FEE EXEMPT

SCOTT S. SLATER (State Bar No. 117317)
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Attorneys for
CHINO BASIN WATERMASTER

SUPERIOR COURT OF THE STATE OF CALIFORNIA

FOR THE COUNTY OF SAN BERNARDINO

CHINO BASIN MUNICIPAL WATER DISTRICT,

Plaintiff,

v.

CITY OF CHINO, ET. AL,

Defendant.

Case No. RCV RS51010

Assigned for All Purposes to the Honorable Stanford E. Reichert

REQUEST FOR THE COURT TO: (1) APPROVE THE INTERVENTIONS OF CALMAT CO. AND NCL CO., LLC INTO THE APPROPRIATIVE POOL; AND, (2) RECEIVE AND FILE THE 39TH ANNUAL REPORT, THE 2016 ANNUAL REPORT OF THE GROUND-LEVEL MONITORING COMMITTEE, AND THE SEMI-ANNUAL OBMP STATUS REPORTS

Hearing Date: December 15, 2017
Time: 1:30 p.m.
Dept.: S35

[Declaration of Bradley J. Herrema and [Proposed] Order filed concurrently herewith]

TO ALL PARTIES AND THEIR RESPECTIVE ATTORNEYS OF RECORD:

PLEASE TAKE NOTICE THAT, on December 15, 2017 at 1:30 p.m. in Department S35 of the above-entitled court located at 247 West Third Street, San Bernardino, California 92415-0210, the Chino Basin Watermaster ("Watermaster") will hereby request that the Court: (1) approve the interventions of Calmat Co. and NCL Co., LLC into the Appropriative Pool; and, (2) receive and file the 39th Watermaster Annual Report, the 2016 Annual Report of the Ground-Level Monitoring Committee, and the Semi-Annual OBMP Status Reports.

Watermaster's request will be based upon this notice, the memorandum of points and authorities attached hereto, the Declaration of Bradley J. Herrema concurrently filed herewith, all documents on file herein, and such oral and documentary evidence as may be presented at the time of the hearing on this matter.

Dated: November 17, 2017

BROWNSTEIN HYATT FARBER SCHRECK, LLP

By: _____

SCOTT S. SLATER
BRADLEY J. HERREMA
Attorneys for
CHINO BASIN WATERMASTER

BROWNSTEIN HYATT FARBER SCHRECK, LLP
1020 State Street
Santa Barbara, CA 93101-2711

MEMORANDUM OF POINTS AND AUTHORITIES

The Chino Basin Watermaster ("Watermaster") hereby requests that the Court: (1) approve the interventions of Calmat Co. ("Calmat") and NCL Co., LLC ("NCL") into the Appropriative Pool; and, (2) receive and file the 39th Watermaster Annual Report, the 2016 Annual Report of the Ground-Level Monitoring Committee ("GLMC"), and the Semi-Annual OBMP Status Reports.

I. REQUESTS FOR INTERVENTION OF CALMAT AND NCL

Watermaster respectfully requests approval of the intervention of Calmat and NCL into the Appropriative Pool. Watermaster's practice has been to accept intervention requests informally by way of a letter and then process the requests through the Pool Committees, Advisory Committee, and Watermaster Board. After this internal process, Watermaster files the request for intervention with the Court for approval along with Watermaster's recommendation as to its disposition, provided that at least 48 hours' notice is provided to any party. (Restated Judgment, ¶ 60 and Order re Intervention Procedures, July 14, 1978.) Only after Court approval is an intervenor bound by the Restated Judgment and entitled to the rights and privileges accorded under the Physical Solution. (Restated Judgment, ¶ 60.) Neither the Restated Judgment nor the July 14, 1978 Order requires a hearing to be held for uncontested interventions.

Parties may request intervention into a particular Pool when changing the character of their use – so as to be assigned to the proper pool – or when proposing to become a new party to the Restated Judgment. (Restated Judgment, ¶ 43.) Under common law, an appropriative right is established by a party having: (1) the intent to appropriate the water and apply it to beneficial use; (2) actually extracting groundwater; and, (3) applying the water to a beneficial use within a reasonable time. (*Turlock Irrigation Dist. v. Zanker* (2006) 140 Cal.App.4th 1047, 1054.)

Calmat's and NCL's intervention requests to join the Appropriative Pool under the Restated Judgment were submitted on August 14, 2017, in order for Calmat to accept a transfer of appropriative water from San Antonio Water Company ("SAWCo"), pursuant to SAWCo's Appropriative Rights. (Declaration of Bradley J. Herrema ("Herrema Decl."), at ¶ 3, Ex. 1, Watermaster Staff Report, CalMat Co. Request for Intervention into the Appropriative Pool, Oct.

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26, 2017, Ex. 2, Watermaster Staff Report, NCL Co., LLC Request for Intervention into Appropriative Pool, Oct. 26, 2017.) While the transfer application has been withdrawn by SAWCo pending approval of Calmat's intervention, both Calmat and NCL have requested to proceed with their interventions into the Appropriative Pool in order to accept transfer of water pursuant to Appropriative Rights in the future.

In addition to its request to intervene into the Appropriative Pool, Calmat is an existing member of the Overlying Non-Agricultural Pool, having formerly held Overlying Rights, owns property within the Basin, and has a well located upon its property through which it might pump the water for industrial use. (Herrema Decl., at ¶ 3, Ex. 1.) NCL has indicated that it will use this same well to pump water from the Basin for industrial use on this same property. (Herrema Decl., at ¶ 3, Ex. 2.) Therefore, Calmat and NCL both satisfy the common law and the Restated Judgment requirements for appropriation of water. Upon intervention into the Appropriative Pool, both entities have stated that they intend to exercise any Appropriative Rights in a manner consistent with the Restated Judgment, which would require Watermaster approval of any transfers or storage of water. (*Id.*)

Watermaster staff recommended support for approval of the intervention requests. The recommendation of approval of the requests was unanimously approved by the Non-Agricultural Pool Committee and the Agricultural Pool Committee at their September 14, 2017 meetings; the Appropriative Pool Committee deferred consideration of the requests at that time and again at its October 12, 2017 meeting. (Herrema Decl., at ¶ 3, Exs. 1 & 2.) On October 19, 2017, the Advisory Committee voted by a 79.08% volume vote in favor of recommending approval of the interventions. On October 26, 2017, the Watermaster Board unanimously voted to recommend approval of the interventions requests by Calmat and NCL for approval by the Court. (*Id.*)

II. FILING OF ANNUAL AND SEMI-ANNUAL REPORTS

Finally, to complete the Court's files, Watermaster hereby files with the Court copies of Watermaster's Thirty-Ninth Annual Report (Fiscal Year 2015-2016), which the Watermaster Board approved at its May 25, 2017 regular meeting (Herrema Decl., at ¶ 4, Ex. 3), the GLMC's 2016 Annual Report, which the Watermaster Board approved at its September 28, 2017 regular

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meeting (Herrema Decl., at ¶ 5, Ex. 4), and Watermaster's Semi-Annual OBMP Status Reports 2016-2 (July to December 2016) and 2017-1 (January to June 2017), which the Watermaster Board approved at its September 28, 2017 regular meeting (Herrema Decl., at ¶ 6, Ex. 5). Watermaster requests that the Court receive and file these Annual and Semi-Annual Reports. Watermaster knows of no opposition to the Court receiving and filing these reports. (Herrema Decl., at ¶ 7.)

Dated: November 17, 2017

BROWNSTEIN HYATT FARBER SCHRECK, LLP

By: _____

SCOTT S. SLATER
BRADLEY J. HERREMA
Attorneys for
CHINO BASIN WATERMASTER

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Attorneys for
CHINO BASIN WATERMASTER

SUPERIOR COURT OF THE STATE OF CALIFORNIA

FOR THE COUNTY OF SAN BERNARDINO

CHINO BASIN MUNICIPAL WATER DISTRICT,

Plaintiff,

v.

CITY OF CHINO, ET. AL,

Defendant.

Case No. RCV RS51010

Assigned for All Purposes to the Honorable Stanford E. Reichert

DECLARATION OF BRADLEY J. HERREMA IN SUPPORT OF WATERMASTER'S REQUEST FOR THE COURT TO: (1) APPROVE THE INTERVENTIONS OF CALMAT CO. AND NCL CO., LLC INTO THE APPROPRIATIVE POOL; AND, (2) RECEIVE AND FILE THE 39TH ANNUAL REPORT, THE 2016 ANNUAL REPORT OF THE GROUND-LEVEL MONITORING COMMITTEE, AND THE SEMI-ANNUAL OBMP STATUS REPORTS

Hearing Date: December 15, 2017
Time: 1:30 p.m.
Dept.: S35

[Watermaster Request and [Proposed] Order filed concurrently herewith]

DECLARATION OF BRADLEY J. HERREMA

I, Bradley J. Herrema, declare:

1. I am an attorney duly admitted to practice before all of the courts of this State, and am a shareholder in the law firm of Brownstein Hyatt Farber Schreck, LLP, counsel of record for Chino Basin Watermaster ("Watermaster"). I have personal knowledge of the facts stated in this declaration, except where stated on information and belief, and, if called as a witness, I could and would competently testify to them under oath. I make this declaration in support of the above-referenced request.

2. As legal counsel for Watermaster, I am familiar with Watermaster's practices and procedures, as well as actions taken by the Pool Committees, Advisory Committee, and Board.

3. At its regularly scheduled meeting on October 26, 2017, the Watermaster Board unanimously voted to recommend to the Court the approval of intervention requests submitted by Calmat Co. and NCL Co., LLC. A true and correct copy of the October 26, 2017 Watermaster Staff Report detailing the Calmat Co. request and Pool Committee and Advisory Committee actions on the request is attached hereto as Exhibit 1. A true and correct copy of the October 26, 2017 Watermaster Staff Report detailing the NCL Co., LLC request and Pool Committee and Advisory Committee actions on the request is attached hereto as Exhibit 2.

4. At its regularly scheduled meeting on May 25, 2017, the Watermaster Board unanimously approved Watermaster's Thirty-Ninth Annual Report (Fiscal Year 2015-2016), a true and correct copy of which is attached hereto as Exhibit 4, and directed its filing with the Court.

5. At its regularly scheduled meeting on September 28, 2017, the Watermaster Board unanimously approved the 2016 Annual Report of the Ground-Level Monitoring Committee, a true and correct copy of which is attached hereto as Exhibit 3, and directed its filing with the Court.

6. At its regularly scheduled meeting on September 28, 2017, the Watermaster Board unanimously approved the Watermaster's Semi-Annual OBMP Status Reports 2016-2 (July to December 2016) and 2017-1 (January to June 2017), true and correct copies of which are attached

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1020 State Street
Santa Barbara, CA 93101-2711

hereto as Exhibit 5, and directed their filing with the Court.

7. Watermaster knows of no opposition to the Court receiving and filing these annual and semi-annual reports referenced in paragraphs 4, 5 and 6.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct. Dated this November 17, 2017, at San Marino, California.

Bradley J. Herrema

16150573

BROWNSTEIN HYATT FARBER SCHRECK, LLP
1020 State Street
Santa Barbara, CA 93101-2711

SUPERIOR COURT OF THE STATE OF CALIFORNIA

FOR THE COUNTY OF SAN BERNARDINO

CHINO BASIN MUNICIPAL WATER DISTRICT,

Plaintiff,

v.

CITY OF CHINO, ET. AL,

Defendant.

Case No. RCV RS51010

Assigned for All Purposes to the Honorable Stanford E. Reichert

[PROPOSED] ORDER RE WATERMASTER'S REQUEST FOR THE COURT TO: (1) APPROVE THE INTERVENTIONS OF CALMAT CO. AND NCL CO., LLC INTO THE APPROPRIATIVE POOL; AND, (2) RECEIVE AND FILE THE 39TH ANNUAL REPORT, THE 2016 ANNUAL REPORT OF THE GROUND-LEVEL MONITORING COMMITTEE, AND THE SEMI-ANNUAL OBMP STATUS REPORTS

Hearing Date: December 15, 2015
Time: 1:30 p.m.
Dept.: S35

[Watermaster Request and Declaration of Bradley J. Herrema filed concurrently herewith]

[PROPOSED] ORDER

On December 15, 2017, Watermaster's Motion requesting that the Court: (1) approve the interventions of Calmat Co. and NCL Co., LLC into the Appropriative Pool; and, (2) receive and file the 39th Watermaster Annual Report, the 2016 Annual Report of the Ground-Level Monitoring Committee, and the Semi-Annual OBMP Status Reports, came on regularly for hearing in the above-captioned matter. Having read and considered the papers and heard the arguments of counsel, the Motion is **GRANTED.** It is **HEREBY ORDERED** that:

1. The Court hereby grants the intervention requests of Calmat Co. and NCL Co., LLC into the Appropriative Pool. Each party shall be a member of the Appropriative Pool and, as a member of such pool, have an adjudicated appropriative production right of zero acre feet per year. Each party shall be bound by all benefits and burdens of the Restated Judgment;
2. The Court hereby receives and files the 39th Watermaster Annual Report, the 2016 Annual Report of the Ground-Level Monitoring Committee, and the Semi-Annual OBMP Status Reports 2016-2 (July to December 2016) and 2017-1 (January to June 2017).

Dated: _____

_____
Hon. Stanford E. Reichert
Judge of the Superior Court

16150504

Exhibit 1

CHINO BASIN WATERMASTER

I. CONSENT CALENDAR

G. CALMAT CO. REQUEST FOR INTERVENTION INTO APPROPRIATIVE POOL

CHINO BASIN WATERMASTER

9641 San Bernardino Road, Rancho Cucamonga, Ca 91730
Tel: 909.484.3888 Fax: 909.484.3890 www.cbwm.org

PETER KAVOUNAS, P.E.
General Manager

STAFF REPORT

DATE: October 26, 2017

TO: Board Members

SUBJECT: CalMat Co. Request for Intervention into Appropriative Pool (Consent Calendar Item I.G.)

SUMMARY

Issue: On August 14, 2017, Watermaster received a request for intervention into the Appropriative Pool from CalMat Co.

Recommendation: File the request for intervention with the Court.

Financial Impact: None.

Future Consideration
Watermaster Board: October 26, 2017: Recommend to Court

ACTIONS:
Non-Agricultural Pool – September 14, 2017: Unanimously recommended Pool representatives to support at the Advisory Committee and Board meetings subject to changes which they deem appropriate
Agricultural Pool – September 14, 2017: Unanimously recommended to the Advisory Committee to recommend to the Watermaster Board to recommend to the Court to approve the request for intervention
Appropriative Pool: October 12, 2017: Unanimously voted to consider the request during the October 19, 2017 Advisory Committee meeting, after requesting further information from the applicant
Advisory Committee: October 19, 2017: Passed by majority 79.080% volume vote in favor of recommending Watermaster to recommend to Court

BACKGROUND

By letter dated August 14, 2017 (Attachment 1) CalMat Co. (CalMat) requested to intervene in the Appropriative Pool. CalMat is a division of Vulcan Materials Co., an existing party to the Judgment, and a member of the Non-Agricultural Pool with no current entitlement to Safe Yield. CalMat is also a shareholder in San Antonio Water Company[1] ("SAWCo"). SAWCo and CalMat previously submitted Consolidated Forms 3, 4 & 5 (Application for Sale or Transfer of Right to Produce Water from Storage, Application or Amendment to Application to Recapture Water in Storage, and Application to Transfer Annual Production Right or Safe Yield – Attachment 2), requesting the transfer of 4.375 acre feet of water to CalMat, pursuant to which, CalMat might obtain a share of SAWCo water by pumping through its own well. By letter of October 4, 2017, SAWCo indicated that it was withdrawing the transfer (Attachment 3). CalMat has indicated that it still wishes, at a future date, to obtain water through a transfer from SAWCo.

Interventions are governed by paragraph 60 of the Restated Judgment: "Any non-party assignee of the adjudicated appropriative rights of any appropriator, or any other person newly proposing to produce water from the Chino Basin, may become a party to this Judgment upon filing a petition in intervention. Said intervention must be confirmed by order of [the] Court. Such intervenor shall thereafter be a party bound by [the] Judgment and entitled to the rights and privileges accorded under the Physical Solution ... through the pool to which the Court shall assign such intervenor."

Watermaster's practice has been to accept intervention requests informally by way of a letter and then process the request through the Pool Committees, Advisory Committee and Board. After this internal process, the request for intervention is filed with the Court for approval with Watermaster's recommendation as to its disposition.

The Restated Judgment provides that Parties changing the character of their use or new parties intervening into the Restated Judgment will be assigned to the proper Pool by the order of the Court authorizing such intervention. (Restated Judgment, ¶ 43.) It further provides that a producer is assigned to the Appropriative Pool if it is an owner of appropriative rights. (Restated Judgment, ¶ 43(c).)

The Appropriative Pool Pooling Plan, Exhibit "H" to the Restated Judgment, describes the membership of the Appropriative Pool as including "Any city, district or other public entity and public utility – either regulated under Public Utilities Commission jurisdiction, or exempt therefrom as a non-profit mutual water company (other than those assigned to the Overlying (Agricultural) Pool)." (Restated Judgment, Ex. "H", § 1.) Since the time of the Judgment's entrance, at least three non-purveyor entities have previously intervened and been assigned by the Court – consistent with Watermaster's recommendation – to the Appropriative Pool: Arrowhead Mountain Springs Water Company in 1993, Nicholson Trust in 2001 or 2002 and Niagara Bottling, LLC in 2003, and each of these entities remains a member of the Appropriative Pool. Relevant in this case, neither Arrowhead nor Niagara own any Appropriative Rights, and the Nicholson Trust was the recipient of a portion of the former rights of Fontana Union Water Company.

DISCUSSION

CalMat requested intervention into the Appropriative Pool for the purpose of accepting the transfer of 4.375 acre feet of water from SAWCo, pursuant to SAWCo's appropriative right, in order to receive water pursuant to its rights as a SAWCo shareholder. CalMat intends to exercise this appropriative right – or any others which it may be assigned - as a member of the Appropriative Pool, separate and apart from any water it might produce pursuant to an Overlying Right as a member of the Non-Agricultural Pool.

[1] San Antonio Water Company (SAWCo) is an original Appropriative Pool Party to the Judgment entered in *Chino Basin Municipal Water District v. City of Chino, et al.*, San Bernardino Superior Court No. RVCRS 51010 (formerly 164327), on January 27, 1978. As a member of the Appropriative Pool, San Antonio Water Company currently owns water rights comprising 1,506.888 acre feet of Safe Yield.

To the extent it does not produce this water, CalMat would require a Storage agreement with Watermaster. The transfer from SAWCo to CalMat was the subject of a separate item on the September 14, 2017 Pool meeting agenda – it was approved by both the Overlying Pool Committees and deferred by the Appropriative Pool.

Although CalMat is a Party to the Judgment and a member of the Overlying (Non-Ag) Pool, for purposes of the potential exercise of an Appropriative Right it would be considered a Non-Appropriative Pool Party Assignee of Appropriative Rights, or, alternatively, could be considered to be newly proposing to Produce water pursuant to an Appropriative Right. (See Restated Judgment, ¶ 60.) While CalMat may not be proposing to make a new end use pursuant to use of an Appropriative Right, by use of an Appropriative Right, it would be changing the character of the water right pursuant to which it makes such end use. (See Restated Judgment, ¶ 43.)

CalMat seeks intervention to exercise Appropriative Rights. Watermaster staff interprets the language of the Appropriative Pooling Plan (Exhibit H, § 1) referenced above as a description of the members of the Pool at the time of the Judgment, and not a limit to membership in the Pool to water purveyors. Further, given the prior intervention of non-purveyor entities, such as Arrowhead, Niagara, and the Nicholson Trust, into the Appropriative Pool for similar purposes, Watermaster staff believes intervention by CalMat into the Appropriative Pool to be appropriate in this instance. On this basis, Watermaster staff recommends the approval of the request for intervention.

ATTACHMENTS

1. August 14, 2017 Letter from Kevin Sage RE Intervention into Chino Basin Watermaster
2. Consolidated Forms 3, 4, and 5
3. Letter from SAWCo dated October 4, 2017 withdrawing the 4.375 AF water transfer

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Attachment 1

Date: August 14, 2017

Chino Basin Watermaster
9641 San Bernardino Road
Rancho Cucamonga, CA 91730
Attn: Peter Kavounas, PE, General Manager

Subject: Intervention into Chino Basin Watermaster

Dear Mr. Kavounas:

I, or the company I represent (see below), request intervention into the Chino Basin Watermaster Judgment. I/we request that the Watermaster attorneys process the intervention paperwork through the Court.

Number of wells: 1

Permission is granted to obtain drilling logs from: Yes

Location(s) of wells (including addresses, parcel numbers, and landmarks):

4711 Huntington Drive, Claremont, California 91763 (existing CalMat well)

Type of usage (Irrigation, Dairy, Domestic, etc.):

Industrial

Property Owner (Well Owner) Information:

Name: Ca Mat Co.

Address: 405 North ndian Hill Boulevard, Claremont, California 91711

Phone: (909) 621-1266 Email:

Property Occupant (Well User) Information (if different from Owner):

Name: CalMat Co.

Address: 405 North Indian Hill Boulevard, Claremont California 91711

Phone: (909) 621-1266 Email:

Representative Handling Intervention:

Name: Kevin Sage Title: Resource Manager

Address: 405 North Indian Hil Boulevard, Claremont, CA 91711

Phone: (909) 621-1266 Email: ksage@irmwater.com

Sincerely,

Signed: Print name: Kevin Sage

February 2017

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Consolidated Forms 3, 4 & 5

CONSOLIDATED WATER TRANSFER FORMS:
FORM 3: APPLICATION FOR SALE OR TRANSFER OF RIGHT TO PRODUCE WATER FROM STORAGE
FORM 4: APPLICATION OR AMENDMENT TO APPLICATION TO RECAPTURE WATER IN STORAGE
FORM 5: APPLICATION TO TRANSFER ANNUAL PRODUCTION RIGHT OR SAFE YIELD

FISCAL YEAR 2017 - 2018

DATE REQUESTED: August 14, 2017 **AMOUNT REQUESTED:** 4,375 Acre-Feet

TRANSFER FROM (SELLER / TRANSFEROR):	**TRANSFER TO (BUYER / TRANSFEREE):**
San Antonio Water Company Name of Party	Vulcan Materials Company Name of Party
139 North Euclid Avenue Street Address	405 North Indian Hill Boulevard Street Address
Upland / CA / 91786 City / State / Zip Code	Claremont / CA / 91711 City / State / Zip Code
(909) 982-4107 Telephone	(909) 621-1266 Telephone
 Facsimile	(909) 621-1196 Facsimile

Have any other transfers been approved by Watermaster between these parties covering the same fiscal year? Yes ☐ No ☒

PURPOSE OF TRANSFER:

- ☐ Pump when other sources of supply are curtailed
- ☐ Pump to meet current or future demand over and above production right
- ☐ Pump as necessary to stabilize future assessment amounts
- ☒ Other, explain Transfer unused entitlement

WATER IS TO BE TRANSFERRED FROM:

- ☐ Annual Production Right (Appropriative Pool) or Operating Safe Yield (Non-Agricultural Pool)
- ☐ Storage
- ☐ Annual Production Right / Operating Safe Yield first, then any additional from Storage
- ☒ Other, explain. Excess Carryover Account

WATER IS TO BE TRANSFERRED TO:

- ☐ Annual Production Right / Operating Safe Yield (common)
- ☐ Storage (rare)
- ☒ Other, explain Local Supplemental

IS THE 85/15 RULE EXPECTED TO APPLY? (If yes, all answers below must be "yes.")	Yes ☐	No ☒
Is the Buyer an 85/15 Party?	Yes ☐	No ☒
Is the purpose of the transfer to meet a current demand over and above production right?	Yes ☐	No ☒
Is the water being placed into the Buyer's Annual Account?	Yes ☐	No ☒

IF WATER IS TO BE TRANSFERRED FROM STORAGE:

Projected Rate of Recapture _____ Projected Duration of Recapture _____

METHOD OF RECAPTURE (e.g. pumping, exchange, etc.):

_____

PLACE OF USE OF WATER TO BE RECAPTURED:

_____

LOCATION OF RECAPTURE FACILITIES (IF DIFFERENT FROM REGULAR PRODUCTION FACILITIES):

_____

WATER QUALITY AND WATER LEVELS

Are the Parties aware of any water quality issues that exist in the area? Yes ☐ No ☒

If yes, please explain:

_____

What are the existing water levels in the areas that are likely to be affected?

_____

MATERIAL PHYSICAL INJURY

Are any of the recapture wells located within Management Zone 1? Yes ☒ No ☐

Is the Applicant aware of any potential Material Physical Injury to a party to the Judgment or the Basin that may be caused by the action covered by the application? Yes ☐ No ☐

If yes, what are the proposed mitigation measures, if any, that might reasonably be imposed to ensure that the action does not result in Material Physical Injury to a party to the Judgment or the Basin?

_____

_____

_____

SAID TRANSFER SHALL BE CONDITIONED UPON:

(1) Transferee shall exercise said right on behalf of Transferor under the terms of the Judgment, the Peace Agreement, the Peace II Agreement, and the Management Zone 1 Subsidence Management Plan for the period described above. The first water produced in any year shall be that produced pursuant to carry-over rights defined in the Judgment. After production of its carry-over rights, if any, the next (or first if no carry-over rights) water produced by Transferee from the Chino Basin shall be that produced hereunder.

(2) Transferee shall put all waters utilized pursuant to said Transfer to reasonable beneficial use.

(3) Transferee shall pay all Watermaster assessments on account of the water production hereby Transferred.

(4) Any Transferee not already a party must intervene and become a party to the Judgment.

ADDITIONAL INFORMATION ATTACHED Yes ☐ No ☒

Seller / Transferor Representative Signature

Charles Moorrees
Seller / Transferor Representative Name (Printed)

Buyer / Transferee Representative Signature

Kevin Sage
Buyer / Transferee Representative Name (Printed)

TO BE COMPLETED BY WATERMASTER STAFF:

DATE OF WATERMASTER NOTICE: _____

DATE OF APPROVAL FROM APPROPRIATIVE POOL: _____

DATE OF APPROVAL FROM NON-AGRICULTURAL POOL: _____

DATE OF APPROVAL FROM AGRICULTURAL POOL: _____

HEARING DATE, IF ANY: _____

DATE OF ADVISORY COMMITTEE APPROVAL: _____

DATE OF BOARD APPROVAL: _____

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CHINO BASIN WATERMASTER

NOTICE

OF

APPLICATION(S)

RECEIVED FOR

WATER TRANSACTIONS – ACTIVITIES

Date of Notice:

September 8, 2017

This notice is to advise interested persons that the attached application(s) will come before the Watermaster Board on or after 30 days from the date of this notice.

TRANSFER OF WATER

A party to the Judgment has submitted a proposed transfer of water for Watermaster approval. Unless contrary evidence is presented to Watermaster that overcomes the rebuttable presumption provided in Section 5.3(b)(iii) of the Peace Agreement, Watermaster must find that there is "no material physical injury" and approve the transfer. Watermaster staff is not aware of any evidence to suggest that this transfer would cause material physical injury and hereby provides this notice to advise interested persons that this transfer will come before the Watermaster Board on or after 30 days from the date of this notice. The attached staff report will be included in the meeting package at the time the transfer begins the Watermaster process (comes before Watermaster).

NOTICE OF APPLICATION(S) RECEIVED

Date of Application: **August 14, 2017** Date of this notice: **September 8, 2017**

Please take notice that the following Application has been received by Watermaster:

- Notice of Sale or Transfer – The purchase of 4.375 acre-feet of water from San Antonio Water Company by Calmat Company (Vulcan Materials). This purchase is made from San Antonio Water Company's Excess Carryover Account. Calmat Company (Vulcan Materials) is utilizing this transaction to produce its San Antonio Water Company shares. This transfer is contingent on Calmat Company (Vulcan Materials) successful intervention in to the Appropriative Pool.

This ***Application*** will first be considered by each of the respective pool committees on the following dates:

Appropriative Pool:	September 14, 2017
Non-Agricultural Pool:	September 14, 2017
Agricultural Pool:	September 14, 2017

This ***Application*** will be scheduled for consideration by the Advisory Committee ***no earlier than thirty days from the date of this notice and a minimum of twenty-one calendar days*** after the last pool committee reviews it.

After consideration by the Advisory Committee, the ***Application*** will be considered by the Board.

Unless the ***Application*** is amended, as ***Contests*** must be submitted a minimum of fourteen (14) days prior to the Advisory Committee's consideration of an ***Application,*** parties to the Judgment may file ***Contests*** to the ***Application*** with Watermaster ***within seven calendar days*** of when the last pool committee considers it. Any ***Contest*** must be in writing and state the basis of the ***Contest.***

Watermaster address:

Chino Basin Watermaster
9641 San Bernardino Road
Rancho Cucamonga, CA 91730

Tel: (909) 484-3888
Fax: (909) 484-3890

ATTACHMENT 3

San Antonio Water Company

Incorporated October 25, 1882

Serving the original Ontario Colony lands

October 4, 2017

Mr. Bob Bowcock
Calmat Company
405 North Indian Hill Boulevard
Claremont, CA 91711

Re: Chino Basin Water Transfer 4.375AF

Please be advised that the San Antonio Water Company hereby withdraws the subject transfer of 4.375 AF to Calmat dated August 14, 2017.

Charles Moorrees
General Manager
/cm

Cc: PKavounas/CBWM
TCorbin/Chair CB Appropriate Pool
SAWCo Board
TMcPeters/Legal Counsel

Exhibit 2

CHINO BASIN WATERMASTER

I. CONSENT CALENDAR

H. NCL CO., LLC REQUEST FOR INTERVENTION INTO APPROPRIATIVE POOL

CHINO BASIN WATERMASTER

9641 San Bernardino Road, Rancho Cucamonga, Ca 91730
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PETER KAVOUNAS, P.E.
General Manager

STAFF REPORT

DATE: October 26, 2017

TO: Board Members

SUBJECT: NCL Co. LLC Request for Intervention into Appropriative Pool
(Consent Calendar Item I.H.)

SUMMARY

Issue: On August 14, 2017, Watermaster received a request for intervention into the Appropriative Pool from NCL Co. LLC.

Recommendation: File the request for intervention with the Court.

Financial Impact: None.

Future Consideration
Watermaster Board: October 26, 2017: Recommend to Court

ACTIONS:
Non-Agricultural Pool – September 14, 2017: Unanimously recommended Pool representatives to support at the Advisory Committee and Board meetings subject to changes which they deem appropriate
Agricultural Pool – September 14, 2017: Unanimously recommended to the Advisory Committee to recommend to the Watermaster Board to recommend to the Court to approve the request for intervention
Appropriative Pool: October 12, 2017: Unanimously voted to consider the request during the October 19, 2017 Advisory Committee meeting, after requesting further information from the applicant
Advisory Committee: October 19, 2017: Passed by majority 79.080% volume vote in favor of recommending Watermaster to recommend to Court

BACKGROUND

By letter dated August 14, 2017 (Attachment 1) NCL Co. LLC (NCL) – not a party to the Judgment – requested to intervene in the Appropriative Pool for the purpose of accepting future transfers of water from CalMat Co. (CalMat). CalMat has also requested to intervene in the Appropriative Pool (see Consent Calendar I.D. of this October 12, 2017 agenda).

Simultaneously with the proposed SAWCo and CalMat transfer (see Consent Calendar I.D., CalMat and NCL Co. LLC (NCL) have submitted Consolidated Forms 3, 4 & 5 (Application for Sale or Transfer of Right to Produce Water from Storage, Application or Amendment to Application to Recapture Water in Storage, and Application to Transfer Annual Production Right or Safe Yield – Attachment 2) to transfer 4.00 acre feet of the appropriative right CalMat would receive from SAWCo to NCL. This proposed transfer was deferred by the Appropriative Pool, and unanimously approved by the Overlying (Non-Agricultural) Pool and the Overlying (Agricultural) Pool during the September 2017 Pool Committee meetings.

Interventions are governed by paragraph 60 of the Restated Judgment: "Any non-party assignee of the adjudicated appropriative rights of any appropriator, or any other person newly proposing to produce water from the Chino Basin, may become a party to this Judgment upon filing a petition in intervention. Said intervention must be confirmed by order of [the] Court. Such intervenor shall thereafter be a party bound by [the] Judgment and entitled to the rights and privileges accorded under the Physical Solution ... through the pool to which the Court shall assign such intervenor."

Watermaster's practice has been to accept interventions informally by way of a letter request and then process the request through the Pools, Advisory Committee and Board. After this internal approval process, the request for intervention is filed with the Court for approval.

The Restated Judgment provides that Parties changing the character of their use or new parties intervening into the Restated Judgment will be assigned to the proper Pool by the order of the Court authorizing such intervention. (Restated Judgment, ¶ 43.) It further provides that a producer is assigned to the Appropriative Pool if it is an owner of appropriative rights. (Restated Judgment, ¶ 43(c).)

The Appropriative Pool Pooling Plan, Exhibit "H" to the Restated Judgment, describes the membership of the Appropriative Pool as including "Any city, district or other public entity and public utility – either regulated under Public Utilities Commission jurisdiction, or exempt therefrom as a non-profit mutual water company (other than those assigned to the Overlying (Agricultural) Pool)." (Restated Judgment, Ex. "H", § 1.) Since the time of the Judgment's entrance, at least three non-purveyor entities have previously intervened and been assigned by the Court – consistent with Watermaster's recommendation – to the Appropriative Pool: Arrowhead Mountain Springs Water Company in 1993, Nicholson Trust in 2001 or 2002 and Niagara Bottling, LLC in 2003, and each of these entities remains a member of the Appropriative Pool. Relevant in this case, neither Arrowhead nor Niagara own any Appropriative Rights, and the Nicholson Trust was the recipient of a portion of the former rights of Fontana Union Water Company.

DISCUSSION

NCL has requested intervention into the Appropriative Pool for the purpose of accepting future transfers of water from CalMat. NCL intends to be a member of the Appropriative Pool, and, to the extent it does not produce water it receives from transfers from CalMat, would require a Storage agreement with Watermaster.

NCL seeks intervention to receive and exercise Appropriative Rights. Watermaster staff interprets the language of the Appropriative Pooling Plan (Exhibit H, § 1) referenced above as a description of the members of the Pool at the time of the Judgment, and not a limit to membership in the Pool to water

purveyors. Further, given the prior intervention of non-purveyor entities, such as Arrowhead, Niagara, and the Nicholson Trust, into the Appropriative Pool for similar purposes, Watermaster staff believes intervention by NCL into the Appropriative Pool to be appropriate in this instance. On this basis, Watermaster staff recommends the approval of the request for intervention.

ATTACHMENTS

1. August 14, 2017 Letter from Robert Bowcock RE Intervention into Chino Basin Watermaster
2. Consolidated Forms 3, 4, and 5

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ATTACHMENT 1

Date: August 14, 2017

Chino Basin Watermaster
9641 San Bernardino Road
Rancho Cucamonga, CA 91730
Attn: Peter Kavounas, PE, General Manager

Subject: Intervention into Chino Basin Watermaster

Dear Mr. Kavounas:

I, or the company I represent (see below), request intervention into the Chino Basin Watermaster Judgment. I/we request that the Watermaster attorneys process the Intervention paperwork through the Court.

Number of wells: 1

Permission is granted to obtain drilling logs from: Yes

Location(s) of wells (including addresses, parcel numbers, and landmarks):

4711 Huntington Drive, Claremont, California 91763 (existing Calmat well)

Type of usage (Irrigation, Dairy, Domestic, etc.):

Industrial

Property Owner (Well Owner) Information:

Name: CalMat Co.

Address: 405 North Indian Hill Boulevard, Claremont, California 91711

Phone: (909) 621-1266 Email:

Property Occupant (Well User) Information (if different from Owner):

Name: NCL Co, LLC

Address: 405 North Indian Hill Boulevard, Claremont, California 91711

Phone: (909) 621-1266 Email:

Representative Handling Intervention:

Name: Robert Bowcock Title: Resource Manager

Address: 405 North Indian Hill Boulevard, Claremont, CA 91711

Phone: (909) 621-1266 Email: bbowcock@imwater.com

Sincerely,

Signed: Print name: Robert Bowcock

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Consolidated Forms 3, 4 & 5

CONSOLIDATED WATER TRANSFER FORMS:
FORM 3: APPLICATION FOR SALE OR TRANSFER OF RIGHT TO PRODUCE WATER FROM STORAGE
FORM 4: APPLICATION OR AMENDMENT TO APPLICATION TO RECAPTURE WATER IN STORAGE
FORM 5: APPLICATION TO TRANSFER ANNUAL PRODUCTION RIGHT OR SAFE YIELD

FISCAL YEAR 2017 - 2018

DATE REQUESTED: August 14, 2017 **AMOUNT REQUESTED:** 4 Acre-Feet

TRANSFER FROM (SELLER / TRANSFEROR):	**TRANSFER TO (BUYER / TRANSFEREE):**
CalMat Co.	NCL Co, LLC
Name of Party	Name of Party
405 North INdian Hill Boulevard	405 North Indian Hill Boulevard
Street Address	Street Address
Claremont / CA / 91711	Claremont / CA / 91711
City / State / Zip Code	City / State / Zip Code
(909) 621-1266	(909) 621-1266
Telephone	Telephone
(909) 621-1266	(909) 621-1196
Facsimile	Facsimile

Have any other transfers been approved by Watermaster between these parties covering the same fiscal year? Yes ☐ No ☒

PURPOSE OF TRANSFER:

- ☐ Pump when other sources of supply are curtailed
- ☒ Pump to meet current or future demand over and above production right
- ☐ Pump as necessary to stabilize future assessment amounts
- ☐ Other, explain _____

WATER IS TO BE TRANSFERRED FROM:

- ☐ Annual Production Right (Appropriative Pool) or Operating Safe Yield (Non-Agricultural Pool)
- ☐ Storage
- ☐ Annual Production Right / Operating Safe Yield first, then any additional from Storage
- ☒ Other, explain Local Supplemental

WATER IS TO BE TRANSFERRED TO:

- ☐ Annual Production Right / Operating Safe Yield (common)
- ☐ Storage (rare)
- ☒ Other, explain Local Supplemental

IS THE 85/15 RULE EXPECTED TO APPLY? (If yes, all answers below must be "yes.")	Yes ☐	No ☒
Is the Buyer an 85/15 Party?	Yes ☐	No ☒
Is the purpose of the transfer to meet a current demand over and above production right?	Yes ☐	No ☒
Is the water being placed into the Buyer's Annual Account?	Yes ☐	No ☒

IF WATER IS TO BE TRANSFERRED FROM STORAGE:

Projected Rate of Recapture _____ Projected Duration of Recapture _____

METHOD OF RECAPTURE (e.g. pumping, exchange, etc.):

_____

PLACE OF USE OF WATER TO BE RECAPTURED:

_____

LOCATION OF RECAPTURE FACILITIES (IF DIFFERENT FROM REGULAR PRODUCTION FACILITIES):

_____

WATER QUALITY AND WATER LEVELS

Are the Parties aware of any water quality issues that exist in the area? Yes ☐ No ☒

If yes, please explain:

_____

What are the existing water levels in the areas that are likely to be affected?

_____

MATERIAL PHYSICAL INJURY

Are any of the recapture wells located within Management Zone 1? Yes ☒ No ☐

Is the Applicant aware of any potential Material Physical Injury to a party to the Judgment or the Basin that may be caused by the action covered by the application? Yes ☐ No ☐

If yes, what are the proposed mitigation measures, if any, that might reasonably be imposed to ensure that the action does not result in Material Physical Injury to a party to the Judgment or the Basin?

_____

_____

_____

SAID TRANSFER SHALL BE CONDITIONED UPON:

(1) Transferee shall exercise said right on behalf of Transferor under the terms of the Judgment, the Peace Agreement, the Peace II Agreement, and the Management Zone 1 Subsidence Management Plan for the period described above. The first water produced in any year shall be that produced pursuant to carry-over rights defined in the Judgment. After production of its carry-over rights, if any, the next (or first if no carry-over rights) water produced by Transferee from the Chino Basin shall be that produced hereunder.

(2) Transferee shall put all waters utilized pursuant to said Transfer to reasonable beneficial use.

(3) Transferee shall pay all Watermaster assessments on account of the water production hereby Transferred.

(4) Any Transferee not already a party must Intervene and become a party to the Judgment.

ADDITIONAL INFORMATION ATTACHED Yes ☐ No ☒

Seller / Transferor Representative Signature

Kevin Sage
Seller / Transferor Representative Name (Printed)

Buyer / Transferee Representative Signature

Robert Bowcock
Buyer / Transferee Representative Name (Printed)

TO BE COMPLETED BY WATERMASTER STAFF:

DATE OF WATERMASTER NOTICE: _____

DATE OF APPROVAL FROM APPROPRIATIVE POOL: _____

DATE OF APPROVAL FROM NON-AGRICULTURAL POOL: _____

DATE OF APPROVAL FROM AGRICULTURAL POOL: _____

HEARING DATE, IF ANY: _____

DATE OF ADVISORY COMMITTEE APPROVAL: _____

DATE OF BOARD APPROVAL: _____

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CHINO BASIN WATERMASTER

NOTICE

OF

APPLICATION(S)

RECEIVED FOR

WATER TRANSACTIONS – ACTIVITIES

Date of Notice:

September 8, 2017

This notice is to advise interested persons that the attached application(s) will come before the Watermaster Board on or after 30 days from the date of this notice.

TRANSFER OF WATER

A party to the Judgment has submitted a proposed transfer of water for Watermaster approval. Unless contrary evidence is presented to Watermaster that overcomes the rebuttable presumption provided in Section 5.3(b)(iii) of the Peace Agreement, Watermaster must find that there is "no material physical injury" and approve the transfer. Watermaster staff is not aware of any evidence to suggest that this transfer would cause material physical injury and hereby provides this notice to advise interested persons that this transfer will come before the Watermaster Board on or after 30 days from the date of this notice. The attached staff report will be included in the meeting package at the time the transfer begins the Watermaster process (comes before Watermaster).

NOTICE OF APPLICATION(S) RECEIVED

Date of Application: **August 14, 2017** Date of this notice: **September 8, 2017**

Please take notice that the following Application has been received by Watermaster:

- Notice of Sale or Transfer – The transfer of 4.000 acre-feet of water from Calmat Company (Vulcan Materials to NCL Company, LLC. This transfer is made from Calmat Company (Vulcan Materials) Local Supplemental Storage Account. This transfer is contingent on NCL Company, LLC.'s successful intervention into the Appropriative Pool.

This ***Application*** will first be considered by each of the respective pool committees on the following dates:

Appropriative Pool:	September 14, 2017
Non-Agricultural Pool:	September 14, 2017
Agricultural Pool:	September 14, 2017

This ***Application*** will be scheduled for consideration by the Advisory Committee ***no earlier than thirty days from the date of this notice and a minimum of twenty-one calendar days*** after the last pool committee reviews it.

After consideration by the Advisory Committee, the ***Application*** will be considered by the Board.

Unless the ***Application*** *is* amended, parties to the Judgment may file ***Contests*** to the ***Application*** with Watermaster ***within seven calendar days*** of when the last pool committee considers it. Any ***Contest*** must be in writing and state the basis of the ***Contest.***

Watermaster address:

Chino Basin Watermaster
9641 San Bernardino Road
Rancho Cucamonga, CA 91730

Tel: (909) 484-3888
Fax: (909) 484-3890

Exhibit 3

2016 Annual Report of the Ground-Level Monitoring Committee

Final Report
September 2017

Prepared for:

Chino Basin Watermaster
Partners in Basin Management

Prepared by:

WEI
Wildermuth Environmental, Inc.

List of Tables

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Acronyms, Abbreviations, and Initialisms

CCX	Chino Creek Extensometer Facility
DHX	Daniels Horizontal Extensometer
EDM	Electronic Distance Measurement
ft-btoc	feet below top of casing
GLMC	Ground-Level Monitoring Committee
GLMP	Ground-Level Monitoring Program
IMP	Interim Monitoring Program
InSAR	Interferometric Synthetic Aperture Radar
MZ-1	Chino Basin OBMP Management Zone 1
OBMP	Optimum Basin Management Plan
SMP	Chino Basin Subsidence Management Plan
USGS	United States Geological Survey

1.1 Background

In general, land subsidence is the sinking or settlement of the Earth's surface due to the rearrangement of subsurface materials. In the United States alone, over 17,000 square miles in 45 states have experienced land subsidence (USGS, 1999). In many instances, land subsidence is accompanied by adverse impacts at the ground surface, such as sinkholes, earth fissures, encroachment of adjacent water bodies, modified drainage patterns, and others. In populated regions, these subsidence-related impacts can result in severe damage to man-made infrastructure and costly remediation measures. Over 80 percent of all documented cases of land subsidence in the United States have been caused by groundwater extractions from the underlying aquifer system (USGS, 1999).

For purposes of clarification in this document, subsidence refers to permanent (non-recoverable) sinking of the land surface. The term inelastic (i.e. non-recoverable) typically refers to permanent deformation of the land surface or the aquifer system. The term elastic typically refers to fully reversible deformation of the land surface or the aquifer system.

1.1.1 Subsidence and Fissuring in Chino Basin

One of the earliest indications of land subsidence in the Chino Basin was the appearance of ground fissures within Management Zone 1 (MZ-1) in the City of Chino. These fissures appeared as early as 1973, but an accelerated occurrence of ground fissuring ensued after 1991 and resulted in damage to existing infrastructure. Figures 1-1 and 1-2 show the locations of these fissures. Scientific studies of the area attributed the fissuring phenomenon to differential land subsidence caused by pumping of the underlying aquifer system and the consequent drainage and compaction of aquitard sediments (Fife et al., 1976; Kleinfelder, 1993, 1996; Geomatrix, 1994; GEOSCIENCE, 2002).

1.1.2 The Optimum Basin Management Program

In 1999, the Optimum Basin Management Plan (OBMP) Phase I Report (WEI, 1999) identified the pumping-induced decline of piezometric levels and subsequent aquifer-system compaction as the most likely cause of the land subsidence and ground fissuring observed in MZ-1. Program Element 4 of the OBMP, *Develop and Implement a Comprehensive Groundwater Management Plan for Management Zone 1*, called for the development and implementation of an interim management plan for MZ-1 that would:

- Minimize subsidence and fissuring in the short-term.
- Collect the information necessary to understand the extent, rate, and mechanisms of subsidence and fissuring.
- Formulate a management plan to abate future subsidence and fissuring or reduce it to tolerable levels.

The OBMP called for an aquifer-system and land subsidence investigation in the southwestern region of MZ-1 to support the development of a management plan for MZ-1 (second and third

bullets above). This investigation was titled the *MZ-1 Interim Monitoring Program* (IMP; WEI, 2003) and is described below.

The OBMP Phase I Report also noted that land subsidence was occurring in other parts of the Basin besides the City of Chino. Program Element 1 of the OBMP Implementation Plan, *Develop and Implement a Comprehensive Monitoring Program*, called for a basin-wide analysis of land subsidence via ground-level surveys and remote-sensing (specifically, interferometric synthetic aperture radar or InSAR) and for ongoing monitoring based on the analysis of the subsidence data.

1.1.3 Interim Management Plan and the MZ-1 Summary Report

From 2001 to 2005, the Chino Basin Watermaster (Watermaster) developed, coordinated, and conducted the IMP under the guidance of the MZ-1 Technical Committee (now called the Ground-Level Monitoring Committee or GLMC). The MZ-1 Technical Committee was comprised of representatives from all major MZ-1 producers and their technical consultants, including the Agricultural Pool; the Cities of Chino, Chino Hills, Ontario, Pomona, and Upland; the Monte Vista Water District; the Golden State Water Company; and the State of California, California Institution for Men.

The IMP consisted of three main monitoring elements: ground-level surveys, InSAR, and aquifer-system monitoring. The ground-level surveys and InSAR analyses were used to monitor deformation of the ground surface. Aquifer-system monitoring measured the hydraulic and mechanical changes within the aquifer system that cause ground-surface deformation. Groundwater-production and groundwater-level data were collected from wells surrounding the areas of observed subsidence and ground fissuring.

The monitoring program was implemented in two phases: a Reconnaissance Phase and a Comprehensive Phase. The Reconnaissance Phase consisted of constructing multi-depth piezometers (11 piezometers screened at various depths) at Rubin S. Ayala Park (Ayala Park) in Chino and installing pressure transducers in nearby production wells and monitoring wells to measure piezometric levels. Following the installation of the monitoring network, several months of aquifer-system monitoring and testing were conducted. Testing included aquifer-system stress tests conducted at production wells in the area.

The Comprehensive Phase consisted of constructing a dual-borehole pipe extensometer at Ayala Park (Ayala Park Extensometer) near the area of historical fissuring. Following installation of the Ayala Park Extensometer, two aquifer-system stress tests were conducted followed by passive aquifer-system monitoring.

During implementation of the IMP, Watermaster's Engineer made the data available to the MZ-1 Technical Committee and prepared quarterly progress reports for submission to the MZ-1 Technical Committee, the Watermaster Pools and Board, and the Court.[1] The progress reports contained data and analyses from the IMP and a summary of the content of any Technical Committee meetings.

The main conclusions derived from the IMP were:

[1] San Bernardino County Superior Court, which retains continuing jurisdiction over the Chino Basin Judgment.

- Groundwater pumping from the deep and confined aquifer system in the southwestern region of MZ-1 causes the greatest stress to the aquifer system. In other words, pumping of the deep aquifer system causes a piezometric-level decline that is much greater in magnitude and lateral extent than the piezometric-level decline caused by pumping the shallow aquifer system.
- Piezometric-level decline due to pumping of the deep aquifer system can cause inelastic compaction of the aquifer-system sediments, which results in land subsidence. The initiation of inelastic compaction within the aquifer system was identified during the investigation when piezometric levels in the deep aquifer system fell below a depth of about 250 feet in Watermaster's PA-7 piezometer at Ayala Park.
- The state of aquifer-system deformation in southern MZ-1 was essentially elastic during the Reconnaissance Phase of the IMP. Very little inelastic compaction was occurring in this area, which contrasted with the recent past when about 2.2 feet of land subsidence occurred from about 1987 to 1995 and was accompanied by ground fissuring. Figure 1-1 shows the land subsidence that was measured in the western Chino Basin and the wells that pumped during that period.
- During the development of the IMP, a previously unknown barrier to groundwater flow was identified, and its location is shown on Figures1-1. The barrier was named the "Riley Barrier" after Francis S. Riley, the retired USGS geologist who first detected the barrier during the IMP. This barrier is located within the deep aquifer system and is aligned with the historical zone of ground fissuring. Pumping from the deep aquifer system was limited to the area west of the barrier, and the resulting piezometric level decline did not propagate eastward across the barrier. Thus, compaction occurred within the deep aquifer system on the west side of the barrier but not on the east side, which caused concentrated differential subsidence across the barrier and created the potential for ground fissuring.
- The InSAR and ground-level surveys indicated that subsidence in the central region of MZ-1 had occurred in the past and was continuing to occur. InSAR also suggested that the groundwater barrier extends northward into the central MZ-1 as shown on Figure 1-1. These observations suggested that the conditions that very likely caused ground fissuring near Ayala Park in the 1990s were also present in the central MZ-1; however, there was not enough historical piezometric data in this area to confirm this relationship. The IMP recommended that, if subsidence continued or increased, the mechanisms causing the land subsidence should be studied in more detail.

The methods, results, and conclusions of the IMP were described in detail in the *MZ-1 Summary Report* (WEI, 2006). The IMP provided enough information for Watermaster to develop Guidance Criteria for MZ-1 producers in the investigation area that, if followed, would minimize the potential for subsidence and fissuring during the completion of the *MZ-1 Subsidence Management Plan* (MZ-1 Plan; WEI, 2007).

The Guidance Criteria were:

1. A list of existing wells shown on Table 1-1 with screens completed into the deep aquifer system (hereafter the Managed Wells) and their owners (hereafter the Parties) that are the subject of these Guidance Criteria.
2. A defined spatial area that is shown on Figure 1-1 and 1-2 where the Guidance Criteria applies (hereafter the Managed Area). Within the boundaries of the Managed Area, both existing and newly constructed wells are subject to being classified as Managed Wells. This area was based on the observed and/or predicted effects of pumping on piezometric levels and aquifer-system deformation. Initial Managed Well designations for wells that pumped during the IMP were based on effects measured at the Ayala Park Extensometer. Future Managed Well designations were to be based on analyses of well construction and borehole lithology.
3. The Guidance Level was a specified depth to water measured in Watermaster's PA-7 piezometer at Ayala Park. It was defined as the threshold piezometric level at the onset of inelastic compaction of the aquifer system as recorded by the extensometer minus 5 feet. The 5-foot reduction was meant to be a safety factor to ensure that inelastic compaction does not occur. The Guidance Level is to be established by Watermaster based on the periodic review of monitoring data collected by Watermaster. The initial Guidance Level was established as 245 feet below the top of the PA-7 well casing.
4. If the piezometric level in PA-7 falls below the Guidance Level, Watermaster recommends that the Parties curtail their pumping from designated Managed Wells as required to maintain the piezometric level in PA-7 above the Guidance Level.
5. Watermaster was to provide the Parties with real-time piezometric level data from PA-7.
6. The Parties were requested to maintain and provide Watermaster with accurate records of operations at the Managed Wells, including pumping rates and on-off dates and times. The Parties were requested to promptly notify Watermaster of all operational changes made to maintain the piezometric level in PA-7 above the Guidance Level.
7. Watermaster recommends that the Parties allow Watermaster to continue monitoring piezometric levels at their wells.
8. Watermaster and Watermaster's Engineer were to evaluate the data collected as part of the MZ-1 Monitoring Program (now called the Ground-Level Monitoring Program or GLMP) after each fiscal year and determine if modifications, additions, and/or deletions to the Guidance Criteria were necessary. These changes to the Guidance Criteria could include: (1) additions or deletions to the list of Managed Wells, (2) re-delineation of the Managed Area, (3) raising or lowering of the Guidance Level, or (4) additions and/or deletions to the Guidance Criteria, including the need to have periods of piezometric level recovery.
9. Watermaster cautioned that some subsidence and fissuring could occur in the future, even if the Guidance Criteria were followed. Watermaster made no warranties that faithful adherence to the Guidance Criteria would eliminate subsidence or fissuring.

1.1.4 MZ-1 Subsidence Management Plan

The Guidance Criteria formed the basis for the MZ-1 Plan, which was developed by the MZ-1 Technical Committee and approved by Watermaster Board in October 2007. In November 2007, the Court approved the MZ-1 Plan and ordered its implementation.

To minimize the potential for future subsidence and fissuring in the Managed Area, the MZ-1 Plan codified the Guidance Level and recommended that the Parties manage their groundwater production such that the piezometric level in PA-7 remains above the Guidance Level.

The MZ-1 Plan called for ongoing monitoring, data analysis, annual reporting, and adjustments to the MZ-1 Plan, as warranted by the data. Implementation of the MZ-1 Plan began in 2008. The MZ-1 Plan called for the continued scope and frequency of monitoring implemented during the IMP within the Managed Area and expanded monitoring of the aquifer system and land subsidence in other areas of the Chino Basin where the IMP indicated concern for future subsidence and ground fissuring. Figure 1-1 shows the location of these so-called Areas of Subsidence Concern: Central MZ-1, Northwest MZ-1, Northeast, and Southeast areas. The expanded monitoring efforts outside of the Managed Area are consistent with the requirements of OBMP Program Element 1 and its implementation plan contained in the Peace Agreement.[2]

Potential future efforts listed in the MZ-1 Plan included: (1) more intensive monitoring of horizontal strain across the zone of historical ground fissuring to assist in developing management strategies related to fissuring, (2) injection feasibility studies within the Managed Area, (3) additional pumping tests to refine the Guidance Criteria, (4) computer-simulation modeling of groundwater flow and subsidence, and (5) the development of alternative pumping plans for those Parties affected by the MZ-1 Plan. The GLMC discusses these potential future efforts, and if deemed prudent and necessary, they are recommended to Watermaster for implementation in future fiscal years.

1.1.5 2015 Chino Basin Subsidence Management Plan

The MZ-1 Plan stated that if data from existing monitoring efforts in the Areas of Subsidence Concern indicate the potential for adverse impacts due to subsidence, Watermaster will revise it to avoid those adverse impacts. The 2014 Annual Report of the GLMC recommended that the MZ-1 Plan be updated to better describe Watermaster's efforts and obligations about land subsidence that included areas outside of MZ-1. As such, the update included a name change to the 2015 Chino Basin Subsidence Management Plan (SMP; WEI 2015a) and a recommendation to develop a subsidence management plan for the Northwest MZ-1 Area. Land subsidence in Northwest MZ-1 was first identified as a concern in 2006 in the MZ-1 Summary Report and again in 2007 in the MZ-1 Plan. Since then, Watermaster has been monitoring vertical ground motion in this area via InSAR and piezometric levels with pressure transducers at selected wells.

Of particular concern, the subsidence in Northwest MZ-1 across the San Jose Fault has occurred in a pattern of concentrated differential subsidence—the same pattern of differential subsidence that occurred in the Managed Area during the time of ground fissuring. Ground

[2] In July 2000, the Parties to the Judgement signed the Peace Agreement. The Peace Agreement outlined the Parties' intent to implement the OBMP as well as other related responsibilities for Watermaster and the Parties.

fissuring is the main subsidence-related threat to infrastructure. The issue of differential subsidence, and the potential for ground fissuring in Northwest MZ-1, has been discussed at prior GLMC meetings, and the subsidence has been documented and described as a concern in past State of the Basin Reports (WEI, 2013) and annual reports of the GLMC. Watermaster increased monitoring efforts in Northwest MZ-1 beginning in winter 2012-2013 to include elevation surveys and electronic distance measurements (EDMs) to monitor the ground motion and the potential for fissuring.

In 2015, Watermaster's Engineer developed the *Work Plan to Develop a Subsidence Management Plan for the Northwest MZ-1 Area* (Work Plan; WEI 2015b). The Work Plan is characterized as an ongoing Watermaster effort and includes a description of a multi-year scope-of-work, cost estimate, and a schedule. The Work Plan was included in the SMP as Appendix B. Implementation of the Work Plan began in July 2015.

The updated SMP also addressed the need for piezometric-level "recovery periods" in the Managed Area by recommending that all deep aquifer-system pumping cease for a continuous 3-month period between October 1 and March 31 of each year within the Managed Area. Every fifth year, Watermaster recommends that all deep aquifer-system pumping cease for a continuous period until water-level recovery reaches 90 ft-btoc at PA-7. These cessations of pumping are intended to allow for sufficient water level recovery at PA-7 to recognize inelastic compaction, if any, at the Ayala Park Extensometer and at other locations where groundwater-level and ground-level data are being collected.

1.1.6 Annual Report of the Ground-Level Monitoring Committee

The SMP states that Watermaster will produce an annual report, containing the results of ongoing monitoring efforts, interpretations of the data, and recommended adjustments to the SMP, if any. This annual report of the GLMC includes results and interpretations for the data collected through calendar year 2016 as well as recommendations for Watermaster's GLMP for FY 2017-18.

1.2 Report Organization

This report is organized into the following six sections:

Section 1 – Introduction. This section provides background information on the history of land subsidence and ground fissuring in Chino Basin, information on the formation of the GLMC and its responsibilities, and a description of the development and implementation of the SMP, which calls for annual reporting.

Section 2 – Ground-Level Monitoring Program (2016). This section describes the monitoring and testing activities that were performed by Watermaster for its GLMP during 2016.

Section 3 – Results and Interpretations. This section discusses and interprets the monitoring data collected through 2016, including basin stresses (i.e. groundwater pumping and recharge) and responses, which include changes in piezometric levels, aquifer-system deformation, and ground motion.

Section 4 – Conclusions and Recommendations. This section summarizes the main conclusions derived from the monitoring program as of December 2016 and describes recommended activities for the GLMP during fiscal year 2017-18 in the form of a proposed scope-of-work, schedule, and budget.

Section 5 – Glossary. This section is a glossary of the terms and definitions utilized within this report and in discussions at GLMC meetings.

Section 6 – References. This section lists the publications cited in this report.

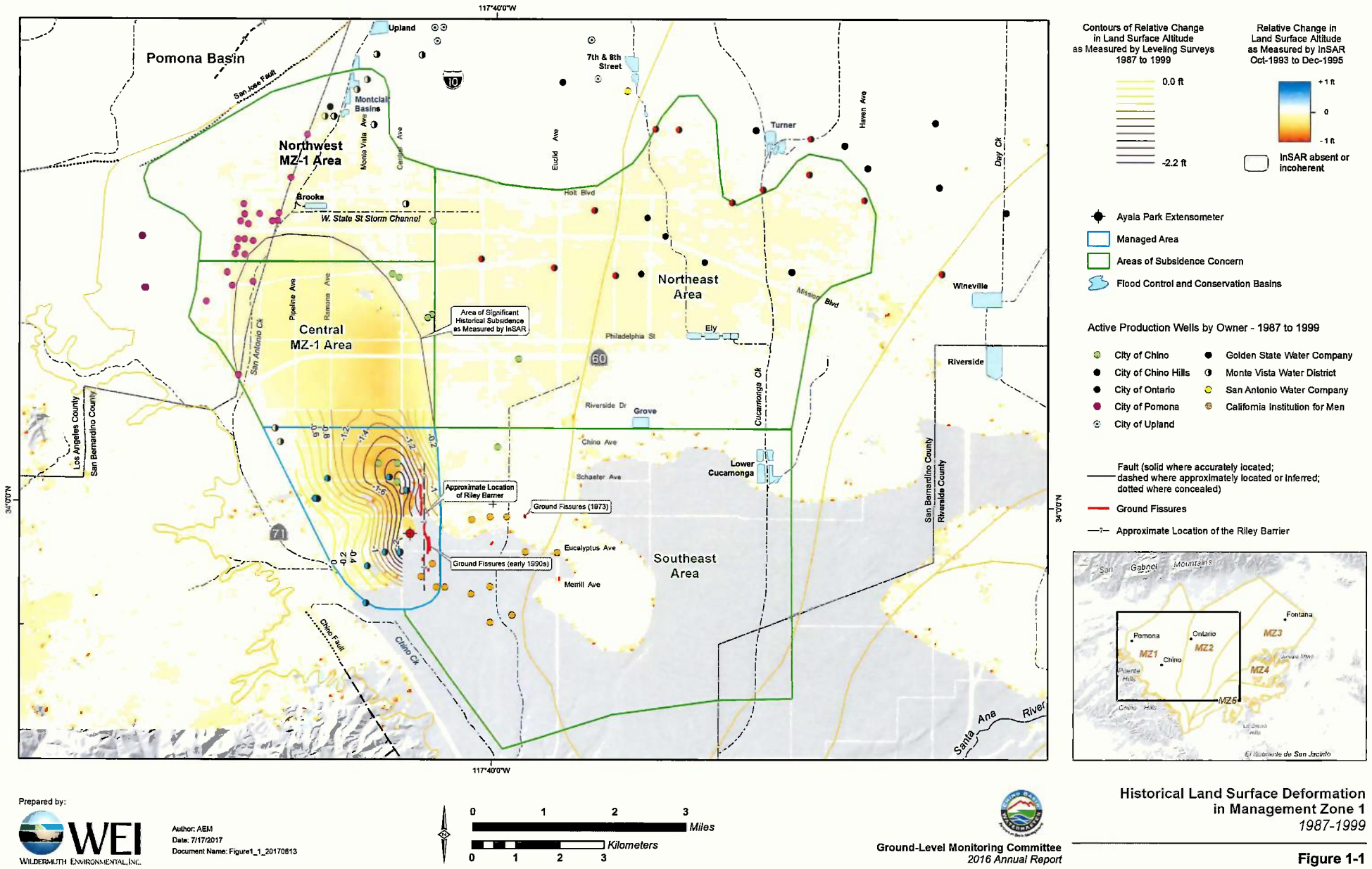
Table 1-1
Managed Wells Screened in the Deep Aquifer and Subject to the Guidance Criteria*

Well Name	CBWM ID	Owner	2016 Status	Well Screen Interval(s) *ft-bgs*
CIM-11A**	3602461	California Institution for Men	Active	174-187; 240-283; 405-465
C-7	3600461	City of Chino	Abandoned	180-780
C-15	600670		Inactive	270-400; 626-820
CH-1B	600487	City of Chino Hills	Inactive	440-470; 490-610; 720-900; 940-1,180
CH-7C	600687		Abandoned	550-950
CH-7D	600498		Destroyed	320-400; 410-450; 490-810; 850-930
CH-15B	600488		Inactive	360-440; 480-900
CH-16	600489		Inactive	430-940
CH-17	600499		Active	300-460; 500-680
CH-19	600500		Abandoned	300-460; 460-760; 800-1,000

*The The MZ-1 Subsidence Management Plan identified the Managed Wells that are the subject of the Guidance Criteria for the Managed Area that, if followed, would minimize the potential for subsidence and fissuring.

**The original casing was perforated from 135-148, 174-187, 240-283, 405-465, 484-512, and 518-540 ft-bgs. This casing collapsed below 470.5 ft- bgs in 2011. A liner was installed to 470 ft-bgs with a screen interval from 155 to 470 ft-bgs.

Active = Well is currently being used for water supply
Inactive = Well can pump groundwater with little or no modifications
Abandoned = Unable to pump the well without major modifications



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Author: AEM
Date: 7/17/2017
Document Name: Figure1_1_20170613

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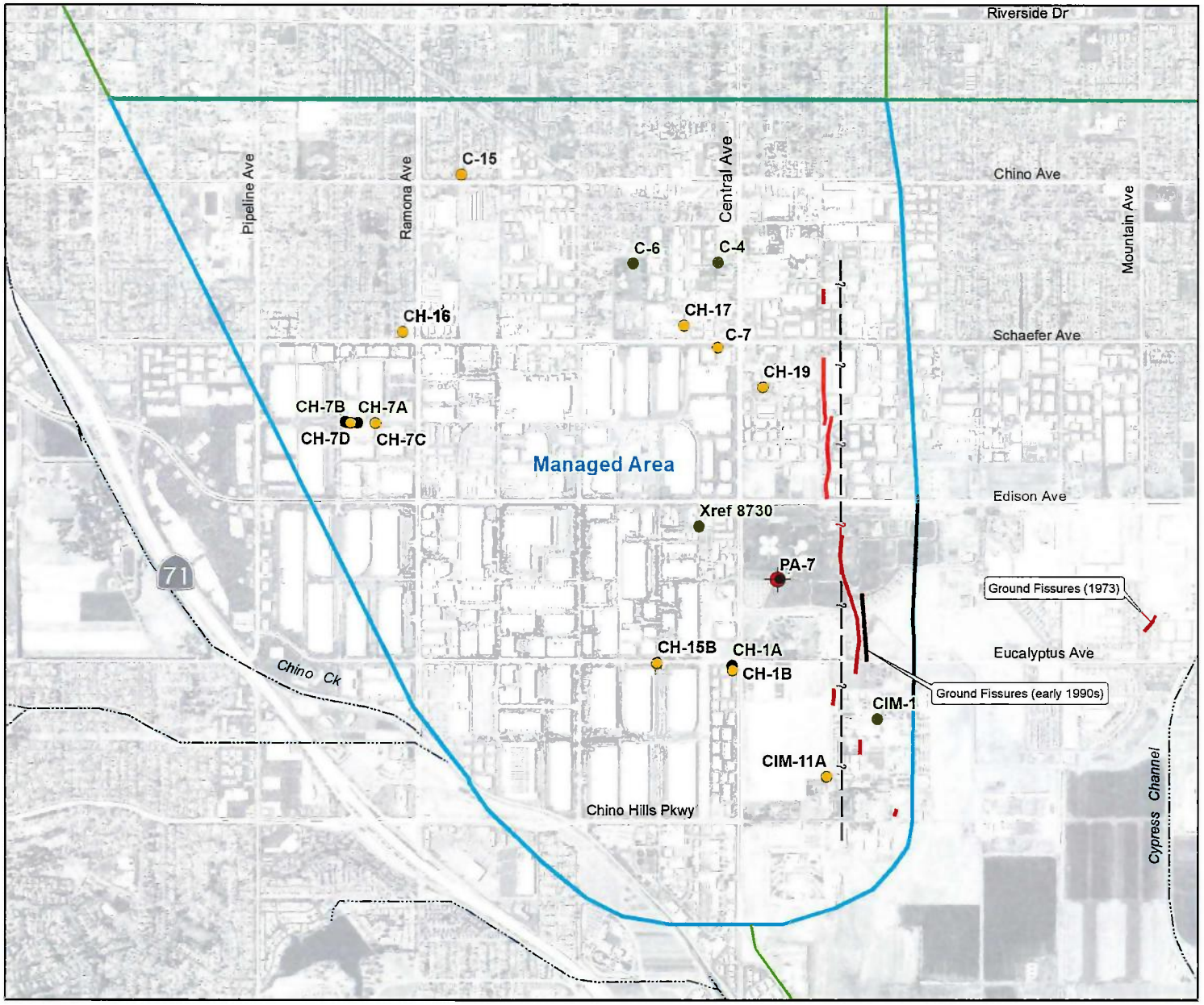
Ground-Level Monitoring Committee
2016 Annual Report

Historical Land Surface Deformation in Management Zone 1
1987-1999

Figure 1-1



- Ayala Park Extensometer
- Managed Well
- Other Production Wells
- Managed Area
- Areas of Subsidence Concern
- PA7 Piezometer at Ayala Park
- Ground Fissures
- Approximate Location of the Riley Barrier

2014 NAIP Mosaic +/- 6 meter Resolution

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Author: AEM
Date: 7/18/2017
Document Name: Figure_1-2_20170613

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0 0.5 1 Kilometers

Ground-Level Monitoring Commitee
2016 Annual Report

MZ1 Managed Area and the Managed Wells

Figure 1-2

Section 2 – 2016 Ground-Level Monitoring Program

This section describes the activities performed by Watermaster for the GLMP during calendar year 2016.

Figures 2-1 and 2-2 are reference figures for this section. Figure 2-1 shows the groundwater production and recharge facilities in the western Chino Basin that impart pumping and recharge stresses to the aquifer system. Figure 2-2 shows the locations of the monitoring facilities in Watermaster's ground-level monitoring network, including wells equipped with pressure transducers that measure piezometric levels, extensometers that measure vertical aquifer-system deformation, and benchmark monuments that are used to perform elevation and EDM surveys to measure vertical and horizontal deformation of the ground surface.

2.1 Ongoing Ground-Level Monitoring Program

Watermaster conducts its GLMP in the Managed Area and other Areas of Subsidence Concern pursuant to the SMP and the recommendations of the GLMC.

The GLMP activities performed in 2016 are described below.

2.1.1 Setup and Maintenance of the Monitoring Facilities Network

- Performed routine maintenance at the Ayala Park and Chino Creek Extensometers. Additional maintenance activities included:
    - Trouble-shooting the internet connection at the Ayala Park Extensometer to maintain electronic data delivery to the Watermaster's Ayala Park website.[3]
    - Installing additional counter-weights at the Chino Creek Extensometer to increase tension on the extensometer cables. The objective here was to reduce friction between the cables and the well casings to provide higher resolution and higher accuracy for the measured data.
    - Updating the software for the Chino Creek Extensometer telemetry modem to comply with a security advisory issued by the manufacturer and cellular service provider.
- Decommissioned and completely removed the Daniel's Horizontal Extensometer Facility (DHX) formerly located at 5500 Daniels St., Chino, CA in April 2016. Removal was necessary because the property is being developed.
- Installed pressure transducers in two wells owned by the Golden State Water Company. The wells are located within Northwest MZ-1.
- Coordinated and worked with staff from the Monte Vista Water District, City of Pomona, and SCADA Integrations to identify a set of wells and the costs associated

[3] http://ayala.wildermuthenvironmental.com:8888/AyalaPark/default.aspx

with equipping the wells with Supervisory Control and Data Acquisition (SCADA) monitoring capabilities. The SCADA-collected production and piezometric-level data will be incorporated into the monitoring program.

2.1.2 Monitoring Activities during 2016

Changes in piezometric levels are caused by the stresses of groundwater pumping and recharge. Changes in piezometric levels are the mechanism behind aquifer-system deformation, which in turn causes vertical and horizontal ground motion. Because of these cause-and-effect relationships, Watermaster monitors groundwater production, recharge, piezometric levels, aquifer-system deformation, and vertical and horizontal ground motion across the western portion of the Chino Basin.

The following were Watermaster's monitoring activities in 2016, as called for by the SMP and in accordance with the recommendations of the GLMC.

2.1.2.1 Monitoring of Production, Recharge, and Piezometric Levels

Watermaster collects and compiles groundwater production data on a quarterly time-step from well owners in the Managed Area and the Areas of Subsidence Concern. The locations of wells that produced groundwater during 2016 are shown in Figure 2-1.

Watermaster collects data on the volumes of imported water, storm-water, and recycled water that are artificially recharged at spreading basins, and the volumes of recycled water used for direct use within the Chino Basin from the Inland Empire Utilities Agency.

During 2016, piezometric levels were measured and recorded once every 15 minutes using pressure transducers maintained by Watermaster at approximately 70 wells in the Managed Area and the Central MZ-1, Northwest MZ-1, and the Southeast areas. Figure 2-2 shows the locations of these wells. Piezometric levels at other wells in western Chino Basin are also measured by manual methods by Watermaster staff and the well owners, typically on a monthly time-step.

2.1.2.2 Monitoring of Vertical Aquifer-System Deformation

Watermaster measured and recorded the vertical component of aquifer-system deformation at the Ayala Park and the Chino Creek Extensometers once every 15 minutes.

2.1.2.3 Monitoring of Vertical Ground Motion

Watermaster monitored vertical ground motion via ground-level surveys using InSAR and traditional leveling techniques.

For InSAR, Watermaster retained Neva Ridge Technologies to acquire and post-process land-surface displacement data from the TerraSAR-X satellite operated by the German Aerospace Center. The width of the TerraSAR-X data frame covers the western half of the Chino Basin only.[4] Seven synthetic aperture radar scenes were collected between January 2016 and January

[4] All historical InSAR data that were collected and analyzed by Watermaster from 1993 to 2010 indicate that very little vertical ground-motion occurred in the eastern half of the Chino Basin. In 2012, the GLMC decided to acquire and analyze InSAR only in the western portion of the Chino Basin as a cost-saving strategy.

2017. The scenes were used to create twelve interferograms[5] to estimate short-term and long-term vertical ground motion over the following periods:

January 2016 to March 2016	March 2016 to May 2016
January 2016 to May 2016	May 2016 to July 2016
January 2016 to July 2016	July 2016 to August 2016
January 2016 to August 2016	August 2016 to November 2016
January 2016 to November 2016	November 2016 to January 2017
January 2016 to January 2017	March 2011 to January 2017

For the traditional leveling surveys, Watermaster retained Parsons Brinkerhoff to conduct the surveys at selected benchmark monuments in the western part of the Chino Basin. Elevation surveys were conducted at benchmark monuments within the following areas (Figure 2-2):

Ground-Level Survey Area	Date of Most Recent Survey	Number of Benchmarks Surveyed
Managed Area*	Mar-2016	22
Southeast Area	Feb-2017	66
Central MZ-1 Area	Feb-2017	12
Northwest MZ-1 Area	Feb-2017	25

*The Managed Area was not surveyed in 2017 based on the GLMC scope and budget recommendations for FY 2016-17.

2.1.2.4 Monitoring of Horizontal Ground Motion

Watermaster measured horizontal ground motion between benchmark locations across areas that are susceptible to ground fissuring via EDMs. EDMs were performed between the benchmarks shown in Figure 2-2 within the following areas:

Ground-Level Survey Area	Date of Most Recent Survey	Number of Benchmarks Surveyed
Fissure Zone Area*	Mar-2016	66
San Jose Fault Zone Area	Feb-2017	10

*The Fissure Zone Area was not surveyed in 2017 based on GLMC scope and budget recommendations for FY 2016-17.

[5] Two or more SAR scenes are used to generate grids of surface deformation (interferograms) over a given period. Typically, surfaces within a pixel will move up or down together as would be expected in uplift/subsidence scenarios. However, surfaces within the area of a pixel can move randomly and cause decorrelation in the radar signal. Examples of random motion within a pixel area are vegetation growing, urbanization, erosion of the ground surface, harvesting crops, plowing fields, and others. The magnitude of this decorrelation in the signal is measured mathematically and called incoherence. Based on the magnitude of decorrelation in an area, pixels will be rejected as "incoherent."

2.2 Land-Subsidence Investigations

Watermaster performs land subsidence investigations pursuant to the SMP, the recommendations of the GLMC, and approval of scope-of-work and budget by the Watermaster Pools, Advisory Committee, and Board. Investigations can include aquifer-stress tests (e.g. pumping and injection) and the simultaneous monitoring of piezometric levels, aquifer-system deformation, and deformation of the ground surface. The goals of these investigations are to refine the Guidance Criteria and assist in the development of subsidence management plans to minimize or abate land subsidence and maximize the prudent extraction of groundwater.

This section describes the land subsidence investigations conducted during 2016 that are called for by the SMP.

2.2.1 Long-Term Pumping Test in the Managed Area

The GLMC developed the Long-Term Pumping Test in the Managed Area in response to the directives in the SMP. The goal of the Long-Term Pumping Test is to develop a strategy for the prudent extraction of groundwater from the Managed Area. In this case, "prudent" is defined as extracting the maximum volume of groundwater possible without causing damage to the ground surface or the area's infrastructure. Specific questions that the test is designed to answer are:

1. Is the Guidance Level for the Managed Area, as currently defined, appropriate? If not, how should the Guidance Level be updated?

2. Does the Riley Barrier separate the Managed Area from the Southeast Area within the deep aquifer system? If not, should the eastern boundary of the Managed Area be revised?

3. How does the recoverable and inelastic aquifer-system deformation that occurs in the Managed Area affect the horizontal strain across the historical zone of ground fissuring and its northward extension into the heavily urbanized portions of the City of Chino?

4. Is aquifer injection a viable tool for mitigating the decline of piezometric levels and preventing inelastic compaction in the deep aquifer system?

5. Is there an "acceptable" rate of subsidence in the Managed Area? If so, what is the "acceptable" rate?

Figure 1-2 shows the locations of the wells included in the Long-Term Pumping Test. The GLMC envisioned the following scope and sequence for the Long-Term Pumping Test:

1. Conduct a controlled pumping test of the deep aquifer system in the Managed Area at wells CH-17 and CH-15B. This test should cause the piezometric level at PA-7 to fall below the Guidance Level and may cause a small amount of subsidence.[6] The test will

[6] The aquifer-system stress testing in 2004-05 resulted in about 0.01 feet of non-recoverable compaction and associated land subsidence (WEI, 2006). The Long-Term Pumping Test may cause a similar small amount of subsidence. This small amount of subsidence is far less than the >2 ft of subsidence that occurred from 1987

be closely monitored at the Ayala Park Extensometer and will be stopped at the first indication of inelastic compaction. Piezometric levels recorded at 15-minute intervals at PA-7 will be updated every three-hours on Watermaster's website. When the piezometric levels decline to within 20 feet of the Guidance Level, data from the Ayala Park Extensometer will be downloaded and used to prepare a stress-strain diagram. The stress-strain diagram will be distributed promptly to the GLMC by e-mail. Watermaster staff and the Watermaster Engineer will remain in close telephonic contact with staff at the City of Chino, the City of Chino Hills, and CIM to review and interpret the stress-strain diagram, to plan for the preparation of the next stress-strain diagram, or to decide to stop the test when appropriate.

2. Stop the pumping test and allow for the partial recovery of piezometric levels.

3. Conduct two cycles of injections at CH-16 to see how injection accelerates the recovery of the regional piezometric levels that were lowered by pumping at CH-17 and CH-15B.[7] After the injection tests, allow for full recovery of piezometric levels at PA-7 to pre-test conditions.

4. Conduct ground-level surveys, InSAR monitoring, and EDM surveys to measure vertical and horizontal ground motion across the Managed Area before, during, and after the test. Collect piezometric and aquifer-system deformation data at the Ayala Park Extensometer once every 15 minutes throughout the test.

5. Check stress-strain diagrams from the Ayala Park Extensometer for inelastic compaction of the aquifer system in the Managed Area. Analyze ground-level survey, InSAR, and EDM data for inelastic horizontal and vertical ground deformation within the Managed Area.

During 2016, the following activities were performed related to the Long-Term Pumping Test:

- The City of Chino Hills connected CH-16 to a potable source-water pipeline to facilitate the injection phase of the Long-Term Pumping Test.

- The City of Chino Hills performed wellhead-treatment rehabilitation at CH-15B. No production occurred at CH-15B during 2016.

- The Long-Term Pumping Test was not completed. Groundwater was produced from CH-17 during November and December 2016. Production from CH-17 did not cause

to 1995 when ground fissures opened in the City of Chino and is much less than the +/- 0.1 ft of elastic vertical ground-motion that occurs seasonally in this area.

[7] The City of Chino Hills is conducting an injection feasibility study at CH-16 as part of the Long-Term Pumping Test. The study will help determine if aquifer injection is a viable tool to manage subsidence within the Managed Area while maximizing the use of existing infrastructure (i.e. wells). The study includes the conversion CH-16 to an aquifer storage and recovery (ASR) well and pilot testing well. Watermaster assisted the City of Chino Hills in applying for and acquiring a Local Groundwater Assistance (LGA) grant from the DWR to partially fund the study. Watermaster also assisted with a cost-share contribution of $368,000 to execute the study. As of the end of 2016, Chino Hills completed modifications to well CH-16 to convert it to an ASR well and completed connections to a potable water supply pipeline.

piezometric levels to decline below the Guidance Level at the PA-7 piezometer (245 ft-btoc). The maximum depth-to-groundwater at the PA-7 piezometer was about 108 ft-btoc before pumping ceased at CH-17 in December 2016.

2.2.2 Analysis of EDM Measurements Across Fissure Zone

The SMP calls for Watermaster to monitor for horizontal ground motion across areas that are susceptible to ground fissuring. Historically, this monitoring has occurred via EDMs and with the Daniels Horizontal Extensometer (DHX). The GLMC annually recommends the scope and frequency of EDM surveys. The DHX was decommissioned and removed in 2015 because the site was developed.

In the Managed Area, there is a network of closely-spaced benchmark monuments along Eucalyptus, Edison, Schaefer, and Chino Avenues that are used to perform the EDM surveys. EDM surveys in the Managed Area have been performed periodically since 2003. In Northwest MZ-1, a similar network of benchmark monuments is installed along San Bernardino and San Antonio Avenues across the San Jose Fault. EDM surveys have been performed in the Northwest MZ-1 Area annually since 2014.

In 2016, the EDM datasets were analyzed and evaluated. The objectives of this exercise were to: (i) describe and document the monitoring equipment, field methods, and accuracies associated with EDMs; (ii) describe the horizontal strain that has occurred between benchmark monuments over time; (iii) identify potential locations, if any, for the re-installation of a horizontal extensometer; and (iv) provide information to support recommendations for future monitoring via EDMs.

2.2.3 Develop a Subsidence Management Plan for Northwest MZ-1

In 2015, Watermaster's Engineer developed the Work Plan, which includes a description of a multi-year effort with cost estimates and a schedule to develop a subsidence management plan for the Northwest MZ-1 Area. The Work Plan was included in the SMP as Appendix B. The background and objectives of the Work Plan are described in Section 1.1.5 herein.

Watermaster began implementation of the Work Plan in July 2015. The following work was completed during 2016:

Task 1 Describe Initial Hydrogeologic Conceptual Model and Monitoring and Testing Program – A draft report was prepared that summarizes the current state of knowledge of the hydrogeology of the Northwest MZ-1 Area, the data gaps that need to be filled to fully describe the occurrence and mechanisms of aquifer-system deformation and the pre-consolidation stress, and a strategy to fill the data gaps.

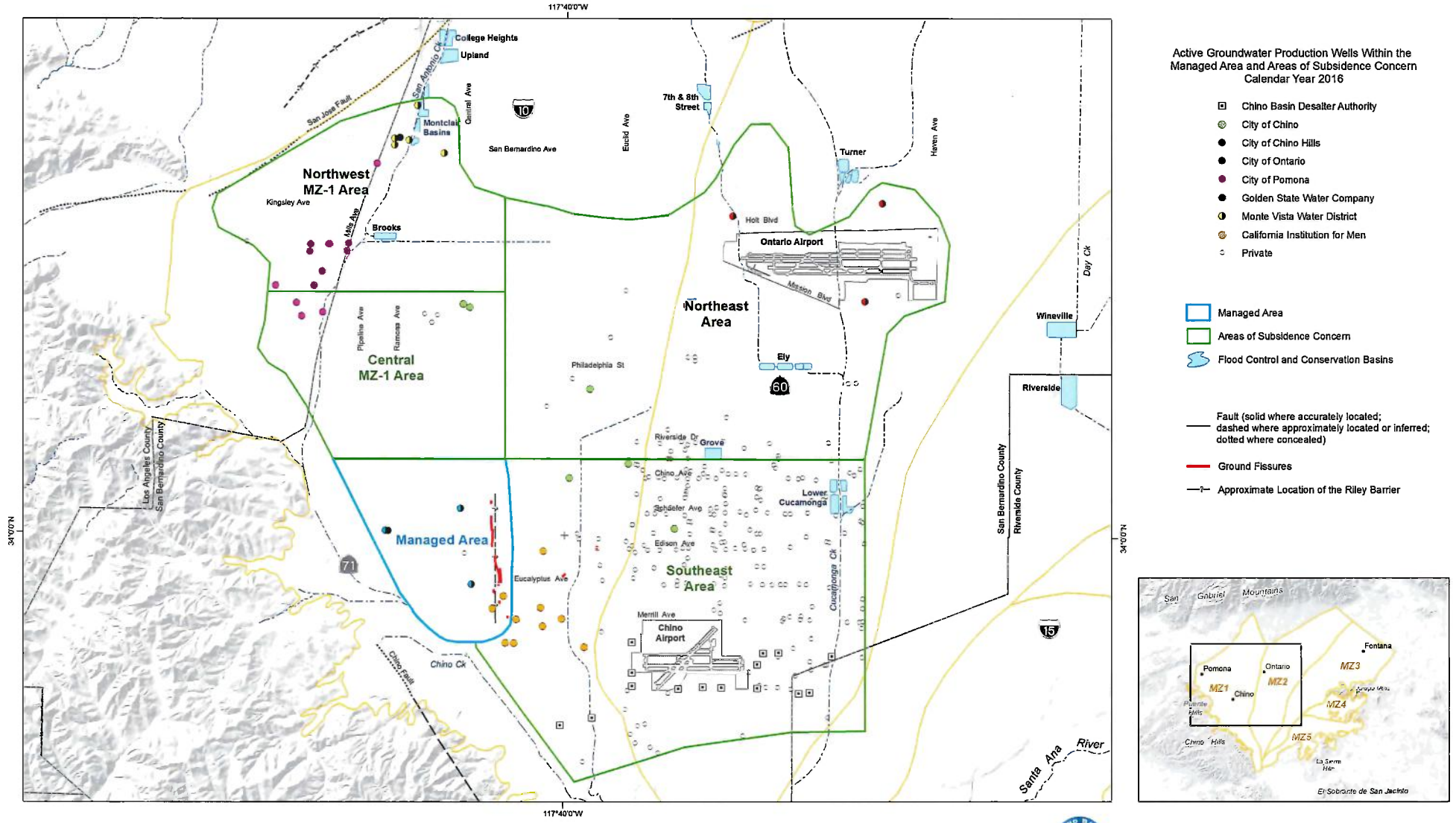
Task 2 Implement the Initial Monitoring and Testing Program – As of December 2016, 20 pressure transducers have been installed in public agency wells, and Watermaster is currently monitoring piezometric levels within the Northwest MZ-1 Study Area. Well owners include the Cities of Chino, Pomona, and Upland; the Golden State Water Company; and the Monte Vista Water District. In addition to the wells with pressure transducers installed by Watermaster's Engineer, the Golden State Water Company records piezometric levels and production rates (15-min intervals) via SCADA for five wells located in the Northwest MZ-1 Study Area.

In 2016, Watermaster's Engineer worked with staff from the Monte Vista Water District, City of Pomona, and SCADA Integrations to identify a set of wells and the costs associated with equipping additional wells with SCADA monitoring capabilities. The SCADA-collected piezometric level data will be incorporated into the Northwest MZ-1 Area monitoring and testing program.

Task 3 Develop and Evaluate the Baseline Management Alternative – Watermaster's Engineer developed and calibrated a one-dimensional aquifer-system compaction model to estimate future subsidence in the Northwest MZ-1 Area. A draft technical memorandum was prepared that summarizes the development of the Baseline Management Alternative.

Task 4 Develop and Evaluate the Initial Subsidence-Management Alternative – Watermaster's Engineer developed multiple groundwater production and wet-water recharge scenarios for Northwest MZ-1 to explore an Initial Subsidence-Management Alternative. These scenarios were simulated using the Chino Basin Groundwater Model and evaluated to assess the piezometric response to each scenario.

Task 5 Design and Install the Pomona Extensometer Facility – Watermaster's Engineer finalized the technical memorandum *Siting Study for the Pomona Extensometer Facility* and began drafting the technical specifications for the Pomona Extensometer facility.



Active Groundwater Production Wells Within the Managed Area and Areas of Subsidence Concern Calendar Year 2016

- Chino Basin Desalter Authority
- City of Chino
- City of Chino Hills
- City of Ontario
- City of Pomona
- Golden State Water Company
- Monte Vista Water District
- California Institution for Men
- Private

- Managed Area
- Areas of Subsidence Concern
- Flood Control and Conservation Basins

- Fault (solid where accurately located; dashed where approximately located or inferred; dotted where concealed)
- Ground Fissures
- Approximate Location of the Riley Barrier

Prepared by:
WEI
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Author: EM
Date: 9/1/2017
Document Name: Figure_2-1_20170613

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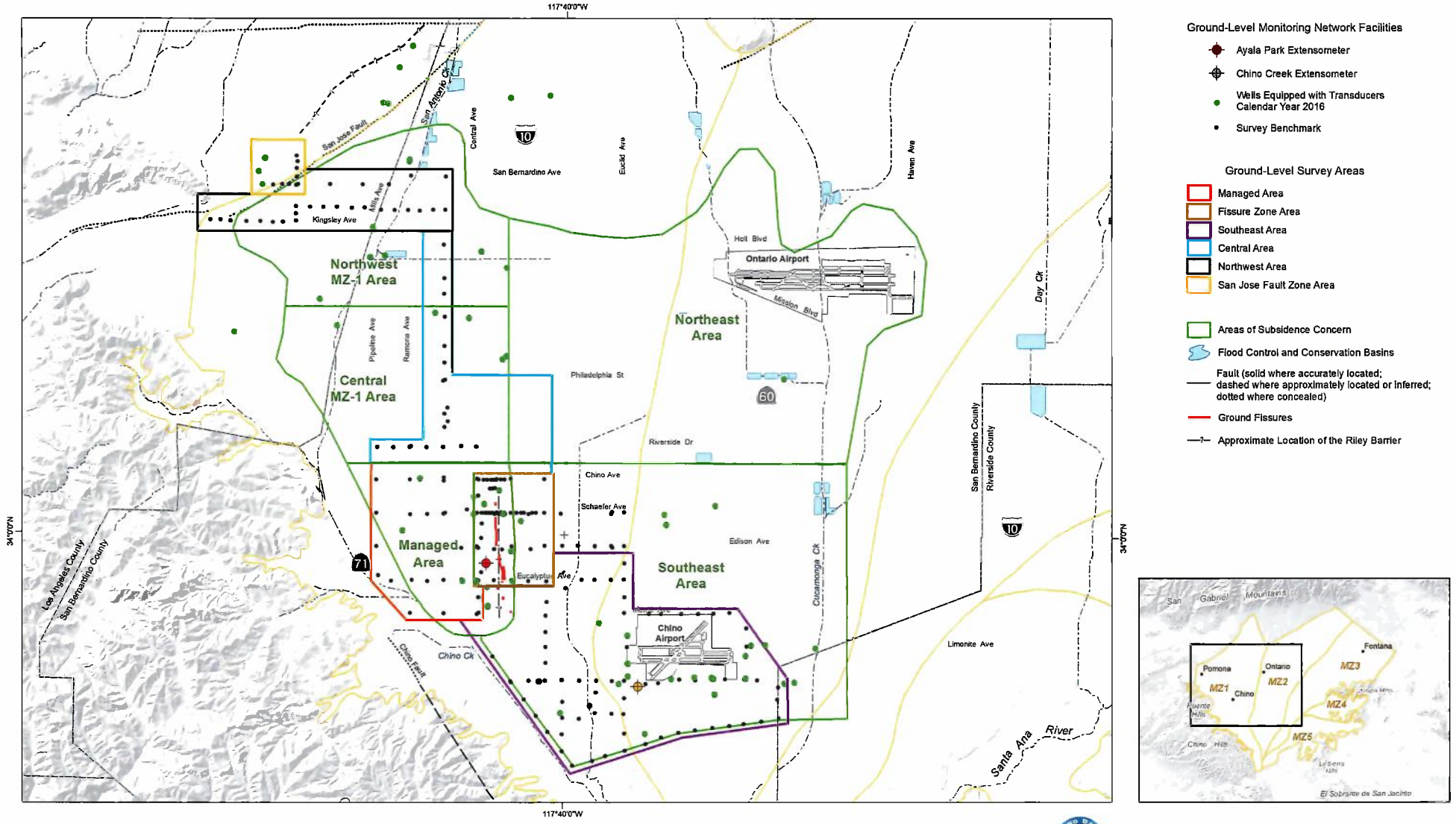
Ground-Level Monitoring Committee
2016 Annual Report

Pumping and Recharge Facilities
Western Chino Basin (2016)

Figure 2-1



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Date: 7/17/2017
Document Name: Figure2_2_20170613

Ground-Level Monitoring Committee
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Ground-Level Monitoring Network
2016

Figure 2-2

This section describes the results and interpretations derived from the GLMP for the Managed Area and all other Areas of Subsidence Concern in the Chino Basin through calendar year 2016. Figures 3-1a and 3-1b display vertical ground-motion as measured by InSAR across the western portion of the Chino Basin over the period of 2011 to 2016 and during calendar year 2016, respectively. Included on the figures are the locations of the specific monitoring sites and facilities referred to in this section. The data shown on the figures are described and interpreted in this section.

