estimates.

Lancaster Wells 1-01 and 1-03 Condition Assessment – California Water Service Company – Lancaster, California. Mr. Kyle performed a condition assessment for two water supply wells with the goal of developing a tailored well rehabilitation and retrofit program. The evaluation includes a review of well construction details, performance characteristics, hydrogeological conditions, and well and pumping plant efficiency testing.

Downey Wells 2, 8, 11, 17, 18, and 29 Condition Assessment – City of Downey – Downey, California. Mr. Kyle performed condition assessments for three water supply wells and developed tailored well rehabilitation and retrofit programs. The evaluation included a review of well construction details, video surveys, performance characteristics, hydrogeological conditions, and well and pumping plant efficiency testing. Well rehabilitation consisted of mechanical and chemical cleaning followed by redevelopment and testing, for which field inspection was provided for three (3) of the wells. In particular, Well 11 responded well and demonstrated a significant increase in plant efficiency and an estimated annual electrical savings of $69,000 per year.

Rehabilitation and Redevelopment of Dominguez Well 294-01 – Carson, California. Mr. Kyle served as technical lead, providing project management and support

during rehabilitation and redevelopment of a well that was to provide raw water to an onsite treatment plant. The well had sat idle for many years due to groundwater contamination and had lost significant production capacity. This time-critical project involved evaluation and development of a rehabilitation program, acquisition of contractor bids, coordination of schedule, and inspection during rehabilitation of the well. Ultimately the well was returned to a production capacity in excess of the original capacity, on-time, and within budget.

Municipal Well Water Quality Evaluation – City of Santa Fe Springs, California. Mr. Kyle provided technical support to the City to evaluate a recently equipped municipal water supply well which was exhibiting changes in groundwater quality from when it was initially constructed. A program of field testing suggested passive vertical groundwater flow between aquifers and possible issues with sampling protocols.

Rehabilitation and Redevelopment of Rialto Well 6 – West Valley Water District - Rialto, California. Provided project management, technical support, contractor coordination, and inspection services during evaluation, rehabilitation and redevelopment of a well contaminated with perchlorate. The purpose of the rehabilitation was to reduce problematic entrained sand to minimal levels such that the well could be provide a sediment-free source of feedwater to a fluidized bed reactor treatment plant. This project was challenging due to its time-critical nature and the need for water treatment prior to discharge.

Evaluation of Potential Impacts to Nearby Water Wells from Operation of Well Nos. 21 and 22 – Irvine Ranch Water District – Orange County, California. Irvine Ranch Water District (IRWD) Well Nos. 21 and 22, located in the City of Tustin, were constructed in 1992 but due to the prohibitive cost of treatment for elevated concentrations of total dissolved solids and nitrate, the wells were never equipped or utilized. As a result of increased growth in southern California since the time of drilling, and because of the need to increase its local water supply, IRWD decided to evaluate the production capability and water quality characteristics of the wells in order to assess the cost effectiveness of placing the wells into service. Rehabilitation and redevelopment of the wells took place from 2008 to 2009 and it was determined that the groundwater produced was unsuitable for potable use without treatment, resulting in construction of groundwater production, conveyance, and treatment facilities such that the impaired groundwater could be put to beneficial use. As a result of putting the wells into service, IRWD would be pumping above their allocated baseline pumping for the Orange County Basin and would potentially impact the production capacity and cost of production for nearby water purveyors. Mr. Kyle was tasked with identifying and quantifying these potential impacts from operation of the wells. This study included a validation and evaluation of existing OCWD groundwater flow model results, coordination with IRWD, OCWD, and impacted water purveyors, acquisition and review of data, interviewing of water operations staff, review and evaluation of current operating conditions for impacted wells, and analysis and determination of physical and financial impacts under numerous operational scenarios.

Curt Roth, PE | Project Manager

EDUCATION

MS, Environmental Engineering, University of California Berkeley

BS, Civil Engineering, Loyola Marymount University

REGISTRATION

PE Civil, CA, No. C61087

YEARS EXPERIENCE

20 years

BENEFIT TO CLIENT

- ✓ Engineering expertise in conveyance pipelines
- ✓ Specialized expertise in designing, constructing and operating Pilot treatment facilities
- ✓ Experience interfacing between multiple agencies
- ✓ Extensive knowledge and familiarity with stormwater treatment

AVAILABILITY

Curt will be available upon award of contract

Curt specializes in environmental and civil engineering. He is experienced in water, storm water, recycled water and wastewater conveyance as well as all aspects of water and storm water treatment. Mr. Roth adds tremendous experience designing, constructing and operating new and innovative systems for the treatment of water.

Long Beach Water Department (LBWD) - On-Call Engineering Design Services for Water Main Replacement Program Curt is the Project Manager providing as needed engineering design services for the replacement of water mains as part of the LBWD Capital Improvement Program. Curt provides general project management, technical review of designs, and coordination with the LBWD staff.

Golden State Water Company - Capital Improvement Program Region 2 and 3 Curt acted as the Project Manager for various pipeline replacement projects within the Capital Improvement Program (CIP), including approximately 20,000 linear feet of 12-inch, 8-inch, and 6-inch water main located throughout the Client's water system in Southern California. Involvement included the design of fifty water main replacement projects, four backwash drain lines, four wellhead designs, and two well treatment systems within a period of 12 months. Also provided a technical support role on several other facility upgrade designs and planning studies.

Long Beach Water Department - S-18 Sewer Lift Station Rehabilitation Upgrade DRP provided project management, field assessment and engineering/CAD design support services for S-18 Sewer Lift Station rehabilitation project (1-3 MGD).

City of Los Angeles, Bureau of Sanitation - Integrated Resources Plan for the City of Los Angeles Curt was the wastewater treatment task lead for the facility plan portion of the Integrated Resources Plan.

Los Angeles Department of Water and Power - Onsite Recycled Water Retrofit Program Curt was the Project Engineer for multiple recycled water retrofit design projects within the overall LADWP program. Curt's responsibilities included site evaluation, assisting with system shut downs, producing drawings for submission to Department of Public Health, and technical assistance and coordination for client meetings.

Metropolitan Water Districts of Southern California (MWD) - Distribution System Infrastructure Protection Program for Western San Bernardino County Region Curt was the lead Project Engineer (subcontractor to prime consultant) for the completion of the Preliminary Design Report for DSIPP for Western San Bernardino County. Curt provided technical review of site conditions; provided recommendations of solutions; assisted with the development of project costs; assisted with the hydraulic analysis of site runoff and stream flows and assisted with drawing and report development.

Los Angeles Department of Public Works, Watershed Management Division - Sun Valley Park Project Lead design engineer for Sun Valley Park Project which consisted of the design of an underground stormwater infiltration basin, small storm drain collection system, collection inlets, monitoring system, and several structural BMPs (swirl concentrators and media filters) for the removal of solids, trash, oil, and certain other constituents of concern, including heavy metals.

Los Angeles County Department of Public Works, Watershed Management Division - Dominguez Gap and DeForest Park Wetlands Project Lead design engineer and project manager for Dominguez Gap and DeForest Park Wetlands for the LACDPW Watershed Management Division and the City of Long Beach, Parks Department.

EDUCATION
M.S. Civil Engineering, California State University, Long Beach

BS, Civil Engineering, Loyola Marymount University

REGISTRATION
PE Civil, CA, No. C39711

Water Treatment Operator T4, CA No. 1689

Water Distribution Operator D5, CA No. 22071

US PATENT
Sewer Pipe Inspection and Diagnostic System and Method (No. 504352644)

YEARS EXPERIENCE
36 years

BENEFIT TO CLIENT

- ✓ Extensive knowledge and familiarity with implementing and managing Capital Improvement Programs
- ✓ Specialized expertise in designing, constructing, operating, and managing water related facilities and infrastructure
- ✓ Engineering expertise in conveyance pipelines

Eric Leung, PE | Vice-President, Director of Engineering

With more than 35 years of experience in the water and wastewater industry, Mr. Eric Leung serves as the Director of Engineering at DRP. He oversees company-wide operations and manages the internal departments that support DRP's project teams. He is a proven leader, recognized for his innovative thinking and wealth of expertise in the water/wastewater industry, a key factor in his ability to improve business processes and enhance productivity. Prior to retiring as Deputy General Manager/Chief Engineer of Long Beach Water Department, Mr. Leung spent 20 years managing large-scale assignments, providing him the characteristics that have contributed to his success.

Mr. Leung focuses on streamlining efficiencies and optimizing client satisfaction. He has developed excellent client relationships and built a strong track record of success. He has worked hand-in-hand with both public and private owners and has extensive knowledge of the project life cycle.

Long Beach Water Department (LBWD) - Deputy General Manager / Chief Engineer

Mr. Leung had a variety of responsibilities, including planning, directing, managing, and supervising the programs and activities of the Department's Engineering Bureau. He also developed and implemented objectives, strategic plans, and programs for the Department's water, reclaimed water, and sanitary sewer systems, including the Capital Improvement Program (CIP), Business Development, GIS/automated mapping, and construction services.

Key Responsibilities Included:

- Oversaw over 200 miles of water pipeline improvements with various sizes and pipe materials.
- Overseeing annual budget of $15 million and capital improvement projects for water, sewer, and recycled water projects
- Developed and implemented first of its kind 0.5 MGD Prototype Seawater Desalination Testing Facility. This program consisted of the design/build of a prototype facility to test a new and innovative two pass two-stage nanofiltration process for seawater desalination. In addition, this program included a sub-surface intake and discharge system , and Ultraviolet Light and Chlorine Dioxide Seawater Pretreatment Systems for Biogrowth Control and Pathogen Inactivation.
- Developed Project Portfolio Management (PPM) program to track CIP project schedules and financials.

- Oversaw preparation and update of Water and Sewer Master Plans
- Developed smart phone apps to track City-wide engineering and construction projects, as well as standard engineering calculations for field uses
- Developed and implemented Los Angeles River Pilot Treatment System Program. This program consisted of designing and constructing a small pilot treatment plant to investigate the opportunity of treating the low flow of the Los Angeles River for use in augmenting the Long Beach water supplies. The pilot system is located at the Dominguez Gap Wetlands site, which has an existing river connection.
- Oversaw rehabilitation and replacement of city-wide existing sanitary sewer pipeline program. Rehabilitation methods included trenchless repairs for full or sectional pipe lengths using cured-in-place pipe (CIPP), UV CIPP, carbon fiber reinforced polymer (FRP), glass FRP, top hats, and other alternative methods.
- Oversaw rehabilitation of system-wide existing sanitary sewer lift station program. Lift Station (ranging from 0.5 to 5 MGD) Rehabilitation Program consisted of field assessment of existing odor control units, Corrosion of Electrical Gear caused by H2S, VFDs & pump clogging, condition of wet well (concrete degradation and lining) and dry wet., FOG and groundwater intrusion. Design and construction design included replacing/upgrading the odor control unit, wet well rehab, installation of new lining to the wet well and electrical gear.
- Oversaw preparation of Sewer System Management Plans (SSMP) for City of Long Beach which included over 700 miles of sanitary sewer and 28 sewer lift stations.

City of Anaheim- Project Manager

Mr. Leung had a variety of responsibilities, including planning, directing, managing, and supervising the projects and activities of the City of Anaheim's Public Utilities Water Services Department.

Key Responsibilities Included:

- Project manager for major enhancements to the Lenain Filtration Plant. Incorporated full treatment capabilities, including ozone disinfection technology
- Project manager for major new infrastructure, including 10MG partially buried water tank, pump stations, disinfection and transmission pipelines in East Anaheim Hills area

Saik-Choon Poh, PE | Project Manager

EDUCATION
M.Eng. Environmental and Water Quality Engineering, Massachusetts Institute of Technology

BS, Civil Engineering, Loyola Marymount University

REGISTRATION
PE Civil, CA, No. C69223

YEARS EXPERIENCE
15 years

CERTIFICATION
National Association of Sewer Service Companies (NASSCO) - PACP, MACP, LACP

BENEFIT TO CLIENT
- ✓ Extensive knowledge and familiarity with sewer pipeline construction and rehabilitation
- ✓ Experience interfacing between multiple agencies
- ✓ Engineering expertise in sewer rehabilitation

Saik-Choon Poh specializes in environmental and civil engineering. He is experienced in water, stormwater, and wastewater conveyance and treatment facilities. As a key member of project teams, he has been responsible for directing work and coordinating closely with clients, subcontractors, contractors, and staff in multiple offices.

Long Beach Water Department (LBWD) - S-1 Sewer Lift Station Rehabilitation Upgrade Project Manager for field assessment, engineering design, and construction management for this lift station rehabilitation project (2-3 MGD) consisting the field assessment of the existing odor control units, corrosion of electrical gear caused by H2S, VFDs & pump clogging and condition of Wet well (concrete degradation and lining) and Dry well. The engineering design included replacing/upgrading the odor control unit, wet well rehab, installation of new lining to the wet well and electrical gear.

Long Beach Water Department (LBWD) - S-12 Sewer Lift Station Rehabilitation Upgrade Project Manager for field assessment, engineering design, and construction management for this lift station rehabilitation project (3-5 MGD) consisting the replacement of the existing odor control units, Corrosion of Electrical Gear caused by H2S, VFDs & pump clogging, rehabilitation of Wet well (concrete repair and lining) and repair existing dry wet, and new FOG system.

Long Beach Water Department - S-18 Sewer Lift Station Rehabilitation Upgrade DRP provided project management, field assessment and engineering/CAD design support services for S-18 Sewer Lift Station rehabilitation project (1-3 MGD).

Long Beach Water Department - North Long Beach Sewer Improvement Project Phase 1 and Phase 2 Project Manager/ Resident Engineer for the design and construction management services for the rehabilitation of approximately 19,600 linear of existing sewer lines.

Long Beach Water Department (LBWD) - Orange Avenue/Del Amo Blvd/ Walnut Ave Street Sewer Upgrade Resident Engineer for the project which consisted of approximately 1,019 LF of 12-inch sewer to be upsized to a 15-inch sewer along Walnut Avenue between Market Street and Jackson Street (located in a built-out, high-density residential/commercial area) the installation of a 10-inch double barrel HDPE siphon with steel casings, and the rehabilitation of nine (9) brick manholes.

Long Beach Water Department (LBWD) - Orange Avenue/7th Street Sewer Upgrade Deputy Project Manager/Resident Engineer for the design and performed construction management services for the construction of approximately 1,300 linear feet of 12- inch Extra Strength VCP within 7th Street and 1,775 linear feet of 30-inch Extra Strength VCP within Orange Avenue.

Long Beach Water Department (LBWD) - Prototype Seawater Desalination Testing Facility Construction Project Resident Engineer for the construction of a prototype facility to test an innovative two-pass, two-stage nanofiltration process for seawater desalination. In addition, this project included the installation of approximately 2,000 feet of influent and effluent piping. Responsibilities included submittal review; coordination with the contractor, designer, and local agencies; review of change order requests; providing responses to requests for information (RFIs); inspecting the construction site; and coordination with the client.

Golden State Water Company - Pipeline Replacement Projects, Southern California Mr. Poh acted as the Project Engineer for various pipeline replacement projects within the Capital Improvement Program (CIP), including approximately 20,000 linear feet of water main located throughout the Client's water system. Responsibilities included supervision of a team of engineers and designers to prepare design drawings; conducting utility research and field verifying locations; and performing hydraulic analysis of water systems.

KIMBERLY MAKAR, GIT

PROJECT ROLE
Field Inspection/
Project Support

REGISTRATIONS/ CERTIFICATIONS
Geologist-in-Training, California No. 863

EDUCATION
Bachelor of Science, Geosciences, University of Arizona, 2011

Ms. Makar is a geologist with seven years of experience in the water resource and mining industries. She began her career as a manager of the dewatering program at an open-pit copper mine in Nevada, for which she was responsible for developing and executing multi-million-dollar groundwater dewatering programs. Since 2014 she has been providing professional consulting services to the water resources industry in Southern California with an emphasis on new well installation and well rehabilitation.

SELECTED EXPERIENCE

Rehabilitation of Citizens Well 9 and Wilson Well 1A – Long Beach Water Department – Long Beach, California. Ms. Makar is serving as lead inspector during rehabilitation of two municipal water supply wells. The project includes physical and chemical cleaning of each well, redevelopment and testing, and retrofitting of the well pump, motor, and electrical.

Rehabilitation of Wells 3B and U – Indio Water Authority – Indio, California. Ms. Makar assisted in the preparation of two work plans to rehabilitate and redevelop Wells 3B and U. In addition to the work plans, a depth-specific water quality plan was prepared for IWA, should they decide to modify the wells if the hexavalent chromium MCL is reduced. Ms. Makar provided field inspection for Well U during chemical mixing and injection, swab and airlift development, pump development, aquifer testing, depth specific water quality sampling, and disinfection.

Monitoring Network Evaluation – City of Riverside, California. Ms. Makar inventoried more than 200 monitoring points, including monitoring wells and inactive production wells, literature review, identified groundwater production well fields by management zone, and recommended additional monitoring wells based on seasonal groundwater piezometric contours and xyz position in multiple groundwater models.

Rehabilitation of Commission Well 20 – Long Beach Water Department – Long Beach, California. Ms. Makar provided field inspection during rehabilitation of Commission Well 20. This included inspection during pump removal, brushing, bailing, downhole video surveys, installation of a liner, development utilizing pumping and surging, and step-drawdown aquifer test.

Rehabilitation of Plant 409 Well 3 – Suburban Water Systems – La Mirada, California. Ms. Makar provided field inspection during rehabilitation of Plant 409 Well 3. This included inspection during mixing, injection, and swabbing of chemical, neutralization and discharging of chemical, initial development using swab and airlift, final development utilizing pumping and surging, step-drawdown aquifer test, constant rate test, and final disinfection.

Rehabilitation of Well No. 11 – City of Downey – Downey, California. Ms. Makar provided field inspection during rehabilitation including during brushing, bailing, development using swabbing and airlifting, development utilizing pumping and surging, and aquifer testing.

Rehabilitation of Well No. 17 – City of Downey – Downey, California. Ms. Makar provided field inspection during rehabilitation including inspection during brushing and bailing.

Rehabilitation of Well No. 8 – City of Downey – Downey, California. Ms. Makar provided field inspection during rehabilitation including inspection during brushing, bailing, downhole video survey, development utilizing pumping and surging, step-drawdown aquifer test, and constant rate test.

Siting of a New Municipal Water Supply Well in Whittier Narrows Area – Puente Basin Water Agency – Whittier, California. Puente Basin Water Agency owns groundwater pumping rights within the Central Basin and is seeking to construct one or more wells in the Whittier area. The goal is to produce potable groundwater from the Central Basin and convey it to the Puente Subbasin through an existing California Domestic Water Company transmission pipeline. Several potential sites have been identified as candidates for the new well and Mr. Makar provided technical hydrogeological support during site evaluation and assisted with report development.

Central Basin Well Siting Study – Puente Basin Water Agency – Los Angeles County. Ms. Makar assisted in a well siting study in the Montebello, Pico Rivera, Whittier area. She researched and plotted groundwater elevations and groundwater quality of six constituents. She produced figures consisting of known contaminant plumes, sites of environmental concern, existing wells, and active and inactive oil pipelines. She assisted in the analysis of the data, ranking of eight potential well sites, and recommendations for the top two sites.

Well Siting Study – Nuevo Water Company – Nuevo, California. Ms. Makar provided project coordination and analyzed all available data including groundwater elevations and groundwater quality. She produced contour maps of TDS and nitrate concentrations which were used in determining a site for a new well. She provided field reconnaissance and recommended privately owned wells for additional sampling.

Replacement Well Commission 22A – Long Beach Water Department – Long Beach, California. Ms. Makar assisted in the preparation of the preliminary design report for the destruction of one existing production well and the construction of a replacement well. She was the lead on permitting matters, including coordinating various agencies to ensure full compliance with all permitting and environmental requirements, and assisted with the production of a bid package, including technical specifications.

Gibbel Park Monitoring Well – City of Hemet – Hemet, California. Ms. Makar assisted in field inspection for a new, multi-completion monitoring well in Gibbel Park for the City of Hemet. The well has been constructed using schedule 80 PVC, with a shallow, middle, and deep completion. This project is currently ongoing.

Megan Trott, PE | Project Engineer

EDUCATION

MBA, Finance, Loyola Marymount University

BS, Civil Engineering, Loyola Marymount University

REGISTRATION

PE Civil, CA, No. C90723

YEARS EXPERIENCE

5 years

BENEFIT TO CLIENT

- ✓ Engineering expertise in conveyance pipelines
- ✓ Engineering expertise in sewer pipeline construction and rehabilitation
- ✓ Experience interfacing between multiple agencies

Long Beach Water Department (LBWD) – Alley Main Conversion, Daisy Avenue, Long Beach, CA Megan was the staff engineer for the relocation of approximately 3,900 linear feet of 6- and 8-inch piping to be replaced and/or removed from the alleyways and relocated into the streets. The project included relocating the connections to the existing water services, meters, fire hydrants, and valves from the existing mainlines to the proposed mainlines; installation of various ductile iron pipes and connections to water mains on lateral streets; installation of various valves, service laterals, and fire hydrants; reconnecting existing service lines and fire hydrants to the new water lines; abandoning existing water mains and service laterals; and designing and locating new on-site private customer service laterals for customers that required a meter relocation. Megan also coordinated with residents to secure Consent of Entry release forms for every property in the project scope.

Long Beach Water Department (LBWD) - On-Call Engineering Design Services for Water Main Replacement Program, Long Beach, CA Provides as needed engineering design services for the replacement of water mains as part of the LBWD Capital Improvement Program. Project tasks include utility research, base map creation, field investigations, determination of recommended alignments, completion of construction plans, and preparation of asbuilt drawings.

Long Beach Water Department (LBWD) - S-1 Sewer Lift Station Rehabilitation Upgrade, Long Beach, CA Project Engineer for construction management for this lift station rehabilitation project. DRP provided CAD and engineering design support (subconsultant to prime) and construction management services (prime) for the lift station rehabilitation project (2-3 MGD) consisting the field assessment of the existing odor control units, corrosion of electrical gear caused by H2S, VFDs & pump clogging and condition of Wet well (concrete degradation and lining) and Dry well. The engineering design included replacing/upgrading the odor control unit, wet well rehab, installation of new lining to the wet well and electrical gear.

Long Beach Water Department - S-18 Sewer Lift Station Rehabilitation Upgrade, Long Beach, CA DRP provided project management, field assessment, engineering/ CAD design support services, and construction management for S-18 Sewer Lift Station rehabilitation project (1-3 MGD).

San Bernardino Municipal Water Department, Highland Avenue and Cedar Street Sewer Pipeline and Manhole Rehabilitation, San Bernardino, CA DRP is serving as the Lead Civil Engineer/Designer for the rehabilitation of a manhole and the surrounding 10-inch sewer pipeline that have settled in an area of pipe with a shallow slope. The pipeline and manhole need tobe rehabilitated and potentially replaced to eliminate the current backup and to improve the capacity of the collection system. This project consists of the evaluation of options for the replacement or rehabilitation of these facilities, determining the exact method of rehabilitation, preliminary and final design, preparing Contract Documents, bid support, and engineering design services during construction.

Upper San Gabriel Valley MWD (Upper District) – Large Landscape Survey and Retrofit (LLSR) Program Assisted with the LLSR conservation program as part of staff extension for Upper District. The goal of the program is to help owners of large landscape irrigation systems conserve water and is an extension of the MWD BeWaterWise rebate program. For a given site, one of the Upper District's consultants will complete an irrigation survey that provides equipment upgrade recommendations and estimates of water savings. Once approved by Upper District and the site owners, the consultants then will complete the recommended upgrades (heads, controllers, leak repairs, etc.) at no cost to the owner. Responsibilities included identifying sites and scheduling work; tracking retrofit performance; and promoting irrigation conservation.

Raymond Tan | Staff Engineer

EDUCATION
California State University, Long Beach
Long Beach, CA

Registration
Engineer-in-Training, #166431

YEARS EXPERIENCE
2 years

BENEFIT TO CLIENT

- ✓ Proficient in AutoCAD , Microstation 2D & 3D , WaterGEMS and ArcGIS
- ✓ Skilled in Microsoft Excel, PowerPoint, and Word
- ✓ Extremely detailed and organized team player

Suburban Water Systems - Various Pipeline Replacement Projects in Whittier-La Mirada and San Jose Hills District for 2020, Raymond is the Project Engineer for this project, which includes designing approximately 31,100 linear feet of new PVC piping to replace a range of 4- to 10-inch diameter AC and plastic pipe with 6- and 8-inch PVC piping for four separate water main replacement projects on an expedited schedule approximately one month per project. The DRP team performed utility research, base map creation, plotting of utility information on base map, field investigations, determinations and recommendations for new water main alignment location driven by utility separation requirements, system operations considerations/hydraulics, current fire department compliance codes, and plan sheet development.

Suburban Water Systems - Various Pipeline Replacement Projects in Whittier-La Mirada and San Jose Hills District for 2019, Raymond is the Project Engineer for this project, which includes designing approximately 5,900 linear feet of new piping to replace a range of 4- to 10-inch diameter AC and plastic pipe with 6- and 8-inch PVC piping for four separate water main replacement projects. The DRP team performed utility research, base map creation, plotting of utility information on base map, field investigations, determinations and recommendations for new water main alignment location driven by utility separation requirements, system operations considerations/ hydraulics, current fire department compliance codes, and plan sheet development.

Liberty Utilities – Flatbush & Barnwall 12" Water Main Installation Plan Raymond was the Project Engineer for this project, which consisted of designing approximately 2,400 linear feet of new ductile Iron piping ranging from 4- to 12-inch diameter. New water mains replaced old existing CI pipe that were unable to deliever Liberty Utilities' present and future water demand, and continue customer water service. The project also consisted of replacing water services, valves, and hydrants. The DRP team performed utility research, base map creation, topographic survey, and field investigations. Additionally, DRP made determinations and recommendations for the new water main alignment location driven by utility separation requirements, water pipe installations considerations, system operations considerations/ hydraulics, and current LA County fire department compliance codes.

Liberty Utilities – Shoemaker 12" Water Main Installation Plan Raymond was the Project Engineer for this project, which consisted of designing approximately 1,000 linear feet of new ductile Iron piping ranging from 12-inch diameter. The project also consisted of replacing water services, valves, and hydrants. The DRP team performed utility research, base map creation, topographic survey, and field investigations. Additionally, DRP made determinations and recommendations for the new water main alignment location driven by utility separation requirements, water pipe installations considerations, system operations considerations/ hydraulics, and current LA County fire department compliance codes.

Metropolitan Water District Of Southern California - Preliminary Design Of Prestressed Concrete Cylinder Pipe (PCCP) Rehabilitation Projects DRP is providing assistance to HDR for the completion of MWD's Sepulveda Feeder PCCP Rehabilitation Project, which consists of 42 miles of pipe ranging from 84- to 150-inch diameter and a working pressure up to 360 psi. The project includes preliminary design and the preparation of design reports for the rehabilitation of the four PCCP lines. The rehabilitation work will include relining or replacement of the pipeline, replacement of existing valves, flow meters, and appurtenant structures.

Long Beach Water Department (LBWD) - On-Call Engineering Design Services for Water Main Replacement Program Provides as needed engineering design services for the replacement of water mains as part of the LBWD Capital Improvement Program. Project tasks include utility research, base map creation, field investigations, determination of recommended alignments, completion of construction plans, and preparation of asbuilt drawings.

P A L M D A L E W A T E R D I S T R I C T

B O A R D M E M O R A N D U M

DATE: February 18, 2020 **February 24, 2020**

TO: BOARD OF DIRECTORS **Board Meeting**

FROM: Mr. Scott Rogers, Engineering Manager

VIA: Mr. Adam Ly, Assistant General Manager
Mr. Dennis D. LaMoreaux, General Manager

RE: ***AGENDA ITEM NO. 7.3 – CONSIDERATION AND POSSIBLE ACTION ON APPROVAL OF RESOLUTION NO. 20-4 BEING A RESOLUTION OF THE BOARD OF DIRECTORS OF THE PALMDALE WATER DISTRICT APPROVING AN AMENDMENT TO APPENDIX M – BID PROCUREMENT AND CHANGE ORDER POLICY OF THE PALMDALE WATER DISTRICT'S RULES AND REGULATIONS. (NO BUDGET IMPACT – ENGINEERING/GRANT MANAGER ROGERS/RESOURCE AND FACILITIES COMMITTEE)***

Recommendation:

Staff and the Resource and Facilities Committee recommend that the Board approve Resolution No. 20-4 amending Appendix M – Bid Procurement and Change Order Policy of the Palmdale Water District's Rules and Regulations.

Alternative Options:

Do not amend Appendix M .

Impact of Taking No Action:

Failure to achieve strategic objectives set by the Board.

Background:

The District's Bid Procurement and Change Order Policy (Appendix M) was last updated in 1997 and was originally adopted by the Board in 1990. Based on current Appendix M, the dollar limits were set when construction and material costs were lower. The previous policy set a limit of $3,000 that can be authorized by the General Manager, between $3,000 to $25,000 authorization by the appropriate Board Committee, and over $25,000 by competitive bid and authorization by the Board of Directors.

An analysis performed by District staff, utilizing the Construction Cost Index for years 1990 and 2019, had indexes of 5994.55 and 12034.19, respectively. By dividing the index for 2019 by 1990, staff developed the percentage increase or ratio of 2.0075. The ratio of two was used to update the

value limits to $6,000, $6,000 to $50,000, and over $50,000. The ratio provides means to bring these values more inline with the worth of the dollar today.

Additionally, the policy lacked the necessary language for incorporating current web-based bidding services that can provide the District more competition, which will equate to tighter bid spreads and savings to the District. The ability for staff to utilize web-based bidding will increase staff efficiency and allow staff to provide quicker answers to bidders' questions and issue addendums. Additionally, by adding the electronic web-based bidding, it will allow the District to save money from advertising public bids, which has cost the District a little over $15,000. The District will be able to shorten the bid descriptions and provide a web link to further information. Web-based bidding is the current practice for other water districts.

Strategic Plan Initiative/Mission Statement:

This item is under Strategic Initiative No. 2 – Operational Excellence and No. 3 – Systems Efficiency.

This item directly relates to the District's Mission Statement.

Budget:

There are no budget impacts.

