BOARD OF DIRECTORS MEETING | Agenda

July 23, 2020

Visalia Convention Center – San Joaquin Room, first floor (Directors Only)
303 E Acequia Ave, Visalia, CA 93291

8:30 AM (CLOSED SESSION)

The public may call-1-866-893-0375 Pin 5595626900# at 8:30 A.M. with any comments prior to Closed Session

10:00 (OPEN SESSION)

VIA WEBEX AT: Video system or application Dial: Webex.com, join, 1339715246@friantwater.webex.com and Phone access dial 1-415-655-0001

MEETING ACCESS CODE: 133 971 5246/MEETING PASSWORD: PZmfgpNp874 (79634767 from phones).

In accordance with the Governor’s Executive Order (N-29-20) and the declared State of Emergency, including social distancing directives as a result of the threat of the COVID-19 virus, Board members and FWA staff will be participating in this meeting remotely. There will not be a physical location for this meeting. Members of the public may participate in the meeting in the following way:

1. Video System or Application Webex.com, join, Dial 1339715246@friantwater.webex.com
2. Phone: WEBEX TELECONFERENCE: 1-415-655-0001
3. MEETING ACCESS CODE : 133 971 5246 MEETING/MEETING PASSWORD: PZmfgpNp874 (79634767 from phones) Email: You may submit comments on a specific agenda item via email to tmarie@friantwater.org. Please send your email at least one hour prior to the start of the meeting.

If members of the public have any problems using the WebEx number during the meeting, please contact the FWA office at 559-562-6305. The Friant Water Authority thanks you for your understanding and for doing your part to prevent the spread of COVID-19.

At the discretion of the Board of Directors, all items appearing on this agenda, whether or not expressly listed for action may be subject to action by the Board. The order of agenda items is subject to change.

1. CALL TO ORDER/ROLL CALL – (TANTAU)
2. APPROVAL OF THE AGENDA – (TANTAU)
3. PUBLIC COMMENT ON CLOSED SESSION ITEMS – (DAVIS)
4. ADJOURN TO CLOSED SESSION
CLOSED SESSION ITEMS (90 MIN)

5. CONFERENCE WITH LEGAL COUNSEL - EXISTING LITIGATION
   A. NRDC v. Murillo, U.S. District Court, Eastern District of California (Sacramento Division), Case No. 88-cv-01658-JAM-GGH
   B. California Natural Resources Agency v. Ross, U.S. District Court, Eastern District of California (Fresno Division), Case No. 1:20-cv-00426-DAD-SKO
   C. Tehama-Colusa Canal Authority, et al., v. California Department of Water Resources, et al., Fresno County Superior Court

6. CONFERENCE WITH LEGAL COUNSEL-ANTICIPATED OF LITIGATION
   (Government Code section 54956.9(d)(2)
   Significant Exposure to Litigation: Two potential matters.

7. CONFERENCE WITH LEGAL COUNSEL-INITIATION OF LITIGATION
   (Government Code section 54956.9(d)(4))
   Initiation of Litigation: Two potential cases.

8. CONFERENCE WITH REAL PROPERTY NEGOTIATORS
   Property: Friant-Kern Canal facilities and right-of-way
   Agency negotiator: CEO, COO, General Counsel
   Negotiating parties: United States (Bureau of Reclamation)
   Under negotiation: OM&R Transfer Agreement (price and terms of payment)

9. RECONVENE INTO OPEN SESSION (START AT 10:00 AM)
   Announce reportable action taken during closed session.

10. PUBLIC COMMENT / PUBLIC PRESENTATIONS – (TANTAU)
    Public comment is welcome at this time on any matter within the jurisdiction of the Board that is not on the agenda. Under the State’s open meeting law - the Brown Act - no action may be taken on any item not on the agenda. Public comment on items on the agenda will be allowed at the time the Board considers the item.

11. CONSENT CALENDAR – (TANTAU)
    The following routine matters will be acted upon by one vote, unless a Board Member requests separate consideration of the item.
    A. Approval of the Minutes – Board of Directors meeting of June 25, 2020. (Tantau)
    B. Approve July 2020 bills and accept the Cash Activity Reports June 2020. (Willard)
12. **ACTION ITEMS (30 MINUTES)**
   
   A. Adoption Of A Resolution Authorizing The Execution Of The Renewal Of The Agreement Transferring The Operations, Maintenance And Repair Of The Friant-Kern Canal And Related Facilities Between FWA And The United States (Bureau of Reclamation) And Finding That The Execution Of The Renewed Agreement Is Exempt From The California Environmental Quality Act. (Phillips/Davis)
   
   B. Approve Submission Of A Draft Water Quality Policy For The Friant-Kern Canal To The Bureau Of Reclamation And Direct Staff To Coordinate With Reclamation On The Implementation Of The Draft Policy. (DeFlitch/Buck-Macleod)
   
   C. Adoption Of A Resolution Authorizing The Chief Executive Officer and Chief Operations Officer to Accept Real Property Interests Conveyed To FWA. (Davis)

13. **GENERAL UPDATES & REPORTS (2 HOURS)**
   
   A. Draft 2021 General Member Budget (Phillips/Willard) (15 minutes)
   
   B. External Affairs Activities. (Biering/Amaral) (15 minutes)
   
   C. Friant-Kern Canal Capacity Correction Project Update. (30 minutes)
      
      i. FKC Middle Reach Capacity Correction Project Schedule. (DeFlitch/Davis) (10 minutes)
      
      ii. FKC Middle Reach Capacity Correction Project Funding Update And Review Of Draft Financing Plan. (Phillips, Amaral, Thomas) (20 minutes)
   
   D. San Joaquin Valley Blueprint Update. (Ewell) (5 minutes)
   
   E. Water Operations Update. (DeFlitch, Biering, Buck-Macleod, Reclamation) (20 minutes)
      
      i. 2020 ASO Flights and Current Snowpack/Storage
      
      ii. Friant Supply
      
      iii. Delta/CVP Supply
   
   F. O&M Report. (DeFlitch) (5 minutes)
   
   G. CEO Report. (Phillips) (10 minutes)

14. **ADJOURNMENT**

**Public Participation Information**

Agenda reports and other disclosable public records related to each Open Session agenda item are available on FWA's website under "Calendar" at Friantwater.org and at FWA's main office, 854 N. Harvard Ave., Lindsay, CA 93247, during regular business hours. Under the Americans with Disabilities Act, if you require a disability-related modification or accommodation to participate in this meeting, including auxiliary aids or services, please contact Toni Marie at 559-562-6305 at least 48 hours prior to the meeting.
CALL TO ORDER/ROLL CALL

Chairman Chris Tantau called to order the noticed meeting of the Board of Directors of the Friant Water Authority at 8:30 a.m.

ROLL CALL

Chief Executive Officer, Jason R. Phillips noted that a quorum of the Board of Directors was present.

ATTENDANCE:

Directors Present:
- Edwin Camp (AEWSD)
- Brock Buche (CofF)
- George Porter (FID) (left after closed session)
- Loren Booth (HVID)
- Chris Tantau (KDWCD)
- Kent Stephens (KTWD)
- Michael Brownfield (LID)
- Cliff Loeffler (LSID)
- Josh Pitigliano (LTRID)
- Jim Erickson (MID)
- David A. Brown (OCID)
- Eric Borba (PID)
- Steven G. Kisling (SID)
- Matthew Leider (TPWD) (Arrived late, missed Consent Calendar Vote)
- Rick Borges (TID)

Non-FWA Directors Present:
- Kelly Hampton (DEID)
- Joseph Ferrara (EID)
- Doug Phillips (IID)
- John Fisher (SSJMUD)

Directors Absent: Kole Upton, Chowchilla W.D. (CWD); and Edwin Wheaton, Terra Bella I.D. (TBID)

APPROVAL OF THE AGENDA

The Board approved the agenda as presented.
M/S/C – Motion by Director Brownfield, seconded by Director Kisling, to approve the agenda as presented. The motion carried. (Roll Call Vote: Ayes – AESWD, CofF, FID, KDWCD, KTWD, LID, LSID, MID, OCID, PID, SID, TID; Nays – 0; Absent – CWD, TPWD, TBID)

3. PUBLIC COMMENT ON CLOSED SESSION ITEMS – (DAVIS)

4. ADJOURN TO CLOSED SESSION

CLOSED SESSION ITEMS (60 MIN)

5. CONFERENCE WITH LEGAL COUNSEL - EXISTING LITIGATION
   A. NRDC v. Murillo, U.S. District Court, Eastern District of California (Sacramento Division), Case No. 88-cv-01658-JAM-GGH
   B. California Natural Resources Agency v. Ross, U.S. District Court, Eastern District of California (Fresno Division), Case No. 1:20-cv-00426-DAD-SKO
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   Agency negotiator: CEO, COO, General Counsel
   Negotiating parties: United States (Bureau of Reclamation)
   Under negotiation: OM&R Transfer Agreement (price and terms of payment)

9. RECONVENE INTO OPEN SESSION (START AT 9:30 AM)
   No reportable action was taken during closed session.

10. PUBLIC COMMENT / PUBLIC PRESENTATIONS
    Peter Harman requested the status of the proposal that was sent to Jason Phillips and the Board, which proposed to install a turnout on the FKC. Chairman Tantau advised that the Board has seen the request and that staff would get back to Mr. Harman on the matter.
11. **CONSENT CALENDAR**

The following routine matters were acted upon by one vote, unless a Board Member requested separate consideration of the item.

A. Approval of the Minutes – Board of Directors meeting of April 23, 2020.

B. Approve May 2020 bills and accept the Cash Activity Reports April 2020.

**M/S/C** – Motion by Director Kisling, seconded by Director Erickson, to approve the consent calendar as presented. The motion carried. (Roll Call Vote: Ayes – (Roll Call Vote: Ayes – AESWD, CoF, FID, KDWCD, KTWD, Lid, LSID, MID, OCID, PID, SID, TID; Nays – 0; Absent – CWD, TPWD, TBID) (Non-FWA Contractor Roll Call Vote: Ayes – EID, Abstain – DEID, EID, IID, SSJMUD; Nays- 0)

12. **ACTION ITEMS**

A. Request for Direction to Pursue Friant Contractor Additional Funding for Friant-Kern Canal Middle Reach Capacity Correction Project In Exchange For Capacity Priority and Related Benefits in the Proposed Zone 3 of the Repaired FKC – CEO Phillips went through the agenda report and discussed Zone 3 funding and the additional funding options that might be pursued. A workshop to discuss the modeling will be scheduled upon approval.

**M/S/C** – Motion by Director Camp, seconded by Director Stephens, to approve the request that FWA staff and financing consultants continue to pursue Friant Contractors additional funding for the Project in exchange for capacity priority and related benefits in the proposed Zone 3 of the repaired FKC, work with Friant Contractors to gauge interest in such additional funding and refine the benefits to be provided for such funding, and bring back for Board consideration formal funding mechanisms related to the proposed Zone 3. The motion carried. (Roll Call Vote: Ayes – AESWD, KDWCD, KTWD, Lid, LSID, MID, OCID, PID, SID, TPWD; TID; Nays – FID; Abstain – CoF; Absent – CWD, TBID) (Non-FWA Contractor Roll Call Vote: Ayes – DEID, EID, SSJMUD; Abstain ¬IID; Nays- 0)

13. **GENERAL UPDATES & REPORTS**

A. Friant-Kern Canal Capacity Correction Project Update.

   i. FKC Middle Reach Capacity Correction Project Schedule – CEO Phillips, COO DeFlitch and General Counsel Davis provided an update on the Project as outlined in the agenda report. The Draft EIS/EIR has been issued for a 60-day review as of May 8, 2020; the 60% Design Review was just submitted to Reclamation; and the land acquisition program continues to move forward as BRI has submitted 10 appraisals to AVSO for approval.

   ii. FKC Middle Reach Capacity Correction Project Funding Update – CEO Phillips went through the summary of the recently held April 29, 2020 FKC Financing Workshop as outlined in the agenda report. The Workshop was well attended and lasted just under 3 hours.

   iii. FKC Middle Reach Capacity Correction Project Contract Management – CEO Phillips and General Counsel Davis when through the available options for preparing and awarding the construction contract(s) for the FKC Middle Reach Capacity Correction Project as outlined in the agenda report. Friant has asked Reclamation to put together a contract management
team for its consideration since that will be a key consideration in evaluating whether to have Reclamation serve as the contracting entity. It is anticipated that a final recommendation to the Board will be presented at the June 25th Board meeting.

B. San Joaquin Valley Blueprint Update.
   i. Update on San Joaquin Valley Blueprint conveyance projects – Austin Ewell introduced Scott Hamilton who gave a presentation on the Blueprint’s Mission and current efforts in developing a plan of action to sustain and improve the communities, habitats, working landscapes, and jobs of the San Joaquin Valley. The presentation was included in packet.
   ii. Other Blueprint activities – Austin Ewell gave a report on current Blueprint activities as outlined in the agenda report following the presentation.

C. OM&R Transfer Agreement Update – General Counsel Davis gave an update on the Transfer Agreement as outlined in the agenda report. He said that Article 12 of the Transfer Agreement, a cost recovery clause for Authority OM&R activities; termination of water deliveries continues to be negotiated, specifically 12(c) as highlighted in the contract language as part of the agenda report. The hope is that a final negotiation session will be scheduled to specifically discuss 12(c) language, and that a final Agreement can be brought back to the Board for approval soon.

D. FKC Title Transfer Update – CEO Phillips gave an update on the development of a draft MOU regarding FKC Title Transfer. He said that a draft MOU and letter have been prepared and will be sent to Reclamation within the next week. The hope is that after Reclamation and Friant meet, the Draft MOU can be presented to the Board for possible execution.

E. External Affairs Activities – Alex Biering, Mike Villines and Johnny Amaral provided a report on Friant’s external affairs activities as outlined in the agenda report. This included a report on the Governor’s May revised budget on May 14th that went from a $5 billion surplus to a $35-$54 billion dollar deficit; COVID Stimulus efforts, specifically passage of a $3 trillion HEROES Act that the House voted on May 15th, though it’s unlikely to pass the Senate. A compromise version will most likely be signed into law in June; and on May 21, Diane Feinstein (D-Calif) introduced the Restoration of Essential Conveyance Act (S. 3811), a bill that authorizes $800 million in federal funding to repair critical canals in the San Joaquin Valley damaged by land sinking from over pumping of groundwater for environmental restoration, similar to legislation that Representative TJ Cox introduced in the House earlier in the year.

F. Water Operations Update. (DeFlitch, Biering, Buck-Macleod, Reclamation) (20 minutes)
   i. 2020 ASO Flights and Current Snowpack/Storage
   ii. Friant Supply
   iii. Delta/CVP Supply

Water Resources Manager Buck-Macleod and Reclamation’s Rufino Gonzalez gave a water operations update as outlined in the agenda report. On May 19th, Reclamation updated the water supply allocation for the Friant Division, increasing the Class 1 allocation from 55% to 60%; and CVP South-of-Delta (SOD) Agricultural contractors allocation from 15% to 20%. On May 17, Reclamation updated the San Joaquin River Restoration Program (SJRRP) allocation, decreasing from 211 TAF to 202 TAF within the Dry Year type. He also reported that ASO activities included a 3rd flight on May 24-25 and that data is currently being processed.
G. Ad Hoc Water Quality Committee Activities Update - Water Resources Manager Buck-Macleod gave an update on current activities of the Ad Hoc Water Quality Committee as outlined in the agenda report. He reported that a majority of the Committee agreed to move forward with the draft policy to get feedback from water users. A Webex workshop will be conducted on June 17 at 10 a.m. The agenda and materials are expected to be provided in advance of the meeting, so participants have enough time to review them. Director Brown of Orange Cove Water District reported that his district has been experiencing issues with canal water filtration, a problem caused by the increased algae in the canal and was hoping to get that addressed. COO DeFlitch said he would look into that further and report back to Director Brown on the issue. He did note that Friant is currently applying copper-sulfate every 10 days to 2 weeks to kill the algae.

H. O&M Report – COO DeFlitch said the O&M Report was in the package for review at the Board’s leisure.

I. CEO Report – CEO Phillips reported on current activities of the Authority. This included an announcement that the Annual Meeting originally planned for April and considered for rescheduling later in the year, is now being cancelled altogether due to COVID-19 concerns. The Board Retreat; however, is being planned for the November time-frame and Friant will provide dates and a location at the June Board meeting. Friant also anticipates having a limited in-person Board meeting in June as counties and cities are beginning to open up.

14. ADJOURNMENT

The meeting adjourned at 12:16 p.m.

__________________________
Jason R. Phillips, Chief Executive Officer
Friant Water Authority

__________________________
Toni Marie, Recording Secretary
Friant Water Authority

OTHERS IN ATTENDANCE:

Jeevan Muhar Arvin-Edison W.S.D.
Brandon Tomlinson Chowchilla W.D.
William R. Stretch Fresno I.D.
Mark Larsen Kaweah-Delta W.C.D.
Steve Dalke Kern-Tulare W.D.
Mike Hagman Lindmore I.D.
Craig Wallace Lindsay-Strathmore I.D.
Tom Barcellos Lower Tule River I.D.
Eric Limas Lower Tule River I.D., Tea Pot Dome W.D.
Tommy Greci Madera I.D.
Fergus Morrissey Orange Cove I.D.
Sean Geivet Porterville I.D., Saucelito I.D., Terra Bella I.D.
Aaron Fukuda   Tulare I.D.
Eric Quinley   Delano-Earlimart I.D.
Steve Collup   Arvin-Edison W.S.D.
Don Davis   FWA General Counsel
Don Willard   FWA
Toni Marie   FWA
Chris Hickernell   FWA
Jason Phillips   FWA
John Bezdek   FWA
Doug DeFlitch   FWA
Christopher Hunter   FWA
Alex Biering   FWA
Johnny Amaral   FWA
Ian Buck-Macleod   FWA
Steve Ottemoeller   Contractor
Bill Luce   Contractor
Austin Ewell   SJV Blueprint
Tim Gobler   Wonderful
Geoff Vanden Heuvel   Milk Producers Council
Don Wright   Waterwrights.com
Alan Doud   Young Wooldridge
Aubrey Mauritson   Visalia Law
Mike Villines
Mike Vicky
Dana Munn   SWID
Rufino Gonzalez   USBR
Scott Hamilton   SJV Blueprint
Peter Harman
DATE: July 23, 2020

TO: Board of Directors

FROM: Finance Committee, Don Willard, Business Administration Manager

SUBJECT: Approve payment of the bills for July 2020 and accept Cash Activity Reports for June 2020

SUMMARY:
The Finance Committee met on July 20, 2020 and reviewed the bills to be paid for July 2020 and the Cash Activity Reports for June 2020. There was a quorum for the meeting.

FINANCE COMMITTEE ACTION:
The Finance Committee acted to recommend that Board of Directors approve payment of the July 2020 bills in the amount of $4,157,487.65 and accept the Cash Activity Reports for June 2020.

RECOMMENDED ACTION:
The Finance Committee recommends approval for the payment of the July 2020 bills in the amount of $4,157,487.65 and acceptance of the June 2020 Cash Activity Reports.

SUGGESTED MOTION:
The Board of Directors approve payment of the July 2020 bills of $4,157,487.65 and accept the June 2020 Cash Activity Reports.

BUDGET IMPACT:
$1,052,413.74 chargeable to the FY 2020 O&M Budget; $43,632.18 chargeable to the FY 2020 GM Budget.

$2,905,651.73 wire to SLDMA for July / August 2020.

$155,790.00 – Banta-Carbona Irrigation District & Patterson Irrigation District – Recapture Water.

ATTACHMENTS:
Friant Water Authority Expenditures – July 2020
Friant Water Authority June 2020 Cash Activity Reports
<table>
<thead>
<tr>
<th>PAYEE</th>
<th>O&amp;M FUND</th>
<th>GM FUND</th>
<th>TOTAL</th>
<th>DESCRIPTION</th>
</tr>
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<tbody>
<tr>
<td>99 STEEL SPECIALTIES</td>
<td>126.65</td>
<td>-</td>
<td>126.65</td>
<td>Metal materials for Delano</td>
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<td>AAA TRUCK SERVICE, INC.</td>
<td>134.63</td>
<td>-</td>
<td>134.63</td>
<td>Oil for utility tractor</td>
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<td>ABILITY</td>
<td>116.01</td>
<td>-</td>
<td>116.01</td>
<td>Answering service-Admin, canal</td>
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<td>ACWA / JPIA</td>
<td>903.00</td>
<td>-</td>
<td>903.00</td>
<td>Annual crime insurance</td>
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<td>ALTA PUMP</td>
<td>3,521.56</td>
<td>-</td>
<td>3,521.56</td>
<td>Sump pump replacements-2</td>
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<td>AMAZON CAPITOL SERVICES, INC.</td>
<td>33.68</td>
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<td>33.68</td>
<td>Office supplies</td>
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<tr>
<td>AT&amp;T</td>
<td>203.16</td>
<td>-</td>
<td>203.16</td>
<td>Telephone services</td>
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<tr>
<td>AWARDS &amp; SIGNS UNLIMITED</td>
<td>53.71</td>
<td>-</td>
<td>53.71</td>
<td>Engraved name plates-4</td>
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<td>BARNES WELDING SUPPLY INC</td>
<td>21.46</td>
<td>-</td>
<td>21.46</td>
<td>Supplies for Lindsay Mechanic</td>
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<td>BOOT BARN INC.</td>
<td>356.49</td>
<td>-</td>
<td>356.49</td>
<td>Safety boots ($76.49 reimbursable)</td>
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<td>BSK ASSOCIATES</td>
<td>704.00</td>
<td>-</td>
<td>704.00</td>
<td>Water analysis for May</td>
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<tr>
<td>BUREAU OF RECLAMATION</td>
<td>10,000.00</td>
<td>-</td>
<td>10,000.00</td>
<td>Renewal of Transfer of Operations, Maintenance &amp; Replacement</td>
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<td>CDW GOVERNMENT INC</td>
<td>1,456.75</td>
<td>-</td>
<td>1,456.75</td>
<td>Logitech camera</td>
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<td>CITY OF DELANO</td>
<td>236.60</td>
<td>-</td>
<td>236.60</td>
<td>Utilities</td>
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<td>COMCAST</td>
<td>351.59</td>
<td>-</td>
<td>351.59</td>
<td>Internet service-Sacramento</td>
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<tr>
<td>CULLIGAN</td>
<td>122.75</td>
<td>-</td>
<td>122.75</td>
<td>Water service-OC yard</td>
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<tr>
<td>CULLIGAN WATER CONDITION</td>
<td>185.10</td>
<td>-</td>
<td>185.10</td>
<td>Water service-Lindsay yard</td>
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<tr>
<td>DACE FARM SUPPLY</td>
<td>258.72</td>
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<td>258.72</td>
<td>Replacement battery charger</td>
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<td>DELL MARKETING L.P.</td>
<td>4,260.71</td>
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<td>Replacement laptops-2</td>
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<td>ENCHOICE</td>
<td>2,500.00</td>
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<td>2,500.00</td>
<td>Software support</td>
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<td>FASTENAL COMPANY</td>
<td>56.01</td>
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<td>56.01</td>
<td>Hardware for Delano yard</td>
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<td>FEDEX</td>
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<td>101.67</td>
<td>Various mailing-3</td>
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<td>GRAINGER</td>
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<td>HOME DEPOT CREDIT SERVICES</td>
<td>557.50</td>
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<td>557.50</td>
<td>Supplies for all yards</td>
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<td>HOSE &amp; FITTINGS, ECT.</td>
<td>498.74</td>
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<td>Replacement steam rack hose</td>
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<td>Propane (8 gallons)</td>
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<td>120.50</td>
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<td>120.50</td>
<td>Smog inspections-3</td>
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<td>JOHNSON CONTROLS FIRE PROTECTION</td>
<td>549.71</td>
<td>-</td>
<td>549.71</td>
<td>Annual extinguisher service-OC yard</td>
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<tr>
<td>KISCO SALES INC.</td>
<td>105.66</td>
<td>-</td>
<td>105.66</td>
<td>Repair parts for spray rig</td>
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<td>LINCOLN NATIONAL LIFE INSURANCE CO.</td>
<td>3,517.62</td>
<td>508.83</td>
<td>4,026.45</td>
<td>Life insurance premiums</td>
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<td>MARIE, TONI</td>
<td>147.78</td>
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<td>147.78</td>
<td>Expense claim reimbursement</td>
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<td>MARTIN TERMITE &amp; PEST CONTROL</td>
<td>45.00</td>
<td>-</td>
<td>45.00</td>
<td>Pest control-Kaweah house</td>
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<td>MBK ENGINEERS</td>
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<td>12,990.25</td>
<td>Consulting services-March and April</td>
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<td>MICROSOFT</td>
<td>858.00</td>
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<td>858.00</td>
<td>Office 365</td>
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<td>MORRIS LEVIN AND SON</td>
<td>59.42</td>
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<td>59.42</td>
<td>Supplies for Lindsay yard</td>
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<td>NUTRIEN AG SOLUTIONS</td>
<td>969.75</td>
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<td>969.75</td>
<td>Cheetah Pro (15 gallons)</td>
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<td>OFFICE DEPOT INC.</td>
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<td>-</td>
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<td>385.25</td>
<td>Hazardous waste removal</td>
</tr>
<tr>
<td>YSI, INC.</td>
<td>1,499.06</td>
<td>-</td>
<td>1,499.06</td>
<td>Sontec repairs</td>
</tr>
<tr>
<td>ZOOM IMAGING SOLUTIONS, INC.</td>
<td>1,433.49</td>
<td>-</td>
<td>1,433.49</td>
<td>Copier supplies</td>
</tr>
</tbody>
</table>

**BILLS TO BE PAID JULY 24, 2020**

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>Total previously paid</td>
<td>129,898.13</td>
<td>4,808.19</td>
<td>134,706.32</td>
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<tr>
<td>Grand total to be approved</td>
<td>3,513,124.58</td>
<td>43,632.18</td>
<td>3,556,756.76</td>
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<tr>
<td>Total from Pump Back Grant</td>
<td>36,037.22</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total from WIIN and SJRRP Grant</td>
<td>564,693.67</td>
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<tr>
<td>Grand Total</td>
<td>$ 4,157,487.65</td>
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## GRANTS

<table>
<thead>
<tr>
<th>PAYEE</th>
<th>Pump Back</th>
<th>Winn/SJRRP</th>
<th>TOTAL</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>BENDER ROSENTHAL INCORPORATED</td>
<td></td>
<td>$43,300.00</td>
<td>$43,300.00</td>
<td>Consulting services for March</td>
</tr>
<tr>
<td>STANTEC CONSULTING SERVICES INC.</td>
<td>$35,443.05</td>
<td>$428,067.16</td>
<td>$463,510.21</td>
<td>Consulting services for May</td>
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**BILLS PAID JULY 10, 2020**

<table>
<thead>
<tr>
<th>PAYEE</th>
<th>Pump Back</th>
<th>Winn/SJRRP</th>
<th>TOTAL</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>BENDER ROSENTHAL INCORPORATED</td>
<td></td>
<td></td>
<td>$52,192.00</td>
<td>Consulting services-June</td>
</tr>
<tr>
<td>BURKE, WILLIAMS &amp; SORENSEN, LLP</td>
<td>450.00</td>
<td>41,131.00</td>
<td>41,581.00</td>
<td>Professional services-April and May</td>
</tr>
<tr>
<td>INTRADO ENTERPRISE COLLABORATION, INC.</td>
<td>7.17</td>
<td>3.51</td>
<td>10.68</td>
<td>Telephone services</td>
</tr>
<tr>
<td>OTTEMOELLER CONSULTING SERVICES, LLC</td>
<td>137.00</td>
<td></td>
<td>137.00</td>
<td>Consulting services for June</td>
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</tbody>
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**BILLS TO BE PAID JULY 24, 2020**

<table>
<thead>
<tr>
<th>PAYEE</th>
<th>Pump Back</th>
<th>Winn/SJRRP</th>
<th>TOTAL</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$594.17</td>
<td>$93,326.51</td>
<td>$93,920.68</td>
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</tbody>
</table>

**GRAND TOTALS**

<table>
<thead>
<tr>
<th></th>
<th>Pump Back</th>
<th>Winn/SJRRP</th>
<th>TOTAL</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$36,037.22</td>
<td>$564,693.67</td>
<td>$600,730.89</td>
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</table>
## Operations & Maintenance

<table>
<thead>
<tr>
<th>Budget Year to Date</th>
<th>Remaining</th>
<th>% Budget Spent</th>
<th>FY 2020 Budget</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employee Salaries/Pay</td>
<td>941,076</td>
<td>557,148</td>
<td>383,927</td>
</tr>
<tr>
<td>Employee Benefits</td>
<td>434,192</td>
<td>315,314</td>
<td>118,878</td>
</tr>
<tr>
<td>Supplies &amp; Services</td>
<td>725,253</td>
<td>162,616</td>
<td>562,637</td>
</tr>
<tr>
<td><strong>Total Operations</strong></td>
<td><strong>2,100,521</strong></td>
<td><strong>1,035,079</strong></td>
<td><strong>1,065,443</strong></td>
</tr>
</tbody>
</table>

## Maintenance Dept

<table>
<thead>
<tr>
<th>Budget Year to Date</th>
<th>Remaining</th>
<th>% Budget Spent</th>
<th>FY 2020 Budget</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employee Salaries/Pay</td>
<td>2,081,633</td>
<td>1,686,227</td>
<td>395,406</td>
</tr>
<tr>
<td>Employee Benefits</td>
<td>994,805</td>
<td>920,282</td>
<td>74,524</td>
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<tr>
<td>Supplies &amp; Services</td>
<td>7,379,692</td>
<td>6,517,522</td>
<td>862,170</td>
</tr>
<tr>
<td><strong>Total Maintenance</strong></td>
<td><strong>10,456,130</strong></td>
<td><strong>9,124,030</strong></td>
<td><strong>1,332,100</strong></td>
</tr>
</tbody>
</table>