3.1 MZ-1 Managed Area

The Managed Area is the primary focus of the SMP. The discussion below describes the results and interpretations of the monitoring program in the Managed Area and relative to the Guidance Criteria.

3.1.1 History of Stress and Strain in the Aquifer-System

Figure 3-2 is a chart that illustrates the long-term history of groundwater production, piezometric levels, and vertical ground motion in the Managed Area. Also shown is the volume of the direct use of recycled water in the Managed Area, which is a recently available alternative water supply that can result in decreased groundwater production from the area. The main observations from this chart are:

- Pumping from the deep aquifer-system during the 1990s caused a decline of piezometric levels that coincided with high rates of land subsidence. About 2.5 ft of subsidence occurred from 1987 to 1999, and ground fissures opened within the City of Chino in the early 1990s.

- Since the early 2000s, groundwater production decreased, piezometric levels in the deep aquifer-system recovered, and the rate of land subsidence declined significantly across the Managed Area.

- Recent increases in piezometric levels in the Managed Area may also be related in part to the increase in the direct use of recycled water, which began during FY 1998/1999 and has generally increased since.

- Since 2005, piezometric levels at PA-7 did not decline below the Guidance Level, and very little, if any, inelastic compaction was recorded in the Managed Area. These observations demonstrate the effectiveness of the SMP in the management of land subsidence in the Managed Area.

3.1.2 Recent Stress and Strain in the Aquifer-System

This section discusses the last six years of groundwater production, piezometric levels, and vertical ground motion in the Managed Area under the SMP.

3.1.2.1 Groundwater Production and Piezometric Levels

Table 3-1 summarizes groundwater production by well within the Managed Area for calendar years 2011-2016. A total of about 1,760 acre-feet of groundwater production occurred in the Managed Area during 2016—82 percent of the groundwater production was from wells screened in the shallow aquifer-system and 18 percent was from wells screened in both the shallow and deep aquifer-systems. Groundwater production in the Managed Area has declined over the past five years from about 5,400 acre-ft/yr in 2012 to about 1,750 acre-ft/yr in 2016. Well CH-17 did not produce groundwater during most calendar year 2016 due to problems with the pump motor. Historical production from CH-17 was typically about 1,080 acre-ft/yr.

Figure 3-3 is a time-series chart that displays groundwater production and the resultant piezometric change (stress) and aquifer-system deformation (strain) in the Managed Area for the period of 2011 and 2016. The chart illustrates the seasonal pattern of production in the Managed Area: increased production during the spring and summer months and decreased production during the fall and winter months.

Figure 3-3 also displays the time-series of piezometric levels at two piezometers at Ayala Park, PA-7 (deep aquifer-system) and PA-10 (shallow aquifer-system), illustrating the deep and shallow piezometric responses to seasonal groundwater production stresses. These data are consistent with the conclusions of the IMP and show that pumping from the deep, confined aquifer-system causes a piezometric decline that is much greater in magnitude than the piezometric decline caused by pumping of the shallow aquifer-system—even though more groundwater production occurs from the shallow aquifer-system. The chart shows that piezometric levels at PA-7 have fluctuated from a low of approximately 190 ft-btoc in August 2013 to a high of about 80 ft-btoc in November 2016 and have not declined below the Guidance Level of 245 ft-btoc. The recovery of piezometric levels at PA-7 to above 90 ft-btoc in 2016 represented a "full recovery" of piezometric levels at PA-7 as defined in the SMP. This is the first instance of full recovery since 2012, which complies with the recommendation in the SMP for full piezometric recovery within the deep aquifer system at least once every five years.[8]

3.1.2.2 Aquifer-System Deformation

Figure 3-3 includes a time-series chart of vertical deformation of the aquifer-system as measured at the Ayala Park Extensometer during 2011-2016. These data show that the seasonal vertical compression and expansion of the aquifer system is responding to the seasonal decline and recovery of piezometric levels and indicate that the vertical deformation of the aquifer-system was mainly elastic during this period. However, between April 6, 2011 to August 3, 2016 (dates of full recovery of piezometric levels at PA-7 to 90 ft-btoc), the Deep Extensometer recorded about 0.028 ft of compression within the aquifer-system, which indicates that this compression is permanent compaction that occurred within the depth interval of 30-1,400 ft-bgs. Over this

[8] Page 2-2 in the SMP; Section 2.1.1.3—Recovery Periods: "Every fifth year, Watermaster recommends that all deep aquifer-system pumping cease for a continuous period until water-level recovery reaches 90 ft-btoc at PA-7. The cessation of pumping is intended to allow for sufficient water level recovery at PA-7 to recognize inelastic compaction, if any, at the Ayala Park Extensometer and at other locations where groundwater-level and ground-level data are being collected. The last time the water level at PA-7 was at or above 90 ft-btoc was in spring 2012. Therefore, the next recommended occurrence of water-level recovery to 90 ft-btoc will be spring 2017."

same period, the Shallow Extensometer recorded about 0.013 ft of compaction within the depth interval of 30-550 ft-bgs. Subtracting the permanent compaction recorded at the Shallow Extensometer from the permanent compaction recorded at the Deep Extensometer indicates that about 0.015 ft of compaction occurred within the depth interval of 550-1,400 ft-bgs between April 2011 to August 2016 (about 54% of the total compaction as estimated from the Deep Extensometer record).

Figure 3-4 is a stress-strain diagram of piezometric levels measured at PA-7 (stress) versus vertical deformation of the aquifer-system sediments as measured at the Deep Extensometer (strain). The hysteresis loops on this figure represent piezometric decline-recovery cycles and the resultant compression-expansion of the aquifer-system sediments. The diagram can be interpreted to understand the timing and magnitude of the occurrence of compaction within the depth interval of aquifer-system that is penetrated by the Deep Extensometer. Piezometric decline is shown as increasing from bottom to top on the Y-axis, and aquifer-system compression is shown as increasing from left to right on the X-axis. From April 2011 to January 2014, the hysteresis loops progressively shift to the right on this chart, indicating that about 0.028 ft of inelastic compaction occurred during this period within the depth interval of 30-1,400 ft-bgs. The overlapping hysteresis loops from 2014 to 2016 indicate that inelastic compaction at Ayala Park had ceased by about 2014 and that the seasonal vertical deformation of the aquifer-system sediments since 2014 has been virtually entirely elastic.

3.1.2.3 Vertical Ground Motion

Vertical ground motion[9] is measured across the Managed Area via InSAR and ground-level surveys. Figures 3-5a and 3-5b are maps that illustrate vertical ground motion as measured by InSAR and ground-level surveys[10] for the period 2011-2016 and during 2016, respectively.

The InSAR data shown in Figure 3-5a indicate the occurrence of up to about -0.08 ft of vertical ground motion across the Managed Area over the period of March 2011 to January 2017. Figure 3-3 shows that piezometric levels in the deep aquifer system were near full recovery (93 ft-btoc at PA-7) in both March 2011 and January 2017, suggesting that the downward vertical ground motion shown by InSAR in the Managed Area is at least in part inelastic and represents permanent land subsidence that occurred during this period. The greatest amount of subsidence shown on Figure 3-5a is in the northern portion of the Managed Area in the vicinity of well CH-17—the main deep production well in the Managed Area that was pumped on a seasonal basis during this period.

The InSAR data shown in Figure 3-5b indicate up to about +0.04 ft of vertical ground motion across most of the Managed Area during the period of January 2016 to January 2017. The area of upward vertical ground motion is confined to areas west of the Riley Barrier, and the greatest upward vertical ground motion is in the vicinity of CH-17. The upward vertical ground motion is explained by decreased production from CH-17 during 2016, which resulted in recovery of piezometric levels and elastic vertical expansion of the aquifer system (see Figure 3-3: the

[9] Upward vertical ground motion is indicated by positive values; downward vertical ground motion is indicated by negative values.

[10] The most recent ground-level survey conducted in the Managed Area was in March 2016. Ground-level surveys in the Managed Area were not conducted in FY 2016/17 at the recommendation of the GLMC.

recovery of piezometric levels at PA-7 and the expansion of the aquifer-system as measured by the Deep Extensometer).

Figure 3-1b shows that upward vertical ground motion in the Managed Area during 2016 also occurred to the north across most of Central MZ-1, which suggests a hydrogeologic connection between these two areas within the deep aquifer system; however, there is not enough piezometric data in Central MZ-1 to verify this connection.

The InSAR data shown in Figure 3-5a are consistent with Deep Extensometer record at Ayala Park:

- Figure 3-3 shows that during the period of March 2011 to January 2017, the Deep Extensometer at Ayala Park recorded about -0.017 ft of vertical compression of the aquifer system, which causes the same magnitude of downward vertical ground motion at this site. The InSAR data in Figure 3-5a during the same period indicate about -0.024 ft of vertical ground motion—a similar direction and magnitude of ground motion.

- Figure 3-3 shows that during the period of January 2016 to January 2017, the Deep Extensometer at Ayala Park recorded about +0.042 ft of vertical expansion of the aquifer system, which causes the same magnitude of upward vertical ground motion at this site. The InSAR data in Figure 3-5b during the same period indicate about +0.02 ft of vertical ground motion—a similar direction and magnitude of ground motion.

3.1.2.4 Horizontal Ground Motion

EDM surveys have been performed periodically since 2003 in the Managed Area between the benchmark monuments located along Eucalyptus, Edison, Schaefer, and Chino Avenues to monitor for horizontal ground motion across the historical Fissure Zone.

The EDM data sets were analyzed in 2016/17 for the following specific purposes: (i) to describe and document the monitoring equipment, field methods, and accuracies associated with EDMs; (ii) to describe the horizontal strain that has occurred between benchmark monuments over time; (iii) to identify potential locations, if any, for the installation of a horizontal extensometer; and (iv) to support recommendations for the future of monitoring via EDMs.

Parsons Brinckerhoff (PB) is the engineering sub-consultant that has conducted elevation and EDM surveys in the Chino Basin since 2003. PB staff conducts EDM surveys using Geodimeter Series 600 Total Stations. These instruments can resolve horizontal angles to within three seconds of arc and have distance accuracies of ±0.01 feet plus 3 parts per million (ppm). The total stations are calibrated annually and are operated consistent with the instrument's user manual. PB staff follows standard surveying practices to reduce sighting error and ensure the integrity of measurements. All measurements are computed and adjusted using MicroSurvey STAR*NET least squares survey network adjustment software. This has produced a standard error for distances between points less than 1,000 feet apart of about ±0.015 feet and about ±0.02 feet at over 3,000 feet. PB has made efforts to ensure continuity of the technology, methods, and operating staff to minimize errors over the course of the monitoring period.

Since 2003, EDM surveys were performed by PB at benchmark monuments aligned along east-west transects shown on the following map figures:

- Figure 3-6a: widely-spaced benchmarks along Schaefer, Edison, and Eucalyptus Avenues from Spring 2003 to Fall 2009.
- Figure 3-7a: closely-spaced benchmarks along Schaefer Avenue east of Central Avenue from Summer 2010 to Spring 2016.
- Figure 3-8a: closely-spaced benchmarks along Chino Avenue east of Central Avenue from Spring 2011 to Spring 2016.

The EDM data were reviewed with PB staff to ensure that they were correctly compiled and interpreted. To quantify and compare the magnitude and type of horizontal strain (compressive or tensile) in the shallow soils over time, horizontal strain in the east-west direction[11] was calculated from the EDM data-sets between pairs of adjacent monuments. Strain is a dimensionless value that was calculated using the following formula:

$$\varepsilon = \frac{\Delta L}{L_0}, \text{ where } \Delta L = L_i - L_0$$

L is the east-west distance between two adjacent monuments.

L_0 is the initial east-west distance between two adjacent monuments.

L_i is a subsequent east-west distance between two adjacent monuments.

Calculating strain based on the initial survey length (L_0) can reveal the occurrence of both elastic and inelastic strain over time. Negative strain values indicate compression between monuments (compressive strain). Positive strain values indicate extension between monuments (tensile strain).

Several figures were prepared to display the time series of east/west-oriented strain between pairs of adjacent monuments shown in the transects on Figures 3-6a, 3-7a, and 3-8a. To understand the effects of vertical ground motion in the Managed Area on the occurrence of horizontal strain between monuments, the time-series of the Deep Extensometer record at Ayala Park (located to the west of the historical Fissure Zone) was plotted on each figure alongside the time series charts of horizontal strain. Each figure was analyzed for the indication of inelastic tensile strain between monuments to identify zones that are most susceptible to ground fissuring that could be caused by subsidence in the Managed Area. If identified, such zones may be appropriate for more intensive monitoring for horizontal strain, such as the installation of a horizontal extensometer and/or addition of closely-spaced monuments and future EDM surveys.

- **Figure 3-6b**. This figure displays the time series of east/west-oriented strain between pairs of widely-spaced monuments shown on Figure 3-6a along Eucalyptus Avenue during 2003-2009. This period included the controlled deep aquifer-system stress testing in the Managed Area west of the Fissure Zone that occurred as part of the IMP in 2003-

[11] Because the historical Fissure Zone was aligned in a north-south direction, the horizontal deformation in the east-west direction is of primary concern for the threat of future ground fissuring.

2005. The Deep Extensometer at Ayala Park recorded up to about 0.15 feet of elastic compression and expansion of the aquifer system during these tests. Analysis of the stress-strain diagram in Figure 3-4 indicates that about 0.01 ft of inelastic compaction occurred at Ayala Park during the 2004-2005 stress test, and a total of about 0.04 ft of inelastic compaction occurred during 2003-2009. The analysis of horizontal strain on Figure 3-6b indicates no obvious areas of inelastic tensile strain that accumulated along Eucalyptus Avenue during 2003-2009. Tensile strain between monuments 145/55.1 and A-18 increased as the Deep Extensometer recorded vertical compression and decreased as the Deep Extensometer recorded vertical expansion, particularly during the 2003-2005 stress testing. Over the entire period of 2003-2009, the tensile strain appeared to be mainly elastic. These two monuments span the historical Fissure Zone and, based on this analysis, appear to be the most logical location along Eucalyptus Avenue for more intensive monitoring of horizontal strain if necessary in the future.

- **Figure 3-6c**. This figure displays the time series of east/west-oriented strain between pairs of widely-spaced monuments, shown on Figure 3-6a along Edison Avenue during 2003-2009. This period included the controlled deep aquifer-system stress testing in the Managed Area west of the Fissure Zone that occurred as part of the IMP in 2003-2005. The Deep Extensometer at Ayala Park recorded up to about 0.15 feet of elastic compression and expansion of the aquifer system during these tests. Analysis of the stress-strain diagram in Figure 3-4 indicates that about 0.01 ft of inelastic compaction occurred at Ayala Park during the 2004-2005 stress test, and a total of about 0.04 ft of inelastic compaction occurred during 2003-2009. The analysis of horizontal strain on Figure 3-6c indicates no obvious areas of inelastic tensile strain that accumulated along Edison Avenue during 2003-2009. Tensile strain between monuments A-12 and A-13 increased as the Deep Extensometer recorded vertical compression and decreased as the Deep Extensometer recorded vertical expansion, particularly during the 2003-2005 stress testing. During the entire period of 2003-2009, the tensile strain appeared to be mainly elastic. These two monuments span the historical Fissure Zone and, based on this analysis, appear to be the most logical location along Edison Avenue for more intensive monitoring of horizontal strain if necessary in the future.

- **Figure 3-6d**. This figure displays the time series of east/west-oriented strain between pairs of widely-spaced monuments, shown on Figure 3-6a along Schaefer Avenue during 2005-2009. This period was subsequent to the controlled deep aquifer-system stress testing in the Managed Area west of the Fissure Zone that occurred as part of the IMP in 2003-2005. The analysis of horizontal strain on Figure 3-6d indicates no obvious areas of inelastic tensile strain that accumulated along Schaefer Avenue during 2005-2009.

- **Figure 3-7b**. This figure displays the time series of east/west-oriented strain between pairs of closely-spaced monuments, shown on Figure 3-7a along Schaefer Avenue during 2011-2016. During this period, the Deep Extensometer at Ayala Park recorded several cycles of seasonal elastic compression and expansion of the aquifer system up to about 0.08 feet. Analysis of the stress-strain diagram in Figure 3-4 indicates that about 0.028 ft of inelastic compaction occurred during 2011-2016 at Ayala Park but that most of this compaction occurred during 2011-2013. The analysis of horizontal strain on

Figure 3-7b indicates one specific area where inelastic tensile strain accumulated along Schaefer Avenue during 2011-2016. Tensile strain between monuments B-75 and B-76 increased during 2011-2013, and then remained relatively stable during 2014-2016. This occurrence of inelastic tensile strain between monuments during 2011-2013 was contemporaneous with the 0.028 ft of inelastic compaction recorded at the Ayala Park Extensometer. These monuments span the historical Fissure Zone and, based on this analysis, appear to be the most logical location along Schaefer Avenue for more intensive monitoring of horizontal strain if necessary in the future.

- **Figures 3-8b and 3-8c**. These figures display the time series of east/west-oriented strain between pairs of closely-spaced monuments, shown on Figure 3-8a along Chino Avenue during 2011-2016. During this period, the Deep Extensometer at Ayala Park recorded several cycles of seasonal elastic compression and expansion of the aquifer system up to about 0.08 feet. Analysis of the stress-strain diagram in Figure 3-4 indicates that about 0.028 ft of inelastic compaction occurred during 2011-2016 at Ayala Park but that most of this compaction occurred during 2011-2013. The analysis of horizontal strain in Figures 3-8b and 3-8c indicates specific areas where inelastic tensile strain accumulated along Chino Avenue during 2011-2016. Tensile strain between monuments [B-238 and B-237], [B-230 and B229], [B-229 and B228], [B-227 and B226], and [B-226 and B225] increased during 2011-2013 and then remained relatively stable during 2014-2016. This occurrence of inelastic tensile strain between monuments during 2011-2013 was contemporaneous with the 0.028 ft of inelastic compaction recorded at the Ayala Park Extensometer. These monuments span an approximate northward extension of the historical Fissure Zone and, based on this analysis, appear to be the most logical locations along Chino Avenue for more intensive monitoring of horizontal strain if necessary in the future.

The following are the conclusions and recommendations from this analysis:

- Tensile and compressive horizontal strains within the shallow soils across the Fissure Zone, as calculated from EDMs, have occurred in a logical and contemporaneous manner relative to the vertical compression and expansion of the aquifer system in the Managed Area west of the Fissure Zone. This observation is especially true for strain between those monuments that directly span the Fissure Zone.

- The analysis above indicates that repeated EDM surveys are suitable as a monitoring technique for detecting the occurrence of tensile strain within shallow soils and determining their elastic and/or inelastic nature.

- During 2003-2009, the EDM surveys indicated that horizontal strain between the widely-spaced monuments across the Fissure Zone was primarily elastic.

- During 2011-2013, the EDM surveys indicated that the tensile strain between the closely-spaced monuments that span the Fissure Zone was in part inelastic and coincided with a small amount of permanent land subsidence that occurred to the west in the Managed Area. During 2014-2016, the land subsidence that was occurring in the

Managed Area during 2011-2013 ceased, and the tensile strain ceased but did not fully recover.

- The areas within the Managed Area that should be monitored by EDMs in the future are the transects of monuments that span the Fissure Zone along Chino, Schaefer, Edison, and Eucalyptus Avenues; EDMs have indicated that inelastic tensile strain can accumulate across the Fissure Zone when permanent land subsidence occurs to the west of the Fissure Zone.

- If the Long-Term Pumping Test will include groundwater production at CH-15B, which is located west on Eucalyptus Avenue, the GLMC should consider adding a series of closely-spaced monuments along Edison and Eucalyptus avenues across the Fissure Zone to perform EDM surveys as part of the test.

- It appears that very little, if any, inelastic tensile strain has accumulated across the Fissure Zone since 2014, when permanent land subsidence in the Managed Area appears to have ceased. Therefore, as long as permanent subsidence is absent in the Managed Area, the GLMC should consider performing EDM surveys across the Fissure Zone once every two to three years. The EDM surveys should be performed in conjunction with elevation surveys at monuments across the Managed Area at full recovery (or near full recovery) of piezometric levels at PA-7.

- If and when the Long-Term Pumping Test in the Managed Area is performed, EDM surveys across the Fissure Zone should be conducted in coordination with the test. These surveys should occur just prior to the test at full recovery of piezometric levels at PA-7, at maximum drawdown of piezometric levels below the Guidance Level at PA-7, and at the subsequent full recovery of piezometric levels at PA-7. The purpose of these EDM surveys will be to monitor for the occurrence and magnitude of inelastic tensile strain across the Fissure Zone associated with the drawdown of piezometric levels below the Guidance Level at PA-7.

- The installation of a new horizontal extensometer is not recommended at this time for the following reasons: (i) EDM surveys are a suitable monitoring technique to monitor for the occurrence and magnitude of inelastic tensile strain in shallow soils across the Fissure Zone; (ii) currently, very little, if any, permanent land subsidence in the Managed Area and tensile strain across the Fissure Zone is occurring; (iii) based on the monitoring results from the IMP, very little, if any, permanent land subsidence in the Managed Area and tensile strain across the Fissure Zone is expected to occur as a result of the Long-Term Pumping Test; and (iv) very little, if any, additional management-grade information would be provided by a horizontal extensometer (that would not be provided by EDMs), and therefore the cost is not justified.

3.2 Southeast Area

Vertical ground motion is measured across the Southeast Area via InSAR, traditional ground-level surveys, and the CCX. Figure 3-9 is a time-series chart that displays and describes the long-term history of land subsidence in the Southeast Area. InSAR data are generally incoherent

across much of this area because the overlying agricultural land uses are not hard, consistent reflectors of radar waves. Therefore, the history of subsidence is best characterized by ground-level surveys and the CCX. The main observations from this chart are that a total of about 0.5 ft of subsidence occurred in the Southeast Area since 1987, but since about 2010, subsidence has virtually ceased, coinciding with the increased direct reuse of recycled water, decreased groundwater production, and stable or increasing piezometric levels.

Figures 3-10a and 3-10b illustrate the vertical ground motion that has occurred in the Southeast Area during 2011-2016 and 2016 respectively, as measured by InSAR and ground-level surveys. Both maps show that little recent subsidence has occurred across the Southeast Area and that some of the area experienced upward vertical ground motion.

Figure 3-11 displays the time series of piezometric levels and vertical aquifer-system deformation recorded at the CCX, which began collecting data in July 2012. In general, piezometric levels have changed very little and have generally recovered from 2012 through 2016. A small amount of expansion of the aquifer-system sediments has been measured by the CCX extensometers, coincident with the piezometric-level recovery. These observations are consistent with the ground-level surveys shown in Figures 3-10a and 3-10b, which indicate minor upward vertical ground motion near the CCX. Groundwater production began at the Chino Creek Well Field in 2014, but appears to have had little, if any, effect on piezometric levels or aquifer-system deformation at the CCX through 2016.

The InSAR and traditional ground-level survey datasets do not always corroborate each other in the pattern and/or magnitude of vertical ground motion in the Southeast Area where both data-sets overlap. Therefore, ground-level surveys should continue to be the primary method of measurement of vertical ground motion across the Southeast Area.

3.3 Central MZ-1 Area

Vertical ground-motion is measured across the Central MZ-1 Area via InSAR and traditional ground-level surveys. Figures 3-1a and 3-1b illustrate vertical ground motion as measured by InSAR across Central MZ-1 during 2011-2016 and 2016, respectively. Figure 3-12 is a time-series chart that displays and describes the long-term history of land subsidence in Central MZ-1. These maps and charts show that the time history and magnitude of vertical ground motion in Central MZ-1 is similar to the time history and magnitude of vertical ground motion in the Managed Area, which suggests a relationship to the causes of land subsidence in the Managed Area; however, there is not enough historical piezometric level data in this area to confirm this relationship.

About 1.2 feet of subsidence occurred near Walnut and Monte Vista Avenue (BM 125/49) from 1993 to 2000. Since 2000, about 0.3 feet of subsidence has occurred at a gradually declining rate. Figure 3-1b shows that during 2016, upward vertical ground motion occurred across most of Central MZ-1—similar to the upward vertical ground motion that occurred across most of the Managed Area during 2016. Figure 3-13 shows that up to about +0.03 ft of vertical ground motion occurred across Central MZ-1 during 2016 as measured by InSAR, and that the ground-level survey data showed a similar spatial pattern and magnitude of vertical ground motion.

3.4 Northwest MZ-1 Area

3.4.1 Vertical Ground Motion

Vertical ground motion is measured across the Northwest MZ-1 Area via InSAR and traditional ground-level surveys. Figures 3-1a and 3-1b illustrate vertical ground motion as measured by InSAR across Northwest MZ-1 during 2011-2016 and 2016, respectively. A maximum of about -0.25 ft of vertical ground motion occurred in Northwest MZ-1 during 2011-2016—an average rate of about -0.04 ft/yr. A maximum of about -0.03 ft of vertical ground motion occurred during 2016.

Figure 3-14 is a time-series chart that displays and describes the long-term history of land subsidence in Northwest MZ-1. The main observations from this chart are that about 1.3 ft of subsidence occurred in this area from 1992 through 2016—an average rate of about 0.05 ft/yr. The chart also shows piezometric levels at wells in the area from 1930-2016. From about 1930 to 1978, piezometric levels in Northwest MZ-1 declined by about 175 feet. Since then, piezometric levels have recovered, but have remained below the 1930 levels. The observed and continuous subsidence that occurred between the 1992 and 2016 period cannot be entirely explained by the concurrent changes in piezometric levels. A plausible explanation for the subsidence is that thick, slow-draining aquitards are compacting in response to the historical declines in piezometric levels that occurred from 1930 to 1978.

Figure 3-15 illustrates the recent vertical ground motion that occurred in Northwest MZ-1 from 2014-2016, as measured by both ground-level surveys and InSAR: a maximum of about -0.1 ft of vertical ground motion occurred in Northwest MZ-1 over this period as measured by InSAR. The ground-level survey data showed a similar spatial pattern and magnitude of vertical ground motion across Northwest MZ-1 as measured by InSAR.

The subsidence shown on these maps and charts has been gradually and persistently occurring in Northwest MZ-1, and is ongoing. Although the downward vertical ground motion that occurred in Northwest MZ-1 during 2016 was less than historical rates, groundwater levels at many wells in the area were recovering during 2016, which may have resulted in elastic expansion of the aquifer system that offset a portion of the permanent compaction that is likely occurring in other portions of the aquifer system (*i.e.* other areas and/or depths). The planned Pomona Extensometer facility (see location on Figures 3-15a and 3-15b) will potentially elucidate these hydro-mechanical processes and identify the compacting depth interval(s) within the aquifer system.

3.4.2 Horizontal Ground Motion

Figure 3-1a shows that the subsidence that occurred in Northwest MZ-1 over the period 2011-2016 created a steep subsidence gradient across the San Jose Fault—the same pattern of "differential subsidence" that occurred in the MZ-1 Managed Area during the time of ground fissuring. Differential subsidence can cause an accumulation of horizontal strain in the shallow sediments and the potential for ground fissuring.[12]

[12] Ground fissuring is the main subsidence-related threat to overlying infrastructure. Watermaster, consistent with the recommendation of the GLMC, has determined that the SMP needs to be updated to include a

To identify the potential areas of accumulation of tensile horizontal strain in the shallow soils in this area, annual EDM surveys between benchmark monuments that cross the San Jose Fault have been performed since 2014. Figure 3-16 displays: (i) the vertical ground motion that occurred in Northwest MZ-1 from 2014-2016 as measured by InSAR and (ii) the closely-spaced benchmark monuments where EDM surveys were performed across the San Jose Fault during 2014-2016. Figure 3-17 displays the time series of east/west-oriented and north/south-oriented strain between the pairs of closely-spaced monuments, shown on Figure 3-16, during 2014-2016. Although tensile strain has been calculated from the EDMs between some monuments (e.g. B-409 to B-408), it is pre-mature to draw conclusions at this point. The GLMC should recommend the continuance of annual elevation and EDM surveys across the San Jose Fault Zone during the development of the *Subsidence Management Plan for the Northwest MZ-1 Area.*

3.5 Northeast Area

Vertical ground-motion is measured across the Northeast Area via InSAR. Figure 3-18 is a time-series chart that displays and describes the long-term history of land subsidence in the Northeast Area. The main observations from this chart are that about 1.0 ft of subsidence occurred in the Northeast Area from 1992 to 2016 at a gradual and persistent rate of about 0.04 ft/yr. Since about 2011, the rate has declined to about 0.03 ft/yr. This decline coincides with relatively stable or increasing piezometric levels in the Northeast Area. These observations indicate that the gradual and persistent subsidence that has occurred is likely inelastic and permanent.

Figure 3-19a is a map of vertical ground motion as measured by InSAR for the Northeast Area over the period 2011 to 2016. The predominant area of downward vertical ground motion is near State Highway 60 between Vineyard and Archibald Avenues, where a maximum of about -0.25 ft of vertical ground motion occurred between March 2011 and January 2017.

Figure 3-19b is a map of vertical ground motion as measured by InSAR across the Northeast Area during 2016. The predominant areas of downward vertical ground motion are similar to the areas shown in Figure 3-19a. Maximum downward vertical ground motion of about -0.06 ft occurred just east of the intersection of Mission Boulevard and Archibald Avenue.

3.6 Seismicity

Tectonic displacement of the land surface on either side of geologic faults can be horizontal, vertical, or a combination of both. During an earthquake, the land surface can subside suddenly. Subsidence associated with large magnitude earthquakes has been documented across North America and elsewhere (Weischet, 1963; Myers and Hamilton, 1964; Plafker, 1965). Tectonic movement along the San Jose Fault Zone, including aseismic creep, is also a plausible mechanism for the occurrence of the differential land subsidence that has occurred in Northwest MZ-1. Figures 3-1a and 3-1b include earthquake epicenters and associated magnitudes for the period between 2011 to 2017 and 2016, respectively. The earthquake epicenters do not show a clear spatial relationship between the seismicity and the differential subsidence in Northwest MZ-1 nor do the data show a spatial correlation between earthquakes

Subsidence Management Plan for the Northwest MZ-1 Area with the long-term objective to minimize or abate the occurrence of the differential land subsidence. Development of this subsidence management plan is an ongoing, multi-year effort of the Watermaster.

and other areas of subsidence concern. With respect to the Northwest MZ-1 Area, without direct evidence of compaction within the aquifer system, as will potentially be provided by the Pomona Extensometer, tectonic deformation cannot be ruled out as a mechanism for the observed differential subsidence.

Table 3-1
Groundwater Production in the Managed Area for Calendar Years 2011-2016
acre-ft

Well Name	Aquifer Layer	2011	2012	2013	2014	2015	Calendar Year 2016					
							Qtr 1	Qtr 2	Qtr 3	Qtr 4	Total	By Layer
C-4	Shallow	709	85	0	0	0	0	0	0	0	0	1,447
C-6		892	1,203	0	0	0	0	0	0	0	0	
CH-1A		910	873	726	1,048	793	39	185	110	170	503	
CH-7A		398	390	283	289	283	2	0	0	41	43	
CH-7B		510	438	236	599	476	2	0	0	56	58	
CIM-1		185	1,064	1,122	1,096	896	180	206	281	173	840	
XRef 8730*		-	-	5	5	3	0.75	0.75	0.75	0.75	3	
CH-17	Deep**	897	867	1,025	1,379	1,060	0	0	0	110	110	310
CH-15B		-	-	140	0	0	0	0	0	0	0	
CIM-11A		433	466	128	156	51	37	25	65	72	200	
	Totals	**4,934**	**5,386**	**3,665**	**4,572**	**3,560**	**261**	**417**	**456**	**622**	**1,756**	

"C" = City of Chino

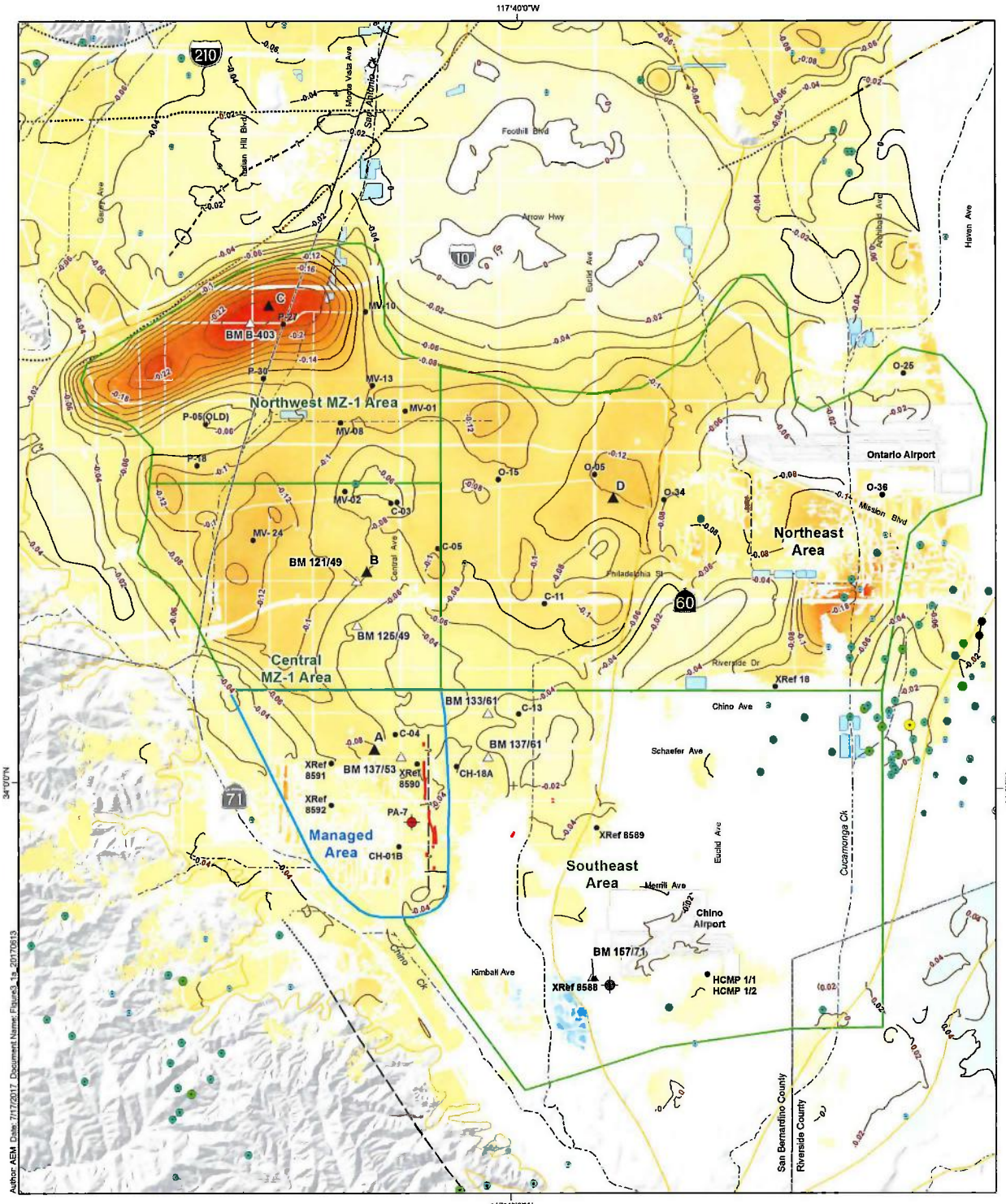
"CH" = City of Chino Hills

"CIM" = California Institution for Men

"XRef" = Private

*Well screen interval is unknown, but assumed to be shallow based on typical well construction for other private well in the vicinity.

**These wells have screen intervals that extend into the shallow-aquifer system, so a portion of the production comes from the shallow aquifer-system.



Relative Change in Land Surface Altitude as Measured by InSAR (March 2011 to January 2017)

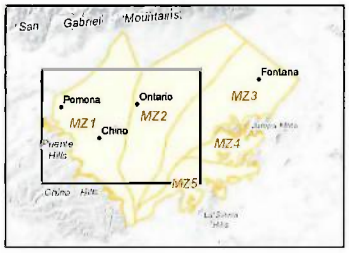
+0.5 ft
0
-0.5 ft
InSAR absent or incoherent

Ayala Park Extensometer
Chino Creek Extensometer
Ground Fissures
Approximate Location of the Riley Barrier

Earthquake Epicenters March 2011 to January 2017 (Local Magnitude)

0 - 1
1 - 2
2 - 3
3 - 4
4 - 5
5 - 6

Wells with Long-Term Time Series of Depth-to-Groundwater
Location of INSAR Time Series of Change in Ground-Surface Elevation
Location of Benchmark with Time Series of Ground-Surface Elevation
Flood Control and Conservation Basins
Managed Area
Areas of Subsidence Concern



Prepared by:
WEI
Wildermuth Environmental Inc.

0 1 2 Miles
0 1 2 Kilometers

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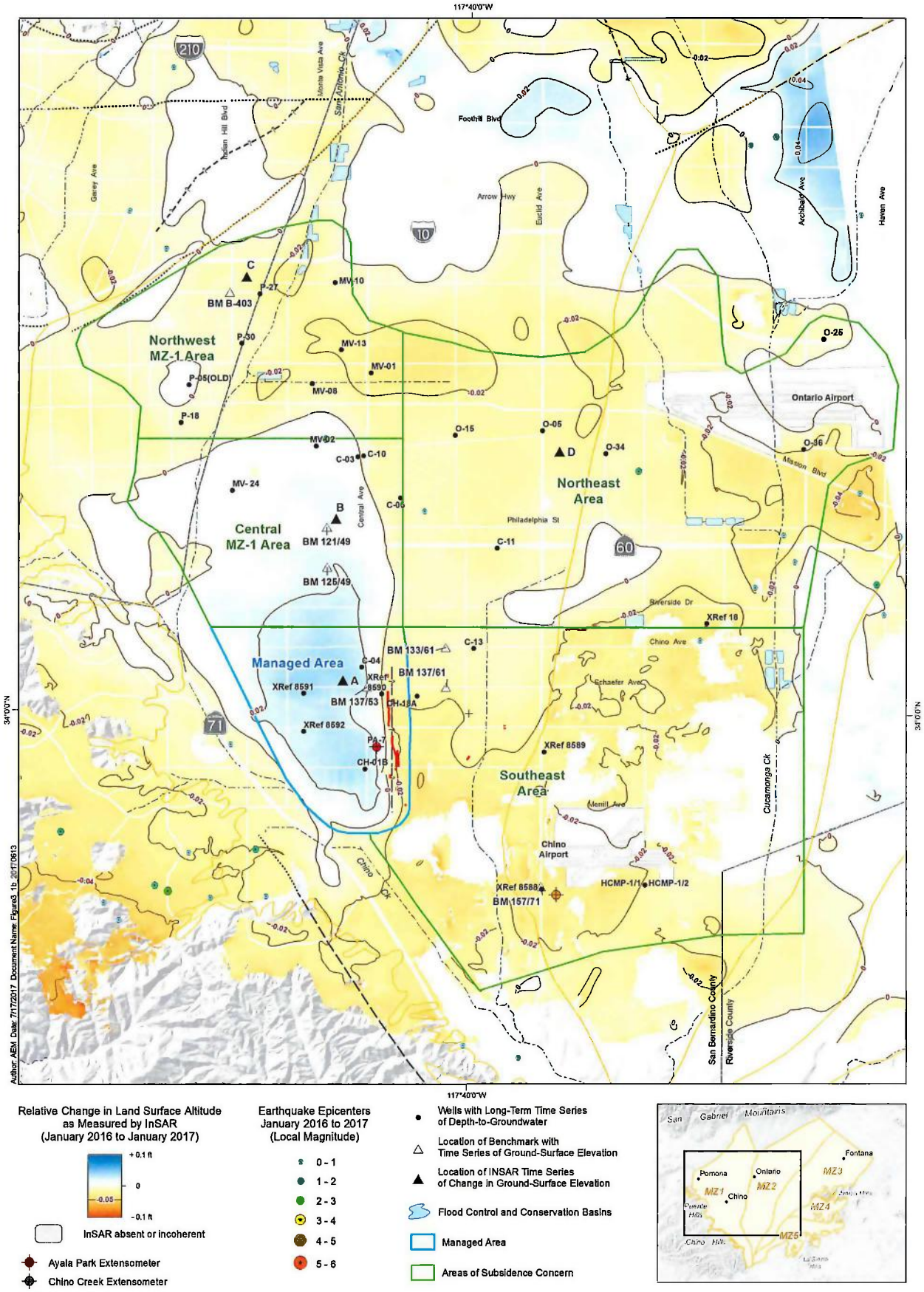
Vertical Ground-Motion Across Western Chino Basin
2011-2016

Figure 3-1a



Relative Change in Land Surface Altitude as Measured by InSAR (January 2016 to January 2017)

+0.1 ft
0
-0.05
-0.1 ft

InSAR absent or incoherent

Ayala Park Extensometer
Chino Creek Extensometer
Ground Fissures
Approximate Location of the Riley Barrier

Earthquake Epicenters January 2016 to 2017 (Local Magnitude)

0 - 1
1 - 2
2 - 3
3 - 4
4 - 5
5 - 6

Wells with Long-Term Time Series of Depth-to-Groundwater
Location of Benchmark with Time Series of Ground-Surface Elevation
Location of INSAR Time Series of Change in Ground-Surface Elevation
Flood Control and Conservation Basins
Managed Area
Areas of Subsidence Concern

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WEI
Wildermuth Environmental Inc.

0 1 2 Miles
0 1 2 Kilometers

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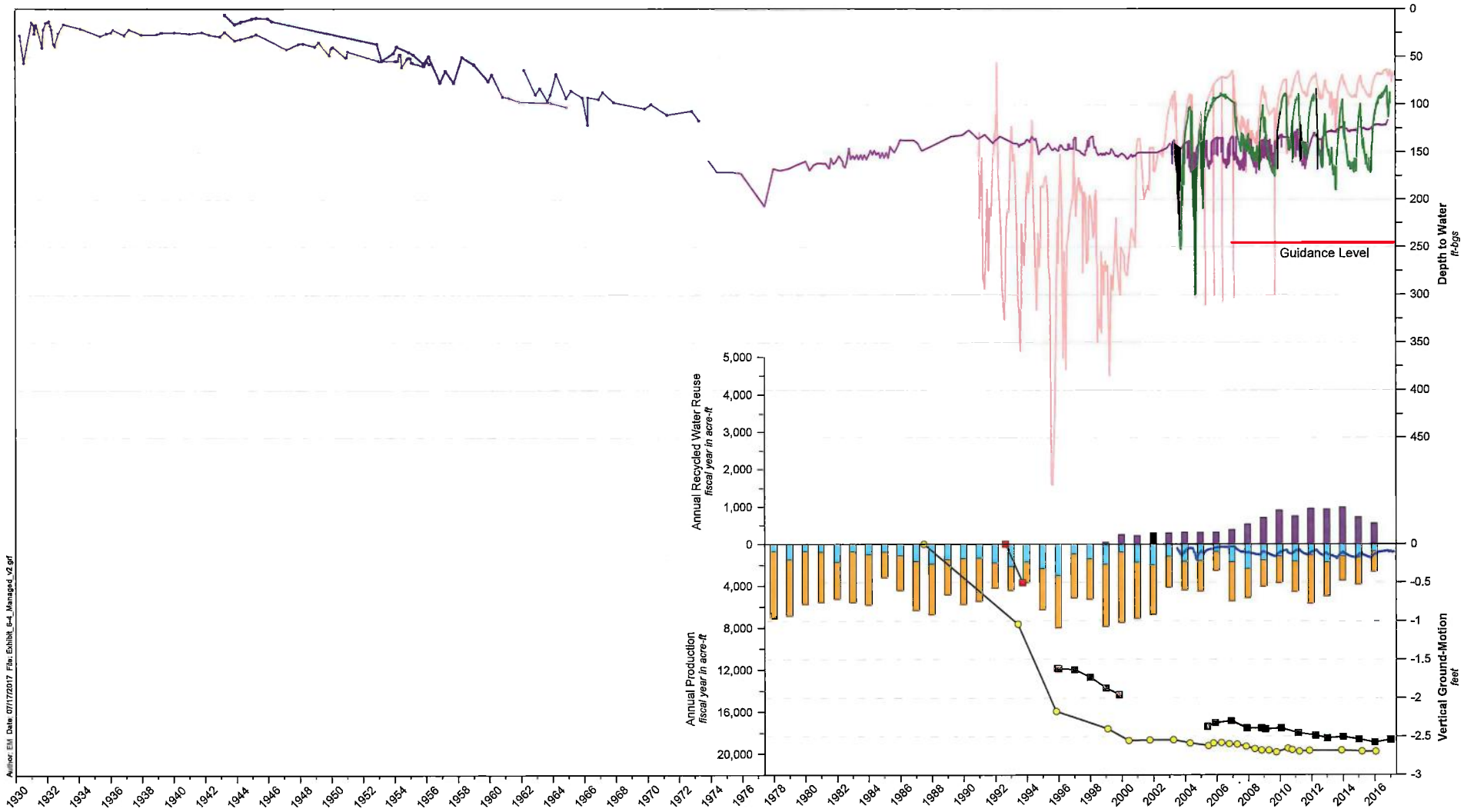
Vertical Ground-Motion Across Western Chino Basin
2016

Figure 3-1b



Piezometric Levels at Wells (Top-Bottom of Screen Interval)

Shallow Aquifer-System
- C-4 (160-275 ft-bgs)
- XRef 8590 (80-225 ft-bgs)
- XRef 8591 (unknown)
- XRef 8592 (90-230 ft-bgs)

Deep Aquifer-Sytem
- CH-1B (440-1,180 ft-bgs)
- PA-7 (438-448 ft-bgs)

Vertical Ground-Motion (Cumulative Displacement)
- InSAR Point A (see Figure 3-1a)
- BM 137/53
- Ayala Park Deep Extensometer Measures between: 30 and 1,440 ft-bgs

Recycled Water Direct Reuse

Groundwater Production
- Shallow Aquifer or Unknown Aquifer
- Deep Aquifer or Both Aquifers

*See Figures 3-1a, b for locations of wells, benchmarks, and extensometers

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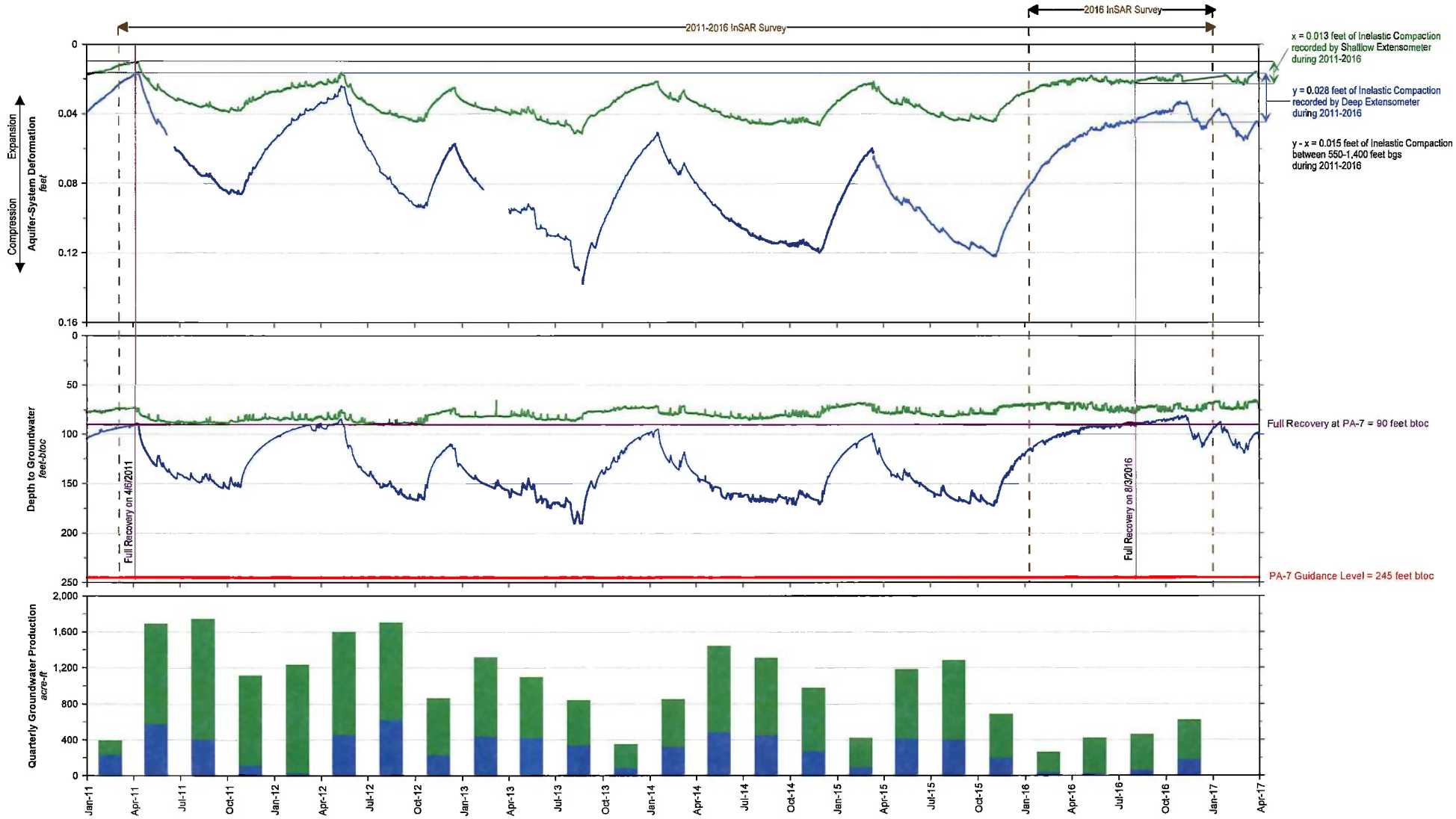
2016 Annual Report

The History of Land Subsidence in the Managed Area

Figure 3-2



Prepared by:

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Wildermuth Environmental, Inc.

Aquifer-System Deformation at Ayala Park
(Extensometer Depth Interval)
- Shallow Extensometer (30-550 ft-bgs)
- Deep Extensometer (30-1,400 ft-bgs)

Piezometric Levels at Ayala Park
(Perforated Depth Interval)
- Shallow Piezometer PA-10 (213-233 ft-bgs)
- Deep Piezometer PA-7 (438-448 ft-bgs)

Groundwater Production
(see Table 3-1 for well details)
- Shallow Aquifer
- Deep Aquifer

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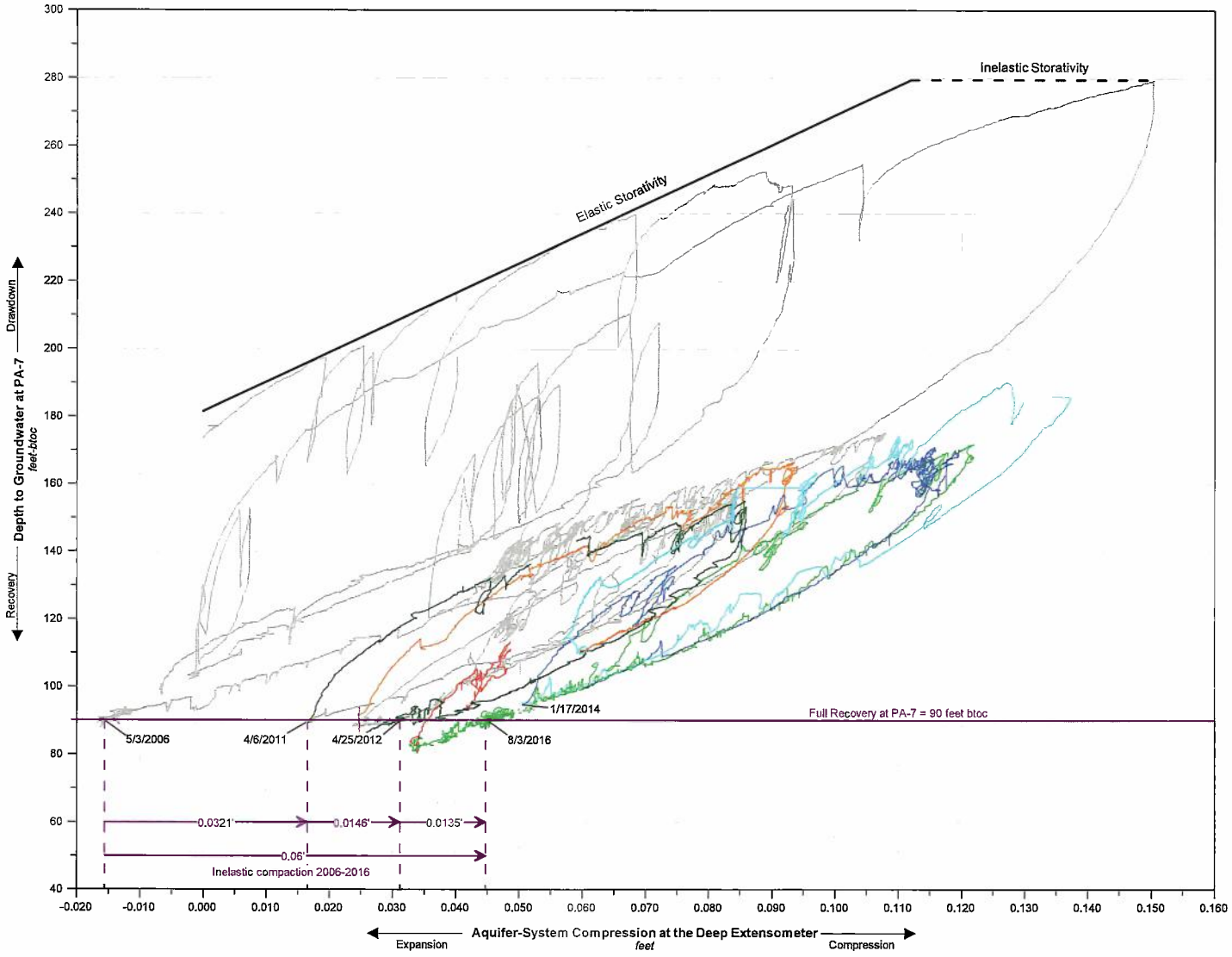
Stress and Strain within the Managed Area

Figure 3-3



Stress - Strain Hysteresis Loops
of Drawdown and Recovery Cycles

- Drawdown and Recovery Between July 2003 and April 2011
- Drawdown and Recovery April 9, 2011 to May 10, 2012
- Drawdown and Recovery May 10, 2012 to December 9, 2012
- Drawdown and Recovery December 9, 2012 to January 17, 2014
- Drawdown and Recovery January 17, 2014 to March 8, 2015
- Drawdown and Recovery March 8, 2015 to November 7, 2016
- Drawdown and Recovery November 11, 2016 to January 1, 2017

*PA-7 Well-Screen Interval: 438-448 ft-bgs
Depth Interval of the Deep Extensometer: 30-1,400 feet-bgs

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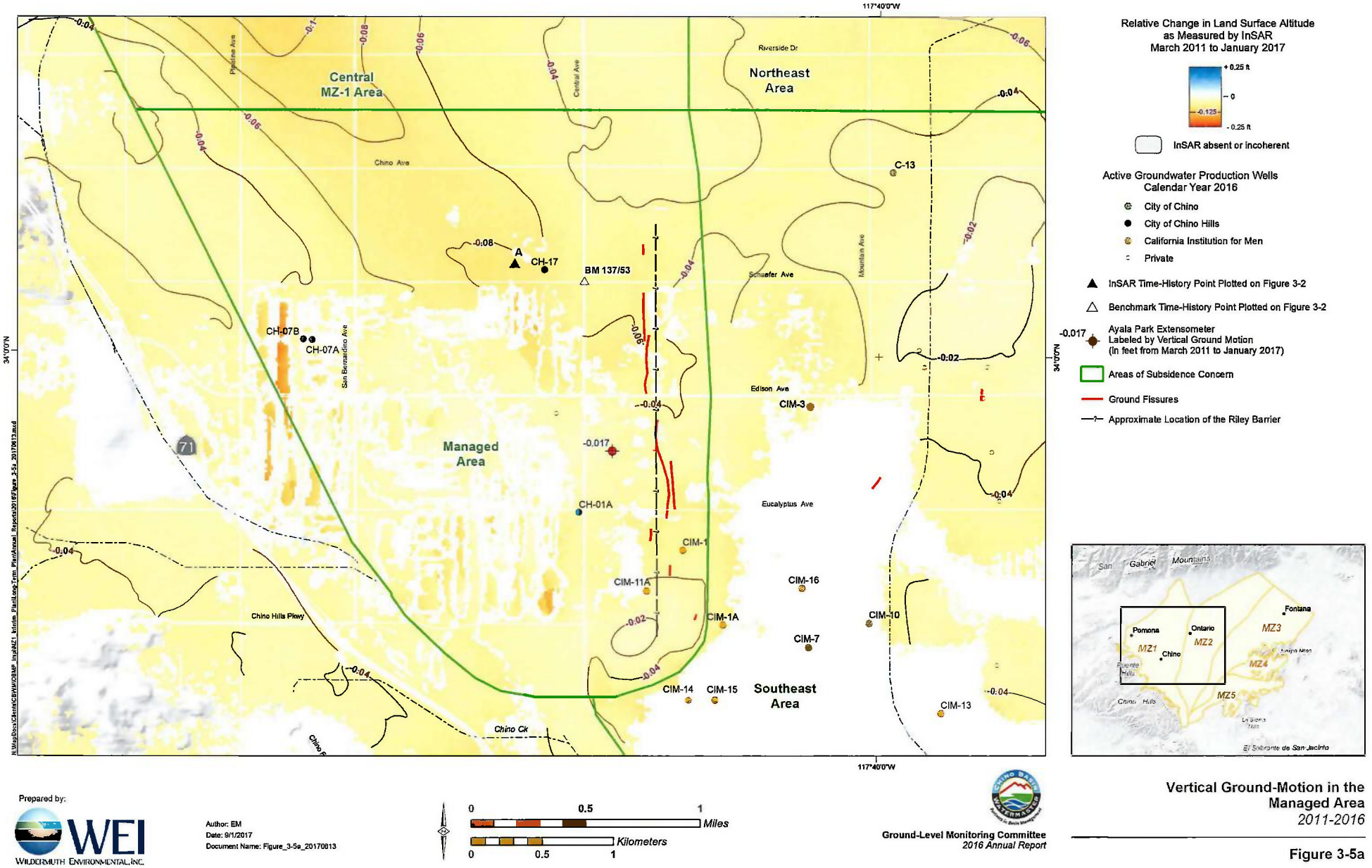
2016 Annual Report

Stress-Strain Diagram
Ayala Park Extensometer

Figure 3-4



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WILDERMUTH ENVIRONMENTAL, INC.

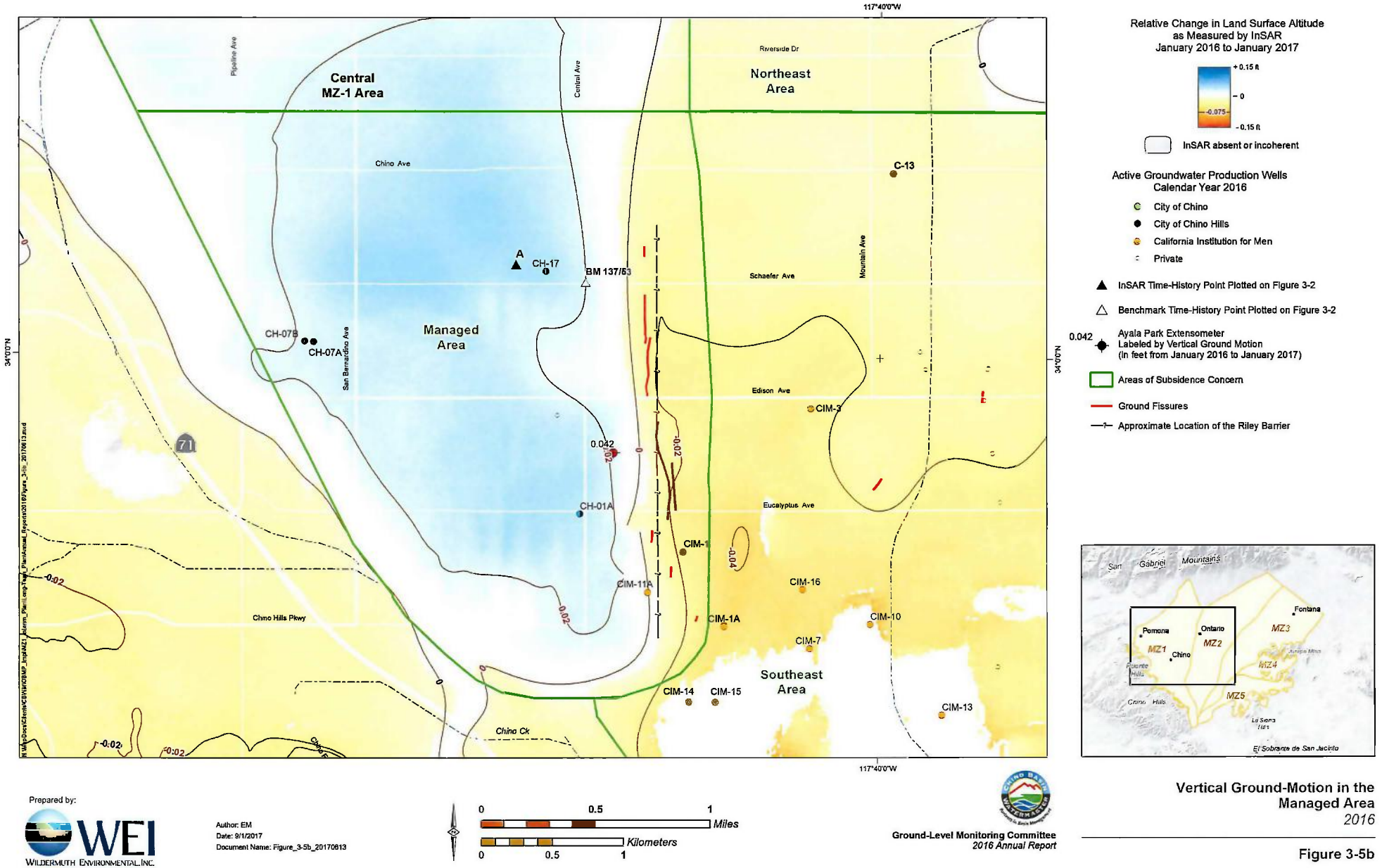
Author: EM
Date: 9/1/2017
Document Name: Figure_3-5a_20170813

0 0.5 1 Miles
0 0.5 1 Kilometers

Ground-Level Monitoring Committee
2016 Annual Report

Vertical Ground-Motion in the Managed Area
2011-2016

Figure 3-5a



Relative Change in Land Surface Altitude
as Measured by InSAR
January 2016 to January 2017

+0.15 ft
0
-0.075
-0.15 ft

InSAR absent or incoherent

Active Groundwater Production Wells
Calendar Year 2016

- City of Chino
- City of Chino Hills
- California Institution for Men
- Private

- InSAR Time-History Point Plotted on Figure 3-2
- Benchmark Time-History Point Plotted on Figure 3-2
- 0.042 Ayala Park Extensometer Labeled by Vertical Ground Motion (in feet from January 2016 to January 2017)
- Areas of Subsidence Concern
- Ground Fissures
- Approximate Location of the Riley Barrier

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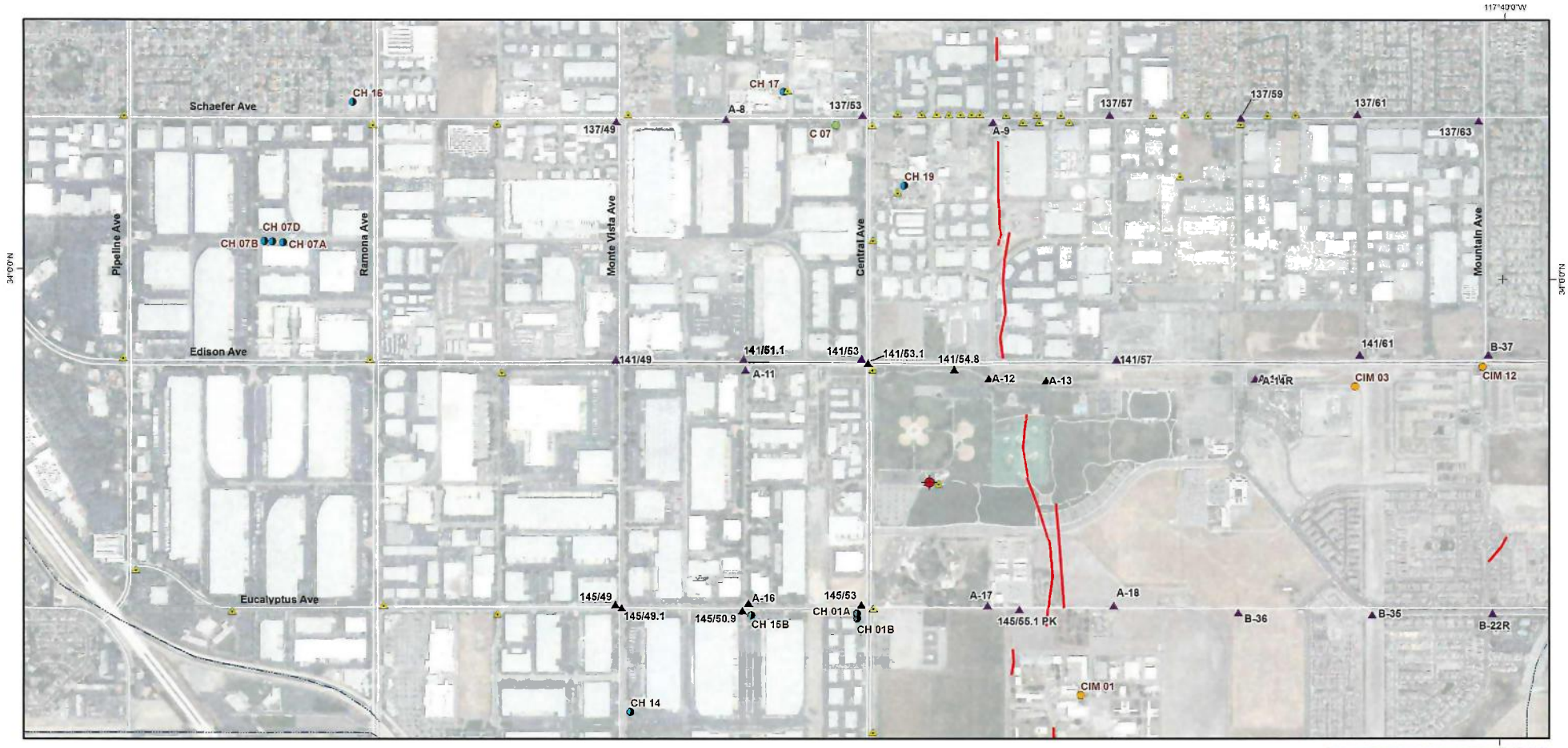
Document Name: Figure_3-5b_20170613

0 0.5 1 Miles
0 0.5 1 Kilometers

Ground-Level Monitoring Committee
2016 Annual Report

Vertical Ground-Motion in the Managed Area
2016

Figure 3-5b



Survey Benchmarks

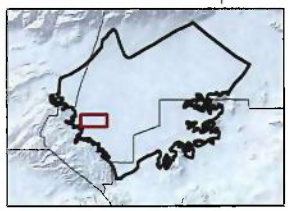
- Existing Benchmark Monument
- Existing Benchmark Monument with Survey Data shown in Figures 3-6b through 3-6d

Ground Fissures

Deep Extensometer at Ayala Park

Active Production Wells by Owner

- City of Chino
- City of Chino Hills
- California Institution for Men



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Date: 20170712
File: Figure_3-6a.mxd

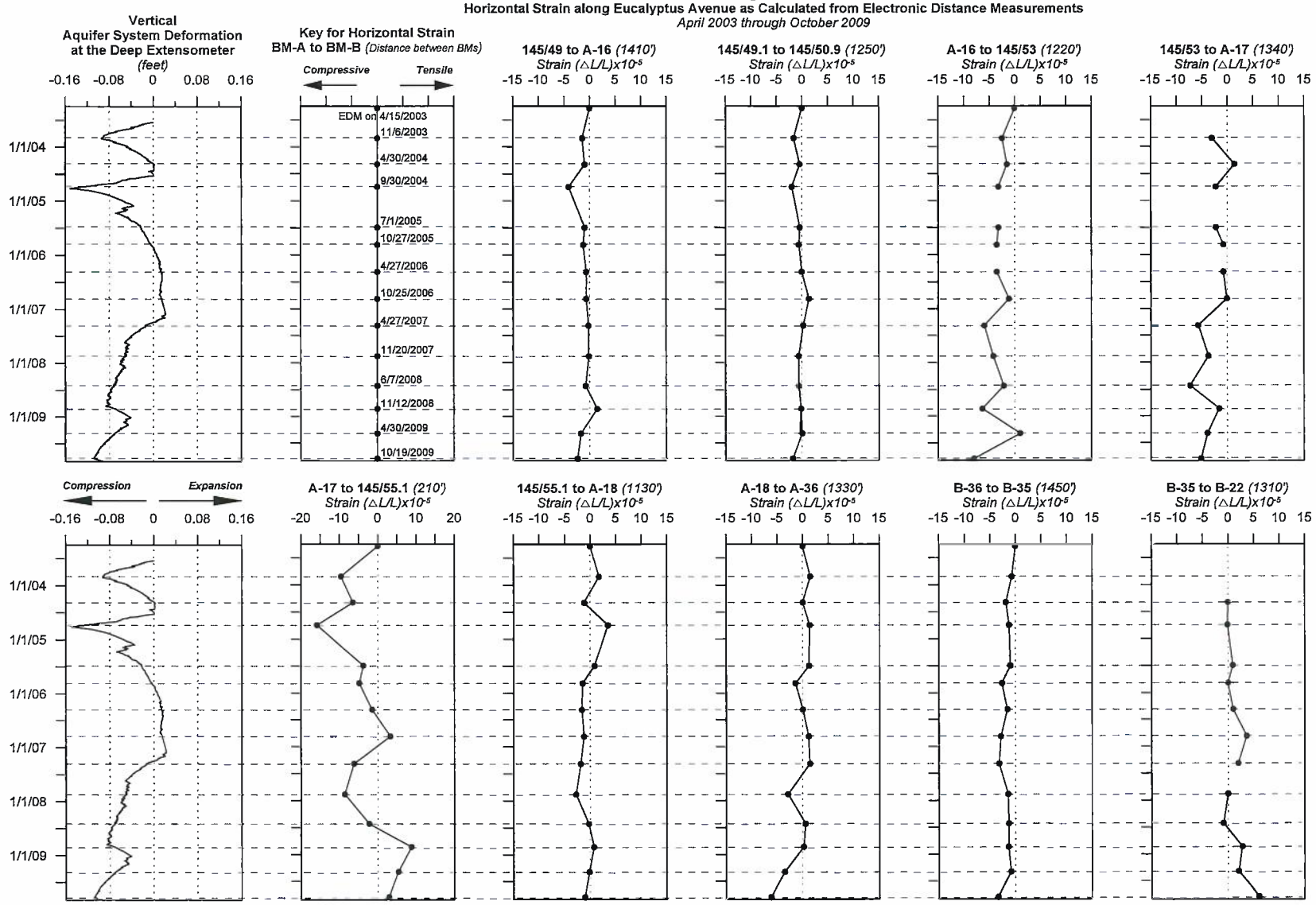
0 1,000 2,000 Feet

0 500 Meters

Map of Widely-Spaced Benchmark Monuments
Managed Area: 2003-2009

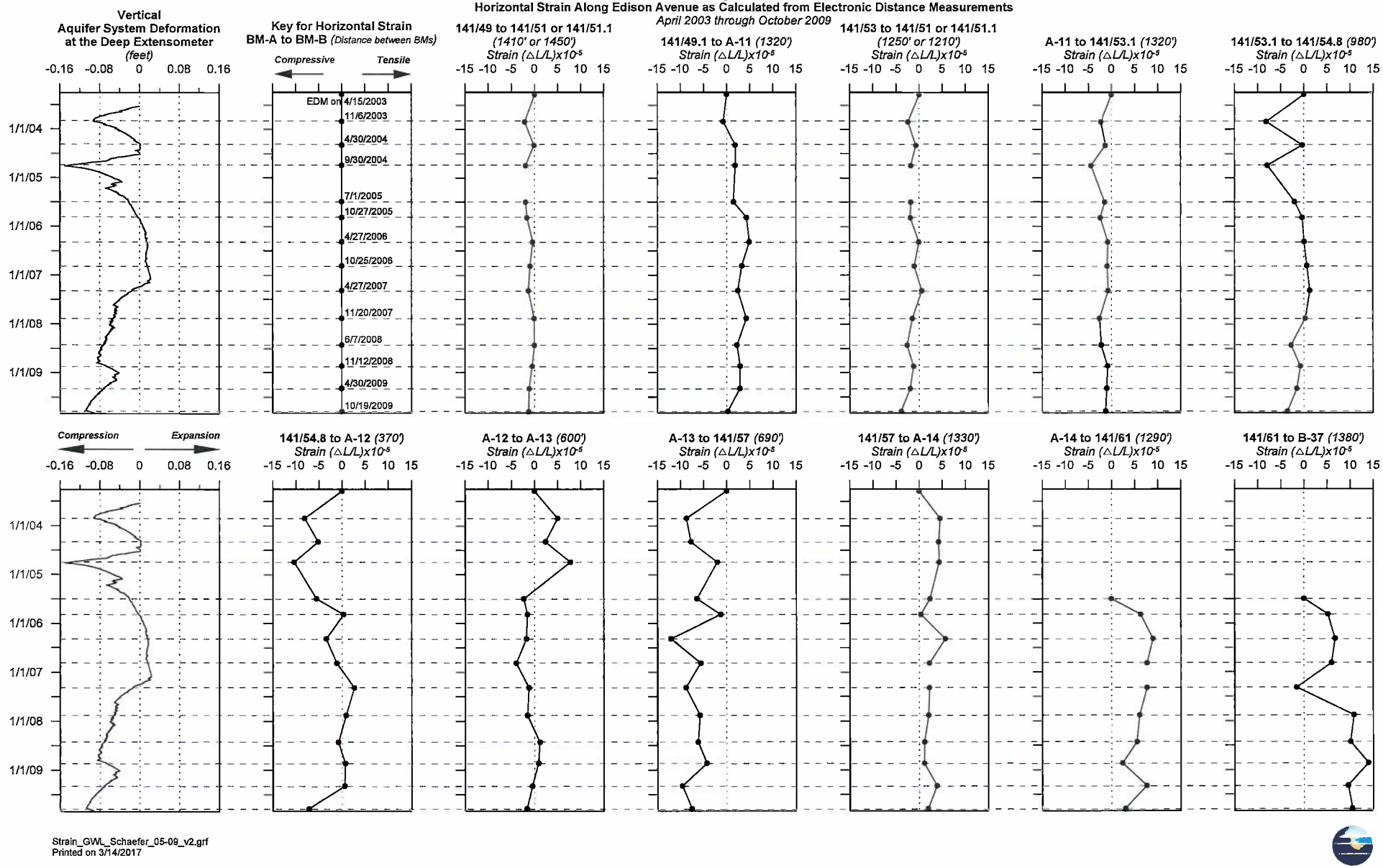
Figure 3-6a

Figure 3-6b
Horizontal Strain along Eucalyptus Avenue as Calculated from Electronic Distance Measurements
April 2003 through October 2009



Strain_GWL_Schaefer_05-09_v2.grf
Printed on 3/14/2017

Figure 3-6c
Horizontal Strain Along Edison Avenue as Calculated from Electronic Distance Measurements
April 2003 through October 2009



Strain_GWL_Schaefer_05-09_v2.grf
Printed on 3/14/2017

Figure 3-6d
Horizontal Strain Along Schaefer Avenue as Calculated from Electronic Distance Measurements
October 2005 through October 2009

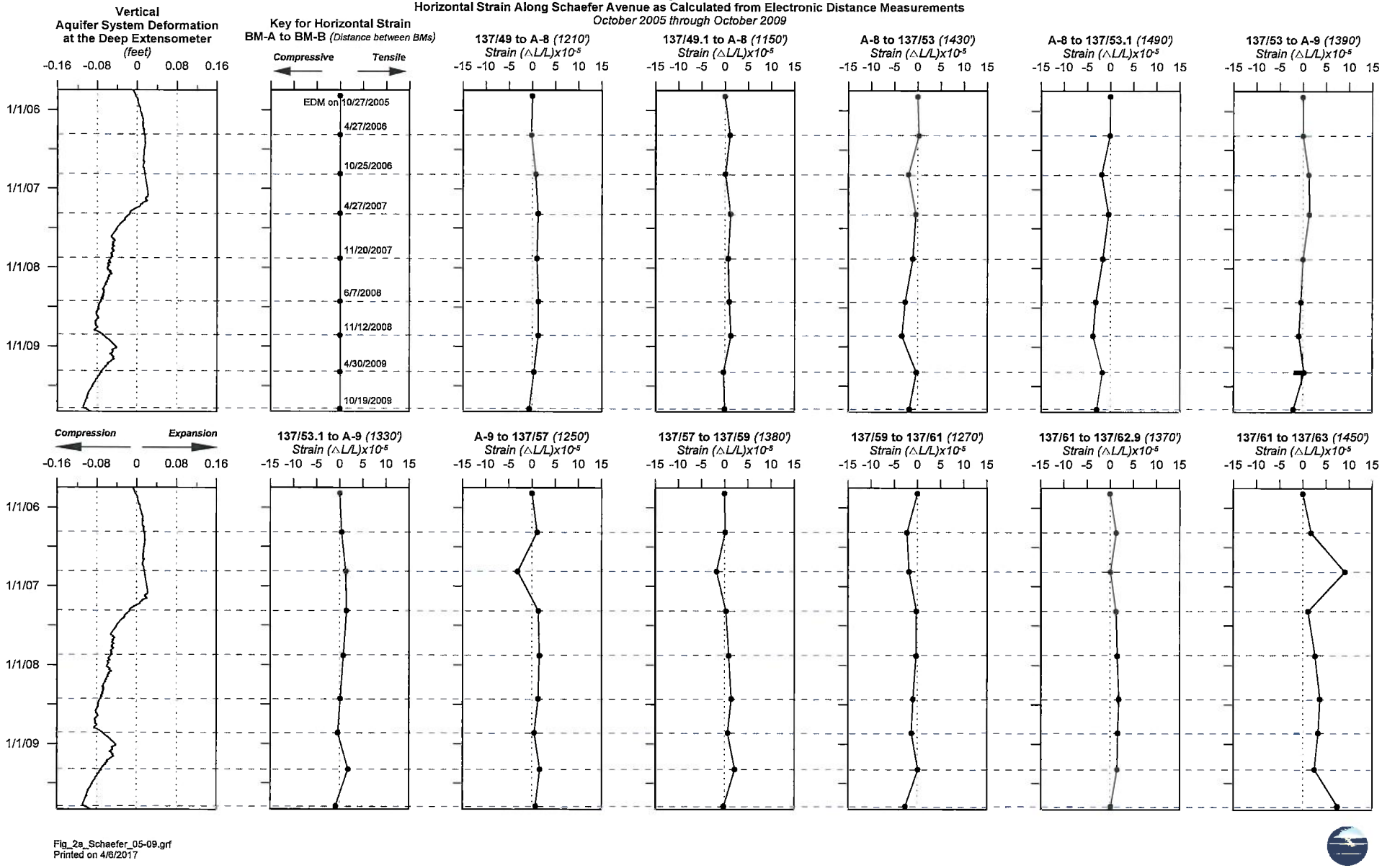
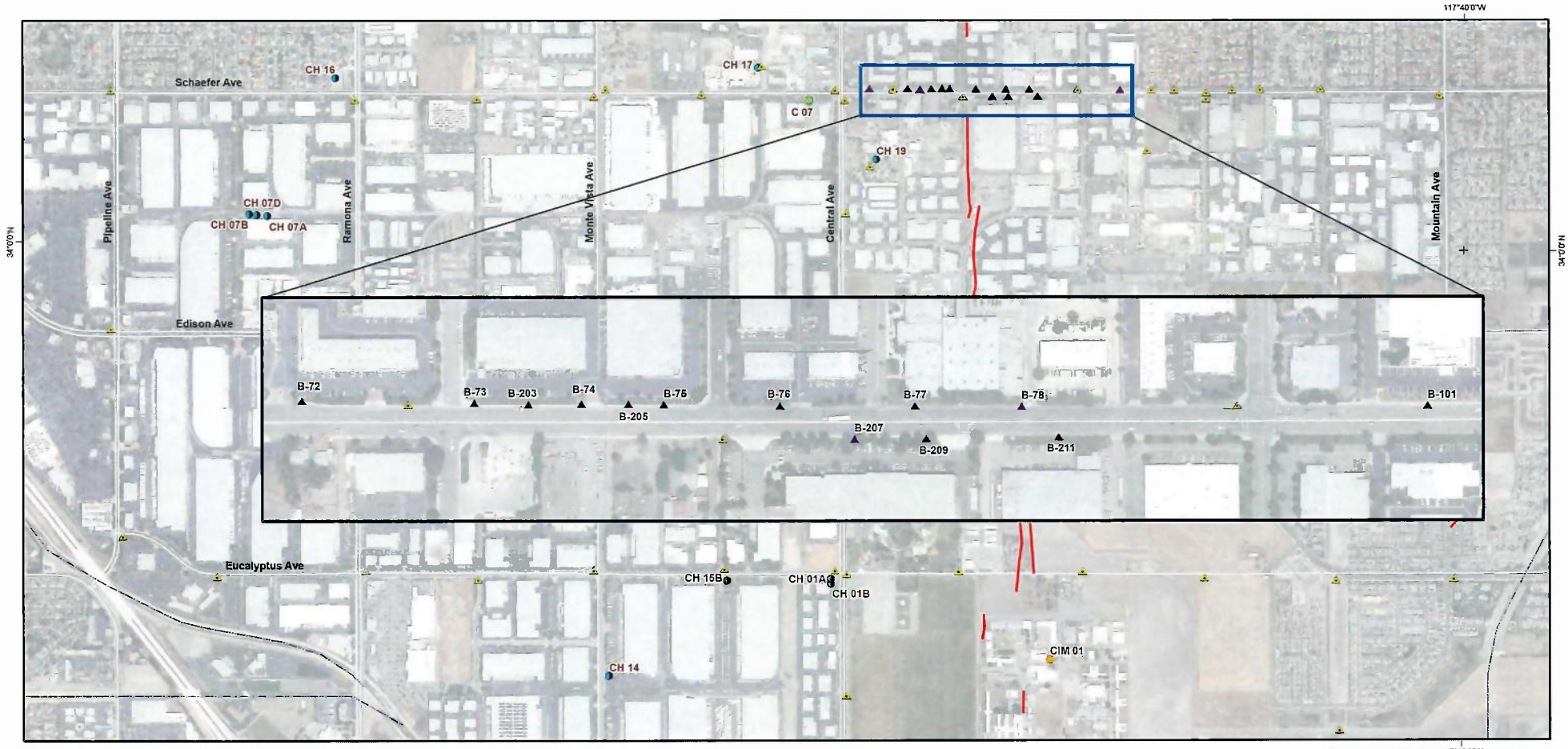


Fig_2a_Schaefer_05-09.grf
Printed on 4/6/2017



Survey Benchmarks

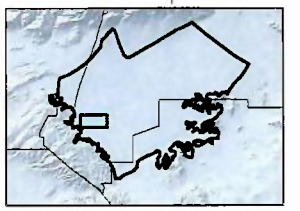
- Existing Benchmark Monument
- Existing Benchmark Monument with Survey Data shown in Figure 3-7b

Ground Fissures

Deep Extensometer at Ayala Park

Active Production Wells by Owner

- City of Chino
- California Institution for Men
- City of Chino Hills



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Wildermuth Environmental Inc.