Supporting Documents:

- Original Appendix M
- Proposed Appendix M
- Resolution No. 20-4

APPENDIX M

BID PROCUREMENT AND CHANGE ORDER POLICY

I. Work Costing More Than $25,000

a. Except as otherwise provided in this statement of policy, all contracts for any improvement, job, construction project or unit of work (herein referred to as work), and all acquisitions of material or equipment, estimated to cost or to have a value when completed in excess of Twenty-Five Thousand Dollars ($25,000), shall be let to the lowest responsible bidder in the manner hereinafter provided.

b. The Board shall first determine whether the contract shall be let or the acquisition made, as a single unit for the whole of the work or acquisition, or whether it shall be divided into severable convenient parts.

c. The Contract documents shall be prepared utilizing the District's standard forms, with such modification as may be appropriate for the particular work or unit of work, or the acquisition of materials or equipment. In the case of work to be performed for the District, the documents to be prepared shall ordinarily include the Notice Inviting Bids, Instructions to Bidders, the Proposal for submission by the bidder, the Information Required of Bidder, setting forth the equipment and material source and other required information, Contractor's Licensing Statement, List of Subcontractors, Bid Security Form, Agreement, Faithful Performance Bond, Payment Bond, Non-Collusion Affidavit, Notice to Proceed, General Provisions, Special Provisions, and Plans and Specifications.

d. Unless otherwise required by the provisions of the Public Contract Code, the District may advertise in the F. W. Dodge Green Sheet, the Construction Market Data and

similar publications, inviting sealed proposals for furnishing labor for or materials or supplies for use or incorporation in, the proposed work or unit of work, or for providing materials or equipment. To the extent applicable to a specific work or acquisition, the notice calling for bids shall contain the information specified in Section 20564 of the Public Contract Code. In the event that the construction of works is to be paid for with the proceeds of the sale of bonds or a limited assessment, the District shall give said notice by publication once a week for three (3) successive weeks in a newspaper of general circulation published in the District as specified in Section 20563 of the Public Contracts Code.

e. All bids shall be presented under sealed cover on forms furnished by the District, and, in the case of a bid to perform work for the District, it shall be accompanied by one of the following forms of bidder's security: (1) cash, (2) a cashier's check made payable to the District, (3) a certified check made payable to the District, or (4) a bidder's bond executed by an admitted surety insurer made payable to the District.

f. At the time and place appointed and set forth in the Notice Inviting Bids, the bids shall be opened in public.

g. The District shall assign a five (5) percent contract bid reduction to a bidder which is a "Local Contractor or Vendor," as defined in (n)(1).

h. The Board may reject any and all proposals or bids should it deem it to be for the public good, or may award the contract for the work or unit of work, or materials or equipment, to the lowest responsible bidder at the prices named or specified in the bid or proposal subject however to Paragraph i.

i. Once all bids have been opened, the bids of those bidders which are "Local Contractors or Vendors" shall be reduced by five percent (5%) for purposes of determining the lowest responsible bidder. If the bid of a Local Contractor or Vendor, after applying the contract

bid reduction provided for in Paragraph g, is then the lowest responsible bid , that Local Contractor or Vendor shall be awarded the contract at the amount of its bid without regard to any contract bid reduction, subject to the remaining provisions of this policy.

j. The District or its agents may refuse to award a contract under Section i to a Local Contractor or Vendor if it makes a determination that the products purchased or work provided by a bidder cannot be provided within a timely manner for the performance of the contract or a determination the Local Contractor or Vendor cannot meet specified quality performance standards or experience requirements.

k. If any federal or state statute or regulation precludes the granting of federal or state assistance or reduces the amount of that assistance for a particular public works project because of a preference awarded according to the terms of this policy, this policy shall not apply insofar as its application would preclude or reduce federal or state assistance for that work.

l. In the case of work to be performed for the District, the District shall require the successful bidder or bidders to file with the Board good and sufficient bonds, to be approved by the Board, conditioned upon the faithful performance of the contract and upon payment of all claims for labor and materials in connection therewith.

m. In the case of work to be performed from the District, the District shall require the successful bidder or bidders to carry public liability and property damage insurance, workers' compensation insurance, and other insurance, in the amounts and under the terms stipulated in the Contract documents.

n. The following terms shall have the following meanings:

1) "Local Contractor or Vendor" means a contractor or vendor whose principal place of business as reflected in official records is located in the area shown on the Local Contractor and Vendor Boundary Map attached hereto.

Those claiming to be Local Contractors and Vendors shall submit proof of their principal place of business with their bid.

2) "Lowest Responsible Bidder" shall mean a person who submits the lowest monetary bid, taking into account the contract bid reduction provided for in paragraph g, and which responds to the terms upon which bids were requested, and who has the capacity, integrity and ability to perform the particular requirements of the contract. Factors which may be considered in determining the "lowest responsible bidder" include, but are not limited to, all of the following:

a) The contractor's prior record of performance on other public works projects, if any, including timely completion of performance, quality of work, and completion of projects within project budget or bid amount submitted.

b) The contractor's involvement in any ongoing litigation or contract disputes with the awarding authority which could impair satisfactory performance on the contract to be awarded.

c) The contractor's history of noncompliance with occupational safety and health requirements, labor statutes and regulations, and other local, state, and federal laws.

II. Work or Acquisitions Costing More Than $3,000, But Not More than $25,000

All contracts for any work or unit of work, and all acquisitions of materials or equipment, estimated to cost or to have a value when completed in excess of Three Thousand Dollars ($3,000), but not more than Twenty-Five Thousand Dollars ($25,000), shall be reviewed by a Committee of the Board, and shall be submitted for formal competitive bids in accordance with this statement of policy only if the Committee shall so recommend and the Board shall concur by

a majority vote. In the event no formal competitive bids are solicited, the Board may also give local contractors and vendors a preference.

III. Work or Acquisitions Costing Less Than $3,000

All contracts for any work or unit of work, and all acquisitions of materials or equipment, estimated to cost or to have a value when completed that is less than Three Thousand Dollars ($3,000), may be authorized by the District's General Manager without compliance with any formal competitive bidding procedure or prior Board approval, and in any such case he may authorize the work or unit of work or acquire the materials or equipment, by informal bidding or quotations or by purchase on the open market without advertising. The District's General Manager may give local contractors and vendors a preference.

IV. Change Order Policy

All change orders occurring during the performance of a contract shall be reported to the Board. Change order amounts which are Three Thousand Dollars ($3,000) or less or which are ten percent (10%) or less of the original contract amount up to a maximum amount of Twenty-Five Thousand Dollars ($25,000) may be authorized by the District's General Manager; however, change order amounts greater than Three Thousand Dollars ($3,000) and greater than ten percent (10%) of the original contract amount up to a maximum change order amount of Twenty-Five Thousand Dollars ($25,000) shall be approved by the Bid Committee of the Board. The Board shall by a majority vote approve all change order amounts in excess of Twenty-Five Thousand Dollars ($25,000). In the case of contracts with unit prices, if the number of units of significant bid items increases by twenty percent (20%) or more, Board approval must be obtained.

V. Exceptions to Statement of Policy

The policy specified in this statement shall not apply in the following cases or circumstances:

(1) A contract for the acquisition or disposal of any real property.

(2) A contract for the leasing of any personal property or the acquisition of personal property other than materials and equipment for use in construction activities.

(3) A contract for the purchase of water or water rights.

(4) A contract for the repair of District equipment.

(5) A contract for legal, engineering and other professional services.

(6) A contract for the performance of work or acquisition of materials or equipment deemed by the Board to be of urgent necessity for the preservation of life, health or property, or in order to continue to provided water to the District's existing customers, and such action is authorized by a two-thirds vote of the District's Board.

(7) The repair, alteration, addition, or the making of improvements, by force account.

(8) Work related to and in furtherance of the purposes of the District, or materials or equipment acquired for such purposes, where such work is to be performed or such materials or equipment are to be acquired, for the account of other persons or entities, an example of such work or acquisition being the construction of a water transmission line or the installation of meters or other facilities for a developer and done at the developer's expense.

(9) A contract for the performance of work or acquisition of materials in instances where work and materials are regularly and periodically required and work and materials are repairs or replacements of prior works or materials relating to the following:

(a) Asphalt and concrete patching;

(b) Janitorial supplies;

(c) Office supplies;

(d) Aggregate (sand, base and similar materials);

(e) Cold mix asphalt;

(f) Data mailers;

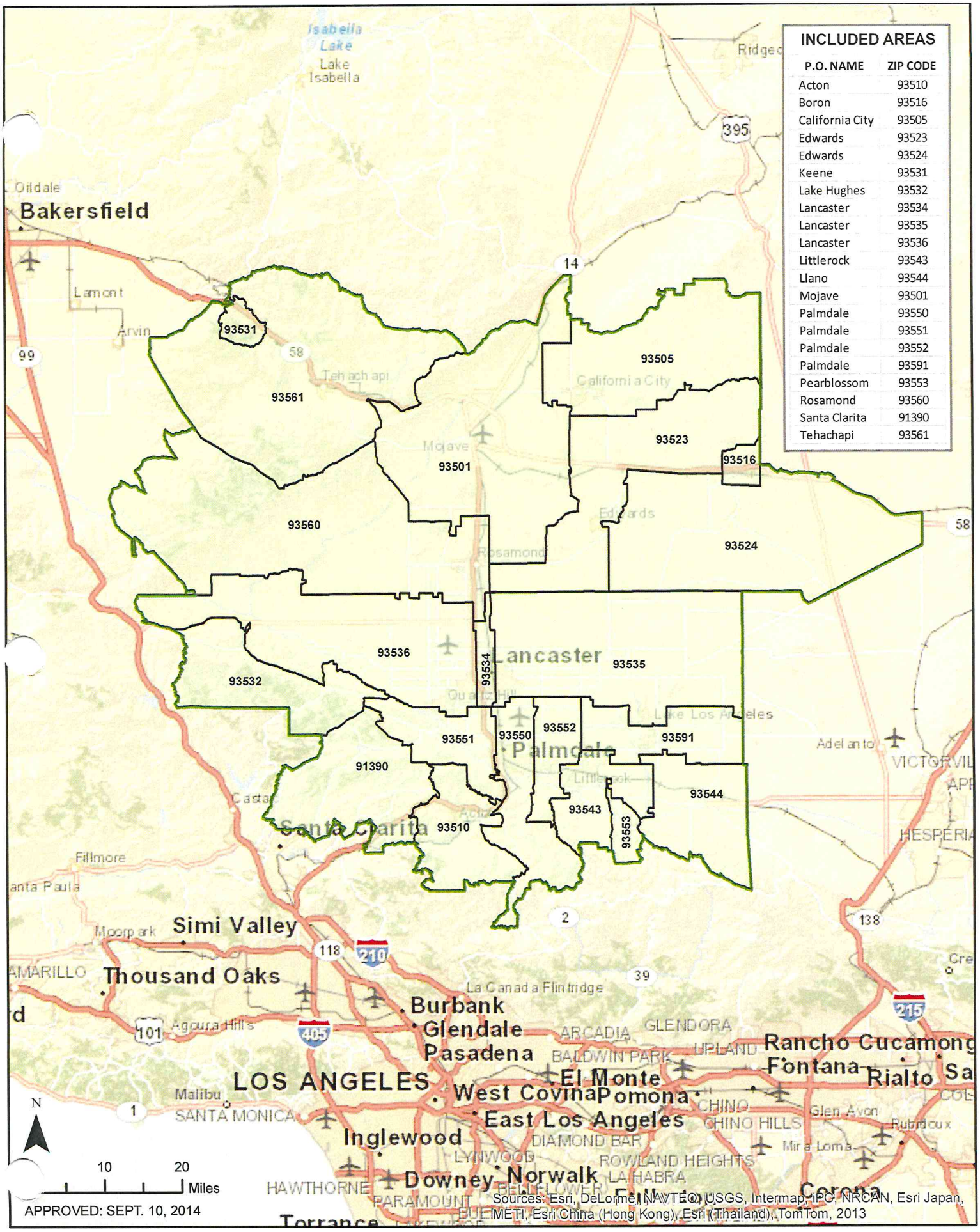
(g) Water meters.

VI. Scope of Statement of Policy

This statement of policy establishes the manner of calling for bids and letting contracts for the performance of work for the District or the acquisition of materials or equipment. However, notwithstanding this statement, all contracts for work and all contracts for acquisition of materials and equipment, may be made or entered into upon such terms and conditions and in such manner as the Board may determine is in the best interest of the District.

BID PROCUREMENT POLICY APPROVED AND ADOPTED AT A REGULAR BOARD MEETING OF THE PALMDALE WATER DISTRICT BOARD OF DIRECTORS HELD April 19, 1990

Revised 1-14-92
Revised 9-15-92
Revised 4-25-94
Revised 11-10-97



PALMDALE WATER DISTRICT RULES AND REGULATIONS APPENDIX "M"

LOCAL CONTRACTOR AND VENDOR BOUNDARY MAP

PROPOSED

APPENDIX M

BID PROCUREMENT AND CHANGE ORDER POLICY

I. Work Cost More Than $~~25~~50,000

a. Except as otherwise provided in this statement of policy, all contracts for any improvement, job, construction project or unit of work (herein referred to as work), and all acquisitions of material or equipment, estimated to cost or to have a value when completed in excess of ~~Twenty-Five~~Fifty Thousand Dollars ($~~25~~50,000) shall be let to the lowest responsible bidder in the manner hereinafter provided.

b. The Board shall first determine whether the contract shall be let or the acquisition made as a single unit for the whole of the work or acquisition, or whether it shall be divided into severable convenient plans.

c. The Contract documents shall be prepared utilizing the District's standard forms~~.~~ with such modification as may be appropriate for the particular work or unit of work, or the acquisition of materials or equipment. In the case of work to be performed for the District~~,~~ t~~T~~the documents to be prepared shall ordinarily include the Notice Inviting Bids~~,~~ Instructions to Bidders, the Proposal for submission by the bidder, the Information Required of Bidder~~,~~ setting forth the equipment and material source and other required information, Contractor's Licensing Statement, List of Subcontractors, Bid Security Form, Agreement, Faithful Performance Bond~~,~~ Payment Bond~~,~~ Non-Collusion Affidavit~~,~~ Notice to Proceed~~,~~ General Provisions~~,~~ Special Provisions, and Plans and Specifications.

d. Unless otherwise required by the provisions of the Public Contract Code, the District may advertise ~~in the F.W. Dodge Green Sheet, the Construction Market Data~~either electronically via a web base bidding service ~~and~~ or in printed ~~similar~~ publications, for inviting ~~sealed~~ proposals for furnishing labor for or materials or supplies for use or incorporation in~~,~~ the proposed work or unit of work, or for providing materials or equipment. To the extent applicable to a specific work or acquisition, the notice calling for bids shall contain the information specified in Section 20564 of the Public Contract Code. In the event that the construction of works is to be paid for with the proceeds of the sale of bonds or a

limited assessment, the District shall give said notice by publication once a week for three (3) successive weeks in a newspaper of general circulation published in the District as specified in Section 20563 of the Public Contracts Code.[SR1]

e. All bids shall be presented ~~under sealed cover~~ on forms furnished by the District either electronically or sealed bid, and, in the case of a bid to perform work for the District, it shall be accompanied by one of the following forms of bidder's security: (1) cash, (2) a cashier's check made payable to the District, (3) a certified check made payable to the District, or (4) a bidder's bond executed by an admitted surety insurer made payable to the District.[SR2]

f. At the time, ~~and~~ place appointed, and set forth in the Notice Inviting Bids, ~~,~~ the bids shall be available either on the bidding service website or opened in public.

g. The District sha11 assign a five (5) percent contract bid reduction to a bidder which is a “Local Contractor or Vendor” as defined in (n)(1).

h. The Board may reject any and all proposals or bids should it deem it to be for the public good, or may award the contract for the work or unit of work, or materials or equipment, to the lowest responsible bidder at the prices named or specified in the bid or proposal subject however to Paragraph i.

i. Once all bids have been opened or received electronically through a web based bidding service, the bids of those bidders which are “Local Contractors or Vendor” shall be reduced by five percent (5%) for purposes of determining the lowest responsible bidder. If the bid of a Local Contractor or Vendor, after applying the contract bid reduction provided for in Paragraph g, is then the lowest responsible bid, that Local Contractor or Vendor shall be awarded the contract at the amount of its bid without regard to any contract bid reduction, subject to the remaining provisions of this policy.

j. The District or its agents may refuse to award a contract under Section i to a Local Contractor or Vendor if it makes a determination that the products purchased or work provided by a bidder cannot be provided within a timely manner for the performance of the contract or a determination the Local Contractor or Vendor cannot meet specified quality performance standards or experience

requirements.

k. If any federal or state statute or regulation precludes the granting of federal or state assistance or reduces the amount of that assistance for a particular public works project because of a preference awarded according to the terms of this policy, this policy shall not apply insofar as its application would preclude or reduce federal or state assistance for that~~t~~ work.

l. In the case of work to be performed for the District, the District shall require the successful bidder or bidders to file with the Board good and sufficient bonds, to be approved by the Board, conditioned upon the faithful performance of the contract and upon payment of all claims for labor and materials in connection therewith.

m. In the case of work to be performed from the District, the District shall require the successful bidder or bidders to carry public liability and property damage insurance, workers' compensation insurance, and other insurance, in the amounts and under the terms stipulated in the Contract documents.

n. The following terms shall have the following meanings:

1) “Local Contractor or Vendor" means a contractor or vendor whose principal place of business as reflected in official records is located in the area shown on the Local Contractor and Vendor Boundary Map attached hereto. Those claiming to be Loca1 Contractors and Vendors shall submit proof of their principal place of business with their bid.

2) "Lowest Responsible Bidder" shall mean a person who submits the lowest monetary bid, taking into account the contract bid reduction provided for in paragraph g, and which responds to the terms upon which bids were requested, and who has the capacity, integrity, and ability to perform the particular requirements of the contract. Factors which may be considered in determining the "lowest responsible bidder" include, but are not limited to, all of the following:

a) The contractor's prior record of performance on other public works projects, if any. including timely completion of performance, quality of work, and completion of projects within project budget or bid amount submitted.

b) The contractor's involvement in any ·ongoing litigation or contract disputes with the awarding authority which could impair satisfactory performance on the contract to be awarded.

c) The contractor's history of noncompliance with occupational safety and health requirements, labor statutes and regulations, and other local, state, and federal laws.

II. Work or Acquisitions Costing More Than $~~3~~6,000, But Not More than $~~25~~50,000

All contracts for any work or unit of work, and all acquisitions of materials or equipment, ~~estimated to cost or to have~~having been submitted either informal or formal bids in accordance with this statement of policy and having a value ~~when completed~~ in excess of ~~Three~~ Six Thousand Dollars ($~~3~~6,000), but not more than ~~Twenty-Five~~Fifty Thousand Dollars ($~~25~~50,000), shall be reviewed and recommended by a Committee of the Board, ~~and shall be submitted for formal competitive bids in accordance with this statement of policy only if the Committee shall so recommend~~ and the Board shall concur by majority vote. In the event no formal competitive bids are solicited, the Board may also give local contractors and vendors a preference.

III. Work or Acquisitions Costing Less Than $~~3~~6,000

All contracts for any work or unit of work, and all acquisitions of materials or equipment, estimated to cost or to have a value when completed that is less than ~~Three~~ Six Thousand Dollars ($~~3~~6,000), may be authorized by the District's General Manager without compliance with any formal competitive bidding procedure or prior Board approval, and in any such case he may authorize the work or unit of work or acquire the materials or equipment, by informal bidding or quotations or by purchase on the open market without advertising. The District's General Manager may give local contractors and vendors a preference.

IV. Change Order Policy

All change orders occurring during the performance of a contract shall be reported to the Board. Change order amounts which are ~~Three~~ Six Thousand Dollars ($~~3~~6,000) or less or which are ten percent (10%) or less of the original contract amount up to a maximum amount of ~~Twenty-Five~~Fifty Thousand Dollars ($~~25~~50,000) may be authorized by the District's General Manager; however, change order amounts greater than ~~Three~~ Six Thousand Dollars ($~~3~~6,000) and greater than ten percent (10%) of the original contract amount up to a

maximum change order amount of ~~Twenty-Five~~Fifty Thousand Dollars ($~~25~~50,000) shall be approved by the appropriate Committee of the Board. The Board shall by a majority vote approve all change order amounts in excess of ~~Twenty-~~ Fifty ~~Five~~ Thousand Dollars ($~~25~~50,000). In the case of contracts with unit prices, if the number of units of significant bid items increases by twenty percent (20%) or more, Board approval must be obtained.

V. Electronic Bidding

a. Notwithstanding any contrary provision in Appendix M, the use of electronic media is authorized for any formal and informal bidding process pursuant to Appendix M, including without limitation submission, identification, opening and reporting of bids electronically ("electronic bidding"; "E-Bid"), provided that it be in accordance with state law. Electronic bidding shall include measures as the District deems appropriate for security of the bidding, approval and award processes and accurate retrieval or conversion of electronic information into a medium which permits inspection and copying. All electronic bids shall be submitted in a manner set forth in the N~~n~~otice ~~of~~ I~~i~~nviting B~~b~~ids and/or the bid instructions.

b. The District may, in its sole discretion, require electronic bidding for any informal and formal bids authorized under Appendix M. If the District elects to use electronic bidding, then all bids must be submitted electronically consistent with the N~~n~~otice I~~of i~~nviting B~~b~~ids and/or bid instructions. If electronic bidding is not selected, then no bids may be submitted electronically and will be submitted sealed bid at a date, time and place.

~~V.~~VI. Exceptions to Statement of Policy

The policy specified in this statement shall not apply in the following cases or circumstances:

(1) A contract for the acquisition or disposal of any real property.

(2) A contract for the leasing of any personal property or the acquisition of personal property other than materials and equipment for use in construction activities.

(3) A contract for the purchase of water or water rights.

(4) A contract for the repair of District equipment.

(5) A contract for legal, engineering and other professional services.

(6) A contract for the performance of work or acquisition of materials or equipment deemed by the Board to be of urgent necessity for the preservation of life, health or property, or in order to continue to provide water to the District's existing customers, and such action is authorized by a two-thirds vote of the District's Board.

(7) The repair, alteration, addition, or the making of improvements, by force account.

(8) Work related to and in furtherance of the purposes of the District, or materials or equipment acquired for such purposes, where such work is to be performed or such materials or equipment are to be acquired, for the account of other persons or entities, an example of such work or acquisition being the construction of a water transmission line or the installation of meters or other facilities for a developer and done at the developer's expense.

(9) A contract for the performance of work or acquisition of materials in instances where work and materials are regularly and periodically required~~;~~ and work and materials ~~are~~ for the repair~~s~~ or replacement~~s~~ of prior works or materials relating to the following:

a) Asphalt and concrete patching; b) Janitorial supplies; c) Office supplies; d) Aggregate (sand, base and similar materials); e) Cold mix asphalt; f) Data mailers; g) Water meters;[SR3] h) Pumps and Motors	i) Online analyzers j) Treatment chemicals k) Laboratory supplies and testing equipment l) Landscape services m) Janitorial services n) Printing services o) Answering services p) Pest control services

~~VI.~~VII. Scope of Statement of Policy

This statement of policy establishes the manner of calling for bids and letting contracts for the performance of work for the District or the acquisition of materials or equipment. However, notwithstanding this statement,

all contracts for work and all contracts for acquisition of materials and equipment, may be made or entered into upon such terms and conditions and in such manner as the Board may determine is in the best interest of the District.

BID PROCUREMENT POLICY APPROVED AND ADOPTED AT A REGULAR BOARD MEETING OF THE PALMDALE WATER DISTRICT BOARD OF DIRECTORS HELD April 19, 1990

Revised 1-14-92
Revised 9-15-92
Revised 4-25-94
Revised 11-10-97

RESOLUTION NO. 20-4
A RESOLUTION OF THE BOARD OF DIRECTORS
OF THE PALMDALE WATER DISTRICT
APPROVING AN AMENDMENT TO APPENDIX M –
BID PROCUREMENT AND CHANGE ORDER POLICY
OF THE PALMDALE WATER DISTRICT'S RULES AND REGULATIONS

WHEREAS, Appendix M – Bid Procurement and Change Order Policy of the Palmdale Water District's Rules and Regulations establishes the manner of calling for bids and letting contracts for the performance of work for the District or the acquisition of materials or equipment.

WHEREAS, the Palmdale Water District (District) would like to be more environmentally conscientious and progressive towards sustainability. Electronic bidding will achieve this goal by giving the ability to District staff and contractors to submit their bids electronically to a secure web-based bidding service. This will allow contractors to submit bids and allow staff to be more efficient in distribution of bid documents to a greater number of bidders;

WHEREAS, the District would like to update Appendix M – the Bid Procurement and Change Order Policy of the District's Rules and Regulations to update the allowable cost to be more current to the worth of the dollar today. The policy is updated for work costs based upon the Construction Cost Index (CCI) as reported by the Engineering News Record (ENR) by the percentage increase of the index from December 1990 to December 2019;

WHEREAS, in accordance with said December 2019 CCI as reported by the ENR and as stated in said Appendix M, the General Manager shall have the authority to authorize all contracts for any work or unit of work and all acquisitions of materials or equipment estimated to cost or to have a value when completed of less than $6,000.00;

WHEREAS, in accordance with said December 2019 CCI as reported by the ENR and as stated in said Appendix M, the appropriate Board Committee shall have the authority to authorize all contracts for any work or unit of work and all acquisitions of materials or equipment having been submitted by either informal or formal bids estimated to cost or to have a value when completed of more than $6,000.00 but no more than $50,000.00; and

WHEREAS, in accordance with said December 2019 CCI as reported by the ENR, except as otherwise stated in said Appendix M, all contracts for any improvement, job, construction project, or unit of work and all acquisitions of material or equipment estimated to cost or to have a value when completed in excess of $50,000.00 shall be let to the lowest responsible bidder in the manner described in said Appendix M.

NOW THEREFORE, BE IT RESOLVED THAT THE BOARD OF DIRECTORS OF THE PALMDALE WATER DISTRICT DOES HEREBY RESOLVE AS FOLLOWS:

SECTION 1. Notwithstanding any contrary provision in Article 17 of the Palmdale Water District's Rules and Regulations, the use of electronic media is authorized for any formal and informal bidding process pursuant to said Appendix M, including without limitation, submission, identification, opening and reporting of bids electronically ("electronic bidding"; "E-Bid"),

provided that it be in accordance with state law. Electronic bidding shall include measures as the District deems appropriate for security of the bidding, approval, and award processes and accurate retrieval or conversion of electronic information into a medium which permits inspection and copying. All electronic bids shall be submitted in a manner set forth in the Notice Inviting Bids and/or the bid instructions.

SECTION 2. The District may, in its sole discretion, require electronic bidding for any informal and formal bids authorized under Article 17 of the Palmdale Water District's Rules and Regulations. If the District elects to use electronic bidding, then all bids must be submitted electronically consistent with the Notice Inviting Bids and/or bid instructions. If electronic bidding is not selected, then no bids may be submitted electronically at a date, time and place.

SECTION 3. The District shall adjust said Appendix M for the allowable amounts in the policy by the percentage increase per said 2019 Construction Cost Index as reported by the Engineering News Record.

PASSED, APPROVED AND ADOPTED THIS: 24th day of February 2020.

Vincent Dino, President
Board of Directors
Palmdale Water District

Don Wilson, Secretary
Board of Directors
Palmdale Water District

APPROVED AS TO FORM:

Aleshire & Wynder. LLP
District General Counsel

P A L M D A L E W A T E R D I S T R I C T

B O A R D M E M O R A N D U M

DATE: February 18, 2020 **February 24, 2020**

TO: BOARD OF DIRECTORS **Board Meeting**

FROM: Mrs. Claudia Bolanos, Resource and Analytics Supervisor

VIA: Mr. Peter Thompson Jr., Resource and Analytics Director
Mr. Dennis D. LaMoreaux, General Manager

RE: ***AGENDA ITEM NO 7.4 – CONSIDERATION AND POSSIBLE ACTION ON UPDATES TO THE WATER USE EFFICIENCY REBATE PROGRAMS INCLUDING THE IMPLEMENTATION OF A NEW SMART CONTROLLER REBATE PROGRAM AND INCREASES TO THE REBATE AMOUNTS FOR THE DISTRICT'S CURRENT HIGH EFFICIENCY TOILET REBATE AND HIGH EFFICIENCY CLOTHES WASHER REBATE PROGRAMS. (BUDGETED UNDER DEPARTMENT REBATE PROGRAMS – RESOURCE AND ANALYTICS SUPERVISOR BOLANOS/RESOURCE AND FACILITIES COMMITTEE).***

Recommendation:

Staff and the Resource and Facilities Committee recommend that the Board approve updates to the Water Use Efficiency Rebate Programs including the addition of a new Water Smart Controller Rebate Program and increases to the rebate amounts for the District's current High Efficiency Toilet Rebate Program and High Efficiency Clothes Washer Rebate Program.

Alternative Options:

Continue to move forward with the rebate programs that we currently have in place and not increase the rebate amounts.

Impact of Taking No Action:

Water Use Efficiency Rebate Programs will not be expanded or updated in 2020, but existing programs will continue to be offered to customers.

Background:

The Water Use Efficiency group continuously explores new programs being used in the water industry and determines if the programs could benefit our customers. The Water Use Efficiency group also periodically evaluates our current programs to ensure that we are offering the best options available to our customers.

Water Smart Controller-

The water smart controller is also referred to as a weather-based controller that automatically adjusts irrigation based on local site conditions and weather feed. Once programmed properly, a water smart controller adjusts as necessary for current conditions. The Water Smart Controller Rebate Program will offer qualifying applicants a rebate for the cost of a So Cal Water Smart listed smart controller up to $150 maximum rebate. This program would benefit multi-family residences as well as commercial customers. The water smart controller is the new wave of irrigation technology, and it is a great program to be able to offer our customers.

High Efficiency Toilet Rebate-

Our High Efficiency Toilet Rebate Program is one of our most popular rebate programs averaging over 100 rebates a year. We currently offer a $60 rebate max, while most other water agencies offer a max of $100. We propose to increase our rebate amount to a max of $100.

High Efficiency Clothes Washer Rebate-

Our High Efficiency Clothes Washer Rebate Program is also a popular rebate program that averages right around 30 rebates a year. Our clothes washer rebate currently offers our customers up to $100, while other water agencies offer up to $150. We propose to increase the rebate amount to a max of $150.

Strategic Plan Initiative/Mission Statement:

This item is under Strategic Initiative No. 6 - Customer Care, Advocacy and Outreach.

This item is directly related to the District's Mission Statement.

Budget:

We currently have enough budget in our rebates account to cover additional rebates.

Supporting Documents:

- Rebate Comparison chart

Rebate Comparison			
Agency	**High-Efficiency Toilets**	**High-Efficiency Washers**	**Smart Controllers**
Palmdale Water District (Current)	$ 60	$ 100	$ -
City of Santa Barbara	$ 100	$ 150	50% of cost
Casitas Municipal Water District	$ 100	$ 150	$ 250
Chino Basin	$ 100	$ -	$ -
East Valley Water District	$ 100	$ 150	$ 150
Desert Water	$ 100	$ 250	$ 150
Ventura Water	$ 100	$ 150	$ 150
California Water Service	$ 100	$ 150	$ 125
Santa Clarita Valley	$ -	$ -	$ 150

Palmdale Water District (Proposed)	$ 100	$ 150	$ 150

PALMDALE WATER DISTRICT

BOARD MEMORANDUM

DATE:	February 18, 2020	**February 24, 2020**
TO:	BOARD OF DIRECTORS	**Board Meeting**
FROM:	Mr. Bob Egan, Financial Advisor	
RE:	***AGENDA ITEM NO. 8.1.a – STATUS REPORT ON CASH FLOW STATEMENT AND CURRENT CASH BALANCES AS OF DECEMBER 2019. (FINANCIAL ADVISOR EGAN/FINANCE COMMITTEE)***	

Attached are the Cash Notes, the Investment Funds Report, and the Cash Flow Report as of December 2019. The reports will be reviewed in detail at the Finance Committee meeting.

