DESERT WATER AGENCY
AUGUST 3, 2021

BOARD OF DIRECTORS
REGULAR MEETING AGENDA

8:00 A.M. OPERATIONS CENTER - 1200 SOUTH GENE AUTRY TRAIL – PALM SPRINGS – CALIFORNIA

Pursuant to the Governor's Executive Order N-29-20 and N-08-21, there will be no public location for attending in person. Members of the public who wish to participate may do so by calling in at:

Toll Free: (866) 899-4679
Access Code: 358-267-621

or Via Computer:
https://www.gotomeeting.com/meeting/join-meeting
9-digit Meeting ID: 358267621

Members of the public who wish to comment on any item within the jurisdiction of the Agency or any item on the agenda should submit comments by emailing sbaca@dwa.org before 5:00 p.m. August 2. Comments will become part of the Board meeting record. Board members and staff will be participating in this meeting via teleconference.

**In order to reduce feedback, please mute your audio when you are not speaking.*

1. CALL TO ORDER/PLEDGE OF ALLEGIANCE — BLOOMER

2. ROLL CALL — BACA

3. PUBLIC COMMENT: Members of the public may comment on any item not listed on the agenda, but within the jurisdiction of the Agency. In addition, members of the public may speak on any item listed on the agenda as that item comes up for consideration. Speakers are requested to keep their comments to no more than three (3) minutes. As provided in the Brown Act, the Board is prohibited from acting on items not listed on the agenda.

4. CONSENT CALENDAR ITEMS: Items listed under the Consent Calendar are considered to be routine and will be acted upon by one motion of the Board without discussion. There will be no separate discussion on these items unless a Board Member requests a specific item to be discussed and/or removed from the Consent Calendar for separate action.

   A. Approve - July 20, 2021 Board Meeting Minutes
   B. Receive and File - Minutes of the July 21, 2021 Finance Committee Meeting
   C. Receive and File - July Activities & Events for the Outreach & Conservation Department
   D. Receive and File – Memo on July 15, 2021 State Water Contractors' Meeting
   E. Receive and File – Minutes of the July 29, 2021 Executive Committee Meeting
   F. Request Board Authorization for Finance Director to Execute Contract with NBS for the 2022 Cost of Service Study
   G. Request Board Authorization to Enter into Cost Share Agreement with Coachella Valley Water District for Global Positioning System Surveying and Interferometric Synthetic Aperture Radar to Assess Land Subsidence in the Coachella Valley

5. GENERAL MANAGER'S REPORT — KRAUSE

6. DISCUSSION ITEMS:
   A. Update on SGMA Alternative Plan 5-Year Update of the Indio and Mission Creek Subbasins — KRAUSE
   B. Directors' Report on NWRA Table Talk Series Attendance — BLOOMER, ORTEGA, STUART

7. DIRECTORS COMMENTS/REQUESTS

8. CLOSED SESSION

   A. CONFERENCE WITH LEGAL COUNSEL – EXISTING LITIGATION
   Pursuant to Government Code Section 54956.9 (d) (1)
   Name of Case: Agua Caliente Band of Cahuilla Indians vs. Coachella Valley Water District, et al (Two Cases)

   B. CONFERENCE WITH LEGAL COUNSEL – EXISTING LITIGATION
   Pursuant to Government Code Section 54956.9 (d) (1)
   Name of Case: Mission Springs Water District vs. Desert Water Agency

   C. CONFERENCE WITH LEGAL COUNSEL – EXISTING LITIGATION
   Pursuant to Government Code Section 54956.9 (d) (1)
   Bonnie Kessner, et al vs. Desert Water Agency, et al

   D. CONFERENCE WITH LEGAL COUNSEL – EXISTING LITIGATION
   Pursuant to Government Code Section 54956.9 (d) (1)
   Name of Case: AT&T vs. County of Riverside

   E. CONFERENCE WITH LEGAL COUNSEL – PENDING ADMINISTRATIVE PROCEEDING
   Pursuant to Government Code Section 54956.9 (d) (1)
   Regional Water Quality Control Board Claim No. 7018 0680 0000 1010 7377

9. RECONVENE INTO OPEN SESSION – REPORT FROM CLOSED SESSION

10. ADJOURN

4-A

MINUTES
OF THE REGULAR MEETING
OF THE
DESERT WATER AGENCY
BOARD OF DIRECTORS

July 20, 2021

DWA Board via Teleconference:	Kristin Bloomer, President	)
	James Cioffi, Vice President	)
	Joseph K. Stuart, Secretary-Treasurer	)
	Patricia G. Oygar, Director	)
	Paul Ortega, Director	)
DWA Staff via Teleconference:	Mark S. Krause, General Manager	)
	Steve Johnson, Assistant General Manager	)
	Esther Saenz, Finance Director	)
	Sylvia Baca, Asst. Secretary of the Board	)
	Kris Hopping, Human Resources Director	)
Consultants via Teleconference:	Michael T. Riddell, Best & Krieger	)
Public via Teleconference:	David Freedman, Palm Springs Sustainability Comm.	)

Pledge of Allegiance

19205. President Bloomer opened the meeting at 8:02 a.m. and asked everyone to join her in the Pledge of Allegiance.

Roll Call

19206. President Bloomer called upon Assistant Secretary of the Board Baca to conduct the roll call:

Present: Ortega, Oygar, Stuart, Cioffi, Bloomer

Public Comment

19207. President Bloomer opened the meeting for public comment.

Mr. Freedman

Mr. Freedman gave an update on the Palm Springs Airport Demonstration Garden.

There being no one else from the public wishing to address the Board, President Bloomer closed the public comment period.

Approval of the Consent Calendar
A. 07/06/21 Regular Board Mtg. Minutes
B. 07/12/21 Conservation & Public Affairs Comm. Mtg. Minutes
C. 07/15/21 Executive Comm. Mtg. Minutes
D.Water Use Reduction (June)

19208. President Bloomer called for approval of the Consent Calendar. She noted that the Consent Calendar items 4-A through 4-D are expected to be routine and to be acted upon by the Board of Directors at one time without discussion. If any Board member requests that an item be removed from the consent calendar, it will be removed so that it may be acted upon separately.

A. Approve minutes of the June 15, 2021 Board Meeting.
B. Receive and file minutes of the July 12, 2021 Conservation & Public Affairs Committee meeting.
C. Receive and file minutes of the July 15, 2021 Executive Committee meeting.
D. Receive and file the Water Use Reduction Figures (June).

Vice President Cioffi requested Item 4-D be pulled for discussion.

Vice President Cioffi moved for approval of Items 4-A thru 4-C. After a second by Director Ortega, the Consent Calendar was approved by the following roll call vote:

AYES: Ortega, Oygar, Stuart, Cioffi, Bloomer
NOES: None
ABSENT: None
ABSTAIN: None

Water Use Reduction Figures (June)

19209. President Bloomer called upon General Manager Krause to provide a report on the June Water Use Reduction Figures.

Mr. Krause reported that the Agency and its customers achieved a 20.68% reduction in metered potable water consumption compared to the same month in 2013. He noted that the report is different due to the Governor requesting voluntarily conservation of 15% compared to last year. Mr. Krause explained that taking into account adding new water meters since 2013, the reduction is roughly 27%.

Secretary-Treasurer Stuart made a motion to receive and file the Water Use Reduction Figures report for June. After a second by Director Ortega, the motion carried by the following roll call vote:

AYES: Ortega, Oygar, Stuart, Cioffi, Bloomer
NOES: None
ABSENT: None
ABSTAIN: None

Secretary-Treasurer's Report (June)

19210. President Bloomer called upon Secretary-Treasurer Stuart to present an overview of financial activities for the month of June 2021.

Operating Fund

Secretary-Treasurer Stuart reported that the Operating Fund received $3,328,771 in Water Sales Revenue, $113,849 in Reclamation Sales Revenue, $251,953 in Construction Deposits and $51,020 in FEMA reimbursement for COVID-19 related expenses included in the miscellaneous cash receipts. $1,693,402 was paid out in Accounts Payable. He noted that Year-to-date Water Sales, Total Revenue and Expense Budget variances will be provided after the 2020/2021 annual audit is complete. There were a total of 23,170 active services as of June 30, compared to 23,098 active services as of May 31.

General Fund

Reporting on the General Fund, Mr. Stuart stated that $329,032 was received in Property Tax Receipts, $15,222 in Groundwater Assessments from Private Pumpers and $108,813 in State Water Project Refunds. $792,624 was paid in State Water Project charges (YTD $17,832,326).

Wastewater Fund

Reporting on the Wastewater Fund, Mr. Stuart reported $87,068 was received in Wastewater Revenue Receipts, $0 was received in Sewer Contract payments. There are a total of 2 Sewer Contracts, 0 paid in full, with total delinquents of 2 (100%) with $370 principal payments remaining. $73,023 was paid out in Accounts Payable.

General Manager's Report

19211. President Bloomer called upon General Manager Krause to provide an update on Agency operations.

Mr. Krause provided an update on Agency operations and noted his meetings and activities for the past several weeks.

Closed Session:
A. Existing Litigation – ACBCI vs. CVWD, et al. (2 Cases)
B. Existing Litigation – MSWD vs. DWA
C. Existing Litigation- Bonnie Kessner, et al vs. Desert Water Agency et al
D. Existing Litigation - Possible Intervention in Case: AT&T vs. County of Riverside
E. Pending Admin. Proceeding, RWQCB Claim

19212. At 8:45 a.m., President Bloomer convened into a Teleconference Closed Session for the purpose of Conference with Legal Counsel, (A) Existing Litigation, pursuant to Government Code Section 54956.9 (d) (1), Agua Caliente Band of Cahuilla Indians vs. Coachella Valley Water District, et al (Two Cases); (B) Existing Litigation, pursuant to Government Code Section 54956.9 (d) (1), Mission Springs Water District vs. Desert Water Agency; (C) Existing Litigation, pursuant to Government Code Section 54956.9 (d) (1) Bonnie Kessner, et al vs. Desert Water Agency, et al; (D) Existing Litigation, Pursuant to Government Code Section 54956.9 (d) (1), AT&T vs. County of Riverside; and (E) Pending Administrative Proceeding Pursuant to Government Code Section 54956.9 (d) (1) Regional Water Quality Control Board Claim No. 7018 0680 0000 1010 7377.

19213. At 9:51 a.m., General Manager Krause reconvened the meeting into open session and announced there was no reportable action taken.

Reconvene – No Reportable Action

19214. In the absence of any further business, General Manager Krause adjourned the meeting at 9:52 a.m.

Adjournment

_____
Sylvia Baca
Assistant Secretary of the Board

Minutes
Finance Committee Meeting
July 21, 2021

Directors Present: Joseph Stuart, Kristin Bloomer

Staff Present: Mark Krause, Steve Johnson, Esther Saenz

1. Discussion Items

   A. Late Fee Use Policy
   The Committee discussed the need for developing a Late Fee Use Policy. The Committee supported the preparation of a draft Late Fee Use policy to be brought back to the Finance Committee prior to presentation to the Board of Directors for acceptance.

   B. Discuss Implementing 5th and Final Prop 218 Approved Rate Increase
   The Committee discussed Staff's desire to implement the 5th and final Prop 218 Approved Rate Increase effective January 1, 2022 for Operating and Wastewater funds. The Committee reviewed the fiscal impacts associated with the rate increase. The Committee directed Staff to bring the proposed rate increase before the Board of Directors.

   C. Review Preferred 2022 Cost of Service Study Proposal
   The Committee discussed the preferred 2022 Cost of Study Proposal and recommended Staff move forward with contract negotiations.

   D. Operational Reorganization Budget Augmentation
   The Committee discussed the proposed Operational Reorganization plan and associated fiscal impacts. The Committee supported the proposed budget augmentation, and directed staff to present a refined Operational Reorganization plan to the Human Resources committee due to modifications after the original presentation.

2. Adjourn

DESERT WATER AGENCY

OUTREACH & CONSERVATION ACTIVITIES

JULY 2021

Activities:

7/01	Xochitl Peña attended a Mission Springs Water District board meeting special session.
7/04	DWA provided the water trailer for the City of Palm Springs 4th of July Spectacular at Ruth Hardy Park.
7/07	Staff attended a DWA Area of Benefit planning meeting.
7/07	Staff attended the Mission Creek Alternative Update Supplemental Management Committee meeting.
7/08	Xochitl Peña was on a live segment with KESQ regarding DWA reopening.
7/12	The Conservation & Public Affairs Committee convened.
7/13	Staff attended a meeting to discuss the DWA redistricting project kickoff.
7/13	Xochitl Peña attended the ONE-PS meeting and provided a DWA update.
7/14	Staff attended a CVRWMG business meeting.
7/15	Ashley Metzger and Xochitl Peña met with Palm Springs Life to discuss the website series episode The Desert We Want.
7/15	Staff attended a DWA Area of Benefit planning meeting.
7/15	Ashley Metzger was on a live segment with KESQ regarding the drought and rebates.
7/15	Ashley Metzger attended a meeting on the DWA Conservation Model.
7/15	Ashley Metzger attended the Mission Springs Water District board meeting.
7/20	Xochitl Peña participated in a phone conference with CV Water Counts.
7/22	Xochitl Peña was on a live segment with KESQ regarding hydration.
7/22	Xochitl Peña attended a CAPIO webinar on project planning and management.
7/26	Ashley Metzger attended the CA Data Collaborative WUE + Statewide Data Action meeting.
7/28	Vicki Petek and Xochitl Peña did a presentation for the STEAM Summer Camp at the Palm Springs Air Museum.
7/29	Ashley Metzger was on a live segment with KESQ regarding smart irrigation

Public Information Releases/eBlasts/Customer Notifications:

July 3: Valley Voice: How We've Saved 60 Billion Gallons of Water Since 2015 – Desert Sun OpEd

July 9: Californians asked to voluntarily use 15% less water – Website, Social media

Legislative/Regulatory Outreach

State Legislature in recess July 16 through August 16

Upcoming Events Upcoming Events

September 15, 2021 – DWA 60th Anniversary

September 15, 2021 – DWA 60th Anniversary webinar

Conservation programs

21 grass removal inspections
9 grass removal projects pre-approved
7 grass removal projects given final approval

10 washing machines requested
6 washing machines approved

11 smart controllers requested
7 smart controllers approved

33 nozzles requested
0 nozzles approved

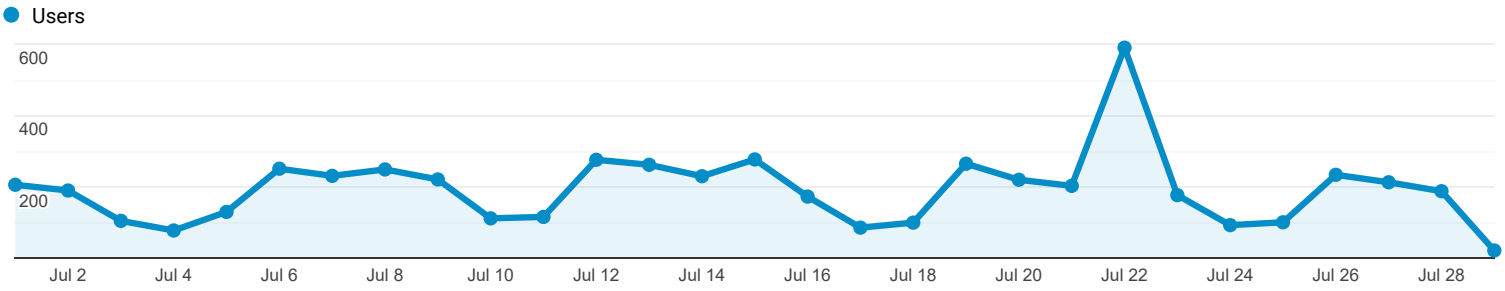
100 toilets requested (commercial only)
100 toilet rebates approved (commercial only)

Audience Overview

All Users
100.00% Users

Jul 1, 2021 - Jul 29, 2021

Overview



Users
4,903

New Users
4,168

Sessions
6,063

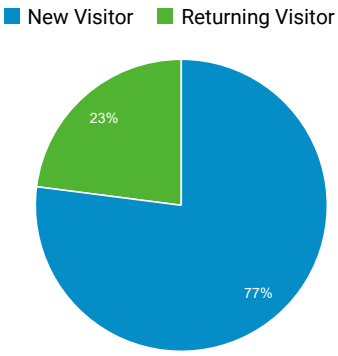
Number of Sessions per User
1.24

Pageviews
12,432

Pages / Session
2.05

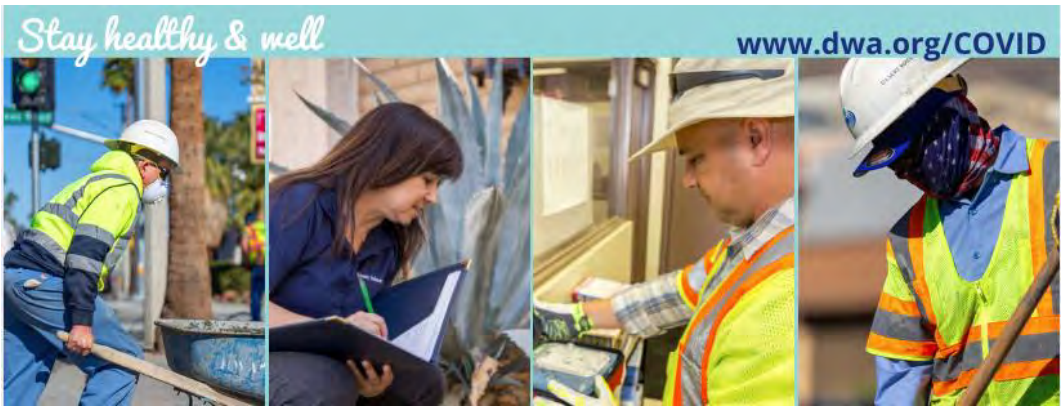
Avg. Session Duration
00:01:36

Bounce Rate
48.34%



	Language	Users	% Users
1.	en-us	4,363	88.95%
2.	en-gb	138	2.81%
3.	en	115	2.34%
4.	en-ca	44	0.90%
5.	zh-cn	23	0.47%
6.	es-es	15	0.31%
7.	de	14	0.29%
8.	en-us@posix	14	0.29%
9.	fr	14	0.29%
10.	fr-fr	13	0.27%

Desert Water Agency Facebook Analytics July 2021



Actions on Page
July 1 - July 28

We have insufficient data to show for the selected time period.

Page Views
July 1 - July 28

66
Total Page Views ▼11%

Page Likes
July 1 - July 28

3
Page Likes ▲50%

Post Reach
July 1 - July 28

591
People Reached ▼36%

Story Reach
July 1 - July 28

Get Story Insights

See stats on how your Page's recent stories have performed.

Learn More

Recommendations
July 1 - July 28

We have insufficient data to show for the selected time period.

Post Engagement
July 1 - July 28

81
Post Engagement ▼25%

Videos
July 1 - July 28

12
3-Second Video Views ▼87%

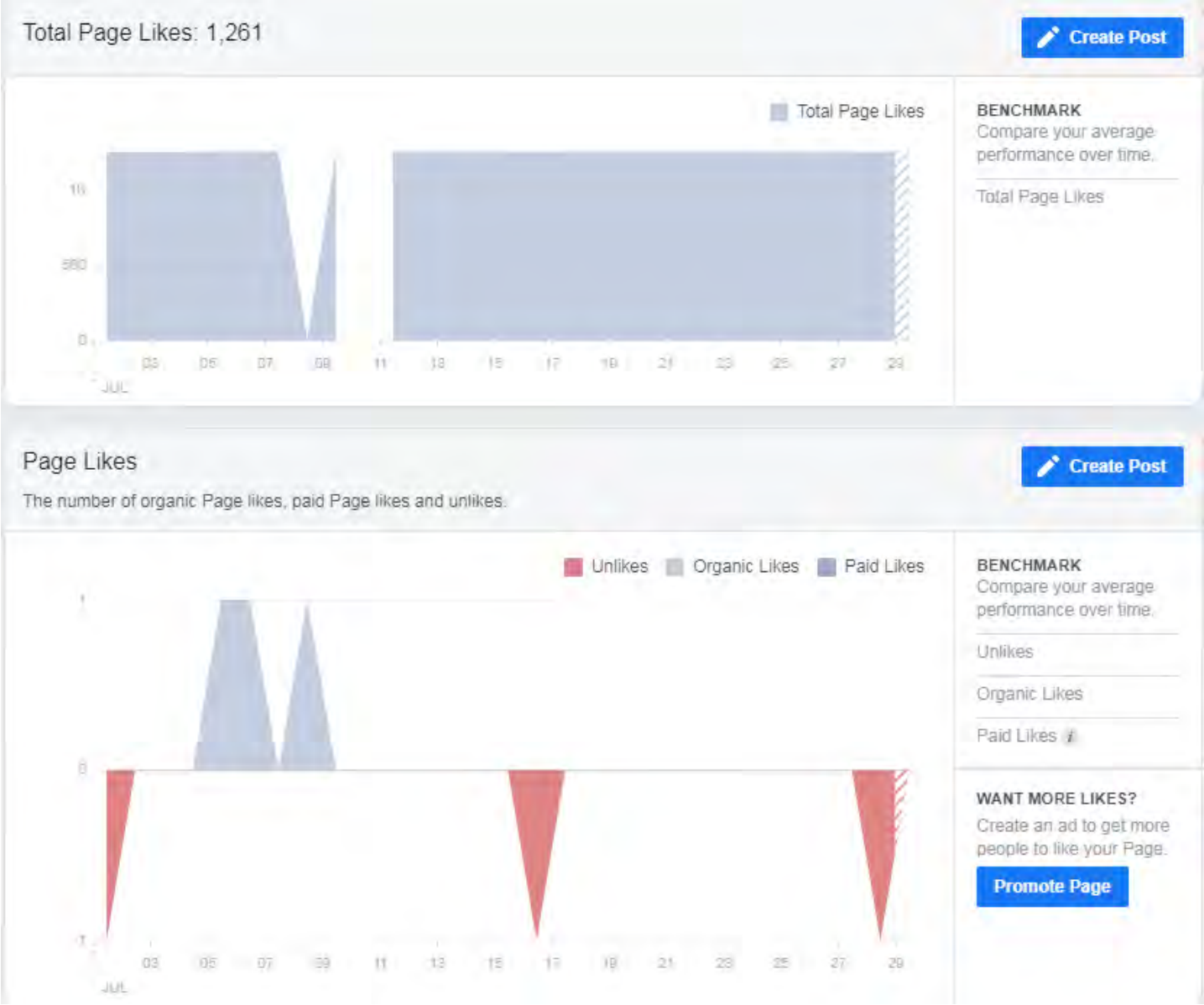
Page Followers
July 1 - July 28

2
Page Followers ▼33%

Facebook Analytics, June 2021

Published	Post	Type	Targeting	Reach	Engagement	Promote
07/28/2021 2:33 PM	 Get paid up on your water bill now so you don't incur a $25 late fee come			20	0 0	Boost Post
07/28/2021 11:12 AM	 We had lots of fun this morning talking with students in the SMaRT			43	0 2	Boost Post
07/26/2021 7:39 AM	 Don't forget to turn off your sprinklers and keep them off for at least 48			235	3 12	Boost Post
07/22/2021 9:08 AM	 Happy National Refreshment Day! To celebrate we have refreshing			105	2 10	Boost Post
07/20/2021 11:07 AM	 Interested in saving water and money? We have incentives that			197	3 7	Boost Post
07/17/2021 10:00 AM	 Summer is in full swing – but the learning doesn't have to stop! Dive			36	0 4	Boost Post
07/15/2021 10:10 AM	 For water tips and the latest happenings at DWA – watch the			96	0 5	Boost Post
07/13/2021 8:12 AM	 July is Pet Hydration Month. Make sure your pet's water bowl is always			81	2 10	Boost Post
07/07/2021 12:16 PM	 July is Smart Irrigation Month. A regular check of your sprinkler			58	5 4	Boost Post
07/04/2021 8:00 AM	 Have a happy & safe Fourth of July. Our office is closed Monday in			61	0 5	Boost Post
07/02/2021 12:00 PM	 Check out our summer newsletter! It has information on COVID relief			40	0 4	Boost Post

Facebook Analytics, June 2021



Instagram July 2021

61 impressions

85 impressions

122 impressions

215 impressions

88 impressions

100 impressions

122 impressions

178 impressions

110 impressions

Desert Water Agency Twitter Analytics July 2021

Tweets	Following	Followers
2,484	1,514	1,206

Jul 2021 • 28 days so far...

TWEET HIGHLIGHTS

Top Tweet earned 1,458 impressions

For water tips and the latest happenings at DWA – watch the @KESQ broadcast at noon every Thursday for our weekly water segment. Check out our playlist here: bit.ly/3B5k3E4 pic.twitter.com/gtkozjk8yj

1 3

View Tweet activity View all Tweet activity

Top Follower followed by 4,456 people

Peter Daut

@PeterDaut FOLLOWS YOU

Anchor/Investigate Reporter @KESQ. SoCal native. Seeker of facts, teller of stories and lover of coffee.

View profile

Top mention earned 2 engagements

California Data Collaborative

@cadc_io · Jul 8

When Ashley Metzger of @DWAwater received a request for feedback from DWR, she was unsure how to proceed.

By working with the CaDC, Ashley was able to complete her organization's evaluation and meet DWR's deadline.

Read more: ow.ly/2Kvu50Fqwl4

1 1

View Tweet

Top media Tweet earned 272 impressions

July is Pet Hydration Month. Make sure your pet's water bowl is always full – especially during the dog days of summer! Stop by our Palm Springs office (1200 S. Gene Autry Trail) and grab a free DWA water bowl for your pet. #DogDaysofSummer #PetHydrationMonth #beattheheat pic.twitter.com/XtQo0QKReu

1 3

ADVERTISE ON TWITTER

Get your Tweets in front of more people

Promoted Tweets and content open up your reach on Twitter to more people.

Get started

JUL 2021 SUMMARY

Tweets	Tweet impressions
9	4,207
Profile visits	**Mentions**
78	4
New followers	
3	

BEST BEST & KRIEGER LLP
ATTORNEYS AT LAW

STATE WATER CONTRACTORS MEETING
July 15, 2021

I. LEGISLATIVE REPORT

(a) Budget signed by Governor
- Budget trailer bills will address how money will be allocated for Covid recovery, subsidence, SGMA implementation, wastewater projects and drought relief
- $1 Billion for fire protection
- $3.7 Billion for climate change

(b) SB 559 would address subsidence in Fresno canal
- Opposition from Defenders of Wildlife and Audubon Society

(c) SB 626 provides design/build authority for up to 7 SWP projects, but not Delta conveyance

II. STATEMENT OF CHARGES OVERVIEW

(a) 30% increase in Delta Water Rate
- Oroville spillway emergency expenditures
- If appeal to FEMA for more reimbursement is successful, money will be refunded

(b) Increases in minimum transportation charges due to Delta compliance costs

(c) Delay in contract term extension is creating “compaction” (inability to finance costs)

III. REPORT ON BUSINESS PROCESS OBJECTIVES

(a) SWP Chief Financial Officer hired (Hong Lin)

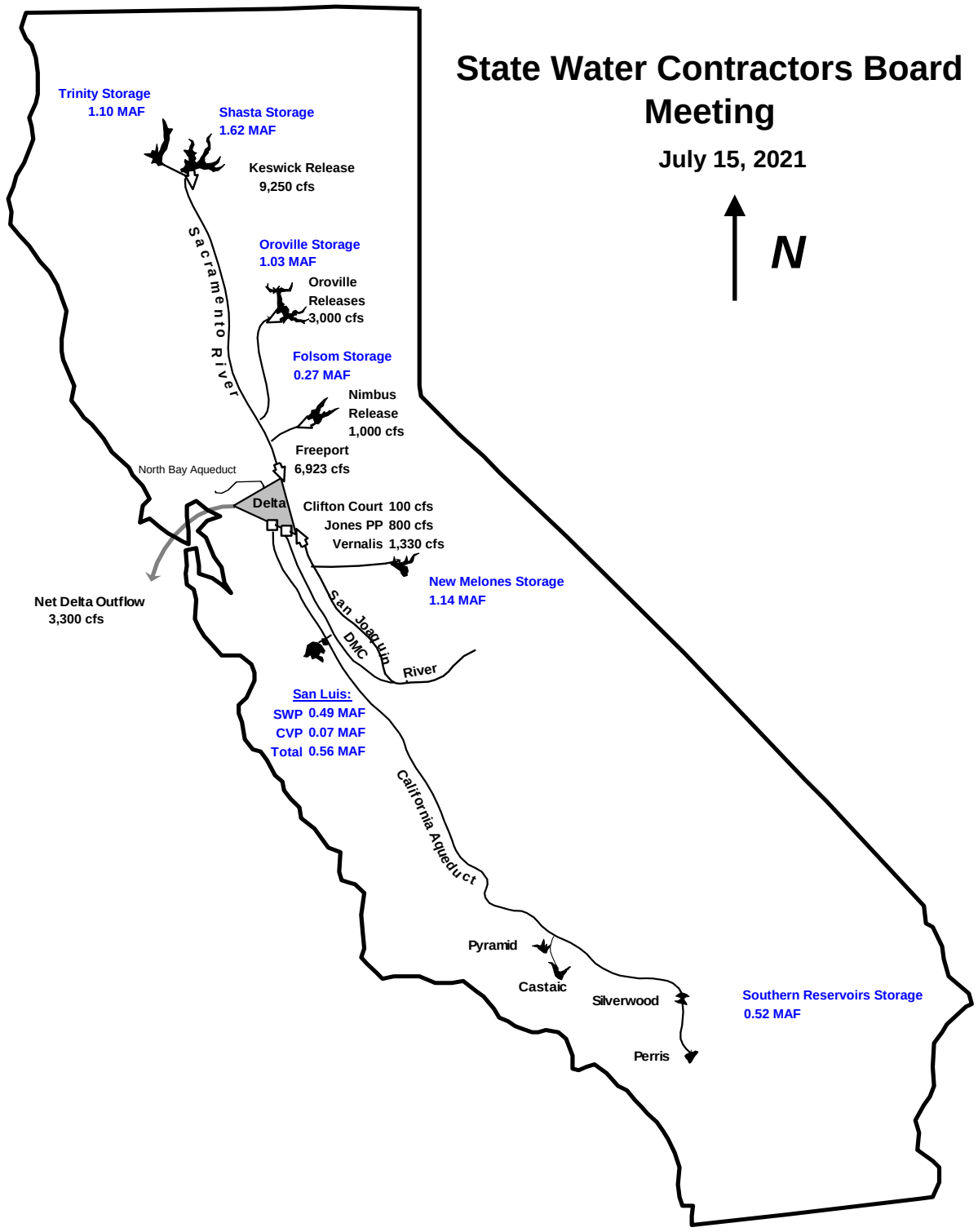
(b) Contract term compaction will become critical in 2030-2035 time frame

(c) In May SWC posted 3 tabloid dashboards on web site for quick access to SWP financial information

IV. GENERAL MANAGER’S REPORT

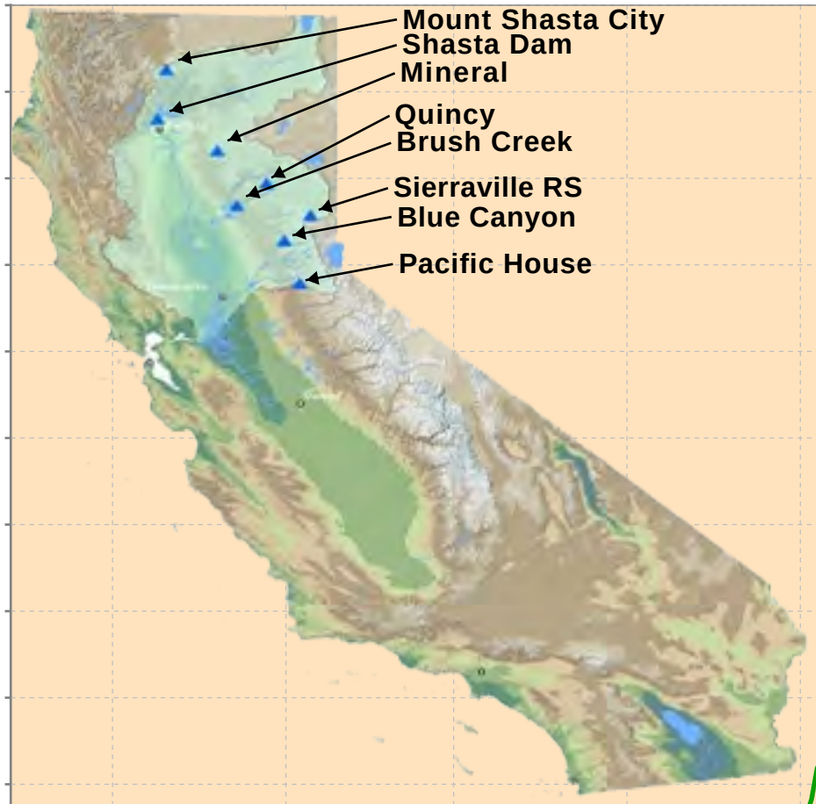
(a) Met with DWR Director Nemeth to discuss contract term compaction concerns

(b) Have hired a consultant to work on conference room technological improvements


State Water Contractors Board Meeting
July 15, 2021
N
Trinity Storage
1.10 MAF
Shasta Storage
1.62 MAF
Keswick Release
9,250 cfs
Sacramento River
Oroville Storage
1.03 MAF
Oroville
Releases
3,000 cfs
Folsom Storage
0.27 MAF
Nimbus
Release
1,000 cfs
Freeport
6,923 cfs
North Bay Aqueduct
Delta
Clifton Court 100 cfs
Jones PP 800 cfs
Vernalis 1,330 cfs
New Melones Storage
1.14 MAF
Net Delta Outflow
3,300 cfs
San Joaquin River
DMC
San Luis:
SWP 0.49 MAF
CVP 0.07 MAF
Total 0.56 MAF
California Aqueduct
Pyramid
Castaic
Silverwood
Perris
Southern Reservoirs Storage
0.52 MAF
Data Compiled on:
7/14/2021

O&M, WMB

Northern Sierra Precipitation: 8-Station Index, July 14, 2021



Percent of Average for this Date: 46%

2016-2017 Daily Precip (wettest) 94.7

1982-1983 (2nd wettest) 88.5

2018-2019 Daily Precip 70.7

Average (1966-2015) 51.8

2017-2018 Daily Precip 41.0

2014-2015 Daily Precip 37.2

2019-2020 Daily Precip 31.7

Current: 23.2

1976-1977(2nd driest & driest thru Aug) 19.0

Cumulative Daily/Monthly Precipitation (inches)