Author: GAR
Date: 20170712
File: Figure_3-7a.mxd

0 1,000 2,000 Feet
0 500 Meters

Map of Closely-Spaced Benchmark Monuments Across the Fissure Zone Along Schaefer Avenue

Figure 3-7a

Figure 3-7b
Horizontal Strain Along Schaefer Avenue as Calculated from Electronic Distance Measurements
April 2011 through March 2016

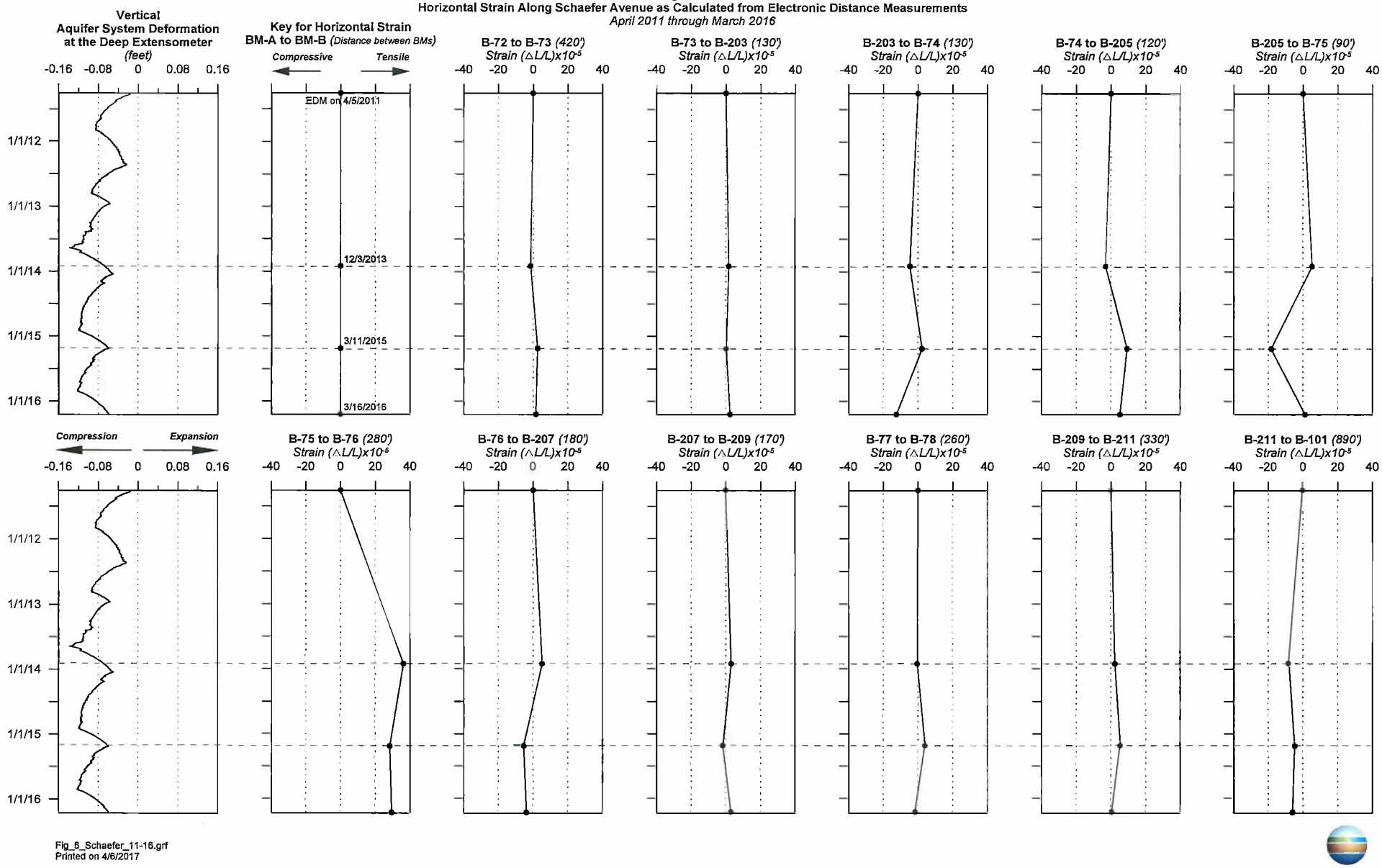
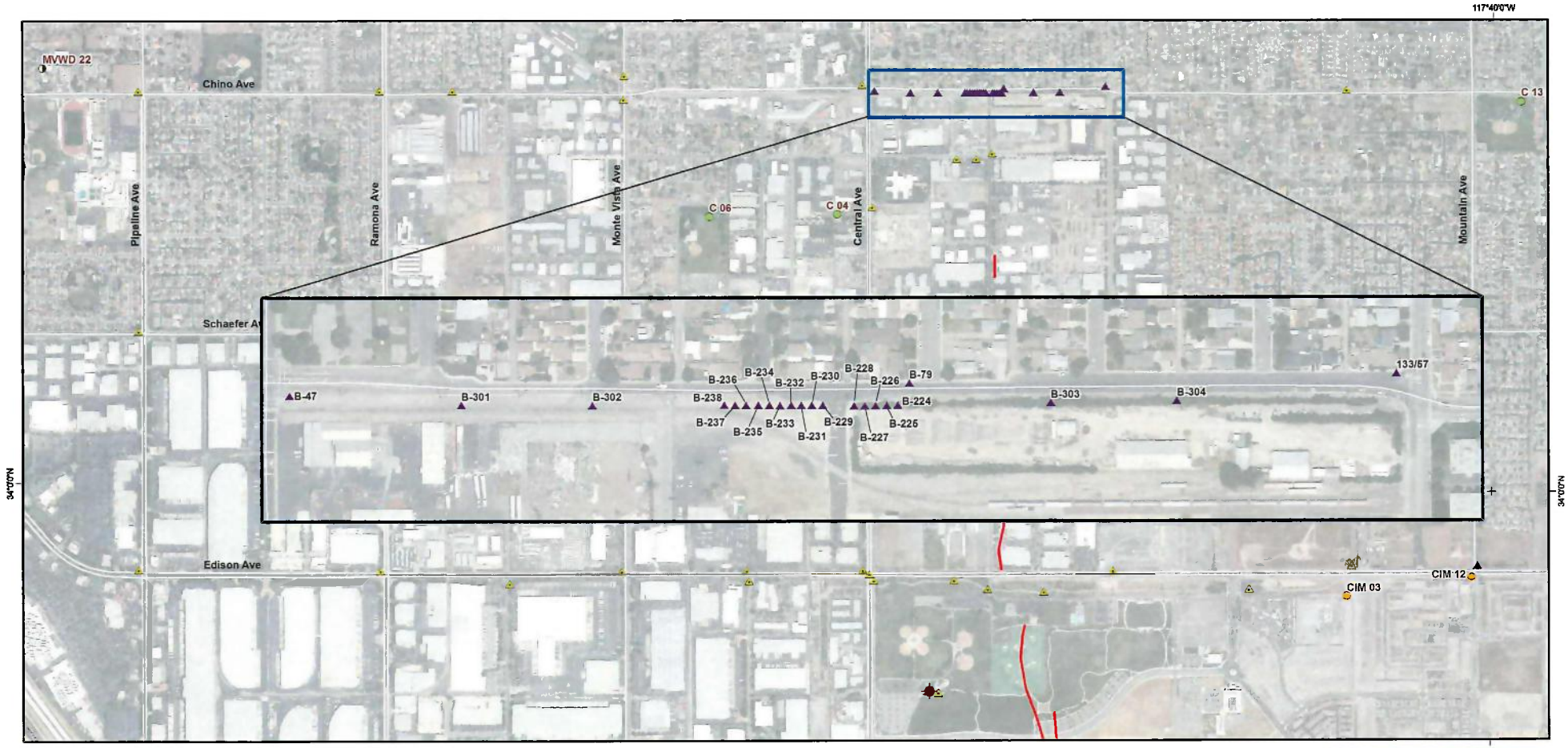


Fig_6_Schaefer_11-16.grf
Printed on 4/6/2017



Survey Benchmarks

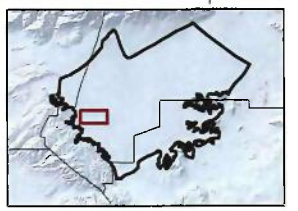
- Existing Benchmark Monument
- Existing Benchmark Monument with Survey Data shown in Figures 3-8b and 3-8c

Ground Fissures

Deep Extensometer at Ayala Park

Active Production Wells by Owner

- City of Chino
- City of Chino Hills
- California Institution for Men
- Monte Vista Water District



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Author: GAR
Date: 20170712
File: Figure_3-8a.mxd

0 1,000 2,000 Feet

0 500 Meters

Map of Closely-Spaced Benchmark Monuments Across the Fissure Zone Along Chino Avenue

Figure 3-8a

Figure 3-8b
Horizontal Strain Along Western Chino Avenue as Calculated from Electronic Distance Measurements
April 2011 through March 2016

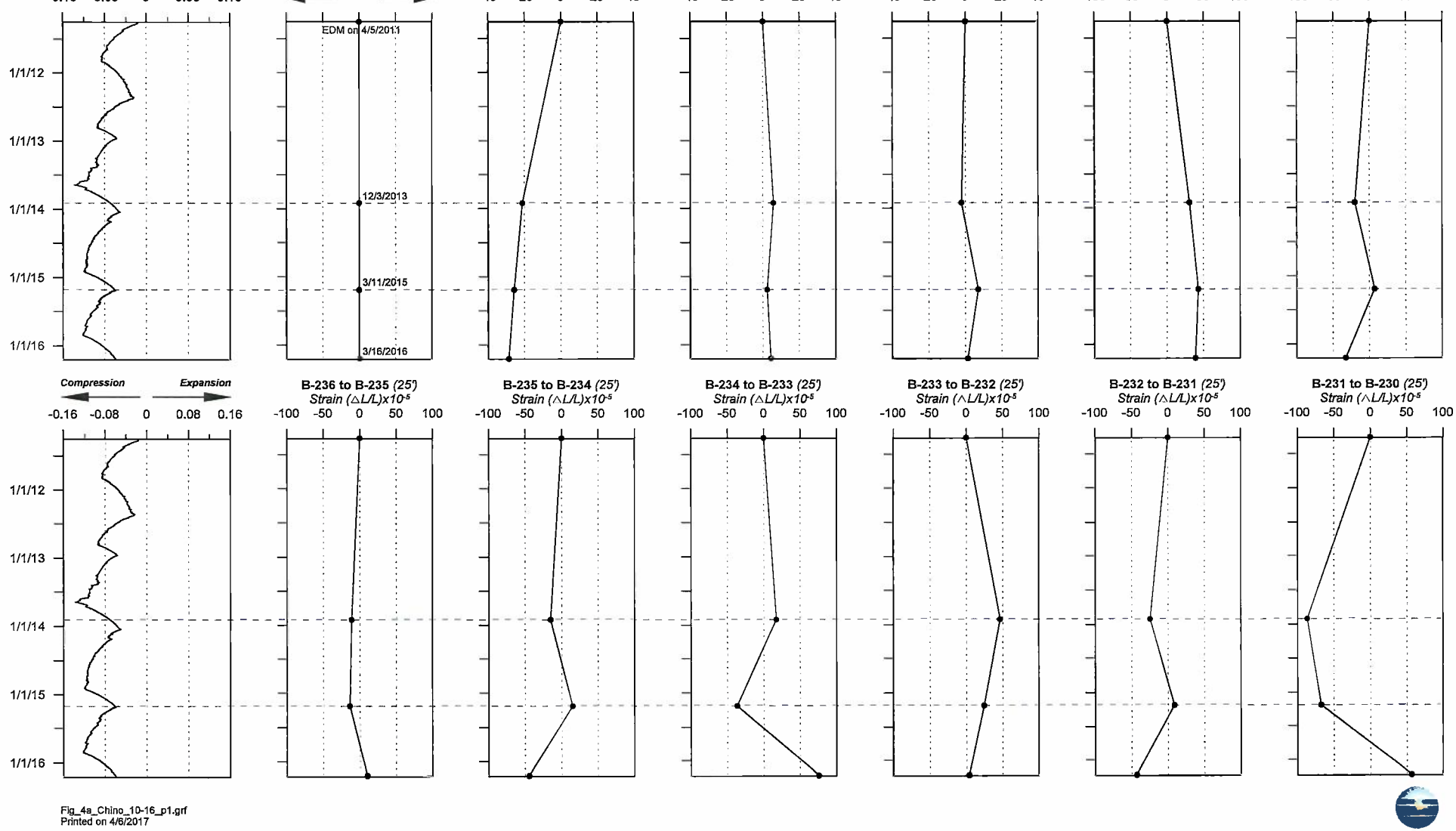


Fig_4a_Chino_10-16_p1.grf
Printed on 4/6/2017

Figure 3-8c
Horizontal Strain Along Eastern Chino Avenue as Calculated from Electronic Distance Measurements
April 2011 through March 2016

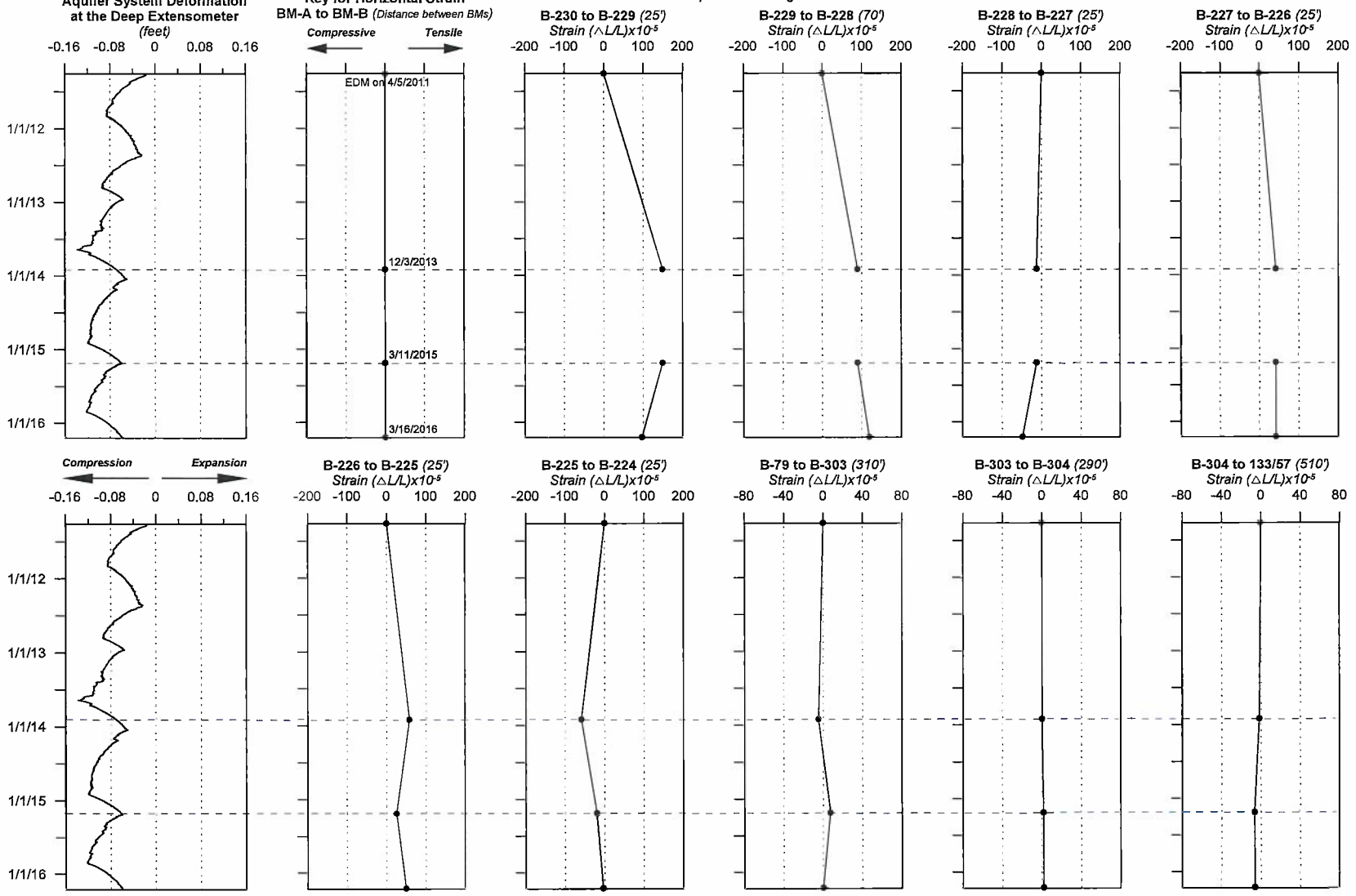
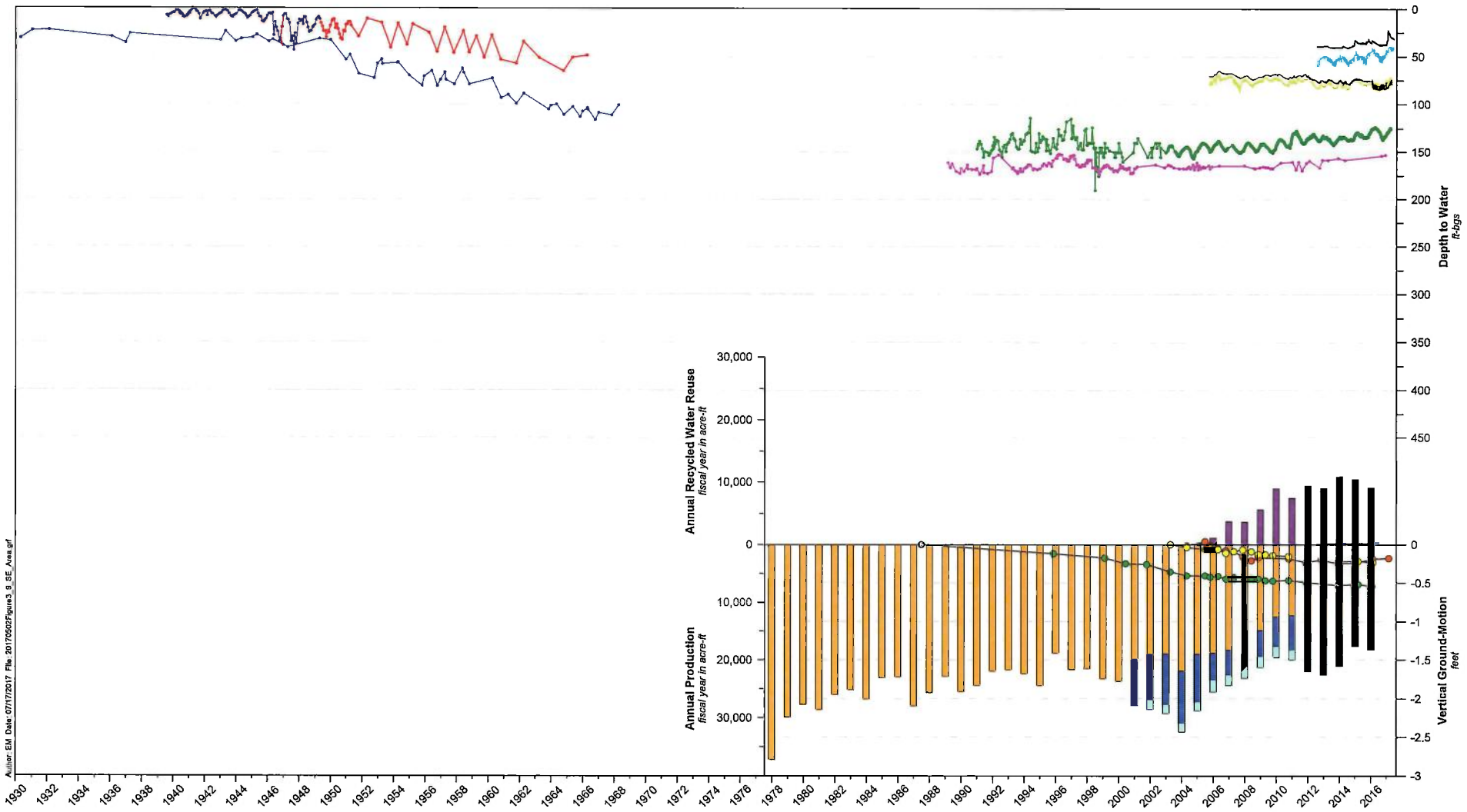


Fig_4b_Chino_11-16_p1.grf
Printed on 4/6/2017



Piezometric Levels at Wells (Top-Bottom of Screen Interval)

- C-13 (290-720 ft-bgs)
- CH-18A (420-980 ft-bgs)
- HCMP-1/1 (135-175 ft-bgs)
- HCMP-1/2 (300-320 ft-bgs)
- XRef 8588 (unknown)
- XRef 8589 (unknown)
- CCPA-1 1230583
- CCPA-2 1230584

Vertical Ground-Motion (Cumulative Displacement)

- BM 133/61
- BM 137/61
- BM 157/71
- CCX-2 Extensometer Measures between: 50 and 610 ft-bgs

Recharge and Production

- Recycled Water Reuse Applied in the Southeast Area
- Groundwater Production from Municipal and Private Wells in the Southeast Area
- Groundwater Production from Desalter Wells in the Upper Aquifer
- Groundwater Production from Desalter Wells in the Lower Aquifer

*See Figures 3-1a, b for locations of wells, benchmarks, and extensometers

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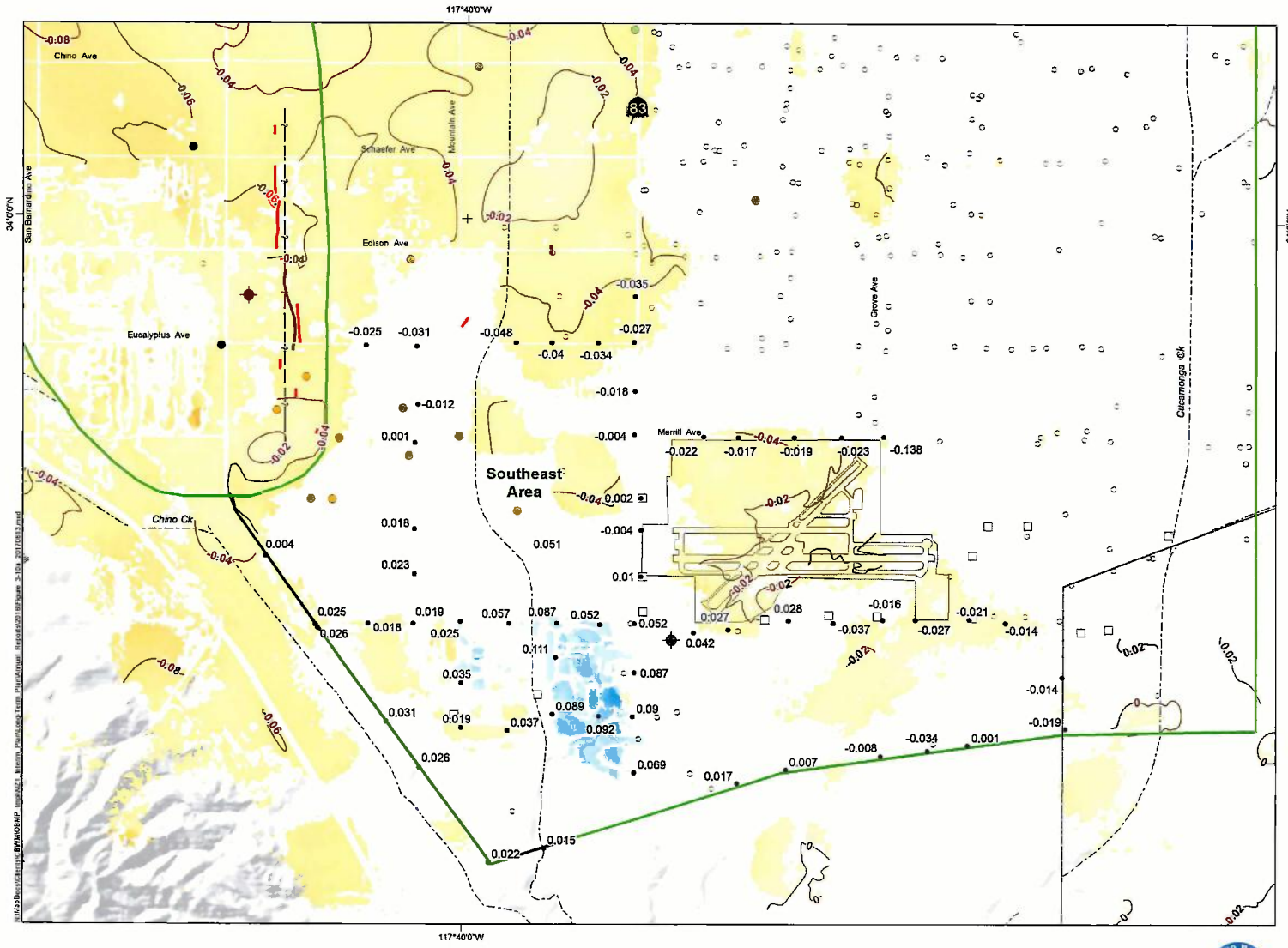
Ground-Level Monitoring Committee
2016 Annual Report

The History of Land Subsidence in the Southeast Area

Figure 3-9



Relative Change in Land Surface Altitude
as Measured by InSAR
March 2011 to January 2017

+0.25 ft
0
-0.125
-0.25 ft

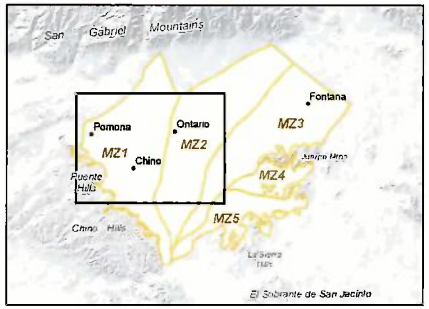
InSAR absent or incoherent

-0.03 Survey Benchmark
Labeled by Vertical Ground Motion
(in feet from November 2011 to February 2017)

Active Groundwater Production Wells
Calendar Year 2016

- Chino Basin Desalter Authority
- City of Chino
- City of Chino Hills
- California Institution for Men
- Private

Ayala Park Extensometer
Chino Creek Extensometer
Areas of Subsidence Concern
Ground Fissures
Approximate Location of the Riley Barrier



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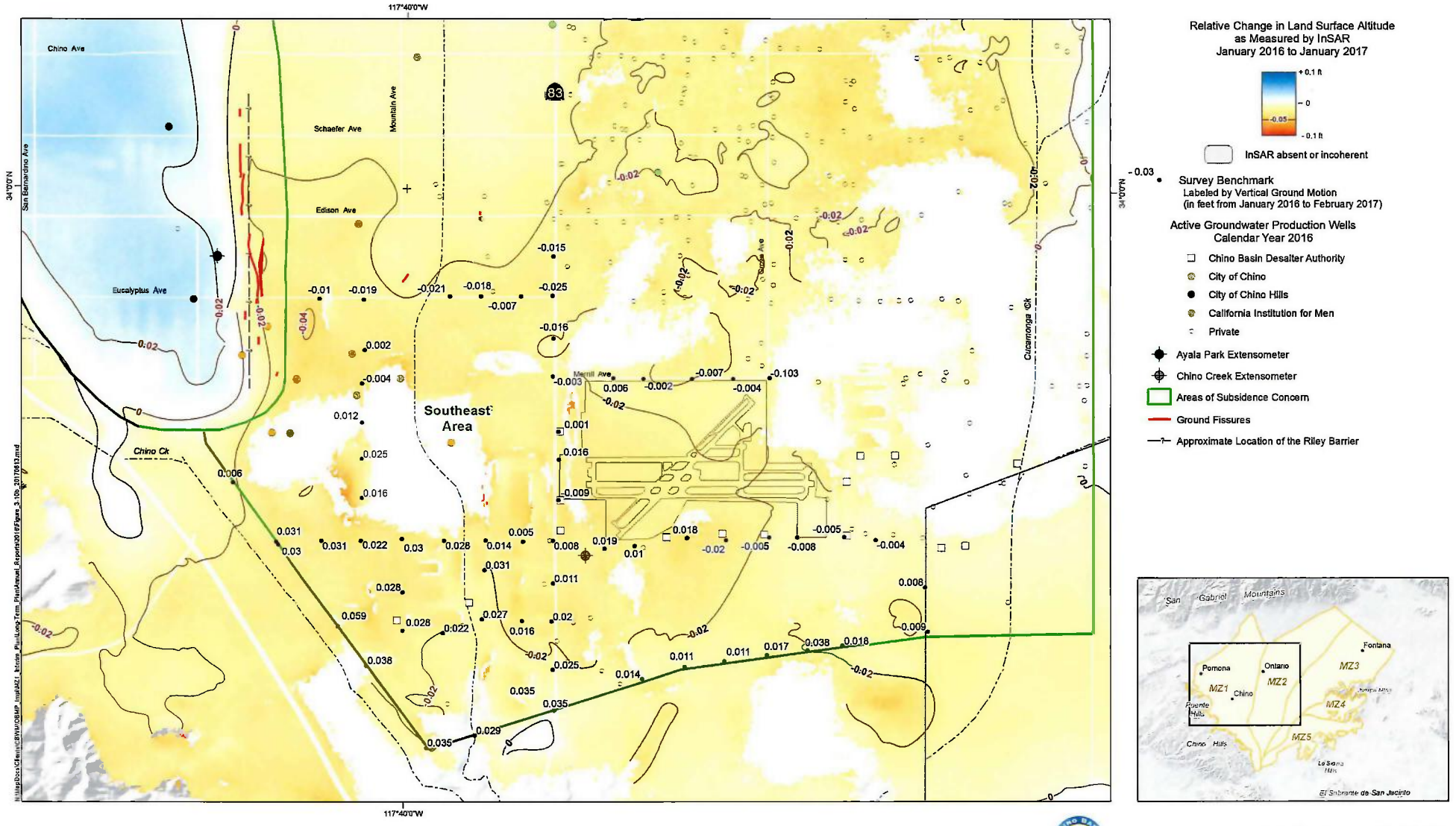
Author: EM
Date: 9/1/2017
Document Name: Figure_3-10a_20170613

0 0.5 1 Miles
0 0.5 1 Kilometers

Ground-Level Monitoring Committee
2016 Annual Report

Vertical Ground-Motion in the Southeast Area
2011- 2016

Figure 3-10a



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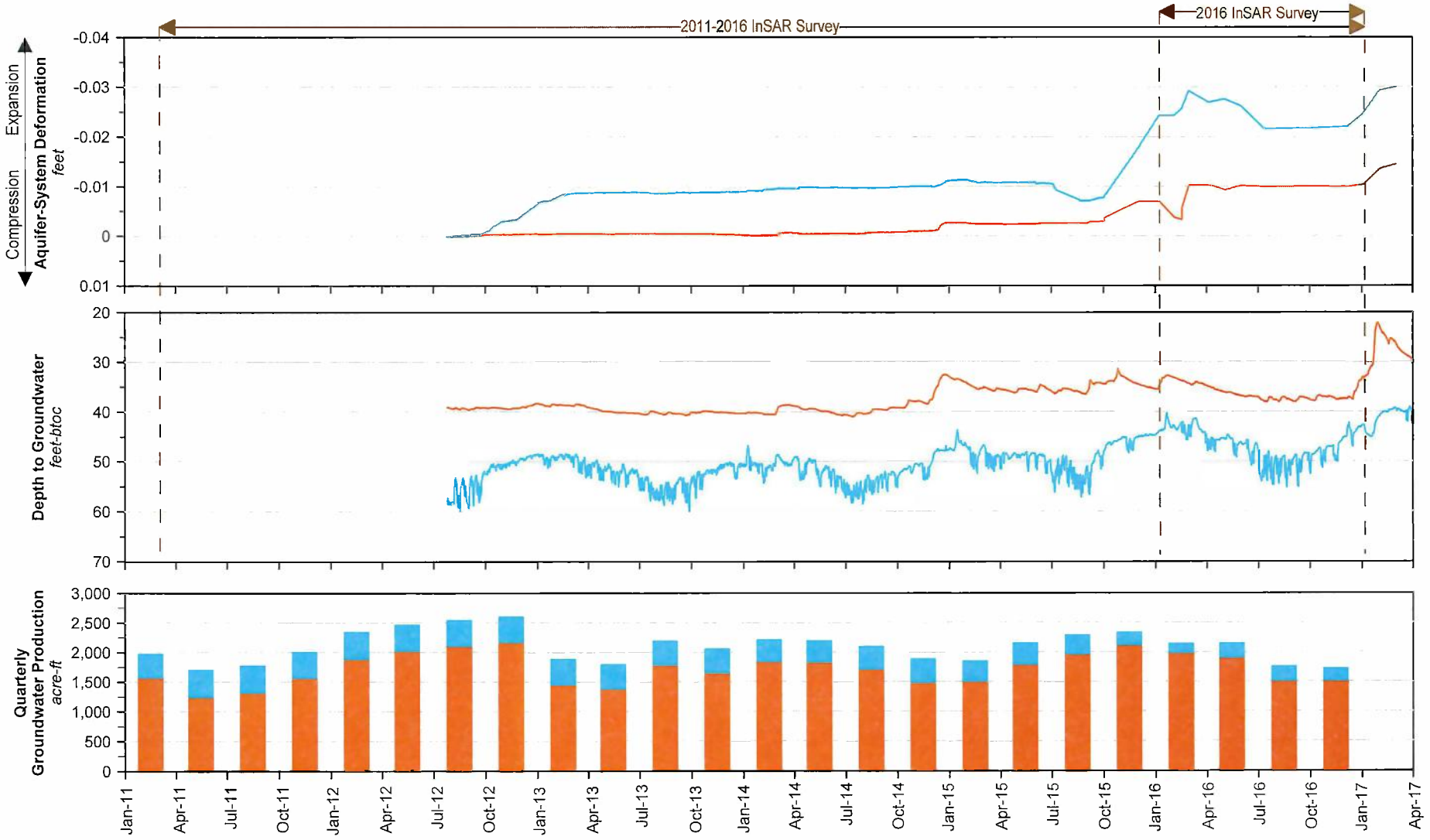
Date: 9/1/2017
Document Name: Figure_3-10b_20170613

Ground-Level Monitoring Committee
2016 Annual Report

Vertical Ground-Motion in the Southeast Area
2016

Figure 3-10b



1 = CDA-5 through 11, 16, 17, 20 and 21
2 = CDA-1 through 4

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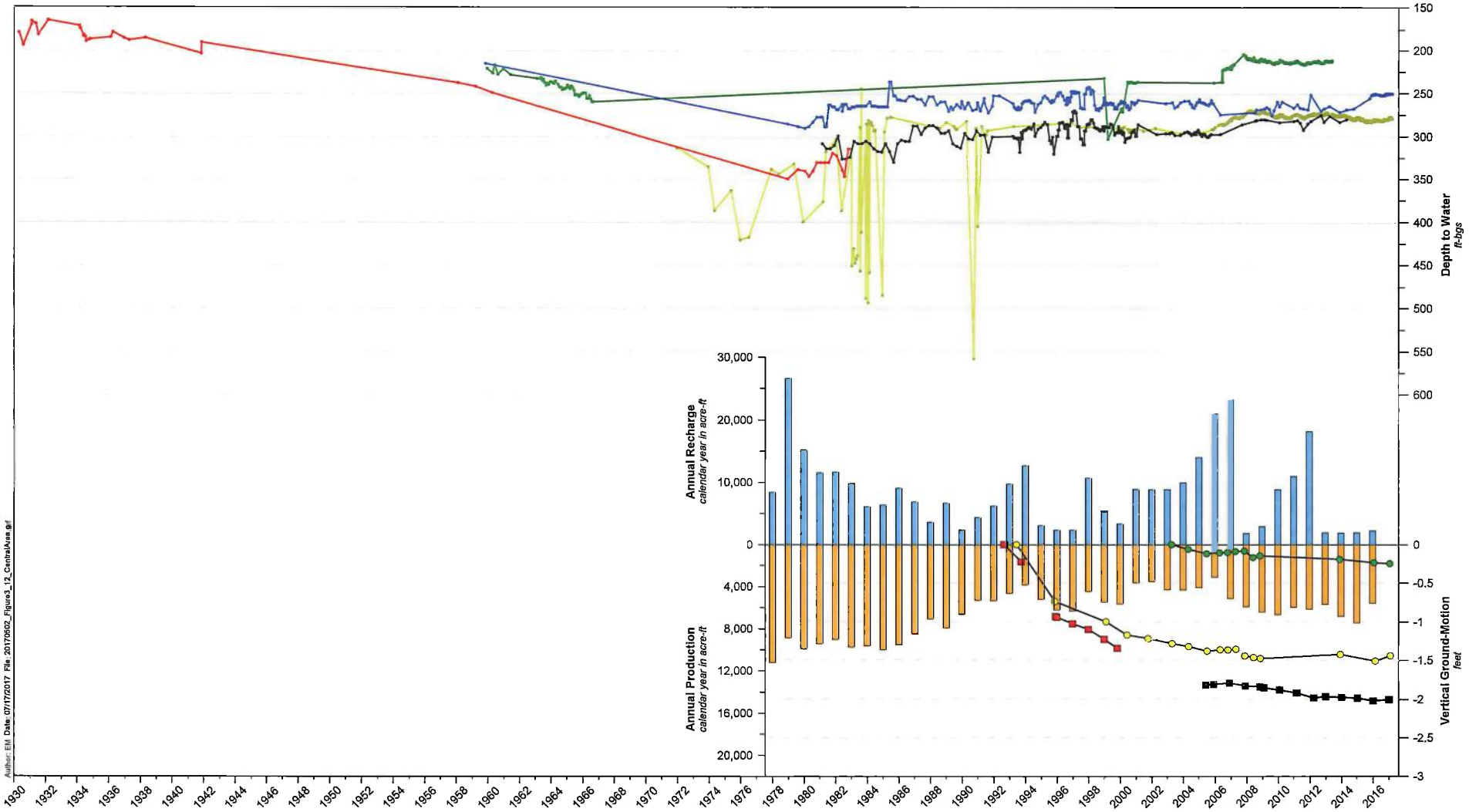
2016 Annual Report

Stress and Strain Within the Southeast Area

Figure 3-11



Piezometric Levels at Wells
(Top-Bottom of Screen Interval)

- C-03 (230-245 ft-bgs)
- C-05 (430-1,100 ft-bgs)
- C-10 (355-1,090 ft-bgs)
- MV-02 (397-962 ft-bgs)
- MV-24 (244-420 ft-bgs)

Vertical Ground-Motion
(Cumulative Displacement)

- InSAR Point B (see Figure 3-1a)
- BM 125/49
- BM 121/49

Recharge and Production

- Recharge of Recycled Water, Storm-water,* and Imported Water at the College Heights, Upland, Montclair, and Brooks Recharge Basins; and, at MVWD ASR Wells
  *Storm-water is an estimated amount prior to fiscal year 2004/05
- Groundwater Production from Wells in Central MZ1 Area

*See Figures 3-1a, b for locations of wells, benchmarks, and extensometers

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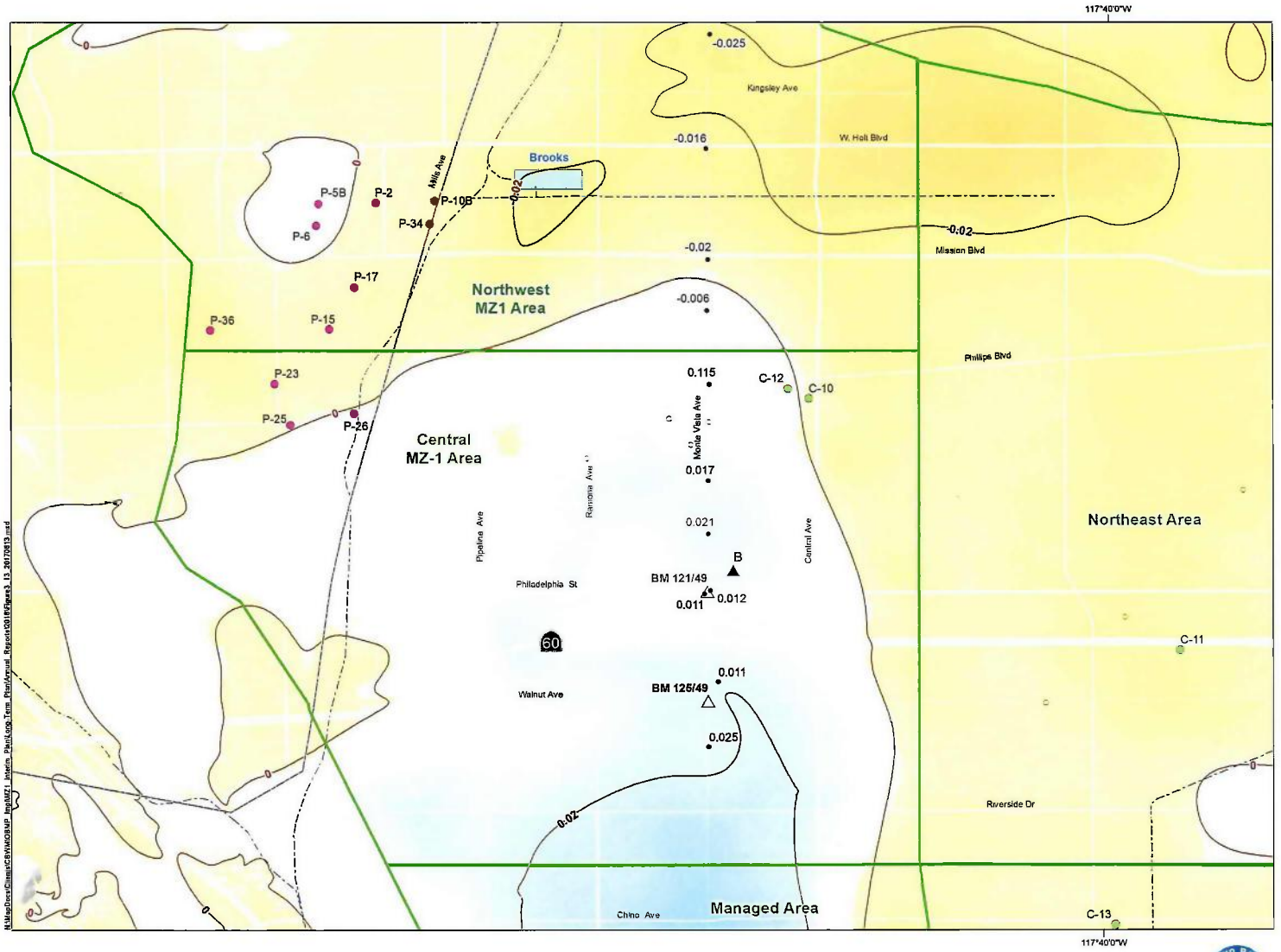
Ground-Level Monitoring Committee
2015 Annual Report

The History of Land Subsidence in the Central MZ-1 Area

Figure 3-12



Relative Change in Land Surface Altitude
as Measured by InSAR
January 2016 to January 2017

+0.15 ft
0
-0.075
-0.15 ft

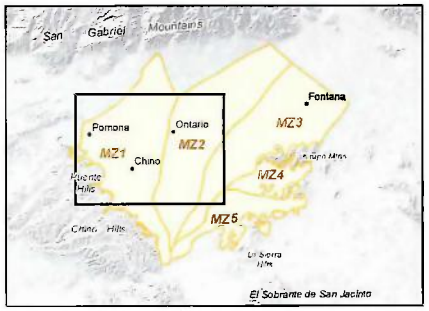
InSAR absent or incoherent

-0.03 Survey Benchmark
Labeled by Vertical Ground Motion
(in feet from January 2016 to February 2017)

Active Groundwater Production Wells
Calendar Year 2016

- City of Chino
- City of Pomona
- Private

- InSAR Time-History Point Plotted on Figure 3-12
- Benchmark Time-History Point Plotted on Figure 3-12
- Areas of Subsidence Concern
- Flood Control and Conservation Basins
- Ground Fissures
- Approximate Location of the Riley Barrier



Vertical Ground-Motion in the
Central MZ-1 Area
2016

Figure 3-13

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WILDERMUTH ENVIRONMENTAL, INC.

Author: EM
Date: 7/17/2017
Document Name: Figure3_13_20170613

0 0.5 1 Miles
0 0.5 1 Kilometers

Ground-Level Monitoring Committee
2016 Annual Report

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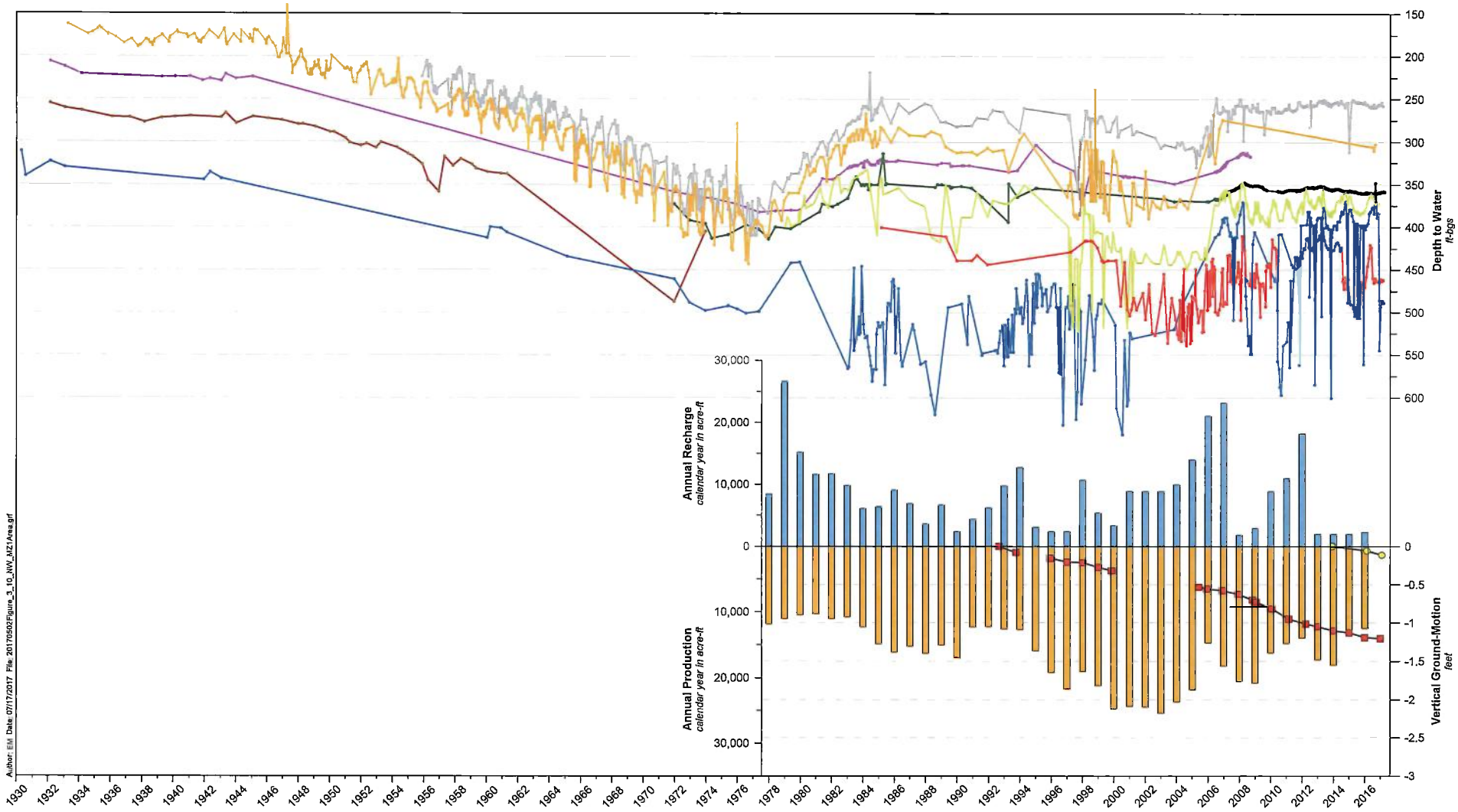

Piezometeric Levels at Wells
(Top-Bottom of Screen Interval)

- MV-1 (245-472 ft-bgs)
- MV-08 (225-447 ft-bgs)
- MV-10 (520-1,084 ft-bgs)
- MV-13 (203-475 ft-bgs)
- P-05(OLD) (141-488 ft-bgs)
- P-18 (307-660 ft-bgs)
- P-27 (472-849 ft-bgs)
- P-30 (565-875 ft-bgs)

Vertical Ground-Motion
(Cumulative Displacement)

- InSAR Point C (see Figure 3-1a)
- BM B-403

Recharge and Production

- Recharge of Recycled Water, Storm-water,* and Imported Water at the College Heights, Upland, Montclair, and Brooks Recharge Basins; and, at MVWD ASR Wells
  *Storm-water is an estimated amount prior to fiscal year 2004/05
- Groundwater Production from Wells in Central MZ1 Area

*See Figures 3-1a, b for locations of wells, benchmarks, and extensometers

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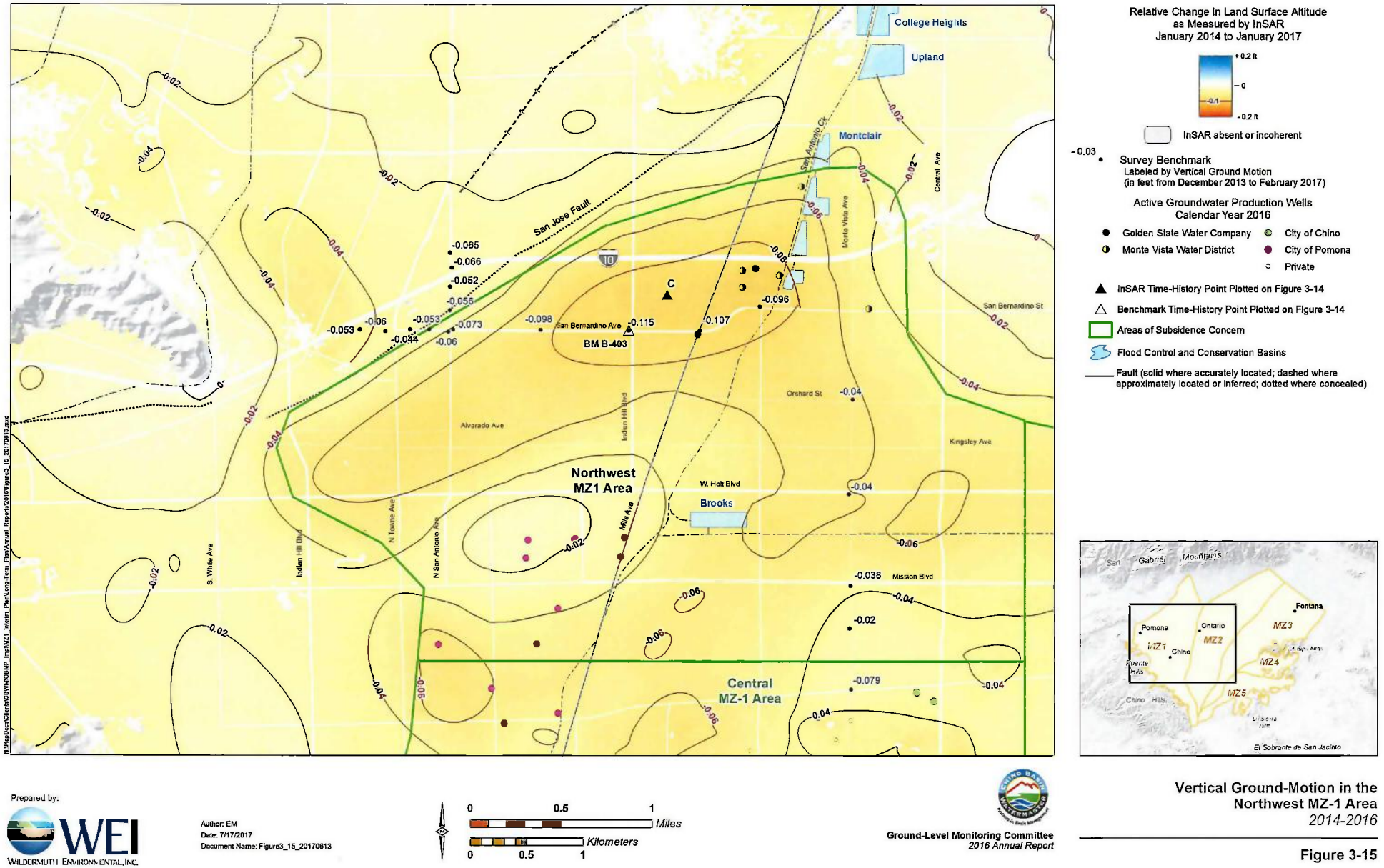
Ground-Level Monitoring Committee
2016 Annual Report

The History of Land Subsidence in the Northwest MZ1 Area

Figure 3-14



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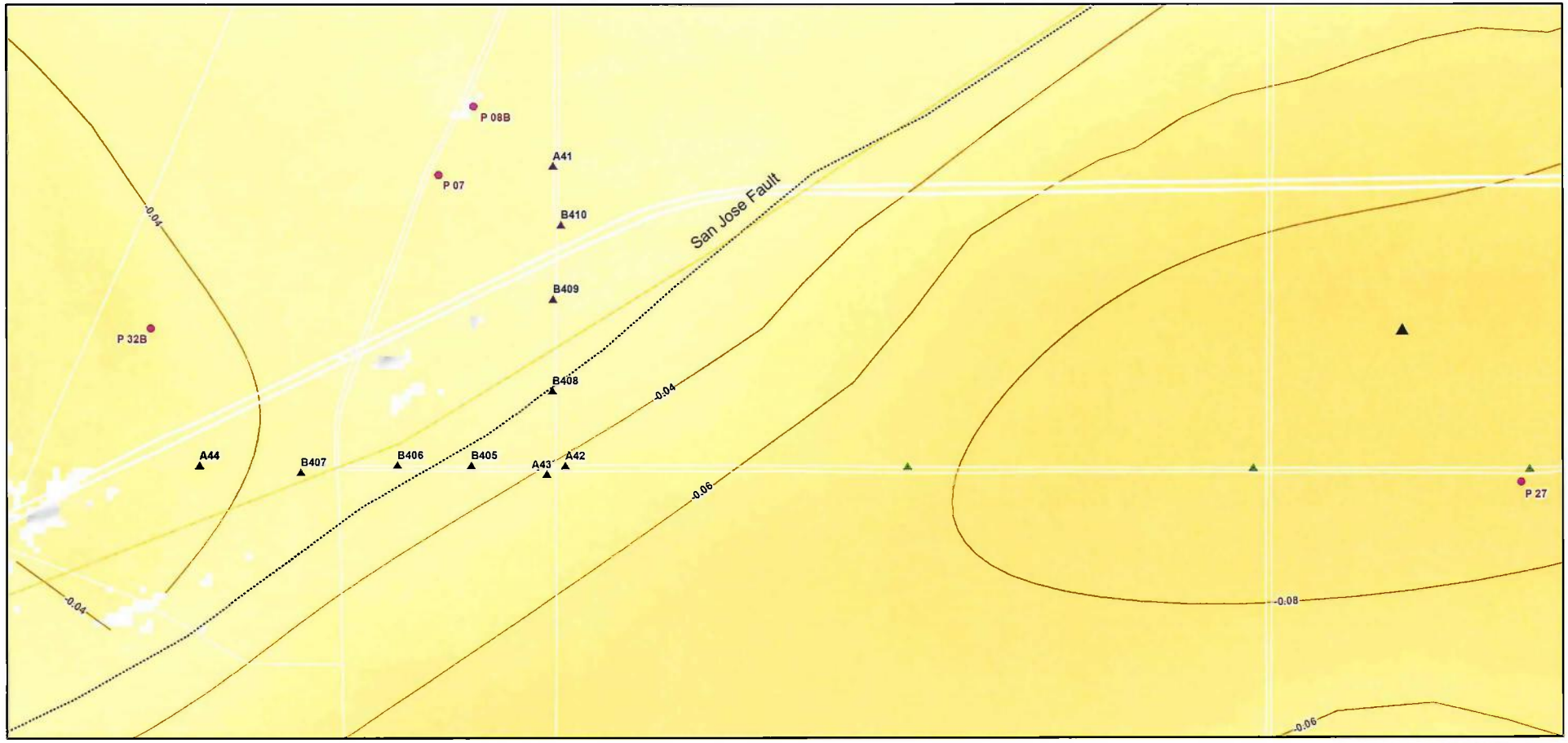
Author: EM
Date: 7/17/2017
Document Name: Figure3_15_20170613

0 0.5 1 Miles
0 0.5 1 Kilometers

Ground-Level Monitoring Committee
2016 Annual Report

Vertical Ground-Motion in the Northwest MZ-1 Area
2014-2016

Figure 3-15



+0.25 ft
0
-0.1
-0.25
Relative Change in Land Surface Altitude as Measured by InSAR Jan-2014 to Jan-2017

InSAR data incoherent

Survey Benchmarks

Existing Benchmark Monument

Existing Benchmark Monument with Survey Data shown in Figure 3-17

InSAR Time-History Point Plotted on Figure 3-17

Active Production Wells by Owner

City of Pomona

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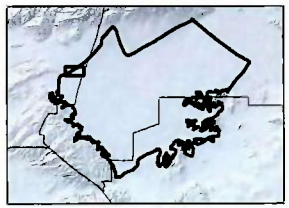
Wildermuth Environmental, Inc.

Author: GAR
Date: 20170712
File: Figure_3-16.mxd

0 1,000 2,000 Feet

0 500 Meters



Benchmark Monuments Accross the San Jose Fault

Figure 3-16

Figure 3-17
Horizontal Strain Across the San Jose Fault as Calculated from Electronic Distance Measurements
December 2013 through February 2017

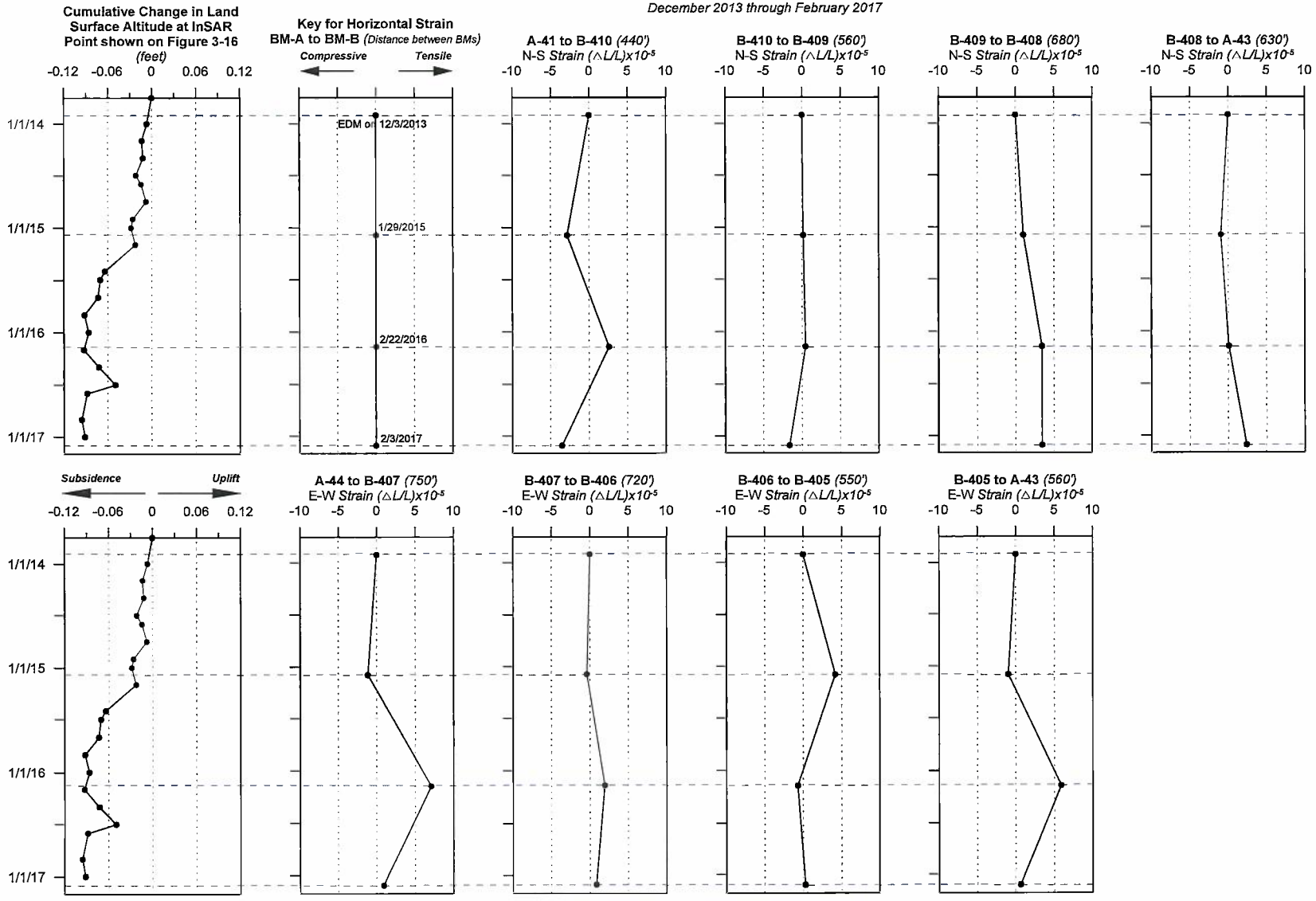
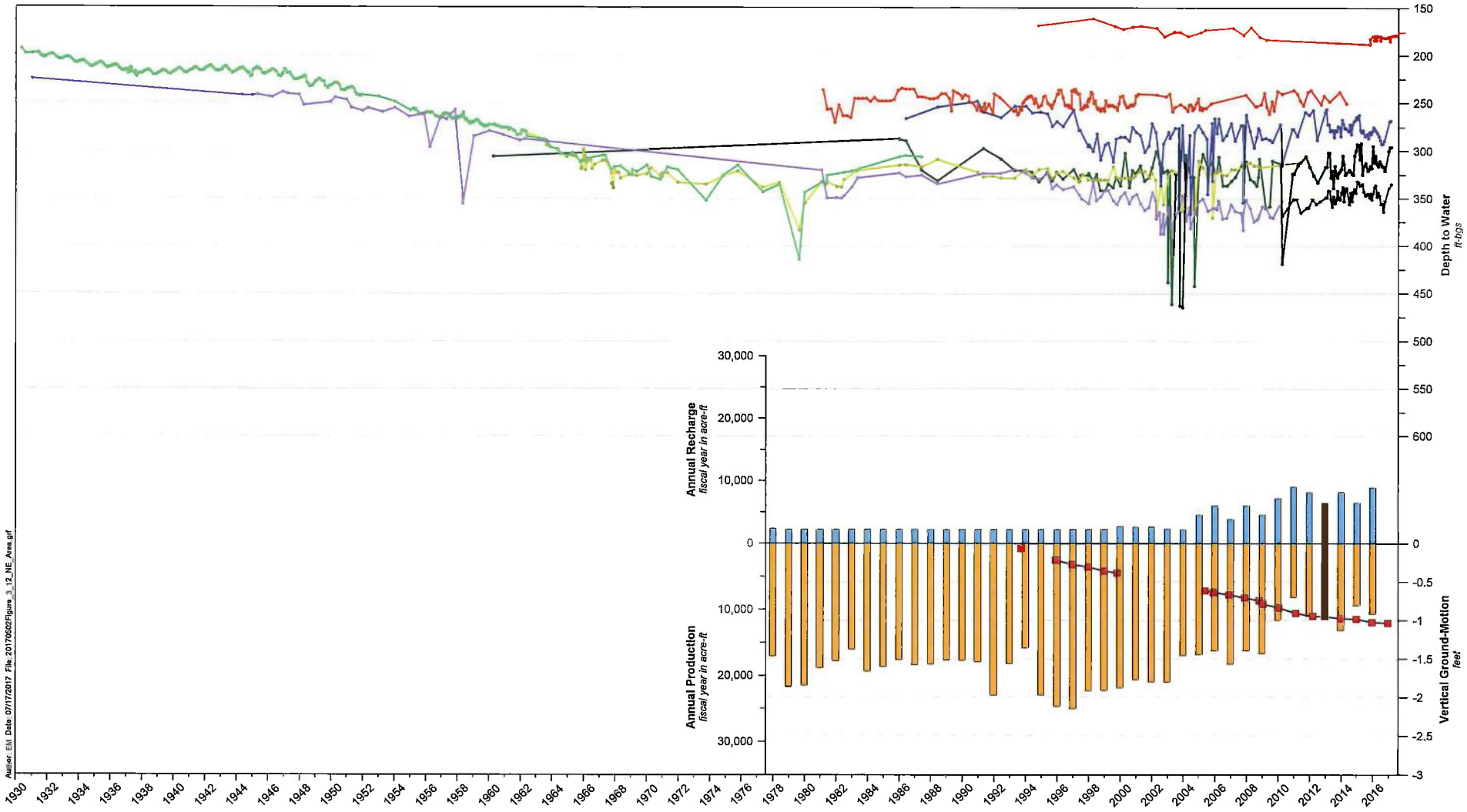


Fig_4a_Chino_10-16_p1.grf
Printed on 4/6/2017



Piezometeric Levels at Wells
(Top-Bottom of Screen Interval)

- O-05 (360-470 ft-bgs)
- O-15 (474-966 ft-bgs)
- O-25 (370-903 ft-bgs)
- O-34 (522-1,092 ft-bgs)
- O-36 (530-1,000 ft-bgs)
- C-11 (390-910 ft-bgs)
- XRef 18 (unknown)

Vertical Ground-Motion
(Cumulative Displacement)

- InSAR Point D (see Figure 3-1a)

Recharge and Production

- Recharge of Recycled, Storm-water,* and Imported Water at the Ely, Grove, Turner, 7th Street and 8th Street Recharge Basins
  *Storm-water is an estimated amount prior to fiscal year 2004/05
- Groundwater Production from Wells in the Northeast Area

*See Figures 3-1a, b for locations of wells, benchmarks, and extensometers

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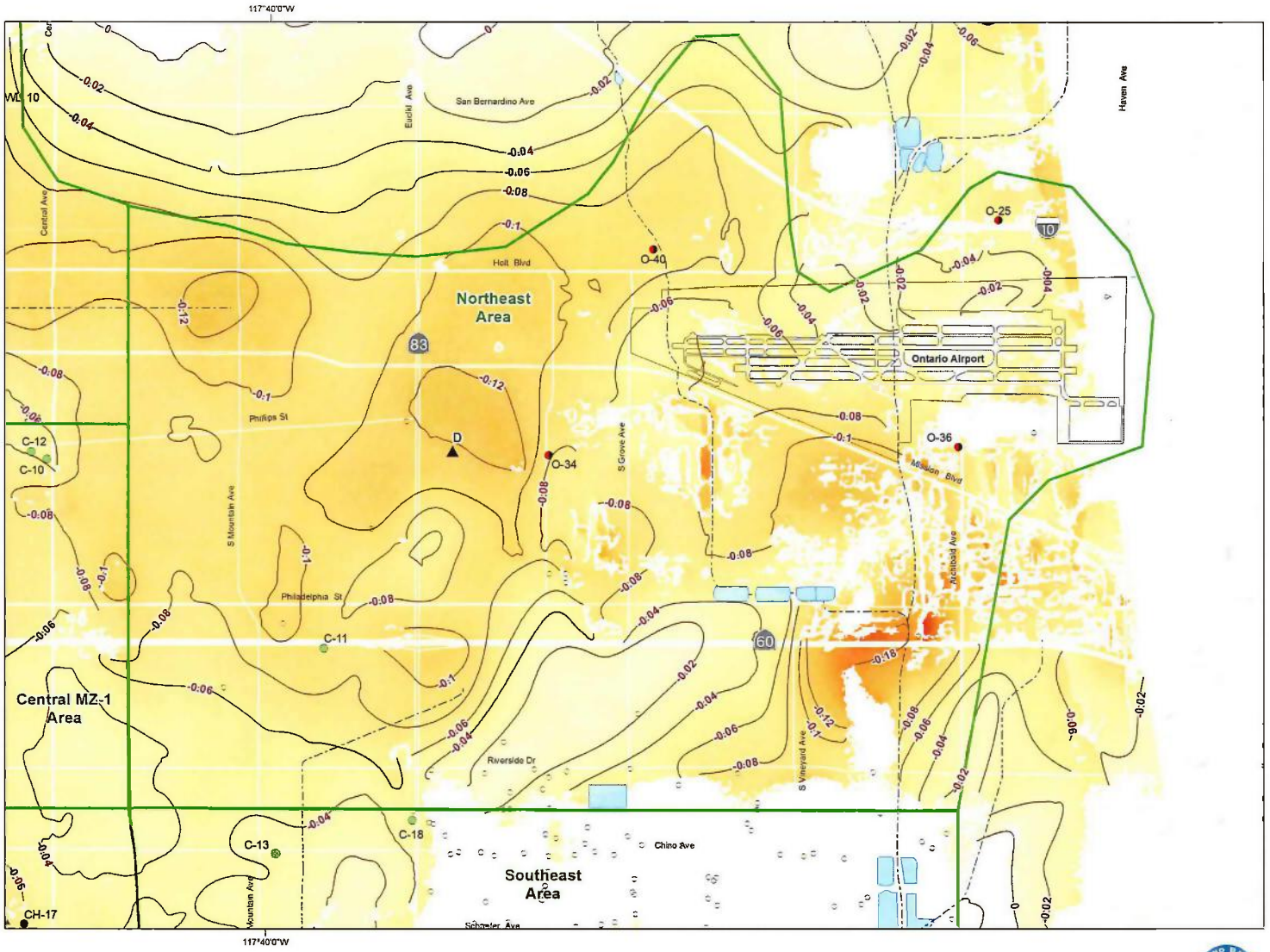
Wildermuth Environmental, Inc.

Ground-Level Monitoring Committee
2016 Annual Report

The History of Land Subsidence in the Northeast Area

Figure 3-18



Relative Change in Land Surface Altitude
as Measured by InSAR
March 2011 to January 2017

+0.25 ft
0
-0.125
-0.25 ft

InSAR absent or incoherent

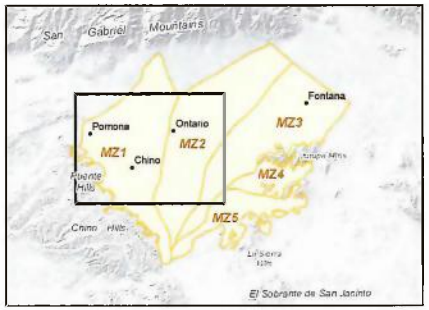
Active Groundwater Production
Calendar Year 2016

- City of Chino
- City of Chino Hills
- City of Ontario
- Private

▲ InSAR Time-History Point Plotted on Figure 3-18

Areas of Subsidence Concern

Flood Control and Conservation Basins



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Wildermuth Environmental, Inc.

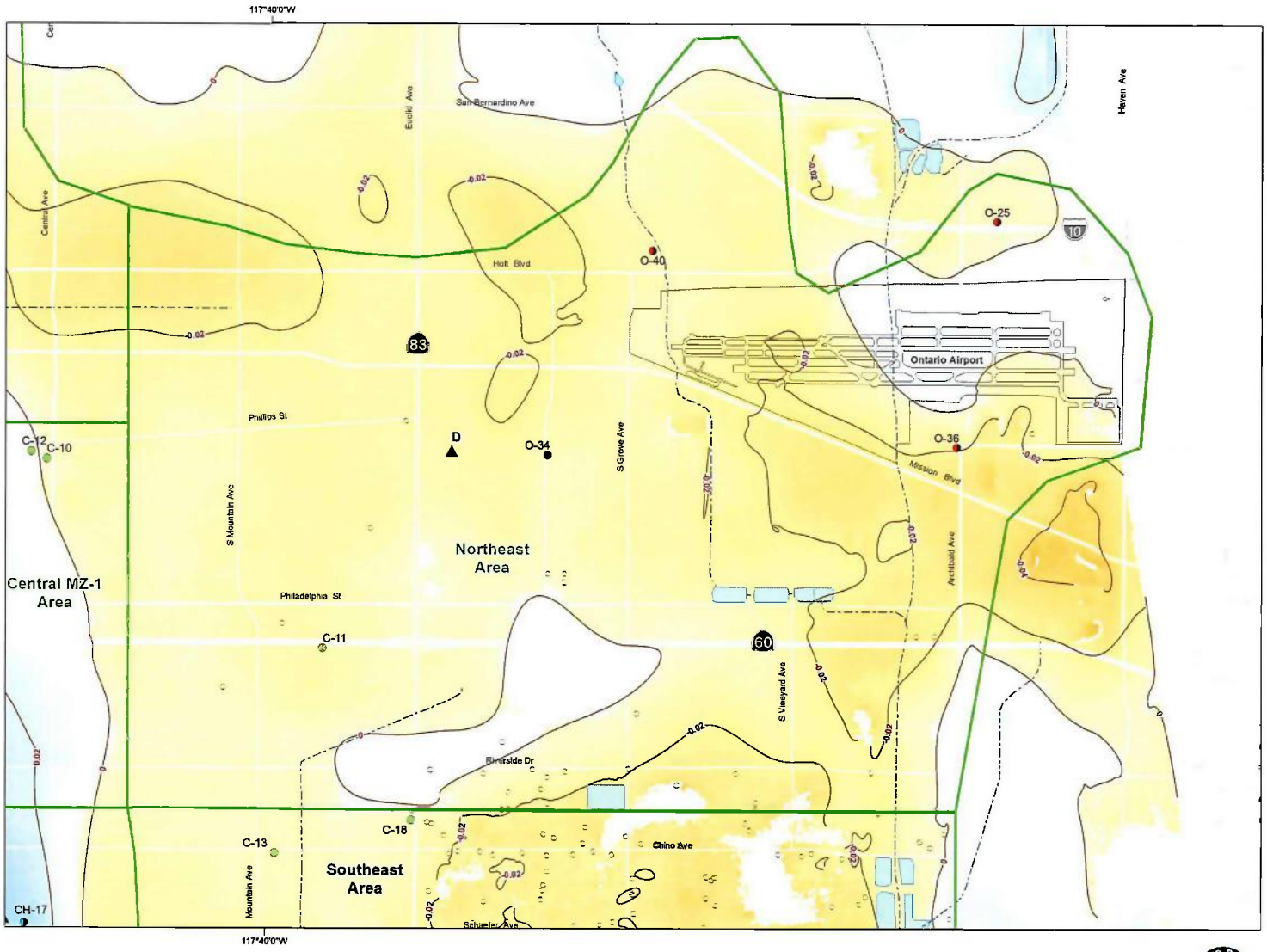
Author: EM
Date: 7/17/2017
Document Name: Figure3_19a_20170613

0 1 2 Miles
0 1 2 Kilometers

Ground-Level Monitoring Committee
2016 Annual Report

Vertical Ground-Motion in the Northeast Area
2011-2016

Figure 3-19a



Relative Change in Land Surface Altitude as Measured by InSAR
January 2016 to January 2017

+0.1 ft
0
-0.05
-0.1 ft

InSAR absent or incoherent

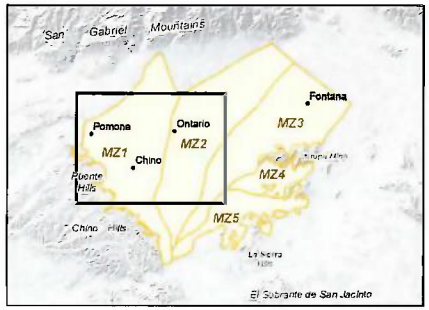
Active Groundwater Production Wells
Calendar Year 2016

- City of Chino
- City of Chino Hills
- City of Ontario
- Private

InSAR Time-History Point Plotted on Figure 3-18

Areas of Subsidence Concern

Flood Control and Conservation Basins



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Date: 7/17/2017
Document Name: Figure3_19b_20170613

0 1 2 Miles
0 1 2 Kilometers

Chino Basin Watermaster
Ground-Level Monitoring Committee
2016 Annual Report

Vertical Ground-Motion in the Northeast Area
2016

Figure 3-19b

4.1 Conclusions and Recommendations

The main conclusions and recommendations of this annual report are:

- During 2016, piezometric-levels measured at the PA-7 piezometer at the Ayala Park Extensometer did not decline below the Guidance Level of 245 ft-btoc, and the aquifer-system deformation as measured at the Deep Extensometer was elastic. This indicates that the Guidance Criteria have been protective in this portion of the Managed Area.

- The recovery of piezometric levels at PA-7 to above 90 ft-btoc in 2016 represented a "full recovery" of piezometric levels at PA-7 as defined in the SMP. This is the first instance of full recovery since 2012, which complies with the recommendation in the SMP for full piezometric recovery within the deep aquifer system at least once every five years.

- The full recovery of piezometric levels coincided with a rebound of the ground surface across most of the Managed Area and Central MZ-1. This observation: (i) indicates that the aquifer-system expanded in response to the full recovery and (ii) suggests a hydrogeologic relationship between these two areas within the deep aquifer system. There is not enough piezometric data in Central MZ-1 to verify this apparent hydrogeologic relationship.

- The in-depth review of horizontal strain calculations from EDM data across the Fissure Zone in the Managed Area indicates the following conclusions and recommendations:

    - EDMs between closely-spaced benchmark monuments appear to be a suitable monitoring technique to detect the occurrence of tensile strain within shallow soils and the potential threat of ground fissuring.

    - The Fissure Zone in the Managed Area and the San Jose Fault Zone in Northwest MZ-1 should be monitored by EDMs in the future; EDMs have indicated that inelastic tensile strain can accumulate across areas of differential land subsidence.

    - As long as permanent subsidence is absent in the Managed Area, the GLMC should consider performing EDM surveys across the Fissure Zone at a frequency longer than annual. The EDM surveys should be performed in conjunction with elevation surveys at monuments across the Managed Area at times of full recovery (or near full recovery) of piezometric levels at PA-7.

    - If and when the Long-Term Pumping Test in the Managed Area is performed, EDM surveys across the Fissure Zone should be conducted in coordination with the test. These surveys should occur just prior to the test at full recovery of piezometric levels at PA-7, at maximum drawdown of piezometric levels (potentially below the Guidance Level at PA-7), and at the subsequent full

recovery of piezometric levels at PA-7. These EDM surveys will be used to monitor for the occurrence and magnitude of inelastic tensile strain across the Fissure Zone associated with the drawdown of piezometric levels below the Guidance Level at PA-7.

  - If the Long-Term Pumping Test will include groundwater production at CH-15B, which is located west on Eucalyptus Avenue, the GLMC should consider adding a series of closely-spaced monuments along Edison and Eucalyptus Avenues across the Fissure Zone to perform EDM surveys as part of the test.

  - The installation of a new horizontal extensometer is not recommended at this time for the following reasons: (i) EDM surveys are a suitable technique to monitor for the occurrence and magnitude of inelastic tensile strain in shallow soils across the Fissure Zone; (ii) currently very little, if any, permanent land subsidence in the Managed Area and tensile strain across the Fissure Zone is occurring;, (iii) based on the monitoring results from the IMP, very little, if any, permanent land subsidence in the Managed Area and tensile strain across the Fissure Zone is expected to occur as a result of the Long-Term Pumping Test; and (iv) very little, if any, additional management-grade information would be provided by a horizontal extensometer (that would not be provided by EDMs), and therefore the cost is not justified.

- Ground-level surveys and the CCX data indicate very little, if any, ongoing subsidence in the Southeast Area even though groundwater production at the Chino Creek Well Field began in the second quarter of 2014 and increased through 2016. The InSAR and ground-level survey datasets do not always corroborate each other in the pattern and/or magnitude of vertical ground motion in the Southeast Area where both datasets overlap—likely due to InSAR incoherence associated with the agricultural land uses in this area. As such, ground-level surveys should continue to be the primary method of measurement of vertical ground motion across the Southeast Area. An elevation survey at the existing benchmark monuments in the Southeast Area should be performed during winter 2017/18 as two additional Chino Creek Desalter wells (I-20 and I-21) commenced production in February 2016.

- During 2016, concentrated differential land subsidence continued to occur in Northwest MZ-1 across the San Jose Fault. The GLMC should pursue the following in 2017/18:

  - Continue monitoring vertical and horizontal ground-motion via InSAR and elevation/EDM surveys at benchmarks.

  - Continue implementation of the *Work Plan to Develop a Subsidence-Management Plan for the Northwest MZ-1 Area*, which includes investigations into the cause(s) of the observed land subsidence and the development and evaluation of subsidence-management alternatives to minimize or abate future subsidence.

- About one-foot of gradual and persistent land subsidence has occurred in the Northeast Area since 1992 and appears to be ongoing. An array of benchmark monuments should be established across the subsiding portions of the Northeast Area to perform elevation

surveys; InSAR data are largely incoherent in some areas that are experiencing subsidence, such as south and southwest of the Ontario Airport.

4.2 Recommended Scope and Budget for Fiscal Year 2017-18

The scope-of-work for the GLMP for FY 2017-18 is a recommendation of the GLMC, and is shown in Table 4-1 as a work breakdown structure with cost estimates:

Task 1—Setup and Maintenance of the Monitoring Network. The extensometers are the key monitoring facilities for the GLMP. They require regular and as-needed maintenance and recalibration to remain in good working order. Task 1.1 includes conducting monthly visits to the Ayala Park and Chino Creek Extensometer Facilities to ensure functionality and calibration of the monitoring equipment and data loggers.

Task 1.3 involves siting a new horizontal extensometer in the Managed Area to replace the Daniels Horizontal Extensometer, performing CEQA, and procuring permits and easements. This work was originally budgeted for FY 2016-17 but was not completed. This budget is shown as carry-over under Task 1.3. Since this annual report is not recommending the installation of a new horizontal extensometer, this budget can be conserved or used to install additional closely-spaced EDM monuments along Edison and Eucalyptus Avenues as recommended in Section 4.1.

Task 2—Aquifer-System Monitoring and Testing. This task involves the quarterly collection of piezometric levels and aquifer-system deformation data at the Ayala Park, Chino Creek, and Pomona Extensometer facilities. The collection of piezometric level and aquifer-system deformation data at the new Pomona Extensometer is anticipated for the final two quarters of FY 2017-18. Quarterly collection and checking of data is necessary to (i) ensure that the monitoring equipment is in good working order and (ii) minimize the risk of losing data because of equipment malfunction.

Task 3—Basin Wide Ground-Level Monitoring Program. This task involves the annual data collection and analysis of InSAR data during 2017. InSAR data are collected by the TerraSAR-X satellite, operated by the German Aerospace Center. Five interferograms will be prepared that will describe the vertical ground motion across the western portion of Chino Basin during 2017. Correlations between InSAR and ground-level surveys (Task 4) will be evaluated in Task 5 to validate the reliability of the InSAR data.

Task 4—Ground-Level Surveys. This task involves conducting elevation surveys at benchmark monuments across defined areas of the western Chino Basin. EDMs are performed between selected benchmark monuments to monitor for horizontal deformation of the ground surface in areas where ground fissuring due to differential land subsidence is a concern. The surveys proposed for FY 2017-18 include:

- *Southeast Area.* Conduct an elevation survey at benchmarks in the Southeast Area in early 2018. The elevation survey will begin at the Ayala Park extensometer and will include benchmarks throughout the Southeast Area shown in Figure 4-1. The elevation survey data will be referenced to the Ayala Park elevation datum. The elevation survey in the Southeast Area is recommended because the InSAR data is largely incoherent across

most of the area and two additional Chino Creek Desalter wells (I-20 and I-21) commenced production in February 2016.

- *Northeast Area.* Establish a benchmark array and conduct an elevation survey of the benchmarks in the Northeast Area in early 2018. The elevation survey will begin at the Ayala Park extensometer and will include benchmarks for the areas in the Northeast Area shown on Figure 4-1. The elevation survey will be referenced to the Ayala Park elevation datum. The elevation survey in the Northeast Area was requested by the City of Ontario because the InSAR data show that up to approximately 0.2 feet of subsidence has occurred since 2011 (between Euclid Ave and Bon View Ave) and the InSAR data are largely incoherent south and southwest of Ontario Airport.

- *Northwest MZ-1 Area.* Conduct an elevation survey and an EDM survey at benchmarks in Northwest MZ-1 during early 2018. The elevation survey will begin at the Ayala Park extensometer and include the benchmarks along Monte Vista Avenue, San Bernardino Avenue, and Orchard Street/Lincoln Avenue/Alvarado Street, as shown on Figure 4-1. The elevation survey data will be referenced to the Ayala Park elevation datum. The surveys are recommended to verify the InSAR data and to measure horizontal deformation across the San Jose Fault where differential land subsidence is occurring.

- *Managed Area.* Conduct an elevation survey and EDM survey in the Managed Area at full recovery (or near full recovery) of piezometric levels at PA-7. Maximum recovery of piezometric levels in the Managed Area typically occurs during the spring months. The elevation survey will begin at the Ayala Park extensometer and include benchmarks within the Managed Area and Fissure Zone Area, as shown on Figure 4-1. The elevation survey data will be referenced to the Ayala Park elevation datum. The elevation and EDM surveys are recommended because the InSAR data are partly incoherent in the southern portions of the area and the last elevation and EDM surveys conducted in the Managed Area occurred in March 2016.

Task 5—Data Analysis and Reporting. This task involves the analysis of the data generated by the GLMP through 2017. The results and interpretations generated from the data analysis will be documented in the *2017 Annual Report of the GLMC.*

Task 6—Develop a Subsidence Management Plan for the Northwest MZ-1 Area. The development of the *Subsidence Management Plan for the Northwest MZ-1 Area* is a multi-year effort. The conceptual framework for this effort is described in the Work Plan.[13] Several tasks outlined in the Work Plan are recommended for implementation in FY 2017-18:

- *Finalize Implementation of the Initial Monitoring Program.* The initial monitoring program will continue to be implemented. This subtask includes the initiation of SCADA-based monitoring of piezometric levels and production at selected wells owned by the Monte Vista Water District and City of Pomona; continuation of monitoring piezometric levels and production from wells owned by the Cities of Chino, Pomona, and Upland, the Monte Vista Water District, and the Golden State Water Company; analysis of the data

[13] http://www.cbwm.org/docs/engdocs/Land%20Subsidence/20150724%20-%20Chino%20Basin%20Subsidence%20Management%20Plan%202015/FINAL_CBSMP_Appendix_B.pdf

generated from the initial monitoring program; and preparation of a Task Memorandum that will document the improved understanding of the aquifer system in the Northwest MZ-1 Area and provide recommendations for designing short-term controlled pumping tests, if necessary.

- *Install the Pomona Extensometer Facility.* Early in FY 2017-18, an extensometer facility site, CEQA compliance, and all appropriate easements will have been secured. Within the first quarter of FY 2017-18, the bid package and contractor selection process to construct the Pomona Extensometer piezometers will be completed. It is anticipated that the drilling, construction, and installation of the Pomona Extensometer Facility piezometers will be completed at the end of the second quarter of FY 2017-18.

- *Install Monitoring Equipment for the Pomona Extensometer Facility.* Immediately following the completion of the Pomona Extensometer piezometers, each piezometer will be equipped with a cable extensometer, data loggers, and pressure transducers. It is anticipated the Pomona Extensometer Facility will be online early in the third quarter of FY 2017-18.

- *Completion Report for the Pomona Extensometer Facility.* A well completion summary report will be prepared to document the drilling and construction activities for the piezometers and the installation of the extensometers and monitoring equipment for the Pomona Extensometer Facility by the end of FY 2017-18.

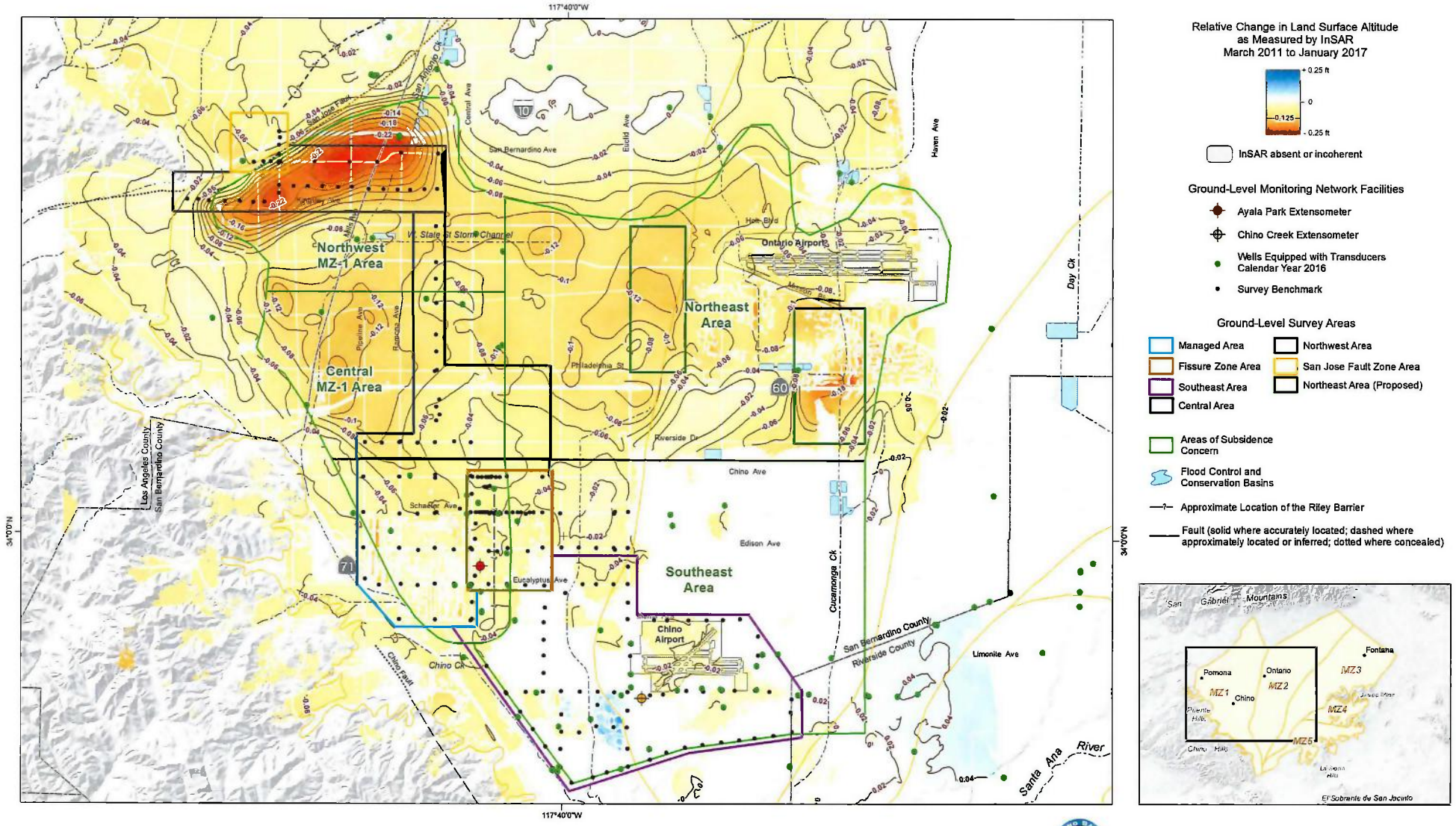
Task 7—Meetings and Administration. Four meetings of the GLMC are planned to oversee the GLMP: July 2017 – review of this annual report and kickoff for the GLMP for FY 2017-18; January 2018 – review of the Technical Memorandum documenting the initial monitoring program for Northwest MZ-1; March 2018 – review of the data collected from the monitoring program through calendar year 2017 and a recommended scope and budget for FY 2018-19; April 2018 – finalize the recommended scope and budget for FY 2018-19. Also, included in Task 7 is project administration, including staffing and financial/schedule reporting.

4.3 Changes to the Subsidence Management Plan

The SMP states that if data from existing monitoring efforts in the Areas of Subsidence Concern indicate the potential for adverse impacts due to subsidence, Watermaster will revise the SMP pursuant to the process outlined in Section 4 of the SMP. Currently, there are no recommended changes to the SMP.

Table 4-1
Work Breakdown Structure and Cost Estimates
Ground-Level Monitoring Program - FY 2017-18

Task Description	Labor		Other Direct Costs							Totals					
	Person Days	Total	Travel	New Equip.	Equip. Rental	Outside Pro	Repro	Misc.	Total	Totals by Task	Recommended Budget 2017-18 a	Budget 2016-17 b	Net Change 2016-17 to 2017-18 a - b	Potential Carry-Over 2017-18 c	Budget with Carry-Over 2017-18 a - c
Task 1 – Setup and Maintenance of the Monitoring Network		**$36,092**							**$30,182**	**$66,274**	**$[illegible], 74**	**$64,714**	**$1,560**	**$41,268**	**$25,006**
1.1 Equipment maintenance															
Routine maintenance of Ayala Park and CCX extensometer facilities		$11,208	$5 3	5	152				$1,235	$12,443	$12,443	$12,227	$216	$0	$12,443
Replacement/repair of equipment at extensometer facilities		$5,616	3	3,	$3	$2,000			$5,111	$10,727	1 727	$10,407	$320	$0	$10,727
1.2 Annual lease fees for CCX extensometer site		$0						1,5	$1,596	$1,596	1.5	$1,596	$0	$0	$1,596
1.3 Identify a site and install a horizontal extensometer in the Managed Area															
Coordinate with the City of Chino	7	$10,760	$194						$194	$10,954	$10,954	$10,298	$656	$10,760	$194
Prepare for and attend a meeting of the GLMC to discuss and approve potential sites	2	$3,536	$46						$46	$3,582	$3,582	$3,398	$184	$3,536	$46
Perform CEQA for the potential new sites and procure permits and easements	4	$4,972				$22,000			$22,000	$26,972	$26,972	$26,788	$184	$26,972	$0
Task 2 – MZ-1: Aquifer-System Monitoring and Testing		**$21,770**							**$1,004**	**$22,774**	**$22,774**	**$16,294**	**$6,480**	**$0**	**$22,774**
2.1 Groundwater-level and extensometer data collection and processing															
Download data from the Ayala Park facility	1.5	$2,004	$259		$76				$335	$2,339	$2,339	$2,255	$84	$0	$2,339
Download data from the CCX facility	0.5	$804	$259		$76				$335	$1,139	$1,139	$1,063	$76	$0	$1,139
Download data from PX facility	0.8	$1,002	$144		$190				$334	$1,336	$1,336	$0	$1,336	$0	$1,336
Process, check, and upload data to database	13	$17,960							$0	$17,960	$17,960	$12,976	$4,984	$0	$17,960
Task 3 – Basin Wide: InSAR		**$4,292**							**$85,000**	**$89,292**	**$89,292**	**$89,082**	**$210**	**$0**	**$89,292**
3.1 InSAR data collection	1	$1,608				$85,000			$85,000	$86,608	$86,608	$86,456	$152	$0	$86,608
3.2 Process, check, and upload data to database/GIS	2	$2,684							$0	$2,684	$2,684	$2,626	$58	$0	$2,684
Task 4 – Ground-Level Surveys		**$5,690**							**$142,356**	**$148,346**	**$148,346**	**$71,147**	**$77,199**	**$0**	**$148,346**
4.1 Conduct fall 2017 ground-level survey in Southeast Area	0.25	$300				$29,571			$29,571	$29,871	$29,871	$29,435	$436	$0	$29,871
4.2 Conduct fall 2017 ground-level and EDM survey in Northwest MZ-1 Area	0.5	$600				$21,907			$21,907	$22,507	$22,507	$15,441	$7,066	$0	$22,507
4.3 Install additional benchmarks and conduct fall 2017 ground-level and EDM survey in the NW MZ-1 Area	0	$0							$0	$0	$0	$16,456	-$16,456	$0	$0
4.4 Conduct ground-level-survey in Managed Area	0.25	$300				$20,988			$20,988	$21,288	$21,288	$0	$21,288	$0	$21,288
4.5 Replace destroyed benchmarks (if needed)	0	$0				$5,963			$5,963	$5,963	$5,963	$5,501	$462	$0	$5,963
4.6 Process, check, and update database	3.25	$4,490				$6,410			$6,410	$10,900	$10,900	$4,314	$6,586	$0	$10,900
4.7 Conduct fall 2017 ground-level survey in Northeast Area	0.25	$300				$57,518			$57,518	$57,818	$57,818	$0	$57,818	$0	$57,818
Task 5 – Data Analysis and Reports		**$59,644**							**$20,000**	**$79,644**	**$79,644**	**$105,398**	**-$25,754**	**$0**	**$79,644**
5.1 Analysis of data from the areas of subsidence concern															
Production/recharge/piezometric/extensometer	4	$5,208				$20,000			$20,000	$25,208	$25,208	$25,032	$176	$0	$25,208
Ground-level survey and Northwest MZ-1 Area EDM data	4	$5,572							$0	$5,572	$5,572	$5,384	$188	$0	$5,572
Perform analysis of EDM and elevations surveys in the Fissure Zone	0	$0							$0	$0	$0	$28,352	-$28,352	$0	$0
InSAR data	4	$5,208							$0	$5,208	$5,208	$5,032	$176	$0	$5,208
Tectonic data	0.25	$300							$0	$300	$300	$298	$2	$0	$300
Recycled water reuse data	2	$2,400							$0	$2,400	$2,400	$2,384	$16	$0	$2,400
5.2 Prepare 2017 Annual Report of the Ground-Level Monitoring Committee										$0					
Prepare draft annual report	23	$32,920							$0	$32,920	$32,920	$31,240	$1,680	$0	$32,920
Prepare final annual report	5.5	$8,036							$0	$8,036	$8,036	$7,676	$360	$0	$8,036
Task 6 – Work Plan to Develop a Subsidence-Management Plan for the Northwest MZ-1 Area		**$365,050**							**$1,217,526**	**$1,582,576**	**$1,582,576**	**$275,945**	**$1,306,631**	**$75,000**	**$1,507,576**
6.1 Finalize implementation of the initial monitoring program	62	$84,224	$644				$50		$694	$84,918	$84,918	$84,645	$273	$75,000	$9,918
6.2 Develop and evaluate the Initial Subsidence-Management Alternative (ISMA)	0	$0							$0	$0	$0	$112,014	-$112,014	$0	$0
6.3 Install the Pomona Extensometer Facility	93.75	$188,426	$12,500			$1,160,000			$1,172,500	$1,360,926	$1,360,926	$60,944	$1,299,982	$0	$1,360,926
6.4 Install monitoring equipment (transducers, data loggers, telemetry) in the Pomona Extensometer and test	48	$62,312	$1,920	$18,300		$24,000			$44,220	$106,532	$106,532	$0	$106,532	$0	$106,532
6.5 Prepare task memorandum - completion report for the Pomona Extensometer Facility	20	$30,088	$62				$50		$112	$30,200	$30,200	$0	$30,200	$0	$30,200
6.6 Meetings and administration	0	$0							$0	$0	$0	$18,342	-$18,342	$0	$0
Task 7 – Meetings and Administration		**$43,404**							**$242**	**$43,646**	**$43,646**	**$35,814**	**$7,832**	**$0**	**$43,646**
7.1 Prepare for and attend three Ground-Level Monitoring Committee meetings	12	$20,576	$194						$194	$20,770	$20,770	$14,569	$6,200	$0	$20,770
7.2 Ad hoc meetings	3	$5,144	$48						$48	$5,192	$5,192	$4,856	$336	$0	$5,192
7.3 Project administration and financial reporting	7.5	$12,540							$0	$12,540	$12,540	$11,580	$960	$0	$12,540
7.4 Scope and budget for FY2018/19	3	$5,144							$0	$5,144	$5,144	$4,808	$336	$0	$5,144
Totals										**$2,032,552**	**$2,032,552**	**$658,394**	**$1,374,158**	**$116,268**	**$1,916,284**



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Date: 7/17/2017
Document Name: Figure4_1_20170613

Ground-Level Monitoring Committee
2016 Annual Report

Ground-Level Monitoring Program
Fiscal Year 2017-18

Figure 4-1

Section 5 – Glossary

The following glossary contains terms and definitions that are used in this report and generally in the discussions at GLMC meetings (USGS, 1999).

Aquifer – A saturated, permeable, geologic unit that can transmit significant quantities of groundwater under ordinary hydraulic gradients and is permeable enough to yield economic quantities of water to wells.

Aquifer-system – A heterogeneous body of interbedded permeable and poorly permeable geologic units that function as a water-yielding hydraulic unit at a regional scale. The aquifer-system may comprise one or more aquifers within which aquitards are interspersed. Confining units may separate the aquifers and impede the vertical exchange of groundwater between aquifers within the aquifer-system.

Aquitard – A saturated, but poorly permeable, geologic unit that impedes groundwater movement and does not yield water freely to wells but which may transmit appreciable water to and from adjacent aquifers and, where sufficiently thick, may constitute an important groundwater storage unit. Areally extensive aquitards may function regionally as confining units within aquifer-systems.

Artesian – An adjective referring to confined aquifers. Sometimes the term artesian is used to denote a portion of a confined aquifer where the altitudes of the potentiometric surface are above land surface (flowing wells and artesian wells are synonymous in this usage). But, more generally, the term indicates that the altitudes of the potentiometric surface are above the altitude of the base of the confining unit (artesian wells and flowing wells are not synonymous in this case).

Compaction – Compaction of the aquifer-system reflects the rearrangement of the mineral grain pore structure and largely non-recoverable reduction of the porosity under stresses greater than the pre-consolidation stress. Compaction, as used here, is synonymous with the term "virgin consolidation" used by soils engineers. The term refers to both the process and the measured change in thickness. As a practical matter, a very small amount (1 to 5 percent) of the compaction is recoverable as a slight elastic rebound of the compacted material if stresses are reduced.

Compression – A reversible compression of sediments under increasing effective stress; it is recovered by an equal expansion when aquifer-system heads recover to their initial higher values.

Consolidation – In soil mechanics, consolidation is the adjustment of a saturated soil in response to increased load, involving the squeezing of water from the pores and a decrease in void ratio or porosity of the soil. For purposes of this report, the term "compaction" is used in preference to consolidation when referring to subsidence due to groundwater extraction.

Confined Aquifer-system – A system capped by a regional aquitard that strongly inhibits the vertical propagation of head changes to or from an overlying aquifer. The heads in a confined aquifer-system may be intermittently or consistently different than in the overlying aquifer.

Deformation, Elastic – A fully reversible deformation of a material. In this report, the term "elastic" typically refers to the reversible (recoverable) deformation of the aquifer-system sediments or the land surface.

Deformation, Inelastic – A non-reversible deformation of a material. In this report, the term "inelastic" typically refers to the permanent (non-recoverable) deformation of the aquifer-system sediments or the land surface.

Differential Land Subsidence – Markedly different magnitudes of subsidence over a short horizontal distance, which can be the cause of ground fissuring.

Drawdown – Decline in aquifer-system head typically due to pumping by a well.

Expansion – In this report, expansion refers to expansion of sediments. A reversible expansion of sediments under decreasing effective stress.

Extensometer – A monitoring well housing a free-standing pipe or cable that can measure vertical deformation of the aquifer-system sediments between the bottom of the pipe and the land surface datum.

Ground Fissures – Elongated vertical cracks in the ground surface that can extend several tens of feet in depth.

Head – A measure of the potential for fluid flow. The height of the free surface of a body of water above a given subsurface point.

Hydraulic Conductivity – A measure of the medium's capacity to transmit a particular fluid. The volume of water at the existing kinematic viscosity that will move in a porous medium in unit time under a unit hydraulic gradient through a unit area. In contrast to permeability, it is a function of the properties of the liquid as well as the porous medium.

Hydraulic Gradient – Change in head over a distance along a flow line within an aquifer-system.

InSAR (Synthetic Aperture Radar Interferometry) – A remote-sensing method (radar data collected from satellites) that measures ground-surface displacement over time.

Linear Potentiometer – A highly sensitive electronic device that can generate continuous measurements of displacement between two objects. Used to measure movement of the land-surface datum with respect to the top of the extensometer measuring point.

Nested Piezometer – A single borehole containing more than one piezometer.

Overburden – The weight of overlying sediments including their contained water.

Piezometer – A monitoring well that measures groundwater levels, or piezometric level, at a point, or in a very limited depth interval, within an aquifer-system.

Piezometric (Potentiometric) Surface – An imaginary surface representing the total head of groundwater within a confined aquifer-system, and is defined by the level to which the water will rise in wells or piezometers that are screened within the confined aquifer-system.