		2019		
		4th Quarter Major account Activity		
		acct 11469		
		Balance	**12/31/19**	**4,628,718**
		Balance	**09/30/19**	**(1,869,713)**
		Increase		**2,759,005**
		3 mos activity		
		Taxes received		**2,749,460**
		Interest/Mkt value received		**9,545**
				2,759,005
		Acct 11475		
		Balance	**12/31/19**	**528,841**
		Balance	**09/30/19**	**(12,181)**
		Increase		**516,660**
		3 mos activity		
		Interest received		**222**
		Capital improvements received		**516,438**
				516,660
		Additional cap fees rec'd in January of 216,144		
		745,288 transferred to 11432 and invested in January.		
		Acct 11432		
		Balance	**12/31/19**	**5,614,292**
		Balance	**09/30/19**	**(5,691,242)**
		Decrease		**(76,950)**
		3 mos activity		
		Interest/Mkt value received		**43,806**
		Transfer to 24016		**(120,757)**
				(76,950)
		Acct 24016.		
		Balance	**12/31/19**	**370,772**
		Balance	**09/30/19**	**(248,676)**
		Increase		**122,096**
		3 mos activity		
		Interest/Mkt value received		**1,339**
		Transfer from 11432		**120,757**
				122,096

PALMDALE WATER DISTRICT
INVESTMENT FUNDS REPORT
December 31, 2019

						December 2019	November 2019	September 2019
CASH								
1-00-0103-100	Citizens - Checking					637,145.96	1,080,695.46	1,335,583.53
1-00-0103-200	Citizens - Refund					5,611.32	-	-
1-00-0103-300	Citizens - Merchant					373,175.53	121,102.33	376,468.09
					Bank Total	**1,015,932.81**	**1,201,797.79**	**1,712,051.62**
1-00-0110-000	PETTY CASH					300.00	300.00	300.00
1-00-0115-000	CASH ON HAND					5,400.00	5,400.00	5,400.00
					TOTAL CASH	**1,021,632.81**	**1,207,497.79**	**1,717,751.62**
INVESTMENTS								
1-00-0135-000	**Local Agency Investment Fund**				**Acct. Total**	**12,434.35**	**12,434.35**	**12,358.23**
1-00-0120-000	**UBS Money Market Account General (SS 11469)**							
	UBS RMA Government Portfolio					2,530,640.37	-	-
	UBS Bank USA Dep acct					250,000.00	176,975.99	13,984.15
	Accrued interest					7,742.16	10,246.34	13,573.19
						2,788,382.53	**187,222.33**	**27,557.34**
	US Government Securities							
	CUSIP #	**Issuer**	**Maturity Date**	**Rate**	**PAR**	**Market Value**	**Market Value**	**Market Value**
					-	-	-	-
	Certificates of Deposit							
		Issuer	**Maturity Date**	**Rate**	**Face Value**			
	1	US Bank NA MN	10/10/2019	2.250	240,000	-	-	240,021.60
	2	Synchrony Bank	11/12/2019	2.300	240,000	-	-	240,108.00
	3	TBK Bank	12/02/2019	2.400	240,000	-	240,016.80	240,196.80
	4	Bank of China	12/19/2019	2.450	200,000	-	200,098.00	200,238.00
	5	Apollo Bank	01/10/2020	2.250	240,000	240,040.80	240,189.60	240,232.80
	6	New York Community	05/11/2020	1.550	240,000	239,901.60	239,937.60	-
	7	Meriodian Corp	03/18/2020	1.800	240,000	240,076.80	240,144.00	239,947.20
	8	UBS Bank	04/24/2020	3.000	238,000	239,009.12	239,332.80	-
	9	Texas Cap Bank	05/11/2020	1.800	240,000	240,036.00	-	-
	10	JP Morgan bank	07/19/2020	2.000	200,000	200,024.00	200,106.00	200,070.00
		Goldman Sachs	11/18/2020	2.300	240,000	241,353.60	241,665.60	241,341.60
		Consumers Bank	11/27/2020	1.600	200,000	199,894.00	-	-
					2,758,000	**1,840,335.92**	**1,841,490.40**	**1,842,156.00**
					Acct. Total	**4,628,718.45**	**2,028,712.73**	**1,869,713.34**
1-00-1110-000	**UBS Money Market Account Capital (SS 11475)**							
	UBS Bank USA Dep acct					250,000.00	250,000.00	12,181.04
	UBS RMA Government Portfolio					278,841.48	260,661.03	-
					Acct. Total	**528,841.48**	**510,661.03**	**12,181.04**
1-00-0125-000	**UBS Access Account General (SS 11432)**							
	UBS Bank USA Dep acct					58,064.20	57,193.19	42,211.89
	UBS RMA Government Portfolio					965,375.00	-	-
	Accrued interest					27,777.14	27,845.08	11,281.78
						1,051,216.34	**85,038.27**	**53,493.67**
	US Government Securities							
	CUSIP #	**Issuer**	**Maturity Date**	**Rate**	**PAR**	**Market Value**	**Market Value**	**Market Value**
	912796RF8	US Treasury Bill	10/10/2019	2.260	1,750,000	-	-	1,749,230.00
	9128283N8	US Treasury Note	12/31/2019	1.875	1,000,000	-	1,000,100.00	999,880.00
	9128283S7	US Treasury Note	01/31/2020	2.000	1,750,000	1,750,472.50	1,750,910.00	-
	912828C57	US Treasury Note	03/21/2021	2.250	1,430,000	1,440,896.60	1,440,496.20	1,440,496.20
					5,930,000	**3,191,369.10**	**4,191,506.20**	**4,189,606.20**
	Certificates of Deposit							
		Issuer	**Maturity Date**	**Rate**	**Face Value**			
	1	Synchrony Bank	04/14/2020	1.850	240,000	240,242.40	240,367.20	240,218.40
	2	JP Morgan Chase Bank	11/18/2020	1.600	240,000	239,212.80	239,306.40	238,603.20
	3	Bank of Baroda NY	11/23/2020	1.600	77,000	-	76,789.79	76,564.18
	4	Wells Fargo	12/14/2020	3.100	240,000	243,278.40	243,758.40	243,717.60
	5	Comenity Cap Bank	01/19/2021	1.900	163,000	164,170.34	164,392.02	164,157.30
	6	Bank of America	02/08/2021	2.550	240,000	242,318.40	242,688.00	242,412.00
	7	Sallie Mae Bank	05/10/2021	2.450	240,000	242,484.00	242,815.20	242,469.60
					1,440,000	**1,371,706.34**	**1,450,117.01**	**1,448,142.28**
					Acct. Total	**5,614,291.78**	**5,726,661.48**	**5,691,242.15**
					Total Managed Accounts	**10,784,286.06**	**8,278,469.59**	**7,585,494.76**
1-00-1121-000	**UBS Rate Stabilization Fund (SS 24016)** - *District Restricted*							
	UBS Bank USA Dep acct					8,884.23	8,883.51	4,376.14
	UBS RMA Government Portfolio					44,000.00	-	-
	Accrued interest					991.92	474.40	233.97
						53,876.15	**9,357.91**	**4,610.11**
	Certificates of Deposit							
		Issuer	**Maturity Date**	**Rate**	**Face Value**			
	1	US Bank USA	10/16/2019	2.500	244,000	-	-	244,065.88
	2	State Bank India	04/21/2020	1.850	240,000	240,139.20	240,232.80	-
	3	Bank of Baroda NY	11/23/2020	1.600	77,000	76,756.68	-	-
					561,000	**316,895.88**	**240,232.80**	**244,065.88**
					Acct. Total	**370,772.03**	**249,590.71**	**248,675.99**
					GRAND TOTAL CASH AND INVESTMENTS	**12,176,690.90**	**9,735,558.09**	**9,551,922.37**
					Increase (Decrease) in Funds	**2,441,132.81**		
1-00-1135-000	**2018A Bonds - Project Funds (BNY Mellon)**							
	Construction Funds					**4,353,631.88**	**7,066,076.17**	**8,560,688.58**
	Issuance Funds					**12,453.92**	**12,438.11**	**12,398.86**
						4,366,085.80	**7,078,514.28**	**8,573,087.44**

2/11/2020

PALMDALE WATER DISTRICT

2019 Cash Flow Report (Based on Nov. 13, 2018 Approved Budget)

	January	February	March	April	May	June	July	August	September	October	November	December	YTD	Budget 2020 Carryover Information
Total Cash Beginning Balance (BUDGET)	**11,758,902**	**11,719,239**	**11,701,222**	**9,716,957**	**11,223,622**	**11,836,793**	**11,371,326**	**11,142,978**	**10,898,854**	**8,880,124**	**9,040,500**	**9,425,377**		
Total Cash Beginning Balance	**11,758,902**	**11,738,165**	**12,039,792**	**9,623,377**	**10,972,277**	**10,978,197**	**10,966,272**	**10,689,934**	**11,059,239**	**9,551,922**	**8,941,037**	**9,735,558**		
Budgeted Water Receipts	1,857,500	1,801,000	1,717,500	1,908,000	2,013,500	2,174,500	2,428,000	2,491,500	2,638,500	2,464,000	2,129,000	2,115,500	25,738,500	
Water Receipts	**2,209,434**	**1,813,810**	**1,788,600**	**1,755,912**	**1,817,467**	**1,988,434**	**2,258,505**	**2,487,162**	**2,600,688**	**2,536,339**	**2,234,362**	**2,294,874**	25,785,587	
DWR Refund (Operational Related)				**4,993**		**7,294**				**5,026**			17,313	
Other										**18,293**			18,293	
Total Operating Revenue (BUDGET)													-	
Total Operating Revenue (ACTUAL)	2,209,434	1,813,810	1,788,600	1,760,905	1,817,467	1,995,728	2,258,505	2,487,162	2,600,688	2,559,659	2,234,362	2,294,874	25,821,193	
Total Operating Expenses excl GAC (BUDGET)	(1,703,728)	(1,470,089)	(1,442,592)	(1,552,592)	(1,724,092)	(1,767,092)	(1,828,092)	(1,944,092)	(1,907,092)	(1,838,092)	(1,702,091)	(1,485,497)	(20,365,141)	
GAC (BUDGET)		(160,000)		(160,000)		-	(160,000)	(160,000)		(160,000)			(800,000)	
Operating Expenses excl GAC (ACTUAL)	**(2,315,781)**	**(1,692,032)**	**(1,660,277)**	**(1,603,933)**	**(2,432,794)**	**(1,664,550)**	**(1,654,735)**	**(1,922,103)**	**(1,740,585)**	**(2,922,847)**	**(1,778,290)**	**(1,610,313)**	(22,998,239)	
GAC	**(123,876)**	-	-	**(123,876)**	-	-	**(68,074)**	**(123,876)**			**(123,876)**		(563,578)	
Prepaid Insurance (paid)/refunded							**(64,671)**	**(34,354)**		**(160,409)**		**(140,755)**	(400,189)	
Total Operating Expense (ACTUAL)	(2,439,657)	(1,692,032)	(1,660,277)	(1,727,809)	(2,432,794)	(1,664,550)	(1,787,481)	(2,080,332)	(1,740,585)	(3,083,256)	(1,902,166)	(1,751,068)	(23,962,007)	
Non-Operating Revenue:														
Assessments, net (BUDGET)	686,050	264,605	18,650	2,167,790	745,795	13,325	86,225	134,500	-	-	137,500	2,620,560	6,875,000	
Actual/Projected Assessments, net	**649,895**	**302,122**	**33,330**	**1,922,586**	**737,077**	**36,359**	**86,737**	**150,449**	-	-	**151,918**	**2,597,541**	6,668,015	
Asset Sale/Unencumbered Money (Taxes)									**4,766**				4,766	
RDA Pass-through (Successor Agency)	**254,124**					**470,470**							724,594	253,086
Interest	**36,770**	**15,070**	**29,281**	**33,027**	**30,415**	**32,419**	**32,590**	**31,635**	**12,653**	**43,833**	**12,943**	**23,271**	333,907	
Market Adjustment	**11,113**	**24,995**	**9,551**	**5,603**	**14,958**	**20,887**	**4,922**	**17,522**	**(1,831)**	**3,984**	**(2,975)**	**(2,719)**	106,010	
Grant Re-imbursement	**9,185**												9,185	100,000
Capital Improvement Fees - Infrastructure		**1,963**		**2,833**	**3,114**				**37,361**	**65,587**	**167,135**	**225,960**	503,954	
Capital Improvement Fees - Water Supply									**190,654**	**15,537**	**265,760**	**8,196**	480,147	
DWR Refund (Capital Related)				**111,507**	**33,510**						**70,197**		215,214	
Other	**4,195**	**(3)**	**(19)**	**20,997**	**(4)**	**(11)**	**8**	**300**	**43**		**(50)**	**1,949**	27,405	
Total Non-Operating Revenues (BUDGET)													-	
Total Non-Operating Revenues (ACTUAL)	**965,283**	**344,147**	**72,142**	**2,096,554**	**819,069**	**560,125**	**124,257**	**199,907**	**243,647**	**128,941**	**664,929**	**2,854,198**	**9,073,197**	
Non-Operating Expenses:														
Budgeted Capital Expenditures	(80,000)	(325,000)	(235,000)	(478,000)	(291,000)	(145,000)	(195,000)	(685,000)	(179,500)	(169,500)	(126,000)	(439,785)	(3,348,785)	
Budgeted Capital Expenditures (Committed During Year)													-	
Actual/Projected Capital Expenditures	**(34,053)**	**(15,749)**	**(507,515.89)**	**(106,387)**	**(48,125)**	**(64,096)**	**(59,434)**	**(89,102)**	**(29,873)**	**(67,996)**	**(38,829)**	**(112,944)**	(1,174,104)	(1,299,500)
WRB Capital Expenditures (COP - Amargosa Recharge Proj)				**(225,626)**								-	(225,626)	(1,120,785)
Const. of Monitoring Wells/Test Basin (Water Supply)			**(54,040)**			**(5,540)**					**(15,653)**	-	(75,233)	(293,500)
Grade Control Structure (Water Supply)													-	
SWP Capitalized	**(712,005)**	**(138,030)**	**(160,840)**	**(138,030)**	**(138,029)**	**(138,029)**	**(712,001)**	**(138,029)**	**(167,030)**	**(138,029)**	**(138,028)**	**(138,028)**	(2,856,108)	
Investment in PRWA				**(300,000)**										
Butte County Water Transfer						**(684,855)**						**(695,158)**	(1,380,013)	
Bond Payments - Interest			**(1,295,245)**						**(1,286,120)**				(2,581,365)	
Principal			**(588,735)**						**(1,117,860)**				(1,706,595)	
Capital leases - Holman Capital (2017 Lease)							**(89,477)**						(89,477)	(89,477)
Capital leases - Enterprise FM Trust (Vehicles)	**(5,357)**	**(6,136)**	**(6,121)**	**(6,121)**	**(7,081)**	**(6,121)**	**(6,121)**	**(5,712)**	**(5,563)**	**(5,563)**	**(5,563)**	**(5,563)**	(71,021)	
Capital leases - Wells Fargo (Printers)	**(4,382)**	**(4,382)**	**(4,382)**	**(4,587)**	**(4,587)**	**(4,587)**	**(4,587)**	**(4,587)**	**(4,622)**	**(4,641)**	**(4,532)**	**(5,179)**	(55,054)	
Total Non-Operating Expenses (ACTUAL)	**(755,797)**	**(164,298)**	**(2,616,879)**	**(780,750)**	**(197,821)**	**(903,228)**	**(871,619)**	**(237,430)**	**(2,611,067)**	**(216,229)**	**(202,605)**	**(956,871)**	**(10,214,595)**	
Total Cash Ending Balance (BUDGET)	**11,719,239**	**11,701,222**	**9,716,957**	**11,223,622**	**11,836,793**	**11,371,326**	**11,142,978**	**10,898,854**	**8,880,124**	**9,040,500**	**9,425,377**	**11,649,020**		
Total Cash Ending Balance (ACTUAL)	**11,738,165**	**12,039,792**	**9,623,377**	**10,972,277**	**10,978,197**	**10,966,272**	**10,689,934**	**11,059,239**	**9,551,922**	**8,941,037**	**9,735,558**	**12,176,691**		
											Budget	**11,649,020**	**Carryover**	(2,803,262)
											Difference	**527,671**	**Adj. Difference**	(2,275,591)
2018 Cash Ending Balance (ACTUAL)	**14,185,206**	**14,474,248**	**13,088,750**	**14,753,769**	**15,025,830**	**13,747,742**	**12,855,412**	**12,404,076**	**10,070,582**	**9,788,348**	**9,787,373**	**11,758,902**		

Indicates actual expenditures/revenues:

Indicates anticipated expenditures/revenues:

PALMDALE WATER DISTRICT

BOARD MEMORANDUM

DATE:	February 18, 2020	**February 24, 2020**
TO:	Board of Directors	**Board Meeting**
FROM:	Michael Williams, Finance Manager/CFO	
VIA:	Mr. Dennis LaMoreaux, General Manager	
RE:	***AGENDA ITEM 8.1.b – STATUS REPORT ON FINANCIAL STATEMENTS, REVENUE, AND EXPENSE AND DEPARTMENTAL BUDGET REPORTS FOR DECEMBER 2019. (FINANCE MANAGER WILLIAMS/FINANCE COMMITTEE)***	

Discussion:

Presented here are the Balance Sheet and Profit/Loss Statement for the period ending December 31, 2019. Also included are Quarter-to-Quarter Comparisons and Year-to-Date Revenue and Expense Analysis. Finally, I have provided individual departmental budget reports through the month of December 2019.

This is the 12th month/4th quarter of the District's Budget Year 2019. The target percentage is 100%. Revenues ideally are at or above, and expenditures ideally are below.

Balance Sheet:

- Pages 1 and 2 is our balance sheet trending for the 12-month period and a graphic presentation of Assets, Liabilities, and Net Position at December 31, 2019.
- The significant change is the increase in investments from property assessments, however, they are offset by a reduction in assessment receivables, resulting in a net change in Current Assets of approximately $260K.

Profit/Loss Statement:

- Page 3 is our profit/loss statement trending for the 12-month period.
- Operating revenue is at 97.5% of budget.
- Cash operating expense is at 98.4% of budget.
- All departmental budgets are at or below the target percentage, except for the following:
    - Engineering is over budget due to the SCADA Watch budgeting issues, which was discussed, also due to employee transitioning overlap.
    - Operations is over due to several unexpected expenses occurring such as increased electrical costs, maintenance on the wind turbine, Palmdale Lake management, building maintenance, and increased chemical use.
    - Human Resource is over due to increased employee expense and safety supplies.
    - Water purchases is over budget due to the state recalculating credits.
- Revenues have exceeded expenses for the month by $215K, and year-to-date revenues have exceeded expenditures by $2.5M.
- Under Non-Operating Revenues, interest earnings have exceeded budget by approximately $300K due to bond proceeds earning interest as the grade control project was on hold.
- We received close to $1M in Capital Improvement Fees for the year.

- Pages 4 through 6 is showing the P&L in various graphic forms using major report category totals.
- Page 7 is showing the operating expense distributed between personnel and operation costs. Labor costs are at 55% of total expenses with salaries making up 37% of that.

Quarter-To-Quarter Comparison P&L:

- Page 8 is our yearly 4th quarter comparison, comparing 2019 to 2018.
- Total operating revenue increased $674, or 0.01%.
- Total operating expense increased $380K, or 7%.
- Units billed decreased by 29K.
- Revenue per unit sold increased $0.07.
- Revenue per connection decreased $0.09.
- Units sold per connection decreased 0.39.

Revenue Analysis Year-To-Date:

- Page 9 is our comparison of revenue, year-to-date.
- Operating revenue through December 2019 is up $86K, or 0.35%.
- Retail water revenue from all areas are up by $148K from last year. That's shown by the combined green highlighted area.
- Retail water sales, excluding meter fees, is down $524K.
- Total revenue is up $1M. or 3%.
- Operating revenue is at 97.5% of budget; last year was at 104% of budget.

Expense Analysis Year-To-Date:

- Page 10 is our comparison of expense, year-to-date.
- Cash Operating Expenses through December 2019 are down $853K, or 4%, compared to 2018; note that the 2019 budget is approximately $1.2M less than 2018.
- Total Expenses are down $873K, or 2.5%.

Departments:

- Pages 11 through 21 are detailed individual departmental budgets for your review.

Non-Cash Definitions:

Depreciation: This is the spreading of the total expense of a capital asset over the expected life of that asset.

OPEB Accrual Expense: Other Post-Employment Benefits (OPEB) is the recognized annual required contribution to the benefit. The amount is actuarially determined in accordance with the parameters of GASB 45. The amount represents a level of funding that, if paid on an ongoing basis, is projected to cover normal cost each year.

Bad Debt: The uncollectible accounts receivable that has been written off.

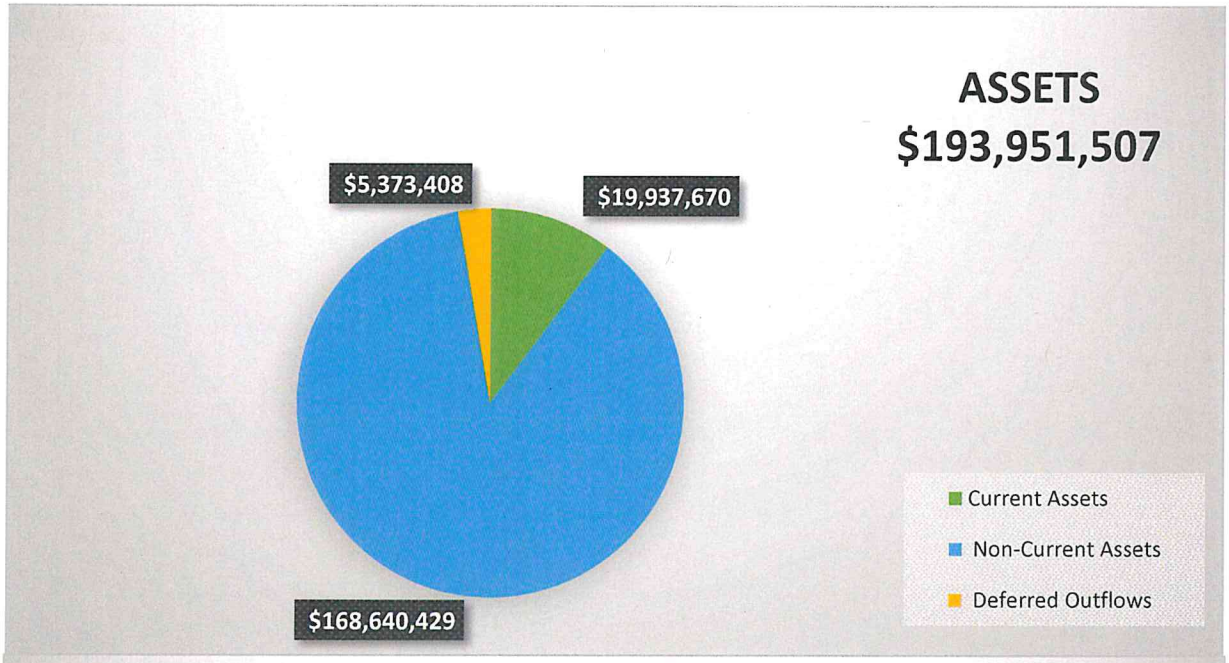
Service Cost Construction: The value of material, parts & supplies from inventory used to construct, repair and maintain our asset infrastructure.

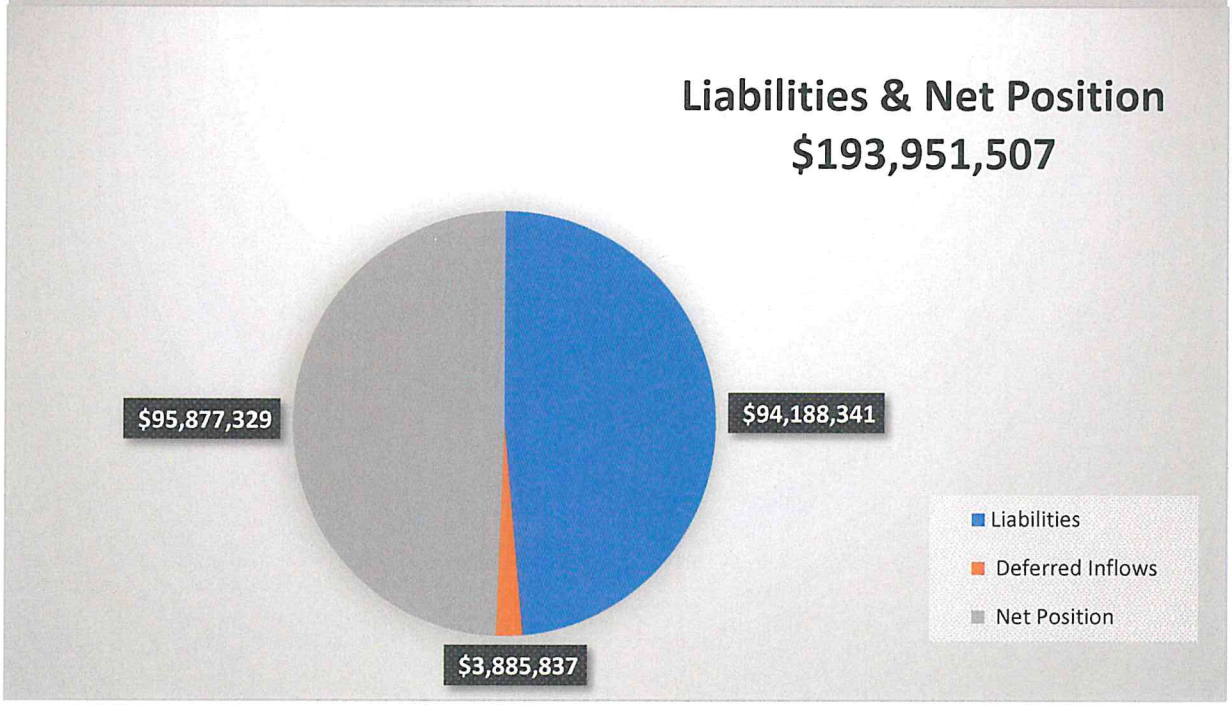
Capitalized Construction: The value of our labor force used to construct our asset infrastructure.

Palmdale Water District
Balance Sheet Report

	January 2019	February 2019	March 2019	April 2019	May 2019	June 2019	July 2019	August 2019	September 2019	October 2019	November 2019	December 2019
ASSETS												
Current Assets:												
Cash and cash equivelents	$ (172,201)	$ 850,293	$ 152,827	$ 556,719	$ 795,587	$ 240,435	$ 860,864	$ 1,049,220	$ 1,717,752	$ 1,007,759	$ 1,207,498	$ 1,021,633
Investments	11,978,425	11,300,101	9,470,551	10,415,558	10,182,610	10,723,893	9,830,124	10,011,150	7,834,171	7,933,278	8,528,060	11,334,691
Accrued interest receivable	-	-	-	-	-	-	-	-	-	-	-	36,583
Accounts receivable - water sales and services, net	1,440,059	1,361,918	1,233,979	1,367,579	1,571,645	1,753,716	1,849,589	2,099,395	2,161,089	2,007,512	2,054,157	1,676,023
Accounts receivable - property taxes and assessments	3,703,618	3,401,497	3,368,166	1,445,580	708,504	672,145	7,185,408	7,034,958	7,034,958	7,004,004	6,852,086	4,254,544
Accounts receivable - other	10,103	10,103	10,103	10,103	10,103	10,103	12,102	11,902	11,802	11,702	11,702	11,702
Materials and supplies inventory	1,015,414	1,054,405	1,561,685	1,529,885	1,508,282	1,476,371	1,391,951	1,336,310	1,232,189	1,135,716	1,080,778	1,020,158
Prepaid items and other deposits	377,107	356,153	335,199	319,466	303,734	352,672	331,550	344,699	323,494	486,466	464,023	582,336
Total Current Assets	**$ 18,352,526**	**$ 18,334,470**	**$ 16,132,510**	**$ 15,644,891**	**$ 15,080,465**	**$ 15,229,335**	**$ 21,461,588**	**$ 21,887,634**	**$ 20,315,455**	**$ 19,586,436**	**$ 20,198,304**	**$ 19,937,670**
Non-Current Assets:												
Restricted - cash and cash equivalents	$ 10,110,068	$ 9,712,855	$ 9,730,512	$ 9,700,094	$ 9,711,621	$ 9,730,473	$ 9,730,473	$ 8,556,559	$ 8,556,559	$ 7,225,673	$ 7,225,673	$ 4,366,086
Investment in Palmdale Recycled Water Authority	1,668,290	1,668,290	1,668,290	1,668,290	1,668,290	1,668,290	1,668,290	1,668,290	1,668,290	1,668,290	1,668,290	1,668,290
Capital assets - not being depreciated	14,706,951	14,263,904	14,444,557	14,794,917	14,620,616	14,812,756	14,960,714	16,343,248	16,502,948	17,637,283	18,144,428	19,997,900
Capital assets - being depreciated, net	143,238,730	143,195,266	142,679,006	142,183,528	142,115,088	142,266,903	142,515,104	141,994,255	141,495,629	141,596,976	141,107,360	142,608,153
Total Non-Current Assets	$ 169,724,038	$ 168,840,315	$ 168,522,365	$ 168,346,829	$ 168,115,615	$ 168,478,422	$ 168,874,581	$ 168,562,353	$ 168,223,426	$ 168,128,222	$ 168,145,750	$ 168,640,429
TOTAL ASSETS	**$ 188,076,564**	**$ 187,174,785**	**$ 184,654,875**	**$ 183,991,720**	**$ 183,196,079**	**$ 183,707,757**	**$ 190,336,168**	**$ 190,449,987**	**$ 188,538,881**	**$ 187,714,658**	**$ 188,344,054**	**$ 188,578,098**
DEFERRED OUTFLOWS OF RESOURCES:												
Deferred loss on debt defeasence, net	$ 2,152,074	$ 2,139,016	$ 2,125,959	$ 2,112,901	$ 2,099,843	$ 2,086,785	$ 2,073,728	$ 2,060,670	$ 2,047,612	$ 2,034,555	$ 2,021,497	$ 2,008,439
Deferred outflows of resources related to pensions	3,364,969	3,364,969	2,837,150	3,364,969	3,364,969	3,364,969	3,364,969	3,364,969	3,364,969	3,364,969	3,364,969	3,364,969
Total Deferred Outflows of Resources	**$ 5,517,043**	**$ 5,503,985**	**$ 4,963,109**	**$ 5,477,870**	**$ 5,464,812**	**$ 5,451,754**	**$ 5,438,697**	**$ 5,425,639**	**$ 5,412,581**	**$ 5,399,524**	**$ 5,386,466**	**$ 5,373,408**
TOTAL ASSETS AND DEFERRED OUTFLOWS OF RESOURCES	**$ 193,593,607**	**$ 192,678,771**	**$ 189,617,984**	**$ 189,469,590**	**$ 188,660,892**	**$ 189,159,511**	**$ 195,774,865**	**$ 195,875,626**	**$ 193,951,463**	**$ 193,114,181**	**$ 193,730,520**	**$ 193,951,507**
LIABILITIES AND NET POSITION												
Current Liabilities:												
Accounts payable and accrued expenses	$ 1,122,481	$ 531,692	$ 358,667	$ 502,130	$ 456,313	$ 128,649	$ 854,544	$ 554,628	$ (63,011)	$ 278,902	$ 557,475	$ 1,125,986
Customer deposits for water service	2,958,940	2,978,009	3,056,060	3,045,452	3,038,060	3,042,331	3,060,658	3,041,570	3,045,087	3,073,526	3,048,257	3,034,578
Construction and developer deposits	1,631,376	1,623,827	1,623,717	1,623,277	1,623,277	1,623,277	1,631,736	1,730,966	1,730,085	1,622,785	1,622,415	1,625,415
Accrued interest payable	864,500	1,080,374	1,296,248	215,356	429,710	644,063	858,416	1,072,769	1,003	212,511	424,020	635,529
Long-term liabilities - due in one year:												
Compensated absences	329,209	356,708	383,947	397,891	384,319	384,319	366,942	365,537	381,560	381,560	398,043	402,331
Capital lease payable	82,364	82,364	82,364	82,364	82,364	82,364	-	-	-	-	-	-
Loan payable	1,186,595	1,186,595	597,860	597,860	597,860	597,860	597,860	597,860	-	-	-	-
Revenue bonds payable	520,000	520,000	520,000	520,000	520,000	520,000	520,000	520,000	-	-	-	-
Total Current Liabilities	**$ 8,695,466**	**$ 8,359,568**	**$ 7,918,863**	**$ 6,984,331**	**$ 7,131,902**	**$ 7,022,862**	**$ 7,890,156**	**$ 7,883,329**	**$ 5,094,725**	**$ 5,569,286**	**$ 6,050,209**	**$ 6,823,839**
Non-Current Liabilities:												
Long-term liabilities - due in more than one year:												
Compensated absences	$ 109,736	$ 118,903	$ 127,982	$ 132,630	$ 128,106	$ 128,106	$ 122,314	$ 121,846	$ 127,187	$ 127,187	$ 132,681	$ 134,110
Capital lease payable	429,316	429,316	429,316	429,316	429,316	429,316	429,316	429,316	429,316	429,316	429,316	429,316
Loan payable	8,746,801	8,735,203	8,723,605	8,712,008	8,700,410	8,688,812	8,677,214	8,665,616	8,654,018	8,642,420	8,630,823	8,619,225
Revenue bonds payable	53,490,000	53,490,000	53,490,000	53,490,000	53,490,000	53,490,000	53,490,000	53,490,000	53,490,000	53,490,000	53,490,000	53,490,000
Net other post employment benefits payable	13,705,196	13,812,256	15,884,436	14,026,376	14,133,436	14,240,495	14,347,555	14,454,615	14,561,559	14,668,076	14,774,592	14,882,392
Aggregate net pension liability	9,809,458	9,809,458	9,265,615	9,809,458	9,809,458	9,809,458	9,809,458	9,809,458	9,809,458	9,809,458	9,809,458	9,809,458
Pension-related debt	-	-	816,046	-	-	-	-	-	-	-	-	-
Total Non-Current Liabilities	**$ 86,290,508**	**$ 86,395,136**	**$ 88,737,001**	**$ 86,599,788**	**$ 86,690,726**	**$ 86,786,188**	**$ 86,875,858**	**$ 86,970,851**	**$ 87,071,539**	**$ 87,166,457**	**$ 87,266,870**	**$ 87,364,502**
Total Liabilities	**$ 94,985,973**	**$ 94,754,704**	**$ 96,655,863**	**$ 93,584,118**	**$ 93,822,627**	**$ 93,809,050**	**$ 94,766,014**	**$ 94,854,180**	**$ 92,166,264**	**$ 92,735,743**	**$ 93,317,079**	**$ 94,188,341**
DEFERRED INFLOWS OF RESOURCES:												
Unearned property taxes and assessments	$ 2,750,000	$ 2,200,000	$ 1,650,000	$ 1,100,000	$ 550,000	$ -	$ 6,050,000	$ 5,500,000	$ 4,950,000	$ 4,400,000	$ 3,850,000	$ 3,300,000
Deferred inflows of resources related to pensions	585,837	585,837	493,082	585,837	585,837	585,837	585,837	585,837	585,837	585,837	585,837	585,837
Total Deferred Inflows of Resources	**$ 3,335,837**	**$ 2,785,837**	**$ 2,143,082**	**$ 1,685,837**	**$ 1,135,837**	**$ 585,837**	**$ 6,635,837**	**$ 6,085,837**	**$ 5,535,837**	**$ 4,985,837**	**$ 4,435,837**	**$ 3,885,837**
NET POSITION:												
Profit/(Loss) from Operations	$ (436,499)	$ (570,067)	$ (2,082,709)	$ (1,508,662)	$ (2,005,869)	$ (943,672)	$ (1,335,282)	$ (772,688)	$ 541,066	$ (315,694)	$ 269,308	$ 169,033
Restricted for investment in Palmdale Recycled Water Authority	1,673,178	1,674,908	1,683,223	1,974,945	1,974,945	1,974,945	1,974,945	1,974,945	1,974,945	1,974,945	1,974,945	1,974,945
Unrestricted	94,035,118	94,033,387	91,218,524	93,733,350	93,733,350	93,733,350	93,733,350	93,733,350	93,733,350	93,733,350	93,733,350	93,733,350
Total Net Position	**$ 95,271,797**	**$ 95,138,229**	**$ 90,819,038**	**$ 94,199,634**	**$ 93,702,427**	**$ 94,764,624**	**$ 94,373,014**	**$ 94,935,608**	**$ 96,249,362**	**$ 95,392,602**	**$ 95,977,604**	**$ 95,877,329**
TOTAL LIABILITIES, DEFERRED INFLOWS OF RESOURCES, AND NET POSITION	**$ 193,593,607**	**$ 192,678,771**	**$ 189,617,984**	**$ 189,469,590**	**$ 188,660,892**	**$ 189,159,511**	**$ 195,774,865**	**$ 195,875,626**	**$ 193,951,463**	**$ 193,114,181**	**$ 193,730,520**	**$ 193,951,507**

