Yucaipa Valley Water District

# Notice and Agenda of a Board Workshop

Tuesday, April 25, 2017 at 4:00 p.m.

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| MEETING LOCATION: | District Administration Building<br>12770 Second Street, Yucaipa |
| MEMBERS OF THE BOARD: | Director Chris Mann, Division 1<br>Director Bruce Granlund, Division 2<br>Director Jay Bogh, Division 3<br>Director Lonni Granlund, Division 4<br>Director Tom Shalhoub, Division 5 |

**I. Call to Order**

**II. Public Comments** At this time, members of the public may address the Board of Directors on matters within its jurisdiction; however, no action or significant discussion may take place on any item not on the meeting agenda.

**III. Staff Report**

**IV. Presentations**

A. Overview on the Proposed Groundwater Sustainability Agency for the San Timoteo Basin [Workshop Memorandum No. 17-051 - Page 5 of 138]

B. Overview of a Proposed Calculation Methodology for the Purchase of Supplemental Water from the San Gorgonio Pass Water Agency [Workshop Memorandum No. 17-052 - Page 13 of 138]

C. Overview of the Yucaipa Valley Water District's Lead Sampling Program for K-12 Schools [Workshop Memorandum No. 17-053 - Page 97 of 138]

D. Overview of Proposed Capital Improvement Projects to Enhance Recycled Water Quality and Prepare for Future Direct Potable Reuse [Workshop Memorandum No. 17-054 - Page 110 of 138]

**V. Operational Updates**

A. Overview of Ultraviolet Disinfection Improvements at the Wochholz Regional Water Recycling Facility [Workshop Memorandum No. 17-055 - Page 114 of 138]

Any person who requires accommodation to participate in this meeting should contact the District office at (909) 797-5117, at least 48 hours prior to the meeting to request a disability-related modification or accommodation.

Materials that are provided to the Board of Directors after the meeting packet is compiled and distributed will be made available for public review during normal business hours at the District office located at 12770 Second Street, Yucaipa. Meeting materials are also available on the District's website at www.yvwd.dst.ca.us

**VI. Capital Improvement Project Updates**

A. Status Report on the Construction of an 8-inch and 30-inch Water Pipelines in Acacia Avenue and First Street [Workshop Memorandum No. 17-056 - Page 118 of 138]

B. Status Report on the Construction of the Site Improvements for the Recycled Water Booster Station 12.4.0 in Calimesa [Workshop Memorandum No. 17-057 - Page 121 of 138]

C. Status Report on the Construction of Replacement Pipelines on Date Avenue, Dodd Street, Panorama Drive, Lennox Street, Verona Street, Calvin Street, and Vista Lane - Yucaipa [Workshop Memorandum No. 17-058 - Page 123 of 138]

**VII. Policy Issues**

A. Conversion of the Calimesa Country Club from Drinking Water to Recycled Water for Irrigation Purposes [Workshop Memorandum No. 17-059 - Page 125 of 138]

**VIII. Development Related Issues**

A. Consideration of an Updated Development Agreement with the McDougal Bros. for Tract No. 14429 - Yucaipa [Workshop Memorandum No. 17-060 - Page 127 of 138]

**IX. Director Comments**

**X. Adjournment**

# Staff Report

Yucaipa Valley Water District

# Presentations

Yucaipa Valley Water District

Yucaipa Valley Water District

# Workshop Memorandum 17-051

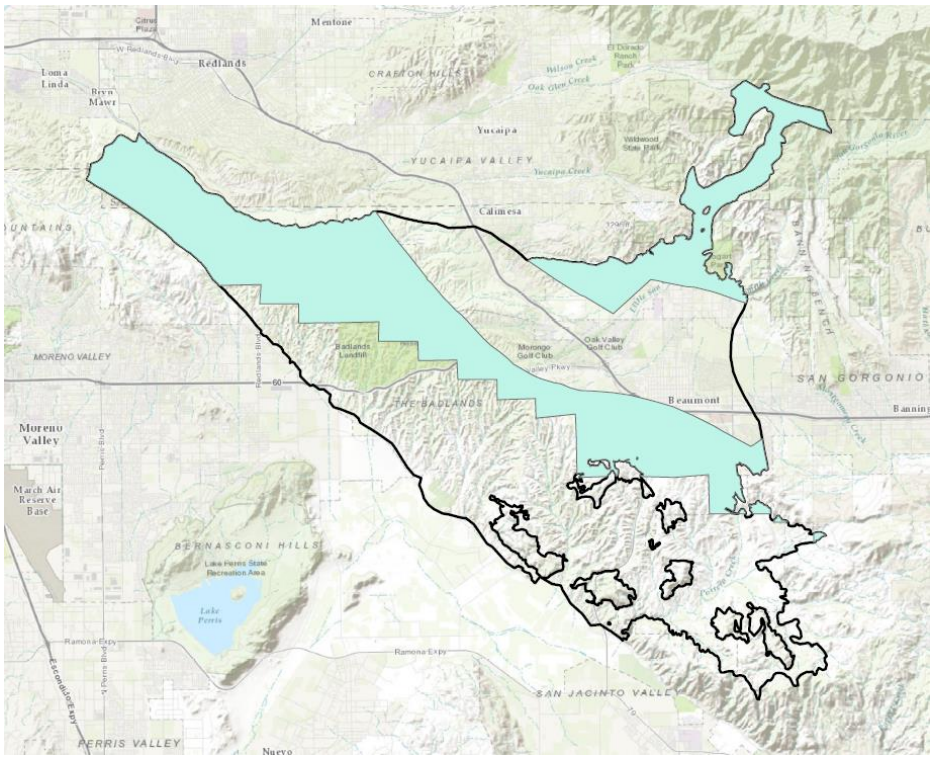
**Date:** April 25, 2017

**From:** Jennifer Ares, Resource Sustainability Manager

**Subject:** Overview on the Proposed Groundwater Sustainability Agency for the San Timoteo Basin

On Sept. 16, 2014, Governor Jerry Brown signed into law a three-bill legislative package, known as the Sustainable Groundwater Management Act of 2014 (the "Act"). The Act provides a framework for sustainable management of groundwater supplies by local authorities, with a limited role for state intervention only if necessary to protect the resource. The Act protects existing surface water and groundwater rights and requires the formation of local groundwater sustainability agencies (GSAs) that must assess conditions in their local water basins and adopt locally-based management plans.

The District has been actively involved in the development of the Groundwater Sustainability Agency for the San Timoteo Basin. Additional agencies involved within the basin are Beaumont Cherry Valley Water District, the City of Redlands, San Gorgonio Pass Water Agency. Eastern Municipal Water District is represented as a stakeholder to the GSA and will be forming a separate GSA in their service area that covers the lower San Timoteo Basin. The shaded area below will be the portion of the groundwater basin included in the San Timoteo Groundwater Management Agency.



# MEMORANDUM OF AGREEMENT TO FORM A GROUNDWATER SUSTAINABILITY AGENCY FOR PART OF THE UNADJUDICATED PORTION OF THE SAN TIMOTEO SUBBASIN AND TO COORDINATE WITH OTHER GROUNDWATER SUSTAINABILITY AGENCIES

This 2017 Memorandum of Agreement (MOA) is entered into by and among Beaumont Cherry Valley Water District (BCVWD), Yucaipa Valley Water District (YVWD), City of Redlands (Redlands), and San Gorgonio Pass Water Agency (SGPWA), which may be referred to herein individually as a "Party" and collectively as the "Parties."

Pursuant to the Sustainable Groundwater Management Act (SGMA) and as further set forth herein, the purposes of this MOA are to form a Groundwater Sustainability Agency (GSA) for part of the unadjudicated portion of the San Timoteo Subbasin (Basin), the members of which GSA shall be BCVWD, YVWD, Redlands, and SGPWA (herein, the ST-GSA), and to establish that the ST-GSA will coordinate with the Eastern Municipal Water District (EMWD) in its formation of a separate GSA for another part of the unadjudicated portion of the Basin within EMWD's service area.

## Recitals

**WHEREAS**, on September 16, 2014, Governor Jerry Brown signed into law Senate Bills 1168 and 1319, and Assembly Bill 1739, collectively known as the Sustainable Groundwater Management Act (SGMA), codified in certain provisions of the California Government Code, commencing with Section 65350.5, and in certain provisions of the California Water Code, including but not limited to, Sections 5200 et seq. and 10720 et seq.; and

**WHEREAS**, SGMA went into effect on January 1, 2015, and thereafter various clarifying amendments to SGMA were signed into law in 2015, including Senate Bills 13 and 226, and Assembly Bills 617 and 939; and

**WHEREAS**, the San Timoteo Subbasin (Basin), as further depicted in **Exhibit A** to this MOA, is identified by the California Department of Water Resources (DWR) Bulletin 118 as Subbasin No. 8-02.08 of the Upper Santa Ana Valley Groundwater Basin, and is designated by DWR as medium priority, and therefore, except as provided by SGMA, the Basin is subject to the requirements of SGMA; and

**WHEREAS**, the Parties recognize and agree that a portion of the Basin (herein, the Adjudicated Area) is subject to the Beaumont Basin adjudication and Judgment in the case referred to as *San Timoteo Watershed Management Authority v. City of Banning, et al.*, Riverside County Superior Court Case No. RIC 389197, and that pursuant to SGMA Section 10720.8(a)(1), said portion of the Basin generally is not subject to the requirements of SGMA and will not be managed by the ST-GSA; and

**WHEREAS**, SGMA Section 10720.7 requires the Basin, as a medium priority basin which is not designated by DWR as being subject to critical conditions of overdraft, to be managed by a Groundwater Sustainability Plan (GSP) or coordinated GSPs by January 31, 2022; and

**WHEREAS**, SGMA Section 10727(b) authorizes (1) a single GSP covering the entire Basin developed and implemented by one GSA, (2) a single GSP covering the entire Basin developed and implemented by multiple GSAs, or (3) multiple GSPs developed and implemented by multiple GSAs and coordinated pursuant to a single coordination agreement that covers the entire Basin; and

**WHEREAS**, SGMA Section 10735.2 requires the formation of a GSA or multiple GSAs for the Basin by June 30, 2017; and

**WHEREAS**, SGMA Section 10723.6(a) authorizes a combination of local agencies to form a GSA pursuant to a joint powers agreement, a memorandum of agreement, or other legal agreement; and

**WHEREAS**, BCVWD, YVWD, Redlands, and SGPWA are local agencies as defined by SGMA, wherein each agency overlies at least a portion of the Basin and each has respective water supply, water management, and/or land use responsibilities within the Basin, and thus each is authorized by SGMA to become part of the ST-GSA; and

**WHEREAS**, in accordance with the terms of this MOA, and in furtherance of the shared intent of the Parties to maximize funding opportunities for the Basin and avoid potential intervention in the Basin by the State Water Resources Control Board, the Parties agree that the ST-GSA formed by this MOA will cover the entire Basin except the Adjudicated Area of the Basin and that portion of the Basin that lies within the service area of EMWD, for which EMWD intends to form a separate GSA as further described below; and

**WHEREAS**, the Parties mutually desire and intend to work with local stakeholders and interested entities in the Basin that are not Parties to this MOA, including but not limited to EMWD, the City of Beaumont (Beaumont), the City of Calimesa (Calimesa), the County of Riverside Planning Department, the County of San Bernardino Flood Control District, the San Bernardino Valley Municipal Water District, the Beaumont Basin Watermaster, overlying landowners, and others to carry out the policy, purposes, and requirements of SGMA in the Basin.

## Agreement

**NOW, THEREFORE**, in consideration of the promises, terms, conditions, and covenants contained herein, it is mutually understood and agreed as follows:

**I.** **Incorporation of Recitals.** The Recitals stated above are incorporated herein by reference.

**II.** **Purposes.** The purposes of this MOA are to form the ST-GSA for part of the unadjudicated portion of the Basin as specified herein pursuant to applicable provisions and requirements of SGMA, including but not limited to SGMA Sections 10723 and 10723.6, and to establish that the ST-GSA will coordinate with EMWD in its formation of a separate GSA for another part of the unadjudicated portion of the Basin within EMWD's service area.

**III.** **Approval of MOA and Formation of the ST-GSA.** Approval of this MOA and formation of the ST-GSA shall be accomplished by BCVWD, YVWD, Redlands, and SGPWA each holding its own noticed public hearing pursuant to SGMA Section 10723(b) and

Government Code Section 6066 and at such hearing will consider approval of a Resolution by its governing board to enter this MOA and jointly form the ST-GSA as specified in this MOA. Upon the respective approvals of such Resolutions and this MOA by BCVWD, YVWD, Redlands, and SGPWA, there shall be established the ST-GSA as provided herein.

**IV. Definitions.** The following terms, whether used in the singular or plural, and when used with initial capitalization, shall have the meanings specified herein. The Parties agree that any definitions set forth herein are intended to be consistent with SGMA, and in the event of any discrepancy between a defined term in this MOA and a defined term in SGMA, the terms of SGMA shall control.

A. "Adjudicated Area" refers to that portion of the Basin that is subject to the Beaumont Basin adjudication and Judgment in the case referred to as *San Timoteo Watershed Management Authority v. City of Banning, et al.*, Riverside County Superior Court Case No. RIC 389197, as further depicted in **Exhibit A** to this MOA.

B. "Basin" refers to the San Timoteo Subbasin, designated by the California Department of Water Resources Bulletin 118 as Subbasin No. 8-02.08, as further specified, and depicted in **Exhibit A** to this MOA.

C. "BCVWD" means the Beaumont Cherry Valley Water District.

D. "DWR" means the California Department of Water Resources.

E. "EMWD" means the Eastern Municipal Water District.

F. "GSA" means Groundwater Sustainability Agency, as defined by SGMA.

G. "GSP" means Groundwater Sustainability Plan, as defined by SGMA.

H. "Memorandum of Agreement" or "MOA" refers to this Memorandum of Agreement.

I. "Party" or "Parties" refers individually or collectively to Beaumont Cherry Valley Water District, Yucaipa Valley Water District, City of Redlands, and San Gorgonio Pass Water Agency, as signatories to this MOA.

J. "Redlands" means the City of Redlands.

K. "SGMA" refers to the Sustainable Groundwater Management Act.

L. "SGPWA" means the San Gorgonio Pass Water Agency.

M. "ST-GSA" refers to the San Timoteo Subbasin GSA formed under this MOA, the members of which GSA are BCVWD, YVWD, Redlands, and SGPWA.

N. "YVWD" means the Yucaipa Valley Water District.

**V. Boundaries of ST-GSA.** The boundaries of the ST-GSA, as further depicted in **Exhibit B** to this MOA, shall be the entire Basin except the Adjudicated Area of the Basin as further

specified in this MOA and that portion of the Basin that lies within the service area of EMWD, wherein EMWD intends to form a separate GSA for that portion of the Basin in accordance with SGMA and without overlapping the boundaries of the ST-GSA as provided in this MOA. The Parties understand and agree that pursuant to SGMA Section 10720.8, the Adjudicated Area of the Basin generally is not subject to the requirements of SGMA and will not be managed by the ST-GSA.

## VI. Coordination and Cooperation

A. Continued Cooperation. The Parties to this MOA will continue to meet, confer, coordinate, and collaborate to discuss and develop technical, managerial, financial, and other criteria and procedures for the preparation, governance, and implementation of a GSP or coordinated GSPs in the Basin and to carry out the policy, purposes, and requirements of SGMA in the Basin.

B. Points of Contact. Each Party shall designate a principal contact person for that Party, who may be changed from time to time at the sole discretion of the designating Party. The principal contact person for each Party shall be responsible for coordinating with the principal contact persons for the other Parties in scheduling meetings and other activities under this MOA.

C. Management Areas. The Parties acknowledge that SGMA, and provisions of the SGMA regulations promulgated by DWR, including but not limited to Section 354.20 (23 C.C.R. § 354.20), authorize the establishment of management areas for the development and implementation of sustainable groundwater management within the Basin, and accordingly the Parties acknowledge and agree that the establishment of management areas within the Basin is a governance alternative that the Parties may explore.

## VII. Roles and Responsibilities

A. The Parties agree to jointly establish their roles and responsibilities for implementing a GSP or coordinated GSPs for the Basin in accordance with SGMA.

B. The Parties agree to work in good faith and coordinate all activities to carry out the purposes of this MOA in implementing the policy, purposes, and requirements of SGMA in the Basin and particularly within the boundaries of the ST-GSA.

C. BCVWD, YVWD, Redlands, and SGPWA, as members of the ST-GSA, shall coordinate with each other to cause all applicable noticing and submission of required information to DWR regarding formation of the ST-GSA.

D. As provided in this MOA, the Parties will continue to meet, confer, coordinate, and collaborate to discuss and develop governance, management, technical, financial, and other matters, including respective roles and responsibilities for activities such as, but not limited to, the following: modeling; metering; monitoring; hiring consultants; developing and maintaining list of interested persons under SGMA Section 10723.4; budgeting; and other initial tasks as determined by the Parties.

**VIII. Funding and Budgeting.** The Parties shall mutually develop reasonable budgets and cost sharing agreements or arrangements for work to be undertaken in carrying out SGMA in the Basin.

**IX. Stakeholders**

A. The Parties agree to work together in ensuring public outreach and involvement of the public, other interested stakeholders, and other agencies such as EMWD that may be responsible for implementing groundwater sustainability in the Basin throughout the SGMA process, including but not limited to all beneficial uses and users of groundwater as provided in SGMA Section 10723.2.

B. The Parties acknowledge, agree, and desire that the preparation, adoption, and implementation of one or more GSPs for the Basin, and the ongoing process of ensuring compliance with the requirements of SGMA in the Basin, will involve close coordination and cooperation with stakeholders and other interested parties, including but not limited to those identified in this MOA.

**X. Term, Termination, and Withdrawal**

A. Term. This MOA shall continue and remain in effect unless and until terminated by the unanimous written consent of the Parties, or as otherwise provided in this MOA or as authorized by law.

B. Withdrawal. Any Party may decide, in its sole discretion, to withdraw from this MOA by providing ninety (90) days written notice to the other Parties. A Party that withdraws from this MOA shall remain obligated to pay its share of costs and expenses incurred or accrued under this MOA and any related cost sharing agreement or arrangement up to the date the Party provides its notice of withdrawal as provided herein. Withdrawal by a Party shall not cause or require the termination of this MOA or the existence of the ST-GSA with respect to the non-withdrawing Parties.

1. In the event of withdrawal by BCVWD, YVWD, Redlands, or SGPWA from this MOA and the ST-GSA, the Parties shall meet and confer regarding whether the withdrawing Party wishes to seek GSA status for a portion of the Basin underlying the service area or management area of the withdrawing Party. The Parties also may meet and confer regarding issues such as: (i) whether the ST-GSA, or one or more of the non-withdrawing Parties, wishes to retain GSA status over the affected portion of the Basin; (ii) whether to enter a co-GSA management or other arrangement with the withdrawing Party; and (iii) whether to address the GSA issues in a different manner. Any resolution of such and other GSA issues shall be undertaken in a manner that satisfies all requirements of SGMA and DWR, including any requirement to file new GSA notices.

**XI. Notice Provisions**

All notices required by this MOA shall be made in writing and delivered to the respective representatives of the Parties at their respective addresses as follows:

Beaumont Cherry Valley Water District
Attn: General Manager
560 Magnolia Avenue
Beaumont, California 92223

City of Redlands
Attn: Municipal Utilities and
Engineering Director
35 Cajon Street
Redlands, California 92373

Yucaipa Valley Water District
Attn: General Manager
12770 Second Street
Yucaipa, California 92399

San Gorgonio Pass Water Agency
Attn: General Manager
1210 Beaumont Avenue
Beaumont, California 92223

Any Party may change the address to which notices are to be given under this MOA by providing all other Parties with written notice of such change at least fifteen (15) calendar days prior to the effective date of the change. All notices shall be effective upon receipt and shall be deemed received upon confirmed personal service, confirmed courier service, or on the fifth ($5^{th}$) calendar day following deposit of the notice in registered first class mail.

## XII. General Terms

A. Amendments. Amendments to this MOA require unanimous written consent of all Parties and approval by the Parties' respective governing bodies.

B. Successors and Assigns. The terms of this MOA shall be binding upon all successors in interest and assigns of each Party; provided, however, that no Party shall assign its rights or obligations under this MOA without the signed written consent of all other Parties to this MOA.

C. Waiver. No waiver of any provision of this MOA by any Party shall be construed as a further or continuing waiver of such provision or any other provision of this MOA by the waiving Party or any other Party.

D. Authorized Representatives. Each person executing this MOA on behalf of a Party hereto affirmatively represents that such person has the requisite authority to sign this MOA on behalf of the respective Party.

E. Exemption from CEQA. The Parties recognize and agree that, pursuant to SGMA Section 10728.6 and Public Resources Code Section 21065, neither this MOA nor the preparation or adoption of a GSP constitute a "project" or approval of a project under the California Environmental Quality Act (CEQA) or the State CEQA Guidelines, and therefore this MOA is expressly exempt from CEQA review.

F. Governing Law and Venue. This MOA shall be governed by and construed in accordance with the laws of the State of California. Any suit, action, or proceeding brought under the scope of this MOA shall be brought and maintained to the extent allowed by law in the County of Riverside, California.

G. Attorney's Fees, Costs, and Expenses. In the event of a dispute among any or all of the Parties arising under this MOA, each Party shall assume and be responsible for its own attorney's fees, costs, and expenses.

H. Entire Agreement/Integration. This MOA constitutes the entire agreement among the Parties regarding the specific provisions of this MOA, and the Parties hereto have made no agreements, representations or warranties relating to the specific provisions of this MOA which are not set forth herein.

I. Construction and Interpretation. The Parties agree and acknowledge that this MOA has been developed through a negotiated process among the Parties, and that each Party has had a full and fair opportunity to review the terms of this MOA with the advice of its own legal counsel and to revise the terms of this MOA, such that each Party constitutes a drafting Party to this MOA. Consequently, the Parties understand and agree that no rule of construction shall be applied to resolve any ambiguities against any particular Party as the drafting Party in construing or interpreting this MOA.

J. Force Majeure. No Party shall be liable for the consequences of any unforeseeable force majeure event that (1) is beyond its reasonable control, (2) is not caused by the fault or negligence of such Party, (3) causes such Party to be unable to perform its obligations under this MOA, and (4) cannot be overcome by the exercise of due diligence. In the event of the occurrence of a force majeure event, the Party unable to perform shall promptly notify the other Parties in writing to the extent practicable. It shall further pursue its best efforts to resume its obligations under this MOA as quickly as possible and shall suspend performance only for such period of time as is necessary as a result of the force majeure event.

K. Execution in Counterparts. This MOA may be executed in counterparts, each of which shall be deemed an original and all of which when taken together shall constitute one and the same instrument.

L. No Third Party Beneficiaries. This MOA is not intended, and will not be construed, to confer a benefit or create any right on a third party or the power or right of any third party to bring an action to enforce any of the terms of this MOA.

M. Timing and Captions. Any provision of this MOA referencing a time, number of days, or period for performance shall be measured in calendar days. The captions of the various articles, sections, and paragraphs of this MOA are for convenience and ease of reference only, and do not define, limit, augment, or describe the scope, content, terms, or intent of this MOA.

IN WITNESS WHEREOF, the Parties hereto have approved and executed this MOA as of the respective dates specified in the adopting Resolution of each Party as provided above in Article III of this MOA.

Yucaipa Valley Water District

# Workshop Memorandum 17-052

**Date:** April 25, 2017

**From:** Joseph Zoba, General Manager

**Subject:** Overview of a Proposed Calculation Methodology for the Purchase of Supplemental Water from the San Gorgonio Pass Water Agency

On July 27, 2015, the Board of Directors of the San Gorgonio Pass Water Agency ("SGPWA") adopted Resolution No. 2015-05 adopting facility capacity fees for new infrastructure and additional water resources (see page 3 of 19). The adoption of this resolution was deemed necessary byt the SGPWA to "…meet future increasing demands for SGPWA supplemental water to the SGPWA service area which will require additional water facilities to be constructed to distribute water and to acquire additional water rights to meet future increasing demands."

At the regular meeting of the City of Calimesa on May 2, 2016, the Calimesa council members reviewed a *Cooperative Agreement for the Collection of Facility Capacity Fees by and Between San Gorgonio Pass Water Agency and [City]* (see page 6 of 19). Following a discussion about the draft cooperative agreement with the San Gorgonio Pass Water Agency, the Calimesa council members voted to "defer action and direct staff to continue working with all parties regarding a regional resolution on water supply".

In summer 2016, a new effort was put forth to draft an agreement that expressly achieved the goals of municipal agencies represented by:

- Bonnie Johnson, City Manager, City of Calimesa;
- Jeff Davis, General Manager, San Gorgonio Pass Water Agency; and
- Joseph Zoba, General Manager, Yucaipa Valley Water District.

After several months of discussions and negotiations, the group of managers developed the latest version of the *Water Rights, Water Supply, and Facility Capacity Fee Collection Agreement* (see page 13 of 19). This agreement sets forth the process, conditions, and requirements needed to ensure development fees paid to the San Gorgonio Pass Water Agency result in water rights dedicated to Yucaipa Valley Water District prior to the City of Calimesa issues buiding permits.

On March 6, 2017, the Board of Directors of the San Gorognio Pass Water Agency voted 6-0 to not proceed any further with the attached draft cooperative agreement. Instead, the San Gorgonio Pass Water Agency created an ad hoc group of their elected officials to develop an agreement tht would be presented to the elected officials of the Yucaipa Valley Water District at some future date.

The District staff remains cautiously optimistic that a solution to the lack of supplemental water for the region will ultimately be achieved by the San Gorgonio Pass Water Agency. While the board members, staff, and legal counsel from the San Gorgonio Pass Water Agency continue to work on their version of a cooperative agreement, the District should establish a reasonable methodology and adopt a fee structure that begins to collect funds for the purchase of supplemental, permanent water rights.

Draft Agreement - March 1, 2017

# WATER RIGHTS, WATER SUPPLY, AND FACILITY CAPACITY FEE COLLECTION AGREEMENT

This WATER RIGHTS, WATER SUPPLY, AND FACILITY CAPACITY FEE COLLECTION AGREEMENT ("Agreement"), dated as of April ____, 2017 (the "Execution Date"), is by and among the CITY OF CALIMESA ("CITY"), a municipal corporation, having its principal address at 908 Park Avenue, Calimesa, California 92320, SAN GORGONIO PASS WATER AGENCY ("AGENCY"), a duly constituted Agency created pursuant to the San Gorgonio Pass Water Agency Act, found at California Water Code Appendix Chapter 101, having its principal address at 1210 Beaumont Avenue, Beaumont, California 92223, and YUCAIPA VALLEY WATER DISTRICT ("DISTRICT") a County Water District organized and operating under the County Water District Law, Sections 30000 and following of the California Water Code, having its principal address at 12770 Second Street, Yucaipa, California 92399.

The CITY, AGENCY, and DISTRICT are also referred to herein individually as a "Party" and collectively as the "Parties".

## RECITALS

A. The AGENCY currently has secured water rights in the State Water Project for a quantity up to 17,300 acre feet of water per year ("AFY") by contract with the California Department of Water Resources ("DWR").

*B.* On July 27, 2015, the AGENCY adopted Resolution No. 2015-05 entitled "A Resolution of the Board of Directors of the San Gorgonio Pass Water Agency to Adopt Facility Capacity Fees for Facilities and Water." As set forth in the AGENCY's Resolution No. 2015-05, the Facility and Water Capacity Fees (referred to collectively as the "AGENCY Fees") consist of two components: (1) a facility fee that will fund a portion of new AGENCY infrastructure; and (2) a water capacity fee that will fund new water rights and entitlements acquired by the AGENCY.

C. The purpose of this Agreement is to enhance existing water supplies provided by the AGENCY to the DISTRICT by creating a mechanism whereby financial contributions from property owners and the DISTRICT are provided to the AGENCY for the purchase of water rights that result in an instantaneous, dedicated, and continuous supply of water to the DISTRICT for development within the DISTRICT and/or the CITY.

## TERMS AND CONDITIONS

NOW, THEREFORE, based on the foregoing Recitals and the terms and conditions set forth in this Agreement, and for good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Parties agree as follows:

**1. Dedication of Base Secured Water Rights**

A. The AGENCY hereby dedicates a firm supply of 800 AFY of water ("Secured Water Rights") as a continuous supply of water to the DISTRICT for existing development and population within the DISTRICT's service territory upon execution of this Agreement by the Parties.

B. The AGENCY shall not contractually obligate, dedicate, deliver, distribute, or provide the Secured Water Rights dedicated to the DISTRICT to any other "AGENCY Customer" defined as any private or public agency or entity, property owner, or other party.

C. Any portion of the Secured Water Rights not delivered by the AGENCY to the DISTRICT during any calendar year shall be delivered to the DISTRICT prior to the delivery of water to any other AGENCY Customer during the following calendar year. The delivery of such deferred Secured Water Rights shall be provided at a mutually agreeable location over a mutually agreeable duration without an increased cost to the DISTRICT and without impacting or reducing regular deliveries in that calendar year.

D. The quantity of water dedicated to the DISTRICT includes the entire amount of 800 acre feet per year of Base Secured Water Rights, plus the additional unreliable portion of water when statewide DWR allocations are greater than the most recently published State Water Project reliability report published by the DWR.

**2. Dedication, Accumulation, and Purchase of Additional Secured Water Rights**

A. In addition to the Secured Water Rights described in Section 1 above, the AGENCY shall purchase additional secured water rights ("Additional Secured Water Rights") when available, and update the AGENCY Fees to reflect the actual cost per acre foot for such Additional Secured Water Rights with a stated reliability factor applied to the specific purchase of Additional Secured Water Rights.