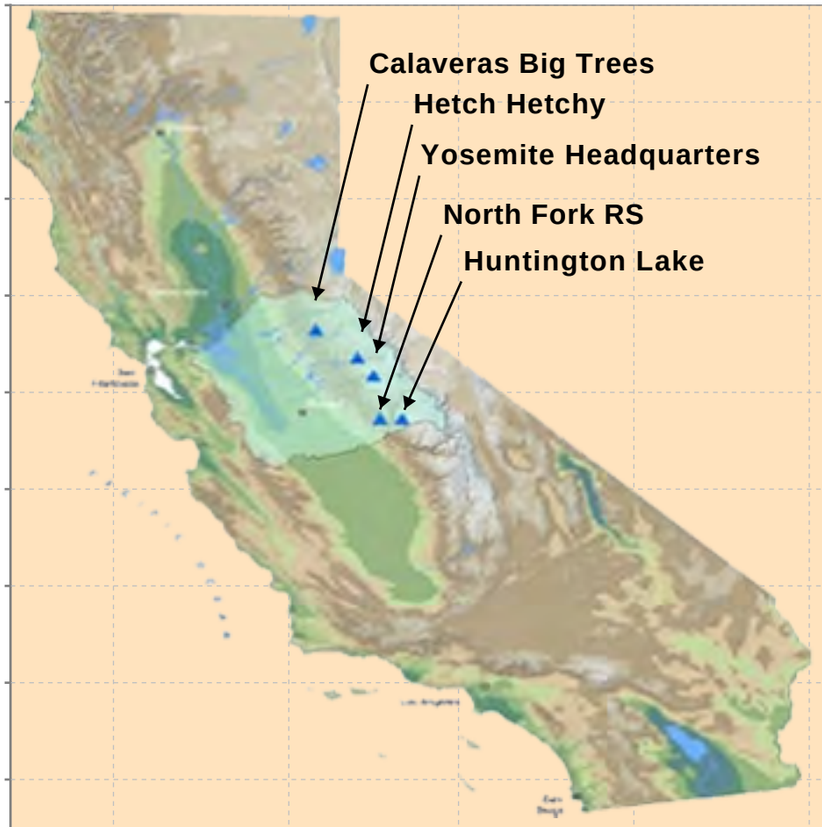
0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95 100

Oct 1 Nov 1 Dec 1 Jan 1 Feb 1 Mar 1 Apr 1 May 1 Jun 1 Jul 1 Aug 1 Sep 1 Oct 1

Water Year (October 1 - September 30)

Total Water Year Precipitation

San Joaquin Precipitation: 5-Station Index, July 14, 2021



Percent of Average for this Date: 47%

1982-1983 (wettest) 77.4

2016-2017 Daily Precip (2nd wettest) 72.7

2018-2019 Daily Precip 50.0

Average (1966-2015) 40.2

2017-2018 Daily Precip 29.7

2019-2020 Daily Precip 24.6

Current: 18.3 19.0

2014-2015 Daily Precip 15.4

1976-1977(2nd driest & driest thru Aug)

Cumulative Daily/Monthly Precipitation (inches)

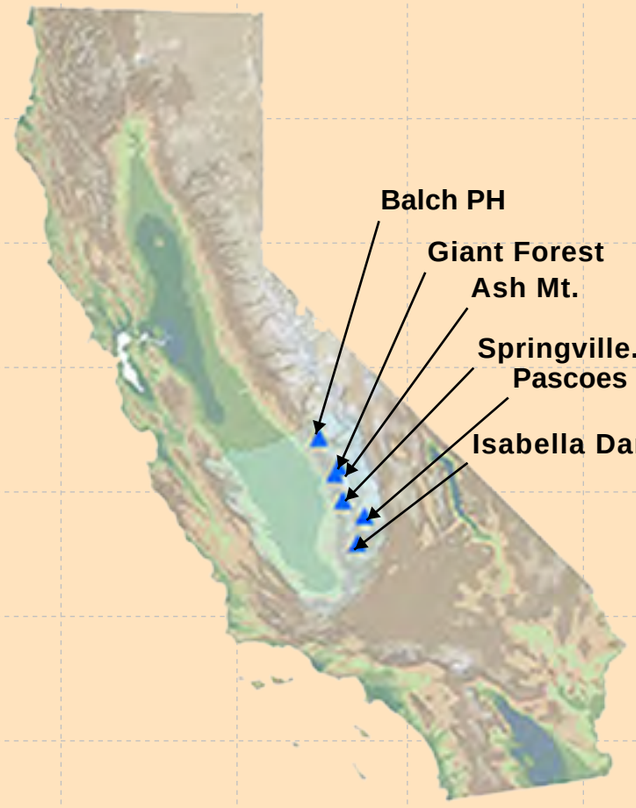
0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90

Oct 1 Nov 1 Dec 1 Jan 1 Feb 1 Mar 1 Apr 1 May 1 Jun 1 Jul 1 Aug 1 Sep 1 Oct 1

Water Year (October 1 - September 30)

Total Water Year Precipitation

Tulare Basin Precipitation: 6-Station Index, July 14, 2021



Percent of Average for this Date: 34%

1968-1969 (Wettest) 56.3
1982-1983 (2nd wettest) 56.2
2016-2017 Daily Precip 46.9
2018-2019 Daily Precip 36.8
Average (1966-2015) 28.8
2019-2020 Daily Precip 18.6
2017-2018 Daily Precip 17.9
2014-2015 Daily Precip 13.5
Current: 9.7
1976-1977 Daily Precip (Driest) 10.9

Cumulative Daily/Monthly Precipitation (inches)

0 5 10 15 20 25 30 35 40 45 50 55 60 65 70

Oct 1 Nov 1 Dec 1 Jan 1 Feb 1 Mar 1 Apr 1 May 1 Jun 1 Jul 1 Aug 1 Sep 1 Oct 1

Water Year (October 1 - September 30)

Total Water Year Precipitation

SELECTED WATER SUPPLY RESERVOIRS

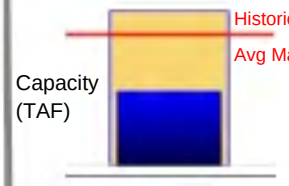
Midnight: July 28, 2021

LEGEND

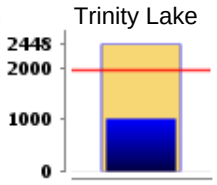
Red Line: Historic level for date

Gold Bar: Total Reservoir Capacity

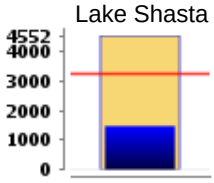
Blue Bar: Storage Level for date



% of Capacity | % of Historical Average



42% | 52%



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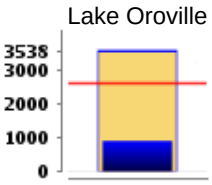

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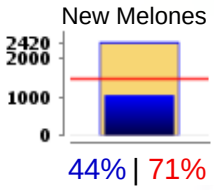

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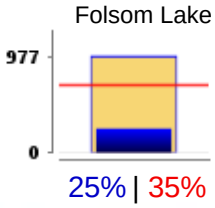

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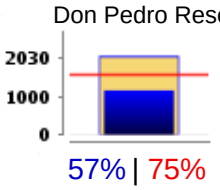

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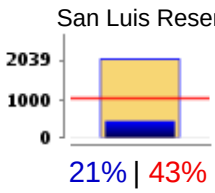

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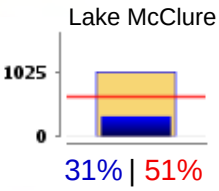

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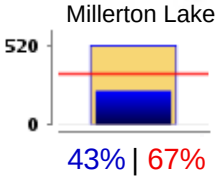

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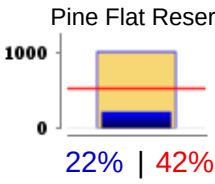

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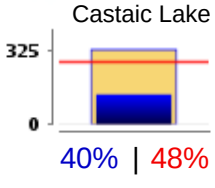

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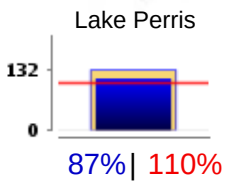

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Updated 07/29/2021 09:18 AM

Minutes
Executive Committee Meeting
July 29, 2021

Directors Present: Kristin Bloomer, James Cioffi
Staff Present: Mark Krause, Steve Johnson, Esther Saenz, Sylvia Baca

1. Discussion Items

A. Review Agenda for August 3, 2021 Board Meeting
The proposed agenda for the August 3, 2021 meeting was reviewed.

2. Adjourn

STAFF REPORT
TO
DESERT WATER AGENCY
BOARD OF DIRECTORS

AUGUST 3, 2021

RE: REQUEST BOARD AUTHORIZATION FOR FINANCE DIRECTOR TO EXECUTE CONTRACT WITH NBS FOR THE 2022 COST OF SERVICE STUDY

In California, water and sewer must adhere to cost of service principles. The Agency is seeking to contract with an independent consultant to prepare a technical cost-of-service evaluation of propose fixed and volumetric water, sewer and recycled water rates in accordance with AWWA guidelines, the California Constitution (Prop 218), and all applicable law, that are fair, objective and fiscally appropriate for Desert Water Agency, covering a five (5) year study period, including but not limited to; ongoing operations, planned capital improvements, a prudent reserve program for operations, capital replacement and emergencies, and propose drought rates.

Staff submitted Requests for Proposal (RFP) to six consultants outlining the Agency's needs. Three consultants submitted proposals: NBS Government Finance Group, Raftelis, and IB Consulting.

An evaluation team comprised of Agency staff was assembled to review and rate the proposals utilizing pre-determined evaluation criteria provided to the proponents in the RFP. NBS received the highest overall rating by the evaluation team and displayed the best understanding of DWA's needs. Additionally, NBS has performed previous rate studies for Desert Water Agency with successful outcomes.

The Finance Committee has reviewed and provided support for staff's recommendation.

Fiscal Impact:
NBS' cost to perform the statement of work is not to exceed $88,800. Staff's estimate for the proposed work included in the 2021/2022 budget is $110,000.

Recommendation:
Staff recommends the Board authorize Finance Director Saenz to execute a contract with NBS Government Finance Group, for the 2022 Cost of Service Study.

Attachment(s):
NBS Proposal for DWA 2022 Cost of Service Study

CONSULTING AGREEMENT

This Consulting Agreement (Agreement) is made as of the _____ day of _____, 2021, by and between NBS GOVERNMENT FINANCE GROUP, a California corporation, dba "NBS" ("Consultant"), and DESERT WATER AGENCY ("Client").

RECITALS

A. The Client desires to obtain certain consulting services for a Water, Reclaimed Water and Wastewater Cost of Service Study.

B. The Client desires to engage Consultant as an independent contractor to perform such services on the terms and conditions set forth herein.

In consideration of the foregoing and of the mutual promises set forth herein, and intending to be legally bound, the parties hereto agree as follows:

AGREEMENT

1. Services. Consultant shall perform the detailed work plan described in Exhibit A, which is attached hereto and incorporated herein by reference ("Services"). Any other services required or requested by Client shall be subject to mutual agreement of the parties and may be subject to additional scope of work and fee negotiations.

2. Term. The term of this Agreement shall commence when agreement is fully executed.

3. Compensation. Compensation to be paid by Client to Consultant shall be in accordance with the schedule set forth in Exhibit B, which is attached hereto and incorporated herein by reference. Client and Consultant recognize that the scope of the project may change from that defined in Exhibit A and that significant changes in the detailed work plan will require renegotiation of fees.

4. Expenses. Except certain billable expenses as set forth in Exhibit B, Consultant will be responsible for all of its expenses incurred in performing the Services hereunder.

5. Qualifications of Consultant. Client has relied upon the professional training and ability of Consultant to perform Services hereunder as a material inducement to enter into this Agreement. Consultant shall therefore provide properly skilled professional and technical personnel to perform all Services under this Agreement. All work performed by Consultant under this Agreement shall be in accordance with applicable legal requirements and shall meet the standard of quality ordinarily to be expected of competent professionals in Consultant's field of expertise.

6. Independent Contractor Status. The relationship of Consultant and Client hereunder is an independent contractor relationship and nothing in this Agreement shall be construed to create any other relationship. No agent, employee, or representative of Consultant shall be deemed to be an agent, employee, or representative of Client for any purpose. Consultant agrees that neither it nor any of its employees, is entitled to the rights or benefits afforded to Client's employees, including disability or unemployment insurance, workers' compensation, medical insurance, sick leave, or any other employment benefit. Consultant is responsible for providing, at its own expense, disability, unemployment, workers' compensation, training, permits, and licenses for its employees. Consultant does not have, nor shall it hold itself out as having, any right, power or authority to create any contract or obligation, either express or implied, on behalf of, in the name of, or binding Client.

7. Income Taxes. Consultant is responsible for paying when due all federal, state and local income taxes, incurred as a result of the compensation paid by Client to Consultant for Services under this Agreement. Consultant agrees to indemnify Client for any claims, costs, losses, fees, penalties, interest, or damages suffered by Client resulting from Consultant's failure to comply with this provision.

8. Insurance Requirements. Consultant, at its own cost and expense, shall procure and maintain, for the duration of this Agreement, commercial general liability insurance (said insurance shall have a limit for each occurrence of at least Two Million Dollars ($2,000,000), and Four Million Dollars $4,000,000 aggregate) naming Desert Water Agency as additional insured, in connection with Consultant's activities, officers, employees, officials, agents, officers, staff and Board members), workers' compensation insurance and employer's liability insurance as required by the State of California (said insurance shall not be less than One Million Dollars ($1,000,000) per accident or disease), and professional errors and omissions liability insurance (said insurance shall cover Consultant's performance under this Agreement with a limit of liability of at least Two Million Dollars ($2,000,000) for any one claim and aggregate), and automobile insurance with a limit of at least One Million Dollars ($1,000,000). Prior to commencement of the Services, Consultant shall deliver to Client a Certificate of Insurance evidencing compliance with this paragraph. The certificate shall stipulate that advance written notice of cancellation of the required policy shall be given to the Client by any and all insurance companies.

9. Client's Responsibilities. The Client shall furnish Consultant with any pertinent information that is available to Client and applicable to the Services. The Client shall designate a person to act with authority on its behalf in respect to the Services. The Client shall promptly respond to Consultant's requests for reviews and approvals of its work, and to its requests for decisions related to the Services. Client understands and agrees that Consultant is entitled to rely on all information, data and documents (collectively, "Information") supplied to Consultant by Client or any of its agents, contractors or proxies or obtained by Consultant from other usual and customary sources including other government sources or proxies as being accurate and correct and Consultant will have no obligation to confirm that such Information is correct and that Consultant will have no liability to Client or any third party if such Information is not correct.

10. Indemnification. Consultant shall defend, indemnify and hold harmless Client, its officers, employees, officials and agents from and against all claims, demands, losses, liabilities, costs and expenses, including reasonable attorneys' fees, (collectively "Liabilities") arising out of or resulting from the negligence or willful misconduct of Consultant or a breach by Consultant of its obligations under this Agreement, except to the extent such Liabilities are caused by the negligence or willful misconduct of Client. Consultant will not be liable to the Client or anyone who may claim any right due to a relationship with Client, for any acts or omissions in the performance of Services under this Agreement, unless those acts or omissions are due to the negligence or willful misconduct of Consultant. Except in the case of Consultant's negligence, willful misconduct or breach of its obligations under this Agreement, Client shall defend, indemnify and hold harmless Consultant, its officers, directors, shareholders, employees and agents from and against all Liabilities to the extent that such Liabilities arise out of Consultant performing Services pursuant to the terms of this Agreement, including, without limitation, any Liabilities arising as a result of Client or any of its agents or contractors supplying incorrect Information or documentation to Consultant. The provisions of this Section 10 shall survive termination of this Agreement.

11. Limitation of Liabilities. Client hereby agrees that to the fullest extent permitted by law, Consultant's total liability to Client for any and all injuries, claims, losses, expenses or damages

whatsoever arising out of or in any way related to Consultant's Services under this Agreement from any cause or causes, including but not limited to Consultant's negligence, errors, omissions or breach of contract (hereafter "Client claims") shall not exceed the total sum paid on behalf of or to Consultant by Consultant's insurers in settlement or satisfaction of Client claims under the terms and conditions of Consultant's insurance policies applicable thereto. The provisions of this Section 11 shall survive termination of this Agreement.

12. Equal Opportunity Employment. Consultant represents that it is an equal opportunity employer and it shall not discriminate against any subcontractor, employee or applicant for employment because of race, religion, color, national origin, disability, ancestry, sex, gender identity, sexual orientation, or age. Such non-discrimination shall include, but not be limited to, all activities related to initial employment, upgrading, demotion, transfer, recruitment or recruitment advertising, layoff or termination.

13. Attorneys' Fees. In the event of any action or other proceeding, including arbitration or other non-judicial proceedings, arising from, in, under or concerning this Agreement and any amendment thereof, including, without limiting the generality of the foregoing, any claimed breach hereof, the prevailing party in such action or proceeding shall be entitled to recover from the other party in such action or proceeding, such sum as the court shall fix as reasonable attorneys' fees incurred by such prevailing party.

14. Compliance with Law. In connection with the services rendered hereunder, Consultant agrees to abide by all federal, state, and local laws, ordinances and regulations.

15. Entire Agreement; Amendment. This Agreement, including the Exhibits attached hereto, constitutes the final, complete and exclusive statement of the terms of the agreement between Client and Consultant with respect to the transactions contemplated hereby and supersedes all prior and contemporaneous agreements, arrangements or understandings between them with respect thereto. This Agreement may not be amended, modified or changed except by instruments in writing signed by all of the parties hereto.

16. Nonwaiver. No failure or neglect of either party hereto in any instance to exercise any right, power or privilege hereunder or under law shall constitute a waiver of any other right, power or privilege or of the same right, power or privilege in any other instance. All waivers by either party hereto must be contained in a written instrument signed by the party to be charged.

17. Controlling Law; Jurisdiction. This Agreement shall be construed and enforced in accordance with the laws of the State of California without reference to its choice of law provisions. The parties hereto hereby irrevocably waive any objection, including, without limitation, any objection to the laying of venue or based on *Forum Non Conveniens*, which it may now or hereafter have to the bringing of any action or proceeding in the manner, or in any of the jurisdictions, provided herein.

18. Counterparts. This Agreement may be executed in any number of counterparts and each such counterpart hereof shall be deemed to be an original instrument, but all such counterparts together shall constitute but one agreement.

19. Further Assurances. The parties shall at their own cost and expense execute and deliver such further documents and instruments and shall take such other actions as may be reasonably required or appropriate to carry out the intent and purposes of this Agreement.

20. Successors and Assigns. Consultant and Client each binds itself, its partners, its successors, legal representatives and assigns to the other party of this Agreement and to the partners, successors, legal representatives and assigns of such other party in respect of all covenants and agreements contained herein.

21. Notices. All notices, requests, demands, and other communications required to or permitted to be given under this Agreement shall be in writing and shall be conclusively deemed to have been duly given (a) when hand delivered to the other party; or (b) when received when sent by e-mail, facsimile or similar electronic delivery at the address and number set forth below (provided, however, that the receiving party confirms receipt of such notice by e-mail, facsimile or any other method permitted hereunder, and that any notice given by e-mail or facsimile shall be deemed received on the next business day if such notice is received after 5:00 p.m. (recipient's time) or on a non-business day); or (c) three business days after the same have been deposited in a United States post office with first class or certified mail return receipt requested postage prepaid and addressed to the parties as set forth below; or (d) the next business day after same has been deposited with a reputable overnight delivery service reasonably known by the parties (such as FedEx, DHL, GLS, USPS Priority Mail, etc.), postage prepaid, addressed to the parties as set forth below with next-business-day delivery guaranteed, provided that the sending party receives a confirmation of delivery from the delivery service provider.

If to Consultant:

NBS Government Finance Group
Attention: Michael Rentner, Chief Executive Officer
32605 Temecula Parkway, Suite 100
Temecula, CA 92592
Telephone: (951) 296-1997
Fax No.: (951) 296-1998
E-Mail: mrentner@nbsgov.com

If to Client:

Desert Water Agency
Attention: Esther Saenz
1200 Gene Autry Trail South
Palm Springs, CA 92264
Telephone: (760) 323-4971 Ext. 120
Fax No.: (760) 322-1224
E-Mail: esther@dwa.org

22. References and Titles. All references in this Agreement to Articles, Sections, Subsections and other subdivisions refer to corresponding Articles, Sections, Subsections and other subdivisions of this Agreement unless expressly provided otherwise. Titles appearing at the beginning of any subdivision are for convenience only and do not constitute any part of such subdivision and shall be disregarded in construing the language contained in such subdivision. The words this Agreement, this instrument, herein, hereof, hereby, hereunder, and words of similar import refer to this Agreement as a whole and not to any particular subdivision unless expressly so limited. Pronouns in masculine, feminine and neuter genders shall be construed to include any other gender, and words in the singular form shall be construed to include the plural and vice versa, unless the context otherwise requires.

23. Time. Time is of the essence.

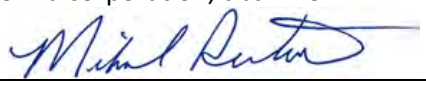
24. No Third Party Beneficiaries. Nothing contained in this Agreement is intended to and nothing contained herein shall be interpreted to confer on any party the rights of a third party beneficiary and this Agreement shall be for the sole benefit of the parties hereto.

25. Severability. If any term, covenant, condition or provision of this Agreement, or the application thereof to any person or circumstances is held by a court of competent jurisdiction to be invalid, void or unenforceable, the remaining provisions will, nevertheless, continue in full force and effect without being impaired or invalidated in any way.

26. Language. The language of this Agreement shall be construed as a whole and in accordance with the fair meaning of the language used. The language of this Agreement shall not be strictly construed against either party based upon the fact that either party drafted or was principally responsible for drafting this Agreement or any specific term or condition hereof.

27. Termination. This Agreement may be terminated by either party by giving thirty (30) business days written notice to the other party of its intent to terminate this Agreement. Upon termination, Consultant shall be entitled to compensation for services performed up to the effective date of termination and Client shall be entitled to all work performed to that date.

IN WITNESS WHEREOF, Client and Consultant have executed this Agreement on the day and year first above written.

CONSULTANT	**CLIENT**
NBS GOVERNMENT FINANCE GROUP, a California corporation, dba NBS	DESERT WATER AGENCY
By: 	By:
Name: Michael Rentner	Name:
Title: Chief Executive Officer	Title:
Date: July 27, 2021	Date:

Attachments:

Exhibit A: Detailed Work Plan
Exhibit B: Fee Schedule and Timeline

Desert Water Agency

Water, Reclaimed Water and Wastewater Cost of Service Study

Exhibit A – NBS' Detailed Work Plan

NBS will provide the leadership necessary to guide Agency staff and the Board through the various options and key issues as well as explain how other California communities are addressing similar problems. Ultimately, we want the Agency to be confident that it is taking reasonable and prudent steps in developing rates and fees that best meet the needs of its customers.

This section details NBS' proposed methodology and scope of work. These tasks serve as the basis for the proposed budget. *Please note that Tasks 1 and 2 apply to water, sewer, and recycled water while Tasks 3 – 5 apply only to the water utility. Similar tasks for sewer and recycled water are separately covered in Tasks 6 and 7 below.*

TASK 1. KICKOFF MEETING AND DATA COLLECTION

Task Objectives: Clearly communicate and work with Agency staff to obtain necessary data and review study objectives, tasks, and schedule.

Task Deliverables:

- Data request to Agency staff prior to the kick-off meeting.
- Review of initial data provided.
- Kick-off meeting with Agency staff.
- Review the preliminary plan for Board workshops and public outreach and adjust as needed.

The kick-off meeting will be used to review and discuss the data available from the Agency's billing and accounting system and data requirements in general. The data the Agency will need to provide for the water rate analyses includes customer accounts, meter sizes, monthly consumption records for each customer, total rate revenue collected, and financial data typically reported in financial statements. Similar data will also be needed for the sewer and recycled water studies.

TASK 2. REVIEW OF CURRENT RATES AND POLICIES

Task Objectives: Work with Agency staff to review and evaluate current rate structures, reserve funds, and related policies at the beginning of the study. This will help set the direction of the study with a greater degree of clarity and avoid unnecessary complications when the final results are presented to the Board and public. For example, policies related to basic equity and fairness, revenue stability vs. water conservation, drought-related supply reductions and/or unit price increases, and the level of funding for capital improvement and replacement costs should all be discussed and agreed upon before starting the Financial Plan and Cost-of-Service Study.

Task Deliverables:

- Assessment of *current reserve funds* and target year-end balances.

- Assessment of *current rate structures* (e.g., pros and cons, areas for improvement, etc.).
- Assessment of *equity* of rates for the various customer classes.
- Assessment of *conservation impacts* (i.e., current rates and potential new rate designs).
- Assessment of current *rate-related policies* compared to industry practices and how they may relate to possible rate alternatives.
- Recommendations for changes to and/or additional policies for the Board to consider adopting, as well as a greater degree of direction on rate alternatives for further evaluation.

TASK 3. FINANCIAL PLAN AND REVENUE REQUIREMENT ANALYSIS (WATER ONLY)

Task Objectives: Prepare financial plans that detail the Agency's revenues, expenditures, reserves, debt coverage ratios, capital improvement costs, repair and replacement costs, and net revenue requirements, for the water and sewer utilities. Based on our review of reserve fund policies, those changes will be incorporated into the financial plan in order to better evaluate the Agency's current financial management concerns.

Task Deliverables:

- 20-year financial projection models that will serve as a financial "roadmap" for the water and sewer utilities (Note: Only a 5-year plan will be proposed for Prop 218 purposes, but a 20-year plan provides Agency staff a template for future use and "what-if" analysis).
- Summary of current and projected net revenue requirements.
- Evaluate reserve fund policies and targets for the various reserve funds the Agency maintains.
- Projected year-end reserve fund levels.
- Calculated debt service coverage ratios.

This financial plan will lay the groundwork for the cost-of-service and rate design analyses in Tasks 4 and 5. It will be particularly important to segregate budget data when preparing separate financial plans for water, sewer, and recycled water (*see Tasks 6 and 7 for sewer and recycled water*). The following subtasks are anticipated:

- **Projected Revenues and Expenditures –** Using a cash-basis and the Agency's system of accounts, NBS will prepare a 20-year projection of revenues, expenses, and increases in rate revenue needed to meet all financial obligations. This will provide the Agency with the financial planning tools needed to minimize the impact of future rate increases and maintain appropriate reserve fund levels in response to revised budget projections.
- **Evaluate Reserve Fund Sufficiency –** NBS will evaluate the sufficiency of existing reserve funds, target reserves, reserve fund policies, and related issues, such as debt service coverage ratios. We will provide recommendations for reserve fund targets that are tailored to the Agency's specific needs such as operating, capital rehabilitation/replacement, and rate stabilization, in addition to recommending strategies for reserve-spending criteria and pay-as-you-go vs. debt funding.
- **Review Capital Improvement Funding –** NBS will incorporate the Agency's capital improvement plans, including continued water main replacements. The timing, costs, and

available reserves used to fund various projects will be carefully evaluated in this study. We will work with Agency staff to develop a well-conceived approach to funding these capital needs.

- **Provide Rate Models –** Once the rate study is completed, NBS will provide the Agency with the working models for the water, sewer and recycled water analyses (separate models for each analysis). This will provide full documentation of the data, calculation, and tables used in the reports and presentation materials. Models will not be designed for what-if analysis beyond what is performed in the rate study.

Figures 1, **2**, and **3** are the types of charts and tables we will use to summarize these results.

Figure 1. Summary of Five-Year Revenue Requirements and Rate Increases

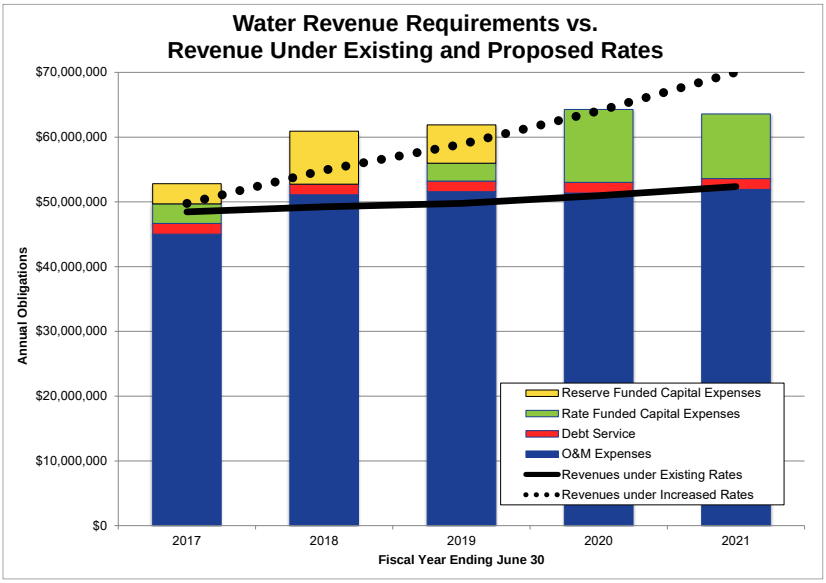
Summary of Sources and Uses of Funds and Net Revenue Requirements	Budget	Projected			
	FY 2016/17	FY 2017/18	FY 2018/19	FY 2019/20	FY 2020/21
Sources of Water Funds					
Operating Fund					
Rate Revenue Under Prevailing Rates (1)	$ 20,227,500	$ 20,412,871	$ 20,598,242	$ 20,783,613	$ 20,968,984
Power Sales	21,000	57,750	57,750	57,750	57,750
Other Revenue	1,565,150	1,779,451	1,098,925	1,085,212	1,129,026
Subtotal: Operating Fund Revenue	*$ 21,813,650*	*$ 22,250,072*	*$ 21,754,917*	*$ 21,926,575*	*$ 22,155,760*
General Fund					
Property Tax Revenue	$ 21,118,200	$ 21,540,564	$ 21,971,375	$ 22,410,803	$ 22,859,019
Groundwater Replenishment	4,351,300	5,148,895	5,629,302	6,071,312	6,675,900
Power Sales - Whitewater Hydro	24,000	66,000	66,000	66,000	66,000
Other Revenue	1,154,200	239,675	359,513	479,350	599,188
Subtotal: General Fund Revenue	*$ 26,647,700*	*$ 26,995,134*	*$ 28,026,190*	*$ 29,027,465*	*$ 30,200,106*
Total Sources of Funds	**$ 48,461,350**	**$ 49,245,206**	**$ 49,781,107**	**$ 50,954,039**	**$ 52,355,866**
Uses of Water Funds					
Operating Fund - O&M Expenses	$ 22,520,644	$ 22,968,051	$ 23,996,049	$ 25,022,024	$ 26,198,150
General Fund - O&M Expenses	23,288,325	27,354,706	27,581,497	26,346,770	25,745,765
Debt Service	1,646,780	1,646,580	1,645,380	1,647,500	1,646,438
Rate-Funded Capital Expenses	3,023,798	-	2,752,861	11,258,090	9,996,758
Total Use of Funds	**$ 50,479,547**	**$ 51,969,337**	**$ 55,975,787**	**$ 64,274,384**	**$ 63,587,110**
Surplus (Deficiency) before Rate Increase	**$ (2,018,197)**	**$ (2,724,130)**	**$ (6,194,681)**	**$(13,320,344)**	**$(11,231,244)**
Additional Revenue from Rate Increases	1,314,788	5,652,324	9,122,900	13,103,519	17,665,010
Surplus (Deficiency) after Rate Increase	**$ (703,409)**	**$ 2,928,194**	**$ 2,928,219**	**$ (216,825)**	**$ 6,433,765**
Projected Annual Rate Increase (2)	***13.00%***	***13.00%***	***13.00%***	***13.00%***	***13.00%***
Cumulative Rate Increases	*13.00%*	*27.69%*	*44.29%*	*63.05%*	*84.24%*
Net Revenue Requirement	**$ 22,245,697**	**$ 23,883,141**	**$ 26,830,686**	**$ 34,103,957**	**$ 32,200,228**
Debt Coverage Ratio (After Rate Increases)	*2.40*	*2.77*	*4.45*	*7.70*	*10.97*

1. Fiscal Year 2015/16 and 2016/17 revenues and expenses are per the Agency's Adopted Budgets.
2. Initial rate increases are anticipated to be effective 1/1/2017 and July 1st, each year there after.

Figure 2. Summary of Five-Year Reserve Fund Balances

Beginning Reserve Fund Balances and Recommended Reserve Targets	Projected				
	FY 2016/17	FY 2017/18	FY 2018/19	FY 2019/20	FY 2020/21
Operating Reserve					
Ending Balance	$ 11,855,026	$ 12,965,390	$ 13,513,221	$ 13,296,396	$ 14,684,522
Recommended Minimum Target	*12,327,533*	*12,965,390*	*13,513,221*	*14,060,894*	*14,684,522*
Capital Rehabilitation & Replacement Reserve					
Ending Balance (1)	$ 12,284,802	$ 5,941,243	$ 2,396,829	$ 2,396,829	$ 7,442,469
Recommended Minimum Target	*6,300,000*	*6,360,000*	*6,430,000*	*6,570,000*	*6,670,000*
Regulatory and Retirement Reserve					
Ending Balance	$ 47,935,000	$ 47,935,000	$ 47,935,000	$ 47,935,000	$ 47,935,000
Recommended Minimum Target	*54,476,348*	*60,979,940*	*61,377,758*	*58,117,513*	*56,437,178*
Total Ending Balance	**$ 72,074,828**	**$ 66,841,634**	**$ 63,845,051**	**$ 63,628,226**	**$ 70,061,991**
Total Recommended Minimum Target	***$ 73,103,880***	***$ 80,305,330***	***$ 81,320,979***	***$ 78,748,407***	***$ 77,791,700***

Figure 3. Summary of Revenue Requirements and Existing vs. Proposed Rates



TASK 4. COST-OF-SERVICE ANALYSIS

Task Objectives: Equitably allocate the revenue requirements to each customer class (the Agency currently uses meter sizes) and determine the cost of providing water service to each of these classes. This analysis provides a critical component necessary in establishing a defensible administrative record for cost-based water rates.

Task Deliverables: Develop cost-of-service summary tables that will be incorporated into the total revenue requirements for each customer class and reflected in the fixed and volumetric rates and documented in the study report and appendices.

4.1 Analysis of Consumption by Customer Class/Meter Sizes

While we believe the Agency is likely to continue using meter sizes as customer classes for fixed charges, we would recommend evaluating consumption data to better understand how consumption patterns by various types of customers have changed over the last five years. This would entail reviewing the Agency's existing customer classes and analyzing the historical consumption (e.g., average monthly water uses and peaking factors) by meter size and customer class to assess how these factors compare by meter size for residential, multi-family, commercial, irrigation, etc. customers. We will review these results with Agency staff to see if any changes might:

- Provide more equitable rates,
- Provide better tools for addressing water conservation goals, and/or
- Better align with industry standards.

If there are any changes to the customer classes resulting from the review of the current rate structures and customer characteristics (i.e., switching to single-, multi-family and commercial rate classes), these changes will be incorporated into this analysis.

4.2 Cost-of-Service Analysis

In the cost-of-service analysis, the revenue requirements will be equitably allocated to individual customer classes based on industry standard methodologies. The Agency's pumping zone costs and charges will also be reviewed to ensure they are cost-based. The two main components of the cost-of-service analysis are: (1) the functionalization/classification of expenses, and (2) the allocation of costs to customer classes. These are described below.

Functionalization/Classification of Expenses – Functionalizing the expenses means arranging costs into basic categories, such as source of supply, treatment, transmission, and distribution, as well as administrative and overhead costs. Once the costs have been functionalized, they are then classified to their various cost components, such as fixed capacity, variable (commodity), or customer related costs, as illustrated below
in **Figure 4**.