BALANCE SHEET AS OF DECEMBER 31, 2019

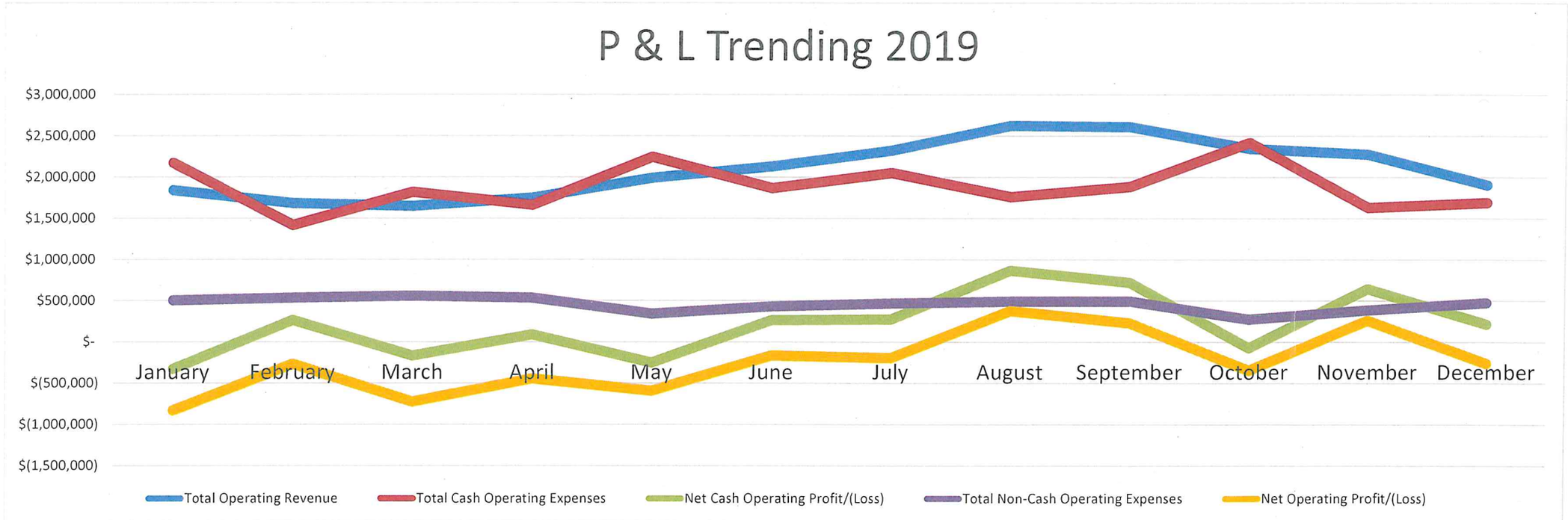


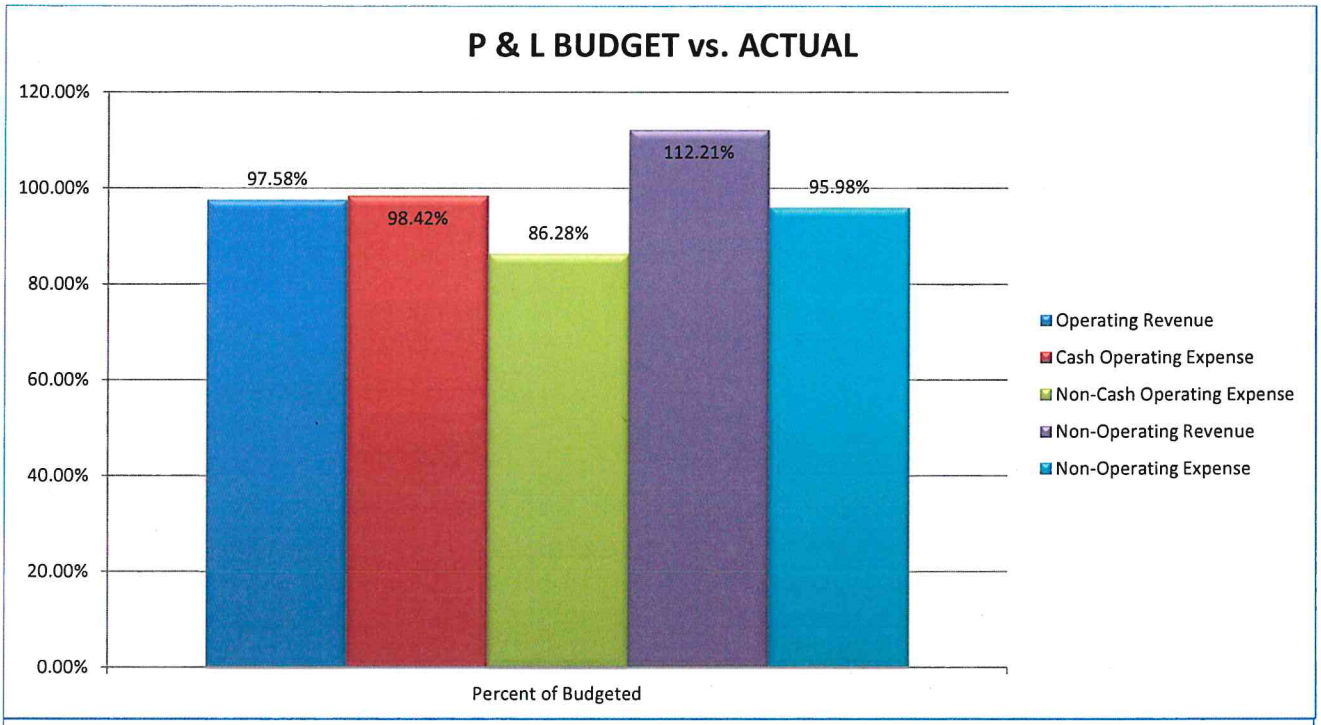


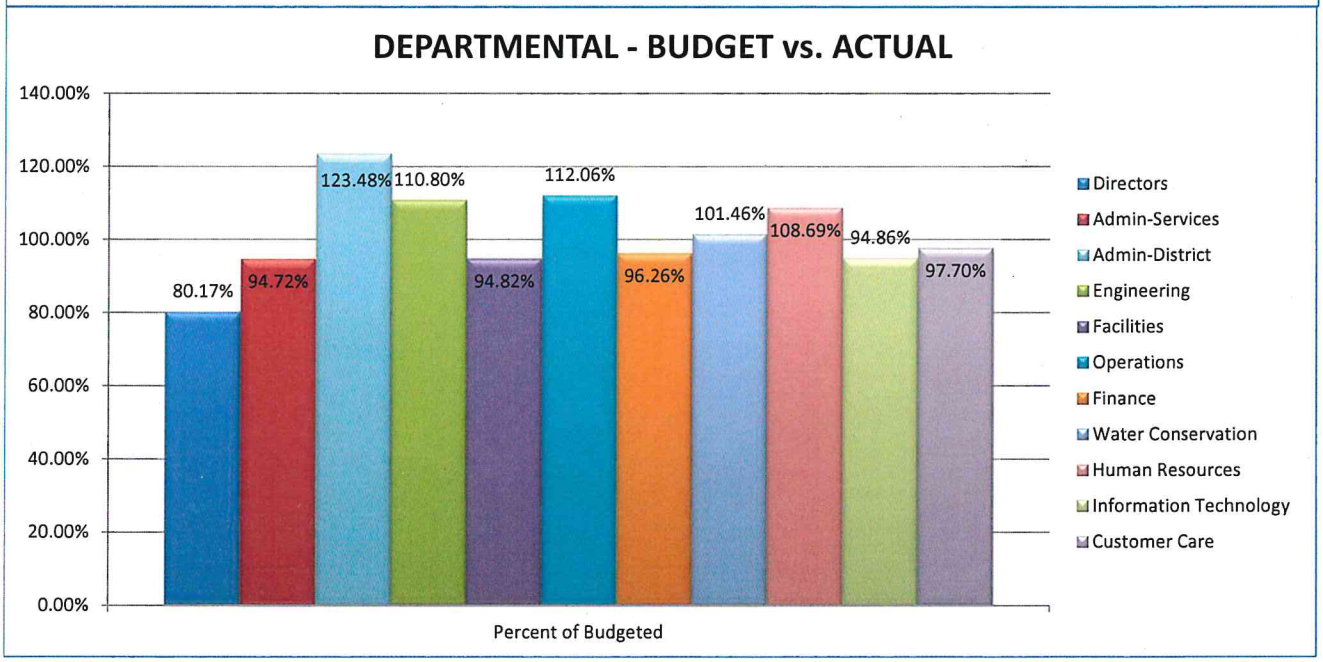
Palmdale Water District
Consolidated Profit and Loss Statement
For the Twelve Months Ending 12/31/2019

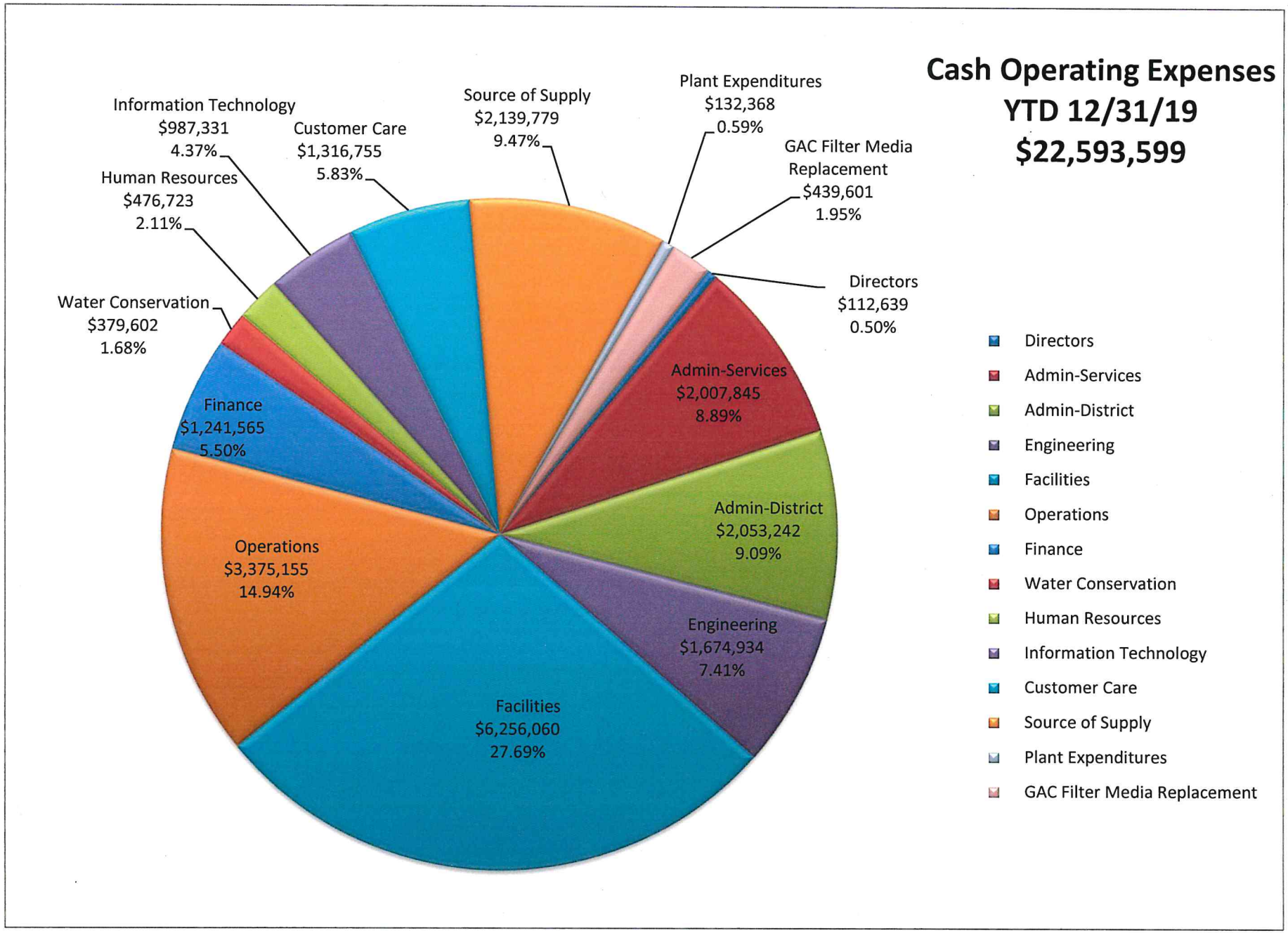
	January	February	March	April	May	June	July	August	September	October	November	December	Year-to-Date	Adjustments	Adjusted Budget	% of Budget
Operating Revenue:																
Wholesale Water	$ 56,939	$ 13,142	$ 4,431	$ 6,159	$ 22,946	$ 48,639	$ 56,792	$ 83,909	$ 74,761	$ 71,002	$ 4,029	$ 82,100	$ 524,847		$ 295,000	177.91%
Water Sales	477,735	391,612	319,697	458,685	650,703	749,758	899,138	1,146,736	1,133,292	915,290	924,049	517,103	8,583,797		9,653,000	88.92%
Meter Fees	1,159,875	1,157,811	1,162,732	1,162,922	1,161,208	1,165,651	1,165,032	1,167,654	1,164,738	1,164,981	1,167,779	1,167,339	13,967,724		13,719,000	101.81%
Water Quality Fees	40,767	37,742	32,863	46,533	64,276	73,116	83,042	98,508	93,494	75,247	70,878	43,909	760,376		826,500	92.00%
Elevation Fees	15,960	13,363	12,081	18,983	29,360	32,486	39,232	46,900	44,049	34,193	30,417	19,070	336,093		370,000	90.84%
Other	89,037	67,662	114,931	55,707	61,381	60,163	78,785	81,190	96,264	84,686	77,812	74,298	941,914		875,000	107.65%
Total Operating Revenue	**$ 1,840,314**	**$ 1,681,332**	**$ 1,646,735**	**$ 1,748,989**	**$ 1,989,874**	**$ 2,129,812**	**$ 2,322,021**	**$ 2,624,898**	**$ 2,606,596**	**$ 2,345,399**	**$ 2,274,964**	**$ 1,903,818**	**$ 25,114,751**	**$ -**	**$ 25,738,500**	**97.58%**
Cash Operating Expenses:																
Directors	$ 5,059	$ 9,071	$ 9,148	$ 7,520	$ 13,575	$ 11,250	$ 8,789	$ 10,399	$ 10,403	$ 10,390	$ 9,467	$ 7,569	$ 112,639		$ 140,500	80.17%
Administration-Services	183,719	161,469	164,756	189,839	225,371	161,136	163,064	143,516	151,506	190,971	140,233	132,266	2,007,845		2,119,700	94.72%
Administration-District	97,102	130,093	271,670	114,846	135,398	261,662	155,309	146,623	209,016	162,994	156,095	212,434	2,053,242		2,166,500	94.77%
Engineering*	166,620	118,271	133,299	115,522	162,159	129,895	121,962	125,821	112,383	208,331	154,588	126,082	1,674,934	(84,809)	1,511,741	110.80%
Facilities	593,796	453,647	384,805	479,361	899,567	468,644	538,487	390,848	497,017	734,315	415,633	399,939	6,256,060		6,598,000	94.82%
Operations	271,872	169,296	233,409	305,016	361,769	237,961	334,133	276,023	303,571	289,474	250,067	342,565	3,375,155		3,012,000	112.06%
Finance	126,506	92,381	90,760	86,475	126,042	95,250	104,902	82,616	98,819	147,221	96,321	94,273	1,241,565		1,289,750	96.26%
Water Conservation	18,601	18,151	19,672	20,884	31,155	17,869	18,141	18,346	18,385	32,657	26,447	139,294	379,602		374,150	101.46%
Human Resources	83,872	16,958	29,352	44,820	48,767	24,902	39,151	38,472	27,907	64,750	36,218	21,555	476,723		438,600	108.69%
Information Technology*	112,651	88,158	47,682	55,307	81,674	109,605	53,697	96,366	59,803	128,008	69,257	85,121	987,331	84,809	1,040,859	94.86%
Customer Care	141,355	103,026	107,220	98,067	131,809	105,973	96,333	91,997	114,653	132,923	83,396	110,002	1,316,755		1,347,700	97.70%
Source of Supply-Purchased Water	249,481	57,943	191,827	141,508	3,577	172,228	290,723	351,954	280,783	192,020	190,569	17,166	2,139,779		1,905,000	112.32%
Plant Expenditures	119,461	(2,733)	8,701	-	21,954	-	-	(15,015)	-	-	-	-	132,368		212,000	62.44%
GAC Filter Media Replacement	-	-	123,876	-	-	67,973	123,876	-	-	123,876	-	-	439,601		800,000	54.95%
Total Cash Operating Expenses	**$ 2,170,095**	**$ 1,415,731**	**$ 1,816,177**	**$ 1,659,165**	**$ 2,242,817**	**$ 1,864,347**	**$ 2,048,568**	**$ 1,757,968**	**$ 1,884,245**	**$ 2,417,931**	**$ 1,628,291**	**$ 1,688,264**	**$ 22,593,599**	**$ -**	**$ 22,956,500**	**98.42%**
Net Cash Operating Profit/(Loss)	**$ (329,782)**	**$ 265,601**	**$ (169,441)**	**$ 89,824**	**$ (252,943)**	**$ 265,466**	**$ 273,453**	**$ 866,930**	**$ 722,351**	**$ (72,532)**	**$ 646,673**	**$ 215,554**	**$ 2,521,153**	**$ -**	**$ 2,782,000**	**90.62%**
Non-Cash Operating Expenses:																
Depreciation	$ 438,723	$ 442,872	$ 439,346	$ 440,091	$ 443,002	$ 433,184	$ 437,529	$ 436,007	$ 427,772	$ 429,933	$ 427,353	$ 452,363	$ 5,248,174		$ 5,050,000	103.92%
OPEB Accrual Expense	127,710	127,710	127,710	127,710	127,710	127,710	127,710	127,710	127,710	127,710	127,710	127,710	1,532,521		1,750,000	87.57%
Bad Debts	2,488	4,732	10,049	968	(4,752)	(5,202)	2,945	2,370	343	220	396	700	15,258		50,000	30.52%
Service Costs Construction	(3,809)	4,106	1,436	14,296	(7,384)	(1,464)	2,506	61,103	24,856	(64,128)	11,474	483	43,476		100,000	43.48%
Capitalized Construction	(63,004)	(45,867)	(22,234)	(49,075)	(217,648)	(125,525)	(104,206)	(137,264)	(87,532)	(219,770)	(182,332)	(105,944)	(1,360,402)		(600,000)	226.73%
Total Non-Cash Operating Expenses	**$ 502,108**	**$ 533,553**	**$ 556,308**	**$ 533,989**	**$ 340,928**	**$ 428,703**	**$ 466,484**	**$ 489,926**	**$ 493,149**	**$ 273,966**	**$ 384,602**	**$ 475,312**	**$ 5,479,027**	**$ -**	**$ 6,350,000**	**86.28%**
Net Operating Profit/(Loss)	**$ (831,890)**	**$ (267,952)**	**$ (725,749)**	**$ (444,165)**	**$ (593,871)**	**$ (163,238)**	**$ (193,031)**	**$ 377,004**	**$ 229,202**	**$ (346,498)**	**$ 262,071**	**$ (259,758)**	**$ (2,957,874)**	**$ -**	**$ (3,568,000)**	**82.90%**
Non-Operating Revenues:																
Assessments (Debt Service)	$ 396,000	$ 396,000	$ 396,000	$ 396,000	$ 396,000	$ 371,945	$ 396,000	$ 396,000	$ 396,000	$ 416,845	$ 416,845	$ 416,845	$ 4,790,480		$ 5,125,000	93.47%
Assessments (1%)	408,124	154,000	154,000	154,000	154,000	617,571	154,000	154,000	158,766	133,155	133,155	133,155	2,507,926		2,300,000	109.04%
DWR Fixed Charge Recovery	-	-	-	111,507	33,510	-	-	-	27,003	5,252	-	-	177,272		175,000	101.30%
Interest	47,884	40,065	38,831	38,631	45,373	53,306	37,512	49,157	10,822	47,816	21,883	20,552	451,831		150,000	301.22%
CIF - Infrastructure	-	1,963	-	2,833	3,114	-	-	-	37,361	65,587	167,135	225,960	503,954		18,750	2687.75%
CIF - Water Supply	-	-	-	-	-	-	-	-	190,654	15,537	265,760	8,196	480,147		56,250	853.59%
Grants - State and Federal	9,185	-	-	-	-	-	-	-	-	-	-	-	9,185		100,000	9.19%
Other	4,195	(3)	(19)	21,197	366	(11)	8	300	43	(43)	(50)	1,949	27,933		50,000	55.87%
Total Non-Operating Revenues	**$ 865,388**	**$ 592,026**	**$ 588,812**	**$ 724,168**	**$ 632,363**	**$ 1,042,811**	**$ 587,520**	**$ 599,457**	**$ 820,650**	**$ 684,149**	**$ 1,004,728**	**$ 806,657**	**$ 8,948,728**	**$ -**	**$ 7,975,000**	**112.21%**
Non-Operating Expenses:																
Interest on Long-Term Debt	$ 226,398	$ 218,157	$ 218,157	$ 216,636	$ 216,636	$ 216,636	$ 223,748	$ 216,636	$ 216,636	$ 213,791	$ 213,791	$ 213,791	$ 2,611,015		$ 2,648,000	98.60%
Amortization of SWP	237,754	237,754	237,754	237,885	237,885	237,885	237,885	237,885	237,885	237,885	237,885	237,885	2,854,227		2,881,000	99.07%
Change in Investments in PRWA	4,888	1,731	-	300,037	-	-	-	-	-	-	-	-	306,655		300,000	102.22%
Water Conservation Programs	957	-	2,930	220	538	4,436	14,585	7,731	3,748	11,912	2,580	288	49,924		236,500	21.11%
Total Non-Operating Expenses	**$ 469,997**	**$ 457,642**	**$ 458,840**	**$ 754,778**	**$ 455,059**	**$ 458,956**	**$ 476,218**	**$ 462,252**	**$ 458,268**	**$ 463,588**	**$ 454,256**	**$ 451,965**	**$ 5,821,821**	**$ -**	**$ 6,065,500**	**95.98%**
Net Earnings	**$ (436,499)**	**$ (133,567)**	**$ (595,777)**	**$ (474,775)**	**$ (416,567)**	**$ 420,617**	**$ (81,730)**	**$ 514,209**	**$ 591,583**	**$ (125,937)**	**$ 812,543**	**$ 94,934**	**$ 169,033**	**$ -**	**$ (1,658,500)**	**-10.19%**

	January	February	March	April	May	June	July	August	September	October	November	December
Total Operating Revenue	$ 1,840,314	$ 1,681,332	$ 1,646,735	$ 1,748,989	$ 1,989,874	$ 2,129,812	$ 2,322,021	$ 2,624,898	$ 2,606,596	$ 2,345,399	$ 2,274,964	$ 1,903,818
Total Cash Operating Expenses	$ 2,170,095	$ 1,415,731	$ 1,816,177	$ 1,659,165	$ 2,242,817	$ 1,864,347	$ 2,048,568	$ 1,757,968	$ 1,884,245	$ 2,417,931	$ 1,628,291	$ 1,688,264
Net Cash Operating Profit/(Loss)	$ (329,782)	$ 265,601	$ (169,441)	$ 89,824	$ (252,943)	$ 265,466	$ 273,453	$ 866,930	$ 722,351	$ (72,532)	$ 646,673	$ 215,554
Total Non-Cash Operating Expenses	$ 502,108	$ 533,553	$ 556,308	$ 533,989	$ 340,928	$ 428,703	$ 466,484	$ 489,926	$ 493,149	$ 273,966	$ 384,602	$ 475,312
Net Operating Profit/(Loss)	$ (831,890)	$ (267,952)	$ (725,749)	$ (444,165)	$ (593,871)	$ (163,238)	$ (193,031)	$ 377,004	$ 229,202	$ (346,498)	$ 262,071	$ (259,758)

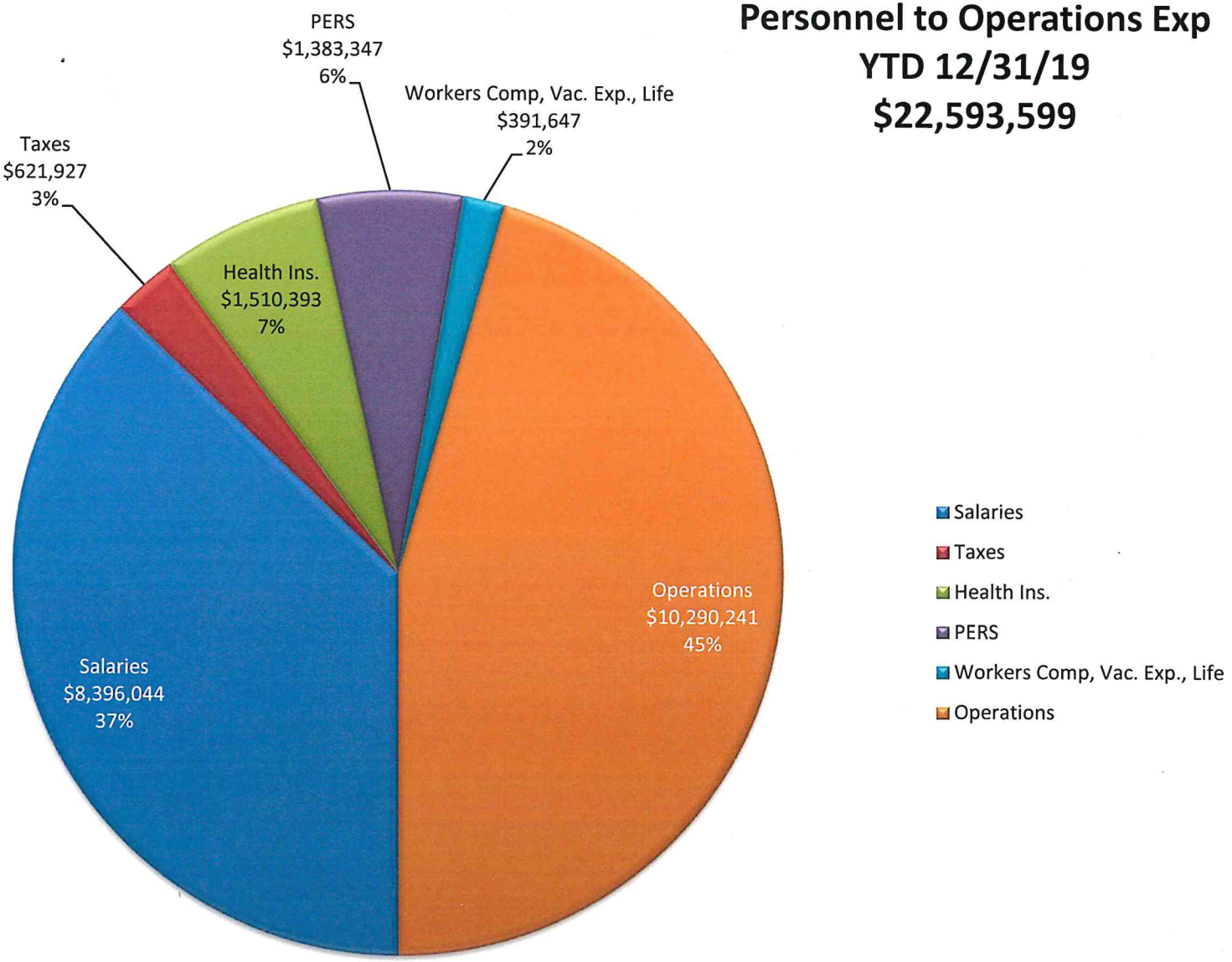



P & L BUDGET vs. ACTUAL
120.00%
100.00%
80.00%
60.00%
40.00%
20.00%
0.00%
97.58%
98.42%
86.28%
112.21%
95.98%
Operating Revenue
Cash Operating Expense
Non-Cash Operating Expense
Non-Operating Revenue
Non-Operating Expense
Percent of Budgeted


DEPARTMENTAL - BUDGET vs. ACTUAL
140.00%
120.00%
100.00%
80.00%
60.00%
40.00%
20.00%
0.00%
80.17%
94.72%
123.48%
110.80%
94.82%
112.06%
96.26%
101.46%
108.69%
94.86%
97.70%
Directors
Admin-Services
Admin-District
Engineering
Facilities
Operations
Finance
Water Conservation
Human Resources
Information Technology
Customer Care
Percent of Budgeted


Cash Operating Expenses
YTD 12/31/19
$22,593,599
Information Technology
$987,331
4.37%
Customer Care
$1,316,755
5.83%
Source of Supply
$2,139,779
9.47%
Plant Expenditures
$132,368
0.59%
GAC Filter Media
Replacement
$439,601
1.95%
Human Resources
$476,723
2.11%
Directors
$112,639
0.50%
Water Conservation
$379,602
1.68%
Admin-Services
$2,007,845
8.89%
Finance
$1,241,565
5.50%
Admin-District
$2,053,242
9.09%
Operations
$3,375,155
14.94%
Engineering
$1,674,934
7.41%
Facilities
$6,256,060
27.69%
Directors
Admin-Services
Admin-District
Engineering
Facilities
Operations
Finance
Water Conservation
Human Resources
Information Technology
Customer Care
Source of Supply
Plant Expenditures
GAC Filter Media Replacement