B. In order to purchase such Additional Secured Water Rights from the AGENCY, the DISTRICT, developers, property owners, and others shall pay the AGENCY Fees for those water rights based on a specific quantity of Additional Secured Water Rights as determined by the DISTRICT. Upon acknowledgement of payment by the AGENCY, the Additional Secured Water Rights shall result in an instantaneous, dedicated, and continuous supply of water from the AGENCY to the DISTRICT. The specific quantity of Additional Secured Water Rights will be determined at the sole discretion of the DISTRICT based on the quantity of water needed to meet the expected water demands of development within the DISTRICT.

C. Upon receipt of payment by the AGENCY of AGENCY Fees, the purchased Additional Secured Water Rights shall be deemed instantaneously transferred from the AGENCY to the DISTRICT resulting in an immediate accumulation in the quantity of the total Secured Water Rights and Additional Secured Water Rights dedicated and available to the DISTRICT by the AGENCY.

D. The quantity of water dedicated to the DISTRICT shall include the entire amount of Secured Water Rights and purchased Additional Secured Water Rights, including reliable and unreliable portions of the water rights as delineated by the AGENCY at the time of purchase.

E. The AGENCY shall provide written evidence to the DISTRICT of the purchased Additional Secured Water Rights including the estimated reliability factor for each

purchase of such Additional Secured Water Rights. Each purchase of Additional Secured Water Rights shall automatically transfer ownership to the DISTRICT upon payment of AGENCY Fees.

F. The DISTRICT may acquire and accumulate Additional Secured Water Rights from the AGENCY at any time, without restriction, based on the adopted AGENCY Fees expressed in units of acre feet per year (AFY) of Additional Secured Water Rights. Purchases of Additional Secured Water Rights by the DISTRICT from the AGENCY may be ultimately used within the AGENCY service territory at the discretion, and for the sole benefit of the DISTRICT.

G. The DISTRICT will provide a drinking water service connection and the CITY will issue a building permit to those parcels for which an AGENCY Customer has:

i. Paid the AGENCY Fees to the AGENCY for the Additional Secured Water Rights as determined by the DISTRICT; and

ii. Received substantial written proof that the AGENCY has purchased, secured, and transferred ownership of Additional Secured Water Rights needed by the DISTRICT resulting in the instantaneous and continuous delivery of water to the DISTRICT.

H. Any portion of the Additional Secured Water Rights not delivered by the AGENCY to the DISTRICT during a calendar year shall be delivered to the DISTRICT prior to the delivery of water to any other AGENCY Customer during the following calendar year. The delivery of such deferred purchased Additional Secured Water Rights shall be provided at a mutually agreeable location over a mutually agreeable duration without an increased cost to the DISTRICT without impacting or reducing regular deliveries in that calendar year

I. The AGENCY shall permanently dedicate and transfer ownership to the DISTRICT, an equal quantity of Additional Secured Water Rights made available on parity, or in a similar manner, to an AGENCY Customer that has not received water from the AGENCY prior to July 27, 2015 as Additional Secured Water Rights, unless such water rights are purchased by a written contract at the published water rights price and made available to all other AGENCY Customers.

J. The DISTRICT retains all rights to Secured Water Rights and purchased Additional Secured Water Rights when the reliability factor exceeds the reliability factor determined at the time the Water Rights are secured and dedicated to the DISTRICT.

K. The AGENCY authorizes the DISTRICT to independently purchase water rights from other sources if such water rights can be delivered consistent with the AGENCY wheeling policy in effect at the time the water rights are secured, or by a wheeling mechanism that does not impact the capacity owned by the AGENCY in State Water Project facilities.

## 3. General Provisions

A. Dispute Resolution and Remedies. In the event a dispute arises between the Parties relating to this Agreement, the Parties shall first attempt to resolve the dispute through an informal dispute resolution process such as mediation. A Party shall initiate the informal dispute resolution process by transmitting written notice to the other Party, briefly setting forth the nature and extent of the dispute, and requesting that the Parties engage in informal dispute resolution. Within ten (10) working days from the date of receipt of that written notice, the general managers of the AGENCY and the DISTRICT and the city manager of the CITY shall meet and confer in a good faith effort to resolve the dispute by recognizing their mutual interests and attempting to reach a resolution that is just, equitable and satisfactory to both Parties. The Parties may by written agreement postpone or continue the informal dispute resolution process. In the event that the Parties have not reached a mutually satisfactory resolution of the dispute within sixty (60) calendar days following the written notice (unless the Parties have mutually agreed to extend the process beyond the sixty (60) days), either Party may pursue judicial action, including, but not limited to, damages, specific performance and injunctive relief.

B. Law, Venue, Attorney Fees and Costs. This Agreement shall be interpreted in accordance with the laws of the State of California. If any action is brought to interpret or enforce any term of this Agreement, the action shall be brought in a California State Superior Court in the County of Riverside. In the event of any such litigation between the Parties, the prevailing party shall be entitled to recover all reasonable litigation costs incurred, including without limitation reasonable attorney's fees.

C. Defense and Indemnity. The AGENCY shall defend, indemnify and hold harmless the DISTRICT and the CITY, their elected and appointed officials, officers, employees, and agents from and against any and all costs, claims, liabilities, judgments, or award of damages, including reasonable attorney's fees (collectively “Liabilities”), arising out of or in any way resulting from the adoption, imposition, collection and application of, and accounting for, the AGENCY Fees.

D. Amendment. This Agreement may be amended only by mutual written agreement signed by the Parties.

E. Mutual Cooperation. The Parties agree to provide information and take such further actions as are reasonably necessary to effectuate the purpose and intent of this Agreement. As part of such mutual cooperation, any other cooperative agreement for the collection of the AGENCY Fees between another party and the AGENCY shall be deemed incorporated at the sole discretion of the DISTRICT.

F. Representations and Warranties. On the Execution Date, each Party represents and warrants to the other Parties that:

i. It is a duly organized, validly existing and in good standing under the laws of the jurisdiction of its formation and that it has the power and authority to enter into this Agreement and to carry out the transactions contemplated hereby, and to perform and carry out all covenants and obligations on its part to be performed under and pursuant to this Agreement;

ii. The execution, delivery and performance of this Agreement is within its powers, has been duly authorized by all necessary action and does not violate any of the terms and conditions in its governing documents, any contracts to which it is a Party or any legal requirement or the like applicable to it;

iii. All legislative, administrative and other governmental action required to authorize the execution, delivery and performance of this Agreement and the transactions contemplated hereby has been taken except to the extent of actions which by the terms hereof are to be taken at a later time;

iv. This Agreement constitutes a valid, legal and binding obligation enforceable in accordance with the terms hereof except as such enforceability may be limited by applicable bankruptcy, insolvency, reorganization, moratorium or other similar laws;

v. It is not bankrupt and there are no proceedings pending or being contemplated by it or, to its knowledge, threatened against it which would result in it being or becoming bankrupt;

vi. There are no actions, suits or proceedings pending or, to such Party's best knowledge, threatened, against or affecting such Party before any court, administrative body or arbitral tribunal that might materially and adversely affect its ability to enter into this Agreement and/or perform its obligations under this Agreement; and

vii. The execution, delivery and performance of this Agreement will not contravene any provision of, or constitute a material default under, any other agreement or instrument to which it is a Party or by which it or its property may be bound.

G. Representatives; Notices.

i. Authorized Representatives. Each Party will designate at least one individual officer or employee who will be its representative and will be authorized to act on behalf of the Party for all purposes in performing the provisions of this Agreement ("Representative"). Each Representative shall be either the General Manager or City Manager of a Party or a Person designated by such Party who shall have at least five (5) years of direct experience and technical expertise in water utility operations. Each Party will also designate an alternate Representative who will serve in the place of (and with the same authority as) the Representative if the latter is unavailable. A Party may also designate more than one Representative. The designation may be changed from time to time. The designation and changes to a designation must be made in a writing delivered to the other Parties.

ii. Notice. All notifications, notices, demands, requests and other communications herein provided for or made pursuant hereto shall be in writing and shall sent by (i) registered or certified mail, return receipt requested, and the giving of such communication shall be deemed

complete on the third (3rd) Business Day after the same is deposited in a United States Post Office with postage charges prepaid, (ii) reputable overnight delivery service, and the giving of such communication shall be deemed complete on the immediately succeeding Business Day after the same is deposited with such delivery service or (iii) so long as a Party has notified the other Parties by means of a method described in clauses (i) or (ii) above of such Party's email address for notification purposes, email transmission of notices to such Party are also permitted provided an original is also sent via one of the other permitted means and the giving of such communication shall be complete when such email is received if such email is received before 5:00 pm PST; otherwise, such communication shall be deemed complete the next Business Day.

H. Other Provisions.

i. Integration. This Agreement, embodies the entire agreement between the AGENCY, CITY and DISTRICT relating to the subject matter hereof and supersedes all prior agreements and understandings, written or oral, relating to such subject matter.

ii. Successor and Assigns. This Agreement shall be binding upon, and shall inure to the benefit of and be enforceable by, the Parties hereto and their respective successors and assigns permitted hereunder.

iii. Relationship of Parties. Each Party is an independent entity and none of the Parties is an agency of another Party.

iv. Construction and Interpretation. The Parties agree and acknowledge that this Agreement has been developed through a negotiated process among the Parties, and that each Party has had a full and fair opportunity to review the terms of this Agreement with the advice of its own legal counsel and to revise the terms of this Agreement, such that each Party constitutes a drafting Party to this Agreement. Consequently, the Parties understand and agree that no rule of construction shall be applied to resolve any ambiguities against any particular Party as the drafting Party in construing or interpreting this Agreement.

v. No Waiver by Failure to Act. No failure, delay, forbearance or indulgence on the part of any Party in insisting upon the strict performance of any provision, or in exercising any option, right, power, privilege or remedy hereunder, shall operate or be construed as a waiver or relinquishment thereof, or as an acquiescence in any breach, nor shall any single or partial exercise of any option, right, power, privilege or remedy hereunder preclude any other or further exercise thereof or the exercise of any other option, right, power, privilege or remedy.

vi. Severability. Any provision of this Agreement which is prohibited or unenforceable in any jurisdiction shall, as to such jurisdiction, be ineffective to the extent of such prohibition or unenforceability without invalidating the remaining provisions hereof, and any such prohibition or unenforceability

in any jurisdiction shall not invalidate or render unenforceable such provision in any other jurisdiction.

vii. Timing and Captions. Any provision of this Agreement referencing a time, number of days, or period for performance shall be measured in calendar days. The captions of the various articles, sections, and paragraphs of this Agreement are for convenience and ease of reference only, and do not define, limit, augment, or describe the scope, content, terms, or intent of this Agreement.

viii. No Third Party Beneficiaries. Nothing in this Agreement, express or implied, is intended to confer any rights or remedies under or by reason of this Agreement on any persons other than the Parties hereto; nothing in this Agreement is intended to relieve or discharge the obligation or liability of any third person to any party; and this Agreement does not create any duty, liability or standard of care to any person who is not a Party.

ix. Counterparts. This Agreement may be executed in any number of counterparts, each of which shall be an original, and such counterparts together shall constitute but one and the same instrument.

DAVID TAUSSIG & Associates, Inc.

# CAPACITY FEE STUDY FOR SAN GORGONIO PASS WATER AGENCY

JULY 21, 2015

Public Finance
Facilities Planning
Urban Economics

Newport Beach
Riverside
San Francisco
Chicago

# CAPACITY FEE STUDY
# FOR
# SAN GORGONIO PASS WATER AGENCY

**JULY 21, 2015**

**Prepared for**
**SAN GORGONIO PASS WATER AGENCY**
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# Executive Summary

The San Gorgonio Pass Water Agency ("SGPWA" or "Agency") is a State Water Project ("SWP") contractor located in the northwest portion of Riverside County east of San Bernardino, California. The mission of SGPWA "is to import supplemental water and to protect and enhance local water supplies for use by present and future water users and to sell imported water to retail water distributors within the service areas of the SGPWA service area."[1] The SGPWA provides, or can potentially provide, wholesale water service within its boundaries to and including the City of Banning, the Beaumont-Cherry Valley Water District, Cabazon Water District, South Mesa Water Company, Banning Heights Mutual Water Company, High Valleys Water District, Mission Springs Water District, and Yucaipa Valley Water District.

To provide capacity in SGPWA's system, sufficient water supply and levels of service to existing and future development over the next twenty years consistent with the mission of the Agency, SGPWA will need to invest at least $12.6M in infrastructure during this period. This infrastructure will include a basin recharge facility and the purchase of additional capacity in existing pipelines that convey SWP water along the route from the SWP turnout at Devil Canyon to the SGPWA service area. Also, due to uncertainties related to the quantity of SWP allotments year to year, SGPWA will need to purchase additional water rights outside of the SWP contract. The current price of additional water rights is estimated at $6,200 per acre-ft and will be purchased on an as-needed basis. To ensure that new development pays its fair share of these costs, SGPWA will implement a facility capacity fee as authorized by SGPWA Law (Water Code App. §101-27.1) and consistent with California Government Code Section §66013, which requires that the "…capacity fee shall not exceed the estimated reasonable cost of providing the service for which the fee or charge is imposed."

In 2011 a nexus study was prepared that proposed the implementation of a Facility Capacity Fee to be imposed on new development. The SGPWA board approved the nexus study, however the fee was not adopted at that time. This nexus study is a new and independent evaluation of (1) current demographics; (2) reconciliation of various local demographic estimates; (3) assessment of facilities and water supplies needed to serve new and expanded development; (4) and the allocation of costs reflecting current demographics and current cost estimates of facilities; and (5) calculation of new fee schedules.

The proposed capacity fee has two components: the Facility Fee, and the Water Capacity Fee. The Facility Fee will fund a portion of the new infrastructure and the Water Capacity Fee will fund a portion of the purchase of new water rights and/or entitlements.

The future capital projects are evaluated on a project-by-project basis to determine the costs that should be allocated to future development. Based on this approach, projects that are required to only meet the needs of future development are allocated 100% to such development. Projects that benefit both existing demands and future development are allocated to both existing demands and future development proportionally according to appropriate factors.

[1] The SGPWA Mission Statement as indicated in the Agency's website

The Table below shows the proposed fee per residential dwelling unit that represents the reasonable fair share contribution of new ***residential*** development to the cost of the required infrastructure.

**Residential Facilty Fee**

| Land Use | Facility Element ($ unit ) | Admin Element ($ per Unit) | Total Facility Fee per DU |
|---|---|---|---|
| Single Family | $ 170.04 | $ 0.86 | $ 170.89 |
| Multi-Family | $ 83.01 | $ 0.42 | $ 83.43 |

The fees for the ***non-residential*** uses (commercial/retail and industrial) are determined in a similar manner. Because water demand from commercial/retail and industrial uses varies widely with building uses, meter size is a reasonable indicator of water demand and basis for allocation. The allocations to non-residential uses in the 2011 Study used building size and water use factors to allocate costs based on equivalent dwelling units ("EDUs"). This Study converts the non-residential allocations to meter size, using a 5/8 inch meter (typical of a single family residence) as the baseline, whose demand is equivalent to a single family dwelling unit, or one (1) EDU. The Table below shows the proposed fee structure that represents the reasonable fair share contribution of new non-residential development to the cost of the required infrastructure.

**Non-Residential Facilty Fee**

| Meter Size | Facility Element | Admin Element | Total Facility Fee |
|---|---|---|---|
| 5/8" | $ 170.04 | $ 0.86 | $ 170.89 |
| 3/4" | $ 187.04 | $ 0.94 | $ 187.98 |
| 1" | $ 238.05 | $ 1.20 | $ 239.25 |
| 1-1/2" | $ 306.06 | $ 1.54 | $ 307.60 |
| 2" | $ 493.10 | $ 2.48 | $ 495.58 |
| 3" | $ 1,870.39 | $ 9.41 | $ 1,879.80 |
| 4" | $ 2,380.49 | $ 11.98 | $ 2,392.48 |
| 6" | $ 3,570.74 | $ 17.97 | $ 3,588.71 |
| 8" | $ 4,931.02 | $ 24.82 | $ 4,955.84 |

Finally, to maintain reliability for the benefit of future development, SGPWA will need to purchase additional water rights and entitlements outside of its SWP contract. The Table below shows the recommended fee charged to new development to fund the purchase of ***new water rights and entitlements*** over the twenty-year period.

**Water Capacity Fee**

| Item | units | Fee |
|---|---|---|
| Fee for New Water Rights and Entitlements | $ per ac-ft | $ 6,200.00 |
| Administrative Overhead | $ per ac-ft | $ 31.00 |
| Total | | $ 6,231.00 |

Please note that the above tables represent the maximum fee that the board can adopt and impose on new development, based on the cost of facilities and water rights or entitlements planned to be constructed or acquired prior to 2035 and identified in this Study. Also, it is recommended that SGPWA review these fee structures periodically to adjust for changes in demographics, water demands, and facility requirements, as well as adjustments for inflation. Based on the above fee structures, a typical single family house would pay a Facility Fee of $170.89, and using an average water use factor of 0.548 acre-feet per year, that same single family house would be subject to a water capacity fee of $3,414.59 ($6,231.00 per acre-feet per year x 0.548), for a total of $3,585.48.

# I. Background

In 1961 SGPWA was formed pursuant to Chapter 101 of the California Water Code Appendix as a result of the approval by the voters of the Burns-Porter Act, which authorized the financing and construction of the SWP. SGPWA entered into a contract with the Department of Water Resources ("DWR") in 1962 for Table A Water capacity in the SWP, which is currently 17,300 acre-ft per year ("AFY"), to bring supplemental water to the SGPWA service area. The SWP system originates at Oroville Reservoir in Northern California and water is delivered through a series of dams, pipelines, rivers, Sacramento Delta canals, sloughs, reservoirs and pumping stations to the SGPWA turnout at Devil Canyon in San Bernardino County. From that point it is delivered by pipeline, pump stations and reservoir to the SGPWA SWP terminus at Cherry Valley, in Northern Riverside County.

The primary source of local water supply to the SGPWA service area at the present time is natural surface runoff and groundwater basins. The major groundwater basin is the Beaumont Storage Unit ("BSU"), which serves the City of Beaumont and the community of Cherry Valley through the Beaumont-Cherry Valley Water District ("BCVWD"), the City of Calimesa through the Yucaipa Valley Water District ("YVWD"), the City of Banning and the South Mesa Water Company ("SMWC"). The BSU was determined by the Riverside Superior Court in 2004 to be in overdraft and a Watermaster was appointed to manage the BSU through controlled overdraft (temporary surplus) through 2013.[2] The BSU is now required to operate in a balanced condition, replacing an amount of water equal to the amount removed from the basin to meet local demands, over time. The Beaumont Basin Adjudication is an official document of the State of California, on file with the Riverside County Superior Court as Case No. RIC 389197, and on file with SGPWA.

Increased demand from new development and decreasing reliability of imported water supplies will continue to exert pressure on the ability of SGPWA to deliver supplemental water on a reliable basis. Adjudication of the BSU, requiring a balanced operating condition, will also exert pressure on the SGPWA to find additional reliable sources of water to meet increasing demands. Revenue from the proposed Facility Capacity Fee program is necessary to provide reliable water service to new development by helping fund new capacity in delivery pipelines, new recharge basins, related land acquisitions and the purchase of new water rights and entitlements. These investments are necessary to continue to provide an adequate level of service and reliability to retail agencies over time. No revenues from this Facility Capacity Fee program will be used to fund the correction of existing deficiencies in the system.

[2] See also, San Gorgonio Pass Water Agency Report on Water Conditions (Reporting Period 2013), dated December 2014.

# II. Introduction to Analysis

The San Gorgonio Pass Water Agency ("SGPWA" or "Agency"), a State Water Project ("SWP") Contractor, authorized David Taussig & Associates, Inc. ("DTA") to prepare a nexus study ("Study") for proposed Facility Capacity Fees that the appropriate retail water agencies and/or land use planning agencies would collect from new development on behalf of SGPWA. These fees will provide a source of revenue for SGPWA needed to mitigate the regional water related impacts of such new development.

California Government Code §66000 et seq ("Mitigation Fee Act") governs the imposition by a local agency of a fee or charge to a development project for "...the purpose of defraying all or a portion of the cost of public facilities related to the development project...". California Government Code §66013(b)(3) further defines a *Capacity Charge* as "... charges for new public facilities to be acquired or constructed in the future that are of proportional benefit to the person or property being charged." New public facilities are further defined in Section 66002 as "facilities for the storage, treatment and distribution of non-agricultural water."

California Water Code §101-27.1 authorizes SGPWA to impose a Facility Capacity Fee, which is in the nature of a connection fee, for the right to make a new retail connection to the water distribution system of any retail water distributor that is located within the boundaries of the SGPWA and that obtains all or any portion of its water supplies from SGPWA.

For the purposes of this Study, the term "Facility Capacity Fee" shall mean *Capacity Charge* as defined in the Mitigation Fee Act. The Facility Capacity Fee is imposed and authorized in California Water Code §101-27.1 and will meet the requirements of California Government Code Section §66013, and will achieve the following goals related to said Section:

- Ensure that the Facility Capacity Fee does not exceed the estimated reasonable cost of providing the service for which the fee is imposed; and

- Provide a clear and concise document that will serve as the basis for the proposed fee levels.

The Board of Directors of SGPWA may contract with the counties in which SGPWA is located, and cities and retail water distributors located within the boundaries of SGPWA, for the collection of the Facility Capacity Fees subject to certain conditions. SGPWA water made available through facilities built, and/or water rights acquired, with capacity fee revenue will be sold to retail water distributors who in turn serve SGPWA water to new and expanded water users.

This Study and the resulting fee structure will focus on the use of the SGPWA Facility Capacity Fee to fund (1) the purchase of capacity in existing pipeline systems owned by other public agencies; (2) an additional basin recharge project for underground water storage in the Beaumont groundwater basin, including land purchases associated with such basin facility; and (3) the purchase of new water and/or water rights and entitlements to meet future water demand. The underlying principle that supports the identification and allocation of costs to new development for these facilities and new water rights or entitlements is that new development throughout the SGPWA service will have access to additional water delivery capacity, additional storage capacity

and additional water rights and entitlements necessary to meet the demands of future development. This is more fully discussed in Section V, "Facility Component of the Facility Capacity Fee."

The Facility Capacity Fee will consist of two components:

- the **Facility Component of the Facility Capacity Fee** ("Facility Fee"). This component will fund the facilities identified in items (1) and (2) above; and

- the **Water Component of the Facility Capacity Fee** ("Water Capacity Fee"). This component will fund the purchase of new water and/or water rights or entitlements, as identified in item (3) above.

The Facility Fee will be charged to all new development within the SGPWA service area (except the Morongo Tribal Land as discussed in Section IV, "Demographics") and is designed to fund the cost of facilities needed to mitigate the cost of facilities needed to meet the additional demands of such new development through the year 2035. The steps followed in calculating the Facility Fee component include:

- **Demographic Assumptions**: Identify future development through 2035 that represents the increased demand for facilities. The demographic assumptions are discussed in Section IV, "Demographics."

- **Facility Needs and Costs**: List the public facilities that can be clearly identified and have a reasonably accurate estimate of costs, that best mitigate the demands of new development through 2035. The needs list and estimate of costs are presented in Section V.1, "Facility Costs."

- **Cost Allocation**: Allocate costs between new and existing residential and non-residential development based on estimated percentage utilization factors related to a proposed conjunctive use facility and additional capacity in the East Branch Extension ("EBX" pipeline system owned by other public agencies). Further allocate costs between single family and multi-family land use by equivalent dwelling unit ("EDU") methodology, and between non-residential buildings by meter sizes. A detailed discussion of the cost allocation methodology is included in Section V.2, "Methodology."

- **Fee Schedule**: Calculate the fee per residential unit or per non-residential meter size based on weighted average water usage factors, providing a uniform fee structure for the SGPWA service area. The resulting Facility Fee component structure is presented in Section V.3 "Fee Structure."

The Water Capacity Fee will be charged to new development based upon the amount of new water capacity needed to serve such development. The steps to calculate the Water Capacity Fee is discussed in Section VI, "Water Component of the Facility Capacity Fee."

It is important to note that all new development will be required to pay the Facility Fee and the Water Capacity Fee. While the Facility Fee is a fixed amount, depending upon land use, the Water Capacity Fee will be calculated based on expected water demands on a project by project basis. This revenue is required for SGPWA to build the proposed facilities and purchase the necessary

water rights and entitlements discussed herein that are needed to provide reliable water deliveries to water retailers.

It is expected that the SGPWA will review both the Facility Fee and the Water Capacity Fee at reasonable intervals to incorporate changes in prices, facility requirements, water demands and demographics in order to ensure that the Facility Capacity Fees are allocated fairly and continue to generate sufficient revenues.

The Facility Capacity Fee program will work in conjunction with SGPWA's other sources of revenue to play a part in a coordinated financing plan that provides a balance of rates and charges needed to fund current and future costs of service. For instance, the current commodity rate structure – the amount charged for actual water deliveries – includes an allocation to partially fund the purchase of new water rights and entitlements needed to enhance the reliability of water deliveries for existing development. Thus the commodity rates will work in conjunction with Water Capacity Fee revenues and other general fund revenue to fund the purchase of new water rights and entitlements over time that are needed to provide an ongoing reliable water source for both new and existing development.

## III. Definitions

The following key defined terms are used throughout this Study:

**Acre-foot ("AF")** – a volumetric unit of measurement commonly used for water supply purposes. It is the amount of water required to cover one acre of land one foot deep, one acre being equal to 43,560 square feet. For illustrative purposes, it is the amount of water required to cover a football playing field, including end zones, 9 inches deep.

**AFY** – Acre-feet per year. A unit of measurement commonly used for large scale water supply purposes to represent flow, or volume of water over a period of time.

**BSU** - the Beaumont Storage Unit, an adjudicated groundwater basin underlying a portion of the SGPWA service area.

**Build Out or Build Out Condition** – The state of development within the SGPWA service area in which there are no longer any undeveloped parcels or lots identified as residential or non residential uses on approved local land use plans from which capacity fees can be collected.

**Conjunctive Use** – is the interactive use of SWP supplemental water and local groundwater for water deliveries. The recharge of groundwater basins with SWP and local surface water during years of surplus and the pumping of stored groundwater to augment SWP allocations during years of deficit assist SGPWA in providing water deliveries on a reliable basis.

**cfs** - cubic feet per second, a measure of volumetric rate of water conveyance

**DTA** – David Taussig & Associates, Inc., the public finance consulting firm that prepared the 2011 Capacity Fee Study and this current Capacity Fee Study.

**DWR** - State of California ("State") Department of Water Resources, the agency that contracts on behalf of the State with SGPWA to deliver water through the SWP under the terms of "Contract Between the State of California Department of Water Resources and San Gorgonio Pass Water Agency, For Water Supply."

**EDU Factor** – the ratio of the water demand for a unit of a given land use to the baseline water demand for a single family residential unit.

**Equivalent Dwelling Unit ("EDU")** – for given land uses, a method of comparison of that land use to a baseline land use, using a common demand variable. A demand variable is a measurable factor that is directly related to the required size or extent of a public facility. For the purposes of this Study the demand variable used is water demand, in gallons per day or acre-feet per year ("AFY"), and the baseline demand is that of a single family residential unit, which is the assumed baseline land use. For non-residential uses costs are allocated by meter size. A 5/8" meter is assumed as the baseline, equivalent in demand to a single family unit.

**Existing Development** - residential and non-residential land use improvements that exist as of June, 2014, within the SGPWA service area. The sources of data used to quantify the extent of such improvement includes local agency permit activity and studies, local UWMPs and County of Riverside demographic data.

**Facility Capacity Fee** – a charge imposed by a local water agency on new development, or increased usage (such as remodels or expansions), to fund or to recover the estimated reasonable cost of providing water, water conveyance or water storage facilities to the person or property being charged. For purposes of this Study the Facility Capacity Fee consists of two components: the facility component ("Facility Component of the Facility Capacity Fee" or "Facility Fee") and the water component ("Water Component of the Facility Capacity Fee" or "Water Capacity Fee").

**Facility Component of the Facility Capacity Fee –** for the purposes of this Study and hereafter referred to as the "**Facility Fee**", is a facility capacity fee imposed on new development to pay that development's fair share of the costs to construct water storage and conveyance facilities that benefit such development.

**Floor Area Ratio ("FAR")** – is the ratio of useable non-residential building square feet to the area, in square feet, of the property within whose boundaries the building is located. For the purposes of this Study a FAR of 0.40 for commercial/retail uses and an FAR of 0.20 for industrial uses was assumed, these ratios being common industry norms and generally accepted where site specific local investigations related to non-residential densities do not exist.

**Future Development** - projected residential and non-residential land use improvements within the SGPWA service area anticipated to occur by the year 2035. The sources of data used to quantify the extent of such improvement includes local agency demographic projections, local UWMPs and County of Riverside demographic studies.

**KSF** – the unit of measurement used for non–residential building size equal to one thousand square feet.

**SBVMWD** - San Bernardino Valley Municipal Water District

**State Water Project ("SWP")** – the system of dams, reservoirs, channels, pipelines, pumping stations, delivery structures and all other conveyance systems whose purpose is to convey and deliver water from the Sacramento-San Joaquin Delta to the various water contractors, including SGPWA. Specific to SGPWA such deliveries are in accordance with the terms of "Contract Between the State of California Department of Water Resources and San Gorgonio Pass Water Agency, For Water Supply."