Figure 4. Example: Classification of Water Revenue Requirements

Budget Categories	Total Revenue Requirements	Commodity	Capacity	Customer	Fire Protection	Basis of Classification			
		COM	CAP	CA	FP	COM	CAP	CA	FP
Source of Supply	$ 3,603,100	$ 3,603,100	$ -	$ -	$ -	100%	0%	0%	0%
Pumping	$ 3,163,500	$ 2,629,050	$ 521,763	$ -	$ 12,687	83%	16%	0%	0%
Water Treatment	$ 505,200	$ 395,472	$ 102,480	$ -	$ 7,248	78%	20%	0%	1%
Transmission & Distribution	$ 3,445,100	$ 1,722,550	$ 1,665,302	$ -	$ 57,248	50%	48%	0%	2%
Administrative & General	$ 10,318,200	$ 3,613,810	$ 6,066,350	$ 478,885	$ 159,155	35%	59%	5%	2%
Total	$ 21,035,100	$ 11,963,982	$ 8,355,895	$ 478,885	$ 236,338	57%	40%	2%	1%

Allocation of Costs to Customer Classes – These costs are then allocated to individual customer classes based on allocation factors specific to each cost classification, producing fixed and variable revenue requirements for each customer class. These allocations will be used for the actual rate calculations. **Figure 5** describes the allocation factors that will be developed in this phase of the analysis and used to allocate costs.

Figure 5. Example: Water Allocation Factors

Cost Classification Category	Commodity	Capacity	Customer
Allocation Factors	Water Consumption by Customer Class	Peak Water Use	Number of Accounts by Customer Class
Types of Costs	*Costs associated with the consumption of water over time.*	*Costs associated with the maximum demand required at one point in time or the maximum size of facilities required to meet this demand.*	*Costs associated with having customers connected to the system.*
Examples of Costs	• *Variable Cost of Purchased Water* • *Electricity* • *Chemicals*	• *Primarily capital facilities* • *Fixed cost of purchased water*	• *Meter Reading* • *Customer Billing* • *Customer Service*

As a result of applying the allocation factors to the cost classifications, the revenue required is allocated to each customer class as shown in **Figure 6**.

Figure 6. Example: Allocation of Revenue Requirements to Customer Classes

Customer Class	Cost Classification Components				Cost of Service Net	% of COS Net Revenue Reqts
	Volumetric	Capacity	Customer	Fire Protection		
Potable Water						
Residential	$ 9,108,405	$ 2,141,306	$ 231,269	$ -	$ 11,480,980	*50.2%*
Multi-Family	$ 379,910	$ 83,635	$ 4,864	$ -	$ 468,409	*2.0%*
Condo	$ 665,309	$ 152,969	$ 60,159	$ -	$ 878,438	*3.8%*
Commercial	$ 5,143,045	$ 1,172,830	$ 40,718	$ -	$ 6,356,594	*27.8%*
Irrigation/Condo	$ 1,741,296	$ 424,344	$ 5,915	$ -	$ 2,171,555	*9.5%*
Fire Private	$ 1,920	$ 726	$ 8,097	$ 231,567	$ 242,309	*1.1%*
Public Authority	$ 713,091	$ 169,917	$ 4,080	$ -	$ 887,088	*3.9%*
Public Authority Mains	$ 23,869	$ 6,662	$ 47	$ -	$ 30,577	*0.1%*
Other Water						
Construction	$ 236,692	$ 103,319	$ 1,114	$ -	$ 341,124	*1.5%*
Total	**$ 18,013,538**	**$ 4,255,707**	**$ 356,263**	**$ 231,567**	**$ 22,857,075**	**100.0%**
Total Vol. and Fixed Rate Rev.	**$ 18,013,538**	**$4,843,537**			**$ 22,857,075**	
Revenue Reqts. by Percentages	*78.8%*	*18.6%*	*1.6%*	*1.0%*	*100%*	

TASK 5. RATE DESIGN ANALYSIS (WATER ONLY)

Task Objectives: Based on the potential new rate alternatives resulting from Task 2 and the revenue requirements by customer class and meter size resulting from Tasks 3 and 4, we will develop rate structure alternatives that fairly and equitably meet annual revenue requirements in addition to incorporating the Agency's broader rate design goals and objectives. This includes evaluation of fixed service charges and volumetric rates, including zone pumping and private fire protection charges.

Task Deliverables: New rates for the proposed rate structure alternatives, including the evaluation of the pros and cons of each alternative.

Develop Rate Design Recommendations – Water and sewer rates will be developed based on the cost-of-service analyses and include a discussion of the relative merits of the current water and sewer rate structures compared to the new alternatives. This discussion and analysis will include issues, such as the amount of revenue collected from fixed vs. volumetric charges. While we believe rate design is more applicable to water rates, we will also review the sewer rate design.

Criteria for Improving the Rate Design – Revenue sufficiency and stability are critical components to consider when evaluating rate designs. In projecting future rates and rate increases, NBS' approach is generally a conservative one in order to ensure that there are no significant under-collections of rate revenue which represents a "worse-case" scenario.

Erring on the conservative side (i.e., one where there is a minimal chance of under-collection) would potentially enable each utility to reduce future rate increases without leaving reserves under-funded. There are several criteria that NBS will discuss with Agency staff in considering new rate structures, including:

- How costs allocated to fixed and volumetric rates affect revenue stability.
- How decreased water usage (conservation) affects new rates.
- How summer peaking patterns are reflected in water rate design.
- How meter sizes are used in calculating fixed charges.
- How "price elasticity" responses to rate increases may impact rates.
- Impacts on customer monthly bills.

The rate structure alternative selected will, in the end, provide the basis for comparing monthly customer bills under both the current and new rate structures. However, all rate structures will be "revenue neutral" because they will all collect the same amount of revenue, both in total and within each customer class.

5.1 Calculate Fixed and Volumetric Charges

Fixed costs consider the number of accounts, equivalent meters, and the number and size of meters. In contrast, variable costs are typically allocated in proportion to consumption. Other factors include revenue stability, water conservation goals, ease of understanding, and ease of administration.

The Agency's last rate study transitioned rates over a five-year period to collect about 70 percent of rate revenue from volumetric rates, decreasing the volumetric percentage by about 10 percent. We will review this approach with Agency staff in light of current rate study objectives (e.g., conservation concerns, revenue stability, etc.). NBS will discuss appropriate rate structure alternatives with Agency staff to strike the right balance between fixed and variable charges. (Note: Fire meter fixed charges will also be updated as part of this task.)

As shown in **Figure 7**, the rate design analysis recovers fixed costs based on the total number of meters, capacity costs from each meter size based on the hydraulic capacity, and commodity costs from customers based on water consumption. The Agency's water supply costs and quantities will be examined and incorporated into the rate design analysis. Also, if the Agency decides to shift to a different rate structure (i.e., using customer classes based on residential, commercial, irrigation, etc.), this calculation will reflect this approach.

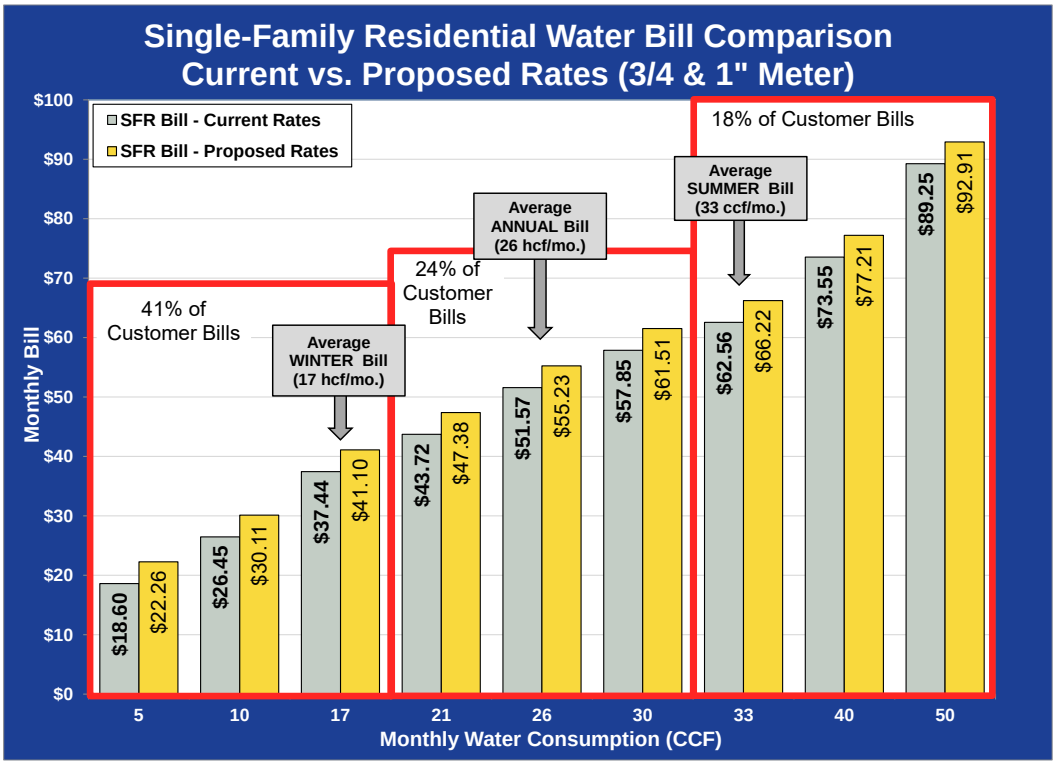
Figure 7. Example: Calculation of Fixed Charges

Meter Size	Hydraulic Capacity Factor	Number of Meters	Total Equivalent Meters	Fixed Meter Charge		Total Fixed Meter Charge	Estimated Revenue
				Customer Component	Capacity Component		
3/4 inch	1.00	12,430	12,430	$1.31	$13.10	$14.41	$ 2,149,736
1 inch	1.00	6,768	6,768	$1.31	$13.10	$14.41	1,170,508
1.5 inch	2.00	1,712	3,424	$1.31	$26.21	$27.52	565,309
2 inch	3.20	1,190	3,808	$1.31	$41.94	$43.24	617,505
3 inch	6.40	84	538	$1.31	$83.87	$85.18	85,859
4 inch	10.00	1	10	$1.31	$131.05	$132.35	1,588
6 inch	20.00	4	80	$1.31	$262.09	$263.40	12,643
8 inch	32.00	0	0	$1.31	$419.35	$420.66	-
10 inch	84.00	0	0	$1.31	$1,100.79	$1,102.10	-
12 inch	106.00	0	0	$1.31	$1,389.10	$1,390.41	-
Total		**22,189**	**27,058**				**$ 4,603,148**

5.2 Comparison of Monthly Water Bills

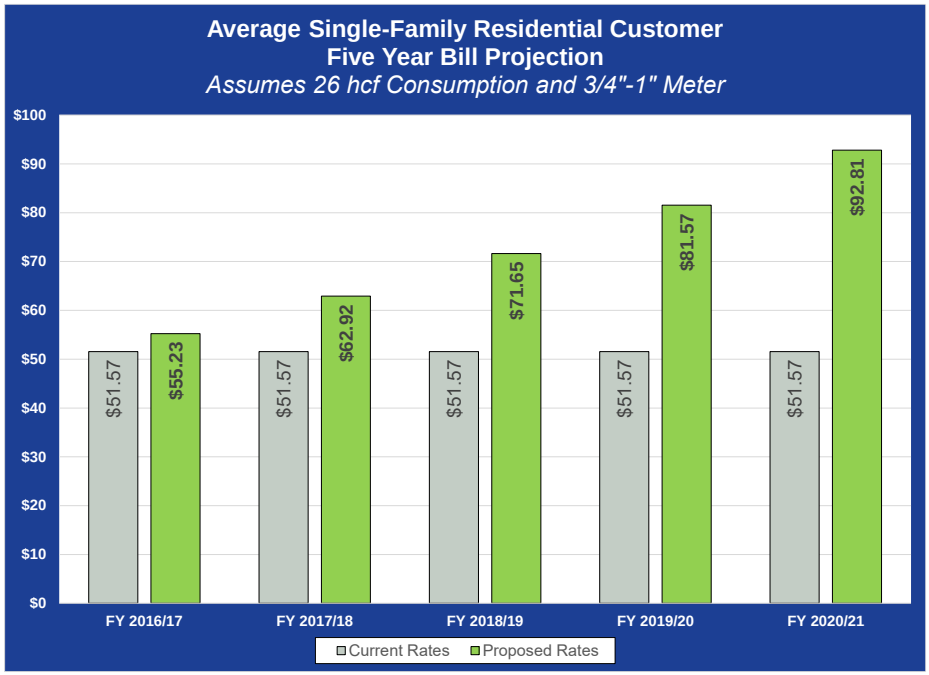
We will prepare an analysis of monthly water bills for various types of customers (meter sizes) with low-, average-, and high-water usage under each rate alternative evaluated in the study. This analysis is useful when evaluating the effects of different rate structures on customers, as illustrated in **Figure 8**.

Figure 8. Example of Monthly Bill Comparison



Five-Year Rate Schedule – We will provide the Agency with a rate schedule that includes proposed rates for the next five years. We will also provide a projection of the typical bill for the five-year period, as illustrated in **Figure 9**.

Figure 9. Example of Monthly Bill Projection



5.3 Prepare Conservation/Drought Rates

To address the symbiotic relationship between water conservation and rate revenue, NBS will update the volumetric drought rates (surcharges) for various levels of conservation. "Conservation rates" are often prepared in conjunction with more severe stages of mandated conservation, such as those outlined in an adopted water shortage contingency plan. These rates can be used to both encourage conservation and ensure revenue stability during more severe drought stages.

NBS will update the drought rates to account for supply costs and changes in the costs of energy, chemicals, etc. **Figure 10** illustrates how the key factors are incorporated into a process that calculates the volumetric rates at various conservation stages. **Figure 11** then shows the resulting volumetric rates for each conservation stage.

Figure 10. Example: Calculating Volumetric Drought Rates

Conservation Goal	Water Consumption (hcf/yr.)	Baseline Rev. Req't from Vol. Charges	Cost Reduction Due to Conservation (1)	Target Rev. Req't from Vol. Charges	Drought Surcharge *($/hcf)*	Uniform Commodity Rates *($/hcf)*
10%	10,326,232	$ 18,013,538	$ (829,195)	$ 17,184,343	$0.09	$1.66
20%	9,178,873	$ 18,013,538	$ (1,658,390)	$ 16,355,148	$0.21	$1.78
30%	8,031,514	$ 18,013,538	$ (2,487,585)	$ 15,525,953	$0.36	$1.93
40%	6,884,155	$ 18,013,538	$ (3,316,780)	$ 14,696,758	$0.56	$2.13
50%	5,736,796	$ 18,013,538	$ (4,145,975)	$ 13,867,563	$0.85	$2.42
60%	4,589,436	$ 18,013,538	$ (4,975,170)	$ 13,038,368	$1.27	$2.84

Figure 11. Example: Drought Rates by Conservation-Stage

Drought Rate Schedule	FY 2016/17		FY 2017/18		FY 2018/19		FY 2019/20		FY 2020/21	
Uniform Rate, all customers	$1.57		$1.72		$1.89		$2.08		$2.28	
Water Consumption Baseline (hcf/yr)	11,473,591 hcf (2)		11,578,738 hcf		11,683,886 hcf		11,789,033 hcf		11,894,181 hcf	
Conservation Target	*Drought Surcharge*	*Drought Rate*	*Drought Surcharge*	*Drought Rate*	*Drought Surcharge*	*Drought Rate*	*Drought Surcharge*	*Drought Rate*	*Drought Surcharge*	*Drought Rate*
10% Conservation	$0.09	$1.66	$0.10	$1.82	$0.12	$2.01	$0.14	$2.22	$0.16	$2.44
20% Conservation	$0.21	$1.78	$0.22	$1.94	$0.28	$2.17	$0.32	$2.40	$0.37	$2.65
30% Conservation	$0.36	$1.93	$0.38	$2.10	$0.48	$2.37	$0.55	$2.63	$0.63	$2.91
40% Conservation	$0.56	$2.13	$0.59	$2.31	$0.74	$2.63	$0.85	$2.93	$0.98	$3.26
50% Conservation	$0.85	$2.42	$0.88	$2.60	$1.11	$3.00	$1.28	$3.36	$1.46	$3.74
60% Conservation	$1.27	$2.84	$1.31	$3.03	$1.66	$3.55	$1.92	$4.00	$2.20	$4.48

As previously mentioned, "revenue stabilization" rates would be an alternative to drought rates. The concept of these rates is very simple: whenever volumetric rate revenue falls 10 percent or more behind projected monthly revenues, a volumetric rate surcharge is implemented and remains in place until volumetric revenues are back to normal. This disconnects the revenue shortfall issues from any formal drought stage and, if implemented as designed, would require no Board action (i.e., surcharges would automatically be implemented). A key aspect of this mechanism is that it may be triggered by any event that results in revenue shortfalls (e.g., weather, natural disasters, asset failures, etc.).

Figure 12 shows an example of revenue stabilization rates adopted for the San Lorenzo Valley Water District and includes several levels of volumetric rate revenue shortfalls.

Figure 12. Example: Revenue Stabilization Rates

Water Rate Schedule	Proposed Revenue-Stabilization Volumetric Rates				
	FY 2017/18	FY 2018/19	FY 2019/20	FY 2020/21	FY 2021/22
Volumetric Charges for All Water Consumed					
Flat Rate (Uniform Rate)	**$10.12**	$10.83	$11.48	$12.06	$12.66
Revenue Stabilization Rates for All Water Consumed					
10%	**$11.14**	$11.91	$12.63	$13.26	$13.92
15%	**$11.64**	$12.46	$13.20	$13.86	$14.56
20%	**$12.15**	$13.00	$13.78	$14.47	$15.19

TASK 6. SEWER RATE ANALYSIS

Task Objectives: Review existing charges and develop updated fixed charges for sewer customers.

Deliverables: This analysis will provide results and work products similar to those for the water rate analysis, including a comprehensive financial plan and updated sewer rates. The Agency's current cost-allocation on an Equivalent Dwelling Unit (EDU) basis is a reasonable approach and we do not anticipate changing this process and, therefore, no rate design task is needed.

6.1 Financial Plan & Cost-of-Service Analysis

Financial Plan – NBS will rely on the Agency's annual budgets to segregate sewer-related costs into a financial plan that projects revenues and expenditures to determine the annual revenue requirements collected through fixed sewer charges.

Cost-of-Service Analysis – Since Desert Water Agency only provides sewer collection services to customers (treatment is handled by other agencies), sewer collection-transmission costs are allocated to customer classes will be based on Equivalent Dwelling Units (EDUs).

The key to this cost-allocation process will be accurately calculating the number of EDUs and how they are assigned to residential, commercial, and other customer classes. Typically, average winter water use records are used to establish reasonable estimates of flows from typical customer classes. Since the Agency's sewer-related costs only include collection and transmission system assets, strength-related differences in effluent between customer classes will be excluded. However, there are minor "customer-related" costs reflecting billing and administrative costs that will be reviewed. An example of how revenue requirements by customer class are determined is shown in **Figure 13** below.

Figure 13. Example: Allocation of Sewer Revenue Requirements to Customer Classes

Customer Class	Total Revenue Requirement	% of Total Revenue Requirement	No. of EDUs	Monthly Fixed Charge Per EDU
Residential	$ 107,428	51.5%	1,670	**$5.36**
Condo	$ 19,106	9.2%	297	**$5.36**
Commercial	$ 77,194	37.0%	1,200	**$5.36**
Public Authority	$ 4,825	2.3%	75	**$5.36**
Total	**$ 208,553**	**100%**	**3,242**	**$5.36**

TASK 7. RECYCLED WATER RATE ANALYSIS

Task Objectives: Review existing rate structure and update recycled water rates based on the most current data available.

Deliverables: Document the projected revenue requirements to be collected from recycled water customers, analyze fixed and volumetric costs along with customer data (e.g., meter sizes and consumption records), and determine how those costs are used to update recycled water rates.

7.1 Financial Plan, COSA and Rate Design

Financial Plan – Similar to the sewer financial plan, the recycled water related costs will be segregated into a financial plan that projects the annual revenue requirements for the recycled water system.

Cost-of-Service Analysis – Recycled water costs and rates are similar to potable water costs and rates in many ways, such as the need to recover both fixed and variable costs. However, there are a very limited number of recycled water customers with much larger meter sizes than a typical potable water system. As a result, NBS proposes to review the current rate design and consider whether there are improvements that might better allocate costs to support the long-term financial health of the recycled water system.

NBS will work cooperatively with Agency staff to review and consider potential improvements. Based on these discussions, NBS will update current recycled water rates and provide clear documentation of these results.

Rate Design Analysis – The key characteristic in reviewing recycled water rate structure alternatives is

how costs are split between fixed and variable (i.e., volumetric) costs. Assuming the current rate design is well-accepted and can provide sufficient annual revenues, we would not anticipate significant changes to the recycled water rate structure. However, we will conduct a review to see if adjustments might be advisable.

TASK 8. PREPARE A WRITTEN STUDY REPORT & BILL ESTIMATORS

Task Objectives: Prepare draft and final reports that are concise and easy for the Board and public to follow.

Task Deliverables: Draft and Final Reports for review by Agency Staff that include our final recommendations for the financial plans and proposed rates. Sufficient information will be provided in the report for Staff, the Board, and the public to review and understand the study.

8.1 Study Reports

We will prepare draft and final rate study reports that include proposed rates for the next five years, although the financial models will cover a 20-year period. An executive summary and introduction will present the purpose of the report and results of the study. Tables, graphs, and charts will be used as appropriate, but the emphasis will be on providing a clear, concise, and understandable report that will provide the Agency with a thorough administrative record that addresses:

- Findings and recommendations.
- Overall study methodology, with reference to AWWA M1 Manual and industry standards as needed.
- Five-year financial plan, including a revenue and expense projection.
- Description of the capital improvement program, as provided by the Agency.
- Supporting justification in the form of calculation tables that a judge and general public could easily understand.
- Appropriate figures and tables summarizing key aspects and results of the study.
- Proposed water rate structure based on cost-of-service principles, including meeting the following criteria:
  - ✓ Providing adequate revenue from rates.
  - ✓ Adopting new rates that are both defensible and equitable across customer classes.
  - ✓ Including a multi-year rate adjustment schedule using a clearly defined inflationary formula that does not exceed the cost of service.

We will provide an electronic copy of the draft report in Microsoft Word format that includes the preliminary results of the study and alternative rates for the Agency's review and comment. Once we receive the Agency's comments,[1] we will incorporate those comments into a final report and provide the Agency with an electronic copy along with ten (10) printed copies.

[1] We assume the Agency's comments will be returned to NBS in the electronic Word file using track-changes mode, and that Agency staff will resolve any of their internal differences prior to returning this file.

8.2 Prepare Bill Estimator (Water Only)

Bill Estimator Tool – NBS will developed and provided a water bill calculator for the Agency. In the simplest case, water bills include a fixed monthly charge and a volumetric rate, the customer would need to input their meter size and monthly consumption unless there was a link to that data. While the rate components are very simple, we will discuss with District staff other alternatives, such as providing a link to the customer's parcel and/or water consumption.

An example of this is a customer portal and parcel-map locator to provide access to parcel-level information about the water services that NBS provided to Santa Clara Valley Water District (see https://www.civicmic.com/scvwd/). This type of information could include a link to the rate schedule and to the bill estimator, with options for calculating water bills based on the customer's current monthly consumption or 12-month average monthly water use, and possibly an option for calculating a bill for each of the next five years.

TASK 9. MEETINGS AND PRESENTATIONS

9.1 Meetings with Agency Staff

Task Objectives: Facilitate the study by reviewing the study progress and initial results with Agency staff.

Task Deliverables: Provide regular remote meetings with Agency Staff to review work products and study progress.

In addition to the kick-off meeting in Task 1, NBS proposes to have progress meetings with Agency staff at key milestones throughout the study to review initial work products and gather input from Staff on the direction of the study. These meetings are planned to be remote via GoToMeeting, Zoom, Teams, or a similar format. We also expect to have regular phone conversations with Agency staff to discuss how the study is proceeding, get input from Staff, and, prior to the public meetings, to review and discuss the study's initial results and work products.

9.2 Board Presentations

Task Objectives: Effectively communicate the draft and final rate study results to the Board of Directors.

Task Deliverables: Provide two (2) on-site presentations of the draft and final study report to the Board of Directors.

9.3 Community Outreach Workshops

Task Objectives: Assist the Agency in effectively communicating the rate study methodology and results as well as answer any questions. This is an important aspect necessary to implement the proposed new rates and study recommendations. This will involve developing a communication strategy, including workshop schedules, at the beginning of the study.

Task Deliverables: Provide two (2) on-site workshops with the public as requested.

NBS will plan to provide one to two public workshops with the public to discuss the study results, receive input, and respond to questions. We will prepare material for these workshop(s), including PowerPoint presentations.

Desert Water Agency

Water, Reclaimed Water and Wastewater Cost of Service Study

Exhibit B – NBS' Fee Schedule and Timeline

FEE SCHEDULE

Budget

Our detailed project budget is shown below and reflects our understanding of the Agency's study objectives.

DESERT WATER AGENCY Water, Recycled Water and Sewer Rate Study					
Rate Study Tasks	Consultant Labor (Hours)			Grand Totals	
	Project Manager (Clumpner)	Senior Review (Highstreet)	Analysts (Bou, Taylor)	Consultant Labor (Hrs.)	Consultant Costs ($)
Hourly Rate	*$250*	*$250*	*$175*		
Task 1 – Kick-off Meeting & Data Collection	6.0	2.0	16.0	24.0	$4,800
Task 2 – Review of Current Rates and Policies	8.0	2.0	-	10.0	$2,500
Task 3 – Financial Plan and Rev. Reqts. *(Water only)*					
3.1 – Financial Plan and Rev. Reqts.	6.0	-	30.0	36.0	$6,750
Task 4 – Cost of Service Analysis *(Water only)*					
4.1 – Analysis of Consumption by Customer Class	2.0	-	20.0	22.0	$4,000
4.2 – Cost of Service Analysis	16.0	2.0	40.0	58.0	$11,500
Task 5 – Rate Design Analysis *(Water only)*					
5.1 – Calculate Fixed and Volumetric Water Rates	10.0	2.0	40.0	52.0	$10,000
5.2 – Comparison of Monthly Water Bills	1.0	-	12.0	13.0	$2,350
5.3 – Update Conservation/Drought Rates	2.0	1.0	10.0	13.0	$2,500
Task 6 – Update Sewer Rate Analysis					
6.1 – Update Sewer Rate Analysis[1]	8.0	2.0	20.0	30.0	$6,000
Task 7 – Update Recycled Water Rate Analysis					
7.1 – Update Recycled Water Rate Analysis[2]	8.0	2.0	20.0	30.0	$6,000
Task 8 – Prepare Written Study Reports & Bill Estimator					
8.1 – Prepare Written Study Reports	22.0	2.0	8.0	32.0	$7,400
8.2 – Prepare Bill Estimator (Water only)[3]	*TBD*	*TBD*	*TBD*	-	$5,000
Task 9 – Meetings and Presentations					
9.1 – Meetings with District Staff (remote)	16.0	2.0	12.0	30.0	$6,600
9.2 – Board Presentation (assume two on-site meetings)	20.0	-	4.0	24.0	$5,700
9.3 – Public Outreach Workshops (assume two on-site)	20.0	-	4.0	24.0	$5,700
Task Totals	**145.0**	**17.0**	**236.0**	**398.0**	**$86,800**
Reimbursable Expenses[4]					$2,000
GRAND TOTAL NOT TO EXCEED	**145.0**	**17.0**	**236.0**	**398.0**	**$88,800**
Additional Cost of On-Site vs. Remote Meeting (one)	*12.0*	-	-	*12.0*	*$3,000*

1. Includes preparation of updated financial plan and fixed sewer charges per EDU.

2. Includes preparation of updated financial plan and fixed and volumetric recycled water rates.

3. Staff will include NBS' CivicMic services.

4. Estimated travel expenses for Greg Clumpner to attend four (4) on-site meetings/presentations. Direct costs (no markups).

We also note that tasks are limited to the hours shown in this table, and additional alternatives for rate design, capital improvement cost scenarios, meetings, or similar tasks are not included and would require additional budget at these labor rates. All new tasks would be mutually agreed upon by NBS and the Agency prior to

proceeding. The work as stated will be performed on a time and materials basis, at the hourly labor rates shown in the table below with a not to exceed fee of **$88,800**.

EXPENSES

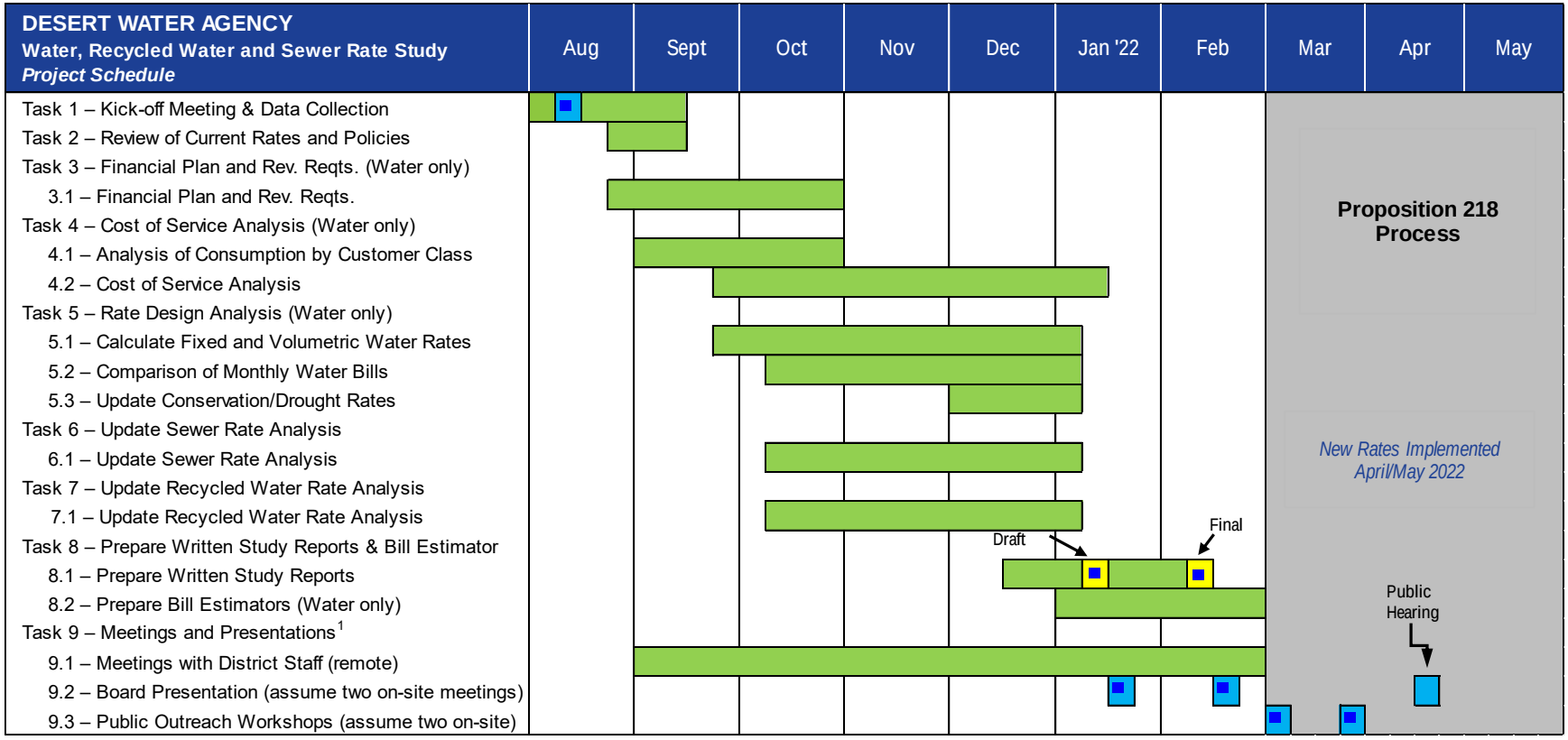
Customary out-of-pocket expenses will be billed to the Client at actual cost to the Consultant. These expenses include and are limited to travel (e.g., mileage, hotel, meals, air travel, etc.).

TERMS

Services will be invoiced monthly as tasks are completed. Expenses will be itemized and included in the next regular invoice. Payment shall be made within 30 days of submittal of an invoice.

PROJECT TIMELINE

The following is an overview of our proposed project schedule based on the schedule the Agency presented in the RFP. We will discuss the details of the proposed schedule at the kick-off meeting, along with the expected timing for individual tasks. However, if the Agency intends to adopt new rates as of January 2022, we can discuss accelerating this schedule to meet that target date.



1. Meetings and presentations are estimated and will be scheduled as needed. The number of meetings and presentations can be adjusted as Agency staff sees necessary.

Active task work
Draft and Final Reports
Meeting or Presentation (estimated, to be scheduled as needed)

STAFF REPORT
TO
DESERT WATER AGENCY
BOARD OF DIRECTORS

AUGUST 3, 2021

RE: APPROVAL TO ENTER INTO COST SHARE AGREEMENT WITH COACHELLA VALLEY WATER DISTRICT FOR GLOBAL POSITIONING SYSTEM SURVEYING AND INTERFEROMETRIC SYNTHETIC APERTURE RADAR TO ASSESS LAND SUBSIDENCE IN THE COACHELLA VALLEY

The Coachella Valley Water District (CVWD) has contracted with the U.S. Geological Survey (USGS) to perform a subsidence study in the Coachella Valley during the period between July 1, 2021 and June 30, 2025 as part of their cooperative water-resources program. The Cost of the proposed cooperative water-resources program is $582,458. Of this amount the USGS will contribute $98,221 subject to the availability of Cooperative Matching Funds (CMF). The study includes the entire area within Desert Water Agency's (DWAs) boundaries overlying the Indio and Mission Creek Subbasins.

Declining groundwater levels can contribute to or induce land subsidence in aquifer systems. Results from prior USGS investigations indicate as much as 2 feet of subsidence occurred along the southwest margin of the Coachella Valley between 1995 and 2017. Land-surface elevation changes in the Mission Creek Subbasin have not previously been studied. Land-surface-elevations in the Desert Hot Springs Subbasin are not being studied at this time because of the limited pumping in the subbasin. The subbasin is designated as a very low priority subbasin under the Sustainable Groundwater Management Act regulations and is therefore excluded from this investigation.

The objective of this study in the Indio Subbasin is to detect and quantify land subsidence using GPS methods (2015-22) and Interferometric Synthetic Aperture Radar (InSAR) methods (2017-23), evaluate the relation between changes in land-surface elevation and groundwater levels at selected sites during 2015-23 and provide technical assistance to the development of subsidence simulation capabilities for an existing numerical groundwater flow model.

The objective in the Mission Creek Subbasin is to assess land-surface elevations during 2015-2021 using available InSAR or other survey data, develop a subsidence monitoring plan, detect and quantify land subsidence and evaluate the relation between changes in land-surface elevation and groundwater levels at selected sites.

This is of scientific interest at this time as California has implemented the Sustainable Groundwater Management Act (SGMA), which stipulates management of land subsidence.