Personnel to Operations Exp
YTD 12/31/19
$22,593,599



Palmdale Water District
Profit and Loss Statement
Quarterly Comparison

	4th Qtr 2018	4th Qtr 2019	Change	% Change
Operating Revenue:				
Wholesale Water	$ 230,348	$ 157,130	$ (73,219)	-31.79%
Water Sales	2,328,964	2,356,442	27,478	1.18%
Meter Fees	3,439,307	3,500,100	60,792	1.77%
Water Quality Fees	193,235	190,034	(3,201)	-1.66%
Elevation Fees	90,949	83,681	(7,269)	-7.99%
Other	240,703	236,795	(3,908)	-1.62%
Total Operating Revenue	**$ 6,523,507**	**$ 6,524,181**	**$ 674**	**0.01%**
Cash Operating Expenses:				
Directors	$ 27,801	$ 27,425	$ (376)	-1.35%
Administration-Services	525,273	463,470	(61,803)	-11.77%
Administration-District	499,001	531,523	32,522	6.52%
Engineering	434,036	489,001	54,965	12.66%
Facilities	1,434,007	1,549,888	115,881	8.08%
Operations	831,826	882,106	50,280	6.04%
Finance	306,531	337,814	31,284	10.21%
Water Conservation	62,391	198,398	136,008	217.99%
Human Resources	120,026	122,523	2,497	2.08%
Information Technology	177,964	282,387	104,422	58.68%
Customer Care	359,676	326,321	(33,356)	-9.27%
Source of Supply-Purchased Water	223,168	399,755	176,587	79.13%
Plant Expenditures	119,792	-	(119,792)	-100.00%
GAC Filter Media Replacement	232,702	123,876	(108,826)	-46.77%
Total Cash Operating Expenses	**$ 5,354,193**	**$ 5,734,485**	**$ 380,292**	**7.10%**
Non-Cash Operating Expenses:				
Depreciation	$ 1,320,579	$ 1,309,649	$ (10,930)	-0.83%
OPEB Accrual Expense	383,130	383,130	-	0.00%
Bad Debts	4,430	(52,170)	(56,600)	-1277.67%
Service Costs Construction	23,435	(52,170)	(75,605)	-322.62%
Capitalized Construction	(336,713)	(508,045)	(171,333)	50.88%
Total Non-Cash Operating Expenses	**$ 1,394,861**	**$ 1,080,393**	**$ (314,468)**	**-22.54%**
Net Operating Profit/(Loss)	**$ (225,548)**	**$ (290,698)**	**$ (65,150)**	**28.89%**
Non-Operating Revenues:				
Assessments (Debt Service)	$ 834,837	$ 1,250,535	$ 415,698	49.79%
Assessments (1%)	715,163	399,465	(315,698)	-44.14%
DWR Fixed Charge Recovery	76,515	5,252	(71,263)	-93.14%
Interest	117,733	90,251	(27,482)	-23.34%
CIF - Infrastructure	18,573	458,682	440,110	2369.63%
CIF - Water Supply	37,298	289,493	252,195	676.16%
Grants - State and Federal	-	-	-	
Other	66,978	1,856	(65,122)	-97.23%
Total Non-Operating Revenues	**$ 1,867,097**	**$ 2,495,534**	**$ 628,438**	33.66%
Non-Operating Expenses:				
Interest on Long-Term Debt	$ 654,471	$ 641,374	$ (13,096)	-2.00%
Amortization of SWP	713,262	713,655	393	0.06%
Change in Investments in PRWA	(296,423)	-	296,423	-100.00%
Water Conservation Programs	23,425	14,780	(8,645)	-36.90%
Total Non-Operating Expenses	**$ 1,094,734**	**$ 1,369,809**	**$ 275,075**	25.13%
Net Earnings	**$ 546,815**	**$ 835,027**	**$ 288,212**	**52.71%**

Consumption Comparison

	2018	2019
Units Billed	1,757,111	1,728,018
Active	80,080	80,184
Vacant	2,123	2,133
Rev/unit	$ 3.71	$ 3.78
Rev/con	$ 81.46	$ 81.37
Unit/con	21.94	21.55

Palmdale Water District
Revenue Analysis
For the Twelve Months Ending 12/31/2019

	2019 Thru November	December	Year-to-Date	Adjusted Budget	% of Budget	2018 to 2019 Comparison December	Year-to-Date	% Change
Operating Revenue:								
Wholesale Water	$ 442,747	$ 82,100	$ 524,847	$ 295,000	177.91%	$ 18,137	$ 27,871	5.61%
Water Sales	8,066,695	517,103	8,583,797	9,653,000	88.92%	(81,765)	(439,720)	-4.87%
Meter Fees	12,800,385	1,167,339	13,967,724	13,719,000	101.81%	(75,212)	673,242	5.06%
Water Quality Fees	716,468	43,909	760,376	826,500	92.00%	(7,572)	(42,930)	-5.34%
Elevation Fees	317,022	19,070	336,093	370,000	90.84%	(3,713)	(42,287)	-11.18%
Other	867,616	74,298	941,914	875,000	107.65%	(1,375)	(89,936)	-8.72%
Total Water Sales	**$ 23,210,933**	**$ 1,903,818**	**$ 25,114,751**	**$ 25,738,500**	**97.58%**	**$ (151,499)**	**$ 86,240**	**0.35%**
Non-Operating Revenues:								
Assessments (Debt Service)	$ 4,373,635	$ 416,845	$ 4,790,480	$ 5,125,000	93.47%	$ 462,841	$ (21,255)	-0.44%
Assessments (1%)	2,374,771	133,155	2,507,926	2,300,000	109.04%	(296,175)	71,718	2.94%
DWR Fixed Charge Recovery	177,272	-	177,272	175,000	101.30%	-	(89,605)	-33.58%
Interest	431,279	20,552	451,831	150,000	301.22%	(21,409)	159,515	54.57%
CIF - Infrastructure	277,994	225,960	503,954	18,750	#######	225,960	466,886	1259.54%
CIF - Water Supply	471,951	8,196	480,147	56,250	853.59%	8,196	410,268	587.11%
Grants - State and Federal	9,185	-	9,185	100,000	9.19%	-	(38,482)	-80.73%
Other	25,984	1,949	27,933	50,000	55.87%	(40,014)	(42,294)	-60.23%
Total Non-Operating Revenues	**$ 8,142,071**	**$ 806,657**	**$ 8,948,728**	**$ 7,975,000**	**112.21%**	**$ 339,400**	**$ 916,751**	**11.41%**
Total Revenue	**$ 31,353,004**	**$ 2,710,475**	**$ 34,063,479**	**$ 33,713,500**	**101.04%**	**$ 187,901**	**$ 1,002,991**	**3.08%**

	2018 Thru November	December	Year-to-Date	Adjusted Budget	% of Budget
Operating Revenue:					
Wholesale Water	$ 433,013	$ 63,962	$ 496,976	$ 160,000	310.61%
Water Sales	8,424,650	598,868	9,023,517	8,320,000	108.46%
Meter Fees	12,051,932	1,242,551	13,294,482	13,006,500	102.21%
Water Quality Fees	751,826	51,480	803,306	941,000	85.37%
Elevation Fees	355,597	22,783	378,380	360,000	105.11%
Other	956,177	75,673	1,031,850	800,000	128.98%
Total Water Sales	**$ 22,540,181**	**$ 1,991,355**	**$ 24,531,536**	**$ 23,587,500**	**104.00%**
Non-Operating Revenues:					
Assessments (Debt Service)	$ 4,857,731	$ (45,996)	$ 4,811,735	$ 5,125,000	93.89%
Assessments (1%)	2,006,879	429,330	2,436,209	2,375,000	102.58%
DWR Fixed Charge Recovery	266,877	-	266,877	175,000	152.50%
Interest	250,356	41,960	292,316	90,000	324.80%
CIF - Infrastructure	37,068	-	37,068	62,500	59.31%
CIF - Water Supply	69,879	-	69,879	187,500	37.27%
Grants - State and Federal	47,667	-	47,667	178,000	26.78%
Other	28,264	41,963	70,227	60,000	117.05%
Total Non-Operating Revenues	**$ 7,564,720**	**$ 467,257**	**$ 8,031,977**	**$ 8,253,000**	**97.32%**
Total Revenue	**$ 30,104,901**	**$ 2,458,611**	**$ 32,563,513**	**$ 31,840,500**	**102.27%**

Palmdale Water District
Operating Expense Analysis
For the Twelve Months Ending 12/31/2019

	2019					2018 to 2019 Comparison		
	Thru November	December	Year-to-Date	Adjusted Budget	% of Budget	December	Year-to-Date	% Change
Cash Operating Expenses:								
Directors	$ 105,071	$ 7,569	$ 112,639	$ 140,500	80.17%	$ (1,416)	$ (9,613)	-7.86%
Administration-Services	1,875,580	132,266	2,007,845	2,119,700	94.72%	(23,770)	140,029	7.50%
Administration-District	1,840,808	212,434	2,053,242	2,166,500	94.77%	(62,750)	47,048	2.35%
Engineering	1,548,852	126,082	1,674,934	1,596,550	104.91%	11,924	(71,681)	-4.10%
Facilities	5,856,121	399,939	6,256,060	6,598,000	94.82%	7,220	(409,471)	-6.14%
Operations	3,032,591	342,565	3,375,155	3,012,000	112.06%	9,035	(181,873)	-5.11%
Finance	1,147,292	94,273	1,241,565	1,289,750	96.26%	2,978	(14,765)	-1.18%
Water Conservation	240,308	139,294	379,602	374,150	101.46%	122,073	145,226	61.96%
Human Resources	455,168	21,555	476,723	438,600	108.69%	36,261	(29,402)	-5.81%
Information Technology	902,210	85,121	987,331	956,050	103.27%	9,457	249,702	33.85%
Customer Care	1,206,753	110,002	1,316,755	1,347,700	97.70%	(16,936)	(41,739)	-3.07%
Source of Supply-Purchased Water	2,122,613	17,166	2,139,779	1,905,000	112.32%	(7,995)	461,190	27.47%
Plant Expenditures	132,368	-	132,368	212,000	62.44%	410,397	(456,868)	-77.54%
GAC Filter Media Replacement	439,601	-	439,601	800,000	54.95%	(123,876)	(681,659)	-60.79%
Total Cash Operating Expenses	**$ 20,905,335**	**$ 1,688,264**	**$ 22,593,599**	**$ 22,956,500**	**98.42%**	**$ 372,603**	**$ (853,877)**	**-3.78%**
Non-Cash Operating Expenses:								
Depreciation	$ 4,795,811	$ 452,363	$ 5,248,174	$ 5,050,000	103.92%	$ 3,875	$ (69,879)	-1.31%
OPEB Accrual Expense	1,404,811	127,710	1,532,521	1,750,000	87.57%	-	-	
Bad Debts	14,558	700	15,258	50,000	30.52%	(1,506)	(77,140)	-83.49%
Service Costs Construction	42,992	483	43,476	100,000	43.48%	11,697	(52,461)	-54.68%
Capitalized Construction	(1,254,458)	(105,944)	(1,360,402)	(600,000)	226.73%	(16,235)	(485,781)	55.54%
Total Non-Cash Operating Expenses	**$ 5,003,715**	**$ 475,312**	**$ 5,479,027**	**$ 6,350,000**	**86.28%**	**$ (2,170)**	**$ (685,261)**	**-12.51%**
Non-Operating Expenses:								
Interest on Long-Term Debt	$ 2,397,223	$ 213,791	$ 2,611,015	$ 2,648,000	98.60%	$ (4,365)	$ 205,120	8.53%
Amortization of SWP	2,616,342	237,885	2,854,227	2,881,000	99.07%	131	207,827	7.85%
Change in Investments in PRWA	306,655	-	306,655	300,000	102.22%	296,423	298,341	3588.20%
Water Conservation Programs	49,636	288	49,924	236,500	21.11%	(13,541)	(45,178)	-47.51%
Total Non-Operating Expenses	**$ 5,369,856**	**$ 451,965**	**$ 5,821,821**	**$ 6,065,500**	**95.98%**	**$ 278,648**	**$ 666,109**	**12.92%**
Total Expenses	**$ 31,278,906**	**$ 2,615,541**	**$ 33,894,446**	**$ 35,372,000**	**95.82%**	**$ 649,081**	**$ (873,029)**	**-2.51%**

Palmdale Water District
Operating Expense Analysis
For the Twelve Months Ending 12/31/2019

2018 to 2019 Comparison

	2018 Thru November	December	Year-to-Date	Adjusted Budget	% of Budget
Cash Operating Expenses:					
Directors	$ 113,268	$ 8,984	$ 122,252	$ 140,500	87.01%
Administration-Services	1,711,781	156,035	1,867,816	1,957,200	95.43%
Administration-District	1,731,009	275,184	2,006,193	1,730,000	115.96%
Engineering	1,632,458	114,157	1,746,615	1,662,900	105.03%
Facilities	6,272,812	392,720	6,665,531	7,091,750	93.99%
Operations	3,223,499	333,530	3,557,028	3,032,007	117.32%
Finance	1,165,035	91,294	1,256,330	1,291,250	97.30%
Water Conservation	217,155	17,221	234,376	300,000	78.13%
Human Resources	520,831	(14,707)	506,125	636,850	79.47%
Information Technology	661,965	75,664	737,629	896,350	82.29%
Customer Care	1,231,557	126,937	1,358,494	1,312,700	103.49%
Source of Supply-Purchased Water	1,653,427	25,161	1,678,589	2,100,000	79.93%
Plant Expenditures	999,634	(410,397)	589,237	1,144,000	51.51%
GAC Filter Media Replacement	997,384	123,876	1,121,260	840,000	133.48%
Total Cash Operating Expenses	**$ 22,131,815**	**$ 1,315,660**	**$ 23,447,476**	**$ 24,135,507**	**97.15%**
Non-Cash Operating Expenses:					
Depreciation	$ 4,869,565	$ 448,488	$ 5,318,053	$ 6,000,000	88.63%
OPEB Accrual Expense	1,404,811	127,710	1,532,521	2,300,000	66.63%
Bad Debts	90,192	2,207	92,399	50,000	184.80%
Service Costs Construction	107,150	(11,213)	95,937	125,000	76.75%
Capitalized Construction	(784,912)	(89,709)	(874,621)	(600,000)	145.77%
Total Non-Cash Operating Expenses	**$ 5,686,806**	**$ 477,482**	**$ 6,164,288**	**$ 7,875,000**	**78.28%**
Non-Operating Expenses:					
Interest on Long-Term Debt	$ 2,187,738	$ 218,157	$ 2,405,895	$ 2,063,500	116.59%
Amortization of SWP	2,408,646	237,754	2,646,400	2,851,000	92.82%
Change in Investments in PRWA	304,738	(296,423)	8,315	300,000	2.77%
Water Conservation Programs	81,273	13,829	95,102	221,000	43.03%
Total Non-Operating Expenses	**$ 4,982,395**	**$ 173,317**	**$ 5,155,712**	**$ 5,435,500**	**94.85%**
Total Expenses	**$ 32,801,016**	**$ 1,966,460**	**$ 34,767,475**	**$ 37,446,007**	**92.85%**

Palmdale Water District
2019 Directors Budget
For the Twelve Months Ending Tuesday, December 31, 2019

	YTD ACTUAL 2019	ORIGINAL BUDGET 2019	ADJUSTMENTS 2019	ADJUSTED BUDGET REMAINING	PERCENT USED
Personnel Budget:					
1-01-4000-000 Directors Pay	$ -	$ -	$ -	$ -	
Employee Benefits					
1-01-4005-000 Payroll Taxes	4,382	5,500		1,118	79.67%
Subtotal (Benefits)	4,382	5,500	-	1,118	79.67%
Total Personnel Expenses	$ 4,382	$ 5,500	$ -	$ 1,118	79.67%
OPERATING EXPENSES:					
1-01-xxxx-006 Director Share - Dizmang, Gloria	$ 6,965	$ 23,010		$ 16,045	30.27%
1-01-xxxx-007 Director Share - Alvarado, Robert	31,400	27,000		(4,400)	116.30%
1-01-xxxx-008 Director Share - Mac Laren, Kathy	23,701	27,000		3,299	87.78%
1-01-xxxx-010 Director Share - Dino, Vincent	21,415	27,000		5,585	79.31%
1-01-xxxx-011 Director Share - Henriquez, Marco	3,990	3,990		(0)	100.01%
1-01-xxxx-012 Director Share - Wilson, Don	20,787	27,000		6,213	76.99%
Subtotal Operating Expenses	108,257	135,000	-	26,742	80.19%
Total O & M Expenses	$ 112,639	$ 140,500	$ -	$ 27,860	80.17%

Palmdale Water District
2019 Administration Services Budget
For the Twelve Months Ending Tuesday, December 31, 2019

		YTD ACTUAL 2019	ORIGINAL BUDGET 2019	ADJUSTMENTS 2019	ADJUSTED BUDGET REMAINING	PERCENT USED
Personnel Budget:						
1-02-4000-000	Salaries	$ 1,253,418	$ 1,350,000		$ 96,582	92.85%
1-02-4000-100	Overtime	3,878	14,000		10,122	27.70%
	Subtotal (Salaries)	$ 1,257,296	$ 1,364,000	$ -	$ 106,704	92.18%
Employee Benefits						
1-02-4005-000	Payroll Taxes	$ 82,787	$ 96,500		13,713	85.79%
1-02-4010-000	Health Insurance	189,419	194,000		4,581	97.64%
1-02-4015-000	PERS	98,751	120,000		21,249	82.29%
	Subtotal (Benefits)	$ 370,957	$ 410,500	$ -	$ 39,543	90.37%
	Total Personnel Expenses	$ 1,628,253	$ 1,774,500	$ -	$ 146,247	91.76%
OPERATING EXPENSES:						
1-02-4050-000	Staff Travel	$ 13,469	$ 14,000	$ -	$ 531	96.21%
1-02-4050-100	General Manager Travel	5,332	5,000		(332)	106.64%
1-02-4060-000	Staff Conferences & Seminars	10,398	6,000		(4,398)	173.30%
1-02-4060-100	General Manager Conferences & Seminars	3,414	4,000		586	85.35%
1-02-4130-000	Bank Charges	184,167	150,000		(34,167)	122.78%
1-02-4150-000	Accounting Services	25,736	25,000		(736)	102.94%
1-02-4175-000	Permits	13,554	17,500		3,946	77.45%
1-02-4180-000	Postage	11,227	25,000		13,773	44.91%
1-02-4190-100	Public Relations - Publications	21,155	30,000		8,845	70.52%
1-02-4190-700	Public Affairs - Marketing/Outreach	46,562	25,000		(21,562)	186.25%
1-02-4190-710	Public Affairs -Advertising	3,134	4,000		866	78.35%
1-02-4190-720	Public Affairs - Equipment	1,333	2,500		1,167	53.33%
1-02-4190-730	Public Affairs -Conference/Seminar/Travel	1,389	2,500		1,111	55.56%
1-02-4190-740	Public Affairs - Consultants	-	3,000		3,000	0.00%
1-02-4190-750	Public Affairs - Membership	865	700		(165)	123.57%
1-02-4200-000	Advertising	2,242	4,000		1,758	56.05%
1-02-4205-000	Office Supplies	30,132	22,000		(8,132)	136.96%
1-02-4210-000	Office Furniture	5,482	5,000		(482)	109.64%
	Subtotal Operating Expenses	$ 379,592	$ 345,200	$ -	$ (34,392)	109.96%
	Total Departmental Expenses	$ 2,007,845	$ 2,119,700	$ -	$ 111,855	94.72%

Palmdale Water District
2019 Administration District Wide Budget
For the Twelve Months Ending Tuesday, December 31, 2019

	YTD ACTUAL 2019	ORIGINAL BUDGET 2019	ADJUSTMENTS 2019	ADJUSTED BUDGET REMAINING	PERCENT USED
Personnel Budget:					
1-02-5070-001 On-Call	$ 76,857	$ 105,000		$ 28,143	73.20%
Subtotal (Salaries)	$ 76,857	$ 105,000	$ -	$ 28,143	73.20%
Employee Benefits					
1-02-5070-002 PERS-Unfunded Liability	$ 699,416	$ 699,000		(416)	100.06%
1-02-5070-003 Workers Compensation	325,844	375,000		49,156	86.89%
1-02-5070-004 Vacation Benefit Expense	59,410	25,000		(34,410)	237.64%
1-02-5070-005 Life Insurance	6,392	6,500		108	98.34%
Subtotal (Benefits)	$ 1,091,062	$ 1,105,500	$ -	$ 14,438	98.69%
Total Personnel Expenses	$ 1,167,919	$ 1,210,500	$ -	$ 42,581	96.48%
OPERATING EXPENSES:					
1-02-5070-006 Other Operating	$ 23,109	$ 25,000		1,891	92.44%
1-02-5070-007 Consultants	243,954	234,000		(9,954)	104.25%
1-02-5070-008 Insurance	230,945	280,000		49,055	82.48%
1-02-5070-009 Groundwater Adjudication - Legal	63,390	40,000		(23,390)	158.48%
1-02-5070-010 Legal Services	121,969	125,000		3,031	97.58%
1-02-5070-011 Memberships/Subscriptions	110,031	125,000		14,969	88.03%
1-02-5070-012 Elections	51,671	57,000		5,329	90.65%
1-02-5070-014 Groundwater Adjudication - Assessment	40,251	45,000		4,749	89.45%
Subtotal Operating Expenses	$ 885,323	$ 931,000	$ -	$ 45,677	95.09%
Total Departmental Expenses	$ 2,053,242	$ 2,141,500	$ -	$ 88,258	95.88%

Palmdale Water District
2019 Engineering Budget
For the Twelve Months Ending Tuesday, December 31, 2019

	YTD ACTUAL 2019	ORIGINAL BUDGET 2019	ADJUSTMENTS 2019	ADJUSTED BUDGET REMAINING	PERCENT USED
Personnel Budget:					
1-03-4000-000 Salaries*	$ 1,169,136	$ 1,092,500	$ (68,789)	$ (145,425)	114.21%
1-03-4000-100 Overtime*	43,158	11,250	(1,433)	(33,341)	439.63%
Subtotal (Salaries)	$ 1,212,295	$ 1,103,750	$ (70,222)	$ (178,767)	117.30%
Employee Benefits					
1-03-4005-000 Payroll Taxes*	90,342	82,000	(7,711)	(16,053)	121.61%
1-03-4010-000 Health Insurance	215,206	211,000		(4,206)	101.99%
1-03-4015-000 PERS*	100,184	106,000	(6,876)	(1,060)	101.07%
Subtotal (Benefits)	$ 405,732	$ 399,000	$ (14,587)	$ (21,319)	105.55%
Total Personnel Expenses	$ 1,618,027	$ 1,502,750	$ (84,809)	$ (200,086)	114.11%
OPERATING EXPENSES:					
1-03-4050-000 Staff Travel	$ 6,090	$ 4,500		$ (1,590)	135.34%
1-03-4060-000 Staff Conferences & Seminars	1,590	4,800		3,210	33.13%
1-03-4060-001 Staff Training - Auto CAD Civil 3D	-	13,000		13,000	0.00%
1-03-4155-000 Contracted Services	2,481	20,000		17,519	12.40%
1-03-4165-000 Memberships/Subscriptions	5,670	2,500		(3,170)	226.79%
1-03-4250-000 General Materials & Supplies	3,665	10,500		6,835	34.90%
1-03-8100-100 Computer Software - Maint. & Support	5,539	31,000		25,461	17.87%
1-03-8100-200 Computer Software - SCADAWatch	31,873	7,500		(24,373)	424.97%
Subtotal Operating Expenses	$ 56,907	$ 93,800	$ -	$ 36,893	60.67%
Total Departmental Expenses	$ 1,674,934	$ 1,596,550	$ (84,809)	$ (163,193)	110.80%

* Budget adjustments by Board action 03/25/19

Palmdale Water District
2019 Facilities Budget
For the Twelve Months Ending Tuesday, December 31, 2019

		YTD ACTUAL 2019	ORIGINAL BUDGET 2019	ADJUSTMENTS 2019	ADJUSTED BUDGET REMAINING	PERCENT USED
Personnel Budget:						
1-04-4000-000	Salaries	$ 2,222,518	$ 2,251,500		$ 28,982	98.71%
1-04-4000-100	Overtime	170,255	115,000		(55,255)	148.05%
	Subtotal (Salaries)	$ 2,392,774	$ 2,366,500	$ -	$ (26,274)	101.11%
Employee Benefits						
1-04-4005-000	Payroll Taxes	187,297	181,000		(6,297)	103.48%
1-04-4010-000	Health Insurance	524,040	473,000		(51,040)	110.79%
1-04-4015-000	PERS	191,029	230,500		39,471	82.88%
	Subtotal (Benefits)	$ 902,365	$ 884,500	$ -	$ (17,865)	102.02%
	Total Personnel Expenses	$ 3,295,139	$ 3,251,000	$ -	$ (44,139)	101.36%
OPERATING EXPENSES:						
1-04-4050-000	Staff Travel	$ 8,290	$ 6,000		$ (2,290)	138.17%
1-04-4060-000	Staff Confrences & Seminars	4,313	15,000		10,687	28.76%
1-04-4155-000	Contracted Services	496,981	571,500		74,519	86.96%
1-04-4175-000	Permits-Dams	42,780	40,000		(2,780)	106.95%
1-04-4215-100	Natural Gas - Wells & Boosters	222,292	210,000		(12,292)	105.85%
1-04-4215-200	Natural Gas - Buildings	10,010	9,000		(1,010)	111.22%
1-04-4220-100	Electricity - Wells & Boosters	1,061,023	1,150,000		88,977	92.26%
1-04-4220-200	Electricity - Buildings	71,542	88,000		16,458	81.30%
1-04-4225-000	Maint. & Repair - Vehicles	21,819	32,500		10,681	67.14%
1-04-4230-100	Maint. & Rep. Office Building	6,284	25,000		18,716	25.13%
1-04-4235-110	Maint. & Rep. Equipment	8,389	12,000		3,611	69.91%
1-04-4235-400	Maint. & Rep. Operations - Wells	53,267	80,000		26,733	66.58%
1-04-4235-405	Maint. & Rep. Operations - Boosters	52,004	50,000		(2,004)	104.01%
1-04-4235-410	Maint. & Rep. Operations - Shop Bldgs	10,411	25,000		14,589	41.65%
1-04-4235-415	Maint. & Rep. Operations - Facilities	18,567	50,000		31,433	37.13%
1-04-4235-420	Maint. & Rep. Operations - Water Lines	252,808	300,000		47,192	84.27%
1-04-4235-425	Maint. & Rep. Operations - Littlerock Dam	7,843	15,000		7,157	52.29%
1-04-4235-430	Maint. & Rep. Operations - Palmdale Dam	670	-		(670)	
1-04-4235-435	Maint. & Rep. Operations - Palmdale Canal	4,884	10,000		5,116	48.84%
1-04-4235-440	Maint. & Rep. Operations - Large Meters	13,638	25,000		11,362	54.55%
1-04-4235-445	Maint. & Rep. Operations - Telemetry	893	-		(893)	
1-04-4235-450	Maint. & Rep. Operations - Hypo Generators	1,443	10,000		8,557	14.43%
1-04-4235-455	Maint. & Rep. Operations - Heavy Equipment	60,433	42,500		(17,933)	142.19%
1-04-4235-460	Maint. & Rep. Operations - Storage Reservoirs	2,807	5,000		2,193	56.13%
1-04-4235-461	Maint. & Rep. Operations - Air Vac	14,815	15,000		185	98.77%
1-04-4235-470	Maint. & Rep. Operations - Meters Exchanges	91,293	50,000		(41,293)	182.59%
1-04-4270-300	Telecommunication - Other	8,015	5,000		(3,015)	160.30%
1-04-4300-100	Testing - Regulatory Compliance	8,725	20,000		11,275	43.63%
1-04-4300-200	Testing - Large Meters	16,220	12,500		(3,720)	129.76%
1-04-4300-300	Testing - Edison Testing	5,800	15,000		9,200	38.67%
1-04-6000-000	Waste Disposal	16,181	20,000		3,819	80.91%
1-04-6100-100	Fuel and Lube - Vehicle	100,360	134,000		33,640	74.90%
1-04-6100-200	Fuel and Lube - Machinery	24,608	25,000		392	98.43%
1-04-6200-000	Uniforms	21,403	28,000		6,597	76.44%
1-04-6300-100	Supplies - General	31,279	55,000		23,721	56.87%
1-04-6300-200	Supplies - Hypo Generators	7,091	7,500		409	94.54%
1-04-6300-300	Supplies - Electrical	577	3,000		2,423	19.22%
1-04-6300-400	Supplies - Telemetry	1,894	5,000		3,106	37.87%
1-04-6300-800	Supplies - Construction Materials	32,428	35,000		2,572	92.65%
1-04-6400-000	Tools	44,217	45,000		783	98.26%
1-04-6450-000	Equipment	-	15,500		15,500	0.00%
1-04-7000-100	Leases -Equipment	19,342	15,000		(4,342)	128.95%
1-04-7000-100	Leases -Vehicles	83,284	70,000		(13,284)	118.98%
	Subtotal Operating Expenses	$ 2,960,921	$ 3,347,000	$ -	$ 386,079	88.46%
	Total Departmental Expenses	$ 6,256,060	$ 6,598,000	$ -	$ 341,940	94.82%

Palmdale Water District
2019 Operation Budget
For the Twelve Months Ending Tuesday, December 31, 2019

		YTD ACTUAL 2019	ORIGINAL BUDGET 2019	ADJUSTMENTS 2019	ADJUSTED BUDGET REMAINING	PERCENT USED
Personnel Budget:						
1-05-4000-000	Salaries	$ 1,035,866	$ 1,006,500		$ (29,366)	102.92%
1-05-4000-100	Overtime	110,380	73,500		(36,880)	150.18%
	Subtotal (Salaries)	$ 1,146,245	$ 1,080,000	$ -	$ (66,245)	106.13%
Employee Benefits						
1-05-4005-000	Payroll Taxes	88,433	81,000		(7,433)	109.18%
1-05-4010-000	Health Insurance	167,516	179,000		11,484	93.58%
1-05-4015-000	PERS	91,630	102,000		10,370	89.83%
	Subtotal (Benefits)	$ 347,579	$ 362,000	$ -	$ 14,421	96.02%
	Total Personnel Expenses	$ 1,493,825	$ 1,442,000	$ -	$ (51,825)	103.59%
OPERATING EXPENSES:						
1-05-4050-000	Staff Travel	$ 5,944	$ 3,000		$ (2,944)	198.12%
1-05-4060-000	Staff Conferences & Seminars	1,145	3,000		1,855	38.17%
1-05-4120-100	Training - Lab Equipment	-	5,000			
1-05-4155-000	Contracted Services	72,195	97,000		24,805	74.43%
1-05-4175-000	Permits	69,263	68,000		(1,263)	101.86%
1-05-4215-200	Natural Gas - WTP	1,580	3,000		1,420	52.68%
1-05-4220-200	Electricity - WTP	257,450	200,000		(57,450)	128.72%
1-05-4230-110	Maint. & Rep. - Office Equipment	1,705	5,000		3,295	34.10%
1-05-4235-110	Maint. & Rep. Operations - Equipment	16,241	20,000		3,759	81.21%
1-05-4235-410	Maint. & Rep. Operations - Shop Bldgs	7,038	6,000		(1,038)	117.30%
1-05-4235-415	Maint. & Rep. Operations - Facilities	83,332	70,000		(13,332)	119.05%
1-05-4235-500	Maint. & Rep. Operations - Wind Turbine	53,615	10,000		(43,615)	536.15%
1-05-4236-000	Palmdale Lake Management	111,708	100,000		(11,708)	111.71%
1-05-6000-000	Waste Disposal	22,839	20,000		(2,839)	114.19%
1-05-6200-000	Uniforms	12,993	16,000		3,007	81.21%
1-05-6300-100	Supplies - Misc.	25,570	15,000		(10,570)	170.47%
1-05-6300-600	Supplies - Lab	44,469	60,000		15,531	74.11%
1-05-6300-700	Outside Lab Work	74,198	100,000		25,803	74.20%
1-05-6400-000	Tools	3,015	6,000		2,985	50.25%
1-05-6500-000	Chemicals	1,006,489	760,000		(246,489)	132.43%
1-05-7000-100	Leases -Equipment	10,542	3,000		(7,542)	351.41%
	Subtotal Operating Expenses	$ 1,881,331	$ 1,570,000	$ -	$ (316,331)	119.83%
	Total Departmental Expenses	$ 3,375,155	$ 3,012,000	$ -	$ (368,155)	112.06%