Pore pressure – Water pressure within the pore space of a saturated sediment.

Rebound – Elastic rising of the land surface.

Stress, Effective – The difference between the geostatic stress and fluid pressure at a given depth in a saturated deposit, and represents that portion of the applied stress which becomes effective as intergranular stress.

Stress, Preconsolidation – The maximum antecedent effective stress to which a deposit has been subjected and which it can withstand without undergoing additional permanent deformation. Stress changes in the range less than the preconsolidation stress produce elastic deformations of small magnitude. In fine-grained materials, stress increases beyond the preconsolidation stress produce much larger deformations that are principally inelastic (non-recoverable). Synonymous with "virgin stress."

Stress – Stress (pressure) that is borne by and transmitted through the grain-to-grain contacts of a deposit, and thus affects its porosity and other physical properties. In one-dimensional compression, effective stress is the average grain-to-grain load per unit area in a plane normal to the applied stress. At any given depth, the effective stress is the weight (per unit area) of sediments and moisture above the water table, plus the submerged weight (per unit area) of sediments between the water table and the specified depth, plus or minus the seepage stress (hydrodynamic drag) produced by downward or upward components, respectively, of water movement through the saturated sediments above the specified depth. Effective stress may also be defined as the difference between the geostatic stress and fluid pressure at a given depth in a saturated deposit, and represents that portion of the applied stress which becomes effective as intergranular stress.

Subsidence – Permanent or non-recoverable sinking or settlement of the land surface due to any of several processes.

Transducer, Pressure – An electronic device that can measure piezometric levels by converting water pressure to a recordable electrical signal. Typically, the transducer is connected to a data logger, which records the measurements.

Water Table – The surface of a body of unconfined groundwater at which the pressure is equal to atmospheric pressure and is defined by the level to which the water will rise in wells or piezometers that are screened within the unconfined aquifer-system.

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Appendix A

Comments and Responses

A.1 Monte Vista Water District

Comment Number	Reference	Comment	Response
1	n/a	"Guidance level" is used throughout the report. What is the purpose and significance of this term?	The initial investigations that Watermaster performed to develop a subsidence management plan for the Managed Area in Chino showed that groundwater-level declines due to pumping from the deep aquifer system within the Managed Area can cause inelastic (non-recoverable) compaction of the aquifer-system sediments, which results in land subsidence. The initiation of inelastic compaction within the aquifer system was identified at the Ayala Park Extensometer when water levels fell below a depth of about 250 feet in the PA-7 piezometer. For more information on these investigations, see the MZ-1 Summary Report (2006): http://www.cbwm.org/docs/engdocs/Land%20Subsidence/20071017_MZ1_Plan%20--%20Appendix_A_MZ1_SummaryReport_20060226.pdf The "Guidance Level" is a specified depth-to-water measured in Watermaster's PA-7 piezometer at Ayala Park. It is defined as the threshold water level at the onset of inelastic compaction of the aquifer system as recorded by the extensometer minus five feet. The five-foot reduction serves as a safety factor to ensure that inelastic compaction does not occur in the future. The initial (and current) Guidance Level was set at 245 feet below the top of the well casing (ft-btoc) in PA-7. The Guidance Level is established by Watermaster and

			subject to change based on the periodic review of monitoring data collected by Watermaster. Watermaster recommends that the Parties manage their groundwater production such that the water level in PA-7 remains above the Guidance Level. If the water level in PA-7 falls below the Guidance Level, Watermaster recommends that the Parties curtail their production from the Managed Wells as required (1) to allow for water-level recovery and (2) to maintain the water level in PA-7 above the Guidance Level. The magnitude of groundwater-level decline at which aquifer compaction is initiated in areas other than at the Ayala Park Extensometer has not been directly evaluated. Therefore, caution is recommended when pumping from Managed Wells in order to minimize groundwater-level decline within the Managed Area. Guidance Levels for wells and/or piezometers in addition to PA-7 may be specified in the future as a result of ongoing monitoring and the evaluation of groundwater production, groundwater levels, and land subsidence. For further explanation, see the Chino Basin Subsidence Management Plan: http://www.cbwm.org/docs/engdocs/Land%20Subsidence/20150724%20-%20Chino%20Basin%20Subsidence%20Management%20Plan%202015/FINAL_2015_CBSMP.pdf
2	Page 1-1 (Sec. 1.1.2)	Has there been anything in writing by either Watermaster or WEI to describe what [a management plan to abate future subsidence and fissuring or reduce it to "tolerable levels" in MZ-1] looks like? If only verbal	Program Element 4 of the OBMP Implementation Plan states that the "occurrence of subsidence and fissuring in Management Zone 1 is not acceptable and should be reduced to tolerable levels or abated." The OBMP

		discussion, what is the synopsis of these discussions to date?	Implementation Plan does not provide – and neither Watermaster nor WEI have developed to date – a definition of a "tolerable level" of subsidence. The OBMP Implementation Plan called for the development of an interim plan to minimize subsidence and fissuring, the collection of information to assess the causes of subsidence and fissuring, and the development of an effective long-term management plan. Watermaster, with WEI's assistance, has and continues to undertake these activities, which will result in the determination of whether and to what extent subsidence and fissuring can be abated or the levels to which it might be reduced.
3	Page 3-10 (Sec. 3.4.1)	To an engineer, a negative downward motion of 0.25-ft means the ground rose by 0.25-ft. To a hydrogeologist, does this mean the ground dropped by 0.25-ft? More importantly, which way is the reader supposed to understand it?	The report has been revised to describe "upward vertical ground motion" as positive values and "downward vertical ground motion" as negative values.
4	Page 4-5 (Sec. 4-2)	"Fiscal Year 2016-2017" Typo?	The text has been modified to address this comment.
5	Page 4-5 (Sec. 4-3)	[Referring to "no recommended changes to the SMP"] I thought, at the 7/27/17 GLMC meeting, WEI said the frequency of surveys in the Managed Area can be adjusted, no?	Correct. Section 2.1.3 of the Chino Basin Subsidence Management [*On-going Monitoring and Testing*] states: "The GLMC will annually recommend the scope and frequency of leveling surveys and InSAR measurements within the Managed Area."

A.2 City of Chino

Comment Number	Reference	Comment	Response
1	Page 1-5 (Sec. 1.1.4)	The discussion should be clarified to indicate the program recommends "full" groundwater level recovery at least once every 5 years to assess non-elastic compaction.	Section 1.1.5—2015 Chino Basin Subsidence Management Plan was revised to include the following text: The updated SMP also addressed the need for "recovery periods" for piezometric levels in the Managed Area by recommending that all deep aquifer-system pumping cease for a continuous 3-month period between October 1 and March 31 of each year within the Managed Area. Every fifth year, Watermaster recommends that all deep aquifer-system pumping cease for a continuous period until water-level recovery reaches 90 ft-btoc at PA-7. These cessations of pumping are intended to allow for sufficient water level recovery at PA-7 to recognize inelastic compaction, if any, at the Ayala Park Extensometer and at other locations where groundwater-level and ground-level data are being collected.
2	Page 3-8 (Sec. 3.1.2.4)	We agree that baseline EDM should be established on Edison and Eucalyptus Avenues prior to any future groundwater level drawdown testing.	Comment noted.
3	(Sec. 3.4.1)	Can the differential subsidence across the San Jose Fault be quantified? That is, change in elevation/horizontal distance. How does differential subsidence in the NW	Differential subsidence can be quantified across the San Jose Fault in Northwest MZ-1 and the Riley Barrier in the Managed Area. Vertical ground motion has

Comment Number	Reference	Comment	Response
		compare to what was observed/measured in the Managed Area?	been measured by both InSAR and ground-level surveys. Horizontal deformation has been measured by EDMs. Analysis and comparison is possible depending the recommendations by the GLMC.

Exhibit 4

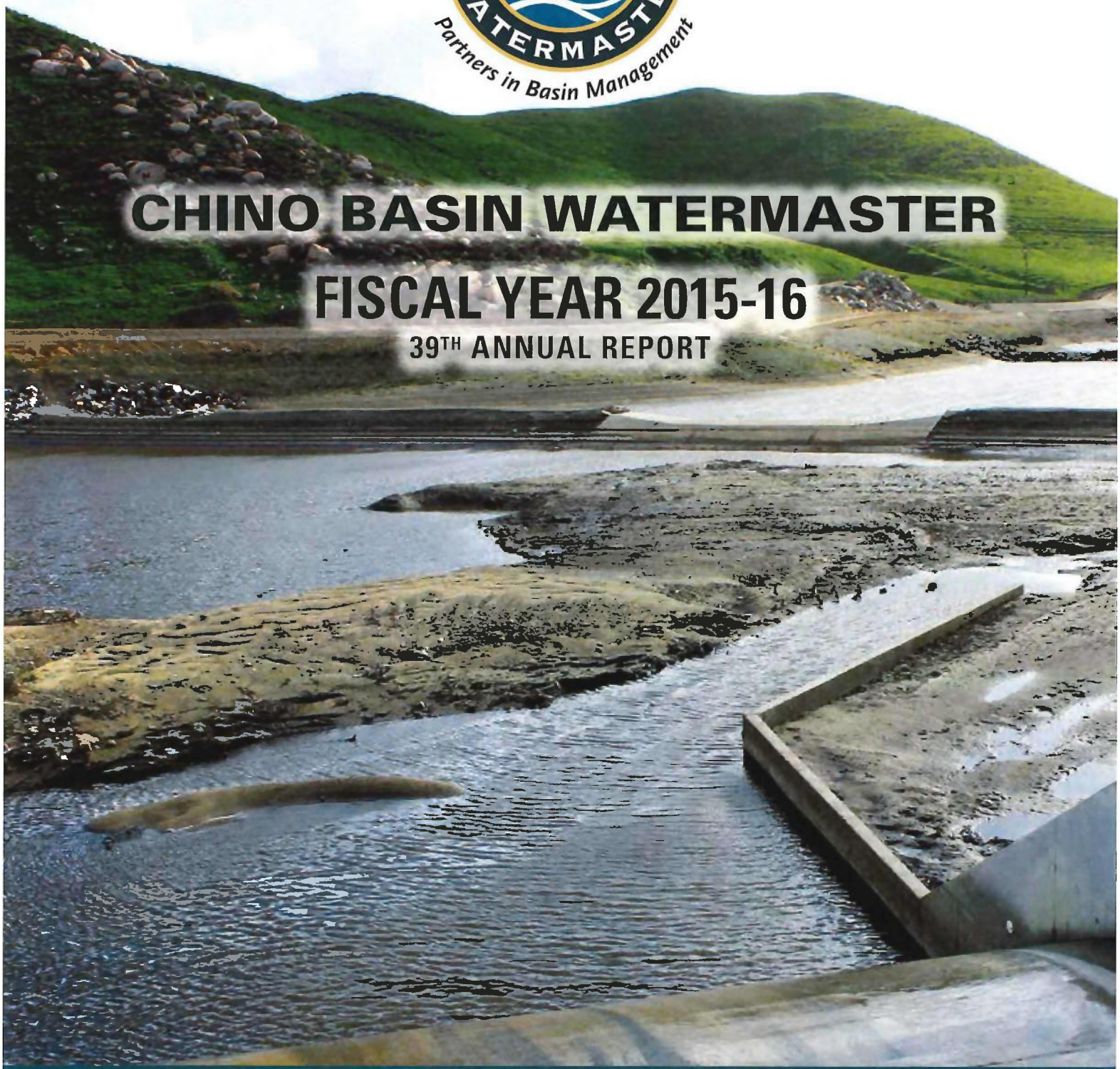
CHINO BASIN WATERMASTER

Partners in Basin Management

CHINO BASIN WATERMASTER

FISCAL YEAR 2015-16

39TH ANNUAL REPORT



REDUCING DEPENDENCE ON IMPORTED WATER

DECADES OF SUCCESS RESOLVING SHARED WATER SUPPLY & QUALITY CHALLENGES

1970s
Conflicts over water threaten supply reliability, water quality, and the regional economy.

1973
Established a fund and implemented a pump tax to raise money to pay for studies that aid in implementing recharge programs in the Basin.

1978
Chino Basin is adjudicated and Watermaster is created. Planning and funding are initiated to manage the Basin.

1999
Optimum Basin Management Program provides a detailed blueprint to ensure a reliable water supply and to protect and enhance water quality.

2000 & 2007
Peace (I) and Peace II Agreements make effective collaboration possible, resulting in hundreds of millions of dollars in cost-savings and other benefits.

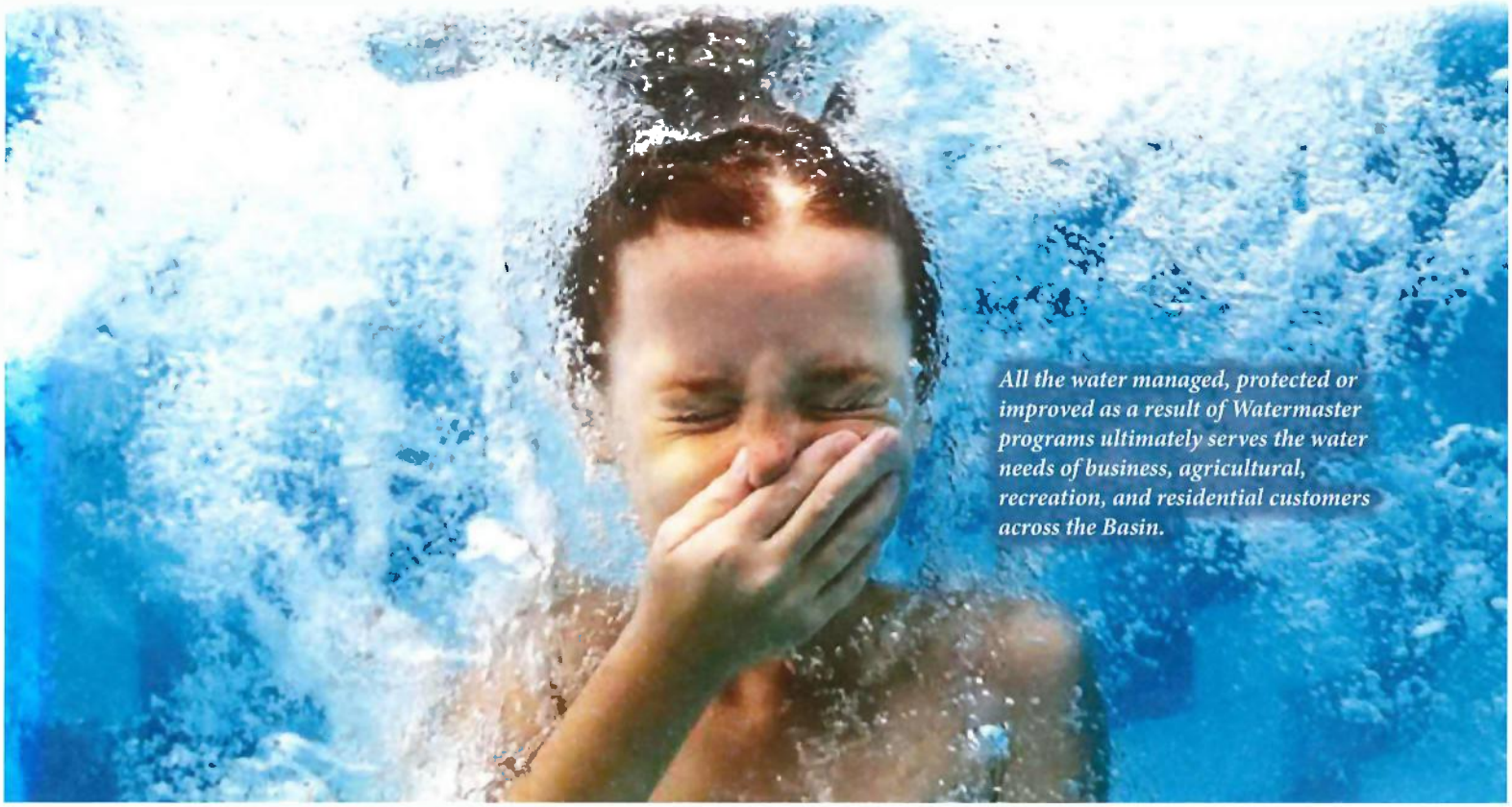
2004
Unique Maximum Benefit Salinity Management Program is Adopted. This enabled implementation of a massive Basin-wide recycled water reuse, stormwater and supplemental water recharge program, and expansion of the groundwater desalting program to achieve hydraulic control.

2008-2010
The Recharge Master Plan Update is a critical step to ensure long-term water quality and supply.

2011
Initiated the Safe Yield Reset process.

2013-2014
Completed the 2013 Amendment to the 2010 Recharge Master Plan Update, which is the new foundation to cost-effectively recharge stormwater, imported water, and recycled water with the goal of improving water quality, and ensuring water supply reliability throughout the Basin into the future.

SEPTEMBER 2015
The Watermaster Board adopted Resolution No. 2015-06, endorsing the 2015 Safe Yield Reset Agreement, and directed Watermaster legal counsel to file the Agreement with the Court.



All the water managed, protected or improved as a result of Watermaster programs ultimately serves the water needs of business, agricultural, recreation, and residential customers across the Basin.

A YEAR OF EXTRAORDINARY ACHIEVEMENTS

A Message from Chino Basin Watermaster

This year marked two notable successes: the achievement of hydraulic control, and the Board approval and subsequent court filing of the Resolution that implements the Safe Yield Reset Agreement. Both took years of intensive technical studies and collaborative policy planning by the stakeholders in a complex regulatory environment.

Hydraulic control seems simple on the surface: prevent contaminated groundwater from flowing out of the Basin into the Santa River by replacing the diminishing agricultural pumping in the southern portion of the Basin with pumping at the Chino Basin Desalters. But, it is the linchpin of the Maximum Benefit Program, a creative salinity management program that protects Santa Ana River quality, enables the large-scale reuse and recharge of recycled water, improves water quality, enhances water supplies, and saves hundreds of millions of dollars in treatment costs. Watermaster and the parties have spent the last fifteen years developing and implementing the management program components.

The Safe Yield Reset is a remarkable example of Watermaster's technical and analytic capabilities, as well as the stakeholders' commitment to sustainable management of the Basin and ability to work collaboratively to resolve difficult challenges in a way that is mutually acceptable and beneficial.

It is also notable that this is the fifth year of an extended drought. While the Chino Basin has endured the same dry conditions as the rest of the State, because of its effective long-term water management programs, the Chino Basin is weathering the drought with comparatively minimal impacts.

Watermaster's water supply and quality achievements and benefits are all truly shared. As is the case each year, all the stakeholders deserve both credit and our heartfelt thanks: the Board, Advisory Committee and Pools, our staff, technical consultants, regulators and the many other stakeholders who are too numerous to name here.

I am looking forward to many more years working together.

Peter Kavounas, PE
General Manager, Chino Basin Watermaster

WATERMASTER IS ACTIVELY IMPLEMENTING THE OPTIMUM BASIN MANAGEMENT PROGRAM, WHICH INCLUDES: EXTENSIVE MONITORING; ENHANCING RECHARGE CAPABILITIES AND STORAGE AND RECOVERY; MANAGING SALT LOADS; DEVELOPING NEW YIELD; AND CONTINUING TO WORK WITH STAKEHOLDERS TO ENHANCE THE BASIN.

PARTNERS IN BASIN MANAGEMENT

SAFE YIELD RESET PROCESS CONTINUES

Andy Malone of Wildermuth Environmental, Inc. presenting.

WHAT "SAFE YIELD" IS AND WHY IT IS SO IMPORTANT

The Restated Judgment defines Safe Yield as the long-term average annual quantity of groundwater (excluding replenishment or stored water, but including return flow to the Basin from the use of replenishment or stored water), which can be produced from the Basin under cultural conditions of a particular year without causing an undesirable result.

The Safe Yield was originally set by the Judgment at 140,000 acre-feet per year and the Reset analysis indicates that the safe yield should be lowered by 5,000 acre-feet through 2020. The result is that the water-rights-holders needed to work together to identify how to accomplish the cut-backs given the complex system of water rights accounting.

Because the Safe Yield directly impacts how much water-rights-holders can pump without a replenishment obligation, the Safe Yield Reset process exemplifies Watermaster's role in providing a forum for discussing differing points of view and to work on resolving difficult challenges.

After years of technical evaluations and hosting more than 50 facilitated meetings, a majority of Watermaster's stakeholders approved the final Safe Yield Reset Agreement (Agreement) that, in part, addresses the lowering of the Safe Yield from 140,000 acre-feet to 135,000 acre-feet through 2020.

The Court's approval of the Agreement is pending due to legal filings submitted by two parties.

MAJOR MILESTONES LEADING UP TO THE SAFE YIELD RESET AGREEMENT

Following a multi-year technical evaluation and intensive facilitated process, Watermaster completed an important requirement by approving and filing the Safe Yield Reset Agreement (Agreement) with the court.

2011-12 The process to reset the Safe Yield began with data gathering, and the update and calibration of Watermaster's model.

2012-13 The evaluation of the Safe Yield using the updated basin model began, and initial findings were developed and presented to the stakeholders in July 2013.

2013-14 The technical analysis was fine-tuned based on the many questions posed by the parties.

2014-15 The facilitated process to develop an agreement on Safe Yield was initiated in January 2015 and continued into fiscal year 2015-16.

Steve Elie (left) presents Mark Kinsey with a plaque for two years of service on the Watermaster Board of Directors.

SAFE YIELD RESET AGREEMENT FILED WITH THE COURT

The Agreement establishes the new Safe Yield at 135,000 acre-feet per year from 2010-11 through 2019-20. This is a reduction of 5,000 acre-feet per year. The Agreement, also addresses details such as: the process and accounting issues in resetting Safe Yield, future allocation of costs and benefits of new stormwater recharge projects, and the management of stored water. The Board approved Resolution 2015-06, recommending that the Agreement be filed with the court.

July and August 2015 – Watermaster hosted nine special meetings with the Parties to help develop the Agreement.

August 2015 – The Watermaster Board directed Legal Counsel and staff to seek advice and counsel from the Pool Committees on the Agreement, and to return to the Board in September so that the Board may take action in order to file with the Court by the planned date of October 1, 2015.

September 2015 – All levels of the Watermaster governance structure considered the Agreement and acted to approve it, as follows:

Agricultural Pool – Unanimously moved to support the Advisory Committee's recommendation that the Board adopt Resolution 2015-06.

Non-Agricultural Pool – Unanimously adopted a Non-Agricultural Pool resolution regarding the 2015 Safe Yield Reset Agreement.

Appropriative Pool – By majority vote, recommended that the Board adopt Resolution 2015-06.

Advisory Committee – Acted by majority vote to recommend that the Board adopt Resolution 2015-06.

Board of Directors – Adopted Resolution 2015-06 on September 24, 2015 by majority vote, endorsing the Agreement and directing Watermaster's legal counsel to file it with the Court.

October 23, 2015 – The Safe Yield Reset Agreement was filed in Court. Subsequently, supporting and opposing briefs were filed with the Court and the Court ultimately set a hearing on the Agreement for September 23, 2016. As of the end of Fiscal Year 2015-16, the final court ruling was pending due to opposition filings submitted by two parties.

THE MANY YEARS OF TECHNICAL WORK AND FACILITATED DISCUSSIONS CULMINATED IN FISCAL YEAR 2015-16 WITH THE DEVELOPMENT OF AN AGREEMENT TO RESET THE SAFE YIELD AND IMPLEMENT IT. THE AGREEMENT IS PENDING APPROVAL BY THE COURT.

PROGRESS CONTINUES ON RECHARGE MAST AND OTHER RECHARGE PROGRAMS

The 2013 Amendment to the 2010 Recharge Master Plan Update (2013 RMPU) forms the foundation for Watermaster's comprehensive program to cost-effectively recharge stormwater, urban runoff, imported water, and recycled water with the goal of improving water quality, and ensuring water supply reliability into the future.

PROGRESS ON 2013 RMPU GROUND WATER RECHARGE IMPLEMENTATION

The additional groundwater recharge achieved through the 2013 RMPU recharge projects will provide Watermaster with the flexibility to take larger amounts of imported water and stormwater at the increasingly limited times when those sources are available, while also utilizing larger amounts of local recycled water and urban runoff. The recharge increases the amount of groundwater in storage and is under full local control, increasing the Basin's capacity to meet water demands at all times, especially during drought.

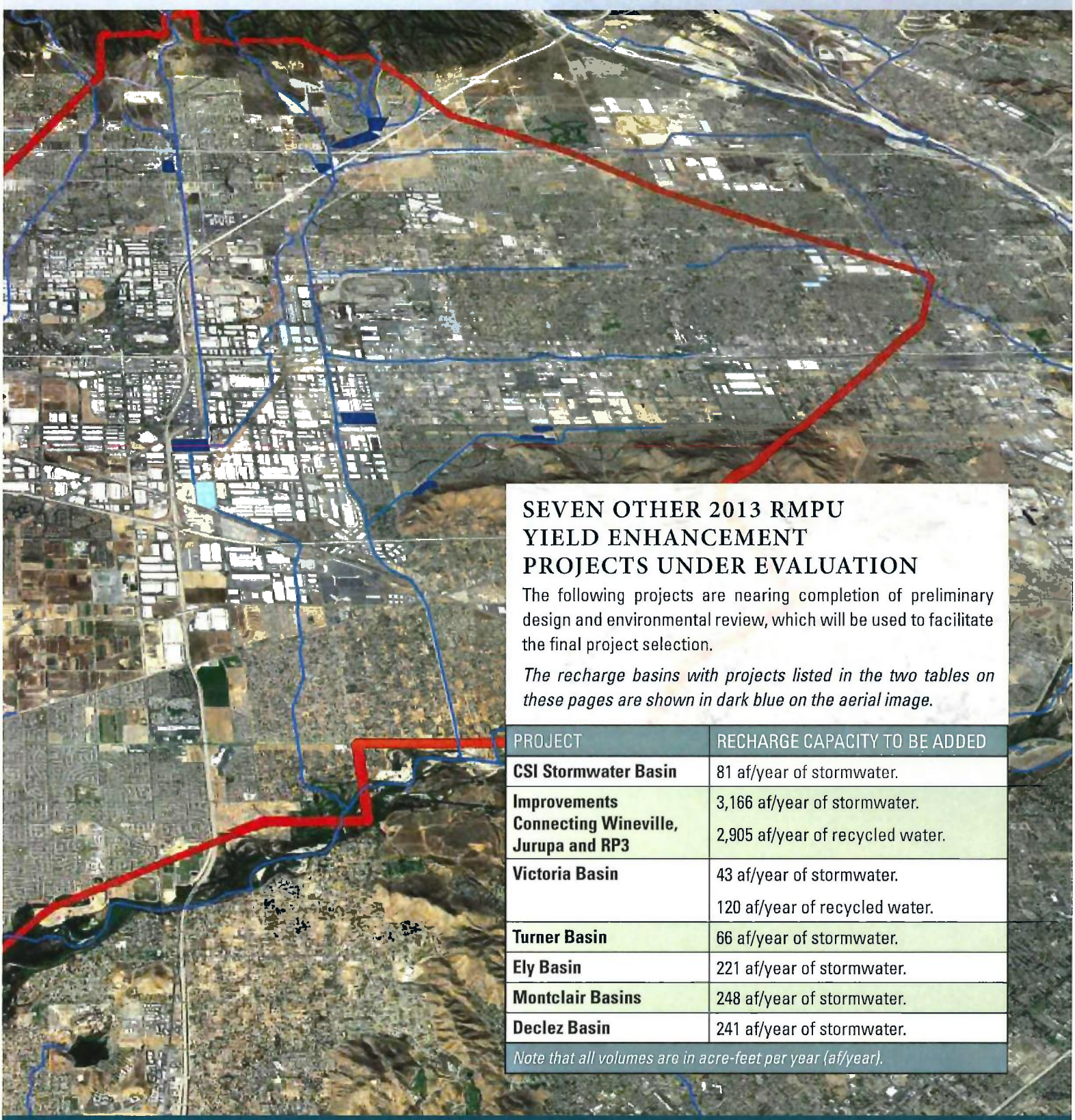
TWO FAST-TRACKED 2013 RMPU YIELD ENHANCEMENT PROJECTS

Planning for the nine 2013 RMPU projects continued throughout Fiscal Year 2015-16. The San Sevaine and Lower Day improvements were fast-tracked in 2014 due to the award of $2.25 million in grant funding.

PROJECT	RECHARGE CAPACITY TO BE ADDED	STATUS
San Sevaine	642 af/year of stormwater. 4,100 af/year of recycled water.	Pre-design and environmental impact investigations complete. Design and permitting in progress.
Lower Day	789 af/year of stormwater. 4,100 af/year of recycled water.	Environmental impact investigations complete and pre-design and permitting in progress.

Note that all volumes are in acre-feet per year (af/year).

ER PLAN UPDATE IMPLEMENTATION



SEVEN OTHER 2013 RMPU YIELD ENHANCEMENT PROJECTS UNDER EVALUATION

The following projects are nearing completion of preliminary design and environmental review, which will be used to facilitate the final project selection.

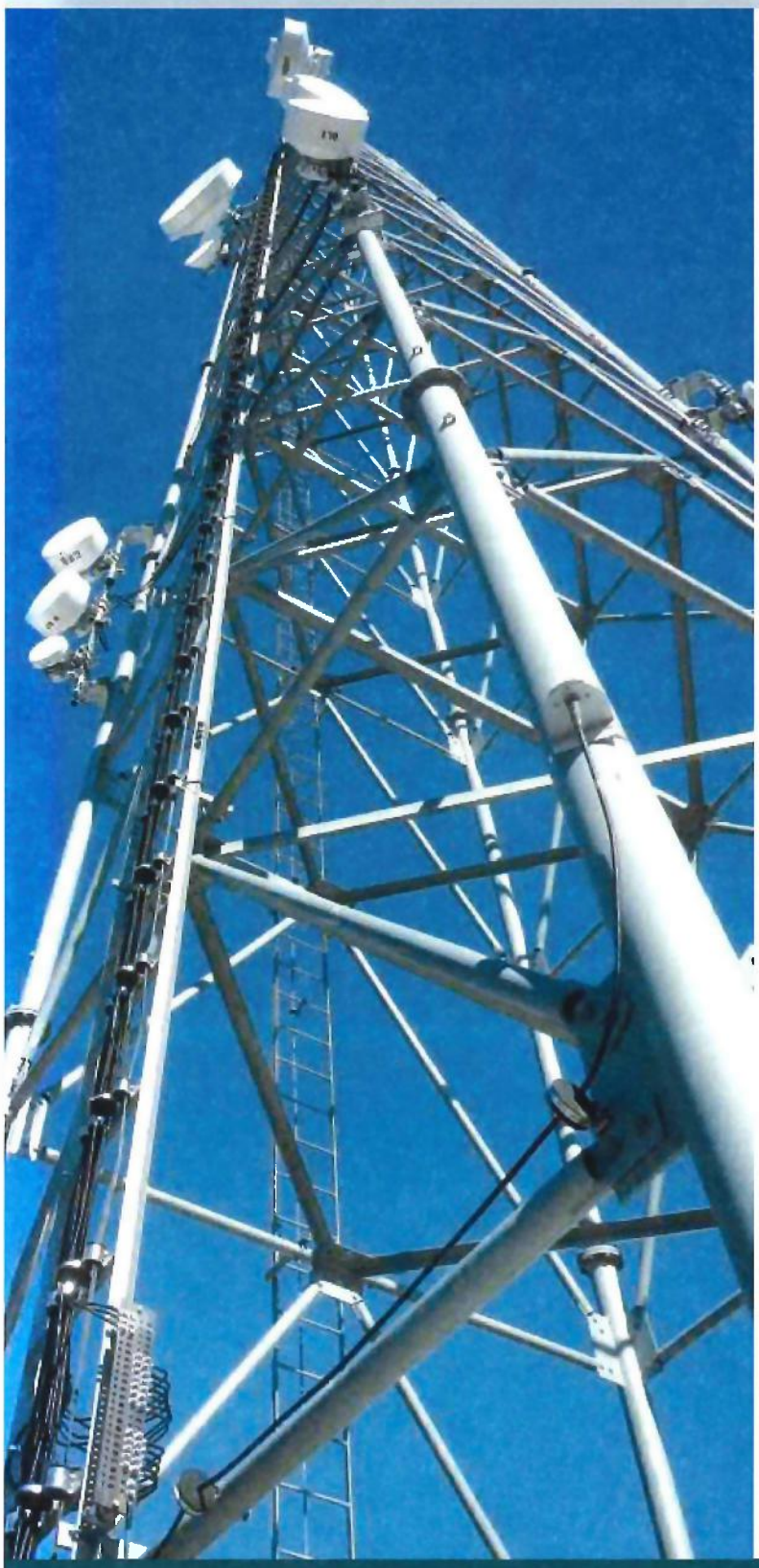
The recharge basins with projects listed in the two tables on these pages are shown in dark blue on the aerial image.

PROJECT	RECHARGE CAPACITY TO BE ADDED
CSI Stormwater Basin	81 af/year of stormwater.
Improvements Connecting Wineville, Jurupa and RP3	3,166 af/year of stormwater. 2,905 af/year of recycled water.
Victoria Basin	43 af/year of stormwater. 120 af/year of recycled water.
Turner Basin	66 af/year of stormwater.
Ely Basin	221 af/year of stormwater.
Montclair Basins	248 af/year of stormwater.
Declez Basin	241 af/year of stormwater.

Note that all volumes are in acre-feet per year (af/year).

NINE PROJECTS ARE IDENTIFIED FOR IMPLEMENTATION UNDER THE RMPU. THE TOTAL CAPITAL COST IS OVER $40 MILLION AND WATERMASTER'S SHARE IS ABOUT $35 MILLION.

PROGRESS CONTINUES ON RECHARGE MASTER PLAN AND OTHER RECHARGE PROGRAMS CONT.



Watermaster and IEUA are undertaking numerous non-RMPU projects to make recharge more efficient, including upgrading aged radios and towers, like the one above, to improve communication with recharge facilities.

RIPCOM ADVANCES OTHER RECHARGE ACTIVITIES

RIPCOM FORUM INCREASES COLLABORATION

The Recharge Investigations and Projects Committee (RIPCom) is a forum created by Watermaster and IEUA to exchange information and updates related to the implementation of the 2013 RMPU, as well as to facilitate the introduction and implementation of other new recharge projects that could have regional benefits. The RIPCom meets monthly and is open to all parties and stakeholders interested in contributing to the process. In February 2016, the RIPCom held its first Annual Workshop.

RIPCOM REPRESENTS A NEW FORUM OF COLLABORATION AMONG THE PARTIES WITH INCREASED TRANSPARENCY, OPEN COMMUNICATION, AND PROACTIVE RESOLUTION OF QUESTIONS AND OPEN ISSUES RELATED TO RECHARGE.

COMMITTEE CONTINUES EVALUATING PROJECTS FOR FEASIBILITY AND COST-EFFECTIVENESS

The RIPCom continued its investigations into the potential feasibility of numerous projects, including the non-RMPU East Declez Basin project. In April 2016, the Appropriative Pool decided not to continue the project. Only projects that are both economically and physically feasible are continued.

The Recharge Investigations and Projects Committee (RIPCOM) at one of its monthly meetings, which are open to all stakeholders.

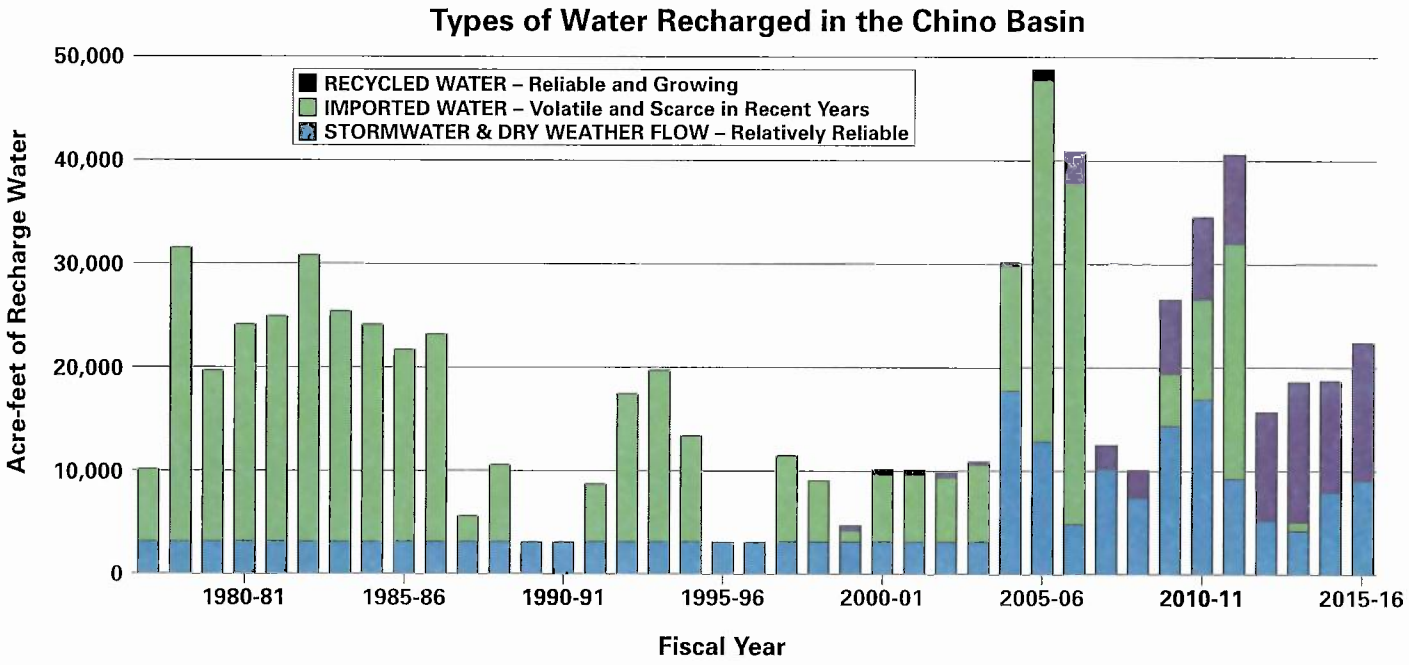
UPDATE IMPLEMENTATION

CONTINUED QUANTIFYING AMOUNT OF WATER CREATED BY NEW MS4 PERMITS

New rules regulating Municipal Separate Stormwater Sewer Systems (MS4) impose strict regulations to ensure that no new stormwater runoff created by new development is discharged to surface waters. As a result, new developments must keep stormwater onsite where it can be stored and infiltrated into the ground. Watermaster continued working on the 2013 RMPU commitment to determine how much new storm water recharge will be achieved through MS4 permit compliance. This multi-year effort is due to be completed in 2017-18. The effort involves collecting, reviewing and cataloging Water Quality Management Plan (WQMP) reports, design reports, and as-built drawings to determine the amount of net new storm water recharge created by each MS4 or other local storm water management project.

UPPER SANTA ANA RIVER WATERSHED HABITAT CONSERVATION PLAN PROGRESSES

The Upper Santa Ana River Watershed Habitat Conservation Plan (HCP) is a regional, multi-agency permitting effort for various projects in the watershed, which will result in preserving and restoring habitat for 23 endangered species in the Upper Santa Ana River watershed. Watermaster and IEUA are partners in and provide funding to the HCP. Participation in the HCP will help to avoid potential permitting delays on future capital projects. Investigation and planning work has been underway since July 2014 and is scheduled to continue through June 2017.



The annual volumes of stormwater and local runoff water, as well as imported and recycled water used for recharge, are shown above for 1977-78 to 2015-16. Stormwater and local runoff have provided a reliable base for recharge, and recycled water has grown increasingly important as imported water supplies vary dramatically depending on the year. The steady volume of 3,200 acre-feet per year of stormwater and local water recharge shown for the period 1977-78 to 2004-05 is an estimated average amount because, prior to 2004-05, neither stormwater nor local runoff recharge were measured in the Chino Basin.

THE CURRENT SUPPLEMENTAL WATER RECHARGE CAPACITY IS A MAXIMUM OF 104,700 ACRE-FEET PER YEAR.

HYDRAULIC CONTROL OF THE BASIN ACHIEVED!

TIMELINE OF ACHIEVEMENT OF HYDRAULIC CONTROL

2004 **The Santa Ana Regional Water Quality Control Board (Regional Board) adopts the Maximum Benefit program, which allows for the reuse and recharge of recycled water and the recharge of imported water without mitigation.** The Maximum Benefit Program is contingent on implementing specific monitoring and reporting programs, constructing and enhancing recharge facilities, and constructing the Chino Basin Desalters to achieve hydraulic control.

Watermaster and IEUA submitted a surface-water and groundwater monitoring program work plan to the Regional Board. The Regional Board approved this work plan in part to collect the data needed to demonstrate the status of hydraulic control.

2007 **Based on water level elevations measured in spring of 2007, Watermaster demonstrates that hydraulic control is being achieved and maintained in the eastern half of the Basin as a result of production by the Chino Basin Desalters.**

2011 **Regional Board adopts the formal definition of hydraulic control as the reduction of groundwater outflow from Chino-North to the Santa Ana River to 1,000 acre-feet of water or less per year,** and emphasizes that the completion of the Chino Creek Well Field (CCWF) and the expansion of the Chino Basin Desalters to a total capacity of 40,000 acre-feet per year will be integral to the achievement of hydraulic control in the west and the maintenance of hydraulic control as agricultural production declines.

2012 **To achieve hydraulic control in the west, Watermaster and IEUA worked with the Chino Desalter Authority (CDA) to construct the CCWF.** Initial results of well development efforts indicated that far less water could be produced from the CCWF than planned, and one well encountered contaminated groundwater.

However, through the development of robust technical analyses, Watermaster and IEUA demonstrated that hydraulic control could be achieved in the west with as little as 1,500 acre-feet of production per year at four of the five CCWF wells. Construction of the CCWF wells was completed in May 2012.

2014 **Watermaster and the IEUA coordinated with CDA to develop a plan to construct additional wells to achieve the required 40,000 acre-feet per year of desalter production capacity** and submitted a preliminary plan to the Regional Board on May 30, 2014.

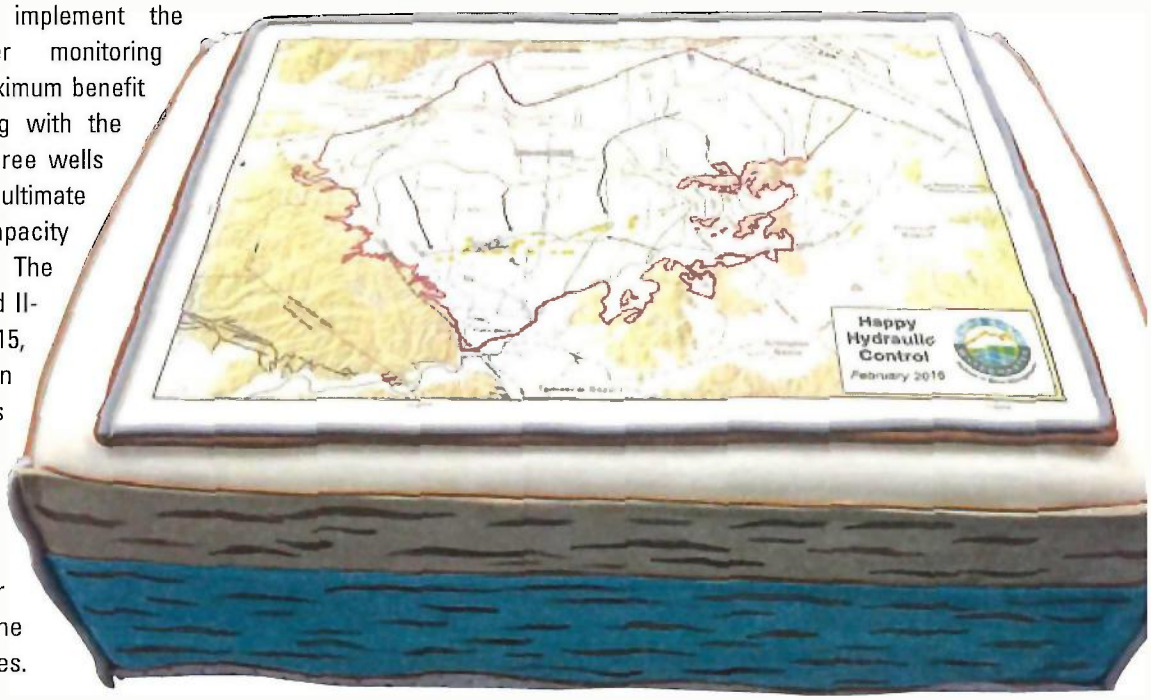
2015 **In June, a final plan and schedule to construct and operate three additional wells for the Chino II Desalter was developed.**

2016 **Production at the CCWF reaches the level required to achieve full hydraulic control across the Basin.**

Following years of focused effort, Watermaster has brought together all the elements of a complex plan to meet a challenging regulatory requirement to protect the Santa Ana River and, at the same time, provide wide ranging additional water supply, quality and cost-saving benefits. This significant milestone was accomplished when Watermaster achieved hydraulic control of the Chino Basin which is defined as "the elimination of groundwater discharge from the Chino-North groundwater management zone to the Santa Ana River or its reduction to a de-minimus level of 1,000 acre-feet or less per year."

ADDITIONAL ACTIONS UNDERWAY TO ENSURE LONG-TERM MAINTENANCE OF HYDRAULIC CONTROL

Watermaster continues to implement the surface and groundwater monitoring programs required by the maximum benefit commitments and is working with the CDA to construct the final three wells required to achieve an ultimate raw-water production capacity of 40,000 acre-feet per year. The construction of wells II-10 and II-11 was completed in late-2015, and in late 2016 the location of the third and final well was determined (II-12). These additional wells are needed to ensure hydraulic control is maintained over time as agricultural groundwater production decreases with the conversion of land to urban uses.



To celebrate the momentous achievement of Hydraulic Control, Watermaster held a special reception following the February 25, 2016 Board meeting. A hydraulic control cake was shared by all.

HYDRAULIC CONTROL IS THE LINCHPIN OF THE MAXIMUM BENEFIT PROGRAM THAT: PROTECTS THE SANTA ANA RIVER, KEEPS WATER IN THE BASIN FOR LOCAL USE, IMPROVES WATER QUALITY BY REMOVING CONTAMINANTS, ALLOWS INCREASED RECHARGE OF RECYCLED WATER TO IMPROVE THE WATER SUPPLY, AND SAVES HUNDREDS OF MILLIONS OF DOLLARS IN LONG-TERM TREATMENT AND OTHER COSTS.

MONITORING IS THE FOUNDATION FOR ALL WATERMASTER PROGRAMS

MAJOR MONITORING PROGRAMS AT A GLANCE

Watermaster monitors groundwater, surface water, and ground level at more than 1,000 sites across the Basin. The information is all entered into a sophisticated relational database and is used support a wide variety of programs and studies.

GROUNDWATER LEVEL MONITORING

About 1,000 wells are monitored to track groundwater levels.

GROUNDWATER QUALITY MONITORING

Watermaster carries out a variety of groundwater quality programs.

GROUNDWATER PRODUCTION MONITORING

All active groundwater wells are monitored for production.

SURFACE WATER MONITORING

Surface water is monitored as it is delivered to recharge basins. Monitoring is also conducted to characterize interactions with groundwater along the Santa Ana River.

GROUND LEVEL MONITORING

The data are used to help design programs to help prevent subsidence and fissuring.

MONITORING SUPPORTS THE FOLLOWING PROGRAMS

- Maximum Benefit Monitoring Program
- Prado Basin Habitat Sustainability Program
- Groundwater Recharge Programs
- Hydraulic Control
- Subsidence Management Plan
- Sustainable Groundwater Management Act
- Periodic Reset of the Safe Yield
- And many others

The Chino Groundwater Basin covers over 220 square miles in portions of three counties. It has hundreds of wells and is overlain with a number of streams and recharge basins that enable the infiltration of natural rainwater and other supplemental water supplies. Watermaster implements extensive monitoring programs, which are necessary to help design water quality and supply programs, and to manage ground levels, and then test the outcomes of those programs.

GROUND LEVEL MONITORING A FOCUS FOR THE YEAR

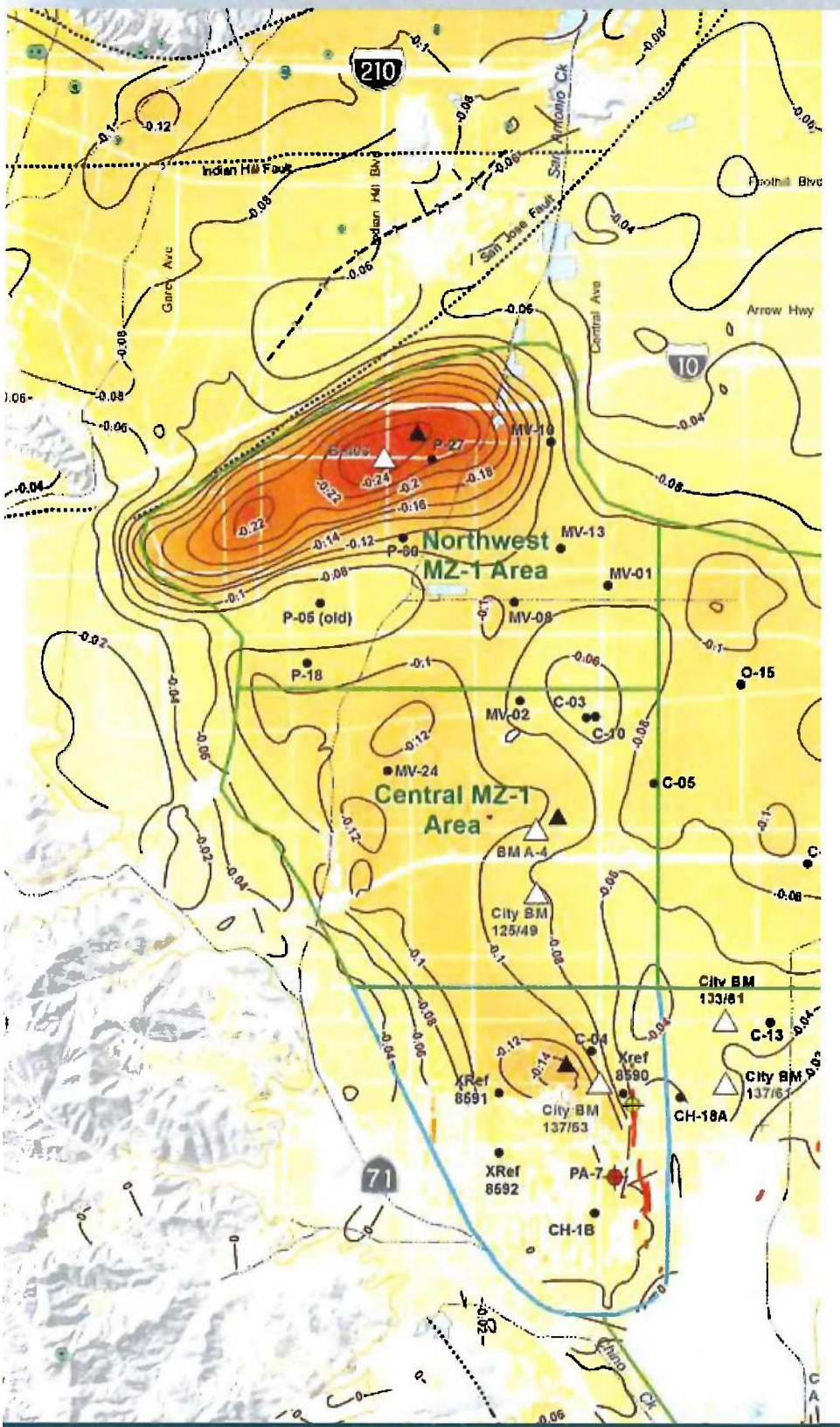
EXPANSION OF GROUND LEVEL MONITORING IN MZ-1

Ground-Level Monitoring Committee is Enhancing Success of the Program. The Ground-Level Monitoring Committee (GLMC) provides for direct interaction between Watermaster's technical experts and the technical experts working for the parties. This expert collaboration has resulted in effective ground-level management solutions. The GLMC meets periodically and is open to all interested participants.

Update of the Chino Basin Subsidence Management Plan. Historical over-pumping of groundwater in southwestern Chino Basin led to a type of permanent ground motion called differential land subsidence, which resulted in ground fissuring in an area called Management Zone-1 (MZ-1). Watermaster began ground-level investigations in 2001, and in 2007 adopted its first monitoring and management plan, the MZ-1 Subsidence Management Plan. By 2014, monitoring data indicated that land subsidence in the southern MZ-1 area was being effectively managed. However, ongoing land subsidence in the northwest portion of MZ-1 was identified as a concern that should be addressed by Watermaster.

In early 2015, Watermaster prepared an update to the MZ-1 Plan, which included a name change to the 2015 Chino Basin Subsidence Management Plan (SMP) and a Work Plan to Develop the Subsidence Management Plan for the Northwest MZ-1 Area (Work Plan) as an appendix.

The 2015 update to the *Subsidence Management Plan* (SMP) and the Work Plan were adopted through the Watermaster process in July 2015.



This representation of vertical ground motion is derived from InSAR satellite data.

THIS YEAR'S SUBSIDENCE MANAGEMENT PLAN ACTIONS

Throughout Fiscal 2015-16 Watermaster continued implementation of the SMP and the Work Pan for the Northwest portion of MZ-1. The data, analysis, and reports generated through the implementation of the plans are reviewed and discussed by the GLMC, which met three times this year and made significant progress:

Extensive Review of Ground Level Data. The committee: reviewed water levels at the PA-7 piezometer where very little, if any, permanent compaction was recorded; collected Interferometric Synthetic Aperture Radar (InSAR) satellite data scenes from across the western Chino Basin; and incorporated the data, results, and conclusions from the Groundwater Level Monitoring Program into the draft 2015 Annual Report of the Ground-Level Monitoring Committee.

Began Implementation of the Northwest MZ1 Work Plan:

- Installed data loggers within wells to measure and record groundwater levels.
- Developed a one-dimensional aquifer-system compaction model that will be used to estimate past and future ground level movement in the Northwest MZ-1 Area.
- Completed a technical memorandum, *Hydrogeologic Conceptual Model and the Monitoring and Testing Program for the Northwest MZ-1 Area.*
- Developed multiple groundwater production and wet-water recharge scenarios for the Northwest MZ-1 Area in support of developing an Initial Subsidence-Management Alternative.

MONITORING IS THE FOUNDATION FOR ALL WATERMASTER PROGRAMS CONT.

PRADO BASIN HABITAT SUSTAINABILITY PROGRAM (PBHSP) ADVANCES

BACKGROUND ON THE PBHSP

The draft Supplemental Environmental Impact Report (SEIR) for Peace II (Re-Operation) indicated that implementation of Re-Operation would not cause groundwater levels to draw down enough to cause adverse impacts on the riparian vegetation in Prado Basin. However, during public review, there was a comment that the effects of Peace II should be monitored.

As a contingency measure, the final SEIR set up the Prado Basin Habitat Sustainability Committee (PBHSC), which was convened by Watermaster and the IEUA, to develop and implement an adaptive management plan to describe the initial monitoring program and a process to modify the monitoring program and/or implement mitigation strategies, if necessary.

NETWORK OF MONITORING WELLS CONSTRUCTED

When the PBHSC first convened in November 2012, its first major task in developing an adaptive management plan was to expand the groundwater-monitoring network within the Prado Basin with the construction of new monitoring wells.

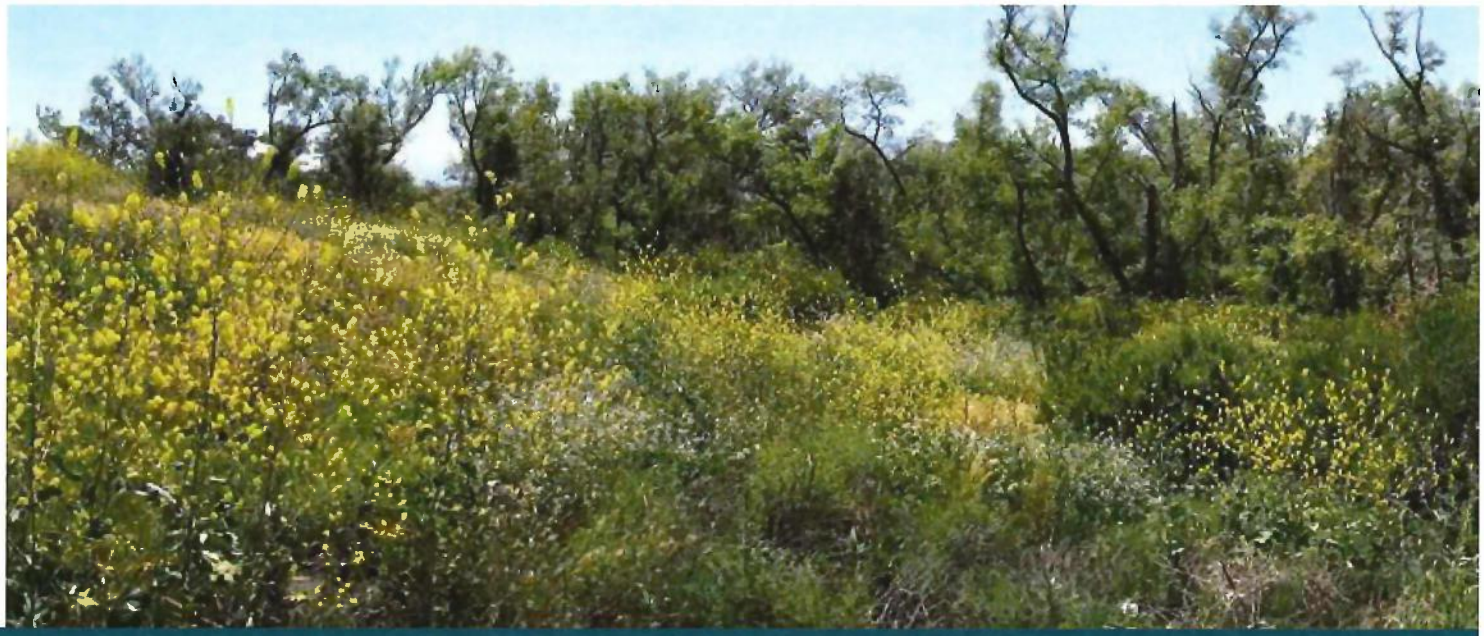
It took a number of years to start construction due to the process to secure easements to the well site locations and the need to time the work in order to avoid impacts to important nesting habitat within Prado Basin.

Ultimately, sixteen monitoring wells were constructed in April and May 2015 and monitoring began immediately.

MONITORING BEGINS AND DRAFT ADAPTIVE MANAGEMENT PLAN PREPARED

First Monitoring Rounds Completed. This fiscal year, Watermaster conducted the first two rounds of quarterly groundwater-level and -quality monitoring at the eighteen PBHSP monitoring wells (the sixteen new wells plus two pre-existing wells).

Draft Adaptive Management Plan Completed. Watermaster made further strides this year by completing the draft *2016 Adaptive Management Plan*. The PBHSC reviewed and revised the draft Adaptive Management Plan; prepared a final report of the results of cone penetrometer testing and drilling, and construction of the PBHSP monitoring wells; and convened a PBHSC meeting in April 2016 to present the draft 2016 Adaptive Management Plan.

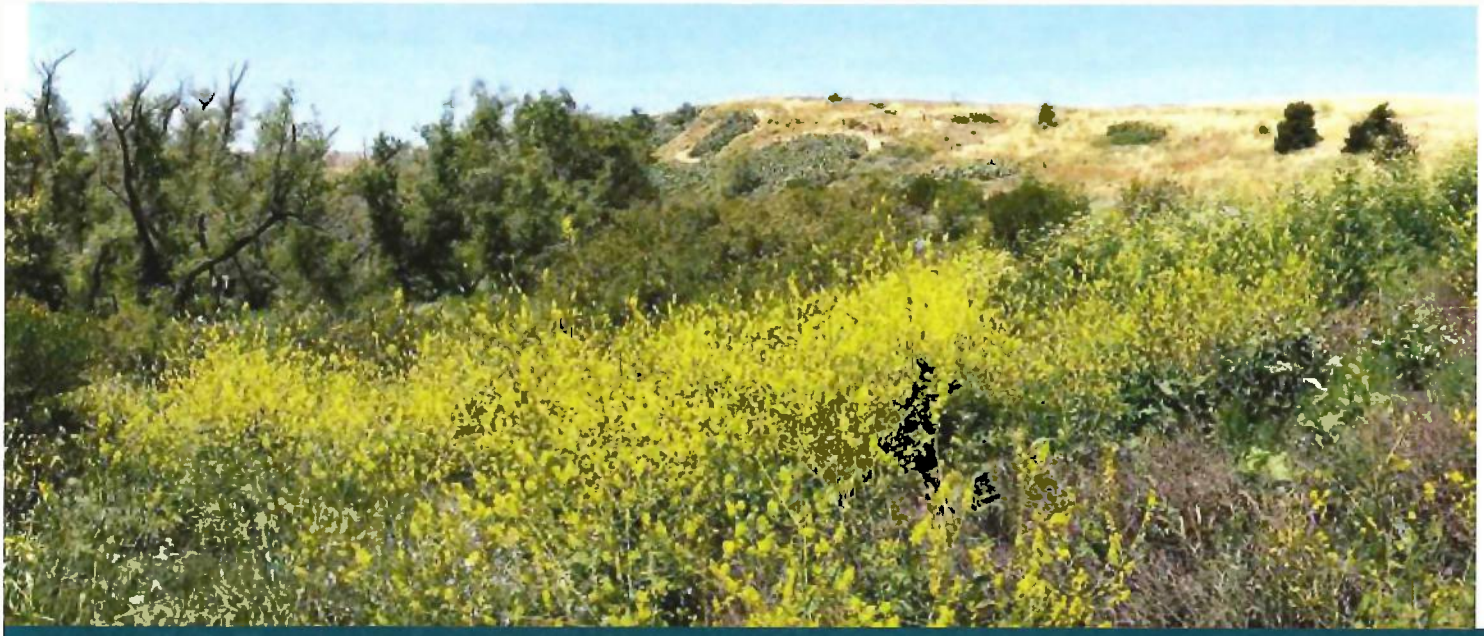


Prado Basin plant life. Monitoring for the PBHSP is extremely complex, requiring drilling of wells in sensitive habitat, tracking water levels, evaluating changes in riparian habitat through photo monitoring, and gathering and evaluating numerous other types of data to ensure habitat sustainability.

ELEMENTS OF THE ADAPTIVE MANAGEMENT PLAN	
MONITORING AND DATA COLLECTION PROGRAMS *for groundwater level and water quality; surface water discharge and quality; weather and climate; vegetation; and compilation of historical and current satellite/radar images and air photos of the riparian habitat area.*	
PERIODIC USE OF PREDICTIVE GROUNDWATER MODELING *to assess potential future adverse impacts.*	**ANNUAL REPORTING OF FINDINGS** *to the PBHSC and to Watermaster and IEUA Boards.*
UPDATE OF THE PLAN PERIODICALLY *in response to findings and conclusions.*	**DEVELOPMENT OF MITIGATION MEASURES** *if impacts are occurring or are predicted to occur.*

THE ADAPTIVE MANAGEMENT PLAN IS DESIGNED TO ANSWER THESE AND OTHER QUESTIONS

- What are the factors that potentially can affect the extent and quality of the riparian habitat?
- What is a consistent, quantifiable definition of "riparian habitat quality," including metrics and measurement criteria?
- What has been the historical extent and quality of the riparian habitat in the Prado Basin?
- How has the extent and quality of the riparian habitat changed during implementation of Peace II?
- How have groundwater levels and quality, surface-water discharge, weather, and climate changed over time? What were the causes of the changes? Did those changes result in an adverse impact to riparian habitat in the Prado Basin?



FOCUS ON EFFICIENT AND FLEXIBLE MANAGEMENT AND ADMINISTRATION

FLEXIBILITY ALLOWS WATERMASTER TO EVOLVE

THREE-YEAR TERM BOARD REAPPOINTMENT

Since Watermaster's founding in 1998, The Court has appointed a nine-member Board of Directors to serve as the Watermaster in conformance with the Judgment. The appointments have been extended throughout the years. Following a request from the Appropriative Pool Committee that was accepted by the Non-Agricultural and Agricultural Pool Committees, the Board requested the Court to reappoint the Board for a three-year term. The Court approved this modification on January 22, 2016.

ADVISORY COMMITTEE VOLUME VOTE

Prior to February 2016, when a Major Producer was absent from the Committee, Watermaster allocated the producer's vote to another Major Producer. As a result, Minor Producers did not receive any benefit from reallocation of votes. After conferring with staff, the Appropriative Committee's legal counsel sent a letter to Watermaster requesting that the Advisory Committee volume vote be reallocated similar to the Agricultural Pool's Pooling Plan. Watermaster has since changed the Appropriative Committees Volume Vote calculator to match it, thus providing a voting benefit to the Minor Producers.

5,000 ACRE-FEET OF EXHIBIT "G" WATER OFFERED AND SOLD

Several years ago, to improve flexibility, Watermaster developed a structure allowing Non-Agricultural Pool members to sell water to Appropriators through a new "Exhibit G" process. A small amount of water was sold in 2014-15. Last year, 2,300 acre-feet was offered for sale and sold. This year, 5,000 acre-feet of "Exhibit G" water was offered and sold in this increasingly successful program.

Wastermaster's Board of Directors at work.

WATERMASTER TRACKS AND IS VIGILANT ON EMERGING AND POTENTIAL ISSUES

COMPLIANCE WITH THE SUSTAINABLE GROUNDWATER MANAGEMENT ACT (SGMA)

The SGMA took effect in early 2015 and requires the development of sustainable groundwater management plans for all medium- and high-priority groundwater basins, as defined by the California Department of Water Resources (DWR), mandates the creation of local groundwater sustainability agencies to oversee and implement the plans, and outlines the guidelines and schedule for complying with the Act.

The Water Code exempts adjudicated areas and local agencies that conform to the requirements of an adjudication of water rights from the provisions of the SGMA (specifically naming the Chino Basin as exempt), except for annual reporting to the DWR.

Watermaster Submitted its first Annual SGMA Report. Watermaster submitted its first annual report to the DWR on April 1, 2016, as required. Prior to the submittal of the report Watermaster staff participated in workshops and coordinated with DWR to ensure that the new report was prepared in accordance with the requirements of the law.

Applied for a Basin Boundary Revision. The groundwater Basin, as defined by the DWR, did not match the Adjudicated Chino Basin Boundary, and Watermaster determined that it would be important to update the DWR boundaries to match, thereby facilitating compliance with SGMA.

Watermaster's staff, technical experts and legal consultants worked rapidly to meet the State's very short timeline to gather and submit the large amount of information required for the Basin boundary modification application. The group met on a weekly basis to prepare all the necessary demonstrations, and submitted the application to DWR by the deadline. Approval of the application by DWR is pending.

A tour of San Antonio Water Company facilities.

CONTINUOUS IMPROVEMENTS IN GOVERNANCE AND OPERATIONAL EFFICIENCY

MANAGED IT CONTRACT:

Previously, Watermaster relied on a sole individual to manage and maintain all its IT related needs. There became a need to shift to a larger IT firm that can better accommodate Watermaster's IT, document repository, and storage needs, and potentially be "on call" when emergencies arise. In January 2016, Watermaster signed a contract with a larger firm that can provide an enhanced level of service.

BUSINESS PLAN UPDATE

To ensure professional management, since 2013, Watermaster staff has prepared and updated a multi-year business plan that outlines upcoming tasks, duration, sequencing, and business practices. The Plan and timeline were updated in 2016 with input from the Pools, and the Board was provided semi-annual updates.

WATERMASTER GOVERNANCE AND MEMBERSHIP – CALENDAR YEAR 2016

Watermaster Board

Agricultural Pool Representatives

REPRESENTATIVE	*MEMBER ENTITY*
Paul Hofer	Crops
Alternates: **Jeff Pierson/Robert Feenstra**	Crops/Dairy
Geoffrey Vanden Heuvel	Dairy
Alternates: **Robert Feenstra/Jeff Pierson**	Dairy/Crops

Non-Agricultural Pool Representatives

REPRESENTATIVE	*MEMBER ENTITY*
Bob Bowcock	Calmat Co., a Div. of Vulcan Materials Co.
Alternate: **Ken Jeske**	California Steel Industries, Inc. (CSI)

Appropriative Pool Representatives

REPRESENTATIVE	*MEMBER ENTITY*
Jim Curatalo, Vice-Chair	Cucamonga Valley Water District
Alternate: **Kathy Tiegs**	
Jim W. Bowman	Ontario, City of
Alternate: **Paul S. Leon**	
Tom Thomas	Upland, City of
Alternate: **Jeannette Vagnozzi**	

Municipal Water District Representatives

REPRESENTATIVE	*MEMBER ENTITY*
Steve Elie, Chair	Inland Empire Utilities Agency
Alternate: **Terry Catlin**	
Bob Kuhn, Secretary/Treasurer	
Alternate: **David DeJesus**	Three Valleys Municipal Water District
Don Galleano	Western Municipal Water District
Alternate: **Robert Stockton**	

Staff

Peter Kavounas, PE	General Manager
Danielle Maurizio, PE (Jan-Feb)	Assistant General Manager
Joseph Joswiak, MBA	Chief Financial Officer
Anna Truong, CAP-OM-TA	Executive Svcs. Director/Board Clerk
Edgar Tellez Foster, PhD (Nov-Dec)	Sr. Environmental Engineer
Frank Yoo	Water Resources Senior Associate
Justin Nakano, MPA	Water Resources Senior Associate
Rick Zapien	Field Operations Specialist
Janine Wilson, CAP-OM	Senior Accountant
Bianca Ruiz, (Jan-Apr)	Office Specialist
Camille Gregory, (May-Dec)	Administrative Assistant

Advisory Committee

Agricultural Pool Representatives

REPRESENTATIVE	*MEMBER ENTITY*
Carol Boyd	State of California-CIM
Nathan deBoom	Dairy
Lawrence Dimock	State of California-CIM
Robert Feenstra	Dairy
Pete Hall	State of California-CIM
John Huitsing	Dairy
Gene Koopman	Dairy[b]
Ron LaBrucherie, Jr.	Crops
Jeff Pierson, 2nd Vice-Chair	Crops
Bob Page	San Bernardino County
Rob Vanden Heuvel	Alternate for any Ag Pool Representative

Non-Agricultural Pool Representatives

REPRESENTATIVE	*MEMBER ENTITY*
Brian Geye, Vice-Chair	California Speedway Corp. (Auto Club Speedway)
Ken Jeske	California Steel Industries, Inc. (CSI)
Alternate: **Ramsey Haddad**	
Tom O'Neill	Ontario, City of (Non-Ag)
Alternate: **Michael Sigsbee**	

Appropriative Pool Representatives

REPRESENTATIVE	*MEMBER ENTITY*
Ron Craig	Chino Hills, City of
Alternate: **Nadeem Majaj**	
Dave Crosley	Chino, City of
Alternates: **Gil Aldaco, Landon Kern, Jesus Plasencia, Jose Alire**	
Marty Zvirbulis	Cucamonga Valley Water District
Alternates: **Jo Lynne Russo-Pereyra, John Bosler**	
Josh Swift	Fontana Union Water Company[c]
Alternate: **Eric Tarango**	
Cris Fealy	Fontana Water Company[c]
Alternate: **Eric Tarango**	
Todd Corbin	Jurupa Community Services District
Alternate: **Robert Tock**	
Van Jew	Monte Vista Irrigation Company[a]
Alternate: **Justin Scott-Coe**	
Justin Scott-Coe	Monte Vista Water District
Alternate: **Mark Kinsey**	
Scott Burton	Ontario, City of[d]
Alternate: **Katie Gienger**	
Darron Poulsen	Pomona, City of
Alternate: **Raul Garibay**	
Teri Layton	San Antonio Water Company[a]
Alternate: **Charles Moorrees**	
Rosemary Hoerning, Chair	Upland, City of

Watermaster Includes Representation of All Key Stakeholder Groups

To draw together in a single organization all the diverse interests in the Basin, a governing structure was formed that represents all stakeholder groups, including a Board, Advisory Committee and three Producer Pool Committees:

- Agricultural Pool to represent dairymen, farmers, the State, and other property owners.
- Non-Agricultural Pool to represent commercial and industrial producers.
- Appropriative Pool to represent cities, water districts, and water companies.

Agricultural Pool Committee

REPRESENTATIVE	*MEMBER ENTITY*
Nathan deBoom	Dairy
Ron LaBrucherie, Jr.	Crops
Robert Feenstra, Chair	Dairy
John Huitsing	Dairy
Gene Koopman	Dairy[b]
Jeff Pierson, Vice-Chair	Crops
Rob Vanden Heuvel	Dairy
Pete Hall	State of California-CIM
Carol Boyd	State of California-CIM
Lawrence Dimock	State of California-CIM
Bob Page	San Bernardino County

ALTERNATE REPRESENTATIVE	*MEMBER ENTITY*
Andrew Silva	San Bernardino County
Henry DeHaan	Dairy[b]
Dan Hostetler	Crops
Diana Frederick	State of California
David Huskey	State of California
Julie Cavender	State of California-CIM
Marilyn Levin	State of California-DOJ
Michael Thompson	State of California-DOC
Noah Golden-Krasner	State of California-DOJ

Non-Agricultural Pool Committee

REPRESENTATIVE	*MEMBER ENTITY*
Jeffrey Bruny	Ameron International Corp.
Dennis Dooley	Angelica Textile Service
Alternate: **William Urena**	(Southern Service Co.)
David Penrice	Aqua Capital Management, LP
—	CCG Ontario, LLC (Catellus)
Brian Geye, Chair	California Speedway Corp.
Alternate: **Ray Wilkings**	(Auto Club Speedway)
Ken Jeske	California Steel Industries, Inc. (CSI)
Alternate: **Ramsey Haddad**	
Bob Bowcock, Vice-Chair	Calmat Co., a Div. of Vulcan Materials Co.
Alternate: **Kevin Sage**	
Randall McAlister	General Electric Co. (GE)
Alternate: **Roger Florio**	
Mark Kinsey	Monte Vista Water District
Alternate: **Van Jew**	
Marco Tule, Alternate: **John Abusham**	NRG California South, LP
Tom O'Neill	Ontario, City of (Non-Ag)
Alternate: **Michael Sigsbee**	
Roger Han, Alternate: **Jose Galindo**	Praxair, Inc.
Steve Riboli	Riboli Family/San Antonio Winery
Bob Page	San Bernardino County
Alternate: **Andrew Silva**	
Erika Clement	Southern California Edison Co. (SCE)
Tom Cruikshank	Space Center Mira Loma, Inc.
Alternate: **Patty Jett**	
David Starnes	Swan Lake Mobile Home Park
Alternate: **Michael Adler**	
Jesse White	TAMCO
Alternates: **Giannina Espinoza, Alfonso Ruiz**	
—	West Venture Development Co.

Appropriative Pool Committee

REPRESENTATIVE	*MEMBER ENTITY*
Kevin Sage	Nestlé Waters North America
Alternate: **Bob Bowcock**	Arrowhead Mountain Spring Water Co.
Dave Crosley	Chino, City of
Alternate: **Gil Aldaco**	
Alternate: **Landon Kern**	
Alternate: **Jesus Plasencia**	
Alternate: **Jose Alire**	
Ron Craig	Chino Hills, City of
Alternate: **Nadeem Majaj**	
Marty Zvirbulis	Cucamonga Valley Water District
Alternate: **Jo Lynne Russo-Pereyra**	
Alternate: **John Bosler**	
Chuck Hays	Fontana, City of[a]
Alternate: **Dan Chadwick**	
Josh Swift	Fontana Union Water Company[c]
Alternate: **Eric Tarango**	
Cris Fealy	Fontana Water Company[c]
Alternate: **Eric Tarango**	
Ben Lewis	Golden State Water Company[a]
Alternate: **Toby Moore**	
Todd Corbin, Vice-Chair	Jurupa Community Services District
Alternate: **Robert Tock**	
Justin Brokaw	Marygold Mutual Water Company[a]
Van Jew	Monte Vista Irrigation Company[a]
Alternate: **Justin Scott-Coe**	
Justin Scott-Coe	Monte Vista Water District
Alternate: **Mark Kinsey**	
Geoff Kamansky	Niagara Bottling, LLC[a]
Alternate: **Pamela Anderson Cridlebaugh**	
Josh Swift	Nicholson Trust[a]
Alternate: **Cris Fealy**	
Chad Blais	Norco, City of[a]
Alternate: **Bill Thompson**	
Scott Burton	Ontario, City of[d]
Alternate: **Katie Gienger**	
Darron Poulsen, Chair	Pomona, City of
Alternates: **Raul Garibay, Meg McWade**	
Teri Layton	San Antonio Water Company[a]
Alternate: **Charles Moorrees**	
Bob Page	San Bernardino County[a]
Alternate: **Andrew Silva**	
J. Arnold Rodriguez	Santa Ana River Water Company[a]
Alternate: **John Lopez**	
Rosemary Hoerning	Upland, City of
Alternate: **Rod Butler**	
Rosemary Hoerning	West End Consolidated Water Co.[a]
Matthew Litchfield	West Valley Water District[a, e]
Alternate: **Joanne Chan**	

[a] Minor Producer.

[b] Henry DeHaan served as alternate for Gene Koopman.

[c] Cris Fealy left in Sept. 2016 and Josh Swift took his seat on FUWC.
Eric Tarango replaced Josh Swift as alternate Sept. 2016.
Josh Swift left in Sept. 2016 and Cris Fealy took his seat on FWC.
Eric Tarango replaced Sheri Rojo as alternate in Sept. 2016.

[d] Ryan Shaw left in Aug. 2016, Katie Gienger became Scott Burton's alternate.

[e] Litchfield replaced Crowley in Sept. 2016 and Chan became his alternate.

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Directory to Appendices
2015-16 Annual Report
Appendices A-Q

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COURT HEARINGS AND ORDERS
FISCAL YEAR 2015-16

During the fiscal year 2015-16, several hearings were held relating to administration of the Judgment and implementation of the Optimum Basin Management Program (OBMP). Hearings and orders were as follows:

Hearing Date	Primary Subject Matter
January 22, 2016	• Hearing Regarding Watermaster's Motion to Re-Appoint Nine Member Watermaster Board for the Further Three-Year Term. • Order to Re-Appoint Nine Member Watermaster Board for the Further Three-Year Term.
December 16, 2015	• Orders Regarding Modification of December 2, 2015 Orders and Briefing Schedule.
December 2, 2015	• Order Continuing December 18, 2015 Hearing and Confirmation of Filings Through Chino Basin Watermaster.
November 20, 2015	• Order Granting Request to Receive and File OBMP Status Report 2013-1. • Hearing on Court Approval of Temporary Substitute Rate for Physical Solution Transfers Under Exhibit "G" to the Judgment. • Order on Court Approval of Temporary Substitute Rate for Physical Solution Transfers Under Exhibit "G" to the Judgment.
August 21, 2015	• Hearing on CBWM Status Report on Watermaster's Safe Yield Redetermination and Reset, Request for Approval of Intervention of MVWD into the Non-Ag Pool, and Transmittal of the 35th Annual Report. • Order Regarding Request for Approval of Intervention of Monte Vista Water District and Transmittal of 35th Annual Report.

RESOLUTIONS
FISCAL YEAR 2015-16[1]

Resolution	Adopted	Summary of Resolution
2016-08	June 23, 2016	*Levying Assessments for Fiscal Year 2015-16* • The Chino Basin Watermaster levies the respected assessments for each pool effective June 23, 2016 as shown on Exhibit "A" attached hereto, less the amounts collected pursuant to Resolution 2015-08, as shown in Exhibit "B", also attached. • Pursuant to the Judgment, each party has thirty (30) days from the date of invoice to remit the amount of payment for assessments due. After that date, interest will accrue on that portion which was due as provided for in Section 55 (c) of the Restated Judgment.
2016-07	May 26, 2016	*Revenue Dedication* • The Watermaster hereby dedicates and pledges net revenues from Debt Service assessments to payment of its share according to the Master Recharge Facilities Financing Agreement between the CBRFA, Watermaster and IEUA, of the Clean Water State Revolving Fund and/or Water Recycling Funding Program financing for the Design Planning for RMPU, CWSRF Project 8223-110. The Watermaster commits to collecting such revenues and maintaining such funds(s) throughout the term of such financing and until the Watermaster and has satisfied its repayment obligation thereunder, unless modification or change is approved in writing by the SWRCB. So long as the financing agreements are outstanding, the Watermaster's pledge hereunder shall constitute a lien in favor of the SWRCB on the foregoing fund(s) and revenue(s) without any further action necessary. So long as the financing agreements are outstanding, the Watermaster commits to maintaining the funds and revenues at levels sufficient to meet there share of the obligations under the financing agreements.
2016-06	May 26, 2016	*Intention to Apply for State Revolving Financial Assistance Funds* • The Inland Empire Utilities Agency (IEUA) General Manager, or in his absence, his designees, is hereby authorized and directed to sign and file, on behalf of the Watermaster, utilizing the Chino Basin Regional Financing Authority (the Authority), a Financial Assistance Application for a State Revolving Fund loan agreement from the State Water Resources Control Board for the preliminary planning design for Recharge Master Plan Update (RMPU); and • The Watermaster hereby agrees and further does authorize IEUA's General Manager, or in his absence, his designees, to provide the assurances, certifications and commitments required for the financial assistance applications, including executing a financial assistance agreement from the State Water Resources Control Board and any amendments or changes thereto; and • That IEUA's General Manager, or in his absence, his designees, is authorized to represent the Watermaster in carrying out the Authority's responsibilities under the loan agreement, including certifying disbursement requests on behalf of IEUA and compliance with applicable state and federal laws.

RESOLUTIONS
FISCAL YEAR 2015-16[1]

Resolution	Adopted	Summary of Resolution
2016-05	May 26, 2016	*Intention to Apply for Proposition 1 Grant Funding* • The Chino Basin Regional Financing Authority (the Authority) is hereby authorized to apply for a Financial Assistance Application for a Proposition 1 Stormwater Grant from the State Water Resources Control Board for the implementation of the Wineville Basin, Jurupa Basin, RP-3 Basin Improvements, and Pumping and Conveyance System Project (Application); and • The Inland Empire Utilities Agency (IEUA) General Manager, or in his absence, his designees, is authorized to sign and file, on behalf of the Watermaster, through the Authority, the Application; and • The IEUA's General Manager, or in his absence, his designees, is authorized to represent the Watermaster through the Authority in carrying out the Authority's responsibilities under the grant agreement, including executing a financial assistance agreement from the State Water Resources Control Board and any amendments or changes thereto, certifying disbursement requests on behalf of the Authority /Watermaster and assisting with compliance with applicable state and federal laws.
2016-04	May 26, 2016	*Intention to Apply for Proposition 1 Grant Funding* • The Chino Basin Regional Financing Authority (the Authority) is hereby authorized to apply for a Financial Assistance Application for a Proposition 1 Groundwater Grant from the State Water Resources Control Board for the implementation of the Chino Basin Improvements and Groundwater Clean-up Project (Application) on Watermaster's behalf; and • The Inland Empire Utilities Agency (IEUA) General Manager, or in his absence, his designees, is authorized to sign and file, on behalf of the Watermaster, through the Authority, the Application; and • The IEUA's General Manager, or in his absence, his designees, is authorized to represent the Watermaster through the Authority in carrying out the Authority's responsibilities under the grant agreement, including executing a financial assistance agreement from the State Water Resources Control Board and any amendments or changes thereto, certifying disbursement requests on behalf of the Authority /Watermaster and assisting with compliance with applicable state and federal laws.
2016-03	March 24, 2016	*Chino Groundwater Basin Modification Request* • Chino Basin Watermaster supports the Basin Boundary Modification Request for Chino Basin Boundaries, as submitted by the Requesting Districts.
2016-02	January 28, 2016	*Authorizing Investment of Monies in the Local Agency Investment Fund* • The Board of Directors does hereby authorize the deposit and withdrawal of Chino Basin Watermaster monies in the Local Agency Investment Fund in the State Treasury in accordance with the provisions of Section 16429.1 of the Government Code for the purpose of investment as stated therein, and verification by the State Treasurer's Office of all banking information provided in that record. • The following Chino Basin Watermaster officers and designated employees or their successors in office/position shall be authorized to order the deposit or withdrawal of monies in the Local Agency Investment Fund: Board Chair, Board Vice-Chair, Board Secretary/Treasurer, General Manager/Secretary, Assistant General Manager, and Chief Financial

RESOLUTIONS
FISCAL YEAR 2015-16[1]

Resolution	Adopted	Summary of Resolution
		Officer.
2016-01	January 28, 2016	*Establishing a Watermaster Investment Policy* • The authority to invest and reinvest funds of Watermaster is hereby delegated to the Watermaster General Manager (and his/her designees) subject to the provisions of said Investment Policy and the ongoing review and control of Watermaster and the Watermaster Advisory Committee. • This resolution shall take effect from and after its date of adoption and Resolution 2015-01 is rescinded in its entirety.
2015-08	November 19, 2015	*Interim Assessments for Fiscal Year 2015-2016* • The Chino Basin Watermaster levies the respective assessments for each pool effective November 19, 2015 as shown on Exhibit "A" attached hereto. • That pursuant to the Judgment, each party has thirty-days from the date of invoice to remit the amount of payment for assessments due. After that date, interest will accrue on that portion which was due as provided for in Section 55 (c) of the Restated Judgment.
2015-07	October 22, 2015	*Amending and Restating the Qualified Retirement Plan* • The Employer hereby amends and restates the Plan (as defined above) in the form of: The ICMA Retirement Corporation Governmental Money Purchase Plan & Trust; and • That the assets of the Plan shall continue to be held in trust, with the Employer serving as trustee ("Trustee"), for the exclusive benefit of Plan participants and their beneficiaries, and the assets shall not be diverted to any other purpose. The Trustee's beneficial ownership of Plan assets held in Vantage Trust shall be held for the further exclusive benefit of the Plan participants and their beneficiaries; and • That the Employer hereby agrees to continue to serve as Trustee under the Plan; and • That each of the officers of the Employer is hereby authorized to take all actions appropriate and desirable to implement the amendment and restatement of the Plan by the April 30, 2016 deadline, including but not limited to reviewing and revising the adoption agreement related to the Plan restatement in order to ensure that the adoption agreement reflects the current provisions of the Plan and administrative practice; signing the adoption agreement and other related Plan documents; and communicating the terms of the Plan restatement to participants and third party service providers; and • The appropriate officers of the Employer be and each of them hereby are authorized and directed to take any action and execute any documents necessary or appropriate to effectuate the foregoing resolutions.
2015-06	September 24, 2015	*Regarding 2015 Safe Yield Reset Agreement* • Watermaster endorses the 2015 Safe Yield Reset Agreement as consistent with Article X, section 2 of the California Constitution, the Judgment, and the Court-Approved Management Agreements. • Consistent with the Proposed Order, Watermaster will comply with the provisions of the 2015 Safe Yield Reset Agreement. • The Watermaster Board will transmit this Resolution 2015-06, the 2015 Safe Yield Reset Agreement, and the referenced Attachments to the Court, and, in accordance with the requests by the parties thereto, the advice and

RESOLUTIONS
FISCAL YEAR 2015-16[1]

Resolution	Adopted	Summary of Resolution
		counsel of the Pools, and the Advisory Committee, Watermaster recommends that the Court approve the proposed Judgment Amendment and to further order that Watermaster proceed to further comply with the 2015 Safe Yield Reset Agreement. • The Watermaster Board directs Watermaster legal counsel to prepare and file a motion with the Court pursuant to paragraph 4, above.
2015-05	August 27, 2015	*Supporting the nomination of Kathleen Tiegs* • The Chino Basin Watermaster Board of Directors hereby places its full and unreserved support of the nomination of Cucamonga Valley Water District Director Kathleen Tiegs as President of the Association of California Water Agencies for the 2016-2017 term.

[1] Prior Annual Reports listed Resolutions on a calendar year basis.

HISTORY OF INTERVENTIONS AFTER JUDGMENT

Production Year[1]	Appropriative	Non-Agricultural	Agricultural
15-16		Monte Vista Water District	
14-15			
13-14		TAMCO	
12-13			
11-12			Tad Nakase (TDN Land Company)
10-11			Restorative Justice Center (dba Community Garden Project of RC)
09-10			Rafael Treto Guillermo Hurtado
08-09		City of Ontario Aqua Capital Management	Michael Y. Park
07-08		KCO, LLC / The Koll Company Riboli Family / San Antonio Winery	Fuji Natural Foods, Inc.
06-07			
05-06			
04-05			
03-04			
02-03	Niagara Bottling Company		
01-02	Nicholson Trust		
00-01		Loving Savior of the Hills Lutheran Church CCG Ontario, LLC (Catellus Commercial Group)	
99-00			
98-99			
97-98		Mountain Vista Power Generation Company, LLC	Louis Badders Paul Russavage
96-97		California Speedway Corporation	Ambrosia Farms, Chin T. Lee
95-96	City of Fontana	General Electric Company	Elizabeth H. Rohrs Richard Van Loon S.N.S. Dairy Wineside 45 Frank Lizzaraga
94-95			
93-94			
92-93			
91-92	Arrowhead Mountain Springs Water Co.	California Steel Industries, Inc.	
90-91			
89-90	Fontana Water Company		Gary Teed

[1] Refer to the Twenty-Seventh Annual Report (Fiscal Year 2003-04) for interventions prior to 89-90.

WATERMASTER'S "NOTICE OF INTENT" TO CHANGE THE OPERATING SAFE YIELD OF THE CHINO GROUNDWATER BASIN

PLEASE TAKE NOTICE that on this 28th day of January 2016, the Chino Basin Watermaster hereby adopts this **"Notice of Intent"** to change the Operating Safe Yield of the Chino Groundwater Basin pursuant to the Judgment entered in Chino Basin Municipal Water District v. City of Chino, et al., San Bernardino Superior Court, Case No. RCV 51010 (formerly Case No. 164327) as Restated (Exhibit "I", Paragraph 3.(b), Page 73).

Approved by:

CHINO BASIN WATERMASTER
BOARD OF DIRECTORS CHAIR

Signature: **/s/ Steve Elie**

Attest:

CHINO BASIN WATERMASTER
BOARD OF DIRECTORS SECRETARY/TREASURER

Signature: **/s/ Bob Kuhn**

APPROPRIATIVE RIGHTS
(ORIGINAL PER JUDGMENT)

Party	Appropriative Right (Acre-Feet)	Share of Operating Safe Yield (Percent)	Share of Initial Operating Safe Yield (Acre-Feet)
City of Chino	5,271.7	6.693	3,670.067
City of Norco	289.5	0.368	201.545
City of Ontario	16,337.4	20.742	11,373.816
City of Pomona	16,110.5	20.454	11,215.852
City of Upland	4,097.2	5.202	2,852.401
Cucamonga County Water District	4,431.0	5.626	3,084.786
Jurupa Community Services District	1,104.1	1.402	768.655
Monte Vista County Water District	5,958.7	7.565	4,148.344
West San Bernardino County Water District	925.5	1.175	644.317
Etiwanda Water Company	768.0	0.975	534.668
Feldspar Gardens Mutual Water Company	68.3	0.087	47.549
Fontana Union Water Company	9,188.3	11.666	6,396.736
Marygold Mutual Water Company	941.3	1.195	655.317
Mira Loma Water Company	1,116.0	1.417	776.940
Monte Vista Irrigation Company	972.1	1.234	676.759
Mutual Water Company of Glen Avon Heights	672.2	0.853	467.974
Park Water Company	236.1	0.300	164.369
Pomona Valley Water Company	3,106.3	3.944	2,162.553
San Antonio Water Company	2,164.5	2.748	1,506.888
Santa Ana River Water Company	1,869.3	2.373	1,301.374
Southern California Water Company	1,774.5	2.253	1,235.376
West End Consolidated Water Company	1,361.3	1.728	947.714
Total	78,763.8	100.000	54,834.000

APPROPRIATIVE RIGHTS
(AS OF JUNE 30, 2016)

Party	Appropriative Right (Acre-Feet)	Share of Operating Safe Yield (Percent)	Share of Initial Operating Safe Yield (Acre-Feet)
City of Chino [A]	5,794.25	7.357	4,033.857
City of Chino Hills [B]	3,032.86	3.851	2,111.422
City of Norco	289.50	0.368	201.545
City of Ontario	16,337.40	20.742	11,373.816
City of Pomona	16,110.50	20.454	11,215.852
City of Upland	4,097.20	5.202	2,852.401
Cucamonga Valley Water District [C]	5,199.00	6.601	3,619.454
Jurupa Community Services District [D]	2,960.60	3.759	2,061.118
Monte Vista Water District [E]	6,929.15	8.797	4,823.954
West Valley Water District [F]	925.50	1.175	644.317
Fontana Union Water Company [G]	9,181.12	11.657	6,391.736
Fontana Water Company [H]	1.44	0.002	1.000
Los Serranos County Club [I]	-	-	-
Marygold Mutual Water Company	941.30	1.195	655.317
Monte Vista Irrigation Company	972.10	1.234	676.759
Niagara Bottling, LLC [J]	-	-	-
Nicholson Trust [K]	5.75	0.007	4.000
San Antonio Water Company	2,164.50	2.748	1,506.888
Santa Ana River Water Company	1,869.30	2.373	1,301.374
Golden State Water Company [L]	591.05	0.750	411.476
West End Consolidated Water Company	1,361.30	1.728	947.714
San Bernardino County (Shooting Park) [M]	-	-	-
Arrowhead Mountain Springs Water Company [N]	-	-	-
City of Fontana [O]	-	-	-
Total	78,763.82	100.000	54,834.000

[A] In 1990, Chino received a portion of San Bernardino County Water Works #8 (WW#8) OSY (363.790 AF) as a result of a permanent transfer.

[B] City of Chino Hills incorporated in 1991 and assumed the responsibility for providing the public services formerly provided by WW#8. WW#8 acquired a portion of the rights of Park and Pomona Valley Water Companies in 1983.

[C] CCWD acquired the rights to Etiwanda Water Company (upon dissolution) in 1986. CCWD changed its name to CVWD in 2004.