Fiscal Impact:

CVWD desires the participation of the other Coachella Valley GSA's and Mission Springs Water District (MSWD) and has proposed a cost split amongst the interested parties. In the Indio Subbasin the costs are to be split with the GSAs each paying for an even 4 way split of one-half of the cost and also paying their proportional share of the other one-half of the cost based on each GSAs proportional area.

Agency	FY 2022	FY 2023	FY2024	FY 2025	Total	Cost %
CVWD	$ -	$ 73,574.37	$ 55,144.31	$ 14,770.90	$143,489.58	51%
CWA	$ -	$ 22,658.53	$ 16,982.67	$ 4,548.96	$ 44,190.16	16%
DWA	**$ -**	**$ 26,868.83**	**$ 20,138.30**	**$ 5,394.22**	**$ 52,401.35**	**18%**
IWA	$ -	$ 22,150.28	$ 16,601.73	$ 4,446.92	$ 43,198.93	15%
Totals	$ -	$ 145,252.01	$ 108,867.01	$ 29,161.00	$283,280.02	100%

In the Mission Creek Subbasin the costs are to be split evenly between CVWD, DWA and MSWD.

Agency	FY 2022	FY 2023	FY 2024	FY 2025	Total	Cost %
CVWD	$ 19,173.33	$ 29,839.67	$ 8,252.33	$ 9,720.33	$ 66,985.66	33%
DWA	**$ 19,173.33**	**$ 29,839.67**	**$ 8,252.33**	**$ 9,720.33**	**$ 66,985.66**	**33%**
MSWD	$ 19,173.33	$ 29,839.67	$ 8,252.33	$ 9,720.33	$ 66,985.66	33%
Total	$ 57,519.99	$ 89,519.01	$ 24,756.99	$ 29,160.99	$ 200,956.98	100%

Total Cost impact:

DWA	**FY 2022**	**FY 2023**	**FY 2024**	**FY 2025**	**Total**
Indio SB	$ -	$ 26,868.83	$ 20,138.30	$ 5,394.22	$ 52,401.35
MC SB	$19,173.33	$ 29,839.67	$ 8,252.33	$ 9,720.33	$ 66,985.66
Total	**$19,173.33**	**$ 56,708.50**	**$ 28,390.63**	**$15,114.55**	**$119,387.01**

The source of revenue for this work will be the Agency's General Fund.

Recommendation:
Staff recommends that the Board of Directors approve cost share for the agreement with Coachella Valley Water District for global positioning system surveying and interferometric synthetic aperture radar to assess land subsidence in the Coachella Valley.

Attachments
Attachment #1 – Proposal #2021-11, Cooperator: Coachella Valley Water District.

United States Department of the Interior

U.S. GEOLOGICAL SURVEY
California Water Science Center
6000 J Street, Placer Hall
California State University
Sacramento, California 95819-6129
Phone: (916) 278-3000 Fax: (916) 278-3070
https://www.usgs.gov/centers/ca-water/

June 10, 2021

Mr. Jim Barrett
General Manager-Chief Engineer
Coachella Valley Water District
Post Office Box 1058
Coachella, California 92236

Dear Mr. Barrett:

This letter confirms discussions between our respective staffs the continuation of our cooperative water resources program between the Coachella Valley Water District (CVWD) and the U.S. Geological Survey (USGS). This work is the continuation of the land subsidence study in the Coachella Valley during the agreement period July 1, 2021 through June 30, 2025.

The scope of work (SOW) proposed is enclosed with this letter describing task associated with this agreement.

The cost of the proposed cooperative water-resources program is $582,458.00. Of this total CVWD will contribute $484,237.00 and, subject to the availability of Cooperative Matching Funds (CMF), the USGS will contribute $98,221.00.

Enclosed is a digital version of Joint Funding Agreement (JFA) 21ZGJFA600085410, signed by our agency for your approval. If you are in agreement with proposed program, please return a fully executed JFA to our office via email address iarios@usgs.gov. Work performed with funds from this agreement will be conducted on a fixed-price basis.

If you have any questions concerning the program described in the attached SOW, please contact Michelle Sneed (916) 708-2479 in our Sacramento Office. If you have administrative questions, please contact Irene Rios at (619) 225-6156.

Sincerely,

ERIC REICHARD

Digitally signed by ERIC REICHARD
Date: 2021.06.21 10:35:06 -07'00'

Eric G. Reichard
Director, USGS CA Water Science Center

Enclosures:
SOW
JFA 21ZGJFA6000854510

DRAFT PROPOSAL by the U.S. Geological Survey
for the Coachella Valley Water District, June 2021

Global Positioning System Surveying and Interferometric Synthetic Aperture Radar to Assess Land Subsidence in Coachella Valley, California

Proposal # 2021-11
Cooperator: Coachella Valley Water District
Authors: Michelle Sneed and Justin Brandt

BACKGROUND/INTRODUCTION

The study area is located in the 50-mi long northwest-trending Coachella Valley, an arid desert basin in southeastern California, which extends from the San Gorgonio Pass to the Salton Sea (fig. 1). The valley covers about 440 mi^2 (California Department of Water Resources, 1964) and includes the cities and communities of Palm Springs, Palm Desert, Indio, and Coachella. The valley is bordered by the San Jacinto and Santa Rosa Mountains on the west, the San Bernardino and the Little San Bernardino Mountains on the north, the Cottonwood Mountains and the Mecca Hills on the east, and the Salton Sea on the south (fig. 1). The Coachella Valley is drained primarily by the Whitewater River, which flows into the Whitewater Stormwater Channel and Coachella Valley Stormwater Channel and eventually flows into the Salton Sea (fig. 1). Land-surface elevations vary from more than 10,000 ft above sea level in the San Bernardino and San Jacinto Mountains to more than 230 ft below sea level at the Salton Sea.

Groundwater has been a major source of water supply for the Coachella Valley since the 1920s. Pumping of groundwater resulted in groundwater-level declines as large as 50 feet (ft) by the late 1940s (Brandt and Sneed, 2020). The Coachella Valley Water District (CVWD) has the responsibility for effectively managing the water supply for a large part of the Coachella Valley. The management strategy involves reducing groundwater overdraft and related land subsidence while maintaining a reliable water supply to meet the growing demands of both agricultural and urban water users (Coachella Valley Water District, 2012). Because of concerns that groundwater-

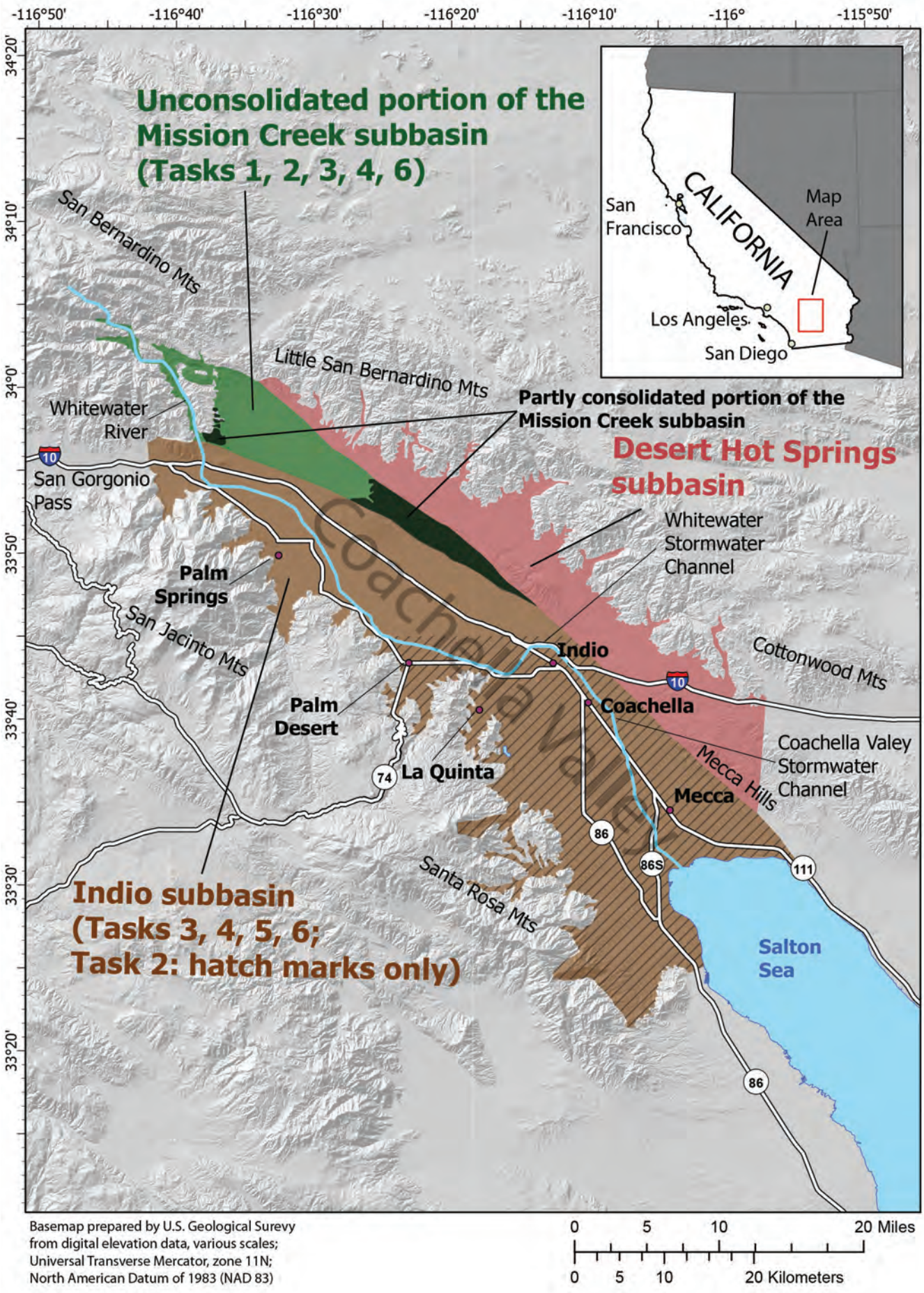


Figure 1. Map showing subbasins, cities, and major roads of the Coachella Valley, California. Subbasins are from the Department of Water Resources (2018), and coverage of partly consolidated areas of Mission Creek subbasin is from Rick Rees, Mission Creek Alternative Plan Update Team (personal communication, March 16, 2021).

level declines could cause land subsidence, the CVWD and the U.S. Geological Survey (USGS) have cooperatively investigated subsidence in the Coachella Valley since 1996. Results of these investigations indicate as much as about 2 ft of subsidence occurred along the southwestern margin of the Coachella Valley between 1995 and 2017.

The Coachella Valley groundwater basin has three subbasins (California Department of Water Resources, 2018): Indio subbasin, which is by far the largest and most developed; Mission Creek subbasin, which is northeast of the Indio subbasin; and Desert Hot Springs subbasin, which is northeast of the Mission Creek subbasin (fig. 1). The groundwater basin consists of unconsolidated to partly consolidated Holocene to Pleistocene alluvial and lacustrine deposits that are more than 2,400 ft thick in parts of the basin (Department of Water Resources, 1964). These deposits consist of an assemblage of gravel, sand, silt, and clay, and tend to be finer grained (contain more silt and clay) in the eastern part of the valley than in the western part because of the greater depositional distance from mountain source rocks, and transition into the lacustrine deposition from ancient Lake Cahuilla.

In the eastern part of the Indio subbasin, the aquifer system consists of an upper aquifer, a confining layer, and a lower aquifer. The thickness of the upper aquifer ranges from about 150 to 300 ft and consists of unconsolidated and partly consolidated silty sands and gravels with interbeds of silt and clay and is separated from the lower aquifer by a confining layer of silt and clay that is 100 to 200 ft thick. The lower aquifer is the most productive source of groundwater in the eastern Coachella Valley; it consists of unconsolidated and partly consolidated silty sands and gravels with interbeds of silt and clay. Available data indicate that the lower aquifer is at least 500 ft thick and may be as much as 2,000 ft thick (California Department of Water Resources, 1964, 1979). In the western part of the Indio subbasin and the Mission Creek subbasin, the confining layer is absent such that the aquifer system is not subdivided and is considered a single aquifer throughout its thickness (California Department of Water Resources, 1964, 1979). The Desert Hot Springs subbasin is not described here because it is not included in this proposed study.

PROBLEM

Declining groundwater levels can contribute to or induce land subsidence in aquifer systems

Galloway and others, 1999). Results of the cooperative investigations indicated that the geology and groundwater-level declines in parts of the Indio subbasin resulted in aquifer-system compaction and subsequent land subsidence that damaged infrastructure (Sneed and others, 2001; 2002; 2014; Sneed and Brandt, 2007; 2020). Results of the investigations also indicated that as water-resource management actions that reduced reliance on the groundwater resource were implemented, groundwater levels increased, and land subsidence rates decreased. Global Positioning System (GPS) survey and Interferometric Synthetic Aperture Radar (InSAR) results indicate that subsidence rates in parts of the Indio subbasin generally had increased from 2000 to mid-2009 compared to earlier periods (Sneed and other, 2014). In mid-2009, in the eastern part of the Indio subbasin which began to be replenished by a managed aquifer recharge facility through spreading ponds, cessation of subsidence began to be observed (Sneed and others, 2014). By 2017, subsidence throughout the eastern part of the Indio subbasin had slowed or stopped (Sneed and Brandt, 2020). InSAR results indicate that the western part of the Indio subbasin uplifted small amounts during 2014–17 (this part of the subbasin was not assessed for subsidence prior to this period). The relation between geology, groundwater levels, and land-surface-elevation changes in the Mission Creek subbasin have not been previously studied and is of concern to CVWD, so is included in this proposal. The relation between geology, groundwater levels, and land-surface-elevation changes in the Desert Hot Springs subbasin is not of concern to CVWD because there is limited pumping in this subbasin and it is not a medium or high priority basin under Sustainable Groundwater Management Act regulations (Zoe Rodriguez del Rey, CVWD, written communication, May 11, 2021). Therefore, study of the Desert Hot Springs subbasin is excluded from this proposal. Continued monitoring of land subsidence in the Indio subbasin is needed to determine the effects of different water-resource scenarios in supply and demand, climate variability, and management actions on future land subsidence, such as projected increases in water demand, changes in land use, complex water transfers, water conservation, managed aquifer recharge, and source substitution. Initial assessment of subsidence and development of a subsidence monitoring plan for the Mission Creek subbasin is needed to begin understanding land subsidence there.

OBJECTIVES and SCOPE

the Indio subbasin, the objectives of this study are to (1) detect and quantify land subsidence using GPS methods (2015–22) and InSAR methods (2017–23), (2) evaluate the relation between changes in land-surface elevation and groundwater levels at selected sites during 2015–23, and (3) provide technical assistance to CVWD and their contractors in the development of subsidence simulation capabilities for an existing numerical groundwater flow model.

For the Mission Creek subbasin, the objectives of this study are to: (1) assess land-surface elevations during 2015–21 using available InSAR or other survey data, (2) develop a subsidence monitoring plan, (3) detect and quantify land subsidence as stipulated in the previously developed monitoring plan, and (4) evaluate the relation between changes in land-surface elevation and groundwater levels at selected sites as stipulated in the previously developed monitoring plan.

RELEVANCE and BENEFITS

In some areas of the Indio subbasin within the Coachella Valley, groundwater levels have recently been relatively stable or have risen after decades of persistent declines, and subsidence was slowed or arrested. These changes were related to water-resource management actions documented in previous USGS subsidence studies. The benefits of this study are to continue to improve our understanding about the relation between groundwater levels and land-surface-elevation changes during 2015–23 in the Indio subbasin. This study facilitates the continued examination of the rare case study of longer-term groundwater-level increase and subsidence cessation in the Indio subbasin and the initial subsidence assessment in the Mission Creek subbasin. This information can be used to effectively manage the water resources and related land subsidence and develop a greater understanding of subsidence and the geology of the Coachella Valley. This is of scientific and societal interest at this time as California has implemented the Sustainable Groundwater Management Act (SGMA), which stipulates management of land subsidence (State of California Water Code Section 10721). The study will address two USGS goals (Evenson and others, 2013): “Provide society the information it needs regarding the amount and quality of water in all components of the water cycle at high temporal and spatial resolution through the advancement of hydrologic monitoring networks and techniques,” and “Deliver timely hydrologic data, analyses, and decision-support tools seamlessly across the Nation to support water-resource decisions.”

APPROACH

The study will consist of six tasks:

1. Analyze available hydrogeologic and geodetic data for the unconsolidated part of the Mission Creek subbasin to:
    a. assess land-surface elevation conditions for 2015 through 2021, and
    b. develop a subsidence monitoring plan, which may include the installation of survey monuments;
2. Conduct and analyze the results of high-precision GPS surveys in 2022 to:
    a. determine the extent and magnitude of the changes in ellipsoid height between 2015 and 2022 at selected geodetic monuments in the Indio subbasin, and
    b. establish ellipsoid height at selected geodetic monuments for the unconsolidated part of the Mission Creek subbasin if stipulated in the monitoring plan developed in Task 1b;
3. Analyze California Department of Water Resources (DWR)-provided InSAR results to compute changes in land-surface elevation in the:
    a. Indio subbasin during 2017–23, and
    b. unconsolidated part of the Mission Creek subbasin if stipulated in the monitoring plan developed in Task 1b

    If InSAR results provided by DWR are determined to be insufficient for any reason as Task 3 is carried out, the CVWD and USGS may amend this agreement to obtain the InSAR results elsewhere;
4. Analyze relation between changes in groundwater levels and land-surface elevation changes near selected geodetic monuments and other sites of interest to CVWD in the:
    a. Indio subbasin during 2015–23, and
    b. unconsolidated part of the Mission Creek subbasin if stipulated in the monitoring plan developed in Task 1b;
5. Provide technical assistance to CVWD and their contractors to add subsidence simulation capabilities to an existing numerical groundwater flow model of the Indio subbasin; and
6. Document results of groundwater-level and land-surface-elevation changes between 2015 and 2023 in the Indio subbasin; and the results of the assessment, monitoring plan, and any data collection

or journal article.

Analyze available hydrogeologic and geodetic data for the unconsolidated part of the Mission Creek subbasin (Task 1)

The USGS will analyze available hydrogeologic and geodetic data for the unconsolidated part of the Mission Creek subbasin to (a) assess land-surface elevation conditions in the Mission Creek subbasin for 2015 through 2021, and (b) develop a subsidence monitoring plan for the Mission Creek subbasin based on the results from (a). The assessment will involve review of existing land-subsidence information for the Mission Creek subbasin including 1) available InSAR interferograms provided by the USGS, the DWR, and others, 2) publicly available continuous GPS measurements from the University Navstar Consortium, Scripps Orbit and Permanent Array Center, and the Nevada Geodetic Laboratory at University of Nevada Reno, 3) available lithologic and geophysical logs from the DWR, the CVWD, and others, and 4) available groundwater-level data from the DWR, the CVWD, and others.

If the assessment indicates that subsidence has not been documented or determined, and the geologic conditions are not conducive to subsidence, the study may indicate that monitoring of subsidence in the subbasin could be accomplished by examining periodic InSAR results before embarking on more costly measures. Furthermore, this proposal assumes that suitable InSAR results will be available from the DWR; however, if suitable InSAR results are not available from the DWR, the USGS and the CVWD may amend this agreement, which may include the USGS processing InSAR data to produce suitable results in-house, or another mutually agreed upon option.

If the assessment indicates that subsidence has occurred and/or the geologic conditions are conducive to subsidence, the USGS will invoke a 2-pronged approach: 1) develop a subsidence monitoring plan, which may include the design and installation of a monument network for the GPS survey described in Task 2b, and 2) conduct a detailed analysis of land-surface elevation and groundwater-level changes during 2017–23 (Tasks 3b and 4b). The USGS will use the results of the assessment (such as areas of subsidence, locations of clay deposits, and substantial groundwater-level declines) to identify key locations for monuments. The monument network likely will consist

square-mile area. The monument network likely will be a combination of existing and newly constructed monuments. Existing monuments of interest will be identified by the USGS and initially be inspected by the CVWD survey crew by winter of 2021–22 for condition and suitability for GPS surveys. The USGS will inspect the monuments before the network design is finalized. For budget purposes, this study assumes that three existing monuments will be used, and three monuments will be constructed. Depending on site conditions, these monuments will be constructed similar to other deep-seated or surficial monuments previously built in cooperation with CVWD. Based on current knowledge, an environmental evaluation under the National Environmental Protection Act (NEPA) will not be required prior to monument installation because monuments (survey marks) are included as a Categorical Exclusion (CE) according to Department of Interior 43 CFR Part 46.210 and USGS DM Part 516 Chapter 9 (https://www.doi.gov/sites/doi.gov/files/uploads/doi_and_bureau_categorical_exclusions.pdf, accessed: May 12, 2021). If this interpretation is changed, the CVWD will be responsible for the NEPA requirements. CVWD will own the monuments. The new monument construction will occur by late spring 2022 to avoid the stifling heat of Coachella Valley summers for the labor-intensive installation, and to allow ample time for the monuments to set before the GPS survey (Task 2b).

Conduct and analyze the results of high-precision GPS surveys in 2022 (Task 2)

The USGS will conduct high-precision GPS Surveys in 2022 of the (a) existing subsidence monitoring network in the Indio subbasin to determine the extent and magnitude of the changes in ellipsoid heights between 2015 and 2022 (Sneed and others, 2001; 2002; 2014; Sneed and Brandt, 2007; 2020), and (b) newly established subsidence monitoring network in the unconsolidated part of the Mission Creek subbasin to establish ellipsoid heights, if stipulated in the monitoring plan developed in Task 1b. The two surveys will not be linked (will not share common monuments) due to the large distance between the networks. In winter or early spring 2022, field visits by the CVWD survey crew will be made to determine the suitability of the Indio subbasin geodetic monuments for use in the GPS Survey (monuments are often damaged or destroyed). Monument replacements will be selected or constructed as necessary soon after to avoid the stifling heat of

monuments to set before the GPS survey. In the weeks leading up to the surveys, the Indio and the Mission Creek subbasin monuments will be visited by the CVWD survey crew to inspect and mark/flag the monuments for efficiency of locating the monuments during the surveys. Changes in ellipsoid heights at the 24 geodetic monuments that were surveyed in 2015 in the Indio subbasin will be determined for the period 2015 to 2022 (dependent on suitability in 2022). Ellipsoid heights (relative to the GPS satellite reference frame) measured at geodetic monuments in 2015 will be compared with the ellipsoid heights measured in the 2022 GPS survey; these results will be put into context with the results from previous surveys. For the newly established network in the Mission Creek subbasin, ellipsoid heights will be determined at the monuments in 2022 which can be used for comparison with ellipsoid heights determined from future GPS surveys. Additionally, the horizontal components of the GPS data will be analyzed, which may elucidate vertical change between the monuments. If the horizontal motion of a monument is inconsistent with the northwest movement of the Pacific plate with respect to the North American plate, then the horizontal motion can be attributed to another mechanism such as nearby subsidence (Bawden and others, 2001). The GPS data will reside redundantly on regularly backed-up servers and made publicly available via a ScienceBase data release near the end of the project.

Analyze California Department of Water Resources (DWR)-provided InSAR results to compute changes in land-surface elevation during 2017–23 (Task 3)

The USGS will analyze DWR-provided InSAR results to compute changes in land-surface elevation in the (a) Indio subbasin during 2017–23, and (b) unconsolidated part of the Mission Creek subbasin, if stipulated in the monitoring plan developed in Task 1b. InSAR is a satellite-based remote sensing technique that can detect centimeter level ground-surface deformation over hundreds of square miles at a spatial resolution (pixel size) of 295 feet or better (Galloway and others, 2000). Synthetic Aperture Radar (SAR) imagery is produced by reflecting radar signals off a target area and measuring the two-way travel time back to the satellite. InSAR uses two or more SAR scenes of the same area taken at different times and “interferes” (differences) them, resulting in maps called interferograms that show relative ground-elevation change (range change) between the two times.

Department of Water Resources, 2021) and used to create time series of land-surface elevations to temporally extend the subsidence history of the Indio subbasin (Sneed and others, 2001; 2002; 2014; Sneed and Brandt, 2007; 2020), and to establish a subsidence history of the unconsolidated part of the Mission Creek subbasin (if stipulated in Task 1b). The European Space Agency's (ESA) Sentinel-1 satellite constellation (2 operational satellites and 2 more planned satellites) has thus far been the source of DWR-provided InSAR datasets and also were used for the bulk of the most recent USGS subsidence analyses in the Coachella Valley (Sneed and Brandt, 2020). The Sentinel-1 satellite constellation is expected to remain viable based on the constellation redundancy and follow-on plan to replace satellites at end of life (European Space Agency, 2021). We expect to obtain the interferograms for 2017 through 2023 from the DWR at no cost (Benjamin Brezing, California Department of Water Resources, personal communication, May 11, 2021). If suitable interferograms are not available from the DWR for 2017–23, the USGS and the CVWD may consider amending our agreement to either obtain interferograms from other providers or process the data in-house using established methods.

Analyze relation between changes in groundwater levels and land-surface elevation changes near selected geodetic monuments and other sites of interest to CVWD (Task 4)

The USGS will analyze the relation between changes in groundwater levels and land-surface elevation near selected geodetic monuments and other sites of interest to CVWD in the (a) Indio subbasin, and (b) unconsolidated part of the Mission Creek subbasin, if stipulated in the monitoring plan developed in Task 1b. Selected available groundwater-level data for the Indio and Mission Creek subbasins for 2015–23 will be obtained from CVWD, the DWR, and other agencies to analyze the relation between changes in groundwater levels (stress) and changes in land-surface elevation (strain) at selected sites during this period. Groundwater-level hydrographs will be compared with land-surface-elevation changes to discern the timing (concurrent or residual) as well as the nature (recoverable or permanent) of measured land-surface elevation changes. The results of the analysis for the Indio subbasin will be put into context of results from previous assessments (Sneed and others, 2001; 2002; 2014; Sneed and Brandt, 2007; 2020). This will be the initial such analysis for the Mission Creek subbasin (dependent on the results from Task 1).

Provide technical assistance to CVWD and their contractors to add subsidence simulation capabilities to an existing numerical groundwater flow model of the Indio subbasin (Task 5)

The USGS will provide assistance and guidance in developing and implementing subsidence simulation capabilities in an existing MODFLOW-2005 model (Tyley, 1974; Swain, 1978; Reichard and Meadows, 1992; Fogg and others, 2000), pending CVWD evaluation of the need and value of such capabilities. For example, the subsidence simulation package that is compatible with MODFLOW-2005 is SUB (Hoffmann and others, 2003) and the capabilities of that code and experiences in other USGS models in constructing this package will be used as a guide. The USGS will provide technical assistance regarding construction of the subsidence-related components of the model that may include the geologic model, instantaneous and delayed compaction, parameter bounds (preconsolidation head, vertical hydraulic conductivity, elastic and inelastic storage), and subsidence observations. Reviewing and/or implementing the model itself and its simulation results are beyond the scope of this study.

Document results of groundwater-level and land-surface-elevation changes between 2015 and 2023 in the Indio subbasin; and the results of the assessment, monitoring plan, and any data collection and analysis in the unconsolidated part of the Mission Creek subbasin (Task 6)

The USGS will document the results of Tasks 1-4 in a USGS interpretive report or journal article, with reference to the reports that documented land-surface deformation results for 1996–2015 (GPS) and 1993–2017 (InSAR). The report will be published by June 30, 2025. The GPS data and results will be released through ScienceBase prior to publication of the report. If the InSAR data and results are provided by USGS, the data will be released through Sciencebase prior to the publication of the report. Additionally, written project updates will be provided upon request at intervals no more frequently than quarterly.

QUALITY ASSURANCE/QUALITY CONTROL

The quality assurance and quality control procedures this project will use to guide GPS and InSAR data-collection, processing, and review activities are based on the methods and procedures described in Sneed and others (2001; 2002; 2014) and Sneed and Brandt (2007; 2020). In short, static GPS methods follow National Geodetic Survey guidelines detailed in Zilkowski and others

be quantitatively compared to continuous GPS results for GPS stations geographically included in the InSAR coverage area and properly operating at the time of InSAR data acquisitions.

LABORATORY EVALUATION PLAN

n/a

PRODUCTS

The products that will be produced for this project include a USGS interpretive report or journal article and a USGS Data Release (Task 6).

REFERENCES

Bawden, G.W., Thatcher, W., Stein, R.S., Hudnut, K.W., and Peltzer, G., 2001, Tectonic contraction across Los Angeles after removal of groundwater pumping effects: Nature, v. 412, p. 812-815., https://doi.org/10.1038/35090558.

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TIMELINE

The study will cover a period of 4 years (July 1, 2021–June 30, 2025). The timeline for the major elements of this study are shown in table 1:

Table 1: Timeline for proposed project

		FY21				FY22				FY23				FY24				FY25			
Task	Task Description	Oct-Dec	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Mar	Apr-Jun	Jul-Sep
1	Assess land subsidence conditions, and develop monitoring plan for Mission Creek subbasin				X	X	X	X													
2	GPS Surveys in Indio and Mission Creek subbasins								X	X	X	X									
3	Analyze DWR-provided InSAR Results for Indio and Mission Creek subbasins												X	X	X	X					
4	Analyze Relation between changes in groundwater levels and land surface elevation at selected sites in the Indio and Mission Creek subbasins												X	X	X	X					
5	Provide technical assistance to CVWD and their contractors to add subsidence simulation capabilities to existing MODFLOW-2005 model												X	X	X	X					
6	Document results of Tasks 1-4																X	X	X	X	

PERSONNEL

The study will require a GS-14 hydrologist to supervise the program (Claudia Faunt), a GS-12 hydrologist (Michelle Sneed) and a GS-9 geophysicist (Justin Brandt) to execute the GPS surveys, process and interpret InSAR images, conduct analyses, provide technical support, and prepare the reports. In addition, several hydrologists/technicians will be needed for the GPS survey. The tasks will be conducted by project staff from San Diego and Sacramento. CVWD personnel (survey crew) will inspect and mark monuments in the Indio and Mission Creek subbasins as detailed in Tasks 1 and 2.

BUDGET SUMMARY

The total cost for the 4-year study is estimated to be $582,458. Subject to availability of Federal matching funds, the USGS will provide $98,220 for salaries, travel, and other miscellaneous project expenses. The CVWD would be responsible for providing $484,237 to complete the study. Costs for major study tasks are presented below (table 2). If the land subsidence assessment from Task 1a indicates that subsidence has not been documented or determined, and the geologic conditions are not conducive to subsidence, Tasks 2b, 3b, and 4b will not be performed, which would reduce the total cost of the project by about $133,000. Additionally, this budget assumes that 3 monuments will be built as part of Task 1b. If 6 monuments need to be built, the total cost for this task would increase by approximately $13,000. Costs for InSAR data are not included in this proposal, as we expect to have no-cost access to available InSAR data from the DWR (Benjamin Brezing, California Department of Water Resources, personal communication, May 11, 2021). Please be advised that costs are preliminary for the second, third, and fourth years of the study, as funding structures have not been developed for FFY2022-FFY2025.

Table 2: July 2021-June 2025 Budget

Task	Task Description	Agency	Year 1 July 1, 2021-June 30, 2022	Year 2 July 1, 2022-June 30, 2023	Year 3 July 1, 2023-June 30, 2024	Year 4 July 1, 2024-June 30, 2025	Task total (by agency)	Task total (combined)
1a	Assess subsidence in Mission Creek subbasin	CVWD	$25,322	$0	$0	$0	$25,322	$31,653
		USGS	$6,331	$0	$0	$0	$6,331	
1b	Develop monitoring plan for Mission Creek subbasin	CVWD	$32,198	$0	$0	$0	$32,198	$39,253
		USGS	$7,055	$0	$0	$0	$7,055	
2a	GPS Survey of 24 monuments in Indio subbasin to compute ellipsoid-height changes for 2015-22	CVWD	$0	$145,252	$24,178	$0	$169,430	$199,290
		USGS	$0	$23,816	$6,044	$0	$29,860	
2b	GPS Survey of 6-7 monuments in Mission Creek subbasin to establish elipsoid heights if stipulated in Task 1b	CVWD	$0	$89,519	$16,119	$0	$105,638	$122,700
		USGS	$0	$13,032	$4,030	$0	$17,062	
3a	Analyze DWR-provided InSAR Results for 2017-23 for the Indio subbasin	CVWD	$0	$0	$25,915	$0	$25,915	$32,394
		USGS	$0	$0	$6,479	$0	$6,479	
3b	Analyze DWR-provided InSAR Results for 2017-23 for the Mission Creek subbasin if stipulated in Task 1b	CVWD	$0	$0	$4,319	$0	$4,319	$5,399
		USGS	$0	$0	$1,080	$0	$1,080	
4a	Analyze relation between changes in groundwater levels and subsidence at selected sites in the Indio subbasin for 2015-23	CVWD	$0	$0	$37,282	$0	$37,282	$46,602
		USGS	$0	$0	$9,320	$0	$9,320	
4b	Analyze relation between changes in groundwater levels and subsidence at selected sites in the Mission Creek subbasin if stipulated in Task 1b	CVWD	$0	$0	$4,319	$0	$4,319	$5,399
		USGS	$0	$0	$1,080	$0	$1,080	
5	Provide technical assistance to CVWD and their contractors to add subsidence simulation capabilities to existing MODFLOW-2005 model	CVWD	$0	$0	$21,492	$0	$21,492	$26,865
		USGS	$0	$0	$5,373	$0	$5,373	
6	Document results of Tasks 1-4	CVWD	$0	$0	$0	$58,322	$58,322	$72,903
		USGS	$0	$0	$0	$14,581	$14,581	
Total by Year (CVWD)		CVWD	$57,520	$234,771	$133,624	$58,322	$484,237	
Total by Year (USGS)		USGS	$13,386	$36,848	$33,406	$14,581	$98,221	
GRAND TOTAL BY YEAR (CVWD + USGS)		CVWD + USGS	$70,906	$271,619	$167,030	$72,903	$582,458	
AGREEMENT TOTAL (CVWD + USGS)		CVWD + USGS	$582,458					

Form 9-1366
(May 2018)

U.S. DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

JOINT FUNDING AGREEMENT

Customer #:	6000000845
Agreement #:	21ZGJFA600084510
Project #:	ZG00DQG
TIN #:	95-6000827
Fixed Cost Agreement	YES

FOR

WATER RESOURCES INVESTIGATIONS

THIS AGREEMENT is entered into as of the, 10TH day of JUNE, 2021 by the U.S. GEOLOGICAL SURVEY, UNITED STATES DEPARTMENT OF THE INTERIOR, party of the first part, and the COACHELLA VALLEY WATER DISTRICT (CVWD), party of the second part.

1. The parties hereto agree that subject to availability of appropriations and in accordance with their respective authorities there shall be maintained in cooperation for a cooperative land subsidence study in Coachella Valley herein called the program. The USGS legal authority is 43 USC 36C; 43 USC 50; and 43 USC 50b.

2. The following amounts shall be contributed to cover all of the cost of the necessary field and analytical work directly related to this program. 2(b) includes In-Kind Services in the amount of $0.00 .