**Table A Water** - The total annual amount of SWP water, entitled by DWR to SGPWA under the terms of "Contract Between the State of California Department of Water Resources and San Gorgonio Pass Water Agency, For Water Supply", Amendment No. 18 dated December 26, 2007. Table A of that contract, as amended by Amendment No. 18, indicates that the current maximum annual entitlement to SGPWA is 17,300 Acre-feet.

**UWMP –** is an Urban Water Management Plan. California Water Code §10610 et. seq. directs certain water agencies to carry out long term planning to ensure that adequate water supplies are

available to both existing demand and new development. Agencies that are required by this code to produce this plan must document its long-term planning effort in an Urban Water Management Plan. This planning document is required to be updated every five years.

**Water Component of the Facility Capacity Fee -** for the purposes of this Study and hereafter referred to as the "**Water Capacity Fee**", is a facility capacity fee imposed on new development to pay that development's fair share of the costs to purchase new water or new water rights or entitlements necessary to meet future water demands and ensure acceptable levels of reliability with regard to the ability of the servicing agency or special district to deliver water in the future.

**Water Use Factor ("WUF")** – a measure of average water demand for a given land use within a given area, expressed as Acre-feet per year per acre (AFY/acre).

**2011 Study** – a capacity fee nexus study prepared by David Taussig & Associates, Inc. for SGPWA in 2011. This study was adopted by SGPWA but not implemented. The demographic analysis for existing residential units and non-residential building square feet in the 2011 Study is used in this Study as the baseline demographics for Existing Development through 2009.

# IV. Demographics

The SGPWA boundary includes the areas within the Cities of Banning, Beaumont, and Calimesa, the communities of Cabazon, Cherry Valley, Poppet Flat, the Morongo Indian Reservation, and other portions of the unincorporated area of Riverside County ("County"). A small area of undeveloped land within the service area at the headwaters of the San Gorgonio River extends into San Bernardino County. At the eastern edge of the SGPWA the Mission Springs Water District straddles the boundary line, serving a portion of the community of Verbania. Water is provided or is planned to be provided to retail customers by various retail water agencies, including the City of Banning, Beaumont Cherry Valley Water District, Cabazon Water District, South Mesa Water Company, Banning Heights Mutual Water Company, High Valleys Water District, Mission Springs Water District, and Yucaipa Valley Water District. As noted in this Study, certain of these agencies will require additional water deliveries and the facilities to convey that water sooner while other agencies may not require additional water and facilities until after the planning period used in this Study. Note that, for purposes of this Study, any property designated as Morongo Tribal Land has been excluded from our analysis because the Morongo Band of Mission Indians is a sovereign nation. Property within the Morongo Tribal lands will not be subject to either component of the Facility Capacity Fee. Therefore, the demographic analysis as described below reflects the property located within the three cities mentioned above and the unincorporated area of Riverside County excluding the Morongo Tribal Land.

For purposes of this Study David Taussig & Associates, Inc. ("DTA") categorized developed residential land uses as Single Family Residential and Multi-Family Residential units. Single Family Residential units include detached and attached residential units, while Multi-Family Residential units include those units with two or more living units on one Assessor's parcel as well as mobile homes. Non-residential land uses are categorized as Commercial/Retail or Industrial.

Because it is difficult to assign a specific year in the distant future in which the Build Out state (as identified by the various local agencies) is realized, the year 2035 was determined to present a reasonable horizon to achieve funding and construction goals. This planning horizon is also consistent with 2035 horizons identified in county and local city studies and local water district UWMPs.

## 1. Existing Number of Residential Units and Non-Residential Square Footage

The estimate of the number of current residential units and non residential square feet in the Cities of Beaumont, Banning, and the unincorporated areas emanate from the 2011 Study and are used as a baseline level of development (see Appendix A). The numbers for residential units and non-residential square footage in the 2011 Study represented existing development through 2009. DTA then added to the 2009 baseline numbers the number of residential units and non-residential square footage indicated by building permits issued, not necessarily constructed, within the three cities and the unincorporated area for the years 2010 to mid 2014 to establish the present baseline. The permit data was provided by the respective planning departments. The City of Calimesa provided existing land use data as of year 2014 and projected land use data at build out conditions.

A detailed discussion of the demographic assumptions and methods used to determine the increase in development from 2009 to mid 2014 can be found in Appendix A of this Study.

The estimated existing residential units by jurisdiction and by single family and multi-family land uses are shown in Table 1 below:

**TABLE 1**

Existing Residential Units Through June 2014[1]

| Residential Land use | City of Banning | City of Beaumont | City of Calimesa | Unincorporated Area | Total Existing Residential Units |
|---|---|---|---|---|---|
| Single Family | 9,900 | 12,700 | 2,200 | 6,200 | 31,000 |
| Multi-Family | 2,300 | 1,500 | 1,500 | 1,400 | 6,600 |
| Totals | 12,200 | 14,200 | 3,700 | 7,600 | 37,600 |

1. Rounded to the nearest 100 units

The estimated existing non-residential building square feet, rounded to the nearest 1,000, by jurisdiction and by Commercial/Retail and Industrial land uses is shown in Table 2 below:

**TABLE 2**

Existing Non-Residential Square Feet Through June 2014[1]

| Non-Residential Land use | City of Banning | City of Beaumont | City of Calimesa | Unincorporated Area | Total Existing Non Residential Square Feet |
|---|---|---|---|---|---|
| Comercial/Retail | 4,536,000 | 3,639,000 | 1,482,000 | 3,780,000 | 13,437,000 |
| Industrial | 4,231,000 | 1,982,000 | 412,000 | 60,000 | 6,685,000 |
| Totals | 8,767,000 | 5,621,000 | 1,894,000 | 3,840,000 | 20,122,000 |

1. Rounded to the nearest 1,000 square feet

## 2. Future Residential and Non-Residential Development

Although projections for Build-Out conditions can be found in studies by various other sources, it was felt that the year 2035 is consistent with local studies and provides a period from which a reasonable prediction of new development growth may be estimated. This quantified estimate of growth may then be used to allocate the cost of facilities that SGPWA staff has determined are needed at this time to mitigate the impacts of current and future demands.

There are several sources that project future residential and non-residential demographics for various horizons within SGPWA boundaries, including housing elements from City General Plans, Urban Water Management Plans ("UWMP") and development projections from interested agencies such as the Southern California Association of Governments ("SCAG"). Differing development trends unique to jurisdictional areas within the Agency boundary suggest that the local retail water agencies' UWMP projections or projections from independent studies might be the most in tune with actual development trends within their purview. Specifically, the growth projections for the Cities of Beaumont and Banning

were taken from the Beaumont Cherry Valley Water District UWMP and the City of Banning UWMP, respectively; however the City of Calimesa provided current growth projections based on its own independent study.

Development projections for unincorporated areas within the Agency are more difficult to determine using local UWMP's as a source. Some retail water districts include unincorporated areas within their boundaries. Those areas may or may not be within the Agency. Also, there are unincorporated areas within the SGPWA that are not covered by a local UWMP. For this reason the County of Riverside was contracted to provide a special study, or addendum, to their 2013 Progress Report that compiles data from only unincorporated areas within census tracts that lie within the SGPWA boundary. In this special study the County estimated the housing units in such census tracts in the year 2035. The results of this study are shown graphically in Figure 1, Appendix A, "Demographic Background."

Furthermore, the Yucaipa Valley Water District UWMP does not segregate water demands from the parts of its service area that lie within the City of Calimesa and the County of Riverside. In addition, the South Mesa Water Company services portions of the City of Calimesa but does not have a UWMP. For these reasons, development projections for the City of Calimesa were provided by the City of Calimesa staff and are based on City General Plan projections and current development trends considering active development projects at various stages of planning.

The following sources were used to project total new housing units to 2035:

- City of Banning UWMP (2010)
- Beaumont Cherry Valley Water District UWMP (2010)
- City of Calimesa planning data provided by City staff
- Riverside County 2013 Progress Report, with a special study that includes unincorporated areas within SGPWA boundaries (2014). See Figure 1, Appendix A

For the City of Banning, their 2010 UWMP provides a total housing projection of 17,988 units in 2035. However, a breakdown of single family and multi family units was not provided. Using projected water usage and water usage factors provided in the UWMP, the 17,988 total units was broken down into single family and multi family units in proportion to each category's water usage.

In similar fashion, the Beaumont Cherry Valley Water District UWMP (2010) projects total residential units in 2035 at 21,958 units, however it does not break that figure down to single family and multi-family units. Again, projected water usage for multi-family units in 2035 and water usage factors were used to calculate the percentage split between single family housing units and multi-family housing units in 2035. The resulting number of housing units were then rounded to the nearest 500 housing units and entered into Table 3 below (see Appendix A, Section A-5).

The City of Calimesa staff provided the number of existing and projected single family and multi-family housing units within the City limits[3]. The City projects 12,100 new residential dwelling units between 2014 and 2035. The City projects over 23,000,000 new commercial building square feet and over 18,000,000 new industrial square feet by 2035.

For the unincorporated areas the special study by the County of Riverside, mentioned above, projected a total of 10,068 residential units in 2035. It is assumed that most of the growth between 2015 and 2035 will be single family units. DTA assumed a 2% cumulative growth in multi-family units during this period, with the balance being single family units.

A detailed discussion of the analysis used to estimate the number of future residential units can be found in Appendix A of this Study. Table 3 below summarizes the expected residential units within the study area at year 2035

**TABLE 3**

Projected Residential Units in 2035[1]

| Residential Land Use | City of Banning[2] | City of Beaumont | City of Calimesa | Unincorporated Area | Total Residential Units |
|---|---|---|---|---|---|
| Single Family | 15,707 | 20,500 | 11,500 | 8,700 | 56,400 |
| Multi-Family | 2,281 | 1,500 | 4,300 | 1,400 | 9,500 |
| Total | 17,988 | 22,000 | 15,800 | 10,100 | 65,900 |

1. Rounded off to the nearest 100 units
2. Total units are not rounded. The 17,988 is taken directly from the City of Banning UWMP, Table 3-1.

The UWMP's that cover the Cities of Banning and Beaumont do not provide projections for non-residential building square feet. Their projections consisted of growth in water demand, as it should for water planning purposes. The percentage growth in water demand for the land use categories within the city limits was applied to the data for existing development to project building square feet in 2035. The City of Calimesa staff provided projections for non-residential building square feet in 2035. Table 4 below summarizes the total expected non-residential square feet within the study area in 2035.

**TABLE 4**

Projected Non-Residential Building Square Feet in 2035[1]

| Non-Residential Land Use | City of Banning | City of Beaumont | City of Calimesa | Unincorporated Area | Total Non-Residential SF |
|---|---|---|---|---|---|
| Commercial/Retail | 7,018,000 | 4,921,000 | 24,895,000 | 5,112,000 | 41,946,000 |
| Industrial | 6,546,000 | 2,493,000 | 18,700,000 | 75,000 | 27,814,000 |
| Total | 13,564,000 | 7,414,000 | 43,595,000 | 5,187,000 | 69,760,000 |

1. Rounded off to the nearest 1,000 square feet

[3] Letter from City of Calimesa to San Gorgonio Pass Water Agency dated July 15, 2015. Subject line reads "CITY OF CALIMESA LAND USE PROJECTIONS".

A detailed discussion of projected residential units and non-residential building square feet can be found in Appendix A of this Study. The numbers found in Table 3 and 4 above represent total numbers through 2035. To determine the amount of growth between 2014 and 2035 the data in Tables 1 and 2 (existing development) must be subtracted from the corresponding data in Tables 3 and 4 (total projected at 2035). This difference is shown in column (5), Table 7, Section V below.

# V. Facility Component of the Facility Capacity Fee

The estimated reasonable cost to SGPWA of providing water supplies to new development is divided into two components: the Facility Component of the Facility Capacity Fee ("Facility Fee") and the Water Component of the Facility Capacity Fee (Water Capacity Fee"). This section will address the identification, the cost, the method of cost allocation, and the fee structure for new water facilities.

SGPWA owns and maintains an integrated system of water storage and conveyance that provides benefit to all lands within SGPWA boundaries by providing access to an imported water supply through the SWP. Each facility within the system provides delivery of water for groundwater basin replenishment, storage for local use when imported water is in short supply, or direct delivery to retail agencies. SGPWA will need to construct new facilities within this system to augment current storage capacity and delivery capabilities in order to meet the demands of current and future development. Thus, imported water stored in the Beaumont Basin, or any other groundwater basin, by SGPWA can be locally used as part of a conjunctive use program in times of shortage, allowing SGPWA imported water supplies to be beneficially used by water users within the SGPWA service area. The integrated system will provide the central core access to a water supply for lands that would not otherwise have such access during prolonged periods of limited imported water deliveries and during years of surplus. For example, the Beaumont Basin Recharge Facility, more fully described in Section V.1 herein, provides an interconnected system of water delivery to local water agencies that overlie the Beaumont and Banning groundwater basins. The Beaumont Basin Recharge Facility adds recharge capacity and storage to an overdrafted basin in order to provide reliable water supplies to both new and existing development within the entire SGPWA service area.

In July, 2015 Webb Associates submitted a letter report to SGPWA included herein as Appendix B, ("Implementation Update"). This document included detailed cost estimates, list of facilities, and detailed graphics that describe the location of recharge basins and alignments of interconnecting pipelines.

The fair share allocation of the cost of facilities anticipated to be needed during this planning horizon is discussed in detail in Section V.2, "Methodology" herein.

## 1. Facility Costs

For purposes of the Facility Fee calculation, SGPWA decided at this time to include only the facilities related to conjunctive use of the Beaumont Basin and the purchase of additional capacity from San Bernardino Valley Municipal Water District ("SBVMWD") because these facilities will be needed prior to the year 2035 based on projected water demands for that year. The facilities to be financed consist of (1) the purchase of additional capacity in existing pipeline systems owned by others, and (2) an additional basin recharge project for underground water storage in the Beaumont basin, including land purchases associated with that basin facility. Itemized facility costs totaling $12.66M were provided

by Webb Associates in its Implementation Update document prepared for SGPWA. See Appendix B herein.

**The East Branch Extension Phase II** project by DWR will include pipelines, pump station additions and expansions, and a reservoir that will convey SWP water from Highland to the SGPWA service area. SGPWA is negotiating with SBVMWDfor the purchase of an additional 32 cubic feet per second ("cfs") capacity in the SBVMWD pipeline between Highland and Devil Canyon. This purchase will provide additional capacity for SGPWA, increasing its capacity from 32 cfs to 64 cfs for the entire East Branch Extension. It has been determined by SGPWA that the full additional 32 cfs capacity will be needed to meet the demands of expected development through 2035. The estimated cost of this capacity, as indicated in the Implementation Update (see Appendix B) is $4M.

**Beaumont Basin Recharge Facility** – SGPWA proposes to construct a 54 acre recharge basin (also known as the Beaumont Avenue Recharge Facility) at the intersection of Beaumont Avenue and Brookside Avenue for the purpose of storing SWP water conveyed through a 6,000 lineal feet pipeline. Water will be used to recharge the Beaumont Basin, thereby replenishing water used to meet the demands of expected development. The estimated cost to improve the site, not including land purchase costs, as indicated in the Implementation Update, is $5.46M. This facility will provide additional storage that can be filled in wet years and drawn down in dry years. The land cost for Beaumont Basin Recharge Facility is $3.2M .

Table 5 below provides a summary of the list of facilities and the respective estimated costs that will be financed, or partially financed, by the revenue from the Facility Fee recommended in this Study. Maps showing the location of each facility can be found in the Implementation Update, found in Appendix B of this Study. Part of the additional capacity provided by the Beaumont basin recharge facility is needed for new development. This additional capacity will also provide a benefit to existing development. The total additional capacity from SBVMWD is required to meet the demands of new development. Therefore, only a portion of the cost of the basin recharge facility is allocated to new development and the full cost of the additional capacity from SBVMWD is allocated to new development. The allocations are more fully described in Section V.2, "Methodology."

**TABLE 5**

Needs List and Estimate of Costs[1]

| Facility Name | Cost Estimate | % Allocated To New Development | Cost to New Development |
|---|---|---|---|
| Beaumont Basin Recharge Facility | $ 5,460,000 | 80.00% | $ 4,368,000 |
| Land Costs for Beaumont Basin Recharge Facility | $ 3,200,000 | 80.00% | $ 2,560,000 |
| 32 cfs capacity from SBVMWD | $ 4,000,000 | 100.00% | $ 4,000,000 |
| Total Facility and Land Cost | $ 12,660,000 | | $ 10,928,000 |
| Administrative fee @ 0.50% | | | $ 55,000 |
| **Grand Total** | | | $ 10,983,000 |

1. Rounded to nearest $1,000

An Administrative Cost Component is included in the total cost to be financed in order to cover the costs incurred by SGPWA associated with the administration of the Facility

Capacity Fee program. Administrative costs include staff time associated with fee collection, maintenance of trust funds into which the fees are deposited, preparation of annual reports, and negotiation and implementation of agreements between SGPWA and the retail agencies or land use planning agencies. A budget of 0.50% of the total facility cost is a reasonable number to spread over the next twenty years of development, amounting to $55,000. This represents approximately one man-hour per month over the next twenty years. The revenue to fund these activities will be a component of the Facility Fees collected.

## 2. Methodology

The Beaumont Basin Recharge Facility discussed above will benefit both existing and new development within the SGPWA boundaries while the additional capacity in the SBVMWD pipeline is needed solely to meet the demands of new development. Because the reliability of SWP deliveries is partially dependent upon weather trends, regulations and court cases, uncertainty becomes a major factor in the management of wholesale water deliveries. Also, the Beaumont Basin is now in balance and the adjudicated requirement that the basin cannot be in overdraft on a continual basis substantiates the need for SGPWA to find additional water rights and entitlements to improve reliability. The Beaumont Basin Recharge Facility will rely on imported water to operate as planned.

The Beaumont Avenue Recharge Facility is a conjunctive use facility designed to take advantage of greater water supplies in wet years. With the reliability of the State Water Project decreasing, a regional conjunctive use project has value to current residents, enabling SGPWA as the regional water agency to import more water in those wet years and store it for future dry years. However, this value will increase substantially as the area grows, as more water supplies will be required and hence the value of being able to import and store more water in wet years increases greatly.

With current water demands the conjunctive use facility might be used once in five years, providing a 20% utilization rate. That rate will increase in future years as additional supplies are obtained for the growing region. As the region grows and the Agency obtains additional water supplies, the facility will likely be used every year, increasing the utilization rate to 100%. Since in the near term it might only be used an average of 20% of the time, it makes sense to have 20% of the cost of the facility funded by current residents. With additional growth causing the facility to eventually be used continuously at 100% capacity, the remaining 80% should be funded by that growth. Thus the funding of the cost of the Beaumont Avenue Recharge Basin Facility and its land cost are components of the Facility Fee. The allocated costs are shown in Table 5 above.

Based on current water demands and projections of future development to 2035, an additional 32 cfs capacity from SBVMWD is required solely to meet the demands of future development. Therefore the cost to purchase this additional capacity is allocated 100% to new development. Negotiations between SBVMWD and SGPWA are ongoing. The Implementation Update (see Appendix B) indicates that a $4M purchase price for this additional capacity is a reasonable estimate. Refer to Section V.1 above.

To fairly distribute the cost of new facilities allocated to the various land use designations for new development, a distribution based on an Equivalent Dwelling Unit ("EDU") methodology will be used whereby water demand will serve as the unit of comparison. The water demand for a residential dwelling or one thousand square feet ("KSF") of building floor area is compared as a ratio of that value to the demand for a single family residential unit. This ratio is defined as the EDU factor and is used to calculate the total existing EDUs, as shown in Table 6 below, and the increase in EDUs through 2035, as shown in Table 7 below.

Data for projected residential and non residential development to 2035 is subtracted from the corresponding existing data as of 2014 to identify the growth in development from 2014 to 2035, as shown in Table 7. Converting this growth into EDUs, the allocated costs can then be distributed to the various land uses. Table 7 shows that the total growth in EDUs from 2014 to 2035 is 61,828 EDUs.

Table 6 below shows the calculation for total existing EDUs, while Table 7 below shows similar calculations for future EDUs through 2035. Water use factors ("WUF"), in acre-ft of water demand per year ("AFY") per acre, are shown in column (1) of both tables and the values are taken from Table 1-7 of the Webb Implementation Plan (see Appendix C) that was made a part of the 2011 Study, where the value entered for "Unincorporated Areas and Others" is the average of the values shown for "Riverside County" and "Cabazon Area". In column (2) of both tables, "Density (DU per acre or FAR)", the residential densities are assumed to be the higher end of the range given for "Residential Low" and "Residential High" given in Table 1-7 of the Webb Implementation Plan for Single Family and Multi-Family land use designations, respectively. This is a reasonable and more conservative method to calculate the estimated densities in that it generates higher EDU counts, resulting in lower calculated residential fees. The densities for Commercial/Retail and Industrial categories use floor area ratios ("FARs") of 0.20 and 0.40 respectively, which are also conservative for the same reasons discussed above for residential uses. In column (3) of both tables the unit water use, in AFY per DU for residential uses or AFY per KSF for non-residential uses, for each land use category was then calculated from the values in the columns (1) and (2).

For example, for the City of Banning, single family land use for existing development, as shown in Table 6, the WUF shown in column (1) is divided by the density shown in column (2). Thus 2.73 AFY/acre divided by 5 DU per acre equals 0.546 AFY per DU. In a similar manner, for City of Banning, Commercial/Retail land use in Table 6, the WUF shown in column (1) is divided by the density in column (2), the result then divided by the 43.560 KSF per acre conversion factor[4]. Thus 5.76 AFY per acre divided by 0.20, the result then divided by 43.560 KSF per acre equals 0.662 AFY per KSF, as shown in column (3). The EDU factor in column (4) was determined by dividing each unit water use in column (3) by the unit water use for a single family dwelling unit in the City of Banning, Beaumont or Calimesa (0.546). For example, the unit water use calculated above for commercial/retail use, 0.662 in column (3) is divided by 0.546 for single family also shown in column (3) to produce an EDU factor of 1.21, shown in column (4).

[4] 1 acre = 43,560 square feet, or 43.560 KSF

In Table 6 below, the total existing residential dwelling units and the total existing non-residential building area in KSF shown in column (5) was taken from Tables 1 and 2. For instance, for the City of Banning, single family land use, the value of 9,936 DU's corresponds to the same value shown for the City of Banning, single family land use in Table 1. The total EDUs for existing development for the various agencies and land uses shown in column (6) were calculated by multiplying the residential dwelling units and commercial/industrial KSF shown in column (5) by the corresponding EDU factors shown in column (4).

**TABLE 6**
**EDU Calculation - Existing Development**

| | (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|---|
| Land Use | Water Use Factor (AFY/Ac) | Density (DU per acre or FAR) | Water Use (AFY per DU or KSF) | EDU Factor | DU or KSF | EDU[1] |
| **City of Banning:** | | | | | | |
| Single Family | 2.73 | 5 | 0.546 | 1.00 | 9,936 | 9,936 |
| Multi-Family | 5.34 | 20 | 0.267 | 0.49 | 2,281 | 1,115 |
| Commercial/Retail | 5.76 | 0.20 | 0.662 | 1.21 | 4,536 | 5,497 |
| Industrial | 1.27 | 0.40 | 0.073 | 0.13 | 4,231 | 565 |
| Total | | | | | | 17,113 |
| **City of Beaumont:** | | | | | | |
| Single Family | 2.73 | 5 | 0.546 | 1.00 | 12,681 | 12,681 |
| Multi-Family | 5.34 | 20 | 0.267 | 0.49 | 1,463 | 715 |
| Commercial/Retail | 5.76 | 0.20 | 0.662 | 1.21 | 3,639 | 4,410 |
| Industrial | 1.27 | 0.40 | 0.073 | 0.13 | 1,982 | 265 |
| Total | | | | | | 18,071 |
| **City of Calimesa:** | | | | | | |
| Single Family | 2.73 | 5 | 0.546 | 1.00 | 2,200 | 2,200 |
| Multi-Family | 5.34 | 20 | 0.267 | 0.49 | 1,500 | 734 |
| Commercial/Retail | 5.76 | 0.20 | 0.662 | 1.21 | 1,482 | 1,796 |
| Industrial | 1.27 | 0.40 | 0.073 | 0.13 | 412 | 55 |
| Total | | | | | | 4,785 |
| **Unincorporated Areas & others** | | | | | | |
| Single Family | 2.85 | 5 | 0.570 | 1.04 | 6,208 | 6,481 |
| Multi-Family | 5.44 | 20 | 0.272 | 0.50 | 1,363 | 679 |
| Commercial/Retail | 5.79 | 0.20 | 0.664 | 1.22 | 3,780 | 4,598 |
| Industrial | 1.29 | 0.40 | 0.074 | 0.14 | 60 | 8 |
| Total | | | | | | 11,766 |
| 1. totals are rounded | | | | | Total Existing EDUs = | 51,735 |
| | | | | | % of total | 44.60% |

The total EDUs for new development shown in Table 7 below are calculated in a similar manner as Table 6 while using future development to 2035. The new development ("growth") value is the difference between 2035 and existing residential DUs or non-residential square feet from Tables 1 through 4.

**TABLE 7**
**EDU Calculation - Future Development**

| | (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|---|
| Land Use | Water Use Factor (AFY/Ac) | Density (DU per acre or FAR) | Water Use (AFY per DU or KSF) | EDU Factor | DU or KSF | EDU |
| **City of Banning:** | | | | | | |
| Single Family | 2.73 | 5 | 0.546 | 1.00 | 5,771 | 5,771 |
| Multi-Family | 5.34 | 20 | 0.267 | 0.49 | 0 | 0 |
| Commercial/Retail | 5.76 | 0.20 | 0.662 | 1.21 | 2,482 | 3,008 |
| Industrial | 1.27 | 0.40 | 0.073 | 0.13 | 2,315 | 309 |
| Total | | | | | | 9,088 |
| **City of Beaumont:** | | | | | | |
| Single Family | 2.73 | 5 | 0.546 | 1.00 | 7,819 | 7,819 |
| Multi-Family | 5.34 | 20 | 0.267 | 0.49 | 37 | 18 |
| Commercial/Retail | 5.76 | 0.20 | 0.662 | 1.21 | 1,282 | 1,553 |
| Industrial | 1.27 | 0.40 | 0.073 | 0.13 | 511 | 68 |
| Total | | | | | | 9,458 |
| **City of Calimesa:** | | | | | | |
| Single Family | 2.73 | 5 | 0.546 | 1.00 | 9,300 | 9,300 |
| Multi-Family | 5.34 | 20 | 0.267 | 0.49 | 2,800 | 1,369 |
| Commercial/Retail | 5.76 | 0.20 | 0.662 | 1.21 | 23,413 | 28,371 |
| Industrial | 1.27 | 0.40 | 0.073 | 0.13 | 18,288 | 2,441 |
| Total | | | | | | 41,481 |
| **Unincorporated Areas & others** | | | | | | |
| Single Family | 2.85 | 5 | 0.570 | 1.04 | 2,492 | 2,602 |
| Multi-Family | 5.44 | 20 | 0.272 | 0.50 | 37 | 18 |
| Commercial/Retail | 5.79 | 0.20 | 0.664 | 1.22 | 1,332 | 1,620 |
| Industrial | 1.29 | 0.40 | 0.074 | 0.14 | 15 | 2 |
| Total | | | | | | 4,242 |
| | | | | | Total Future EDUs = | 64,269 |
| | | | | | % of total | 55.40% |
| | | | | | Total EDU's = | 116,004 |

Based on the numbers shown in Table 6 and Table 7, it is anticipated that in the year 2035 there will be 116,004 EDUs within the SGPWA service area (51,735 existing EDUs plus 64,269 future EDUs).

The summary of existing EDUs and growth EDUs at 2035 by land use is shown below in Table 8, "EDU Summary at 2035":

**TABLE 8**
**EDU Summary at 2035**

| Land Use | Existing EDUs | New Growth Between 2015 and 2035 EDUs | Total EDUs at 2035 |
|---|---|---|---|
| Single Family | 31,298 | 25,492 | 56,790 |
| Multi-Family | 3,243 | 1,405 | 4,648 |
| Commercial/ Retail | 16,301 | 34,552 | 50,853 |
| Industrial | 893 | 2,820 | 3,713 |
| Totals | 51,735 | 64,269 | **116,004** |
| % of Total EDU's at 2035 | 44.60% | 55.40% | 100.00% |

## 3. Facility Fee Structure

As indicated in Table 5 in this Section, the estimated total facility cost allocated to new development is $10.9M. This amount is divided by the total EDUs assigned to new development through 2035 to arrive at a cost per EDU of $170.04. The administrative cost element is calculated in a similar fashion to be $0.89 per EDU. The total cost per EDU is $170.89. These unit costs are shown in Table 9 below:

**TABLE 9**
**Facilites Cost Per EDU**

| Item | Cost | EDUs for New Development | Cost per EDU |
|---|---|---|---|
| New Water Facilities | $ 10,928,000 | 64,269 | $ 170.04 |
| Administrative Overhead | $ 55,000 | 64,269 | $ 0.86 |
| Totals | $ 10,983,000 | 64,269 | $ 170.89 |

The proposed Facility Fee for the respective land uses is determined by multiplying the cost per EDU by the appropriate EDU factor. Because the EDU factors and the WUFs upon which the EDUs are based do vary between local service areas, as shown in Table 10, it is reasonable that weighted average WUFs are used to calculate uniform SGPWA service area EDU factors. This will result in one uniform fee structure to be used throughout the service area. Table 10 also shows the method for determining weighted average WUF for each land use. The WUF for each agency is weighted by the ratio of future EDUs for such agency to the total future EDUs. For example the City of Banning has 9,088 future EDUs, which represents 14.14% of the total future EDUs (refer to Table 7, "EDU Calculation – Growth at 2035" for EDU totals). Each land use within a given agency has its own specific WUF, which is multiplied by the weighting ratio specific to that agency (14.14% for the City of Banning). The weighted average WUF for each land use within the SGPWA service area is calculated by summing the weighted average WUF for each agency, by land use, and this value is shown in bold in the extreme right column labeled "Total" in Table 10.