Palmdale Water District
2019 Finance Budget
For the Twelve Months Ending Tuesday, December 31, 2019

		YTD ACTUAL 2019	ORIGINAL BUDGET 2019	ADJUSTMENTS 2019	ADJUSTED BUDGET REMAINING	PERCENT USED
Personnel Budget:						
1-06-4000-000	Salaries	$ 687,620	$ 711,750		$ 24,130	96.61%
1-06-4000-100	Overtime	788	3,000		2,212	26.27%
	Subtotal (Salaries)	$ 688,408	$ 714,750	$ -	$ 26,342	96.31%
Employee Benefits						
1-06-4005-000	Payroll Taxes	48,357	55,000		6,643	87.92%
1-06-4010-000	Health Insurance	101,355	101,250		(105)	100.10%
1-06-4015-000	PERS	63,912	72,500		8,588	88.15%
	Subtotal (Benefits)	$ 213,624	$ 228,750	$ -	$ 15,126	93.39%
	Total Personnel Expenses	$ 902,032	$ 943,500	$ -	$ 41,468	95.60%
OPERATING EXPENSES:						
1-06-4050-000	Staff Travel	$ 357	$ 2,000		$ 1,644	17.83%
1-06-4060-000	Staff Conferences & Seminars	547	1,500.00		953	36.45%
1-06-4155-000	Contracted Services	14,835	12,250		(2,585)	121.10%
1-06-4155-100	Contracted Services - Infosend	265,550	270,000		4,450	98.35%
1-06-4165-000	Memberships/Subscriptions	220	500		280	44.00%
1-06-4230-110	Maintenance & Repair - Office Equipment	-	500		500	0.00%
1-06-4250-000	General Material & Supplies	-	3,000		3,000	0.00%
1-06-4260-000	Business Forms	-	4,000		4,000	0.00%
1-06-4270-100	Telecommunication - Office	31,206	25,000		(6,206)	124.83%
1-06-4270-200	Telecommunication - Cellular Stipend	24,215	24,500		285	98.84%
1-06-7000-100	Leases - Equipment	2,603	3,000		397	86.76%
	Subtotal Operating Expenses	$ 339,533	$ 346,250	$ -	$ 6,717	98.06%
	Total Departmental Expenses	$ 1,241,565	$ 1,289,750	$ -	$ 48,185	96.26%

Palmdale Water District
2019 Water Conservation Budget
For the Twelve Months Ending Tuesday, December 31, 2019

	YTD ACTUAL 2019	ORIGINAL BUDGET 2019	ADJUSTMENTS 2019	ADJUSTED BUDGET REMAINING	PERCENT USED
Personnel Budget:					
1-07-4000-000 Salaries	$ 167,216	$ 156,750		$ (10,466)	106.68%
1-07-4000-100 Overtime	4,797	3,000		(1,797)	159.90%
Subtotal (Salaries)	$ 172,013	$ 159,750		$ (12,263)	107.68%
Employee Benefits					
1-07-4005-000 Payroll Taxes	13,670	12,500		(1,170)	109.36%
1-07-4010-000 Health Insurance	45,490	40,400		(5,090)	112.60%
1-07-4015-000 PERS	16,426	16,000		(426)	102.67%
Subtotal (Benefits)	$ 75,587	$ 68,900	$ -	$ (6,687)	109.70%
Total Personnel Expenses	$ 247,600	$ 228,650	$ -	$ (17,153)	108.29%
OPERATING EXPENSES:					
1-07-4050-000 Staff Travel	$ 2,280	$ 2,500		$ 220	91.21%
1-07-4060-000 Staff Confrences & Seminar	1,145	3,000		1,855	38.17%
1-07-4190-300 Public Relations - Landscape Workshop/Training	89	5,000		4,911	1.79%
1-07-4190-400 Public Relations - Contests	390	3,000		2,610	13.01%
1-07-4190-500 Public Relations - Education Programs	119,294	120,000		706	99.41%
1-07-4190-900 Public Relations - Other	1,880	5,000		3,120	37.60%
1-07-6300-100 Supplies - Misc.	6,923	7,000		77	98.90%
Subtotal Operating Expenses	$ 132,002	$ 145,500	$ -	$ 13,498	90.72%
Total Departmental Expenses	$ 379,602	$ 374,150	$ -	$ (3,655)	101.46%

Palmdale Water District
2019 Human Resources Budget
For the Twelve Months Ending Tuesday, December 31, 2019

		YTD ACTUAL 2019	ORIGINAL BUDGET 2019	ADJUSTMENTS 2019	ADJUSTED BUDGET REMAINING	PERCENT USED
Personnel Budget:						
1-08-4000-000	Salaries	$ 235,010	$ 222,750		$ (12,260)	105.50%
1-08-4000-100	Salaries - Overtime	613	1,000		387	61.28%
	Subtotal (Salaries)	$ 235,623	$ 222,750	$ -	$ (12,260)	105.78%
Employee Benefits						
1-08-4005-000	Payroll Taxes	17,466	17,000		(466)	102.74%
1-08-4010-000	Health Insurance	31,281	31,750		469	98.52%
1-08-4015-000	PERS	16,595	18,000		1,405	92.20%
	Subtotal (Benefits)	$ 65,342	$ 66,750	$ -	$ 1,408	97.89%
	Total Personnel Expenses	$ 300,965	$ 289,500	$ -	$ (10,852)	103.96%
OPERATING EXPENSES:						
1-08-4050-000	Staff Travel	$ 3,261	$ 1,500		$ (1,761)	217.39%
1-08-4060-000	Staff Conferences & Seminars	1,574	1,500		(74)	104.93%
1-08-4070-000	Employee Expense	85,996	50,000		(35,996)	171.99%
1-08-4090-000	Temporary Staffing	1,894	-		(1,894)	
1-08-4095-000	Employee Recruitment	7,925	3,000		(4,925)	264.18%
1-08-4100-000	Employee Retention	5,046	5,000		(46)	100.92%
1-08-4105-000	Employee Relations	1,384	3,500		2,116	39.54%
1-08-4120-100	Training-Safety	5,986	35,000		29,014	17.10%
1-08-4120-200	Training-Speciality	16,508	15,000		(1,508)	110.05%
1-08-4121-000	Safety Program	35	1,000		965	3.50%
1-08-4165-000	Membership/Subscriptions	1,474	1,600		126	92.14%
1-08-4165-100	HR/Safety Publications	-	1,000		1,000	0.00%
1-08-6300-500	Supplies - Safety	44,674	30,000		(14,674)	148.91%
	Subtotal Operating Expenses	$ 175,758	$ 148,100	$ -	$ (27,658)	118.67%
	Total Departmental Expenses	$ 476,723	$ 437,600	$ -	$ (39,123)	108.94%

Palmdale Water District
2019 Information Technology Budget
For the Twelve Months Ending Tuesday, December 31, 2019

		YTD ACTUAL 2019	ORIGINAL BUDGET 2019	ADJUSTMENTS 2019	ADJUSTED BUDGET REMAINING	PERCENT USED
Personnel Budget:						
1-09-4000-000	Salaries*	$ 286,562	$ 213,500	$ 68,789	$ (4,273)	101.51%
1-09-4000-100	Overtime*	731	3,000	1,433	3,702	16.48%
	Subtotal (Salaries)	$ 287,292	$ 216,500	$ 70,222	$ (570)	100.20%
Employee Benefits						
1-09-4005-000	Payroll Taxes*	21,331	17,000	7,711	3,380	86.32%
1-09-4010-000	Health Insurance	31,509	24,750		(6,759)	127.31%
1-09-4015-000	PERS*	25,993	21,750	6,876	2,633	90.80%
	Subtotal (Benefits)	$ 78,833	$ 63,500	$ 14,587	$ (746)	100.96%
	Total Personnel Expenses	$ 366,125	$ 280,000	$ 84,809	$ (1,316)	100.36%
OPERATING EXPENSES:						
1-09-4050-000	Staff Travel	$ 2,968	$ 3,000		$ 32	98.92%
1-09-4060-000	Staff Confrences & Seminars	2,017	10,000		7,983	20.17%
1-09-4155-000	Contracted Services	173,899	200,850	(7,000)	19,951	89.71%
1-09-4165-000	Memberships/Subscriptions	1,455	2,500		1,045	58.20%
1-09-4270-000	Telecommunications	95,680	99,500		3,820	96.16%
1-09-7000-100	Leases - Equipment	55,085				
1-09-8000-100	Computer Equipment - Computers	54,264	45,000	7,000	(2,264)	104.35%
1-09-8000-200	Computer Equipment - Laptops	44,449	45,000		551	98.78%
1-09-8000-300	Computer Equipment - Monitors	2,214	2,000		(214)	110.70%
1-09-8000-500	Computer Equipment - Toner Cartridges	157	3,000		2,843	5.23%
1-09-8000-550	Computer Equipment - Telephony	-	3,000		3,000	0.00%
1-09-8000-600	Computer Equipment - Other	15,583	25,000		9,417	62.33%
1-09-8000-650	Computer Equipment - Warranty & Support	6,000	15,000		9,000	40.00%
1-09-8100-100	Computer Software - Maint. and Support	115,891	145,200		29,309	79.81%
1-09-8100-150	Computer Software - Dynamics GP Support	40,731	55,000		14,269	74.06%
1-09-8100-200	Computer Software - Software and Upgrades	10,812	20,000		9,188	54.06%
	Subtotal Operating Expenses	$ 621,205	$ 674,050	$ -	$ 107,930	92.16%
	Total Departmental Expenses	$ 987,331	$ 954,050	$ 84,809	$ 106,613	95.04%

* Budget adjustments by Board action 03/25/19

Palmdale Water District
2019 Customer Care Budget
For the Twelve Months Ending Tuesday, December 31, 2019

	YTD ACTUAL 2019	ORIGINAL BUDGET 2019	ADJUSTMENTS 2019	ADJUSTED BUDGET REMAINING	PERCENT USED
Personnel Budget:					
1-10-4000-000 Salaries	$ 923,399	$ 897,000		$ (26,399)	102.94%
1-10-4000-100 Overtime	3,842	7,500		3,658	51.23%
Subtotal (Salaries)	$ 927,241	$ 904,500	$ -	$ (22,741)	102.51%
Employee Benefits					
1-10-4005-000 Payroll Taxes	67,863	68,500		637	99.07%
1-10-4010-000 Health Insurance	204,576	181,500		(23,076)	112.71%
1-10-4015-000 PERS	79,411	121,500		42,089	65.36%
Subtotal (Benefits)	$ 351,850	$ 371,500	$ -	$ 19,650	94.71%
Total Personnel Expenses	$ 1,279,091	$ 1,276,000	$ -	$ (3,091)	100.24%
OPERATING EXPENSES:					
1-10-4050-000 Staff Travel	$ 4,626	$ 2,000		$ (2,626)	231.32%
1-10-4060-000 Staff Conferences & Seminars	3,082	3,000		(82)	102.73%
1-10-4155-000 Contracted Services	26,630	22,000		(4,630)	121.04%
1-10-4230-110 Maintenance & Repair-Office Equipment	-	200		200	0.00%
1-10-4250-000 General Material & Supplies	2,454	7,000		4,546	35.06%
1-10-4260-000 Business Forms	871	2,500		1,629	34.85%
Subtotal Operating Expenses	$ 37,664	$ 36,700	$ -	$ (964)	102.63%
Total Departmental Expenses	$ 1,316,755	$ 1,312,700	$ -	$ (4,055)	100.31%

Updated: 2/11/2020

AGENDA ITEM NO. 8.1.c

Palmdale Water District

2018 Capital Projects - Contractual Commitments and Needs

New and Replacement Capital Projects

Budget Year	Project	Project Title	Project Type	Estimated Expense	Contractor	Approved Contract Amount	Board / Manager Approval	Payments Approved to Date	Contract Balance	Through Dec. 2018	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	2019 Total	2020 Carryover
2017	12-400	PRGRRP - Construction of Monitoring Wells / Test Basin	Water Supply		Environmental Const.	427,490	04/26/2017	246,765	180,725	232,192	-	-	-	-	-	-	-	-	-	-	14,573	-	14,573	
2017	12-400	PRGRRP - Construction of Monitoring Wells / Test Basin - Auxiliary Items	Water Supply		Various Vendors			178,484	-	74,342	-	-	54,040	-	-	5,540	-	40,200	-	3,025	1,080	257	104,143	
2017	15-611	WM Replacement - Camares & Avenue S14 (Spec 1502)	Replacement Cap.	110,000				44,335	-	10,584	-	-	-	-	6,722	9,864	13,267	3,475	422	-	-	-	33,750	
2017	15-614	WTP - Drainage Improvements	New Capital	80,000				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
2017	16-411	6MG Clearwell - Piping Replacement	Replacement Cap.					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
2017	16-605	WTP - Additional Brine Tank/Salt Silo	New Capital	90,000				130,076	-	59,389	14,293	4,664	340	1,516	-	808	-	-	29,297	1,335	18,434	-	70,687	
2017	16-611	CL2 Monitoring @ Well Sites	Regulatory	110,000				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
2017	17-613	Avenue T8 Booster #2 - Emergency Repair	Replacement Cap.		Best Drilling & Pump, Inc.			36,540	-	36,540	-	-	-	-	-	-	-	-	-	-	-	-	-	
2018	12-611	WM Replacement - Avenue P8/20th	Replacement Cap.	410,000				7,318	-	-	-	-	-	-	-	-	3,220	2,842	-	1,256	-	-	7,318	
2018	15-613	WM Replacement - Avenue V5 (Spec 1504)	Replacement Cap.	45,000				722	-	-	-	-	-	-	-	-	-	-	-	645	-	77	722	
2018	16-602	WM Replacement - Avenue P & 25th ST (Spec 1601)	Replacement Cap.	152,000				16,730	-	-	-	-	-	-	-	-	-	-	-	-	10,062	6,668	16,730	
2018	17-602	WM Replacement - 13th ST E/Avenue R (Spec 1703)	Replacement Cap.	170,000				43,657	-	26,422	6,150	11,085	-	-	-	-	-	-	-	-	-	-	17,235	
2018	17-608	Replace PRV - Avenue S14/Camares	Replacement Equip.					492	-	492	-	-	-	-	-	-	-	-	-	-	-	-	-	
2018	18-408	Water Meter Replacement Program (Qty. 3,400)	Replacement Cap.	550,000				499,132	-	487,830	11,302	-	-	-	-	-	-	-	-	-	-	-	11,302	
2018	18-410	PRV Replacement - 40th ST E (Bypass)	General Project					9,165	-	9,165	-	-	-	-	-	-	-	-	-	-	-	-	-	
2018	18-601	6MG Clearwell - Curtain Repairs	General Project	94,000	Garrett Paint & Sndblsting			85,169	-	85,169	-	-	-	-	-	-	-	-	-	-	-	-	-	
2018	18-603	Well 29 - Rehabilitation	Replacement Cap.	65,000				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
2018	18-605	Well 14 - Rehabilitation	Replacement Cap.					15,962	-	15,962	-	-	-	-	-	-	-	-	-	-	-	-	-	
2018	18-606	45th ST Tank Site - Altitude Valve Replacement	Replacement Cap.	70,000				72,141	-	72,141	-	-	-	-	-	-	-	-	-	-	-	-	-	
2018	18-609	WTP Replacement Sodium Hypochlorite Unit	Replacement Cap.	68,000	DeNora Water Tech			68,290	-	68,290	-	-	-	-	-	-	-	-	-	-	-	-	-	
2018	18-611	WTP - MPS6120-ZETASIZER Water Testing Equipment	New Equipment					72,862	-	72,862	-	-	-	-	-	-	-	-	-	-	-	-	-	
2018	18-613	WTP - Ferric Chloride Tank	General Project					54,638	-	8,636	2,308	-	-	-	39,566	2,152	-	-	-	-	-	1,977	46,002	
2018	18-414	Well # 25 - Emergency Rehabilitation	General Project					162,857	-	-	-	-	-	88,341	-	29,729	-	42,506	-	2,281	-	-	162,857	
2018	18-615	Install/Construction - Water Fill Station	General Project					19,942	-	-	-	-	-	-	-	19,942	-	-	-	-	-	-	19,942	
2019	19-403	2019 Canal Repair-Bentonite	General Project	12,000				7,763	-	-	-	-	-	7,763	-	-	-	-	-	-	-	-	7,763	
2019	19-404	2019 Meter Exchange Project	General Project	750,000				509,109	-	-	-	-	507,176	632	-	-	441	80	154	-	627	-	509,109	
2019	19-604	Purchase/Install Sampling Dock @ WTP	General Project					8,844	-	-	-	-	-	-	-	-	-	-	-	-	8,844	-	8,844	
2019	19-602	WTP Replacement of 30" & 42" Mag Meters	Replacement Equip.					45,615	-	-	-	-	-	-	-	-	-	-	-	-	-	45,615	45,615	
2019	19-605	Purchase HX50 Vacuum Excavator	Replacement Equip.					4,818	-	-	-	-	-	-	-	-	-	-	-	-	-	4,818	4,818	
2019	19-701	Vault Rehabilitation - 36523 25th ST E	Replacement Cap.					4,690	-	-	-	-	-	-	-	-	-	-	-	-	-	4,690	4,690	
2018		45th ST - Booster #3	Replacement Cap.	23,000				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
2018		Well 3 - Booster	Replacement Cap.	15,000				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
2018		Well 14 - Booster	Replacement Cap.	8,000				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
2018		Ave. P-12, Division, 2nd, 3rd, Stanridge Water Main Repl.	Replacement Cap.	750,000				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
2018		Sierra Hwy. Tie-In and Abandonment	Replacement Cap.	15,000				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
2018		Ave. Q-14 and 17th Street East Water Main Replacement	Replacement Cap.	45,000				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
2018		Ave. Q-10 and 12th Street East Water Main Replacement	Replacement Cap.	15,000				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
2018		Protective Coatings on WTP Structures	Replacement Cap.	100,000				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
2018		WTP Infrastructure and Process/Equipment Repairs	Replacement Cap.	75,000				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
2018		PRV Replacements 37th St; 40th St	Replacement Equip.	26,667				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
2018		Altitude Valve - 25th St East (Body Only)	Replacement Equip.	22,000				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
2018		Littlerock - Insertion Mag Meter	Replacement Equip.	32,000				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
2018		T-8 Booster Station Pump Skids	Replacement Equip.	35,000				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
2018		Intellispark @ Well 11 & 15	Replacement Equip.	13,000				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
2018-2020		Replacement of Structural Support Beams - WTP Sed. Basins	Replacement Cap.	300,000				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
2019		Ancillary costs related to all project over and above the main contractor			Various Vendors			2,358		-	-	-	-	2,358	-	-	-	-	-	-	-	-	2,358	
			Sub-Totals:	4,140,667		427,490		2,348,474	180,725	1,260,016	34,053	15,749	561,556	100,610	46,288	68,035	16,928	89,102	29,873	8,542	53,620	64,102	1,088,459	-

Updated: 2/11/2020

Palmdale Water District
2018 Capital Projects - Contractual Commitments and Needs

Consulting and Engineering Support

Budget Year	Project	Project Title	Project Type	Estimated Expense	Contractor	Approved Contract Amount	Board / Manager Approval	Payments Approved to Date	Contract Balance	Through Dec. 2018	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	2019 Total	2020 Carryover
2017	12-400	PRGRRP - CEQA, Permitting, Pre-Design, and Pilot	Water Supply		Kennedy/Jenks	1,627,000	05/12/2016	-	1,627,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		Paid by General Fund			Kennedy/Jenks			432,840	-	432,840	-	-	-	-	-	-	-	-	-	-	-	-	-	
2017	14-603	Upper Amargosa Recharge Project	Water Supply		City of Palmdale	1,250,000	12/04/2013	244,431	1,005,569	18,806	-	-	-	225,626	-	-	-	-	-	-	-	-	225,626	
2017	04-501	Littlerock Sediment Removal Project (EIR/EIS/Permitting)	Water Supply		Aspen	869,023	09/14/2016	-	869,023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		Paid by General Fund			Aspen			315,907	-	206,782	-	-	-	-	-	1,601	-	-	-	57,820	862	48,842	109,125	
		Paid by 2018A Water Revenue Bonds			Aspen	1,238,287	07/18/2018	794,485	443,802	184,515	-	223,960	78,799	49,460	-	6,959	33,297	58,422	-	-	159,073	-	609,970	
		Paid by 2018A Water Revenue Bonds			ASI	9,275,808	07/18/2018	9,478,500	(202,692)	1,777,841	-	2,159,848	338,899	-	-	-	-	1,118,793	-	1,361,655	-	2,721,464	7,700,659	
2017	04-501	Littlerock Sediment Removal (Cost Recovery Agreement)	Permitting		Forest Service	100,000	04/26/2017	-	100,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
2017	04-501	Littlerock Sediment Removal Project - Design Grade Control Structure	Water Supply	350,000		-		146,954	-	146,954	-	-	-	-	-	-	-	-	-	-	-	-	-	
2017	14-404	Water System Master Plan - CEQA	Facilities Planning		ESA	174,715	11/09/2016	133,778	131,242	133,778	-	-	-	-	-	-	-	-	-	-	-	-	-	
		Water System Master Plan - CEQA (Amendment No. 1)	Facilities Planning		ESA	69,985	01/24/2018																	
		Water System Master Plan - CEQA (Amendment No. 2)	Facilities Planning		ESA	20,320	05/14/2018																	
		Water System Master Plan - Hydraulic Model	Facilities Planning		Stantec	9,510	05/14/2018	-	9,510	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
2017	17-405	WTP Process Evaluation (As-Needed)	Regulatory		Carollo	35,000	01/11/2017	3,500	31,500	3,500	-	-	-	-	-	-	-	-	-	-	-	-	-	
2017	17-410	Sanitary Survey Update	Regulatory	50,000	Black & Veatch	49,773	07/26/2017	33,763	16,010	33,763	-	-	-	-	-	-	-	-	-	-	-	-	-	
2017	04-501	Littlerock Sediment Removal Project - State Permits	Permitting	152,000		-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
2018	18-402	Emergency Action Plan	Planning	175,000	Black & Veatch	178,970	01/24/2018	133,820	45,150	124,573	-	-	-	5,776	1,837	-	-	-	-	1,634	-	-	9,247	
2018		System Valuation Study	Financial Planning	30,000		-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
2018		Electrical Engineering (As-Needed)	Facilities Design	10,000		-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
2018		Energy Storage - Feasibility and Pilot Study	Savings/Efficiency	50,000		-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
						-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
			Sub-Totals:	817,000		14,898,391		11,717,979	4,076,113	3,063,352	-	2,383,808	417,699	280,862	1,837	8,560	33,297	1,177,214	-	1,421,108	159,935	2,770,306	8,654,627	-

New and Replacement Equipment

Budget Year	Project	Project Title	Project Type	Estimated Expense	Contractor	Approved Contract Amount	Board / Manager Approval	Payments Approved to Date	Contract Balance	Through Dec. 2018	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	2019 Total	2020 Carryover
2018	17-402	WTP - Security Improvements - Additional Cameras (Blind Spots) Spec. No. 1702	Safety		Siemens	20,000		10,236	9,764	10,236	-	-	-	-	-	-	-	-	-	-	-	-	-	
2018	18-405	Replace and Upgrade VMWare Servers (EOL)	Replacement Equip.					81,721	-	81,721	-	-	-	-	-	-	-	-	-	-	-	-	-	
2018		Replace Firewall and VPN Appliances (EOL)	Replacement Equip.					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
2018		Upgrade Microsoft GP & SQL Databases	Replacement Equip.					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
2018		Water Meter Calibration Bench	New Equipment	10,000		-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
2018		Online Forms (Add-In Functionality)	New Equipment	5,000		-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
2018		Customer Texting / Mass Communication	New Equipment	15,000		-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
2018		Conference Bridge - ShoreTel	New Equipment	25,000		-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
2018		Data Center UPS - Whole Room UPS	New Equipment	25,000		-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
						-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
			Sub-Totals:	80,000		20,000		91,957	9,764	91,957	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Water Quality Fee Funded Projects

Budget Year	Work Order	Project Title	Project Type	Estimated Expense	Vendor/Supplier	Approved Contract Amount	Board / Manager Approval	Payments Approved to Date	Contract Balance	Through Dec. 2018	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	2019 Total	2020 Carryover
2019	19-401	GAC Replacements @ WTP	Water Quality	760,000	Calgon Carbon	-	07/09/2014	371,628	-		123,876	-	-	123,876	-	-	-	123,876	-	-	-	-	371,628	
2019	19-401	GAC Replacement @ Underground Booster Station	Water Quality	40,000	Evoqua	-	03/10/2017	68,074	-		-	-	-	-	-	-	68,074	-	-	-	-	-	68,074	
											-	-	-	-	-	-	-	-	-	-	-	-	-	
			Sub-Totals:	800,000		-		439,702	-	-	123,876	-	-	123,876	-	-	68,074	123,876	-	-	-	-	439,702	-

= Projects that originated from 2013 WRB Funds

= Project had additional funding paid out by the general fund to complete.

= Project is now deemed complete with no further expense.

= Projects paid by 2018 WRB Funds

Project Summary (W/O GAC Included)	Totals	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	2019 Total
Total Approved Contracts to Date	15,345,881													
Total Payments on Approved Contracts to Date	14,158,410													
Total Contract Balance to Date	4,266,601													
Non-Operating Capital Expenditures (Paid)		34,053	2,399,557	979,254	381,473	48,125	76,595	50,225	1,266,317	29,873	1,429,650	213,555	2,834,408	9,743,085
Non-Operating Capital Expenditures (Projected)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Funding Available Through Water Supply Fees	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2019 Funding Through Budgeted Non-Operating Capital Ex.	9,743,085	34,053	2,399,557	979,254	381,473	48,125	76,595	50,225	1,266,317	29,873	1,429,650	213,555	2,834,408	9,743,085

Water Revenue Bond - Series 2018A

Updated: February 11, 2020

Project	Project #	Description	Bond Allocation	Contractual Commitment	Payout to Date	Remaining Contract	Uncommitted Bond $
LGCS-ASI	04-501	Littlerock Dam - Grade Control Structure (Construction)	$ 8,160,257	$ 10,619,601	$ 10,162,412	$ 457,188	$ (2,459,344)
		Original Contract Amt: $9,500,808, C.O.1: $1,118,792.54					
LGCS-ASP	04-501	Littlerock Dam - Grade Control Structure (Monitoring)		1,238,287	745,847	492,440	(1,238,287)
WTP		Water Treatment Plant Improvements	2,375,000		-	-	
6MG		6 M.G. Reservoir Renovations	1,050,000		-	-	
WMR		Various W.M. Replacements	1,789,612		-	-	
PWD		Design, Engineering and Other Preconstruction Costs	173,000		-	-	
WRB		Bond Issuance Costs	226,303		226,303	-	
ISS		Issuance Funds			(12,092)		
		Interest Earned through January 31, 2020			(321,372)		
		Totals:	**$ 13,774,172**	**$ 11,857,888**	**$ 10,801,097**	**$ 949,628**	**$ (3,697,631)**
		2018A Water Revenue Bonds - Unallocated Funds:		**$ 1,916,284**			
		2018A Water Revenue Bonds - Remaining Funds to payout:			**$ 2,973,075**		

Requisition No.	Payee	Date Approved	Invoice No.	Project	Payment Amount
	Issuance Costs	Jun 27, 2018	N/A	WRB	$ 226,302.82
	Interest - Jul 2018		N/A	INT	1,384.72
	Interest - Aug 2018		N/A	INT	20,900.39
1	Aspen Environmental Group	Sep 12, 2018	1116.007-01	LGCS-ASP	28,105.88
2	ASI Construction LLC	Sep 18, 2018	01	LGCS-ASI	60,027.00
	Interest - Sep 2018		N/A	INT	21,047.68
3	ASI Construction LLC	Oct 2, 2018	02	LGCS-ASI	156,655.00
4	Aspen Environmental Group	Oct 8, 2018	1116.007-02	LGCS-ASP	51,072.42
5	Aspen Environmental Group	Oct 30, 2018	1116.007-03	LGCS-ASP	56,698.38
	Interest - Oct 2018		N/A	INT	20,838.36
6	ASI Construction LLC	Nov 7, 2018	03	LGCS-ASI	844,455.00
	Interest - Nov 2018		N/A	INT	22,998.40
7	Aspen Environmental Group	Dec 10, 2018	1116.007-04	LGCS-ASP	99,711.66
7	ASI Construction LLC	Dec 10, 2018	04	LGCS-ASI	665,631.99
	Interest - Dec 2018		N/A	INT	21,673.24
8	Aspen Environmental Group	Jan 3, 2019	1116.007-05	LGCS-ASP	67,719.03
9	ASI Construction LLC	Jan 7, 2019	05	LGCS-ASI	1,494,216.00
10	Aspen Environmental Group	Jan 29, 2019	1116.007-06	LGCS-ASP	56,529.35
	Interest - Jan 2019		N/A	INT	22,085.33
11	ASI Construction LLC	Feb 14, 2019	06	LGCS-ASI	338,899.30
	Interest - Feb 2019		N/A	INT	20,485.96
12	Aspen Environmental Group	Feb 28, 2019	1116.007-07	LGCS-ASP	78,799.25
	Interest - Mar 2019		N/A	INT	17,656.62
13	Aspen Environmental Group	Apr 1, 2019	1116.007-08	LGCS-ASP	34,790.67
13	Aspen Environmental Group	Apr 1, 2019	1116.008-01	LGCS-ASP	7,731.53
14	Aspen Environmental Group	Apr 22, 2019	1116.007-09	LGCS-ASP	6,938.12
	Interest - Apr 2019		N/A	INT	19,042.25
15	Aspen Environmental Group	May 15, 2019	1116.007-10	LGCS-ASP	6,958.75
	Interest - May 2019		N/A	INT	18,485.68
	Interest - June 2019		N/A	INT	18,852.79
16	Aspen Environmental Group	Jul 1, 2019	1116.007-11	LGCS-ASP	11,059.71
17	Aspen Environmental Group	Jul 30, 2019	1116.007-12	LGCS-ASP	22,237.47
	Interest - July 2019		N/A	INT	18,017.03
18	Aspen Environmental Group	Aug 27, 2019	1116.007-13	LGCS-ASP	58,421.77
19	ASI Construction LLC	Aug 28, 2019	Chng Order 4	LGCS-ASI	1,118,792.54
	Interest - August 2019		N/A	INT	18,580.51
	Interest - September 2019		N/A	INT	16,527.97
20	ASI Construction LLC	Oct 15, 2019	08	LGCS-ASI	1,361,654.50
	Interest - October 2019		N/A	INT	14,239.81

(Cont.)

Requisition No.	Payee	Date Approved	Invoice No.	Project	Payment Amount
21	Aspen Environmental Group	Oct 31, 2019	1116.007-15	LGCS-ASP	102,968.21
21	Aspen Environmental Group	Oct 31, 2019	1116.008-03	LGCS-ASP	56,104.56
	Interest - November 2019		N/A	INT	11,914.30
22	ASI Construction LLC	Dec 9, 2019	09	LGCS-ASI	248,804.00
22	ASI Construction LLC	Dec 9, 2019	10	LGCS-ASI	1,211,532.61
23	ASI Construction LLC	Dec 17, 2019	11	LGCS-ASI	1,261,127.87
	Interest - December 2019		N/A	INT	9,036.00
24	ASI Construction LLC	Jan 27, 2020	12	LGCS-ASI	1,400,616.68
	Interest - January 2020		N/A	INT	7,605.29

PALMDALE WATER DISTRICT

BOARD MEMORANDUM

DATE:	February 18, 2020	**February 24, 2020**
TO:	Board of Directors	**Board Meeting**
FROM:	Michael Williams, Finance Manager/CFO	
VIA:	Mr. Dennis LaMoreaux, General Manager	
RE:	***AGENDA ITEM 8.1.d – OTHER FINANCIAL ITEMS INCLUDING PAYMENT TRANSACTIONS, BILLING AND COLLECTION STATISTICS, ACCOUNTS RECEIVABLE AGING REPORT, REVENUE PROJECTIONS, AND THE RATE ASSISTANCE PROGRAM STATUS. (FINANCE MANAGER WILLIAMS/FINANCE COMMITTEE)***	

Discussion:

Presented here are financial related items for your review.

1. Payment Transactions by Type January – December
    a. Note that electronic forms of payment continue to increase while counter and mail decrease.