## Administration Allocation to O&M

<table>
<thead>
<tr>
<th>Budget Year to Date</th>
<th>Remaining</th>
<th>% Budget Spent</th>
<th>FY 2020 Budget</th>
</tr>
</thead>
<tbody>
<tr>
<td>Budget Year to Date</td>
<td>Administration Allocation to O&amp;M</td>
<td>2,132,339</td>
<td>1,325,595</td>
</tr>
<tr>
<td>Budget Year to Date</td>
<td>Administration Fixed Assets not allocated</td>
<td>364,439</td>
<td>-</td>
</tr>
<tr>
<td><strong>Total Operations &amp; Maintenance</strong></td>
<td><strong>15,053,429</strong></td>
<td><strong>11,484,703</strong></td>
<td><strong>3,568,725</strong></td>
</tr>
</tbody>
</table>

## General Member

<table>
<thead>
<tr>
<th>Budget Year to Date</th>
<th>Remaining</th>
<th>% Budget Spent</th>
<th>FY 2020 Budget</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employee Salaries/Pay with Benefits</td>
<td>736,000</td>
<td>530,247</td>
<td>205,753</td>
</tr>
<tr>
<td>Other supplies and services</td>
<td>295,500</td>
<td>176,640</td>
<td>118,860</td>
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<tr>
<td>Admin Allocation to GM</td>
<td>210,000</td>
<td>122,300</td>
<td>87,700</td>
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<tr>
<td>General Counsel</td>
<td>10,000</td>
<td>12,658</td>
<td>(2,658)</td>
</tr>
<tr>
<td>Outside Legal Consultants</td>
<td>309,500</td>
<td>241,413</td>
<td>68,087</td>
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<tr>
<td>Other Consultants</td>
<td>553,000</td>
<td>330,238</td>
<td>222,762</td>
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<tr>
<td><strong>Total General Member</strong></td>
<td><strong>2,114,000</strong></td>
<td><strong>1,413,497</strong></td>
<td><strong>700,503</strong></td>
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</tbody>
</table>
## FWA Revenue Presentation

FY 2019 - 2020  

<table>
<thead>
<tr>
<th>Operations &amp; Maintenance</th>
<th>FY 2020 Budget</th>
<th>06/30/2020 Year to Date</th>
<th>Budget Remaining</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenue</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interest Income</td>
<td>106,000</td>
<td>49,102</td>
<td>56,898</td>
</tr>
<tr>
<td>Miscellaneous Income</td>
<td>-</td>
<td>67,609</td>
<td>(67,609)</td>
</tr>
<tr>
<td>Water Sales Revenue</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Conveyance Fees</td>
<td>-</td>
<td>424,213</td>
<td></td>
</tr>
<tr>
<td>Federal Grant Revenue</td>
<td>-</td>
<td>1,144,486</td>
<td>(1,144,486)</td>
</tr>
<tr>
<td>O &amp; M Revenue</td>
<td>15,053,429</td>
<td>12,544,520</td>
<td>2,508,909</td>
</tr>
<tr>
<td><strong>Total Revenue</strong></td>
<td>15,159,429</td>
<td>14,229,930</td>
<td>1,353,712</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Expenses</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Operations</td>
<td>2,100,521</td>
<td>1,035,079</td>
<td>1,065,443</td>
</tr>
<tr>
<td>Total Maintenance</td>
<td>10,456,130</td>
<td>9,124,030</td>
<td>1,332,100</td>
</tr>
<tr>
<td>Total Administration</td>
<td>2,496,778</td>
<td>1,325,595</td>
<td>1,171,183</td>
</tr>
<tr>
<td><strong>Total O&amp;M Expenses</strong></td>
<td>15,053,429</td>
<td>11,484,703</td>
<td>3,568,725</td>
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</tbody>
</table>

## General Member

<table>
<thead>
<tr>
<th>FY 2020 Budget</th>
<th>06/30/2020 Year to Date</th>
<th>FY 2020 Remaining</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenue</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interest Income</td>
<td></td>
<td>10,867</td>
</tr>
<tr>
<td>GM Revenue</td>
<td>2,102,000</td>
<td>1,576,500</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td></td>
<td>390</td>
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<tr>
<td>Associate Dues</td>
<td>12,000</td>
<td>9,000</td>
</tr>
<tr>
<td><strong>Total Revenue</strong></td>
<td></td>
<td>1,596,757</td>
</tr>
<tr>
<td><strong>Total GM Expenses</strong></td>
<td></td>
<td>1,413,497</td>
</tr>
<tr>
<td>Maintenance Item</td>
<td>Annual Budget</td>
<td>YTD Actual</td>
</tr>
<tr>
<td>------------------------------------------------------</td>
<td>---------------</td>
<td>------------</td>
</tr>
<tr>
<td>Vehicle &amp; Equipment Service</td>
<td>736,462</td>
<td>354,949</td>
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<tr>
<td>Maintenance Supervision</td>
<td>328,514</td>
<td>242,620</td>
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<tr>
<td>Right-of-Way Management</td>
<td>23,012</td>
<td>35,544</td>
</tr>
<tr>
<td>Weed &amp; Pest Control</td>
<td>675,694</td>
<td>509,096</td>
</tr>
<tr>
<td>Implem Biol. Opinion</td>
<td>42,634</td>
<td>1,253</td>
</tr>
<tr>
<td>Road Maintenance</td>
<td>203,791</td>
<td>50,659</td>
</tr>
<tr>
<td>Yard &amp; Building Maintenance</td>
<td>285,821</td>
<td>187,542</td>
</tr>
<tr>
<td>Structure &amp; Gate Maintenance</td>
<td>103,524</td>
<td>161,341</td>
</tr>
<tr>
<td>Cleaning Right-of-Way</td>
<td>44,874</td>
<td>42,600</td>
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<tr>
<td>Bargate &amp; Guardrail Maint.</td>
<td>53,951</td>
<td>27,493</td>
</tr>
<tr>
<td>Embarkment Maintenance</td>
<td>62,517</td>
<td>77,914</td>
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<tr>
<td>Bridge Maintenance</td>
<td>71,846</td>
<td>11,811</td>
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<tr>
<td>Miscellaneous</td>
<td>20,216</td>
<td>8,388</td>
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<tr>
<td>Reverse Flow Pumping</td>
<td>-</td>
<td>54,047</td>
</tr>
<tr>
<td>Concrete Lining Maintenance</td>
<td>8,614</td>
<td>2,668</td>
</tr>
<tr>
<td>Deck &amp; Channel Maint.</td>
<td>26,533</td>
<td>6,767</td>
</tr>
<tr>
<td>Fence Maintenance</td>
<td>38,046</td>
<td>32,899</td>
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<tr>
<td>Mudjacking</td>
<td>14,464</td>
<td>3,843</td>
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<tr>
<td>Painting</td>
<td>56,021</td>
<td>17,495</td>
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<tr>
<td>Sump Pump Maintenance</td>
<td>1,907</td>
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<tr>
<td>Cross Drainage Structure Mtc</td>
<td>13,873</td>
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<tr>
<td>Rip-Rapping</td>
<td>6,560</td>
<td>197</td>
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<td>USBR Pump Back Project</td>
<td>147,483</td>
<td>278,702</td>
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<td>FK Subsidence</td>
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<td>5,295,020</td>
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<td>FK Subsidies</td>
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<tr>
<td>GSA Engagement</td>
<td>120,000</td>
<td>68,599</td>
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<tr>
<td>Operations Supervision</td>
<td>41,923</td>
<td>34,634</td>
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<tr>
<td>Water supply coordination &amp; monitoring</td>
<td>13,383</td>
<td>122,968</td>
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<tr>
<td>Water Quality</td>
<td>-</td>
<td>4,668</td>
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<tr>
<td>FK Title Transfer</td>
<td>669,831</td>
<td>76,422</td>
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<tr>
<td>Legal Expense - Direct</td>
<td>6,140</td>
<td>4,371</td>
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<tr>
<td>Safety &amp; First Aid Training</td>
<td>82,419</td>
<td>15,182</td>
</tr>
<tr>
<td>SDLMWFA/FWA</td>
<td>-</td>
<td>393</td>
</tr>
<tr>
<td>Payroll Preparation</td>
<td>2,393</td>
<td>331</td>
</tr>
<tr>
<td>Meetings (General)</td>
<td>23,306</td>
<td>66,943</td>
</tr>
<tr>
<td>Meetings (Board of Directors)</td>
<td>9,844</td>
<td>39,935</td>
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<tr>
<td>Meetings (Sub Committee)</td>
<td>6,562</td>
<td>14,446</td>
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<tr>
<td>Meetings (Staff)</td>
<td>14,573</td>
<td>29,432</td>
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<td>Education &amp; Training</td>
<td>60,695</td>
<td>27,427</td>
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<tr>
<td>Miscellaneous Administrative</td>
<td>-</td>
<td>9,521</td>
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<tr>
<td>Procurement</td>
<td>8,856</td>
<td>3,233</td>
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<tr>
<td>Inventory &amp; Property Mgt.</td>
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<td>Employee Benefit (Holiday)</td>
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<tr>
<td>Employee Benefit (Sick Pay)</td>
<td>84,072</td>
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<td>Employee Benefit (Vacation)</td>
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<td>89,542</td>
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<tr>
<td>Employee Benefit (Jury Duty)</td>
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<td>1,200</td>
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<td>Travel</td>
<td>8,610</td>
<td>6,576</td>
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<tr>
<td>Personnel Administration</td>
<td>10,186</td>
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</tr>
<tr>
<td>Retirement, Health Ins, PR Taxes</td>
<td>826,505</td>
<td>700,432</td>
</tr>
<tr>
<td>Legal Expense-Indirect</td>
<td>2,172</td>
<td>0.0%</td>
</tr>
<tr>
<td>Telephone Expense</td>
<td>77,181</td>
<td>46,233</td>
</tr>
<tr>
<td>Dues &amp; Subscriptions</td>
<td>21,385</td>
<td>5,241</td>
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<tr>
<td>Budget Preparation</td>
<td>12,308</td>
<td>4,160</td>
</tr>
<tr>
<td>Archiving &amp; Data Storage</td>
<td>6,632</td>
<td>0.0%</td>
</tr>
<tr>
<td>Vehicle &amp; Equipment Acquisition</td>
<td>299,756</td>
<td>20,872</td>
</tr>
<tr>
<td>Services for outside contracts</td>
<td>-</td>
<td>2,955</td>
</tr>
</tbody>
</table>

**TOTAL EXPENSES: MAINTENANCE**

10,456,130 9,124,030 87.3% 1,332,100 2,081,633 1,686,227 81.0% 395,406 8,374,497 7,437,803 88.8% 936,694
<table>
<thead>
<tr>
<th>Services</th>
<th>Annual Budget</th>
<th>Actual</th>
<th>% of Bud</th>
<th>Projected Remaining</th>
<th>% of Bud</th>
<th>Projected Remaining</th>
<th>% of Bud</th>
<th>Projected Remaining</th>
<th>% of Bud</th>
<th>Projected Remaining</th>
<th>% of Bud</th>
<th>Projected Remaining</th>
<th>% of Bud</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Vehicle &amp; Equipment Service</strong></td>
<td>$3,926</td>
<td>$1,258</td>
<td>32.05%</td>
<td>$2,668</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Yard &amp; Building Maintenance</strong></td>
<td>$81,305</td>
<td>$27,170</td>
<td>33.42%</td>
<td>$54,135</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Structure &amp; Gate Maintenance</strong></td>
<td>$216,520</td>
<td>$86,383</td>
<td>40.82%</td>
<td>$128,137</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Cleaning Right-of-Way</strong></td>
<td>$8,953</td>
<td>-</td>
<td>0.00%</td>
<td>$8,953</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Barge &amp; Guardrail Maint</strong></td>
<td>$5,068</td>
<td>$2,560</td>
<td>50.52%</td>
<td>$2,508</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Reverse Flow Pump</strong></td>
<td>$47,037</td>
<td>2,560</td>
<td>50.52%</td>
<td>$2,508</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Sump Pump Maintenance</strong></td>
<td>$32,445</td>
<td>$3,660</td>
<td>11.28%</td>
<td>$28,786</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>C &amp; I General Mtce</strong></td>
<td>$16,746</td>
<td>$25,766</td>
<td>153.87%</td>
<td>($9,020)</td>
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<tr>
<td><strong>C. &amp; I. Maint (ESI Equipment)</strong></td>
<td>$257,193</td>
<td>$41,807</td>
<td>16.26%</td>
<td>$215,385</td>
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<tr>
<td><strong>Canal Patrol</strong></td>
<td>$193,416</td>
<td>$211,873</td>
<td>109.54%</td>
<td>($18,458)</td>
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<tr>
<td><strong>Operations Reports</strong></td>
<td>$115,499</td>
<td>$72,067</td>
<td>62.40%</td>
<td>$43,432</td>
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<tr>
<td><strong>Operations Supervision</strong></td>
<td>$42,415</td>
<td>$42,576</td>
<td>100.38%</td>
<td>($161)</td>
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<tr>
<td><strong>Water Measurement</strong></td>
<td>$67,703</td>
<td>$62,873</td>
<td>93.65%</td>
<td>$4,897</td>
<td></td>
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<tr>
<td><strong>Miscellaneous Operations</strong></td>
<td>$4,241</td>
<td>$4,215</td>
<td>100.38%</td>
<td>$2,560</td>
<td></td>
<td></td>
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<tr>
<td><strong>Water Quality</strong></td>
<td>$71,688</td>
<td>$71,931</td>
<td>100.38%</td>
<td>($243)</td>
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<tr>
<td><strong>Groundwater &amp; Seepage Well Measurement</strong></td>
<td>$4,419</td>
<td>$2,840</td>
<td>64.42%</td>
<td>$1,580</td>
<td></td>
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<tr>
<td><strong>Safety &amp; First Aid Training</strong></td>
<td>$17,515</td>
<td>$14,187</td>
<td>81.23%</td>
<td>$3,328</td>
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</tr>
<tr>
<td><strong>Payroll Preparation</strong></td>
<td>$509</td>
<td>-</td>
<td>0.00%</td>
<td>$509</td>
<td></td>
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<tr>
<td><strong>Water supply coordination &amp; monitoring</strong></td>
<td>$163,853</td>
<td>$130,497</td>
<td>80.00%</td>
<td>$33,356</td>
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<tr>
<td><strong>Meetings (General)</strong></td>
<td>$4,072</td>
<td>$3,511</td>
<td>13.77%</td>
<td>$407</td>
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<tr>
<td><strong>Meetings (Staff)</strong></td>
<td>$4,433</td>
<td>$3,580</td>
<td>80.75%</td>
<td>$853</td>
<td></td>
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<tr>
<td><strong>Education &amp; Training</strong></td>
<td>$33,526</td>
<td>$32,636</td>
<td>97.30%</td>
<td>$890</td>
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</tr>
<tr>
<td><strong>Procurement</strong></td>
<td>$1,018</td>
<td>-</td>
<td>0.00%</td>
<td>$1,018</td>
<td></td>
<td></td>
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</tr>
<tr>
<td><strong>Inventory &amp; Property Mgt.</strong></td>
<td>$5,016</td>
<td>-</td>
<td>0.00%</td>
<td>$5,016</td>
<td></td>
<td></td>
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</tr>
<tr>
<td><strong>Employee Benefit (Holiday)</strong></td>
<td>$25,599</td>
<td>$25,480</td>
<td>99.45%</td>
<td>$1,552</td>
<td></td>
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<tr>
<td><strong>Employee Benefit (Sick Pay)</strong></td>
<td>-</td>
<td>$23,481</td>
<td>0.00%</td>
<td>$23,481</td>
<td></td>
<td></td>
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</tr>
<tr>
<td><strong>Employee Benefit (Vacation)</strong></td>
<td>-</td>
<td>$395</td>
<td>0.00%</td>
<td>$395</td>
<td></td>
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</tr>
<tr>
<td><strong>Employee Benefit (Vacation)</strong></td>
<td>-</td>
<td>$46,044</td>
<td>99.99%</td>
<td>$123,191</td>
<td></td>
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</tr>
<tr>
<td><strong>Retirement, Health Ins, PR Taxes</strong></td>
<td>$361,549</td>
<td>$240,695</td>
<td>66.66%</td>
<td>$120,854</td>
<td></td>
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</tr>
<tr>
<td><strong>Utilities</strong></td>
<td>$26,753</td>
<td>$26,081</td>
<td>98.21%</td>
<td>$672</td>
<td></td>
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</tr>
<tr>
<td><strong>Telephone Expense</strong></td>
<td>$57,491</td>
<td>$46,808</td>
<td>81.18%</td>
<td>$10,683</td>
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<tr>
<td><strong>Postage</strong></td>
<td>$564</td>
<td>$490</td>
<td>87.21%</td>
<td>$73</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td><strong>Budget Preparation</strong></td>
<td>$1,018</td>
<td>-</td>
<td>0.00%</td>
<td>$1,018</td>
<td></td>
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</tr>
<tr>
<td><strong>Vehicle &amp; Equipment Acquisition</strong></td>
<td>$47,975</td>
<td>-</td>
<td>0.00%</td>
<td>$47,975</td>
<td></td>
<td></td>
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</tbody>
</table>

**TOTAL EXPENSES: WATER OPERATIONS**  $2,100,521 $1,035,079 49.3%  $1,065,443 $941,076 $557,148 59.2%  $383,927 $1,159,446 $477,930 41.2%  $681,515
<table>
<thead>
<tr>
<th>Item</th>
<th>FYE 9/30/20</th>
<th>CURRENT YTD FWA</th>
<th>PROJECTED REMAINING</th>
<th>CURRENT YTD NON-LABOR</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Budget Item</strong></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td><strong>O&amp;M</strong></td>
<td>91%</td>
<td>1,325,595</td>
<td></td>
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</tr>
<tr>
<td><strong>GM</strong></td>
<td>9%</td>
<td>122,300</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL CARRY OVER ITEMS FY 2019</strong></td>
<td></td>
<td>210,000</td>
<td>8,000</td>
<td>n/a</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td>210,000</td>
<td>8,000</td>
<td>n/a</td>
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</table>
### General Membership Summary

<table>
<thead>
<tr>
<th>Category</th>
<th>Budget</th>
<th>YTD</th>
<th>% of Bud</th>
<th>Projected</th>
<th>Actual</th>
<th>Remaining</th>
<th>Budget</th>
<th>YTD</th>
<th>% of Bud</th>
<th>Projected</th>
<th>Actual</th>
<th>Remaining</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outside Legal Consultants</td>
<td>309,500</td>
<td>241,413</td>
<td>68,087</td>
<td>78%</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Other Consultants</td>
<td></td>
<td></td>
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<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Resources Consulting</td>
<td>91,000</td>
<td>25,728</td>
<td>65,272</td>
<td>28%</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Steve Ottemoeller</td>
<td>27,000</td>
<td>25,249</td>
<td>1,751</td>
<td>94%</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Biologist</td>
<td>35,000</td>
<td>1,325</td>
<td>33,675</td>
<td>4%</td>
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</tr>
<tr>
<td>Kan Ventures</td>
<td>65,500</td>
<td>46,881</td>
<td>18,619</td>
<td>72%</td>
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<td></td>
</tr>
<tr>
<td>WDC Lobbyist</td>
<td>43,000</td>
<td>18,783</td>
<td>24,217</td>
<td>44%</td>
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<tr>
<td>Sacramento Lobbyist</td>
<td>40,000</td>
<td>19,359</td>
<td>20,641</td>
<td>48%</td>
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</tr>
<tr>
<td>Public Relations Consultant</td>
<td>40,500</td>
<td>16,025</td>
<td>24,475</td>
<td>40%</td>
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</tr>
<tr>
<td>CDPFA - State Water Res. Control B</td>
<td>52,000</td>
<td>48,514</td>
<td>3,476</td>
<td>93%</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Family Farm Alliance</td>
<td>15,000</td>
<td>15,000</td>
<td>-</td>
<td>100%</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>CVPA dues</td>
<td>44,000</td>
<td>48,514</td>
<td>(4,514)</td>
<td>110%</td>
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<td></td>
<td></td>
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</tr>
<tr>
<td>SJV Blueprint</td>
<td>15,000</td>
<td>15,000</td>
<td>-</td>
<td>100%</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Science Funding</td>
<td>50,000</td>
<td>50,000</td>
<td>-</td>
<td>0%</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Temperance Flat Reservoir Authority</td>
<td>35,000</td>
<td>50,000</td>
<td>(15,000)</td>
<td>143%</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Total Other Consultants</td>
<td>553,000</td>
<td>330,238</td>
<td>222,762</td>
<td>60%</td>
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</tr>
<tr>
<td>Other Supplies</td>
<td>295,000</td>
<td>176,640</td>
<td>118,360</td>
<td>60%</td>
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</tr>
<tr>
<td>General Counsel</td>
<td>10,000</td>
<td>12,658</td>
<td>(2,658)</td>
<td>127%</td>
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<td></td>
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</tr>
<tr>
<td>Staff Payroll &amp; Benefits</td>
<td>736,000</td>
<td>530,247</td>
<td>205,753</td>
<td>72%</td>
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<td></td>
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</tr>
<tr>
<td>Admin Allocation</td>
<td>210,000</td>
<td>122,300</td>
<td>87,700</td>
<td>58%</td>
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<td></td>
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</tr>
<tr>
<td>Total GM</td>
<td>2,114,000</td>
<td>1,413,497</td>
<td>700,503</td>
<td>67%</td>
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</tbody>
</table>
# FRIANT WATER AUTHORITY

## CASH ACTIVITY BALANCE
MONTH ENDING JUNE 30, 2020

<table>
<thead>
<tr>
<th></th>
<th>Beginning Balance</th>
<th>Increases</th>
<th>Decreases</th>
<th>Ending Balance</th>
</tr>
</thead>
<tbody>
<tr>
<td>FKC Operations &amp; Maintenance</td>
<td>$5,184,707</td>
<td>$2,217,343</td>
<td>$(1,979,255)</td>
<td>$5,422,795</td>
</tr>
<tr>
<td>SLDMWA</td>
<td>$214,454</td>
<td>$3,465,451</td>
<td>$(2,533,054)</td>
<td>$1,146,851</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$5,399,161</strong></td>
<td><strong>$5,682,794</strong></td>
<td><strong>$(4,512,309)</strong></td>
<td><strong>$6,569,646</strong></td>
</tr>
<tr>
<td>General Member</td>
<td>$491,020</td>
<td>-</td>
<td>$(185,938)</td>
<td>$305,082</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$6,874,728</strong></td>
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</tbody>
</table>

## BANK ACTIVITY BALANCE
MONTH ENDING JUNE 30, 2020

<table>
<thead>
<tr>
<th></th>
<th>Beginning Balance</th>
<th>Increases</th>
<th>Decreases</th>
<th>Ending Balance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local Agency Investment Fund</td>
<td>$5,454,426</td>
<td>$1,300,000</td>
<td>$(400,000)</td>
<td>$6,354,426</td>
</tr>
<tr>
<td>Bank of the Sierra</td>
<td>$435,754</td>
<td>$4,382,794</td>
<td>$(4,298,246)</td>
<td>$520,302</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$6,874,728</strong></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

NOTE: Cash on deposit with LAIF represents the consolidation of available balances held by all FWA funds. Most Current Interest Rate: For month ended June 30, 2020, effective yield, 1.217%
Total LAIF fund as of June 30, 2020: $32,075,372,647.84
The Authority’s investments are in compliance with its Statement of Investment Policy dated July 22, 2004.
Management believes it is fully able to meet its expenditure requirements for the next six months.
## FRIANT WATER AUTHORITY
### O&M FUND
### CASH ACTIVITY REPORT
### MONTH ENDING JUNE 30, 2020

<table>
<thead>
<tr>
<th>Description</th>
<th>Checking</th>
<th>Payroll</th>
<th>Petty</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CASH BALANCE MAY 31, 2020</strong></td>
<td>$ 5,398,360</td>
<td>$ -</td>
<td>$ 801</td>
<td>$ 5,399,161</td>
</tr>
</tbody>
</table>

**Increases:**
- District O&M receipts: $1,791,376
- SLDMWA receipts: $3,465,451
- Revenue from Subsidence Project: $-
- Interest from Bank of Sierra: $168
- Miscellaneous deposits: $53,405
- Other Funds: Administration Allocation: $11,784
- Payroll deposits: $346,570

**Total Increases:** $5,336,224

**Decreases:**
- O&M Expenditures: $303,589
- Pump Back Project Expenditures: $113,075
- Subsidence Project Expenditures: $727,921
- Wire to SLDMWA (WY2020): $2,533,054
- BCID-Recapture of restoration flows: $60,750
- PID-Recapture of restoration flows: $80,730
- Bank charges: $50
- Payroll Cash Outlays: $346,570

**Total Decreases:** $4,165,739

**CASH BALANCE BEFORE INTERFUND ACTIVITY:** 
- $6,568,845
- $-
- $801
- $6,569,646

**Interfund transfer from O&M:** $-

**CASH BALANCE JUNE 30, 2020:**
- $6,568,845
- $-
- $801
- $6,569,646
# FRIANT WATER AUTHORITY
## GENERAL MEMBERS FUND
### CASH ACTIVITY REPORT
#### MONTH ENDING JUNE 30, 2020

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
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<tbody>
<tr>
<td>CASH BALANCE MAY 31, 2020</td>
<td>$491,020</td>
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<tr>
<td>Increases:</td>
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<tr>
<td>Member Assessments</td>
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<tr>
<td><strong>Total Cash Receipts</strong></td>
<td>$-</td>
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<td>Decreases:</td>
<td></td>
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<tr>
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<td>443</td>
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<td>Consulting</td>
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<td>Meetings</td>
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<td>Rent &amp; Facility Expense</td>
<td>6,168</td>
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<td>Office Supplies</td>
<td>277</td>
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<td>Annual contribution</td>
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<td>Other Payroll Benefits</td>
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<td><strong>Reimburse O&amp;M:</strong></td>
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<td>Current Month Payroll &amp; Benefits</td>
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<td>Current Month Payroll &amp; Benefits to O&amp;M</td>
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<td>Administration Allocation</td>
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<td><strong>Less Total Cash Disbursements</strong></td>
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<td><strong>CASH BALANCE BEFORE INTERFUND ACTIVITY</strong></td>
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<td>Interfund transfer from O&amp;M</td>
<td>$-</td>
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<tr>
<td><strong>CASH BALANCE JUNE 30, 2020</strong></td>
<td>$305,082</td>
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FRIANT WATER AUTHORITY
MONTH ENDING JUNE 30, 2020
CASH ACTIVITY REPORT
LOCAL AGENCY INVESTMENT FUND (L.A.I.F.)
(FUNDS ON DEPOSIT WITH STATE OF CALIFORNIA)
CASH ACTIVITY REPORT

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
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<tr>
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<td>Increases:</td>
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<td>Transfer from checking</td>
<td>$1,300,000</td>
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<td>Decreases:</td>
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<td>Transfer to checking</td>
<td>$400,000</td>
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<tr>
<td>CASH BALANCE JUNE 30, 2020</td>
<td>$6,354,426</td>
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Balance ascribed to:
- O&M Fund: $6,072,434
- General Member Fund & Temp Flat: $281,993
  
  Total: $6,354,426

NOTE: Cash on deposit with LAIF represents the consolidation of available balances held by all FWA funds. Most Current Interest Rate: For month ended June 30, 2020, effective yield, 1.217%