Since EDUs are based on water demand, weighting based on EDUs presents a fair and rational means of determining service area wide EDU factors. For any of the four land use designations, the variation between EDU factors calculated by this weighted average method and the EDU factor determined on an individual retail agency basis, as shown in Table 10, is less than 4%, therefore use of the weighted average is reasonable. The calculation of the weighted average WUF for each land use designation is shown in Table 10 below:

**TABLE 10**
**Weighted Average Water Use Factors**

| WUF by LandUse | City of Banning | City of Beaumont | City of Calimesa | Unincor-porated Areas and Other | Total |
|---|---|---|---|---|---|
| Weighting Factors: | | | | | |
| subtotal of EDUs | 9,088 | 9,458 | 41,481 | 4,242 | 64,269 |
| % of total EDUs | 14.14% | 14.72% | 64.54% | 6.60% | 100.00% |
| Single Family: | | | | | |
| Water Use Factor ("WUF") | 2.73 | 2.73 | 2.73 | 2.85 | |
| Weighted WUF | 0.39 | 0.40 | 1.76 | 0.19 | **2.74** |
| Multi-Family: | | | | | |
| Water Use Factor ("WUF") | 5.34 | 5.34 | 5.34 | 5.44 | |
| Weighted WUF | 0.76 | 0.79 | 3.45 | 0.36 | **5.35** |
| Commercial/Retail: | | | | | |
| Water Use Factor ("WUF") | 5.76 | 5.76 | 5.76 | 5.79 | |
| Weighted WUF | 0.82 | 0.85 | 3.72 | 0.38 | **5.77** |
| Industrial: | | | | | |
| Water Use Factor ("WUF") | 1.27 | 1.27 | 1.27 | 1.29 | |
| Weighted WUF | 0.18 | 0.19 | 0.82 | 0.09 | **1.27** |

If future data show that water use within the SGPWA service area is significantly different than the WUFs used in this study, it is recommended that SGPWA update the Facility Fee portion of this Update to reflect such changes.

For residential land uses the Facility Fee is determined based on a per unit water demand, whereby a dwelling unit in a multi-family building would demand less water by volume than that demanded by a single family dwelling unit. In Table 11A below the weighted average WUFs, the densities, the resulting water uses and EDU factors were used to calculate a uniform Facility Fee structure for residential land uses only. In column (1) the weighted average WUFs were taken from Table 10 above. The densities in column (2), the water usages in column (3) and the EDU factors in column (4) are the same as used in Tables 6 and 7. The fee for each of the two land uses was calculated by multiplying the cost per EDU from Table 9 of $170.04 by the service area wide EDU factor. For instance, the Facility Fee for a multi-family dwelling unit is found by multiplying the unit facility cost by 0.49, the EDU factor.

**TABLE 11A**
**Residential Facilty Component Fee Structure**

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) |
|---|---|---|---|---|---|---|---|
| Land Use | Weighted Ave. WUF (AFY/Ac) | Density (DU per acre ) | Water Use (AFY per DU ) | EDU Factor | Facility Element ($ unit ) | Admin Element ($ per Unit) | Total Facility Fee per DU |
| Single Family | 2.74 | 5 | 0.548 | 1.00 | $ 170.04 | $ 0.86 | $ 170.89 |
| Multi-Family | 5.35 | 20 | 0.267 | 0.49 | $ 83.01 | $ 0.42 | $ 83.43 |

Commercial and industrial land uses include any one of many specific building uses, ranging from low water demand uses such as retail, office and warehouse to high demand uses such as commercial laundry and car wash. Consequently, a fee structure based on building meter size is reasonable and prudent. A 5/8" meter size is typical for a single family unit, therefore a 5/8" meter is assigned one EDU. EDU factors for larger meter sizes are determined by the ratio of meter operational capacities, as determined by values given by the American Water Works Association, Manual M-1[5]. Table 11B below lists the various EDU factors, by meter size, and the corresponding Facility Fee. The facility element and the administration fees are calculated by multiplying the EDU factor by the costs per EDU from Table 9.

**TABLE 11B**
**Non-Residential Facilty Component Fee Structure**

| Meter Size | AWWA Demand Ratio[1] | EDU Factor | Facility Element | Admin Element | Total Facility Fee |
|---|---|---|---|---|---|
| 5/8" | 1.0 | 1.0 | $ 170.04 | $ 0.86 | $ 170.89 |
| 3/4" | 1.1 | 1.1 | $ 187.04 | $ 0.94 | $ 187.98 |
| 1" | 1.4 | 1.4 | $ 238.05 | $ 1.20 | $ 239.25 |
| 1-1/2" | 1.8 | 1.8 | $ 306.06 | $ 1.54 | $ 307.60 |
| 2" | 2.9 | 2.9 | $ 493.10 | $ 2.48 | $ 495.58 |
| 3" | 11.0 | 11.0 | $ 1,870.39 | $ 9.41 | $ 1,879.80 |
| 4" | 14.0 | 14.0 | $ 2,380.49 | $ 11.98 | $ 2,392.48 |
| 6" | 21.0 | 21.0 | $ 3,570.74 | $ 17.97 | $ 3,588.71 |
| 8" | 29.0 | 29.0 | $ 4,931.02 | $ 24.82 | $ 4,955.84 |

1. American Water Works Association, Manual M-6

It is recommended that SGPWA include in its fee resolution a provision to automatically increase the Facility Fee on July 1st of each year, beginning July 1, 2016 by a percentage equal to the change in Construction Cost Index for Los Angeles as published by Engineering News Record for the preceding twelve months. It is also recommended that SGPWA review the Facility Fee levels at reasonable intervals to incorporate changes in unit prices, facility requirements, water demands and demographics in order to ensure that Facility Fee cost allocations are reasonable and that collections over time will fund the required facilities. Finally, the Facility Fee is a requirement of all new development or redevelopment in the SGPWA service area, irrespective of whether a Water Capacity Fee (discussed in Section VI below) is required.

[5] Principles of Water Rates, Fees and Charges, Manual M-1, and Water Meters- Selection, Installation, Testing and Maintenance, Manual M-6, American Water Works Association.

# VI. Water Component of the Facility Capacity Fee

The second component of the Facility Capacity Fee is the water component ("Water Capacity Fee"). The task of meeting the demands of new growth with scarce water sources is exacerbated by the significant reduction in reliability of imported water deliveries from the SWP due to periodic drought conditions, regulatory and court case cutbacks in allocations. SGPWA will need to purchase new water rights and entitlements to insure that additional water supplies will be available in the future as the SGPWA service area experiences new development. It has been estimated that total water demand at build-out is expected to be in excess of local supplies and existing imported SWP water, with allowances for reduced reliability. This deficit will need to be balanced by the purchase of new water rights and entitlements. The water rights and entitlements (authorized by SGPWA Act 101 – 27.1(b), (d) and (g)) that are needed to meet the demands of new development shall be purchased with funds provided by new development in the form of a Water Capacity Fee.

In July of 2014 SGPWA instructed Water Consultancy to prepare a memorandum that updates the estimated cost of purchasing additional Table A water (see Appendix D). Water Consultancy, by this July 2014 memorandum, estimates the market value of the cost of additional water rights and entitlements at $6,200 per acre-ft. The amount charged to new development as a Water Capacity Fee will be determined based on water demand, on a project by project basis, by SGPWA in cooperation with the permitting agency that has jurisdiction over the project. Administrative overhead is estimated to be 0.50% of the fee revenue, or $31.00 per acre-ft. This amounts to $31,000 for a purchase of 10,000 acre-ft of water, which is sufficient funding to cover the costs of administrative actions required for such purchase. See Table 12 below:

**TABLE 12**
**Water Capacity Fee**

| Item | units | Fee |
|---|---|---|
| Fee for New Water Rights and Entitlements | $ per ac-ft | $ 6,200.00 |
| Administrative Overhead | $ per ac-ft | $ 31.00 |
| Total | | $ 6,231.00 |

For example, using an annual water use amount of 0.548 AFY as indicated in Table 11A, a hypothetical single family dwelling unit would pay a Water Capacity Fee of $3,414.59 (0.548 AFY x $6,231 per acre-foot).

It is recommended that SGPWA include in its fee resolution a provision to review the Water Capacity Fee on July 1st of each year, beginning July 1, 2016, and adjust the Water Capacity Fee by a reasonable percentage based on the cost of actual water purchases, an updated water rights appraisal, or comparisons of recent purchases of additional water rights by statewide municipalities and special districts over the preceding twelve months.

# Appendix A:

# Demographic Background

# Appendix A – Demographic Background

The purpose of this appendix is to document the methodology used to process raw residential dwelling unit data and non-residential building square feet data provided by local agencies in order to update existing development data given in the 2011 Study to mid 2014 levels. This Study will project residential and non-residential development to a 2035 development horizon. These changes are necessary in order to calculate a fee structure for the Facility Fee, as discussed in Section V of this Study. The Water Capacity Fee is not affected by updated demographic information, since this fee is based on expected water usage on a project by project basis, as discussed in Section VI of this Study. The updated existing development data and the revised projected development levels at 2035 will yield growth data that will ultimately affect the proposed Facility Fee structure. This demographic data was updated in order to recommend a Facility Fee structure that will insure that new development will pay its reasonable fair share of the cost of wholesale water delivery systems necessary to continue to meet the demand in the SGPWA service area. The Facility Fee will be implemented based on a fee per new residential unit and a fee by meter size for new non-residential buildings.

## A.1 Existing Development

Existing residential units and non-residential building square feet as of 2009 are shown in Tables 1 and 2 of the 2011 Study. In order to update these numbers for existing development to June 2014, it was determined that building permit activity between 2009 and June 2014, where available, would be the best data source to add to the 2009 numbers.

### A.1.1 Existing Residential Units

Table 1 of the 2011 Study lists the total single family and multi-family residential units in the Cities of Banning, Beaumont and Calimesa, and a portion of the unincorporated area of Riverside County that lies within the SGPWA service area, as of 2009. Annual permit data provided by the Cities and the County of Riverside was used to sum the number of new residential units permitted from 2009 to mid 2014. These numbers were then added to the data found in the 2011 Study to determine the extent of existing residential development as of June 2014. See Table A1 below:

**TABLE A1**

Existing Residential Units

| Residential Land use | City of Banning | City of Beaumont | City of Calimesa | Unincorporated Area | Total Existing Residential Units |
|---|---|---|---|---|---|
| Single Family Thru 2009 | 9,927 | 11,421 | 2,200 | 6,201 | 29,749 |
| Single Family from 2010 Thru June 2014 | 9 | 1,260 | 0 | 7 | 1,276 |
| Total Existing Single Family | 9,936 | 12,681 | 2,200 | 6,208 | **31,025** |
| Multi Family Thru 2009 | 2,281 | 1,463 | 1,500 | 1,363 | 6,607 |
| Multi Family from 2010 Thru June 2014 | 0 | 0 | 0 | 0 | 0 |
| Total Existing Multi Family | 2,281 | 1,463 | 1,500 | 1,363 | **6,607** |
| Total | 12,217 | 14,144 | 3,700 | 7,571 | 37,632 |

### A.1.2 Existing Non-Residential Building Square Footage

In a manner similar to the method discussed above for updating existing residential units within the study area, permit activity for non-residential square feet between 2009 and June 2014 was added to the non-residential building square feet through 2009. The permit activity for the cities of Banning, Beaumont and Calimesa was provided by the respective City Building and Safety Departments while permit activity for the unincorporated areas within the SGPWA service area was provided by the County of Riverside. The numbers for existing development as of 2009 were taken from the 2011 Study. See Table A2 below:

**TABLE A2**

Existing Non-Residential Square Feet[1]

| Non-Residential Land Use | City of Banning | City of Beaumont | City of Calimesa | Unincorporated Area | Total Existing Non-Residential SF |
|---|---|---|---|---|---|
| Comercial/Retail Thru 2009 | 4,502,000 | 3,624,000 | 1,482,000 | 3,471,000 | 13,079,000 |
| Commercial /Retail from 2010 Thru June 2014 | 34,000 | 15,000 | 0 | 309,000 | 358,000 |
| Total Existing Commercia/Retail | 4,536,000 | 3,639,000 | 1,482,000 | 3,780,000 | **13,437,000** |
| Industrial Thru 2009 | 4,231,000 | 1,982,000 | 412,000 | 60,000 | 6,685,000 |
| Industrial from 2010 Thru June 2014 | 0 | 0 | 0 | 0 | 0 |
| Total Existing Industrial | 4,231,000 | 1,982,000 | 412,000 | 60,000 | **6,685,000** |
| Total | 8,767,000 | 5,621,000 | 1,894,000 | 3,840,000 | 20,122,000 |

1. Actual numbers rounded to the nearest 1,000 square feet

## A.2 Future Residential and Non-Residential Development

Section IV of this Study, "Demographics", refers to revising the development horizon to 2035. Many sources of information are available for selecting or computing residential units and non residential square feet in year 2035, such as local city planning departments, county planning and GIS department, and local water district planning departments and Urban Water Management Plans ("UWMPs"), for example:

| | | |
|---|---|---|
| City of Banning | City of Beaumont | City of Calimesa |
| County of Riverside | Yucaipa Valley WD | Beaumont Cherry Valley WD |

Since this Study relates to the recommendation of a facility capacity fee, in most cases UWMP's from retail water agencies within SGPWA boundaries were used as the primary source of 2035 demographic data.

### Reconciliation of Various Demographic Estimates

Upon review the form of the data available from all sources is not consistent and easily related to residential units or non-residential square feet. For instance, the Banning UWMP lists total residential units (17,988), but lists projected water use for single family, multi family, commercial and industrial land uses in 2035. Therefore a calculation must be made to convert water use to residential units and non residential square feet. A similar approach is used for the City of Beaumont and the Community of Cherry Valley whereby total household data and water delivery projections in the Beaumont Cherry Valley Water District UWMP ("BCVWD UWMP") are used in order to determine a reasonable projection for residential units and non residential square feet.

The Yucaipa Valley Water District UWMP ("YVWD UWMP") provides water demand projections for 2035 but does not break down the data into local agencies or communities within the district, including the City of Calimesa and unincorporated areas of the County. Consequently, the City of Calimesa staff provided projected residential housing units and non-residential building square feet to the year 2035[1]. Approximately 75% of the residential housing unit projection was based on current projects before the City planning department at various stages of planning. City staff also provided projections to build out conditions for Commercial/Retail and Industrial building square feet.

In several cases, using common conversion factors such as water use factors and persons per household to convert data to the desired units, the results led to possible inconsistencies that can be easily reconciled. For instance, the City of Banning shows no additional multi-family units during the period from 2009 to June 2014 and therefore has 2,281 multi-family units as of June 2014, according to Table 3 of this report. However, using Banning UWMP data and converting to residential units, this approach calculates only 711 units. A three-fold reduction in multi-family units is unreasonable. See Table

[1] Letter from the City of Calimesa to San Gorgonio Pass Water Agency dated July 15, 2015. Subject line reads: "CITY OF CALIMESA LAND USE PROJECTIONS."

A3 below for the calculation using water usage to arrive at the 711 units. Similar disconnects lead one to believe that there is not one independent source of raw demographic data (population or households and building square feet) and not one set of conversion factors (per capita water use, persons per household) that is used by local agencies and retail water districts alike to determine water projections, residential units and non residential square feet. It should not be expected that universal conversion factors be used and residential and non-residential data be provided, as the primary objectives of local UWMP's is to identify projected water demands and water sources, not necessarily in terms of dwelling units and building square feet.

Listed below are a few of the factors that can vary by agency depending on local conditions. To the extent that these factors become variable across agencies within the Agency, it becomes necessary to reconcile differences in demographic projections when comparing data.

| | | |
|---|---|---|
| Persons per Household | Water Growth Rates | Per Capita Water Use |
| Population Growth Rates | Floor Area Ratios | Service Area Water Demand |

Projections for residential dwelling units for the Cities of Banning, Beaumont and Calimesa are found in the various UWMP's that cover those areas. Projections for residential units for the unincorporated areas of Riverside County are found in special studies conducted by County staff. Projections for non-residential building square feet are basically projections of water usage converted to building square feet with the use of reasonable water use factors accepted in the 2011 Study. The methodology used to convert this data into single family and multi-family units and non-residential square feet is discussed below by jurisdiction.

**City of Banning**

Table 3-1 of the City of Banning UWMP projects the level of residential development in 2035 to be 17,988 units. This is based on the City's 2008 Housing Element and this number is consistent with Table 2-3 in Banning UWMP, which bases population projections on a 2% per year population increase from 2010 and an average of 2.7 persons per household. Table 3-1 does not break down the total units into single family and multi-family units. However, Table 3-1 does project the annual water demand for single family and multi-family dwelling units by multiplying a water use factor of 0.52 AFY per dwelling unit by 17,988 total units. This product is then broken down into single family and multi-family demand by applying percentages based on historical usage. These water demands are converted back to dwelling units by applying the water use factor 0.52 AFY. See Table A3 below:

**Table A3**

Residential Dwelling Units in the City of Banning per Table 3-1, 2010 UWMP:

| | 2030 | | | 2035 | | |
|---|---|---|---|---|---|---|
| | Water use[1] (AF/yr) | % | Dwelling Units[2] | Water use[1] (AF/yr) | % | Dwelling Units[2] |
| Single Family | 8,141 | 96.05% | 15,648 | 8,988 | 96.05% | 17,277 |
| Multi Family | 335 | 3.95% | 644 | 370 | 3.95% | 711 |
| totals | 8,476 | 100.00% | 16,292 | 9,358 | 100.00% | 17,988 |

Notes:

1. City of Banning, 2010 UWMP, Table 3-1
2. City of Banning, 2010 UWMP, Table 3-1 and Table 2-3

Table A1 indicates that 2,281 multi-family units exist in the City of Banning as of June 2014. Table A3 above indicates that there are only 711 units projected for 2035 based on water demand. It is not plausible to expect a three-fold reduction in multi-family units to occur over the next twenty years. Therefore, for the purposes of this Study it will be assumed that the growth in residential units over the next twenty years will occur solely within the single family category, with the total housing unit count to remain at 17,988 as indicated in the City of Banning UWMP. See Table A4 below:

**Table A4.1**

City of Banning - Projected Residential Units

| | 2030 | 2035 |
|---|---|---|
| Single Family | 14,011 | 15,707 |
| Multi Family | 2,281 | 2,281 |
| Total | 16,292 | 17,988 |

Table 3-1 of the City of Banning 2010 UWMP also indicates projected water usage for commercial and industrial uses for future years in 5 year increments. Using average increases during these intervals and prorating this average over the twenty year study period, an increase of 54.72% over current levels is calculated. That percentage increase is applied to existing levels to estimate non-residential levels of development in 2035. See Table A4.2 below:

**Table A4.2**

City of Banning Non-Residential Square Feet

| | 2014 | 2035 |
|---|---|---|
| Commercial | 4,536,000 | 7,018,004 |
| Industrial | 4,231,000 | 6,546,115 |
| Total | 8,767,000 | 13,564,119 |

**City of Beaumont and Cherry Valley**

Table 2-11 of the Beaumont Cherry Valley Water District Urban Water Management Plan ("BCVWD UWMP") shows 21,958 households in 2035. However Table 2-11 does not break down the households into single family and multi-family categories. Table 3-8c of the BCVWD UWMP projects water deliveries (acre-ft per yr) in 2035 for single family and multi family categories. Using water use factors (acre-ft per year per DU) for each

category from Table 7 of the 2011 Study for SGPWA, the number of single family and multi-family units were projected based on water use. Since the total number of units determined by water use does not match the 21,958 units found in Table 2-11, the percentage split from the water use information was applied to the 21,958 total units to split single family and multi-family categories, as shown in Table A5.1 below:

**Table A5.1**

City of Beaumont - Projected Residential Units

| | projected water deliveries (acre-ft/yr)[1] | water use factors (acre-ft/yr/DU)[2] | DU's | % | DU's in 2035 |
|---|---|---|---|---|---|
| Single Family | 14,658 | 0.546 | 26,846 | 93.86% | 20,610 |
| Multi Family | 469 | 0.267 | 1,757 | 6.14% | 1,348 |
| | 15,127 | | 28,603 | 100.00% | 21,958 |

Notes:

1. From Table 3-8c, BCVWD UWMP, year 2035
2. From Table 6, Capacity Fee Study for SGPWA, 2011

The BCVWD UWMP does not provide data for projected non-residential building square feet, however, Tables 3-8b and 3-8c of the BCVWD UWMP indicate water usage in AFY for 2015 and 2035. The calculated percentage increases were then applied to the 2015 levels of existing commercial and industrial building square feet to project the corresponding 2035 levels. See Table A5.2 below:

**Table A5.2**

City of Beaumont Non-Residential Square Feet

| | 2015 | 2035 | increase | 2015 | 2035 |
|---|---|---|---|---|---|
| Commercial | 88 | 119 | 35.23% | 3,639,000 | 4,920,920 |
| Industrial | 93 | 117 | 25.81% | 1,982,000 | 2,493,484 |
| Totals | 181 | 236 | | 5,621,000 | 7,414,404 |

see Table 3-8b and Table 3-8c, BCVWD UWMP

**City of Calimesa**

The City of Calimesa General Plan is not clear with regards to demographic projections to the year 2035. Table 3-13 of the Yucaipa Valley Water District UWMP indicates projected water demands from areas within their district that lie within the SGPWA service boundary. For year 2035, water demand for domestic water, conjunctive use and long term supply sustainability is projected to be 1,453.7 MG. However, this data does not break down into land use categories. The Yucaipa Valley Water District UWMP demands include areas of Calimesa and portions of the unincorporated area of Riverside County that lie within SGPWA boundaries. In addition, the City of Calimesa is served in part by the South Mesa Water District. By segregating demographic data from the two Districts that apply only to the City of Calimesa results in projections for the City of Calimesa that would be inaccurate and possibly incomplete. For this reason it is

determined that projections provided by City staff would represent the latest and best data regarding growth within the City of Calimesa limits.

**Table A6**

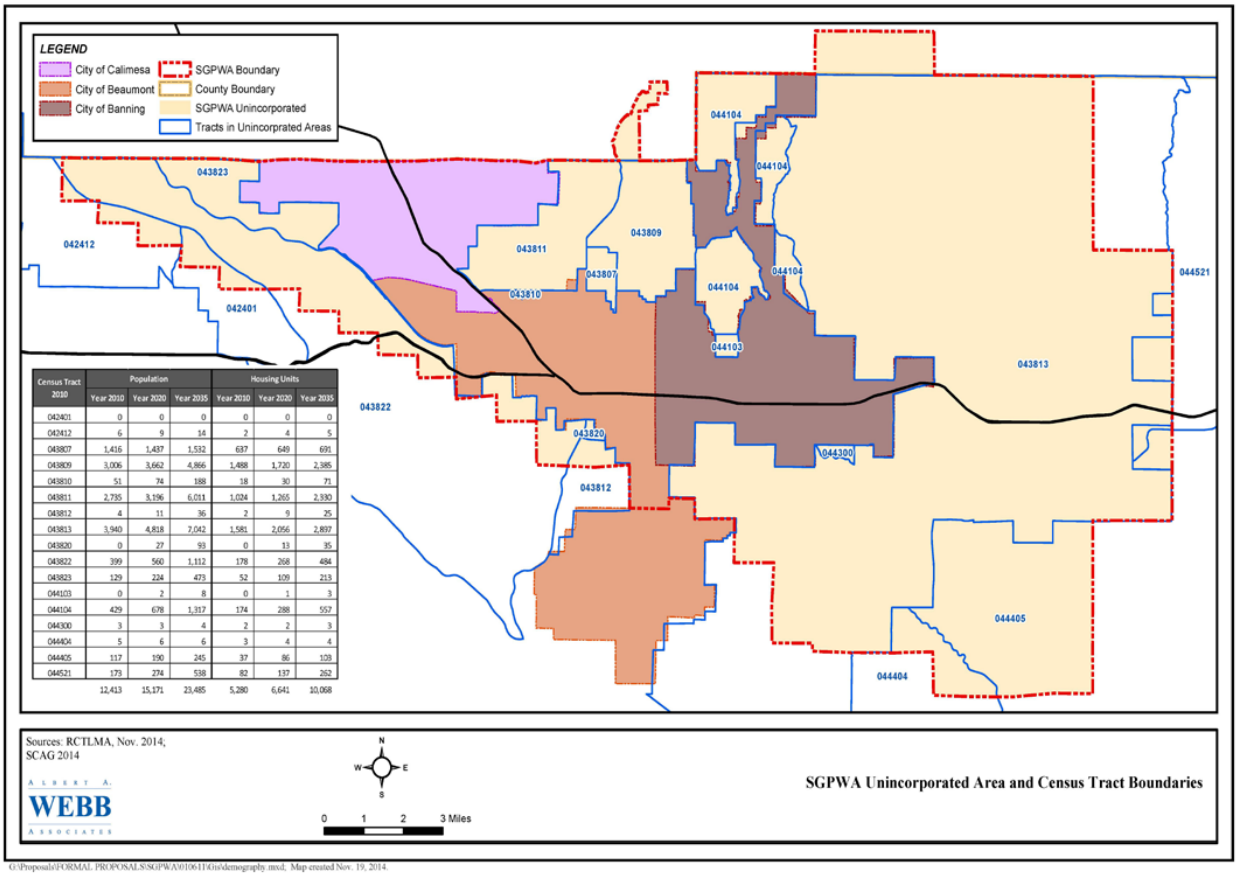
City of Calimesa - Projections to 2035

| | Dwelling Units | Building S.F. |
|---|---|---|
| Single Family | 11,500 | |
| Multi-Family | 4,300 | |
| Commercial | | 24,895,000 |
| Industrial | | 18,700,000 |

**Unincorporated Areas of Riverside County (not including Cherry Valley)**

The County of Riverside ("County"), Information Technology and Center for Demographic Research publishes a progress report that contains a wide range of demographic information for cities lying within the County limits as well as unincorporated areas within the County. However, the data in the progress report for the unincorporated area is countywide, and does not breakdown the areas within wholesale water districts. At the direction of SGPWA staff, Webb Associates contracted with County staff to have County staff prepare a special study that compiles population data and housing data for unincorporated areas that lie within the SGPWA service area. In November of 2014 the County submitted their study in the form of an area map and table of population and housing data for the years 2010, 2020 and 2035. See Figure 1 below:

**FIGURE 1**




| Census Tract 2010 | Population | | | Housing Units | | |
|---|---|---|---|---|---|---|
| | Year 2010 | Year 2020 | Year 2035 | Year 2010 | Year 2020 | Year 2035 |
| 042401 | 0 | 0 | 0 | 0 | 0 | 0 |
| 042412 | 6 | 9 | 14 | 2 | 4 | 5 |
| 043807 | 1,416 | 1,437 | 1,532 | 637 | 649 | 691 |
| 043809 | 3,006 | 3,662 | 4,866 | 1,488 | 1,720 | 2,385 |
| 043810 | 51 | 74 | 188 | 18 | 30 | 71 |
| 043811 | 2,735 | 3,196 | 6,011 | 1,024 | 1,265 | 2,930 |
| 043812 | 4 | 11 | 36 | 2 | 9 | 25 |
| 043813 | 3,940 | 4,818 | 7,042 | 1,581 | 2,056 | 2,897 |
| 043820 | 0 | 27 | 93 | 0 | 13 | 35 |
| 043822 | 399 | 560 | 1,112 | 178 | 268 | 484 |
| 043823 | 129 | 224 | 473 | 52 | 109 | 213 |
| 044103 | 0 | 2 | 8 | 0 | 1 | 3 |
| 044104 | 429 | 678 | 1,317 | 174 | 288 | 557 |
| 044300 | 3 | 3 | 4 | 2 | 2 | 3 |
| 044404 | 5 | 6 | 6 | 3 | 4 | 4 |
| 044405 | 117 | 190 | 245 | 37 | 86 | 103 |
| 044521 | 173 | 274 | 538 | 82 | 137 | 262 |
| | 12,413 | 15,171 | 23,485 | 5,280 | 6,641 | 10,068 |

G:\Proposals\FORMAL PROPOSALS\SGPWA\010611\Gis\demography.mxd; Map created Nov. 19, 2014.