   (a) by the party of the first part during the period

Amount	Date	to	Date
$98,221.00	July 1, 2021		June 30, 2025

   (b) by the party of the second part during the period

Amount	Date	to	Date
$484,237.00	July 1, 2021		June 30, 2025

   USGS DUNs is 1761-38857. Total funding in 2(a) and 2(b) above are for this agreement $582,458.00. Total funding amount for USGS is $98,221.00 Total funding amount for CVWD for this agreement is $484,237.00.

   (c) Contributions are provided by the party of the first part through other USGS regional or national programs, in the amount of: $0.00

   Description of the USGS regional/national program:
   No additional contributions

   (d) Additional or reduced amounts by each party during the above period or succeeding periods as may be determined by mutual agreement and set forth in an exchange of letters between the parties.

   (e) The performance period may be changed by mutual agreement and set forth in an exchange of letters between the parties.

3. The costs of this program may be paid by either party in conformity with the laws and regulations respectively governing each party.

4. The field and analytical work pertaining to this program shall be under the direction of or subject to periodic review by an authorized representative of the party of the first part.

5. The areas to be included in the program shall be determined by mutual agreement between the parties hereto or their authorized representatives. The methods employed in the field and office shall be those adopted by the party of the first part to insure the required standards of accuracy subject to modification by mutual agreement.

6. During the course of this program, all field and analytical work of either party pertaining to this program shall be open to the inspection of the other party, and if the work is not being carried on in a mutually satisfactory manner, either party may terminate this agreement upon 60 days written notice to the other party.

9-1366 (Continuation) Customer #: 6000000845 Agreement #: 21ZGJFA600084510

7. The original records resulting from this program will be deposited in the office of origin of those records. Upon request, copies of the original records will be provided to the office of the other party.

8. The maps, records or reports resulting from this program shall be made available to the public as promptly as possible. The maps, records or reports normally will be published by the party of the first part. However, the party of the second part reserves the right to publish the results of this program, and if already published by the party of the first part shall, upon request, be furnished by the party of the first part, at cost, impressions suitable for purposes of reproduction similar to that for which the original copy was prepared. The maps, records or reports published by either party shall contain a statement of the cooperative relations between the parties.
The Parties acknowledge that scientific information and data developed as a result of the Scope of Work (SOW) are subject to applicable USGS review, approval, and release requirements,
which are available on the USGS Fundamental Science Practices website (https://www2.usgs.gov/fsp/).

9. Billing for this agreement will be rendered.
QUARTERLY
Invoices not paid within 60 days from the billing date will bear Interest, Penalties, and Administrative cost at the annual rate pursuant the Debt Collection Act of 1982, (codified at 31 U.S.C. § 3717) established by the U.S. Treasury.

	U.S. Geological Survey **United States** **Department of the Interior**		COACHELLA VALLEY WATER DISTRICT
	USGS Point of Contact		**Customer Point of Contact**
Name:	Irene A. Rios, Budget Analyst	Name:	Jim Barrett, General Manager, Chief Engineer
Address:	4165 Spruance Rd., Suite 200 San Diego, CA 92101	Address:	75-515 Hovley Lane E. Palm Desert, CA 92211
Telephone:	619-225-6156	Telephone:	760-398-2651
Email:	iarios@usgs.gov	Email:	

Signatures and Date

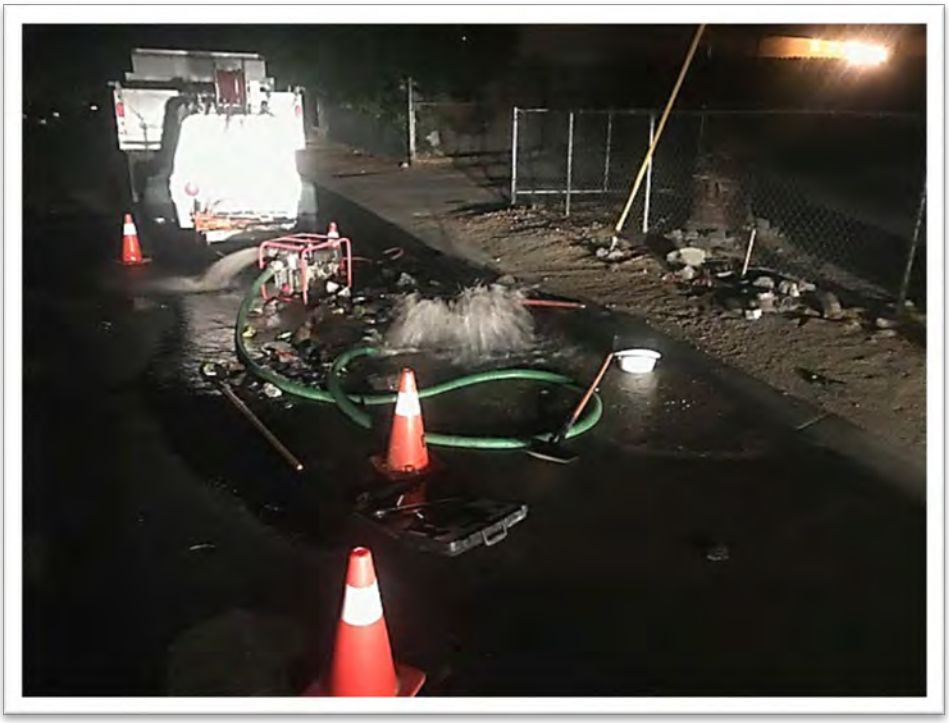
Signature:	Date:	Signature:	Date:
ERIC REICHARD Digitally signed by ERIC REICHARD Date: 2021.06.21 10:36:13 -07'00'			
Name: Eric G. Reichard		Name: J.M. Barrett	
Title: Director, USGS CA Water Science Center		Title: General Manger, CVWD	

GENERAL MANAGER'S REPORT
August 3, 2021

Service Leak – 68777 E. Street, Cathedral City

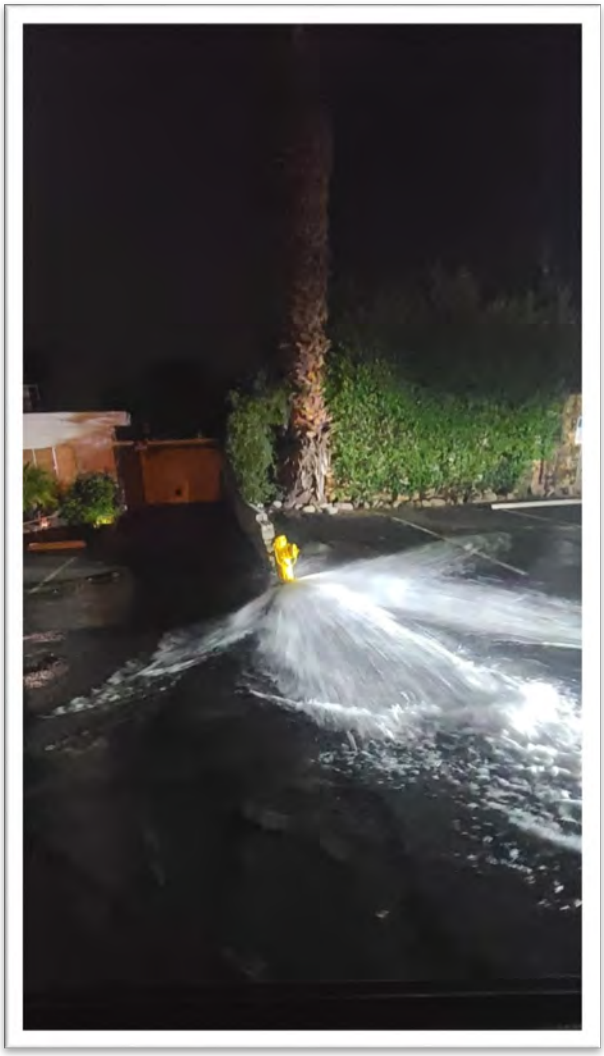
On July 21 at approximately 11:50 p.m., Construction stand-by responded to a leak at 68777 E. St. The PE service line had a split. They attempted to crimp the PE which made the split worse. The split was about 10". Staff had to throttle the water main down and were able to shut off the corp stop and make the repair. There was only a 5-foot section of PE that was connected to the copper line.

Service Leak
(Cont.d)



Damaged Hydrant – 725 San Lorenzo Rd.

On July 22 at approximately 10:30 p.m., Construction stand-by responded to a hit hydrant located in front of 725 San Lorenzo Rd. (Between Random Rd. and Camino Real). Some of the breakaway bolts broke, but staff was able to throttle the valve down and replace the bolts. The water loss was a 6-inch pipe, about halfway open. A police report was filed and the hydrant is back in service.



Union Bank Safety Deposit Box

On June 1, 2021, Agency staff requested board authorization to access and close the Agency's Union Bank safety deposit box. On July 22, General Manager Krause & Finance Director Saenz attended the locksmith opening of the Agency's safety deposit box. It was confirmed the box had no contents and the box has been taken out of the Agency's name.

New State Water Resources Control Board Arrearage Program

On July 22, 2021, Governor Newsom signed a budget trailer bill, AB 148, which established the California Water and Wastewater Arrearage Payment Program in the State Water Resources Control Board (State Board). This program will have $985 million in federal funding from the American Rescue Plan Act (ARPA) to distribute directly to water agencies. The State Board will provide direct payments to community water systems for delinquent water and sewer bill arrearages accrued during the COVID-19 pandemic bill relief period of March 4, 2020 to June 15, 2021.

In the coming months, the State Board will be surveying community water systems to determine the statewide arrearages and water enterprise revenue shortfalls and will hold a special Board meeting in September to adopt a resolution establishing the guidelines for application requirements and reimbursement amounts. Within 14 days of adopting the resolution, the State Board will begin accepting applications. Funds will be available on a first come, first served basis; time will be of the essence. Funds will be prioritized for water with remaining funds, if available, for wastewater.

Distribution of funds is anticipated in October or November of 2021. We are currently auto-enrolling customers in payment plans. If and when the funding is allocated to DWA, we would reduce payment plans accordingly.

Updated CDC Mask Guidance

On July 27, the Centers for Disease Control (CDC) revised their guidance encouraging masking for vaccinated individuals in indoor public spaces in areas with high or substantial Covid-19 transmission. The CDC classifies Riverside County as a high transmission area.

California Department of Public Health (CDPH), Riverside County Public Health, Desert Healthcare District and the City of Palm Springs are also following the updated CDC guidance on masking.

These entities are not mandating vaccinated individuals to wear masks, but are recommending that they do so in indoor public spaces.

Staff is evaluating DWA mask policies for employees and visitors. In line with state mandates, masks are required indoors at DWA facilities only for those employees that have not verified vaccination to Human Resources. Visitors and vendors who are unvaccinated are also asked to wear masks.

SYSTEM LEAK DATA

(PERIOD BEGINNING JUL 13, 2021 THRU JUL 26, 2021)

STREET NAME	NUMBER OF LEAKS	PIPE DIAMETER (INCHES)	YEAR INSTALLED	PIPE MATERIAL	PIPE CONSTRUCTION
AVENIDA CABALLEROS	3	14	1953	STEEL	BARE/UNLINED
WARM SANDS DR	3	4	1946	STEEL	BARE/UNLINED
TERRY LANE	3	4	1956	STEEL	BARE/UNLINED
AMADO RD	2	6	1946	STEEL	BARE/UNLINED
INDIAN CANYON DR	2	6	1951	STEEL	BARE/UNLINED
EAST PALM CANYON	2	6	1955	STEEL	BARE/UNLINED
INDIAN TR	2	3	1935	STEEL	BARE/UNLINED
VISTA CHINO	1	20	1949	STEEL	BARE/UNLINED
MOUNTAIN VIEW PLACE	1	8	1986	STEEL	BARE/UNLINED
E STEVENS RD	1	6	1946	STEEL	BARE/UNLINED
LUGO RD	1	6	1954	STEEL	BARE/UNLINED
THORNHILL RD	1	6	1955	STEEL	BARE/UNLINED
DEL LAGO RD	1	6	1957	STEEL	BARE/UNLINED
ANDREAS RD	1	6	1958	STEEL	BARE/UNLINED
CALLE MARCUS	1	4	1945	STEEL	BARE/UNLINED
CAMINO SAN MIGUEL	1	4	1946	STEEL	BARE/UNLINED
HIGHLAND DR	1	4	1946	STEEL	BARE/UNLINED
N CERRITOS DR	1	4	1946	STEEL	BARE/UNLINED
N RIVERSIDE DR	1	4	1948	STEEL	BARE/UNLINED
INDUSTRIAL PL	1	4	1948	STEEL	BARE/UNLINED
SAN LUCAS RD	1	4	1948	STEEL	BARE/UNLINED
ROSE AVE	1	4	1953	STEEL	BARE/UNLINED
VIA ALTAMIRA	1	4	1954	STEEL	BARE/UNLINED
PATENCIO RD	1	4	1954	STEEL	BARE/UNLINED
BELLAMY RD	1	4	1957	STEEL	BARE/UNLINED
JACQUES DR	1	4	1959	STEEL	BARE/UNLINED
TOTAL LEAKS IN SYSTEM:	**36**				

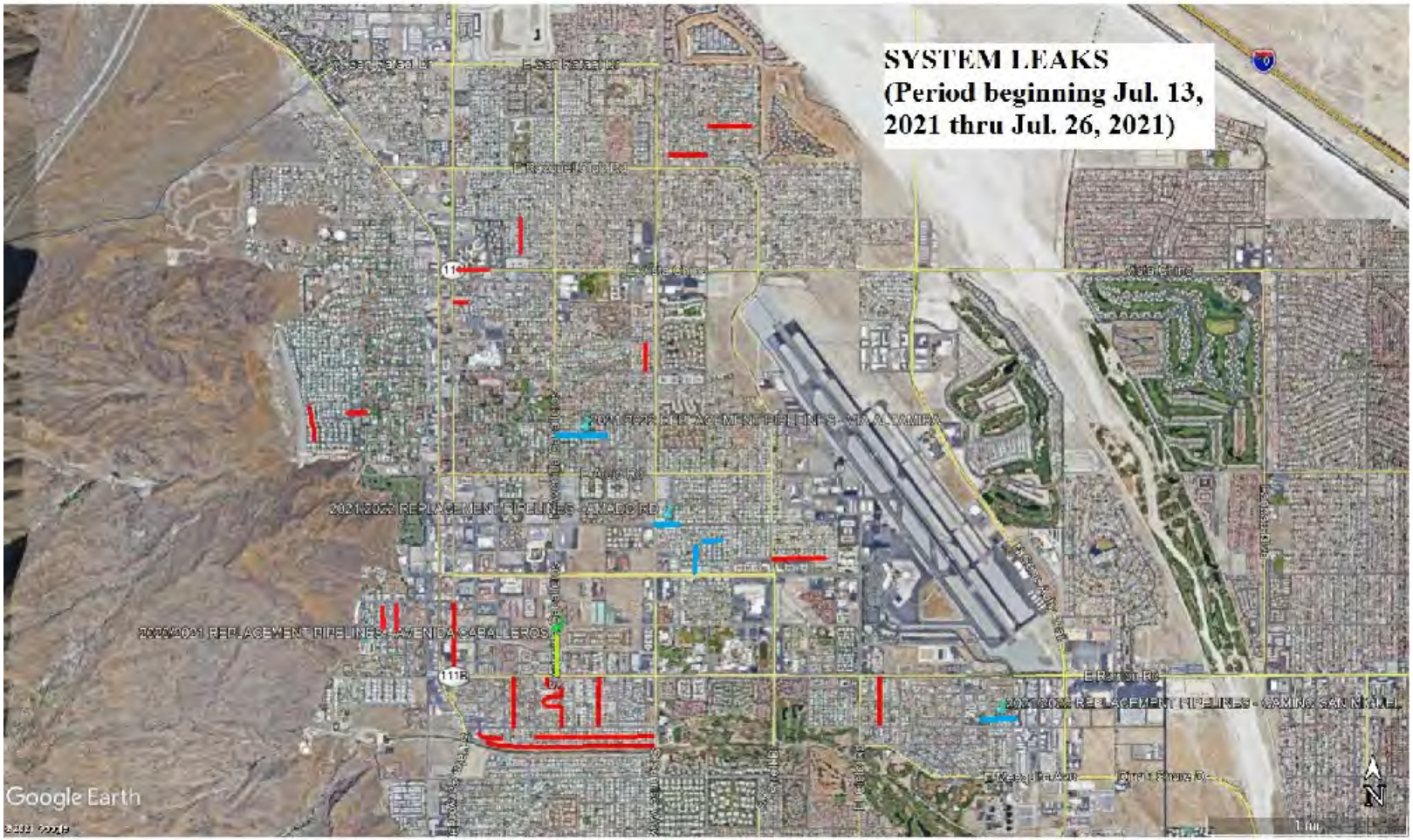
Streets highlighted in green are included as part of the
2020/2021 Replacement Pipeline Project

Streets highlighted in blue are being proposed as part of the
2021/2022 Replacement Pipeline Project

Estimate for design portion of Vista Chino 20" mainline replacement is being developed

SYSTEM INFORMATION:	
OLDEST PIPE IN THE SYSTEM (YEAR OF INSTALLATION):	1935
AVERAGE YEAR OF INSTALLATION OF UNLINED STEEL PIPE (SYSTEMWIDE):	1952
AVERAGE AGE OF UNLINED STEEL PIPE (SYSTEMWIDE):	66 YEARS
AVERAGE AGE OF PIPELINE AT THE TIME OF REPLACEMENT:	68 YEARS
TOTAL LENGTH OF PIPE IN SYSTEM OLDER THAN 70 YEARS (LINEAR FEET):	**128,186**
TOTAL LENGTH OF UNLINED PIPE SYSTEMWIDE (LINEAR FEET):	297,672
*AVERAGE LENGTH OF PIPE REPLACED ANNUALLY (LINEAR FEET):	14,500
PROJECTED TIME FRAME FOR 100% REPLACEMENT OF UNLINED STEEL PIPE:	21 YEARS
PROJECTED TIME FRAME FOR 100% REPLACEMENT OF PIPE OLDER THAN 70 YEARS:	**9 YEARS**
YEAR AGENCY TRANSITIONED TO CEMENT LINED STEEL PIPE:	1960

***PLEASE NOTE THIS FIGURE REPRESENTS THE AVERAGE LINEAR FOOTAGE OF PIPELINE REPLACED ANNUALLY GIVEN AN AVERAGE ANNUAL BUDGET OF $3 MILLION.**


SYSTEM LEAKS
(Period beginning Jul. 13, 2021 thru Jul. 26, 2021)
Google Earth

General Manager's Meetings and Activities

Meetings:

07/20/21	DWA Bi-Monthly Board Mtg	Conf Call
07/20/21	SGMA Mission Creek Subbasin	Conf Call
07/20/21	Sites – Water Right Approach Information Session	Conf Call
07/21/21	US Bank Safety Deposit Box Closing	Conf Call
07/21/21	DWA Finance Committee Meeting	Conf. Call
07/21/21	SGMA Indio Subbasin	Conf Call
07/22/21	WWRF – BLM ROW Permit All Team	Conf Call
07/23/21	Join Sites Reservoir Committee/Authority Mtg	Conf Call
07/26/21	DWA Wkly Staff Mtgs	Conf Call
07/27/21	WWRF – BLM ROW Permit Cooperators Mtg	Conf Call
07/28/21	Tribal Mediation Technical Subcommittee Mtg	Conf Call
07/29/21	DWA Executive Cmte Mtg	Conf Call
07/29/21	WSIP Projects Workshop	Conf Call
07/30/21	DWA Conservation & Public Affairs Cmte Mtg	Conf Call
08/02/21	DWA Wkly Staff Mtgs	Conf Call
08/02/21	Tribal Mediation – Small Negotiating Group	Conf Call
08/02/21	Tribal Mediation – Large Group Session	Conf Call
08/03/21	SGMA Mission Creek Subbasin	Conf Call
08/03/21	DWA Bi-Monthly Board Mtg	Conf Call

Activities:

1) SWP Contract Extension Amendment
2) DWA Remote Meter Reading Fixed Network
3) Whitewater Hydro – Automatic Re-start
4) State and Federal Contractors Water Authority and Delta Specific Project Committee (Standing)
5) Whitewater River Surface Water Recharge
6) Lake Oroville Spillway FEMA funding
7) Replacement Pipelines 2020-2021
8) DC Project – Finance JPA Committee (Standing)
9) DWA/CVWD/MWD Operations Coordination/Article 21/Pool A/Pool B/Yuba Water (Standing)
10) DWA/CVWD/MWD Exchange Agreement Coordination Committee (Standing)
11) SWP 2020 Water Supply
12) ACBCI Water Rights Lawsuit
13) Whitewater Hydro Operations Coordination with Recharge Basin O&M
14) SGMA Tribal Stakeholder Meetings
15) Whitewater Spreading Basins – BLM Permits
16) Delta Conveyance Project Cost Allocation
17) DWA Surface Water Filtration Feasibility Snow Creek Village/Palm Oasis
18) MCSB Delivery Updates
19) Well 6 Meaders Cleaners RWQB Meetings
20) SWP East Branch Enlargement Cost Allocation

Activities Cont.:

21) UWMP Population Calculation Update/Valley-Wide UWMP
22) RWQCB Update to the SNMP
23) SGMA – San Gorgonio Pass Subbasin

Item 6-A

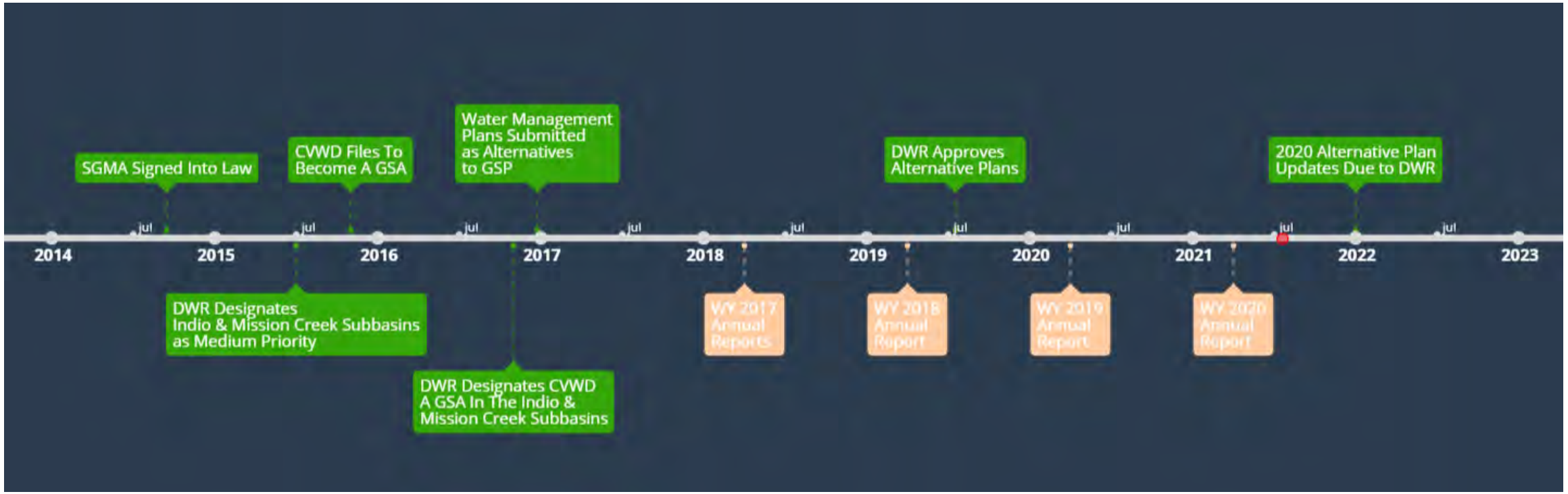
DESERT WATER

Update on SGMA Alternative Plan 5-Year Updates

Indio & Mission Creek Subbasins

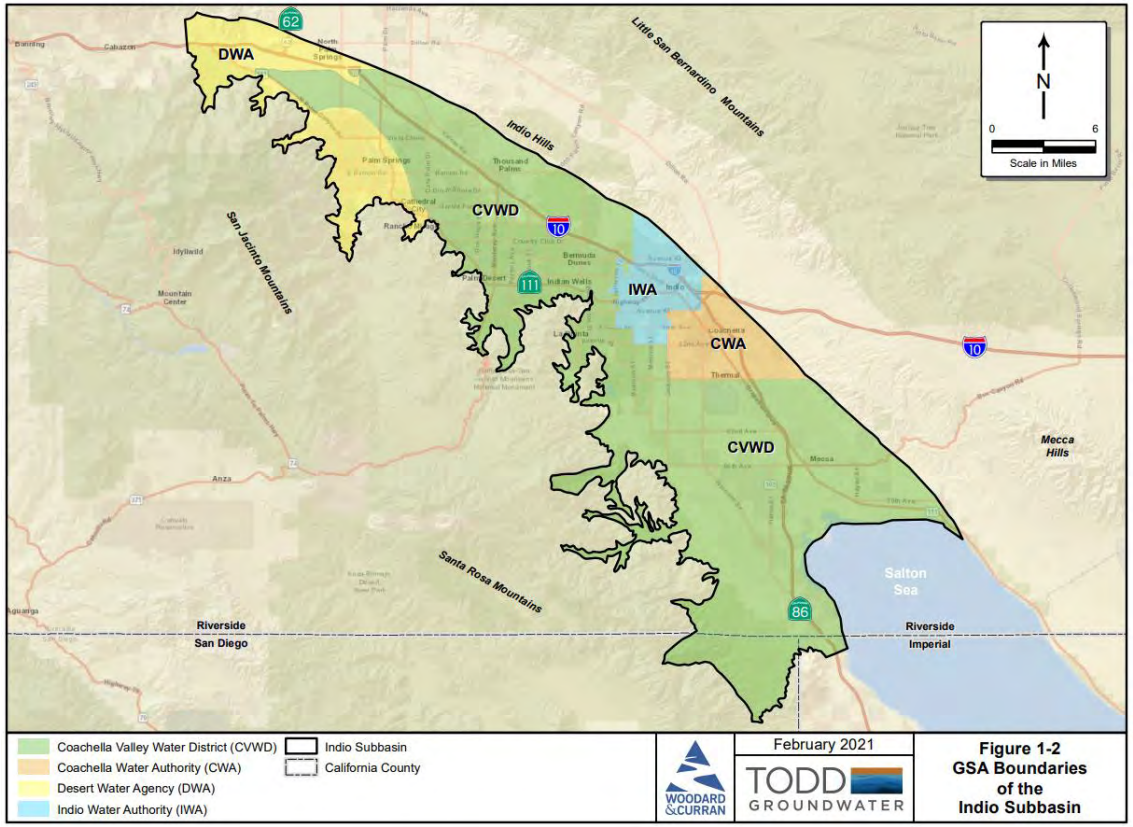
August 3, 2021

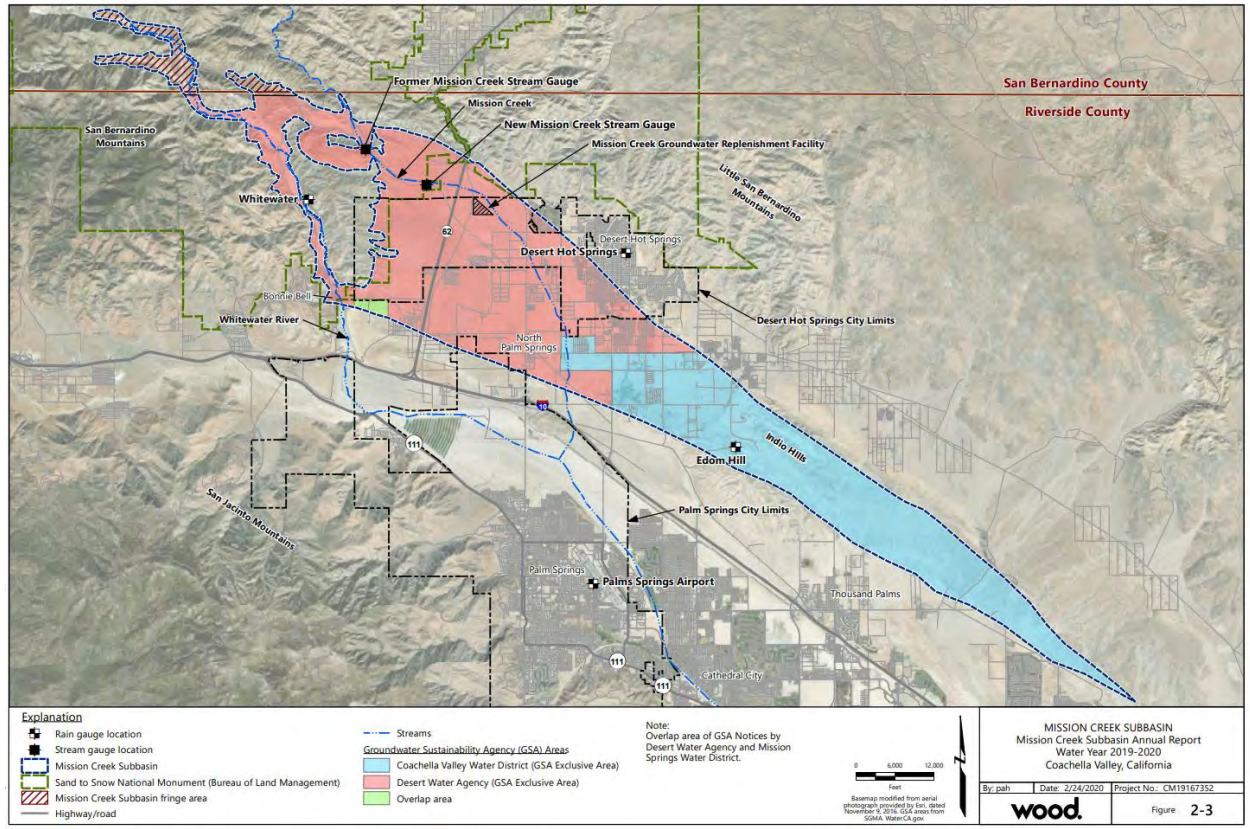
Sustainable Groundwater Management Act (SGMA) Timeline



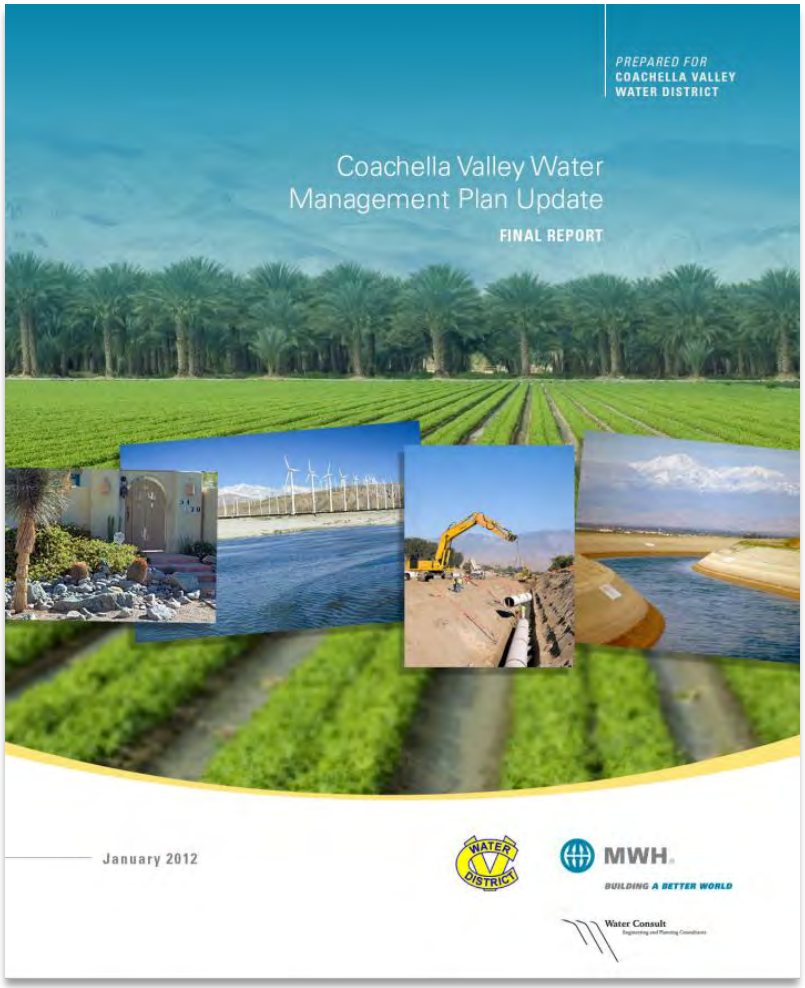
DESERT WATER

Multi-Agency Collaboration





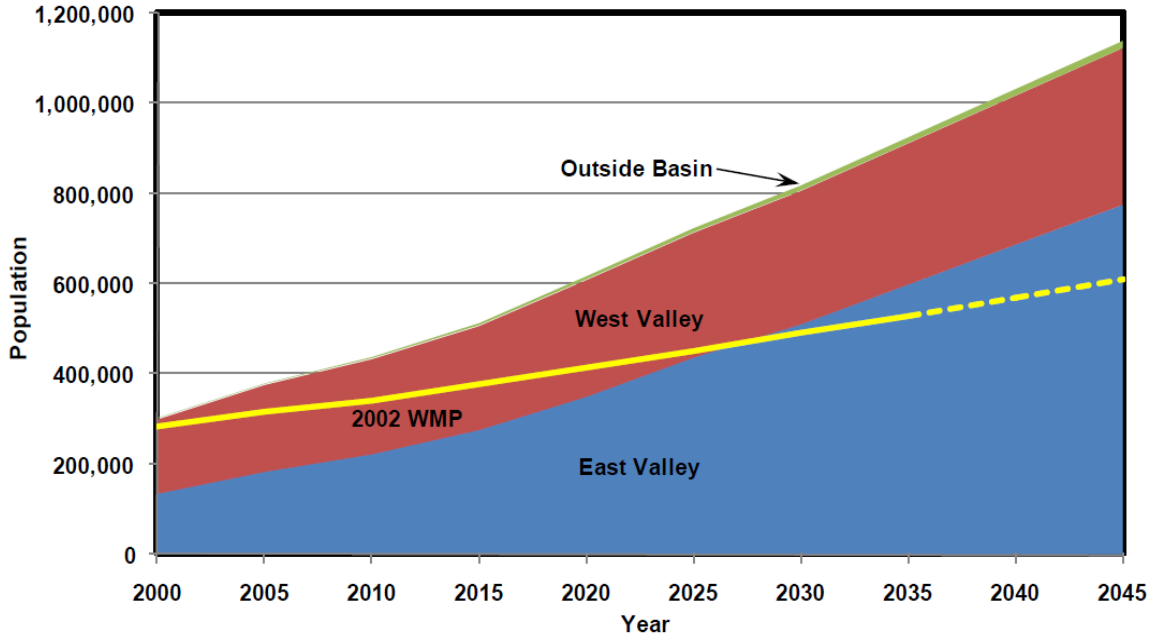
Indio Subbasin Alternative Plan Update



DESERT WATER

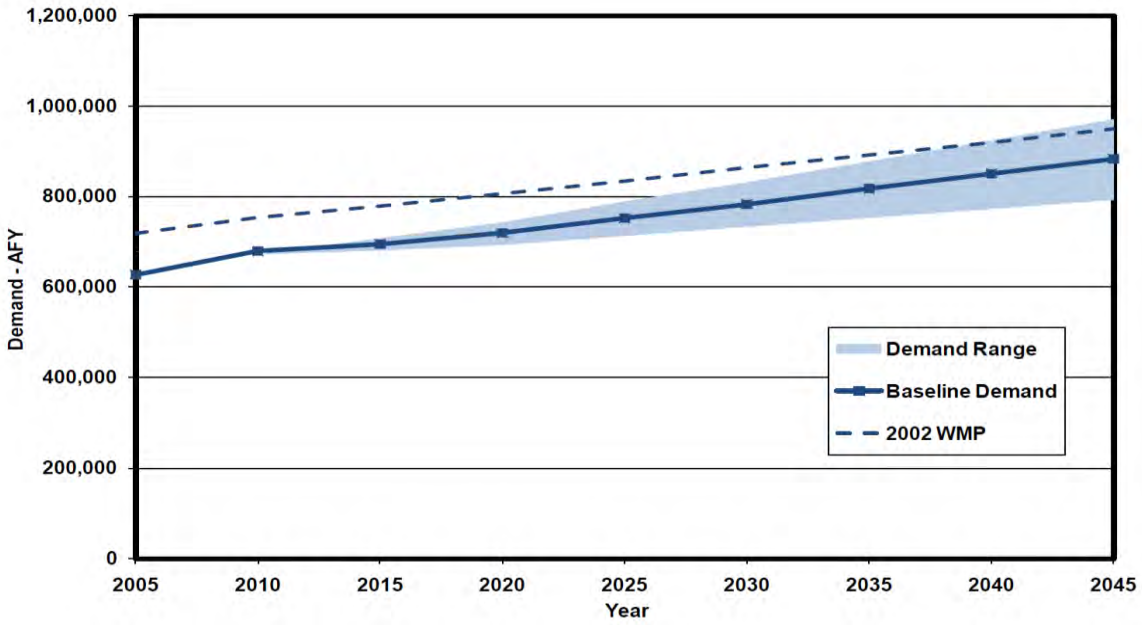
Need to Update Water Demand Forecast

2010 CVWMP Population Growth



2020 population is ~509,000
~21% lower than projected

2010 CVWMP Water Demand

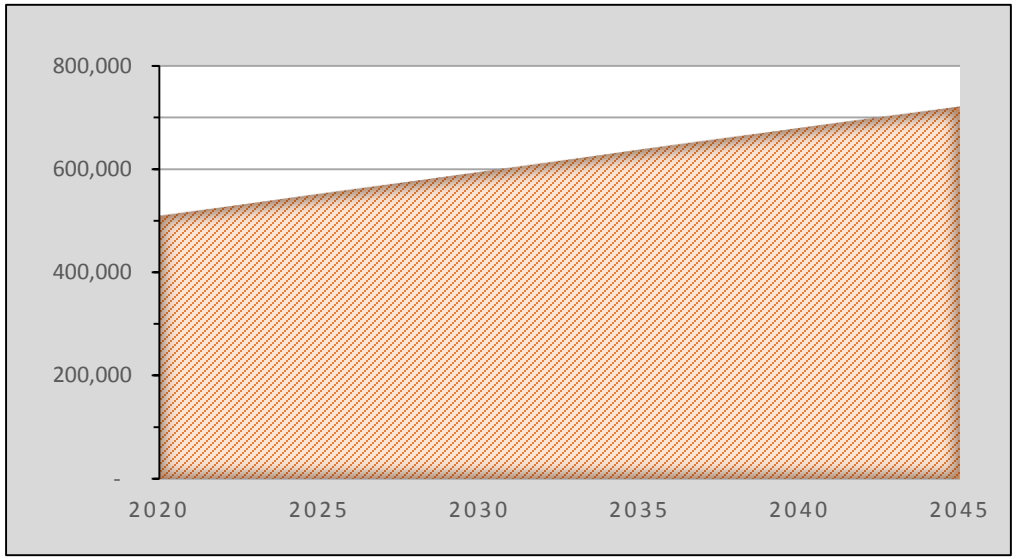


2020 water demands were ~595,000 AFY
~17% lower than projected – due to lower population growth + conservation