Total LAIF fund as of June 30, 2020: $32,075,372,647.84


Management believes it is fully able to meet its expenditure requirements for the next six months.

```
<table>
<thead>
<tr>
<th>Time</th>
<th>Yield</th>
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<tr>
<td>Ave. 2019</td>
<td>2.32%</td>
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<tr>
<td>Jan-20</td>
<td>1.97%</td>
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<tr>
<td>Feb-20</td>
<td>1.91%</td>
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<tr>
<td>Mar-20</td>
<td>1.79%</td>
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<tr>
<td>Apr-20</td>
<td>1.65%</td>
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<tr>
<td>May-20</td>
<td>1.36%</td>
</tr>
<tr>
<td>Jun-20</td>
<td>1.22%</td>
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# CASH RECONCILIATION-ESTIMATED
## SEPTEMBER 30, 2019

<table>
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<tr>
<th></th>
<th>O&amp;M</th>
<th>SLDMWA</th>
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<th>Temperance Flat MOU</th>
<th>Temperance Flat Resevoir</th>
<th>Grand Totals</th>
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<tr>
<td><strong>CASH BALANCE SEPTEMBER 30, 2019</strong></td>
<td>$3,773,688</td>
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<td>Emergency Cost Reserve</td>
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<td>2018 Refund to Members (estimate)</td>
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<td>(32,631)</td>
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<td>Accounts Receivable</td>
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<td>211,131</td>
<td>325,777</td>
<td>7,975</td>
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<td>544,884</td>
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<td>FY2020 Deferrals</td>
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<td>(1,254,452)</td>
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<td>$0</td>
<td>$104,950</td>
<td>$697,368</td>
<td>($135,325)</td>
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</table>

**Note:** before FY2019 refund
DATE: July 23, 2020
TO: Board of Directors
FROM: Jason Phillips, CEO; Donald M. Davis, General Counsel
SUBJECT: Adoption Of A Resolution Authorizing The Execution Of The Renewal Of The Agreement Between FWA And The United States (Bureau of Reclamation) Transferring The Operations, Maintenance And Repair Of The Friant-Kern Canal And Related Facilities To FWA

SUMMARY:
The current agreement with the Bureau of Reclamation (Reclamation) transferring operations, maintenance and repair (OM&R) responsibility for the Friant-Kern Canal (FKC) to the Friant Water Authority (Transfer Agreement) expires on March 1, 2023. As financing for FKC Middle Reach Capacity Correction Project (including Federal loans) will require that a long-term agreement be in place, FWA, at Board direction, requested early negotiations with Reclamation.

FWA participated in a multi-party negotiation over the standard terms of the Transfer Agreement with two of the other major Operating Non-Federal Entities (ONFE) in the state (the San Luis & Delta Mendota Water Authority and the Tehama Colusa Canal Authority) in late 2019, which left a relatively small number of items for FWA to negotiate directly.

FWA and Reclamation have held several “technical” (informal) and “formal” (i.e. public) negotiations sessions in April, May, June and July of 2020. Based on the last negotiation session on July 9, 2020, all of FWA’s legal and substantive issues have been addressed, leaving only finalization of Exhibit A, which is the list of transferred facilities. As this exhibit can be addressed administratively, staff and the Executive Committee are recommending that the Board approve authorization for the Board Chair to execute the renewed Transfer Agreement when Exhibit A is finalized.

RECOMMENDED ACTION:
The Board find that the execution of the renewed Transfer Agreement is exempt from the California Environmental Quality Act, and adopt the resolution authorizing the execution of the renewed Transfer Agreement.

SUGGESTED MOTION:
I move that the Board find that the execution of the renewed Transfer Agreement is exempt from the California Environmental Quality Act for the reasons set forth in the proposed resolution, and adopt the resolution authorizing the execution of the renewed Transfer Agreement.
DISCUSSION:

The following is a summary of the Articles that were substantively revised as part of the FWA/Reclamation negotiations:

Article 1 (Definitions): The definitions of “Capital Improvements” and “OM&R,” which were enhanced in the three authority negotiations to further strengthen the existing rights of the ONFE to self-finance repairs and replacements of facilities as provided in Article 5, were further refined, and unused definitions of “Irrigation Water” and “M&I Water” were deleted.

Article 3 (Indemnity): FWA objected to a portion of Reclamation’s new indemnity language on the grounds that California law places limits on the scope of contractual indemnities. Following a lengthy review, Reclamation agreed to the limiting language proposed by FWA.

Article 9 (Delivery of Water): FWA is apparently unique among some of the major ONFEs in terms of having operating guidelines approved by Reclamation for the FKC. The federal contracting officer’s ability to issue directives pursuant to these guidelines will now be formally recognized.

Article 10 (Resolution of Disputes): The process for submitting disputes to Reclamation on matters subject to the dispute resolution process has been clarified, including a general time limit for Reclamation to act to help ensure prompt decisions.

Article 12 (OM&R Cost Recovery): The existing delegation of authority to collect approved OM&R costs from contractors has been clarified with an acknowledgement that Reclamation’s 9(d) contracts do not limit FWA’s ability to collect such OM&R costs. This article has also been amended to eliminate the ability of Reclamation to direct the delivery of water to a contractor or other entity entitled to receive water but who is delinquent in paying applicable OM&R costs or other charges and fees. Upon the failure of an entity to cure a delinquency, FWA may halt the delivery of water until the delinquency is addressed.

Numerous other non-substantive, clarifying revisions have been made as indicated in the attached redlined version.

ATTACHMENTS:

1. Renewed Transfer Agreement – Clean Copy
2. Redline of Changes from the Initial Draft based on the SLMWA Transfer Agreement
3. Resolution
AGREEMENT BETWEEN THE UNITED STATES OF AMERICA AND FRIANT WATER AUTHORITY TO TRANSFER THE OPERATION, MAINTENANCE AND REPLACEMENT AND CERTAIN FINANCIAL AND ADMINISTRATIVE ACTIVITIES RELATED TO THE FRIANT-KERN CANAL AND ASSOCIATED WORKS

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<tr>
<th>Article No.</th>
<th>Title</th>
<th>Page No.</th>
</tr>
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<tbody>
<tr>
<td>Preamble</td>
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<td>Recitals</td>
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<td>Term of Agreement ......................................................................</td>
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<td>3</td>
<td>Operation and Maintenance of Project Works ................................</td>
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<td>4</td>
<td>Transfer Inspection ...................................................................</td>
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<td>5</td>
<td>Capital Improvements and Repairs ...........................................</td>
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<td>Performance Work Statement, Emergency Action Plans and Notifications</td>
<td>11</td>
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<td>7</td>
<td>Administration of Federal Project Lands ....................................</td>
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<td>Oversight and Participation .....................................................</td>
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<td>Delivery of Water by the Authority ..........................................</td>
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<td>10</td>
<td>Resolution of Disputes ................................................................</td>
<td>15</td>
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<td>Examination, Inspection, and Audit of Project Works, Records, and Reports for Determining Adequacy of OM&amp;R</td>
<td>15</td>
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<td>12</td>
<td>Cost Recovery for Authority OM&amp;R Activities; Termination of Water Deliveries</td>
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<td>Water Accounting ........................................................................</td>
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<td>14</td>
<td>Emergency Reserve Fund ................................................................</td>
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<td>15</td>
<td>Books, Records, and Reports ....................................................</td>
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<td>16</td>
<td>Notification of Third Parties ..................................................</td>
<td>27</td>
</tr>
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<td>17</td>
<td>Opinions and Determinations .....................................................</td>
<td>28</td>
</tr>
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<td>18</td>
<td>Charges for Delinquent Payments .............................................</td>
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<td>------</td>
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<tr>
<td>19</td>
<td>Contamination or Pollution of Federal Property</td>
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<td>Assignment Limited: Successors and Assigns Obligated</td>
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<td>Contingent on Appropriation or Allotment of Funds</td>
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<td>Compliance with Civil Rights Laws and Regulations</td>
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<td>Changes in Contractor’s Organization</td>
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<td>Protection of Water and Air Quality</td>
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<td>Medium for Transmitting Payments</td>
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<td>Sustainable Operation and Maintenance</td>
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<td>Cooperation/Mutual Aid</td>
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<td>Agreement Drafting Considerations</td>
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<tr>
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<td>Signature Page</td>
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</table>

Exhibit A: List of Project Works
Exhibit B: List of Obligations to Convey and Distribute Water In and From the Project Works
Exhibit C: Sustainable Operation and Maintenance
UNIFIED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
Central Valley Project, California

AGREEMENT BETWEEN THE UNITED STATES OF AMERICA AND FRIANT WATER
AUTHORITY TO TRANSFER THE OPERATION, MAINTENANCE AND REPLACEMENT
AND CERTAIN FINANCIAL AND ADMINISTRATIVE ACTIVITIES RELATED TO THE
FRIANT-KERN CANAL AND ASSOCIATED WORKS

THIS AGREEMENT, effective the ____ day of __________, ______, (“Effective Date”)
in pursuance generally of the Act of Congress of June 17, 1902 (32 Stat.388), and the acts
amendatory thereof or supplementary thereto, including Section 5 of the Act of August 13, 1914
(38 Stat. 687), all collectively hereinafter referred to as the Federal Reclamation laws, between
the UNITED STATES OF AMERICA, hereinafter referred to as the United States, and the
FRIANT WATER AUTHORITY, hereinafter referred to as the Authority, a public agency of the
State of California, duly organized, existing, and acting pursuant to the laws of the State of
California. The United States and the Authority are referred to collectively as the “Parties,” and
individually as a “Party.”

WITNESSETH, That:

RECITALS

a. The United States Bureau of Reclamation (Reclamation) has constructed the
Friant Division, Central Valley Project (Project), for storage, diversion, carriage and distribution
of water for agricultural, flood control, municipal, industrial, domestic and other beneficial uses
and purposes; and
b. The Authority represents water users who contract with the United States for water service provided by the Friant Division of the Project; and

c. The United States operates the Friant Division of the Project for the benefit, among others, of the water users represented by the Authority; and

d. The Authority has operated and maintained certain Friant Division facilities pursuant to that certain Agreement to Transfer the Operation, Maintenance, and Replacement (OM&R) and Certain Financial and Administrative Activities Related to the Friant-Kern Canal and Associated Works, Contract No. 8-07-20-X0356 (Transfer Agreement), between the Parties for a term of twenty-five (25) years, effective March 1, 1998; and

e. The Authority requested initiation of the renewal process for the continued OM&R of the Project Works under Contract No. 8-07-20-X0356 by letter dated July 30, 2019; and

f. The Authority has demonstrated its ability to operate and maintain such facilities to the satisfaction of the Contracting Officer and in a manner which best and most economically serves the water users relying on those facilities; and

i. It is deemed to be in the best interests of the Parties and the Project’s water users that the continued OM&R, as well as certain administrative and financial activities, of the Project Works continue to be transferred to the Authority as the Operating Non-Federal Entity by renewing the Transfer Agreement; and

j. The United States also believes it to be in the best interests of the Parties and the Project’s water users to transfer to the Authority the administrative and financial responsibility to continue to perform and hereafter fund the Authority’s OM&R of the Project Works while the
United States retains the responsibility to fund Capital Improvement costs of the Project Works; and

k. The Authority is willing to continue to assume the OM&R of the Project Works as the Operating Non-Federal Entity and perform the enumerated administrative and financial activities in accordance with the terms and conditions herein set forth; and

l. The National Environmental Policy Act compliance requirement for execution of this Agreement has been met by the Categorical Exclusion dated __________, 2020; and

In consideration of the mutual and dependent covenants herein contained, the Parties mutually agree as follows:

DEFINITIONS

1. When used in this Agreement, the term:

(a) “Capital Improvement” shall mean any activity that extends the useful life of a property, plant or equipment asset, expands the capacity or efficiency of an asset, or otherwise upgrades an asset to serve needs different from, or significantly greater than, an asset’s current use, or as defined in the Blue Book entitled Federal Replacements, Units, Service Lives, Factors, as amended or in accordance with Federal law and accounting standards, or any other regulations, policies, guidelines, or instructions adopted thereunder.

(b) “Fiscal Year” shall mean the period from and including the first day of October of each calendar year through and including the last day of September of the following calendar year.

(c) “Operation, Maintenance and Replacement” or “OM&R” shall mean the complete operation and maintenance of the Project Works, including performing, funding, and financing such repairs and replacements as are normally considered part of annual operation and maintenance functions and not considered Capital Improvement costs of the Project. OM&R
shall include the performance, funding, and financing of emergency or unusual operation and
maintenance or extraordinary operation and maintenance costs, unusual or extraordinary repair
or replacement costs, and betterment costs, but only to the extent the costs thereof are not
considered Capital Improvement costs of the Project. Notwithstanding the foregoing, OM&R
shall also include Capital Improvements, as that term is defined in Article 1(a) which the
Authority chooses to accomplish and finance pursuant to Article 5(b).

(d) “Other Water” shall mean water other than water conveyed or delivered
pursuant to Water Delivery Contracts which the United States has a legal or contractual
obligation to convey or deliver through the Project Works. Other Water includes, without
limitation, water to be conveyed through the Project Works (1) pursuant to contracts under the
Warren Act (43 USC 523, et seq.), Section 305 of the Act of March 5, 1992 (106 Stat. 59),
Section 3408(c) of the Central Valley Project Improvement Act (106 Stat. 4706), and
Section 215 of the Reclamation Reform Act of 1982 (96 Stat. 1263); (2) under other wheeling or
conveyance agreements binding on the Secretary; (3) in accordance with agreements for
conveyance of water to wildlife refuges and wildlife management areas; and (4) to satisfy other
legally imposed obligations of the Secretary.

(e) “Party Entitled to Utilize or Receive Other Water” shall mean the party
required to pay the Authority the amounts described in Article 12 in connection with the delivery
of Other Water. In the case of Other Water delivered to satisfy agreements for conveyance of
water to wildlife refuges and wildlife management areas, as well as other legally imposed
obligations of the Secretary, the Party Entitled to Utilize or Receive Other Water (and therefore
required to pay the Authority the amounts described in Article 12 in connection with the delivery
thereof) shall be the Contracting Officer.
“Project” shall mean the Central Valley Project owned by the United States and managed by the Department of the Interior, Bureau of Reclamation.

“Project Water” shall mean all water that is developed, diverted, stored, or delivered by the Secretary in accordance with the statutes authorizing the Project and in accordance with the terms and conditions of water rights acquired pursuant to California law.

“Project Works” shall mean those facilities listed or described on the attached Exhibit A, which are incorporated herein by this reference, including: the Friant-Kern Canal and related in-line control facilities; wasteways, laterals, holding reservoirs, turnouts and measuring devices, associated water level control devices and water level recording instruments; appurtenant equipment, structures and maintenance buildings; and such other facilities as the Parties may agree by modification of Exhibit A, without amending this Agreement.

“Secretary” or “Contracting Officer” shall mean the Secretary of the United States Department of the Interior or his/her duly authorized representative.

“Substantial Change” shall mean a modification in, or addition to, Project Works which involves changes in the original design intent, function, and/or operational parameters of the facility, or changes in benefits of the Project Works, including non-routine maintenance activities that involve construction or reconstruction of a portion of the facility.

“Water Delivery Contract” shall mean (1) any contract entered into by the Secretary under the provisions of Sections 9(c), 9(d) or 9(e) of the Reclamation Project Act of 1939 [43 USC 485h (c), (d) and (e)] or Section 3404 of the Central Valley Project Improvement Act (106 Stat. 4706) pursuant to which Project Water is to be supplied from or through the Project Works and (2) any exchange contract, water rights settlement contract or similar
agreement pursuant to the terms of which water is to be supplied by the Secretary from or using the Project Works.

   (l) “Water Delivery Contractor” shall mean a party holding a Water Delivery Contract with the United States.

TERM OF AGREEMENT

2. (a) This Agreement shall be effective as of the Effective Date and shall remain in effect for thirty-five (35) years thereafter; Provided, That this Agreement is not terminated at an earlier date pursuant to Article 2(b) below. Subject to modification acceptable to the Contracting Officer and the Authority, the Authority shall have the option to renew this Agreement for successive periods not to exceed thirty-five (35) years each by providing written notice of such to the Contracting Officer not more than one (1) year, but not less than six (6) months, prior to the end of the then-current term, unless by mutual agreement to renew sooner.

   (b) The Contracting Officer may terminate this Agreement at any time before the expiration of its term whenever the Contracting Officer determines that the Authority is in substantial violation of the Agreement as provided in this Article 2(b); Provided, That prior to the effective date of any such termination, the Contracting Officer shall first notify the Authority in writing of, the specific purported deficiencies of the Authority in carrying out the terms and conditions of this Agreement. It is the intent of the Parties that disputes be resolved pursuant to this Article 2(b) as expeditiously as is reasonably possible without the necessity of other relief at law or in equity. If after the designated representative of the Authority has met with the Contracting Officer or his or her designated representative and attempt in good faith and with the use of best efforts to resolve any dispute arising from the purported deficiency an agreement is not reached, the Contracting Officer may issue a notice of proposed termination, which includes the specific deficiencies of the Authority’s performance under this Agreement. The Authority
shall have at least ninety (90) days from receipt of the written notice of proposed termination to correct all deficiencies referred to in said written notice; *Provided, That* in the event of a condition which threatens the safety or integrity of the Project Works, the Contracting Officer may specify a shorter correction period which the Contracting Officer determines to be appropriate under the circumstances. In the event the Authority does not correct all deficiencies referred to in said written notice within the applicable period, the Contracting Officer may thereafter terminate this Agreement upon thirty (30) days prior written notice to the Authority.

Any termination pursuant to this Article shall be subject to the rights and obligations of the Parties as more specifically set forth in this Agreement.

(c) The Authority may at any time, upon giving twelve (12) months written notice, terminate this Agreement; *Provided, That* such termination shall not relieve the Authority of any of its duties, liabilities or obligations accruing from the Effective Date of this Agreement to the effective date of such termination, except insofar as the Authority lacks funding to perform such obligations due to a failure by the United States to meet any of its obligations under this Agreement.

(d) Upon any termination of this Agreement, the United States will take over from the Authority the care, OM&R of the Project Works and the Authority shall transfer to the United States (1) title to all tools, vehicles, supplies, and equipment transferred under Article 3(b) of the original agreement 8-07-20-X0356 (to the extent still on hand) or purchased by the Authority for the purposes of this Agreement, and (2) any funds in its possession which were collected for, or allocated to, the OM&R of the Project Works for the then-current Fiscal Year which are in excess of the obligations of the Authority for the OM&R of the Project Works. All other funds and reserves in the Authority’s possession, including without limitation all other
funds collected for, or allocated to, the OM&R of the Project Works and the reserve funds established under Article 14 shall be retained or distributed by the Authority in accordance with the direction of the Authority’s board of directors.

(e) An Agreement review must be performed at least every fifteen (15) years. A more frequent review will be established if determined to be appropriate by the Contracting Officer. The review and update will be limited to focus on this Agreement’s standard articles and incorporation of any new statutory requirements applicable to this Agreement.

OPERATION AND MAINTENANCE OF PROJECT WORKS

3. (a) The Contracting Officer has transferred, and the Authority has accepted and assumed the care, OM&R of the Project Works. Title to the Project Works will remain in the name of the United States, unless otherwise provided by the Congress of the United States.

(b) The Authority, without expense to the United States, will care for, OM&R the Project Works in full compliance with the terms of this Agreement and in such a manner that the Project Works remain in good and efficient condition, subject to exercise of discretion to fund and carry out Capital Improvements, as described below in Article 5(b).

(c) Necessary repairs of the Project Works will be made promptly by the Authority. In case of unusual conditions or serious deficiencies in the OM&R of the Project Works threatening or causing interruption of water service, the Contracting Officer may issue to the Authority a special written notice of those necessary repairs. Except in the case of an emergency, the Authority will be given sixty (60) days to either make the necessary repairs or submit a plan for accomplishing the repairs acceptable to the Contracting Officer. In the case of an emergency, or if the Authority fails to either make the necessary repairs or submit a plan for accomplishing the repairs acceptable to the Contracting Officer within sixty (60) days of receipt of the notice, the Contracting Officer may cause the repairs to be made, and the cost of those repairs will be paid by the Authority as directed by the Contracting Officer.

(d) The Authority will not make any Substantial Changes in the Project Works without first obtaining written consent of the Contracting Officer.

(e) The Authority agrees to indemnify the United States for, and hold the United States and all of its representatives harmless from, all damages resulting from suits, actions, or claims of any character, except for intentional torts committed by employees of the United States, brought on account of any injury to any person or property arising out of any act, omission, neglect, or misconduct in the manner or method of performing any construction, care, operation, maintenance, supervision, examination, inspection, or other duties of the Authority or the United States on Project Works required under this Agreement, regardless of who performs
those duties;

Provided, That for the purposes of this Article 3(e), the term “intentional torts” includes acts or omissions under California law that constitute gross or willful misconduct, gross or willful negligence; and, provided further, that the term “employees of the United States,” includes agents and independent contractors who are directly responsible to the United States.

(f) Omitted.

(g) In the event the Authority is found to be operating the Project Works or any part thereof in violation of this Agreement or the Authority is found to be failing any financial commitments or other commitments to the United States under the terms and conditions of this Agreement, then upon the election of the Contracting Officer, the United States may take over from the Authority the care, OM&R of the Project Works by giving written notice to the Authority of such election and the effective date thereof. Thereafter, during the period of operation by the United States, upon notification by the Contracting Officer the Authority will pay to the United States, annually in advance, the cost of the OM&R of the Project Works as determined by the Contracting Officer. Following written notification from the Contracting Officer the care, OM&R of the Project Works may be transferred back to the Authority.

(h) In addition to all other payments to be made by the Authority under this Agreement, the Authority will pay to the United States, following the receipt of a statement from the Contracting Officer, all reimbursable miscellaneous costs to be incurred by the United States for any work involved in the administration and supervision of this Agreement.

(i) Nothing in this Article will be deemed to waive the sovereign immunity of the United States.

TRANSFER INSPECTION

4. The Authority (including its predecessors) has been the Operating Non-Federal Entity for the Project Works since 1986. Joint inspections of the Project Works have been conducted by the United States and the Authority. The inspection reports shall be made available for the Authority’s review upon request.

CAPITAL IMPROVEMENTS AND REPAIRS

5. (a) Nothing in this Agreement shall be construed to require the Authority to make or fund improvements, modifications, replacements or repairs of any nature to the Project.
Works, the costs of which should be or will be added to the Capital Improvement costs of the Project. The identification of Capital Improvements shall be made in accordance with Federal law or any regulations, policies, guidelines or instructions adopted thereunder. The Contracting Officer’s determination of whether the costs of any improvements, modifications, replacements or repairs should be or will be added to the Capital Improvement costs of the Project shall be accepted by the Authority after the Contracting Officer has conferred in good faith with the Authority with respect thereto; Provided, That such determination shall be subject to review by a court having jurisdiction over the dispute. The Authority shall act in accordance with such determination unless and until it is reversed or modified. The Authority shall submit annual OM&R work forecasts at the start of each Fiscal Year. The OM&R work forecasts shall include all work to Project Works that is projected to be done in the following Fiscal Year and work to be done in the next three (3) Fiscal Years. Following the completion of a Review of Operation and Maintenance (RO&M) examination of the Project Works as set forth in Article 11 of this Agreement, if that RO&M examination identifies a potential Capital Improvement, and at such other times as the Parties agree are necessary, the Authority and the Contracting Officer shall confer to identify any Capital Improvements planned or necessary for the Project Works for the next ten (10) years and agree upon the mechanism for accomplishing and financing the Capital Improvements.

(b) Notwithstanding the provisions of Article 5(a), in the event the Authority identifies Capital Improvements it deems necessary for the OM&R of the Project Works and the Contracting Officer is unable or unwilling to provide a mechanism for accomplishing and financing such Capital Improvements, the Authority may proceed with the accomplishment and financing of such Capital Improvements and deem the costs thereof to be OM&R costs.
hereunder, regardless of whether such costs are added to the Capital Improvement costs of the Project under Article 5(a). Such Capital Improvements may include, without limitation, the acquisition, repair or replacement of personal property (such as motor vehicles and heavy equipment) and the construction or improvement of structures utilized by the Authority in connection with the OM&R of the Project Works.

PERFORMANCE WORK STATEMENT, EMERGENCY ACTION PLANS AND NOTIFICATIONS

6. (a) The Authority shall maintain the Project Works in such a manner that the Project Works shall remain in good and efficient condition for the storage, diversion and carriage of water. The Authority shall perform the OM&R of the Project Works consistent with the guidelines provided by existing Designer’s Operating Criteria, standard operation procedures (SOPs) and/or manufacturer’s technical manuals for the Project Works, in accordance with such sound engineering practices as have been or may be developed for the Project Works, and in accordance with applicable Federal, State and local environmental laws. Deviations from or changes to these standards shall be approved by the Contracting Officer.

(b) The Authority shall prepare such Emergency Action Plans (EAPs) for the Project Works as are required by governmental agencies with jurisdiction over the Authority’s operations. The Authority shall furnish copies of any such plans to the Contracting Officer.

(c) In addition to implementing Article 6(b), the Authority shall notify the Contracting Officer as soon as reasonably practicable after initial observation by the Authority of any event or situation which threatens (1) the safety or integrity of the Project Works, or (2) the well-being of humans or property located adjacent to the Project Works. Notwithstanding Article 26, such notification shall be made immediately telephonically and by electronic mail.
(d) The Authority shall submit monthly reports to the Contracting Officer outlining all work accomplished.

(e) The Authority shall annually review, and as necessary update, all SOPs and EAPs and provide such updates to the Contracting Officer.

(f) The performance work statement (PWS) will consist of the OM&R work forecast, current SOPs for all the major facilities, and EAPs as applicable.

ADMINISTRATION OF FEDERAL PROJECT LANDS

7. (a) (1) The lands and interests in lands acquired, withdrawn, or reserved and needed by the United States for the purposes of care, OM&R of the Project Works (collectively, “Project Work Lands”) may be used by the Authority for such purposes without being charged any administrative fees therefor. The Authority shall ensure that no unauthorized encroachment occurs on Federal Project lands and rights-of-way. The Authority does not have the authority to issue any land-use agreement or grant that conveys an interest in Federal real property, nor to lease or dispose of any interest of the United States.

Where there are unauthorized encroachments on Project Works Lands, the Authority will work with the Contracting Officer to resolve the encroachments to the Contracting Officer’s satisfaction. For the purposes of this Agreement “encroachment” means any unauthorized building, structure, or object of any kind or character placed, into, over, or under any Project Works Lands.

(2) The Contracting Officer shall not issue any rights-of-way across Project Works Lands or any leases, licenses, permits, or special-use agreements involving Project Works Lands until the Contracting Officer has determined that the grant is compatible with the Project purposes and with the OM&R of the Project Works. The Contracting Officer shall issue such rights-of-way across Project Works Lands or any leases, licenses, permits or special-use agreements involving Project Works Lands only after offering the Authority the opportunity to provide appropriate comment concerning the request. Requests for such grants that are received by the Authority shall be referred to the Contracting Officer along with
appropriate comment concerning the request. A copy of all such grants issued by the Contracting Officer shall be provided to the Authority.

(b) The Authority shall regularly inspect the Project Works Lands to identify any trespass and determine the general condition of the real property itself. Cases of trespass shall be corrected, where possible, by the Authority. Trespass cases which the Authority feels may require undue time and/or expense to correct shall be referred without delay to the Contracting Officer for resolution.

(c) The Authority shall review land-use requests for compatibility within Project Works Lands. The Contracting Officer shall remain responsible for review and action upon all requests for use of the Project Works or Project Works Lands unless a delegation of authority to the Authority is otherwise provided for by the express written consent of the Contracting Officer.

(d) The United States retains responsibility for compliance with the National Historic Preservation Act of 1966, and the Native American Graves Protection and Repatriation Act of 1990. The Authority will notify the Contracting Officer and, only when on tribal land, also notify the appropriate tribal official, immediately upon the discovery of any potential historic properties or Native American human remains, funerary objects, sacred objects, or objects of cultural patrimony.

OVERSIGHT AND PARTICIPATION

8. (a) The Contracting Officer shall, to the greatest extent possible, afford the Authority the opportunity to review and comment on preliminary and final development plans, environmental documents and other documents which affect the Project Works. The Authority’s comments shall be provided to the Contracting Officer; and

(b) The Parties shall, to the greatest extent possible, afford each other the opportunity to participate with city, county, State and Federal governments, or governmental
groups and private concerns in meetings, hearings and other activities affecting the Project Works. The Parties shall keep each other informed of these activities.

**DELIVERY OF WATER BY THE AUTHORITY**

9. (a) The Authority shall convey and distribute water in and from the Project Works in accordance with the directives of the Contracting Officer, including all operating guidelines approved by the Contracting Officer, so that the Contracting Officer can satisfy all valid water delivery obligations of the United States from the Project Works, including without limitation all water delivery obligations of the United States under Water Delivery Contracts and for the delivery of Other Water. The Authority shall deliver water to each Water Delivery Contractor or Party Entitled to Utilize or Receive Other Water entitled thereto from the Project Works through turnouts or such temporary diversion facilities as are specified in then-existing Water Delivery Contracts or other arrangements or agreements relating to Other Water specifying such turnouts and delivery points, or as may be agreed to by such Water Delivery Contractor(s) or Party Entitled to Utilize or Receive Other Water, the Authority, and the Contracting Officer.