Figure 1 above indicates that there are 10,068 housing units projected for the year 2035 that lie within unincorporated areas of the County that are within SGPWA service area. Based on current development trends, it is very unlikely that there will be much new multi-family development in the unincorporated areas. Therefore it is assumed that the current level of multi-family development (1,363 units) will increase by only 2% total over the next twenty years, and the remainder of the 10,068 projected units will fall into the single family residential category. See Table A7 below:

**Table A7**

Unincorporated Areas - Residential

| | 2014 | 2035 |
|---|---|---|
| Single Family | 6,208 | 8,678 |
| Multi Family | 1,363 | 1,390 |
| totals | 7,571 | 10,068 |

The County progress report does not include non-residential data. However the Beaumont Cherry Valley Water District UWMP does indicate levels of water deliveries in 2015 and

2035, by land use categories. The study area in this UWMP includes undeveloped unincorporated areas in addition to the City of Beaumont. Similar to the method used for non-residential property within the City of Beaumont, it is reasonable to assume that the non-residential growth in these areas will be uniform and the magnitude of which is a percentage increase in the development that exists as of mid 2014. Also, it is assumed that the increase in water deliveries projected by the UWMP is a reflection of the judgment of BCVWD with regard to growth in its service area. Using these percentage increases in deliveries and applying those increases to current building square feet (in 1,000 square feet units, or KSF), 2035 projected commercial and industrial building square feet can be estimated. See Table A8 below:

**Table A8**

Unincorporated Areas - Non Residential

| | 2015 water deliveries | 2035 water deliveries1 | increase | Existing KSF | projected KSF |
|---|---|---|---|---|---|
| Commercial | 88 | 119 | 35.23% | 3,780 | 5,112 |
| Industrial | 93 | 117 | 25.81% | 60 | 75 |

1. Tables 3-8b and 3-8c, BCVWD UWMP

# Appendix B:

## Facility Costs – Letter to Jeff Davis from Webb Associates, July 17, 2015

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July 17, 2015

Mr. Jeff Davis, General Manager
San Gorgonio Pass Water Agency
1210 Beaumont Avenue
Beaumont, CA 92223

Subject: San Gorgonio Pass Water Agency
Capacity Fee Improvement Cost Update

Dear Mr. Davis:

San Gorgonio Pass Water Agency (SGPWA) has retained the services of David Taussig & Associates, Inc. to conduct a Capacity Fee Nexus study. In order to provide the most current project cost data to Taussig & Associates, the Agency requested Webb Associates to update Webb's October 2010 "Implementation Plan for Capacity Fee Study" to reflect current cost data.

In this update, the Agency has decided to not include any Cabazon facilities in the fee, so this update will only apply to the Beaumont basin recharge facility and the acquisition of additional capacity in the Foothill Pipeline.

The Agency is currently in negotiations with San Bernardino Valley Municipal Water District (SBVMWD) for the purchase of 32 cubic feet per second (cfs) capacity in their Foothill Pipeline. The Agency has indicated that SBVMWD has initially agreed to a lower purchase price than previously discussed due to the age of the Foothill Pipeline and other factors.

As a result of these recent developments, the Agency has requested a redetermination of Webb's 2010 project cost estimate of the Beaumont Recharge Basin facilities.

As detailed in the SGPWA October 2010 "Implementation Plan for Capacity Fee" planning document prepared by Webb Associates, the projects were summarized as follows:

- Banning Pipeline Upsizing
- Beaumont Basin Recharge Facility
- Cabazon Pipeline
- Cabazon Basin Recharge Facility
- 32 cfs Capacity Purchase in the Foothill Pipeline from San Bernardino Valley Municipal Water District (SBVMWD)

As indicated above, this update study only includes the project cost for the Beaumont Basin and acquisition of additional capacity in the Foothill Pipeline.

The Beaumont Recharge Basin and its ancillary facilities along with the acquisition of additional capacity in the Foothill Pipeline are needed in order to meet average delivery of SWP water to the Agency's service area. The Agency must have the ability to convey and store SWP water during wet years to utilize this water during dry years. The implementation of recharge facilities in the Beaumont Basin will provide the Agency the terminal storage to implement the required conjunctive use program to fully utilize the Agency's Table A amount and be able to provide water to its retail customers during drought periods.

Refer to **Plate 1** for the project locations. The projects are in various states of development, from conceptual planning, design, and contract documents, and construction. Therefore, a varying degree of cost analysis was applied. The following summarize the recommended costing analysis:

- Beaumont Basin Recharge Facility
  - Engineering and Planning Costs for Recharge Facility and Offsite Pipeline
  - Bid Cost for Offsite Pipeline
  - Construction Management & Inspection (CM&I) Costs for Offsite Pipeline
  - Engineer's Estimate for Beaumont Recharge Facility
  - Estimated CM&I Costs for Beaumont Recharge Facility
  - Land Purchase for Beaumont Recharge Facility
  - Service Connection
- 32 cfs Capacity Purchase (Foothill Pipeline) from SBVMWD
  - Based upon preliminary discussion with SBVMWD

**BEAUMONT BASIN RECHARGE FACILITY**

This project has the following two components:

1. Ground Water Basin Recharge Facility (**Plate 2**)
2. Offsite Delivery Pipeline (**Plate 2**) and Service Connection

The Beaumont Basin Recharge Facility project has gone through a siting study, concept planning layout, land purchase, design and preparation of contract documents. This project is planned to be advertised and bid towards the end of 2015 or early 2016. At this level of planning and design, the cost basis will be the actual engineering design cost and contract level engineer's estimate. Additionally the estimated construction phase management and inspection support costs has been provided. The following **Table 2** summarizes these costs.

**Table 2**
**Beaumont Recharge Basin Costs**

| Description | Costs |
|---|---|
| Planning and Engineering | $ 51,700 |
| Design and Contract Documents | $ 182,900 |
| Contract Level Engineer's Estimate | $2,833,415 |
| Construction Management and Inspection | $ 300,000 |
| **TOTAL COST[1]** | **$3,370,000** |

The Beaumont Basin Recharge Facility's associated offsite pipeline went through the same planning efforts and recently completed construction and includes the Service Connection. These costs were provided per the Agency's August 19, 2014 and subsequent September 4, 2014 e-mails. The following **Table 3** summarizes these costs (see **Attachment A** for detailed breakdown of these costs).

[1] Rounded to the nearest $10,000.

**Table 3**
**Beaumont Recharge Basin Offsite Pipeline Costs**

| Description | Costs |
|---|---|
| Engineering and Planning | $152,600 |
| Contractor's Bid | $1,345,000 |
| Construction Management and Inspection | $191,400 |
| **TOTAL COST** | **$1,690,000** |

Per the Agency's August 19, 2014 e-mail, the land purchase cost was $3,200,000. Summarized in **Table 4** is the total cost for the Beaumont Recharge Basin Project.

**Table 4**
**Beaumont Recharge Basin Facilities Costs**

| Description | Costs |
|---|---|
| Beaumont Recharge Basin | $3,370,000 |
| Offsite Pipeline | $1,690,000 |
| Land Purchase | $3,200,000 |
| Service Connection | $ 400,000 |
| **TOTAL COST[2]** | **$8,660,000** |

## 32 CFS CAPACITY PURCHASE OF THE FOOTHILL PIPELINE FROM SBVMWD

The Agency and SBVMWD have had lengthy discussions on the value of purchasing 32 cfs capacity in SBVMWD's Foothill Pipeline. Citing concerns with the age of the delivery pipelines among other reasons, the current negotiated amount is $4,000,000. Though there has not been a finalized executed agreement between the Agency and SBVMWD, for planning purposes, the amount of $4,000,000 will be utilized for this letter report.

[2] Rounded to the nearest $10,000.

**PROJECT COST SUMMARY**

**Table 5** summarizes all the updated cost impacting the capacity fee.

**Table 5**

**San Gorgonio Pass Water Agency**

**Updated Project Costs**

| Description | Costs[3] |
|---|---|
| Beaumont Basin Recharge Facility | $ 8,660,000 |
| 32 cfs Capacity Purchase from SBVMWD | $ 4,000,000 |
| **TOTAL PROJECT COST** | **$12,660,000[4]** |

Should you have any questions, please feel free to contact our office at 951-686-1070.

Sincerely,

**ALBERT A. WEBB ASSOCIATES**

Sam I. Gershon, RCE
Senior Vice President

Enclosures

[3] Rounded to the nearest $10,000

[4] Please note that pursuant to the American Association of Cost Engineers, our "project cost" is defined as an "Order of Magnitude Estimate. An approximate estimate made without detailed engineering data.... An estimate of this type is normally expected to be accurate within plus 50 percent or minus 30 percent." Please note the "Order of Magnitude Estimate" definition does not apply to the Beaumont Basin Recharge Facilities since this project is partially under construction and the balance has been designed.

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# ATTACHMENT A

**Beaumont Avenue Recharge Facility**

**COST ESTIMATE**

**Date: 12-10-2013**

| Item No. | Description | Unit | Qty | Unit Price | Amount |
|---|---|---|---|---|---|
| 1 | Mobilization | LS | 1 | $50,000.00 | $75,000 |
| 2 | Clearing and Miscellaneous Work | LS | 1 | $25,000.00 | $25,000 |
| 3 | Water Pollution Control (SWPPP) | LS | 1 | $10,000.00 | $10,000 |
| 4 | Overexcavation and Recompaction | CY | 165,000 | $2.00 | $330,000 |
| 5 | Excavation and Grading (Excavation/Cut) | CY | 196,000 | $5.50 | $1,078,000 |
| 6 | Install 24" RCP Class IV | LF | 730 | $125.00 | $91,250 |
| 7 | Construct Inlet Structure | EA | 5 | $4,000.00 | $20,000 |
| 8 | Construct Outlet Structure | EA | 4 | $3,000.00 | $12,000 |
| 9 | Construct Spillway (W=15') | EA | 4 | $10,000.00 | $40,000 |
| 10 | Construct Spillway (W=20') | EA | 1 | $12,500.00 | $12,500 |
| 11 | Install Rip Rap | CY | 900 | $75.00 | $67,500 |
| 12 | Construct Access Stairway | EA | 5 | $1,000.00 | $5,000 |
| 13 | Construct SPPWC Std. 304-3 Grate Catch Basin (including concrete apron) | EA | 3 | $2,500.00 | $7,500 |
| 14 | Construct SPPWC Std. 304-3 Grate Catch Basin (including concrete apron) | EA | 1 | $2,500.00 | $2,500 |
| 15 | Construct Downdrain | LF | 195 | $30.00 | $5,850 |
| 16 | Construct Manhole NO.1 per RCFC&WCD MH251 | EA | 1 | $2,500.00 | $2,500 |
| 17 | Construct Driveway Entrance | EA | 1 | $6,500.00 | $6,500 |
| 18 | Construct Seepage Cutoff Collar | EA | 30 | $750.00 | $22,500 |
| 19 | Construct TS No. 3 Per RCFC&WCD Std. TS303 | EA | 1 | $2,000.00 | $2,000 |
| 20 | Construct Splash Wall | CY | 8 | $450.00 | $3,600 |
| 21 | Construct Concrete Collar Per RCFC&WCD Std. M803 | EA | 1 | $750.00 | $750 |
| 22 | 24" dia. C-905 PVC pipe | LF | 825 | $170.00 | $140,250 |
| 23 | 20" dia. C-905 PVC pipe | LF | 3,301 | $160.00 | $528,160 |
| 24 | 18" dia. C-905 PVC pipe | LF | 1,182 | $140.00 | $165,480 |
| 25 | 14" dia. C-905 PVC pipe | LF | 140 | $120.00 | $16,800 |
| 26 | 12" dia. C-900 PVC pipe | LF | 145 | $95.00 | $13,775 |
| 27 | 8' dia. manhole/inlet structure | EA | 1 | $18,000.00 | $18,000 |
| 28 | Energy Dissipators | EA | 10 | $3,500.00 | $35,000 |
| 29 | 14" BFV | EA | 2 | $3,500.00 | $7,000 |
| 30 | 12" BFV | EA | 3 | $3,000.00 | $9,000 |
| 31 | 18" Meter Assembly | EA | 5 | $16,000.00 | $80,000 |
| | **Optional Items:** | | | | |
| XX | Install Perimeter Fence and Gates | LF | | | $0 |
| XX | Hydroseed Exterior Slopes and Pads | SY | | | $0 |
| | | | | | |
| | **Total** | | | | **$2,833,415** |

**San Gorgonoio Pass Water Agency**
**Beaumont Recharge Basin Project**
**Estimated Construction Management and Inspection Services for Recharge Basin**

| Description of Effort | Hours [1] | Unit Cost | Cost |
|---|---|---|---|
| Construction Management 15 Hr/Week | 386 | $140 | $54,000 |
| Construction Management Support 10 Hr/Week | 257 | $110 | $28,286 |
| Construction Inspection 40 Hr/Week for 20 Weeks | 800 | $110 | $88,000 |
| Geotech 40Hr/Week for 12 Weeks | 480 | $120 | $57,600 |
| Survey 40Hr/Week for 3 Weeks | 120 | $240 | $28,800 |
| Geotech Report | | | $10,000 |
| Potential Other Subconsultants | | | $20,000 |
| Expences | | | $10,000 |
| **Total [2] Rounded to the Nearest $10,000:** | | | **$300,000** |

[1] *Contract duration per project specifications is 180 calendar days converted to weeks:*
*(180 Calendar Day = 26 weeks)*

[2] *This construction support effort is reflective of the Estimated Cost only and may need to be updated upon actual construction duration and re-evaluation of scoping efforts.*

**San Gorgonoio Pass Water Agency**
**Beaumont Recharge Basin Project**
**Project Costs - Recharge Basin**

| Effort Type | Time Duration | Costs |
|---|---|---|
| Site Analysis, Conceptual, Planning | 2008 to 2011 | $51,700 |
| Design and Constrctuction Documents | 2012 | $182,900 |
| Engineer's Estimate | 2013 | $2,833,415 |
| Construction Services | 2014 | $300,000 |
| **Project Cost Rounded to the Nearest $10,000:** | | **$3,370,000** |

*This project cost is reflective of Webb's Actual Costs, Engineer's, Estimate, and estimated construciton support costs and does not account for budget expended by the Agency's Staff.*

Beaumont Rchrg Basin G:\2009\09-0033\Capacity Fee Update\Estimates\08-18-14_Cost for Fiesta - Site 4

**San Gorgonoio Pass Water Agency**
**Beaumont Recharge Basin Project**
**Project Costs - Offsite Pipeline**

| Effort Type | Time Duration | Costs |
|---|---|---|
| Design and Constrctuction Documents | 2012 | $152,600 |
| Engineer's Estimate | 2013 | $1,345,000 |
| Construction Services | 2014 | $191,400 |
| **Project Cost Rounded to the Nearest $10,000:** | | **$1,690,000** |

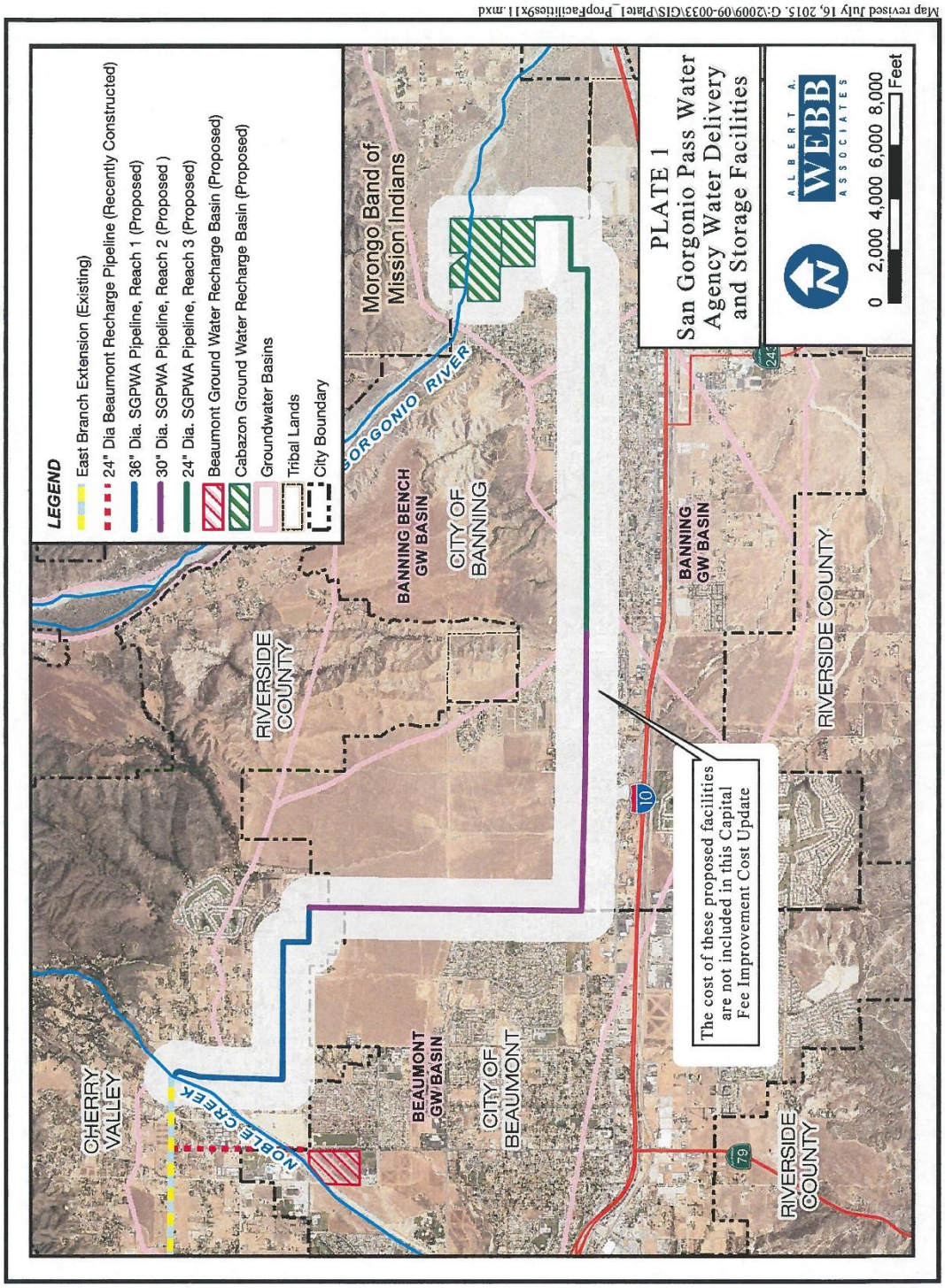
*This project cost is reflective of Actual Costs of Design Consultants, Contractor's Bid, and Budget for Construciton Support Consultant and does not account for budget expended by the Agency's Staff.*

**Beaumont Recharge Basin Total Facilities Costs**

| Description | Costs |
|---|---|
| Beaumont Recharge Basin | $3,370,000 |
| Offsite Pipeline | $1,690,000 |
| Land Purchase | $3,200,000 |
| Service Connection | $400,000 |
| **Project Cost Rounded Nearest $10,000:** | **$8,660,000** |

Offsite Pipeline G:\2009\09-0033\Capacity Fee Update\Estimates\09-05-14_Cost for Fiesta - Site 4

# PLATES


Map revised July 16, 2015. G:\2009\09-0033\GIS\Plate1_PropFacilities9x11.mxd
LEGEND
East Branch Extension (Existing)
24" Dia Beaumont Recharge Pipeline (Recently Constructed)
36" Dia. SGPWA Pipeline, Reach 1 (Proposed)
30" Dia. SGPWA Pipeline, Reach 2 (Proposed )
24" Dia. SGPWA Pipeline, Reach 3 (Proposed)
Beaumont Ground Water Recharge Basin (Proposed)
Cabazon Ground Water Recharge Basin (Proposed)
Groundwater Basins
Tribal Lands
City Boundary
PLATE 1
San Gorgonio Pass Water Agency Water Delivery and Storage Facilities
ALBERT A. WEBB ASSOCIATES
0 2,000 4,000 6,000 8,000 Feet
Morongo Band of Mission Indians
SAN GORGONIO RIVER
BANNING BENCH GW BASIN
CITY OF BANNING
BANNING GW BASIN
RIVERSIDE COUNTY
CHERRY VALLEY
NOBLE CREEK
BEAUMONT GW BASIN
CITY OF BEAUMONT
The cost of these proposed facilities are not included in this Capital Fee Improvement Cost Update
10
79
243

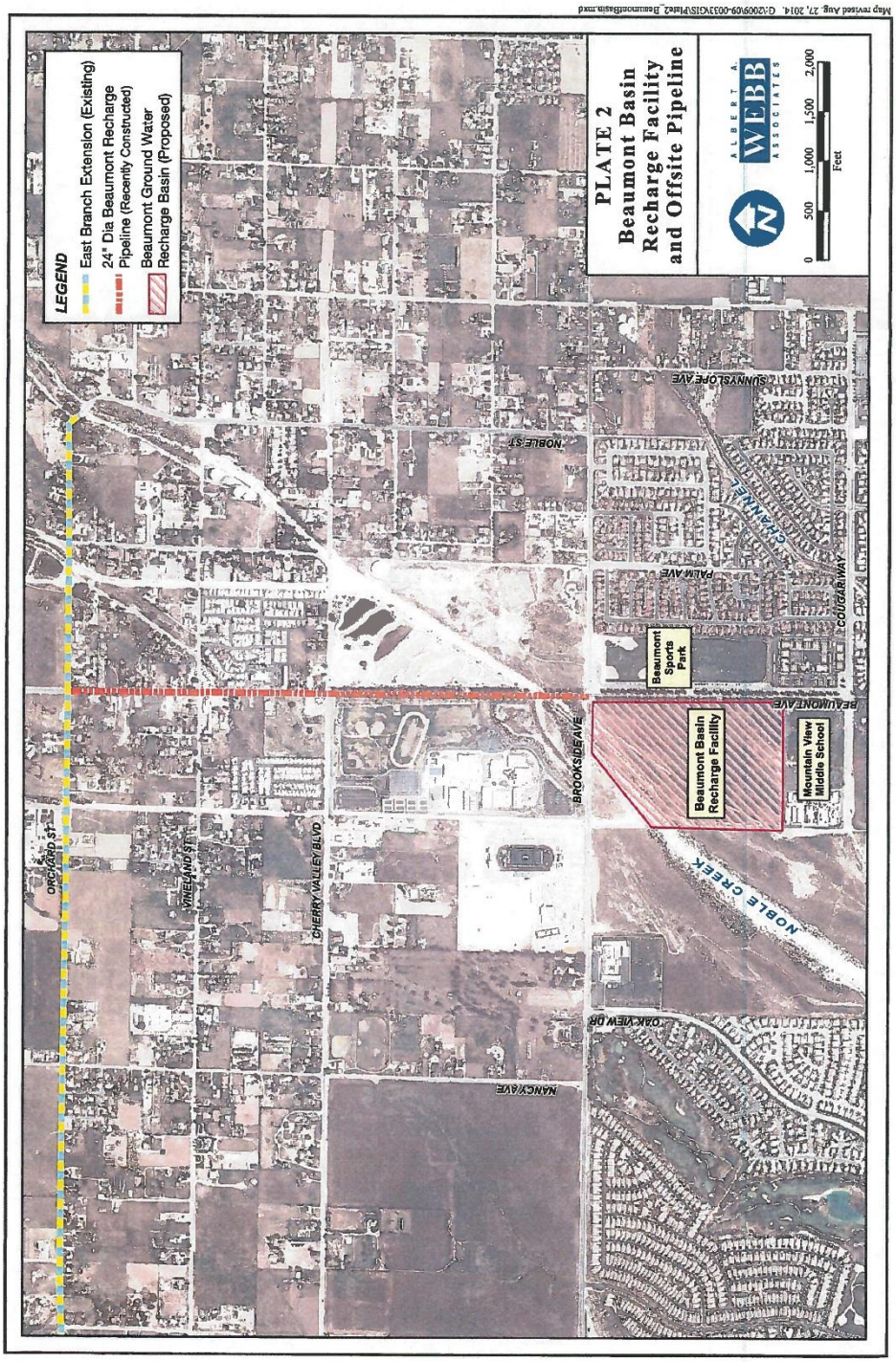


PLATE 2
Beaumont Basin
Recharge Facility
and Offsite Pipeline
LEGEND
East Branch Extension (Existing)
24" Dia Beaumont Recharge Pipeline (Recently Constructed)
Beaumont Ground Water Recharge Basin (Proposed)
ALBERT A WEBB ASSOCIATES
0 500 1,000 1,500 2,000
Feet
Beaumont Basin Recharge Facility
Beaumont Sports Park
Mountain View Middle School
BEAUMONT AVE
PALM AVE
SUNNYSLOPE AVE
COUGAR WAY
NOBLE ST
BROOKSIDE AVE
NOBLE CREEK
OAK VIEW DR
NANCY AVE
CHERRY VALLEY BLVD
ORCHARD ST
WINELAND ST

# Appendix C

## Section 1 of Implementation Plan For Capacity Fee, Webb Associates, October 2010

*Implementation Plan for Capacity Fee*

# San Gorgonio Pass Water Agency

*Prepared for*

San Gorgonio Pass Water Agency

October 2010

ALBERT A. WEBB ASSOCIATES

# SAN GORGONIO PASS WATER AGENCY

# IMPLEMENTATION PLAN FOR CAPACITY FEE

Prepared By:

**ALBERT A. WEBB ASSOCIATES**
3788 McCray Street
Riverside, CA 92506
(951) 686-1070


Sam I. Gershon, R.C.E.
R.C.E. No. C14489

October, 2010

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## APPENDICIES

# SECTION 1 - GUIDANCE FOR DETERMINATION OF UNIT WATER USE

## INTRODUCTION

This section provides the guidance for the evaluation and determination of the Unit Water Use Factors for the San Gorgonio Pass Water Agency.

To address recent State water use reduction requirements (Water Conservation Requirements, SBX 7 7), San Gorgonio Pass Water Agency (SGPWA) has reviewed and evaluated publications and references and applied applicable standards and requirements for the determination of residential and non-residential water use factors.

As a requirement of SBX 7 7, many Water Agencies and Districts are developing and adopting ordinances in order to attain the recommended 20-percent water reduction by the year 2020. The water retailers within SGPWA service area have adopted ordinances based on model ordinances that were developed by the State and County. SGPWA's projected water demand, calculated herein, was based upon current water conservation criteria for indoor or interior water use and the local prevailing ordinance for outdoor water use.

It is noted that these water use factors should be generally applied to planned developments as well as to individual developments.

## RESIDENTIAL DEVELOPMENTS

The estimated indoor water demand is based on the following:

- Indoor water use is based on an average water use of 57.6 gallons per day per capita (gpcd) taking into account the use of ultra low flush toilets, low flow showerheads and faucets

and installation of other current water-efficient fixtures and appliances as required by current plumbing codes and state and federal law.

- Outdoor water use is based on applicable ordinances as adopted by the water retailers within the Agency's service area.

**Indoor Water Use**

The indoor water use is based on a study prepared by the American Water Works Association Research Foundation (AWWARF, 1999) which showed that the average per capita indoor water use was 69.3 gpcd, including a mix of homes with older and newer plumbing; although based on the data presented, homes utilizing ultra low flush toilets and low flow shower heads could be expected to use 57.6 gpcd (including leakage) (Appendix A). As water savings devices such as high efficiency toilets, clothes washers and dishwashers are currently being utilized by many households and are typically required for new developments, it is reasonable to expect that residential water use would be 57.6 gpcd or less.

In computing the indoor demand, the average residential occupancy for the area should be utilized for the Agency's areas. Riverside County Transportations and Land Management Agency, 2009 Progress Report (Appendix B) indicates an average of 3.06 persons per occupied housing unit. For guidance purposes, this evaluation will assume the household occupancy rate is 3 persons per occupied housing unit (Table 1-1).

**Table 1-1: Household Occupancy Rate[1]**

| Criteria | Persons Per Occupied Housing Unit |
|---|---|
| 3 Bed/2 Bath | 3 |

The indoor water use factors are applied to the designated residential land use based on the zoning requirements and converted to acre-feet per year per acre basis. An example of such a conversion is as follows:

[1] For housing units having greater than 3 bedrooms, it should be considered that each additional bedroom shall add a water demand of 0.065 Acre-feet/Bedroom/Year.

Water Retailer: Yucaipa Valley Water District (YVWD)

Zoning: Residential High A (Res HA) 14 to 20 dwelling units per acre, City of Calimesa General Plan Land Use as utilized in the SGPWA Supplemental Water Supply Study.

Occupancy: 3 persons per household

Water Use: 57.6 gpdc

Based on these parameters, the acre-feet equivalent of water usage per year per dwelling unit is 0.194 ac-ft/yr/DU. For the zone designation of Res HA, assuming the maximum numbers of dwelling units per acre, the indoor unit Water Use Factor for Res H within the YVWD is 3.87 ac-ft/ac/yr.

The following Table 1-2 summarizes the indoor unit water use factors for the jurisdictions within SGPWA's service area.

**Table 1-2: Indoor Unit Use Factor per Residential Landuse Designation (Acre-Feet/Acre/Year)[2]**

| Residential Landuse Designations | Unit Use Factor |
|---|---|
| Residential Agriculture (1DU per 10 Acres) | 0.02 |
| Residential Rural (1 DU per Acre) | 0.19 |
| Residential Very Low (2 DU per Acre) | 0.39 |
| Residential Low (3-5 DU per Acre) | 0.97 |
| Residential Medium (5-12 DU per Acre) | 2.32 |
| Residential High A (12-20 DU per Acre) | 3.87 |
| Residential High B (20-29 DU per Acre) | 5.61 |

**Outdoor Water Use**

Outdoor demand is based on compliance with the local adopted ordinances for outdoor water use. These ordinances typically establish a maximum water allowance for landscape irrigation which is based on the potential evapotranspiration (ETo) area.

Some jurisdiction's ordinances require a "dual plumbing" system which involves a separate water system for outdoor use, particularly for landscaping purposes, while some do not, but have guides for types of plants and turf landscaping, and provide calculations for determining outdoor water

[2] Based upon a 3 bedroom/two bath house with 3 occupants.

usage. The following Table 1-3 summarizes the jurisdictions' outdoor water use ordinances (Appendix C). For areas that are outside a City's boundaries, the Riverside County Ordinance No. 859.2 as adopted on October 22, 2009 would apply.