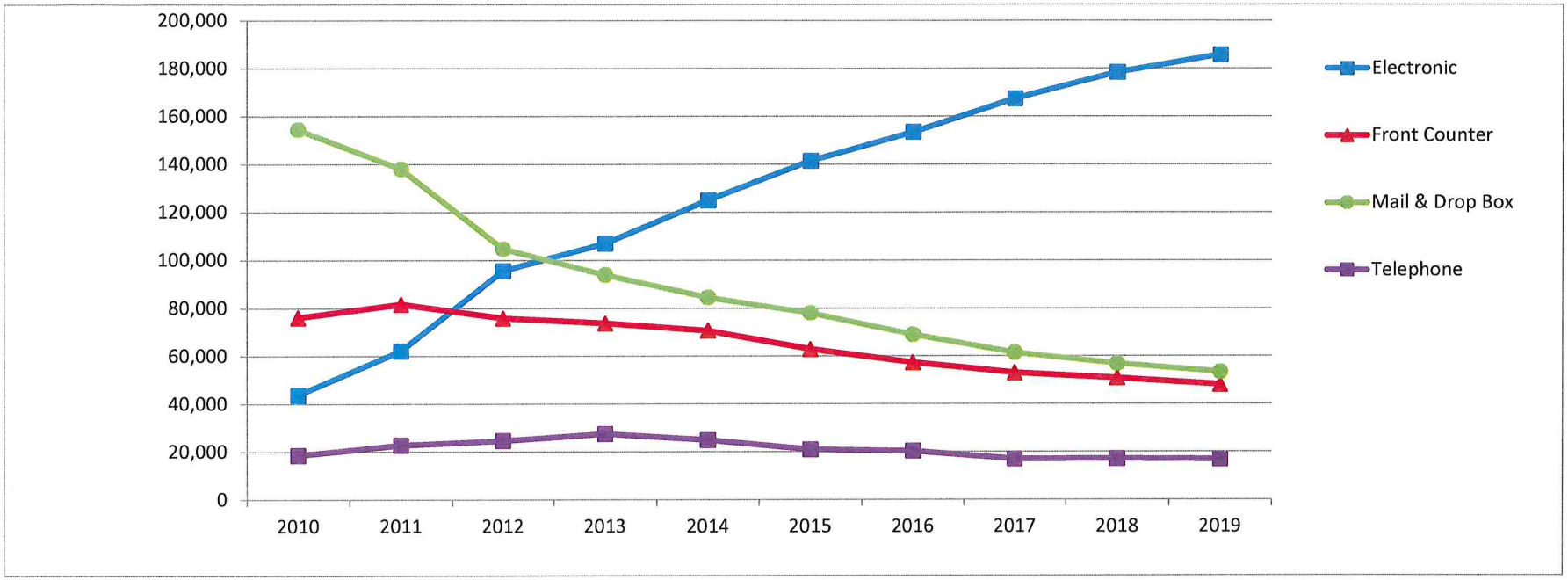
2. Billing & Collection Statistics
    a. Billing & collection cycle complete through July 2019 shows slight increase in late fee notices and shut off notices from July 2018, but lower percentage of off & lock after shut off notice.

3. Accounts Receivable Aging Report December 31, 2019
    a. Aging report shows we are consistent with collection and amount of outstanding receivables in relation to time of year, but 12/31/19 is the lowest in past 3 years.

4. Revenue Projections
    a. Revenue projections for 2019 based on selling 17,250 AF shows as of December 31st, revenue is down approximately $1.1M.

5. Rate Assistance Program
    a. At December 31st, there were 722 participants - 354 were Seniors and 368 were Low Income.

Payment Transactions By Types Jan-Dec



Payment Type	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Electronic	43,590	61,989	95,446	106,870	124,881	141,393	153,408	167,351	178,355	185,683
Front Counter	76,023	81,539	75,723	73,557	70,599	62,841	57,296	52,950	50,748	48,047
Mail & Drop Box	154,303	137,945	104,630	93,819	84,407	77,916	68,919	61,349	56,771	53,318
Telephone	18,550	22,746	24,635	27,431	24,921	20,894	20,273	16,947	17,068	16,817
Total	**292,464**	**304,219**	**300,434**	**301,677**	**304,808**	**303,044**	**299,896**	**298,597**	**302,942**	**303,865**

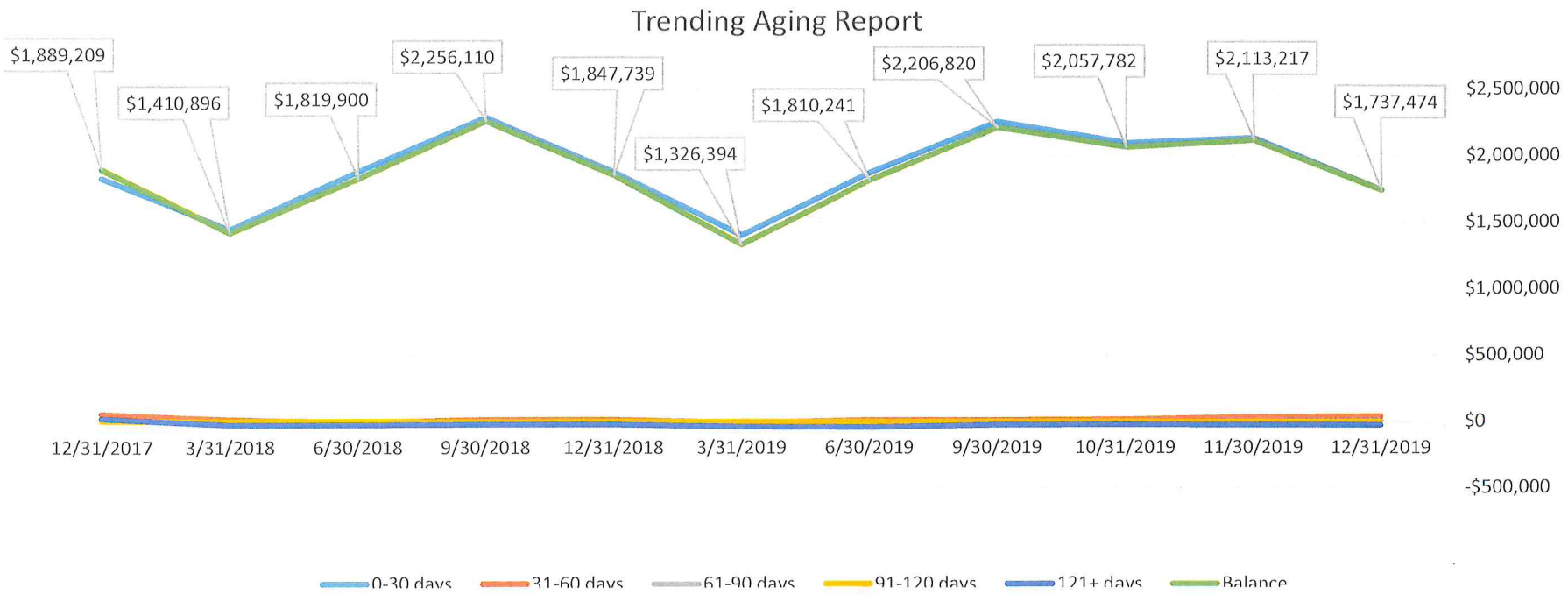
Detail of Electronic Payments	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
META - ACH Pymt	8,286	7,747	7,469	7,837	3,027	3,233	1,622	1,695	1,676	1,694
WES - ACH Pymt	377	809	913	1,036	971	972	995	1,022	976	917
INF - Website Pymts	34,927	49,602	63,919	70,399	73,349	77,813	82,246	90,409	97,384	103,872
IVR - Automated Pay ##	0	0	0	0	13,035	23,607	28,788	32,680	35,010	36,813
KIOSK - Automated Pay $$	0	0	0	0	0	366	1,296	1,504	2,044	1,385
PNM - Automated Pay %%	0	0	0	0	0	0	815	2,897	4,268	4,717
VAN - ACH Pymt &&	0	3,831	23,145	27,598	34,499	35,402	37,646	37,144	36,997	36,285
Total	**43,590**	**61,989**	**95,446**	**106,870**	**124,881**	**141,393**	**153,408**	**167,351**	**178,355**	**185,683**

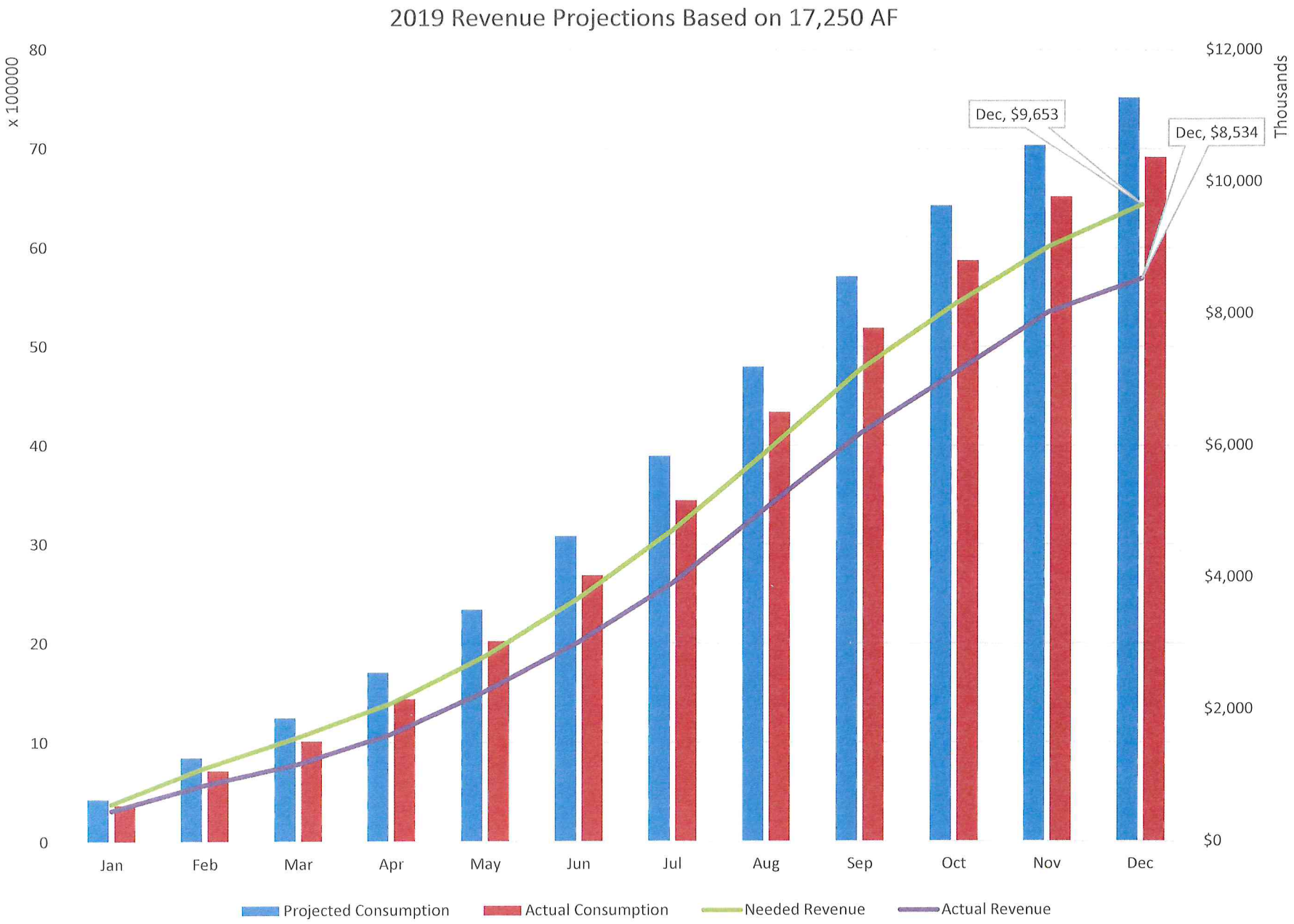
##- IVR service started March 13, 2014
$$ - Kiosk service started July 1, 2015
%% - PNM - Pay Near Me service started June 9, 2016
&& - Vanco ACH service started Sept 2011

Billing Statistics

	Bills	LF Notice	Shut Notice	Off & Lock	Based on Bills Issued			Based on Late Notices		Based on Shut Notice
	(A)	(B)	(C)	(D)	B / A	C / A	D /A	C / B	D / B	D / C
Jan-18	24,846	6,358	2,262	427	25.6%	9.1%	1.7%	35.6%	6.7%	18.88%
Feb-18	24,863	5,945	2,324	394	23.9%	9.3%	1.6%	39.1%	6.6%	16.95%
Mar-18	24,855	5,419	2,148	444	21.8%	8.6%	1.8%	39.6%	8.2%	20.67%
Apr-18	24,865	5,896	2,250	408	23.7%	9.0%	1.6%	38.2%	6.9%	18.13%
May-18	24,872	5,713	2,118	387	23.0%	8.5%	1.6%	37.1%	6.8%	18.27%
Jun-18	24,875	5,996	2,283	439	24.1%	9.2%	1.8%	38.1%	7.3%	19.23%
Jul-18	24,900	6,047	2,316	371	24.3%	9.3%	1.5%	38.3%	6.1%	16.02%
Aug-18	24,926	6,052	2,338	381	24.3%	9.4%	1.5%	38.6%	6.3%	16.30%
Sep-18	24,919	6,272	2,518	419	25.2%	10.1%	1.7%	40.1%	6.7%	16.64%
Oct-18	24,916	6,197	2,429	345	24.9%	9.7%	1.4%	39.2%	5.6%	14.20%
Nov-18	24,943	5,769	2,094	316	23.1%	8.4%	1.3%	36.3%	5.5%	15.09%
Dec-18	24,944	6,485	2,401	423	26.0%	9.6%	1.7%	37.0%	6.5%	17.62%
Jan-19	24,960	5,834	1,989	378	23.4%	8.0%	1.5%	34.1%	6.5%	19.00%
Feb-19	24,971	6,176	2,169	452	24.7%	8.7%	1.8%	35.1%	7.3%	20.84%
Mar-19	24,989	5,796	2,046	388	23.2%	8.2%	1.6%	35.3%	6.7%	18.96%
Apr-19	24,998	6,168	2,239	389	24.7%	9.0%	1.6%	36.3%	6.3%	17.37%
May-19	24,999	6,178	2,265	434	24.7%	9.1%	1.7%	36.7%	7.0%	19.16%
Jun-19	24,996	6,189	2,337	404	24.8%	9.3%	1.6%	37.8%	6.5%	17.29%
Jul-19	25,029	6,486	2,461	391	25.9%	9.8%	1.6%	37.9%	6.0%	15.89%

	0-30 days	31-60 days	61-90 days	91-120 days	121+ days	Balance
12/31/2019	$1,739,176	$35,389	-$936	-$5,813	-$30,343	$1,737,474
11/30/2019	$2,129,781	$28,666	-$6,054	-$9,434	-$29,742	$2,113,217
10/31/2019	$2,092,174	$10,362	-$10,790	-$5,892	-$28,072	$2,057,782
9/30/2019	$2,250,102	$3,677	-$9,637	-$6,208	-$31,113	$2,206,820
6/30/2019	$1,867,456	$4,978	-$8,295	-$6,641	-$47,257	$1,810,241
3/31/2019	$1,396,553	-$10,972	-$11,317	-$5,758	-$42,112	$1,326,394
12/31/2018	$1,871,921	$11,096	-$5,439	-$3,721	-$26,118	$1,847,739
9/30/2018	$2,282,443	$10,683	-$5,391	-$5,897	-$25,729	$2,256,110
6/30/2018	$1,875,467	-$9,241	-$11,326	-$4,097	-$31,338	$1,819,900
3/31/2018	$1,437,029	$11,627	-$5,872	-$2,367	-$29,520	$1,410,896
12/31/2017	$1,821,145	$48,908	$3,517	-$765	$16,405	$1,889,209




2019 Revenue Projections Based on 17,250 AF
x 100000
80
70
60
50
40
30
20
10
0
$12,000
$10,000
$8,000
$6,000
$4,000
$2,000
$0
Thousands
Dec, $9,653
Dec, $8,534
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Projected Consumption
Actual Consumption
Needed Revenue
Actual Revenue

MINUTES OF MEETING OF THE FINANCE COMMITTEE OF THE PALMDALE WATER DISTRICT, NOVEMBER 19, 2019:

A meeting of the Finance Committee of the Palmdale Water District was held Tuesday, November 19, 2019, at 2029 East Avenue Q, Palmdale, California, in the Board Room of the District office. Chair Dizmang called the meeting to order at 4:30 p.m.

1) Roll Call.

Attendance:	**Others Present:**
Committee:	Dennis LaMoreaux, General Manager
Gloria Dizmang, Chair	Adam Ly, Assistant General Manager
Don Wilson, Committee Member	Mike Williams, Finance Manager
	Judy Shay, Public Affairs Director
	Dennis Hoffmeyer, Accounting Supervisor
	Bob Egan, Financial Advisor
	Dawn Deans, Executive Assistant
	0 members of the public

2) Adoption of Agenda.

It was moved by Committee Member Wilson, seconded by Chair Dizmang, and unanimously carried by all members of the Committee present at the meeting to adopt the agenda, as written.

3) Public Comments on Non-Agenda Items.

There were no public comments on non-agenda items.

4) Action Items: (The Public Shall Have an Opportunity to Comment on Any Action Item as Each Item is Considered by the Committee Prior to Action Being Taken.)

4.1) Consideration and Possible Action on Approval of Minutes of Meeting Held October 22, 2019.

It was moved by Committee Member Wilson, seconded by Chair Dizmang, and unanimously carried by all members of the Committee present at the meeting to approve the minutes of the Financial Health and Stability Committee meeting held October 22, 2019.

4.2) Discussion and Overview of Cash Flow Statement and Current Cash Balances as of October 2019. (Financial Advisor Egan)

Financial Advisor Egan provided an overview of the Investment Funds Report through October 2019, including capital improvement fees received and interest income, and then reviewed the cash flow statement and decrease in cash, including scheduled significant disbursements, receipts, October water receipts, November assessments, capital improvement fees, a Department of Water Resources refund, and the projected year-end balance.

4.3) Discussion and Overview of Financial Statements, Revenue, and Expense and Departmental Budget Reports for October 2019. (Finance Manager Williams)

Finance Manager Williams reviewed in detail the balance sheet, profit and loss statement and trends, and revenue and expense analysis reports for the period ending October 2019 and stated that most departments are operating at or below the targeted expenditure percentage of 83%, with the exception of Engineering due to SCADA-Watch, Operations due to chemical costs, and Human Resources due to education reimbursements and training expenditures, followed by discussion of Directors' budgets and expenditures.

4.4) Discussion and Overview of Committed Contracts Issued. (Finance Manager Williams)

Finance Manager Williams provided an overview of the Contractual Commitments and Needs Report for new and replacement capital projects, consulting and engineering support projects, new and replacement equipment, water quality fee funded projects, committed and projected capital expenditures, and the summary of Water Revenue Bond Series 2018A payouts through October 2019.

4.5) Consideration and Possible Action on a Recommendation Regarding the 2020 Budget. (Finance Manager Williams)

Finance Manager Williams and Financial Advisor Egan reviewed the 2020 Budget, which is based on the 2019 Water Rate Study and five-year Water Rate Plan approved by the Board of Directors, and after a brief discussion of the 2020 Budget and several line items, grant funding, and payouts on annual projects to maintain year-end

cash flow, the Committee concurred that the proposed 2020 Budget is consistent with the 2019 Water Rate Study and five-year Water Rate Plan; that the Committee has no recommendation on the 2020 Budget; and then requested that a Budget Workshop be scheduled at the December 16, 2019 Regular Board Meeting to provide the Board with a detailed overview of how the 2020 Budget ties into the 2019 Water Rate Study and five-year Water Rate Plan.

4.6) Consideration and Possible Action on a Recommendation Regarding Resolution No. 19-17 Being a Resolution of the Board of Directors of the Palmdale Water District Establishing its Investment Policy. (Financial Advisor Egan/Finance Manager Williams)

Financial Advisor Egan provided an overview of Resolution No. 19-17, and after a brief discussion of the Investment Policy, it was moved by Director Wilson, seconded by Chair Dizmang, and unanimously carried by all members of the Committee present at the meeting that the Committee concurs with staff's recommendation to approve Resolution No. 19-17 being a Resolution of the Board of Directors of the Palmdale Water District Establishing its Investment Policy and that this Resolution be presented to the full Board for approval at the November 25, 2019 Regular Board Meeting.

5) Information Items.

5.1) Status of Debt Service Coverage. (Financial Advisor Egan)

Financial Advisor Egan stated that the Debt Service Coverage for the period of November 2018 through October 2019 is 1.58.

A transfer of $250,000.00 to the Rate Stabilization Fund was then discussed.

5.2) Other.

There were no other information items.

6) Board Members' Requests for Future Agenda Items.

There were no requests for future agenda items.

7) Date of Next Committee Meeting.

It was determined that the next Finance Committee meeting will be held in February 2020.

8) Adjournment.

There being no further business to come before the Finance Committee, the meeting was adjourned at 5:52 p.m.

Chair

MINUTES OF MEETING OF THE RESOURCE AND FACILITIES COMMITTEE OF THE PALMDALE WATER DISTRICT, DECEMBER 10, 2019:

A meeting of the Resource and Facilities Committee of the Palmdale Water District was held Tuesday, December 10, 2019, at 2029 East Avenue Q, Palmdale, California, in the Board Room of the District office. Chair Mac Laren called the meeting to order at 3:00 p.m.

1) Roll Call.

Attendance:
Committee:
Kathy Mac Laren, Chair
Robert Alvarado, Committee Member

Others Present:
Dennis LaMoreaux, General Manager
Adam Ly, Assistant General Manager
Judy Shay, Public Affairs Director
Scott Rogers, Engineering/Grant Manager
Chris Bligh, Facilities Manager
Peter Thompson II, Resource & Analytics Director
Claudia Bolanos, Resource & Analytics Supervisor
Dawn Deans, Executive Assistant
0 members of the public

2) Adoption of Agenda.

It was moved by Committee Member Alvarado, seconded by Chair Mac Laren, and unanimously carried by all members of the Committee present at the meeting to adopt the agenda, as written.

3) Public Comments.

There were no public comments.

4) Action Items: (The Public Shall Have an Opportunity to Comment on Any Action Item as Each Item is Considered by the Committee Prior to Action Being Taken.)

4.1) Consideration and Possible Action on Approval of Minutes of Meeting Held October 8, 2019.

It was moved by Committee Member Alvarado, seconded by Chair Mac Laren, and unanimously carried by all members of the Committee present at the meeting to approve the minutes of the Resource Reliability and Operational Efficiency Committee meeting held October 8, 2019, as written.

4.2) Consideration and Possible Action on a Recommendation Declaring District Vehicles as Surplus and Offering Same for Sale and/or Lease Returns. (Potential Revenue – Facilities Manager Bligh)

After a brief discussion of the proposed surplus vehicles, it was moved by Committee Member Alvarado, seconded by Chair Mac Laren, and unanimously carried by all members of the Committee present at the meeting that the Committee concurs with staff's recommendation to declare District vehicles as surplus and offer same for sale and/or lease returns and that this item be presented to the full Board for consideration at the December 16, 2019 Regular Board Meeting.

4.3) Consideration and Possible Action on a Recommendation Regarding Resolution No. 19-18 Being a Resolution of the Board of Directors of the Palmdale Water District Approving Waiver of the District's Bid Procurement and Change Order Policy for the Construction of the Water Conservation and Education Garden at 2005 East Avenue Q, Palmdale. (No Budget Impact – Resource & Analytics Supervisor Bolanos)

Resolution No. 19-18 Approving Waiver of the District's Bid Procurement and Change Order Policy, along with proposed plans and details for the Water Conservation and Education Garden, were briefly reviewed, and after a brief discussion of the benefits of the Project, of avoiding shrubbery that attracts bees, potential liability, the area being open to the public, and deterring overnight use, it was moved by Committee Member Alvarado, seconded by Chair Mac Laren, and unanimously carried by all members of the Committee present at the meeting that the Committee concurs with staff's recommendation to approve Resolution No. 19-18 being a Resolution of the Board of Directors of the Palmdale Water District Approving Waiver of the District's Bid Procurement and Change Order Policy for the construction of the Water Conservation and Education Garden at 2005 East Avenue Q, Palmdale and that this item be presented to the full Board for consideration at the December 16, 2019 Regular Board Meeting.

4.4) Consideration and Possible Action on a Recommendation Regarding Authorizing Staff to Enter into a Contract for the Construction of the Water Conservation and Education Garden at 2005 East Avenue Q, Palmdale. ($118,895.00 – Budgeted – Resource and Analytics Supervisor Bolanos)

After a brief discussion of the proposed contract for construction of the Water Conservation and Education Garden, it was moved by Committee Member Alvarado,

seconded by Chair Mac Laren, and unanimously carried by all members of the Committee present at the meeting that the Committee concurs with staff's recommendation authorizing staff to enter into a contract for the construction of the Water Conservation and Education Garden at 2005 East Avenue Q, Palmdale and that this item be presented to the full Board for consideration at the December 16, 2019 Regular Board Meeting.

5) Information Items.

5.1) Status of 2019 State Water Project Allocation Use. (Resource and Analytics Director Thompson II)

Resource and Analytics Director Thompson II stated that the District's total surface water supply for 2019 through the State Water Project was 25,700 acre feet - 16,000 acre feet from the District's 75% State Water Project allocation, 7,500 acre feet from the continuing Agreement with Butte County, and 2,200 acre feet of carryover water; that this supply was used in the Semi-Tropic Water Bank, Palmdale Lake, the Big Rock Creek Recharge Project, the Amargosa Creek Recharge Project, the Kern County Exchange, and carryover for 2020; and that the District's initial State Water Project allocation for 2020 is 10%.

5.2) Status on Littlerock Reservoir Sediment Removal Project. (Engineering/Grant Manager Rogers)

The Committee viewed a video on the construction of the grade control structure for the Littlerock Reservoir Sediment Removal Project after which Engineering/Grant Manager Rogers stated that the structure is operating as expected and completion is anticipated by this weekend.

5.3) Status on the Upper Amargosa Recharge Project. (General Manager LaMoreaux)

General Manager LaMoreaux stated that the ribbon-cutting ceremony for this Project is scheduled for this Thursday; that a meeting is scheduled next week to review the operational agreement for the Project; and that 500 acre feet of the District's State Water Project allocation will be delivered by year-end with a more standing authorization to deliver water in the future followed by discussion of public relations opportunities.

5.4) Status on Palmdale Regional Groundwater Recharge and Recovery Project. (Engineering/Grant Manager Rogers)

Engineering/Grant Manager Rogers stated that staff anticipates bids for the pilot well for this Project will be requested early 2020; that phase II plans have been reviewed by District staff and sent back to the engineer; and that all applications for grant funding are still under review followed by discussion of grant funding and upcoming regulatory requirements.

5.5) Other.

General Manager LaMoreaux stated that staff is continuing discussions with representatives from the High-Speed Rail Project regarding refining the alignment of the Project near Palmdale Lake and Dam.

6) Board Members' Requests for Future Agenda Items.

Director Alvarado recommended that Directors not able to attend the Upper Amargosa Recharge Project ribbon cutting ceremony recreate a photo opportunity and that "Status of shrubbery that attracts bees for the Water Conservation and Education Garden" be placed on the next agenda.

There were no requests for future agenda items.

7) Date of Next Committee Meeting.

It was determined that the next Resource and Facilities Committee meeting will be held February 11, 2019 at 3:00 p.m.

8) Adjournment.

There being no further business to come before the Resource and Facilities Committee, the meeting was adjourned at 4:05 p.m.

Kathryn S. MacDonald
Chair

MINUTES OF REGULAR MEETING OF THE COMMISSIONERS OF THE ANTELOPE VALLEY STATE WATER CONTRACTORS ASSOCIATION, JANUARY 9, 2020.

A regular meeting of the Commissioners of the Antelope Valley State Water Contractors Association was held Thursday, January 9, 2020, at the Palmdale Water District at 2029 East Avenue Q, Palmdale. Chair Parris called the meeting to order at 6:00 p.m.

1) Pledge of Allegiance.

At the request of Chair Parris, Commissioner Hogan led the pledge of allegiance.

2) Roll Call.

Attendance:	**Others Present:**
Rob Parris, Chair	Matt Knudson, General Manager
Vincent Dino, Vice Chair	Peter Thompson II, Asst. General Manager
Leo Thibault, Treasurer	Tom Barnes, Resources Manager
Kathy Mac Laren, Secretary	Don Wilson, PWD Alt. Commissioner
Barbara Hogan, Commissioner	James Chaisson, LCID Manager
Keith Dyas, Commissioner	Robert Alvarado, PWD Director
	Dawn Deans, Executive Assistant
	3 members of the public

3) Adoption of Agenda.

It was moved by Commissioner Mac Laren, seconded by Commissioner Dino, and unanimously carried by all members of the Board of Commissioners present at the meeting to adopt the agenda, as written.

4) Public Comments for Non-Agenda Items.

There were no public comments.

5) Consideration and Possible Action on Minutes of Regular Meeting Held October 10, 2019.

It was moved by Commissioner Dyas, seconded by Commissioner Thibault, and unanimously carried by all members of the Board of Commissioners present at the

meeting to approve the minutes of the regular meeting held October 10, 2019, as written.

6) Payment of Bills.

It was moved by Commissioner Thibault, seconded by Commissioner Mac Laren, and unanimously carried by all members of the Board of Commissioners present at the meeting to ratify payment of the bills to PWD in the amount of $625.58 for staff services, to AVEK in the amount of $363.30 for staff services, to Nigro & Nigro in the amount of $500.00 for auditing services, to Kennedy/Jenks Consultants in the amounts of $6,816.50 and $881.50 for the Big Rock Creek Groundwater Recharge Project, to Woodard & Curran in the amounts of $88,506.80 and $40,432.66 for work on the Antelope Valley Integrated Regional Water Management Plan, and to United States Geological Survey in the amount of $16,225.00 per the Joint Funding Agreement; to approve payment of the bills to Kennedy/Jenks Consultants in the amounts of $4,898.85 and $6,025.32 for the Big Rock Creek Groundwater Recharge Project; and to approve the supplemental bill to AVEK in the amount of $726.60 for staff services.

7) Consideration and Possible Action on Election of Officers. (General Manager Knudson)

After a brief discussion of the officers for the Association, it was moved by Commissioner Dyas, seconded by Commissioner Hogan, and unanimously carried by all members of the Board of Commissioners present at the meeting that the slate of officers for the Association for 2020 remain as:

Rob Parris, Chair
Vincent Dino, Vice Chair
Leo Thibault, Treasurer
Kathy Mac Laren, Secretary
Barbara Hogan, Commissioner
Keith Dyas, Commissioner

8) Report of General Manager and Assistant General Manager.

a) Member Agency Approval of Joint Funding Agreement with the USGS to Continue Monitoring Groundwater Levels and Water Quality During the Period of November 1, 2019 to October 31, 2020.

General Manager Knudson reported that all member agencies have approved the USGS Joint Funding Agreement.

b) A.V. Watermaster Approval of Replacement Water Agreement Between the AVSWCA and the A.V. Watermaster for Delivery of Replacement Water Within the Antelope Valley Adjudicated Groundwater Basin.

General Manager Knudson reported that the Replacement Water Agreement has now been approved by both the Association and the A.V. Watermaster.

c) Status updates:

1) Proposed East Side Recycled Water Line Project.

General Manager Knudson reported that this concept has been presented to the Advisory Committee and that the next step is to present this project to the A.V. Watermaster Board.

2) Big Rock Creek Joint Groundwater Recharge Project.

Assistant General Manager Thompson II reported that the pilot program for this Project has successfully been completed with 674 acre feet of water recharged and that Kennedy/Jenks Consultants is reviewing the results for recommendations for the next phase.

3) Antelope Valley Watermaster Meetings.

Assistant General Manager Thompson II reported that the budget and scope of work for the engineer and for administrative staff has been approved, and reports are being collected to begin the billing process.

4) Antelope Valley and Fremont Basin IRWMP Stakeholder Meetings.

Assistant General Manager Thompson II reported that an IRWMP Stakeholder Meeting is scheduled for January 15, 2020; that an update on the Proposition 1 application process should be presented at that time; and that there are no updates on the Fremont Basin project.