(b) A complete list of all valid obligations of the United States to convey and distribute water in and from the Project Works is attached as Exhibit B and incorporated herein by this reference. Exhibit B indicates whether each obligation is under a Water Delivery Contract or is for the delivery of Other Water. The Contracting Officer shall modify Exhibit B as such obligations change or as new obligations are added without amending this Agreement.

(c) Prior to the Contracting Officer entering into, renewing or amending any Water Delivery Contract or any other agreement which requires or permits the conveyance of water through any of the Project Works, the Contracting Officer shall consult with the Authority about the terms of such contract action, and shall provide the Authority the opportunity to review
and comment thereon. Any such contract action shall be taken by the Contracting Officer only after the Contracting Officer has given due consideration to, and has taken all reasonable actions to mitigate the impacts of such contract action on (1) the quantity or quality of water available to Water Delivery Contractors, or Parties Entitled to Utilize or Receive Other Water, and (2) the ability of the Authority to perform its obligations under this Agreement. The Contracting Officer shall provide the Authority a copy of all contracts entered into with Water Delivery Contractors or Parties Entitled to Utilize or Receive Other Water utilizing the Project Works for delivery or conveyance.

RESOLUTION OF DISPUTES

10. Should any dispute arise concerning delivery or conveyance of water by the Authority through the Project Works between the Authority, any Water Delivery Contractor(s) and/or any Party(ies) Entitled to Utilize or Receive Other Water from or through the Project Works, which the Authority concludes cannot be resolved through negotiations with the other party(ies) to the dispute, the Authority shall provide its final position with respect to such dispute to the other party(ies) thereto in writing and to the Contracting Officer requesting a determination of the dispute. Within sixty (60) days after such final position is provided, or such other reasonable date as may be agreed upon by the Authority and the Contracting Officer, the Contracting Officer will issue a written determination regarding the dispute. The Contracting Officer's determination shall be accepted by the Authority and other party(ies) thereto as final and conclusive and the Authority and the other party(ies) shall promptly comply with said decision and shall operate the Project Works in conformance with such decision until the same is stayed, reversed or modified by a decision of a court of competent jurisdiction.
EXAMINATION, INSPECTION, AND AUDIT OF PROJECT WORKS, RECORDS, AND REPORTS FOR DETERMINING ADEQUACY OF OM&R

11. (a) The Contracting Officer may examine the following: the Authority’s books, records, and reports with respect to OM&R obligations under this Agreement; the Project Works being operated by the Authority; the adequacy of the OM&R program; the reserve fund; and the water conservation program including the water conservation fund, if applicable. Notwithstanding title ownership, where the United States retains a financial, physical, or liability interest in facilities either constructed by the United States or with funds provided by the United States, the Contracting Officer may examine any or all of the Project Works providing such interest to the United States.

(b) The Contracting Officer may, or the Authority may ask the Contracting Officer to, conduct special inspections of any Project Works being operated by the Authority and special audits of the Authority’s books and records to ascertain the extent of any OM&R deficiencies to determine the remedial measures required for their correction and to assist the Authority in solving specific problems. Except in an emergency, any special inspection or audit shall be made only after written notice thereof has been delivered to the Authority by the Contracting Officer.

(c) The Authority shall provide access to the Project Works, operate any mechanical or electrical equipment, and be available to assist in the examination, inspection, or audit.

(d) The Contracting Officer shall prepare reports based on the examinations, inspections, and audits and furnish copies of such reports and any recommendations to the Authority.

(e) The costs incurred by the United States in conducting OM&R examinations, inspections, and audits and preparing associated reports and recommendations related to high- and significant-hazard dams and associated facilities shall be nonreimbursable. Associated facilities include carriage, distribution, and drainage systems; pumping and pumping generating plants; power plant structures; tunnels/pipelines; diversion and storage dams (low-hazard); Type 2 bridges which are Reclamation-owned bridges not located on a public road; regulating reservoirs (low-hazard); fish passage and protective facilities, including hatcheries; river channelization features; rural/municipal water systems; desalting and other water treatment plants; maintenance buildings and service yards; facilities constructed under Federal loan programs (until paid out); and recreation facilities (reserved works only); and any other facilities as determined by the Contracting Officer.

(f) Expenses incurred by the Authority, as applicable, in participating in the OM&R site examination will be borne by the Authority.

(g) Requests by the Authority for consultations, design services, or modification reviews, and the completion of any OM&R activities identified in the formal recommendations resulting from the examinations (unless otherwise noted) are to be funded as
project OM&R and are reimbursable by the Authority to the extent of current OM&R allocations.

(h) Site visit special inspections that are beyond the regularly scheduled OM&R examinations conducted to evaluate particular concerns or problems and provide assistance relative to any corrective action (either as a follow up to an OM&R examination or when requested by the Authority) shall be nonreimbursable.

(i) The Contracting Officer may provide the State of California an opportunity to observe and participate in, at its own expense, the examinations and inspections. The State of California may be provided copies of reports and any recommendations relating to such examinations and inspections.

COST RECOVERY FOR AUTHORITY OM&R ACTIVITIES; TERMINATION OF WATER DELIVERIES

12. The Authority is responsible for directly funding the OM&R of the Project Works transferred hereby. Except as otherwise provided herein, the Parties acknowledge that the United States will no longer provide funding through the appropriations process for such OM&R. Reclamation hereby delegates to the Authority all required authority under statutes, contracts, regulations, and policies to collect for OM&R of the Project Works. Reclamation acknowledges and agrees that the provisions of its Water Delivery Contracts regarding the obligation to pay the Authority for the operation and maintenance of the Project Works performed by the Authority under this Agreement, but which do not have the same definition of OM&R as in this Agreement, were not intended to and do not limit the delegation of authority to charge and collect for the OM&R of the Project Works as provided in this Article 12. The procedures and authorities to be utilized by the Authority for such direct funding are set forth in this Article 12.

(a) OM&R Budgets. Not later than ninety (90) days before the start of each Fiscal Year, the Authority shall submit to each Water Delivery Contractor, and all Parties Entitled to Utilize or Receive Other Water, the proposed budget for the next Fiscal Year for all activities of the Authority to be carried out under this Agreement. The budget so developed shall
include amounts necessary to establish the reserve fund described in Article 14 and such other
reserves as may be determined to be necessary by the Authority. The Authority shall afford each
Water Delivery Contractor and all Parties Entitled to Utilize or Receive Other Water the
opportunity to submit comments on such proposed budget by thirty (30) days before
commencement of the Fiscal Year. Except as otherwise provided in the Memorandum of
Understanding described in Article 12(f), any dispute(s) regarding the proposed budget shall be
resolved in the manner described in Article 10. The Authority shall submit the final budget for
each Fiscal Year to the Contracting Officer prior to the start of that Fiscal Year. The Authority
shall use reasonable efforts to perform its responsibilities under this Agreement in accordance
with the applicable final budget.

(b) Cost Recovery Methodology. The Authority shall develop a methodology
to recover all costs incurred by the Authority in carrying out its responsibilities under this
Agreement, including without limitation all costs described in the budgets prepared pursuant to
Article 12(a).

(1) The Authority's cost recovery methodology shall (i) provide for the
equitable allocation of the costs to be recovered among Water Delivery Contractors with an
obligation to pay for water delivered or conveyed through the Project Works and all Parties
Entitled to Utilize or Receive Other Water with an obligation to pay therefor, including without
limitation the Contracting Officer; (ii) provide for the equitable allocation of the costs to be paid
to the Authority pursuant to the Memorandum of Understanding described in Article 12(f); and
(iii) clearly set forth the manner in which all such costs shall be collected by the Authority,
including deadlines for payments and/or deposits required of Water Delivery Contractors and all
Parties Entitled to Utilize or Receive Other Water under the methodology.
(2) Such methodology shall recover costs in lieu of the conveyance OM&R cost component and the conveyance pumping OM&R cost component heretofore calculated by the United States pursuant to its ratesetting policies for the Project. In addition to OM&R costs for directly funding the OM&R of the Project Works, such methodology shall recover power costs for conveyance pumping incurred by the United States for the production or transmission of such power that are payable by the Water Delivery Contractors, Parties Entitled to Utilize or Receive Other Water, and contractors in the Friant Division pursuant to the Memorandum of Understanding described in Article 12(f), in connection with the delivery or conveyance of water through the Project Works.

(3) The Authority’s cost recovery methodology and any subsequent amendments thereto shall be approved by the Authority and provided to all parties with payment obligations under this Article 12 by July 1 of each year, or not less than sixty (60) days prior to the effective date of any amendment thereof. Except as otherwise specified in the Memorandum of Understanding described in Article 12(f), any dispute(s) regarding the Authority's cost recovery methodology shall be resolved in the manner described in Article 10. The Contracting Officer has approved the Authority’s initial cost recovery methodology. All proposed amendments shall be submitted to the Contracting Officer for review and comment concurrent with the dissemination to all parties with payment obligations noted above.

c) Deficiencies in Cost Recovery. The Authority is not obligated to provide funding from non-Federal sources for the cost of delivering water to Water Delivery Contractors or Parties Entitled to Utilize or Receive Other Water who do not pay the Authority in full for the OM&R of the Project Works.
(1) In the event any Water Delivery Contract or obligation to deliver Other Water provides for or results in the payment of less than all of the costs to be recovered by the Authority in accordance with Article 12(b) (a “deficiency”), whether resulting from the inadequacy of contract provisions between the Water Delivery Contractor or Party Entitled to Utilize or Receive Other Water and the United States to cover the Authority's OM&R costs, delinquency in payment of amounts due as described in Article 12(d), or otherwise, the United States may elect to pay to the Authority the amount of any such deficiency, through a separate agreement or such other appropriate legal instrument as may be entered into by the Parties from time to time. If the United States does not elect to pay such deficiency, the Authority may terminate water deliveries as provided in Article 12(d).

(2) Any payments made by the United States to the Authority for such deficiencies shall become the financial obligation of the deficient Water Delivery Contractor or Party Entitled to Utilize or Receive Other Water to the Contracting Officer.

(d) Termination of Water Deliveries. In the event any amount due to or to be collected by the Authority from a Water Delivery Contractor or Party Entitled to Utilize or Receive Other Water pursuant to Article 12 is not paid when due (a “delinquency”), the Authority is authorized by the United States to discontinue delivery and conveyance of water to or for such Water Delivery Contractor or Party Entitled to Utilize or Receive Other Water until such time as the delinquency is cured. The Authority shall give the Contracting Officer and the delinquent party written notice of the delinquency and of the date deliveries will be terminated if the delinquency is not cured. Prior to issuing such notice, the Contracting Officer and the Authority shall agree in writing on the appropriate timing and length of such cure period.
(e) Interest. In the event any amounts due to the Authority from the United States under this Agreement are not paid when due, in addition to exercising the rights afforded the Authority under Article 12(c) and Article 12(d), the Authority will receive interest on the delinquent amounts pursuant to the Prompt Payment Act, as amended (31 USC 3901, et seq.); Provided, That the Authority shall have previously submitted appropriate invoices to the United States in accordance with 48 CFR Section 32.907-1.

(f) Recovery of Certain Costs and Memorandum of Understanding. The Parties acknowledge that the OM&R of certain Project facilities benefiting parties in the Friant Division will be performed by the San Luis and Delta-Mendota Water Authority pursuant to that certain Agreement to Transfer Operation and Maintenance and Replacement and Certain Financial and Administrative Activities Related to the San Luis and Delta-Mendota Canals, Tracy Pumping Plant, and O’Neill Pumping/Generating Plant, San Luis Drain and Associated Works. In connection therewith, the Authority has entered into that certain “Memorandum of Understanding Between the Friant Water Authority (as successor to the Friant Water Users Authority) and the San Luis & Delta-Mendota Water Authority Relating to Allocation, Collection and Payment of Operation, Maintenance & Replacement Costs for Water Delivered Through Certain Central Valley Project Facilities,” effective March 1, 1998, amended February 25, 2003, and as it may be further amended by the parties thereto from time to time. Pursuant to such Memorandum of Understanding, certain OM&R costs described therein will be payable by contractors in the Friant Division of the Project, and collected by the Authority and paid to the San Luis and Delta-Mendota Water Authority in accordance with the terms of such Memorandum of Understanding. The United States acknowledges and agrees that it is not a party to such Memorandum of Understanding. While this Agreement is in effect, the Authority
shall comply with the terms of such Memorandum of Understanding, as it may be amended by the parties thereto.

(g) Direct Charges Replace U.S. Rate Components. The United States shall not charge water rate components for conveyance OM&R, conveyance pumping OM&R, to a Water Delivery Contractor or Party Entitled to Utilize or Receive Other Water, except to the extent (i) financial obligations otherwise properly included in such components have been incurred by the United States and have not been included as an expense therein under the ratesetting policies for the Project; or (ii) the United States has paid or provided funding to the Authority for delivering water to a Water Delivery Contractor or Party Entitled to Utilize or Receive Other Water to cover a deficiency in payment.

(1) To the extent the Authority’s cost recovery methodology includes recovery of power costs for conveyance pumping that are incurred by the United States for the production or transmission of such power, the Authority shall remit such funds to the Contracting Officer within thirty (30) days after receipt of the Contracting Officer's billing therefor.

(2) All costs recovered pursuant to the Authority’s cost allocation methodology and not required to be remitted to the Contracting Officer pursuant to this Article 12(g) shall be immediately available for funding the costs of the Authority pursuant to this Article 12.

(h) Deposits of Amounts Collected. Amounts collected by the Authority pursuant to this Article 12 shall be placed on deposit or otherwise invested in accordance with the Authority's investment policy and in conformance with State law to be expended solely for
purposes of this Agreement. All interest accruing on said account shall be property of the
Authority, and not of the United States, and shall be applied against OM&R costs.

(i) The Contracting Officer agrees that material changes in Project operations
affecting the quantity of water to be delivered or in Project finances may affect the ability of the
Authority to carry out its obligations under this Agreement. Under such circumstances, the
Parties will meet and confer as to emergency measures available to reduce the economic
hardship to the Authority, the Water Delivery Contractors, and/or Parties Entitled to Utilize or
Receive Other Water.

WATER ACCOUNTING

13. (a) The Contracting Officer’s water accounting system shall be the data
utilized in maintaining water delivery records and in allocating costs for all Water Delivery
Contractors and all Parties Entitled to Utilize or Receive Other Water. The water accounting
system shall fully and accurately document the allocation and deliveries of water through the
Project Works and account for financial transactions affecting the Water Delivery Contractors,
the Friant Division Contractors required to make payments via the Authority to the San Luis and
Delta-Mendota Water Authority pursuant to the Memorandum of Understanding described in
Article 12(f), and all Parties Entitled to Utilize or Receive Other Water with an obligation to pay
therefor.

(b) The Contracting Officer shall direct the Water Delivery Contractors and
other Parties Entitled to Utilize or Receive Other Water to provide the Authority and the
Contracting Officer with water delivery and payment information for all water delivered to said
Water Delivery Contractors and Parties Entitled to Utilize or Receive Other Water pursuant to
this Agreement. All water accounting records created or maintained by the Authority under this
Agreement shall be subject to Article 15 and shall be accessible by the Contracting Officer.
In order to further their mutual goals and objectives, the Contracting Officer and the Authority shall communicate, coordinate, and cooperate with each other, in order to improve the OM&R of the Project, including the financing thereof. The communication, coordination, and cooperation shall include, but not be limited to, any action which will or may materially affect the quantity or quality of Project Water supply, the allocation of Project Water supply, and Project financial matters, including but not limited to, budget and water accounting issues. The communication, coordination, and cooperation provided for hereunder shall extend to all provisions of this Agreement. Each party shall retain exclusive decision making authority for all actions, opinions, and determinations to be made by the respective party.

The Contracting Officer acknowledges that some or all of the Water Delivery Contractors and Parties Entitled to Utilize or Receive Other Water may appoint the Authority as agent for such parties or may otherwise designate, in writing, the Authority to act as an intermediary with the Contracting Officer concerning the water accounting or financial information. Upon notice, in writing, of such relationship, the Contracting Officer agrees to recognize the Authority in such capacity.

EMERGENCY RESERVE FUND

14. (a) Upon transfer of the OM&R of the Project Works under this Agreement, the Authority shall accumulate and maintain a minimum reserve fund or demonstrate to the satisfaction of the Contracting Officer that other funds are available for use as an emergency reserve fund. The Authority shall establish and maintain that emergency reserve fund to meet costs incurred during periods of special stress caused by damaging droughts, storms, earthquakes, floods, or other emergencies threatening or causing interruption of water service.

A minimum reserve fund account balance will be maintained to finance (1) OM&R costs; (2) costs associated with addressing conditions which threaten or cause interruption of water service; and (3) costs associated with addressing conditions which threaten the safety or integrity of the Project Works.
(b) The Authority shall accumulate the reserve fund with annual deposits or investments over a maximum of ten (10) years and is to be held in a Federally insured, interest- or dividend-bearing account or in securities guaranteed by the Federal Government, in the California Local Agency Investment Fund, or, if approved by the Contracting Officer, in any fiduciary account in a manner provided by the laws of the State of California: Provided, That money in the reserve fund, including accrued interest, shall be available within a reasonable time to meet expenses for such purposes as those identified in paragraph (d) herein. Such annual deposits and the accumulation of interest to the reserve fund shall continue until the basic amount of fifteen percent (15%) of the average annual actual OM&R costs incurred by the Authority for the Project Works during the three most recent Fiscal Years is accumulated (excluding any OM&R costs pertaining to Capital Improvements). Following an emergency expenditure from the fund, the annual deposits shall continue from the year following the emergency expenditure until the previous balance is restored. After the initial amount is accumulated or after the previous balance is restored, the annual deposits may be discontinued, and the interest earnings shall continue to accumulate and be retained as part of the reserve fund.

(c) Upon mutual written agreement between the Authority and the Contracting Officer, the basic reserve fund or the accumulated reserve fund may be adjusted to account for risk and uncertainty stemming from the size and complexity of the Project; the size of the annual OM&R budget; additions to deletions from, or changes in Project Works; and OM&R costs not contemplated when this Agreement was executed.

(d) The Authority may make expenditures from the reserve fund only for OM&R costs incurred during periods of special stress, as described in paragraph (a) herein; or for meeting unforeseen extraordinary operation and maintenance costs; or for meeting unusual or extraordinary repair or replacement costs; or for meeting betterment costs (in situations where recurrence of severe problems can be eliminated) during periods of special stress. Proposed expenditures from the fund shall be submitted to the Contracting Officer in writing for review and written approval prior to disbursement. Whenever the reserve fund is reduced below the current balance by expenditures therefrom, the Authority shall restore that balance within five (5) years of withdrawal by the accumulation of annual deposits which will be over and above the normal annual contribution to the reserve fund.

(e) In accordance with Article 3.(g) of this Agreement, during any period in which any of the Project Works are operated and maintained by the United States, the Authority agrees the reserve fund shall be available for like use by the United States.

(f) On or before October 1, of each year, the Authority shall provide a current statement of the principal and accumulated interest of the reserve fund account to the Contracting Officer.

BOOKS, RECORDS, AND REPORTS

15. (a) The Authority shall establish and maintain accounts and other books and records pertaining to administration of the terms and conditions of this Agreement, including the Authority’s financial transactions; water supply data; OM&R logs; Project Works Lands and rights-of-way use agreements; and other matters that the Contracting Officer may require.
Reports shall be furnished to the Contracting Officer in such form and on such date or dates as the Contracting Officer may require. Subject to applicable Federal law and regulations, each Party to this Agreement shall have the right during officer hours to examine and make copies of the other Party’s books and records relating to matters covered by this Agreement.

All records and books maintained pursuant to this Agreement shall be available to, and subject at all reasonable times to inspection, examination, copying or audit by authorized representatives of affected Water Delivery Contractors, Parties Entitled to Utilize or Receive Other Water, and the Contracting Officer. Each month the Authority shall collect and certify all delivery and measurement records and report any abnormal findings to the Contracting Officer.

(b) The Authority shall maintain and verify records of actual expenditures in accordance with an accounting system prescribed by the California State Controller in compliance with California Government Code section 53891. The Contracting Officer and the Authority shall preserve and make available their respective financial and accounting records and books relating to this Agreement until the later of either (1) the final disposition of any litigation or settlement of claims arising out of performance under this Agreement, or (2) the expiration of five (5) years after the activities giving rise to the creation of such records and books. By March 31, following the completion of each Fiscal Year, the Authority shall provide the Contracting Officer with a copy of its audited financial statements as of the end of the preceding Fiscal Year.

(c) Until termination of this Agreement, the Authority shall retain the originals of all significant OM&R records pertinent to the Project Works and/or water operations, including modifications to Project Works; as-built drawings; maintenance and repair logs; equipment tests, equipment operations logs; emergency response plans; spill prevention control and countermeasure plans; written inquiries received by the Authority pursuant to the Federal Freedom of Information Act or analogous State law; Congressional or State Legislative
requests; or public or private claims or potential claims against the United States and/or the
Authority relative to the Project Works.

(d) Upon request by the Authority, the Contracting Officer shall make
available to the Authority those OM&R, financial and administration records relating to the
Project Works in his possession and any revisions or modifications to those records.

NOTIFICATION OF THIRD PARTIES

16. (a) To the extent the Contracting Officer has not previously done so, the
Contracting Officer shall instruct all Water Delivery Contractors and all Parties Entitled to
Utilize or Receive Other Water that the Authority is the Operating Non-Federal Entity with
respect to the Project Works. The Contracting Officer shall inform all parties to be so notified of
the Authority’s rights, authorities, and obligations under this Agreement and any other
agreements relevant to the Authority’s status as the Operating Non-Federal Entity and shall
cooperate with the Authority in ensuring that all such parties timely and properly make all
required payments to the Authority. Without limiting the foregoing, the Contracting Officer
shall direct all such parties to simultaneously provide the Authority with copies of all water
delivery schedules provided to the Contracting Officer. The Contracting Officer shall also
inform all parties to be notified pursuant to this Article 16(a) that, after March 1, 1998, the
United States has not and shall not charge the conveyance OM&R cost component, the
conveyance pumping OM&R cost component heretofore calculated by the United States
pursuant to its ratesetting policies for the Project to Water Delivery Contractors, or Parties
Entitled to Utilize or Receive Other Water, except to the extent financial obligations otherwise
properly included in such components have been incurred by the United States prior to March 1,
1998, and have not been included as an expense therein under the ratesetting policies for the
Project.
(b) All agreements providing for the delivery or conveyance of water through the Project Works entered into, renewed, or amended shall include provisions recognizing the Authority’s status as the Operating Non-Federal Entity, and shall require that the non-Federal parties to such agreements timely and properly make all required payments to the Authority. Such new, renewed, or amended agreements shall also include provisions requiring the non-Federal parties to such agreements to simultaneously provide the Authority with copies of all water delivery schedules and water delivery and payment information provided to the Contracting Officer. The Contracting Officer shall also include in all such new, renewed, or amended agreements a provision confirming that the United States shall not charge the conveyance OM&R cost component, or the conveyance pumping OM&R cost component heretofore calculated by the United States pursuant to its ratesetting policies for the Project to Water Delivery Contractors, or Parties Entitled to Utilize or Receive Other Water, except to the extent financial obligations otherwise properly included in such components have been incurred by the United States prior to the Effective Date of this Agreement and have not been included as an expense therein under the ratesetting policies for the Project.

OPINIONS AND DETERMINATIONS

17. (a) Where the terms of this Agreement provide for actions to be based upon the opinion or determination of either Party, said terms shall not be construed as permitting such action to be predicated upon arbitrary, capricious or unreasonable opinions or determinations. The Parties, notwithstanding any other provisions of this Agreement, expressly reserve the right to relief from and appropriate adjustment for any such arbitrary, capricious or unreasonable opinion or determination. Each opinion or determination by either Party shall be provided in a timely manner.
(b) The Contracting Officer shall have the right to make determinations necessary to administer this Agreement that are consistent with the expressed and implied provisions of this Agreement, the laws of the United States and the State of California, and rules and regulations applicable to the Contracting Officer. Such determinations shall be made in consultation with the Authority to the extent reasonably practicable.

CHARGES FOR DELINQUENT PAYMENTS

18. (a) The Authority shall be subject to interest, administrative and penalty charges on delinquent payments. If a payment is not received by the due date, the Authority shall pay an interest charge on the delinquent payment for each day the payment is delinquent beyond the due date. If a payment becomes sixty (60) days delinquent, the Authority shall pay, in addition to the interest charge, an administrative charge to cover additional costs of billing and processing the delinquent payment. If a payment is delinquent ninety (90) days or more, the Authority shall pay, in addition to the interest and administrative charges, a penalty charge for each day the payment is delinquent beyond the due date, based on the remaining balance of the payment due at the rate of six (6) percent per year. The Authority shall also pay any fees incurred for debt collection services associated with a delinquent payment.

(b) The interest charge rate shall be the greater of the rate prescribed quarterly in the Federal Register by the Department of the Treasury for application to overdue payments, or the interest rate of 0.5 percent per month. The interest charge rate shall be determined as of the due date and remain fixed for the duration of the delinquent period.

(c) When a partial payment on a delinquent account is received, the amount received shall be applied first, to the penalty, secondly to the administrative charges, third to the accrued interest, and finally to the overdue payment.

CONTAMINATION OR POLLUTION OF FEDERAL PROPERTY

19. (a) The Authority shall not allow contamination or pollution of Federal Project lands, Project waters, or Project works of the United States or administered by the United States and for which the Authority has the responsibility for care, operation, and maintenance by its employees or agents under this Agreement. The Authority shall also take reasonable precautions to prevent such contamination or pollution by third parties.

(b) The Authority shall comply with all applicable Federal, State, and local laws and regulations and Reclamation policies and instructions existing, or hereafter enacted or promulgated, concerning any hazardous material that will be used, produced, transported, stored, released, or disposed of on or in Federal Project lands, Project waters, or Project works.

(c) “Hazardous material” means (1) any substance falling within the definition of “hazardous substance,” “pollutant or contaminant,” or “hazardous waste” under the
Comprehensive Environmental Response, Compensation and Liability Act

(42 U.S.C. § 9601(14), (29), and (33)); (2) oil, as defined by the Clean Water Act
(33 U.S.C. § 1321(a)) and the Oil Pollution Act (33 U.S.C. § 2701(23)); (3) thermal pollution,
refuse, garbage, sewage effluent, industrial waste, mine or mill tailings, mineral salts, pesticides,
and other solid waste, and (4) any other substance regulated as hazardous or toxic under Federal,
State, local or Tribal law.

(d) Upon discovery of any event which may or does result in contamination or
pollution of Federal Project lands, Project water, or Project Works, the Authority shall
immediately undertake all measures necessary to protect public health and the environment,
including measures necessary to contain or abate any such contamination or pollution, and shall
report such discovery with full details of the actions taken to the Contracting Officer. Reporting
shall be within a reasonable time period but shall not exceed twenty-four (24) hours from the
time of discovery if it is an emergency and the first working day following discovery in the event
of a non-emergency.

(e) If violation of the provisions of this Article occurs and the Authority does
not take immediate corrective action, as determined by the Contracting Officer, the Authority
may be subject to remedies imposed by the Contracting Officer, which may include termination
of this Agreement in accordance with Article 2(b).

(f) The Authority shall be liable for any response action or corrective measure
necessary to protect public health and the environment or to restore Federal Project lands, Project
waters, or Project Works that are adversely affected as a result of such violation, and for all
costs, penalties or other sanctions that are imposed for violation of any Federal, State, local or
Tribal laws and regulations concerning hazardous material. At the discretion of the Contracting
Officer, the United States may also terminate this Agreement in accordance with Article 2(b) as a
result of such violation.

(g) The Authority shall defend, indemnify, protect and save the United States
harmless from and against any costs, expenses, claims, damages, demands, or other liability
arising from or relating to Authority’s violation of this Article.

(h) Reclamation agrees to provide information necessary for the Authority,
using reasonable diligence, to comply with the provisions of this Article.

ASSIGNMENT LIMITED: SUCCESSORS AND ASSIGNS OBLIGATED

20. The provisions of this Agreement shall apply to and bind the successors and
assigns of the respective Parties, but no assignment or transfer of this Agreement or any right or
interest therein by either Party shall be valid until approved in writing by the other Party.

CONTINGENT ON APPROPRIATION OR ALLOTMENT OF FUNDS

21. The expenditure or advance of any money or the performance of any obligation of
the United States under this Agreement shall be contingent upon appropriation or allotment of
funds. Absence of appropriation or allotment of funds shall not relieve the Authority from any
obligations under this Agreement. No liability shall accrue to the United States in case funds are 
not appropriated or allotted.

OFFICIALS NOT TO BENEFIT

22. No member of or delegate to Congress, Resident Commissioner or official of the 
Authority shall benefit from this Agreement other than as a water user or landowner in the same 
manner as other water users or landowners.

CLEAN AIR AND WATER

23. (a) The Authority agrees as follows:

(1) To comply with all the requirements of section 114 of the Clean 
Air Act, as amended (42 U.S.C. § 7414), and section 308 of the Clean Water Act 
(33 U.S.C. § 1318), relating to inspection, monitoring, entry, reports, and information, as well as 
other requirements specified in those sections, and all applicable regulations and guidelines 
issued thereunder.

(2) That no portion of the work required by this Agreement will be 
performed in a facility listed on the Environmental Protection Agency List of Violating Facilities 
on the Effective Date unless and until the Environmental Protection Agency eliminates the name 