**Table 1-3: Jurisdictions' Outdoor Water Use Ordinances**

| Jurisdiction | Applicable Ordinance | Water Retailer(s) |
|---|---|---|
| Banning | City of Banning's adopted Resolution No. 2010-06 – Water Conservation in Landscaping Act (AB1881) which found that the City's water efficient landscape Ordinance No. 1339 (adopted Feb. 14, 2006) contained most of the elements that correspond to the requirements of AB 1881. A chart provided with Resolution No. 2010-06 identified the requirement of AB 1881 and the corresponding City regulation or program that meets that requirement. | City of Banning Water Department |
| Beaumont | Modified Version of Riverside County's Ordinance, Ordinance No. 963, adopted on Nov. 2009 | Beaumont Cherry Valley Water District |
| Calimesa | State Model Ordinance, City adopted State's Model on Dec. 2009 | Yucaipa Valley Water District |
| Riverside County | County Ordinance, Ordinance No. 859.2, adopted on Oct., 2009 | Cabazon Water District, Banning Heights Mutual Water Company, High Valley Water District, South Mesa Water Company |

Upon review of the various ordinances, there was a common formula for the determination of outdoor water use (Appendix C):

Maximum Applied Water Allowance (MAWA) is the upper limit of the annual applied water for the established landscaped areas in gallons per year. The MAWA formula is as follows:

MAWA = (ETo x 0.62) x [(0.7 x LA) + (0.3 x SLA)]

ETo = Reference EvapoTranspiration, per 1999 CIMIS Zone Maps (inches per year) (Appendix D)
0.62 = Conversion factor (to gallons)
0.7 = ET Adjusted Factor (ETAF)
LA = Landscaped Area (square feet)
SLA = Special Landscaped Area (square feet)
0.3 = Additional Water Allowance for SLA

For the purpose of simplifying the determination of the unit water use factors, it is assumed that there are no SLA's, therefore the formula is revised as follows:

MAWA = (ETo x 0.62) x (0.7 x LA)

The following Table 1-4 summarizes the evapotranspiration (ETo) rates for a given area. It is noted that the ETo rate the areas within SGPWA's service area varies from 55.1 to 62.5.

**Table 1-4: EvapoTranspiration Rates**

| County/City | ETo Rate (inches/year) |
|---|---|
| Riverside County | 55.1 |
| City of Calimesa | 55.1 |
| City of Beaumont | 55.1 |
| City of Banning[3] | 55.1 |
| Cabazon Area | 62.5 |

The amount of area to be landscaped (LA) was assumed based on review of the number of dwelling units within an acre and utilizing Plate E-6.3 entitled "Impervious Cover for Developed Areas" of the RCFC&WCD Hydrology Manual (Appendix E). Plate E-6.3 provides for an estimated range of impervious cover and assumes the pervious cover would be irrigated. The higher end of the pervious percentage cover was used. The following Table 1-5 summarizes these assumptions and provides the landscaped area value.

**Table 1-5: Outdoor Landscape Areas Per Lot, Including Common Parkway Areas**

| Residential Landuse Designations | Sq. Foot | Pervious Areas |
|---|---|---|
| Residential Agriculture (1DU per 10 Acres) | 37000 | Assumed 85% of 1 Acre |
| Residential Rural (1 DU per Acre) | 37000 | 85% of 1 Acre |
| Residential Very Low (2 DU per Acre) | 14200 | 65% of 1/2 Acre |
| Residential Low (3-5 DU per Acre) | 4800 | 55% DU of Lot |
| Residential Medium (5-12 DU per Acre) | 2000 | 55% DU of Lot |
| Residential High A (12-20 DU per Acre) | 1000 | 45% DU of Lot |
| Residential High B (20-29 DU per Acre) | 500 | 35% DU of Lot |

[3] As per January 26, 2010 City Council Consent Item regarding Resolution No. 2010-06, Water Conservation in Landscaping Act 9AB 1881), Attachment 1, Exhibit "A", Chapter 17.32, page 608, there was reference to an attached evapotranspiration (ETo) map, though a map was not attached. Additionally, the sample calculations listed an ETo rate as high as 75.0 inches/year. The ETo rate for Banning would require verification as the listed rate on the sample calculation is greater than the highest listed rate on the 1999 CIMIS Evapotranspiration Map (Appendix D).

Utilizing the formula for determining the MAWA and applying the area's associated ETo rates and the estimated LA's for a given landuse designation, yields outdoor unit water use as summarized in the following Table 1-6. It is noted that the upper range of the number of dwelling units were utilized. For example, for Residential High B with 20 to 29 dwelling units per acre, 29 dwelling units per acre was utilized in the calculation.

**Table 1-6: Outdoor Unit Use Factors per Residential Landuse Designation (Acre-Feet/Acre/Year)**

| Residential Landuse Designations (MAWA) | Riverside County | Calimesa Beaumont Banning | Cabazon Area |
|---|---|---|---|
| Residential Agriculture (1 DU per 10 Acres) | 2.72 | 2.72 | 3.08 |
| Residential Rural (1 DU per Acre) | 2.72 | 2.72 | 3.08 |
| Residential Very Low (2 DU per Acre) | 2.08 | 2.08 | 2.36 |
| Residential Low (3-5 DU per Acre) | 1.76 | 1.76 | 2.00 |
| Residential Medium (5-12 DU per Acre) | 1.76 | 1.76 | 2.00 |
| Residential High A (12-20 DU per Acre) | 1.47 | 1.47 | 1.66 |
| Residential High B (20-29 DU per Acre) | 1.06 | 1.06 | 1.21 |

The following Table 1-7 summarizes the total indoor and outdoor water use factors per respective residential landuse designation.

**Table 1-7: Indoor & Outdoor Unit Use Factor per Residential Landuse Designation (Acre-Feet/Acre/Year)**

| Residential Landuse Designations (MAWA) | Riverside County | Calimesa, Beaumont, & Banning | Cabazon Area | Table 2-5 Oct. '09 Supplemental Water[4] |
|---|---|---|---|---|
| Residential Agriculture (1 DU per 10 Ac.) | 2.74 | 2.74 | 3.10 | 2.09 |
| Residential Rural (1 DU per Ac.) | 2.91 | 2.91 | 3.27 | 2.29 |
| Residential Very Low (2 DU per Ac.) | 2.47 | 2.47 | 2.75 | 2.21 |
| Residential Low (3-5 DU per Ac.) | 2.73 | 2.73 | 2.97 | 2.46 |
| Residential Medium (5-12 DU per Ac.) | 4.08 | 4.08 | 4.32 | 3.76 |
| Residential High A (12-20 DU per Ac.) | 5.34 | 5.34 | 5.54 | 4.60 |
| Residential High B (20-29 DU per Acre) | 6.68 | 6.68 | 6.82 | 5.38 |

It is noted that the City of Calimesa is in Yucaipa Valley Water District's (YVWD) Service Area. If YVWD has a separate outdoor water system utilizing recycled water (dual plumbing), then the Unit Use Factor would not include Outdoor Unit Use per Table 1-7 above. Therefore the following Table 1-8 summarizes the unit use factors for City of Calimesa, if YVWD implements a dual plumbing program.

**Table 1-8: Indoor Unit Use Factor per Residential Landuse Designation (Acre-Feet/Acre/Year)**

| Residential Landuse Designations | City of Calimesa |
|---|---|
| Residential Agriculture (1DU per 10 Acres) | 0.02 |
| Residential Rural (1 DU per Acre) | 0.19 |
| Residential Very Low (2 DU per Acre) | 0.39 |
| Residential Low (3-5 DU per Acre) | 0.97 |
| Residential Medium (5-12 DU per Acre) | 2.32 |
| Residential High A (12-20 DU per Acre) | 3.87 |
| Residential High B (20-29 DU per Acre) | 5.61 |

[4] These unit use factors were utilized in Table 2-5 of the October 2009 SGPWA Supplemental Water Report prepared by Webb Associates.

## NON-RESIDENTIAL DEVELOPMENTS

Non-residential developments include commercial, institutional and recreational developments. Indoor water use for these developments should be based on the specific type of use proposed and appropriate indoor water use factors. In 2000, the American Water Works Association Research Foundation (AWWARF, 2000) (Appendix F) prepared a study of commercial and institutional water use. This study identified a range of efficient water use for five types of commercial/institutional establishments (restaurants, hotel/motels, offices, supermarkets and schools. Typical water use factors are shown in the following Table 1-9.

**Table 1-9: Indoor Water Use for Commercial/Industrial Use[5]**

| Type of Use | Usage Range (gpd) | Unit of Application |
|---|---|---|
| Restaurants | 0.36 - 0.91 | Sq. ft. of building Area |
| Hotels and Motels | 60 - 115 | Occupied room |
| Offices | 0.07 - 0.10 | Sq. ft. of building Area |
| Supermarkets | 0.07 - 0.14 | Sq. ft. of building Area |
| Schools | 0.02 - 0.04 | Sq. ft. of building Area |

**Indoor Water Use**

In order to equate a building's square footage to usage in terms of acres, various ratios were utilized for the types of commercial land uses. These ratios were estimated based on typical projects. The following Table 1-10 summarizes the percent building (structure) area of a given landuse designation and the associated indoor unit water use.

**Table 1-10: Indoor Unit Use Factor per Commercial Landuse Designation (Acre-Feet/Acre/Year)**

| Commercial Landuse Designations | Percent Building Area | Unit Water Use |
|---|---|---|
| Restaurant | 30% | 13.32 |
| Hotels and Motels | 60% | 7.32 |
| Offices | 40% | 1.95 |
| Supermarkets | 50% | 3.42 |
| Schools (assumed structures 15%) | 15% | 0.29 |

**Outdoor Water Use**

For determining commercial outdoor use, the same methodology utilized to determine the residential outdoor water use was applied, such as using the RCFC&WCD Hydrology Manual for determining the irrigation area and the ordinance's formula for calculating the MAWA. It is noted that an ETo of 55.1 was utilized for Riverside County, Banning, Beaumont and Calimesa,

[5] Reference: AWWA RF 2000. Commercial and Institutional End Uses of Water.

and ETo of 62.5 was utilized for the Cabazon Area for this evaluation. The following Table 1-11 summarizes the percent area landscaped and the outdoor water use.

**Table 1-11: Outdoor Landscape Areas Unit Water Use Factors per Commercial Landuse Designation (Acre-Feet/Acre/Year)**

| Commercial Landuse Designation | Pervious Area in Percent | Riverside County, Calimesa, Beaumont, & Banning | Cabazon Area |
|---|---|---|---|
| Restaurant | 10 | 0.32 | 0.36 |
| Hotels and Motels | 10 | 0.32 | 0.36 |
| Offices | 15 | 0.48 | 0.54 |
| Supermarkets | 15 | 0.48 | 0.54 |
| Schools (assumed 50% for turf areas) | 50 | 1.60 | 1.81 |

The following Table 1-12 summarizes the total indoor and outdoor water use factor per respective commercial landuse designation. If the commercial development is within the YVWD's service area and YVWD implements a dual plumbing program, then the unit water uses summarized in the previous Table 1-10 would apply.

**Table 1-12: Indoor & Outdoor Unit Use Factor per Commercial Designation (Acre-Feet/Acre/Year)**

| Commercial Landuse Designations | Riverside County, Calimesa Beaumont, Banning | Cabazon Area |
|---|---|---|
| Restaurant | 13.64 | 13.68 |
| Hotels and Motels | 7.64 | 7.68 |
| Offices | 2.43 | 2.50 |
| Supermarkets | 3.90 | 3.96 |
| Schools | 1.89 | 2.11 |
| Airport[6] | 0.60 | |
| Commercial[6] | 1.21 | |
| Industrial[6] | 1.27 | |
| Public Facilities[6] | 1.76 | |

[6] AWWARF 2000 addressed the unit use factors for restaurant, hotels and motels, offices, supermarkets and schools. For additional non-residential developments that may not fall into the AWWARF 2000 designations, these landuse designations and associated unit use factors, from the SGPWA October, 2009 Supplemental Water Supply Planning Study, may be utilized.

**Golf Courses**

The ordinances listed in Table 1-3 did not cover golf courses. Though for guidance purposes, the unit water use was estimated utilizing the same methodology for determining outdoor commercial and residential water uses, such as using the RCFC&WCD Hydrology Manual for determining the irrigation area and the ordinances' formula for calculating the MAWA. The following Table 1-13 summarizes the unit water uses per a given ETo rate.

**Table 1-13: Unit Use Factor for Turf Irrigation of Golf Courses (Acre-Feet/Acre/Year)**

| Location of Golf Course | ETo Rate | Unit Water Use |
|---|---|---|
| Riverside Co, Calimesa, Beaumont, Banning | 55.1 | 3.20 |
| Cabazon Area | 62.5 | 3.63 |

The unit use factors listed in Tables 1-11 and 1-13 should be considered as a basis of evaluation and it is up to the developer to provide plans and calculations for determining the actual water demand for outdoor landscape areas for commercial landuse areas and golf courses on a case by case basis.

As the irrigation demand for golf courses can be substantial, the developers may want to review the use of a non-potable water supply.

# Appendix D

# Updated Water Rights Appraisal – Memo from Water Consultancy, July 20, 2014

Water Consultancy

20 July 2014

# Memorandum

To: Mr. Jeff Davis, General Manager
San Gorgonio Pass Water Agency

From: Lynn Takaichi

Subject: Updated Valuation of State Water Project Table A Amount
WC- 003

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In accordance with our agreement dated July 10, 2014, Water Consultancy is pleased to provide the following updated valuation of State Water Project (SWP) Table A Amount for the San Gorgonio Pass Water Agency (SGPWA).

## Background

SGPWA is currently considering the implementation of a wholesale facility capacity fee and is developing the technical support for the development of the fee. One element of the capital program to be funded by the fee is the acquisition of additional water supplies. Because SGPWA is a State Water Project (SWP) contractor, it is likely that any acquired water supply will be additions to its SWP Table A Amount (as defined in SGPWA's contract with the California Department of Water Resources). To establish the estimated cost of potential additions to SGPWA's Table A Amount, SGPWA authorized Water Consultancy to prepare this updated valuation to the valuation prepared in 2010 by Kennedy/Jenks Consultants. The valuation, like the previous one, is based on the financial terms of previous Table A transfers and adjusted to 2014 dollars. The valuation does not assure the availability of potential future Table A transfers; however, such transfers are currently being discussed among the SWP contractors.

## Fair Market Value

As defined by the Code of Civil Procedure Section 1263.320, "The fair market value of the property taken is the highest price on the date of the valuation that would be agreed by the seller, being willing to sell; and a buyer being ready, willing, and able to buy under no particular or urgent necessity for so doing, each dealing with the other with full knowledge of all the uses and purposes for which property is reasonably adaptable and available."

This definition implies that the fair market value is the highest price that a willing buyer would pay a willing seller if sold on the open market without the force of condemnation or the threat of condemnation. Sections 815 through 821 of the Evidence Code provide several allowable considerations when establishing the value of property. These considerations include sales of the subject property, comparable sales, leases of the subject property, comparable leases, capitalization of income, reproduction cost and conditions in the general vicinity of the subject property.

t/wc-projects/wc-003

## Memorandum



### Method of Valuation

There are several methods of valuation that are commonly utilized in determining the fair market value of a property. However, not all of these methods may be appropriate in determining the value of water rights. The commonly used and most appropriate method of valuation for water rights is the comparable sales method.

The Comparable Sales method of valuation can also be used to value water rights or other real property. However, it is somewhat difficult to find comparable sales since water rights are often not comparable. Under this method, the value of the water rights is determined by comparing relevant factors of prior sales with those of the water rights being appraised.

### Market Value by the Comparable Sales Method

Because of their different financial characteristics, permanent Table A transfers are distinguished from short-term Table A transfers for the purpose of this valuation. Short-term Table A transfers are not addressed in this valuation. In addition, please note that prior Table A transfers have occurred at different years. Accordingly, adjustments of the transfer prices are necessary to compare the transactions. These adjustments are presented in a subsequent section of this valuation.

Various SWP contractors (or their member agencies) hold contractual SWP Table A Amounts in excess of their demands. Due to the high annual fixed costs of their SWP Table A Amounts, some of these agencies have arranged to sell all or part of this excess to other contractors. Such Table A Amounts are subject to the SWP annual allocation and SWP delivery reliability constraints. In the majority of cases, sellers have been San Joaquin Valley agricultural contractors, for whom the fixed costs of their SWP Table A Amounts are too high. Buyers have included various southern California and Bay Area water agencies, as well as real estate interests and developers (who sometimes finance the transfer for a water agency that would subsequently serve their residential or commercial development projects).

Financial terms are variable, but recent "face value" costs have ranged from $1,500/AF to over $5,000/AF. The buyer assumes all prospective SWP Transportation Minimum, Capital, O&M and variable power cost payments to DWR from the time the Table A sale is effective, through the life of the SWP contract (to 2035 and beyond).

A summary of permanent Table A transfers is presented below.

*Devils Den Water District to Castaic Lake Water Agency (CLWA), 1991:* CLWA purchased the entire 12,700 AF of the Devils Den Water District Table A Amount by purchasing the majority (90%) of the District lands. The purchase price of the land was $5.0 million. Assuming the value of the Table A was the primary basis for the purchase price, the cost of the Table A transfer was $394/AF. This was the first permanent "ag to urban" Table A transfer transaction under the terms of the SWP contracts.

## Memorandum



*Kern County Water Agency (KCWA) to Mojave Water Agency (MWA), 1998:* This transfer was the first "ag to urban" transfer processed under the Monterey Amendment to the SWP Contracts. Transfer amount was 25,000 AF, at $1,000/AF.

*KCWA (Wheeler Ridge-Maricopa WSD) to CLWA, 1999:* The Table A Amount transferred was 41,000 AF and price was $1,000/AF (A Monterey Amendment transfer).

*KCWA to Palmdale Water District, 2000:* 4,000 AF of Table A Amount at $1,000/AF (A Monterey Amendment transfer).

*KCWA to Zone 7 Water Agency (Zone 7), 2000/2001:* This Monterey transfer was composed of amounts from several KCWA member agencies: Berrenda Mesa Water District: 7,000 AF; Lost Hills Water District: 15,000 AF; Belridge Water Storage District: 10,000 AF. Total Table A transfer was 32,000 AF at $1,000/AF.

*KCWA to Solano County Water Agency, 2001:* 5,756 AF of Table A Amount was transferred under the Monterey Amendment at a purchase price of $1,055/AF.

*KCWA to Napa County Flood Control and Water Conservation District, 2001:* The Table A transfer was 4,025 AF at $1,000/AF (A Monterey Amendment transfer).

*Tulare Lake Basin Water Storage District (TLBWSD) to Dudley Ridge Water District (DRWD), 2002:* The Table A transfer was 3,973 AF (Not a Monterey Amendment Transfer). Although the purchase price was not available, it was estimated to be $1,500/AF (TLBWSD, personal communication).

*TLBWSD to Antelope Valley-East Kern Water Agency (AVEK), 2002:* 3,000 AF of Table A Amount was transferred for a price of $1,100/AF (Not a Monterey Amendment transfer).

*TLBWSD to Zone 7, 2003*: The price of this 400 AF Table A transfer was $1,600/AF, plus reimbursement to the landowner seller for his obligation to TLBWSD fixed infrastructure buy-out fees. The total cost to Zone 7 was approximately $1,782/AF (Not a Monterey Amendment transfer).

*KCWA to Zone 7, 2003*: This Table A transfer was for 2,219 AF at a price of $1,500/AF, plus a 6% per annum increase from January 1, 2001 to closing. The transaction closed on October 31, 2003; the final cost to Zone 7 was $1,755/AF (A Monterey Amendment transfer).

*TLBWSD to Kings County, 2004:* This Table A transfer was for 5,000 AF (Not a Monterey Amendment transfer). Although the purchase price was not available, it was estimated to be $1,500/AF (TLBWSD, personal communication).

*TLBWSD to Coachella Valley Water District (CVWD), 2004:* This Table A transfer was for 9,900 AF at $2,150/AF (Not a Monterey Amendment transfer).

*KCWA (Berrenda Mesa Water District) to CVWD, 2008*: This was the final Monterey Amendment "ag to urban" transfer. Total Table A Amount transferred was 16,000 AF at $3,000/AF.

*DRWD to MWA, 2009*: 14,000 AF of Table A Amount is being transferred, at $5,250/AF. The transfer will take place in increments over a ten-year period.

*DRWD to AVEK, 2012*; This transfer was 1993 AF at $ 5850/AF (D. Melville, personal communication.

*TLBWSD to AVEK, 2012*; This transfer was 1993 AF at $ 5850/AF (D. Melville, personal communication).

## Economic Evaluation

To compare the identified Table A transfers, the transaction costs must be adjusted for the differing transaction dates. Accordingly, an inflation rate of 3.3 percent is utilized to express prior transaction costs in 2014 dollars. This rate is the approximate average annual increase in SWP costs as well as the long-term average annual increase in the Consumer Price Index. The results of this evaluation are presented in Table 1 and shown graphically on Figure 1. The linear regression analysis indicates that the projected cost of a permanent Table A transfer is approximately $ 6197/AF in 2014. It should be noted that these cost do not include the cost of conveyance, storage, or treatment which could vary widely depending on the location of the buyer and seller and the end use of the transferred water.

Based on the historical Table A transfers, it should be noted that since permanent Table A transfers were initiated, the normalized costs of the transfers have steadily increased until the most recent transfers, which appear to be higher than the long-term trend line for these transfers. Whether these transfers are anomalous or a precursor to higher price points is unknown.

The projected cost of a permanent transfer is significantly affected by the most recent Table A transfers. The estimated cost of these transfers is over $ 6,200 in 2014 dollars. Accordingly, another economic evaluation was performed excluding these transfers. The results of this evaluation is shown in Figure 2. The linear regression analysis indicates the projected cost of a permanent Table A transfer is approximately $4,091 in 2014. Also, note that including the recent data increases the correlation coefficient (R2) from 0.73 to 0.80. This increase supports the observation that the recent transfers would represent a new and higher price point for permanent Table A transfers.

## Opinion of Value

In developing an opinion of "fair market value," consideration was given to the market values based on the Comparable Sales method of valuation. Although the trend analysis indicates that the values of SWP Table A Amounts should range from $ 4,091 to $ 6,197/AF, there appears to be sufficient evidence that a new price point has developed. Accordingly, in my opinion, the fair

Water Consultancy

**Memorandum**

Mr. Jeff Davis, San Gorgonio Pass Water Agency
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market value of a long-term SWP Table A transfer, as of 30 June 2014, is $6,200/AF of Table A Amount.

t/wc-projects/wd-00

***TABLE 1 - HISTORICAL COST OF PERMANENT TABLE A TRANSFERS***

| Seller and Buyer | Year | | n | AF | Cost/AF | Sale Price | Adjusted Cost/AF ($ 2010) |
|---|---|---|---|---|---|---|---|
| Devils Den Water District To Casitas Lake Water Agency | 1991 | 2014 | 23.25 | 17,000 | $394 | $6,698,000 | $838 |
| Kern County Water Agency (KCWA) to Mojave Water Agency | 1998 | 2014 | 16.25 | 25,000 | $1,000 | $25,000,000 | $1,695 |
| KCWA (Wheeler Ridge-Maricopa WSD) to CLWA | 1999 | 2014 | 15.25 | 41,000 | $1,000 | $41,000,000 | $1,641 |
| KCWA to Palmdale Water District | 2000 | 2014 | 14.25 | 4,000 | $1,000 | $4,000,000 | $1,588 |
| KCWA to Zone 7 Water Agency | 2001 | 2014 | 13.25 | 4,000 | $1,000 | $4,000,000 | $1,538 |
| KCWA to Solano County Water Agency | 2000 | 2014 | 14.25 | 5,756 | $1,055 | $6,072,580 | $1,676 |
| KCWA to Napa County Flood Control and Water Conservation District | 2001 | 2014 | 13.25 | 4,024 | $1,000 | $4,024,000 | $1,538 |
| Tulare Lake Basin Water Storage District (TLBWSD) to Dudley Ridge Water District | 2002 | 2014 | 12.25 | 3,973 | $1,500 | $5,959,500 | $2,233 |
| TLBWSD to Antelope Valley-East Kern Water Agency | 2002 | 2014 | 12.25 | 3,000 | $1,100 | $3,300,000 | $1,637 |
| TLBWSD to Zone 7 | 2003 | 2014 | 11.25 | 400 | $1,782 | $712,800 | $2,568 |
| KCWA to Zone 7 Water Agency | 2003 | 2014 | 11.25 | 2,219 | $1,755 | $3,894,345 | $2,529 |
| TLBWSD to Kings County | 2004 | 2014 | 10.25 | 5,000 | $1,500 | $7,500,000 | $2,092 |
| TLBWSD to Coachella Valley Water District | 2004 | 2014 | 10.25 | 9,900 | $2,150 | $21,285,000 | $2,999 |
| KCWA (Berrenda Mesa Water District) to Coachella Valley Water District | 2008 | 2014 | 6.25 | 16,000 | $3,000 | $48,000,000 | $3,675 |
| Dudley Ridge Water District to Mojave Water Agency | 2009 | 2014 | 5.25 | 14,000 | $5,250 | $73,500,000 | $6,226 |
| Dudley Ridge Water District to AVEK | 2012 | 2014 | 2.25 | 1,993 | $5,850 | $11,659,050 | $6,293 |
| TLBWSD to AVEK | 2012 | 2014 | 2.25 | 1,993 | $5,850 | $11,659,050 | $6,293 |

Yucaipa Valley Water District

# Workshop Memorandum 17-053

**Date:** April 25, 2017

**From:** Mike Kostelecky, Operations Manager
Tim Mackamul, Integrated Senior Plant Operator

**Subject:** Overview of the Yucaipa Valley Water District's Lead Sampling Program for K-12 Schools

---

The State Water Resources Control Board's Division of Drinking Water has taken the initiative to begin testing drinking water in schools (K-12) for lead. Schools may request assistance from their public water system to conduct water sampling for lead and to provide technical assistance if an elevated lead sample site is found. To be proactive, the District staff will be initiating a lead sampling program for all schools in our service area by the end of the current school year.

The purpose of the workshop item is to provide an overview of the District's lead sampling initiative.

Media Release

# California Water Systems to Provide Lead Testing For Schools

**FOR IMMEDIATE RELEASE**
**Jan. 17, 2017**

**Contact:** Andrew DiLuccia
**Phone:** (916) 324-4775
andrew.diluccia@waterboards.ca.gov

**SACRAMENTO** – In an effort to further safeguard California's water quality, K-12 schools in the state can receive free testing for lead under a new initiative announced today by the State Water Resources Control Board.

The Board is requiring all community water systems to test school drinking water upon request by the school's officials.

There are approximately 9,000 K-12 schools in California, most of which are served by more than 3,000 community water systems in the state. While these community water systems extensively and regularly test their drinking water for lead, lead could get into clean water at a school campus if there were corroded pipes or old fixtures at the school.

Because California has newer infrastructure and less corrosive water than other parts of the country, lead problems at the tap are uncommon. However, national events have highlighted the importance of ongoing water quality monitoring and in 2015 Governor Edmund G. Brown Jr. directed the State Water Board to incorporate schools into the regular water quality testing that community water systems conduct at customer's taps.

"While the presence of lead in California's water infrastructure is minimal compared to other parts of the country, additional testing can help ensure we are continuing to protect our most vulnerable populations," said Darrin Polhemus, deputy director of the State Water Board's Division of Drinking Water.

Under the new requirement, testing is voluntary for schools, but if the schools make a written request, the community water systems must collect the samples within three months and report the results back to the school within 10 business days after receiving the results from the laboratory, or two business days if a result exceeds 15 parts per billion. Sampling locations can include drinking fountains, cafeteria and food preparation areas, and reusable water bottle filling stations. The one-time program extends until Nov. 1, 2019.

Media Release

The community water systems are responsible for the costs associated with collecting drinking water samples, analyzing them and reporting results through this new program. In addition, the State Water Board's Division of Financial Assistance will have some funding available to assist with addressing lead found in tests, with a particular focus on schools in disadvantaged communities.

Under the federal Lead and Copper Rule, the U.S. Environmental Protection Agency already requires public water systems to test for lead at customers' taps, targeting the highest risk homes based on the age of their plumbing. California's compliance rate with the Lead and Copper Rule is among the highest in the country, but the rule does not require testing for schools and businesses. The Board's new requirement ensures schools that want lead testing can receive it for free. The Board consulted with water systems and schools in developing the requirement.

Existing federal and state programs provide guidance to help schools determine if a lead problem exists and how to remedy the contamination. And many school districts have already implemented testing programs.

Protecting children from lead exposure is important for their development and lifelong good health.

For more information on the lead sampling for schools program, see our frequently asked questions section of the lead sampling website.

###

CALIFORNIA Water Boards

# Frequently Asked Questions about Lead Testing of Drinking Water in California Schools

*DISCLAIMER: This document is intended to provide answers to questions that may arise regarding lead testing of drinking water in California schools. Nothing in this document supersedes any statutory or regulatory requirements or permit provisions for public water systems.*

## Contents

## Purpose and Requirements of Permit Amendment Requiring Public Water Systems to Assist Schools in Lead Testing of Drinking Water

### 1. What are the new requirements for lead testing of drinking water in California schools? Why was this action taken?

As a result of a permit action by the State Water Resources Control Board Division of Drinking Water (DDW) on January 17, 2017, all community water systems are required to collect and analyze up to five water samples from drinking water fountains and regularly used drinking water faucets at a school, if the testing is requested by a superintendent or designee of a school, governing board or designee of a charter school, or administrator or designee of a private school.