DESERT WATER

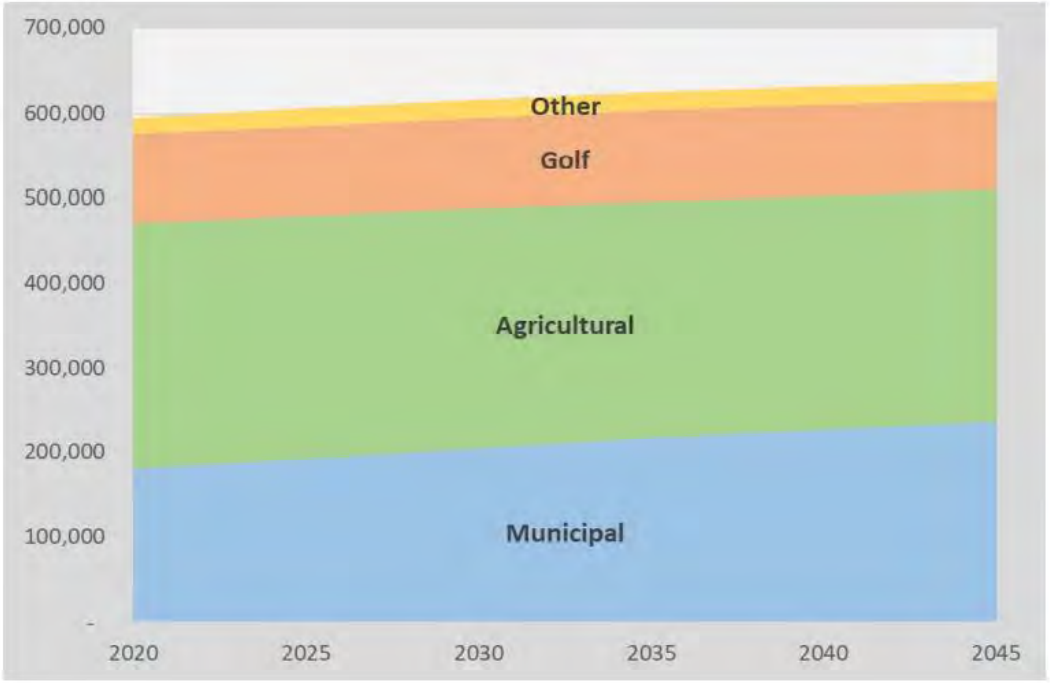
Updated Growth & Water Demand Forecast

Permanent & Seasonal Residents
(Based on 2020 SCAG Regional Growth Forecast)



	2016 Baseline	2020	2025	2030	2035	2040	2045
Coachella Valley Water District	267,136	287,987	308,015	328,042	348,069	364,297	380,523
Coachella Water Authority	45,828	54,736	66,488	78,241	89,993	105,175	120,357
Desert Water Agency	66,755	70,451	74,164	77,878	81,591	85,576	89,561
Indio Water Authority	91,366	96,107	103,429	110,751	118,072	124,408	130,743
Plan Area Total	**471,085**	**509,281**	**552,096**	**594,912**	**637,725**	**679,456**	**721,184**

Demand Projections (AFY)



Water Demand Type	2020	2025	2030	2035	2040	2045
Municipal	180,318	192,098	204,163	216,074	225,997	235,149
Agricultural	290,312	287,092	283,873	280,654	277,442	274,231
Golf	105,300	106,075	106,850	107,625	107,625	107,625
Other	18,893	21,593	21,593	21,593	21,593	21,593
Plan Area Total	**594,823**	**606,858**	**616,479**	**625,946**	**632,657**	**638,598**

DESERT WATER

Need to Update Water Supply Assumptions

2010 CVWMP

- Overdraft
- Supply Gap

2020 Alternative Plan

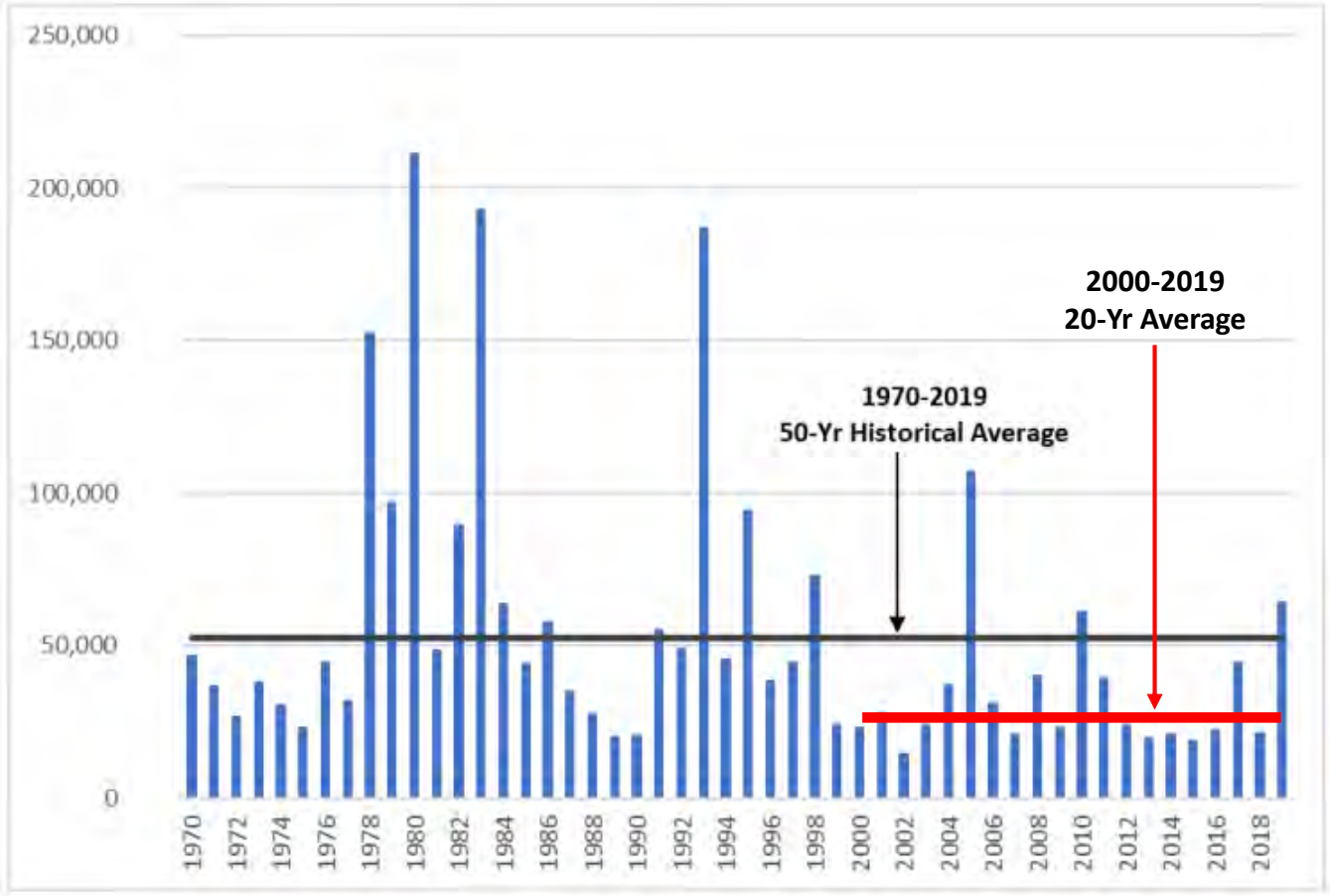
- Sustainability
- Supply Uncertainties

- Decrease in average State Water Project (SWP) reliability
- New projects
  - Lake Perris Seepage Recovery
  - Sites Reservoir
- Deferred projects
  - Desalination of perched groundwater
- Possibility of shortage conditions in the Colorado River Lower Basin
- Recycled water development slower than projected
- Changes in local hydrology
- Need to consider impacts of climate change on water supplies

DESERT WATER

Watershed Runoff

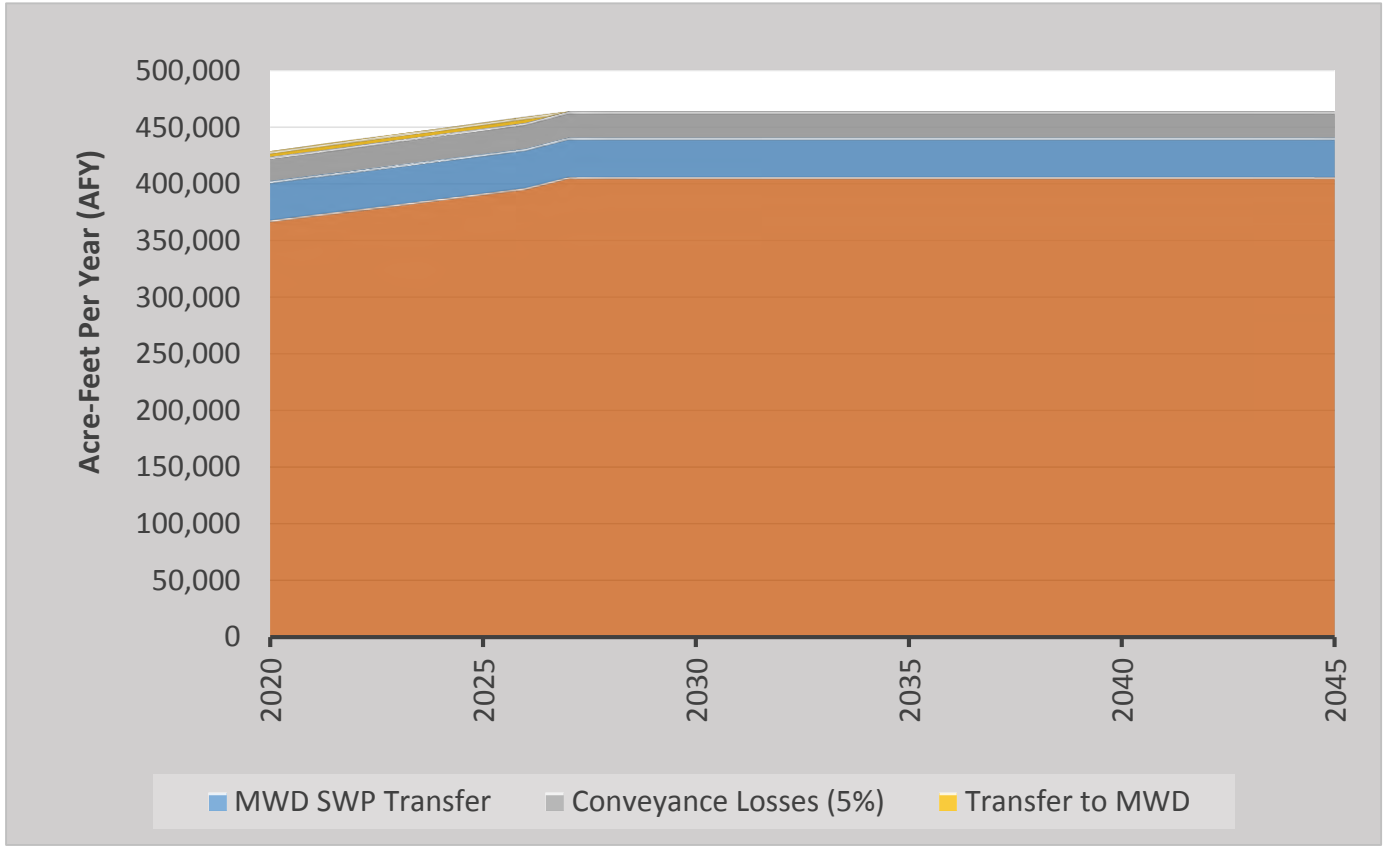
- 50-year average ~50,000 AFY
- 20-year average ~30,000 AFY



DESERT WATER

Colorado River QSA Entitlements

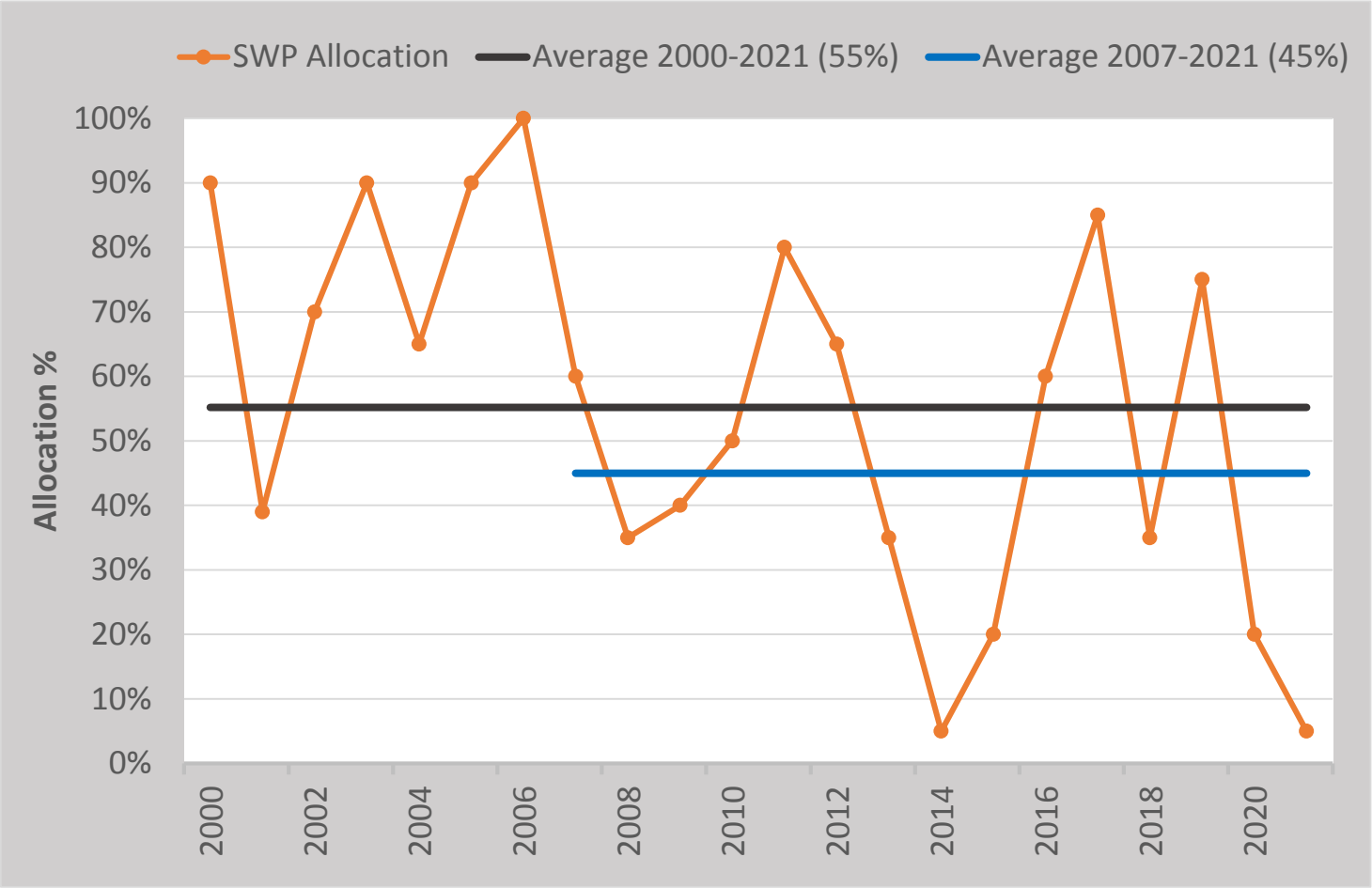
- Net allocation under the QSA increases to 424,000 AFY by 2045
- MWD SWP Transfer of 35,000 AFY
- Conveyance losses of 5%
- 5,000 AFY transfer to MWD assumed through 2026
- Climate change assumptions incorporate CVWD's Lower Basin Drought Contingency Plan (DCP) contribution



DESERT WATER

State Water Project Reliability

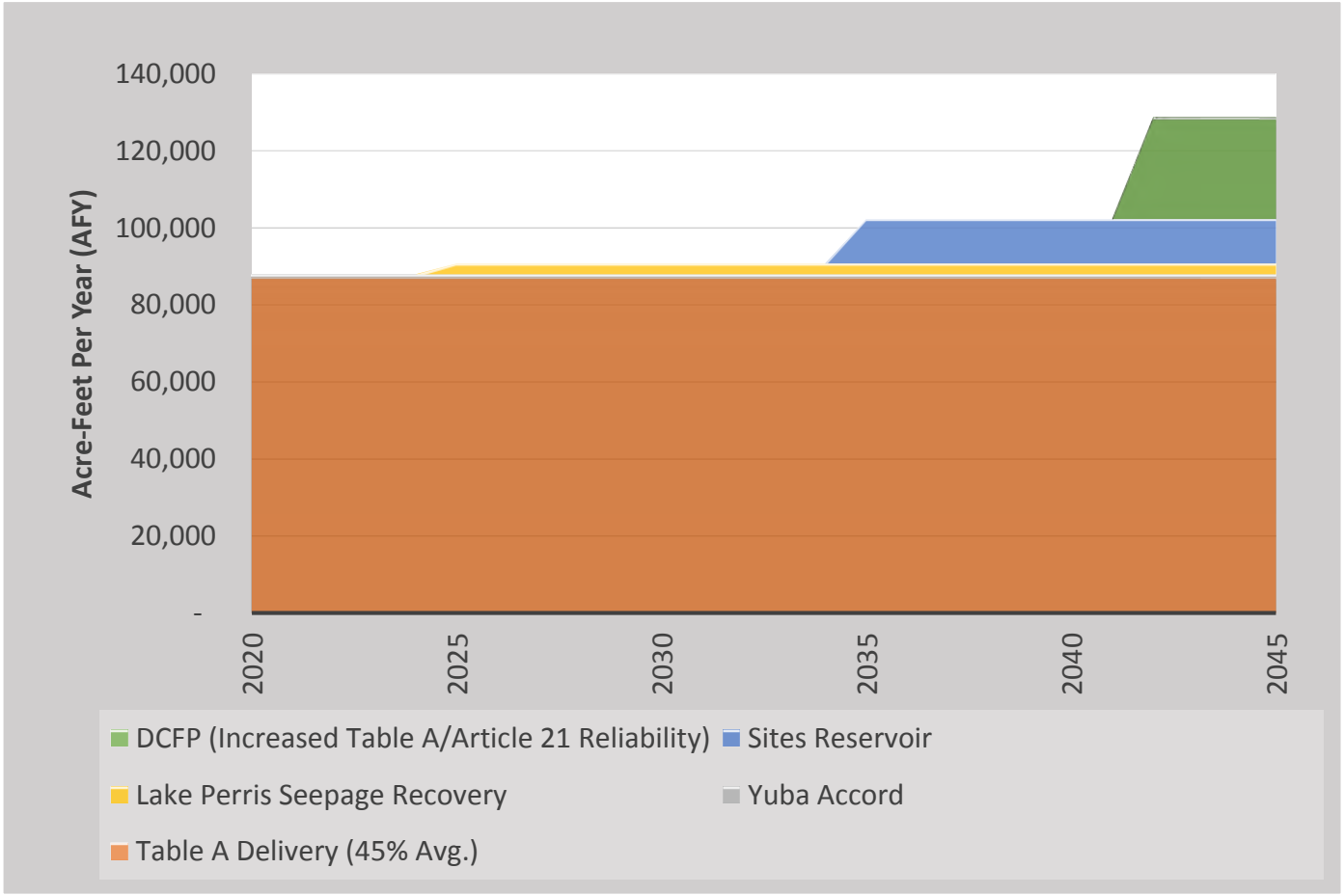
- DWR Capability Report projects 58% reliability declining to 52% w/o Delta Conveyance Facility Project (DCFP)
- Average since Wanger decision is 45%
- Climate change could further reduce reliability w/o DCFP



DESERT WATER

State Water Project Supplies

- CVWD + DWA Allocations
- Supply reliability would increase with construction of
  - Lake Perris Seepage Recovery Project
  - Sites Reservoir by 2040
  - DCFP by 2042
- SWP supplies allocated to WWR-GRF and MC-GRF in accordance with 2004 Settlement Agreement
  - MC-GRF – 8% projected to increase to 10% by 2045

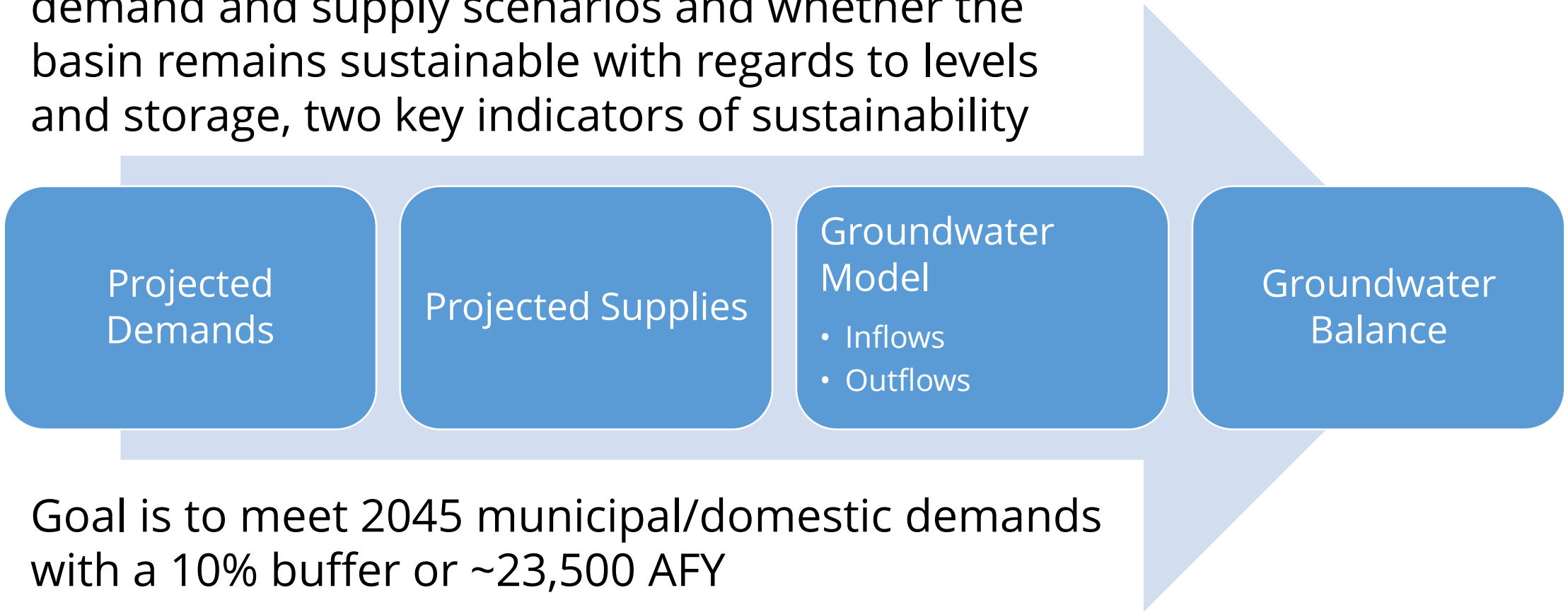


WWR-GRF = Whitewater River Groundwater Replenishment Facility
MC-GRF = Mission Creek Groundwater Replenishment Facility

DESERT WATER

Groundwater Balance

The groundwater model is used to simulate demand and supply scenarios and whether the basin remains sustainable with regards to levels and storage, two key indicators of sustainability