of such facility or facilities from such listing.

(3) To use its best efforts to comply with clean air standards and clean 
water standards at the facility where the Agreement work is being performed.

(4) To insert the substance of the provisions of this Article into any 
nonexempt subcontract, including this subparagraph (a)(4).

(b) The following definitions apply for purposes of this Article:

(1) The term “Clean Air Act” means the Act enacted by Pub. L. 88-

(2) The term “Clean Water Act” means the Act enacted by Pub. L. 92-
500 of Oct. 18, 1972, and amendments thereto, as codified at 33 U.S.C. § 1251, et seq.

(3) The term “clean air standards” refers to all enforceable rules, 
regulations, guidelines, standards, limitations, orders, controls, prohibitions, and other 
requirements which are contained in, issued under, or otherwise adopted pursuant to the Clean 
Air Act or Executive Order 11738, an applicable implementation plan as described in 
section 110 of the Clean Air Act (42 U.S.C. § 7410), an approved implementation procedure or 
plan under subsection 111(c) or subsection 111(d) of the Clean Air Act (42 U.S.C. § 7411(c) or 
(d)), or an approved implementation procedure under subsection 112(d) of the Clean Air Act 
(42 U.S.C. § 7412(d)).

(4) The term “clean water standards” refers to all enforceable

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limitations, controls, conditions, prohibitions, standards, and other requirements which are
promulgated pursuant to the Clean Water Act or contained in a permit issued to a discharger by
the Environmental Protection Agency or by a state under an approved program, as authorized by
section 402 of the Clean Water Act (33 U.S.C. § 1342), or by local government to ensure
compliance with pretreatment regulations as required by section 307 of the Clean Water Act

(5) The term “comply” refers to compliance with clean air or water
standards. It also refers to compliance with a schedule or plan ordered or approved by a court of
competent jurisdiction, the Environmental Protection Agency, or an air or water pollution control
agency in accordance with the requirements of the Clean Air Act or Clean Water Act and
regulations issued pursuant thereto.

(6) The term “facility” means any building, plant, installation,
structure, mine, vessel or other floating craft, location, or site of operations owned, leased, or
supervised by a contractor or subcontractor to be utilized in the performance of a contract or
subcontract. Where a location or site of operations contains or includes more than one building,
plant, installation, or structure, the entire location or site shall be deemed to be a facility except
where the Director, Office of Federal Activities, Environmental Protection Agency, determines
that independent facilities are collocated in one geographical area.

COMPLIANCE WITH CIVIL RIGHTS LAWS AND REGULATIONS

24. (a) The Authority shall comply with Title VI of the Civil Rights Act of 1964
101-336; 42 U.S.C. § 12181, et seq.), and any other applicable civil rights laws, and with the
applicable implementing regulations and any guidelines imposed by the U.S. Department of the
Interior and/or Bureau of Reclamation.

(b) These statutes prohibit any person in the United States from being
excluded from participation in, being denied the benefits of, or be otherwise subjected to
discrimination under any program or activity receiving financial assistance from the Bureau of
Reclamation on the grounds of race, color, national origin, disability, or age. By executing this
Agreement, the Authority agrees to immediately take any measures necessary to implement this
obligation, including permitting officials of the United States to inspect premises, programs and
documents.

(c) The Authority makes this Agreement in consideration of and for the
purpose of obtaining any and all Federal grants, loans, contracts, property discounts or other
Federal financial assistance extended after the date hereof to the Authority by the Bureau of
Reclamation, including installment payments after such date on account of arrangements for
Federal financial assistance which were approved before such date. The Authority recognizes
and agrees that such Federal assistance will be extended in reliance on the representations and
agreements made in this Article, and that the United States reserves the right to seek judicial
enforcement thereof.
(d) Complaints of discrimination against the Authority shall be investigated by the Contracting Officer’s Office of Civil Rights.

EQUAL OPPORTUNITY

25. During the performance of this Agreement, the Authority agrees as follows:

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

(b) The Authority will, in all solicitations or advertisements for employees placed by or on behalf of the Authority, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, sexual orientation, gender identity, or national origin.

(c) The Authority will not discharge or in any other manner discriminate against any employee or applicant for employment because such employee or applicant has inquired about, discussed, or disclosed the compensation of the employee or applicant or another employee or applicant. This provision shall not apply to instances in which an employee who has access to the compensation information of other employees or applicants as a part of such employee’s essential job functions discloses the compensation of such other employees or applicants to individuals who do not otherwise have access to such information, unless such disclosure is in response to a formal complaint or charge, in furtherance of an investigation, proceeding, hearing, or action, including an investigation conducted by the employer, or is consistent with the Authority’s legal duty to furnish information.

(d) The Authority will send to each labor union or representative of workers with which it has a collective bargaining agreement or other contract or understanding, a notice, to be provided by the agency Contracting Officer, advising the labor union or workers’ representative of the Authority’s commitments under Section 202 of Executive Order 11246 of September 24, 1965, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

(e) The Authority will comply with all provisions of Executive Order No. 11246 of September 24, 1965, and of the rules regulations and relevant orders of the Secretary of Labor.

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

(g) In the event of the Authority’s noncompliance with the nondiscrimination
clauses of this Agreement or with any of the said rules, regulations or orders, this Agreement
may be canceled, terminated or suspended, in whole or in part and the Authority may be declared
ineligible for further Government contracts in accordance with procedures authorized in
Executive Order No. 11246 of September 24, 1965, and such other sanctions may be imposed
and remedies invoked as provided in Executive Order 11246 of September 24, 1965, or by rule,
regulation, or order of the Secretary of Labor, or as otherwise provided by law.

(h) The Authority will include the provisions of paragraphs (a) through (h) in
every subcontract or purchase order unless exempted by the rules, regulations, or orders of the
Secretary of Labor issued pursuant to Section 204 of said Executive Order No. 11246 of
September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor.
The Authority will take such action with respect to any subcontract or purchase order as may be
directed by the Secretary of Labor as a means of enforcing such provisions, including sanctions
for noncompliance: Provided, however, that in the event the Authority becomes involved in, or is
threatened with, litigation with a subcontractor or vendor as a result of such direction, the
Authority may request the United States to enter into such litigation to protect the interests of the
United States.

NOTICES

26. (a) Any notice, demand, or request authorized or required by this Agreement
shall be deemed to have been given, on behalf of the Authority, when mailed, postage prepaid, or
delivered to the Area Manager, South-Central California Area Office, 1243 N Street, Fresno,
California 93721, Bureau of Reclamation, and on behalf of the United States, when mailed,
postage prepaid, or delivered to the Chief Operating Officer of the Friant Water Authority, 854
North Harvard Avenue, Lindsay, CA 93247-1715. The designation of the addressee or the
address may be changed by notice given in the same manner as provided in this Article for other
notices.

(b) This Article 26 shall not preclude the effective service of such notice by
other means.

MODIFICATIONS

27. Each Party reserves the right to propose modifications to this Agreement at any
time while it is in effect. If either Party proposes any such modifications, the Parties shall
promptly attempt to negotiate in good faith an amendatory Agreement to accommodate the
proposed modifications.
OMITTED

28. [Intentionally Omitted.]

29. While this Agreement is in effect, no change may be made in the Authority’s organization, by inclusion or exclusion of lands or by any other changes, which may affect the respective rights, obligations, privileges, and duties of either the United States or the Authority under this Agreement including, but not limited to, dissolution, consolidation, or merger, except upon the Contracting Officer’s written consent.

PROTECTION OF WATER AND AIR QUALITY

30. (a) The Authority, without expense to the United States, will perform the OM&R of the Project Works in a manner that preserves the quality of the water at the highest feasible level as determined by the Contracting Officer.

(b) The United States will perform the OM&R of reserved works in a manner that preserves the quality of the water at the highest feasible level as determined by the Contracting Officer. The United States does not warrant the quality of the water delivered to the Water Delivery Contractors and Parties Entitled to Utilize or Receive Other Water and is under no obligation to furnish or construct water treatment facilities to maintain or improve the quality of water delivered to the Water Delivery Contractors and Parties Entitled to Utilize or Receive Other Water.

(c) The Authority will comply with all applicable water and air pollution laws and regulations of the United States and the State of California; and will obtain all required permits or licenses from the appropriate Federal, State, or local authorities necessary for the delivery of water by the Authority; and will be responsible for compliance with all Federal, State, and local water quality standards applicable to surface and subsurface drainage and/or discharges generated through the use of Federal facilities or Project Water provided by the Authority within its Project Water service area.

(d) This Article will not affect or alter any legal obligations of the Secretary to provide drainage or other discharge services.

RELOCATION ASSISTANCE AND REAL PROPERTY ACQUISITION

31. When acquiring land or an interest in land and relocating persons or personal property in connection with the construction, operation, and maintenance of Project Works, the Authority shall comply with the provisions of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (Pub. L. 91-646; 84 Stat. 1894; 42 U.S.C. § 4601, et seq.) and Department of Transportation regulations at 49 C.F.R. part 24.

PEST MANAGEMENT

32. (a) The Authority is responsible for complying with applicable Federal, State,
and local laws, rules, and regulations related to pest management in performing its responsibilities under this Agreement.

(b) The Authority is responsible for effectively avoiding the introduction and spread of, and for otherwise controlling, undesirable plants and animals, as defined by the Contracting Officer, on or in Federal Project lands, Federal Project waters, and Federal Project works for which and to the extent that the Authority has operation and maintenance responsibility. The Authority is responsible for exercising the level of precaution necessary in meeting this responsibility, including inspecting its vehicles, watercraft, and equipment for reproductive and vegetative parts, foreign soil, mud or other debris that may cause the spread of weeds, invasive species and other pests, and removing such materials before moving its vehicles, watercraft, and equipment onto any Federal land, into any Federal Project facility waters, or out of any area on Federal Project land where work is performed.

(c) Where decontamination of the Authority’s vehicles, watercraft, or equipment is required prior to entering Federal Project land or waters, the decontamination shall be performed by the Authority at the point of prior use, or at an approved offsite facility able to process generated cleaning wastes, pursuant to applicable laws, rules, and regulations. Upon the completion of work, the Authority will perform any required decontamination within the work area before moving the vehicles, watercraft, and equipment from Federal Project lands and waters.

(d) Programs for the control of undesirable plants and animals on Federal Project lands, and in Federal Project waters and Federal Project works for which the Authority has operation and maintenance responsibility will incorporate Integrated Pest Management (IPM) concepts and practices. IPM refers to a systematic and environmentally compatible program to maintain pest populations within economically and environmentally tolerable levels. In implementing an IPM program, the Authority will adhere to applicable Federal and State laws and regulations and Department of the Interior and Bureau of Reclamation policies, directives, guidelines, and manuals, including but not limited to, the Department of the Interior Manual, Part 517 Integrated Pest Management Policy and Part 609 Weed Control Program, the Plant Protection Act of June 20, 2000 (Pub. L. 106-224), and Executive Order 13112 of February 3, 1999.

MEDIUM FOR TRANSMITTING PAYMENTS

33. (a) All payments from the Authority to the United States under this Agreement shall be by the medium requested by the United States on or before the date payment is due. The required method of payment may include checks, wire transfers, or other types of payment specified by the United States.

(b) Upon execution of the Agreement, the Authority shall furnish the Contracting Officer with the Authority’s taxpayer’s identification number (TIN). The purpose for requiring the Authority’s TIN is for collecting and reporting any delinquent amounts arising out of the Authority’s relationship with the United States.
34. The Authority shall comply with Section Two (2) of Executive Order 13834 “Regarding Efficient Federal Operations”. Implementation of this Executive Order as it applies to this Agreement is provided in Exhibit C to this Agreement.

COOPERATION/MUTUAL AID

35. (a) In situations which the Contracting Officer and the Authority determine to be emergencies or other extraordinary circumstances affecting the Project, including without limitation, the Project Works, either the Contracting Officer or the Authority may request the other to furnish personnel, materials, tools, equipment, or other resources. The Party so requested shall immediately cooperate with the other and render such assistance as the Party so requested determines to be available. Unless otherwise agreed, the Party making the request, within sixty (60) days of receipt of properly itemized bills from the other Party, shall reimburse the Party rendering such assistance for all costs properly and reasonably incurred by it in such performance. Such costs shall be determined on the basis of current charges or rates charged by the Party rendering the assistance.

(b) In instances in which the total costs of responding to emergencies or other extraordinary circumstances, whether due to a single event or condition or to multiple events or conditions, exceed or substantially deplete the Authority’s minimum reserve fund established pursuant to Article 14(b), the Contracting Officer agrees to cooperate with the Authority (1) to promptly identify sources of funding, including but not limited to, sources available from or to the United States; (2) to allocate responsibility for paying the costs of responding to such emergencies or other extraordinary circumstances, including but not limited to by determining Capital Improvements under Article 5(a); and (3) to develop a timetable for repayment of such
costs that are provided by the United States and are allocated to the Authority.

AGREEMENT DRAFTING CONSIDERATIONS

36. This Agreement has been negotiated and reviewed by the Parties hereto, each of whom is sophisticated in the matters to which this Agreement pertains. Articles 1 through 36 of this Agreement have been drafted, negotiated, and reviewed by the Parties, and no one Party shall be considered to have drafted the stated Articles.
IN WITNESS WHEREOF, the Parties hereto have executed this Agreement as of the day and year first above written.

THE UNITED STATES OF AMERICA

By:__________________________
Regional Director
Interior Region 10: California-Great Basin
Bureau of Reclamation

FRIANT WATER AUTHORITY
(SEAL)

By:__________________________
Chair, Board of Directors

Attest:

__________________________
Secretary
EXHIBIT A

LIST OF PROJECT WORKS

Friant Water Authority

Friant-Kern Canal, including all right-of-way and all associated facilities as outlined in the following Section 5.2.25 of the Performance Work Statement dated January 21, 1986.

Specifically:

- Offices, buildings and property at 854 N Harvard Avenue, Lindsay, CA 93247
- Offices, buildings, and property at 860 Second Street, Orange Cove, CA 93646
- Offices, buildings and property at 332 Norwalk Street, Delano CA 93215
- Residence and storage yards at Kings River, FKC MP 28.53- 19553 E Trimmer Springs, Sanger CA 93657
- Residence and storage yards at Kaweah River, FKC MP 71.29- 21159 Ave 322, Woodlake, CA 93286
- Residence and storage yards at Tule River, FKC MP 95.59- 21799 Ave 160, Porterville CA 93257
- Remote storage yard at Friant, CA as outlined in section 5.2.25.4-part K
- Remote storage yard at Lake Woollomes – FKC MP 121.54

This Exhibit A is still being updated with Project Works the Authority is responsible for including but not limited to repeater sites.
EXHIBIT A

LIST OF PROJECT WORKS
EXHIBIT B

LIST OF OBLIGATIONS TO CONVEY AND DISTRIBUTE WATER IN AND FROM
THE PROJECT WORKS

Friant Water Authority

Water Service Contracts:

Millerton Lake

Fresno Co. Waterworks
#18 .............................................. 14-06-200-5904D

Gravelly Ford WD .................................. 1-07-20-W0242D

Madera, County of .................................. 14-06-200-2406A-LTR1

Orange Cove, City of ................................. 14-06-200-5230-LTR1

Friant-Kern Canal

Arvin-Edison WSD .................................. 14-06-200-229AD

Delano-Earlimart ID ................................. I75r-3327D

Exeter ID .............................................. I75r-2508D

Fresno, City of ........................................ 14-06-200-8901D

Fresno ID .............................................. 14-06-200-1122D

Garfield WD .............................................. 14-06-200-9421D

International WD .................................... 14-06-200-585A-LTR1

Ivanhoe ID .............................................. I75r-1809D

Lewis Creek WD ...................................... 14-06-200-1911D

Lindmore ID .............................................. I75r-1635D

Lindsay, City of ....................................... 5-07-20-W0428-LTR1

Lindsay-Strathmore ID ............................ I75R-1514D

Lower Tule River ID ................................ I75r-2771D

Orange Cove ID ........................................ I75r-1672D

Orange Cove, City of ................................ 14-06-200-5230-LTR1

Porterville ID .......................................... I75r-4309D

3
Saucelito ID ......................................................... 175r-2604D
Shafer-Wasco ID .................................................... 14-06-200-4032D
So. San Joaquin MUD ............................................. I1r-1460D
Stone Corral ID ...................................................... 175r-2555D
Tea Pot Dome WD .................................................... 14-06-200-7430D
Terra Bella ID ....................................................... 175r-2446D
Tulare ID .............................................................. 175r-2485D
Tulare, County of .................................................... 14-06-200-8293A

Cross Valley Canal Contractors
Arvin-Edison WSD .................................................... 14-06-200-229AD
Fresno, County of ................................................... 14-06-200-8292A-IR18
Hills Valley ID ......................................................... 14-06-200-8466A-IR18
Kern-Tulare WD ....................................................... 14-06-200-8601A-IR18
Kern-Tulare WD ....................................................... 14-06-200-8367A-IR18A
Lower Tule River ID .................................................. 14-06-200-8237A-IR18
Pixley ID ............................................................... 14-06-200-8238A-IR18
Tri-Valley WD ......................................................... 14-06-200-8565A-IR18
Tulare County of ................................................... 14-06-200-8293A-IR18

Warren Act Contracts:
There are no long-term Warren Act Contract obligations at this time.

Water Right Contracts:
There are no Water Right Contract obligations at this time.

Refuge Deliveries:
No current contracts for refuge water deliveries, but use of the Friant-Kern canal is being considered as part of a long-term conveyance alternative.
EXHIBIT C

SUSTAINABLE OPERATION AND MAINTENANCE

FRIANT WATER AUTHORITY

ROLES AND RESPONSIBILITIES FOR SUSTAINABLE OM&R

In order to comply with Section 2 of Executive Order 13834 “Regarding Efficient Federal Operations” as it relates to this Contract and more specifically the Transferred Works, the District shall:

- Achieve and maintain annual reductions in building energy use and implement energy efficiency measures that reduce costs;
- Meet statutory requirements relating to the consumption of renewable energy and electricity;
- Reduce potable and non-potable water consumption, and comply with stormwater management requirements;
- Utilize performance contracting to achieve energy, water, building modernization, and infrastructure goals;
- Ensure that new construction and major renovations conform to applicable building energy efficiency requirements and sustainable design principles; consider building efficiency when renewing or entering into leases; implement space utilization and optimization practices; and annually assess and report on building conformance to sustainability metrics;
- Implement waste prevention and recycling measures and comply with all Federal requirements with regard to solid, hazardous, and toxic water management and disposal;
- Acquire, use, and dispose of products and services, including electronics, in accordance with statutory mandates for purchasing preference, Federal Acquisition Regulation requirements, and other applicable Federal procurement policies; and
- Track and report annually energy management activities, performance improvements, cost reductions, greenhouse gas emissions, energy and water savings, and other appropriate performance measures.
UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
Central Valley Project, California

AGREEMENT BETWEEN THE UNITED STATES OF AMERICA AND FRIANT WATER
AUTHORITY TO TRANSFER THE OPERATION, MAINTENANCE AND REPLACEMENT
AND CERTAIN FINANCIAL AND ADMINISTRATIVE ACTIVITIES RELATED TO THE
FRIANT-KERN CANAL AND ASSOCIATED WORKS

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Exhibit A: List of Project Works
Exhibit B: List of Obligations to Convey and Distribute Water In and From the Project Works
Exhibit C: Inspection Reports
Exhibit D: Sustainable Operation and Maintenance
UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
Central Valley Project, California

AGREEMENT BETWEEN THE UNITED STATES OF AMERICA AND FRIANT WATER
AUTHORITY TO TRANSFER THE OPERATION, MAINTENANCE AND REPLACEMENT
AND CERTAIN FINANCIAL AND ADMINISTRATIVE ACTIVITIES RELATED TO THE
FRIANT-KERN CANAL AND ASSOCIATED WORKS

THIS AGREEMENT, effective the _____ day of __________,_______, (“Effective Date”)
in pursuance generally of the Act of Congress of June 17, 1902 (32 Stat.388), and the acts
amendatory thereof or supplementary thereto, including Section 5 of the Act of August 13, 1914
(38 Stat. 687), all collectively hereinafter referred to as the Federal Reclamation laws, between
the UNITED STATES OF AMERICA, hereinafter referred to as the United States, and the
FRIANT WATER AUTHORITY, hereinafter referred to as the Authority, a public agency of the
State of California, duly organized, existing, and acting pursuant to the laws of the State of
California. The United States and the Authority are referred to collectively as the “Parties,” and
individually as a “Party.”

WITNESSETH, That:
RECITALS

a. The United States Bureau of Reclamation (Reclamation) has constructed the Friant Division, Central Valley Project (Project), for storage, diversion, carriage and distribution of water for agricultural, flood control, municipal, industrial, domestic and other beneficial uses and purposes; and

b. The Authority represents water users who contract with the United States for water service provided by the Friant Division of the Project; and

c. The United States operates the Friant Division of the Project for the benefit, among others, of the water users represented by the Authority; and

d. The Authority has operated and maintained certain Friant Division facilities pursuant to that certain Agreement to Transfer the Operation, Maintenance, and Replacement (OM&R) and Certain Financial and Administrative Activities Related to the Friant-Kern Canal and Associated Works, Contract No. 8-07-20-X0356 (Transfer Agreement) between the Parties for a term of twenty-five (25) years, effective March 1, 1998; and

e. The Authority requested initiation of the renewal process for the continued OM&R of the Project Works under Contract No. 8-07-20-X0356 by letter dated July 30, 2019; and

f. The Authority has demonstrated its ability to operate and maintain such facilities to the satisfaction of the Contracting Officer and in a manner which best and most economically serves the water users relying on those facilities; and

i. It is deemed to be in the best interests of the Parties and the Project’s water users that the continued OM&R, as well as certain administrative and financial activities, of the Project
Works continue to be transferred to the Authority as the Operating Non-Federal Entity by renewing the Transfer Agreement; and

j. The United States also believes it to be in the best interests of the Parties and the Project’s water users to transfer to the Authority the administrative and financial responsibility to continue to perform and hereafter fund the Authority’s OM&R of the Project Works while the United States retains the responsibility to fund Capital Improvement costs of the Project Works; and

k. The Authority is willing to continue to assume the OM&R of the Project Works as the Operating Non-Federal Entity and perform the enumerated administrative and financial activities in accordance with the terms and conditions herein set forth; and

l. The National Environmental Policy Act compliance requirement for execution of this Agreement has been met by the Categorical Exclusion dated __________, 2020; and

In consideration of the mutual and dependent covenants herein contained, the Parties mutually agree as follows:

DEFINITIONS

1. When used in this Agreement, the term:

(a) “Capital Improvement” shall mean any activity that extends the useful life of a property, plant or equipment asset, expands the capacity or efficiency of an asset, or otherwise upgrades an asset to serve needs different from, or significantly greater than, an asset’s current use, or as defined in the Blue Book entitled Federal Replacements, Units, Service Lives, Factors, as it exists on the date of this Agreement, amended or in accordance with Federal law and accounting standards, or any other regulations, policies, guidelines, or instructions adopted thereunder.
“Fiscal Year” shall mean the period from and including the first day of October of each calendar year through and including the last day of September of the following calendar year.

“Irrigation Water” shall mean the use of Project Water or Other Water to irrigate land primarily for the production of commercial agricultural crops or livestock, and domestic and other uses that are incidental thereto.

“Municipal and Industrial Water” or “M&I Water” shall mean the use of Project Water or Other Water for municipal, industrial, and miscellaneous purposes not falling under the definition of “Irrigation Water” or within another category of water use under applicable Federal authority.

“Operation, Maintenance and Replacement” or “OM&R” shall mean the complete operation and maintenance of the Project Works, including performing, funding, and financing such repairs and replacements as are normally considered part of annual operation and maintenance functions and not considered Capital Improvement costs of the Project in accordance with the Blue Book entitled Federal Replacements, Units, Service Lives, Factors, as it exists on the date of this Agreement or in accordance with Federal law or any other regulations, policies, guidelines or instructions adopted thereunder. OM&R shall include the performance, funding, and financing of emergency or unusual operation and maintenance or extraordinary operation and maintenance costs, unusual or extraordinary repair or replacement costs, and betterment costs, but only to the extent the costs thereof are not considered Capital Improvement costs of the Project in accordance with the Blue Book referenced above as it exists on the date of this Agreement or in accordance with Federal law or any other regulations, policies, guidelines or instructions adopted thereunder. Notwithstanding the foregoing, OM&R shall also include
Capital Improvements, as that term is defined in Article 1(a) which the Authority chooses to accomplish and finance pursuant to Article 5(b).

(d) "Other Water" shall mean water other than water conveyed or delivered pursuant to Water Delivery Contracts which the United States has a legal or contractual obligation to convey or deliver through the Project Works. Other Water includes, without limitation, water to be conveyed through the Project Works (1) pursuant to contracts under the Warren Act (43 USC 523, et seq.), Section 305 of the Act of March 5, 1992 (106 Stat. 59), Section 3408(c) of the Central Valley Project Improvement Act (106 Stat. 4706), and Section 215 of the Reclamation Reform Act of 1982 (96 Stat. 1263); (2) under other wheeling or conveyance agreements binding on the Secretary; (3) in accordance with agreements for conveyance of water to wildlife refuges and wildlife management areas; and (4) to satisfy other legally imposed environmental obligations of the Secretary.

(e) "Party Entitled to Utilize or Receive Other Water" shall mean the party required to pay the Authority the amounts described in Article 12 in connection with the delivery of Other Water. In the case of Other Water delivered to satisfy agreements for conveyance of water to wildlife refuges and wildlife management areas, as well as other legally imposed environmental obligations of the Secretary, the Party Entitled to Utilize or Receive Other Water (and therefore required to pay the Authority the amounts described in Article 12 in connection with the delivery thereof) shall be the Contracting Officer.

(f) "Project" shall mean the Central Valley Project owned by the United States and managed by the Department of Interior, Bureau of Reclamation.
“Project Water” shall mean all water that is developed, diverted, stored, or delivered by the Secretary in accordance with the statutes authorizing the Project and in accordance with the terms and conditions of water rights acquired pursuant to California law.

“Project Works” shall mean those facilities listed or described on the attached Exhibit A, which are incorporated herein by this reference, including: the Friant-Kern Canal and related in-line control facilities; wasteways, laterals, holding reservoirs, turnouts and measuring devices, associated water level control devices and water level recording instruments; appurtenant equipment, structures and maintenance buildings; and such other facilities as the Parties may agree by modification of Exhibit A, without amending this Agreement.

“Secretary” or “Contracting Officer” shall mean the Secretary of the United States Department of the Interior or his/her duly authorized representative.

“Substantial Change” shall mean a modification in, or addition to, Project Works which involves changes in the original design intent, function, and/or operational parameters of the facility, or changes in benefits of the Project Works, including non-routine maintenance activities that involve construction or reconstruction of a portion of the facility.

“Water Delivery Contract” shall mean (1) any contract entered into by the Secretary under the provisions of Sections 9(c), 9(d) or 9(e) of the Reclamation Project Act of 1939 [43 USC 485h (c), (d) and (e)] or Section 3404 of the Central Valley Project Improvement Act (106 Stat. 4706) pursuant to which Project Water is to be supplied from or through the Project Works and (2) any exchange contract, water rights settlement contract or similar agreement pursuant to the terms of which water is to be supplied by the Secretary from or using the Project Works.
“Water Delivery Contractor” shall mean a party holding a Water Delivery Contract with the United States.

TERM OF AGREEMENT

2. (a) This Agreement shall be effective as of the Effective Date and shall remain in effect for thirty-five (35) years thereafter; Provided, That this Agreement is not terminated at an earlier date pursuant to Article 2(b) below. Subject to modification acceptable to the Contracting Officer and the Authority, the Authority shall have the option to renew this Agreement for successive periods not to exceed thirty-five (35) years each by providing written notice of such to the Contracting Officer not more than one (1) year, but not less than six (6) months, prior to the end of the then-current term, unless by mutual agreement to renew sooner.

(b) The Contracting Officer may terminate this Agreement at any time before the expiration of its term whenever the Contracting Officer determines that the Authority is in substantial violation of the Agreement as provided in this Article 2(b); Provided, That prior to the effective date of any such termination, the Contracting Officer shall first notify the Authority in writing of, the specific purported deficiencies of the Authority in carrying out the terms and conditions of this Agreement. It is the intent of the Parties that disputes be resolved pursuant to this Article 2(b) as expeditiously as is reasonably possible without the necessity of other relief at law or in equity. If after the designated representative of the Authority has met with the Contracting Officer or his or her designated representative and attempt in good faith and with the use of best efforts to resolve any dispute arising from the purported deficiency an agreement is not reached, the Contracting Officer may issue a notice of proposed termination, which includes the specific deficiencies of the Authority’s performance under this Agreement. The Authority shall have at least ninety (90) days from receipt of the written notice of proposed termination to
correct all deficiencies referred to in said written notice; **Provided, That** in the event of a condition which threatens the safety or integrity of the Project Works, the Contracting Officer may specify a shorter correction period which the Contracting Officer determines to be appropriate under the circumstances. In the event the Authority does not correct all deficiencies referred to in said written notice within the applicable period, the Contracting Officer may thereafter terminate this Agreement upon thirty (30) days prior written notice to the Authority. Any termination pursuant to this Article shall be subject to the rights and obligations of the Parties as more specifically set forth in this Agreement.

(c) The Authority may at any time, upon giving twelve (12) months written notice, terminate this Agreement; **Provided, That** such termination shall not relieve the Authority of any of its duties, liabilities or obligations accruing from the effective date of this Agreement to the effective date of such termination, except insofar as the Authority lacks funding to perform such obligations due to a failure by the United States to meet any of its obligations under this Agreement.

(d) Upon any termination of this Agreement, the United States will take over from the Authority the care, OM&R of the Project Works and the Authority shall transfer to the United States (1) title to all tools, vehicles, supplies, and equipment transferred under Article 3(b) of the original agreement 8-07-20-X0356 (to the extent still on hand) or purchased by the Authority for the purposes of this Agreement, and (2) any funds in its possession which were collected for, or allocated to, the OM&R of the Project Works for the then-current Fiscal Year which are in excess of the obligations of the Authority for the OM&R of the Project Works. All other funds and reserves in the Authority’s possession, including without limitation all other funds collected for, or allocated to, the OM&R of the Project Works and the reserve funds
established under Article 14 shall be retained or distributed by the Authority in accordance with
the direction of the Authority's board of directors.