Recent events in cities across the United States have shown that lead in drinking water remains an ongoing public health challenge and an important concern for children's health. DDW is taking action to allow schools (Kindergarten through 12$^{th}$ grade) to perform lead testing on water from regularly used drinking water faucets used for drinking or cooking, and requiring community water systems to assist schools in this effort.

### 2. Are schools required to test their drinking water for lead?

There are approximately 500 schools in California that are permitted as a public water system because they have their own water supply, such as a well. Those schools are already required to test their taps for lead (and copper), and have been performing this testing for many years. The DDW permit action does *not* apply to schools that are already regulated as public water systems.

However, most schools in California are served by community water systems which have not been required to test their water for lead under the current Lead and Copper Rule.

### 3. Why did our water system receive a permit amendment requiring lead testing of drinking water in schools when there are no schools in our distribution system?

DDW issued the permit action requiring lead testing of drinking water in California schools to all community water systems in California. If your water system does not serve potable water to at least one K-12 school listed in the California School Directory, the permit amendment does not apply to your water system and no further action is necessary.

### 4. Our water system is regulated by a Local Primacy Agency (LPA), not DDW. How do the lead testing requirements apply to our system?

The permit provisions and testing requirements apply to all community water systems that serve water to a school, regardless of water system size. The LPA should be consulted as needed and required by the permit amendment. Sampling results should be reported to the DDW database.

## Requests for Lead Sampling in Schools

### 5. I am a school administrator. How can I have the drinking water at my school tested for lead?

The superintendent or designee of a school, governing board or designee of a charter school, or administrator or designee of a private school must submit a written request to the public water system that serves water to the school. DDW has created a template to request sampling. The designee is any authorized school personnel designated in writing by the superintendent, charter school governing board, or private school administrator, such as an environmental health manager or principal. The superintendent, charter school governing board, or private school administrator must provide written authorization to the water system for a designee to request lead testing. Water systems are not required to proceed with lead sampling at a school if a written request has not been made by authorized personnel.

You can visit the DDW website to determine which community water system serves your school. You can also contact your local DDW office and we can assist you in determining which community water system serves your school.

### 6. When can lead testing be requested?

The superintendent or designee of a school, governing board or designee of a charter school, or administrator or designee of a private school can submit a written request for lead testing to their community water system any time before November 1, 2019.

### 7. Which schools can request lead testing of their drinking water?

The DDW permit action requires community water systems to assist any school in their service area that is listed in the California School Directory. This directory includes schools for grades K-12, including private, charter, magnet and non-public schools. The directory does *not* include preschools, daycare centers, or postsecondary schools.

## Collecting Samples in Schools

### 8. How will the lead testing be performed?

A water system representative will make an appointment to come to the school, develop a sampling plan, and collect up to five water samples. Samples may be collected from regularly used drinking fountains, cafeteria/food preparation areas, or reusable water bottle filling stations. Samples may be taken at sites where drinking water receives additional treatment, such as water softening. Sampling sites should be selected according to the sampling guidance prepared by DDW.

The samples will be sent to a laboratory for analysis. Laboratories used for sample analysis must be certified for lead testing of drinking water by the state Environmental Laboratory Accreditation Program (ELAP).

### 9. When will the sampling be conducted?

Within 90 days of receiving the sampling request, the water system must meet with school officials, finalize a sampling plan, and collect water samples, or develop an alternate schedule that is approved by DDW.

The samples will be collected while school is in session in order to get the most representative results. Samples will be collected by a water system representative who is adequately trained to collect lead samples. The water system will receive the results of the sample analyses from the laboratory and meet with school officials to discuss the sampling results.

### 10. What size sample bottle should be used? How should the sample be preserved? Should aerators be removed? Can samples be invalidated?

DDW has prepared a sampling protocol for lead testing of drinking water in California schools, which includes information on sample bottle size, preservation and chain of custody requirements, reporting requirements, and sample invalidation procedures. It should be noted that the DDW sampling protocol has different requirements than the USEPA's *3Ts (Training, Testing and Telling) Program for Schools*, including sample size and lead action level. Water systems should adhere to the DDW sampling protocol when conducting lead sampling in California schools.

### 11. Who pays for lead testing of drinking water in California schools?

The community water system that serves the school is responsible for all costs associated with collecting, analyzing, and reporting drinking water samples for lead testing at up to five locations at each school, and is required to meet with the authorized school representative to develop a sampling plan and review the sampling results. The community water system will *not* pay for any maintenance or corrections needed at the school if elevated lead levels are found in the drinking

water, but is required to conduct repeat sampling at the school to confirm elevated lead levels and the effectiveness of any corrective action taken by the school.

### 12. Can a school take drinking water samples at more than five locations?

The DDW permit action requires that water systems assist schools in sampling up to five locations at each school. If the school district wishes to sample additional locations, the water system is not required to assist in the collection or analysis of those samples. Only five samples per school will be reported to the DDW database.

## Reporting Results

### 13. Who will get the results of lead testing of drinking water performed at California schools?

The lab results from the sampling are reported directly to the community water system. The water system will then provide the results to the school and meet with the school staff to assist with interpretation of the sample results.

Water systems are required to include a summary of the number of schools requesting lead sampling in their annual Consumer Confidence Report (CCR).

### 14. When taking the school samples, my water system would like to take a distribution system sample at the same time. How do I report this sample result?

A distribution system sample, such as from a routine Total Coliform Rule (TCR) monitoring location near the school, may be taken at the same time as the school sampling is performed to determine water quality before it enters the school's plumbing. This is a routine practice at some water systems; however, these distribution samples are not required by the DDW permit action and should not be reported to the DDW database, because the database is only designed to accept sample results from school tap locations.

## Interpreting and Responding to Sample Results

### 15. What is the action level for lead in drinking water at schools?

The DDW sampling protocol and permit action have established 15 parts per billion (ppb) as the action level for lead sampling in schools. This is the same concentration as the action level for residential tap sampling conducted by water systems for the Lead and Copper Rule. One part per billion is equivalent to about one drop in an Olympic-sized swimming pool.

The USEPA's *3Ts (Training, Testing and Telling) Program for Schools* currently uses 20 ppb in a 250 milliliter (mL) sample as the trigger level for follow-up testing; however, the California lead sampling of drinking water in schools sampling protocol was developed to align more closely with the tap sampling already performed by community water systems under the Lead and Copper Rule.

### 16. The Lead and Copper Rule uses a 90th percentile value to determine compliance with the action level. Does that apply to the lead sampling in schools program?

Each sample location at a school is compared individually to the 15 ppb action level. There is no 90th percentile calculation.

### 17. What happens if lead is detected in the drinking water at a school?

The USEPA's *3Ts (Training, Testing and Telling) Program for Schools* and the American Water Works Association's *Assisting Schools and Child Care Facilities in Addressing Lead in Drinking Water* contain detailed information on routine, interim, and long-term remedies if lead is detected in drinking water at a school.

In addition, the community water system will notify school officials within two school business days of receiving any sample results that exceed the lead action level of 15 parts per billion (ppb), and will then meet with the school staff to assist with interpretation of the sample results and provide information regarding potential corrective actions. The water system will conduct repeat sampling at any locations that exceed 15 ppb and obtain the results from the laboratory within 10 business day, as well as after any corrective action is taken. Repeat sampling will not be conducted at a sample site if the school chooses to remove the tap from service.

The community water system that serves the school is responsible for all costs associated with collecting, analyzing, and reporting drinking water samples for lead testing at California schools required by the January 17, 2017 permit action and the water system is also required to meet with the authorized school representative to develop a sampling plan and review the sampling results. The community water system will *not* pay for any maintenance or corrections needed at the school.

To assist schools in providing access to, and the quality of, drinking water in public schools pursuant to Senate Bill 828 (2016), the State Water Board is establishing a new grant program. Approximately $9.5 million will be available later in 2017 for schools to install water bottle filling stations, install or replace drinking water fountains, and for the installation of treatment devices at these locations that are capable of removing contaminants from drinking water.

It should be noted that DDW has no regulatory authority over schools served by public water systems and cannot require any specific action be taken by the school or school district in the event of a lead action level exceedance at a school.

### 18. If elevated lead levels are found in a school's drinking water, will other drinking water tap locations be sampled for lead?

If elevated lead levels are found in a school, the school district may choose to sample additional drinking water tap locations; however, the community water system that serves the school is not required to conduct sampling at any locations other than the five locations chosen for initial sampling.

### 19. If elevated lead levels are found in a school's drinking water, will the community water system that serves the school receive a citation or fines?

Community water system compliance with the Lead and Copper Rule will continue to be determined by the results of residential sampling done according to the water system's Lead and Copper Rule tap sampling plan. Elevated lead levels found during a special sampling event at a school will not cause a water system to be out of compliance with the Lead and Copper Rule.

## Information about Lead Sources and Health Effects

### 20. What are other environmental sources of lead exposure for children?

According to the USEPA's 3Ts (Training, Testing and Telling) Program for Schools, the most common source of lead exposure for children is chips and particles of deteriorated lead paint, especially if they are exposed to house dust or soil contaminated by leaded paint. Other potential sources include lead in the air from industrial emissions, lead deposits in soils near streets from past emissions by automobiles using leaded gas, and lead in consumer products and food, such as imported candies, medicines, dishes, toys, jewelry, and plastics.

### 21. Where does lead in drinking water come from?

According to the USEPA's *3Ts (Training, Testing and Telling) Program for Schools*:
"Most lead gets into drinking water after the water leaves the local well or treatment plant and comes into contact with plumbing materials containing lead. These include lead pipe and lead solder (commonly used until 1986), as well as faucets, valves, and other components made of brass. The physical/chemical interaction that occurs between the water and plumbing is referred to as corrosion. The extent to which corrosion occurs contributes to the amount of lead that can be released into the drinking water."

### 22. What are the health risks of lead in drinking water?

Lead can affect almost every organ and system in your body. The most sensitive is the central nervous system (brain), particularly in children. Lead also damages kidneys and the reproductive system. The effects are the same whether it is breathed or swallowed. Lead in children's blood has been associated with reduced IQ and attention span, learning disabilities, poor classroom performance, hyperactivity, behavioral problems, impaired growth, and hearing loss.

Infants and children who drink water containing lead in excess of the lead action level may experience delays in their physical or mental development. Children may show slight deficits in attention span and learning abilities. Adults who drink this water over many years may develop kidney problems or high blood pressure.

## Information about Lead Testing of Drinking Water in Other Locations

### 23. How can I find out what my community water system's Lead and Copper Rule sampling results are?

Lead and copper sampling results, as well as other water quality data, are reported in your community water system's annual Consumer Confidence Report (CCR), which is sent or emailed to customers around July 1 of every year. You can obtain a copy of the most recent CCR by contacting your community water system by phone or checking their website. You can also search the USEPA website for the CCR.

### 24. How can I have the drinking water at my home tested for lead?

USEPA has recommendations for testing drinking water in the home. You can also find information on lead sampling in drinking water for individual homeowners and homes on a private well on the State Water Board website. State-certified, commercial labs that can analyze drinking water for lead and other inorganics can be found by searching the Geographic Information System map on the ELAP website. Customers can also contact their community water system and volunteer to participate in the residential tap sampling program for the Lead and Copper Rule.

## Sources of Additional Information about Lead Testing of Drinking Water in California Schools

### 25. Whom can I contact for more information about lead testing of drinking water in California schools?

If you have additional questions about any aspect of lead testing of drinking water in California schools, send an email to DDW-PLU@waterboards.ca.gov, or call (916) 449-5646.

## 26. Can I get information about lead testing of drinking water in California schools in Spanish?

En español:

- Preguntas Frecuentes (FAQs) sobre las Pruebas para Detectar Plomo en el Agua Potable de Escuelas de CA
- USEPA El plomo del agua potable en las escuelas y los centros de cuidado infantil: https://espanol.epa.gov/espanol/el-plomo-del-agua-potable-en-las-escuelas-y-los-centros-de-cuidado-infantil

## Links to Resources Cited in this Document

| Title | Author | Link |
|---|---|---|
| **DDW Lead Sampling in Schools Website** | **DDW** | http://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/leadsamplinginschools.shtml |
| 3Ts for Reducing Lead in Drinking Water in Child Care Facilities | USEPA | http://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=20017JVA.txt |
| 3Ts for Reducing Lead in Drinking Water in Schools | USEPA | https://www.epa.gov/sites/production/files/2015-09/documents/toolkit_leadschools_guide_3ts_leadschools.pdf |
| Assisting Schools and Child Care Facilities in Addressing Lead in Drinking Water | AWWA | http://www.awwa.org/portals/0/files/legreg/documents/assistingschoolslead2005.pdf |
| California School Directory | CDE | http://www.cde.ca.gov/re/sd/index.asp |
| Centers for Disease Control Healthy Schools | CDC | **http://www.cdc.gov/healthyschools/nutrition/schoolnutrition.htm** |
| Certified Environmental Laboratories in California | ELAP | http://www.waterboards.ca.gov/drinking_water/certlic/labs/index.shtml |
| Consumer Confidence Report Search Tool | USEPA | https://ofmpub.epa.gov/apex/safewater/f?p=136:102 |
| DDW District Office Contact Information | DDW | http://www.waterboards.ca.gov/drinking_water/programs/documents/ddwem/DDWdistrictofficesmap.pdf |
| DDW Lead Sampling in Schools Sampling Protocol | DDW | http://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/leadsamplinginschools.shtml |
| DDW Supply Service Area Lookup Tool | DDW | http://www.waterboards.ca.gov/waterrights/water_issues/programs/drought/water_supplier.shtml |
| Home Water Testing | USEPA | https://www.epa.gov/sites/production/files/2015-11/documents/2005_09_14_faq_fs_homewatertesting.pdf |
| National Drinking Water Alliance | UC | **http://www.drinkingwateralliance.org** |
| School Water Quality Improvement Funding Program | DFA | http://www.waterboards.ca.gov/water_issues/programs/grants_loans/ |
| Water Quality Funding Sources for Schools | USEPA | https://www.epa.gov/dwreginfo/water-quality-funding-sources-schools-resource-k-12-schools-and-child-care-facilities |

Version 7.4
December 2016

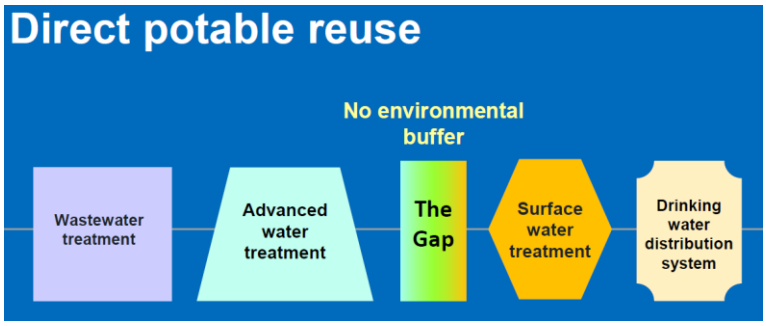
Yucaipa Valley Water District

# Workshop Memorandum 17-054

**Date:** April 25, 2017

**From:** Joseph Zoba, General Manager

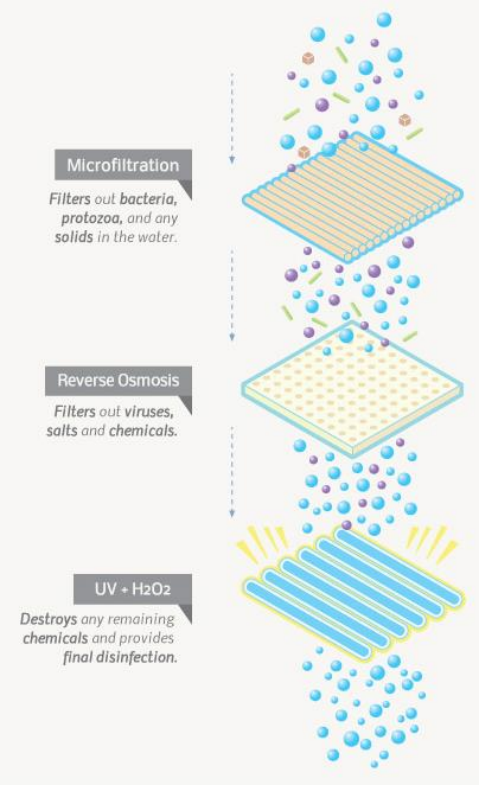
**Subject:** Overview of Proposed Capital Improvement Projects to Enhance Recycled Water Quality and Prepare for Future Direct Potable Reuse

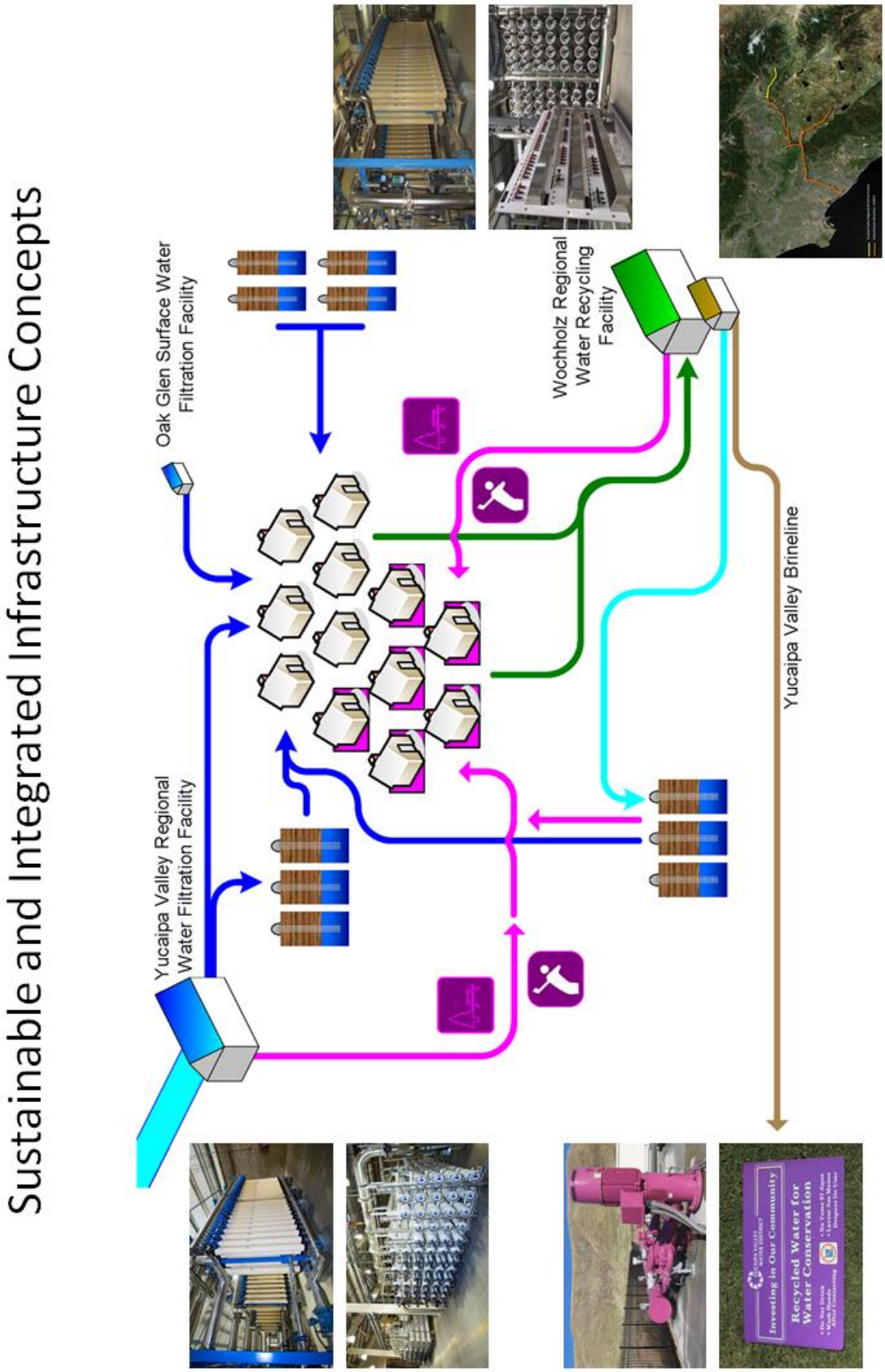



Prolonged, severe, and reoccuring droughts continue to make high quality water supplies increasingly scarce in the Southwest. The lack of reliable water resources have led many agencies to explore Direct Potable Reuse. Direct Potable Reuse (DPR) involves state-of-the art advanced water treatment technologies, like membranes, reverse osmosis, and advanced oxidation, to remove viruses, bacteria, chemicals, and other contaminants that may be present in wastewater.

The existing infrastructure of the Yucaipa Valley Water District closely mirrors the proposed pathway that will likely be required for Direct Potable Reuse.

The purpose of this workshop item is to provide an update on proposed infrastructure that can be constructed to facilitate the pathway to Direct Potable Reuse.




Sustainable and Integrated Infrastructure Concepts
Oak Glen Surface Water Filtration Facility
Wochholz Regional Water Recycling Facility
Yucaipa Valley Regional Water Filtration Facility
Yucaipa Valley Brineline
Recycled Water for Water Conservation
Investing in Our Community

# Important considerations

| | |
|---|---|
| 1. Consistent with current regulations in Arizona | 5. DPR lacks an environmental barrier |
| 2. Terms and definitions | 6. Multiple barrier approach (drinking water concept) to control pathogens and chemicals |
| 3. Regulations or permitting or guidance | 7. Technical, operational, and managerial barriers |
| 4. Regulatory flexibility (alternatives provision) | 8. Protective of public health |

## Components of an O&M Plan for a DPR System (Tchobanoglous et al., 2015)

- Staffing (i.e., for daily operations and emergencies)
- Operator training and certification
- Checklists for operations procedures (daily, weekly, and monthly)
- Routine maintenance of equipment
- Critical spare parts and failure training
- Control system (e.g., SCADA, shutdown procedures, and alarms)
- Process monitoring and control
- Regulatory compliance
- Frequency of monitoring
- Distribution System
- Response time to treatment failures or non-compliant water quality

# Operational Updates

Yucaipa Valley Water District

Yucaipa Valley Water District

# Workshop Memorandum 17-055

**Date:** April 25, 2017

**From:** Kevin King, Operations Manager
Thaxton Van Belle, Senior Plant Operator

**Subject:** Overview of Ultraviolet Disinfection Improvements at the Wochholz Regional Water Recycling Facility

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The District staff recently conducted bioassay testing on the ultraviolet disinfection process at the Wochholz Regional Water Recycling Facility. The recent testing determined the necessity to replace the quartz sleeves and other items provided in the quote from DC Frost Associates for $49,232.29. This quotation includes the option to supply labor resources in the amount of $13,800. The additional labor is necessary due to the limited number of operators available to complete these improvements.

The District staff also will need to replace the ultraviolet lamps when they reach 75% of their usable life, or 12,000 hours. The District staff recommends replacing 900 ultraviolet lamps for a sum not to exceed $145,617.

# QUOTATION

D FROST ASSOCIATES, INC. a wholly owned subsidiary of Coombs-Hopkins
2855 Mitchell Drive, Suite 215 • Walnut Creek, CA 94598
(800) 964-9733 Fax (925) 939-4457

TO: Yucaipa Valley Water District
Thaxton Van Belle
Phone #: 909-795-2491
Cell #:
Fax #:
Email: tvanbelle@yvwd.dst.ca.us

NUMBER: WC- 27331 -Q

DATE: April 6, 2017

PAGE: 1 of 1

EQUIPMENT: Trojan MODEL: UV3000Plus REF #: 511190

We are pleased to offer our quotation on the equipment listed herein for the above project.

| ITEM | QUANTITY | DESCRIPTION | UNIT PRICE | TOTAL PRICE |
|---|---|---|---|---|
| A | 84 | Quartz Sleeve, 4-pack, part #316136-004 | $340.00 | $28,560.00 |
| B | 6 | Sensor Sleeve, part #015239 | $120.00 | $720.00 |
| C | 684 | Wiper Seal, part #327021 | $4.60 | $3,146.40 |
| D | 35 | Sleeve Seal O-Ring, 10-pack, part #316144P | $1.60 | $56.00 |
| E | 1 | Sensor Sleeve Seal O-Ring, 10-pack, part #302300P | $1.80 | $1.80 |
| F | 2 | Vent Screw, 10-pack, part #010301P | $0.30 | $0.60 |
| G | 3 | Sleeve Cup Nut (Ryton), 10-pack, part #316148P | $15.00 | $45.00 |
| H | 6 | Canister Assy, Sensor Module, part #327115-180 SNRMID | $59.00 | $354.00 |
| | | | **Sub Total** | $32,883.80 |
| | | **Sales Tax:** San Bernardino, County of | 7.7500% | $2,548.49 |
| | | **Freight Terms:** F.O.B. Factory, Prepaid & Added to Invoice | | |
| I | 1 | Service for one (1) week, including one (1) tech & one (1) helper. Please note: this service requires one (1) plant person to help service tech for the week. | $13,800.00 | $13,800.00 |
| | | | **Grand Total** | $49,232.29 |

Submittals/Drawings: na weeks after receipt of order with complete information.
Shipment: 1-2 weeks after receipt of purchase order or approved drawings.
Prices quoted herein are firm for your acceptance for a period of
If prices quoted herein do not include sales or use tax, such taxes, if required, are to be paid by the purchaser.
This quotation and any resulting order will be subject to our standard terms of sale.
PAYMENT TERMS: Net 30 days

BY: Catherine M. Frost

# QUOTATION

IC FROST ASSOCIATES, INC. a wholly owned subsidiary of Coombs-Hopkins
2855 Mitchell Drive, Suite 215 • Walnut Creek, CA 94598
(800) 964-9733 Fax (925) 939-4457

TO: Yucaipa Valley Water District
Kevin Lee
Phone #: 909-795-2491
Cell #:
Fax #: 909-795-0402
Email: klee@yvwd.dst.ca.us

NUMBER: WC- 26789 -Q-R1

DATE: March 14, 2017

PAGE: 1 of 1

EQUIPMENT: Trojan MODEL: UV3000Plus REF #: 511190

We are pleased to offer our quotation on the equipment listed herein for the above project.

| ITEM | QUANTITY | DESCRIPTION | UNIT PRICE | TOTAL PRICE |
|---|---|---|---|---|
| A | 900 | Lamp, Flat Base, part #794447-0YW | $150.00 | $135,000.00 |
| B | 90 | O-Ring, Sleeve Seal, 10-pack, part #316144P | $1.60 | $144.00 |
| | | | **Sub Total** | $135,144.00 |
| | | **Sales Tax:** San Bernardino, County of 7.7500% | | $10,473.66 |
| | | **Freight Terms:** F.O.B. Factory, Prepay and Add | | |
| | | | **Grand Total** | $145,617.66 |

Submittals/Drawings: __na__ weeks after receipt of order with complete information.
Shipment: 1-2 weeks after receipt of purchase order or approved drawings.
Prices quoted herein are firm for your acceptance for a period of thirty (30) days.
If prices quoted herein do not include sales or use tax, such taxes, if required, are to be paid by the purchaser.
This quotation and any resulting order will be subject to our standard terms of sale.
PAYMENT TERMS: Net 30 days

BY: Catherine M. Frost

# Capital Improvement Projects

Yucaipa Valley Water District

Yucaipa Valley Water District

# Workshop Memorandum 17-056

**Date:** April 25, 2017

**From:** Matthew Porras, Management Analyst

**Subject:** Status Report on the Construction of an 8-inch and 30-inch Water Pipelines in Acacia Avenue and First Street

On November 1, 2016, the Board of Directors authorized the District staff to solicit bids for the construction of pipelines on Acacia Avenue and First Street [Director Memorandum No. 16-104]. On January 3, 2017, the Board of Directors authorized the construction contract with Borden Excavating for the aforementioned pipelines [Director Memorandum No. 17-008]
The pipeline project involves two pipes:

- 948 linear feet of 30-inch ductile iron pipe in First Street, west on Acacia Avenue to Second Street; and
- 1005 linear feet of 8-inch ductile iron pipe in First Street and Acacia Avenue to the alley east of California Street.

The 30-inch ductile iron pipe is an extension of the existing 30-inch crosstown transmission pipeline in Second Street, east on Acacia Avenue and south on First Street to Yucaipa Boulevard and the 8-inch ductile iron pipe will support the infrastructure needs of the new Performing Arts Center replacing an old 6-inch PVC alley pipeline. This project is categorically exempt from environmental review in accordance with the California Environmental Quality Act Guidelines Section 15301(c).


04/04/2017 20:03


04/05/2017 01:34


DOOSAN

Yucaipa Valley Water District

# Workshop Memorandum 17-057

**Date:** April 25, 2017

**From:** Kathryn Hallberg, Management Analyst

**Subject:** Status Report on the Construction of the Site Improvements for the Recycled Water Booster Station 12.4.0 in Calimesa

On January 31, 2017, the Board of Directors awarded the contract to TSR Construction and Inspection for the construction of the site improvements at RWB- 12.4 Recycled Booster Station at the intersection of Myrtlewood Drive and California Street.

The project includes the construction of 315± linear feet of 8-foot 8-inch to 12-foot high masonry walls with masonry pillars, 200± linear feet of 8-foot high steel tubular fencing with access gates, site grading and furnishing, installing Class 2 base material, and site landscaping.