[D] JCSD acquired the rights of Mira Loma Water Company in 1979 (776.940 AF OSY), Feldspar Gardens in 1988 (47.549AF OSY) and Mutual Water Company of Glen Avon Heights in 1997 (467.974 AF OSY).

[E] MVCWD changed its name to MVWD in 1980. In 1990, MVWD received 675.610 AF of WW#8 OSY as a result of a permanent transfer.

[F] WSBCWD changed its name to WVWD in 2003.

[G] In FY 01-02, 5.000 AF OSY was reassigned: 1.000 AF to FWC and 4.000 AF to the Nicholson Trust.

[H] FWC intervened in 1989 and was assigned 1.000 AF OSY as a result of a permanent transfer of water rights from FUWC.

[I] Los Serranos intervened into the Appropriative Pool in 1990 with 0.000 AF OSY, and it was later determined that they are not within the Basin.

[J] Niagara Bottling intervened in FY 02-03 with 0.000 AF OSY.

[K] Nicholson Trust intervened in FY 01-02 and was assigned 4.000 AF OSY as a result of a permanent transfer of water rights from FUWC.

[L] GSWC permanently transferred 823.900 AF OSY to Park Water Company in 1980. Park Water Co was acquired by WW#8 which was subsequently acquired by the City of Chino Hills. SCWC changed its name to GSWC in 2005.

[M] San Bernardino County Prado Tiro (now known as Prado Shooting Park) was involuntarily reassigned to the Appropriative Pool from the Agricultural Pool in 1985.

[N] Arrowhead intervened in 1992 with 0.000 AF OSY.

[O] City of Fontana intervened in 1996 with 0.000 AF OSY.

NON-AGRICULTURAL RIGHTS
(ORIGINAL PER JUDGMENT)

Party	Total Overlying Non-Agricultural Rights (Acre-Feet)	Share of Safe Yield (Acre-Feet)
Ameron Steel Producers, Inc.	125	97.858
County of San Bernardino (Airport)	171	133.870
Conrock Company	406	317.844
Kaiser Steel Corporation	3,743	2,930.274
Red Star Fertilizer	20	15.657
Southern California Edison Co.	1,255	982.499
Space Center, Mira Loma	133	104.121
Southern Service Co. dba Blue Seal Linen	24	18.789
Sunkist Growers, Inc.	2,393	1,873.402
Carlsberg Mobile Home Properties, Ltd '73	593	464.240
Union Carbide Corporation	546	427.446
Quaker Chemical Co.	-	-
Total	9,409	7,366.000

NON-AGRICULTURAL RIGHTS
(AS OF JUNE 30, 2016)*

Party	Share of Safe Yield (Acre-Feet)
Ameron International Corp. [A]	82.858
San Bernardino, County of (Chino Airport)	133.870
Vulcan Materials Company [B]	-
Kaiser Ventures, Inc. [C]	-
West Venture Development Co. [D]	-
Southern California Edison Co. [E]	-
NRG California South, LP [F]	954.540
Space Center Mira Loma, Inc.	104.121
Angelica Corp. [G]	18.789
Sunkist Growers, Inc. [H]	-
Mobile Community Management Co. (Swan Lake MHP) [I]	464.240
Praxair, Inc. [J]	1.000
Quaker Chemical Company [K]	-
California Steel Industries, Inc. (CSI) [L]	1,615.137
General Electric Company [M]	-
Auto Club Speedway [N]	1,000.000
Loving Savior of the Hills Lutheran Church [O]	-
CCG Ontario, LLC [P]	-
KCO, LLC / The Koll Company [Q]	-
Riboli Family / San Antonio Winery [R]	-
Ontario, City of (Non-Ag) [S]	2,910.788
Aqua Capital Management LP [T]	-
TAMCO [U]	15.000
Monte Vista Water District (Non-Ag) [V]	50.00
Total	7,350.343

*** This listing is not representative of the current Non-Agricultural Pool membership. See Appendices N-34 and N-39 for the current membership listing.**

[A] Ameron Steel Producers, Inc. changed its name to Ameron International Corp in 1996.

[B] Conrock became Calmat and in FY 99-00 became Vulcan Materials Co. On July 23, 2009, Vulcan permanently transferred its 317.844 AF SY to Aqua Capital Management.

[C] Kaiser Steel Corporation became Kaiser Resources and then Kaiser Ventures, Inc. Kaiser sold portions of its property to CSI & Speedway, then its last property holdings and all its remaining water rights to CCG Ontario, LLP on August 16, 2000.

[D] The property and associated water rights owned by Red Star Fertilizer were transferred to Anaheim Citrus and then to West Venture Development Co. After subdividing and selling the property, West Venture went out of business in 91-92 and disclaimed any interest in the water rights, requesting that their disposition be determined by the Court.

[E] A portion of SCE was sold in FY 98-99; SCE retained 27.959 AF SY. On March 24, 2011, SCE permanently transferred 27.959 AF SY to Ontario, City of (Non-Ag).

[F] Mountain Vista Power Generating Company (MVPG) purchased the Etiwanda Generating Facility owned by SCE in FY 98-99. MVPG became Reliant Energy, Etiwanda with 954.540 AF SY. Reliant Energy, Etiwanda changed its name to RRI Energy West, Inc. in FY 08-09. RRI Energy West, Inc. changed its name to GenOn West, LP in FY 10-11. NRG acquired GenOn in FY 12-13.

[G] Southern Service Company became Angelica Rental Service in FY 90-91, then later changed its name to Angelica Corp.

[H] On May 22, 2008, Sunkist permanently transferred 22.000 AF SY to KCO/Koll. On October 23, 2008 Sunkist permanently transferred 1,873.402 AF SY to Ontario, City of (Non-Ag).

[I] Carlsberg Mobile Home Properties became Mobile Community Management Co. and is known as Swan Lake Mobile Home Park.

[J] Union Carbide Corp. became Praxair, Inc. On May 27, 2010, Praxair permanently transferred 426.446 AF SY to Ontario, City of (Non-Ag).

[K] Quaker Chemical Company went out of business in FY 93-94.

[L] California Steel Industries, Inc. (CSI) intervened in FY 91-92 after purchasing land from Kaiser. ACM and CSI settled their water rights dispute in February 2013. The settlement agreement allocates one half of the right in dispute's Assigned Share of Safe Yield to each, effective July 1, 2007, and the parties allocated among themselves the quantities of water in storage related to the right.

[M] General Electric Company intervened in FY 95-96 with 0.000 AF SY.

[N] California Speedway intervened in FY 96-97 after purchasing land from Kaiser. On August 16, 2000, Catellus permanently transferred 525.000 AF SY to Speedway. California Speedway changed its name to Auto Club Speedway in FY 07-08.

[O] Loving Savior of the Hills Lutheran Church intervened in FY 00-01 with 0.000 AF SY.

[P] CCG Ontario, LLC intervened in FY 00-01. Kaiser sold its last property holdings and all its remaining water rights to CCG Ontario, LLP on August 16, 2000. On December 18, 2009, CCG Ontario permanently transferred its 630.274 AF SY to Aqua Capital Management.

[Q] KCO/Koll intervened in FY 07-08 after purchasing land from Sunkist. On May 22, 2008, Sunkist permanently transferred 22.000 AF SY to KCO/Koll. On May 28, 2009, the 22.000 AF SY was permanently transferred to Ontario, City of (Non-Ag).

[R] San Antonio Winery intervened in FY 07-08 with 0.000 AF SY.

[S] Ontario, City of (Non-Ag) intervened in FY 08-09 after purchasing land from Sunkist. On October 23, 2008, Sunkist permanently transferred 1,873.402 AF SY to Ontario, City of (Non-Ag). On May 28, 2009, Koll's 22.000 AF SY was permanently transferred to Ontario, City of (Non-Ag). On May 27, 2010, Praxair permanently transferred 426.446 AF SY to Ontario, City of (Non-Ag). On March 24, 2011, SCE permanently transferred 27.959 AF SY to Ontario, City of (Non-Ag). On July 10, 2015, Aqua Capital Management, LP's remaining share of the SY (582.981 AF) was permanently transferred to the City of Ontario (Non-Ag) as a result of the intervention by Monte Vista Water District (Non-Ag).

[T] Aqua Capital Management LP (ACM) intervened in FY 08-09 after purchasing land from CCG Ontario. On December 18, 2008, CCG Ontario permanently transferred 630.274 AF SY to Aqua Capital. On July 23, 2009, Vulcan permanently transferred 317.844 AF SY to Aqua Capital. ACM and CSI settled their water rights dispute in February 2013. The settlement agreement allocates one half of the right in dispute's Assigned Share of Safe Yield to each, effective July 1, 2007, and the parties allocated among themselves the quantities of water in storage related to the right. In July 2015, ACM permanently transferred 50.000 AF to Monte Vista Water District (Non-Ag) as a result of Monte Vista's intervention. ACM's remaining share of the SY (582.981 AF) was permanently transferred to the City of Ontario (Non-Ag).

[U] TAMCO intervened in FY 13-14 after purchasing land and water rights from Ameron International Corp. This resulted in a permanent transfer of 15.000 AF SY to TAMCO. Ameron's share of SY was reduced from 97.858 AF to 82.858 AF.

[V] Monte Vista Water District (Non-Ag) intervened on July 10, 2015 and was approved a permanent transfer of 50.000 AF from Aqua Capital Management, LP's share of the SY.

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HISTORY OF REALLOCATION OF UNPRODUCED AG POOL SAFE YIELD[1] (ACRE-FEET)

Production Year	Calculation of Water Rights Available for Reallocation due to Ag Pool Underproduction of Safe Yield[5]		Claims to Underproduced Ag Pool Safe Yield			Rights Available for Reallocation less Claimed Rights[9]	Total Reallocation of Unproduced Ag Pool Safe Yield[10]
	Assessable Ag Pool Production	Water Rights Available for Reallocation	Claims Resulting from Land Use Conversions[6]	Early Transfer Claims[5,8]	Total Claims		
	A	*B*	*C*	*D*	*E = C + D*	*F = B - E*	*G = B*
83-84 [2]	59,033	n/a[5]	593	n/a	593	n/a	26,355
84-85	55,543	n/a	593	n/a	593	n/a	19,136
85-86	52,061	n/a	811	n/a	811	n/a	21,902
86-87	59,847	n/a	811	n/a	811	n/a	37,159
87-88	57,865	n/a	4,056	n/a	4,056	n/a	78,489
88-89 [3]	46,762	24,935	811	n/a	811	24,124	24,935
89-90	48,420	36,038	811	n/a	811	35,227	36,038
90-91	48,085	34,380	811	n/a	811	33,569	34,380
91-92	44,682	34,715	811	n/a	811	33,904	34,715
92-93	44,092	38,118	811	n/a	811	37,307	38,118
93-94	44,298	38,708	811	n/a	811	37,897	38,708
94-95	55,022	38,502	3,652	n/a	3,652	34,850	38,502
95-96	43,639	27,778	11,711	n/a	11,711	16,067	27,778
96-97	44,809	39,161	12,620	n/a	12,620	26,541	39,161
97-98	43,345	37,991	14,426	n/a	14,426	23,565	37,991
98-99	47,538	39,455	17,022	n/a	17,022	22,433	39,455
99-00 [4]	44,401	38,399	10,471	32,800	43,271	-4,872	38,399
00-01	39,954	42,846	13,920	32,800	46,720	-3,874	42,846
01-02	39,495	43,306	14,133	32,800	46,933	-3,627	43,306
02-03	37,457	45,343	16,480	32,800	49,280	-3,937	45,343
03-04	41,978	40,822	17,510 [7]	32,800	50,310	-9,488	40,822
04-05	34,450	48,350	19,013	32,800	51,813	-3,464	48,350
05-06	33,900	48,900	20,370	32,800	53,170	-4,270	48,900
06-07	37,295	45,505	22,158	32,800	54,958	-9,454	45,505
07-08	30,910	51,890	22,461	32,800	55,261	-3,371	51,890
08-09	32,143	50,657	22,730	32,800	55,530	-4,873	50,657
09-10	31,855	50,945	22,943	32,800	55,743	-4,798	50,945
10-11	31,342	51,458	23,033	32,800	55,833	-4,375	51,458
11-12	34,353	48,447	23,237	32,800	56,037	-7,590	48,447
12-13	34,458	48,342	23,773	32,800	56,573	-8,231	48,342
13-14	33,639	49,161	26,162	32,800	58,962	-9,801	49,161
14-15	28,521	54,279	26,768	32,800	59,568	-5,289	54,279
15-16	26,167	56,633	27,450	32,800	60,250	-3,617	56,633

[1] Source: Watermaster Annual Reports and Assessment Packages.

[2] Fiscal year 83-84 was the first-year reallocation occurred under the Judgment.

[3] During fiscal year 87-88 the Appropriators agree to pay Ag Pool assessments and the reallocation procedure changed by agreement. Effective FY 88-89, the Ag Pool's unused water rights from the prior year are made available for reallocation to the Appropriative Pool in the following year (i.e. 82,800 AF less the total assessable production).

[4] During fiscal year 99-00 the Peace Agreement is signed. The Appropriators agree to pay the Ag Pool assessments for the life of the Peace Agreement and the reallocation procedure is changed by agreement. The Ag Pool's unused water rights (i.e. 82,800 AF less the total assessable production) are made available for reallocation to the Appropriative Pool in the current year.

[5] *n/a* indicates the information is not applicable for the given year.

[6] When land is converted from agricultural to urban uses, water rights are permanently transferred to the appropriative pool. This column represents the sum of the cumulative transfers that have resulted from land use changes over time. For example, in 85-86 land use conversions resulted in 218 acre-feet of conversions. Thus the total claims for 85-86 were 811: the sum of the conversions from prior years plus the new conversions for 85-86 (*811 = 593 + 218*).

[7] After a duplication of conversion areas was identified, Jurupa's Pre-Peace Agreement acres were adjusted to 337.6 acres and the Post-Peace Agreement acres were adjusted to 846.4 acres.

[8] During fiscal year 99-00 the Peace Agreement is signed and establishes that each year 32,800 acre-feet of Ag Pool rights will be pre-emptively transferred to the Appropriative Pool and the transfer will be distributed proportional to each member's share of the Operating Safe Yield.

[9] If the total claims to underproduced Ag Pool Safe Yield (*C + D*) are greater than the water rights available for reallocation (*B*) then the reallocation is limited to the amount of rights available. The reduction is distributed among the Parties in proportion to their share of the Operating Safe Yield.

[10] For production year 83-84 through 87-88, the allocation was computed in a different manner and so the generalized formula does not apply for these years.

HISTORY OF TOTAL ANNUAL GROUNDWATER PRODUCTION FROM THE CHINO BASIN (ACRE-FEET)

Production Year	Appropriative Pool[13]	Agricultural Pool[13]	Non-Agricultural Pool[13]	Chino Basin Desalters[14]	Department of Toxic Substances Control[15]	Total Production
77-78	62,393	86,407	10,040 [1]	-	-	158,840
78-79	61,350	74,421	7,208	-	-	142,979
79-80	65,343	69,127	7,490	-	-	141,960
80-81	71,413	66,847	5,724	-	-	143,985
81-82	66,814	63,061	5,749	-	-	135,624
82-83	63,556	56,128	2,394	-	-	122,078
83-84	70,544	58,591	3,207	-	-	132,342
84-85	76,903	53,521	2,414	-	-	132,838
85-86	80,885	49,932	3,192	-	-	134,009
86-87	84,662	57,080	2,622	-	-	144,365
87-88	91,579 [2]	55,023	2,957	-	-	149,559
88-89	93,617 [3]	44,609	3,618	-	-	141,844
89-90	101,344 [4]	46,381	4,856	-	-	152,581
90-91	86,513 [5]	46,293	5,407	-	-	138,213
91-92	91,736 [6]	42,681	4,850	-	-	139,266
92-93	86,584 [7]	44,300	5,226	-	-	136,110
93-94	80,934 [8]	44,492	4,322	-	45	129,793
94-95	93,608 [9]	55,415	4,091	-	45	153,159
95-96	103,729 [10]	43,635	3,240	-	60	150,664
96-97	112,205	44,921	3,779	-	76	160,981
97-98	99,810 [11]	43,369	3,274 [12]	-	83	146,535
98-99	111,048	47,791	3,734	-	81	162,654
99-00	128,892	44,241	5,605	-	82	178,820
00-01	116,204	39,280	5,991	7,989	100	169,565
01-02	123,531	38,194	4,150	9,458	81	175,414
02-03	121,748	35,167	3,979	10,439	79	171,412
03-04	125,320	38,190	2,057	10,605	79	176,251
04-05	118,030	31,502	2,246	9,854	81	161,712
05-06	107,249	30,250	2,641	16,542	80	156,761
06-07	119,438	29,649	3,251	27,077	79	179,494
07-08	120,650	23,530	3,421	30,121	81	177,804
08-09	134,119	23,268	2,420	29,012	83	188,901
09-10	117,299	21,034	2,039	28,857	85	169,314
10-11	99,171	21,016	1,986	29,043	87	151,304
11-12	93,613	22,394	3,162	28,411	89	147,668
12-13	109,292	23,937	3,685	27,098	87	164,100
13-14	113,974	22,054	3,834	29,282	85	169,229
14-15	97,840	17,364	3,371	30,022	84	148,680
15-16	100,297	17,352	2,670	28,191	85	148,595

[1] Includes 3,945 AF of mined water pumped by Edison as agent for IEUA.

[2] Does not include 7,674.3 AF exchanged with MWDSC.

[3] Does not include 6,423.6 AF exchanged with MWDSC.

[4] Does not include 16,377.1 AF exchanged with MWDSC.

[5] Does not include 14,929.1 AF exchanged with MWDSC.

[6] Does not include 12,202.4 AF exchanged with MWDSC.

[7] Does not include 13,657.3 AF exchanged with MWDSC.

[8] Does not include 20,194.7 AF exchanged with MWDSC.

[9] Does not include 4,221.9 AF exchanged with MWDSC.

[10] Does not include 6,167.2 AF exchanged with MWDSC.

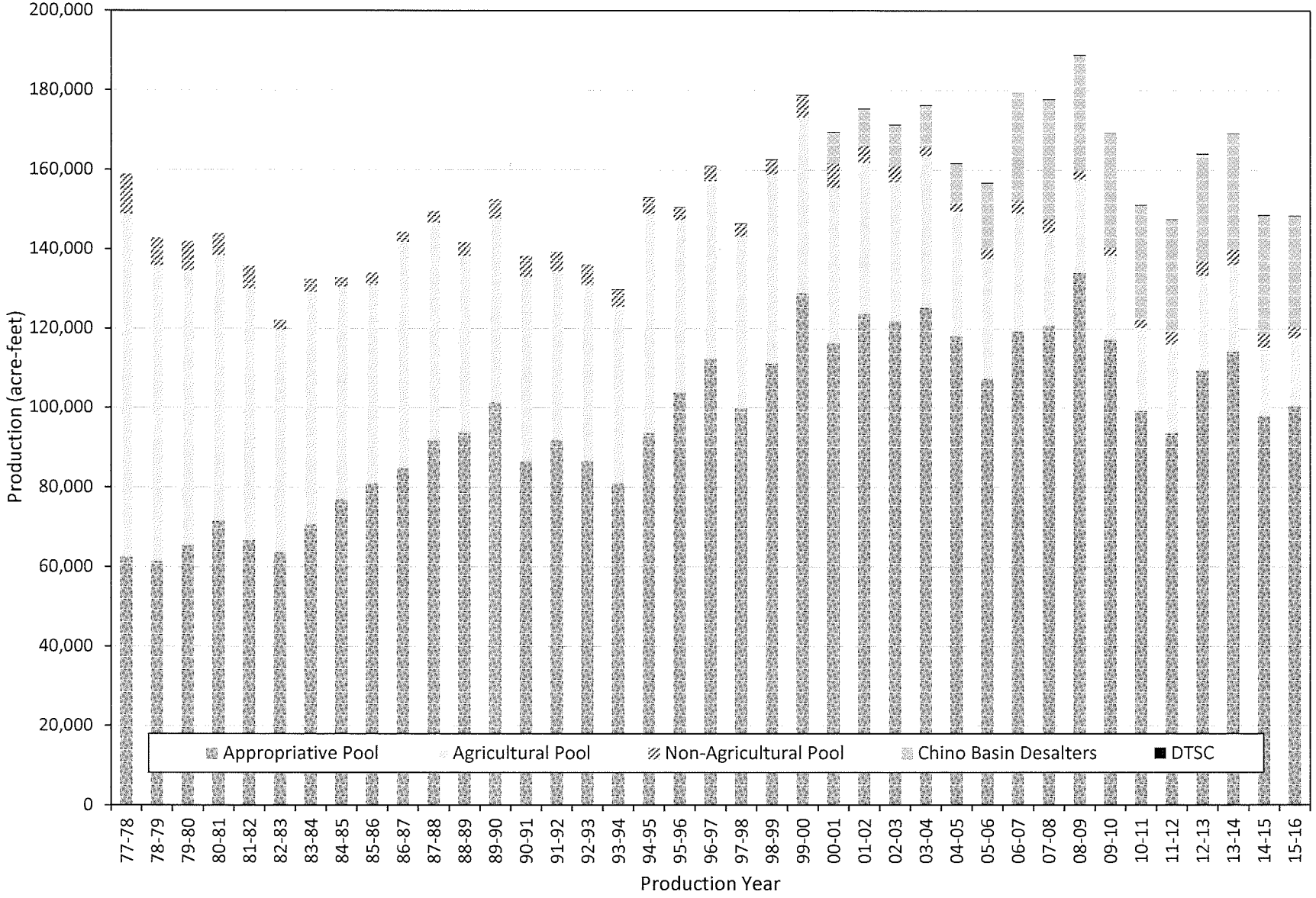
[11] Does not include 4,275.4 AF exchanged with MWDSC.

[12] Does not include 216.5 AF exchanged with MWDSC.

[13] **Represents total physical production by Pools, not assessed production.**

[14] Production by the Chino Basin Desalters is not considered assessable production; Desalter replenishment obligation accounting is shown in the Assessment Pkg.

[15] Production by DTSC is accounted separately, by agreement, such that the production is not assessed by Watermaster.


HISTORY OF TOTAL ANNUAL GROUNDWATER PRODUCTION FROM THE CHINO BASIN (ACRE-FEET)
Production (acre-feet)
200,000
180,000
160,000
140,000
120,000
100,000
80,000
60,000
40,000
20,000
0
Appropriative Pool
Agricultural Pool
Non-Agricultural Pool
Chino Basin Desalters
DTSC
77-78
78-79
79-80
80-81
81-82
82-83
83-84
84-85
85-86
86-87
87-88
88-89
89-90
90-91
91-92
92-93
93-94
94-95
95-96
96-97
97-98
98-99
99-00
00-01
01-02
02-03
03-04
04-05
05-06
06-07
07-08
08-09
09-10
10-11
11-12
12-13
13-14
14-15
15-16
Production Year

SUMMARY OF SUPPLEMENTAL SUPPLIES USED BY THE CHINO BASIN PARTIES[1] FISCAL YEAR 2015-16 (ACRE-FEET)

Parties	Other Groundwater Basins	Surface Diversions	Imported Water Deliveries				Recycled Water[2]	Total
			SBVMWD	MWDSC				
				IEUA	TVMWD	WMWD		
Chino, City of	-	-	-	2,843	-	-	7,217	10,060
Chino Hills, City of	-	-	-	100	-	-	1,410	1,510
Cucamonga Valley Water District [3]	7,589	1,159	-	7,440	-	-	1,146	17,334
Inland Empire Utilities Agency	-	-	-	-	-	-	541	541
Fontana Water Company [4]	9,253	1,497	-	6,613	-	-	-	17,363
Golden State Water Company [5]	3,627	-	-	-	3,143	-	-	6,770
Jurupa Community Services District [6]	547	-	-	-	-	-	-	547
Marygold Mutual Water Company [7]	-	-	-	-	-	-	-	-
Monte Vista Water District	-	-	-	4,799	-	-	278	5,077
Norco, City of [8]	5,772	-	-	-	-	175	-	5,947
Ontario, City of	-	-	-	2,755	-	-	7,566	10,321
Pomona, City of [9]	3,132	1,076	-	-	3,645	-	1,664	9,516
San Antonio Water Company [10]	829	1,483	-	-	-	-	-	2,311
San Bernardino, County of	-	-	-	-	-	-	536	536
Santa Ana River Water Company [11]	2	-	-	-	-	-	-	2
State of California, CIM [12]	-	-	-	-	-	-	769	769
Upland, City of [13]	7,317	-	-	4,890	-	-	719	12,926
West End Consolidated Water Company [14]	1,246	-	-	-	-	-	-	1,246
West Valley Water District [15]	5,977	2,437	3,592	-	-	-	-	12,005
Total	45,289	7,651	3,592	29,439	6,787	175	21,846	114,780

[1] The values reported herein represent the total supplemental water supply used by each Party within its entire service area. Some Parties have service area boundaries which extend outside the adjudicated Chino Basin boundary.

[2] Recycled water is supplied by IEUA unless stated otherwise.

[3] Other groundwater is produced from Cucamonga Basin. Surface water diversions are from Lloyd Michaels, Royer-Nesbit, and Arthur H. Bridge WTPs, and Deer Canyon.

[4] Other groundwater is produced from Colton/Rialto, Lytle, and "unnamed" Basins. Surface water diversions are from Lytle Creek.

[5] Other groundwater is produced from Six Basins.

[6] Other groundwater is produced from Riverside Basin and Temescal.

[7] Treated water is delivered by West Valley Water District (WVWD), and represents a blend of multiple water sources available to WVWD. MMWC purchased 306 acre-feet of water from WVWD, but that amount is shown as part of WVWD's supply within this table.

[8] Other groundwater is produced from Arlington and Temescal Basins and a portion of the hydrologic Chino Basin that is outside the adjudicated boundary.

[9] Imported groundwater is produced from Six Basins and Spadra Basin. Surface water diversions are from San Antonio Creek. Recycled water is served from the Pomona Water Reclamation Plant.

[10] Other groundwater is produced from Six Basins, San Antonio Tunnel and Cucamonga Basin. Surface water diversions are from San Antonio Creek. Supplemental Supplies shown herein do not include sales to the City of Upland - these supplies are shown as part of Upland's supply within this table.

[11] Other groundwater is produced from the portion of the hydrologic Chino Basin that is outside the adjudicated boundary.

[12] Recycled water is treated by CIM and reused on location for irrigation purposes.

[13] Other groundwater is produced from Six Basins.

[14] Other groundwater is produced from Six Basins and Cucamonga Basin.

[14] Other groundwater is produced from Rialto and North Riverside basins. Surface water diversions are from Lytle Creek.

SUMMARY OF IMPORTED WATER DELIVERIES FROM THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA TO THE CHINO BASIN PARTIES FOR FISCAL YEAR 2015-16 (ACRE-FEET)[1]

Month	Water Facilities Authority - CB-12						Reliant
	Upland	MVWD	Ontario	Chino	Chino Hills[2]	Sub-Total	CB-01
July	595	209	257	251	-	1,312	-
August	717	270	315	283	10	1,595	
September	648	259	229	277	10	1,423	-
October	459	124	263	199	10	1,054	-
November	292	317	221	177	10	1,017	-
December	180	206	201	167	10	764	-
January	114	108	165	160	10	557	-
February	229	183	160	165	10	747	-
March	310	319	231	191	10	1,061	-
April	334	817	225	244	10	1,630	-
May	400	838	252	297	10	1,796	-
June	613	1,151	236	432	-	2,431	-
Total	4,890	4,799	2,755	2,843	100	15,387	-

Month	Fontana Water Co.	Cucamonga Valley Water District			Three Valleys MWD to Pomona	Three Valleys MWD to GSWC	Western MWD to Norco	Total
	CB-19	CB-07	CB-16	Sub-Total				
July	993	-	1,022	1,022	284	293	-	3,904
August	609	-	1,212	1,212	415	361	-	4,192
September	383	-	1,014	1,014	367	364	-	3,551
October	332	-	804	804	255	350	-	2,795
November	301	-	954	954	148	263	-	2,684
December	317	-	239	239	164	192	-	1,674
January	313	31	182	212	101	91	90	1,364
February	308	34	350	384	239	177	86	1,941
March	872	-	-	-	224	95	-	2,251
April	873	-	457	457	394	204	-	3,558
May	893	-	443	443	526	312	-	3,970
June	420	-	698	698	528	442	-	4,519
Total	6,613	65	7,375	7,440	3,645	3,143	175	36,402

[1] Does not include Dry Year Yield activity ("puts" or "takes").

[2] Total includes water delivered directly from WFA and from WFA through MVWD by agreement.

TOTAL WATER CONSUMPTION BY THE CHINO BASIN PARTIES[1] (ACRE-FEET)

TOTAL WATER CONSUMPTION BY THE CHINO BASIN PARTIES'
(ACRE-FEET)

Year	Chino Basin Extractions[2]	Supplemental Supplies[3]	Total
77-78	158,840	61,567	220,407
78-79	142,979	75,864	218,843
79-80	141,960	70,727	212,687
80-81	143,985	77,765	221,750
81-82	135,624	67,491	203,115
82-83	122,078	76,000	198,078
83-84	132,342	99,257	231,599
84-85	132,838	92,952	225,790
85-86	134,009	114,624	248,633
86-87	144,365	126,493	270,858
87-88	149,559	116,175	265,734
88-89	141,844	128,167	270,011
89-90	152,581	139,004	291,585
90-91	138,213	116,493	254,706
91-92	139,266	104,480	243,746
92-93	136,110	117,205	253,315
93-94	129,793	136,038	265,831
94-95	153,159	116,797	269,956
95-96	150,664	130,494	281,158
96-97	160,981	115,031	276,012
97-98	146,535	106,360	252,895
98-99	162,654	113,040	275,694
99-00	178,820	129,208	308,028
00-01	169,565	128,596	298,161
01-02	175,414	140,907	316,321
02-03	171,412	134,154	305,566
03-04	176,251	143,989	320,240
04-05	161,712	145,644	307,356
05-06	156,761	171,896	328,658
06-07	179,494	176,807	356,301
07-08	177,804	162,465	340,269
08-09	188,901	131,819	320,720
09-10	169,314	144,354	313,667
10-11	151,304	154,760	306,064
11-12	147,668	171,808	319,476
12-13	164,100	154,870	318,970
13-14	169,229	183,699	352,928
14-15	148,636	162,477 1	311,113
15-16	148,595	114,622 1	263,217

[1]The values reported herein are intended to represent the supplemental water supply used by each Party within its entire service area. Some Parties have service area boundaries which extend outside the adjudicated Chino Basin boundary. During the preparation of the FY14/15 Annual Report, it was determined that the collection and reporting of supplemental water supplies has been inconsistent over time, such that some parties reported estimates of water used within the boundary of Chino Basin and others provided the entire service area use, and some agencies varied thier reporting methods over time. In many years, the reported data also excluded some Watermaster Parties. And, in some cases the supplmental supplies included recharge water volumes. The values reported for the noted years are representative of total water consuption by the Chino Basin parties and are not directly comparable to values reported for prior years. Watermaster staff will be working with the Parties to update the historical information for consistency in future annual reports.

[2] Represents the total groundwater extraction values reported in Appendix H1.

[3] Total does not include cyclic deliveries, water delivered by exchange, or water from direct spreading that was used for replenishment.

SUMMARY OF CONJUNCTIVE USE REPLENISHMENT, AND CYCLIC ACTIVITIES
FISCAL YEAR 2015-16
(ACRE-FEET)

	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total
Conjunctive Use Resulting from Storage and Recovery Programs in the Chino Basin[1]													
Direct													
Monte Vista Water District	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-
In-Lieu													
Chino Basin Watermaster	-	-	-	-	-	-	-	-	-	-	-	-	-
Chino, City of	-	-	-	-	-	-	-	-	-	-	-	-	-
Chino Hills, City of	-	-	-	-	-	-	-	-	-	-	-	-	-
Cucamonga Valley Water District	-	-	-	-	-	-	-	-	-	-	-	-	-
Jurupa Community Services District	-	-	-	-	-	-	-	-	-	-	-	-	-
Monte Vista Water District	-	-	-	-	-	-	-	-	-	-	-	-	-
Ontario, City of	-	-	-	-	-	-	-	-	-	-	-	-	-
Pomona, City of	-	-	-	-	-	-	-	-	-	-	-	-	-
Upland, City of	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Storage / (Withdrawals)	-	-	-	-	-	-	-	-	-	-	-	-	-
Replenishment (and Preemptive Replenishment) Deliveries[1]				Watermaster's Cumulative Unmet Replenishment Obligation (CURO) from Past Years: 3,988.661 AF Watermaster's Replenishment Obligation Resulting from 2015-16 Production: 1,550.909 AF **Watermaster's Cumulative Replenishment Obligation as of June 30, 2016: 5,539.570 AF**									
Direct*													
ASR (Monte Vista Water District)	-	-	-	-	-	-	-	-	-	-	-	-	-
CB-11 (Deer Creek)	-	-	-	-	-	-	-	-	-	-	-	-	-
CB-13 (San Sevaine)	-	-	-	-	-	-	-	-	-	-	-	-	-
CB-14 (Etiwanda)	-	-	-	-	-	-	-	-	-	-	-	-	-
CB-15 (Day Creek)	-	-	-	-	-	-	-	-	-	-	-	-	-
CB-18 (Etiwanda Inter-tie)	-	-	-	-	-	-	-	-	-	-	-	-	-
CB-20 (West Cucamonga)	-	-	-	-	-	-	-	-	-	-	-	-	-
OC-59 (San Antonio)	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-
In-Lieu													
Service Connections													
CB-12	-	-	-	-	-	-	-	-	-	-	-	-	-
CB-16	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-
Purchased from Parties	-	-	-	-	-	-	-	-	-	-	-	-	-
Purchased from Cyclic Account	-	-	-	-	-	-	-	-	-	-	-	-	-
Pre-Purchased Previous Year(s)	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Replenishment	-	-	-	-	-	-	-	-	-	-	-	-	-

[1] Dashed entires indicate zero acre-feet of conjunctive use and replenishment deliveries

SUMMARY OF STORMWATER, IMPORTED WATER, AND RECYCLED WATER RECHARGE FISCAL YEAR 2015-16 (ACRE-FEET)

	JULY			AUGUST			SEPTEMBER			OCTOBER			NOVEMBER			DECEMBER		
	ST	IMP	RC	ST	IMP	RC	ST	IMP	RC	ST	IMP	RC	ST	IMP	RC	ST	IMP	RC
MZ 1																		
Aquifer Storage & Recovery (ASR)																		
MVWD	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
San Antonio Channel																		
Upland	17	0	0	0	0	0	29	0	0	19	0	0	12	0	0	28	0	0
College Heights	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Montclair 1, 2 3 & 4	17	0	0	0	0	0	41	0	0	22	0	0	15	0	0	42	0	0
Brooks	0	0	63	0	0	0	0	0	0	0	0	0	1	0	0	0	0	101
West Cucamonga Channel																		
15th Street	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8th Street	44	0	0	4	0	0	19	0	0	14	0	0	10	0	0	10	0	0
7th Street	0	0	0	0	0	23	57	0	60	25	0	13	9	0	95	76	0	159
	78	**0**	**63**	**4**	**0**	**23**	**146**	**0**	**60**	**80**	**0**	**13**	**47**	**0**	**95**	**156**	**0**	**260**
MZ 2																		
Cucamonga /Deer Creek Channels																		
Turner 1 & 2	0	0	0	1	0	0	120	0	145	98	0	238	45	0	79	105	0	224
Turner 3 & 4	87	0	85	15	0	163	74	0	51	64	0	65	44	0	3	144	0	1
Day Creek Channel																		
Lower Day	17	0	0	21	0	0	19	0	0	24	0	0	0	0	0	27	0	0
Etiwanda Channel																		
Etiwanda Debris Basin	2	0	0	0	0	0	13	0	0	8	0	0	0	0	0	20	0	0
Victoria	4	0	139	1	0	165	37	0	136	35	0	101	0	0	34	86	0	60
Minor Drainage																		
Grove	37	0	0	0	0	0	82	0	0	60	0	0	20	0	0	42	0	0
San Sevaine Channel																		
San Sevaine 1, 2, 3 & 4	4	0	0	0	0	0	28	0	0	31	0	0	1	0	0	40	0	0
San Sevaine 5	5	0	0	0	0	0	25	0	0	16	0	0	0	0	0	40	0	0
West Cucamonga Channel																		
Ely 1, 2 & 3	285	0	102	3	0	1	215	0	31	75	0	76	41	0	21	92	0	128
West Fontana Channel																		
Hickory	0	0	39	0	0	56	9	0	107	14	0	73	14	0	84	64	0	53
	441	**0**	**365**	**41**	**0**	**385**	**622**	**0**	**470**	**425**	**0**	**553**	**165**	**0**	**221**	**660**	**0**	**466**
MZ 3																		
Day Creek Channel																		
Wineville	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Riverside	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DeClez Channel																		
DeClez	49	0	0	3	0	0	147	0	0	36	0	0	4	0	0	49	0	50
RP3 Cell 1, 3, & 4	105	0	268	9	0	141	75	0	219	67	0	363	40	0	228	148	0	274
RP3 Cell 2	29	0	0	22	0	0	48	0	0	19	0	0	14	0	0	40	0	0
Etiwanda Channel																		
Etiwanda Conservation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
San Sevaine Channel																		
Jurupa	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
West Fontana Channel																		
Banana	0	0	54	0	0	156	40	0	376	105	0	349	30	0	262	59	0	283
	183	**0**	**322**	**34**	**0**	**297**	**310**	**0**	**595**	**227**	**0**	**712**	**88**	**0**	**490**	**296**	**0**	**607**
Total	**702**	**0**	**750**	**79**	**0**	**705**	**1,078**	**0**	**1,125**	**732**	**0**	**1,278**	**300**	**0**	**806**	**1,112**	**0**	**1,333**

ST = stormwater
IMP = imported water
RC = recycled water

JANUARY			FEBRUARY			MARCH			APRIL			MAY			JUNE			TOTAL			
ST	IMP	RC	ST	IMP	RC	ST	IMP	RC	ST	IMP	RC	ST	IMP	RC	ST	IMP	RC	ST	IMP	RC	ALL
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
154	0	0	19	0	0	134	0	0	10	0	0	3	0	0	0	0	0	425	0	0	425
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
174	0	0	21	0	0	89	0	0	20	0	0	0	0	0	0	0	0	441	0	0	441
54	0	254	22	0	211	90	0	116	11	0	192	0	0	278	0	0	0	178	0	1,215	1,393
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
150	0	0	93	0	165	198	0	80	32	0	163	71	0	204	6	0	296	651	0	908	1,559
99	0	59	0	0	41	2	0	80	2	0	32	1	0	0	0	0	0	271	0	562	833
631	**0**	**313**	**155**	**0**	**417**	**513**	**0**	**276**	**75**	**0**	**387**	**75**	**0**	**482**	**6**	**0**	**296**	**1,966**	**0**	**2,685**	**4,651**
269	0	102	51	0	198	165	0	161	19	0	128	38	0	156	5	0	159	916	0	1,590	2,506
82	0	0	41	0	0	47	0	0	49	0	0	33	0	0	20	0	0	700	0	368	1,068
119	0	0	14	0	0	37	0	0	0	0	0	2	0	0	1	0	0	281	0	0	281
26	0	0	0	0	0	0	0	0	14	0	0	0	0	0	0	0	0	83	0	0	83
87	0	0	10	0	0	79	0	0	1	0	0	2	0	0	1	0	0	343	0	635	978
100	0	0	15	0	0	53	0	0	15	0	0	47	0	0	0	0	0	471	0	0	471
101	0	0	5	0	0	44	0	0	24	0	0	0	0	0	0	0	0	278	0	0	278
143	0	0	28	0	0	44	0	0	5	0	0	1	0	0	0	0	0	307	0	0	307
337	0	61	59	0	89	177	0	47	24	0	127	197	0	119	1	0	210	1,506	0	1,012	2,518
35	0	23	5	0	27	22	0	0	21	0	43	0	0	52	0	0	18	184	0	575	759
1,299	**0**	**186**	**228**	**0**	**314**	**668**	**0**	**208**	**172**	**0**	**298**	**320**	**0**	**327**	**28**	**0**	**387**	**5,069**	**0**	**4,180**	**9,249**
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
158	0	78	34	0	153	92	0	126	20	0	133	12	0	228	3	0	201	607	0	969	1,576
205	0	390	53	0	358	155	0	134	36	0	247	33	0	358	9	0	245	935	0	3,225	4,160
34	0	0	1	0	0	53	0	40	14	0	0	15	0	17	2	0	0	291	0	57	348
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
71	0	75	7	0	110	38	0	74	0	0	97	15	0	113	0	0	157	365	0	2,106	2,471
468	**0**	**543**	**95**	**0**	**621**	**338**	**0**	**374**	**70**	**0**	**477**	**75**	**0**	**716**	**14**	**0**	**603**	**2,198**	**0**	**6,357**	**8,555**
2,398	**0**	**1,042**	**478**	**0**	**1,352**	**1,519**	**0**	**858**	**317**	**0**	**1,162**	**470**	**0**	**1,525**	**48**	**0**	**1,286**	**9,233**	**0**	**13,222**	**22,455**

CHINO BASIN WATERMASTER

APPROVED 2016/2017 ASSESSMENT PACKAGE (PRODUCTION YEAR 2015/2016)

NOVEMBER 17, 2016

ASSESSMENT PACKAGE REFERENCES AND DEFINITIONS

Assessment Package References and Definitions

Assessment Calculation Table

Assessment Package Detailed Pages

Appendix A: Pool 3 Water Production Detail

Appendix B: Desalter Replenishment Accounting

Appendix C: Water Transaction Details for Fontana Water Co. (Actuals vs. Assessed)

Appendix D: Adjustment Calculation - 85/15 Rule Application to Exhibit G Transactions for Assessment Years 2014/2015 and 2015/2016

Appendix E: Pool 2 Water Transaction Summary

ASSESSMENT PACKAGE REFERENCES AND DEFINITIONS

REPORT REFERENCE	NAME	DESCRIPTION
1A	AF Production and Exchanges	Total production and exchanges. Copied from [2L].
1B	Appropriative Pool—AF/Admin	Production and Exchanges [1A] <times> per acre-foot Admin fee.
1C	Appropriative Pool—AF/OBMP	Production and Exchanges [1A] <times> per acre-foot OBMP fee.
1D	Ag Pool SY Reallocation—AF Total Reallocation	Reallocation of Ag Pool Safe Yield. Copied from [2E] and [12G].
1E	Ag Pool SY Reallocation—AF/Admin	Party Ag Pool reallocation [1D] <divided by> Total Ag Pool Reallocation [1D Total] <times> total dollar amount needed for Ag Pool Administration.
1F	Ag Pool SY Reallocation—AF/OBMP	Party Ag Pool reallocation [1D] <divided by> Total Ag Pool Reallocation [1D Total] <times> total dollar amount needed for Ag Pool OBMP.
1G	Replenishment Assessments—AF/15%	For Parties participating in the 85/15 Rule: Percentage of total 85/15 participant production <times> required credit amount. Copied from Page 9A.
1H	Replenishment Assessments—AF/85%	For parties participating in the 85/15 Rule: Total volume overproduced [2M] <times> 85% of the replenishment rate.
1I	Replenishment Assessments—AF/100%	For parties not participating in the 85/15 Rule: Total volume overproduced [2N] <times> 100% of the replenishment rate.
1J	85/15 Water Transaction Activity—15% Producer Credits	For parties participating in the 85/15 Rule: Credit amount equals 15% of the cost of the water purchased. Total copied from Page 7D.
1K	85/15 Water Transaction Activity—15% Pro-rated Debits	For parties participating in the 85/15 Rule: Percentage of total 85/15 participant production <times> required credit amount. Copied from Page 9A.
1L	CURO Adjustment	Monetary amount needed (or to be credited) for each Party's Cumulative Unmet Replenishment Obligation (CURO). Calculated on Page 10A.
1M	ASSESSMENTS DUE—Total Production Based	Total fees assessed based on Party production. [1B] + [1C] + [1E] + [1F] + [1G] + [1H] + [1I] + [1J] + [1K] + [1L].
1N	ASSESSMENTS DUE—Pomona Credit	Debit amount to Pomona <times> -1 <times> percent share of Operating Safe Yield [2A].
1O	ASSESSMENTS DUE—Recharge Debt Payment	Total recharge debt payment <times> percent share of Operating Safe Yield [2A].
1P	ASSESSMENTS DUE—Recharge Improvement Project	Total Recharge Improvement Project <times> Percent Share of Operating Safe Yield [2A].
1Q	ASSESSMENTS DUE—Other Adjustments	Used as necessary for any other monetary adjustments needed to the Assessment Package.
1R	ASSESSMENTS DUE—Total Due	Total assessments. [1M] + [1N] + [1O] + [1P] + [1Q].

ASSESSMENT PACKAGE REFERENCES AND DEFINITIONS

REPORT REFERENCE	NAME	DESCRIPTION
2A	Percent of Operating Safe Yield	The Party's yearly percentage of Operating Safe Yield.
2B	Carryover Beginning Balance	The beginning balance in each Annual Account. This number carries forward from the ending balance in the previous period Assessment Package.
2C	Prior Year Adjustments	This number reflects the adjusted production rights from a previous Assessment Package, in the event that corrections are needed.
2D	Assigned Share of Operating Safe Yield	The Party's yearly volume of Operating Safe Yield.
2E	Net Ag Pool Reallocation	Reallocation of Ag Pool Safe Yield. Copied from [12G]. The calculations that lead to this are made on Page 12A.
2F	Water Transaction Activity	Water transactions. Copied from [6D]. The calculations that lead to this are made on Page 6A.
2G	Stormwater New Yield	Stormwater New Yield <times> percent share of Operating Safe Yield [2A].
2H	Other Adjustments	This number reflects adjusted production rights, in the event that corrections are needed.
2I	Annual Production Right	Current Year Production Right. [2B] + [2C] + [2D] + [2E] + [2F] + [2G] + [2H].
2J	Actual Fiscal Year Production	Fiscal year production, including Assignments and Voluntary Agreements, from CBWM's production system (as verified by each Party on their Water Activity Report). Includes a sub note subtracting Desalter production. See Appendix A.
2K	Storage and Recovery Program(s)	Total exchanges for the period (July 1- June 30) including MZ1 forbearance and DYY deliveries (as reported to CBWM by IEUA and TVMWD and as verified by each Party on their Water Activity Report).
2L	Total Production and Exchanges	Actual production [2J] <plus> Storage and Recovery exchanges [2K]. Includes a sub note subtracting Desalter production. Also known as Assessable Production.
2M	Net Over-Production—85/15%	For 85/15 Rule participants: Production rights [2I] <minus> total production and exchanges [2L], equaling less than zero.
2N	Net Over-Production—100%	For non-85/15 Rule participants: Production rights [2I] <minus> total production and exchanges [2L], equaling less than zero. Includes a sub note subtracting Desalter production.
2O	Under Production Balances—Total Under-Produced	Production rights [2I] <minus> total production and exchanges [2L], equaling more than zero.
2P	Under Production Balances—Carryover: Next Year Begin Bal	Either total under-produced [2O] or share of Operating Safe Yield [2D], whichever is less.
2Q	Under Production Balances—To Excess Carryover Account	Total under produced [2O] <minus> Carryover to next year [2P], equaling more than zero.

ASSESSMENT PACKAGE REFERENCES AND DEFINITIONS

REPORT REFERENCE	NAME	DESCRIPTION
3A	Excess Carry Over Account (ECO)—Beginning Balance	The beginning balance in each ECO account. This carries forward from the ending balance in the previous period Assessment Package.
3B	Excess Carry Over Account (ECO)—1.20% Storage Loss	Beginning balance [3A] <times> -0.012.
3C	Excess Carry Over Account (ECO)—Transfers To / (From)	Total of water transferred to and from ECO and the Annual Account.
3D	Excess Carry Over Account (ECO)—From Supplemental Storage	Total of water transferred to and from Local Supplemental Storage accounts, as shown on Page 4A.
3E	Excess Carry Over Account (ECO)—From Under-Production	Total of water transferred from the Annual Account due to under production. Copied from [2Q].
3F	Excess Carry Over Account (ECO)—Ending Balance	The current balance in each ECO account. [3A] + [3B] + [3C] + [3D] + [3E].

ASSESSMENT PACKAGE REFERENCES AND DEFINITIONS

REPORT REFERENCE	NAME	DESCRIPTION
4A	Recharged Recycled Account—Beginning Balance	The beginning balance in each Recharged Recycled Account. This number carries forward from the ending balance in the previous period Assessment Package.
4B	Recharged Recycled Account—1.20% Storage Loss	Beginning balance [4A] <times> -0.012.
4C	Recharged Recycled Account—Current Recharged Recycled	Total recharged recycled water credited to each Party for the year, as provided by IEUA.
4D	Recharged Recycled Account—Transfer to ECO Account	Total of water transferred to the ECO Account, as shown on Page 3A.
4E	Recharged Recycled Account—Ending Balance	The current balance in each Recharged Recycled account. [4A] + [4B] + [4C] + [4D].
4F	Quantified (Pre 7/1/2000) Account—Beginning Balance	The beginning balance in each Quantified Supplemental Account. This number carries forward from the ending balance in the previous period Assessment Package.
4G	Quantified (Pre 7/1/2000) Account—1.20% Storage Loss	Beginning balance [4F] <times> -0.012.
4H	Quantified (Pre 7/1/2000) Account—Transfers To / (From)	Total of water transferred to and from the Annual Account.
4I	Quantified (Pre 7/1/2000) Account—Transfer to ECO Account	Total of water transferred to the ECO Account, as shown on Page 3A.
4J	Quantified (Pre 7/1/2000) Account—Ending Balance	The current balance in each Quantified Supplemental account. [4F] + [4G] + [4H] + [4I].
4K	New (Post 7/1/2000) Account—Beginning Balance	The beginning balance in each New Supplemental Account. This number carries forward from the ending balance in the previous period Assessment Package.
4L	New (Post 7/1/2000) Account—1.20% Storage Loss	Beginning balance [4K] <times> -0.012.
4M	New (Post 7/1/2000) Account—Transfers To / (From)	Total of water transferred to and from the Annual Account.
4N	New (Post 7/1/2000) Account—Transfer to ECO Account	Total of water transferred to the ECO Account, as shown on Page 3A.
4O	New (Post 7/1/2000) Account—Ending Balance	The current balance in each New Supplemental Account. [4K] + [4L] + [4M] + [4N].
4P	Combined—Ending Balance	The combined amount in all supplemental storage accounts [4E] + [4J] + [4O].

ASSESSMENT PACKAGE REFERENCES AND DEFINITIONS

REPORT REFERENCE	NAME	DESCRIPTION
5A	Desalter Replenishment—Beginning Balance	The beginning balances in each Desalter Replenishment account. These numbers carry forward from the ending balances in the previous period Assessment Package. "Re-Operation Offset: Pre-Peace II Desalters" had an original beginning balance of 225,000.000 AF and "Re-Operation Offset: Peace II Expansion" had an original beginning balance of 175,000.000 AF.
5B	Desalter Replenishment—Storage Loss	Beginning balance [5A] <times> -(loss %). There is no loss assessed on the native Basin water allocated to offset Desalter production as a result of Basin Reoperation as approved in the Peace II Agreement. Per the "Preemptive Replenishment" agreements, no losses are deducted against these accounts.
5C	Desalter Replenishment—Transfers To	Total of water transferred to each Desalter Replenishment account.
5D	Desalter Replenishment—Transfers From	Total of water transferred from each Desalter Replenishment account.
5E	Desalter Replenishment—Ending Balance	The current balance in each Desalter Replenishment account. [5A] + [5B] + [5C] + [5D].
5F	Storage and Recovery—Beginning Balance	The beginning balance in the Storage and Recovery (DYY) Account. This number carries forward from the ending balance in the previous period Assessment Package.
5G	Storage and Recovery—Storage Loss	Beginning balance [5F] <times> -(loss %).
5H	Storage and Recovery—Transfers To	Total of water transferred to the Storage and Recovery Account ("puts").
5I	Storage and Recovery—Transfers From	Total of water transferred from the Storage and Recovery Account ("takes").
5J	Storage and Recovery—Ending Balance	The current balance in the Storage and Recovery Account. [5F] + [5G] + [5H] + [5I].

REPORT REFERENCE	NAME	DESCRIPTION
6A	Water Transactions—Assigned Rights	Total of assigned transactions for this period, including annual water transfers/leases between Appropriators and/or from Appropriators to Watermaster for replenishment purposes, and also the Exhibit "G" physical solution transfers from the Non-Ag Pool. Detailed in Pages 7A-7E.
6B	Water Transactions—General Transfer	Total of water transfers between Parties for this period. Transfers in this column include the annual transfer of 10-percent of the Non-Ag OSY to the seven Appropriator Parties, as stated in the Peace II Agreement.
6C	Water Transactions—Transfers (To) / From ECO Account	Total of water transferred between the Annual Account and ECO Account.
6D	Water Transactions—Total Water Transactions	Total water transactions. [6A]+ [6B] + [6C]. This column is used to populate [2F].

ASSESSMENT PACKAGE REFERENCES AND DEFINITIONS

REPORT REFERENCE	NAME	DESCRIPTION
12A	% Share of Operating Safe Yield	The Party's yearly percentage of Operating Safe Yield. Copied from [2A].
12B	Reallocation of Agricultural Pool Safe Yield—32,800 AF Early Transfer	The Party's percent share of Operating Safe Yield [12A] multiplied by 32,800.
12C	Reallocation of Agricultural Pool Safe Yield—Land Use Conversions	Total land use conversions claimed on Page 11A (as verified by each Party on their Water Activity Report).
12D	Reallocation of Agricultural Pool Safe Yield—Potential for Reallocation (AF)	The Agricultural Pool Reallocation amount potentially available to each Appropriator. [12B] + [12C].
12E	Reallocation of Agricultural Pool Safe Yield—Percent of Ag Pool Reallocation	Each Party's pro rata share of the potential for reallocation [12D] from the total of [12D].
12F	Reallocation of Agricultural Pool Safe Yield—Difference: Potential vs. Net	The total over or under Agricultural Pool Reallocation (from Page 11A) <times> each Party's percent of Ag Pool reallocation [12E].
12G	Reallocation of Agricultural Pool Safe Yield—Net Ag Pool Reallocation	Net Agricultural Pool Reallocation to each Party. [12D] + [12F]. This column is used to populate [2E].

REPORT REFERENCE	NAME	DESCRIPTION
13A	AF Production	Actual fiscal year production by each Party. Copied from [14H].
13B	Non-Agricultural Pool—AF/Admin	Production [13A] <times> per acre-foot Admin fee.
13C	Non-Agricultural Pool — AF/OBMP	Production [13A] <times> per acre-foot OBMP fee.
13D	Replenishment Assessments—AF Exceeding Annual Right	Over-production for each Party beyond their annual production right. Copied from [14I].
13E	Replenishment Assessments—Per AF	Amount overproduced [13D] <times> the current replenishment rate.
13F	CURO Adjustment	Monetary amount needed (or to be credited) for each Party's Cumulative Unmet Replenishment Obligation (CURO). Calculated on Page 10B.
13G	Other Adjustments	Used as necessary for any other monetary adjustments needed to the Assessment Package.
13H	Total Assessments Due	Total fees assessed based on Party production. [13B] + [13C] + [13E] + [13F] + [13G].

ASSESSMENT PACKAGE REFERENCES AND DEFINITIONS

REPORT REFERENCE	NAME	DESCRIPTION
14A	Percent of Safe Yield	The Party's yearly percentage of Safe Yield.
14B	Carryover Beginning Balance	The beginning balance in each Annual Account. This number carries forward from the ending balance in the previous period Assessment Package.
14C	Prior Year Adjustments	This number reflects the adjusted production rights from a previous Assessment Package, in the event that corrections are needed.
14D	Assigned Share of Safe Yield (AF)	The Party's yearly volume of Safe Yield.
14E	Water Transaction Activity	Total of one-time water transfers between Parties for this period, including the annual transfer of 10-percent of the Non-Ag Safe Yield to the seven Appropriator Parties, as stated in the Peace II Agreement, and Exhibit G.
14F	Other Adjustments	This number reflects adjusted production rights, in the event that corrections are needed.
14G	Annual Production Right	Current Year Production Right. [14B] + [14C] + [14D] + [14E] + [14F].
14H	Actual Fiscal Year Production	Fiscal year production, including Assignments, from CBWM's production system (as verified by each Party on their Water Activity Report). Also known as Assessable Production.
14I	Net Over Production	Over-production, if any, for each Party beyond their annual production right. [14H] – [14G], equaling more than zero.
14J	Under Production Balances—Total Under-Produced	Production rights [14G] <minus> production [14H], equaling more than zero.
14K	Under Production Balances—Carryover: Next Year Begin Bal	Either total under-produced [14J] or share of Safe Yield [14D], whichever is less.
14L	Under Production Balances—To Local Storage Account	Total under-produced [14J] <minus> Carryover to next year [14K], equaling more than zero.

REPORT REFERENCE	NAME	DESCRIPTION
15A	Local Storage Account—Beginning Balance	The beginning balance in each Local Storage account. This number carries forward from the ending balance in the previous period Assessment Package.
15B	Local Storage Account—1.20% Storage Loss	Beginning balance [15A] <times> -0.012.
15C	Local Storage Account—Transfers To / (From)	Total of water transferred to and from the Annual Account.
15D	Local Storage Account—Ending Balance	The current balance in each Local Storage Account. [15A] + [15B] + [15C].

CHINO BASIN WATERMASTER
ASSESSMENT CALCULATION
FISCAL YEAR 2016/17
INCLUDES "10% ADMINISTRATIVE AND 15% OBMP/PROJECT OPERATING RESERVES"

PRODUCTION BASIS		FY 2015/16 BUDGET	FY 2016/17 BUDGET	ASSESSMENT	APPROPRIATIVE POOL		AGRICULTURAL POOL		NON-AG POOL	
2014/15 Production & Exchanges in Acre-Feet (Actuals)				116,961.798	84,107.515	71.910%	28,520.530	24.384%	4,333.753	3.705%
2015/16 Production & Exchanges in Acre-Feet (Actuals)				119,475.939	89,906.000	75.250%	26,167.031	21.902%	3,402.908	2.848%
BUDGET					General Administration	OBMP	General Administration	OBMP	General Administration	OBMP
Administration, Advisory Committee & Watermaster Board[1]		$1,891,019	$1,938,787	$1,938,787	$1,458,943		$424,624		$55,220	
OBMP & Implementation Projects[1]		5,019,087	5,109,883	5,109,883		3,845,202		1,119,141		145,539
General Admin & OBMP Assessments		$6,910,106	$7,048,670	7,048,670	1,458,943	3,845,202	424,624	1,119,141	55,220	145,539
TOTAL BUDGET				7,048,670	1,458,943	3,845,202	424,624	1,119,141	55,220	145,539
Less: Budgeted Interest Income		(22,050)	(19,891)	(19,891)		(14,968)		(4,356)		(567)
Less: Contributions from Outside Agencies		(157,941)	(158,923)	(158,923)		(119,590)		(34,807)		(4,526)
Subtotal: CASH DEMAND		6,730,116	6,869,856	6,869,856	1,458,943	3,710,644	424,624	1,079,978	55,220	140,446
Less: SB 222 FUND USE [2]		0	(158,251)	(158,251)		(119,085)		(34,659)		(4,507)
Subtotal: CASH DEMAND AFTER SB222 FUND USE		6,730,116	6,711,605	6,711,605	1,458,943	3,591,559	424,624	1,045,319	55,220	135,939
Add: OPERATING RESERVE										
Administrative (10%)	10%	189,102	193,878	$193,878	$145,894		$42,462		$5,522	
OBMP (15%)	15%	752,863	766,482	766,482		576,780		167,871		21,831
Subtotal: OPERATING RESERVE		941,965	960,361	960,361	145,894	576,780	42,462	167,871	5,522	21,831
Less: Cash Balance On Hand Available for Assessments [3]		(941,965)	(960,361)	(960,361)	(145,894)	(576,780)	(42,462)	(167,871)	(5,522)	(21,831)
Total: CASH REQUIRED TO BE ASSESSED		$6,730,116	$6,711,605	**$6,711,605**	$1,458,943	$3,591,559	$424,624	$1,045,319	$55,220	$135,939
Current Year Assessments										
General Administration/OBMP Assessments (Minimum $5.00 Per Producer)	A			Per Acre-Foot	**$16.23**	**$39.95**	**$16.23**	**$39.95**	**$16.23**	**$39.95**
Grand Total						**$56.18**		**$56.18**		**$56.18**
Prior Year Assessments, (Actuals) Information Only	B			Per Acre-Foot	$15.58	$41.96	$15.58	$41.96	$15.58	$41.96
Grand Total						$57.54		$57.54		$57.54
Variance Between Proposed Assessments and Prior Year Assessments	A - B				$0.65	($2.01)	$0.65	($2.01)	$0.65	($2.01)
Grand Total						($1.36)		($1.36)		($1.36)
Estimated Assessment as of "Approved" Budget May 26, 2016, Information Only					$15.01	$40.17	$15.01	$40.17	$15.01	$40.17
Grand Total						$55.18		$55.18		$55.18

[1] Total costs are allocated to Pools by actual production percentages. Does not include Recharge Debt Payment, Recharge Improvement Projects or Replenishment Water purchases.
[2] Support and approval received from IEUA on August 31, 2016 that the remainder of the SB 222 funds be used "to pay for studies and investigations that aid in implementing the OBMP."
[3] June 30th fund balance (estimated) less funds required for Operating Reserves, Agricultural Pool Reserves, and Carryover replenishment obligations.

May 26, 2016

ASSESSMENT CALCULATION - BASED ON ACTUAL FY 15/16 PRODUCTION

ASSESSMENT CALCULATION TABLE

Assessment Year 2016-2017 (Production Year 2015-2016)

Pool 3 Assessment Fee Summary

	AF Production and Exchanges	Appropriative Pool $16.23 AF/Admin	Appropriative Pool $39.95 AF/OBMP	Ag Pool SY Reallocation AF Total Reallocation	Ag Pool SY Reallocation $424,623.99 $7.50 AF/Admin	Ag Pool SY Reallocation $1,045,318.99 $18.46 AF/OBMP	Repleni AF/15%
Arrowhead Mtn Spring Water Co	356.162	5,780.51	14,228.67	0.000	0.00	0.00	0.00
Chino Hills, City Of	1,548.281	25,128.60	61,853.83	2,336.657	17,519.84	43,129.51	16.88
Chino, City Of	0.000	0.00	0.00	10,078.864	75,569.54	186,033.48	0.00
Cucamonga Valley Water District	20,534.740	333,278.83	820,362.86	2,597.581	19,476.20	47,945.58	223.84
Desalter Authority	28,162.862	0.00	0.00	0.000	0.00	0.00	0.00
Fontana Union Water Company	0.000	0.00	0.00	3,593.946	26,946.77	66,336.27	0.00
Fontana Water Company	15,317.165	248,597.59	611,920.74	784.546	5,882.39	14,480.98	166.97
Fontana, City Of	0.000	0.00	0.00	0.000	0.00	0.00	0.00
Golden State Water Company	807.419	13,104.41	32,256.39	231.231	1,733.73	4,268.01	8.80
Jurupa Community Services District	8,952.753	145,303.18	357,662.48	14,508.019	108,778.57	267,785.86	97.59
Marygold Mutual Water Company	752.723	12,216.69	30,071.28	368.428	2,762.41	6,800.36	0.00
Monte Vista Irrigation Company	0.000	0.00	0.00	380.452	2,852.56	7,022.30	0.00
Monte Vista Water District	8,203.721	133,146.39	327,738.65	2,775.741	20,812.02	51,234.02	89.43
Niagara Bottling, LLC	1,774.574	28,801.34	70,894.23	0.000	0.00	0.00	0.00
Nicholson Trust	0.000	0.00	0.00	2.158	16.18	39.83	0.00
Norco, City Of	0.000	0.00	0.00	113.457	850.68	2,094.16	0.00
Ontario, City Of	18,053.831	293,013.68	721,250.55	8,478.076	63,567.12	156,486.48	196.80
Pomona, City Of	9,963.663	161,710.25	398,048.34	6,306.131	47,282.26	116,397.19	0.00
San Antonio Water Company	1,030.847	16,730.65	41,182.34	847.230	6,352.38	15,637.99	11.24
San Bernardino, County of (Shootin	9.396	152.50	375.37	0.000	0.00	0.00	0.10
Santa Ana River Water Company	0.000	0.00	0.00	731.615	5,485.52	13,503.99	0.00
Upland, City Of	2,600.725	42,209.77	103,898.96	1,603.818	12,025.14	29,602.92	28.35
West End Consolidated Water Co	0.000	0.00	0.00	532.756	3,994.51	9,833.49	0.00
West Valley Water District	0.000	0.00	0.00	362.262	2,716.18	6,686.55	0.00
	118,068.862	**1,459,174.37**	**3,591,744.69**	**56,632.968**	**424,623.99**	**1,045,318.99**	**840.00**
		1A	1B	1C	1D	1E	1F	1G

p1: 1) Pursuant to Paragraph 5.4(b) of the Peace Agreement, the City of Pomona shall be allowed a credit of up to $2 million against OBMP Assessments for 30 Pool Parties, allocated on % OSY.
2) Recharge Debt Project expenses [1O] and Recharge Improvement Project expenses [1P] are each allocated on % OSY, based on the approved budget.
3) The 85/15 Rule had not been applied to the Exhibit G water sales in the prior two years. Other Adjustments [1Q] includes that adjustment.

shment Assessments		85/15 Water Transaction Activity			ASSESSMENTS DUE					
$506.60 AF/85%	$596.00 AF/100%	15% Producer Credits	15% Pro-rated Debits	CURO Adjustment	Total Production Based	Pomona Credit	Recharge Debt Payment	Recharge Imprvmnt Project	Other Adjustments	Total Due
0.00	200,107.00	0.00	0.00	(18,817.91)	201,298.27	0.00	0.00	0.00	0.00	201,298.27
0.00	0.00	0.00	23,766.84	(1.94)	171,413.55	2,567.35	17,914.85	110,508.30	15,222.13	317,626.17
0.00	0.00	0.00	0.00	0.00	261,603.02	4,904.69	34,224.76	211,116.47	0.00	511,848.95
0.00	0.00	(54,447.76)	315,217.87	(25.73)	1,482,031.71	4,400.69	30,707.85	189,422.30	25,849.69	1,732,412.23
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	93,283.05	7,771.37	54,228.36	334,509.27	0.00	489,792.05
0.00	0.00	(1,124,632.09)	235,125.65	(19.19)	(8,476.97)	1.33	9.30	57.39	(143,413.04)	(151,821.98)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	(3,810.00)	12,394.26	(1.01)	59,954.59	500.00	3,489.00	21,522.00	1,719.94	87,185.53
0.00	0.00	0.00	137,428.95	(11.22)	1,017,045.41	2,506.01	17,486.87	107,868.26	39,584.58	1,184,491.13
0.00	0.00	0.00	0.00	(1,303.76)	50,546.99	796.67	5,559.14	34,291.72	0.00	91,194.52
0.00	0.00	0.00	0.00	0.00	9,874.86	822.67	5,740.57	35,410.86	0.00	51,848.96
0.00	0.00	0.00	125,930.96	(10.28)	658,941.19	5,864.70	40,923.64	252,438.71	16,364.49	974,532.73
0.00	700,046.10	0.00	0.00	(42,558.60)	757,183.08	0.00	0.00	0.00	0.00	757,183.08
0.00	0.00	0.00	0.00	0.00	56.01	4.67	32.56	200.87	0.00	294.11
0.00	0.00	0.00	0.00	0.00	2,944.84	245.34	1,711.94	10,560.13	0.00	15,462.24
0.00	0.00	0.00	277,134.76	(22.62)	1,511,626.76	13,828.07	96,491.78	595,212.43	34,761.38	2,251,920.42
0.00	0.00	0.00	0.00	0.00	723,438.04	(53,030.93)	95,152.01	586,947.98	0.00	1,352,507.10
0.00	0.00	0.00	15,823.98	(1.29)	95,737.28	1,832.01	12,783.70	78,856.61	2,875.06	192,084.65
4,760.01	0.00	0.00	144.23	(547.20)	4,885.01	0.00	0.00	0.00	35.78	4,920.79
0.00	0.00	0.00	0.00	0.00	18,989.51	1,582.01	11,039.20	68,095.61	90.30	99,796.62
0.00	0.00	0.00	39,922.35	(3.26)	227,684.23	3,468.02	24,199.70	149,276.59	6,909.68	411,538.23
0.00	0.00	0.00	0.00	0.00	13,828.00	1,152.01	8,038.66	49,586.69	0.00	72,605.35
0.00	0.00	0.00	0.00	0.00	9,402.73	783.34	5,466.10	33,717.80	0.00	49,369.97
4,760.01	**900,153.10**	**(1,182,889.85)**	**1,182,889.85**	**(63,324.02)**	**7,363,291.14**	**0.00**	**465,200.00**	**2,869,600.00**	**(0.01)**	**10,698,091.13**
1H	1I	1J	1K	1L	1M	1N	1O	1P	1Q	1R

years. This equates to $66,667 per year. TVMWD elected to discontinue payment of the "Pomona Credit," effective FY 2012/2013. It is now paid by the Appropriative

Assessment Year 2016-2017 (Production Year 2015-2016)

Pool 3 Water Production Summary

	Percent of Operating Safe Yield	Carryover Beginning Balance	Prior Year Adjust-ments	Assigned Share of Operating Safe Yield	Net Ag Pool Reallocation	Water Transaction Activity	Stormwater New Yield
Arrowhead Mtn Spring Water Co	*0.000%*	0.000	0.000	0.000	0.000	20.412	0.000
Chino Hills, City Of	*3.851%*	715.328	0.000	2,111.422	2,336.657	0.000	0.000
Chino, City Of	*7.357%*	4,033.857	0.000	4,033.857	10,078.864	0.000	0.000
Cucamonga Valley Water District	*6.601%*	3,619.454	0.000	3,619.454	2,597.581	13,485.682	0.000
Desalter Authority	*0.000%*	0.000	0.000	0.000	0.000	0.000	0.000
Fontana Union Water Company	*11.657%*	0.000	0.000	6,391.736	3,593.946	(9,985.682)	0.000
Fontana Water Company	*0.002%*	1.000	0.000	1.000	784.546	15,145.761	0.000
Fontana, City Of	*0.000%*	0.000	0.000	0.000	0.000	0.000	0.000
Golden State Water Company	*0.750%*	85.377	0.000	411.476	231.231	117.941	0.000
Jurupa Community Services District	*3.759%*	2,061.118	0.000	2,061.118	14,508.019	1,763.526	0.000
Marygold Mutual Water Company	*1.195%*	0.000	0.000	655.317	368.428	16.000	0.000
Monte Vista Irrigation Company	*1.234%*	676.759	0.000	676.759	380.452	30.855	0.000
Monte Vista Water District	*8.797%*	4,823.954	0.000	4,823.954	2,775.741	896.727	0.000
Niagara Bottling, LLC	*0.000%*	0.000	0.000	0.000	0.000	600.000	0.000
Nicholson Trust	*0.007%*	1.835	0.000	4.000	2.158	(6.500)	0.000
Norco, City Of	*0.368%*	201.545	0.000	201.545	113.457	0.000	0.000
Ontario, City Of	*20.742%*	11,373.816	0.000	11,373.816	8,478.076	80.000	0.000
Pomona, City Of	*20.454%*	11,215.852	0.000	11,215.852	6,306.131	219.678	0.000
San Antonio Water Company	*2.748%*	0.000	0.000	1,506.888	847.230	(1,000.000)	0.000
San Bernardino, County of (Shooting P	*0.000%*	0.000	0.000	0.000	0.000	0.000	0.000
Santa Ana River Water Company	*2.373%*	1,301.374	0.000	1,301.374	731.615	(1,109.668)	0.000
Upland, City Of	*5.202%*	2,733.755	0.000	2,852.401	1,603.818	1,885.678	0.000
West End Consolidated Water Co	*1.728%*	947.714	0.000	947.714	532.756	0.000	0.000
West Valley Water District	*1.175%*	644.317	0.000	644.317	362.262	15.000	0.000
	100.00%	**44,437.055**	**0.000**	**54,834.000**	**56,632.968**	**22,175.410**	**0.000**
Less Desalter Authority Production							
Total Less Desalter Authority Production							
	2A	2B	2C	2D	2E	2F	2G

p2: 1) Stormwater New Yield is allocated to the Appropriators based on their % OSY. Watermaster has completed the process for correction of prior over-allocati allocating Stormwater New Yield, 0 AF will be allocated during 2015/16. When the Safe Yield Recalculation and Stormwater New Yield allocation matters are resol 2) Column [2J], "Actual Fiscal Year Production," includes Voluntary Agreements and Assignments. A detailed breakdown can be found in Appendix A.

Other Adjust-ments	Annual Production Right	Actual Fiscal Year Production	Storage and Recovery Program(s)	Total Production and Exchanges	Net Over-Production		Under Production Balances		
					85/15%	100%	Total Under-Produced	Carryover: Next Year Begin Bal	To Excess Carryover Account
0.000	20.412	356.162	0.000	356.162	0.000	335.750	0.000	0.000	0.000
0.000	5,163.407	1,548.281	0.000	1,548.281	0.000	0.000	3,615.126	2,111.422	1,503.704
0.000	18,146.578	0.000	0.000	0.000	0.000	0.000	18,146.578	4,033.857	14,112.721
0.000	23,322.171	20,534.740	0.000	20,534.740	0.000	0.000	2,787.430	2,787.430	0.000
0.000	0.000	28,162.862	0.000	28,162.862	0.000	28,162.862	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.000	15,932.307	15,317.165	0.000	15,317.165	0.000	0.000	615.141	1.000	614.141
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.000	846.025	807.419	0.000	807.419	0.000	0.000	38.605	38.605	0.000
0.000	20,393.781	8,952.753	0.000	8,952.753	0.000	0.000	11,441.027	2,061.118	9,379.909
0.000	1,039.744	752.723	0.000	752.723	0.000	0.000	287.020	287.020	0.000
0.000	1,764.825	0.000	0.000	0.000	0.000	0.000	1,764.825	676.759	1,088.066
0.000	13,320.376	8,203.721	0.000	8,203.721	0.000	0.000	5,116.655	4,823.954	292.701
0.000	600.000	1,774.574	0.000	1,774.574	0.000	1,174.574	0.000	0.000	0.000
0.000	1.493	0.000	0.000	0.000	0.000	0.000	1.493	1.493	0.000
0.000	516.547	0.000	0.000	0.000	0.000	0.000	516.547	201.545	315.002
0.000	31,305.708	18,053.831	0.000	18,053.831	0.000	0.000	13,251.877	11,373.816	1,878.060
0.000	28,957.513	9,963.663	0.000	9,963.663	0.000	0.000	18,993.850	11,215.852	7,777.997
0.000	1,354.118	1,030.847	0.000	1,030.847	0.000	0.000	323.270	323.270	0.000
0.000	0.000	9.396	0.000	9.396	9.396	0.000	0.000	0.000	0.000
0.000	2,224.695	0.000	0.000	0.000	0.000	0.000	2,224.695	1,301.374	923.321
0.000	9,075.652	2,600.725	0.000	2,600.725	0.000	0.000	6,474.927	2,852.401	3,622.526
0.000	2,428.184	0.000	0.000	0.000	0.000	0.000	2,428.184	947.714	1,480.470
0.000	1,665.896	0.000	0.000	0.000	0.000	0.000	1,665.896	644.317	1,021.579
0.000	**178,079.432**	**118,068.862**	**0.000**	**118,068.862**	**9.396**	**29,673.186**	**89,693.146**	**45,682.947**	**44,010.197**
		28,162.862		**28,162.862**		**28,162.862**			
		89,906.000		**89,906.000**		**1,510.324**			
2H	2I	2J	2K	2L	2M	2N	2O	2P	2Q

ion that was documented through Condition Subsequent 7. Due to the ongoing Safe Yield Recalculation process and related questions as to the proper method for lved, the 2015/16 allocation will be recalculated, if necessary, and credited, if necessary.

LEFT

INTENTIONALLY

BLANK

Assessment Year 2016-2017 (Production Year 2015-2016)

Pool 3 Local Excess Carry Over Storage Account Summary

	Excess Carry Over Account (ECO)					
	Beginning Balance	1.20% Storage Loss	Transfers To / (From)	From Supplemental Storage	From Under-Production	Ending Balance
Arrowhead Mtn Spring Water Co	0.000	0.000	0.000	0.000	0.000	0.000
Chino Hills, City Of	6,903.859	(82.846)	0.000	0.000	1,503.704	8,324.717
Chino, City Of	71,092.746	(853.112)	(10,000.000)	0.000	14,112.721	74,352.355
Cucamonga Valley Water District	43,946.340	(527.356)	1,436.791	0.000	0.000	44,855.775
Desalter Authority	0.000	0.000	0.000	0.000	0.000	0.000
Fontana Union Water Company	0.000	0.000	0.000	0.000	0.000	0.000
Fontana Water Company	2,360.394	(28.324)	0.000	0.000	614.141	2,946.211
Fontana, City Of	0.000	0.000	0.000	0.000	0.000	0.000
Golden State Water Company	1,192.173	(14.306)	0.000	0.000	0.000	1,177.867
Jurupa Community Services District	10,045.919	(120.551)	0.000	0.000	9,379.909	19,305.277
Marygold Mutual Water Company	623.219	(7.478)	0.000	0.000	0.000	615.741
Monte Vista Irrigation Company	5,941.374	(71.296)	0.000	0.000	1,088.066	6,958.144
Monte Vista Water District	8,179.884	(98.158)	100.000	0.000	292.701	8,474.427
Niagara Bottling, LLC	0.000	0.000	(600.000)	600.000	0.000	0.000
Nicholson Trust	1.107	(0.013)	0.000	0.000	0.000	1.094
Norco, City Of	3,309.352	(39.712)	0.000	0.000	315.002	3,584.642
Ontario, City Of	39,662.802	(475.953)	(2,116.821)	0.000	1,878.060	38,948.088
Pomona, City Of	29,552.570	(354.630)	(2,600.000)	0.000	7,777.997	34,375.937
San Antonio Water Company	1,901.366	(22.816)	(500.000)	0.000	0.000	1,378.550
San Bernardino, County of (Shooting	0.000	0.000	0.000	0.000	0.000	0.000
Santa Ana River Water Company	2,640.058	(31.680)	(99.000)	0.000	923.321	3,432.699
Upland, City Of	16,279.095	(195.349)	(768.404)	0.000	3,622.526	18,937.868
West End Consolidated Water Co	4,245.507	(50.946)	(792.941)	0.000	1,480.470	4,882.090
West Valley Water District	6,765.275	(81.183)	(500.000)	0.000	1,021.579	7,205.671
	254,643.040	**(3,055.709)**	**(16,440.375)**	**600.000**	**44,010.197**	**279,757.153**
	3A	3B	3C	3D	3E	3F

p3: 1) Hydraulic Control was achieved on February 1, 2016. Pursuant to Paragraph 7.4(b) of the Peace II Agreement, Storage Loss was changed from 2% to 0.07%. For this Assessment Package, the Storage Loss had been calculated at an average rate of 1.20% based on seven months at 2% and five months at 0.07%.
2) In October 2016, Niagara transferred 600.00 AF from their Supplemental Storage Account to offset their Production Year 2015/2016 overproduction obligations.

Assessment Year 2016-2017 (Production Year 2015-2016)

Pool 3 Local Supplemental Storage Account Summary

	Recharged Recycled Account					
	Beginning Balance	1.20% Storage Loss	Current Recharged Recycled	Transfer to ECO Account	Ending Balance	Beginning Balance
Arrowhead Mtn Spring Water Co	0.000	0.000	0.000	0.000	0.000	0.000
Chino Hills, City Of	5,264.138	(63.169)	1,096.900	0.000	6,297.869	4,861.202
Chino, City Of	6,103.937	(73.247)	1,301.860	0.000	7,332.550	1,067.520
Cucamonga Valley Water District	13,608.158	(163.297)	3,098.530	0.000	16,543.391	10,853.603
Desalter Authority	0.000	0.000	0.000	0.000	0.000	0.000
Fontana Union Water Company	0.000	0.000	0.000	0.000	0.000	0.000
Fontana Water Company	0.000	0.000	0.000	0.000	0.000	0.000
Fontana, City Of	0.000	0.000	0.000	0.000	0.000	0.000
Golden State Water Company	0.000	0.000	0.000	0.000	0.000	1,409.807
Jurupa Community Services District	3,490.798	(41.889)	915.800	0.000	4,364.709	0.000
Marygold Mutual Water Company	0.000	0.000	0.000	0.000	0.000	1,549.600
Monte Vista Irrigation Company	0.000	0.000	0.000	0.000	0.000	5,732.025
Monte Vista Water District	2,564.070	(30.768)	548.370	0.000	3,081.672	3,427.107
Niagara Bottling, LLC	0.000	0.000	0.000	0.000	0.000	0.000
Nicholson Trust	0.000	0.000	0.000	0.000	0.000	0.000
Norco, City Of	0.000	0.000	0.000	0.000	0.000	0.000
Ontario, City Of	23,821.355	(285.856)	5,034.290	0.000	28,569.789	8,170.733
Pomona, City Of	0.000	0.000	0.000	0.000	0.000	11,075.571
San Antonio Water Company	0.000	0.000	0.000	0.000	0.000	0.000
San Bernardino, County of (Shooting Park)	0.000	0.000	0.000	0.000	0.000	0.000
Santa Ana River Water Company	0.000	0.000	0.000	0.000	0.000	0.000
Upland, City Of	5,827.513	(69.930)	1,226.250	0.000	6,983.833	5,890.130
West End Consolidated Water Co	0.000	0.000	0.000	0.000	0.000	0.000
West Valley Water District	0.000	0.000	0.000	0.000	0.000	0.000
	60,679.969	**(728.156)**	**13,222.000**	**0.000**	**73,173.813**	**54,037.298**
	4A	4B	4C	4D	4E	4F

p4: 1) Hydraulic Control was achieved on February 1, 2016. Pursuant to Paragraph 7.4(b) of the Peace II Agreement, Storage Loss was changed from 2% to 0.07%. For 2) In October 2016, Niagara transferred 600.00 AF to offset their Production Year 2015/2016 overproduction obligations.

Quantified (Pre 7/1/2000) Account				New (Post 7/1/2000) Account					Combined
1.20% Storage Loss	Transfers To / (From)	Transfer to ECO Account	Ending Balance	Beginning Balance	1.20% Storage Loss	Transfers To / (From)	Transfer to ECO Account	Ending Balance	Ending Balance
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
(58.334)	0.000	0.000	4,802.868	0.000	0.000	0.000	0.000	0.000	11,100.737
(12.810)	0.000	0.000	1,054.710	1,955.492	(23.465)	0.000	0.000	1,932.027	10,319.287
(130.243)	0.000	0.000	10,723.360	647.463	(7.769)	0.000	0.000	639.694	27,906.445
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	213.491	(2.561)	100.007	0.000	310.937	310.937
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
(16.917)	0.000	0.000	1,392.890	58.057	(0.696)	0.000	0.000	57.361	1,450.251
0.000	0.000	0.000	0.000	999.146	(11.989)	0.000	0.000	987.157	5,351.866
(18.595)	0.000	0.000	1,531.005	97.049	(1.164)	0.000	0.000	95.885	1,626.890
(68.784)	0.000	0.000	5,663.241	328.000	(3.936)	0.000	0.000	324.064	5,987.305
(41.125)	0.000	0.000	3,385.982	2,152.762	(25.833)	0.000	0.000	2,126.929	8,594.583
0.000	0.000	0.000	0.000	2,699.953	(32.399)	0.000	(600.000)	2,067.554	2,067.554
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	97.818	(1.173)	0.000	0.000	96.645	96.645
(98.048)	0.000	0.000	8,072.685	4,879.057	(58.548)	0.000	0.000	4,820.509	41,462.983
(132.906)	0.000	0.000	10,942.665	1,583.224	(18.998)	0.000	0.000	1,564.226	12,506.891
0.000	0.000	0.000	0.000	1,102.194	(13.226)	92.750	0.000	1,181.718	1,181.718
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	488.283	(5.859)	0.000	0.000	482.424	482.424
(70.681)	0.000	0.000	5,819.449	0.000	0.000	0.000	0.000	0.000	12,803.282
0.000	0.000	0.000	0.000	459.307	(5.511)	0.000	0.000	453.796	453.796
0.000	0.000	0.000	0.000	312.319	(3.747)	0.000	0.000	308.572	308.572
(648.443)	**0.000**	**0.000**	**53,388.855**	**18,073.615**	**(216.874)**	**192.757**	**(600.000)**	**17,449.498**	**144,012.166**

73,173.813 + 17,449.498 = 90,623.311

Must not exceed 100,000 AF per Peace Agreeements I and II

4G	4H	4I	4J	4K	4L	4M	4N	4O	4P

this Assessment Package, the Storage Loss had been calculated at an average rate of 1.20% based on seven months at 2% and five months at 0.07%.

Assessment Year 2016-2017 (Production Year 2015-2016)

Pool 3 Other Storage and Replenishment Accounts Summary

Desalter Replenishment:

	Beginning Balance	Storage Loss	Transfers To	Transfers From	Ending Balance
Re-Operation Offset: Pre-Peace II Desalters	0.000	0.000	0.000	0.000	0.000
Re-Operation Offset: Peace II Expansion	174,536.755	0.000	0.000	(1,154.052)	173,382.703
Non-Ag Dedication	0.000	0.000	0.000	0.000	0.000
City of Chino Preemptive Replenishment:	1,416.470	0.000	0.000	0.000	1,416.470
City of Ontario Preemptive Replenishment:	3,322.247	0.000	0.000	0.000	3,322.247
Jurupa CSD Preemptive Replenishment:	2,360.783	0.000	0.000	0.000	2,360.783
Niagara Replenishment Purchase:	35.515	0.000	0.000	0.000	35.515
	5A	5B	5C	5D	5E

Storage and Recovery:

	Beginning Balance	**Storage Loss**	Transfers To	Transfers From	**Ending Balance**
MWD DYY / CUP	0.000	0.000	0.000	0.000	0.000
	5F	5G	5H	5I	5J

p5: 1) "Re-Operation Offset: Pre-Peace II Desalters" had an original beginning balance of 225,000.000 AF. The account will need adjustment following the current modeling and Safe Yield Redetermination work (i.e. Desalter Induced Recharge - DIR) and will be adjusted in the next Assessment Package. The 29,070 AF correction required by Condition Subsequent 7 is included. (See Appendix B)
2) "Re-Operation Offset: Peace II Expansion" had an original beginning balance of 175,000.000 AF. The "Transfer From" amount includes Expansion production for this year. The table shows information under existing rules. This will be adjusted if necessary following the Court's consideration of the 2015 SYRA.
3) There is no loss assessed on the native Basin water allocated to offset Desalter production as a result of Basin Reoperation as approved in the Peace II Agreement.
4) Chino, Ontario, and JCSD Preemptive Replenishment Agreement water is shown. Per the Agreements, no losses are deducted against these accounts.
5) "Non-Ag Dedication" was used in a prior Assessment Package to indicate Non-Ag Pool desalter dedication.
6: Niagara purchased Desalter Replenishment in FY 2015/16. Other parties have purchased or shown interest in purchasing Desalter Replenishment but did not remit funds to Watermaster by 6/30/2016.

Assessment Year 2016-2017 (Production Year 2015-2016)

Pool 3 Water Transaction Summary

	Water Transactions			
	Assigned Rights	General Transfer	Transfers (To) / From ECO Account	Total Water Transactions
Arrowhead Mtn Spring Water Co	20.412	0.000	0.000	20.412
Chino Hills, City Of	0.000	0.000	0.000	0.000
Chino, City Of	(10,000.000)	0.000	10,000.000	0.000
Cucamonga Valley Water District	4,936.791	9,985.682	(1,436.791)	13,485.682
Desalter Authority	0.000	0.000	0.000	0.000
Fontana Union Water Company	0.000	(9,985.682)	0.000	(9,985.682)
Fontana Water Company	15,145.761	0.000	0.000	15,145.761
Fontana, City Of	0.000	0.000	0.000	0.000
Golden State Water Company	117.941	0.000	0.000	117.941
Jurupa Community Services District	1,763.526	0.000	0.000	1,763.526
Marygold Mutual Water Company	0.000	16.000	0.000	16.000
Monte Vista Irrigation Company	30.855	0.000	0.000	30.855
Monte Vista Water District	784.049	212.678	(100.000)	896.727
Niagara Bottling, LLC	0.000	0.000	600.000	600.000
Nicholson Trust	(6.500)	0.000	0.000	(6.500)
Norco, City Of	0.000	0.000	0.000	0.000
Ontario, City Of	(2,116.822)	80.000	2,116.822	80.000
Pomona, City Of	(2,600.000)	219.678	2,600.000	219.678
San Antonio Water Company	(1,500.000)	0.000	500.000	(1,000.000)
San Bernardino, County of (Shooting Park)	0.000	0.000	0.000	0.000
Santa Ana River Water Company	(1,239.668)	31.000	99.000	(1,109.668)
Upland, City Of	956.596	160.678	768.404	1,885.678
West End Consolidated Water Co	(792.941)	0.000	792.941	0.000
West Valley Water District	(500.000)	15.000	500.000	15.000
	5,000.000	**735.034**	**16,440.376**	**22,175.410**
	6A	6B	6C	6D

p6: 1) Transfers in Column [6A] include annual water transfers/leases between Appropriators and/or from Appropriators to Watermaster for replenishment purposes. There were no transfers from Appropriative Pool Parties to Watermaster toward the replenishment obligation during this production year. Also included are the Exhibit "G" physical solution transfers from the Non-Ag Pool (See Pages 7C & 7D).
2) Transfers in Column [6B] include: the annual transfer of 10-percent of the Non-Ag OSY to the seven Appropriator Parties, as stated in the Peace II Agreement 9.2a; these are City of Ontario, City of Upland, Monte Vista Water District, City of Pomona, Marygold Mutual Water Co, West Valley Water District, and Santa Ana River Water Co.