(e) An Agreement review must be performed at least every fifteen (15) years. A more frequent review will be established if determined to be appropriate by the Contracting Officer. The review and update will be limited to focus on this Agreement’s standard articles and incorporation of any new statutory requirements applicable to this Agreement.

OPERATION AND MAINTENANCE OF PROJECT WORKS

3. (a) The Contracting Officer has transferred, and the Authority has accepted and assumed the care, OM&R of the Project Works. Title to the Project Works will remain in the name of the United States, unless otherwise provided by the Congress of the United States.

(b) The Authority, without expense to the United States, will care for, OM&R the Project Works in full compliance with the terms of this Agreement and in such a manner that the Project Works remain in good and efficient condition, subject to exercise of discretion to fund and carry out Capital Improvements, as described below in Article 5(b).

(c) Necessary repairs of the Project Works will be made promptly by the Authority. In case of unusual conditions or serious deficiencies in the OM&R of the Project Works threatening or causing interruption of water service, the Contracting Officer may issue to the Authority a special written notice of those necessary repairs. Except in the case of an emergency, the Authority will be given sixty (60) days to either make the necessary repairs or submit a plan for accomplishing the repairs acceptable to the Contracting Officer. In the case of an emergency, or if the Authority fails to either make the necessary repairs or submit a plan for accomplishing the repairs acceptable to the Contracting Officer within sixty (60) days of receipt of the notice, the Contracting Officer may cause the repairs to be made, and the cost of those repairs will be paid by the Authority as directed by the Contracting Officer.

(d) The Authority will not make any Substantial Changes in the Project Works without first obtaining written consent of the Contracting Officer.

(e) The Authority agrees to indemnify the United States for, and hold the United States and all of its representatives harmless from, all damages resulting from suits, actions, or claims of any character, except for intentional torts committed by employees of the United States, brought on account of any injury to any person or property arising out of any act, omission, neglect, or misconduct in the manner or method of performing any construction, care, operation, maintenance, supervision, examination, inspection, or other duties of the Authority or the United States on Project Works required under this Agreement, regardless of who performs those duties.
Provided, That for the purposes of this Article 3(e), the term “intentional torts” includes acts or omissions under California law that constitute gross or willful misconduct, gross or willful negligence; and, provided further, that the term “employees of the United States,” includes agents and independent contractors who are directly responsible to the United States.

(f) Omitted.

(g) In the event the Authority is found to be operating the Project Works or any part thereof in violation of this Agreement or the Authority is found to be failing any financial commitments or other commitments to the United States under the terms and conditions of this Agreement, then upon the election of the Contracting Officer, the United States may take over from the Authority the care, OM&R of the Project Works by giving written notice to the Authority of such election and the effective date thereof. Thereafter, during the period of operation by the United States, upon notification by the Contracting Officer the Authority will pay to the United States, annually in advance, the cost of the OM&R of the Project Works as determined by the Contracting Officer. Following written notification from the Contracting Officer the care, OM&R of the Project Works may be transferred back to the Authority.

(h) In addition to all other payments to be made by the Authority under this Agreement, the Authority will pay to the United States, following the receipt of a statement from the Contracting Officer, all reimbursable miscellaneous costs to be incurred by the United States for any work involved in the administration and supervision of this Agreement.

(i) Nothing in this Article will be deemed to waive the sovereign immunity of the United States.

TRANSFER INSPECTION

4. The Authority (including its predecessors) has been the Operating Non-Federal Entity for the Project Works since 1986. Joint inspections of the Project Works have been conducted by the United States and the Authority since ________. The inspection report signature pages are attached to this Agreement as Exhibit C. Reports shall be made available for the Authority’s review upon request.
CAPITAL IMPROVEMENTS AND REPAIRS

5. (a) Nothing in this Agreement shall be construed to require the Authority to make or fund improvements, modifications, replacements or repairs of any nature to the Project Works, the costs of which should be or will be added to the Capital Improvement costs of the Project. The identification of Capital Improvements shall be made in accordance with Federal law or any regulations, policies, guidelines or instructions adopted thereunder. The Contracting Officer’s determination of whether the costs of any improvements, modifications, replacements or repairs should be or will be added to the Capital Improvement costs of the Project shall be accepted by the Authority after the Contracting Officer has conferred in good faith with the Authority with respect thereto; Provided, That such determination shall be subject to review by a court having jurisdiction over the dispute. The Authority shall act in accordance with such determination unless and until it is reversed or modified. The Authority shall submit annual OM&R work forecasts at the start of each Fiscal Year. The OM&R work forecasts shall include all work to Project Works that is projected to be done in the following Fiscal Year and work to be done in the next three (3) Fiscal Years. Following the completion of a Review of Operation and Maintenance (RO&M) examination of the Project Works as set forth in Article 11 of this Agreement, if that RO&M examination identifies a potential Capital Improvement, and at such other times as the Parties agree are necessary, the Authority and the Contracting Officer shall confer to identify any Capital Improvements planned or necessary for the Project Works for the next ten (10) years and agree upon the mechanism for accomplishing and financing the Capital Improvements.

(b) Notwithstanding the provisions of Article 5(a), in the event the Authority identifies Capital Improvements it deems necessary for the OM&R of the Project Works and the
Contracting Officer is unable or unwilling to provide a mechanism for accomplishing and financing such Capital Improvements, the Authority may proceed with the accomplishment and financing of such Capital Improvements and deem the costs thereof to be OM&R costs hereunder, regardless of whether such costs are added to the Capital Improvement costs of the Project under Article 5(a). Such Capital Improvements may include, without limitation, the acquisition, repair or replacement of personal property (such as motor vehicles and heavy equipment) and the construction or improvement of structures utilized by the Authority in connection with the OM&R of the Project Works.

**PERFORMANCE WORK STATEMENT, EMERGENCY ACTION PLANS AND NOTIFICATIONS**

6. (a) The Authority shall maintain the Project Works in such a manner that the Project Works shall remain in good and efficient condition for the storage, diversion and carriage of water. The Authority shall perform the OM&R of the Project Works consistent with the guidelines provided by existing Designer’s Operating Criteria, standard operation procedures (SOPs) and/or manufacturer’s technical manuals for the Project Works, in accordance with such sound engineering practices as have been or may be developed for the Project Works, and in accordance with applicable Federal, State and local environmental laws. Deviations from or changes to these standards shall be approved by the Contracting Officer.

(b) The Authority shall prepare such Emergency Action Plans (EAPs) for the Project Works as are required by governmental agencies with jurisdiction over the Authority’s operations. The Authority shall furnish copies of any such plans to the Contracting Officer.

(c) In addition to implementing Article 6(a)(b), the Authority shall notify the Contracting Officer as soon as reasonably practicable after initial observation by the Authority of
any event or situation which threatens (1) the safety or integrity of the Project Works, or (2) the well-being of humans or property located adjacent to the Project Works. Notwithstanding Article 26, such notification shall be made immediately telephonically or by via and by electronic mail rather than by mail.

(d) The Authority shall submit monthly reports to the Contracting Officer outlining all work accomplished.

(e) The Authority shall annually review, and as necessary update, all SOPs and EAPs and provide such updates to the Contracting Officer.

(f) The performance work statement (PWS) will consist of the OM&R work forecast, current SOPs for all the major facilities, and EAPs as applicable.

**ADMINISTRATION OF FEDERAL PROJECT LANDS**

7. (a) (1) The lands and interests in lands acquired, withdrawn, or reserved and needed by the United States for the purposes of care, OM&R of the Project Works (collectively, “Project Work Lands”) may be used by the Authority for such purposes without being charged any administrative fees therefor. The Authority shall ensure that no unauthorized encroachment occurs on Federal Project lands and rights-of-way. The Authority does not have the authority to issue any land-use agreement or grant that conveys an interest in Federal real property, nor to lease or dispose of any interest of the United States.

Where there are existing unauthorized encroachments as of the Effective Date on Project Works Lands, the Authority will work with the Contracting Officer to resolve the encroachments to the Contracting Officer’s satisfaction. For the purposes of this Agreement “encroachment” means any unauthorized building, structure, or object of any kind or character placed, into, over, or under any Project Works Lands.

(2) The Contracting Officer shall not issue any rights-of-way across Project Works Lands or any leases, licenses, permits, or special-use agreements involving Project Works Lands until the Contracting Officer has determined that the grant is compatible
with the Project purposes and with the OM&R of the Project Works. The Contracting Officer shall issue such rights-of-way across Project Works Lands or any leases, licenses, permits or special-use agreements involving Project Works Lands only after offering the Authority the opportunity to provide appropriate comment concerning the request. Requests for such grants that are received by the Authority shall be referred to the Contracting Officer along with appropriate comment concerning the request. A copy of all such grants issued by the Contracting Officer shall be provided to the Authority.

(b) The Authority shall regularly inspect the Project Works Lands to identify any trespass and determine the general condition of the real property itself. Cases of trespass shall be corrected, where possible, by the Authority. Trespass cases which the Authority feels may require undue time and/or expense to correct shall be referred without delay to the Contracting Officer for resolution.

(c) The Authority shall review land-use requests for compatibility within Project Works Lands. The Contracting Officer shall remain responsible for review and action upon all requests for use of the Project Works or Project Works Lands unless a delegation of authority to the Authority is otherwise provided for by the express written consent of the Contracting Officer.

(d) The United States retains responsibility for compliance with the National Historic Preservation Act of 1966, and the Native American Graves Protection and Repatriation Act of 1990. The Authority will notify the Contracting Officer and, only when on tribal land, also notify the appropriate tribal official, immediately upon the discovery of any potential historic properties or Native American human remains, funerary objects, sacred objects, or objects of cultural patrimony.
OVERSIGHT AND PARTICIPATION

8.  (a) The Contracting Officer shall, to the greatest extent possible, afford the Authority the opportunity to review and comment on preliminary and final development plans, environmental documents and other documents which affect the Project Works. The Authority’s comments shall be provided to the Contracting Officer; and

(b) The Parties shall, to the greatest extent possible, afford each other the opportunity to participate with city, county, State and Federal governments, or governmental groups and private concerns in meetings, hearings and other activities affecting the Project Works. The Parties shall keep each other informed of these activities.

DELIVERY OF WATER BY THE AUTHORITY

9.  (a) The Authority shall convey and distribute water in and from the Project Works in accordance with the directives of the Contracting Officer, including all operating guidelines approved by the Contracting Officer, so that the Contracting Officer can satisfy all valid water delivery obligations of the United States from the Project Works, including without limitation all water delivery obligations of the United States under Water Delivery Contracts and for the delivery of Other Water. The Authority shall deliver water to each Water Delivery Contractor or Party Entitled to Utilize or Receive Other Water entitled thereto from the Project Works through turnouts or such temporary diversion facilities as are specified in then-existing Water Delivery Contracts or other arrangements or agreements relating to Other Water specifying such turnouts and delivery points, or as may be agreed to by such Water Delivery Contractor(s) or Party Entitled to Utilize or Receive Other Water, the Authority, and the Contracting Officer.
(b) A complete list of all valid obligations of the United States to convey and distribute water in and from the Project Works is attached as Exhibit B and incorporated herein by this reference. Exhibit B indicates whether each obligation is under a Water Delivery Contract or is for the delivery of Other Water. The Contracting Officer shall modify Exhibit B as such obligations change or as new obligations are added without amending this Agreement.

(c) Prior to the Contracting Officer entering into, renewing or amending any Water Delivery Contract or any other agreement which requires or permits the conveyance of water through any of the Project Works, the Contracting Officer shall consult with the Authority about the terms of such contract action, and shall provide the Authority the opportunity to review and comment thereon. Any such contract action shall be taken by the Contracting Officer only after the Contracting Officer has given due consideration to, and has taken all reasonable actions to mitigate the impacts of such contract action on (1) the quantity or quality of water available to Water Delivery Contractors, or Parties Entitled to Utilize or Receive Other Water, as of the date of this Agreement, and (2) the ability of the Authority to perform its obligations under this Agreement. The Contracting Officer shall provide the Authority a copy of all contracts entered into with Water Delivery Contractors or Parties Entitled to Utilize or Receive Other Water utilizing the Project Works for delivery or conveyance.

RESOLUTION OF DISPUTES

10. Should any dispute arise concerning delivery or conveyance of water by the Authority through the Project Works between the Authority, any Water Delivery Contractor(s) and/or any Party(ies) Entitled to Utilize or Receive Other Water from or through the Project Works, which the Authority concludes cannot be resolved through negotiations with the other party(ies) to the dispute, the Authority shall provide its final position with respect to such dispute.
to the other party(ies) thereto in writing and to the Contracting Officer requesting a
determination of the dispute. Within sixty (60) days after such notice-final position is provided,
the dispute shall be referred to or such other reasonable date as may be agreed upon by the
Authority and the Contracting Officer, the Contracting Officer for resolution will issue a written
determination regarding the dispute. The Contracting Officer’s resolution of the dispute
determination shall be accepted by the Authority and other party(ies) thereto as final and
conclusive and the Authority and the other party(ies) shall promptly comply with said decision
and shall operate the Project Works in conformance with such decision until the same is stayed,
reversed or modified by a decision of a court of competent jurisdiction.

EXAMINATION, INSPECTION, AND AUDIT OF PROJECT WORKS, RECORDS, AND
REPORTS FOR DETERMINING ADEQUACY OF OM&R

11. (a) The Contracting Officer may examine the following: the Authority’s
books, records, and reports with respect to OM&R obligations under this Agreement; the Project
Works being operated by the Authority; the adequacy of the OM&R program; the reserve fund;
and the water conservation program including the water conservation fund, if applicable.
Notwithstanding title ownership, where the United States retains a financial, physical, or liability
interest in facilities either constructed by the United States or with funds provided by the United
States, the Contracting Officer may examine any or all of the Project Works providing such
interest to the United States.

(b) The Contracting Officer may, or the Authority may ask the Contracting
Officer to, conduct special inspections of any Project Works being operated by the Authority and
special audits of the Authority’s books and records to ascertain the extent of any OM&R
deficiencies to determine the remedial measures required for their correction and to assist the
Authority in solving specific problems. Except in an emergency, any special inspection or audit
shall be made only after written notice thereof has been delivered to the Authority by the
Contracting Officer.

(c) The Authority shall provide access to the Project Works, operate any
mechanical or electrical equipment, and be available to assist in the examination, inspection, or
audit.
(d) The Contracting Officer shall prepare reports based on the examinations, inspections, and audits and furnish copies of such reports and any recommendations to the Authority.

(e) The costs incurred by the United States in conducting OM&R examinations, inspections, and audits and preparing associated reports and recommendations related to high- and significant-hazard dams and associated facilities shall be nonreimbursable. Associated facilities include carriage, distribution, and drainage systems; pumping and pumping generating plants; power plant structures; tunnels/pipelines; diversion and storage dams (low-hazard); Type 2 bridges which are Reclamation-owned bridges not located on a public road; regulating reservoirs (low-hazard); fish passage and protective facilities, including hatcheries; river channelization features; rural/municipal water systems; desalting and other water treatment plants; maintenance buildings and service yards; facilities constructed under Federal loan programs (until paid out); and recreation facilities (reserved works only); and any other facilities as determined by the Contracting Officer.

(f) Expenses incurred by the Authority, as applicable, in participating in the OM&R site examination will be borne by the Authority.

(g) Requests by the Authority for consultations, design services, or modification reviews, and the completion of any OM&R activities identified in the formal recommendations resulting from the examinations (unless otherwise noted) are to be funded as project OM&R and are reimbursable by the Authority to the extent of current OM&R allocations.

(h) Site visit special inspections that are beyond the regularly scheduled OM&R examinations conducted to evaluate particular concerns or problems and provide assistance relative to any corrective action (either as a follow up to an OM&R examination or when requested by the Authority) shall be nonreimbursable.

(i) The Contracting Officer may provide the State of California an opportunity to observe and participate in, at its own expense, the examinations and inspections. The State of California may be provided copies of reports and any recommendations relating to such examinations and inspections.

COST RECOVERY FOR AUTHORITY OM&R ACTIVITIES; TERMINATION OF WATER DELIVERIES

12. As of the Effective Date, the Authority shall be responsible for directly funding the OM&R of the Project Works transferred hereby. Except as otherwise provided herein, the Parties acknowledge that the United States will no longer provide funding through the appropriations process for such OM&R. The United States hereby delegates to the Authority.
Authority all required authority under statutes, contracts, regulations, and policies to collect for OM&R of the Project Works. Reclamation acknowledges and agrees that the provisions of its Water Delivery Contracts regarding the obligation to pay the Authority for the operation and maintenance of the Project Works performed by the Authority under this Agreement, but which do not have the same definition of OM&R as in this Agreement, were not intended to and do not limit the delegation of authority to charge and collect for the OM&R of the Project Works as provided in this Article 12. The procedures and authorities to be utilized by the Authority for such direct funding are set forth in this Article 12.

(a) OM&R Budgets. Not later than ninety (90) days before the start of each Fiscal Year, the Authority shall submit to each Water Delivery Contractor, and all Parties Entitled to Utilize or Receive Other Water, the proposed budget for the next Fiscal Year for all activities of the Authority to be carried out under this Agreement. The budget so developed shall include amounts necessary to establish the reserve fund described in Article 14 and such other reserves as may be determined to be necessary by the Authority. The Authority shall afford each Water Delivery Contractor and all Parties Entitled to Utilize or Receive Other Water the opportunity to submit comments on such proposed budget by thirty (30) days before commencement of the Fiscal Year. Except as otherwise provided in the Memorandum of Understanding described in Article 12(f), any dispute(s) regarding the proposed budget shall be resolved in the manner described in Article 10. The Authority shall submit the final budget for each Fiscal Year to the Contracting Officer prior to the start of that Fiscal Year. The Authority shall use reasonable efforts to perform its responsibilities under this Agreement in accordance with the applicable final budget.
(b) Cost Recovery Methodology. The Authority shall develop a methodology to recover all costs incurred by the Authority in carrying out its responsibilities under this Agreement, including without limitation all costs described in the budgets prepared pursuant to Article 12(a).

(1) The Authority's cost recovery methodology shall (i) provide for the equitable allocation of the costs to be recovered among Water Delivery Contractors with an obligation to pay for water delivered or conveyed through the Project Works and all Parties Entitled to Utilize or Receive Other Water with an obligation to pay therefor, including without limitation the Contracting Officer; (ii) provide for the equitable allocation of the costs to be paid to the Authority pursuant to the Memorandum of Understanding described in Article 12(f); and (iii) clearly set forth the manner in which all such costs shall be collected by the Authority, including deadlines for payments and/or deposits required of Water Delivery Contractors and all Parties Entitled to Utilize or Receive Other Water under the methodology.

(2) Such methodology shall recover costs in lieu of the conveyance OM&R cost component and the conveyance pumping OM&R cost component heretofore calculated by the United States pursuant to its ratesetting policies for the Project. In addition to OM&R costs for directly funding the OM&R of the Project Works, such methodology shall recover power costs for conveyance pumping incurred by the United States for the production or transmission of such power that are payable by the Water Delivery Contractors, Parties Entitled to Utilize or Receive Other Water, and contractors in the Friant Division pursuant to the Memorandum of Understanding described in Article 12(f), in connection with the delivery or conveyance of water through the Project Works.
(3) The Authority’s cost recovery methodology and any subsequent amendments thereto shall be approved by the Authority and provided to all parties with payment obligations under this Article 12 by July 1 of each year, or not less than sixty (60) days prior to the effective date of any amendment thereof. Except as otherwise specified in the Memorandum of Understanding described in Article 12(f), any dispute(s) regarding the Authority’s cost recovery methodology shall be resolved in the manner described in Article 10. The Contracting Officer has approved the Authority’s initial cost recovery methodology. All proposed amendments shall be submitted to the Contracting Officer for review and comment concurrent with the dissemination to all parties with payment obligations noted above.

(c) Deficiencies in Cost Recovery. The Authority is not obligated to provide funding from non-Federal sources for the cost of delivering water to Water Delivery Contractors or Parties Entitled to Utilize or Receive Other Water who do not pay the Authority in full for the OM&R of the Project Works.

(1) In the event any Water Delivery Contract or obligation to deliver Other Water provides for or results in the payment of less than all of the costs to be recovered by the Authority in accordance with Article 12(b) (a “deficiency”), whether resulting from the inadequacy of contract provisions between the Water Delivery Contractor or Party Entitled to Utilize or Receive Other Water and the United States to cover the Authority’s OM&R costs, delinquency in payment of amounts due as described in Article 12(d), or otherwise, the United States may elect to pay to the Authority the amount of any such deficiency, through a separate agreement or such other appropriate legal instrument as may be entered into by the Parties from time to time. If the United States does not elect to pay such deficiency, the Authority may terminate water deliveries as provided in Article 12(d).
(2) Except as otherwise provided under this Article 12(c), payment for such deficiencies shall be made through a separate service contract or such other appropriate legal instrument as may be entered into by the Parties from time to time, by the terms of which the United States agrees to pay or provide funding to the Authority for water delivery services provided under this Agreement to the United States on behalf of the parties incurring the deficiencies. The solicitation and award of any service contract shall be made pursuant to the applicable Federal acquisitions laws, regulations, and policies governing such contracts, including the Federal Acquisition Regulations (FAR), and the Department of the Interior and Bureau of Reclamation Acquisition Regulations. Payments (2) Any payments made by the United States to the Authority for such deficiencies shall become the financial obligation of the deficient Water Delivery Contractor or Party Entitled to Utilize or Receive Other Water to the Contracting Officer.

(3) If payments for deficiencies as provided in this Article 12(c) are not timely made by the United States in accordance with said service contract or other appropriate legal instrument, the Authority may exercise its rights under Article 12(d).

(d) Termination of Water Deliveries. Subject to subparagraphs (1)—(3) of this Article 12(d), in the event any amount due to or to be collected by the Authority from a Water Delivery Contractor or Party Entitled to Utilize or Receive Other Water pursuant to Article 12 is not paid when due (a “delinquency”), the Authority is authorized by the United States to discontinue delivery and conveyance of water to or for such Water Delivery Contractor or Party Entitled to Utilize or Receive Other Water until such time as the delinquency is cured. The Authority shall give the Contracting Officer and the delinquent party written notice of the delinquency and of the date deliveries will be terminated if the delinquency is not cured. The
Prior to issuing such notice, the Contracting Officer and the Authority shall agree in writing on the appropriate timing and length of such notice cure period.

(2) In the event, and only in the event, the Contracting Officer directs the Authority in writing to deliver or convey water to or for a delinquent party, the United States shall be liable to the Authority for the costs to be recovered from such party under Article 12(c) of this Agreement, and the Authority shall have no obligation to collect any amounts associated with such water from the delinquent parties.

(e) Interest. In the event any amounts due to the Authority from the United States under this Agreement are not paid when due, in addition to exercising the rights afforded the Authority under Article 12(c) and Article 12(d), the Authority will receive interest on the delinquent amounts pursuant to the Prompt Payment Act, as amended (31 USC 3901, et seq.); Provided, That the Authority shall have previously submitted appropriate invoices to the United States in accordance with 48 CFR Section 32.907-1.

(f) Recovery of Certain Costs and Memorandum of Understanding. The Parties acknowledge that the OM&R of certain Project facilities benefiting parties in the Friant Division will be performed by the San Luis and Delta-Mendota Water Authority pursuant to that certain Agreement to Transfer Operation and Maintenance and Replacement and Certain Financial and Administrative Activities Related to the San Luis and Delta-Mendota Canals, Tracy Pumping Plant, and O’Neill Pumping/Generating Plant, San Luis Drain and Associated Works. In connection therewith, the Authority has entered into that certain “Memorandum of Understanding Between the Friant Water Authority (as successor to the Friant Water Users Authority) and the San Luis & Delta-Mendota Water Authority Relating to Allocation, Collection and Payment of Operation, Maintenance & Replacement Costs for Water Delivered
Through Certain Central Valley Project Facilities,” effective March 1, 1998, amended February 25, 2003, and as it may be further amended by the parties thereto from time to time. Pursuant to such Memorandum of Understanding, certain OM&R costs described therein will be payable by contractors in the Friant Division of the Project, and collected by the Authority and paid to the San Luis and Delta-Mendota Water Authority in accordance with the terms of such Memorandum of Understanding. The United States acknowledges and agrees that it is not a party to such Memorandum of Understanding. While this Agreement is in effect, the Authority shall comply with the terms of such Memorandum of Understanding, as it may be amended by the parties thereto.

(g) Direct Charges Replace U.S. Rate Components. After the Effective Date, the United States shall not charge water rate components for conveyance OM&R, conveyance pumping OM&R, to a Water Delivery Contractor or Party Entitled to Utilize or Receive Other Water, except to the extent (i) financial obligations otherwise properly included in such components have been incurred by the United States prior to the date of this Agreement and have not been included as an expense therein under the ratesetting policies for the Project; or (ii) the United States has paid or provided funding to the Authority for delivering water to a Water Delivery Contractor or Party Entitled to Utilize or Receive Other Water to cover a deficiency in payment.

(1) To the extent the Authority’s cost recovery methodology includes recovery of power costs for conveyance pumping that are incurred by the United States for the production or transmission of such power, the Authority shall remit such funds to the Contracting Officer within thirty (30) days after receipt of the Contracting Officer's billing therefor.
(2) All costs recovered pursuant to the Authority’s cost allocation methodology and not required to be remitted to the Contracting Officer pursuant to this Article 12(g) shall be immediately available for funding the costs of the Authority pursuant to this Article 12.

(h) Deposits of Amounts Collected. Amounts collected by the Authority pursuant to this Article 12 shall be placed on deposit or otherwise invested in accordance with the Authority’s investment policy and in conformance with State law to be expended solely for purposes of this Agreement. All interest accruing on said account shall be property of the Authority, and not of the United States, and shall be applied against OM&R costs.

(i) The Contracting Officer agrees that material changes in Project operations affecting the quantity of water to be delivered or in Project finances may affect the ability of the Authority to carry out its obligations under this Agreement. Under such circumstances, the Parties will meet and confer as to emergency measures available to reduce the economic hardship to the Authority, the Water Delivery Contractors, and/or Parties Entitled to Utilize or Receive Other Water.

WATER ACCOUNTING

13. (a) The Contracting Officer’s water accounting system shall be the data utilized in maintaining water delivery records and in allocating costs for all Water Delivery Contractors and all Parties Entitled to Utilize or Receive Other Water. The water accounting system shall fully and accurately document the allocation and deliveries of water through the Project Works and account for financial transactions affecting the Water Delivery Contractors, the Friant Division Contractors required to make payments via the Authority to the San Luis and Delta-Mendota Water Authority pursuant to the Memorandum of Understanding described in
Article 12(f), and all Parties Entitled to Utilize or Receive Other Water with an obligation to pay therefor.

(b) The Contracting Officer shall direct the Water Delivery Contractors and other Parties Entitled to Utilize or Receive Other Water to provide the Authority and the Contracting Officer with water delivery and payment information for all water delivered to said Water Delivery Contractors and Parties Entitled to Utilize or Receive Other Water pursuant to this Agreement. All water accounting records created or maintained by the Authority under this Agreement shall be subject to Article 15 and shall be accessible by the Contracting Officer.

(c) In order to further their mutual goals and objectives, the Contracting Officer and the Authority shall communicate, coordinate, and cooperate with each other, in order to improve the OM&R of the Project, including the financing thereof. The communication, coordination, and cooperation shall include, but not be limited to, any action which will or may materially affect the quantity or quality of Project Water supply, the allocation of Project Water supply, and Project financial matters, including but not limited to, budget and water accounting issues. The communication, coordination, and cooperation provided for hereunder shall extend to all provisions of this Agreement. Each party shall retain exclusive decision making authority for all actions, opinions, and determinations to be made by the respective party.

(d) The Contracting Officer acknowledges that some or all of the Water Delivery Contractors and Parties Entitled to Utilize or Receive Other Water may appoint the Authority as agent for such parties or may otherwise designate, in writing, the Authority to act as an intermediary with the Contracting Officer concerning the water accounting or financial information. Upon notice, in writing, of such relationship, the Contracting Officer agrees to recognize the Authority in such capacity.

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14. (a) Upon transfer of the OM&R of the Project Works under this Agreement, the Authority shall accumulate and maintain a minimum reserve fund or demonstrate to the satisfaction of the Contracting Officer that other funds are available for use as an emergency reserve fund. The Authority shall establish and maintain that emergency reserve fund to meet costs incurred during periods of special stress caused by damaging droughts, storms, earthquakes, floods, or other emergencies threatening or causing interruption of water service.

A minimum reserve fund account balance will be maintained to finance (1) OM&R costs; (2) costs associated with addressing conditions which threaten or cause interruption of water service; and (3) unforeseen or extraordinary OM&R costs; and (4) costs associated with addressing conditions which threaten the safety or integrity of the Project Works.

(b) The Authority shall accumulate the reserve fund with annual deposits or investments over a maximum of ten (10) years and is to be held in a Federally insured, interest- or dividend-bearing account or in securities guaranteed by the Federal Government, in the California Local Agency Investment Fund, or, if approved by the Contracting Officer, in any fiduciary account in a manner provided by the laws of the State of California: Provided, That money in the reserve fund, including accrued interest, shall be available within a reasonable time to meet expenses for such purposes as those identified in paragraph (d) herein. Such annual deposits and the accumulation of interest to the reserve fund shall continue until the basic amount of fifteen percent (15%) of the average annual actual OM&R costs incurred by the Authority for the Project Works during the three most recent Fiscal Years is accumulated (excluding any OM&R costs pertaining to Capital Improvements). Following an emergency expenditure from the fund, the annual deposits shall continue from the year following the emergency expenditure until the previous balance is restored. After the initial amount is accumulated or after the previous balance is restored, the annual deposits may be discontinued, and the interest earnings shall continue to accumulate and be retained as part of the reserve fund.