Bobcat

Yucaipa Valley Water District

# Workshop Memorandum 17-058

**Date:** April 25, 2017

**From:** Matthew Porras, Management Analyst

**Subject:** Status Report on the Construction of Replacement Pipelines on Date Avenue, Dodd Street, Panorama Drive, Lennox Street, Verona Street, Calvin Street, and Vista Lane - Yucaipa

On April 4, 2017, the Board of Directors awarded a construction project to Borden Excavating for the construction of replacement pipelines on Date Avenue, Dodd Street, Panorama Drive, Lennox Street, Verona Street, Calvin Street, and Vista Lane Replacement Pipelines [Director Memorandum No. 17-032]. The project includes the construction of approximately 4,600± linear feet of 8-inch Mortar Lined Ductile Iron Pipe, including various laterals, valves and appurtenances, and removal and replacement of pavement.


The purpose of this agenda item is to provide an update on the current construction activities.

# Policy Issues

Yucaipa Valley Water District

Yucaipa Valley Water District

# Workshop Memorandum 17-059

**Date:** April 25, 2017

**From:** Joseph Zoba, General Manager

**Subject:** Conversion of the Calimesa Country Club from Drinking Water to Recycled Water for Irrigation Purposes

The District staff and the owners of the Calimesa Country Club have been discussing alternative methods to convert the country club from drinking water to recycled water for irrigation use.


The District staff will be presenting an alternative method that can help to facilitate the conversion once the recycled water pipelines are constructed through the golf course and recycled water is available.

# Development Projects

Yucaipa Valley Water District

Yucaipa Valley Water District

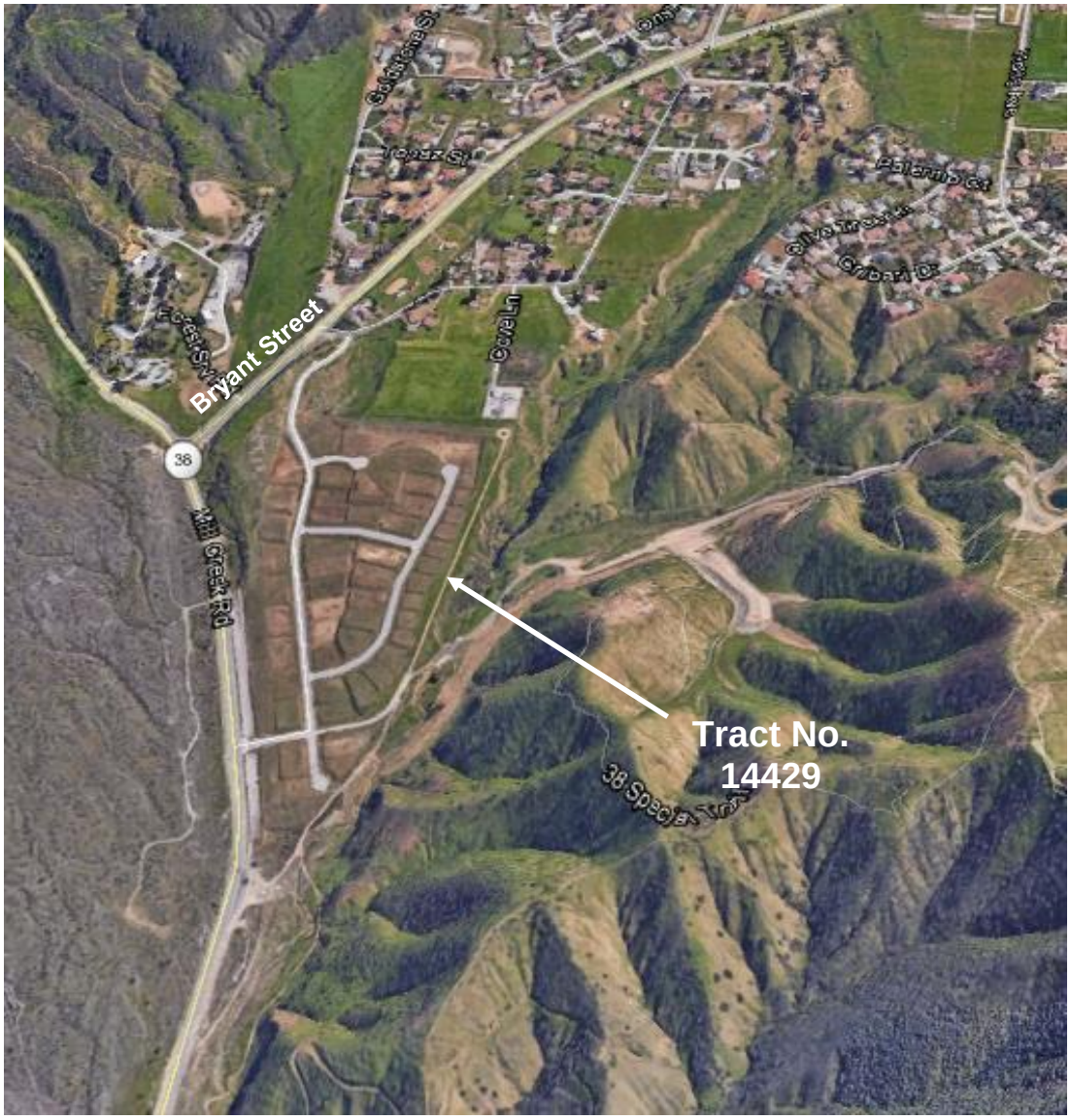
# Workshop Memorandum 17-060

**Date:** April 25, 2017

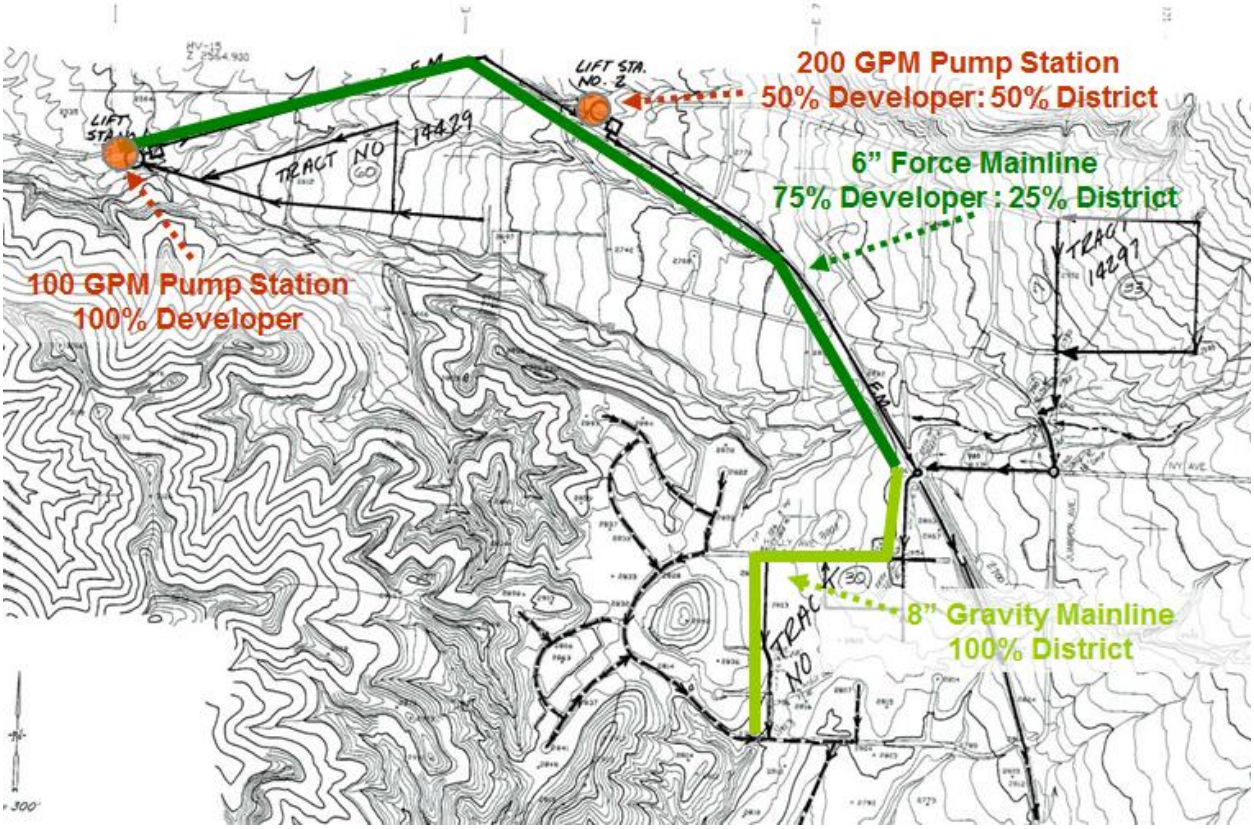
**From:** Joseph Zoba, General Manager

**Subject:** Consideration of an Updated Development Agreement with the McDougal Bros. for Tract No. 14429 - Yucaipa

On October 2, 2002, the Board of Directors approved a development agreement for Tract No. 14429 located near the intersection of Bryant Street and Highway 38.



The original development agreement required extensive offsite sewer improvements consisting of two lift stations, for mainlines and sewer collection systems. The District staff would like to present alternatives that might be included in an updated development agreement.



# Director Comments

Yucaipa Valley Water District

# Adjournment

Yucaipa Valley Water District

Yucaipa Valley Water District

# FACTS ABOUT THE YUCAIPA VALLEY WATER DISTRICT

**Service Area Size:** 40 square miles (sphere of influence is 68 square miles)

**Elevation Change:** 3,140 foot elevation change (from 2,044 to 5,184 feet)

**Number of Employees:**
5 elected board members
62 full time employees

**Operating Budget:**
Water Division - $13,397,500
Sewer Division - $11,820,000
Recycled Water Division - $537,250
Total Annual Budget - $25,754,750

**Number of Services:**
12,434 water connections serving 17,179 units
13,559 sewer connections serving 20,519 units
64 recycled water connections

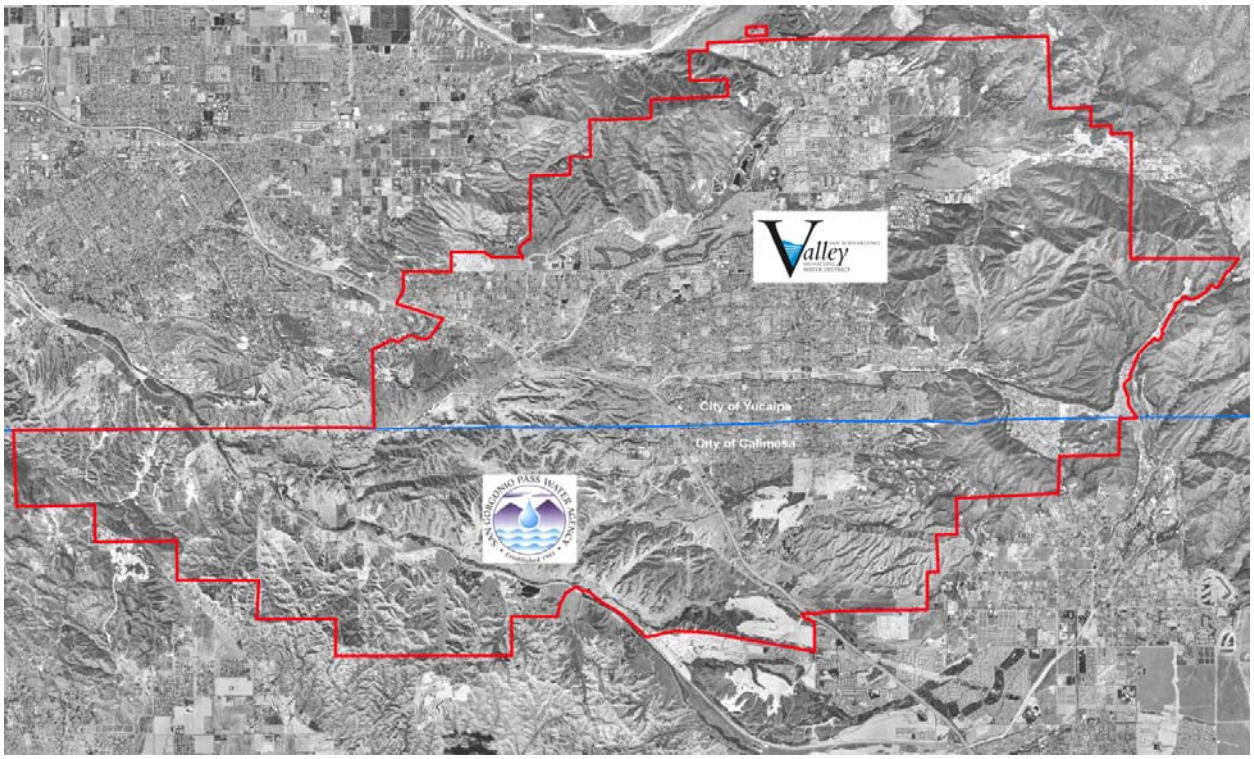
**Water System:**
215 miles of drinking water pipelines
27 reservoirs - 34 million gallons of storage capacity
18 pressure zones
12,000 ac-ft annual water demand (3.9 billion gallons)
Two water filtration facilities:
- 1 mgd at Oak Glen Surface Water Filtration Facility
- 12 mgd at Yucaipa Valley Regional Water Filtration Facility

**Sewer System:**
8.0 million gallon treatment capacity - current flow at 4.0 mgd
205 miles of sewer mainlines
5 sewer lift stations
4,500 ac-ft annual recycled water prod. (1.46 billion gallons)

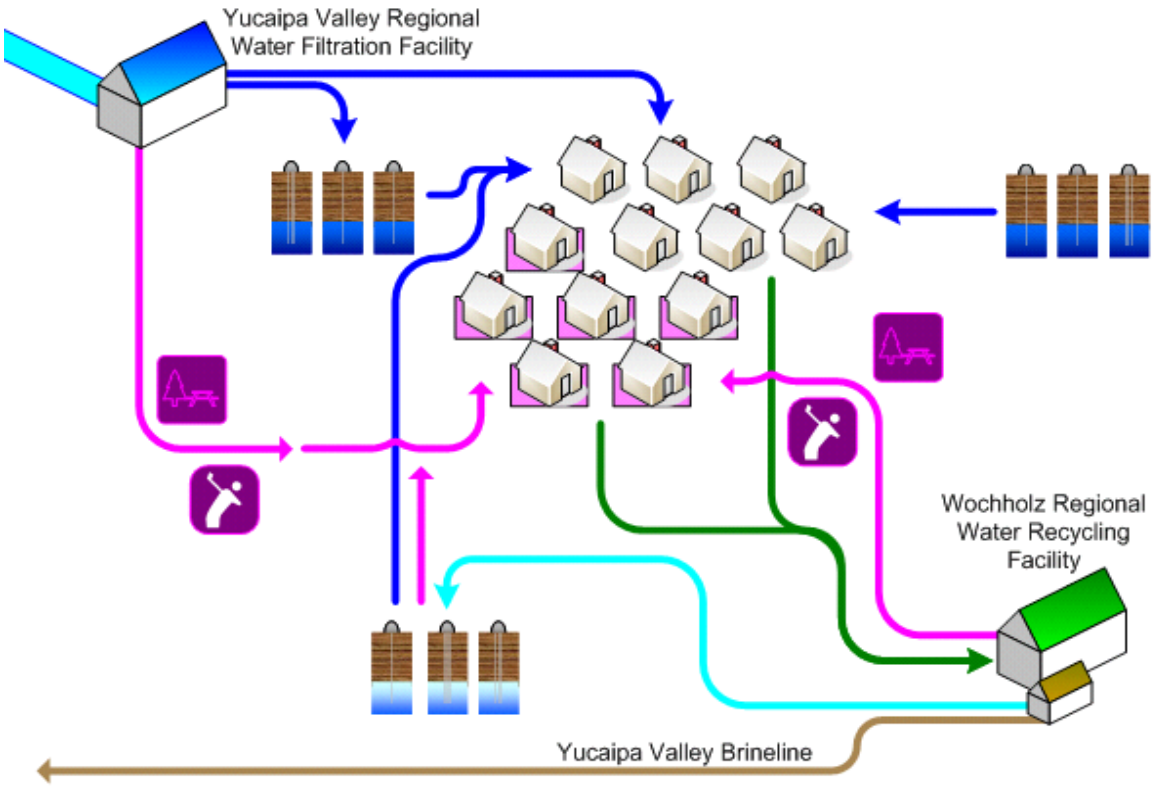
**Recycled Water:**
22 miles of recycled water pipelines
5 reservoirs - 12 million gallons of storage
1,200 ac-ft annual recycled demand (0.4 billion gallons)

**Brine Disposal:**
2.2 million gallon desalination facility at sewer treatment plant
1.108 million gallons of Inland Empire Brine Line capacity
0.295 million gallons of treatment capacity in Orange County

**State Water Contractors:** San Bernardino Valley Municipal Water District
San Gorgonio Pass Water Agency




**Sustainability Plan:** A Strategic Plan for a Sustainable Future: The Integration and Preservation of Resources, adopted on August 20, 2008.



Yucaipa Valley Water District

# THE MEASUREMENT OF WATER PURITY

***One part per hundred*** is generally represented by the percent (%).
This is equivalent to about fifteen minutes out of one day.

***One part per thousand*** denotes one part per 1000 parts.
This is equivalent to about one and a half minutes out of one day.

***One part per million*** (**ppm**) denotes one part per 1,000,000 parts.
This is equivalent to about 32 seconds out of a year.

***One part per billion*** (**ppb**) denotes one part per 1,000,000,000 parts.
This is equivalent to about three seconds out of a century.

***One part per trillion*** (**ppt**) denotes one part per 1,000,000,000,000 parts.
This is equivalent to about three seconds out of every hundred thousand years.

***One part per quadrillion*** (**ppq**) denotes one part per 1,000,000,000,000,000 parts.
This is equivalent to about two and a half minutes out of the age of the Earth (4.5 billion years).

Yucaipa Valley Water District

# GLOSSARY OF COMMONLY USED TERMS

Every profession has specialized terms which generally evolve to facilitate communication between individuals. The routine use of these terms tends to exclude those who are unfamiliar with the particular specialized language of the group. Sometimes jargon can create communication cause difficulties where professionals in related fields use different terms for the same phenomena.

Below are commonly used water terms and abbreviations with commonly used definitions. If there is any discrepancy in definitions, the District's Regulations Governing Water Service is the final and binding definition.

**Acre Foot of Water** - The volume of water (325,850 gallons, or 43,560 cubic feet) that would cover an area of one acre to a depth of 1 foot.

**Activated Sludge Process** – A secondary biological sewer treatment process where bacteria reproduce at a high rate with the introduction of excess air or oxygen, and consume dissolved nutrients in the wastewater.

**Annual Water Quality Report** - The document is prepared annually and provides information on water quality, constituents in the water, compliance with drinking water standards and educational material on tap water. It is also referred to as a Consumer Confidence Report (CCR).

**Aquifer** - The natural underground area with layers of porous, water-bearing materials (sand, gravel) capable of yielding a supply of water; see Groundwater basin.

**Backflow** - The reversal of water's normal direction of flow. When water passes through a water meter into a home or business it should not reverse flow back into the water mainline.

**Best Management Practices (BMPs)** - Methods or techniques found to be the most effective and practical means in achieving an objective. Often used in the context of water conservation.

**Biochemical Oxygen Demand (BOD)** – The amount of oxygen used when organic matter undergoes decomposition by microorganisms. Testing for BOD is done to assess the amount of organic matter in water.

**Biosolids** – Biosolids are nutrient rich organic and highly treated solid materials produced by the sewer treatment process. This high-quality product can be used as a soil amendment on farm land or further processed as an earth-like product for commercial and home gardens to improve and maintain fertile soil and stimulate plant growth.

**Catch Basin** – A chamber usually built at the curb line of a street, which conveys surface water for discharge into a storm sewer.

**Capital Improvement Program (CIP)** – Projects for repair, rehabilitation, and replacement of assets. Also includes treatment improvements, additional capacity, and projects for the support facilities.

**Collector Sewer** – The first element of a wastewater collection system used to collect and carry wastewater from one or more building sewer laterals to a main sewer.

**Coliform Bacteria** – A group of bacteria found in the intestines of humans and other animals, but also occasionally found elsewhere and is generally used as an indicator of sewage pollution.

**Combined Sewer Overflow** – The portion of flow from a combined sewer system, which discharges into a water body from an outfall located upstream of a wastewater treatment plant, usually during wet weather conditions.

**Combined Sewer System**– Generally older sewer systems designed to convey both sewage and storm water into one pipe to a wastewater treatment plant.

**Conjunctive Use** - The coordinated management of surface water and groundwater supplies to maximize the yield of the overall water resource. Active conjunctive use uses artificial recharge, where surface water is intentionally percolated or injected into aquifers for later use. Passive conjunctive use is to simply rely on surface water in wet years and use groundwater in dry years.

**Consumer Confidence Report (CCR)** - see Annual Water Quality Report.

**Cross-Connection** - The actual or potential connection between a potable water supply and a non-potable source, where it is possible for a contaminant to enter the drinking water supply.

**Disinfection By-Products (DBPs)** - The category of compounds formed when disinfectants in water systems react with natural organic matter present in the source water supplies. Different disinfectants produce different types or amounts of disinfection byproducts. Disinfection byproducts for which regulations have been established have been identified in drinking water, including trihalomethanes, haloacetic acids, bromate, and chlorite

**Drought** - a period of below average rainfall causing water supply shortages.

**Dry Weather Flow** – Flow in a sanitary sewer during periods of dry weather in which the sanitary sewer is under minimum influence of inflow and infiltration.

**Fire Flow** - The ability to have a sufficient quantity of water available to the distribution system to be delivered through fire hydrants or private fire sprinkler systems.

**Gallons per Capita per Day (GPCD)** - A measurement of the average number of gallons of water use by the number of people served each day in a water system. The calculation is made by dividing the total gallons of water used each day by the total number of people using the water system.

**Groundwater Basin** - An underground body of water or aquifer defined by physical boundaries.

**Groundwater Recharge** - The process of placing water in an aquifer. Can be a naturally occurring process or artificially enhanced.

**Hard Water** - Water having a high concentration of minerals, typically calcium and magnesium ions.

**Hydrologic Cycle** - The process of evaporation of water into the air and its return to earth in the form of precipitation (rain or snow). This process also includes transpiration from plants, percolation into the ground, groundwater movement, and runoff into rivers, streams and the ocean; see Water cycle.

**Infiltration** – Water other than sewage that enters a sewer system and/or building laterals from the ground through defective pipes, pipe joints, connections, or manholes. Infiltration does not include inflow. See *Inflow.*

**Inflow** - Water other than sewage that enters a sewer system and building sewer from sources such as roof vents, yard drains, area drains, foundation drains, drains from springs and swampy areas, manhole covers, cross connections between storm drains and sanitary sewers, catch basins, cooling towers, storm waters, surface runoff, street wash waters, or drainage. Inflow does not include infiltration. See *Infiltration*.

**Inflow / Infiltration (I/I)** – The total quantity of water from both inflow and infiltration.

**Mains, Distribution** - A network of pipelines that delivers water (drinking water or recycled water) from transmission mains to residential and commercial properties, usually pipe diameters of 4" to 16".

**Mains, Transmission** - A system of pipelines that deliver water (drinking water or recycled water) from a source of supply the distribution mains, usually pipe diameters of greater than 16".

**Meter** - A device capable of measuring, in either gallons or cubic feet, a quantity of water delivered by the District to a service connection.

**Overdraft** - The pumping of water from a groundwater basin or aquifer in excess of the supply flowing into the basin. This pumping results in a depletion of the groundwater in the basin which has a net effect of lowering the levels of water in the aquifer.

**Peak Flow** – The maximum flow that occurs over a specific length of time (e.g., daily, hourly, instantaneously).

**Pipeline** - Connected piping that carries water, oil or other liquids. See Mains, Distribution and Mains, Transmission.

**Point of Responsibility, Metered Service** - The connection point at the outlet side of a water meter where a landowner's responsibility for all conditions, maintenance, repairs, use and replacement of water service facilities begins, and the District's responsibility ends.

**Potable Water** - Water that is used for human consumption and regulated by the California Department of Public Health.

**Pressure Reducing Valve** - A device used to reduce the pressure in a domestic water system when the water pressure exceeds desirable levels.

**Pump Station** - A drinking water or recycled water facility where pumps are used to push water up to a higher elevation or different location.

**Reservoir** - A water storage facility where water is stored to be used at a later time for peak demands or emergencies such as fire suppression. Drinking water and recycled water systems will typically use concrete or steel reservoirs. The State Water Project system considers lakes, such as Shasta Lake and Folsom Lake to be water storage reservoirs.

**Runoff** - Water that travels downward over the earth's surface due to the force of gravity. It includes water running in streams as well as over land.

**Sanitary Sewer System** - Sewer collection system designed to carry sewage, consisting of domestic, commercial, and industrial wastewater. This type of system is not designed nor intended to carry water from rainfall, snowmelt, or groundwater sources. See *Combined Sewer System*.

**Sanitary Sewer Overflow** – Overflow from a sanitary sewer system caused when total wastewater flow exceeds the capacity of the system. See *Combined Sewer Overflow*.

**Santa Ana River Interceptor (SARI) Line** – A regional brine line designed to convey 30 million gallons per day of non-reclaimable wastewater from the upper Santa Ana River basin to the sewer treatment plant operated by Orange County Sanitation District.

**Secondary Treatment** – Biological sewer treatment, particularly the activated-sludge process, where bacteria and other microorganisms consume dissolved nutrients in wastewater.

**Supervisory Control and Data Acquisition (SCADA)** - A computerized system which provides the ability to remotely monitor and control water system facilities such as reservoirs, pumps and other elements of water delivery.

**Service Connection** - The water piping system connecting a customer's system with a District water main beginning at the outlet side of the point of responsibility, including all plumbing and equipment located on a parcel required for the District's provision of water service to that parcel.

**Sludge** – Untreated solid material created by the treatment of sewage.

**Smart Irrigation Controller** - A device that automatically adjusts the time and frequency which water is applied to landscaping based on real-time weather such as rainfall, wind, temperature and humidity.

**Special District** - A political subdivision of a state established to provide a public services, such as water supply or sanitation, within a specific geographic area.

**Surface Water** - Water found in lakes, streams, rivers, oceans or reservoirs behind dams.

**Total Suspended Solids (TSS)** – The amount of solids floating and in suspension in water or sewage.

**Transpiration** - The process by which water vapor is released into the atmosphere by living plants.

**Trickling Filter** – A biological secondary treatment process in which bacteria and other microorganisms, growing as slime on the surface of rocks or plastic media, consume nutrients in primary treated sewage as it trickles over them.

**Underground Service Alert (USA)** - A free service that notifies utilities such as water, telephone, cable and sewer companies of pending excavations within the area (dial 8-1-1 at least 2 working days before you dig).

**Urban Runoff** - Water from city streets and domestic properties that typically carries pollutants into the storm drains, rivers, lakes, and oceans.

**Valve** - A device that regulates, directs or controls the flow of water by opening, closing or partially obstructing various passageways.

**Wastewater** – Any water that enters the sanitary sewer.

**Water Banking** - The practice of actively storing or exchanging in-lieu surface water supplies in available groundwater basin storage space for later extraction and use by the storing party or for sale or exchange to a third party. Water may be banked as an independent operation or as part of a conjunctive use program.

**Water cycle** - The continuous movement water from the earth's surface to the atmosphere and back again; see Hydrologic cycle.

**Water Pressure** - Pressure created by the weight and elevation of water and/or generated by pumps that deliver water to the tap.

**Water Service Line** - The pipeline that delivers potable water to a residence or business from the District's water system. Typically the water service line is a 1" to 1½" diameter pipe for residential properties.

**Watershed** - A region or land area that contributes to the drainage or catchment area above a specific point on a stream or river.

**Water Table** - The upper surface of the zone of saturation of groundwater in an unconfined aquifer.

**Water Transfer** - A transaction, in which a holder of a water right or entitlement voluntarily sells/exchanges to a willing buyer the right to use all or a portion of the water under that water right or entitlement.

**Water Well** - A hole drilled into the ground to tap an underground water aquifer.

**Wetlands** - Lands which are fully saturated or under water at least part of the year, like seasonal vernal pools or swamps.

**Wet Weather Flow** – Dry weather flow combined with stormwater introduced into a combined sewer system, and dry weather flow combined with infiltration/inflow into a separate sewer system.

Yucaipa Valley Water District

# COMMONLY USED ABBREVIATIONS

| | |
|---|---|
| **AQMD** | Air Quality Management District |
| **BOD** | Biochemical Oxygen Demand |
| **CARB** | California Air Resources Board |
| **CCTV** | Closed Circuit Television |
| **CWA** | Clean Water Act |
| **EIR** | Environmental Impact Report |
| **EPA** | U.S. Environmental Protection Agency |
| **FOG** | Fats, Oils, and Grease |
| **GPD** | Gallons per day |
| **MGD** | Million gallons per day |
| **O & M** | Operations and Maintenance |
| **OSHA** | Occupational Safety and Health Administration |
| **POTW** | Publicly Owned Treatment Works |
| **PPM** | Parts per million |
| **RWQCB** | Regional Water Quality Control Board |
| **SARI** | Santa Ana River Inceptor |
| **SAWPA** | Santa Ana Watershed Project Authority |
| **SBVMWD** | San Bernardino Valley Municipal Water District |
| **SCADA** | Supervisory Control and Data Acquisition system |
| **SSMP** | Sanitary Sewer Management Plan |
| **SSO** | Sanitary Sewer Overflow |
| **SWRCB** | State Water Resources Control Board |
| **TDS** | Total Dissolved Solids |
| **TMDL** | Total Maximum Daily Load |
| **TSS** | Total Suspended Solids |
| **WDR** | Waste Discharge Requirements |
| **YVWD** | Yucaipa Valley Water District |