Goal is to meet 2045 municipal/domestic demands with a 10% buffer or ~23,500 AFY

DESERT WATER

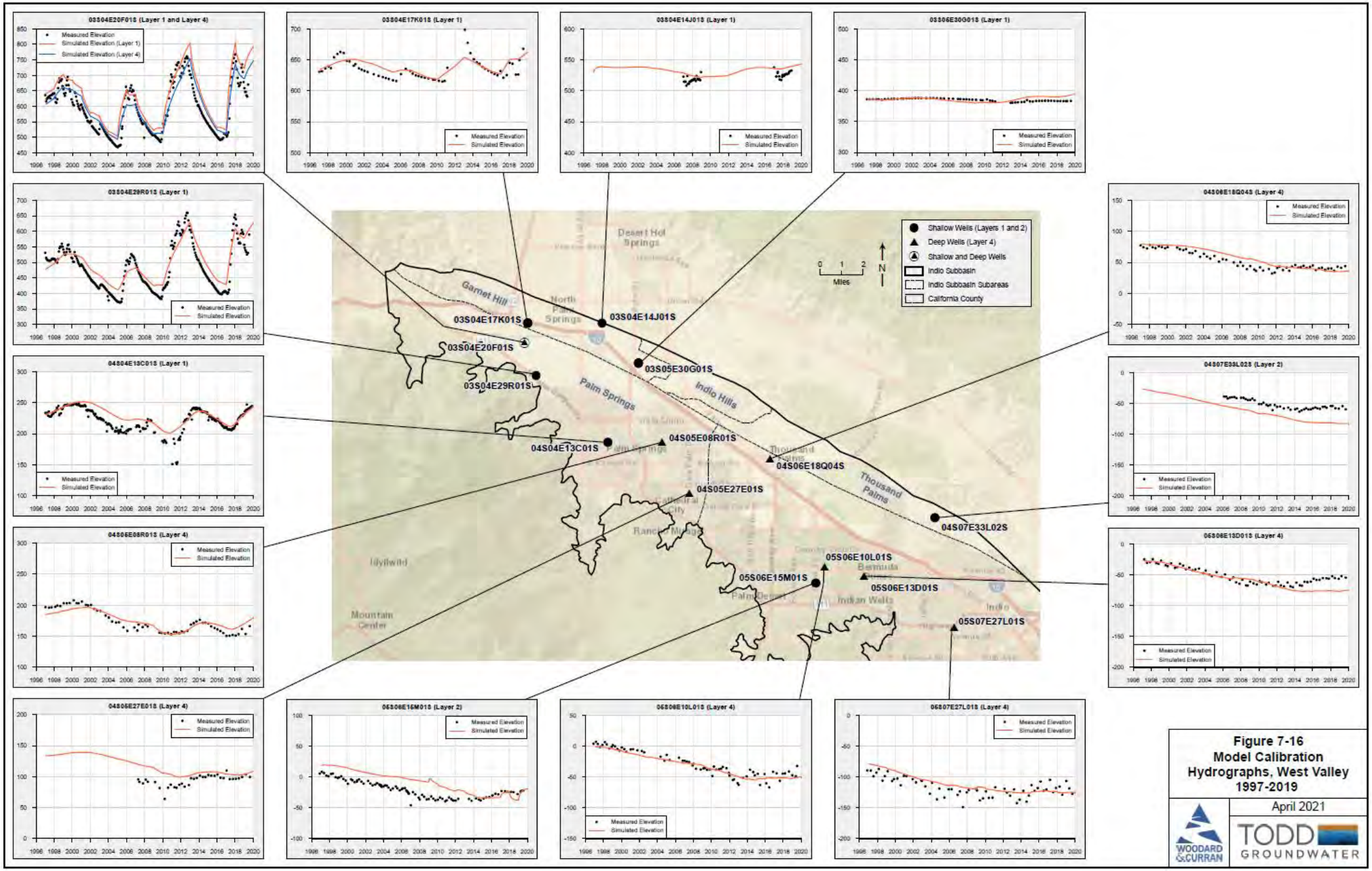


Figure 7-16
Model Calibration
Hydrographs, West Valley
1997-2019

April 2021

WOODARD & CURRAN

TODD GROUNDWATER

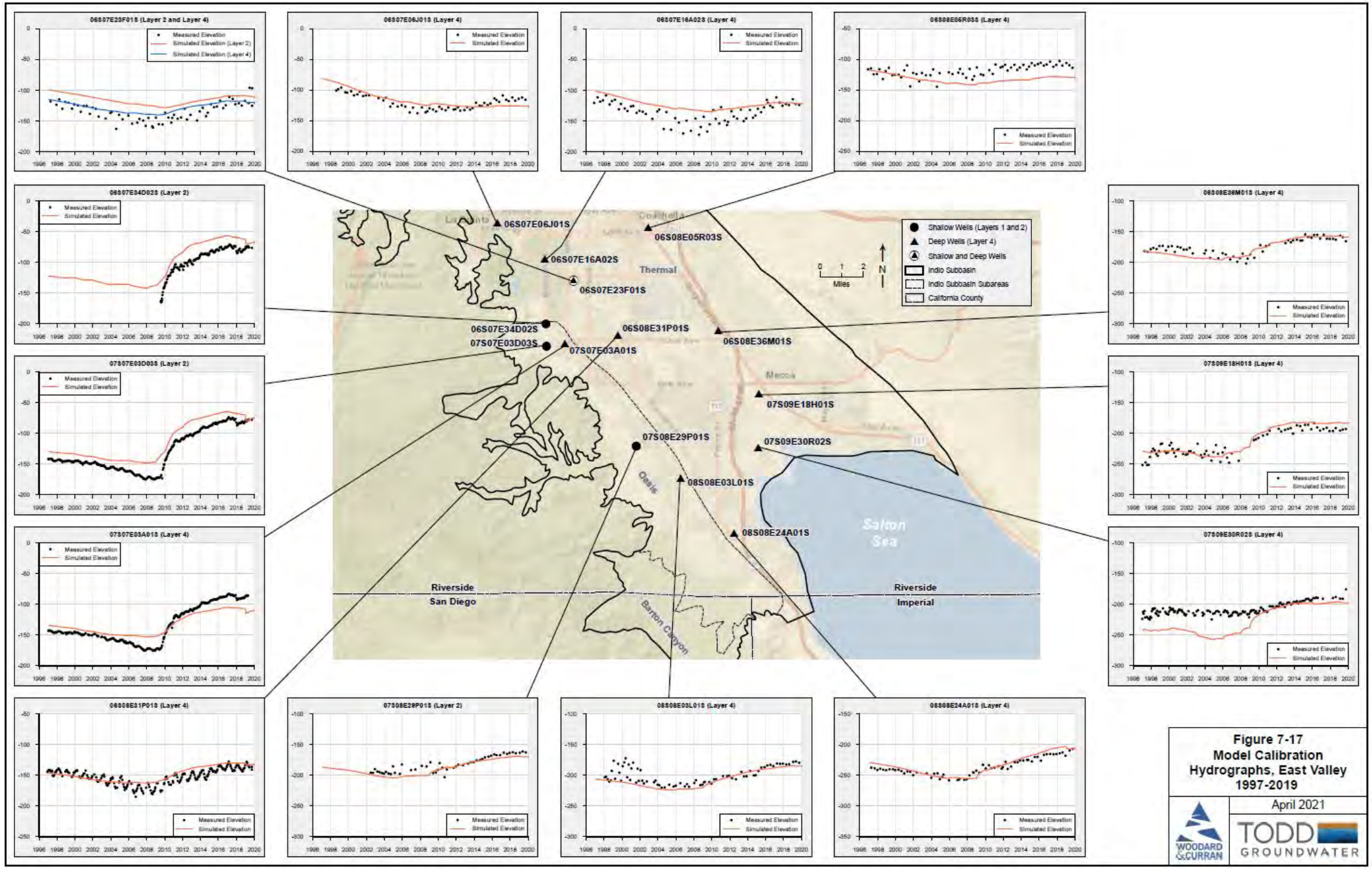


Figure 7-17
Model Calibration Hydrographs, East Valley 1997-2019

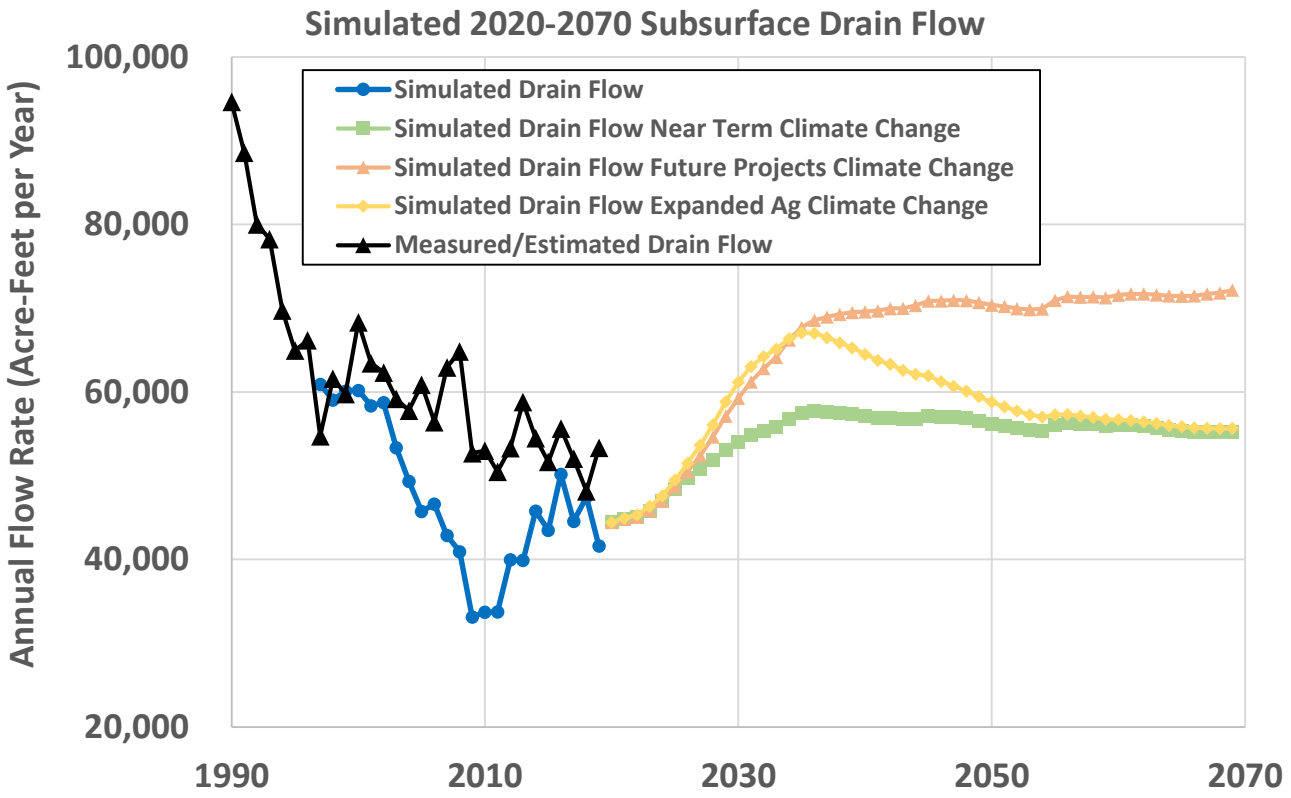
April 2021

WOODARD & CURRAN

TODD GROUNDWATER

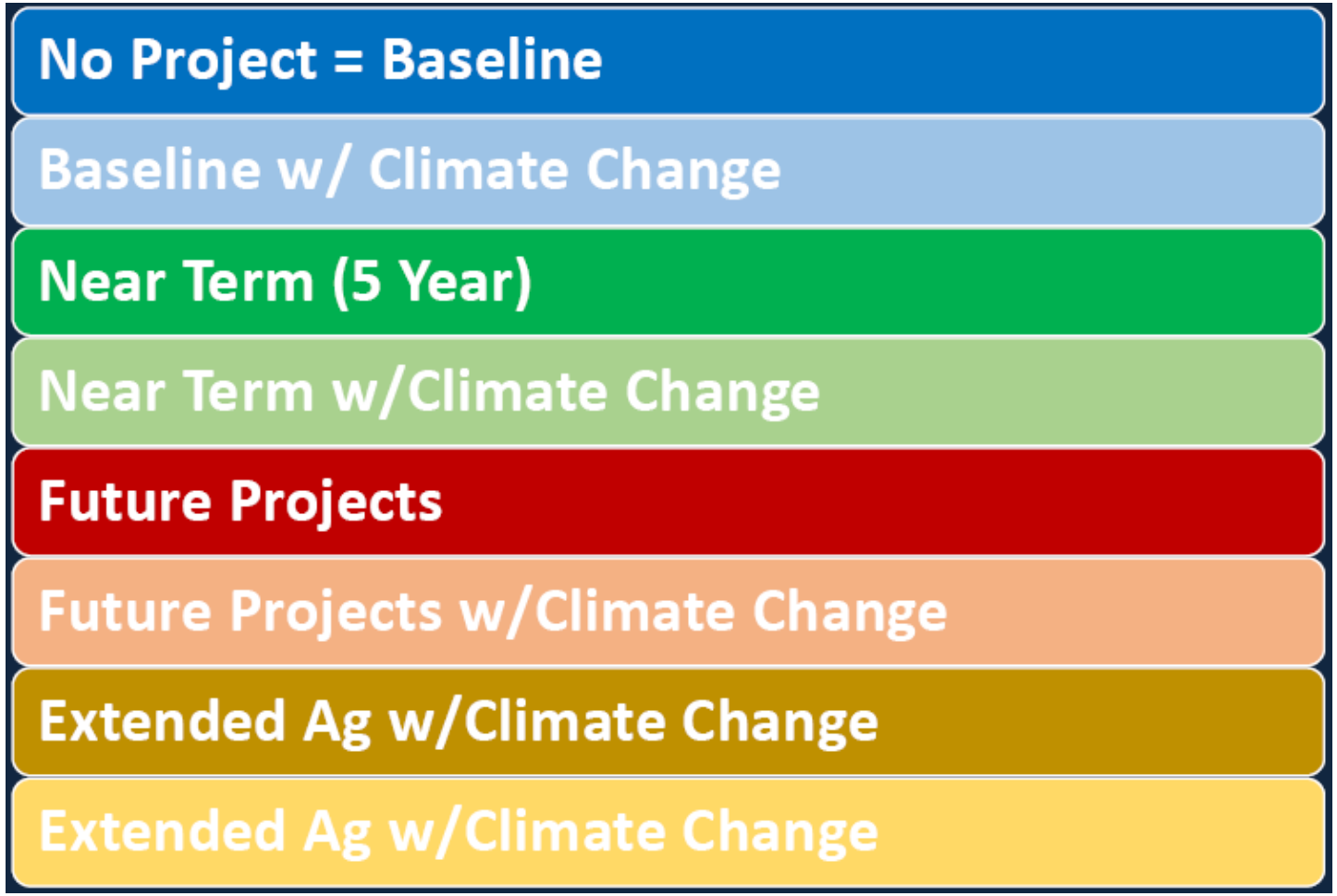
Agricultural Drain Flow Minimum Threshold?

- Higher drain flows are beneficial
  - Response to higher groundwater levels that are protective of deep aquifer
  - Promote salt export from subbasin
- Projected drain flows are a model output based on response to planning assumptions
  - Expected to increase under all future management scenarios
- Not an adequate measure of significant and unreasonable undesirable results
  - Study planned to improve information on the relationship between groundwater levels, drain flows, salt export, and protection of the deep aquifer
  - Will also improve model calibration and groundwater balance



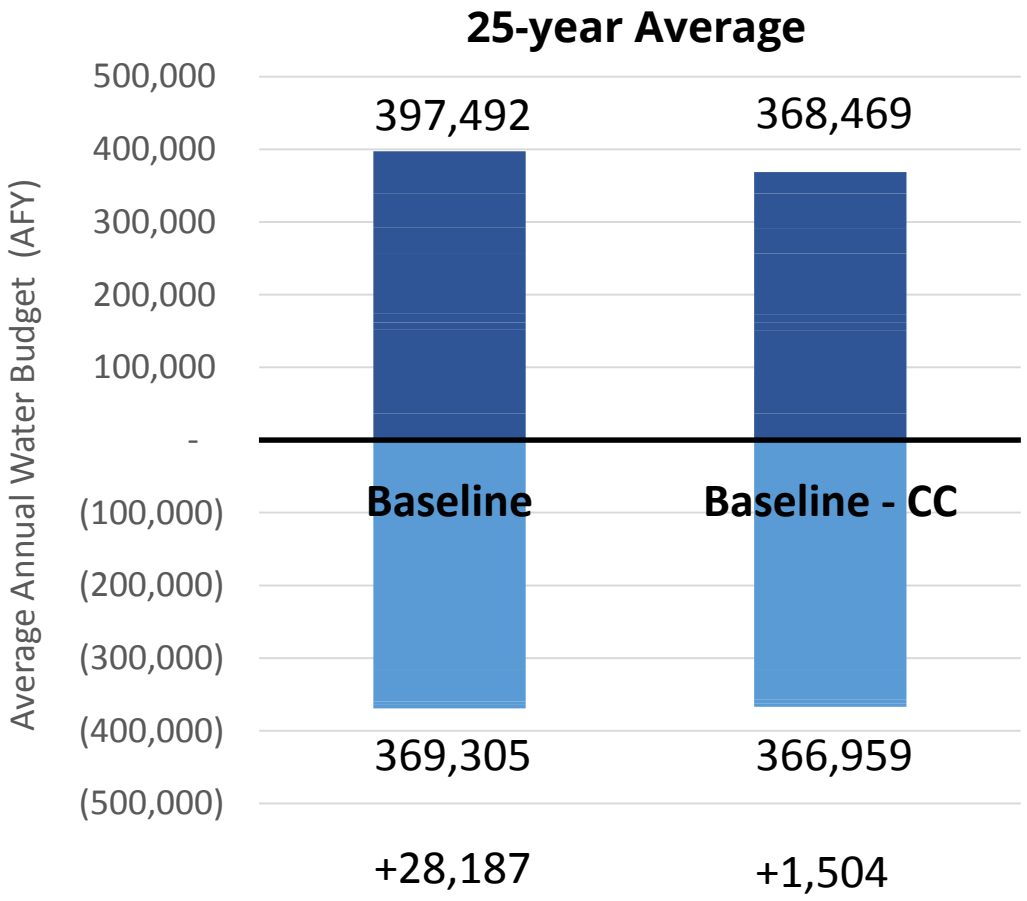
DESERT WATER

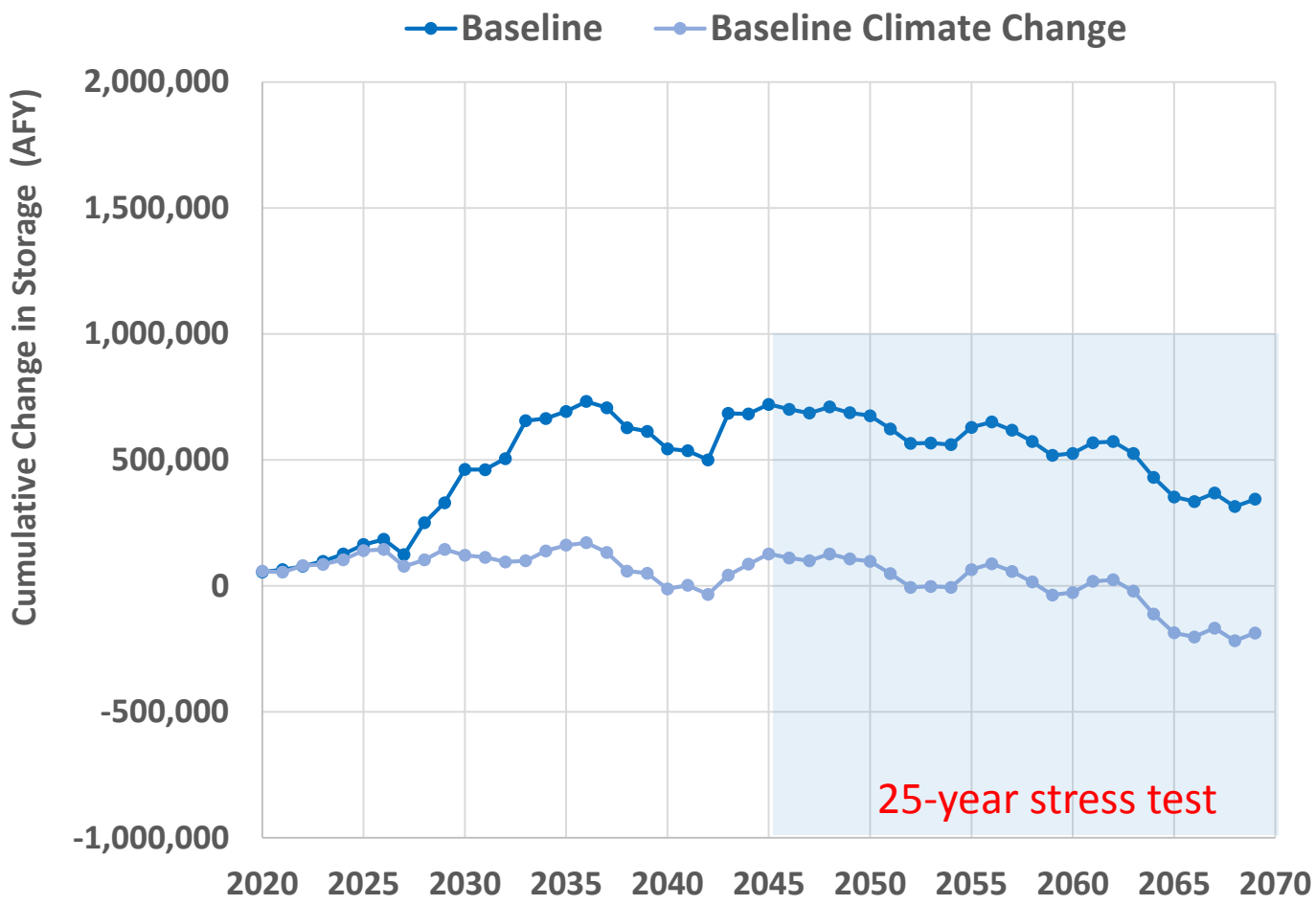
Modeled Scenarios - ISB



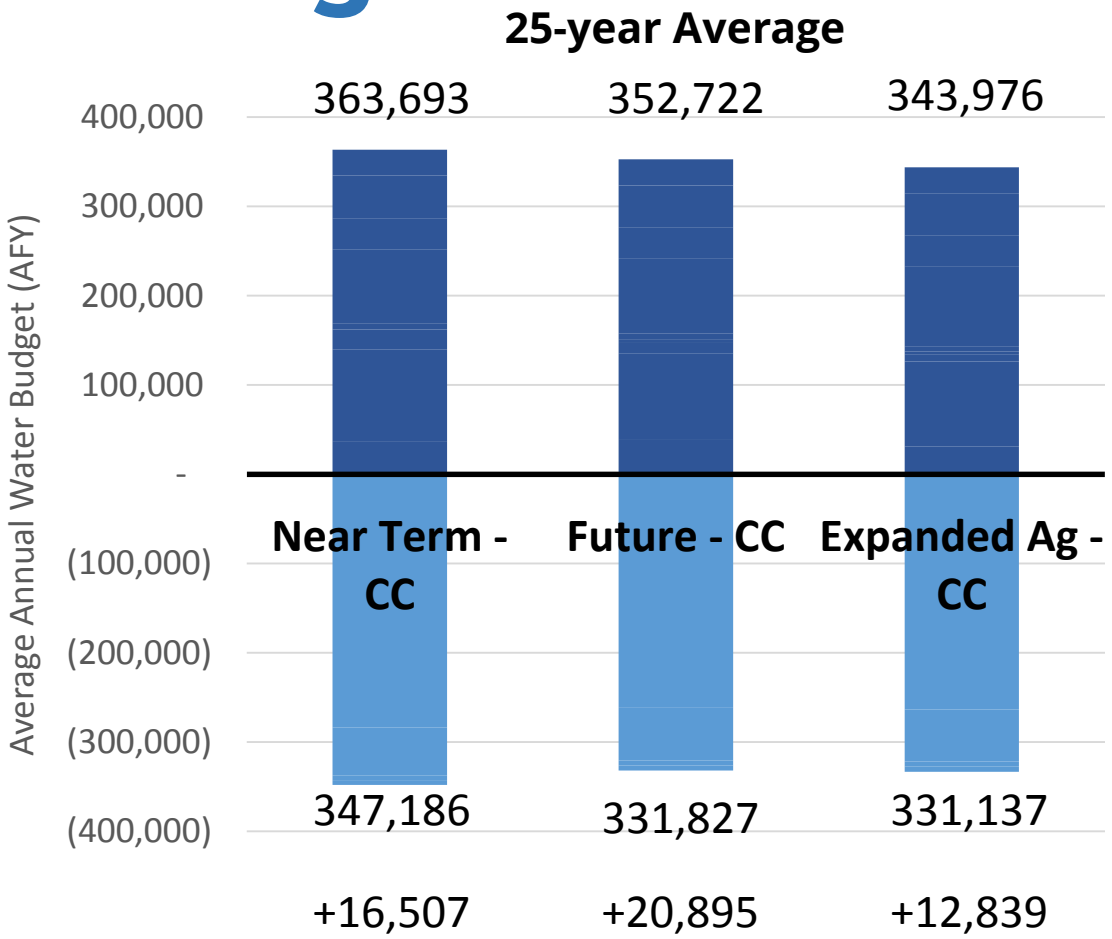
DESERT WATER

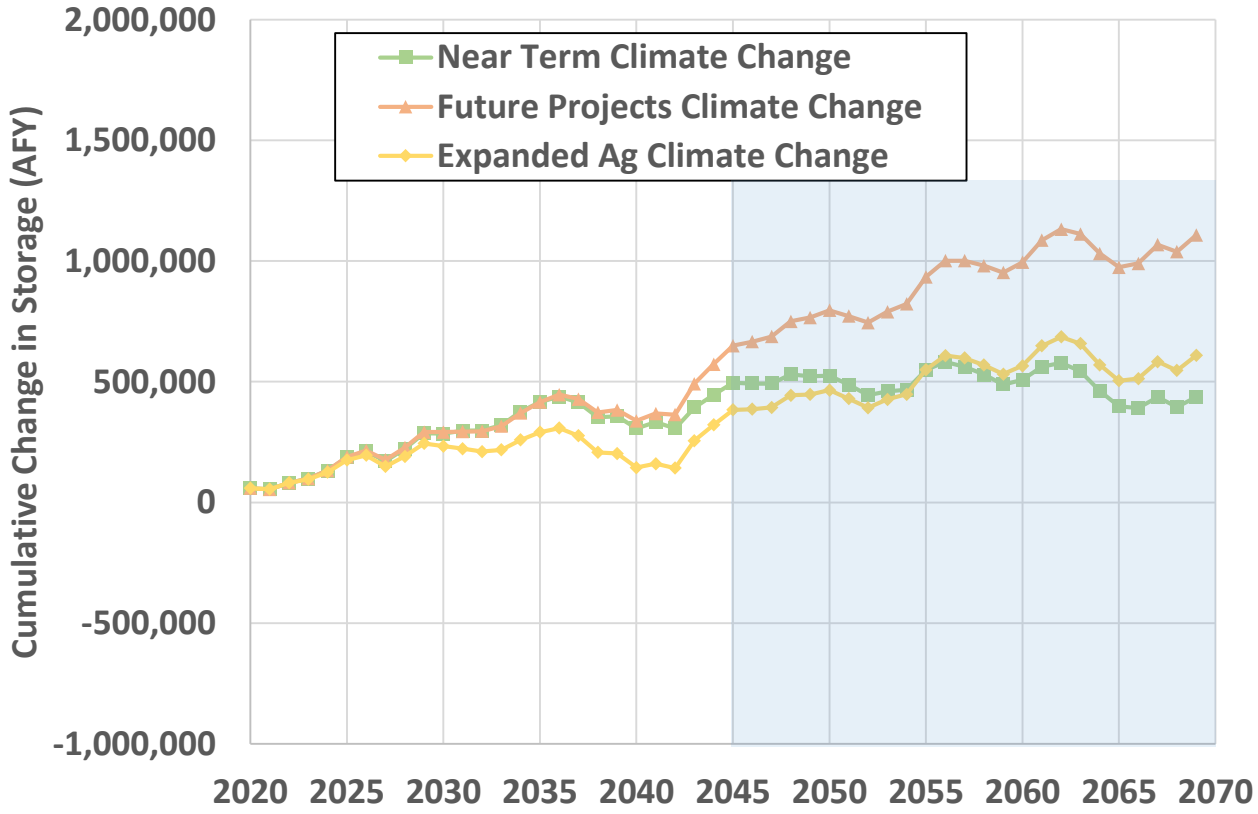
Baseline Groundwater Balance & Cumulative Change in Storage





Near-Term, Future, Expanded Agriculture Groundwater Balance & Cumulative Change in Storage

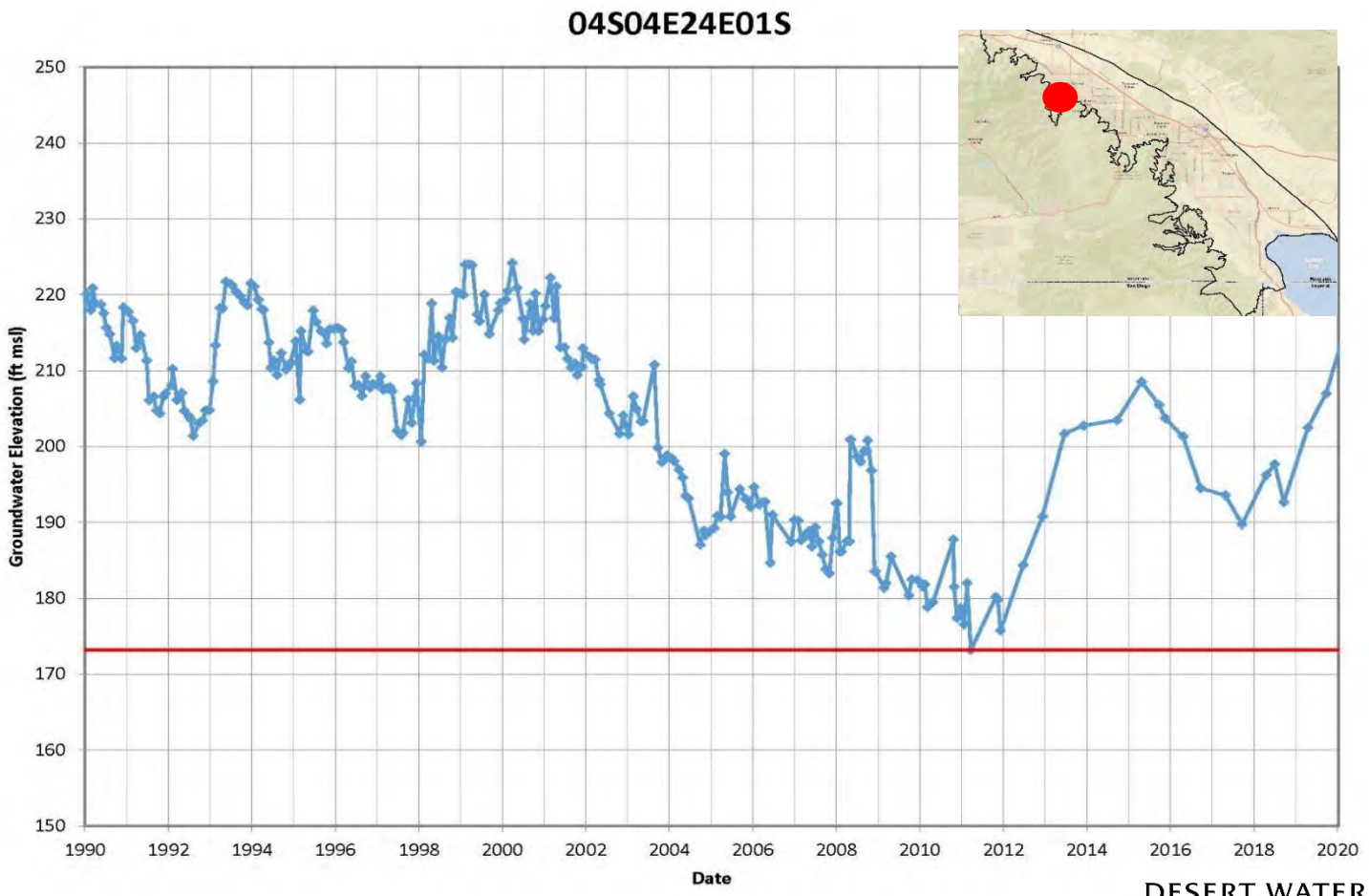




DESERT WATER

Groundwater Management Criteria – Levels, Storage, and Subsidence

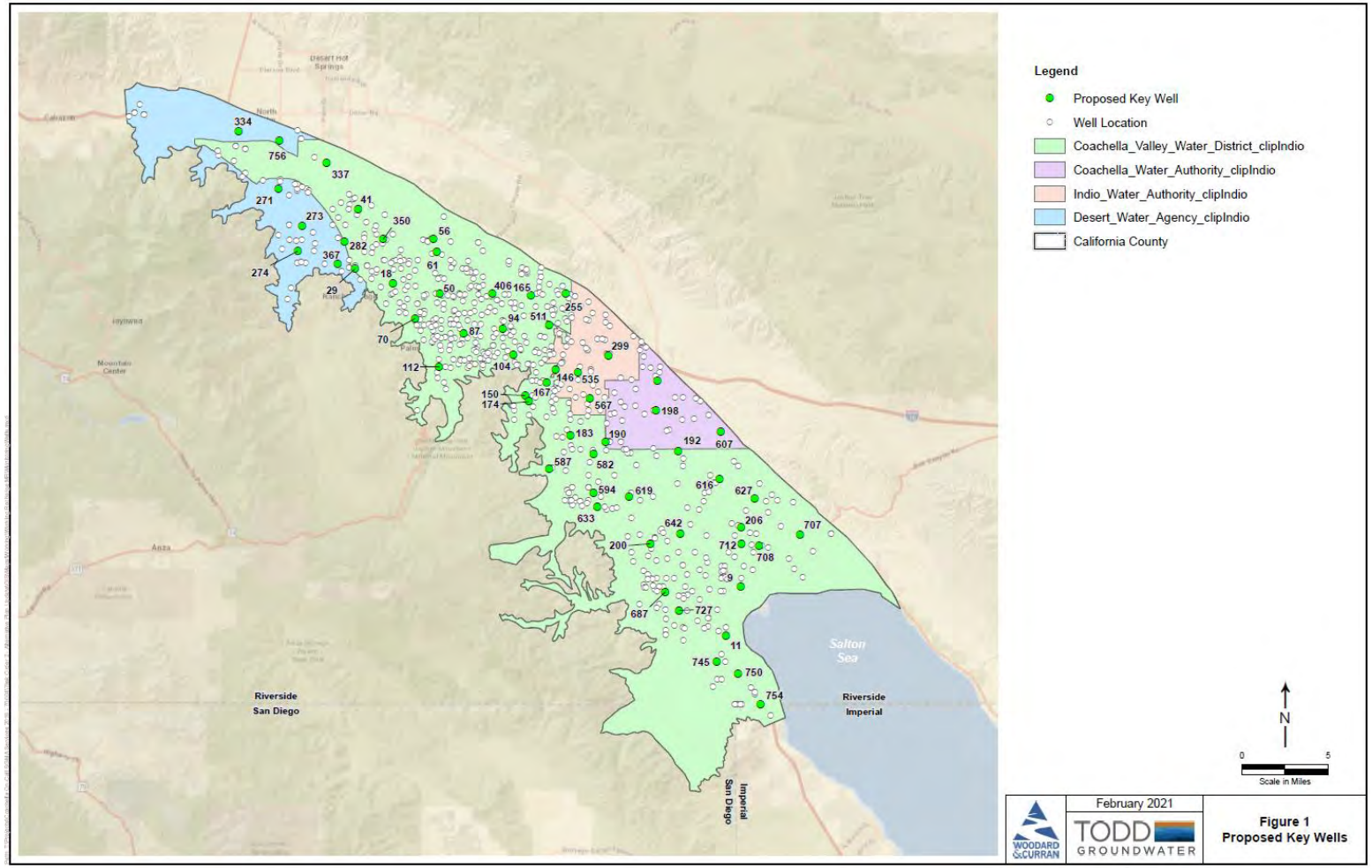
- DWR recommended quantitative thresholds for groundwater levels, groundwater in storage, and subsidence
- Groundwater levels being used as the indicator for levels, storage, and subsidence
- Minimum thresholds (MTs) defined as historical lows as measured at 57 Key Wells



DESERT WATER

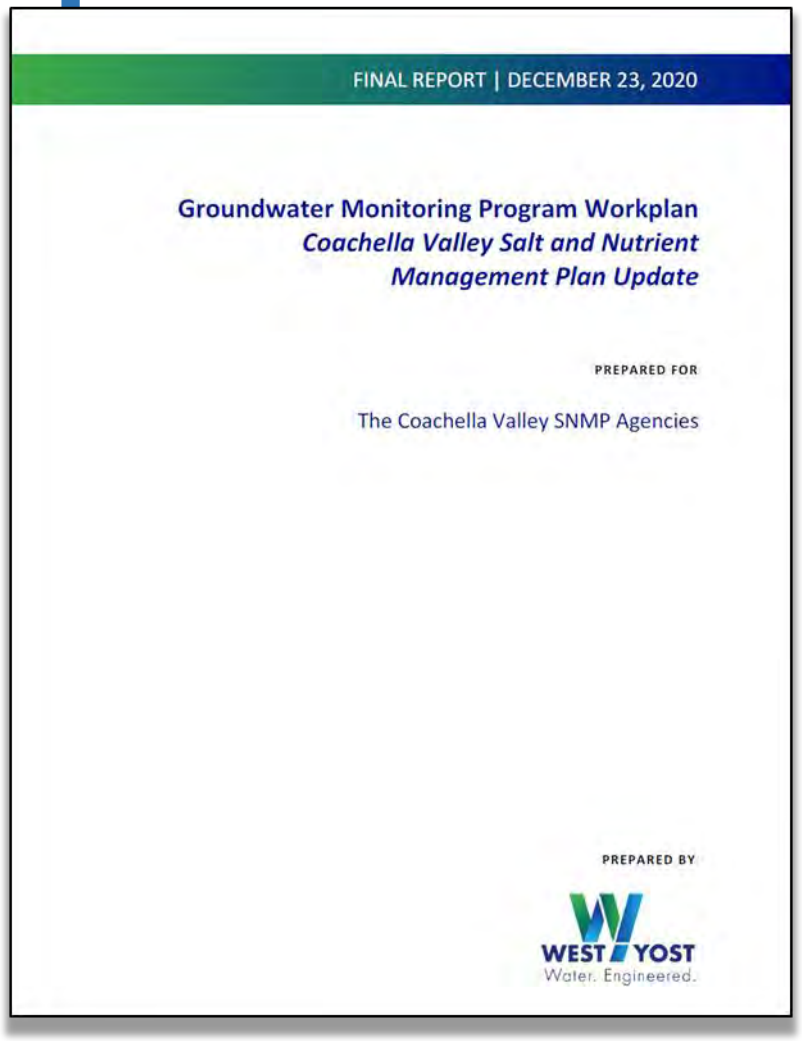
Monitoring at Key Wells

- A significant and unreasonable undesirable condition occurs when
  - The MT is crossed in five consecutive years
  - In 25% of wells across the Subbasin
- GSAs will monitor & report annually

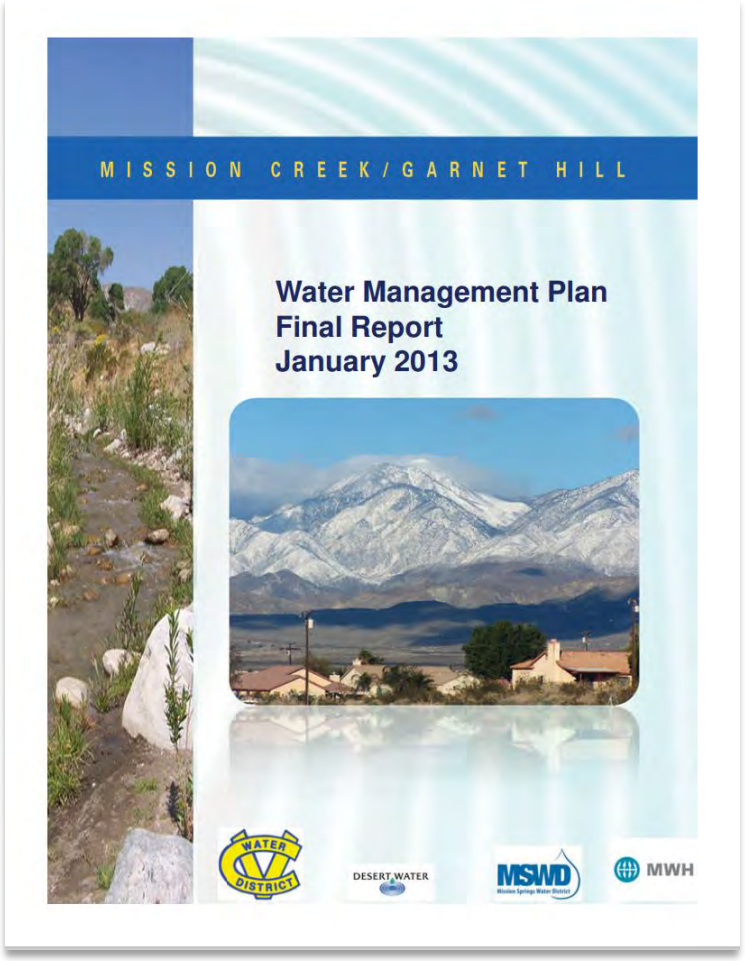


Integrate Approved Coachella Valley Salt & Nutrient Management Plan (CV-SNMP) Into Future Alternative Plan Update

- CV-SNMP Agencies (water and wastewater agencies) are collaborating to update 2015 CV-SNMP towards this goal
- Finalizing Workplan to update CV-SNMP starting in 2022
- Groundwater Monitoring Workplan approved by Regional Board being implemented
- An update will be provided in Alternative Plan Update and Annual Reports