Chino Basin Watermaster Asssessment Breakdown

2016-2017 Water Transaction Detail

Assessment Year 2016-2017 (Production Year 2015-2016)

Standard Transactions

To:	From:	Date of Submittal	Quantity	$ / Acre Feet	Total $	If 85/15 Rule Applies: 85%	15%	WM Pays
Cucamonga Valley Water District	Pomona, City Of Storage Account	5/3/2016	2,500.000	507.00	$1,267,500.00			Cucamonga Valley Water District
	San Antonio Water Company Storage Account	9/8/2015	500.000	510.00	$255,000.00	$216,750.00	$38,250.00	Cucamonga Valley Water District
	West Valley Water District Storage Account	4/25/2016	287.431	508.00	$146,014.95			Cucamonga Valley Water District
	West Valley Water District Storage Account	4/25/2016	212.569	508.00	$107,985.05	$91,787.29	$16,197.76	Cucamonga Valley Water District
Fontana Water Company	Chino, City Of Storage Account	5/3/2016	6,000.000	516.35	$3,098,100.00	$2,633,385.00	$464,715.00	Fontana Water Company
	*** Using blended rate for all 5/3/16 transactions (see page 7E). Original AF rate for this transaction was $517.90.*							
****SEE APPENDIX C***	Chino, City Of Storage Account	5/3/2016	4,000.000	516.35	$2,065,400.00	$1,755,590.00	$309,810.00	Fontana Water Company
	*** Using blended rate for all 5/3/16 transactions (see page 7E). Original AF rate for this transaction was $515.63.*							
	Nicholson Trust Annual Account	6/10/2016	6.500	517.65	$3,364.73			Fontana Water Company
	Ontario, City Of Storage Account	5/3/2016	3,500.000	516.35	$1,807,225.00	$1,536,141.25	$271,083.75	Fontana Water Company
	*** Using blended rate for all 5/3/16 transactions (see page 7E). Original AF rate for this transaction was $504.90.*							
	Upland, City Of Storage Account	5/3/2016	391.358	516.35	$202,077.70	$171,766.05	$30,311.66	Fontana Water Company
	*** Using blended rate for all 5/3/16 transactions (see page 7E). Original AF rate for this transaction was $550.00.*							
	Upland, City Of Storage Account	5/3/2016	608.642	516.35	$314,272.30			Fontana Water Company
	*** Using blended rate for all 5/3/16 transactions (see page 7E). Original AF rate for this transaction was $550.00.*							

Chino Basin Watermaster Asssessment Breakdown

2016-2017 Water Transaction Detail

Assessment Year 2016-2017 (Production Year 2015-2016)

Standard Transactions

To:	From:	Date of Submittal	Quantity	$ / Acre Feet	Total $	If 85/15 Rule Applies: 85%	15%	WM Pays
Golden State Water Company	West End Consolidated Water Co Storage Account	6/6/2016	67.941	49.00	$3,329.11			
	85/15 Rule does not apply -- method of utilizing West End shares.							
Jurupa Community Services District	Santa Ana River Water Company Annual Account	3/29/2016	1,299.000	508.00	$659,892.00			
	1200 AF from Annual Production Right, 99 AF from Excess Carry Over							
Monte Vista Water District	Pomona, City Of Storage Account	10/15/2015	100.000	0.00	$0.00			
	85/15 Rule does not apply. From storage to storage.							
Upland, City Of	San Antonio Water Company Annual Account	1/22/2016	1,000.000	222.16	$222,160.00			
	85/15 Rule does not apply -- method of utilizing SAWCO shares.							
	West End Consolidated Water Co Storage Account	6/6/2016	725.000	49.00	$35,525.00			
	85/15 Rule does not apply -- method of utilizing West End shares.							
			21,198.441		**$10,187,845.83**	**$6,405,419.59**	$1,130,368.16	

Chino Basin Watermaster Asssessment Breakdown

2016-2017 Water Transaction Detail

Assessment Year 2016-2017 (Production Year 2015-2016)

Exhibit G Transactions

To:	From:	Date of Submittal	Quantity	$ / Acre Feet	Total $	If 85/15 Rule Applies: 85%	15%	WM Pays
Watermaster (Exhibit G Non-Ag Transfers)	California Speedway Corp. (Auto Club Speedway) *Exhibit "G" water sale, sold from storage account.*	1/31/2016	-1,000.000					
	California Steel Industries, Inc. (CSI) *Exhibit "G" water sale, sold from storage account.*	1/31/2016	-2,500.000					
	NRG California South LP *Exhibit "G" water sale, sold from storage account.*	1/31/2016	-1,500.000					
Arrowhead Mtn Spring Water Co	Watermaster (Exhibit G Non-Ag Transfer) *Exhibit "G" Purchase*	3/1/2016	20.412	508.00	$10,369.30			
Cucamonga Valley Water District	Watermaster (Exhibit G Non-Ag Transfer) *Exhibit "G" Purchase. 85/15 Rule does not apply, Placed into storage.*	3/1/2016	967.180	508.00	$491,327.44			
Fontana Union Water Company	Watermaster (Exhibit G Non-Ag Transfer) *Exhibit "G" Purchase*	3/1/2016	469.611	508.00	$238,562.39			
Fontana Water Company	Watermaster (Exhibit G Non-Ag Transfer) *Exhibit "G" Purchase*	3/1/2016	639.261	508.00	$324,744.59	$276,032.90	$48,711.69	Fontana Water Company
Golden State Water Company	Watermaster (Exhibit G Non-Ag Transfer) *Exhibit "G" Purchase*	3/1/2016	50.000	508.00	$25,400.00	$21,590.00	$3,810.00	Golden State Water Company
Jurupa Community Services District	Watermaster (Exhibit G Non-Ag Transfer) *Exhibit "G" Purchase*	3/1/2016	464.526	508.00	$235,979.21			

Chino Basin Watermaster Asssessment Breakdown

2016-2017 Water Transaction Detail

Assessment Year 2016-2017 (Production Year 2015-2016)

Exhibit G Transactions

To:	From:	Date of Submittal	Quantity	$ / Acre Feet	Total $	If 85/15 Rule Applies: 85%	15%	WM Pays
Monte Vista Irrigation Company	Watermaster (Exhibit G Non-Ag Transfer) *Exhibit "G" Purchase*	3/1/2016	30.855	508.00	$15,674.34			
Monte Vista Water District	Watermaster (Exhibit G Non-Ag Transfer) *Exhibit "G" Purchase*	3/1/2016	684.049	508.00	$347,496.89			
Ontario, City Of	Watermaster (Exhibit G Non-Ag Transfer) *Exhibit "G" Purchase*	3/1/2016	1,383.178	508.00	$702,654.42			
Santa Ana River Water Company	Watermaster (Exhibit G Non-Ag Transfer) *Exhibit "G" Purchase*	3/1/2016	59.332	508.00	$30,140.66			
Upland, City Of	Watermaster (Exhibit G Non-Ag Transfer) *Exhibit "G" Purchase*	3/1/2016	231.596	508.00	$117,650.77			
			5,000.000		**$2,540,000.00**	**$297,622.90**	**$52,521.69**	

Total 15% Credits from all Transactions: **$1,182,889.85**

Chino Basin Watermaster Asssessment Breakdown

2016-2017 Water Transaction Detail

Assessment Year 2016-2017 (Production Year 2015-2016)

Applied Recurring Transactions:

From:	To:	Quantity	$ / Acre Feet	
Fontana Union Water Company Annual Account - Assigned Rights	Cucamonga Valley Water District Annual Account - Assigned Rights	All	0.00	*Transfer FUWC water transfer rights to CVWD.*
Fontana Union Water Company Annual Account - Transfer (To) / From	Cucamonga Valley Water District Annual Account - Transfer (To) / From	All	0.00	*Transfer FUWC water transfer rights to CVWD.*
Fontana Union Water Company Annual Account - 32,800 AF Early Transfer	Cucamonga Valley Water District Annual Account - Transfer (To) / From	All	0.00	*Transfer FUWC Ag Pool Reallocation Early Transfer to CVWD.*
Fontana Union Water Company Annual Account - Diff - Potential vs. Net	Cucamonga Valley Water District Annual Account - Transfer (To) / From	All	0.00	*Transfer FUWC Ag Pool Reallocation Difference (Potential vs. Net) to CVWD.*
Fontana Union Water Company Annual Account - Stormwater New Yield	Cucamonga Valley Water District Annual Account - Transfer (To) / From	All	0.00	*Transfer FUWC New Yield to CVWD.*
Fontana Union Water Company Annual Account - Assigned Share of Operating Safe Yield	Cucamonga Valley Water District Annual Account - Transfer (To) / From	All	0.00	*Transfer FUWC Share of Safe Yield to CVWD.*

**: Fontana Water Company had four Water Transactions on 5/3/2016. Because the cost per AF differ from one transaction to the next, a blended rate was used for all four transactions (see below for blended rate calculation):

From	AF	Per AF	Total $
City of Chino	6,000	517.90	3,107,400
City of Chino	4,000	515.63	2,062,520
City of Ontario	3,500	504.90	1,767,150
City of Upland	1,000	550.00	550,000
	14,500		7,487,070

5/13/16 Blended Rate: $516.35 ($7,487,070 / 14,500 AF)

1) The Water Transaction between Fontana Water Company and the City of Upland submitted on 5/3/2016 for the amount of 1,000 AF was split because the amount purchased exceeds what is required to satisfy overproduction; the 85/15 Rule only applies to the portion that satisfies overproduction per the direction of the Appropriative Pool on November 2, 2011.
2) The Water Transaction between Cucamonga Valley Water District and the West Valley Water District submitted on 4/25/2016 for the amount of 500 AF was split because the amount purchased exceeds what is required to satisfy overproduction; the 85/15 Rule only applies to the portion that satisfies overproduction per the direction of the Appropriative Pool on November 2, 2011.

Chino Basin Watermaster Asssessment Breakdown

2016-2017 Analysis of the Application of the 85/15 Rule to Water Transfers

Assessment Year 2016-2017 (Production Year 2015-2016)

To	(Over)/Under Production Excluding Water Transfer(s)	From	Date of Submittal	Transfer Quantity	Is Buyer an 85/15 Party?	Is Transfer Being Placed into Annual Account?	Is Purpose of Transfer to Utilize SAWCO or West End Shares?	Amount of Transfer Eligible for 85/15 Rule
Watermaster (Exhibit G Non-Ag Transfers)	0.000	California Speedway Corp. (Auto Club Speedway)	1/31/2016	1,000.000	No	No	No	0.000
		Exhibit "G" water sale, sold from storage account.						
		California Steel Industries, Inc. (CSI)	1/31/2016	2,500.000	No	No	No	0.000
		Exhibit "G" water sale, sold from storage account.						
		NRG California South LP	1/31/2016	1,500.000	No	No	No	0.000
		Exhibit "G" water sale, sold from storage account.						
Arrowhead Mtn Spring Water Co	(356.162)	Watermaster (Exhibit G Non-Ag Transfer)	3/1/2016	20.412	No	Yes	No	0.000
		Exhibit "G" Purchase						
Cucamonga Valley Water District	(712.569)	Watermaster (Exhibit G Non-Ag Transfer)	3/1/2016	967.180	Yes	No	No	0.000
		Exhibit "G" Purchase. 85/15 Rule does not apply, Placed into storage.						
		Pomona, City Of Storage Account	5/3/2016	2,500.000	Yes	Yes	No	0.000
		San Antonio Water Company Storage Account	9/8/2015	500.000	Yes	Yes	No	500.000
		West Valley Water District Storage Account	4/25/2016	212.569	Yes	Yes	No	212.569
		West Valley Water District Storage Account	4/25/2016	287.431	Yes	Yes	No	0.000
Fontana Union Water Company	0.000	Watermaster (Exhibit G Non-Ag Transfer)	3/1/2016	469.611	Yes	No	No	0.000
		Exhibit "G" Purchase						

Chino Basin Watermaster Asssessment Breakdown

2016-2017 Analysis of the Application of the 85/15 Rule to Water Transfers

Assessment Year 2016-2017 (Production Year 2015-2016)

To	(Over)/Under Production Excluding Water Transfer(s)	From	Date of Submittal	Transfer Quantity	Is Buyer an 85/15 Party?	Is Transfer Being Placed into Annual Account?	Is Purpose of Transfer to Utilize SAWCO or West End Shares?	Amount of Transfer Eligible for 85/15 Rule
Fontana Water Company	(14,530.619)	Watermaster (Exhibit G Non-Ag Transfer)	3/1/2016	639.261	Yes	Yes	No	639.261
		Exhibit "G" Purchase						
		Chino, City Of Storage Account	5/3/2016	4,000.000	Yes	Yes	No	4,000.000
		*** Using blended rate for all 5/3/16 transactions (see page 7E). Original AF rate for this transaction was $515.63.*						
		Chino, City Of Storage Account	5/3/2016	6,000.000	Yes	Yes	No	6,000.000
		*** Using blended rate for all 5/3/16 transactions (see page 7E). Original AF rate for this transaction was $517.90.*						
		Nicholson Trust Annual Account	6/10/2016	6.500	Yes	Yes	No	0.000
		Ontario, City Of Storage Account	5/3/2016	3,500.000	Yes	Yes	No	3,500.000
		*** Using blended rate for all 5/3/16 transactions (see page 7E). Original AF rate for this transaction was $504.90.*						
		Upland, City Of Storage Account	5/3/2016	608.642	Yes	Yes	No	0.000
		*** Using blended rate for all 5/3/16 transactions (see page 7E). Original AF rate for this transaction was $550.00.*						
		Upland, City Of Storage Account	5/3/2016	391.358	Yes	Yes	No	391.358
		*** Using blended rate for all 5/3/16 transactions (see page 7E). Original AF rate for this transaction was $550.00.*						
Golden State Water Company	(79.335)	Watermaster (Exhibit G Non-Ag Transfer)	3/1/2016	50.000	Yes	Yes	No	50.000
		Exhibit "G" Purchase						
		West End Consolidated Water Co Storage Account	6/6/2016	67.941	Yes	Yes	Yes	0.000
		85/15 Rule does not apply -- method of utilizing West End shares.						

Chino Basin Watermaster Asssessment Breakdown

2016-2017 Analysis of the Application of the 85/15 Rule to Water Transfers

Assessment Year 2016-2017 (Production Year 2015-2016)

To	(Over)/Under Production Excluding Water Transfer(s)	From	Date of Submittal	Transfer Quantity	Is Buyer an 85/15 Party?	Is Transfer Being Placed into Annual Account?	Is Purpose of Transfer to Utilize SAWCO or West End Shares?	Amount of Transfer Eligible for 85/15 Rule
Jurupa Community Services District	9,677.502	Watermaster (Exhibit G Non-Ag Transfer)	3/1/2016	464.526	Yes	Yes	No	0.000
		Exhibit "G" Purchase						
		Santa Ana River Water Company Annual Account	3/29/2016	1,299.000	Yes	Yes	No	0.000
		1200 AF from Annual Production Right, 99 AF from Excess Carry Over						
Monte Vista Irrigation Company	1,733.970	Watermaster (Exhibit G Non-Ag Transfer)	3/1/2016	30.855	Yes	Yes	No	0.000
		Exhibit "G" Purchase						
Monte Vista Water District	4,432.606	Watermaster (Exhibit G Non-Ag Transfer)	3/1/2016	684.049	Yes	Yes	No	0.000
		Exhibit "G" Purchase						
		Pomona, City Of Storage Account	10/15/2015	100.000	Yes	No	No	0.000
		85/15 Rule does not apply. From storage to storage.						
Ontario, City Of	13,251.877	Watermaster (Exhibit G Non-Ag Transfer)	3/1/2016	1,383.178	Yes	No	No	0.000
		Exhibit "G" Purchase						
Santa Ana River Water Company	3,365.363	Watermaster (Exhibit G Non-Ag Transfer)	3/1/2016	59.332	Yes	Yes	No	0.000
		Exhibit "G" Purchase						

Chino Basin Watermaster Asssessment Breakdown

2016-2017 Analysis of the Application of the 85/15 Rule to Water Transfers

Assessment Year 2016-2017 (Production Year 2015-2016)

To	(Over)/Under Production Excluding Water Transfer(s)	From	Date of Submittal	Transfer Quantity	Is Buyer an 85/15 Party?	Is Transfer Being Placed into Annual Account?	Is Purpose of Transfer to Utilize SAWCO or West End Shares?	Amount of Transfer Eligible for 85/15 Rule
Upland, City Of	4,749.927	Watermaster (Exhibit G Non-Ag Transfer)	3/1/2016	231.596	Yes	No	No	0.000
		Exhibit "G" Purchase						
		San Antonio Water Company Annual Account	1/22/2016	1,000.000	Yes	Yes	Yes	0.000
		85/15 Rule does not apply -- method of utilizing SAWCO shares.						
		West End Consolidated Water Co Storage Account	6/6/2016	725.000	Yes	Yes	Yes	0.000
		85/15 Rule does not apply -- method of utilizing West End shares.						

p8: 1) The column titled "(Over)/Under Production Excluding Water Transfer(s)" excludes Exhibit "G" water sales and water transfers between Appropriators and to Watermaster (if any), but includes the "10% Non-Ag Haircut" water to the seven Appropriators. ([2B]+[2C]+[2D]+[2E]+[6B]-[2J])
2) The Water Transaction between Fontana Water Company and the City of Upland submitted on 5/3/2016 for the amount of 1,000 AF had been split because the amount purchased exceeds what is required to satisfy overproduction; the 85/15 Rule only applies to the portion that satisfies overproduction per the direction of the Appropriative Pool on November 2, 2011.
3) The Water Transaction between Cucamonga Valley Water District and the West Valley Water District submitted on 4/25/2016 for the amount of 500 AF had been split because the amount purchased exceeds what is required to satisfy overproduction; the 85/15 Rule only applies to the portion that satisfies overproduction per the direction of the Appropriative Pool on November 2, 2011.

Assessment Year 2016-2017 (Production Year 2015-2016)

Watermaster Replenishment Calculation

Cost of Replenishment Water per acre foot:	
Watermaster Replenishment Cost	$594.00
Projected Spreading - OCWD Connection Fee	$2.00
Projected Spreading - IEUA Surcharge	$0.00
Pre-purchased Credit	$0.00
Total Replenishment Cost per acre foot	**$596.00**

Replenishment Obligation:	**AF @ $596.00**	15%	85%	**Total**
Appropriative - 100	1,510.324			$900,153.10
Appropriative - 15/85	9.396	$840.00	$4,760.01	$5,600.02
Non-Agricultural - 100	31.189			$18,588.64
	1,550.909			**$924,341.76**

Company	AF Production and Exchanges	85/15 Producers	Percent of Total 85/15 Producers	15% Replenishment Assessment	15% Water Transaction Debits
Arrowhead Mtn Spring Water Co	356.162			-	-
Chino Hills, City Of	1,548.281	1,548.281	2.009%	$16.88	$23,766.84
Chino, City Of	0.000	0.000	0.000%	$0.00	$0.00
Cucamonga Valley Water District	20,534.740	20,534.740	26.648%	$223.84	$315,217.87
Desalter Authority	28,162.862			-	-
Fontana Union Water Company	0.000	0.000	0.000%	-	$0.00
Fontana Water Company	15,317.165	15,317.165	19.877%	$166.97	$235,125.65
Fontana, City Of	0.000			-	-
Golden State Water Company	807.419	807.419	1.048%	$8.80	$12,394.26
Jurupa Community Services Distric	8,952.753	8,952.753	11.618%	$97.59	$137,428.95
Marygold Mutual Water Company	752.723			-	-
Monte Vista Irrigation Company	0.000	0.000	0.000%	-	$0.00
Monte Vista Water District	8,203.721	8,203.721	10.646%	$89.43	$125,930.96
Niagara Bottling, LLC	1,774.574			-	-
Nicholson Trust	0.000	0.000	0.000%	-	$0.00
Norco, City Of	0.000	0.000	0.000%	-	$0.00
Ontario, City Of	18,053.831	18,053.831	23.429%	$196.80	$277,134.76
Pomona, City Of	9,963.663			-	-
San Antonio Water Company	1,030.847	1,030.847	1.338%	$11.24	$15,823.98
San Bernardino, County of (Shootin	9.396	9.396	0.012%	$0.10	$144.23
Santa Ana River Water Company	0.000	0.000	0.000%	-	$0.00
Upland, City Of	2,600.725	2,600.725	3.375%	$28.35	$39,922.35
West End Consolidated Water Co	0.000	0.000	0.000%	-	$0.00
West Valley Water District	0.000	0.000	0.000%	-	$0.00
*** Fee assessment total is 15% of Appropriative 15/85 replenishment obligation*	**118,068.862**	**77,058.878**	**	**$840.00**	**$1,182,889.85**
				Transfers to **1G**	*Transfers to* **1K**

p9: 1) The "Watermaster Replenishment Cost" listed is MWD's 2016 Tier 1 Full Service Untreated Rate.
2) There is no "Projected Spreading - IEUA Surcharge"; an RTS charge will be applied for Assessment Years 16/17 and 17/18 over a period of ten years beginning with Assessment Year 18/19.
3) The "15% Water Transaction Debits" total is the "Total 15% Credits from all Transactions" from Page 7D.

Assessment Year 2016-2017 (Production Year 2015-2016)

Watermaster Cumulative Unmet Replenishment Obligation (CURO)

Remaining Replenishment Obligation:	AF
Appropriative - 100	3,781.477
Appropriative - 15/85	38.839
Non-Agricultural - 100	168.345
	3,988.661

Replenishment Rate	
2016 Rate	$596.00
2015 Rate	$611.00

Pool 3 Appropriative

Company	Outstanding Obligation (AF)	Fund Balance ($)	Outstanding Obligation ($)	*AF Production and Exchanges*	85/15 Producers	Percent	15%	85%	100%	Total
Arrowhead Mtn Spring Water Co	1,135.278	$695,443.60	($18,817.91)	*356.162*					($18,817.91)	($18,817.91)
Chino Hills, City Of	0.000	$0.00	$0.00	*1,548.281*	1,548.281	2.009%	($1.94)	$0.00		($1.94)
Chino, City Of	0.000	$0.00	$0.00	*0.000*	0.000	0.000%	$0.00	$0.00		$0.00
Cucamonga Valley Water District	0.000	$0.00	$0.00	*20,534.740*	20,534.740	26.648%	($25.73)	$0.00		($25.73)
Desalter Authority	0.000	$0.00	$0.00	*28,162.862*						$0.00
Fontana Union Water Company	0.000	$0.00	$0.00	*0.000*	0.000	0.000%	$0.00	$0.00		$0.00
Fontana Water Company	0.000	$0.00	$0.00	*15,317.165*	15,317.165	19.877%	($19.19)	$0.00		($19.19)
Fontana, City Of	0.000	$0.00	$0.00	*0.000*					$0.00	$0.00
Golden State Water Company	0.000	$0.00	$0.00	*807.419*	807.419	1.048%	($1.01)	$0.00		($1.01)
Jurupa Community Services District	0.000	$0.00	$0.00	*8,952.753*	8,952.753	11.618%	($11.22)	$0.00		($11.22)
Marygold Mutual Water Company	78.655	$48,182.14	($1,303.76)	*752.723*					($1,303.76)	($1,303.76)
Monte Vista Irrigation Company	0.000	$0.00	$0.00	*0.000*	0.000	0.000%	$0.00	$0.00		$0.00
Monte Vista Water District	0.000	$0.00	$0.00	*8,203.721*	8,203.721	10.646%	($10.28)	$0.00		($10.28)
Niagara Bottling, LLC	2,567.544	$1,572,814.82	($42,558.60)	*1,774.574*					($42,558.60)	($42,558.60)
Nicholson Trust	0.000	$0.00	$0.00	*0.000*	0.000	0.000%	$0.00	$0.00		$0.00
Norco, City Of	0.000	$0.00	$0.00	*0.000*	0.000	0.000%	$0.00	$0.00		$0.00
Ontario, City Of	0.000	$0.00	$0.00	*18,053.831*	18,053.831	23.429%	($22.62)	$0.00		($22.62)
Pomona, City Of	0.000	$0.00	$0.00	*9,963.663*					$0.00	$0.00
San Antonio Water Company	0.000	$0.00	$0.00	*1,030.847*	1,030.847	1.338%	($1.29)	$0.00		($1.29)
San Bernardino, County of (Shooting Par	38.839	$23,791.80	($643.76)	*9.396*	9.396	0.012%	($0.01)	($547.19)		($547.20)
Santa Ana River Water Company	0.000	$0.00	$0.00	*0.000*	0.000	0.000%	$0.00	$0.00		$0.00
Upland, City Of	0.000	$0.00	$0.00	*2,600.725*	2,600.725	3.375%	($3.26)	$0.00		($3.26)
West End Consolidated Water Co	0.000	$0.00	$0.00	*0.000*	0.000	0.000%	$0.00	$0.00		$0.00
West Valley Water District	0.000	$0.00	$0.00	*0.000*	0.000	0.000%	$0.00	$0.00		$0.00
Pool 3 Appropriative Total	**3,820.316**	**$2,340,232.36**	**($63,324.02)**	***118,068.862***	**77,058.878**	**	**($96.56)**	**($547.19)**	**($62,680.27)**	**($63,324.02)**

Assessment Year 2016-2017 (Production Year 2015-2016)

Watermaster Cumulative Unmet Replenishment Obligation (CURO)

Remaining Replenishment Obligation:	AF
Appropriative - 100	3,781.477
Appropriative - 15/85	38.839
Non-Agricultural - 100	168.345
	3,988.661

Replenishment Rate	
2016 Rate	$596.00
2015 Rate	$611.00

Pool 2 Non-Agricultural

Company	Outstanding Obligation (AF)	Fund Balance ($)	Outstanding Obligation ($)
Ameron International Corp.	0.000	$0.00	$0.00
Aqua Capital Management LP	57.471	$35,205.33	($952.61)
California Speedway Corp. (Auto Club Sp	0.000	$0.00	$0.00
California Steel Industries, Inc. (CSI)	0.000	$0.00	$0.00
Calmat Co., a Division of Vulcan Material	0.000	$0.00	$0.00
CCG Ontario, LLC	0.000	$0.00	$0.00
General Electric Co. (GE)	0.004	$2.45	($0.07)
Hamner Park Associates (Swan Lake M	0.000	$0.00	$0.00
Kaiser Ventures, Inc.	0.000	$0.00	$0.00
KCO, LLC / The Koll Company	0.000	$0.00	$0.00
Loving Savior Of The Hills Lutheran Chur	0.000	$0.00	$0.00
Monte Vista Water District (Non-Ag)	0.000		$0.00
NRG California South LP	0.000	$0.00	$0.00
Ontario, City of (Non-Ag)	0.000	$0.00	$0.00
Praxair, Inc.	0.000	$0.00	$0.00
Riboli Family / San Antonio Winery	28.812	$17,649.53	($477.58)
San Bernardino, County of (Chino Airport	0.000	$0.00	$0.00
Southern California Edison Co. (SCE)	0.000	$0.00	$0.00
Southern Service Co. (Angelica)	62.233	$38,122.42	($1,031.55)
Space Center Mira Loma, Inc.	0.000	$0.00	$0.00
Sunkist Growers, Inc.	0.000	$0.00	$0.00
TAMCO	19.825	$12,144.31	($328.61)
West Venture Development Co.	0.000	$0.00	$0.00
Pool 2 Non-Agricultural Total	**168.345**	**$103,124.04**	**($2,790.42)**

Assessment Year 2016-2017 (Production Year 2015-2016)

Watermaster Cumulative Unmet Replenishment Obligation (CURO)

Remaining Replenishment Obligation:	AF
Appropriative - 100	3,781.477
Appropriative - 15/85	38.839
Non-Agricultural - 100	168.345
	3,988.661

Replenishment Rate	
2016 Rate	$596.00
2015 Rate	$611.00

p10: 1) The Appropriative and Non-Ag Pools Outstanding Obligations from the previous three FYs are: 1,036.121 AF, 1,234.827 AF, and 1,717.713 AF; 3,820.316 AF for Appropriative Pool, and 168.345 AF for Non-Ag Pool; a total of 3,988.661 AF. The financial Outstanding Obligations are reconciled on these two pages.
2) Fund Balance is maintained on a spreadsheet by Watermaster.
3) Outstanding Obligation is calculated by multiplying Outstanding Obligation (AF) by the current rate, reduced by the Fund Balance.
4) There is no IEUA Surcharge in the 2016 Rate; an RTS charge will be applied for Assessment Years 16/17 and 17/18 over a period of ten years beginning with Assessment Year 18/19.

Chino Basin Watermaster Asssessment Breakdown

2016-2017 Land Use Conversion Summary

Assessment Year 2016-2017 (Production Year 2015-2016)

AGRICULTURAL POOL SUMMARY IN ACRE FEET

Agricultural Pool Safe Yield	82,800.000
Agricultural Total Pool Production	(26,167.031)
Early Transfer	(32,800.000)
Total Conversions	(27,450.188)
Under(Over) Production:	**(3,617.219)**

		Acres Converted @ 1.3 af/ac		Total Prior to Peace Agrmt Converted AF	Acres Converted @ 2.0 af/ac		Total Land Use Conversions Acre-Feet
	Prior Converted	Acres	Acre Feet		Acres	Acre Feet	
Chino Hills, City Of	0.000	670.266	871.346	871.346	175.714	351.428	1,222.774
Chino, City Of	196.235	1,454.750	1,891.175	2,087.410	3,111.054	6,222.108	8,309.518
Cucamonga Valley Water District	0.000	460.280	598.364	598.364	0.000	0.000	598.364
Fontana Water Company	0.000	0.000	0.000	0.000	417.000	834.000	834.000
Jurupa Community Services District	0.000	2,756.920	3,583.996	3,583.996	5,308.858	10,617.716	14,201.712
Monte Vista Water District	0.000	28.150	36.595	36.595	15.510	31.020	67.615
Ontario, City Of	209.400	527.044	685.157	894.557	660.824	1,321.648	2,216.205
	405.635	**5,897.410**	**7,666.633**	**8,072.268**	**9,688.960**	**19,377.920**	27,450.188

p11: "Agricultural Total Pool Production" includes Voluntary Agreements between Appropriators and Agricultural Pool Parties.

Assessment Year 2016-2017 (Production Year 2015-2016)

Pool 3 Agricultural Pool Reallocation Summary

		Reallocation of Agricutural Pool Safe Yield					
	% Share of Operating Safe Yield	32,800 AF Early Transfer	Land Use Conver-sions	Potential for Reallocation (AF)	*Percent of Ag Pool Reallocation*	Difference: Potential vs. Net	Net Ag Pool Reallocation
Arrowhead Mtn Spring Water Co	*0.000%*	0.000	0.000	0.000	*0.000%*	0.000	0.000
Chino Hills, City Of	*3.851%*	1,263.128	1,222.774	2,485.902	*4.126%*	(149.245)	2,336.657
Chino, City Of	*7.357%*	2,413.096	8,309.518	10,722.614	*17.797%*	(643.750)	10,078.864
Cucamonga Valley Water District	*6.601%*	2,165.128	598.364	2,763.492	*4.587%*	(165.911)	2,597.581
Desalter Authority	*0.000%*	0.000	0.000	0.000	*0.000%*	0.000	0.000
Fontana Union Water Company	*11.657%*	3,823.496	0.000	3,823.496	*6.346%*	(229.550)	3,593.946
Fontana Water Company	*0.002%*	0.656	834.000	834.656	*1.385%*	(50.110)	784.546
Fontana, City Of	*0.000%*	0.000	0.000	0.000	*0.000%*	0.000	0.000
Golden State Water Company	*0.750%*	246.000	0.000	246.000	*0.408%*	(14.769)	231.231
Jurupa Community Services District	*3.759%*	1,232.952	14,201.712	15,434.664	*25.618%*	(926.645)	14,508.019
Marygold Mutual Water Company	*1.195%*	391.960	0.000	391.960	*0.651%*	(23.532)	368.428
Monte Vista Irrigation Company	*1.234%*	404.752	0.000	404.752	*0.672%*	(24.300)	380.452
Monte Vista Water District	*8.797%*	2,885.416	67.615	2,953.031	*4.901%*	(177.290)	2,775.741
Niagara Bottling, LLC	*0.000%*	0.000	0.000	0.000	*0.000%*	0.000	0.000
Nicholson Trust	*0.007%*	2.296	0.000	2.296	*0.004%*	(0.138)	2.158
Norco, City Of	*0.368%*	120.704	0.000	120.704	*0.200%*	(7.247)	113.457
Ontario, City Of	*20.742%*	6,803.376	2,216.205	9,019.581	*14.970%*	(541.505)	8,478.076
Pomona, City Of	*20.454%*	6,708.912	0.000	6,708.912	*11.135%*	(402.781)	6,306.131
San Antonio Water Company	*2.748%*	901.344	0.000	901.344	*1.496%*	(54.114)	847.230
San Bernardino, County of (Shooting	*0.000%*	0.000	0.000	0.000	*0.000%*	0.000	0.000
Santa Ana River Water Company	*2.373%*	778.344	0.000	778.344	*1.292%*	(46.729)	731.615
Upland, City Of	*5.202%*	1,706.256	0.000	1,706.256	*2.832%*	(102.438)	1,603.818
West End Consolidated Water Co	*1.728%*	566.784	0.000	566.784	*0.941%*	(34.028)	532.756
West Valley Water District	*1.175%*	385.400	0.000	385.400	*0.640%*	(23.138)	362.262
	100.000%	**32,800.000**	**27,450.188**	**60,250.188**	***100.000%***	**(3,617.220)**	**56,632.968**
	12A	12B	12C	12D	12E	12F	12G

Assessment Year 2016-2017 (Production Year 2015-2016)

Pool 2 Assessment Fee Summary

		Non-Agricultural Pool		Replenishment Assessments				
	AF Production	$16.23 AF/Admin	$39.95 AF/OBMP	*AF Exceeding Annual Right*	$596.00 Per AF	CURO Adjustment	Other Adjustments	Total Assessments Due
Ameron International Corp.	*0.000*	0.00	0.00	*0.000*	0.00	0.00	0.00	0.00
Aqua Capital Management LP	*0.000*	0.00	0.00	*0.000*	0.00	(952.61)	0.00	(952.61)
California Speedway Corp. (Auto Club Speedway)	*299.502*	4,860.92	11,965.10	*0.000*	0.00	0.00	0.00	16,826.02
California Steel Industries, Inc. (CSI)	*1,187.201*	19,268.27	47,428.68	*0.000*	0.00	0.00	0.00	66,696.95
Calmat Co., a Division of Vulcan Materials Co.	*0.000*	0.00	0.00	*0.000*	0.00	0.00	0.00	0.00
CCG Ontario, LLC	*0.000*	0.00	0.00	*0.000*	0.00	0.00	0.00	0.00
General Electric Co. (GE)	*0.058*	0.94	2.32	*0.057*	33.97	(0.07)	0.00	37.16
Hamner Park Associates (Swan Lake MHP)	*264.914*	4,299.55	10,583.31	*0.000*	0.00	0.00	0.00	14,882.87
Monte Vista Water District (Non-Ag)	*12.581*	204.19	502.61	*0.000*	0.00	0.00	0.00	706.80
NRG California South LP	*204.439*	3,318.04	8,167.34	*0.000*	0.00	0.00	0.00	11,485.38
Ontario, City of (Non-Ag)	*1,235.830*	20,057.52	49,371.41	*0.000*	0.00	0.00	0.00	69,428.93
Praxair, Inc.	*0.000*	0.00	0.00	*0.000*	0.00	0.00	0.00	0.00
Riboli Family / San Antonio Winery	*3.952*	64.14	157.88	*3.952*	2,355.39	(477.58)	0.00	2,099.84
San Bernardino, County of (Chino Airport)	*43.133*	700.05	1,723.16	*0.000*	0.00	0.00	0.00	2,423.21
Southern California Edison Co. (SCE)	*0.000*	0.00	0.00	*0.000*	0.00	0.00	0.00	0.00
Southern Service Co. (Angelica)	*27.553*	447.19	1,100.74	*10.643*	6,343.23	(1,031.55)	0.00	6,859.60
Space Center Mira Loma, Inc.	*93.708*	1,520.88	3,743.63	*0.000*	0.00	0.00	0.00	5,264.51
TAMCO	*30.037*	487.50	1,199.98	*16.537*	9,856.05	(328.61)	0.00	11,214.92
West Venture Development Co.	*0.000*	0.00	0.00	*0.000*	0.00	0.00	0.00	0.00
	3,402.908	**55,229.19**	**135,946.17**	***31.189***	**18,588.64**	**(2,790.42)**	**0.00**	**206,973.58**
	13A	13B	13C	13D	13E	13F	13G	13H

p13: There is no IEUA Surcharge; an RTS charge will be applied for Assessment Years 16/17 and 17/18 over a period of ten years beginning with Assessment Year 18/19.

Assessment Year 2016-2017 (Production Year 2015-2016)

Pool 2 Water Production Summary

	Percent of Safe Yield	Carryover Beginning Balance	Prior Year Adjust-ments	Assigned Share of Safe Yield (AF)	Water Transaction Activity	Other Adjust-ments	Annual Production Right	Actual Fiscal Year Production	Net Over Production	Under Production Balances		
										Total Under-Produced	Carryover: Next Year Begin Bal	To Local Storage Account
Ameron International Corp.	1.127%	82.858	0.000	82.858	(8.286)	0.000	157.430	0.000	0.000	157.430	82.858	74.572
Aqua Capital Management LP	0.000%	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
California Speedway Corp. (Auto Cl	13.605%	1,000.000	0.000	1,000.000	(100.000)	0.000	1,900.000	299.502	0.000	1,600.498	1,000.000	600.498
California Steel Industries, Inc. (CSI	21.974%	1,615.137	0.000	1,615.137	(161.513)	0.000	3,068.761	1,187.201	0.000	1,881.560	1,615.137	266.423
Calmat Co., a Division of Vulcan Ma	0.000%	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CCG Ontario, LLC	0.000%	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
General Electric Co. (GE)	0.000%	0.000	0.000	0.000	0.000	0.000	0.000	0.058	0.057	0.000	0.000	0.000
Hamner Park Associates (Swan Lak	6.316%	464.240	0.000	464.240	(46.424)	0.000	882.056	264.914	0.000	617.142	464.240	152.902
Monte Vista Water District (Non-Ag)	0.680%	0.000	0.000	50.000	(5.000)	0.000	45.000	12.581	0.000	32.418	32.418	0.000
NRG California South LP	12.986%	954.540	0.000	954.540	(95.454)	0.000	1,813.626	204.439	0.000	1,609.187	954.540	654.646
Ontario, City of (Non-Ag)	39.601%	2,627.807	0.000	2,910.788	(291.079)	0.000	5,247.516	1,235.830	0.000	4,011.685	2,910.788	1,100.897
Praxair, Inc.	0.014%	1.000	0.000	1.000	(0.100)	0.000	1.900	0.000	0.000	1.900	1.000	0.899
Riboli Family / San Antonio Winery	0.000%	0.000	0.000	0.000	0.000	0.000	0.000	3.952	3.952	0.000	0.000	0.000
San Bernardino, County of (Chino A	1.821%	76.937	0.000	133.870	(13.387)	0.000	197.420	43.133	0.000	154.286	133.870	20.415
Southern California Edison Co. (SC	0.000%	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Southern Service Co. (Angelica)	0.256%	0.000	0.000	18.789	(1.879)	0.000	16.910	27.553	10.643	0.000	0.000	0.000
Space Center Mira Loma, Inc.	1.417%	0.003	0.000	104.121	(10.412)	0.000	93.711	93.708	0.000	0.003	0.003	0.000
TAMCO	0.204%	0.000	0.000	15.000	(1.500)	0.000	13.500	30.037	16.537	0.000	0.000	0.000
West Venture Development Co.	0.000%	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	100.00%	**6,822.522**	**0.000**	**7,350.343**	**(735.034)**	**0.000**	**13,437.830**	**3,402.908**	**31.189**	**10,066.109**	**7,194.854**	**2,871.252**
	14A	14B	14C	14D	14E	14F	14G	14H	14I	14J	14K	14L

p14: 1) Transfers in Column [14E] include the annual transfer of 10 percent of the Non-Ag Safe Yield to the seven Appropriator Parties, as stated in the Peace II Agreement, and also the Exhibit "G" physical solution transfers to the Appropriative Pool. (See Pages 7C & 7D, and Appendix D)
2) Column [14H], "Actual Fiscal Year Production," includes Assignments between Appropriators and Non-Ag Pool Parties.

Assessment Year 2016-2017 (Production Year 2015-2016)

Pool 2 Local Storage Account Summary

	Local Storage Account			
	Beginning Balance	1.20% Storage Loss	Transfers To / (From)	Ending Balance
Ameron International Corp.	438.773	(5.265)	74.572	508.080
Aqua Capital Management LP	0.000	0.000	0.000	0.000
California Speedway Corp. (Auto Club Speedway)	1,081.196	(12.974)	(399.502)	668.720
California Steel Industries, Inc. (CSI)	3,880.468	(46.565)	(2,233.577)	1,600.326
Calmat Co., a Division of Vulcan Materials Co.	5.072	(0.060)	0.000	5.012
CCG Ontario, LLC	0.000	0.000	0.000	0.000
General Electric Co. (GE)	0.000	0.000	0.000	0.000
Hamner Park Associates (Swan Lake MHP)	1,184.018	(14.208)	152.902	1,322.712
Monte Vista Water District (Non-Ag)	0.000	0.000	0.000	0.000
NRG California South LP	2,670.309	(32.043)	(845.354)	1,792.912
Ontario, City of (Non-Ag)	2,905.004	(34.860)	1,100.897	3,971.041
Praxair, Inc.	59.846	(0.718)	0.899	60.027
Riboli Family / San Antonio Winery	0.000	0.000	0.000	0.000
San Bernardino, County of (Chino Airport)	0.000	0.000	20.415	20.415
Southern California Edison Co. (SCE)	0.000	0.000	0.000	0.000
Southern Service Co. (Angelica)	0.000	0.000	0.000	0.000
Space Center Mira Loma, Inc.	0.000	0.000	0.000	0.000
TAMCO	0.000	0.000	0.000	0.000
West Venture Development Co.	0.000	0.000	0.000	0.000
	12,224.686	**(146.693)**	**(2,128.748)**	**9,949.245**
	15A	15B	15C	15D

p15: 1) Hydraulic Control was achieved on February 1, 2016. Pursuant to Paragraph 7.4(b) of the Peace II Agreement, Storage Loss was changed from 2% to 0.07%. For this Assessment Package, the Storage Loss had been calculated at an average rate of 1.20% based on seven months at 2% and five months at 0.07%.
2) Column [15C] includes the Exhibit "G" physical solution transfers to the Appropriative Pool. (See Pages 7C & 7D)

Assessment Year 2016-2017 (Production Year 2015-2016)

Appendix A: Pool 3 Water Production Detail

	Physical Production	Voluntary Agreements (w/ Ag)	Assignments (w/ Non-Ag)	Other Adjustments	Actual FY Production (Assmnt Pkg Column 2J)
Arrowhead Mtn Spring Water Co	356.162	0.000	0.000	0.000	356.162
Chino Hills, City Of	1,633.459	(85.178)	0.000	0.000	1,548.281
Chino, City Of	5,009.976	(5,488.140)	(43.133)	521.297	0.000
Cucamonga Valley Water District	20,537.150	0.000	0.000	(2.410)	20,534.740
Desalter Authority	28,190.610	0.000	0.000	(27.748)	28,162.862
Fontana Union Water Company	0.000	0.000	0.000	0.000	0.000
Fontana Water Company	15,317.165	0.000	0.000	0.000	15,317.165
Fontana, City Of	0.000	0.000	0.000	0.000	0.000
Golden State Water Company	807.419	0.000	0.000	0.000	807.419
Jurupa Community Services District	9,283.627	0.000	(358.622)	27.748	8,952.753
Marygold Mutual Water Company	752.723	0.000	0.000	0.000	752.723
Metropolitan Water District	0.000	0.000	0.000	0.000	0.000
Monte Vista Irrigation Company	0.000	0.000	0.000	0.000	0.000
Monte Vista Water District	8,358.319	(117.688)	0.000	(36.910)	8,203.721
Niagara Bottling, LLC	1,774.574	0.000	0.000	0.000	1,774.574
Nicholson Trust	0.000	0.000	0.000	0.000	0.000
Norco, City Of	0.000	0.000	0.000	0.000	0.000
Ontario, City Of	22,849.257	(3,559.596)	(1,235.830)	0.000	18,053.831
Pomona, City Of	9,963.663	0.000	0.000	0.000	9,963.663
San Antonio Water Company	1,030.847	0.000	0.000	0.000	1,030.847
San Bernardino, County of (Shooting	9.396	0.000	0.000	0.000	9.396
Santa Ana River Water Company	0.000	0.000	0.000	0.000	0.000
Upland, City Of	2,600.725	0.000	0.000	0.000	2,600.725
West End Consolidated Water Co	0.000	0.000	0.000	0.000	0.000
West Valley Water District	0.000	0.000	0.000	0.000	0.000
	128,475.072	**(9,250.602)**	**(1,637.585)**	**481.977**	**118,068.862**
Less Desalter Authority Production					**28,162.862**
Total Less Desalter Authority Production					**89,906.000**

Note: Other Adjustments include water provided to another Appropriator, pump-to-waste that has been captured in a recharge basin, and ASR injections. The volume noted for City of Chino is an adjustment made to keep the City's Actual Production from being a negative number.

Assessment Package Appendix B

Desalter Replenishment Accounting, Shortfall Deducted from the Pre-Peace II Desalters Re-Operation Account[1]

Per Peace II Agreement, Section 6.2 (PIIA, 6.2)

(Acre-Feet)

Production Year	Desalter Production			Desalter Replenishment									Residual Replenishment Obligation[5, 8, 9]
									Controlled Overdraft / Re-Op, PIIA, 6.2(a)(vi)				
	Pre-Peace II Desalter Production	Peace II Desalter Expansion Production[2]	Total	Desalter (aka Kaiser) Account PIIA, 6.2(a)(i)	Paragraph 31 Settlement Agreements Dedication[3] PIIA, 6.2(a)(ii)	Desalter Induced Recharge[4] (DIR) PIIA, 6.2(a)(iii)	"Leave Behind" Losses PIIA, 6.2(a)(iv)	Safe Yield Contributed by Parties PIIA, 6.2(a)(v)	Allocation to Pre-Peace II Desalters[5]	Allocation for Peace II Desalter Expansion[6]	Balance	Non-Ag OBMP Assessment (10% Haircut)[7] PIIA, 6.2(b)(i)	
2001	7,989	0	7,989	3,995	0	0	0	0	0	0	0	0	3,995
2002	9,458	0	9,458	4,729	0	0	0	0	0	0	0	0	4,729
2003	10,439	0	10,439	5,219	0	0	0	0	0	0	0	0	5,219
2004	10,605	0	10,605	5,303	0	0	0	0	0	0	0	0	5,303
2005	9,854	0	9,854	4,927	0	0	0	0	0	0	0	0	4,927
2006	16,476	0	16,476	11,579	0	0	0	0	0	0	400,000	0	4,897
2007	26,356	0	26,356	608	4,273	0	0	0	21,475	0	378,525	0	0
2008	26,972	0	26,972	0	0	0	0	0	26,972	0	351,553	0	0
2009	32,920	0	32,920	0	0	0	0	0	61,989	0	289,564	0	-29,069
2010	28,517	0	28,517	0	0	0	0	0	28,517	0	261,047	0	0
2011	29,319	0	29,319	0	0	0	0	0	29,319	0	231,729	0	0
2012	28,379	0	28,379	0	0	0	0	0	28,379	0	203,350	0	0
2013	27,062	0	27,062	0	0	0	0	0	27,062	0	176,288	0	0
2014	29,228	15	29,243	0	0	0	0	0	1,288	15	174,985	0	27,940
2015	29,541	449	29,990	0	0	0	0	0	0	449	174,537	0	29,541
2016	27,009	1,154	28,163	0	0	0	0	0	0	1,154	173,383	0	27,009
2017	30,000	10,000	40,000	0	0	0	0	0	0	10,000	163,383	735	29,265
2018	30,000	10,000	40,000	0	0	0	0	0	0	10,000	153,383	735	29,265
2019	30,000	10,000	40,000	0	0	0	0	0	0	10,000	143,383	735	29,265
2020	30,000	10,000	40,000	0	0	0	0	0	0	10,000	133,383	735	29,265
2021	30,000	10,000	40,000	0	0	0	0	0	0	10,000	123,383	735	29,265
2022	30,000	10,000	40,000	0	0	0	0	0	0	10,000	113,383	735	29,265
2023	30,000	10,000	40,000	0	0	0	0	0	0	10,000	103,383	735	29,265
2024	30,000	10,000	40,000	0	0	0	0	0	0	10,000	93,383	735	29,265
2025	30,000	10,000	40,000	0	0	0	0	0	0	10,000	83,383	735	29,265
2026	30,000	10,000	40,000	0	0	0	0	0	0	10,000	73,383	735	29,265
2027	30,000	10,000	40,000	0	0	0	0	0	0	10,000	63,383	735	29,265
2028	30,000	10,000	40,000	0	0	0	0	0	0	10,000	53,383	735	29,265
2029	30,000	10,000	40,000	0	0	0	0	0	0	10,000	43,383	735	29,265
2030	30,000	10,000	40,000	0	0	0	0	0	0	10,000	33,383	735	29,265
Totals	770,123	141,617	911,740	36,360	4,273	0	0	0	225,000 (225,000 available)	141,617 (175,000 available)		10,290	494,200

1. Table format and content: WEI, Response to Condition Subsequent Number 7, November 2008.

2. Peace II Desalter Expansion expected to increase total desalter production in October 2015.

3. 3,956.877 acre-feet + 316.177 acre-feet added as Non-Ag dedicated stored water per Paragraph 31 Settlement Agreements. Per Agreements, the water is deemed to have been dedicated as of June 30, 2007.

4. The projection of the Desalter Induced Recharge (DIR), previously referred to as the Santa Ana River Underflow New Yield (SARUNY), in the table is shown as zero for each year. In the near future, through the modeling work and Safe Yield Redetermination process, Watermaster will determine the DIR and will produce a new schedule.

5. Six years of Desalter tracking (Production Year 2000/2001 through Production Year 2005/2006) incorrectly assumed that a significant portion of Desalter production was being offset by SAR Underflow New Yield. Condition Subsequent 7 included an adjustment of 29,070 AF against Desalter replenishment in Production Year 2008/2009.

6. The Peace I Agreement terminates in 2030. Per this schedule, the Peace II Desalter expansion would not fully utilize its available 175,000 acre-feet.

7. For the first 10 years following the Peace II Agreement (2006/2007 through 2015/2016), the Non-Ag "10% Haircut" water is apportioned among the specific seven members of the Appropriative Pool, per PIIA 9.2(a). In the eleventh year and in each year thereafter, it is dedicated to Watermaster to further offset desalter replenishment. However, to the extent there is no remaining desalter replenishment obligation in any year after applying the offsets set forth in 6.2(a), it will be distributed pro rata among the members of the Appropriative Pool based upon each Producer's combined total share of OSY and the previous year's actual production.

8. Per the Peace II Agreement, Section 6.2(b)(ii), the residual replenishment assessment is against the Appropriative Pool, pro-rata based on each Producer's combined total share of OSY and the previous year's actual production.

9. Through production year 2015/16, the desalter replenishment obligation could be as high as 84,490 AF. Due to the ongoing Safe Yield Redetermination process and related DIR matter, the desalter replenishment obligation is not being assessed at this time. When the Safe Yield Redetermination and DIR matters are resolved, the desalter replenishment obligation will be recalculated, if necessary, and assessed, if necessary.

Chino Basin Watermaster Assessment Breakdown

Appendix C - Details of FWC's Standard and Exhibit G Water Transactions

Assessment Year 2016-2017 (Production Year 2015-2016)

Sorted by Date of Submittal, then by Seller.

			Actuals			As Assessed with 85/15 Rule Applied					
To (Buyer):	From (Seller):	Date of Submittal	Quantity	$/Acre Feet	Total $	Quantity	Running Total[1]	$/Acre Feet	Total $	85%	15%
Fontana Water Company	Watermaster (Exhibit G Non-Ag Transfer)	3/1/2016	639.261	$508.00	$324,744.59	639.261	639.261	$508.00	$324,744.59	$276,032.90	$48,711.69
Fontana Water Company	Chino, City of Storage Account	**5/3/2016	6,000.000	$517.90	$3,107,400.00	6,000.000	6,639.261	$516.35	$3,098,100.00	$2,633,385.00	$464,715.00
	Chino, City of Storage Account	**5/3/2016	4,000.000	$515.63	$2,062,520.00	4,000.000	10,639.261	$516.35	$2,065,400.00	$1,755,590.00	$309,810.00
	Ontario, City of Storage Account	**5/3/2016	3,500.000	$504.90	$1,767,150.00	3,500.000	14,139.261	$516.35	$1,807,225.00	$1,536,141.25	$271,083.75
	Upland, City of Storage Account	**5/3/2016	1,000.000	$550.00	$550,000.00	391.358	14,530.619	$516.35	$202,077.70	$171,766.05	$30,311.66
	Upland, City of Storage Account					608.642	15,139.261	$516.35	$314,272.30		
	Nicholson Trust Annual Account	6/10/2016	6.500	$517.65	$3,364.73	6.500	15,145.761	$517.65	$3,364.73		
			15,145.761		$7,815,179.31	15,145.761			$7,815,184.31	$6,372,915.20	$1,124,632.09

[1] Running Total is used to determine the point where over-production is satisfied and which transaction to split for the 85/15 Rule application. FWC over-produced by **14,530.619 AF**.

**Fontana Water Company had four Water Transactions dated 5/3/2016. Because the cost per AF differ from one transaction to the next, a blended rate was used for all four transactions.

Blended Rate Calculation:

Total 5/3/2016 Transaction Volume (AF): 14,500

Total 5/3/2016 Transaction Cost ($): $7,487,010

Blended Rate = *Total Transaction Cost* ($7,487,010) ÷ *Total Transaction Volume* (14,500 AF) = **$516.35**

Assessment Year 2016-2017 (Production Year 2015-2016)

Adjustment Calculation - 85/15 Rule Application to Exhibit G Transactions for Prior Two Years

Adjustment Calculation

Party	Assmnt Year	Prod Year	As Assessed in Approved Assessment Packages: (Over)/Under Production[1]	100%	85%	15%	All Transaction Total	Adjusted: (Over)/Under Production[2]	100%	85%	15%	All Transaction Total	15% Producer Credit Differences
Cucamonga Valley Water District	14/15	13/14	881.742	$ 2,267,985.58	$ -	$ -	$ 2,267,985.58	(154.351)	$ 2,192,930.86	$ 63,796.51	$ 11,258.21	$ 2,267,985.58	$ (11,258.21)
Fontana Water Company	14/15	13/14	(12,685.752)	$ 970,043.26	$ 4,491,122.05	$ 792,550.95	$ 6,253,716.26	(14,680.659)	$ -	$ 5,315,658.82	$ 938,057.44	$ 6,253,716.26	$ (145,506.49)
Fontana Water Company	15/16	14/15	(12,143.106)	$ 1,437,614.68	$ 5,268,669.25	$ 929,765.16	$ 7,636,049.09	(12,582.666)	$ 1,217,606.12	$ 5,455,676.52	$ 962,766.45	$ 7,636,049.09	$ (33,001.28)

[1] Excludes Water Transfers

[2] Excludes Water Transfers and Exhibit G Water Sales

Adjustment Allocation

Appropriative Pool Party	85/15 Party	Assessment Year 2014/15: Total Prod & Exchanges	85/15 Producers	Producer Credit (see above)	Pro-rated Debits	Adjustment	Assessment Year 2015/16: Total Prod & Exchanges	85/15 Producers	Producer Credit (see above)	Pro-rated Debits	Adjustment	Total Adjustments for Prior Two Years
Arrowhead Mtn Spring Water Co		379.111				$ -	426.139				$ -	$ -
Chino Hills, City Of	X	7,224.004	7,224.004		$ 13,446.58	$ 13,446.58	3,661.309	3,661.309		$ 1,775.55	$ 1,775.55	$ 15,222.13
Chino, City Of	X	-	-		$ -	$ -	-	-		$ -	$ -	$ -
Cucamonga Valley Water District	X	16,121.550	16,121.550	$ (11,258.21)	$ 30,008.25	$ 18,750.04	14,639.960	14,639.960		$ 7,099.65	$ 7,099.65	$ 25,849.69
Desalter Authority		[illegible]				[illegible]	[illegible]				[illegible]	[illegible]
Fontana Union Water Company	X	-	-		$ -	$ -	-	-		$ -	$ -	$ -
Fontana Water Company	X	15,377.579	15,377.579	$ (145,506.49)	$ 28,623.45	$ (116,883.04)	13,344.225	13,344.225	$ (33,001.28)	$ 6,471.28	$ (26,530.00)	$ (143,413.04)
Fontana, City Of		-				$ -	-				$ -	$ -
Golden State Water Company	X	736.362	736.362		$ 1,370.65	$ 1,370.65	720.259	720.259		$ 349.29	$ 349.29	$ 1,719.94
Jurupa Community Services District	X	18,018.347	18,018.347		$ 33,538.91	$ 33,538.91	12,466.577	12,466.577		$ 6,045.67	$ 6,045.67	$ 39,584.58
Marygold Mutual Water Company		1,314.734				$ -	1,250.349				$ -	$ -
Monte Vista Irrigation Company	X	-	-		$ -	$ -	-	-		$ -	$ -	$ -
Monte Vista Water District	X	6,998.745	6,998.745		$ 13,027.29	$ 13,027.29	6,881.539	6,881.539		$ 3,337.20	$ 3,337.20	$ 16,364.49
Niagara Bottling, LLC		1,342.588				$ -	1,859.765				$ -	$ -
Nicholson Trust	X	-	-		$ -	$ -	-	-		$ -	$ -	$ -
Norco, City Of	X	-	-		$ -	$ -	-	-		$ -	$ -	$ -
Ontario, City Of	X	15,697.045	15,697.045		$ 29,218.09	$ 29,218.09	11,430.640	11,430.640		$ 5,543.29	$ 5,543.29	$ 34,761.38
Pomona, City Of		12,909.293				$ -	12,520.382				$ -	$ -
San Antonio Water Company	X	1,159.242	1,159.242		$ 2,157.78	$ 2,157.78	1,479.087	1,479.087		$ 717.28	$ 717.28	$ 2,875.06
San Bernardino, County of (Shooting Park)	X	16.390	16.390		$ 30.51	$ 30.51	10.868	10.868		$ 5.27	$ 5.27	$ 35.78
Santa Ana River Water Company	X	48.515	48.515		$ 90.30	$ 90.30	-	-		$ -	$ -	$ 90.30
Upland, City Of	X	2,822.046	2,822.046		$ 5,252.89	$ 5,252.89	3,416.416	3,416.416		$ 1,656.79	$ 1,656.79	$ 6,909.68
West End Consolidated Water Company	X	-	-		$ -	$ -	-	-		$ -	$ -	$ -
West Valley Water District	X				$	$				$	$	$

Assessment Year 2016-2017 (Production Year 2015-2016)

Appendix E: Pool 2 Water Transaction Summary

Party	Percent of Safe Yield	Assigned Share of Safe Yield (AF)	Water Transactions: 10% to the Seven Appropriative Parties	Water Transactions: Transfer From Local Storage	Water Transactions: Exhibit G Water Sales	Water Transactions: Total Water Transactions
Ameron Inc	1.127%	82.858	(8.286)	0.000	0.000	(8.286)
Aqua Capital Management	0.000%	0.000	0.000	0.000	0.000	0.000
California Speedway Corp. (Auto Club Speedway)	13.605%	1,000.000	(100.000)	1,000.000	(1,000.000)	(100.000)
California Steel Industries, Inc. (CSI)	21.974%	1,615.137	(161.513)	2,500.000	(2,500.000)	(161.513)
Calmat Co., a Division of Vulcan Materials Co.	0.000%	0.000	0.000	0.000	0.000	0.000
CCG Ontario, LLC	0.000%	0.000	0.000	0.000	0.000	0.000
General Electric Co. (GE)	0.000%	0.000	0.000	0.000	0.000	0.000
Hamner Park Associates (Swan Lake MHP)	6.316%	464.240	(46.424)	0.000	0.000	(46.424)
Monte Vista Water District (Non-Ag)	0.680%	50.000	(5.000)	0.000	0.000	(5.000)
NRG California South LP	12.986%	954.540	(95.454)	1,500.000	(1,500.000)	(95.454)
Ontario, City of (Non-Ag)	39.601%	2,910.788	(291.079)	0.000	0.000	(291.079)
Praxair Inc	0.014%	1.000	(0.100)	0.000	0.000	(0.100)
Riboli Family / San Antonio Winery	0.000%	0.000	0.000	0.000	0.000	0.000
San Bernardino, County of (Chino Airport)	1.821%	133.870	(13.387)	0.000	0.000	(13.387)
Southern California Edison Company	0.000%	0.000	0.000	0.000	0.000	0.000
Southern Service Co. (Angelica)	0.256%	18.789	(1.879)	0.000	0.000	(1.879)
Space Center Mira Loma, Inc.	1.416%	104.121	(10.412)	0.000	0.000	(10.412)
TAMCO	0.204%	15.000	(1.500)	0.000	0.000	(1.500)
West Venture Development	0.000%	0.000	0.000	0.000	0.000	0.000
	100.000%	**7,350.343**	**(735.034)**	**5,000.000**	**(5,000.000)**	**(735.034)**
			[A]	**[B]**	**[C]**	**[A] + [B] + [C]**

HISTORIC ASSESSMENTS PER ACRE-FOOT OF PRODUCTION

Assessment Year	Agricultural Pool [1] ($/AF)	Non-Ag Pool ($/AF)	Appropriative Pool [2] ($/AF)	Gross Replenishment Water Rate ($/AF)
77-78	0.29	0.32	0.42	
78-79	0.65	1.29	0.77	51.00
79-80	0.54	0.20	0.51	56.20
80-81	0.32	0.00	0.00	62.51
81-82	0.10	0.00	0.00	63.78
82-83	0.10	0.00	0.00	81.46
83-84	0.10	0.00	0.00	102.18
84-85	0.10	0.00	0.10	154.00
85-86	0.10	0.00	0.45	149.39
86-87	0.10	0.00	0.41	155.10
87-88	0.10	0.00	0.25	155.42
88-89	0.09	0.00	0.67	155.33
89-90	3.27	0.00	0.48	115.00
90-91	2.31	0.00	0.43	117.55
91-92	3.53	0.12	0.11	132.55
92-93	7.03	4.07	3.41	169.89
93-94	12.37	6.67	2.51	210.69
94-95	9.86	3.24	2.06	222.00
95-96	11.68	3.43	1.57	233.15
96-97	19.70	7.55	3.69	233.15
97-98	15.19	6.56	2.73	237.15
98-99	19.04	9.85	7.77	243.00
99-00	26.30	14.12	11.75	243.00
00-01	18.15	25.79	24.74	242.00
01-02	34.37	29.93	25.42	243.00
02-03	35.69	26.72	21.35	244.00
03-04	34.10	25.39	22.90	244.00
04-05	26.15	25.43	25.43	250.00
05-06	19.91	27.94	27.94	251.00
06-07	28.23	40.72	40.72	251.00
07-08	29.76	36.30	36.30	257.00
08-09	29.93	50.24	50.24	309.00
09-10	32.50	51.21	51.21	380.00
10-11	30.90	49.41	49.41	541.00
11-12	29.93	49.14	49.14	574.00
12-13	35.88	50.60	50.60	607.00
13-14	28.79	40.39	40.39	608.00
14-15	27.71	40.49	40.49	610.00
15-16	30.24	57.54	57.54	611.00
16-17	25.96	56.18	56.18	596.00

[1] $/AF of water reallocated to the Appropriative Pool.

[2] Excludes amounts related to the debt service of the Recharge Improvement Project, and supplemental and replenishment water purchases.

SUMMARY BUDGET
FISCAL YEAR 2015-2016

	FY 12-13		FY 13-14		FY 14-15		FY 15-16		Amended
	Approved Budget	Amended Budget	Approved Budget	Amended Budget	Approved Budget	Amended Budget	Approved Budget	Amended Budget	vs. Amended
4000 Mutual Agency Revenue	$ 152,938	$ 152,938	$ 154,581	$ 154,581	$ 155,331	$ 155,331	$ 157,941	$ 157,941	$ 2,610
4110 Appropriative Pool Assessments	6,285,952	6,360,952	6,301,135	6,361,227	6,888,767	7,280,154	8,637,418	8,878,283	1,598,129
4120 Non-Agricultural Pool Assessments	191,711	251,711	239,320	241,378	246,483	244,096	296,797	305,932	61,836
4730 Prorated Interest Income	39,600	39,600	29,700	29,700	25,800	25,800	22,050	22,050	(3,750)
4900 Miscellaneous Income	-	-	-	-	-	-	-	-	-
Total Income	**6,670,201**	**6,805,201**	**6,724,736**	**6,786,886**	**7,316,381**	**7,705,381**	**9,114,206**	**9,364,206**	**1,658,825**
Administrative Expenses									
6010 Salary Costs	519,684	519,684	617,747	677,747	845,547	785,327	880,591	880,591	95,264
6020 Office Building Expense	107,345	107,345	106,630	106,630	105,274	107,174	110,381	110,381	3,207
6030 Office Supplies & Equip.	27,000	27,000	28,300	28,300	31,980	34,700	35,260	35,260	560
6040 Postage & Printing Costs	62,368	62,368	51,900	43,100	56,900	56,900	55,032	55,032	(1,868)
6050 Information Services	142,296	143,796	135,996	135,996	131,840	131,840	131,840	131,840	-
6060 WM Special Contract Services	31,900	40,900	24,800	24,800	40,200	40,200	40,600	40,600	400
6070 Watermaster Legal Services	175,645	210,645	234,100	314,600	230,700	315,707	256,450	256,450	(59,257)
6080 Insurance Expense	19,393	19,393	19,107	27,407	27,312	27,312	27,916	27,916	604
6110 Dues and Subscriptions	27,500	27,500	22,325	22,325	20,325	20,325	21,335	21,335	1,010
6150 Field Supplies & Equipment	1,400	1,400	1,450	1,450	1,450	1,450	1,450	1,450	-
6170 Travel & Transportation	21,170	21,170	19,170	19,170	22,860	22,860	25,320	25,320	2,460
6190 Conferences & Seminars	15,000	15,000	12,500	15,500	15,000	20,600	22,400	22,400	1,800
6200 Advisory Committee Expenses	53,385	53,385	54,368	33,368	55,568	36,568	43,674	43,674	7,106
6300 Watermaster Board Expenses	143,894	123,894	151,289	176,289	173,258	133,258	178,744	178,744	45,486
6500 Education Fund Expenditures	257	257	-	-	-	-	-	-	-
8300 Appropriative Pool Administration	59,285	154,381	136,273	140,273	137,622	202,622	136,069	136,069	(66,553)
8400 Agricultural Pool Administration	356,983	356,983	353,462	199,962	353,938	303,938	352,290	352,290	48,352
8500 Non-Agricultural Pool Administration	46,995	116,995	110,314	113,814	110,025	110,025	107,974	107,974	(2,051)
9400 Depreciation Expense	-	-	-	-	-	-	-	-	-
9500 Allocated G&A Expenditures	(732,558)	(732,558)	(568,626)	(568,626)	(391,876)	(391,877)	(401,307)	(401,307)	(9,430)
Total Administrative Expenses	**1,078,942**	**1,269,538**	**1,511,105**	**1,512,106**	**1,967,923**	**1,958,929**	**2,026,019**	**2,026,019**	**67,090**
General OBMP Expenditures									
6900 Optimum Basin Mgmt Program	994,850	994,305	1,009,365	1,313,365	1,207,145	1,591,145	1,344,437	1,594,437	3,292
6950 Cooperative Efforts	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	-
9501 Allocated G&A Expenditures	214,336	214,336	228,433	228,433	126,551	126,551	128,656	128,656	2,105
Total General OBMP Expenses	**1,219,186**	**1,218,641**	**1,247,798**	**1,551,798**	**1,343,696**	**1,727,696**	**1,483,093**	**1,733,093**	**5,397**
OBMP Implementation Projects									
7101 Production Monitoring	108,746	108,746	81,649	81,649	59,239	93,482	56,547	56,547	(36,935)
7102 In-Line Meter Installation/Maintenance	106,162	106,162	104,616	104,616	101,422	101,422	67,087	67,087	(34,335)
7103 Groundwater Quality Monitoring	173,738	173,498	202,339	202,339	176,018	155,810	220,342	220,342	64,532
7104 Groundwater Level Monitoring	318,898	283,974	292,840	247,840	236,355	223,660	247,627	247,627	23,967
7105 Recharge Basin Water Quality Monitoring	3,118	3,118	-	-	-	-	-	-	-
7107 Ground Level Monitoring	524,451	628,918	347,305	594,308	325,219	555,830	253,423	253,423	(302,407)
7108 Hydraulic Control Monitoring Program	411,162	376,502	319,045	406,943	89,080	319,910	316,123	316,123	(3,787)
7109 Recharge & Well Monitoring Program	21,540	4,000	21,000	21,000	21,000	21,000	19,867	19,867	(1,133)
7200 OBMP Pgm Element 2 - Comp Recharge	1,374,719	1,484,758	995,892	1,358,042	948,327	1,022,945	1,005,171	1,005,171	(17,774)
7300 OBMP Pgm Element 3 & 5 - Water Supply Pl	75,995	75,995	60,649	50,649	60,474	7,000	45,276	45,276	38,276
7400 OBMP Pgm Element 4 - Mgmt Zone Strategi	82,250	82,254	107,507	107,507	108,168	193,168	622,505	622,505	429,337
7500 OBMP Pgm Element 6 & 7 - Coop Efforts/Sa	92,479	81,993	111,112	81,112	81,313	80,680	81,966	81,966	1,286
7600 OBMP Pgm Element 8 & 9 Storage Mgmt/Cc	58,618	47,290	41,378	31,378	33,582	3,342	76,909	76,909	73,567
7700 Inactive Well Protection Program	920	920	500	500	500	500	500	500	-
7690 Recharge Improvement Debt Projects	501,055	773,884	939,808	1,111,637	1,498,740	2,179,817	2,319,100	2,319,100	139,283
9502 Allocated G&A Expenditures	518,222	518,222	340,193	340,193	265,325	265,326	272,651	272,651	7,325
Total OBMP Implementation Projects	**4,372,073**	**4,750,235**	**3,965,833**	**4,739,713**	**4,004,762**	**5,223,892**	**5,605,094**	**5,605,094**	**381,202**
Total Expenses	**6,670,201**	**7,238,413**	**6,724,736**	**7,803,616**	**7,316,381**	**8,910,517**	**9,114,206**	**9,364,206**	**453,689**
Net Ordinary Income	**-**	**(433,212)**	**-**	**(1,016,730)**	**-**	**(1,205,136)**	**-**	**-**	**1,205,136**
Other Income									
4225 Interest Income	-	-	-	-	-	-	-	-	-
4210 Approp Pool-Replenishment	-	-	-	-	-	-	-	-	-
4220 Non-Ag Pool-Replenishment	-	-	-	-	-	-	-	-	-
4600 Groundwater Sales	-	-	-	-	-	-	-	-	-
Total Other Income	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Other Expense									
5010 Groundwater Recharge	-	-	-	-	-	-	-	-	-
5100 Other Water Purchases	-	-	-	-	-	-	-	-	-
9000 Other Expense	-	-	-	-	-	-	-	-	-
9200 Interest Expense	-	-	-	-	-	-	-	-	-
9990 Excess Reserve Refunds	-	-	-	-	-	-	-	-	-
Total Other Expense	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
9900 To / (From) Reserves	-	-	-	-	-	-	-	-	-
Net Other Income	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Net Income	**$ -**	**$ (433,212)**	**$ -**	**$ (1,016,730)**	**$ -**	**$ (1,205,136)**	**$ -**	**$ -**	**$ 1,205,136**

Chino Basin Watermaster

Annual Financial Report

For the Fiscal Years Ended June 30, 2016 and 2015

Our Mission Statement

"To manage the Chino Groundwater Basin in the most beneficial manner and to equitably administer and enforce the provisions of the Chino Basin Watermaster Judgment"

Pools	Name	Title	Current Term
Agricultural	Paul Hofer	Member	Ongoing [1]
Agricultural	Geoffrey Vanden Heuvel	Member	Ongoing [1]
Non-Agricultural	Robert Bowcock	Member	Ongoing [1]
Appropriative	James V. Curatalo, Jr.	Vice-Chair	Ongoing [1,2]
Appropriative	Tom Thomas	Member	Ongoing [1,2]
Appropriative	Jim W. Bowman	Member	January 2017 [1,2]
Municipal	Steve Elie	Chair	Ongoing [1]
Municipal	Bob G. Kuhn	Secretary/Treasurer	Ongoing [1]
Municipal	Donald D. Galleano	Member	Ongoing [1]

[1] The Watermaster Board serves at the direction of Judge Reichert and was re-appointed for a three year term effective January 2016 (Board approval on November 19, 2015).

[2] The Appropriative Pool's rotation sequence for Board membership effective January 2016 was approved by the Appropriative Pool on November 17, 2015.

Chino Basin Watermaster
Peter Kavounas PE, General Manager
9641 San Bernardino Road
Rancho Cucamonga, California 91730
(909) 484-3888 – www.cbwm.org

Chino Basin Watermaster

Annual Financial Report

For the Fiscal Years Ended June 30, 2016 and 2015

Chino Basin Watermaster
Annual Financial Report
For the Fiscal Years Ended June 30, 2016 and 2015

Table of Contents

Introductory Section

November 17, 2016

Board of Directors
Chino Basin Watermaster

Introduction

It is our pleasure to submit the Annual Financial Report for the Chino Basin Watermaster (Watermaster) for the fiscal years ended June 30, 2016 and 2015, following guidelines set forth by the Governmental Accounting Standards Board. Watermaster staff prepared this financial report. The Watermaster is ultimately responsible for both the accuracy of the data and the completeness and the fairness of presentation, including all disclosures in this financial report. We believe that the data presented is accurate in all material respects. This report is designed in a manner that we believe necessary to enhance your understanding of the Watermaster's financial position and activities.

This report is organized into three sections: (1) Introductory, (2) Financial, and (3) Supplemental. The Introductory section offers general information about the Watermaster's organization and current Watermaster activities and reports on a summary of significant financial results. The Financial section includes the Independent Auditor's Report, Management's Discussion and Analysis of the Watermaster's basic financial statements, and the Watermaster's audited basic financial statements with accompanying Notes. The Supplemental section includes combining revenue and expense schedules.

Generally Accepted Accounting Principles (GAAP) requires that management provide a narrative introduction, overview and analysis to accompany the financial statements in the form of the Management's Discussion and Analysis (MD&A) section. This letter of transmittal is designed to complement the MD&A and should be read in conjunction with it. The Watermaster's MD&A can be found immediately after the Independent Auditor's Report.

Watermaster Structure and Leadership

The Chino Basin Watermaster ("Watermaster") was established under a judgment entered in Superior Court of the State of California for the County of San Bernardino as a result of Case No. RCV 51010 (formerly Case No. SCV 164327) entitled "Chino Basin Municipal Water District v. City of Chino, et al.", signed by the Honorable Judge Howard B. Wiener on January 27, 1978. The effective date of this Judgment for accounting and operations was July 1, 1977. Under the Judgment, three Pool committees were formed: (1) Overlying (Agricultural) Pool which includes the State of California and all producers of water for overlying uses other than industrial or commercial purposes; (2) Overlying (Non-Agricultural) Pool which represents producers of water for overlying industrial or commercial purposes; and (3) Appropriative Pool which represents cities, special districts, other public or private entities and utilities. The three Pools act together to form the "Advisory Committee". Pursuant to the Judgment, the Chino Basin Municipal Water District (CBMWD) five member Board of Directors was initially appointed as "Watermaster". Pursuant to a recommendation of the Advisory Committee, the Honorable J. Michael Gunn appointed a nine-member board as Watermaster on September 28, 2000.

The General Manager administers the day-to-day operations of the Watermaster in accordance with policies and procedures established by the Board of Directors. The Watermaster staff includes nine regular employees. The Watermaster's three Pools, the Advisory Committee, and the Board of Directors meet each month.

Watermaster Mission and Services

Chino Basin Watermaster's mission is "To manage the Chino Groundwater Basin in the most beneficial manner and to equitably administer and enforce the provisions of the Chino Basin Watermaster Judgment", Case No. RCV 51010 (formerly Case No. SCV 164327). The Watermaster provides the Chino Groundwater Basin service area with services which primarily include: accounting for water appropriations and components of acre footage of stored water by agency, purchase of replenishment water, groundwater monitoring and implementation of special projects. The Watermaster is progressively and actively implementing the Basin's Optimum Basin Management Program which includes extensive monitoring, further developing recharge capabilities, storage and recovery projects, managing salt loads, developing new yield such as reclaimed and storm water recharge and continuing to work with other agencies and entities to enhance this significant natural resource.

Watermaster expenditures are allocated to the pools based on the prior year's production volume (or the same percentage used to set the annual assessments).

Economic Condition and Outlook

The Watermaster's office is located in the City of Rancho Cucamonga in San Bernardino County which has experienced tempered economic growth within the region. The economic outlook for the Southern California region is one of cautious growth as the region recovers from a prolonged financial down turn.

Internal Control Structure

Watermaster management is responsible for the establishment and maintenance of the internal control structure that ensures the assets of the Watermaster are protected from loss, theft or misuse. The internal control structure also ensures adequate accounting data that is compiled to allow for the preparation of financial statements in conformity with generally accepted accounting principles. The Watermaster's internal control structure is designed to provide reasonable assurance that these objectives are met. The concept of reasonable assurance recognizes that (1) the cost of a control should not exceed the benefits likely to be derived, and (2) the valuation of costs and benefits requires estimates and judgments by management.

Budgetary Control

The Advisory Committee annually approves, and the Board of Directors annually adopts an operating budget prior to the new fiscal year. The budget authorizes and provides the basis for reporting and control of financial operations and accountability for the Watermaster's enterprise operations. The budget and reporting treatment applied to the Watermaster is consistent with the accrual basis of accounting and the financial statement basis.

Investment Policy

The Board of Directors has adopted an investment policy that conforms to state law, Watermaster's ordinance and resolutions, prudent money management, and the "prudent person" standards. The objectives of the Investment Policy are safety, liquidity and yield. Watermaster funds are invested in the State Treasurer's Local Agency Investment Fund and an institutional checking account.

Water Rates and Watermaster Revenues

The Judgment prescribes Watermaster's authority and specifies classes of water production assessments to be used to fund certain activities. Those assessment categories are: Administration, Optimum Basin Management Program, Special Projects and Replenishment. Each class of assessment has a prescribed purpose and water production base. Assessment revenue is Watermaster's principal source of income.

Audit and Financial Reporting

State Law requires the Watermaster to obtain an annual audit of its financial statements by an independent certified public accountant. The accounting firm of Fedak & Brown LLP has conducted the audit of the Watermaster's financial statements. Their unmodified Independent Auditor's Report appears in the Financial Section.

Other References

More information is contained in the Management's Discussion and Analysis and the Notes to the Basic Financial Statements found in the Financial Section of the report.

Acknowledgements

Preparation of this report was accomplished by the combined efforts of Watermaster staff. We appreciate the dedicated efforts and professionalism that these staff members contribute to the Watermaster. We would also like to thank the members of the Board of Directors for their continued support in planning and implementation of the Chino Basin Watermaster's fiscal policies.

Respectfully submitted,

Peter Kavounas, P.E.
General Manager

Joseph S. Joswiak, MBA
Chief Financial Officer

Financial Section

Fedak & Brown LLP
Certified Public Accountants

Charles Z. Fedak, CPA, MBA
Christopher J. Brown, CPA, CGMA
Jonathan P. Abadesco, CPA

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Independent Auditor's Report

Board of Directors
Chino Basin Watermaster
Rancho Cucamonga, California

Report on the Financial Statements

We have audited the accompanying financial statements of Chino Basin Watermaster (Watermaster) as of and for the years ended June 30, 2016 and 2015, and the related notes to the financial statements, which collectively comprise the Watermaster's basic financial statements as listed in the table of contents.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

Auditor's Responsibility

Our responsibility is to express opinions on these financial statements based on our audits. We conducted our audits in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in Government Auditing Standards, issued by the Comptroller General of the United States. Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Opinions

In our opinion, the financial statements referred to above present fairly, in all material respects, the respective financial position of the Watermaster, as of June 30, 2016 and 2015, and the respective changes in financial position, and, where applicable, cash flows thereof for the years then ended in accordance with accounting principles generally accepted in the United States of America.

Emphasis of matter

As described in note 1 to the financial statements, the Watermaster adopted the provisions of Governmental Accounting Standards Board (GASB) Statement No. 72 – *Fair Value Measurement and Application*, GASB Statement No. 79 – *Certain External Investment Pools and Pool Participants*, for the year ended June 30, 2016, GASB Statement No. 68 – *Accounting and Financial Reporting for Pensions*, and GASB Statement No. 71 – *Pension Transition for Contributions made Subsequent to the Measurement Date – An Amendment of GASB Statement No. 68*, for the year ended June 30, 2015. Our opinions are not modified with respect to these matters.

Other Matters

Required Supplementary Information

Accounting principles generally accepted in the United States of America require that the management's discussion and analysis on pages 7 through 10, the required supplementary information on page 39 and 41 be presented to supplement the basic financial statements. Such information, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board, who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Other Information

Our audits were conducted for the purpose of forming opinions on the financial statements that collectively comprise the Watermaster's basic financial statements. The introductory section on pages 1 through 3 and combining schedules of revenue, expenses and changes in net position on page 42 through 43, are presented for purposes of additional analysis and are not a required part of the basic financial statements.

The combining schedules of revenue, expenses and changes in net position are the responsibility of management and were derived from and relate directly to the underlying accounting and other records used to prepare the basic financial statements. Such information has been subjected to the auditing procedures applied in the audit of the basic financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the basic financial statements or to the basic financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America. In our opinion, the combining schedules of revenue, expenses and changes in net position are fairly stated in all material respects in relation to the basic financial statements as a whole.

The introductory section has not been subjected to the auditing procedures applied in the audit of the basic financial statements and, accordingly, we do not express an opinion or provide any assurance on them.

Other Reporting Required by *Government Auditing Standards*

In accordance with Government Auditing Standards, we have also issued our report dated November 17, 2016, on our consideration of the Watermaster's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements and other matters. The purpose of that report is to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing, and not to provide an opinion on internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with Government Auditing Standards in considering the Watermaster's internal control over financial reporting and compliance. This report can be found on pages 44 and 45.

Fedak & Brown LLP

Fedak & Brown LLP
Cypress, California
November 17, 2016

Chino Basin Watermaster
Management's Discussion and Analysis
For the Fiscal Years Ended June 30, 2016 and 2015

The following Management's Discussion and Analysis (MD&A) of activities and financial performance of the Chino Basin Watermaster (Watermaster) provides an introduction to the financial statements of the Watermaster for the fiscal years ended June 30, 2016 and 2015. We encourage readers to consider the information presented here with additional information that we have furnished in conjunction with the transmittal letter in the Introductory Section and with the accompanying basic financial statements and related notes, which follow this section.

Financial Highlights

- In fiscal year 2016, the Watermaster's net position increased by 26.96% or $2,077,544 as a result of ongoing operations. In fiscal year 2015, the Watermaster's net position increased by 13.88%, or $939,237 to $7,707,107, which is comprised of an increase from normal operations of $1,679,432 and a decrease from prior period adjustment in the amount of $740,195. Please see Note 5 to the basic financial statements for further discussion.
- In fiscal year 2016, the Watermaster's total revenues increased by $35,16% or $3,377,274 due primarily to increases in administrative assessments, and replenishment water revenue of $1,659,608 and $1,707,513, respectively. In fiscal year 2015, the Watermaster's total revenues decreased 28.98% or $3,919,153 to $9,606,663. Operating revenues decreased 29.06% or $3,925,308 to $9,583,293, primarily due to a decrease in groundwater sales as affected by the statewide drought. Non-operating revenue increased 35.75% or $6,155 to $23,370, primarily due to an increase in interest income.
- In fiscal year 2016, Watermaster's operating expenses increased by 32.24% or $2,551,235, primarily due to a $1,388,804 increase in groundwater replenishment costs and other water purchases and a $905,596 increase in optimum basin management plan expenditures. In fiscal year 2015, The Watermaster's operating expenses decreased 38.61% or $4,977,263, primarily due to a $5,687,446 decrease in groundwater replenishment costs and water purchases, which was offset by a $776,067 increase in optimum basin management plan spending and a $65,884 decrease in personnel costs and other expenses.

Required Financial Statements

This annual report consists of a series of financial statements, The Statements of Net Position, Statements of Revenues, Expenses, and Changes in Net Position and Statements of Cash Flows provide information about the activities and performance of the Watermaster using accounting methods similar to those used by private sector companies.

The Statements of Net Position includes all of the Watermaster's investments in resources (assets), deferred outflows of resources, obligations to creditors (liabilities), and deferred inflows of resources. It also provides the basis for computing a rate of return, evaluating the capital structure of the Watermaster and assessing the liquidity and financial flexibility of the Watermaster. All of the current year's revenue and expenses are accounted for in the Statements of Revenues, Expenses, and Changes in Net Position. This statement measures the success of the Watermaster's operations over the past year and can be used to determine if the Watermaster has successfully recovered all of its costs through its rates and other charges. This statement can also be used to evaluate profitability and credit worthiness. The final required financial statement is the Statement of Cash Flows, which provides information about the Watermaster's cash receipts and cash payments during the reporting period. The Statement of Cash Flows reports cash receipts, cash payments and net changes in cash resulting from operations, investing, non-capital financing, and capital and related financing activities and provides answers to such questions as where did cash come from, what was cash used for, and what was the change in cash balance during the reporting period.

Financial Analysis of the Watermaster

One of the most important questions asked about the Watermaster's finances is, "Is the Watermaster better off or worse off as a result of this year's activities?" The Statements of Net Position and the Statements of Revenues, Expenses and Changes in Net Position report information about the Watermaster in a way that helps answer this question.

These statements include all assets, deferred outflows of resources, liabilities, and deferred inflows of resources using the *accrual basis of accounting*, which is similar to the accounting method used by most private sector companies. All of the current year's revenues and expenses are taken into account regardless of when the cash is received or paid.

These two statements report the Watermaster's *net position* and changes in them. You can think of the Watermaster's net position – the difference between assets, deferred outflow of resources, and liabilities and deferred inflows of resources – as one way to measure the Watermaster's financial health, or *financial position*. Over time, *increases or decreases* in an organization's net position is one indicator of whether its *financial health* is improving or deteriorating. However, one will need to consider other non-financial factors such as changes in economic conditions, population growth, zoning, and new or changed government legislation, such as changes in federal and state water quality standards. Watermaster is funded on a year-by-year basis through a Court-mandated process.

Notes to the Basic Financial Statements

The notes provide additional information that is essential to a full understanding of the data provided in the basic financial statements. The notes to the basic financial statements can be found on pages 15 through 38.

Statements of Net Position

		2016	2015	Change
Assets:				
Current assets	$	12,033,692	9,749,593	2,284,099
Capital assets, net		14,378	19,439	(5,061)
Total assets		12,048,070	9,769,032	2,279,038
Deferred outflows of resources		301,831	137,056	164,775
Liabilities:				
Current liabilities		1,126,336	992,325	134,011
Non-current liabilities		1,317,462	1,005,093	312,369
Total liabilities		2,443,798	1,997,418	446,380
Deferred inflows of resources		121,452	201,563	(80,111)
Net position:				
Invested in capital assets		14,378	19,439	(5,061)
Unrestricted		9,770,273	7,687,668	2,082,605
Total net position	$	9,784,651	7,707,107	2,077,544

As noted earlier, net position may serve over time as a useful indicator of an organization's financial position. In the case of the Watermaster, assets and deferred outflows of resources exceeded liabilities and deferred inflows of resources by $9,784,651 and $7,707,107 as of June 30, 2016 and 2015, respectively.

Statement of Net Position, continued

The Watermaster's investment in capital assets is comprised of capital assets (net of accumulated depreciation) less any related debt (where applicable) used to acquire those assets that are still outstanding. The Watermaster uses these capital assets to provide services to customers within the Watermaster's service area; consequently, these assets are not available for future spending.

At the end of fiscal years 2016 and 2015, the Watermaster reflected a positive balance in its unrestricted net position of $9,770,273 and $7,687,668, respectively that may be utilized in future years. (See Note 11)

Statement of Revenues, Expenses and Changes in Net Position

		2016	2015	Change
Revenues:				
Operating revenues	$	12,952,155	9,583,293	3,368,862
Non-operating revenues		31,782	23,370	8,412
Total revenues		12,983,937	9,606,663	3,377,274
Expenses:				
Operating expense		10,465,108	7,913,873	2,551,235
Depreciation		5,061	5,061	-
Non-operating expense		436,224	8,297	427,927
Total expenses		10,906,393	7,927,231	2,979,162
Change in net position		2,077,544	1,679,432	398,112
Net position, beginning of period		7,707,107	6,027,675	1,679,432
Net position, end of period	$	9,784,651	7,707,107	2,077,544

The statements of revenues, expenses and changes of net position show how the Watermaster's net position changed during the fiscal years. In fiscal year 2016, the Watermaster's net position increased by 26.96% or $2,077,544 as a result of ongoing operations. In fiscal year 2015, the Watermaster's net position increased by $1,679,432 from normal operations, and decreased by $740,195 from prior period adjustment related to the implementation of GASB 68.

A closer examination of the sources of changes in net position reveals that:

In fiscal year 2016, the Watermaster's operating revenues increased by 35.15% or $3,368,862, primarily due to the increases in administrative assessments, and replenishment water revenue of $1,659,608 and $1,707,513, respectively. In fiscal year 2015, the Watermaster's operating revenues decreased 29.06% or $3,925,308 in 2015, primarily due to a decrease in groundwater sales as affected by the statewide drought.

In fiscal year 2016, the Watermaster's operating expenses increased by 32.24% or $2,551,235, primarily due to a $1,388,804 increase in groundwater replenishment costs and other water purchases and a $905,596 increase in optimum basin management plan expenditures. In fiscal year 2015, the Watermaster's operating expenses decreased 38.61% or $4,977,263 primarily due to a $5,687,446 decrease in groundwater replenishment costs and water purchases, which was offset by a $710,183 increase in personnel costs and other expenses.

Capital Asset Administration

At the end of fiscal year 2016 and 2015, the Watermaster's investment in capital assets amounted to $14,378 and $19,439 (net of accumulated depreciation), respectively. This investment in capital assets includes leasehold improvements, office equipment, and vehicles. There were no major capital assets additions during the year ended June 30, 2016 and 2015.

Changes in capital assets in 2016 were as follows:

		Balance 2015	Additions	Disposals/ Transfers	Balance 2016
Capital assets:					
Depreciable assets	$	265,144		-	265,144
Accumulated depreciation		(245,705)	(5,061)	-	(250,766)
Total capital assets	$	19,439	(5,061)	-	14,378

Changes in capital assets in 2015 were as follows:

		Balance 2014	Additions	Disposals/ Transfers	Balance 2015
Capital assets:					
Depreciable assets	$	282,402	7,668	(24,926)	265,144
Accumulated depreciation		(265,570)	(5,061)	24,926	(245,705)
Total capital assets	$	16,832	2,607	-	19,439

Conditions Affecting Current Financial Position

Management is unaware of any conditions which could have a significant impact on the Watermaster's current financial position, net assets or operating results based on past, present and future events.

Requests for Information

This financial report is designed to provide the Watermaster's present users, including funding sources, customers, stakeholders and other interested parties with a general overview of the Watermaster's finances and to demonstrate Watermaster's accountability with an overview of Watermaster's financial operations and financial condition. Should the reader have questions regarding the information included in this report or wish to request additional financial information, please contact the Watermaster's Chief Financial Officer, Joseph Joswiak, at the Chino Basin Watermaster, 9641 San Bernardino Road, Rancho Cucamonga, CA 91730 or (909) 484-3888.

Basic Financial Statements

Chino Basin Watermaster
Statements of Net Position
June 30, 2016 and 2015

		2016	2015
Current assets:			
Cash and cash equivalents (note 2)	$	5,850,508	9,649,337
Accounts receivable		6,154,975	53,185
Accrued interest receivable		9,612	7,408
Prepaid expenses		18,597	39,663
Total current assets		12,033,692	9,749,593
Non-current assets:			
Capital assets, net (note 3)		14,378	19,439
Total non-current assets		14,378	19,439
Total assets		12,048,070	9,769,032
Deferred outflows of resources:			
Deferred pension outflows (note 4 and 9)		301,831	137,056
Total deferred outflows of resources	$	301,831	137,056

Continued on next page

See accompanying notes to the basic financial statements

Chino Basin Watermaster
Statements of Net Position, continued
June 30, 2016 and 2015

		2016	2015
Current liabilities:			
Accounts payable and accrued expenses	$	1,011,079	876,153
Accrued salaries and benefits		41,913	32,426
Long-term liabilities – due within one year:			
Compensated absences (note 6)		73,344	83,746
Total current liabilities		1,126,336	992,325
Non-current liabilities:			
Long-term liabilities – due in more than one year:			
Compensated absences (note 6)		136,209	155,527
Other post employment benefits obligation (note 10)		346,070	245,013
Net pension liability (note 9)		811,437	599,803
Employee compensation plan (note 7)		23,746	4,750
Total non-current liabilities		1,317,462	1,005,093
Total liabilities		2,443,798	1,997,418
Deferred inflows of resources:			
Deferred pension inflows (note 9 and 12)		121,452	201,563
Total deferred inflows of resources		121,452	201,563
Net Position: (note 11)			
Net investment in capital assets		14,378	19,439
Unrestricted		9,770,273	7,687,668
Total net position	$	9,784,651	7,707,107

See accompanying notes to the basic financial statements

Chino Basin Watermaster
Statements of Revenues, Expenses, and Changes in Net Position
For the Fiscal Years Ended June 30, 2016 and 2015

		2016	2015
Operating revenues:			
Administrative assessments	$	9,184,114	7,524,506
Replenishment water revenue		3,610,692	1,903,179
Other revenue		157,349	155,608
Total operating revenue		12,952,155	9,583,293
Operating expenses:			
Groundwater replenishment and other water purchases		2,540,000	1,151,196
Optimum basin management plan		5,655,762	4,750,166
Watermaster administration		1,649,361	1,310,849
Pool, advisory, and board administration		619,985	701,662
Total operating expense		10,465,108	7,913,873
Operating income before depreciation		2,487,047	1,669,420
Depreciation expense		(5,061)	(5,061)
Operating income		2,481,986	1,664,359
Non-operating revenue (expense):			
Reserve distribution		(436,224)	(8,297)
Investment earnings		31,782	23,370
Total non-operating revenues		(404,442)	15,073
Change in net position		2,077,544	1,679,432
Net position at beginning of period (Note 5)		7,707,107	6,027,675
Net position at end of period	$	9,784,651	7,707,107

See accompanying notes to the basic financial statements

Chino Basin Watermaster
Statements of Cash Flows
For the Fiscal Years Ended June 30, 2016 and 2015

		2016	2015
Cash flows from operating activities:			
Cash received from stakeholders	$	6,850,365	9,530,108
Cash paid to employees for salaries and wages		(1,039,636)	(1,038,775)
Cash paid to vendors and suppliers for materials and services		(9,639,136)	(6,369,917)
Net cash (used in) provided by operating activities		(3,828,407)	2,121,416
Cash flows from capital financing activities:			
Acquisition of capital assets		-	(7,668)
Net cash used in capital financing activities		-	(7,668)
Cash flows from investing activities:			
Investment earnings received		29,578	20,664
Net cash provided by investing activities		29,578	20,664
Net increase (decrease) in cash and cash equivalents		(3,798,829)	2,134,412
Cash and cash equivalents at the beginning of year		9,649,337	7,514,925
Cash and cash equivalents at the end of year	$	5,850,508	9,649,337
Reconciliation of operating income to net cash used in operating activities:			
Operating income	$	2,481,986	1,664,359
Adjustments to reconcile operating income to net cash provided by operating activities:			
Depreciation		5,061	5,061
Reserve distribution		(436,224)	(8,297)
Changes in assets, deferred outflows of resources, liabilities and deferred inflows of resources:			
(Increase) decrease in assets and deferred outflows:			
Accounts receivable		(6,101,790)	(53,185)
Prepaid expenses		21,066	(477)
Deferred outflows of resources		(164,775)	(57,704)
Increase (decrease) in liabilities and deferred inflows:			
Accounts payable and accrued expense		134,926	414,888
Accrued salaries and benefits		9,487	6,998
Compensated absences		(29,720)	66,635
Other post employment benefits obligation		101,057	96,569
Net pension liability		211,634	(219,744)
Employee compensation plan		18,996	4,750
Deferred inflows of resources		(80,111)	201,563
Total adjustments		(6,310,393)	457,057
Net cash (used in) provided by operating activities	$	(3,828,407)	2,121,416

Chino Basin Watermaster
Notes to the Financial Statements
For the Fiscal Years Ended June 30, 2016 and 2015

(1) Reporting Entity and Summary of Significant Accounting Policies

A. Organization and Operations of the Reporting Entity

The Chino Basin Watermaster ("Watermaster") was established under a judgment entered in Superior Court of the State of California for the County of San Bernardino as a result of Case No. RCV 51010 (formerly Case No. SCV 164327) entitled "Chino Basin Municipal Water District v. City of Chino, et al.", signed by the Honorable Judge Howard B. Weiner on January 27, 1978. The effective date of this Judgment for accounting and operations was July 1, 1977.

Pursuant to the Judgment, the Chino Basin Municipal Water District (CBMWD) five member Board of Directors was initially appointed as "Watermaster". Their term of appointment as Watermaster was for five years, and the Court, by subsequent orders, provided for successive terms, or for a successor Watermaster. Pursuant to a recommendation of the Advisory Committee, the Honorable J. Michael Gunn appointed a nine-member board as Watermaster on September 28, 2000.

Under the Judgment, three Pool committees were formed: (1) Overlying (Agricultural) Pool which includes the State of California and all producers of water for overlying uses other than industrial or commercial purposes; (2) Overlying (Non-Agricultural) Pool which represents producers of water for overlying industrial or commercial purposes; and (3) Appropriative Pool which represents cities, districts, other public or private entities and utilities. The three Pool committees act together to form the "Advisory Committee."