Commissioner Thibault then requested a tour of the Upper Amargosa Recharge Project for the Commissioners after which General Manager Knudson provided a brief update on the status of this Project, and it was determined that a tour for PWD, AVEK, and LCID be held on the first day the valves are opened.

9) Report of Controller.

a) Update on Revenue, Expenses and Change in Net Position.

General Manager Knudson provided an update on the Association's revenue, expenses, and change in net position for the month ending November 30, 2019 followed by discussion of the layout of the financial reports, and it was requested that Controller Hoffmeyer provide a presentation on the details and line items of the financial reports at the next Commission meeting.

10) Reports of Commissioners.

There were no reports from Commissioners.

11) Report of Attorney.

No attorney was present at the meeting.

It was then suggested that AVEK's attorney attend an Association meeting to be introduced to the Commissioners.

12) Commission Members' Requests for Future Agenda Items.

Commissioner Hogan requested an item be placed on the next agenda for "Consideration and possible action on AVSWCA participation in the upcoming Home and Garden Show/Water Expo," and Chair Parris requested Dan Jacobs, from the Antelope Valley Fair, be invited to the next meeting for "Presentation on the Antelope Valley Fair's Conservation Garden and the Home and Garden Show/Water Expo."

Assistant General Manager Thompson II then reported that PWD staff is working on vendor participation for the Home and Garden Show/Water Expo and that he will provide a status report at the next meeting.

There were no further requests for future agenda items.

13) Consideration and Possible Action on Scheduling the Next Association Meeting February 13, 2020.

It was stated that the next regular meeting of the Association will be held on February 13, 2020 at 6:00 p.m. at Palmdale Water District.

14) Adjournment.

There being no further business to come before the Commissioners, the regular meeting of the Commissioners of the Antelope Valley State Water Contractors Association was adjourned at 6:25 p.m.

Secretary

P A L M D A L E W A T E R D I S T R I C T

B O A R D M E M O R A N D U M

DATE: February 19, 2020 **February 24, 2020**

TO: BOARD OF DIRECTORS **Board Meeting**

FROM: Mr. Dennis D. LaMoreaux, General Manager

RE: ***AGENDA ITEM NO. 8.3 – FEBRUARY 2020 GENERAL MANAGER REPORT***

The following is the February 2020 report to the Board of activities through January 2020. It is organized to follow the District's six strategic initiatives and is intended to provide a general update on the month's activities. A summary of the initiatives is as follows:

Water Resource Reliability

Complete the 2018 phase of the Upper Amargosa Creek Recharge Project
Ensure Palmdale Recycled Water Authority (PRWA) to be fully operational by year 2020
Adopt new state-of-the-art water treatment technologies
Implement the Antelope Valley Groundwater Adjudication agreement
Complete the grade-control structure for the Littlerock Reservoir Sediment Removal Project
Continue the next phase towards the completion of Palmdale Regional Groundwater Recharge and Recovery Project
Identify and pursue opportunities to increase the reliability of water supply

Organizational Excellence

Offer competitive compensation and benefits package to promote employee retention
Focus Succession Planning Program on ensuring an overlap of training for key positions
Continue providing transparency to our ratepayers
Promote and support leadership training and professional development programs to enhance the District's customers' experience

Systems Efficiency

Implement 2016 Water System Master Plan
Develop a five-year Infrastructure Revitalization Plan to continue the reinvestment and preventative maintenance for aging infrastructure
Explore energy independence
Continue being the industry's leader on the use of Granular Activated Carbon (GAC)
Research and test new technologies to increase efficiencies
Improve safety and training for Directors, employees and customers
Develop a crisis communications plan

Financial Health and Stability

Pursue additional grant funding for all District projects
Adopt a sustainable and balanced rate structure to meet short and long-term needs
Create a five-year financial plan in conjunction with the 2019 Water Rate Plan
Maintain adequate reserve levels, high-level bond rating, and financial stability

Regional Leadership

Enhance relationships with Antelope Valley partnerships, including local water agencies, Antelope Valley State Water Contractors Association and the Palmdale Recycled Water Authority
Expand school water education programs
Engage elected officials in water-related issues
Continue offering career opportunities through the Internship Program
Provide opportunities for local businesses to contract with the District

Customer Care, Advocacy and Outreach

Increase Customer Care accessibility through communication and feedback to enhance customers' experience
Evaluate, develop, and market additional payment options
Be point of communication for customers' water-related public health concerns
Develop the District's Public Outreach Plan
Increase public awareness of the District's history and promote centennial anniversary

This report also includes charts that show the effects of the District's efforts in several areas. They are organized within each strategic initiative and include status of the State Water Resources Control Board's (SWRCB) long-term conservation orders, 20 x 2020 status, the District's total per capita water use trends, 2019 final water production and customer use graph, mainline leaks, and the water loss trends for both 12- and 24-month running averages.

Water Resource Reliability

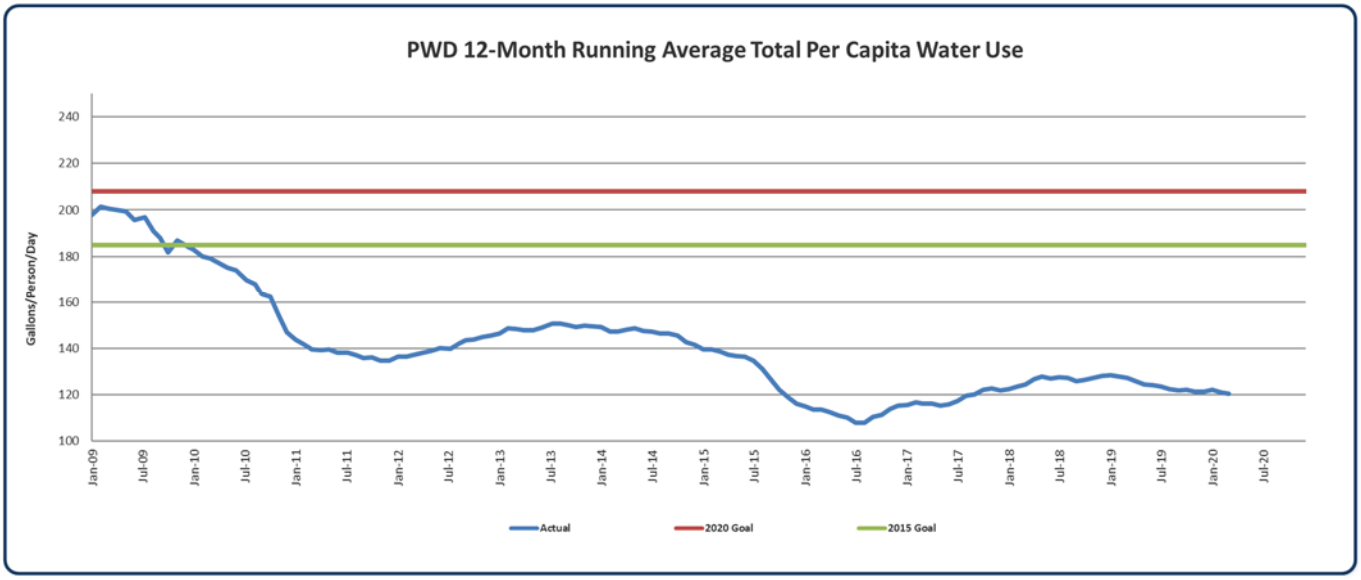
This initiative includes conservation efforts, water supply projects, and water planning. Recent highlights are as follows:

State Water Resources Control Board (SWRCB) Activities

- The 20 x 2020 per capita reduction goals passed by the legislature in 2009 with new long-term water budgeting requirements have now been replaced with new requirements and water agency water budgets. These follow through on the "Making Water Conservation

a California Way of Life" plan. The District expects to easily comply with the new requirements as they are based on the same philosophy as the District water budget rate structure. Until these criteria are finalized, the customers' performance is shown in this report using the 20 x 2020 requirements.

The District's compliance with the former 20 x 2020 law is evident from the chart titled "PWD 12-Month Running Average Total Per Capita Water Use.":



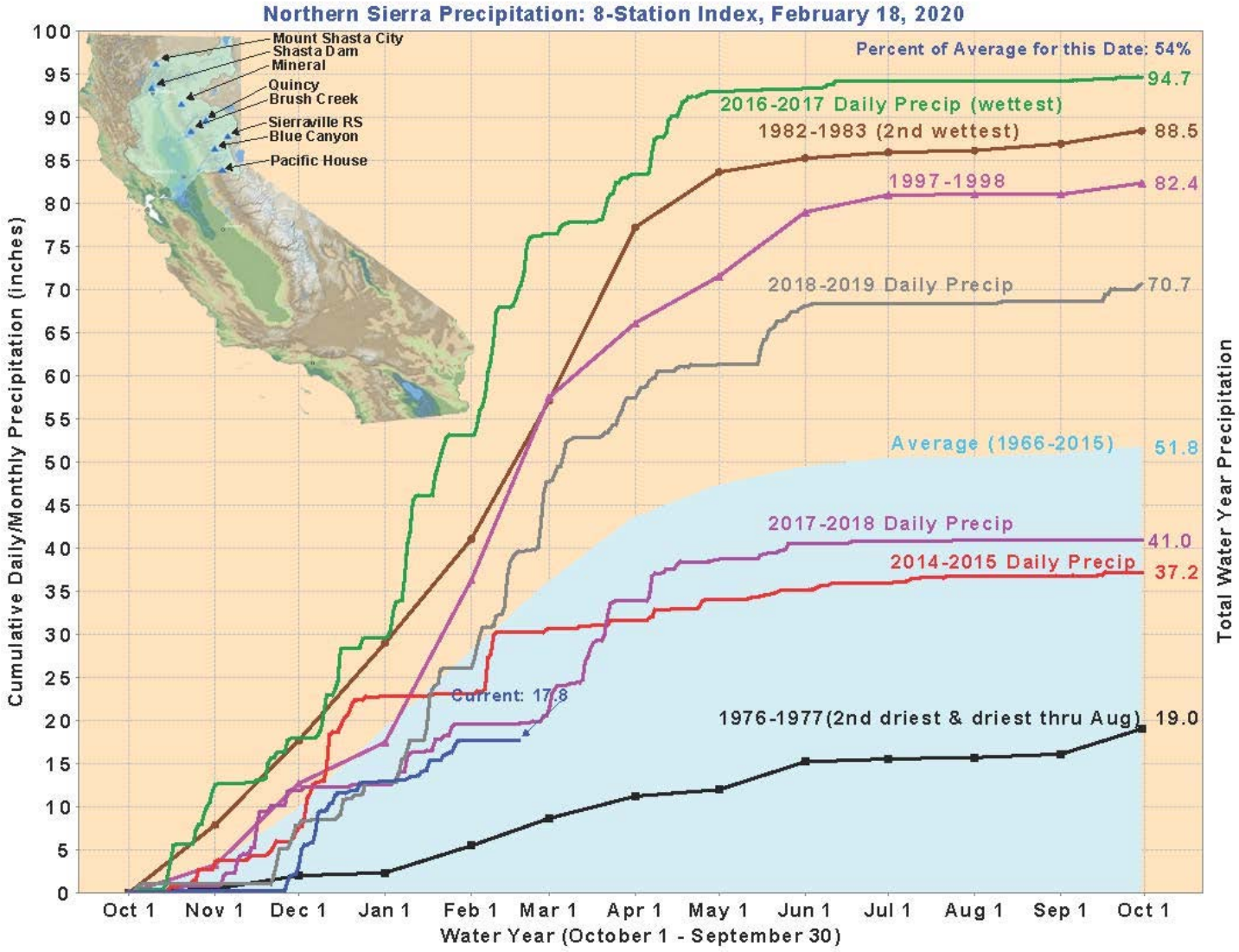
The District's customers have cut their water use by **47.6%** from the baseline number of 231 established in the 2015 Urban Water Management Plan and met the 2020 Goal in early 2010. The current Total-GPCD is 121.

Water Supply Information

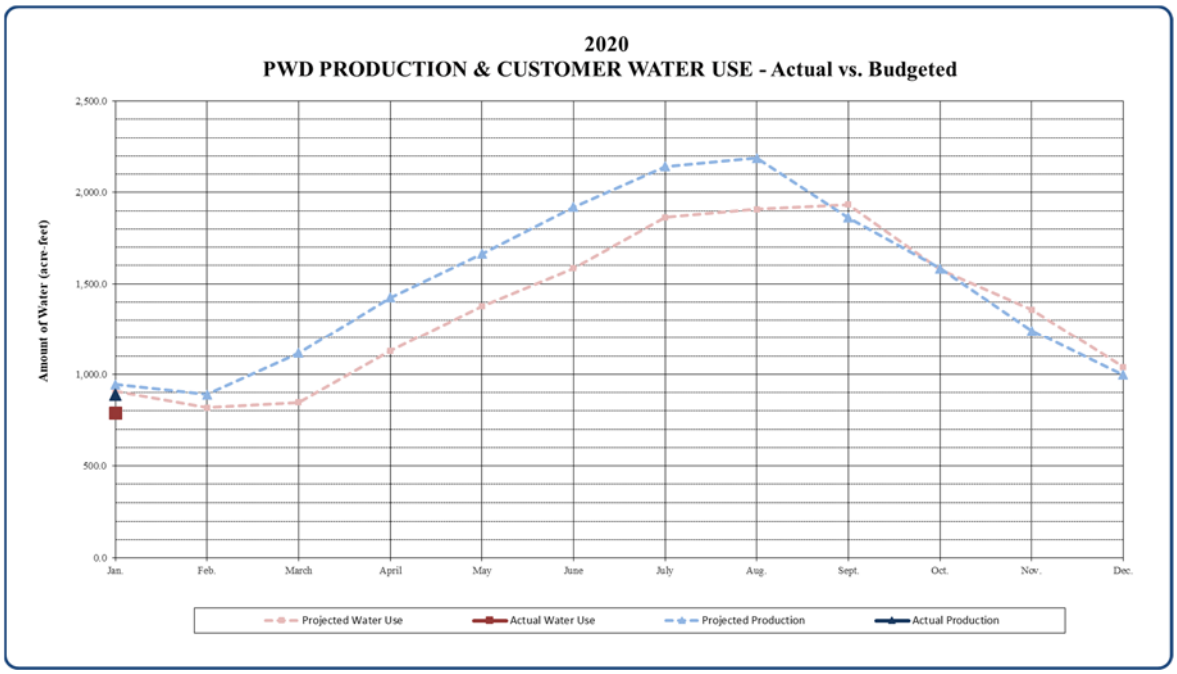
- The AV Adjudication is now entering its fifth year, and the reduction to the native safe yield is in its third year. The District's native groundwater right is 2,769.63 AF. The District's 2019 groundwater rights totaled 7,986.67 AF without the prior year's Carryover Rights.

- The 2020 water resources plan is tentative at this point. Precipitation in the area that contributes to the State Water Project is currently at 54% of average and the SWP allocation is currently only 15%. This provides the District approximately 4,700 AF. Another 2,000 AF is anticipated from Littlerock Reservoir. The District is also exploring other water sources including the SWP Dry Year Program and Yuba Accord Water. These efforts along with the District's available groundwater rights will lessen any needed conservation needed by our customers if the winter continues to be dry.

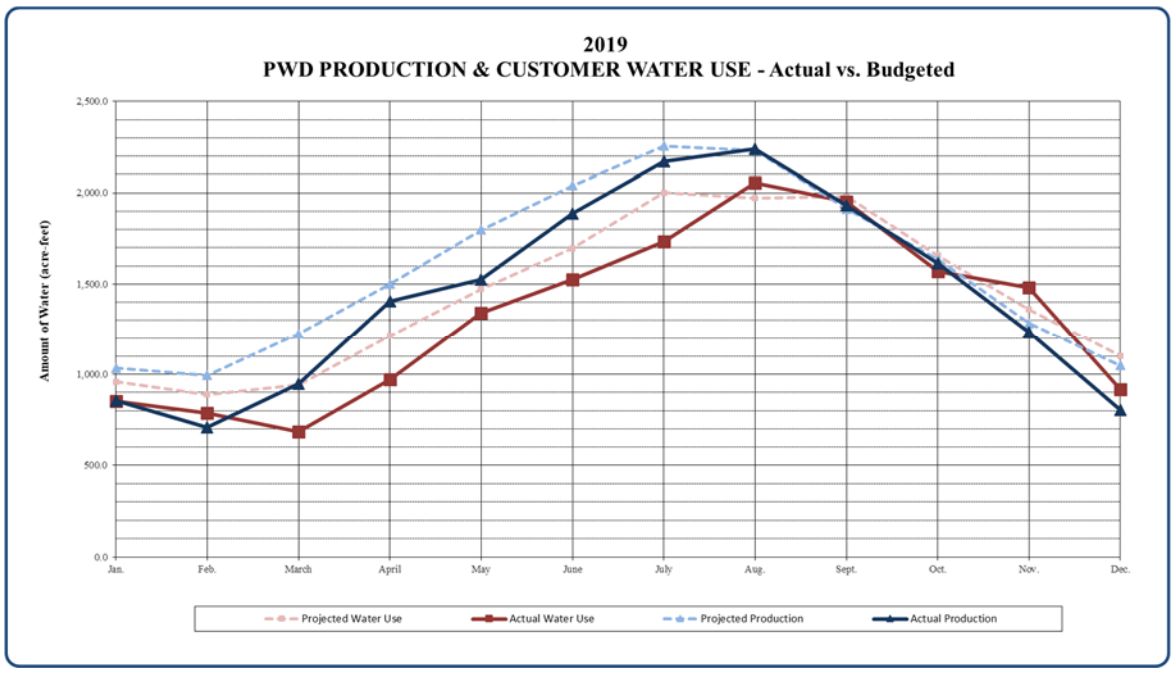
The following graph shows the 2019-2020 water year as of Tuesday, February 18, 2020.



- The following is the anticipated monthly water consumption and production for 2020 based on the prior five years of actual monthly information. The total consumption is based on the 2020 Budget amount of 16,341 AF. Actual January numbers are slightly lower than anticipated.



- The following graph shows actual monthly amounts for 2019 for both production and consumption. 2019 water use was 8% less than anticipated due to a wetter than average year.



Other Items

- The Littlerock Reservoir Sediment Removal Project Environmental Impact Report/Environmental Impact Statement (EIR/EIS) was fully approved in 2017. All required permits are in place, and a construction contract for the Grade Control Structure was awarded in July 2018 to ASI Construction, LLC (ASI) of Colorado Springs.

  After the site flooded in early 2019, ASI returned to the site in mid-July and began working. The first activities were re-establishing the dewatering network so excavation can be done, rebuilding the upstream berm to protect the construction site, and reinstalling the bypass pipe to allow storm water to go around the site. RCC placement began in late September and the work was completed in January 2020 and ASI has left the site.

  A citizen's committee, Friends of Littlerock Dam (FOLD), was formed in the Littlerock, Pearblossom, and Juniper Hills area to find a way to reopen the Littlerock Reservoir Recreation area. They worked with the District and the USFS on this issue. The USFS has issued an eviction notice to the former operator living at the Reservoir in May 2019. This process is expected to be completed later this year.

  Discussions are underway to explore having a small number of weekends this summer for limited recreation in the Littlerock Reservoir area while a more permanent solution is established. This successfully occurred for two weekends in 2018. It will take the combined cooperation of the Angeles National Forest, FOLD, and the District. The District's focus will be providing information on the upcoming sediment removal actions and time frames.

- The public review of the Draft California Environmental Quality Act (CEQA) EIR for the Palmdale Regional Groundwater Recharge and Recovery Project is complete. The Final EIR was certified by the Board on July 13, 2016, and the Notice of Determination was filed on July 14, 2016. The comments from the SWRCB Recycled Water Division on the Title 22 Engineering Report were addressed and returned for further review. Another set of comments was received in 2018 and information is being collected to address them.

  The soil column tests were completed and reported on late last year. The District reviewed additional geotechnical work done to verify the proposed location is suitable. The result is a recommendation to drill an additional well to better understand the aquifer in the area. The well design and construction documents are out for bids due in February 2020.

- The Upper Amargosa Creek Recharge Project is complete. One contract is for the California Aqueduct turnout and transmission water main. The other is for the recharge basins. They are higher than original estimates and will result in a request from the City

of Palmdale to the District, LA County Waterworks, and AVEK for additional funding. The park aspects of the project are expected to be finished early next year. The District is working with DWR to deliver water to the Project for recharge on a continuing basis.

- California Water Fix: There have been recent regulatory approvals moving this project forward. However, the current Governor has only stated support for one of the proposed tunnels. The State Water Contractors and the Department of Water Resources are continuing discussions about the Project's financing and operations. These discussions will result in a clearer picture of the effect on individual contractors. Staff is directly involved in these discussions, the development of the Agreement in Principle, and will update the Board soon.

Organizational Excellence

This initiative includes efforts to restructure staff duties and activities to more efficiently provide service to our customers. Recent highlights are as follows:

- Workshops were held to discuss the District's direction and update the Strategic Plan for 2019. This process reset the District's standing committees to align better with the Strategic Plan and give them clear direction. This have been continued this year during the various committees' initial 2020 meetings.

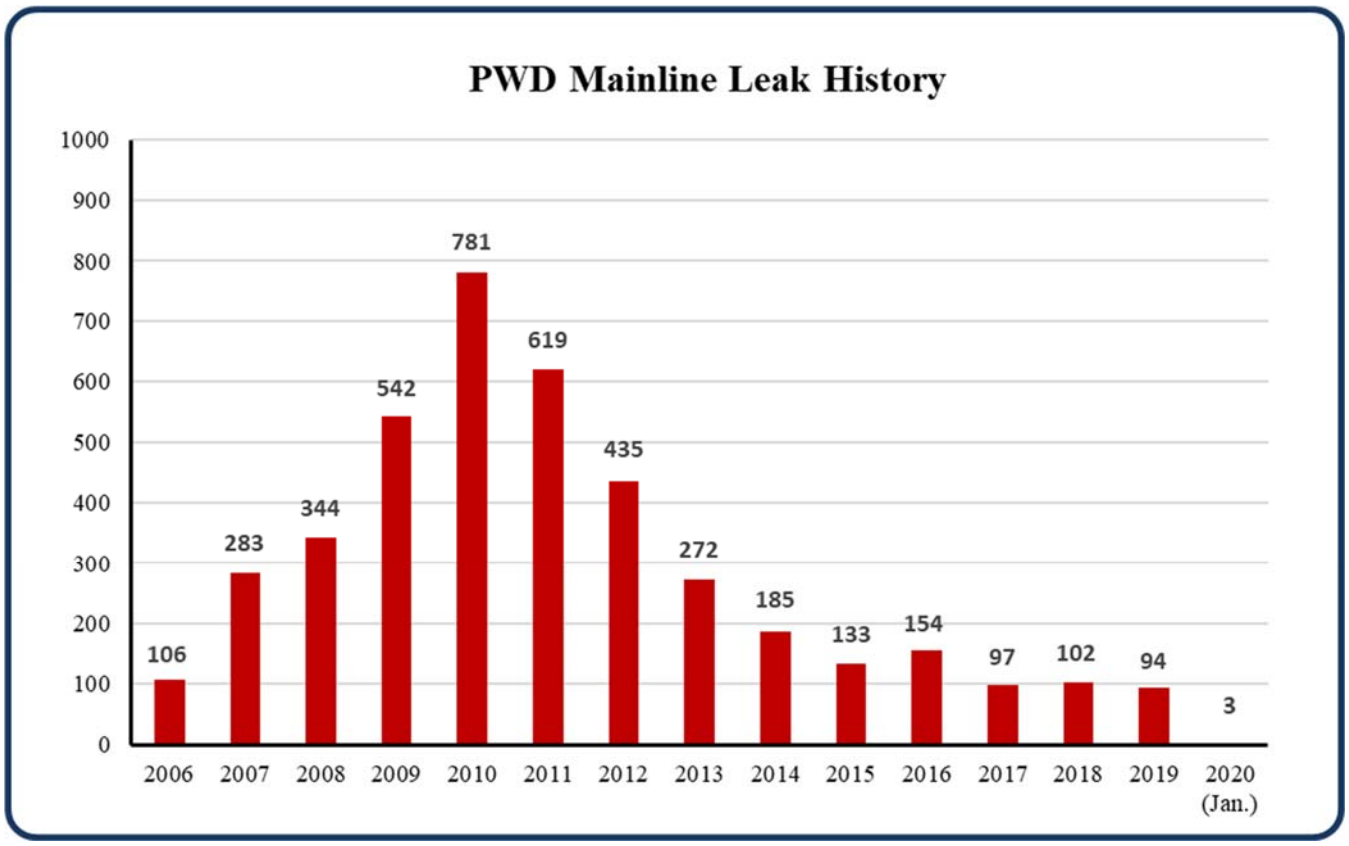
- The District and other members of the Public Water Agencies Group (PWAG) have hired and share the services of an Emergency Preparedness Coordinator. This has already resulted in a successful training held at the District office. This approach also kept the District in a good position when responding to the July 4 and 5 earthquakes near Ridgecrest and compliance with the America's Water Infrastructure Act of 2018.

Systems Efficiency

This initiative largely focuses on the state of the District's infrastructure. Recent highlights are as follows:

- The effects of the District's past efforts in replacing failing water mains and meters can be seen in the reduced number of mainline leaks. This is illustrated in the chart titled "Mainline Leak History." The mainline leaks through January 2020 are 3, and there were 11 service line leaks. As can be seen in the following graph, **the mainline leaks for 2017, 2018, and 2019 average less than 100 or roughly one leak for every four (4) miles of**

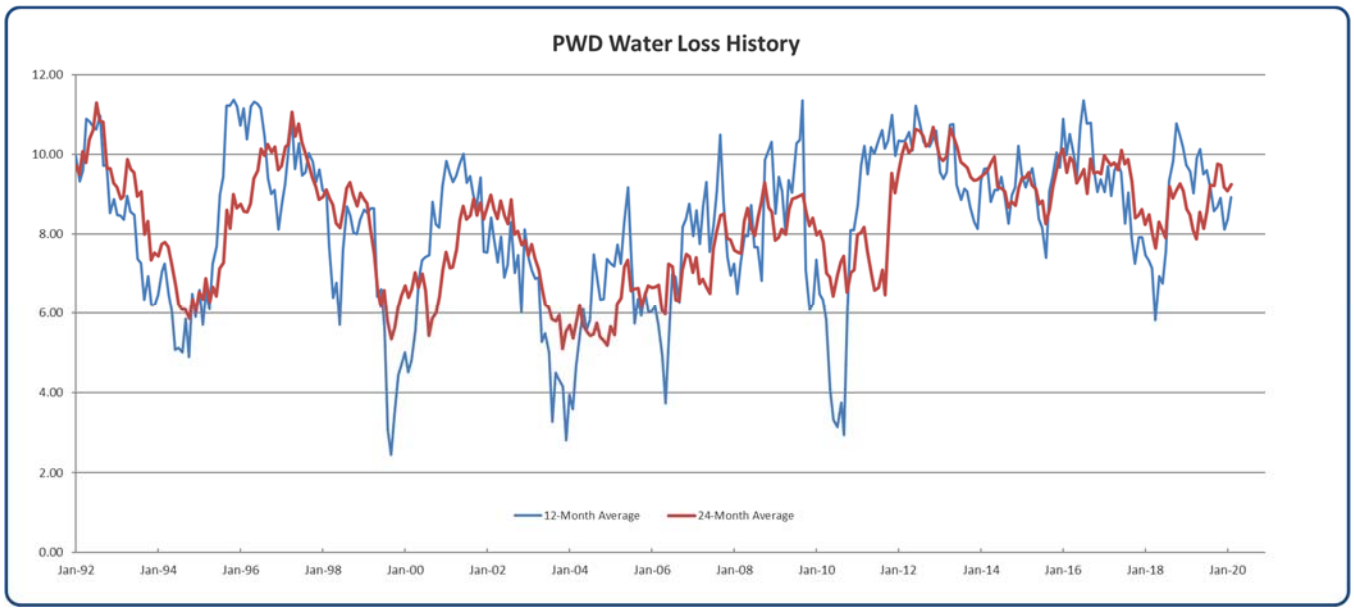
the District's water system as opposed to nearly one leak every half mile in 2010. This is a clear indication of the benefit in replacing old, worn out infrastructure.



- The 2019 Budget included replacing approximately 2,800 meters. Staff completed this replacement project in October. This approach to replacing water meters worked well and is planned to continue in 2020. District staff is exploring other options for meters due to warranty issues being experienced with the current meter brand.

- The District advertised two water main replacement projects in December. One is in Avenue P near 25th Street East and the other is in Avenue V-5 west of 47th Street East. These contracts were awarded by the Board at the February 10, 2020 regular meeting.

- The positive effect of both water main and water meter replacement programs is shown on the chart titled "PWD Water Loss History." The running average for water losses remains under 10%.



Financial Health and Stability

PWD and City of Palmdale staffs have worked together to obtain funding for the Palmdale Recycled Water Authority (PRWA). Staff is considering a public bond issue for this project. Early discussions show this as a strong possibility to fund the work. PRWA is also trying to obtain completed booster station plans being held by Los Angeles County Waterworks District 40 to complete the Phase II design plans and financing.

The AV Integrated Regional Water Management Plan (IRWMP) also provides an avenue for State funding assistance. The Littlerock Sediment Removal and PRWA Phase II Projects are the highest rated and are very likely to receive nearly $900,000 for each project in the current round of funding.

- The 2019 Water Rate Study and Proposition 218 process is now complete. The Proposition 218 public hearing was held on October 28, 2019 for the 8.1% annual revenue increase. 101 protests were received of which 88 were valid. The Board then unanimously approved Resolution No. 19-15. This set the water rate structure and water rates for 2020-2024.

  Resolution No. 19-15 also includes criteria to evaluate the District's financial condition each year. It gives the Board the ability to reduce the water rates if the District's financial position meets four (4) of the criteria in an annual review while preparing the following year's budget.

- Water-Wise Landscape Conversion Program (Cash-for-Grass Program): The District received a $75,000 Grant from the Bureau of Reclamation in 2017 to assist in funding the Program. The District has fully used the grant funds. The Board approved an application for additional funds in February. The District received a preliminary notice indicating a favorable review of the application.

Regional Leadership

This initiative includes efforts to involve the community, be involved in regional activities, and be a resource for other agencies in the area. Recent highlights are as follows:

- Activities of the Palmdale Recycled Water Authority (PRWA), AV Integrated Regional Water Management Plan (IRWMP), and Antelope Valley State Water Contractors Association have continued.

- The District staff continues to share the administration of the Antelope Valley Watermaster Board (AVWB) with AVEK and related meetings.

- District staff is active in the local chambers, Greater Antelope Valley Economic Alliance (GAVEA), regional human resources, and public information organizations.

- The first "PWD Water Ambassador Academy" (WAA) was conducted on September through October 2018. The response was overwhelmingly positive. The next Academy was successfully completed in March 2019 and a high school version of the Academy was successfully held as a one-day event on May 2019. The 2020 WAA is being planned for March 2020. This will also include a brief presentation by the City of Palmdale. The District will also be included in the City's program.

- The District, AVEK, City of Palmdale, and the City of Lancaster cohosted the Greater Antelope Valley Water Emergency Coalition on October 30th. The event was well-received and a success. A more formal move towards mutual assistance and coordination is planned from the participating organizations.

- PRWA staff, District and City personnel, recently met to look at activities for this year and what future planning should be done. This includes developing a logo and brand, a website, completing the Phase II contract documents, possibly updating the Master Plan, and developing a five-year strategic plan.

Customer Care and Advocacy

This initiative includes efforts to better serve our customers. Recent highlights are as follows:

- The ability to make payments at 7-Eleven and Family Dollar Store is also continuing to grow.

- Customer Care office and field staff are crosstraining to better understand the other's interaction with customers and to improve communication.

- Customers are continuing to take advantage of the District's electronic payment options. 61% of all payments made by customers were done electronically in 2019.

- Truebill, the customer information system, is updated for the new water rate structure and water rates for 2020.

- Staff is working to implement revised policies related to SB 998 approved by the Board of Directors on January 13, 2020. This bill requires additional procedures for dealing with delinquent customers. The District must be in compliance with it on February 1, 2020.

- Remodeling of the floor area on both floors of the main office are being designed and priced.