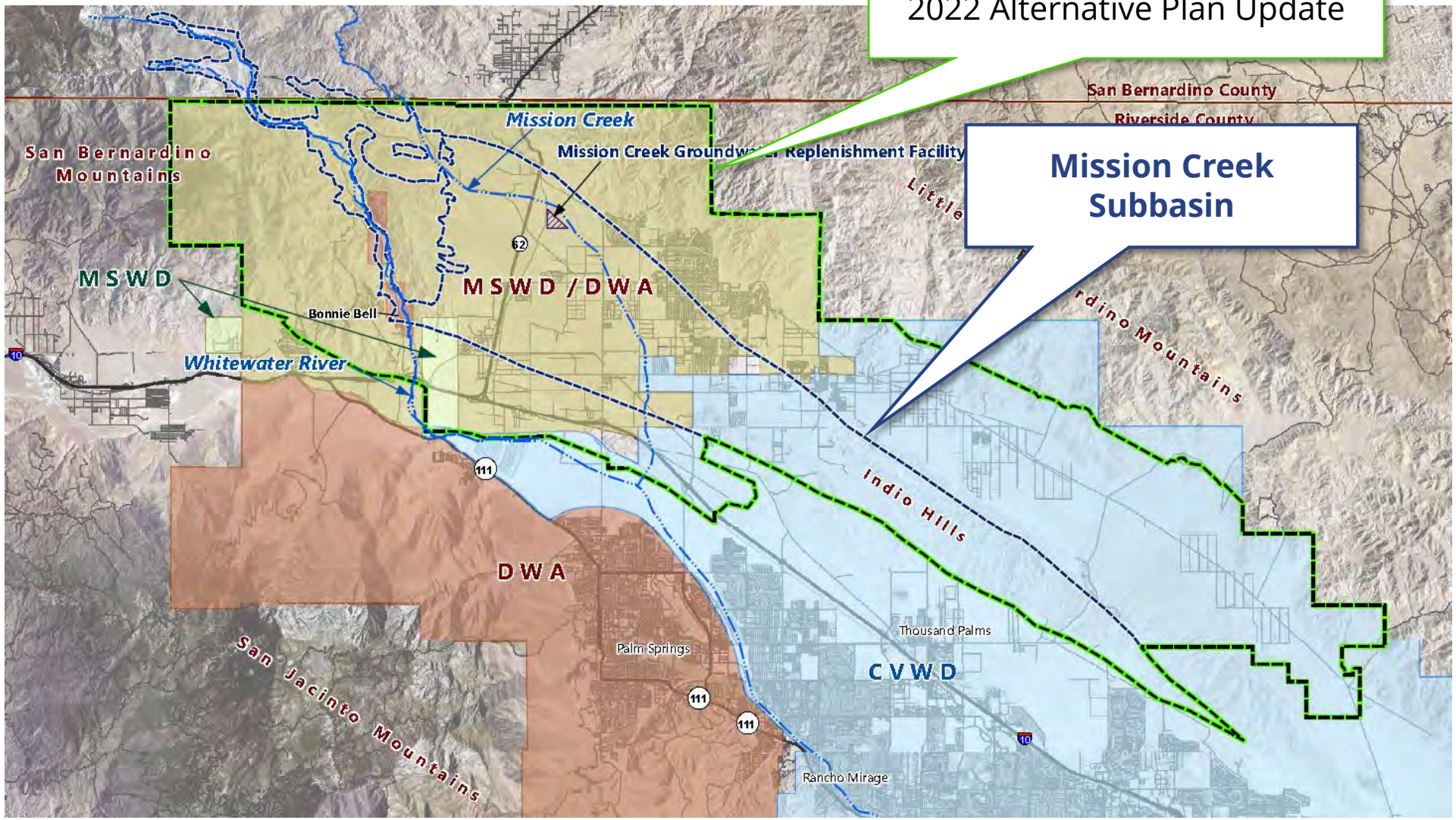


Mission Creek Subbasin Alternative Plan Update



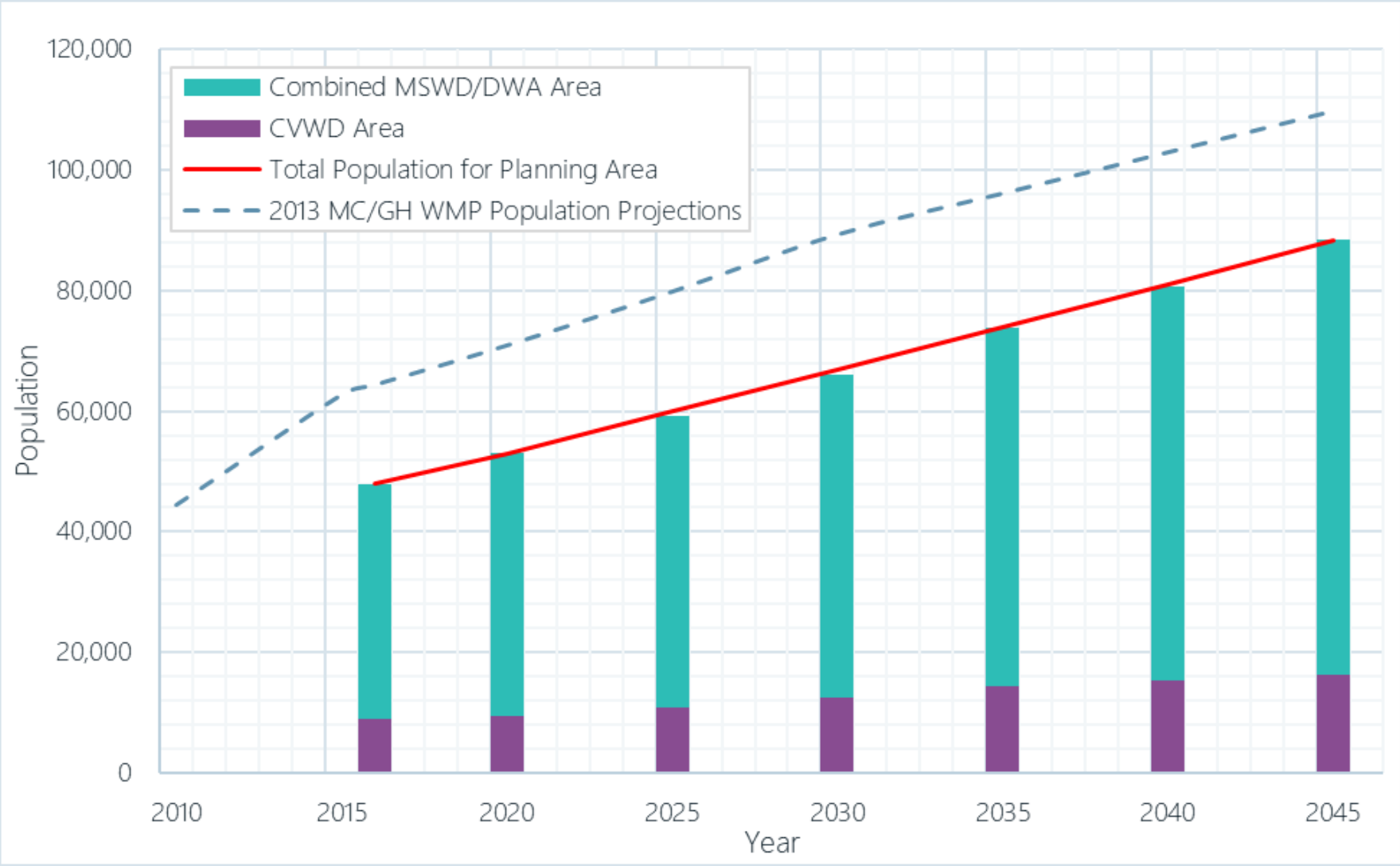
Plan Area

PA 2022 = Planning Area for 2022 Alternative Plan Update



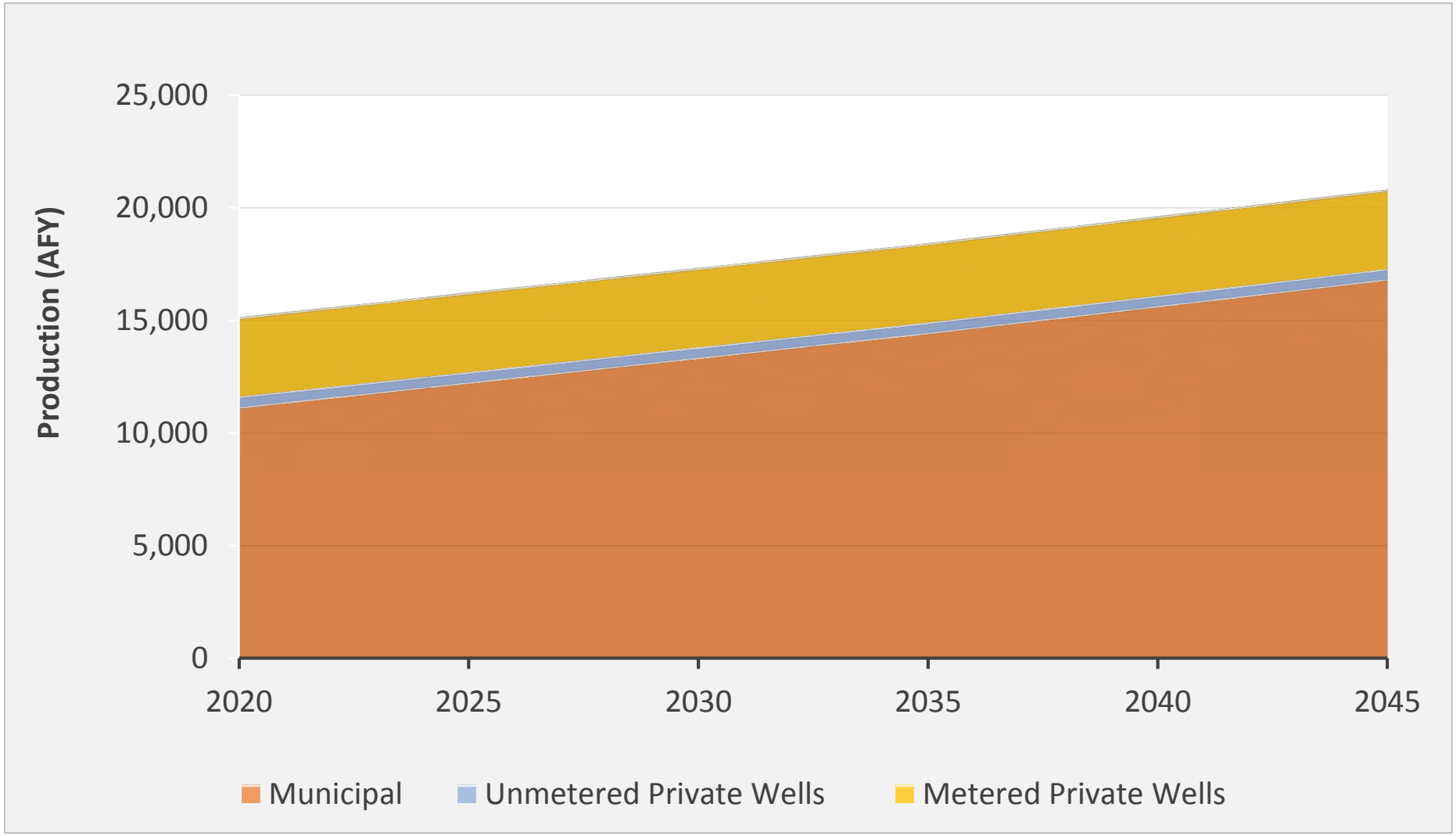
DESERT WATER

Population Projections



DESERT WATER

Water Demand Projections



DESERT WATER

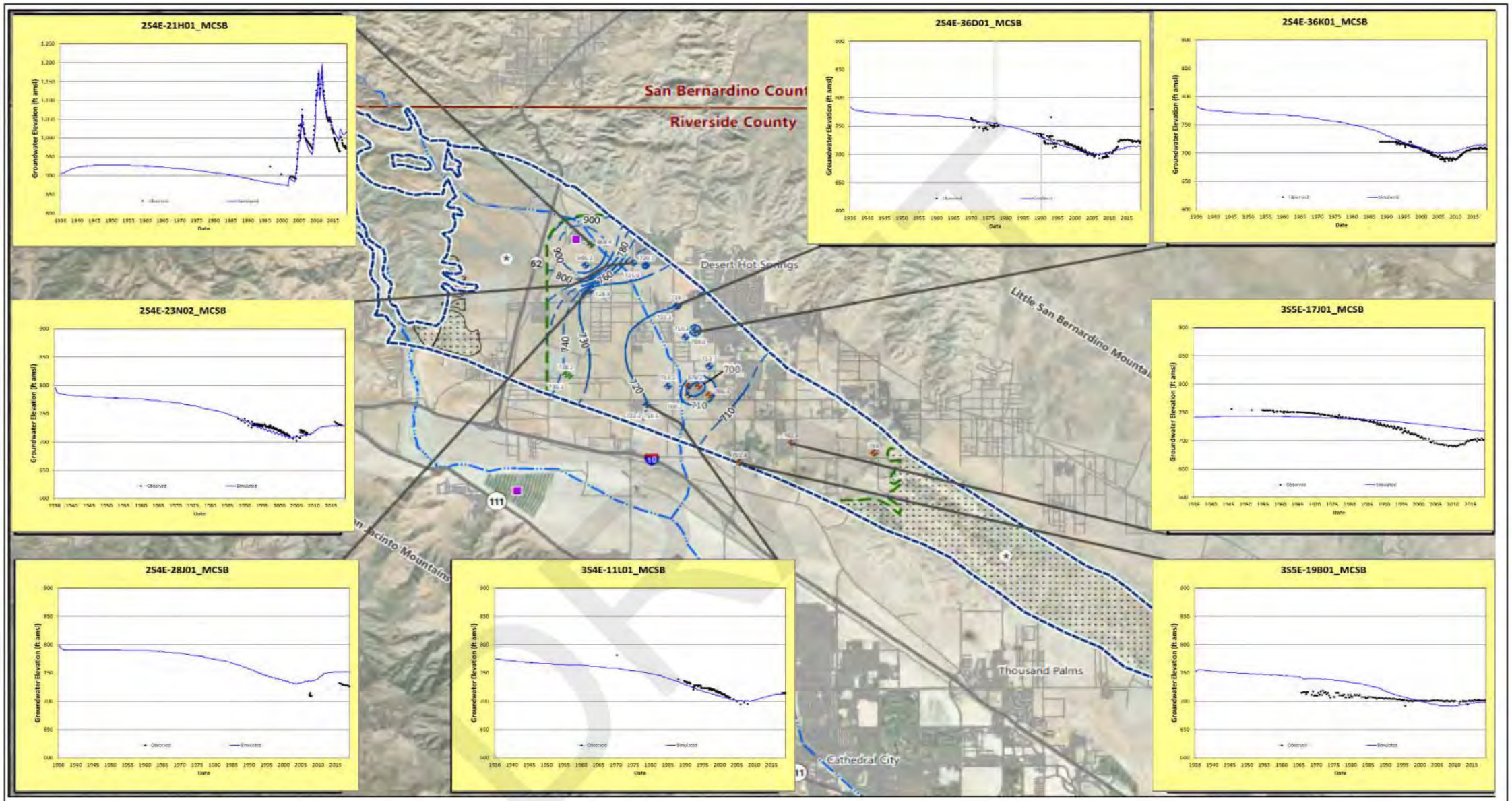
Sources of Supply

- Groundwater
  - Mountain Front Recharge
    - 50-year average is 18,187 AFY
    - 25 year average is 12,272 AFY
- SWP supplies allocated to WWR-GRF and MC-GRF in accordance with 2004 Settlement Agreement
  - MC-GRF – 8% projected to increase to 10% by 2045
- Future projects
  - Mission Springs Water District (MSWD) plans to develop recycled water for direct use or groundwater recharge

WWR-GRF = Whitewater River Groundwater Replenishment Facility
MC-GRF = Mission Creek Groundwater Replenishment Facility

Modeled Scenarios

1. Baseline
   - Current supplies and projects
   - Includes new MSWD Regional Wastewater Treatment Plant (WWTP) in Garnet Hill Subarea of the Indio Subbasin
2. Baseline with climate change assumptions
3. Near-term projects with climate change assumptions
   - Includes MSWD plan to recycle wastewater from the Regional WWTP for delivery in Mission Creek Subbasin
4. Future projects and supplies with climate change assumptions
   - Projected supplies and projects by 2045



Observed Head

Simulated Head

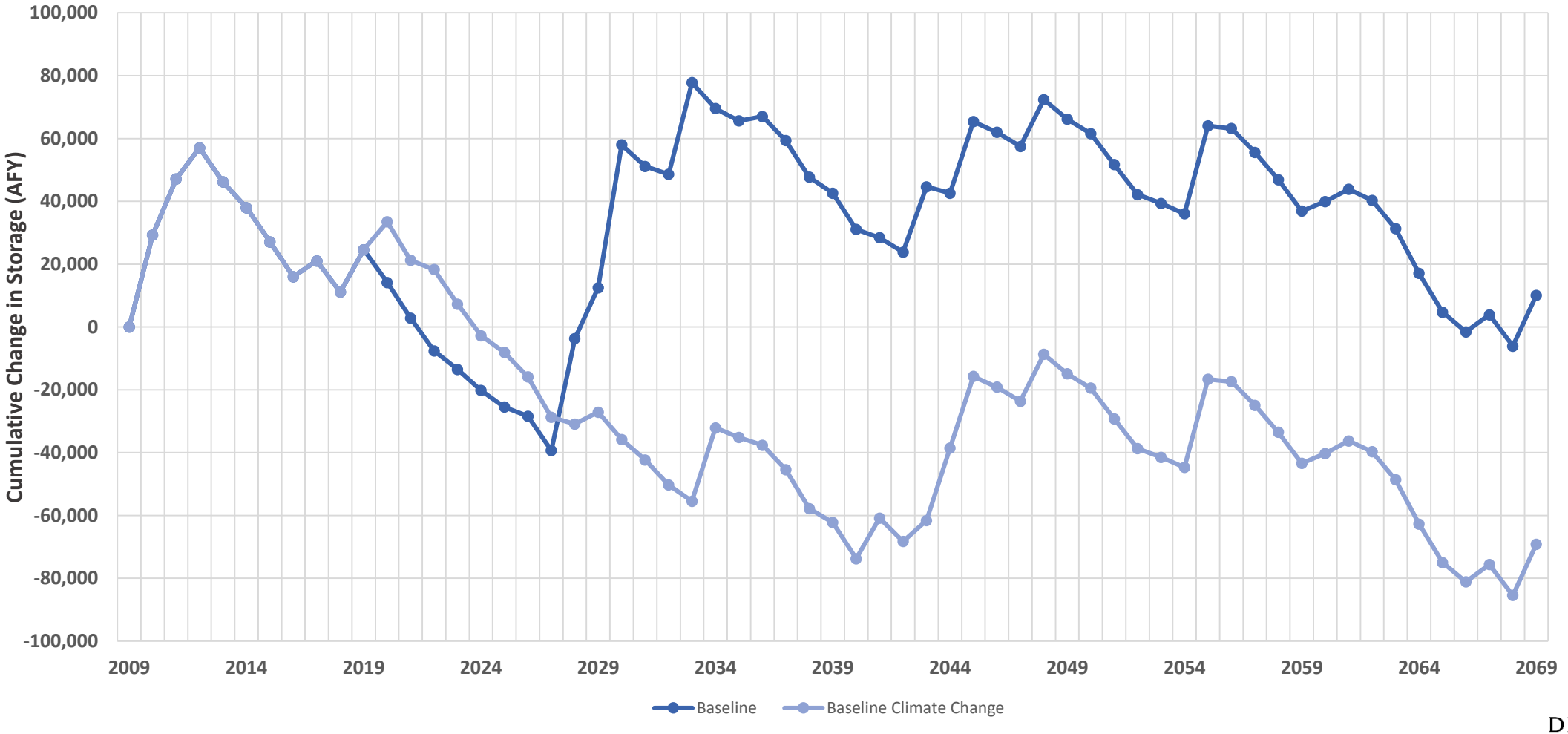
Observed and Simulated Hydrographs of Selected Wells

Mission Creek Groundwater Model Update

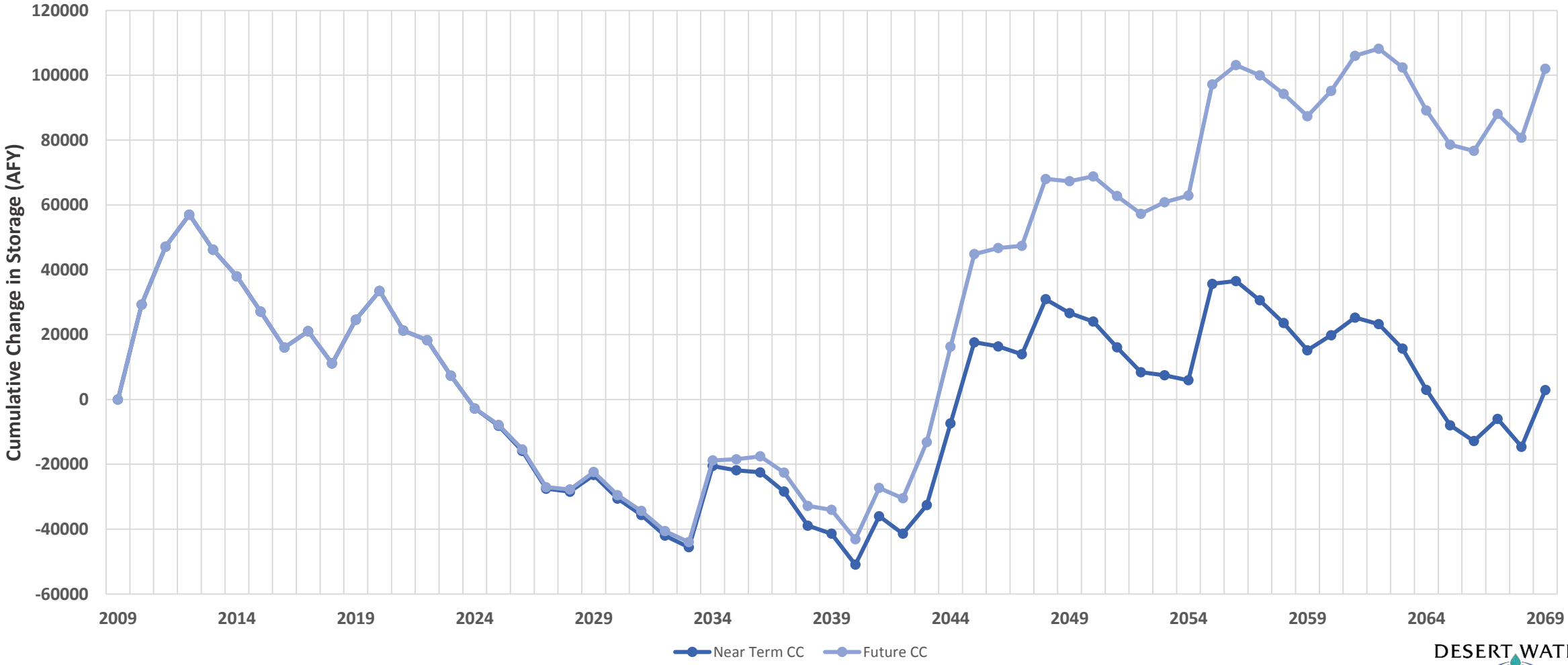
Riverside County, California

By: dmb	Date: 09/18/2020	Project No.: CM19167351
wood.		Figure **A23**

Baseline Groundwater Balance & Cumulative Change in Storage



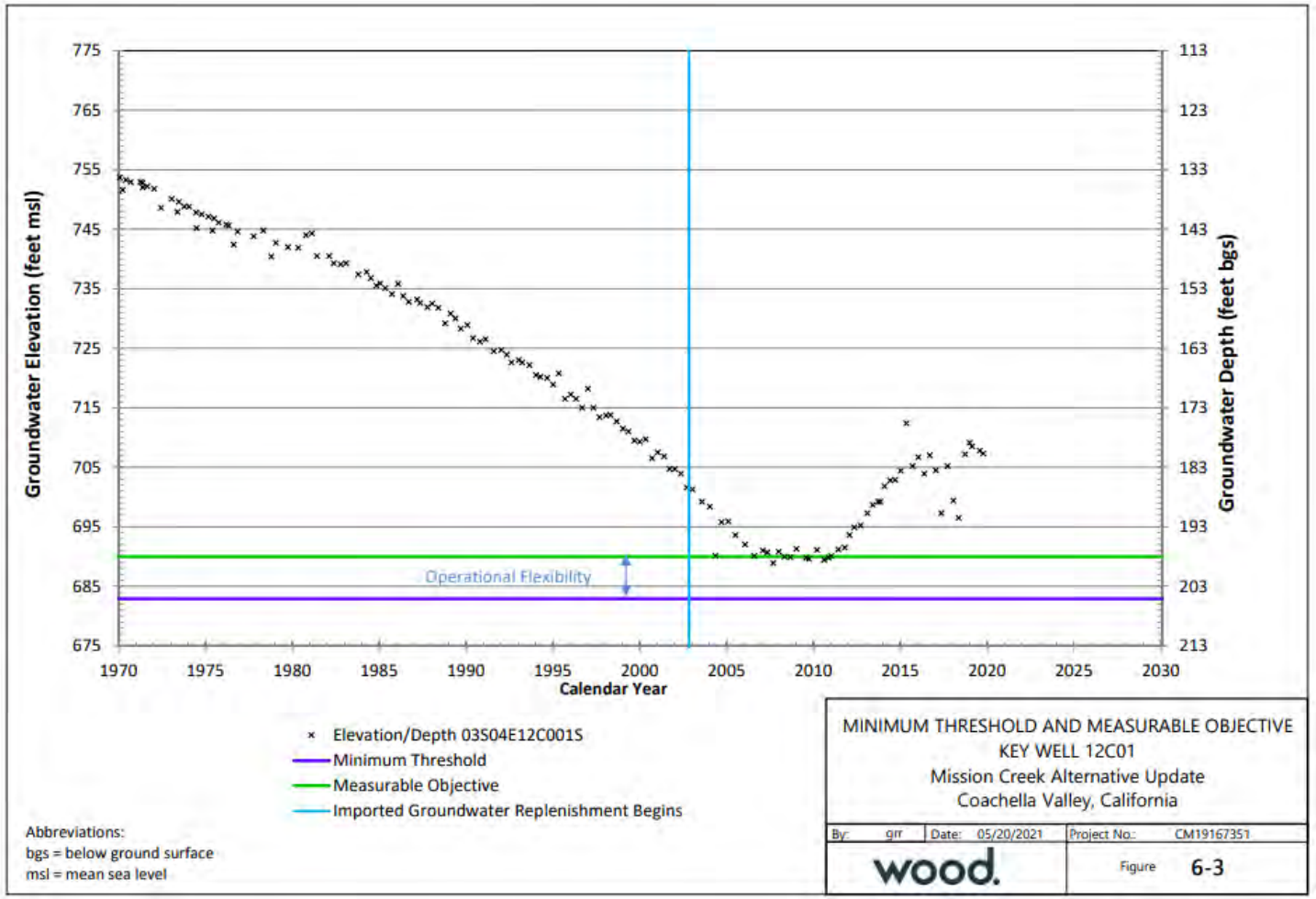
Near-term, Future Groundwater Balance & Cumulative Change in Storage



DESERT WATER

Groundwater Levels Criteria

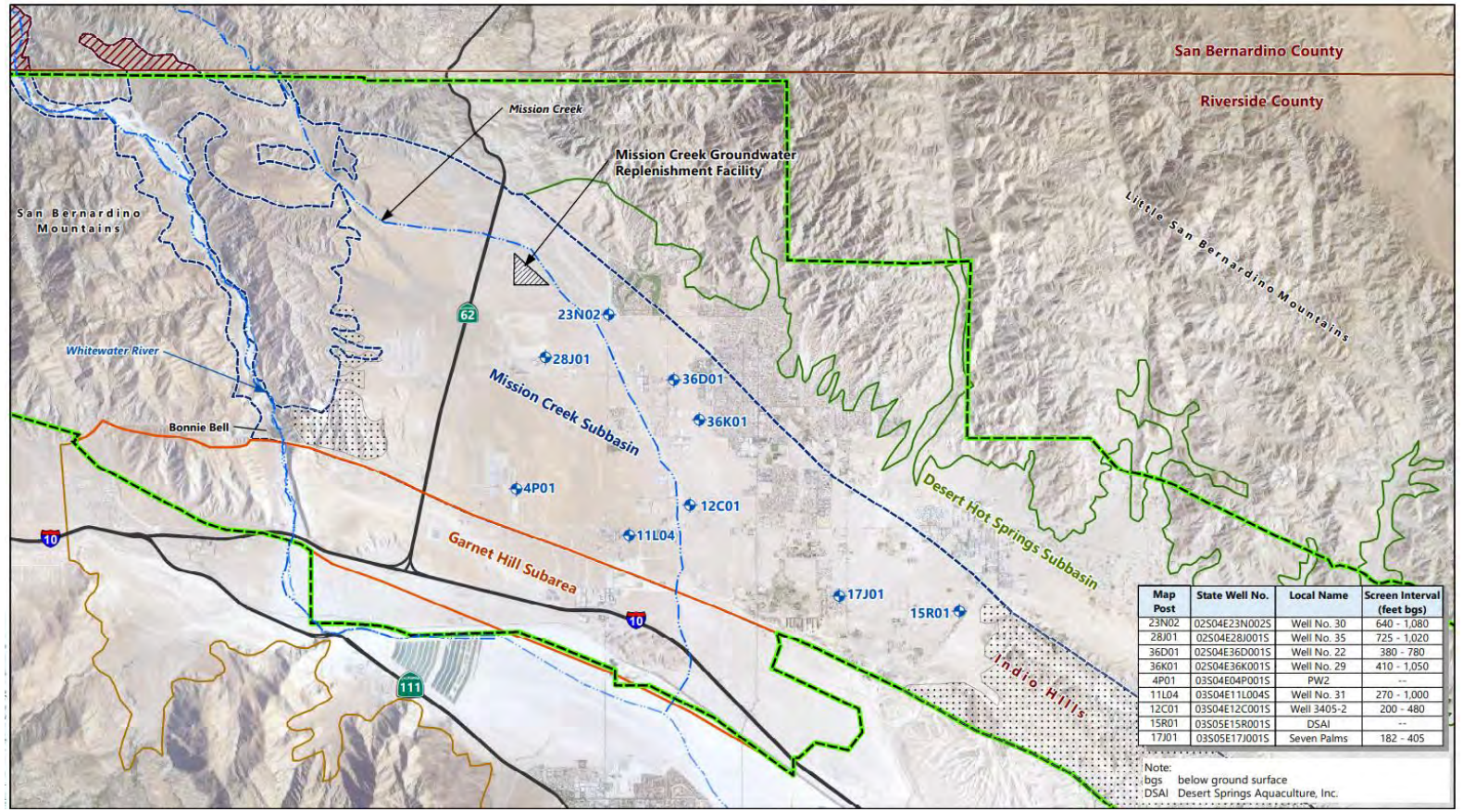
- DWR recommended groundwater-level criteria from specific wells that will be used to demonstrate that the 2009 groundwater level standard identified in the Plan is being met.
- MTs set to one standard deviation of water levels between 2002 and 2019 <u>below</u> 2009 levels at 9 Key Wells
- Management objective set to 2009 levels at these Key Wells



DESERT WATER

Monitoring at Key Wells

- A significant and unreasonable undesirable condition occurs when
  - The MT is crossed in four key wells (45%)
  - For three consecutive years
- Levels at Key Wells will also serve as a proxy for storage
- GSAs will monitor & report annually



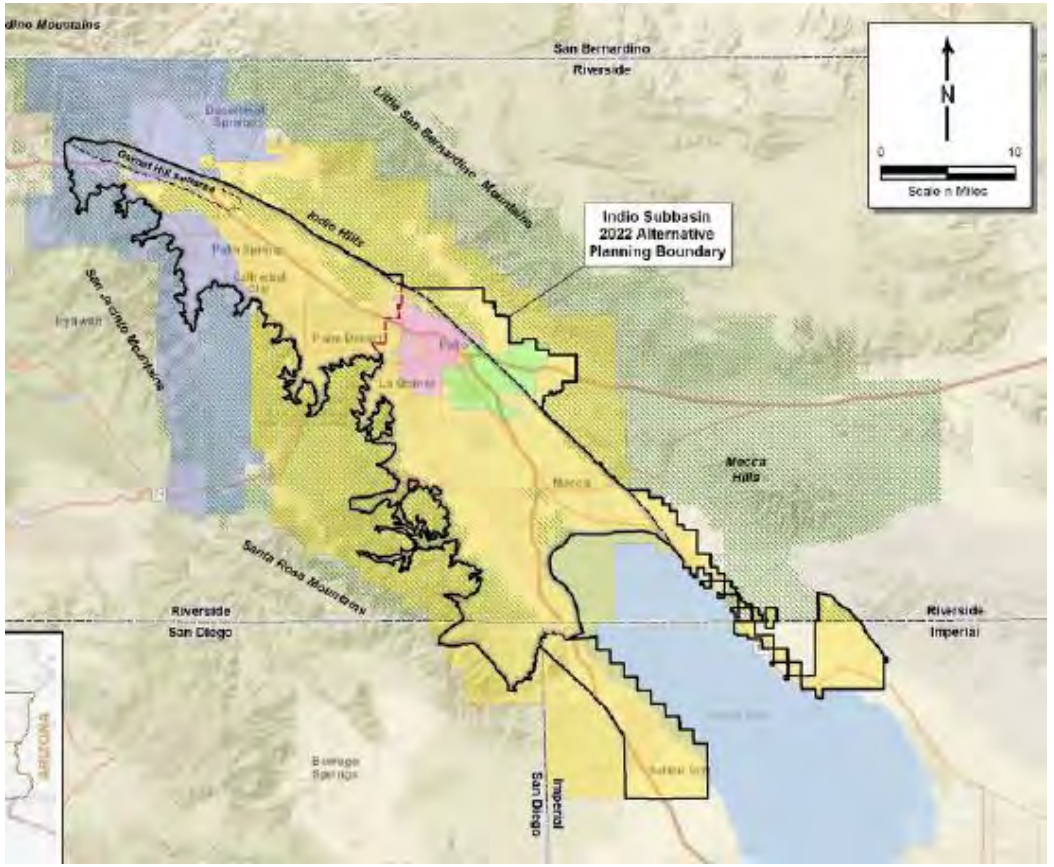
Map Post	State Well No.	Local Name	Screen Interval (feet bgs)
23N02	02S04E23N002S	Well No. 30	640 - 1,080
28J01	02S04E28J001S	Well No. 35	725 - 1,020
36D01	02S04E36D001S	Well No. 22	380 - 780
36K01	02S04E36K001S	Well No. 29	410 - 1,050
4P01	03S04E04P001S	PW2	--
11L04	03S04E11L004S	Well No. 31	270 - 1,000
12C01	03S04E12C001S	Well 3405-2	200 - 480
15R01	03S05E15R001S	DSAI	--
17J01	03S05E17J001S	Seven Palms	182 - 405

Note:
bgs below ground surface
DSAI Desert Springs Aquaculture, Inc.

DESERT WATER

DWA Area of Benefit Analysis

- Narrowing view to just DWA area
- Analyzing active conservation projections within our area



Next Steps - Timeline

Activity	Time Period
Draft Alternative Plan Update Agency Review	Mid-August
Public and Tribal Workshops	Late August
Public and Tribal Workshops	Late September/ Early October
30-day Public Review	Late September
Board Adoption	December 7
Submit to DWR	By January 1, 2022

DESERT WATER