The Watermaster provides the Chino Groundwater Basin service area with services which primarily include: accounting for water appropriations and components of acre-footage of stored water by agency, purchase of replenishment water, groundwater monitoring and implementation of special projects.

Watermaster expenditures are allocated to the pools based on the prior year's production volume (or the same percentage used to set the annual assessments). Allocations for fiscal year 2015-2016 expenses are based on the 2014-2015 production volume.

	Fiscal Year 2016	
Production volume	**Acre Feet**	**Percentage**
Appropriative Pool	84,107	71.910%
Agricultural Pool	28,521	24.385%
Non-agricultural Pool	4,334	3.705%
Total production volume	116,962	100.000%

The Agricultural Pool members ratified an agreement with the Appropriative Pool at their meeting of June 16, 1988, wherein the Appropriative Pool assumes Agricultural Pool administrative expenses and special project cost allocations in exchange for an accelerated transfer of unpumped agricultural water to the Appropriative Pool. In addition the Agricultural Pool transferred all pool administrative reserves at June 30, 1988, to the Appropriative Pool effective July 1, 1988.

In July of 2000, the principal parties in the Basin signed an agreement, known as the Peace Agreement, which among other things formalized the commitment of the Basin parties to implement an Optimum Basin Management Program. The Peace Agreement was signed by all of the parties, and the Court has approved the agreement and ordered the Watermaster to proceed in accordance with the terms of the agreement. The Court has approved revisions to the Chino Basin Watermaster Rules and Regulations.

(1) Reporting Entity and Summary of Significant Accounting Policies, continued

B. Basis of Accounting and Measurement Focus

The Watermaster reports its activities as an enterprise fund, which is used to account for operations that are financed and operated in a manner similar to a private business enterprise, where the intent of the Watermaster is that the costs of providing water to its service area on a continuing basis be financed or recovered primarily through user charges (water sales), capital grants and similar funding. Revenues and expenses are recognized on the full accrual basis of accounting. Revenues are recognized in the accounting period in which they are earned and expenses are recognized in the period incurred, regardless of when the related cash flows take place.

Operating revenues and expenses, such as replenishment water revenues and groundwater replenishment, result from exchange transactions associated with the principal activity of the Watermaster. Exchange transactions are those in which each party receives and gives up essentially equal values. Management, administration, and depreciation expenses are also considered operating expenses. Other revenues and expenses not included in the above categories are reported as non-operating revenues and expenses.

C. Financial Reporting

The Watermaster's basic financial statements have been prepared in conformity with accounting principles generally accepted in the United States of America (GAAP), as applied to enterprise funds. The Governmental Accounting Standards Board (GASB) is the accepted standard-setting body for establishing governmental accounting and financial reporting principles. Watermaster solely operates as a special-purpose government which means it is only engaged in business-type activities; accordingly, activities are reported in the Watermaster's proprietary fund.

The Watermaster has adopted the following GASB pronouncements in the current year:

Government Accounting Standards Board Statement No. 72

In February 2015, the GASB issued Statement No. 72 – *Fair Value Measurement and Application*, effective for financial statements for periods beginning after June 15, 2015.

The objective of this Statement is to enhance comparability of financial statements among governments by measurement of certain assets and liabilities at their fair value using a consistent and more detailed definition of fair value and accepted valuation techniques. The definition of *fair value* is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. This Statement establishes a hierarchy of inputs to valuation techniques used to measure fair value.

Government Accounting Standards Board Statement No. 73

In June 2015, the GASB issued Statement No. 73 – *Accounting and Financial Reporting for Pensions and Related Assets that are not within the Scope of GASB Statement 68, and Amendments to Certain Provisions of GASB Statement 67 and 68*, effective for fiscal years beginning after June 15, 2015.

The objective of this Statement is to improve the usefulness of information about pensions included in the general purpose external financial reports of state and local governments for making decisions and assessing accountability. This Statement establishes requirements for defined benefit pensions that are not within the Scope of Statement No. 68, *Accounting and Financial Reporting for Pensions*, as well as for the assets accumulated for purposes of providing those pensions.

(1) Reporting Entity and Summary of Significant Accounting Policies, continued

C. Financial Reporting, continued

Government Accounting Standards Board Statement No. 76

In June 2015, the GASB issued Statement No. 76 – *The Hierarchy of Generally Accepted Accounting Principles for State and Local Governments*, effective for financial statements for periods beginning after June 15, 2015.

This Statement replaces the requirements of Statement No. 55, *The Hierarchy of Generally Accepted Accounting Principles for State and Local Governments*. The objective of this Statement is to identify – in the context of the current governmental financial reporting environment – the hierarchy of generally accepted accounting principles (GAAP). The "GAAP hierarchy" consists of the sources of accounting principles used to prepare financial statements of local governmental entities in conformity with GAAP and the framework for selecting those principles. This statement reduces the GAAP hierarchy to two categories of authoritative GAAP and addresses the use of authoritative and non-authoritative literature in the event that the accounting treatment is not specified within the source of authoritative GAAP.

Government Accounting Standards Board Statement No. 79

In December 2015, the GASB issued Statement No. 79 – *Certain External Investment Pools and Pool Participants*, effective for financial statements for periods beginning after June 15, 2015.

This Statement enhances comparability of financial statements among governments by establishing specific criteria used to determine whether a qualifying external investment pool may elect to use an amortized cost exception to fair value measurement. Those criteria will provide qualifying external investment pools and participants in those pools with consistent application of an amortized cost-based measurement for financial reporting purposes. That measurement approximates fair value and mirrors the operations of external investment pools that transact with participants at a stable net asset value per share.

D. Assets, Deferred Outflows, Liabilities, Deferred Inflows and Net Position

1. Use of Estimates

The preparation of the basic financial statements in conformity with generally accepted accounting principles requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosures of contingent assets and liabilities at the date of the financial statements and the reported changes in net position during the reporting period. Actual results could differ from those estimates.

2. Cash and Cash Equivalents

Substantially all of the Watermaster's cash is invested in interest-bearing accounts. The Watermaster considers all highly liquid investments with a maturity of three months or less to be cash equivalents.

3. Investments

Changes in fair value that occur during a fiscal year are recognized as investment income reported for that fiscal year. Investment income includes interest earnings, changes in fair value, and any gains or losses realized upon the liquidation or sale of investments.

(1) Reporting Entity and Summary of Significant Accounting Policies, continued

D. Assets, Deferred Outflows, Liabilities, Deferred Inflows and Net Position, continued

3. Investments, continued

The Watermaster categorizes its fair value measurements within the fair value hierarchy established by generally accepted accounting principles. The hierarchy is based on valuation inputs used to measure the fair value of the asset, as follows:

- **Level 1** – Valuation is based on quoted prices in active markets for identical assets.
- **Level 2** – Valuation is based on directly observable and indirectly observable inputs. These inputs are derived principally from or corroborated by observable market data through correlation or market-corroborated inputs. The concept of market-corroborated inputs incorporates observable market data such as interest rates and yield curves that are observable at commonly quoted intervals.
- **Level 3** – Valuation is based on unobservable inputs where assumptions are made based on factors such as prepayment rates, probability of defaults, loss severity and other assumptions that are internally generated and cannot be observed in the market.

The asset's fair value measurement level within the fair value hierarchy is based on the lowest level of any input that is significant to the fair value measurement. Valuation techniques attempt to maximize the use of observable inputs and minimize the use of unobservable inputs.

The preceding methods described may produce a fair value calculation that may not be indicative of net realizable value or reflective of future fair values. Furthermore, although the Watermaster believes its valuation methods are appropriate and consistent with other market participants, the use of different methodologies or assumptions to determine the fair value of certain financial instruments could result in different fair value measurement at the reporting date.

4. Accounts Receivable and Allowance for Uncollectible Accounts

The Watermaster extends credit to customers in the normal course of operations. Management has determined that all amounts are considered collectable. As a result, the Watermaster has not recorded an allowance for doubtful accounts at June 30, 2016.

5. Prepaid Expenses

Certain payments to vendors reflect costs or deposits applicable to future accounting periods and are recorded as prepaid items in the basic financial statements.

6. Capital Assets

Capital assets acquired and/or constructed are capitalized at historical cost. Donated assets are recorded at estimated fair market value at the date of donation. Upon retirement or other disposition of capital assets, the cost and related accumulated depreciation are removed from the respective balances and any gains or losses are recognized.

Depreciation is recorded on a straight-line basis over the estimated useful lives of the assets as follows:

Computer equipment and software	5 years
Office furniture and fixtures	7 years
Leasehold improvements	10 years
Automotive equipment	7 years

(1) Reporting Entity and Summary of Significant Accounting Policies, continued

D. Assets, Deferred Outflows, Liabilities, Deferred Inflows and Net Position, continued

7. Deferred Outflows of Resources

Deferred outflows of resources represent the consumption of resources that is applicable to future periods.

8. Compensated Absences

The Watermaster's policy is to permit eligible employees to accumulate earned vacation up to a total of 320 hours. Employees may receive pay in lieu of using vacation for up to one-half of their annual vacation accrual if: (1) within the prior twelve months, the employee has used vacation in an amount equal to at least half of their annual vacation accrual rate; and (2) the employee has a minimum remaining accrued vacation balance of at least 40 hours. Eligible employees accrue and accumulate sick leave based on Watermaster policy. Twice a year, employees may buy-back accrued sick leave at 50% of their current pay provided that at least 480 hours of accrued sick leave remain after the cash-out. Upon termination of employment, employees are paid all unused vacation, and unused sick time is paid out based on Watermaster policy.

9. Deferred Inflows of Resources

Deferred inflows of resources represent the acquisition of resources that is applicable to future periods.

10. Pensions

For purposes of measuring the net pension liability and deferred outflows/inflows of resources related to pensions, and pension expense, information about the fiduciary net position of the Watermaster's California Public Employees' Retirement System (CalPERS) plans (Plans) and addition to/deduction from the Plans' fiduciary net position have been determined on the same basis as they are reported by CalPERS. For this purpose, benefit payments (including refunds of employee contributions) are recognized when due and payable in accordance with the benefit terms. Investments are reported at fair value.

GASB 68 requires that the reported results must pertain to liability and asset information within certain defined timeframes. For this report, the following timeframes are used:

- Valuation Date: June 30, 2014
- Measurement Date: June 30, 2015
- Measurement Period: July 1, 2014 to June 30, 2015

11. Water Production Assessments

Water Production Assessment categories include: Administration, Optimum Basin Management Program, Special Projects, and Water Replenishment. Assessments are billed on a yearly basis.

12. Budgetary Policies

The Watermaster adopts an annual operational budget for planning, control, and evaluation purposes. Budgetary control and evaluation are affected by comparisons of actual revenues and expenses with planned revenues and expenses for the period. Encumbrance accounting is not used to account for commitments related to unperformed contracts for construction and services.

(1) Reporting Entity and Summary of Significant Accounting Policies, continued

D. Assets, Deferred Outflows, Liabilities, Deferred Inflows and Net Position, continued

13. Net Position

The financial statements utilize a net position presentation. Net position is categorized as follows:

- Net Investment in Capital Assets Component of Net Position – This component of net position consists of capital assets, net of accumulated depreciation and is reduced by any outstanding debt outstanding against the acquisition, construction or improvement of those assets.
- Restricted Component of Net Position – This component of net position consists of constraints placed on net position use through external constraints imposed by creditors, grantors, contributors, or laws or regulations of other governments or constraints imposed by law through constitutional provisions or enabling legislation.
- Unrestricted Component of Net Position – This component of net position consists of the net amount of the assets, deferred outflows of resources, liabilities, and deferred inflows of resources that are not included in the determination of the net investment in capital assets or restricted component of net position.

(2) Cash and Investments

Cash and investments as of June 30, are classified in the Statements of Net Position as follows:

		2016	2015
Cash and cash equivalents	$	5,850,508	9,649,337

Cash and investments as of June 30, consist of the following:

		2016	2015
Cash on hand	$	500	500
Deposits with financial institutions		521,412	479,819
Investments		5,328,596	9,169,018
Total cash and investments	$	5,850,508	9,649,337

As of June 30, the Watermaster's authorized deposits had the following maturities:

	2016	2015
Deposits held with the California Local Agency Investment Fund	167 days	239 days

(2) Cash and Investments, continued

Investments Authorized by the California Government Code and the Watermaster's Investment Policy

The table below identifies the investment types that are authorized by the Watermaster in accordance with the California Government Code (or the Watermaster's investment policy, where more restrictive). The table also identifies certain provisions of the California Government Code (or the Watermaster's investment policy, where more restrictive) that address interest rate risk, credit risk, and concentration of credit risk.

Authorized Investment Type	Maximum Maturity	Maximum Percentage of Portfolio	Maximum Investment in One Issuer
U.S. Treasury Obligations	5 years	None	None
Federal Agency and bank obligations	5 years	None	None
Certificates of Deposits and Time Deposits	5 years	30%	None
Commercial Paper	270 days	10%	10%
Money Market Mutual Funds	90 days	20%	10%
State and Local Bonds, Notes and Warrants	5 years	10%	None
California Local Agency Investment Fund (LAIF)	N/A	None	None
Investment Trust of California (CalTRUST)	N/A	20%	None

Investment in State Investment Pool

The Watermaster is a voluntary participant in the Local Agency Investment Fund (LAIF) that is regulated by the California Government Code under the oversight of the Treasurer of the State of California. The fair value of Watermaster's investment in this pool is reported in the accompanying financial statements at amounts based upon Watermaster's pro-rata share of the fair value provided by LAIF for the entire LAIF portfolio (in relation to the amortized cost of that portfolio). The balance available for withdrawal is based on the accounting records maintained by LAIF, which are recorded on an amortized cost basis.

Watermaster's deposit and withdrawal restrictions and limitations are as follows:

- Same day transaction processing occurs for orders received before 10:00 a.m.
- Next day transactions processing occurs for orders received after 10:00 a.m.
- Maximum limit of 15 transactions (combination of deposits and withdrawals) per month.
- Minimum transaction amount requirement of $5,000, in increments of $1,000 dollars.
- Withdrawals of $10,000,000 or more require 24 hours advance.
- Prior to funds transfer, an authorized person must call LAIF for verbal authorization.

Custodial Credit Risk

Custodial credit risk for *deposits* is the risk that, in the event of the failure of a depository financial institution, a government will not be able to recover its deposits, or will not be able to recover collateral securities that are in the possession of an outside party. The California Government Code and the Watermaster's investment policy does not contain legal or policy requirements that would limit the exposure to custodial credit risk for deposits, other than the following provision for deposits:

The California Government Code requires that a financial institution secure deposits made by state or local governmental units by pledging securities in an undivided collateral pool held by a depository regulated under state law (unless so waived by the governmental unit).

(2) Cash and Investments, continued

Custodial Credit Risk, continued

The market value of the pledged securities in the collateral pool must equal at least 110% of the total amount deposited by the public agencies. Of the Watermaster's bank balances, up to $250,000 at June 30, 2016, were federally insured and the remaining balance is collateralized in accordance with the Code; however, the collateralized securities are not held in the Watermaster's name.

The custodial credit risk for *investments* is the risk that, in the event of the failure of the counterparty (e.g., broker-dealer) to a transaction, a government will not be able to recover the value of its investment or collateral securities that are in the possession of another party. The Code and the Watermaster's investment policy contain legal and policy requirements that would limit the exposure to custodial credit risk for investments. With respect to investments, custodial credit risk generally applies only to direct investments in marketable securities. Custodial credit risk does not apply to a local government's indirect investment in securities through the use of mutual funds or government investment pools (such as LAIF).

Interest Rate Risk

Interest rate risk is the risk that changes in market interest rates will adversely affect the fair value of an investment. Generally, the longer the maturity of an investment the greater the sensitivity of its fair value to changes in market interest rates. One of the ways that the Watermaster manages its exposure to interest rate risk is by purchasing a combination of shorter term and longer term investments and by timing cash flows from maturities so that a portion of the portfolio matures or comes close to maturity evenly over time as necessary to provide for cash flow requirements and liquidity needed for operations.

Credit Risk

Credit risk is the risk that an issuer of an investment will not fulfill its obligation to the holder of the investment. This is measured by the assignment of a rating by a nationally recognized statistical rating organization. Presented below is the minimum rating required by (where applicable) the California Government Code, the Watermaster's investment policy, or debt agreements, and the actual rating as of year-end for each investment type.

Credit ratings of investments as of June 30, 2016 were as follows:

Investment Type		Total	Minimum Legal Rating	Not Rated
California Local Agency Investment Fund	$	5,328,596	N/A	5,328,596

Credit ratings of investments as of June 30, 2015 were as follows:

Investment Type		Total	Minimum Legal Rating	Not Rated
California Local Agency Investment Fund	$	9,169,018	N/A	9,169,018

Concentration of Credit Risk

The Watermaster's investment policy contains no limitations on the amounts that can be invested in any one issuer as beyond that stipulated by the California Government Code. There were no investments in any one issuer (other than for U.S. Treasury securities, mutual funds, and external investment pools) that represented 5% or more of total Watermaster's investment at June 30, 2016.

(3) Capital Assets

Changes in capital assets for 2016 were as follows:

		Balance 2015	Additions	Disposals/ Transfers	Balance 2016
Depreciable assets:					
Computer equipment	$	107,551	-	-	107,551
Furniture and fixtures		43,666	-	-	43,666
Leasehold improvements		23,443	-	-	23,443
Vehicles and equipment		90,484	-	-	90,484
Total depreciable assets		265,144	-	-	265,144
Accumulated depreciation:					
Computer equipment		(98,529)	(2,978)	-	(101,507)
Furniture and fixtures		(33,250)	(2,083)	-	(35,333)
Leasehold improvements		(23,443)	-	-	(23,443)
Vehicles and equipment		(90,483)	-	-	(90,483)
Total accumulated depreciation		(245,705)	(5,061)	-	(250,766)
Total capital assets, net	$	19,439			14,378

Changes in capital assets for 2015 were as follows:

		Balance 2014	Additions	Disposals/ Transfers	Balance 2015
Depreciable assets:					
Computer equipment	$	124,809	7,668	(24,926)	107,551
Furniture and fixtures		43,666	-	-	43,666
Leasehold improvements		23,443	-	-	23,443
Vehicles and equipment		90,484	-	-	90,484
Total depreciable assets		282,402	7,668	(24,926)	265,144
Accumulated depreciation:					
Computer equipment		(120,477)	(2,978)	24,926	(98,529)
Furniture and fixtures		(31,167)	(2,083)	-	(33,250)
Leasehold improvements		(23,443)	-	-	(23,443)
Vehicles and equipment		(90,483)	-	-	(90,483)
Total accumulated depreciation		(265,570)	(5,061)	24,926	(245,705)
Total capital assets, net	$	16,832			19,439

(4) Deferred Outflows of Resources

Changes in deferred outflows of resources for 2016, were as follows:

	Balance 2015	Additions	Amortization	Balance 2016
Deferred outflows of resources:				
Deferred pension outflows	$ 137,056	376,606	(211,831)	301,831
Total deferred outflows of resources	$ 137,056	376,606	(211,831)	301,831

Changes in deferred outflows of resources for 2015, were as follows:

	Balance 2014	Additions	Amortization	Balance 2015
Deferred outflows of resources:				
Deferred pension outflows	$ 79,352	138,359	(80,655)	137,056
Total deferred outflows of resources	$ 79,352	138,359	(80,655)	137,056

(5) Prior Year Restatement of Net Position

In fiscal year 2015, the Watermaster implemented GASB pronouncements 68 and 71 to recognize its proportionate share of the net pension liability.

As a result of the implementation, the Watermaster recognized the pension liability and recorded a net prior period adjustment of $740,195 to decrease the governmental activities' beginning net position. The adjustment was made to reflect the prior period costs related to the implementation of GASB 68 and 71.

The restatement of beginning net position is summarized as follows:

The adjustment to net position is as follows:

Net position at July 1, 2014, as previously stated	$ 6,767,870
Effect of adjustment to record net pension liability	(819,547)
Effect of adjustment to record deferred pension outflows	79,352
Total adjustments	(740,195)
Net position at July 1, 2014, as restated	$ 6,027,675

(6) Compensated Absences

The changes to compensated absences for 2016, were as follows:

	Balance 2015	Additions	Deletions	Balance 2016	Due Within One Year	Due in more than one year
$	239,273	137,153	(166,873)	209,553	73,344	136,209

The changes to compensated absences for 2015, were as follows:

	Balance 2014	Additions	Deletions	Balance 2015	Current	Long Term
$	172,638	142,448	(75,813)	239,273	83,746	155,527

(7) Nonqualified Employee Compensation Plan

Effective June 1, 2015, the Watermaster established a Nonqualified Deferred Compensation Plan (Plan). The purpose of this Plan is to provide deferred compensation for selected public employees to participate in the Plan. The Plan is intended to be an unfunded deferred compensation plan that complies with the requirements of Section 457(f) and 409A of the Internal Revenue Code of 1986. Each Plan Participant shall be entitled to elect to forego all or any portion, as either a dollar amount or a percentage, of the Participant's salary and/or bonus that may become payable by the Employer for a Plan year after all applicable deductions and withholdings. Such election shall be evidenced by a Deferral Agreement.

On June 30, 2016, Watermaster made an employer contribution of $18,996 to the Plan for the benefit of its eligible employee for the 12 consecutive month period from July 1, 2015 to June 30, 2016. On June 30, 2015, Watermaster made an employer contribution of $4,750 to the Plan for the benefit of its eligible employee for the 12 consecutive month period from July 1, 2014 to June 30, 2015. For each of Watermaster's regular payroll periods beginning on and after July 1, 2015 during the remainder of the Employment Term (from June 30, 2014 up to the expiration date of June 30, 2017), the Watermaster agrees to make an employer contribution to the Plan for the benefit of the eligible employee equal to 8% of the corresponding salary including any incentive compensation paid during that payroll period; provided that the eligible employee is still employed with Watermaster on the payday of that payroll period. The balance of Watermaster's Employee Compensation Plan as of June 30, 2016 and 2015 amounted to $23,746 and $4,750, respectively.

(8) Deferred Compensation Savings Plan

For the benefit of its employees, the Watermaster participates in a 457 Deferred Compensation Program (Program). The purpose of this Program is to provide deferred compensation for public employees that elect to participate in the Program. Generally, eligible employees may defer receipt of a portion of their salary until termination, retirement, death or unforeseeable emergency. Until the funds are paid or otherwise made available to the employee, the employee is not obligated to report the deferred salary for income tax purposes.

Federal law requires deferred compensation assets to be held in trust for the exclusive benefit of the participants. Accordingly, the Watermaster is in compliance with this legislation. Therefore, these assets are not the legal property of the Watermaster, and are not subject to claims of the Watermaster's general creditors. Market value of all plan assets held in trust at June 30, 2016 and 2015 was $870,106 and $877,881, respectively.

(8) Deferred Compensation Savings Plan, continued

The Watermaster has implemented GASB Statement No. 32, *Accounting and Financial Reporting for Internal Revenue Code Section 457 Deferred Compensation Plans*. Since the Watermaster has little administrative involvement and does not perform the investing function for this plan, the assets and related liabilities are not shown on the statement of net position.

(9) Defined Benefit Pension Plan

Plan Description

All qualified permanent and probationary employees are eligible to participate in the Watermaster's Miscellaneous Employee Pension Plan, cost-sharing multiple employer defined benefit pension plans administered by the California Public Employees' Retirement System (CalPERS). Benefit provisions under the Plan are established by State statute and Watermaster's resolution. CalPERS issues publicly available reports that include a full description of the pension plan regarding benefit provisions, assumptions and membership information that can be found on the CalPERS website.

Benefits provided

CalPERS provides service retirement and disability benefits, annual cost of living adjustments and death benefits to plan members, who must be public employees and beneficiaries. Benefits are based on years of credited service, equal to one year of full time employment. Members with five years of total service are eligible to retire at age 50 with statutorily reduced benefits. All members are eligible for non-duty disability benefits after 10 years of service. The death benefit is one of the following: The Basic Death Benefit, the 1957 Survivor Benefit, or the Optional Settlement 2W Death Benefit. The cost of living adjustments for each plan are applied as specified by the Public Employees' Retirement Law.

On September 12, 2012, the California Governor signed the California Public Employees' Pension Reform Act of 2013 (PEPRA) into law. PEPRA took effect January 1, 2013. The new legislation closed the Watermaster's CalPERS 2.5% at 55 Risk Pool Retirement Plan to new employee entrants effective December 31, 2013. All employees hired after January 1, 2013 are eligible for the Watermaster's CalPERS 2.0% at 62 Retirement Plan under PEPRA.

The Plans' provision and benefits in effect at June 30, 2016 are summarized as follows:

	Miscellaneous Plan	
	Classic	PEPRA
Hire date	Prior to January 1, 2013	On or after January 1, 2013
Benefit formula	2.5% @ 55	2.0% @ 62
Benefit vesting schedule	5 years of service	5 years of service
Benefit payments	monthly for life	monthly for life
Retirement age	50 - 55	52 - 67
Monthly benefits, as a % of eligible compensation	2.0% to 2.5%	1.0% to 2.5%
Required employee contribution rates	8.00%	6.25%
Required employer contribution rates	9.671%	6.237%

(9) Defined Benefit Pension Plan, continued

Contributions

Section 20814(c) of the California Public Employees' Retirement Law requires that the employer contribution rates, for all public employers, be determined on an annual basis by the actuary and shall be effective on July 1 following notice of the change in rate. Funding contributions for the Plan is determined annually on an actuarial basis as of June 30 by CalPERS. The actuarially determined rate is the estimated amount necessary to finance the costs of benefits earned by employees during the year, with an additional amount to finance any unfunded accrued liability. The Watermaster is required to contribute the difference between the actuarially determined rate and the contribution rate of employees.

For the fiscal years ended June 30, 2016 and 2015, the contributions recognized as part of pension expense for the Plan was as follows:

	Miscellaneous Plan	
	2016	2015
Contributions – employer	$ 83,557	133,410

Net Pension Liability

As of the fiscal year ended June 30, 2016 and 2015, the Watermaster reported net pension liabilities for its proportionate shares of the net pension liability of each Plan as follows:

	Proportionate Share of Net Pension Liability	
	2016	2015
Miscellaneous Plan	$ 811,437	599,803

The Watermaster's net pension liability for the Plan is measured as the proportionate share of the net pension liability. The net pension liability of the Plan is measured as of June 30, 2015 and 2014 (the measurement dates), and the total pension liability for the Plan used to calculate the net pension liability was determined by an actuarial valuation as of June 30, 2014 and 2013 (the valuation dates), rolled forward to June 30, 2015 and 2014, using standard update procedures. The Watermaster's proportion of the net pension liability was based on a projection of the Watermaster's long-term share of contributions to the pension plan relative to the projected contributions of all participating employers, actuarially determined.

The Watermaster's proportionate share of the pension liability for the Plan as of the measurement date June 30, 2014 and 2015 was as follows:

	Miscellaneous Plan
Proportion – June 30, 2014	0.00964%
Proportion – June 30, 2015	0.01182%
Change – Increase (Decrease)	0.00218%

(9) Defined Benefit Pension Plan, continued

Net Pension Liability, continued

The Watermaster's proportionate share of the pension liability for the Plan as of the measurement date June 30, 2013 and 2014 was as follows:

	Miscellaneous Plan
Proportion – June 30, 2013	0.01017%
Proportion – June 30, 2014	0.00964%
Change – Increase (Decrease)	-0.00053%

Deferred Pension Outflows (Inflows) of Resources

For the fiscal years ended June 30, 2016 and 2015, the Watermaster recognized pension expense of $50,305 and $57,525, respectively.

At June 30, 2016, the Watermaster reported deferred outflows of resources and deferred inflows of resources related to pensions from the following sources:

Description		Deferred Outflows of Resources	Deferred Inflows of Resources
Pension contributions subsequent to the measurement date	$	83,557	-
Differences between actual and expected experience		8,551	-
Changes in assumptions		-	(80,897)
Net differences between projected and actual earnings on plan investments		-	(40,555)
Differences between actual contribution and proportionate share of contribution		11,832	-
Net adjustment due to differences in proportions of net pension liability		197,891	-
Total	$	301,831	(121,452)

(9) Defined Benefit Pension Plan, continued

Deferred Pension Outflows (Inflows) of Resources, continued

At June 30, 2015, the Watermaster reported deferred outflows of resources and deferred inflows of resources related to pensions from the following sources:

Description		Deferred Outflows of Resources	Deferred Inflows of Resources
Pension contributions subsequent to the measurement date	$	133,410	-
Net differences between projected and actual earnings on plan investments		-	(201,563)
Net adjustment due to differences in proportions of net pension liability		3,646	-
Total	$	137,056	(201,563)

As of June 30, 2016 and 2015, employer pension contributions reported as deferred outflows of resources related to contributions subsequent to the measurement date of $83,557 and $133,410, respectively and will be recognized as a reduction of the net pension liability in the fiscal year ended June 30, 2017 and 2016.

At June 30, 2016, Watermaster recognized other amounts reported as deferred outflows and inflows of resources related to the pension liability, which will be recognized as pension expense as follows:

Fiscal Year Ending June 30,		Deferred Net Outflows/(Inflows) of Resources
2017	$	26,794
2018		26,531
2019		15,844
2020		27,653
2021		-
Remaining		-

At June 30, 2015, Watermaster recognized other amounts reported as deferred outflows and inflows of resources related to the pension liability, which will be recognized as pension expense as follows:

Fiscal Year Ending June 30,		Deferred Net Outflows/(Inflows) of Resources
2016	$	(49,087)
2017		(49,087)
2018		(49,350)
2019		(50,393)

(9) Defined Benefit Pension Plan, continued

Actuarial assumptions, continued

The total pension liabilities in the June 30, 2015 and 2014 actuarial valuation report were determined using the following actuarial assumptions:

The following is a summary of the actuarial assumptions and methods:

Valuation Date	June 30, 2014 and 2013
Measurement Date	June 30, 2015 and 2014
Actuarial cost method	Entry Age Normal in accordance with the requirements of GASB Statement No. 68
Actuarial assumptions:	
Discount rate	7.50% for 2014 and 7.65% for 2015
Inflation	2.75%
Salary increases	Varies by Entry Age and Service
Investment Rate of Return	7.50 % Net of Pension Plan Investment and Administrative Expenses; includes inflation
Mortality Rate Table*	Derived using CalPERS' Membership Data for all Funds
Post Retirement Benefit	Contract COLA up to 2.75% until Purchasing Power Protection Allowance Floor on Purchasing Power applies, 2.75% thereafter

* The mortality table used on the previous page was developed based on CalPERS' specific data. The table includes 20 years of mortality improvements using Society of Actuaries Scale BB. For more details on this table, please refer to the 2014 Experience Study report. Further details of the Experience Study can be found on the CalPERS website.

Discount Rate

For the June 30, 2015 and 2014 valuation reports, the discount rate used to measure the total pension liability was 7.65% and 7.50%, respectively, for the Plan. To determine whether the municipal bond rate should be used in the calculation of a discount rate for the plan, CalPERS stress tested plans that would most likely result in a discount rate that would be different from the actuarially assumed discount rate. Based on the testing, none of the tested plans run out of assets. Therefore, the current 7.65% and 7.50% discount rates used are adequate and the use of the municipal bond rate calculation is not necessary. The long term expected discount rate of 7.65% and 7.50% will be applied to all plans in the Public Employees' Retirement Fund (PERF). The stress test results are presented in a detailed report which can be obtained from the CalPERS website.

According to Paragraph 30 of Statement 68, the long-term discount rate should be determined without reduction for pension plan administrative expense. For the June 30, 2015 and 2014 valuation reports, the 7.65% and 7.50% investment return assumption used in this accounting valuation is net of administrative expenses. Administrative expenses are assumed to be 15 basis points. An investment return excluding administrative expenses would have been 7.80% and 7.65%, respectively. Using this lower discount rate has resulted in a slightly higher Total Pension Liability and Net Pension Liability. CalPERS confirmed the materiality threshold for the difference in the calculation and did not find it to be a material difference.

(9) Defined Benefit Pension Plan, continued

Discount Rate, continued

CalPERS is scheduled to review all actuarial assumptions as part of its regular Asset Liability Management (ALM) review cycle that is scheduled to be completed in February 2018. Any changes to the Discount rate will require CalPERS Board action and proper stakeholder outreach. For these reasons, CalPERS expects to continue using a discount rate net of administrative expenses for GASB 67 and 68 calculations through at least the fiscal year ended 2017-2018. CalPERS will continue to check the materiality of the difference in the calculation until such time as it has changed its methodology.

The long-term expected rate of return on pension plan investments was determine using a building-block method in which best-estimate ranges of expected future real rates of return (expected returns, net of pension plan investment expense and inflation) are developed for each major asset class.

In determining the long-term expected rate of return, CalPERS took into account both short-term and long-term market return expectations as well as the expected pension fund cash flows. Using historical returns of all the funds' asset classes, expected compound returns were calculates over the short-term (first 10 years) and the long-term (11-60 years) using a building-block approach. Using the expected nominal returns for both short-term and long-term, the present value of benefits was calculated for each fund. The expected rate of return was set by calculating the single equivalent return that arrived at the same present value of benefits for cash flows as the one calculated using both short-term and long-term returns. The expected rate of return was then set equivalent to the single equivalent rate calculated above and rounded down to the nearest one quarter of one percent.

In determining the long-term expected rate of return, CalPERS took into account both short-term and long-term market return expectations as well as the expected pension fund cash flows. Using historical returns of all the funds' asset classes, expected compound returns were calculates over the short-term (first 10 years) and the long-term (11-60 years) using a building-block approach. Using the expected nominal returns for both short-term and long-term, the present value of benefits was calculated for each fund. The expected rate of return was set by calculating the single equivalent return that arrived at the same present value of benefits for cash flows as the one calculated using both short-term and long-term returns. The expected rate of return was then set equivalent to the single equivalent rate calculated above and rounded down to the nearest one quarter of one percent.

The table below reflects the long-term expected real rate of return by asset class. The rate of return was calculated using the capital market assumptions applied to determine the discount rate and asset allocation.

Asset Class	New Strategic Allocation	Real Return Years 1–10*	Real Return Year 11+**
Global Equity	47.0%	5.25%	5.71%
Global Fixed Income	19.0	0.99	2.43
Inflation Sensitive	6.0	0.45	3.36
Private Equity	12.0	6.83	6.95
Real Estate	11.0	4.50	5.13
Infrastructure and Forestland	3.0	4.50	5.09
Liquidity	2.0	(0.55)	(1.05)
Total	100.0%		

* An expected inflation of 2.5% used for this period

** An expected inflation of 3.0% used for this period

(9) Defined Benefit Pension Plan, continued

Discount Rate, continued

Sensitivity of the Proportionate Share of Net Pension Liability to Changes in the Discount Rate

The following table presents the Watermaster's proportionate share of the net position liability for the Plan, calculated using the discount rate, as well as what the Watermaster's proportional share of the net pension liability would be if it were calculated using a discount rate that is one percentage point lower or one percentage point higher than the current rate.

At June 30, 2016, the discount rate comparison was the following:

	Discount Rate - 1% 6.65%	Current Discount Rate 7.65%	Discount Rate + 1% 8.65%
Watermaster's Net Pension Liability	$ 1,377,903	811,437	362,332

At June 30, 2015, the discount rate comparison was the following:

	Discount Rate - 1% 6.50%	Current Discount Rate 7.50%	Discount Rate + 1% 8.50%
Watermaster's Net Pension Liability	$ 1,068,664	599,803	210,693

Payable to the Pension Plan

At June 30, 2016 and 2015, the Watermaster reported no payables for the outstanding amount of contribution to the pension plan.

Pension Plan Fiduciary Net Position

Detailed information about the pension plan's fiduciary net position is available in separately issued CalPERS financial reports. See pages 41 through 42 for the Required Supplementary Schedules.

(10) Other Post-Employment Benefits Payable

The Watermaster provides other post-employment benefits (OPEB) to qualified employees who retire from the Watermaster and meet the Watermaster's vesting requirements. During the fiscal year ended June 30, 2013, the Watermaster implemented GASB Statement No. 45, which changed the accounting and financial reporting used by local government employers for post-employment benefits. Previously, the costs of such benefits were generally recognized as expenses of local government employers on a pay-as-you-go basis. The new reporting requirements for these benefit programs as they pertain to the Watermaster are set forth below.

(10) Other Post-Employment Benefits Payable, continued

Background

The CalPERS Health Benefits Program is governed by the Public Employees' Medical and Hospital Care Act (PEMHCA) of the California Public Employees' Retirement Law. The program was established in 1962 to purchase health care for employees of the State of California. In 1976, legislation was passed to allow other public employers, such as cities, counties, and school districts to join the program.

Contracting Public Agencies must offer all eligible active and retired employees an opportunity to enroll in a CalPERS health plan of their choice. All employers are required by statute to contribute towards the cost of the health plan premium. Premiums and health plan benefits are approved annually by the CalPERS Board of Administration.

The CalPERS Health Benefits Program offers a choice of health plans to provide basic coverage to active employees and Supplement to Medicare and Managed Medicare coverage for retired members. Eligible enrollees can choose between a variety of Health Maintenance Organizations, Preferred Provider Organizations and employee association plans.

Plan Description – Eligibility

The Watermaster's Retiree Health Plan is a single-employer defined benefit healthcare plan administered by the California Public Employees Retirement System (CalPERS). The Plan provides medical insurance benefits to eligible retirees and their dependents.

In accordance with Public Employee Retirement Law (Article 2), the Public Employees Retirement System Board of Administration has the responsibility to approve health benefit plans and may contract with carriers offering health benefit plans. The Board of Administration is responsible for adopting all rules and regulations, including scope and content of basic health plans. The California Government Code also defines certain rules for contract agencies to purchase health insurance benefits.

Membership in the OPEB plan consisted of the following members as of June 30:

	2016	2015	2014
Active plan members	8	9	9
Active employees' dependents	3	4	4
Retirees and dependents receiving benefits	1	1	1
Retirees and dependents not receiving benefits	-		-
Total plan membership	12	14	14

Funding Policy

There is no requirement imposed by CalPERS, to contribute any amount beyond the pay-as-you-go contributions. The cost of monthly insurance premiums is shared between the retiree and the Watermaster. The cost sharing varies depending upon: the dependent status and plan selected. A minimum employer monthly contribution requirement is established and may be amended by the CalPERS Board of Administration and applicable laws.

The Watermaster is required to contribute the *Annual Required Contribution (ARC) of the Employer*, an amount actuarially determined in accordance with the parameters of GASB Statement No. 45. The ARC represents a level of funding that, if paid on an ongoing basis, is projected to cover the normal cost each year and amortize any unfunded actuarial liabilities (or funding excess) over a period not to exceed thirty years. At June 30, 2016 and 2015, the ARC rate is 10.09% and 10.21%, respectively of the annual covered payroll.

(10) Other Post-Employment Benefits Payable, continued

Annual Cost

For the years ended June 30, 2016 and 2015, the Watermaster's ARC cost is $102,557 and $98,033. The Watermaster's net OPEB payable obligation amounted to $346,070 and $245,013 for the years ended June 30, 2016 and 2015. The Watermaster contributed $1,500 and $1,464 to adjust the annual required contribution for current retiree OPEB premiums for the years ended June 30, 2016 and 2015, respectively.

The balance at June 30, consists of the following:

		2016	2015	2014
Annual OPEB expense:				
Annual required contribution (ARC)	$	101,484	97,383	79,930
Interest on net OPEB obligation		12,251	7,422	-
Adjustment to annual required contribution		(11,178)	(6,772)	-
Total annual OPEB expense		102,557	98,033	79,930
Change in net OPEB payable obligation:				
Age adjusted contributions made		(1,500)	(1,464)	(1,123)
Total change in net OPEB payable obligation		101,057	96,569	78,807
OPEB payable – beginning of year		245,013	148,444	69,637
OPEB payable – end of year	$	346,070	245,013	148,444

The Watermaster's annual OPEB cost, the percentage of the annual OPEB cost contributed to the Plan, and the net OPEB obligation for fiscal year 2016 and the two preceding years were as follows:

Three-Year History of Net OPEB Obligation

Fiscal Year Ended		Annual OPEB Cost	Age Adjusted Contribution	Percentage of Annual OPEB Cost Contributed	Net OPEB Obligation Payable
2016	$	102,557	1,500	1.46%	346,070
2015		98,033	1,464	1.49%	245,013
2014		79,930	1,123	1.40%	148,444

(11) Net Position

Calculation of net position as of June 30, were as follows:

		2016	2015
Net investment in capital assets:			
Capital assets, net	$	14,378	19,439
Total net investment in capital assets		14,378	19,439
Unrestricted net position:			
Non-spendable net position:			
Prepaid expenses and deposits		18,597	39,663
Total non-spendable net position		18,597	39,663
Spendable net position are designated as follows:			
Undesignated net position reserve		9,751,676	7,648,005
Total spendable net position		9,751,676	7,648,005
Total unrestricted net position		9,770,273	7,687,668
Total net position	$	9,784,651	7,707,107

(12) Deferred Inflows of Resources

Changes in deferred inflows of resources for 2016, were as follows:

		Balance 2015	Additions	Amortization	Balance 2016
Deferred inflows of resources:					
Deferred pension inflows	$	201,563	(28,484)	(51,627)	121,452
Total deferred inflows of resources	$	201,563	(28,484)	(51,627)	121,452

Changes in deferred inflows of resources for 2015, were as follows:

		Balance 2014	Additions	Amortization	Balance 2015
Deferred inflows of resources:					
Deferred pension inflows	$	-	251,953	(50,390)	201,563
Total deferred inflows of resources	$	-	251,953	(50,390)	201,563

(13) Risk Management

The Watermaster is exposed to various risks of loss related to torts, theft of, damage to and destruction of assets; errors and omissions; injuries to employees; and natural disasters. The Watermaster is insured for a variety of potential exposures. The following is a summary of the insurance policies carried by the Watermaster as of June 30, 2016:

- Commercial General Liability: $2,000,000 General Aggregate Limit (Other than Products/Completed Operations); $2,000,000 Products/Completed Operations Aggregate Limit (Any One Person or Organization); $1,000,000 Personal and Advertising Injury Limit; $1,000,000 Each Occurrence Limit; $100,000 Rented To You Limit; $5,000 Medical Expenses Limit (Any One Person).
- Commercial Excess Liability: Limits of Liability are $10,000 Retained Limit, $4,000,000 Each Occurrence, $4,000,000 General Aggregate Limit, $4,000,000 Products/Completed Operations to Aggregate.
- Automobile: $1,000,000 Combined Bodily Injury and Property Damage Single Limit (Each Accident); $500,000 Uninsured Motorists Single Limit. $1,000 deductible for Comprehensive and $1,000 deductible for Collision.
- Property: $525,000 with liability limits varying by property type with a $1,000 deductible.
- Crime coverage: $50,000 per claim with a $1,000 deductible.
- Director & Officers Liability: $1,000,000 Liability Coverage; Employment Practices Liability: $1,000,000 Liability Coverage. Director and Officer/Crisis Management: $5,000 to $50,000 with liability limits varying by type of coverage.
- Workers' compensation: $2,000,000 each accident or each employee by disease.

(14) Governmental Accounting Standards Board Statements Issued, Not Yet Effective

The Governmental Accounting Standards Board (GASB) has issued several pronouncements prior to June 30, 2016, that has effective dates that may impact future financial presentations.

Governmental Accounting Standards Board Statement No. 74

In June 2015, the GASB issued Statement No. 74 – *Financial Reporting for Postemployment Benefit Plans Other Than Pension Plans*. The objective of this Statement is to improve the usefulness or information about postemployment benefits other than pensions (other postemployment benefits of OPEB) included in the general purpose external financial reports of state and local governmental OPEB plans for making decisions and assessing accountability.

This Statement replaces Statements No. 43, *Financial Reporting for Postemployment Benefit Plans Other Than Pension Plans*, as amended, and No. 57, *OPEB Measurements by Agent Employers and Multiple-Employer Plans*. It also includes requirements for defined contribution OPEB plans that replace the requirements for those OPEB plans in Statement No. 25, *Financial Reporting for Defined Benefit Pension Plans and Note Disclosures for Defined Contribution Plans*, as amended, Statement 43, and Statement No.50, *Pension Disclosures*.

The provisions of this Statement are effective for financial statements for periods beginning after June 15, 2016. The impact of the implementation of this Statement to Watermaster's financial statements has not been assessed at this time.

(14) Governmental Accounting Standards Board Statements Issued, Not Yet Effective, continued

Governmental Accounting Standards Board Statement No. 75

In June 2015, the GASB issued Statement No. 75 – *Accounting and Financial Reporting for Postemployment Benefits Other Than Pensions*. The objective of this Statement is to improve accounting and financial reporting by state and local governments for postemployment benefits other than pensions (OPEB). It also improves information provided by state and local governmental employers about financial support for OPEB that is provided by other entities.

This Statement replaces the requirements of Statement No. 45, *Accounting and Financial Reporting by Employers for Postemployment Benefits Other Than Pensions*, as amended, and No. 57, *OPEB Measurements by Agent Employers and Agent Multiple-Employer Plans*, for OPEB. The provisions of this Statement are effective for financial statements for periods beginning after June 15, 2017. The impact of the implementation of this Statement to the Watermaster's financial statements has not been assessed at this time.

Governmental Accounting Standards Board Statement No. 77

In August 2015, the GASB issued Statement No. 77 – *Tax Abatement Disclosures*. The objective of this Statement is to improve financial reporting by giving users of financial statements essential information that is not consistently or comprehensively reported to the public at present. Financial statement users need information about certain limitations on a government's ability to raise resources. This includes limitations on revenue-raising capacity resulting from governmental programs that use tax abatements to induce behavior by individuals and entities that is beneficial to the government or its citizens. Tax abatements are widely used by state and local governments, particularly to encourage economic development. This Statement is effective for financial statements for periods beginning after December 15, 2015. It is believed that the implementation of this Statement will not have a material effect to the Watermaster's financial statements.

Governmental Accounting Standards Board Statement No. 80

In January 2016, the GASB issued Statement No. 80 – *Blending Requirements for Certain Component Units – An Amendment of GASB Statement No. 14*. The objective of this Statement is to improve financial reporting for irrevocable split-interest agreements by providing recognition and measurement guidance for situations in which a government is a beneficiary of the agreement. The additional criterion requires blending of a component unit incorporated as a not-for-profit corporation in which the primary government is the sole corporate member. The additional criterion does not apply to component units included in the financial reporting entity pursuant to the provisions of Statement No. 39, *Determining Whether Certain Organizations Are Component Units*. This Statement is effective for financial statements for periods beginning after June 15, 2016. It is believed that the implementation of this Statement will not have a material effect to Watermaster's financial statements.

Governmental Accounting Standards Board Statement No. 81

In March 2016, the GASB issued Statement No. 81 – *Irrevocable Split-Interest Agreements*. The objective of this Statement is to improve accounting and financial reporting for irrevocable split-interest agreements by providing recognition and measurement guidance for situations in which a government is a beneficiary of the agreement. This Statement requires that a government that receives resources pursuant to an irrevocable split-interest agreement recognize assets, liabilities, and deferred inflows of resources at the inception of the agreement. Furthermore, this Statement requires that a government recognize assets representing its beneficial interests in irrevocable split-interest agreements that are administered by a third party, if the government controls the present service capacity of the beneficial interests.

(14) Governmental Accounting Standards Board Statements Issued, Not Yet Effective, continued

Governmental Accounting Standards Board Statement No. 81, continued

This Statement requires that a government recognize revenue when the resources become applicable to the reporting period. This Statement is effective for financial statements for periods beginning after December 15, 2016. It is believed that the implementation of this Statement will not have a material effect to Watermaster's financial statements.

In March 2016, the GASB issued Statement No. 81 – *Irrevocable Split-Interest Agreements*. The objective of this Statement is to improve accounting and financial reporting for irrevocable split-interest agreements by providing recognition and measurement guidance for situations in which a government is a beneficiary of the agreement. This Statement requires that a government that receives resources pursuant to an irrevocable split-interest agreement recognize assets, liabilities, and deferred inflows of resources at the inception of the agreement. Furthermore, this Statement requires that a government recognize assets representing its beneficial interests in irrevocable split-interest agreements that are administered by a third party, if the government controls the present service capacity of the beneficial interests. This Statement requires that a government recognize revenue when the resources become applicable to the reporting period. This Statement is effective for financial statements for periods beginning after December 15, 2016. It is believed that the implementation of this Statement will not have a material effect to Watermaster's financial statements.

Governmental Accounting Standards Board Statement No. 82

In March 2016, the GASB issued Statement No. 82 – *Pension Issues-an amendment of GASB Statements No. 67, No. 68, and No.73*. This Statement addresses issues regarding (1) the presentation of payroll-related measures in required supplementary information, (2) the selection of assumptions and the treatment of deviations from the guidance in an Actuarial Standard of Practice for financial reporting purposes, and (3) the classification of payments made by employers to satisfy employee (plan member) contribution requirements. This Statement is effective for financial statements for periods beginning after June 15, 2016. It is believed that the implementation of this Statement will not have a material effect to Watermaster's financial statements.

(15) Commitments and Contingencies

Grant Awards

Grant funds received by the Watermaster are subject to audit by the grantor agencies. Such audit could lead to requests for reimbursements to the grantor agencies for expenditures disallowed under terms of the grant. Management of the Watermaster believes that such disallowances, if any, would not be significant.

Litigation

In the ordinary course of operations, the Watermaster is subject to claims and litigation from outside parties. After consultation with legal counsel, the Watermaster believes the ultimate outcome of such matters, if any, will not materially affect its financial condition.

(16) Subsequent Events

Events occurring after June 30, 2016, have been evaluated for possible adjustment to the financial statements or disclosure as of November 17, 2016 which is the date the financial statements were available to be issued.

Required Supplementary Information

Chino Basin Watermaster
Schedule of Funding Status – Other Post-Employment Benefits Obligation
For the Year Ended June 30, 2016

Funded Status and Funding Progress of the Plan

Required Supplemental Information – Schedule of Funding Progress

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (b)	Unfunded Actuarial Accrued Liability (UAAL) (b-a)	Funded Ratio (a/b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll ((b-a)/c)
6/30/2016	$ -	565,767	565,767	-	1,005,439	56.27%
6/30/2015	-	524,713	524,713	-	954,193	54.99%
6/30/2014	-	381,010	381,010	-	858,882	44.36%

The most recent valuation (dated June 30, 2016) includes an Actuarial Accrued Liability and Unfunded Actuarial Accrued Liability of $565,767. The covered payroll (annual payroll of active employees covered by the plan) for the year ended June 30, 2016 was $1,005,439. The ratio of the unfunded actuarial accrued liability to annual covered payroll is 56.27%.

Actuarial Methods and Assumptions

Actuarial valuations involve estimates of the value of reported amounts and assumptions about the probability of events far into the future. Actuarially determined amounts are subject to continual revision as actual results are compared to past expectations and new estimates are made about the future. Calculations are based on the types of benefits provided under the terms of the substantive plan at the time of each valuation and the pattern of sharing of costs between the employer and plan members to that point. Consistent with the long-term perspective of actuarial calculations, actuarial methods and assumptions used include techniques that are designed to reduce short-term volatility in actuarial accrued liabilities for benefits.

The following is a summary of the actual assumptions and methods:

Valuation date	June 30, 2016
Actuarial cost method	Entry age normal actuarial cost method
Amortization method	Level percent of payroll
Remaining amortization period	20 years as of the valuation date
Assumed retirement age	60 years of age
Actuarial assumptions:	15 year smooth market
Discount rate	5.00% (net of administrative expenses)
Projected salary increase	3.00%
Medical insurance premium rate increase	7.00%
Individual salary growth	3.00%

Chino Basin Watermaster
Schedule of the Watermaster's Proportionate Share of the Net Pension Liability
As of June 30, 2016
Last Ten Years*

	Measurement Date 6/30/2014	Measurement Date 6/30/2015
Watermaster's Proportion of the Net Pension Liability	0.00964%	0.01182%
Watermaster's Proportionate Share of the Net Pension Liability	$ 599,803	$ 811,437
Watermaster's Covered-Employee Payroll	$ 726,672	$ 888,483
Watermaster's proportionate share of the net pension liability as a as a Percentage of its Covered-Employee Payroll	82.54%	91.33%
Plan's Fiduciary Net Position as a Percentage of the Plan's Total Pension Liability	83.03%	78.02%
Plan's Proportionate Share of Aggregate Employer Contributions	$ 79,352	$ 99,615

Note:

* Fiscal Year 2015 was the first year of implementation, therefore only two years are shown.

Chino Basin Watermaster
Schedule of Pension Plan Contributions
As of June 30, 2015
Last Ten Years*

Schedule of Pension Plan Contributions (a):	Measurement Date 2013-2014	Measurement Date 2014-2015
Actuarially Determined Contribution	$ 112,177	$ 99,615
Contributions in Relation to the Actuarially Determined Contribution	(112,177)	(83,557)
Contribution Deficiency (Excess)	$ -	$ 16,058
Covered Payroll	$ 726,672	$ 888,483
Contribution's as a percentage of Covered-employee Payroll	15.44%	9.40%

Note:

* Fiscal Year 2015 was the first year of implementation, therefore only two years is shown.

Supplemental Information Section

Chino Basin Watermaster
Combining Schedule of Revenue, Expenses and Changes in Net Position
For the Fiscal Year Ended June 30, 2016

	Watermaster Administration	Optimum Basin Management	Pool Administration and Special Projects: Appropriative Pool	Agricultural Pool	Non-Ag Pool	Groundwater Operations: Groundwater Replenishment	SB 222 Funds	LAIF Value Adj	GASB 68 Beginning Net Position	Grand Totals	AMENDED BUDGET 2015-2016
Administrative Revenues:											
Administrative Assessments			8,874,750		309,364					9,184,114	9,184,219
Interest Revenue			23,428	2,046	164					25,638	22,050
Mutual Agency Project Revenue	157,346									157,346	157,937
Miscellaneous Income										-	0
Total Revenues	157,346		8,898,178	2,046	309,528	-	-	-	-	9,367,098	9,364,206
Administrative & Project Expenditures:											
Watermaster Administration	1,482,333									1,482,333	1,347,766
Watermaster Board-Advisory Committee	144,320									144,320	169,078
Ag Pool Misc. Expense - Ag Fund										-	800
Pool Administration	-	-	109,504	341,451	95,741	-				546,696	567,483
Optimum Basin Mgmt Administration	-	1,741,442	-	-	-	-	-	-	-	1,741,442	1,855,003
OBMP Project Costs	-	2,218,620	-	-	-	-	-	-	-	2,218,620	3,390,855
Debt Service	-	304,376	-	-	-	-	-	-	-	304,376	460,209
Basin Recharge Improvements	-	1,391,315	-	-	-	-	-	-	-	1,391,315	3,472,477
Mutual Agency Project Costs										-	37,000
Total Administrative/OBMP Expenses	1,626,652	5,655,752	109,504	341,451	95,741	-	-	-	-	7,829,112	11,237,144
Net Administrative/OBMP Expenses	(1,469,304)	(5,655,752)									
Allocate Net Admin Expenses To Pools	1,469,304		1,056,580	358,282	54,442					-	
Allocate Net OBMP Expenses To Pools		3,960,061	2,847,987	965,543	146,531					-	
Allocate Debt Service to App Pool		304,376	304,376							-	
Allocate Basin Recharge to App Pool		1,391,315	1,391,315							-	
Agricultural Expense Transfer*			1,665,377	(1,665,377)						-	
Total Expenses			7,374,848	-	296,714	-	-	-	-	7,829,112	11,237,144
Net Administrative Income			1,523,328	2,046	12,814	-	-	-	-	1,537,986	(1,872,938)
Other Income/(Expense):											
Replenishment Water Assessments			-	-	-	1,070,692		-	-	1,070,692	-
Non-Ag Stored Water Purchases			-	-	-	-		-	-	-	-
Exhibit "G" Non-Ag Pool Water			2,540,000							2,540,000	-
Interest Revenue			-	-	-	6,265		-	-	6,265	-
MWD Water Purchases			-	-	-	-		-	-	-	-
Non-Ag Stored Water Purchases			-	-	-						
Exhibit "G" Non-Ag Pool Water			(2,540,000)						-	(2,540,000)	
MWD Water Purchases			-	-	-	-		-	-	-	-
Groundwater Replenishment			-	-	-	-		-	-	-	-
LAIF - Fair Market Value Adjustment			-	-	-	-		(138)	-	(138)	-
Other Post-Employment Benefits (OPEB)			(97,313)	-	(3,744)				-	(101,057)	-
Refund-Excess Reserves			(87,128)	-	(3,182)	-		-	-	(90,310)	-
Refund-Recharge Debt			(345,914)							(345,914)	
Net Other Income/(Expense)			(530,355)		(6,926)	1,076,957	-	(138)	-	539,538	-
Net Transfers To/(From) Reserves		2,077,545	992,973	2,046	5,888	1,076,957		(138)		2,077,545	(1,872,938)
Net Assets, July 1, 2015			6,346,614.73	481,130.33	69,774.69	1,388,079.60	158,251.00	3,446.05	(340,195.00)	7,707,175.81	
Net Assets, End of Period			7,339,593.00	483,175.99	75,461.74	2,465,036.54	158,251.00	3,308.19	(340,195.00)	9,784,851.26	[illegible]
2014/2015 Assessable Production			84,197,515	28,520,530	4,555,755					116,661,799	
2014/2015 Production Percentages			[illegible]	[illegible]	[illegible]					100.000%	

*Fund balance transfer as agreed to in the Peace Agreement

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Chino Basin Watermaster
Combining Schedule of Revenue, Expenses, and Changes in Net Position
For the Fiscal Year Ended June 30, 2015

	Watermaster Administration	Optimum Basin Management	Pool Administration and Special Projects: Appropriative Pool	Agricultural Pool	Non-Agricultural Pool	Groundwater Operations: Groundwater Replenishment	SB 222 Funds	LAIF Value Adj.	Grand Totals	Budget 2014-2015
Administrative revenues:										
Administrative assessments	$ -		7,280,399		244,197		-	-	7,524,596	7,524,220
Interest revenue	-	-	17,644	1,236	362		-	-	19,242	25,800
Mutual agency project revenue	155,607	-	-	-	-	-	-	-	155,607	155,351
Total revenues	155,607	-	7,298,043	1,236	244,559	-			7,699,445	7,705,371
Administrative & project expenditures:										
Watermaster administration	1,143,627			-	-	-	-	-	1,143,627	1,172,515
Watermaster board-advisory committees	163,809	-	-	-	-	-	-		163,809	169,326
Ag Pool misc. expense - Ag Fund			-	-	-	-	-			400
Pool administration			199,977	303,796	109,893	-	-	-	613,666	916,185
Optimum basin management administration	-	1,709,149	-	-		-	-	-	1,709,149	1,717,696
OBMP project costs	-	2,625,043	-			-	-	-	2,625,043	3,044,079
Debt service		415,975			-	-	-	-	415,975	431,740
Basin recharge improvements					-	-	-	-		1,748,977
Mutual agency project costs	-	-	-	-	-	-	-			60,000
Total administrative/OBMP expenses	1,307,436	4,750,166	199,977	303,796	109,893				6,671,268	8,910,517
Net administrative/OBMP expenses	(1,151,829)	(4,750,166)								
Allocate net admin expenses to pools	$ 1,151,829		833,367	280,057	37,405					-
Allocate net OBMP expenses to pools		4,334,189	3,137,925	1,053,819	142,445					-
Allocate debt service to app pool		415,975	415,975						-	-
Agricultural expense transfer*			1,637,573	(1,637,573)						-
Total expenses			6,225,485	-	290,183				6,671,268	8,910,517
Net administrative income			1,072,558	1,236	(45,724)				1,028,088	(1,205,136)
Other income/(expense):										
Replenishment water assessments			-	-	-	751,983	-		751,983	-
Non-Ag stored water purchases			-	-	-				-	-
Exhibit "G" Non-Ag pool water			1,151,196				-	-	1,151,196	-
Interest revenue			-		-	2,601	-	-	2,601	-
MWD water purchases			-	-	-	-		-	-	-
Non-Ag stored water purchases			-	-	-					-
Exhibit "G" Non-Ag pool water			(1,151,196)	-	-	-			(1,151,196)	-
MWD water purchases			-	-	-				-	-
Groundwater replenishment							-	-	-	-
LAIF - fair market value adjustment					-	-	-	1,326	1,326	
Other post-employment benefits (OPEB)			(93,395)		(3,174)			-	(96,569)	
Refund - excess reserves			(6,456)	-	(1,841)	-	-		(8,297)	-
Refund - recharge debt			-	-	-	-	-	-		-
Net other income			(99,851)	-	(5,015)	754,584		1,326	651,044	-
Net transfers to/(from) reserves			972,724	1,236	(50,739)	754,584	-	1,326	1,679,132	(1,205,136)
Net Position July 1, 2014, as previously stated			5,377,896	479,894	120,514	633,295	(58,251)	2,120	6,767,970	
Prior period adjustment			-	-	-	-	-		(740,195)	
Net Position, July 1, 2014, as restated			5,373,896	479,894	120,514	633,295	(58,251)	2,120	6,027,775	
Net Position, End of Period			6,346,620	481,130	69,775	1,388,079	(58,251)	3,446	7,702,107	8,447,302
2013/2014 assessable production			109,165,231	33,638,883	4,546,972				158,351,406	
2013/2014 production percentages			71.3995%	24.3146%	3.2877%				100.000%	

* Fund balance transfer as agreed to in the Peace Agreement.

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Report on Internal Controls and Compliance

Fedak & Brown LLP
Certified Public Accountants

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Independent Auditor's Report on Internal Control over Financial Reporting and on Compliance and Other Matters Based on an Audit of Financial Statements Performed in Accordance with *Government Auditing Standards*

Board of Directors
Chino Basin Watermaster
Rancho Cucamonga, California

We have audited, in accordance with the auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards* issued by the Comptroller General of the United States, the financial statements of the Chino Basin Watermaster (Watermaster) as of and for the years ended June 30, 2016 and 2015, and the related notes to the financial statements, which collectively comprises the Watermaster's basic financial statements, and have issued our report thereon dated November 17, 2016.

Internal Control Over Financial Reporting

In planning and performing our audit of the financial statements, we considered the Watermaster's internal control over financial reporting (internal control) to determine the audit procedures that are appropriate in the circumstances for the purpose of expressing our opinion on the financial statements, but not for the purpose of expressing an opinion on the effectiveness of the Watermaster's internal control. Accordingly, we do not express an opinion on the effectiveness of the Watermaster's internal control.

A *deficiency in internal control* exists when the design or operation of a control does not allow management or employees, in the normal course of performing their assigned functions, to prevent, or detect and correct, misstatements on a timely basis. A *material weakness* is a deficiency, or a combination of deficiencies, in internal control, such that there is a reasonable possibility that a material misstatement of the entity's financial statements will not be prevented, or detected and corrected on a timely basis. A *significant deficiency* is a deficiency, or a combination of deficiencies, in internal control that is less severe than a material weakness, yet important enough to merit attention by those charged with governance.

Our consideration of internal control was for the limited purpose described in the first paragraph of this section and was not designed to identify all deficiencies in internal control that might be material weaknesses or significant deficiencies. Given these limitations, during our audit we did not identify any deficiencies in internal control that we consider to be material weaknesses. However, material weaknesses may exist that have not been identified.

Compliance and Other Matters

As part of obtaining reasonable assurance about whether the Watermaster's financial statements are free from material misstatement, we performed tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements, noncompliance with which could have a direct and material effect on the determination of financial statement amounts. However, providing an opinion on compliance with those provisions was not an objective of our audits, and accordingly, we do not express such an opinion. The results of our tests disclosed no instances of noncompliance or other matters that are required to be reported under *Government Auditing Standards*.

Independent Auditor's Report on Internal Controls Over Financial Reporting And on Compliance and Other Matters Based on an Audit of Financial Statements Performed in Accordance with *Government Auditing Standards, (continued)*

Purpose of this Report

The purpose of this report is solely to describe the scope of our testing of internal control and compliance and the results of that testing, and not to provide an opinion on the effectiveness of the Watermaster's internal control or on compliance. This report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the Watermaster's internal control and compliance. Accordingly, this communication is not suitable for any other purpose.

Fedak & Brown LLP

Fedak & Brown LLP
Cypress, California
November 17, 2016

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FISCAL YEAR 2015-16

WATERMASTER STAFF

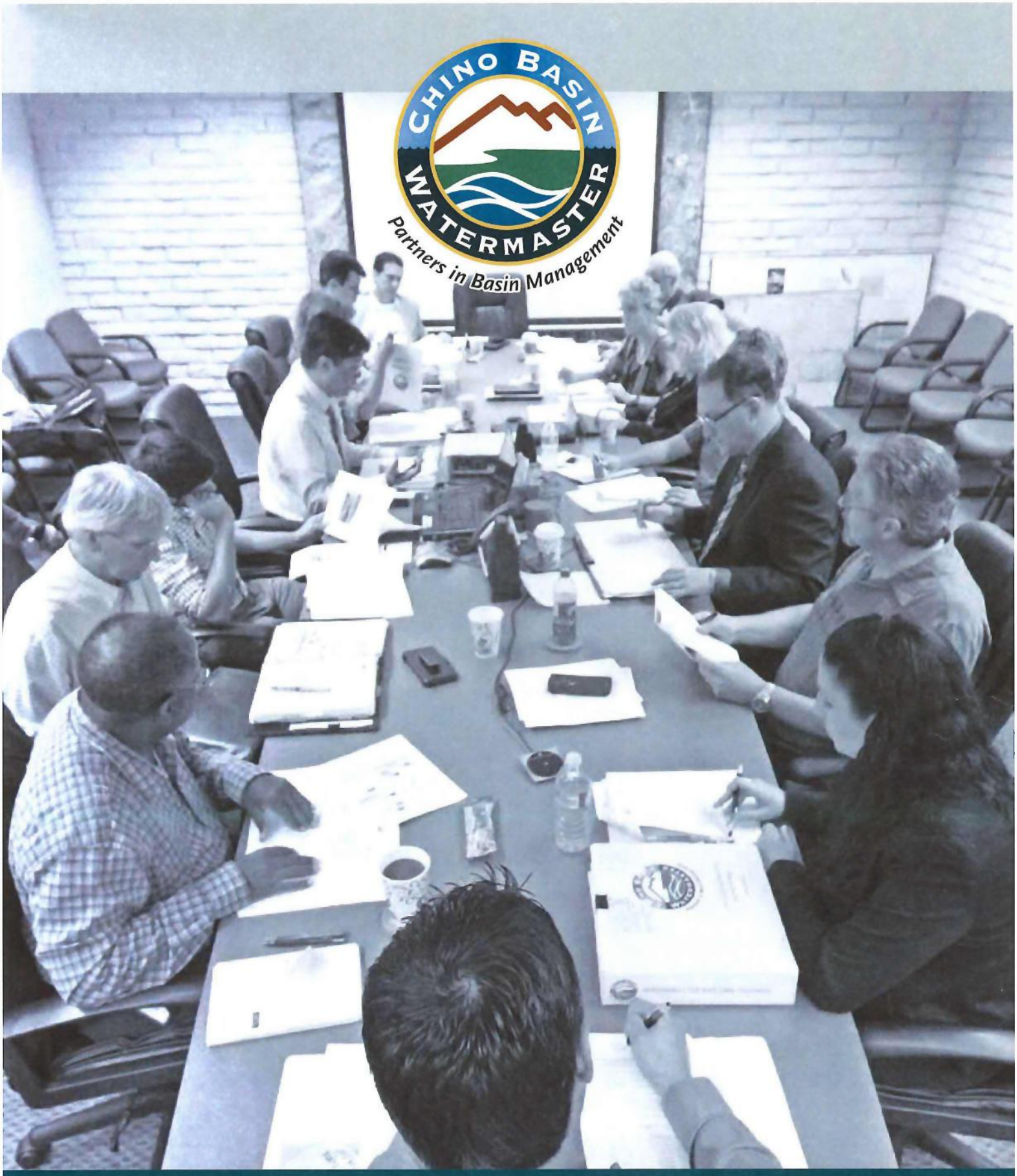

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Exhibit 5.a

Optimum Basin Management Program

Staff Status Report 2016-2: July to December 2016

CHINO BASIN WATERMASTER

Optimum Basin Management Program

Highlighted Activities

- During this reporting period, Watermaster manually measured 400 water levels at about 80 private wells throughout the Chino Basin, conducted two quarterly download events at about 170 wells containing pressure transducers, collected 46 groundwater-quality samples from private and dedicated monitoring wells, and collected four surface-water quality samples.

- Development and planning continues between the Chino Desalter Authority (CDA) and Watermaster to expand the Chino Desalters to an ultimate raw-water production capacity of 40,000 acre-feet per year. During the reporting period, the CDA continued with the land acquisition process for the future construction of Well II-12 and continued construction of a raw-water pipeline to plumb three desalter wells (II-10, II-11, and II-12) into the Chino-II Desalter.

- As a requirement of Mitigation Measure 4.4-3 from the Peace II Subsequent Environmental Impact Report (SEIR), Watermaster, the Inland Empire Utilities Agency (IEUA), and the Orange County Water District (OCWD) continued to develop a Prado Basin Habitat Sustainability Program (PBHSP). During this reporting period, the Prado Basin Habitat Sustainability Committee (PBHSC) adopted the final Adaptive Management Plan in August 2016. A PBHSC meeting was convened in November 2016 to kick-off the PBHSP for fiscal year 2016/17 and preparation of the first Annual Report. The first Annual Report of the PBHSC will be completed by June 2017. Additionally, Watermaster collected two rounds of quarterly groundwater-quality samples and conducted two quarterly downloads of pressure transducers that measure water levels at the eighteen PBHSP monitoring wells.

- Watermaster continued implementation of the Northwest MZ-1Work Plan, including the installation of transducers within wells in the Study Area to measure and record piezometric levels. Watermaster worked with the Monte Vista Water District and the City of Pomona to determine the best way to modify their facilities and SCADA systems to better monitor groundwater production and levels. Watermaster also worked with the cities of Chino, Pomona, and Upland, and acquired the remaining necessary technical information through a monitoring and testing program. Watermaster worked with the cities of Chino, Pomona, and Upland, and the Golden State Water Company to collect quarterly groundwater levels and production data.

- Watermaster and the IEUA are continuing to implement the 2013 Amendment to the 2010 Recharge Master Plan Update (2013 RMPU) pursuant to the October 2013 Court Order authorizing its implementation. During this reporting period, Watermaster and the IEUA continued developing agreements to construct the storm and supplemental water recharge projects listed in Table 8-2c of the 2013 RMPU report, to prioritize the construction of these projects relative to the availability of grant funding, and to plan subsequent implementation. Preliminary Design Reports were developed for eight of the chosen projects during the reporting period.

- During this reporting period, stormwater recharge was approximately 4,579 acre-feet, recycled water recharge was approximately 7,085 acre-feet, and imported water recharge was approximately 4,260 acre-feet.

- Watermaster began its evaluation of the Safe Yield in 2013. The Watermaster parties concluded a facilitated process and developed an agreement to implement the recalculated Safe Yield. This proposed agreement was filed with the Court on October 23, 2015 with a motion recommending that the Court reset the Safe Yield of the Chino Basin at 135,000 acre-feet per year. The hearing on this motion was scheduled for December 18, 2015 but was continued to September 23, 2016.

Important Court Hearings and Orders

- September 23, 2016 - Hearing re 2015 Safe Yield Reset Agreement, Amendment of Restated Judgment, Paragraph 6
  - September 28, 2016 - Notice of Ruling on Watermaster's Motion Regarding 2015 Safe Yield Reset Agreement, Amendment of Restated Judgment, Paragraph 6
  - October 5, 2016 - Notice of Ruling on Request by Non-Agriuclutural Pool Committee for Entry of Order Regarding Filing and Service
  - October 19, 2016 - Notice of Orders: City of Chino Motion to Permit Chino to Conduct Discovery; Objections to Declaration of Gutierrez in Support of Motion to Conduct Discovery; Chino's Objections to Declaration of Egoscue in Support of Ag Pool's Opposition to Chino's Motion to Conduct Discovery; Chino's Objections to Declaration of Herrema in Support of Watermaster's Opposition to Chino's Motion to Conduct Discovery; Chino's objections to Declaration of Kavounas in Suppport of Watermaster's Opposition to Chino's Motion to Conduct Discovery
- December 9, 2016 - Hearing re Motion for Court Approval of Temporary Substitute Rate for Physical Solution Transfers Under Exhibit "G" to the Judgment
  - December 22, 2016 - Order Granting Motion for Court Approval of Temporary Substitute Rate for Physical Solution Transfers Under Exhibit "G" to the Judgment

Program Element 1: Develop and Implement a Comprehensive Monitoring Program

Groundwater Level Monitoring

Watermaster initiated a basin-wide groundwater-level monitoring program as part of the implementation of the Optimum Basin Management Program (OBMP). The monitoring program has been refined over time to satisfy the evolving needs of the Watermaster and the IEUA, such as new regulatory requirements and improved data coverage. The groundwater-level monitoring program supports many Watermaster functions, such as the periodic reassessment of Safe Yield, the monitoring and management of ground-level movement, the analysis of desalter pumping impacts at private wells, the analysis of the implementation of the Peace II Agreement on groundwater levels and riparian vegetation in Prado Basin, the triennial re-computation of ambient water quality mandated by the Water Quality Control Plan for the Santa Ana River Basin (Basin Plan), and the assessment of hydraulic control—a maximum-benefit commitment in the Basin Plan. The data are also used to update and recalibrate Watermaster's computer-simulation groundwater-flow model, to understand groundwater flow directions, to compute storage changes, to support interpretations of water quality data, and to identify areas of the basin where recharge and discharge are not in balance.

The current groundwater-level monitoring program is comprised of about 1,200 wells. At about 950 of these wells, water levels are measured by well owners, which include municipal water agencies, the California Department of Toxic Substances Control (DTSC), the Counties, and various private consulting firms. Watermaster collects these water level data at least semi-annually. At the remaining 250 wells, water levels are measured by Watermaster staff using manual methods once per month or by using pressure transducers that record data once every 15 minutes. These wells are mainly Agricultural Pool wells or dedicated monitoring wells located south of the 60 freeway.

All groundwater-level data are checked by Watermaster staff and uploaded to a centralized database management system that can be accessed online through HydroDaVE℠. During this reporting period, Watermaster measured 400 manual water levels at about 80 wells throughout the Chino Basin, and conducted two quarterly downloads at about 170 wells containing pressure transducers. Additionally, Watermaster compiled all available groundwater-level data from well owners in the basin for the April 2016 to September 2016 period.

Groundwater Quality Monitoring

Watermaster initiated a comprehensive groundwater-quality monitoring program as part of the implementation of the OBMP. The monitoring program has been refined over time to satisfy the evolving needs of the Watermaster and the IEUA, such as new regulatory requirements and improved data coverage. The groundwater-quality data are used by Watermaster for: the biennial State of the Basin report; the triennial ambient water quality update; the demonstration of hydraulic control, monitoring nonpoint-source groundwater contamination and plumes associated with point-source discharges, and to assess the overall health of the groundwater basin. Groundwater-quality data are also used in conjunction with numerical models to assist Watermaster and other parties in evaluating proposed salinity management and groundwater remediation strategies. The groundwater-quality monitoring program currently consists of the following five components:

1. An annual Key-Well Water-Quality Monitoring Program consisting of about 100 wells, which are mostly privately-owned agricultural wells in the southern portion of Chino Basin, or monitoring wells near the Kaiser Steel Mill Plume, that are otherwise not included in an established sampling program. Twenty of these wells are sampled every year, and the remaining wells are sampled once every three years. The wells sampled annually are for the continuous monitoring of areas of concern associated with the southern edge of the South Archibald Plume, the southern region of the Chino Airport Plume, and the Kaiser Steel Mill Plume.
2. Annual sampling at nine HCMP multi-port monitoring wells, with a total of 21 casings, which are strategically located between the Chino Desalter well fields and the Santa Ana River. The annual sampling results are used to analyze the effect of desalter pumping over time on hydraulic control, by comparing water quality measured at the wells to the water quality of the Santa Ana River.
3. Quarterly sampling at four wells near the Santa Ana River to characterize the interaction between the Santa Ana River and nearby groundwater. These shallow monitoring wells consist of two former US Geological Survey (USGS) National Water Quality Assessment Program wells (Archibald 1 and Archibald 2) and two wells owned by the Santa Ana River Water Company (Well 9 and Well 11).
4. Quarterly sampling of eighteen PBHSP monitoring wells located in nine locations near the fringes of riparian vegetation in the Prado Basin. The data will be used to support the assessment of the impacts from the implementation of the Peace II Agreement on groundwater levels and riparian habitat in the Prado Basin.

Program Element 1: Develop and Implement a Comprehensive Monitoring Program (Continued)

5. A cooperative basin-wide data-collection effort known as the Chino Basin Data Collection program, which relies on municipal producers and other government agencies to supply groundwater-quality data on a cooperative basis. These sources include the Chino Basin Appropriators, the DTSC, the Regional Water Quality Control Board (Regional Board), the USGS, the Counties, and other cooperators.

All groundwater-quality data are checked by Watermaster staff and uploaded to a centralized database management system that can be accessed online through HydroDaVE℠. During this reporting period, Watermaster collected 46 groundwater-quality samples from private and dedicated monitoring wells and compiled all available groundwater-quality data collected from other parties for the January to June 2016 period.

Groundwater Production Monitoring

All active agricultural production wells (except for minimal producer wells) are now metered. Watermaster reads the meters on a quarterly basis and enters the production data into Watermaster's relational database, which can be accessed online through HydroDaVE℠.

Surface Water Monitoring in the Santa Ana River

Watermaster collects grab water quality samples at two sites along the Santa Ana River (Santa Ana River at River Road and Santa Ana River at Etiwanda) on a quarterly basis. Along with data collected at four wells near the Santa Ana River, these data are used to characterize the interaction between the Santa Ana River and nearby groundwater. During this reporting period, Watermaster collected four surface-water quality samples.

Santa Ana River

Prado Basin Habitat Sustainability Monitoring Program

Mitigation Measure 4.4-3 from the Peace II SEIR requires that Watermaster and the IEUA, and allows the OCWD, develop an Adaptive Management Plan for the PBHSP and form the Prado Basin Habitat Sustainability Committee (PBHSC), convened by Watermaster and the IEUA, to implement the Adaptive Management Plan, and to perform annual reporting. The objective of this plan is to ensure that the riparian habitat in the Prado Basin is not adversely impacted by drawdown associated with the implementation of the Peace II activities. Sixteen monitoring wells at nine sites were constructed in April and May 2015 as part of the monitoring program for the PBHSP. Two existing wells will also be monitored as part of the PBHSP. The PBHSC developed the Adaptive Management Plan of the PBHSP to describe an initial monitoring program and a process to modify the monitoring program and/or implement mitigation strategies, as necessary.

In August 2016, Watermaster approved the final Adaptive Management Plan adopted by the PBHSC. A PBHSC meeting was convened in November 2016 to kick-off the PBHSP for fiscal year 2016/17 and to organize the preparation of the first Annual Report. The first Annual Report of the PBHSC will be completed by June 2017. Additionally, Watermaster collected two rounds of quarterly groundwater-quality samples and conducted two quarterly downloads of pressure transducers that measure water levels at the eighteen PBHSP monitoring wells (these data make up a part of the groundwater level and water quality monitoring programs described earlier in this section).

Chino Basin Groundwater Recharge Monitoring Program

Watermaster, the IEUA, the Chino Basin Water Conservation District, and the San Bernardino County Flood Control District jointly sponsor the Chino Basin Groundwater Recharge Program. This is a comprehensive water supply program to enhance water supply reliability and improve the groundwater quality in local drinking water wells by increasing the recharge of storm, imported, and recycled waters. The recharge program is regulated under RWQCB Order No. R8-2007-0039 and Monitoring and Reporting Program No. R8-2007-0039.

Watermaster and the IEUA measure the quantity of storm and supplemental water that enters into recharge basins using pressure transducers or staff gauges that measure water levels during recharge operations. They also collect weekly water quality samples from recharge basins that are actively recharging recycled water and from lysimeters installed within those recharge basins. Additionally, imported water quality data for State Water Project water are obtained from the Metropolitan Water District of Southern California (MWDSC) and recycled water quality data for the RP-1 and RP-4 treatment plant effluents are obtained from the IEUA. Combining the measured flow data with the respective water qualities enables the calculation of the blended water quality

Program Element 1: Develop and Implement a Comprehensive Monitoring Program (Continued)

of the recharge sources in each recharge basin and the assessment of whether there is adequate dilution of recycled water as required by the recycled water recharge permits held with the Department of Drinking Water (DDW). Additionally, the measurements of recharge are used to estimate the New Yield to the Chino Basin as a result of the recharge activities.

Monitoring Activities. During this reporting period, the IEUA performed its on-going monitoring program to measure and record recharge volumes and collect stormwater quality samples pursuant to its permit requirements. Also, during this reporting period, approximately 289 recharge basin and lysimeter samples were collected and 30 recycled water samples were collected for alternative monitoring plans that include the application of a correction factor for soil-aquifer treatment determined from each recharge basin's start-up period. Monitoring wells located down-gradient of the recharge basins were sampled, at a minimum, on a quarterly basis; however, some monitoring wells were sampled more frequently during the reporting period for a total of 118 samples.

Reporting. Watermaster and the IEUA completed the following required reports concerning the recharge program during the reporting period:

- 2Q-2016 Quarterly Report, submitted to the RWQCB – August 2016
- 3Q-2016 Quarterly Report, submitted to the RWQCB – November 2016

Ground-Level Monitoring

In response to the occurrence of land subsidence in the City of Chino, Watermaster prepared and submitted a subsidence management plan (known as the MZ-1 Plan) to the Court for approval and, in November 2007, the Court ordered its implementation (see the update in this report under Program Element 4 for more on the MZ-1 Plan implementation). The MZ-1 Plan required several monitoring and mitigation measures to minimize or abate the future occurrence of land subsidence and ground fissuring in the western Chino Basin. These measures and activities included:

- Continuing the scope and frequency of monitoring within the so-called Managed Area (southwest MZ-1) that was conducted during the period when the MZ-1 Plan was being developed.
- Expanding the monitoring of the aquifer system and ground-level movement into other areas of MZ-1 and the Chino Basin where data indicate concern for future subsidence and ground fissuring (Areas of Subsidence Concern).
- Monitoring of horizontal strain across the historical zone of ground fissuring.
- Evaluating the potential contribution of groundwater production in northern MZ-1 on ground-level conditions in southern MZ-1.
- Conducting additional testing and monitoring to refine the MZ-1 Guidance Criteria for subsidence management.
- Developing alternative pumping plans for the MZ-1 producers that are impacted by the MZ-1 Plan.
- Constructing and testing a lower-cost cable extensometer facility at Ayala Park.
- Evaluating and comparing ground-level surveying and Interferometric Synthetic Aperture Radar (InSAR), and recommending future monitoring protocols for both techniques.
- Conducting an aquifer storage recovery (ASR) feasibility study at a City of Chino Hills production well within the MZ-1 Managed Area (Well 16).
- Providing for recovery of groundwater levels in the MZ-1 Managed Area.

Since the initial MZ-1 Plan was adopted in 2007, Watermaster has conducted the annual Ground-Level Monitoring Program (GLMP) to implement the monitoring and reporting program. The main results of the GLMP were that very little permanent land subsidence has occurred in the MZ-1 Managed Area, indicating that subsidence is being successfully managed in this area, and that land subsidence has been occurring in the Northwest MZ-1 Area. One concern is that subsidence in Northwest MZ-1 has occurred differentially across the San Jose Fault, following the same pattern of differential subsidence that occurred in the MZ-1 Managed Area during the time of ground fissuring.

Program Element 1: Develop and Implement a Comprehensive Monitoring Program (Continued)

Based on these results, Watermaster determined that the subsidence management plan needed to be updated to include a *Subsidence Management Plan for the Northwest MZ-1 Area* with the long-term objective to minimize or abate the occurrence of the differential land subsidence. Thus, Watermaster expanded the GLMP into the Northwest MZ-1 Area and prepared an updated *2015 Chino Basin Subsidence Management Plan* (SMP), which included the *Work Plan to Develop a Subsidence-Management Plan for the Northwest MZ-1 Area* (Work Plan) as an appendix.

During this reporting period, Watermaster undertook the following activities called for in the SMP:

- Continued high-resolution water-level monitoring at wells within the Managed Area and within the Areas of Subsidence Concern. All monitoring equipment is inspected at least quarterly and is repaired and/or replaced as necessary. The data collected were checked and analyzed to assess the functionality of the monitoring equipment and for compliance with the MZ-1 Plan.
- Continued monitoring and maintenance at the extensometer facilities at the Ayala Park and Chino Creek sites. Performed equipment maintenance at the Ayala Park and Chino Creek Extensometer facilities which included recalibration of the transducer at the PC-2 piezometer and security updates to the software on the telemetry modem at the Chino Creek Extensometer.
- Collected InSAR data scenes across the western Chino Basin from the German Aerospace Center's TerraSAR-X satellite.
- Conducted ground-level surveys and electronic distance measurements (EDMs) at benchmarks in the Northwest MZ-1 and the San Jose Fault Zone areas. Installed a new line of benchmark monuments across the Northwest MZ-1 Area.
- Continued implementation of the Work Plan, including:
    - Installed transducers within wells in the Study Area to measure and record piezometric levels. Collected, processed and checked groundwater level data and production data from wells in the Study Area monthly.
    - Worked with the Monte Vista Water District and the City of Pomona to determine the best way to modify their facilities and SCADA systems to better monitor groundwater production and levels. This involved coordinating with Pomona's operations staff and subcontracting with SCADA Integrations to assess the MVWD's SCADA system. Conducted a meeting and field visit at one MVWD well. Reviewed report prepared by SCADA Integrations.
    - Worked with the cities of Chino, Pomona, and Upland, and the Golden State Water Company to collect quarterly groundwater levels and production data.

Program Element 2: Develop and Implement a Comprehensive Recharge Program

The objectives of the comprehensive recharge program include enhancing the yield of the Chino Basin through the development and implementation of a Recharge Master Plan to improve, expand, and construct recharge facilities that enable the recharge of storm, recycled, and imported waters; to ensure a balance of recharge and discharge in the Chino Basin management zones; and to ensure that sufficient storm and imported waters are recharged to comply with recycled water dilution requirements in Watermaster and the IEUA's recycled water recharge permits.

Capturing Imported Water at the College Heights Basins

Pursuant to PE2 of the OBMP, Watermaster and the IEUA partnered with the San Bernardino County Flood Control District and the Chino Basin Water Conservation District to construct and/or improve eighteen recharge sites. This project was known as the Chino Basin Facilities Improvement Project (CBFIP). The average annual stormwater recharge of the CBFIP facilities is approximately 10,000 acre-feet per year, the supplemental "wet"[1] water recharge capacity is approximately 74,700 acre-feet per year, and the in-lieu supplemental water recharge capacity ranges from 25,000 to 40,000 acre-feet per year. In addition to the CBFIP facilities, the Monte Vista Water District has five ASR wells with a demonstrated well injection capacity of 5,600 acre-feet per year. The current total supplemental water recharge capacity ranges from 105,300 to 120,300 acre-feet per year which is greater than the projected supplemental water recharge capacity required by Watermaster.

[1] The modifier "wet" means actual physical water is being recharged in spreading basins as opposed to the dedication of water from storage or in-lieu recharge.

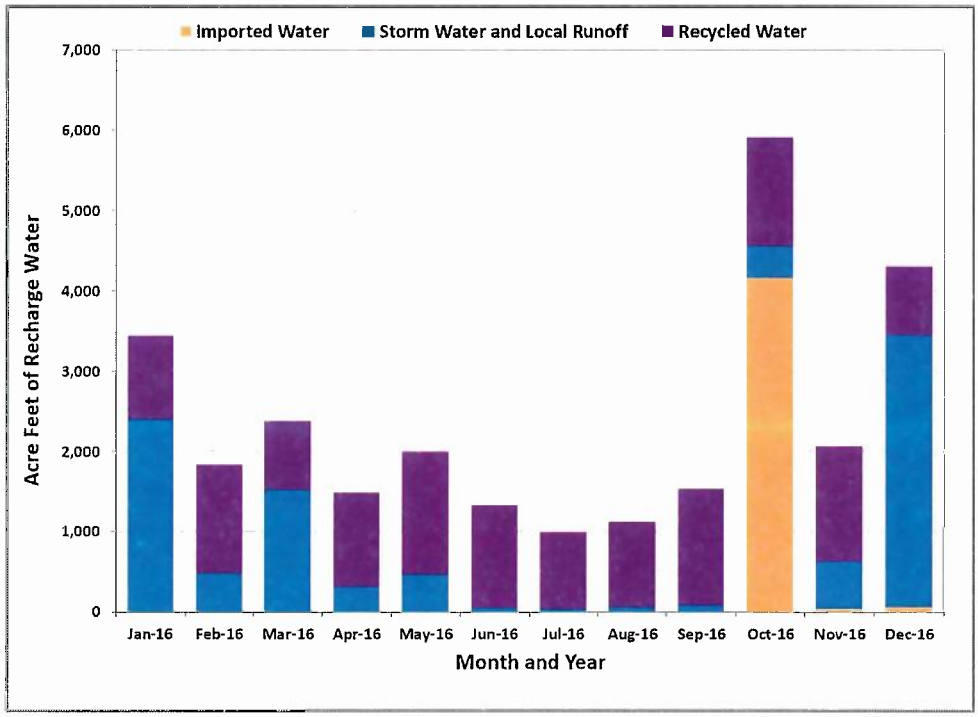
Program Element 2: Develop and Implement a Comprehensive Recharge Program (Continued)

In 2008, Watermaster began preparing the *2010 Recharge Master Plan Update* (2010 RMPU) pursuant to the December 21, 2007 Court Order (the Peace II Agreement) to complete a Recharge Master Plan Update by July 1, 2010. In October 2010, the Court accepted the 2010 RMPU as satisfying the condition and ordered that certain recommendations of the 2010 RMPU be implemented. In November 2011, Watermaster reported its progress to the Court pursuant to the October 2010 Court Order; after which, in December 2011, the Court issued an order directing Watermaster to continue with its implementation of the 2010 RMPU per its October 2010 order but with a revised schedule. And, on December 15, 2011, the Watermaster Board moved to:

> "approve that within the next year there will be the completion of [a] Recharge Master Plan Update, there will be the development of an Implementation Plan to address balance issues within the Chino Basin subzones, and the development of a Funding Plan, as presented."

This motion led to the development of an update to the 2010 RMPU and in 2012, Watermaster staff sent out a "call for projects" to the Watermaster parties, seeking their recommendations for recharge improvement projects that should be considered in the update. The *2013 Amendment to the 2010 Recharge Master Plan Update* (2013 RMPU) outlines the recommended projects to be implemented by Watermaster and the IEUA and lays out the implementation and financing plans. The 2013 RMPU report was approved by the Watermaster Board in September 2013 and filed with the Court in October 2013. In December 2013, the Court approved the 2013 RMPU except for Section 5 that dealt with the accounting for new recharge from Municipal Separate Stormwater Sewer Systems; Section 5 was later approved by the Court in April 2014.

2013 RMPU Implementation. Watermaster and the IEUA are continuing to carry out the October 2013 Court Order, which authorizes them to implement the 2013 RMPU. During the reporting period, Watermaster and the IEUA continued developing agreements to construct the storm and supplemental water recharge projects listed in Table 8-2c of the 2013 RMPU report, prioritizing the construction of these projects relative to the availability of grant funding. During the reporting period, Preliminary Design Reports (PDRs) were developed for eight of the chosen 2013 RMPU projects: CSI Basin, Wineville/Jurupa/RP3 Basins, Declez Basin, Victoria Basin, Lower Day Basin, Turner Basin, Ely Basin, and the Montclair Basins. The expected yields of each of these projects were updated due to the new information generated through the development of the PDRs and other updated basin information provided by the IEUA.



Additionally, Watermaster and the IEUA continued to develop a series of projects outside of the 2013 RMPU effort that will increase and/or facilitate stormwater and supplemental water recharge and have jointly agreed to fund these projects, including monitoring upgrades and habitat conservation. Watermaster's share of the cost of these projects was included in the budget adopted by Watermaster for fiscal 2016/17.

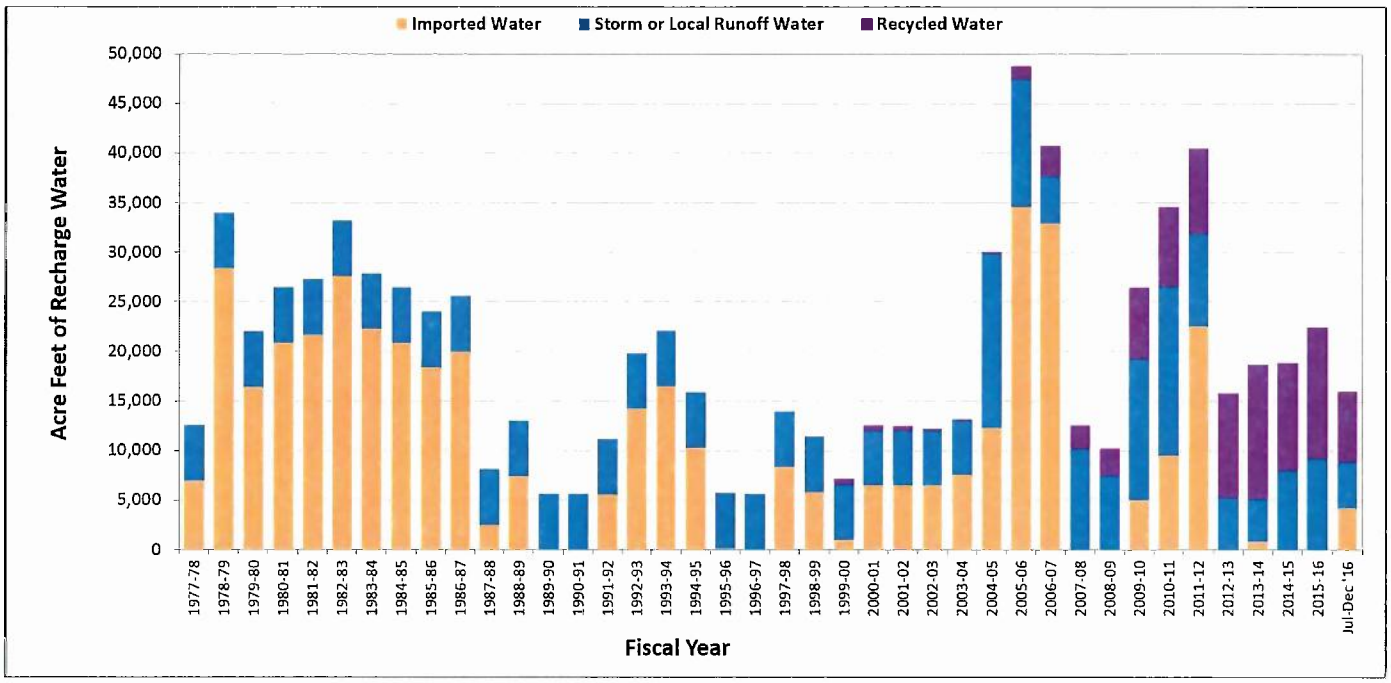
The Recharge Improvements Project Committee met monthly on the progress of implementing the 2013 RMPU Projects and other recharge-related projects.

Recharge for Dilution of Recycled Water. In fiscal year 2009/10, Watermaster and the IEUA's recharge permit was amended to allow for existing underflow dilution and extended the period for calculating dilution from a running 60-month to a running 120-month

Program Element 2: Develop and Implement a Comprehensive Recharge Program (Continued)

period. Additionally, the IEUA has worked with the DDW to obtain approval to increase the allowable recycled water contribution (RWC) at wells to 50 percent. These permit amendments allow for increased recycled water recharge without having to increase the amount of imported and storm waters required for dilution. The IEUA projects its dilution requirements as part of its annual reporting to the DDW. Based on the latest Annual Report (May 2017), the IEUA projects that dilution requirements will be met through 2020, even if no imported water were available for dilution.

Recharge Activities. During this reporting period, ongoing recycled water recharge occurred in the Brooks, 7th Street, 8th Street, Turner, Ely, Hickory, Declez, RP-3, Victoria, and Banana Basins; stormwater was recharged at 18 recharge basins across all management zones of the Chino Basin; and imported water was recharged in the Upland, College Heights, Montclair, Brooks, Turner, Lower Day, San Sevaine, and Victoria Basins. During this reporting period, stormwater recharge was approximately 4,579 acre-feet, recycled water recharge was approximately 7,085 acre-feet, and imported water recharge was 4,260 acre-feet.



Balance of Recharge and Discharge in MZ-1. The total amount of supplemental water recharged in MZ-1 since the Peace II Agreement through December 31, 2016 was approximately 53,703 acre-feet, which is more than 11,000 acre-feet less than the 65,000 acre-feet that is required to be recharged by June 30, 2017 (annual requirement of 6,500 acre-feet); the shortfall will be recharged in MZ-1in subsequent years as supplemental water becomes available. The amount of supplemental water recharged into MZ-1 during the reporting period was approximately 5,922 acre-feet.

Program Element 3: Develop and Implement Water Supply Plan for the Impaired Areas of the Basin; and
Program Element 5: Develop and Implement Regional Supplemental Water Program

As stated in the OBMP, "the goal of Program Elements 3 and 5 is to develop a regional, long range, cost-effective, equitable, water supply plan for producers in the Chino Basin that incorporates sound basin management." One element of the water supply plan is the development of a way to replace the decline in groundwater production to prevent significant amounts of degraded groundwater from discharging to the Santa Ana River and violating the Basin Plan. Replacing the decline in agricultural groundwater production will mitigate the reduction of the Safe Yield of the Basin and allow for more flexibility in the Basin's supplemental water supplies if the produced groundwater is treated. This is achieved through the operation of the Chino Basin Desalter facilities, which comprise a series

Program Element 3: Develop and Implement Water Supply Plan for the Impaired Areas of the Basin; and
Program Element 5: Develop and Implement Regional Supplemental Water Program (Continued)

of wells and treatment facilities in the southern Chino Basin that are designed to replace the decline in production of the agricultural groundwater producers, and to treat and serve this groundwater to various Appropriative Pool members.

The Chino I Desalter Expansion and the Chino II Desalter facilities were completed in February 2006. As currently configured, the Chino I Desalter produces about 13,500 acre-feet per year (12.1 million gallons per day [MGD]) of groundwater at 15 wells (I-1 through I-15) that is treated through air stripping (volatile organic compound [VOC] removal), ion exchange (nitrate removal), and/or reverse osmosis (for nitrate and TDS removal). The Chino II Desalter produces about 15,800 acre-feet per year (14.1 MGD) of groundwater at eight wells (II-1 through II-4 and II-6 through II-9) that is treated through ion exchange and/or reverse osmosis. Development and planning continues between the CDA and Watermaster to expand the production and treatment capacity of the Chino Desalters by about 10,500 acre-feet per year (9.5 MGD). More than $77 million in grant funds have been secured toward this expansion.

The most recently completed expansion project includes the construction of five wells for the new Chino Creek Well Field (CCWF), which includes wells I-16, I-17, I-18, I-20 and I-21. These wells were constructed to meet the hydraulic control commitment associated with the maximum benefit (see Program Element 7 update in this status report) and provide additional raw water to the Chino I Desalter. Production at wells I-16 and I-17 began in mid-2014, production at wells I-20 and I-21 began in early 2016. Well 1-18 is currently not planned for operation by the CDA due to high concentrations of VOCs.

Three additional wells (II-10, II-11, and II-12) are planned for construction to provide additional raw water to the Chino II Desalter and are also required to meet the maximum-benefit commitment to produce a total of 40,000 acre-feet per year from the combined desalter well fields. These wells are also being constructed as part of the remediation action plan to clean-up the South Archibald Plume (See Program Element 6 update in this status report). The construction of wells II-10 and II-11 was completed in late-2015, and equipping of the wells began in 2016. Full equipping of wells II-10 and II-11 is on-hold and planned for completion in mid-2017 after the CDA completes construction of the raw-water pipeline to plumb the three new wells into the Chino-II Desalter. During this reporting period, the CDA continued with the land acquisition process for Well II-12. As soon as that land is acquired, a monitoring well will be constructed to support the design of the production well. The CDA has retained consultants for the construction and design of Well II-12, which is anticipated to begin in 2017.

Program Element 4: Develop and Implement a Comprehensive Groundwater Management Plan for Management Zone 1

Because of the historical occurrence of pumping-induced land subsidence and ground fissuring in southwestern Chino Basin (southern MZ-1), the OBMP required the development and implementation of an Interim Management Plan (IMP) for MZ-1 that would:

- Minimize subsidence and fissuring in the short-term,
- Collect the information necessary to understand the extent, rate, and mechanisms of subsidence and fissuring, and
- Formulate a management plan to reduce to tolerable levels or abate future subsidence and fissuring.

From 2001-2005, Watermaster developed, coordinated, and conducted an IMP under the guidance of the MZ-1 Technical Committee. The investigation provided enough information for Watermaster to develop Guidance Criteria for the MZ-1 producers in the investigation area that, if followed, would minimize the potential for subsidence and fissuring during the completion of the MZ-1 Plan. The Guidance Criteria included a listing of Managed Wells and their owners subject to the criteria, a map of the so-called Managed Area, and an initial threshold water level (Guidance Level) of 245 feet below the top of the PA-7 well casing. The MZ-1 Summary Report and the Guidance Criteria were adopted by the Watermaster Board in May 2006. The Guidance Criteria formed the basis for the MZ-1 Plan, which was approved by Watermaster in October 2007. The Court approved the MZ-1 Plan in November 2007 and ordered its implementation. Watermaster has implemented the MZ-1 Plan since this time, including the ongoing Ground-Level Monitoring Program (GLMP) called for by the MZ-1 Plan (refer to the update in this report under Program Element 1).

The MZ-1 Plan states that if data from existing monitoring efforts in the so-called Areas of Subsidence Concern indicate the potential for adverse impacts due to subsidence, Watermaster will revise the MZ-1 Plan pursuant to the process outlined in Section 3 of the MZ-1 Plan. In early 2015, Watermaster prepared an update to the MZ-1 Plan, which included a name change to the *2015 Chino*

Program Element 4: Develop and Implement a Comprehensive Groundwater Management Plan for Management Zone 1 (Continued)

Basin Subsidence Management Plan (SMP) and a *Work Plan to Develop the Subsidence Management Plan for the Northwest MZ-1 Area* (Work Plan) as an appendix. The SMP and the Work Plan were adopted through the Watermaster Pool process during July 2015.

The data, analysis, and reports generated through the implementation of the MZ-1 Plan, SMP, and Work Plan are reviewed and discussed by the Ground-Level Monitoring Committee (GLMC), which meets on a periodic basis throughout the year. The GLMC is open to all interested participants, including the Watermaster Parties and their consultants. During this reporting period, Watermaster undertook the following data analysis and reporting tasks:

- Reviewed water levels at the PA-7 piezometer and determined that levels remained above the Guidance Level during the reporting period, and very little, if any, permanent compaction was recorded at the Ayala Park Extensometer.
- Prepared the final version of the *2015 Annual Report of the Ground-Level Monitoring Committee*, following approval of the draft report by the Watermaster Board. Submitted final report to the Court on October 28, 2016.
- Completed draft technical memorandum: *Initial Hydrogeologic Conceptual Model and the Monitoring and Testing Program for the Northwest MZ-1 Area*. The technical memorandum describes (1) the technical information that is required to develop a subsidence management plan for the Northwest MZ-1 Area, (2) the currently known technical information, and (3) a strategy to acquire the remaining necessary technical information through a monitoring and testing program.
- Prepared a draft technical memorandum discussing the projected basin-management strategies (i.e. baseline management alternative), documenting the one-dimensional aquifer-system compaction model and results, and summarizing the results from the historical benchmark data review.
- Conducted a siting study for the Pomona Extensometer. This work included preparation of criteria for selecting and ranking parcels within the target areas for the Pomona Extensometer. The draft siting study was submitted to the Ground-Level Monitoring Committee for review and comment.
- The GLMC met in September, October, and December of 2016.

Program Element 6: Develop and Implement Cooperative Programs with the Regional Water Quality Control Board, Santa Ana Region and Other Agencies to Improve Basin Management

Program Elements 6 and 7 are necessary to address the water quality management problems that occur in the Chino Basin. During the development of the OBMP, it was identified that Watermaster does not have sufficient information to determine whether point and non-point sources of groundwater contamination are being adequately addressed, including the various contaminant plumes in the Chino Basin. With the Regional Board and other agencies, Watermaster has worked to address the following major point source contaminant plumes in the Chino Basin:

Watermaster Staff Taking WQ Sampling Notes

South Archibald Plume

In July 2005, the Regional Board prepared draft Cleanup and Abatement Orders (CAOs) for six parties who were tenants on the Ontario Airport with regard to the South Archibald TCE Plume. The draft CAOs required the parties to "submit a work plan and time schedule to further define the lateral and vertical extent of the TCE and related VOCs that are discharging, have been discharged, or threaten to be discharged from the site" and to "submit a detailed remedial action plan, including an implementation schedule, to cleanup or abate the effects of the TCE and related VOCs." Four of the six parties (Aerojet-General Corporation, The Boeing Company, General Electric, and Lockheed Martin) voluntarily formed a group known as ABGL to work jointly on a remedial investigation. Northrop Grumman declined to participate in the group. The US Air Force, in cooperation with the US Army Corps of Engineers, funded the installation of one of the four clusters of monitoring wells installed by the ABGL Parties.

In 2008, Regional Board staff conducted research pertaining to the likely source of the TCE contamination and identified discharges of wastewater that may have contained TCE to the RP-1 treatment plant and associated disposal areas to be a potential source. The

Program Element 6: Develop and Implement Cooperative Programs with the Regional Water Quality Control Board, Santa Ana Region and Other Agencies to Improve Basin Management (Continued)

Regional Board identified several industries, including some previously identified tenants of the Ontario Airport property, that likely used TCE solvents before and during the early-1970s, and discharged wastes to the Cities of Ontario and Upland's sewage systems and subsequently to the RP-1 treatment plant and disposal areas. In 2012, an additional Draft CAO was issued by the Regional Board jointly to the City of Ontario, City of Upland, and IEUA as the previous and current operators of the RP-1 treatment plant and disposal area (collectively, the RP-1 parties). In part, the draft CAOs require that RP-1 parties "supply uninterrupted replacement water service…to all residences south of Riverside Drive that are served by private domestic wells at which TCE has been detected at concentrations at or exceeding 5 µg/L […]" and to report this information to the Regional Board. In addition, the RP-1 parties are to "prepare and submit [a] […] feasibility study" and "prepare, submit and implement the Remedial Action Plan" to mitigate the "effects of the TCE groundwater plume."

Under the Regional Board's oversight, sampling at private residential wells and taps has been conducted approximately every two years (2007-2008, 2009, 2011, 2013-2014) by multiple parties in the region where groundwater is potentially contaminated with TCE. As of 2014, all private residences in the area of the plume have been sampled at least once. Alternative water systems (tanks) have been installed at residences in the area where well water contains TCE at or above 80% of the MCL for TCE. Residents who declined tank systems are being provided bottled water. Watermaster also routinely samples for water quality at private wells in the area, and uses data obtained from this monitoring to delineate the spatial extent of the plume. In July 2015, the RP-1 parties completed the Draft Feasibility Study Report for the South Archibald Plume (Feasibility Study). The Feasibility Study establishes clean-up objectives for both domestic water supply and plume remediation, and evaluates alternatives to accomplish these objectives. A Draft Remedial Action Plan (RAP) was concurrently prepared and published in August 2015. Two community meetings were convened in September 2015 to educate the public about the plume, the Feasibility Study and the RAP, and to solicit comments on these reports. In November 2015, a revised Draft Feasibility Study, RAP, and Responses to Comments were completed to address input from the public, the ABGL, and others.

The preferred plume remediation alternative identified in the Draft Feasibility Study and RAP involves the use of existing and proposed CDA production wells and facilities. The RP-1 parties reached a Joint Facility Development Agreement with the CDA for implementation of a project designed to remediate the South Archibald Plume. The proposed project includes the operation of three new CDA desalter wells (II-10, II-11, and II-12), and a dedicated pipeline to convey produced groundwater from the three new wells and existing CDA well I-11 to the Desalter II treatment facility.

The preferred domestic water supply alternative identified in the Feasibility Study and RAP for those private residences affected by the TCE groundwater contamination that are currently receiving bottled water, is a hybrid between the installation of tank systems for some residences where water is delivered from the City of Ontario potable supply via truck deliveries, and the installation of a temporary pipeline to connect some residences to the City of Ontario potable water system. The City of Ontario has assumed the responsibility for implementing the domestic water supply alternative.

In September 2016, the Regional Board issued the Final CAO R8-2016-0016 collectively to the RP-1 parties and the ABGL parties. The Final CAO was adopted by all parties in November 2016, thus approving the plume remediation and domestic water supply alternatives identified in the RAP. The parties also reached a settlement agreement that aligns with the Final CAO and authorizes funding to initiate implementation of the plume remediation alternative. Project initiation of the plume remediation alternative is expected to begin in the second quarter of 2017.

Chino Airport Plume

In 1990, the Regional Board issued CAO No. 90-134 to the County of San Bernardino, Department of Airports (County) to address groundwater contamination originating from the Chino Airport. During 1991 to 1992, ten underground storage tanks and 310 containers of hazardous waste were removed, and 81 soil borings were drilled and sampled on the airport property. During 2003 to 2005, nine onsite monitoring wells were installed and used to collect groundwater quality samples. In 2007, the County conducted its first offsite monitoring effort, and in 2008, the Regional Board issued CAO No. R8-2008-0064, which requires the County to define the lateral and vertical extent of the plume and prepare a remedial action plan. From 2009 to 2012, Tetra Tech, the consultant to the County, conducted several off-site plume characterization studies to delineate the areal and vertical extent of the plume, and constructed 33 offsite monitoring wells. From 2013 to early-2015 Tetra Tech conducted an extensive investigation of several areas identified for additional characterization of soil and groundwater contamination; and at the conclusion of the work, they constructed an additional 33 groundwater monitoring wells on and adjacent to the Airport property. The County conducts quarterly and/or annual monitoring events at all 75 of their monitoring wells constructed to date. Conclusions from this monitoring program can be

Program Element 6: Develop and Implement Cooperative Programs with the Regional Water Quality Control Board, Santa Ana Region and Other Agencies to Improve Basin Management (Continued)

found in reports posted on the Regional Board's GeoTracker website. In September 2016, Tetra Tech submitted the *Semiannual Groundwater Monitoring Report, Winter and Spring 2016, Chino Airport Groundwater Assessment, San Bernardino County, California.*

The County completed a Draft Feasibility Study for the Chino Airport in August 2016. The Feasibility Study identifies remedial action objectives for contaminated groundwater originating from the Chino Airport and evaluates remediation alternatives for mitigation. The recommended remediation alternative in the Feasibility Study is a groundwater pump-and-treat system to provide hydraulic containment and treatment of both the West Plume and East Plume originating from the Chino Airport. The system consists of seven extraction wells that will produce approximately 650 gallons per minute of groundwater for treatment onsite using carbon adsorption. An air stripper may be added to the system if found necessary. The preferred option for discharge of treated groundwater is to construct a pipeline to the onsite CDA Chino-I Desalter influent pipeline. If this discharge option is not available at the time of system construction the backup options are to discharge to the local surface waters or treatment plants or to six injection wells at the northeast corner of the Chino Airport. Additionally, the County has proposed an interim remediation plan to construct a granular activated carbon wellhead treatment system at CDA well I-18 located at the center of the plume, which is currently not being used by the CDA for groundwater production for the Chino Desalters. The CDA is currently reviewing the proposed design and operations plan for this well-head treatment system. The Draft Feasibility Study will be finalized after comments from the Regional Board are received and adequately addressed. Watermaster periodically collects groundwater-quality samples from dedicated monitoring wells and private wells in and around the Chino Airport plume area. And, Watermaster has also used its calibrated groundwater model to estimate cleanup times and contaminant concentrations in the vicinity of the CCWF. This work will be updated, given new information about the extent of contamination, subsurface hydrogeology, well performance, and the need for habitat sustainability in the Prado Basin.

Other Water Quality Issues

Watermaster continues to track monitoring programs and mitigation measures associated with other point sources in the Chino Basin, including: Alumax Aluminum Recycling, Alger Manufacturing Facility, the Former Crown Coach Facility, General Electric Test Cell and Flatiron, Former Kaiser Steel Mill, Milliken Landfill, Upland Landfill, and the Stringfellow National Priorities List sites

Program Element 7: Develop and Implement a Salt Management Program

Maximum Benefit Salinity Management Plan

In January 2004, the Regional Board amended the Basin Plan to incorporate an updated total dissolved solids (TDS) and nitrogen (N) management plan. The Basin Plan amendment includes both "antidegradation" and "maximum benefit" objectives for TDS and nitrate-N for the Chino-North and Cucamonga groundwater management zones (GMZs). The maximum benefit objectives allow for the reuse and recharge of recycled water and the recharge of imported water without mitigation; these activities are an integral part of the OBMP. The application of the maximum-benefit objectives is contingent on Watermaster and the IEUA's implementation of specific projects and requirements termed the maximum-benefit commitments. There are a total of nine commitments and Watermaster and the IEUA report the status of compliance with each commitment to the Regional Board annually.

Chino Desalter I Facility

Monitoring Programs. Two of the maximum-benefit commitments are to implement surface and groundwater monitoring programs. On April 15, 2005, the Regional Board adopted resolution R8-2005-0064, approving Watermaster and the IEUA's surface and groundwater monitoring programs. These monitoring programs were conducted pursuant to the 2005 work plan until 2012, when the Basin Plan was amended to remove all references to the specific monitoring locations and the sampling frequencies required for groundwater and surface water monitoring. The Basin Plan amendment allows for the monitoring programs to be modified over time on a go-forward basis, subject to the approval of the Executive Officer of the Regional Board. The Basin Plan amendment was approved by the Regional Board on February 12, 2012 and by the State Office of Administrative Law on December 6, 2012. This amendment was adopted based on demonstrations made by Watermaster and the IEUA, showing that the surface water monitoring program, as explicitly described in the Basin Plan, was not

Program Element 7: Develop and Implement a Salt Management Program (Continued)

meaningfully adding to the body of evidence required to demonstrate hydraulic control. In the place of specific monitoring requirements, the Basin Plan required that Watermaster and the IEUA submit a new surface water monitoring program work plan by February 25, 2012 and a new groundwater monitoring program work plan by December 31, 2013. In February 2012, Watermaster and the IEUA submitted, and the Regional Board approved, a new surface water monitoring program that reduced the 2005 monitoring program from bi-weekly surface water quality measurements at 17 sites and direct discharge measurements at six sites to quarterly surface water quality sampling at two sites.

In December 2013, Watermaster and the IEUA submitted an updated Maximum Benefit Monitoring Program Work Plan and Proposed Schedule for Achieving Hydraulic Control to the Regional Board. The updated Work Plan states that Watermaster and the IEUA will recalibrate the Chino Basin groundwater model every five years and use the model to estimate groundwater discharge from the Chino-North GMZ to the Santa Ana River (i.e. annual underflow past the CCWF) and determine whether hydraulic control has been achieved. The new Maximum Benefit Monitoring Program Work Plan was adopted by the Regional Board in April 2014. Maximum benefit monitoring is incorporated as part of the groundwater level, groundwater quality, and surface water monitoring programs described in Program Element 1. During this reporting period, Watermaster continued implementing the monitoring programs (see Program Element 1 of this report for details).

Hydraulic Control and Chino Desalters. One of the main maximum-benefit commitments is to achieve and maintain "hydraulic control" of the Chino Basin so the downstream beneficial uses of the Santa Ana River are protected. The mechanism for achieving hydraulic control is the construction of the Chino Basin Desalters in the southern Chino Basin, thereby replacing the diminishing agricultural production that previously prevented the outflow of high TDS and nitrate groundwater. Hydraulic control is defined by the Basin Plan as the elimination of groundwater discharge from the Chino-North GMZ to the Santa Ana River or its reduction to a de minimus level. In October 2011, the Regional Board indicated that groundwater discharge from the Chino-North GMZ to the Prado Basin surface water management zone (Prado Basin) in an amount less than 1,000 acre-feet per year is considered de minimus. Watermaster and the IEUA have demonstrated, in Annual Reports to the Regional Board, that complete hydraulic control has been achieved at and east of Chino-I Desalter Well 5. The construction and operation of the CCWF (see Program Element 5), which began in 2010, is intended to achieve hydraulic control in the area west of Chino-I Desalter Well 5. In February 2016, the CCWF commenced full-scale operation with production at wells I-16, I-17, I-20, and I-21. The CCWF wells produced a total of about 1,665 acre-feet in 2016, which is more than the model-estimated production needed to achieve hydraulic control to the de minimus standard west of Chino-I Desalter Well 5. With this accomplishment, Watermaster has achieved full hydraulic control of the Chino Basin.

Although full hydraulic control has been achieved, future agricultural groundwater production in the southern part of the basin is expected to continue to decline, necessitating future expansion of the desalters to sustain hydraulic control. In a letter dated January 23, 2014, the Regional Board required that by May 31, 2014, Watermaster and the IEUA submit a plan detailing how hydraulic control will be sustained in the future as agricultural production in the southern region of Chino-North continues to decrease, specifically how the Chino Basin Desalters will achieve the required total groundwater production level of 40,000 acre-feet per year. On May 30, 2014 Watermaster and the IEUA submitted a draft plan and schedule to install three new desalter wells—with the location of one well being provisional. On June 30, 2015 Watermaster and the IEUA submitted a final plan and schedule for the construction and operation of the three new desalter wells including the final well locations. These wells are under construction. During this reporting period, Watermaster coordinated with the Chino Desalter Authority to track the progress of construction of the desalter expansion facilities. A full status report on the desalter expansion facilities is described in this status report under Program Element 3.

Recycled Water Line at the San Sevaine Basins

Recycled Water Recharge and Quality. The maximum benefit commitments require Watermaster and the IEUA to construct and operate expanded facilities for the recharge of storm and recycled waters and to report on the quality of the individual and combined sources of water used for recharge. This data is compiled and analyzed each year for reporting to the Regional Board. During this reporting period, Watermaster and the IEUA continued their monitoring programs to collect the data required for analysis and reporting to the Regional Board.

Ambient Water Quality. Commitment number 9 requires that Watermaster and the IEUA recompute the ambient TDS and nitrate concentrations for the Chino Basin and Cucamonga GMZs every three years. The recomputation of ambient water quality is performed for the entire Santa Ana River Watershed, and the technical work is contracted, managed, and directed by the Santa Ana Watershed Project Authority's Basin Monitoring Program Task

Program Element 7: Develop and Implement a Salt Management Program (Continued)

Force. Watermaster and the IEUA have participated in each triennial, watershed-wide ambient water quality determination as members of the Task Force. The most recent recomputation, covering the 20-year period from 1993 to 2012, was completed in August 2014. During this reporting period, the Task Force initiated the effort to compute the ambient water quality for the 20-year period from 1996 to 2015, and Watermaster and the IEUA provided the Task Force with a portion of the groundwater data necessary for the recomputation of the management zones in the Chino and Cucamonga Basins. The remainder of the data is anticipated to be delivered in early 2017.

Program Element 8: Develop and Implement a Groundwater Storage Management Program; and Program Element 9: Develop and Implement a Storage and Recovery Program

Groundwater storage is important to the Chino Basin. The OBMP outlines Watermaster's commitments to investigate the technical and management implications of Local Storage Agreements, improve related policies and procedures, and then revisit all pending Local Storage Agreement applications.

The existing Watermaster/IEUA/MWDSC/Three Valleys Municipal Water District Dry-Year Yield (DYY) program continues to be implemented. By April 30, 2011, all DYY program construction projects and a full "put" and "take" cycle had been completed, leaving the DYY storage account with a zero balance. During the reporting period, no water was stored or withdrawn from storage in the DYY Program.

Safe Yield Redetermination

The Basin's Safe Yield was initially set by the Judgment at 140,000 acre-feet per year. The Safe Yield was based in on the hydrology of the period 1965 through 1974. Pursuant to the Judgment, the Chino Basin Safe Yield is to be re-determined periodically, but it provides that the Safe Yield would not be reexamined for at least ten years from 1978. Pursuant to the OBMP Implementation Plan and Watermaster's Rules and Regulations, in year 2010/11 and every ten years thereafter, Watermaster is to compute the Safe Yield. The 2011 Safe Yield recalculation was to be based in part on the information obtained in the prior ten-year period.

In 2011, Watermaster authorized its staff to compile the necessary data and update its model of the basin and, based on the data and the model, to recalculate the Safe Yield. The model calibration was completed in 2012, and the evaluation of Safe Yield began in 2013. During fiscal year 2014/15, the Watermaster parties, pursuant to Watermaster Board direction, met intensively in a facilitated process which resulted in a majority consensus regarding the implementation of the recalculated Safe Yield and drafted the 2015 Safe Yield Reset Agreement. At its September 24, 2015 meeting, the Board adopted Resolution 2015-06, endorsing the 2015 Safe Yield Reset Agreement, and directed Watermaster legal counsel to file the Agreement with the Court. Resolution 2015-06 was adopted by majority vote, with two of the nine Board members opposing the action. The agreement was filed with the Court on October 23, 2015 with a motion recommending that the Court reset the Safe Yield of the Chino Basin at 135,000 acre-feet per year. The hearing on this motion was originally scheduled for December 18, 2015. The Court continued the hearing to September 23, 2016. The Court conducted a hearing on September 23, 2016, heard oral arguments from various parties and Watermaster legal counsel, requested further briefing from the interested parties, and scheduled a hearing in the next reporting period.

Exhibit 5.b

Optimum Basin Management Program

Staff Status Report 2017-1: January to June 2017

CHINO BASIN WATERMASTER

Optimum Basin Management Program

Highlighted Activities

- On June 30, 2017, Watermaster published the *2016 State of the Basin Report*, which contains detailed exhibits, characterizing current conditions in the Chino Basin related to hydrology, groundwater production and recharge, groundwater levels, groundwater quality, and ground-level monitoring as of the end of fiscal year (FY) 2015-2016. This report is prepared every two years pursuant to the Optimum Basin Management Program (OBMP) Phase 1 Report, the Peace Agreement and the associated OBMP Implementation Plan, and the November 15, 2011 Court Order.

- During this reporting period, Watermaster manually measured 400 water levels at about 70 private wells throughout the Chino Basin, conducted two quarterly download events at about 120 wells containing pressure transducers, collected 45 groundwater-quality samples from private and dedicated monitoring wells, and collected four surface-water quality samples.

- Pursuant to a monitoring and mitigation requirement of the Peace II Subsequent Environmental Impact Report, Watermaster, the Inland Empire Utilities Agency (IEUA), and the Orange County Water District (OCWD) continued to implement the Prado Basin Habitat Sustainability Program (PBHSP). During this reporting period, the Prado Basin Habitat Sustainability Committee (PBHSC) prepared its first annual report: *Annual Report of the Prado Basin Habitat Sustainability Committee for Water Year 2015/16*.

- Pursuant to the *Chino Basin Subsidence Management Plan*, Watermaster continued to implement the Ground-Level Monitoring Program and began drafting the *2016 Annual Report of the Ground-Level Monitoring Committee*, which analyzes and interprets data from the monitoring program and recommends future monitoring and testing activities. A main conclusion from the monitoring program is that land subsidence is being successfully managed within the MZ-1 Managed Area within the City of Chino, where land subsidence and ground fissuring occurred in the 1990s.

- Watermaster and the IEUA are continuing to implement the 2013 Amendment to the 2010 Recharge Master Plan Update (2013 RMPU) pursuant to the October 2013 Court Order authorizing its implementation. During this reporting period, Watermaster and the IEUA continued developing agreements to construct the storm and supplemental water recharge projects listed in Table 8-2c of the 2013 RMPU report, to prioritize the construction of these projects relative to the availability of grant funding, and to plan subsequent implementation. The San Sevaine Basin project went to bid for construction, and a consultant was selected for the design of five other 2013 RMPU projects.

- During this reporting period, Watermaster and the IEUA recharged a total of 22,726 acre-feet of water in the basin: 6,996 acre-feet of stormwater, 6,839 acre-feet of recycled water, and 8,891 acre-feet of imported water.

- To recalculate the Safe Yield, Watermaster began updating the groundwater model in 2011 and using it to evaluate Safe Yield in 2013. The Watermaster parties concluded a facilitated process and developed an agreement to implement the recalculated Safe Yield. This proposed agreement was filed with the Court on October 23, 2015 with a motion recommending that the Court reset the Safe Yield of the Chino Basin at 135,000 acre-feet per year. The Court conducted a hearing on September 23, 2016, heard oral arguments from various parties and Watermaster legal counsel, requested further briefing from the interested parties, and scheduled a hearing in the next reporting period. On April 28, 2017, the Court issued a final order resetting the Safe Yield at 135,000 acre-feet per year.

- Watermaster and the IEUA proposed a temporary change in the Safe Storage Capacity of the Chino Basin from 500,000 to 600,000 acre-feet, based on new information regarding storage management and basin conditions versus what was known in 2000 when the OBMP storage management plan was developed and evaluated in the programmatic environmental impact reports (PEIR). This change in Safe Storage Capacity was submitted as an addendum to the 2000 PEIR and approved by the IEUA Board of Directors on March 15, 2017. Watermaster staff, at the direction of its Board of Directors, began the development of a scope of work to develop the architecture for an updated storage management plan.

Important Court Hearings and Orders

- February 22, 2017—Notice of Revised Order on Chino Basin Watermaster's Motion Regarding 2015 Safe Yield Reset Agreement, Amendment of Restated Judgment, Paragraph 6
- April 28, 2017—Chino Basin Watermaster Court Hearing
- April 28, 2017—Notice of Rulings After Hearing on Watermaster's Motion Regarding 2015 Safe Yield Reset Agreement, Amendment of Restated Judgment, Paragraph 6

Program Element 1: Develop and Implement a Comprehensive Monitoring Program

Fundamental to the implementation of each of the OBMP Program Elements are the monitoring and data collection efforts performed in accordance with Program Element 1, which includes monitoring basin hydrology, production, recharge, groundwater levels, groundwater quality, and ground-level movement. Monitoring is performed by basin pumpers, Watermaster staff and other cooperating entities as follows.

Groundwater Level Monitoring

Watermaster initiated a basin-wide groundwater-level monitoring program as part of the implementation of the OBMP. The monitoring program has been refined over time to satisfy the evolving needs of Watermaster and the IEUA, such as new regulatory requirements and improved data coverage. The groundwater-level monitoring program supports many Watermaster functions, such as the periodic reassessment of Safe Yield, the monitoring and management of ground-level movement, the analysis of desalter pumping impacts at private wells, the analysis of the implementation of the Peace II Agreement on groundwater levels and riparian vegetation in Prado Basin, the triennial re-computation of ambient water quality mandated by the Water Quality Control Plan for the Santa Ana River Basin (Basin Plan), and the assessment of hydraulic control—a maximum-benefit commitment in the Basin Plan. The data are also used to update and recalibrate Watermaster's computer-simulation groundwater-flow model, to understand groundwater flow directions, to compute storage changes, to support interpretations of water quality data, and to identify areas of the basin where recharge and discharge are not in balance.

The current groundwater-level monitoring program is comprised of about 1,100 wells. At about 900 of these wells, water levels are measured by well owners, which include municipal water agencies, the California Department of Toxic Substances Control (DTSC), the Counties, and various private consulting firms. Watermaster collects these water level data at least semi-annually. At the remaining 200 wells, water levels are measured by Watermaster staff using manual methods once per month or by using pressure transducers that record data once every 15 minutes. These wells are mainly Agricultural Pool wells or dedicated monitoring wells located south of the 60 freeway.

All groundwater-level data are checked by Watermaster staff and uploaded to a centralized database management system that can be accessed online through HydroDaVE℠. During this reporting period, Watermaster measured 400 manual water levels at about 70 wells throughout the Chino Basin and conducted two quarterly downloads of 120 pressure transducers installed in private, municipal, and monitoring wells. Additionally, Watermaster compiled all available groundwater-level data from well owners in the basin for the October 2016 to March 2017 period.

Groundwater Quality Monitoring

Watermaster initiated a comprehensive groundwater-quality monitoring program as part of the implementation of the OBMP. The monitoring program has been refined over time to satisfy the evolving needs of Watermaster and the IEUA, such as new regulatory requirements and improved data coverage. The groundwater-quality data are used by Watermaster for: the biennial State of the Basin report; the triennial ambient water quality update; the demonstration of hydraulic control, monitoring nonpoint-source groundwater contamination and plumes associated with point-source discharges, and assessing the overall health of the groundwater basin. Groundwater-quality data are also used in conjunction with numerical models to assist Watermaster and other parties in evaluating proposed salinity management and groundwater remediation strategies. The details of the groundwater monitoring programs as of FY 2016/17 are described below.

Chino Basin Data Collection (CBDC). Watermaster routinely and proactively collects groundwater-quality data from well owners, such as municipal producers and government agencies. Groundwater-quality data are also obtained from special studies and monitoring that takes place under orders of the Santa Ana Regional Water Quality Control Board (Regional Board)—such as for landfills and other groundwater quality investigations, the Department of Toxic Substances Control (DTSC), the US Geological Survey (USGS), and others. These data are collected from well owners and monitoring entities at least twice per year. Data is collected for about 840 wells as part of the CBDC program. During this reporting period, Watermaster compiled data collected for the CBDC program for the July to December 2016 period.

Watermaster Field Groundwater Quality Monitoring Programs. Watermaster continues to sample privately owned wells and its own monitoring wells on a routine basis as follows:

1. *Private Wells.* About 100 private wells, located predominantly in the southern portion of the basin, are sampled at various frequencies based on their proximity to known point-source contamination plumes. 76 wells are sampled on a triennial basis, and 20 wells near contaminant plumes are sampled on an annual basis.

Program Element 1: Develop and Implement a Comprehensive Monitoring Program (Continued)

2. *Watermaster Monitoring Wells.* Watermaster collects groundwater quality samples from a total of about 22 multi-nested monitoring wells located throughout the southern Chino Basin. These include nine nested HCMP monitoring wells constructed to support the demonstration of Hydraulic Control, nine sites constructed to support the PBHSP, and four sites that fill spatial data gaps near contamination plumes in MZ-3. Each nested well site contains up to three wells in the borehole. Currently, the HCMP and MZ-3 wells are sampled annually, and the PBHSP wells are sampled quarterly.
3. *Other wells.* Watermaster collects quarterly samples from four near-river wells to characterize the interaction of the Santa Ana River and groundwater. These shallow monitoring wells along the Santa Ana River consist of two former USGS National Water Quality Assessment Program wells (Archibald 1 and Archibald 2) and two Santa Ana River Water Company wells (well 9 and well 11).

During this reporting period, Watermaster collected 45 groundwater-quality samples from private and dedicated monitoring wells. All groundwater-quality data are checked by Watermaster staff and uploaded to a centralized database management system that can be accessed online through HydroDaVE^{sm}.

Groundwater Production Monitoring

As of the end of this reporting period, there were a total of 519 producing wells, 304 of it was agricultural. All active agricultural production wells, with a few exceptions, are now metered. Wells that are not metered include minimal producer wells, and wells where installing a meter is not feasible. Watermaster reads the meters on a quarterly basis and enters the production data into Watermaster's relational database, which can be accessed online through HydroDaVE^{sm}.

Surface Water Monitoring in the Santa Ana River

Watermaster collects grab water quality samples at two sites along the Santa Ana River (Santa Ana River at River Road and Santa Ana River at Etiwanda) on a quarterly basis. Along with data collected at four wells near the Santa Ana River, these data are used to characterize the interaction between the Santa Ana River and nearby groundwater. During this reporting period, Watermaster collected four surface-water quality samples.

Prado Basin Habitat Sustainability Program (PBHSP)

Mitigation Measure 4.4-3 from the Peace II SEIR requires that Watermaster and the IEUA, in collaboration with OCWD, form a committee, the PBHSC, and develop and implement an Adaptive Management Plan for the PBHSP. The PBHSC is open to all interested participants, including the Watermaster Parties, IEUA member agencies, OCWD, and other interested stakeholders. The objective of the PBHSP is to ensure that riparian habitat in the Prado Basin is not adversely impacted by the implementation of Peace II activities. Currently, the PBHSP consists of a monitoring program and annual reporting on the results of the monitoring program. The monitoring program includes an assessment of the riparian habitat and all factors that could potentially impact the riparian habitat, including those factors affected by Peace II activities, such as changes in groundwater levels. Sixteen monitoring wells at nine sites were constructed in 2015 to support the PBHSP.

Prado Wetlands

During the reporting period, Watermaster performed the following tasks:

- Conducted the groundwater monitoring program, which included the quarterly collection of groundwater-level and groundwater-quality data from the PHBSP monitoring wells.
- Prepared a memorandum titled: *Recommended Scope and Budget of the Prado Basin Habitat Sustainability Program for FY 2017-18.* This memorandum was used by Watermaster and the IEUA to develop and approve their respective FY 2017-18 budgets.
- Prepared the first annual report: *Annual Report of the Prado Basin Habitat Sustainability Committee for Water Year 2015/16.* The main conclusion of the annual report was that there has been no observed degradation of riparian habitat contemporaneous with the implementation of the Peace II Agreement.

Program Element 1: Develop and Implement a Comprehensive Monitoring Program (Continued)

- Conducted three meetings of the PBHSC:
  - On March 21, 2017 to present the preliminary results of the PBHSP and the Recommended Scope and Budget of the PBHSP for FY 2017-18.
  - On April 25, 2017 to present the draft 2016 Annual Report of the PBHSC through Section 3.1.
  - On June 6, 2017 to present the draft-final 2016 Annual Report of the PBHSC.

Chino Basin Groundwater Recharge Monitoring Program

Watermaster, the IEUA, the Chino Basin Water Conservation District, and the San Bernardino County Flood Control District jointly sponsor the Chino Basin Groundwater Recharge Program. This is a comprehensive water supply program to enhance water supply reliability and improve groundwater quality in local drinking water wells by increasing the recharge of storm, imported, and recycled waters. The recharge program is regulated under Regional Board Order No. R8-2007-0039 and Monitoring and Reporting Program No. R8-2007-0039.

Montclair 1 Basin after a rain storm.

Watermaster and the IEUA measure the quantity of storm and supplemental water that enters into recharge basins using pressure transducers or staff gauges and collect weekly water quality samples from recharge basins that are actively recharging recycled water and from lysimeters installed within those recharge basins. Imported water quality data for State Water Project water are obtained from the Metropolitan Water District of Southern California (MWDSC) and recycled water quality data for RP-1 and RP-4 treatment plant effluents are obtained from the IEUA. Combining measured flow data with respective water quality data enables the calculation of the blended water quality of the recharge sources in each recharge basin and the assessment of adequate dilution of recycled water, as required by the recycled water recharge permits held with the Department of Drinking Water (DDW). The recharge measurements are also used to estimate the New Yield to the Chino Basin as a result of the recharge activities.

Monitoring Activities. During this reporting period, the IEUA performed its ongoing monitoring program to measure and record recharge volumes and to collect stormwater quality samples pursuant to its permit requirements. Also, during this reporting period, approximately 58 recharge basin and lysimeter samples were collected for water quality analysis, and 28 recycled water samples were collected for alternative water quality monitoring plans, including the application of a correction factor for soil-aquifer treatment, determined from each recharge basin's startup period. Monitoring wells located downgradient of the recharge basins were sampled, at a minimum, on a quarterly basis; that said, some monitoring wells were sampled more frequently during the reporting period for a total of 123 samples.

Reporting. Watermaster and the IEUA completed the following compliance reports concerning the recharge program during the reporting period:

- 4Q-2016 Quarterly Report, submitted to the RWQCB – February 2017
- 1Q-2017 Quarterly Report, submitted to the RWQCB – May 2017
- 2016 Annual Report, submitted to the RWQCB – May 2017

Ground-Level Monitoring

To address the historical occurrence of land subsidence and ground fissuring in the Chino Basin, Watermaster prepared and submitted a subsidence management plan (known as the MZ-1 Plan) to the Court for approval, and in November 2007, the Court ordered its implementation (see Program Element 4 in this report for more on the MZ-1 Plan implementation). The MZ-1 Plan required several monitoring and mitigation measures to minimize or abate the future occurrence of land subsidence and ground fissuring. These measures and activities included:

- Continuing the scope and frequency of monitoring within the so-called Managed Area (southwest MZ-1) that was conducted during the period when the MZ-1 Plan was being developed.

Program Element 1: Develop and Implement a Comprehensive Monitoring Program (Continued)

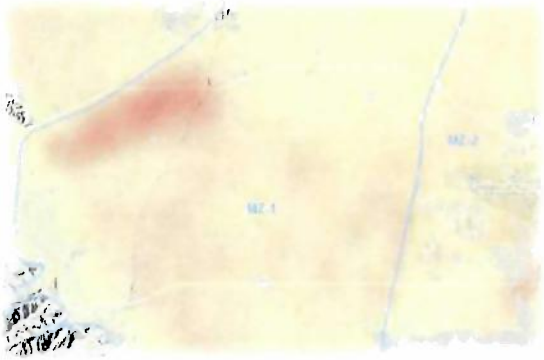
- Expanding the monitoring of the aquifer system and ground-level movement into other areas of MZ-1 and the Chino Basin where data indicate concern for future subsidence and ground fissuring (Areas of Subsidence Concern).
- Monitoring of horizontal strain across the historical zone of ground fissuring.
- Evaluating the potential contribution of groundwater production in northern MZ-1 on ground-level conditions in southern MZ-1.
- Conducting additional testing and monitoring to refine the MZ-1 Guidance Criteria for subsidence management (e.g. the Long-Term Pumping Test).
- Developing alternative pumping plans for the MZ-1 producers impacted by the MZ-1 Plan.
- Constructing and testing a lower-cost cable extensometer facility at Ayala Park.
- Evaluating and comparing ground-level surveying and Interferometric Synthetic Aperture Radar (InSAR), and recommending future monitoring protocols for both techniques.
- Conducting an aquifer storage recovery (ASR) feasibility study at a City of Chino Hills production well within the MZ-1 Managed Area (Well 16).
- Providing for recovery of groundwater levels in the MZ-1 Managed Area.

Since the initial MZ-1 Plan was adopted in 2007, Watermaster has conducted the annual Ground-Level Monitoring Program (GLMP). The main results of the GLMP are: very little permanent land subsidence has occurred in the MZ-1 Managed Area, indicating that subsidence is being successfully managed in this area, and land subsidence has been occurring in the Northwest MZ-1 Area. One concern is that subsidence in Northwest MZ-1 has occurred differentially across the San Jose Fault, following the same pattern of differential subsidence that occurred in the MZ-1 Managed Area during the time of ground fissuring.

Based on these results, Watermaster determined that the subsidence management plan needed to be updated to include a *Subsidence Management Plan for the Northwest MZ-1 Area* with the long-term objective of minimizing or abating the occurrence of the differential land subsidence. Thus, Watermaster expanded the GLMP into the Northwest MZ-1 Area and prepared an updated *Chino Basin Subsidence Management Plan* (SMP), which included the *Work Plan to Develop a Subsidence-Management Plan for the Northwest MZ-1 Area* (Work Plan) as an appendix.

During this reporting period, Watermaster undertook the following SMP activities:

- Continued high-resolution water-level monitoring at wells within the Managed Area and within the Areas of Subsidence Concern. All monitoring equipment is inspected at least quarterly and is repaired and/or replaced as necessary. The data collected were checked and analyzed to assess the functionality of the monitoring equipment and for compliance with the SMP.
- Performed monthly routine maintenance, data collection, and verification at the Ayala Park and Chino Creek extensometer facilities. This included repair and the reinstallation of the Ayala Park data logger, which was malfunctioning.
- Collected InSAR data scenes across the western Chino Basin from the German Aerospace Center's TerraSAR-X satellite.
- Conducted vertical ground-level surveys at benchmarks in the Southeast and Northwest Areas. Electronic distance measurements (EDMs) were also conducted across the San Jose Fault Zone. Installed a new line of benchmark monuments across the Northwest MZ-1 Area.
- Continued implementation of the Work Plan:
    - Collected, processed, and checked groundwater level data and production data from wells in the Northwest MZ-1 Study Area monthly.
    - Coordinated with the Monte Vista Water District, City of Pomona, and SCADA Integrations (consulting firm) to prepare a proposal to equip and integrate up to 21 wells with SCADA-based monitoring of groundwater levels and production. Developed a SCADA Installation, Monitoring, and Reimbursement Letter Agreement between the Monte Vista Water District and Watermaster.



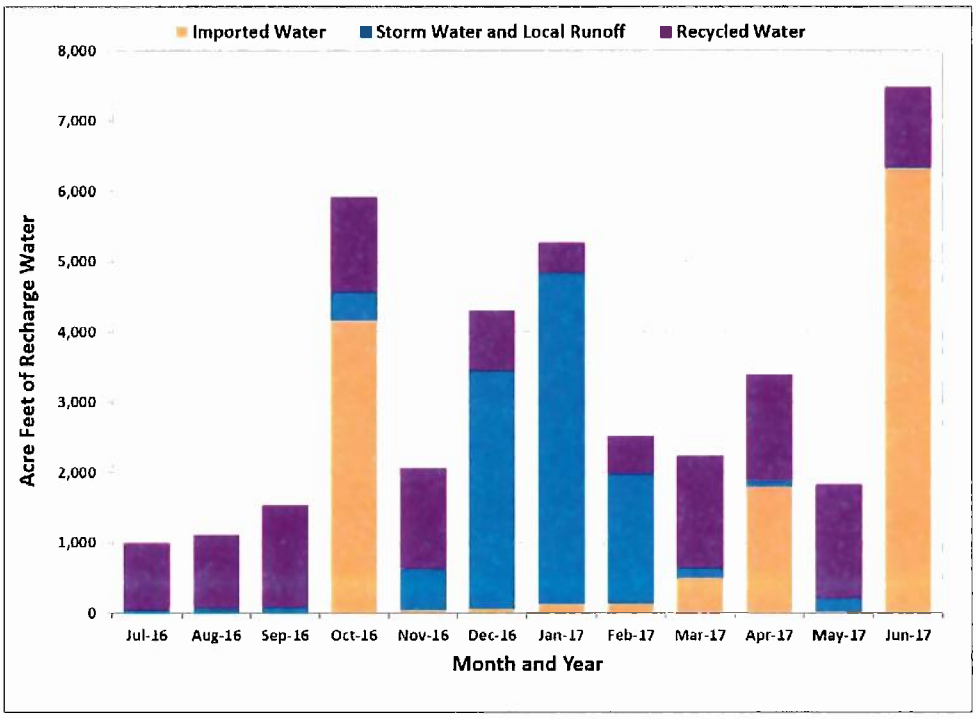
Utilization of InSAR data in maps for analysis.

Program Element 1: Develop and Implement a Comprehensive Monitoring Program (Continued)

- The Long-Term Pumping Test, described in the SMP, was developed by the GLMC to test and refine the Guidance Level for the Managed Area. The test requires the City of Chino Hills to pump wells CH-15B and CH-17 such that they cause water levels at PA-7 to decline below the Guidance Level. The recovery phase of the test includes groundwater injection cycles at City of Chino Hills well CH-16. The following work was performed during this reporting period:
  - The City of Chino Hills worked on the wellhead-treatment filters for arsenic at CH-15B.
  - The City of Chino Hills connected CH-16 to a potable source water pipeline.
  - Pumping at wells in the MZ-1 Managed Area did not result in water levels to decline below the Guidance Level at PA-7.

Program Element 2: Develop and Implement a Comprehensive Recharge Program

The objectives of the comprehensive recharge program include enhancing the yield of the Chino Basin through the development and implementation of a Recharge Master Plan to improve, expand, and construct recharge facilities that enable the recharge of storm, recycled, and imported waters; to ensure a balance of recharge and discharge in the Chino Basin management zones; and to ensure that sufficient storm and imported waters are recharged to comply with the recycled water dilution requirements in Watermaster and the IEUA's recycled water recharge permits.



Pursuant to PE2 of the OBMP, Watermaster and the IEUA partnered with the San Bernardino County Flood Control District and the Chino Basin Water Conservation District to construct and/or improve eighteen recharge sites. This project is known as the Chino Basin Facilities Improvement Project (CBFIP). The average annual stormwater recharge of the CBFIP facilities is approximately 10,000 acre-feet per year, the supplemental "wet"[1] water recharge capacity is approximately 74,700 acre-feet per year, and the in-lieu supplemental water recharge capacity ranges from 25,000 to 40,000 acre-feet per year. In addition to the CBFIP facilities, the Monte Vista Water District has five ASR wells with a demonstrated well injection capacity of 5,600 acre-feet per year. The current total supplemental water recharge capacity ranges from 105,300 to 120,300 acre-feet per year, which is greater than the projected supplemental water recharge capacity required by Watermaster.

In 2008, Watermaster began preparing the *2010 Recharge Master Plan Update* (2010 RMPU) pursuant to the December 21, 2007 Court Order (the Peace II Agreement) to complete a Recharge Master Plan Update by July 1, 2010. In October 2010, the Court accepted the 2010 RMPU as satisfying the condition and ordered that certain recommendations of the 2010 RMPU be implemented. In November 2011, Watermaster reported its progress to the Court pursuant to the October 2010 Court Order, and in December 2011, the Court issued an order directing Watermaster to continue with its implementation of the 2010 RMPU per its October 2010 order but with a revised schedule. On December 15, 2011, the Watermaster Board moved to:

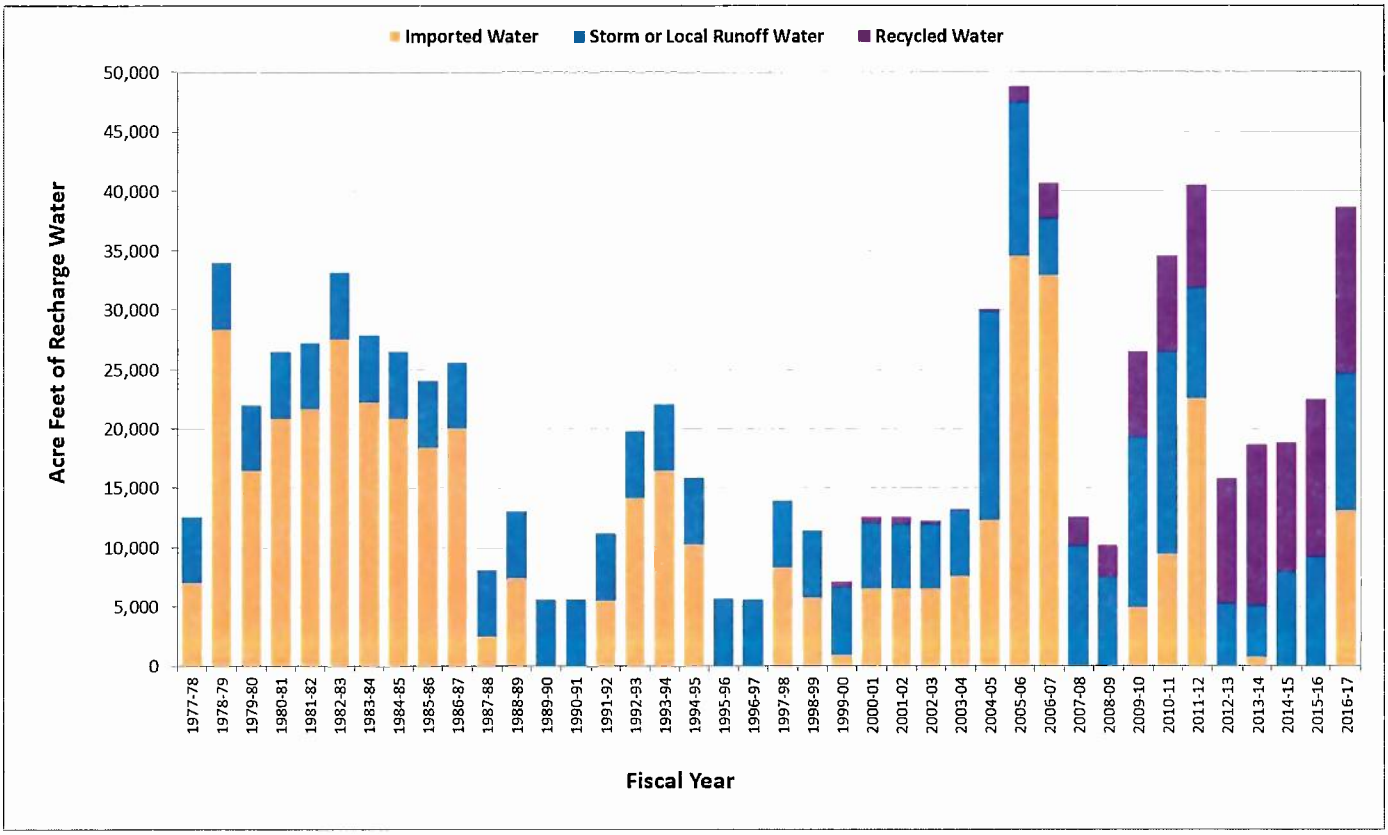
> "approve that within the next year there will be the completion of [a] Recharge Master Plan Update, there will be the development of an Implementation Plan to address balance issues within the Chino Basin subzones, and the development of a Funding Plan, as presented."

[1]The modifier "wet" means actual physical water is being recharged in spreading basins as opposed to the dedication of water from storage or in-lieu recharge.

Program Element 2: Develop and Implement a Comprehensive Recharge Program (Continued)

This motion led to the development of an update to the 2010 RMPU, and in 2012, Watermaster staff sent out a "call for projects" to the Watermaster parties, seeking their recommendations for recharge improvement projects that should be considered in the update. The *2013 Amendment to the 2010 Recharge Master Plan Update* (2013 RMPU) outlines the recommended projects to be implemented by Watermaster and the IEUA and lays out the implementation and financing plans. The 2013 RMPU report was approved by the Watermaster Board in September 2013 and filed with the Court in October 2013. In December 2013, the Court approved the 2013 RMPU except for Section 5, which dealt with the accounting for new recharge from Municipal Separate Stormwater Sewer Systems; Section 5 was later approved by the Court in April 2014.

During this reporting period, Watermaster staff developed a budget and schedule to complete the forthcoming 2018 Recharge Master Plan Update (2018 RMPU), which is due to the Court by October 2018.



2013 RMPU Implementation. Watermaster and the IEUA are continuing to carry out the October 2013 Court Order, which authorizes them to implement the 2013 RMPU. During the reporting period, Watermaster and the IEUA continued developing agreements to construct the storm and supplemental water recharge projects listed in Table 8-2c of the 2013 RMPU report, prioritizing the construction of projects relative to the availability of grant funding. During the reporting period, the San Sevaine Basin project was put out to bid for construction. A design consultant was selected for the design of five of the chosen 2013 RMPU projects: CSI Basin, Wineville/Jurupa/RP3 Basins, Montclair Basins, Lower Day Basin, and Victoria Basin. Watermaster stakeholders chose to defer the remaining 2013 RMPU projects for consideration in a future RMPU.

Additionally, Watermaster and the IEUA continued to develop a series of projects outside of the 2013 RMPU effort that will increase and/or facilitate stormwater and supplemental water recharge and have jointly agreed to fund these projects, including monitoring upgrades and habitat conservation. Watermaster's share of the cost of these projects was included in the budget adopted by Watermaster for fiscal 2016/17.

Program Element 2: Develop and Implement a Comprehensive Recharge Program (Continued)

The Recharge Improvements Project Committee met monthly on the progress of implementing the 2013 RMPU Projects and other recharge-related projects.

Recharge for Dilution of Recycled Water. In fiscal year 2009/10, Watermaster and the IEUA's recharge permit was amended to allow for existing underflow dilution and extended the period for calculating dilution from a running 60-month to a running 120-month period. Additionally, the IEUA has worked with the DDW to obtain approval to increase the allowable recycled water contribution (RWC) at wells to 50 percent. These permit amendments allow for increased recycled water recharge without having to increase the amount of imported and storm waters required for dilution. The IEUA projects its dilution requirements as part of its annual reporting to the DDW. Based on the latest Annual Report (May 2017), the IEUA projects that dilution requirements will be met through 2027 even if no imported water is available for dilution.

Recycled water line at the Ely Basins.

Recharge Activities. During this reporting period, ongoing recycled water recharge occurred in the Brooks, 7th Street, 8th Street, Turner, Ely, Declez, RP-3, Victoria, and Banana Basins; stormwater was recharged at 18 recharge basins across all management zones of the Chino Basin; and imported water was recharged in 13 recharge basins, primarily in MZ-1. Watermaster and the IEUA recharged a total of 22,726 acre-feet of water: 6,996 acre-feet of stormwater, 6,839 acre-feet of recycled water, and 8,891 acre-feet of imported water.

Balance of Recharge and Discharge in MZ-1. The total amount of supplemental water recharged in MZ-1 since the Peace II Agreement through June 30, 2017 was approximately 61,547 acre-feet, which is about 3,500 acre-feet less than the 65,000 acre-feet that required by that date (annual requirement of 6,500 acre-feet); the shortfall will be recharged in MZ-1in subsequent years as supplemental water becomes available. The amount of supplemental water recharged into MZ-1 during the reporting period was approximately 7,844 acre-feet.

Program Element 3: Develop and Implement Water Supply Plan for the Impaired Areas of the Basin; and
Program Element 5: Develop and Implement Regional Supplemental Water Program

As stated in the OBMP, "the goal of Program Elements 3 and 5 is to develop a regional, long range, cost-effective, equitable, water supply plan for producers in the Chino Basin that incorporates sound basin management." One element of the water supply plan is the development of a way to replace the decline in groundwater production to prevent significant amounts of degraded groundwater from discharging to the Santa Ana River and violating the Basin Plan. Replacing the decline in agricultural groundwater production will mitigate the reduction of the Safe Yield of the basin and allow for more flexibility in the basin's supplemental water supplies if the produced groundwater is treated. This is achieved through the operation of the Chino Basin Desalter facilities, which comprise a series of wells and treatment facilities in the southern Chino Basin that are designed to replace the decline in production of the agricultural groundwater producers and to treat and serve this groundwater to various Appropriative Pool members.

The Chino I Desalter Expansion and the Chino II Desalter facilities were completed in February 2006. As currently configured, the Chino I Desalter produces about 13,500 acre-feet of groundwater per year (12.1 million gallons per day [MGD]) at 15 wells (I-1 through I-15). This water is treated through air stripping (volatile organic compound [VOC] removal), ion exchange (nitrate removal), and/or reverse osmosis (for nitrate and TDS removal). The Chino II Desalter produces about 15,800 acre-feet of groundwater per year (14.1 MGD) at eight wells (II-1 through II-4 and II-6 through II-9). This water is treated through ion exchange and/or reverse osmosis. Development and planning continues between the CDA and Watermaster to expand the production and treatment capacity of the Chino Desalters by about 10,500 acre-feet per year (9.5 MGD). More than $77 million in grant funds have been secured toward this expansion.

The most recently completed expansion project included the construction of five wells for the new Chino Creek Well Field (CCWF): wells I-16, I-17, I-18, I-20, and I-21. These wells were constructed to meet the hydraulic control commitment associated with the maximum benefit (see the Program Element 7 update in this status report) and provide additional raw water to the Chino I Desalter. Production began at wells I-16 and I-17 in mid-2014 and at wells I-20 and I-21 in early 2016. Well 1-18 is not planned for operation by the CDA due to high concentrations of VOCs.

Program Element 3: Develop and Implement Water Supply Plan for the Impaired Areas of the Basin; and
Program Element 5: Develop and Implement Regional Supplemental Water Program (Continued)

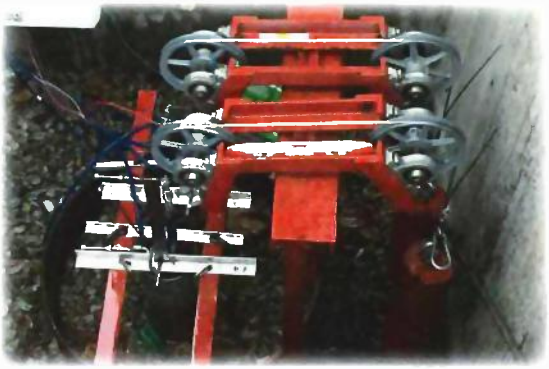
Three final wells (II-10, II-11, and II-12) are planned for construction to provide additional raw water to the Chino II Desalter and are required to meet the maximum-benefit commitment to produce a total of 40,000 acre-feet per year from the combined desalter well fields. These wells are also being constructed as part of the remediation action plan to clean-up the South Archibald Plume (See the Program Element 6 update in this status report). The construction of wells II-10 and II-11 was completed in late-2015, and equipping the wells is planned for completion in July 2017once the CDA completes the construction of the raw-water pipeline to plumb the new wells into the Chino-II Desalter. During this reporting period, the CDA continued with the land acquisition process for Well II-12. As soon as that land is acquired, a monitoring well will be constructed to support the design of the production well. The CDA has retained consultants for the construction and design of Well II-12, which is anticipated to be completed and operational by July 2019.

Program Element 4: Develop and Implement a Comprehensive Groundwater Management Plan for Management Zone 1

Because of the historical occurrence of pumping-induced land subsidence and ground fissuring in southwestern Chino Basin (southern MZ-1), the OBMP required the development and implementation of an Interim Management Plan (IMP) for MZ-1 that would:

- Minimize subsidence and fissuring in the short-term.
- Collect the information necessary to understand the extent, rate, and mechanisms of subsidence and fissuring.
- Formulate a management plan to reduce to tolerable levels or abate future subsidence and fissuring.

From 2001-2005, Watermaster developed, coordinated, and conducted an IMP under the guidance of the MZ-1 Technical Committee. The investigation provided enough information for Watermaster to develop Guidance Criteria for the MZ-1 producers in the investigation area that, if followed, would minimize the potential for subsidence and fissuring during the completion of the MZ-1 Plan. The Guidance Criteria included a listing of Managed Wells and their owners subject to the criteria, a map of the so-called Managed Area, and an initial threshold water level (Guidance Level) of 245 feet below the top of the PA-7 well casing. The MZ-1 Summary Report and the Guidance Criteria were adopted by the Watermaster Board in May 2006. The Guidance Criteria formed the basis for the MZ-1 Plan, which was approved by Watermaster in October 2007. The Court approved the MZ-1 Plan in November 2007 and ordered its implementation. Watermaster has implemented the MZ-1 Plan since that time, including the ongoing Ground-Level Monitoring Program (GLMP) called for by the MZ-1 Plan (refer to the update in this report under Program Element 1).



Extensometer at Ayala Park.

The MZ-1 Plan states that if data from existing monitoring efforts in the so-called Areas of Subsidence Concern indicate the potential for adverse impacts due to subsidence, Watermaster will revise the MZ-1 Plan pursuant to the process outlined in Section 3 of the MZ-1 Plan. In early 2015, Watermaster prepared an update to the MZ-1 Plan, which included a name change to the *2015 Chino Basin Subsidence Management Plan* (SMP) and a *Work Plan to Develop the Subsidence Management Plan for the Northwest MZ-1 Area* (Work Plan) as an appendix. The SMP and the Work Plan were adopted through the Watermaster Pool process during July 2015.

The data, analysis, and reports generated through the implementation of the MZ-1 Plan, SMP, and Work Plan are reviewed and discussed by the Ground-Level Monitoring Committee (GLMC), which meets on a periodic basis throughout the year. The GLMC is open to all interested participants, including the Watermaster Parties and their consultants. During this reporting period, Watermaster undertook the following data analysis and reporting tasks:

- Reviewed water levels at the PA-7 piezometer and determined that levels remained above the Guidance Level during the reporting period; very little, if any, permanent compaction was recorded at the Ayala Park Extensometer.
- Analyzed historical EDM data collected in the Managed Area and Northwest MZ-1 Area. The results of the analysis will be used to identify potential sites for the re-installation of a horizontal extensometer in the Managed Area and make recommendations for future EDM methods.

Program Element 4: Develop and Implement a Comprehensive Groundwater Management Plan for Management Zone 1 (Continued)

- Analyzed data from the GLMP during 2016, and prepared draft text, tables and figures for the *2016 Annual Report of the Ground-Level Monitoring Committee*.
- For the *Work Plan to Develop a Subsidence Management Plan for the Northwest MZ-1 Area*:
  - Prepared draft response to comments on the memorandum: *Initial Hydrogeologic Conceptual Model and the Monitoring and Testing Program for the Northwest MZ-1 Area*. The response to comments is currently under internal review.
  - Prepared the draft technical memorandum: *Development and Characterization of the Baseline Management Alternative and Initial Subsidence-Management Alternative for the Northwest MZ-1 Area*. The technical memorandum is currently under internal review.
  - Finalized the technical memorandum: *Siting Study for the Pomona Extensometer*.
  - Prepared the final technical specifications: *Detailed Technical Specifications for the Drilling and Construction of Two Dual-Nested Piezometers for the Pomona Extensometer Facility*. The technical specifications will be incorporated in the Pomona Extensometer Piezometers construction bid package at the completion of CEQA.
- The GLMC met on March 23 and April 11, 2017. The meeting agendas included the following items:
  - Preliminary results of the GLMP for 2016.
  - Recommended scope and budget of the GLMC for FY 2017-18.
  - Cost estimates for the proposed modifications to the SCADA systems at MVWD and the City of Pomona.
  - Draft Technical Specifications for the Pomona Extensometer piezometers.
  - Review the GLMC's next steps: finalize the recommended scope and budget for FY 2017-18 and upcoming GLMC deliverables and meetings.

Program Element 6: Develop and Implement Cooperative Programs with the Regional Water Quality Control Board, Santa Ana Region and Other Agencies to Improve Basin Management

Program Elements 6 and 7 are necessary to address the water quality management problems that occur in the Chino Basin. During the development of the OBMP, it was identified that Watermaster did not have sufficient information to determine whether point and non-point sources of groundwater contamination are being adequately addressed, including the various contaminant plumes in the Chino Basin. With the Regional Board and other agencies, Watermaster has worked to address the following major point source contaminant plumes in the Chino Basin:

South Archibald Plume

In July 2005, the Regional Board prepared draft Cleanup and Abatement Orders (CAOs) for six parties who were tenants on the Ontario Airport with regard to the South Archibald TCE Plume. The draft CAOs required the parties to "submit a work plan and time schedule to further define the lateral and vertical extent of the TCE and related VOCs that are discharging, have been discharged, or threaten to be discharged from the site" and to "submit a detailed remedial action plan, including an implementation schedule, to cleanup or abate the effects of the TCE and related VOCs." Four of the six parties (Aerojet-General Corporation, The Boeing Company, General Electric, and Lockheed Martin) voluntarily formed a group known as ABGL to work jointly on a remedial investigation. Northrop Grumman declined to participate in the group. The US Air Force, in cooperation with the US Army Corps of Engineers, funded the installation of one of the four clusters of monitoring wells installed by the ABGL Parties.

In 2008, Regional Board staff conducted research pertaining to the likely source of the TCE contamination and identified discharges of wastewater that may have contained TCE to the RP-1 treatment plant and associated disposal areas to be a potential source. The Regional Board identified several industries, including some previously identified tenants of the Ontario Airport property, that likely used TCE solvents before and during the early-1970s, and discharged wastes to the Cities of Ontario and Upland's sewage systems and subsequently to the RP-1 treatment plant and disposal areas. In 2012, an additional Draft CAO was issued by the Regional Board jointly to the City of Ontario, City of Upland, and IEUA as the previous and current operators of the RP-1 treatment plant and

Program Element 6: Develop and Implement Cooperative Programs with the Regional Water Quality Control Board, Santa Ana Region and Other Agencies to Improve Basin Management (Continued)

disposal area (collectively, the RP-1 parties). In part, the draft CAOs require that RP-1 parties "supply uninterrupted replacement water service [...] to all residences south of Riverside Drive that are served by private domestic wells at which TCE has been detected at concentrations at or exceeding 5 µg/L [...]" and to report this information to the Regional Board. In addition, the RP-1 parties are to "prepare and submit [a] [...] feasibility study" and "prepare, submit and implement the Remedial Action Plan" to mitigate the "effects of the TCE groundwater plume."

Under the Regional Board's oversight, sampling at private residential wells and taps has been conducted approximately every two years (2007-2008, 2009, 2011, 2013-2014) by multiple parties in the region where groundwater is potentially contaminated with TCE. By 2014, all private wells and/or taps in the area of the plume had been sampled at least once since 2007. Alternative water systems (tanks) have been installed at residences in the area where well water contains TCE at or above 80% of the MCL for TCE. Residents who declined tank systems are being provided bottled water. Watermaster also routinely samples for water quality at private wells in the area and uses data obtained from this monitoring to delineate the spatial extent of the plume.

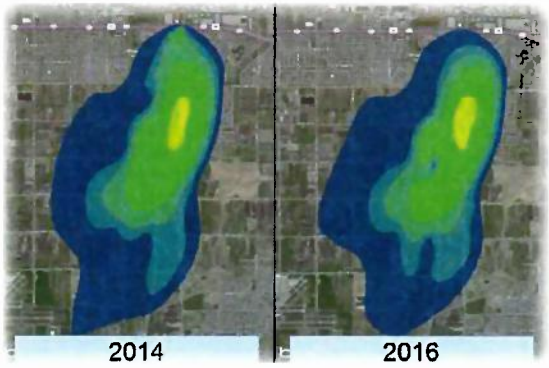
In July 2015, the RP-1 parties completed the Draft Feasibility Study Report for the South Archibald Plume (Feasibility Study). The Feasibility Study established cleanup objectives for both domestic water supply and plume remediation and evaluates alternatives to accomplish these objectives. In August 2015, a Draft Remedial Action Plan (RAP) was concurrently prepared by the RP-1 parties to present the preferred plume remediation and domestic water supply alternatives. A public review period followed along with two community meetings to educate the public about the plume, the Feasibility Study, and the RAP, and to solicit comments on these reports. In November 2015, a revised Draft Feasibility Study, RAP, and Responses to Comments were completed to address input from the public, the ABGL, and others. In September 2016, the Regional Board issued the Final CAO R8-2016-0016 collectively to the RP-1 parties and the ABGL parties. The Final CAO was adopted by all parties in November 2016, thus approving the preferred plume remediation and domestic water supply alternatives identified in the RAP. The parties also reached a settlement agreement that aligns with the Final CAO and authorizes funding to initiate implementation of the plume remediation alternative.

The plume remediation alternative involves the use of existing and proposed CDA production wells and facilities. The RP-1 parties reached a Joint Facility Development Agreement with the CDA for implementation of a project designed to remediate the South Archibald Plume. The proposed project includes the operation of three new CDA desalter wells (II-10, II-11, and II-12) and a dedicated pipeline to convey produced groundwater from the three new wells and existing CDA well I-11 to the Desalter II treatment facility. As noted previously in this status report, the CDA has completed construction of two of the three wells, which will be operational by July 2017. The third well will be completed and operational by July 2019.

The domestic water supply alternative for those private residences affected by TCE groundwater contamination is a hybrid between the installation of tank systems for some residences, where water is delivered from the City of Ontario potable supply via truck deliveries, and the installation of a temporary pipeline to connect some residences to the City of Ontario potable water system. The City of Ontario has assumed responsibility for implementing the domestic water supply alternative.

During the reporting period, the City of Ontario submitted a private water supply well sampling work plan and a domestic water supply work plan to the Regional Board, including performance objectives for both the plume remediation and domestic water supply alternatives. Pursuant to the February 2017 work plans, an Annual Groundwater Monitoring Report was completed on May 15, 2017 by the Cities of Ontario and Upland and submitted to the Regional Board. The groundwater sampling effort took place during February and March 2017 and included 41 private and municipal well locations. Based on the results of the 2017 sampling event, no additional residences were recommended for participation in the alternative water supply program.

Also during the reporting period, Watermaster prepared an updated delineation of the spatial extent of the South Archibald TCE plume. The updated plume delineation was published on June 30, 2017 as part of the *2016 State of the Basin Report*.



South Archibald TCE plume from 2014 to 2016.

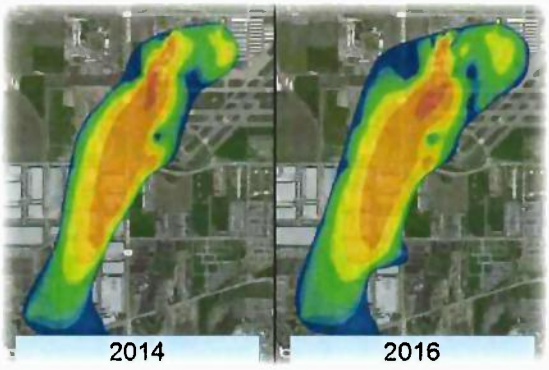
Program Element 6: Develop and Implement Cooperative Programs with the Regional Water Quality Control Board, Santa Ana Region and Other Agencies to Improve Basin Management (Continued)

Chino Airport Plume

In 1990, the Regional Board issued CAO No. 90-134 to the County of San Bernardino, Department of Airports (County) to address groundwater contamination originating from the Chino Airport. During 1991 to 1992, ten underground storage tanks and 310 containers of hazardous waste were removed, and 81 soil borings were drilled and sampled on the airport property. From 2003 to 2005, nine onsite monitoring wells were installed and used to collect groundwater quality samples. In 2007, the County conducted its first offsite monitoring effort, and in 2008, the Regional Board issued CAO No. R8-2008-0064, requiring the County to define the lateral and vertical extent of the plume and prepare a remedial action plan. From 2009 to 2012, Tetra Tech, the consultant to the County, conducted several off-site plume characterization studies to delineate the areal and vertical extent of the plume and constructed 33 offsite monitoring wells. From 2013 to early-2015, Tetra Tech conducted an extensive investigation of several areas identified for additional characterization of soil and groundwater contamination; and at the conclusion of the work, they constructed an additional 33 groundwater monitoring wells on and adjacent to the Airport property. In August 2016, the County completed a Draft Feasibility Study to identify remedial action objectives and evaluate remediation alternatives for mitigation.

The County conducts quarterly and/or annual monitoring events at all 75 of their monitoring wells constructed to date. The conclusions from this monitoring program can be found in reports posted on the Regional Board's GeoTracker website. In April 2017, Tetra Tech submitted the *Semiannual Groundwater Monitoring Report, Summer and Fall 2017, Chino Airport Groundwater Assessment, San Bernardino County, California*, which included the County's most recent characterizations of the TCE plume. Watermaster also routinely samples for water quality at private and monitoring wells in the area and uses this and other data obtained from its data collection programs to independently delineate the spatial extent of the plume.

During this reporting period, the Regional Board issued CAO R8-2017-0011, which requires the County to prepare a Final Feasibility Study that incorporates comments from the Regional Board and to prepare, submit, and implement a Remedial Action Plan. The County submitted a Final Feasibility Study for the Chino Airport on June 6, 2017, and it was approved by the Regional Board on June 7, 2017. The recommended remediation alternative is a groundwater pump-and-treat system to provide hydraulic containment and treatment of both the West Plume and the East Plume originating from the Chino Airport. The system consists of ten extraction wells that combined will produce approximately 900 gallons per minute of groundwater for onsite treatment using carbon adsorption. Included among the 10 wells is CDA well I-18, which is no longer planned for use by the CDA. Once treated, the preferred option is to discharge the treated groundwater to the CDA's Chino-I Desalter influent pipeline via a newly constructed pipeline. If this discharge option is not available at the time the system is constructed, the alternative options are to discharge the treated groundwater to either the local surface-water channels or wastewater treatment plants or to inject the treated groundwater back into the basin with six injection wells at the northeast corner of the Chino Airport. The final RAP, based on the approved final Feasibility Study, is due to the Regional Board by August 7, 2017.



Chino Airport TCE Plume from 2014 to 2016.

Also during the reporting period, Watermaster prepared an updated delineation of the spatial extent of the Chino Airport TCE plume. The updated plume delineation was published on June 30, 2017 as part of the *2016 State of the Basin Report.*

Other Water Quality Issues

Watermaster continues to track monitoring programs and mitigation measures associated with other point sources in the Chino Basin, including: Alumax Aluminum Recycling, Alger Manufacturing Facility, the Former Crown Coach Facility, General Electric Test Cell and Flatiron, Former Kaiser Steel Mill, Milliken Landfill, Upland Landfill, and the Stringfellow National Priorities List sites. During the reporting period, Watermaster prepared updated delineations of the extent of the VOC plumes for GE Test Cell, GE Flatiron, Milliken Landfill, and the so-called Pomona VOC plume. The updated plume delineations were published on June 30, 2017 as part of the 2016 State of the Basin Report.

Program Element 7: Develop and Implement a Salt Management Program

Maximum Benefit Salinity Management Plan

In January 2004, the Regional Board amended the Basin Plan to incorporate an updated total dissolved solids (TDS) and nitrogen (N) management plan. The Basin Plan amendment includes both "antidegradation" and "maximum benefit" objectives for TDS and nitrate-N for the Chino-North and Cucamonga groundwater management zones (GMZs). The maximum benefit objectives allow for the reuse and recharge of recycled water and the recharge of imported water without mitigation; these activities are an integral part of the OBMP. The application of the maximum-benefit objectives is contingent on Watermaster and the IEUA's implementation of specific projects and requirements termed the maximum-benefit commitments. There are a total of nine commitments, and Watermaster and the IEUA report the status of compliance with each commitment to the Regional Board annually. During this reporting period, Watermaster prepared and submitted the 2016 *Chino Basin Maximum Benefit Annual Report*. Specific details of the commitments and related activities are described below.

Monitoring Programs. Two of the maximum-benefit commitments are to implement surface and groundwater monitoring programs. On April 15, 2005, the Regional Board adopted resolution R8-2005-0064, approving Watermaster and the IEUA's surface and groundwater monitoring programs. These monitoring programs were conducted pursuant to the 2005 work plan until 2012, when the Basin Plan was amended to remove all references to the specific monitoring locations and sampling frequencies required for groundwater and surface water monitoring. The Basin Plan amendment allows for the monitoring programs to be modified over time on a go-forward basis, subject to the approval of the Executive Officer of the Regional Board. The Basin Plan amendment was approved by the Regional Board on February 12, 2012 and by the State Office of Administrative Law on December 6, 2012. This amendment was adopted based on demonstrations made by Watermaster and the IEUA, showing that the surface water monitoring program, as explicitly described in the Basin Plan, was not meaningfully adding to the body of evidence required to demonstrate hydraulic control. In the place of specific monitoring requirements, the Basin Plan required that Watermaster and the IEUA submit a new surface water monitoring program work plan by February 25, 2012 and a new groundwater monitoring program work plan by December 31, 2013. In February 2012, Watermaster and the IEUA submitted, and the Regional Board approved, a new surface water monitoring program that reduced the 2005 monitoring program from bi-weekly surface water quality measurements at 17 sites and direct discharge measurements at six sites to quarterly surface water quality sampling at two sites.

In December 2013, Watermaster and the IEUA submitted an updated Maximum Benefit Monitoring Program Work Plan and Proposed Schedule for Achieving Hydraulic Control to the Regional Board. The updated Work Plan states that Watermaster and the IEUA will recalibrate the Chino Basin groundwater model every five years and use the model to estimate groundwater discharge from the Chino-North GMZ to the Santa Ana River (i.e. annual underflow past the CCWF) and determine whether hydraulic control has been achieved. The new Maximum Benefit Monitoring Program Work Plan was adopted by the Regional Board in April 2014. Maximum benefit monitoring is incorporated as part of the groundwater level, groundwater quality, and surface water monitoring programs described in Program Element 1. During this reporting period, Watermaster continued implementing the monitoring programs (see Program Element 1 of this report for details).

Hydraulic Control and Chino Desalters. One of the main maximum-benefit commitments is to achieve and maintain "hydraulic control" of the Chino Basin so downstream beneficial uses of the Santa Ana River are protected. The mechanism for achieving hydraulic control is the construction of the Chino Basin Desalters in the southern Chino Basin, thereby replacing the diminishing agricultural production that previously prevented the outflow of high TDS and nitrate groundwater. Hydraulic control is defined by the Basin Plan as the elimination of groundwater discharge from the Chino-North GMZ to the Santa Ana River or its reduction to a de minimus level. In October 2011, the Regional Board indicated that groundwater discharge from the Chino-North GMZ to the Prado Basin surface water management zone (Prado Basin) in an amount less than 1,000 acre-feet per year is considered de minimus. Watermaster and the IEUA have demonstrated, in Annual Reports to the Regional Board, that complete hydraulic control has been achieved at and east of Chino-I Desalter Well 5. The construction and operation of the CCWF (see Program Element 5), which began in 2010, is intended to achieve hydraulic control in the area west of Chino-I Desalter Well 5. In February 2016, the CCWF commenced full-scale operation with production at wells I-16, I-17, I-20, and I-21. The CCWF wells produced a total of about 1,665 acre-feet in 2016, which is more than the model-estimated production needed to achieve hydraulic control to the de minimus standard west of Chino-I Desalter Well 5. With this accomplishment, Watermaster has achieved full hydraulic control of the Chino Basin.

Although full hydraulic control has been achieved, future agricultural groundwater production in the southern part of the basin is expected to continue to decline, necessitating future expansion of the desalters to sustain hydraulic control. In a letter dated January 23, 2014, the Regional Board required that by May 31, 2014, Watermaster and the IEUA submit a plan detailing how hydraulic control will be sustained in the future as agricultural production in the southern region of Chino-North continues to decrease—specifically, how the Chino Basin Desalters will achieve the required total groundwater production level of 40,000 acre-feet per year. On June 30, 2015 Watermaster and the IEUA submitted a final plan and schedule for the construction and operation of the three new

Program Element 7: Develop and Implement a Salt Management Program (Continued)

desalter wells. These wells are under construction. During this reporting period, Watermaster coordinated with the CDA to track the progress of construction of the desalter expansion facilities. A full status report on the desalter expansion facilities is described in this status report under Program Element 3.

Recycled Water Recharge and Quality. The maximum benefit commitments require Watermaster and the IEUA to construct and operate expanded facilities for the recharge of storm and recycled waters and to report on the quality of the individual and combined sources of water used for recharge. This data is compiled and analyzed each year for reporting to the Regional Board. During this reporting period, Watermaster and the IEUA continued their monitoring programs to collect the data required for analysis and reporting to the Regional Board.

Ambient Water Quality. Commitment number 9 requires that Watermaster and the IEUA recompute ambient TDS and nitrate concentrations for the Chino Basin and Cucamonga GMZs every three years. The recomputation of ambient water quality is performed for the entire Santa Ana River Watershed, and the technical work is contracted, managed, and directed by the Santa Ana Watershed Project Authority's Basin Monitoring Program Task Force. Watermaster and the IEUA have participated in each triennial, watershed-wide ambient water quality determination as members of the Task Force. The most recent recomputation, covering the 20-year period from 1993 to 2012, was completed in August 2014. In July 2016, the Task Force initiated the effort to compute the ambient water quality for the 20-year period from 1996 to 2015. The final report is due to be published in August 2017.

Program Element 8: Develop and Implement a Groundwater Storage Management Program; and Program Element 9: Develop and Implement a Storage and Recovery Program

Groundwater storage is critical to the Chino Basin. The OBMP outlines Watermaster's commitments to investigate the technical and management implications of Local Storage Agreements, improve related policies and procedures, and then revisit all pending Local Storage Agreement applications.

The existing Watermaster/IEUA/MWDSC/Three Valleys Municipal Water District Dry-Year Yield (DYY) program continues to be implemented. By April 30, 2011, all DYY program construction projects and a full "put" and "take" cycle had been completed, leaving the DYY storage account with a zero balance. Since that time the balance has increased, as during the reporting period, about 6,320 acre-feet was recharged in June and placed into storage for the DYY Program.

Dry Year Yield inflow at Montclair 1 Basin.

Safe Yield Recalculation

The Basin's Safe Yield was initially set by the Judgment at 140,000 acre-feet per year. The Safe Yield was based in on the hydrology for the period of 1965 through 1974. Pursuant to the Judgment, the Chino Basin Safe Yield is to be recalculated periodically but not for at least ten years following 1978. Pursuant to the OBMP Implementation Plan and Watermaster's Rules and Regulations, in year 2010/11 and every ten years thereafter, Watermaster is to recalculate the Safe Yield. The 2011 Safe Yield recalculation was to be based in part on the information obtained in the prior ten-year period.

In 2011, Watermaster authorized its staff to compile the necessary data and update the model of the basin and to recalculate the Safe Yield. The model calibration was completed in 2012, and the evaluation of Safe Yield began in 2013. During fiscal 2014/15, the Watermaster parties, pursuant to the Watermaster Board's direction, met intensively in a facilitated process, which resulted in a majority consensus regarding the implementation of the recalculated Safe Yield, and drafted the 2015 Safe Yield Reset Agreement. At its September 24, 2015 meeting, the Board adopted Resolution 2015-06, endorsing the 2015 Safe Yield Reset Agreement, and directed Watermaster legal counsel to file the Agreement with the Court. Resolution 2015-06 was adopted by a majority vote with two of the nine Board members opposing the action. The agreement was filed with the Court on October 23, 2015 with a motion recommending that the Court reset the Safe Yield of the Chino Basin to 135,000 acre-feet per year. The hearing on this motion was originally scheduled for December 18, 2015. The Court continued the hearing and conducted it on September 23, 2016; the Court heard oral arguments from various parties and Watermaster legal counsel, requested further briefing from the interested parties, and scheduled a hearing in the next reporting period. On April 28, 2017, the Court issued a final order, resetting the Safe Yield to 135,000 acre-feet per year.

Program Element 8: Develop and Implement a Groundwater Storage Management Program; and Program Element 9: Develop and Implement a Storage and Recovery Program (Continued)

Groundwater Storage Management

Addendum to PEIR. The OBMP storage management plan was temporarily revised during the reporting period. The original OBMP storage management program consists of managing groundwater production, replenishment, recharge, and storage such that the total storage within the basin would range from a low of 5,300,000 acre-feet to a high of 5,800,000 acre-feet. The following storage-related definitions are included in the OBMP Implementation Plan:

- Operational Storage Requirement – The Operational Storage Requirement is the storage or volume in the Chino Basin that is necessary to maintain the Safe Yield. [Author's note: This is an average value with the storage oscillating around this value due to dry and wet periods in precipitation. The Operational Storage Requirement was estimated in the development of the OBMP to be about 5.3 million acre-feet. This storage value was set at the estimated storage in the basin in 1997.]
- Safe Storage – Safe Storage is an estimate of the maximum storage in the basin that will not cause significant water-quality and high-groundwater related problems. [Author's note: Safe storage was estimated in the development of the OBMP to be about 5.8 million acre-feet.]
- Safe Storage Capacity – Safe Storage Capacity is the difference between the Safe Storage and the Operational Storage Requirement. The allocation and use of storage space in excess of the Safe Storage Capacity will preemptively require mitigation; mitigation must be defined and resources committed to mitigation prior to allocation and use.

Water occupying the Safe Storage Capacity includes Local Storage Account Water, Carryover Water, and water that was anticipated to be stored in future groundwater storage programs. This storage management program was evaluated in the OBMP programmatic environmental impact report (PEIR) in 2000.

Subsequent to the OBMP PEIR, Watermaster and the Parties developed revisions to the OBMP based on: new monitoring and borehole data collected since 1998, an improved hydrogeologic conceptualization of the basin, new numerical models that have improved the understanding of basin hydrology since 2000, and the need to expand the Chino Basin Desalters (desalters) to the 40,000 acre-feet per year of groundwater production required in the OBMP Implementation Plan. These investigations included a recalculation of the total water in storage in the basin, based on the improved hydrogeologic understanding. The total storage in the Chino Basin for 2000 was estimated to be about 5,935,000 acre-feet.

The Peace II Agreement was negotiated by the Parties to implement, among other things, the expansion of the desalters, the dedication of 400,000 acre-feet of groundwater in storage to desalter replenishment, and changes in the Judgment to implement the Peace II Agreement. However, there was no change to the storage management plan in the OBMP Implementation Plan even though the revised storage estimated for 2000 was greater than the Safe Storage and the implementation of the Peace II Agreement would result in 400,000 acre-feet of new controlled overdraft. The IEUA completed and subsequently adopted a supplemental environmental impact report (SEIR) for the Peace II Agreement in 2010.

There is a significant difference in what is known today regarding storage management and basin conditions versus what was known in 2000 when the OBMP storage management plan was developed and evaluated in the PEIR. Watermaster and the IEUA proposed a temporary change in the Safe Storage Capacity, increasing it from 500,000 acre-feet to 600,000 acre-feet for the period July 1, 2017 through June 30, 2021. This temporary increase in Safe Storage Capacity was found to not cause Material Physical Injury and/or loss of Hydraulic Control, and it will provide Watermaster and the IEUA time to develop a new storage management plan and agreements to implement it. The IEUA adopted an addendum to the 2000 PEIR, increasing the Safe Storage Capacity from 500,000 acre-feet to 600,000 acre-feet for the period July 1, 2017 through June 30, 2021. The addendum was approved by the IEUA Board of Directors on March 15, 2017.

Storage Management Plan Architecture. Watermaster staff, at the direction of its Board of Directors, began the development of a scope of work to develop the architecture for an updated storage management plan. The intent of this effort is to provide the technical information to enable the development of a storage management plan based on a scientific and sustainable foundation.

CHINO BASIN WATERMASTER
Case No. RCV 51010
Chino Basin Municipal Water District v. The City of Chino

PROOF OF SERVICE

I declare that:

I am employed in the County of San Bernardino, California. I am over the age of 18 years and not a party to the within action. My business address is Chino Basin Watermaster, 9641 San Bernardino Road, Rancho Cucamonga, California 91730; telephone (909) 484-3888.

On November 17, 2017 I served the following:

1. REQUEST FOR THE COURT TO: (1) APPROVE THE INTERVENTIONS OF CALMAT CO. AND NCL CO., LLC INTO THE APPROPRIATIVE POOL; AND, (2) RECEIVE AND FILE THE 39TH ANNUAL REPORT, THE 2016 ANNUAL REPORT OF THE GROUND-LEVEL MONITORING COMMITTEE, AND THE SEMI-ANNUAL OBMP STATUS REPORTS
2. DECLARATION OF BRADLEY J. HERREMA IN SUPPORT OF WATERMASTER'S REQUEST FOR THE COURT TO: (1) APPROVE THE INTERVENTIONS OF CALMAT CO. AND NCL CO., LLC INTO THE APPROPRIATIVE POOL; AND; (2) RECEIVE AND FILE THE 39TH ANNUAL REPORT, THE 2016 ANNUAL REPORT OF THE GROUND-LEVEL MONITORING COMMITTEE, AND THE SEMI-ANNUAL OBMP STATUS REPORTS
3. [PROPOSED] ORDER RE WATERMASTER'S REQUEST FOR THE COURT TO: (1) APPROVE THE INTERVENTIONS OF CALMAT CO. AND NCL CO., LLC INTO THE APPROPRIATIVE POOL; AND; (2) RECEIVE AND FILE THE 39TH ANNUAL REPORT, THE 2016 ANNUAL REPORT OF THE GROUND-LEVEL MONITORING COMMITTEE, AND THE SEMI-ANNUAL OBMP STATUS REPORTS

/ X / BY MAIL: in said cause, by placing a true copy thereof enclosed with postage thereon fully prepaid, for delivery by United States Postal Service mail at Rancho Cucamonga, California, addresses as follows:
See attached service list: Mailing List 1

/___/ BY PERSONAL SERVICE: I caused such envelope to be delivered by hand to the addressee.

/___/ BY FACSIMILE: I transmitted said document by fax transmission from (909) 484-3890 to the fax number(s) indicated. The transmission was reported as complete on the transmission report, which was properly issued by the transmitting fax machine.

/ X / BY ELECTRONIC MAIL: I transmitted notice of availability of electronic documents by electronic transmission to the email address indicated. The transmission was reported as complete on the transmission report, which was properly issued by the transmitting electronic mail device.

I declare under penalty of perjury under the laws of the State of California that the above is true and correct.

Executed on November 17, 2017 in Rancho Cucamonga, California.

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