(c) Upon mutual written agreement between the Authority and the Contracting Officer, the basic reserve fund or the accumulated reserve fund may be adjusted to account for risk and uncertainty stemming from the size and complexity of the Project; the size of the annual OM&R budget; additions to deletions from, or changes in Project Works; and OM&R costs not contemplated when this Agreement was executed.

(d) The Authority may make expenditures from the reserve fund only for OM&R costs incurred during periods of special stress, as described in paragraph (a) herein; or for meeting unforeseen extraordinary operation and maintenance costs; or for meeting unusual or extraordinary repair or replacement costs; or for meeting betterment costs (in situations where recurrence of severe problems can be eliminated) during periods of special stress. Proposed expenditures from the fund shall be submitted to the Contracting Officer in writing for review.
and written approval prior to disbursement. Whenever the reserve fund in reduced below the current balance by expenditures therefrom, the Authority shall restore that balance within five (5) years of withdrawal by the accumulation of annual deposits which will be over and above the normal annual contribution to the reserve fund.

(e) During. In accordance with Article 3.(g) of this Agreement, during any period in which any of the Project Works are operated and maintained by the United States, the Authority agrees the reserve fund shall be available for like use by the United States.

(f) On or before October 1, of each year, the Authority shall provide a current statement of the principal and accumulated interest of the reserve fund account to the Contracting Officer.

BOOKS, RECORDS, AND REPORTS

15. (a) The Authority shall establish and maintain accounts and other books and records pertaining to administration of the terms and conditions of this Agreement, including the Authority’s financial transactions; water supply data; OM&R logs; Project Works Lands and rights-of-way use agreements; and other matters that the Contracting Officer may require. Reports shall be furnished to the Contracting Officer in such form and on such date or dates as the Contracting Officer may require. Subject to applicable Federal law and regulations, each Party to this Agreement shall have the right during officer hours to examine and make copies of the other Party’s books and records relating to matters covered by this Agreement.

All records and books maintained pursuant to this Agreement shall be available to, and subject at all reasonable times to inspection, examination, copying or audit by authorized representatives of affected Water Delivery Contractors, Parties Entitled to Utilize or Receive Other Water, and the Contracting Officer. Each month the Authority shall collect and certify all delivery and measurement records and report any abnormal findings to the Contracting Officer.

(b) The Authority shall maintain and verify records of actual expenditures in accordance with an accounting system prescribed by the California State Controller in compliance with California Government Code section 53891. The Contracting Officer and the Authority shall preserve and make available their respective financial and accounting records and books relating to this Agreement until the later of either (1) the final disposition of any litigation or settlement of claims arising out of performance under this Agreement, or (2) the expiration of
five (5) years after the activities giving rise to the creation of such records and books. By March
31, following the completion of each Fiscal Year, the Authority shall provide the Contracting
Officer with a copy of its audited financial statements as of the end of the preceding Fiscal Year.

(c) Until termination of this Agreement, the Authority shall retain the
originals of all significant OM&R records pertinent to the Project Works and/or water
operations, including modifications to Project Works; as-built drawings; maintenance and repair
logs; equipment tests, equipment operations logs; emergency response plans; spill prevention
control and countermeasure plans; written inquiries received by the Authority pursuant to the
Federal Freedom of Information Act or analogous State law; Congressional or State Legislative
requests; or public or private claims or potential claims against the United States and/or the
Authority relative to the Project Works.

(d) Upon request by the Authority, the Contracting Officer shall make
available to the Authority those OM&R, financial and administration records relating to the
Project Works in his possession as of the Effective Date and any revisions or modifications to
those records subsequent to such execution.

NOTIFICATION OF THIRD PARTIES

16. (a) To the extent the Contracting Officer has not previously done so, the
Contracting Officer shall instruct all Water Delivery Contractors and all Parties Entitled to
Utilize or Receive Other Water that, effective March 1, 1998, the Authority became the
Operating Non-Federal Entity with respect to the Project Works. The Contracting Officer shall
inform all parties to be so notified of the Authority’s rights, authorities, and obligations under
this Agreement and any other agreements relevant to the Authority’s status as the Operating Non-
Federal Entity and shall cooperate with the Authority in ensuring that all such parties timely and
properly make all required payments to the Authority. Without limiting the foregoing, the
Contracting Officer shall direct all such parties to simultaneously provide the Authority with
copies of all water delivery schedules provided to the Contracting Officer. The Contracting
Officer shall also inform all parties to be notified pursuant to this Article 16(a) that, after the
Effective Date of this Agreement March 1, 1998, the United States has not and shall not charge
the conveyance OM&R cost component, the conveyance pumping OM&R cost component
heretofore calculated by the United States pursuant to its ratesetting policies for the Project to
Water Delivery Contractors, or Parties Entitled to Utilize or Receive Other Water, except to the
extent financial obligations otherwise properly included in such components have been incurred
by the United States prior to the Effective Date of this Agreement March 1, 1998, and have not
been included as an expense therein under the ratesetting policies for the Project.

(b) In accordance with the original agreement 8-07-20-X0356, the Secretary
included in all All agreements providing for the delivery or conveyance of water through the
Project Works which were entered into, renewed, or amended after May 29, 1998, a provision
requiring that, while that agreement remained in effect, the Authority shall be the Operating
Non-Federal Entity with respect to the Project Works. All such new, renewed, or amended
agreements shall include provisions recognizing the Authority’s status as the Operating Non-
Federal Entity, and shall require that the non-Federal parties to such agreements timely and
properly make all required payments to the Authority. Such new, renewed, or amended
agreements shall also include provisions requiring the non-Federal parties to such agreements to
simultaneously provide the Authority with copies of all water delivery schedules and water
delivery and payment information provided to the Contracting Officer. The Contracting Officer
shall also include in all such new, renewed, or amended agreements a provision confirming that,

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after May 28, 1998, the United States shall not charge the conveyance OM&R cost component, or the conveyance pumping OM&R cost component heretofore calculated by the United States pursuant to its ratesetting policies for the Project to Water Delivery Contractors, or Parties Entitled to Utilize or Receive Other Water, except to the extent financial obligations otherwise properly included in such components have been incurred by the United States prior to the Effective Date of this Agreement and have not been included as an expense therein under the ratesetting policies for the Project.

OPINIONS AND DETERMINATIONS

17. (a) Where the terms of this Agreement provide for actions to be based upon the opinion or determination of either party, said terms shall not be construed as permitting such action to be predicated upon arbitrary, capricious or unreasonable opinions or determinations. The Parties, notwithstanding any other provisions of this Agreement, expressly reserve the right to relief from and appropriate adjustment for any such arbitrary, capricious or unreasonable opinion or determination. Each opinion or determination by either Party shall be provided in a timely manner.

(b) The Contracting Officer shall have the right to make determinations necessary to administer this Agreement that are consistent with the expressed and implied provisions of this Agreement, the laws of the United States and the State of California, and rules and regulations applicable to the Contracting Officer. Such determinations shall be made in consultation with the Authority to the extent reasonably practicable.

CHARGES FOR DELINQUENT PAYMENTS

18. (a) The Authority shall be subject to interest, administrative and penalty charges on delinquent payments. If a payment is not received by the due date, the Authority shall pay an interest charge on the delinquent payment for each day the payment is delinquent
beyond the due date. If a payment becomes sixty (60) days delinquent, the Authority shall pay, in addition to the interest charge, an administrative charge to cover additional costs of billing and processing the delinquent payment. If a payment is delinquent ninety (90) days or more, the Authority shall pay, in addition to the interest and administrative charges, a penalty charge for each day the payment is delinquent beyond the due date, based on the remaining balance of the payment due at the rate of six (6) percent per year. The Authority shall also pay any fees incurred for debt collection services associated with a delinquent payment.

(b) The interest charge rate shall be the greater of the rate prescribed quarterly in the Federal Register by the Department of the Treasury for application to overdue payments, or the interest rate of 0.5 percent per month. The interest charge rate shall be determined as of the due date and remain fixed for the duration of the delinquent period.

(c) When a partial payment on a delinquent account is received, the amount received shall be applied first, to the penalty, secondly to the administrative charges, third to the accrued interest, and finally to the overdue payment.

CONTAMINATION OR POLLUTION OF FEDERAL PROPERTY

19. (a) The Authority shall not allow contamination or pollution of Federal Project lands, Project waters, or Project works of the United States or administered by the United States and for which the Authority has the responsibility for care, operation, and maintenance by its employees or agents under this Agreement. The Authority shall also take reasonable precautions to prevent such contamination or pollution by third parties.

(b) The Authority shall comply with all applicable Federal, State, and local laws and regulations and Reclamation policies and instructions existing, or hereafter enacted or promulgated, concerning any hazardous material that will be used, produced, transported, stored, released, or disposed of on or in Federal Project lands, Project waters, or Project works.

(c) “Hazardous material” means (1) any substance falling within the definition of “hazardous substance,” “pollutant or contaminant,” or “hazardous waste” under the Comprehensive Environmental Response, Compensation and Liability Act (42 U.S.C. § 9601(14), (29), and (33)); (2) oil, as defined by the Clean Water Act (33 U.S.C. § 1321(a)) and the Oil Pollution Act (33 U.S.C. § 2701(23)); (3) thermal pollution, refuse, garbage, sewage effluent, industrial waste, mine or mill tailings, mineral salts, pesticides, and other solid waste, and (4) any other substance regulated as hazardous or toxic under Federal, State, local or Tribal law.

(d) Upon discovery of any event which may or does result in contamination or pollution of Federal Project lands, Project water, or Project Works, the Authority shall immediately undertake all measures necessary to protect public health and the environment, including measures necessary to contain or abate any such contamination or pollution, and shall report such discovery with full details of the actions taken to the Contracting Officer. Reporting shall be within a reasonable time period but shall not exceed twenty-four (24) hours from the time of discovery if it is an emergency and the first working day following discovery in the event...
(e) If violation of the provisions of this Article occurs and the Authority does not take immediate corrective action, as determined by the Contracting Officer, the Authority may be subject to remedies imposed by the Contracting Officer, which may include termination of this Agreement in accordance with Article 2(b).

(f) The Authority shall be liable for any response action or corrective measure necessary to protect public health and the environment or to restore Federal Project lands, Project waters, or Project Works that are adversely affected as a result of such violation, and for all costs, penalties or other sanctions that are imposed for violation of any Federal, State, local or Tribal laws and regulations concerning hazardous material. At the discretion of the Contracting Officer, the United States may also terminate this Agreement in accordance with Article 2(b) as a result of such violation.

(g) The Authority shall defend, indemnify, protect and save the United States harmless from and against any costs, expenses, claims, damages, demands, or other liability arising from or relating to Authority’s violation of this Article.

(h) Reclamation agrees to provide information necessary for the Authority, using reasonable diligence, to comply with the provisions of this Article.

ASSIGNMENT LIMITED: SUCCESSORS AND ASSIGNS OBLIGATED

20. The provisions of this Agreement shall apply to and bind the successors and assigns of the respective Parties, but no assignment or transfer of this Agreement or any right or interest therein by either Party shall be valid until approved in writing by the other Party.

CONTINGENT ON APPROPRIATION OR ALLOTMENT OF FUNDS

21. The expenditure or advance of any money or the performance of any obligation of the United States under this Agreement shall be contingent upon appropriation or allotment of funds. Absence of appropriation or allotment of funds shall not relieve the Authority from any obligations under this Agreement. No liability shall accrue to the United States in case funds are not appropriated or allotted.

OFFICIALS NOT TO BENEFIT

22. No member of or delegate to Congress, Resident Commissioner or official of the Authority shall benefit from this Agreement other than as a water user or landowner in the same manner as other water users or landowners.

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CLEAN AIR AND WATER

23. (a) The Authority agrees as follows:

(1) To comply with all the requirements of section 114 of the Clean Air Act, as amended (42 U.S.C. § 7414), and section 308 of the Clean Water Act (33 U.S.C. § 1318), relating to inspection, monitoring, entry, reports, and information, as well as other requirements specified in those sections, and all applicable regulations and guidelines issued thereunder.

(2) That no portion of the work required by this Agreement will be performed in a facility listed on the Environmental Protection Agency List of Violating Facilities on the Effective Date unless and until the Environmental Protection Agency eliminates the name of such facility or facilities from such listing.

(3) To use its best efforts to comply with clean air standards and clean water standards at the facility where the Agreement work is being performed.

(4) To insert the substance of the provisions of this Article into any nonexempt subcontract, including this subparagraph (a)(4).

(b) The following definitions apply for purposes of this Article:


(3) The term “clean air standards” refers to all enforceable rules, regulations, guidelines, standards, limitations, orders, controls, prohibitions, and other requirements which are contained in, issued under, or otherwise adopted pursuant to the Clean Air Act or Executive Order 11738, an applicable implementation plan as described in section 110 of the Clean Air Act (42 U.S.C. § 7410), an approved implementation procedure or plan under subsection 111(c) or subsection 111(d) of the Clean Air Act (42 U.S.C. § 7411(c) or (d)), or an approved implementation procedure under subsection 112(d) of the Clean Air Act (42 U.S.C. § 7412(d)).

(4) The term “clean water standards” refers to all enforceable limitations, controls, conditions, prohibitions, standards, and other requirements which are promulgated pursuant to the Clean Water Act or contained in a permit issued to a discharger by the Environmental Protection Agency or by a state under an approved program, as authorized by section 402 of the Clean Water Act (33 U.S.C. § 1342), or by local government to ensure compliance with pretreatment regulations as required by section 307 of the Clean Water Act (33 U.S.C. § 1317).
The term “comply” refers to compliance with clean air or water standards. It also refers to compliance with a schedule or plan ordered or approved by a court of competent jurisdiction, the Environmental Protection Agency, or an air or water pollution control agency in accordance with the requirements of the Clean Air Act or Clean Water Act and regulations issued pursuant thereto.

The term “facility” means any building, plant, installation, structure, mine, vessel or other floating craft, location, or site of operations owned, leased, or supervised by a contractor or subcontractor to be utilized in the performance of a contract or subcontract. Where a location or site of operations contains or includes more than one building, plant, installation, or structure, the entire location or site shall be deemed to be a facility except where the Director, Office of Federal Activities, Environmental Protection Agency, determines that independent facilities are collocated in one geographical area.

COMPLIANCE WITH CIVIL RIGHTS LAWS AND REGULATIONS


(b) These statutes prohibit any person in the United States from being excluded from participation in, being denied the benefits of, or be otherwise subjected to discrimination under any program or activity receiving financial assistance from the Bureau of Reclamation on the grounds of race, color, national origin, disability, or age. By executing this Agreement, the Authority agrees to immediately take any measures necessary to implement this obligation, including permitting officials of the United States to inspect premises, programs and documents.

(c) The Authority makes this Agreement in consideration of and for the purpose of obtaining any and all Federal grants, loans, contracts, property discounts or other Federal financial assistance extended after the date hereof to the Authority by the Bureau of Reclamation, including installment payments after such date on account of arrangements for Federal financial assistance which were approved before such date. The Authority recognizes and agrees that such Federal assistance will be extended in reliance on the representations and agreements made in this Article, and that the United States reserves the right to seek judicial enforcement thereof.

(d) Complaints of discrimination against the Authority shall be investigated by the Contracting Officer’s Office of Civil Rights.
25. During the performance of this Agreement, the Authority agrees as follows:

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

(b) The Authority will, in all solicitations or advertisements for employees placed by or on behalf of the Authority, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, sexual orientation, gender identity, or national origin.

(c) The Authority will not discharge or in any other manner discriminate against any employee or applicant for employment because such employee or applicant has inquired about, discussed, or disclosed the compensation of the employee or applicant or another employee or applicant. This provision shall not apply to instances in which an employee who has access to the compensation information of other employees or applicants as a part of such employee’s essential job functions discloses the compensation of such other employees or applicants to individuals who do not otherwise have access to such information, unless such disclosure is in response to a formal complaint or charge, in furtherance of an investigation, proceeding, hearing, or action, including an investigation conducted by the employer, or is consistent with the Authority’s legal duty to furnish information.

(d) The Authority will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice, to be provided by the agency Contracting Officer, advising the labor union or workers’ representative of the Authority’s commitments under Section 202 of Executive Order 11246 of September 24, 1965, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

(e) The Authority will comply with all provisions of Executive Order No. 11246 of September 24, 1965, and of the rules regulations and relevant orders of the Secretary of Labor.

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

(g) In the event of the Authority’s noncompliance with the nondiscrimination
clauses of this Agreement or with any of the said rules, regulations or orders, this Agreement
may be canceled, terminated or suspended, in whole or in part and the Authority may be declared
ineligible for further Government contracts in accordance with procedures authorized in
Executive Order No. 11246 of September 24, 1965, and such other sanctions may be imposed
and remedies invoked as provided in Executive Order 11246 of September 24, 1965, or by rule,
regulation, or order of the Secretary of Labor, or as otherwise provided by law.

(h) The Authority will include the provisions of paragraphs (a) through (h) in
every subcontract or purchase order unless exempted by the rules, regulations, or orders of the
Secretary of Labor issued pursuant to Section 204 of said Executive Order No. 11246 of
September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor.
The Authority will take such action with respect to any subcontract or purchase order as may be
directed by the Secretary of Labor as a means of enforcing such provisions, including sanctions
for noncompliance: *Provided, however,* that in the event the Authority becomes involved in, or is
threatened with, litigation with a subcontractor or vendor as a result of such direction, the
Authority may request the United States to enter into such litigation to protect the interests of the
United States.

NOTICES

26. (a) Any notice, demand, or request authorized or required by this Agreement
shall be deemed to have been given, on behalf of the Authority, when mailed, postage prepaid, or
delivered to the Area Manager, South-Central California Area Office, 1243 N Street, Fresno,
California 93721, Bureau of Reclamation, and on behalf of the United States, when mailed,
postage prepaid, or delivered to the Chief Operating Officer of the Friant Water Authority, 854
North Harvard Avenue, Lindsay, CA 93247-1715. The designation of the addressee or the
address may be changed by notice given in the same manner as provided in this Article for other
notices.

(b) This Article 26 shall not preclude the effective service of such notice by
other means.

MODIFICATIONS

27. Each Party reserves the right to propose modifications to this Agreement at any
time while it is in effect. If either Party proposes any such modifications, the Parties shall
promptly attempt to negotiate in good faith an amendatory Agreement to accommodate the
proposed modifications.
OMITTED

CHANGES IN CONTRACTOR’S AUTHORITY’S ORGANIZATION

29. While this Agreement is in effect, no change may be made in the Authority’s organization, by inclusion or exclusion of lands or by any other changes, which may affect the respective rights, obligations, privileges, and duties of either the United States or the Contractor Authority under this Agreement including, but not limited to, dissolution, consolidation, or merger, except upon the Contracting Officer’s written consent.

PROTECTION OF WATER AND AIR QUALITY

30. (a) The Authority, without expense to the United States, will perform the OM&R of the Project Works in a manner that preserves the quality of the water at the highest feasible level as determined by the Contracting Officer.

   (b) The United States will perform the OM&R of reserved works in a manner that preserves the quality of the water at the highest feasible level as determined by the Contracting Officer. The United States does not warrant the quality of the water delivered to the Water Delivery Contractors and Parties Entitled to Utilize or Receive Other Water and is under no obligation to furnish or construct water treatment facilities to maintain or improve the quality of water delivered to the Water Delivery Contractors and Parties Entitled to Utilize or Receive Other Water.

   (c) The Authority will comply with all applicable water and air pollution laws and regulations of the United States and the State of California; and will obtain all required permits or licenses from the appropriate Federal, State, or local authorities necessary for the delivery of water by the Authority; and will be responsible for compliance with all Federal, State, and local water quality standards applicable to surface and subsurface drainage and/or discharges generated through the use of Federal facilities or Project Water provided by the Authority within its Project Water service area.

   (d) This Article will not affect or alter any legal obligations of the Secretary to provide drainage or other discharge services.

RELOCATION ASSISTANCE AND REAL PROPERTY ACQUISITION

31. When acquiring land or an interest in land and relocating persons or personal property in connection with the construction, operation, and maintenance of Project Facilities Works, the Authority shall comply with the provisions of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (Pub. L. 91-646; 84 Stat. 1894; 42 U.S.C. § 4601, et seq.) and Department of Transportation regulations at 49 C.F.R. part 24.
PEST MANAGEMENT

32. (a) The Authority is responsible for complying with applicable Federal, State, and local laws, rules, and regulations related to pest management in performing its responsibilities under this Agreement.

(b) The Authority is responsible for effectively avoiding the introduction and spread of, and for otherwise controlling, undesirable plants and animals, as defined by the Contracting Officer, on or in Federal Project lands, Federal Project waters, and Federal Project works for which and to the extent that the Authority has operation and maintenance responsibility. The Authority is responsible for exercising the level of precaution necessary in meeting this responsibility, including inspecting its vehicles, watercraft, and equipment for reproductive and vegetative parts, foreign soil, mud or other debris that may cause the spread of weeds, invasive species and other pests, and removing such materials before moving its vehicles, watercraft, and equipment onto any Federal land, into any Federal Project facility waters, or out of any area on Federal Project land where work is performed.

(c) Where decontamination of the Authority’s vehicles, watercraft, or equipment is required prior to entering Federal Project land or waters, the decontamination shall be performed by the Authority at the point of prior use, or at an approved offsite facility able to process generated cleaning wastes, pursuant to applicable laws, rules, and regulations. Upon the completion of work, the Authority will perform any required decontamination within the work area before moving the vehicles, watercraft, and equipment from Federal Project lands and waters.

(d) Programs for the control of undesirable plants and animals on Federal Project lands, and in Federal Project waters and Federal Project works for which the Authority has operation and maintenance responsibility will incorporate Integrated Pest Management (IPM) concepts and practices. IPM refers to a systematic and environmentally compatible program to maintain pest populations within economically and environmentally tolerable levels. In implementing an IPM program, the Authority will adhere to applicable Federal and State laws and regulations and Department of the Interior and Bureau of Reclamation policies, directives, guidelines, and manuals, including but not limited to, the Department of the Interior Manual, Part 517 Integrated Pest Management Policy and Part 609 Weed Control Program, the Plant Protection Act of June 20, 2000 (Pub. L. 106-224), and Executive Order 13112 of February 3, 1999.

MEDIUM FOR TRANSMITTING PAYMENTS

33. (a) All payments from the Authority to the United States under this Agreement shall be by the medium requested by the United States on or before the date payment is due. The required method of payment may include checks, wire transfers, or other types of payment specified by the United States.

(b) Upon execution of the Agreement, the Authority shall furnish the Contracting Officer with the Authority’s taxpayer’s identification number (TIN). The purpose
for requiring the Authority’s TIN is for collecting and reporting any delinquent amounts arising out of the Authority’s relationship with the United States.

**SUSTAINABLE OPERATION AND MAINTENANCE**

34. The Authority shall comply with Section Two (2) of Executive Order 13834 “Regarding Efficient Federal Operations”. Implementation of this Executive Order as it applies to this Agreement is provided in Exhibit D-C to this Agreement.

**COOPERATION/MUTUAL AID**

35. (a) In situations which the Contracting Officer and the Authority determine to be emergencies or other extraordinary circumstances affecting the Project, including without limitation, the Project Works, either the Contracting Officer or the Authority may request the other to furnish personnel, materials, tools, equipment, or other resources. The Party so requested shall immediately cooperate with the other and render such assistance as the Party so requested determines to be available. Unless otherwise agreed, the Party making the request, within sixty (60) days of receipt of properly itemized bills from the other Party, shall reimburse the Party rendering such assistance for all costs properly and reasonably incurred by it in such performance. Such costs shall be determined on the basis of current charges or rates charged by the Party rendering the assistance.

(b) In instances in which the total costs of responding to emergencies or other extraordinary circumstances, whether due to a single event or condition or to multiple events or conditions, exceed or substantially deplete the Authority’s minimum reserve fund established pursuant to Article 14(b), the Contracting Officer agrees to cooperate with the Authority (1) to promptly identify sources of funding, including but not limited to, sources available from or to the United States; (2) to allocate responsibility for paying the costs of responding to such
emergencies or other extraordinary circumstances, including but not limited to by determining
Capital Improvements under Article 5(a); and (3) to develop a timetable for repayment of such
costs that are provided by the United States and are allocated to the Authority.

**AGREEMENT DRAFTING CONSIDERATIONS**

36. This Agreement has been negotiated and reviewed by the Parties hereto, each of
whom is sophisticated in the matters to which this Agreement pertains. Articles 1 through 36 of
this Agreement have been drafted, negotiated, and reviewed by the Parties, and no one Party
shall be considered to have drafted the stated Articles.
IN WITNESS WHEREOF, the Parties hereto have executed this Agreement as of the day and year first above written.

THE UNITED STATES OF AMERICA

By: ______________________
Regional Director, Mid-Pacific Interior Region 10: California-Great Basin Bureau of Reclamation

FRIANT WATER AUTHORITY
(SEAL)

By: ______________________
Chair, Board of Directors

Attest:

Secretary
EXHIBIT A

LIST OF PROJECT WORKS

Friant Water Authority

Friant-Kern Canal, including all right-of-way and all associated facilities as outlined in the following Section 5.2.25 of the Performance Work Statement dated January 21, 1986.

Specifically:

- Offices, buildings and property at 854 N Harvard Avenue, Lindsay, CA 93247
- Offices, buildings, and property at 860 Second Street, Orange Cove, CA 93646
- Offices, buildings and property at 332 Norwalk Street, Delano CA 93215
- Residence and storage yards at Kings River, FKC MP 28.53- 19553 E Trimmer Springs Sanger CA 93657
- Residence and storage yards at Kaweah River, FKC MP 71.29- 21159 Ave 322 Woodlake, CA 93286
- Residence and storage yards at Tule River, FKC MP 95.59- 21799 Ave 160 Porterville CA 93257
- Remote storage yard at Friant, CA as outlined in section 5.2.25.4-part K
- Remote storage yard at Lake Woollomes –FKC MP 121.54

This Exhibit A is still being updated with Project Works the Authority is responsible for including but not limited to repeater sites.
EXHIBIT A

LIST OF PROJECT WORKS
**EXHIBIT B**

**LIST OF OBLIGATIONS TO CONVEY AND DISTRIBUTE WATER IN AND FROM THE PROJECT WORKS**

*Friant Water Authority*

**Water Service Contracts:**

### Millerton Lake

- **Fresno Co. Waterworks**
  - #18
  - 14-06-200-5904D

- **Gravelly Ford WD**
  - 1-07-20-W0242D

- **Madera, County of**
  - 14-06-200-2406A-LTR1

- **Orange Cove, City of**
  - 14-06-200-5230-LTR1

### Friant-Kern Canal

- **Arvin-Edison WSD**
  - 14-06-200-229AD

- **Delano-Earlimart ID**
  - I75r-3327D

- **Exeter ID**
  - I75r-2508D

- **Fresno, City of**
  - 14-06-200-8901D

- **Fresno ID**
  - 14-06-200-1122D

- **Garfield WD**
  - 14-06-200-9421D

- **International WD**
  - 14-06-200-585A-LTR1

- **Ivanhoe ID**
  - I75r-1809D

- **Lewis Creek WD**
  - 14-06-200-1911D

- **Lindmore ID**
  - I75r-1635D

- **Lindsay, City of**
  - 5-07-20-W0428-LTR1

- **Lindsay-Strathmore ID**
  - I75R-1514D

- **Lower Tule River ID**
  - I75r-2771D

- **Orange Cove ID**
  - I75r-1672D

- **Orange Cove, City of**
  - 14-06-200-5230-LTR1

- **Porterville ID**
  - I75r-4309D
Saucelito ID 175r-2604D
Shafer-Wasco ID 14-06-200-4032D
So. San Joaquin MUD 11r-1460D
Stone Corral ID 175r-2555D
Tea Pot Dome WD 14-06-200-7430D
Terra Bella ID 175r-2446D
Tulare ID 175r-2485D
Tulare, County of 14-06-200-8293A
Cross Valley Canal Contractors
Arvin-Edison WSD 14-06-200-229AD
Fresno, County of 14-06-200-8292A-IR18
Hills Valley ID 14-06-200-8466A-IR18
Kern-Tulare WD 14-06-200-8601A-IR18
Kern-Tulare WD 14-06-200-8367A-IR18A
Lower Tule River ID 14-06-200-8237A-IR18
Pixley ID 14-06-200-8238A-IR18
Tri-Valley WD 14-06-200-8565A-IR18
Tulare County of 14-06-200-8293A-IR18

Warren Act Contracts:
There are no long-term Warren Act Contract obligations at this time.

Water Right Contracts:
There are no Water Right Contract obligations at this time.

Refuge Deliveries:
No current contracts for refuge water deliveries, but use of the Friant-Kern canal is being considered as part of a long-term conveyance alternative.
EXHIBIT C

SUSTAINABLE OPERATION AND MAINTENANCE

FRIANT WATER AUTHORITY

ROLES AND RESPONSIBILITIES FOR SUSTAINABLE OM&R

In order to comply with Section 2 of Executive Order 13834 “Regarding Efficient Federal Operations” as it relates to this Contract and more specifically the Transferred Works, the District shall:

- Achieve and maintain annual reductions in building energy use and implement energy efficiency measures that reduce costs;
- Meet statutory requirements relating to the consumption of renewable energy and electricity;
- Reduce potable and non-potable water consumption, and comply with stormwater management requirements;
- Utilize performance contracting to achieve energy, water, building modernization, and infrastructure goals;
- Ensure that new construction and major renovations conform to applicable building energy efficiency requirements and sustainable design principles; consider building efficiency when renewing or entering into leases; implement space utilization and optimization practices; and annually assess and report on building conformance to sustainability metrics;
- Implement waste prevention and recycling measures and comply with all Federal requirements with regard to solid, hazardous, and toxic water management and disposal;
- Acquire, use, and dispose of products and services, including electronics, in accordance with statutory mandates for purchasing preference, Federal Acquisition Regulation requirements, and other applicable Federal procurement policies; and
- Track and report annually energy management activities, performance improvements, cost reductions, greenhouse gas emissions, energy and water savings, and other appropriate performance measures.
RESOLUTION NO. 2020-02


THE BOARD OF DIRECTORS OF THE FRIANT WATER AUTHORITY RESOLVES AS FOLLOWS:

Section 1. General Findings. The Board of Directors (Board) finds as follows:

A. The United States Bureau of Reclamation (Reclamation) has constructed the Friant Division, Central Valley Project (Project), for storage, diversion, carriage and distribution of water for agricultural, flood control, municipal, industrial, domestic and other beneficial uses and purposes.

B. The Friant Water Authority (FWA) is comprised of and represents water users who contract with the United States for water service provided by the Friant Division of the Project.

C. Since 1998, FWA (and its predecessor the Friant Water Users Authority) has operated and maintained certain Friant Division facilities pursuant to that certain Agreement to Transfer the Operation, Maintenance, and Replacement (OM&R) and Certain Financial and Administrative Activities Related to the Friant-Kern Canal and Associated Works, Contract No. 8-07-20-X0356 (Transfer Agreement).

D. During this period, FWA has demonstrated its ability to operate and maintain such facilities (Project Works) to the satisfaction of Reclamation and in a manner which best and most economically serves the water users relying on those facilities.

E. FWA requested initiation of the renewal process for the continued OM&R of the Project Works under the Transfer Agreement by letter dated July 30, 2019.

F. The revisions to the Transfer Agreement negotiated by FWA and Reclamation as part of the renewal process consist of changes to or clarifications of administrative and financial procedures and obligations and do not directly authorize any physical improvements or changes to the Project Works.

G. FWA desires to continue to assume the OM&R of the Project Works as the Operating Non-Federal Entity and perform the enumerated administrative and financial activities in accordance with the terms and conditions of the Transfer Agreement, as revised pursuant to the recently completed negotiations between the parties.
Section 2. Environmental Findings. The Board finds that the proposed renewal of the Transfer Agreement is not subject to California Environmental Quality Act (CEQA) pursuant to the State CEQA Guidelines (Chapter 3 of Title 14 of the California Code of Regulations beginning at Section 15000), specifically: Section 15060(c)(2), because the proposed Transfer Agreement will not result in a direct or reasonably foreseeable indirect physical change in the environment; Section 15061(b)(3), because the proposed Transfer Agreement is covered by the general rule that CEQA applies only to projects which have the potential for causing a significant effect on the environment; and Section 15301, which exempts existing facilities. The proposed Transfer Agreement consists of updates to an existing agreement and any potential projects that may result from FWA's obligation to maintain and repair the Project Works, where applicable, will receive individualized CEQA review, and any future project pursued under the Transfer Agreement that has the potential to cause a significant effect on the environment will be evaluated through a separate environmental review process in accordance with CEQA. As such, it can be seen with certainty that there is no possibility that the proposed renewal of the Transfer Agreement may have a significant adverse effect on the environment. Therefore, the proposed execution of the renewed Transfer Agreement is exempt from CEQA.

Section 3. Authorization to Execute Transfer Agreement. The Board Chair is hereby authorized to execute the renewed Transfer Agreement in form substantially similar to the attached Exhibit A, subject to final approval as to form and contents by the Chief Executive Officer and the General Counsel.

APPROVED AND ADOPTED on ______________, 2020.

________________________________________
Chris Tantau, Chair of the Board of Directors

ATTEST:

________________________________________
Cliff Loeffler, Secretary of the Board
I, Cliff Loeffler, Secretary/Treasurer of the Friant Water Authority, certify that Resolution No. 2020-__ was duly adopted by the Board of Directors of the Friant Water Authority at a regular meeting held on July 23, 2020, by the following vote:

AYES:
NOES:
ABSTAIN:
ABSENT:

________________________
Cliff Loeffler, Secretary/Treasurer
Friant Water Authority
SUMMARY:
In response to concerns regarding the implementation of programs and projects on the Friant-Kern Canal (FKC) which could potentially introduce water of lesser quality, as compared to historic Millerton Lake water quality, the FKC Water Quality Ad Hoc Committee (Ad Hoc Committee) has developed a draft comprehensive water quality policy for implementation by the Friant Division. The proposed Draft FKC Water Quality Policy (Draft Policy) includes policy principles, Water Quality Mitigation Ledger, Water Quality Monitoring Plan, and Water Quality Model.

The Ad Hoc Committee presented the Draft Policy at a workshop on June 17, 2020. Representatives from Shafter-Wasco Irrigation District (SWID) continued to state that the Draft Policy does not meet SWID’s stated objectives in terms of irrigation practices and agricultural usage. All Ad Hoc Committee members except for SWID are in support of the Draft Policy.

The analysis used to support the mitigation curves proposed in the Draft Policy examined what irrigation management changes (i.e. mitigation measures) are necessary to prevent salts from accumulating in the crop root zone at potentially damaging levels. The mitigation curve approach does not advocate an irrigation management approach, but rather provides the general leaching requirements under the given irrigation water quality conditions.

Friant Water Authority (FWA) currently does not have authority to adopt water quality regulations on the FKC. As such, staff recommends that FWA work with Reclamation and the Ad Hoc Committee to update Reclamation’s 2008 Policy for Accepting Non-Project Water into the Friant-Kern and Madera Canals to incorporate the Draft Policy. FWA could also endorse or possibly adopt the Draft Policy as “guidelines” and then incorporate the provisions of a final policy into FKC pump-back projects and the Long-Term Recapture and Recirculation of Restoration Flows project. The Draft Policy would not exempt individual projects from performing project-level effects analyses for compliance with the National Environmental Policy Act (NEPA), California Environmental Quality Act (CEQA), and/or other regulatory requirements.

RECOMMENDED ACTION:
That the Board approve submission of the Draft Friant-Kern Canal Water Quality Policy to Reclamation and direct FWA staff to work with Reclamation to implement the proposed policy in the most expeditious and feasible manner in coordination with the Ad Hoc Committee.
SUGGESTED MOTION:
I move that the Board approve submission of the Draft Friant-Kern Canal Water Quality Policy to Reclamation and direct FWA staff to work with Reclamation to implement the proposed policy in the most expeditious and feasible manner in coordination with the Ad Hoc Committee.

BUDGET IMPACT:
Implementation costs related to working with Reclamation on implementation of the Draft Policy and the incorporation of its provisions into project-specific environmental compliance is being provided by existing grant funding sources. Annual administration and monitoring costs outlined in the Draft Policy are estimated to be $172,000 per year (2020 dollars) and would be recouped via a surcharge to contractors that introduce non-Millerton Lake water into the Friant-Kern Canal. A portion of this has been assumed in the FY 2021 O&M budget, assuming Policy implementation in early 2021.

DISCUSSION:
In response to concerns regarding the implementation of programs and projects on the Friant-Kern Canal (FKC) which would introduce water of lesser quality, as compared to historic Millerton Lake water quality, the Ad Hoc Committee has developed a comprehensive water quality policy for implementation by the Friant Division. This document is paramount to completion of the environmental documents for the Long-Term Recapture and Recirculation of Restoration Flows (LTRRRF) Project for the San Joaquin River Restoration Program, as well as or the FKC Reverse Pump-Back Project. The Ad Hoc Committee is made up of Friant Contractor directors and district managers from Arvin-Edison Water Storage District (AEWSD), Delano-Earlimart Irrigation District (DEID), Kern-Tulare Water District, Lindsay Strathmore ID (LSID), Lower Tule River ID, Pixley ID, Porterville ID (PID), Shafter-Wasco ID (SWID), Saucelito ID (SID), and Terra Bella ID (TBID).

The Ad Hoc Committee is proposing the implementation of the Draft Policy, which includes the Water Quality Mitigation Ledger, Water Quality Monitoring Plan, and Water Quality Model. The Water Quality Mitigation Ledger tracks and accounts for all inflows and diversions into and from the FKC in order to determine appropriate mitigation for impacted water quality (attributable to the introduction (Put) and corresponding distribution thereof (Take)), aiming to balance concerns related to long-term groundwater quality with a multi-layered assessment of agronomic impacts as a durable solution.

JUNE 17 PUBLIC WORKSHOP
The Ad Hoc Committee presented the Draft Policy at a workshop on June 17, attended by a mix of Friant district managers, directors, and farmers; consultants; and Reclamation (see attached meeting summary). In general, most questions were technical in nature regarding the proposed ledger, monitoring plan, and cost allocation. Representatives from Shafter-Wasco Irrigation District (SWID) continued to state that the Draft Policy does not meet SWID’s stated objectives in terms of irrigation practices and agricultural usage. All Ad Hoc Committee members except for SWID are in support of the Draft Policy. FWA requested additional comments to be provided by July 1 and only received one additional comment (see in attached meeting summary).

FWA appreciates the concerns expressed by SWID representatives. The analysis used to support the mitigation curves proposed in the Draft Policy examined what irrigation management changes (i.e. mitigation measures) are necessary to prevent salts from accumulating in the crop root zone to potentially...
damaging levels. The analysis looks at the most restricting water quality constituents and their impacts on the most sensitive crops. The only way to prevent accumulation of salts, or any of its constituents, in the rootzone is by leaching, which could take place during the irrigation season (maintenance leaching), or in the late fall and winter months (reclamation leaching). The analysis performed addresses maintenance leaching because it allows for a simple, steady-state approach to develop mitigation curves that provide guidelines for excess water needed for salinity control; however, the Draft Policy does not advocate for a particular irrigation management approach for individual growers.

SHAFTER WASCO IRRIGATION DISTRICT PROPOSAL AND CURRENT POLICY

On November 15, 2019, Shafter-Wasco Irrigation District (SWID) provided a written response to the proposed program and negotiations being conducted by the FKC Water Quality Ad hoc Committee and Small Group. SWID expressed that district landowners have historically relied on Millerton water quality in coordination with deep well operation to meet agricultural demands. SWID detailed three requirements that they desire to have included in the program’s operational criteria. The table below details SWID’s requests and a description of how these requests were addressed or why they could not be included in the Draft Policy.

<table>
<thead>
<tr>
<th>SWID Request</th>
<th>Draft FKC Water Quality Policy</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. SWID will not protest non-Millerton supplies being introduced below and used below the FKC Shafter check.</td>
<td>No response required.</td>
</tr>
<tr>
<td>2. a) Non-Millerton supplies pumped over the FKC Shafter check and introduction of banked groundwater above the FKC Shafter check can occur when and if SWID is not taking water from the FKC, typically SWID winter maintenance during December-January (note SWID also had its FKC head gates closed during most of 2014 and 2015).</td>
<td>a) Existing and potential future pump-ins do and will occur in months outside of the months proposed by SWID. See discussion of Millerton-Only window below.</td>
</tr>
<tr>
<td>b) Non-Millerton supplies pumped over the FKC Shafter check and introduction of banked groundwater above the FKC Shafter check SWID gets mitigation water per recent “small group” presentation</td>
<td>b) All parties have been supportive of the ledger approach and “mitigation rating curve” as a method to quantify and track required mitigation.</td>
</tr>
<tr>
<td>c) Non-Millerton supplies pumped over the FKC Shafter check and introduction of banked groundwater above the FKC Shafter check Millerton water-only firm (not FKC committee decided) windows and FKC canal prism water quality per the following (i) Class 1 = 100% and/or Uncontrolled Season, no non-Millerton water (ii) Class 1 less than 100% - 4 month Millerton-water-only window, June-July and</td>
<td>c) The Draft Policy indicates in Operations Criteria #2 that pump-in and pump-back programs will not be introduced to the FKC during Friant Division uncontrolled season, addressing concerns of receiving uncontrolled season flows especially for use in reclamation leaching.</td>
</tr>
</tbody>
</table>

To address the Millerton Only window which SWID described was to cover irrigation practices during almond hull split periods in order to avoid hull rot, a deficit irrigation analysis was conducted. This analysis was based on agronomic principles and aimed at
September-October. Maximum constituents 322 mg/L TDS, 53 mg/L Cl, 38 mg/L Na.

maintaining a critical constituent threshold that represented the most sensitive crops. Threshold limits for chloride were adjusted to provide protections for crop injuries.

Considering deficit irrigation and necessary water quality threshold adjustments, analysis was completed to understand how existing programs would be affected. The Draft Policy proposes three periods with varying threshold limits to provide flexibility for existing and future programs while considering agronomic principles and water quality limits.

No explanation was provided for the specific constituent limits provided by SWID. Constituent thresholds included in the Draft Policy are based on agronomic principles as detailed in Attachment A of the Draft Policy.

3. After 20 years if SWID determines this program adversely impacts SWID then non-Millerton supplies pumped over the FKC Shafter check and introduction of banked groundwater above the FKC Shafter check will cease unless new standards are agreed to.

Draft Policy Principle #7 addresses concerns for need of reopener.

AGRONOMIC ANALYSIS CONSERVATIVE ASSUMPTIONS

Below is a list of conservative assumptions included in the agronomic analysis used to support the Draft Policy, including policy principles and operations criteria.

- The leaching requirement equation predicts similar leaching needs as the leaching fraction curves assuming ‘conventional’ irrigation. The result indicates that more leaching is required than is predicted under ‘high frequency’ irrigation.
- The leaching requirement equation assumes steady-state conditions, which tend to be overly conservative and overestimates soil salinity and, therefore, overestimates yield losses.
- The quantified leaching requirement does not account for leaching from rain or end of the season reclamation practices. Any rain or end of season leaching would decrease the leaching requirement.
- The mitigation curve is based on the water quality constituent that requires the most stringent leaching requirement (i.e. boron) for the most sensitive crop. Therefore, all other crops are protected from boron as well as other water quality constituents that could potentially damage the crop (e.g. EC or chloride).
- The mitigation curve approach is not advocating an irrigation management practice, but rather provides the general leaching requirements under the given irrigation water quality conditions.
• Operations criteria and mitigation curve accounts for regulated deficit irrigation of almonds as an irrigation management practice to minimize almond hull rot during hull split. Hull split typically lasts one to two weeks; however, regulated deficit irrigation analysis assumes an 8-week period to account for potential variances in hull split initiation in the Friant Division.
• Operations criteria flexibility is only provided when average water quality from March through June is well below the threshold for chloride (i.e. 70 mg/L as compared to 102 mg/L).

OUTSTANDING POLICY ITEMS
In addition to the Policy Principles and Operations Criteria, several programmatic challenges were identified that will continue to be evaluated and addressed, and are as follows:

• Identify all existing programs and pump-ins and determine which are exempt from the Policy (e.g., handling of City of Orange Cove flood flow pump-ins).
• FWA cannot independently adopt water quality regulations for the FKC (only Reclamation can), but could endorse or possibly adopt the Policy as “guidelines” and incorporate significant aspects of the proposed Policy as part of its CEQA approval for the Long-Term Recapture and Recirculation of Restoration Flows and FKC Pump-Back projects.
• Coordinate with Reclamation in updating the 2008 Policy for Accepting Non-Project Water into the Friant-Kern and Madera Canals and work with Reclamation regarding the potential adoption of the Policy.
• Define standard operating procedures to account for mitigation and its administration, including contractual requirements with Reclamation (e.g., transfer agreements, Warren Act contracts); Water Quality Mitigation Ledger; and water quality threshold management.
• Finalize the FKC Water Quality Monitoring Program and Water Quality Model.

ENVIRONMENTAL EFFECTS ANALYSIS
The proposed Draft Policy aims to balance short-term and long-term concerns for water quality and water supply reliability but would not exempt individual projects from performing project-level effects analyses for compliance with the NEPA, CEQA, and/or other regulatory requirements. The Policy should be evaluated as a management or mitigation measure for any proposed action under NEPA/CEQA.

ATTACHMENTS:
• June 17 Public Workshop Summary
• Draft FKC WQ Policy
  o Describes the Draft Policy in response to concerns regarding the implementation of programs and projects that could introduce water of a lesser quality to the FKC
• Attachment A – Agronomic Impacts and Mitigation
  o Describes agronomic effects, mitigation requirements, maximum water quality thresholds for key constituents developed for the FKC
• Attachment B – Water Quality Mitigation Ledger Example
  o Describes the process to quantify mitigation using the Water Quality Mitigation Ledger
• Attachment C – Water Quality Monitoring Plan
  o Describes key elements and actions required for implementation of a water quality monitoring plan
• Attachment D – Water Quality Policy Cost Allocation
  o Describes the estimated capital and annual costs to implement and administer the Draft Policy
Meeting Summary

DATE/TIME: JUNE 17, 2020 / 10:00 AM

SUBJECT: SPECIAL BOARD OF DIRECTORS MEETING, FRIANT-KERN CANAL WATER QUALITY POLICY WORKSHOP

PLACE: WEBEX

PURPOSE:

Inform and garner feedback from Friant Water Authority (FWA) board members, managers, landowners, and broader Friant Division of the Central Valley Project (Friant Division) water user community on a comprehensive Draft Friant-Kern Canal Water Quality Policy proposed for adoption by the Friant Division.

WORKSHOP:

Jason Phillips, FWA Chief Executive Officer, opened the meeting by providing a background of the issues, actions and events that have led to the development of the proposed Policy, emphasizing that FWA does not have authority to implement a water quality policy, but will work with the U.S. Department of the Interior, Bureau of Reclamation (Reclamation) to adopt and implement the proposed Policy.

Major components and key points of the following documents, provided as meeting materials, were reviewed.

- Draft Friant-Kern Canal Water Quality Policy
- Attachment A – Agronomic Impacts and Mitigation
- Attachment B – Water Quality Mitigation Ledger Example
- Attachment C – Water Quality Monitoring Plan
- Attachment D – Cost Allocation
- Friant-Kern Canal Water Quality Policy Development Schematic

Throughout the meeting, participants were requested to raise questions and provide comments or feedback on the proposed Policy and meeting materials. Additionally, participants were requested to submit questions and comments during the workshop, and after via email to waterquality@friantwater.org by July 1, 2020.

Table 1 provides a list of meeting attendees. Table 2 catalogs comments and questions received during the June 17, 2020 workshop, along with responses provided by FWA staff.

Table 1. List of June 17, 2020 Friant-Kern Canal Water Quality Policy Workshop Attendees

<table>
<thead>
<tr>
<th>Name</th>
<th>Affiliation</th>
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<tbody>
<tr>
<td>Aaron Fukuda</td>
<td>Tulare Irrigation District</td>
</tr>
<tr>
<td>Andy Safford</td>
<td>EKI Environment &amp; Water, Inc.</td>
</tr>
<tr>
<td>Bill Swanson</td>
<td>Stantec Consulting Services Inc.</td>
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<tr>
<td>Brandon Tomlinson</td>
<td>Chowchilla Water District</td>
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<tr>
<td>Chris Hunter</td>
<td>Friant Water Authority</td>
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<tr>
<td>Cliff Loeffler</td>
<td>Lindsay-Strathmore Irrigation District</td>
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<tr>
<td>Craig Wallace</td>
<td>Lindsay-Strathmore Irrigation District</td>
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<tr>
<td>David Hyatt</td>
<td>U.S. Bureau of Reclamation</td>
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<tr>
<td>Dana Munn</td>
<td>Shafter-Wasco Irrigation District</td>
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<tr>
<td>Don Roberts</td>
<td>Gravelly Ford Water District</td>
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<tr>
<td>Don Willard</td>
<td>Friant Water Authority</td>
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Table 1. List of June 17, 2020 Friant-Kern Canal Water Quality Policy Workshop Attendees (cont’d)

<table>
<thead>
<tr>
<th>Name</th>
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<tbody>
<tr>
<td>Doug DeFlitch</td>
<td>Friant Water Authority</td>
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<tr>
<td>Doug Gosling</td>
<td>Shafter-Wasco Irrigation District</td>
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<tr>
<td>Edwin Camp</td>
<td>Arvin-Edison Water Storage District</td>
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<tr>
<td>Eric Limas</td>
<td>Lower Tule River Irrigation District, Pixley Irrigation District</td>
</tr>
<tr>
<td>Eric Quinley</td>
<td>Delano-Earlimart Irrigation District</td>
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<tr>
<td>Fergus Morrisey</td>
<td>Orange Cove Irrigation District</td>
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<tr>
<td>Geordy Wise</td>
<td>Shafter-Wasco Irrigation District</td>
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<tr>
<td>Jamil Ibrahim</td>
<td>Stantec Consulting Services Inc.</td>
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<tr>
<td>Jason Gianquinto</td>
<td>Semitropic Water Storage District</td>
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<tr>
<td>Jason Phillips</td>
<td>Friant Water Authority</td>
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<tr>
<td>Jeevan Muhar</td>
<td>Arvin-Edison Water Storage District</td>
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<tr>
<td>Jeffrey Papendick</td>
<td>U.S. Bureau of Reclamation</td>
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<tr>
<td>John Slater</td>
<td>Friant Water Authority</td>
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<tr>
<td>Kaitlyn Allen</td>
<td>U.S. Bureau of Reclamation</td>
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<tr>
<td>Katie Duncan</td>
<td>Stantec Consulting Services Inc.</td>
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<tr>
<td>Kent Stephens</td>
<td>Kern Tulare Water District</td>
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<tr>
<td>Mia Swenson</td>
<td>Friant Water Authority</td>
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<tr>
<td>Rain Emerson</td>
<td>U.S. Bureau of Reclamation</td>
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<tr>
<td>Ram Venkatesan</td>
<td>North Kern Water Storage District</td>
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<tr>
<td>Randy Bloemhoff</td>
<td>Bloemhof Farms and Harvesting (SWID)</td>
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<tr>
<td>Robert Diamond</td>
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<tr>
<td>Sean Geivet</td>
<td>Porterville Irrigation District; Terra Bella Irrigation District, Saucelito Irrigation District</td>
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<tr>
<td>Stephanie Hearn</td>
<td>GEI Consultants, Inc.</td>
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<tr>
<td>Steve Bloemhoff</td>
<td>Bloemhof Farms and Harvesting (SWID)</td>
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<tr>
<td>Steve Collup</td>
<td>Arvin-Edison Water Storage District</td>
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<td>Steve Dalke</td>
<td>Kern-Tulare Water District</td>
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<tr>
<td>Steve Grattan</td>
<td>UC Davis</td>
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<tr>
<td>Steve Ottemoeller</td>
<td>Friant Water Authority</td>
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<tr>
<td>Taylor Faria</td>
<td>Friant Water Authority</td>
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<tr>
<td>Tom Weddle</td>
<td>Ivanhoe Irrigation District</td>
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<tr>
<td>Unidentified Attendees (5)</td>
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<td>Name</td>
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<tr>
<td>Dana Munn</td>
<td>Shafter-Wasco Irrigation District</td>
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<td>Steve Collup</td>
<td>Arvin-Edison Water Storage District</td>
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<td>Aaron Fukuda</td>
<td>Tulare Irrigation District</td>
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<td>Fergus Morrissey</td>
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<td>GEI Consultants</td>
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<tr>
<td>Fergus Morrissey</td>
<td>Orange Cove Irrigation District</td>
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Table 2. Comments, Questions, and Responses During June 17, 2020 Friant-Kern Canal Water Quality Policy Workshop (cont’d)

<table>
<thead>
<tr>
<th>Name</th>
<th>District/Agency/Other</th>
<th>Comment</th>
<th>Response</th>
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<tbody>
<tr>
<td>Randy and Steve</td>
<td>Bloemhof Farms and Harvesting, Shafter-Wasco Irrigation</td>
<td>FWA and Ad hoc committee acknowledge financial impacts associated with degraded water quality by including mitigation based on science of agronomic effects. Commenter suggested that science does not account for day-to-day farming practices. On-the-ground orchard management is much more complicated than just increasing leaching volumes. Because of increased salt concentrations, proposed leaching will cause more issues. Salt uptake has long-lasting effect on trees. Water quality goes beyond hull rot, as growers see effects during the entire season. Policy does not account or include compensation for yield loss or revenue loss. Oppose proposal.</td>
<td>The technical analyses on which the proposed Policy is based are not an admission or quantification of specific impacts, but rather an analysis of maintenance leaching for varying water quality on agricultural crops in the Friant Division, but the management strategy adopted by individual growers to achieve salinity control is a personal choice. The proposed Policy aims to balance concerns regarding water quality and future supply reliability. This Policy would allow for the expansion of infrastructure and projects that would benefit regional supply reliability and sustainability while assuring districts who are disproportionately affected by changes in water quality that water quality thresholds and mitigation will be implemented and that water quality in the canal will be monitored regularly and dependably communicated so that water users can make informed decisions for the use of available supplies. There is no current water quality policy for water supplies delivered via the Friant-Kern Canal, except for accepting Non-Project water into the Friant-Kern Canal (and Madera Canal) and Reclamation does not have an obligation to meet any specified water quality condition. FWA seeks to work with Reclamation to implement the proposed policy to create a path towards long-term and dependable water quality solutions for water users and move away from the historic and on-going litigation on individual project compliance. Ultimately, individual districts and water users must make management decisions based on their needs and best interests.</td>
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<tr>
<td>Bloemhof</td>
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POST-WORKSHOP COMMENTS RECEIVED:
FWA has received one additional comment since the workshop shown below.

Comment by Craig Fulwyler (Shafter-Wasco Irrigation District Board President)
Ian,

I wanted [to] make a few additional comments in regard to the proposed water quality mitigation program that Friant is working on. I am by no means a soil scientist, but simply a farmer who has 40 years of experience with soils in the SWID district. The concept of trying to mitigate the exchange of SWID’s Millerton water with lesser quality “pumped-in” water and CVC water, is very problematic. Any mitigation must take into consideration the water to be taken from SWID, “pure Millerton supplies”, and the proposed lesser quality water to be made available to SWID in exchange. Using constituent levels tolerable to crops as a baseline ignores the significant value of pure Sierra waters. This would be like telling some race car drivers that the premium fuel they have always relied upon in the past is to be allocated to other drivers in the race. But there is some lower quality fuel that we can sell you that will get you by and you can get an extra 10% of this fuel for free so you can burn a higher rate of fuel and you should get the performance you normally expect from your engine, initially. Then, as would be expected, degradation in performance and decreased engine life will result.

Growers in the SWID district have relied upon the pure Millerton water to blend with on-farm groundwater wells as a matter of practice to provide irrigation demands for crops grown here and manage salts accumulating in the soil. The soils in the SWID district are premium soils, highly productive and highly versatile, primarily due to this excellent source of water and ongoing management practices. Limiting supplies to the SWID district of it’s contracted Millerton supply will reduce the opportunity to properly manage our soils and will have significant economic impacts.

The concept of trying to balance the negative impact of applying the exchanged water containing higher sodium and chloride levels, by applying additional supplies of this same low quality water, to soils in the SWID district is impractical. Over the years irrigation practices have migrated from flood and furrow systems to micro-sprinkler systems and now predominately drip irrigation systems. These systems are designed to be very efficient and meet evapotranspiration demands of the crops while also allowing windows of opportunity for cultural practices. Increasing water applied during the growing season as a leaching component would not only be disruptive to good farming practices, but in many cases, unadvisable. Due to the predominance of minimum-till and no-till operations, soil permeability and infiltration rates are significantly limited in our soils with permanent crop plantings. Root and leaf diseases are already an issue in many locations due to high moisture and humidity levels. Also the micro-irrigation systems are not effective for leaching due to the fact that salts move laterally with these systems. The most effective leaching occurs in our soils in the winter months during periods of high rainfall. Additionally, I know of no one that would recommend the addition of sodium and chloride to increase the EC in order to facilitate permeability.

The exchange of water that precipitates the need for this water quality program is discriminatory and places an undue burden upon SWID growers.

Sincerely,
Craig Fulwyler

FWA Response to Craig Fulwyler Comment
Friant Water Authority appreciates the concerns detailed in Mr. Fulwyler’s comment. It is understandable that switching from high quality water sourced from Sierra Nevada snowmelt (i.e. Millerton Lake water) that has very little salt to an irrigation water with a slightly higher salt content raises concerns. Therefore, a detailed analysis of the potential negative impacts is needed before a grower or district feels comfortable with a decision to allow for irrigation water supplies with a slightly higher salt content. That is what is provided here with the water quality mitigation analysis.

Analysis described in Friant-Kern Canal Water Quality Policy, Draft Attachment A – Agronomic Impacts and Mitigation examines what irrigation management changes (i.e. mitigation measures) are necessary to prevent salts from accumulating in the crop root zone to potentially damaging levels. The analysis looks at the most restricting water quality constituents (i.e. electrical conductivity, chloride, sodium, and boron) and their impacts on the most sensitive crops to that constituent.

The only way to prevent the accumulation of salts, or any of its constituents, in the rootzone is by leaching (Ayers and Westcot, 1985; Wallender and Tanji, 2012). Leaching can take place in the late fall and winter months (reclamation leaching) or during the irrigation season (maintenance leaching). The analysis we used addresses maintenance leaching because it allows a simple, steady-state approach to develop mitigation curves that provide guidelines for excess water needed for...
salinity control. Transient state models are potentially more accurate for estimating leaching requirements, but are more complex, require many more inputs and assumptions, and often predict that irrigation waters of higher salinity can be used than what the steady-state approach would suggest. Our steady-state analysis does not account for rainfall nor use a root water-uptake weighted rootzone salinity to predict the negative impacts, both of which would suggest water of poorer quality can be used for irrigation (Letey et al., ; Corwin and Grattan, 2018). Therefore, our steady-state analysis is a very conservative approach to estimating leaching requirements. Moreover, the most sensitive crop for the most sensitive water quality constituents was used for the assessment. If that most sensitive crop is protected under the estimated leaching requirement conditions, then all other crops are most certainly protected.

The mitigation curve approach is not advocating an irrigation management approach to control salinity, but provides general leaching requirements under given irrigation water quality conditions. For example, if leaching cannot occur at each irrigation from a practical perspective, the mitigation curves would indicate that one could be falling behind on leaching (given the most sensitive crop, rootstock and water quality constituent) and such leaching would need to occur at another, more practical time.

It is understood that many successful growers rely on reclamation leaching as the practice of choice because of several of the points raised in this comment (e.g. infiltration difficulties during the season, excessive water promoting insect damage and fungal root diseases, etc.). This reclamation leaching approach during the winter is particularly attractive as growers in the region rely more and more on low-pressure systems, such as drip and mini-sprinklers, to irrigate their crops. These irrigation methods can cause salt build up between emitters and wetting patterns. Over time, this can be injurious to the crop. If winter rains are insufficient to leach the accumulated salts, hand-move sprinklers may be needed to provide reclamation leaching. Therefore, the mitigation curves developed for the Friant-Kern Canal Water Quality Policy are provided to estimate the additional water needed for salinity control assuming steady-state maintenance leaching, but the management strategy adopted by individual growers to achieve salinity control is a personal choice.

Many growers within the Friant Division of the Central Valley Project (Friant Division) rely on groundwater to supplement surface water deliveries from Millerton Lake to meet irrigation water requirements. Groundwater quality conditions within the Friant Division are higher in salinity than surface waters used for irrigation. For example, in Shafter-Wasco Irrigation District (SWID), depending upon the aquifer, the electrical conductivity (EC) of groundwater is 255-365 µmhos/cm.¹ This is substantially higher than the average EC of water diverted from the California Aqueduct as measured at Check 21 (average of approximately 500 µmhos/cm). Therefore, growers in the Friant Division, including within the SWID, are already successfully managing irrigation water with higher salt content. Moreover, it is likely that the salinity concentration of local groundwaters within the Friant Division will continue to increase over time and leaching will be required to mitigate potential adverse effects from salinity conditions in irrigation supplies sourced from groundwater and/or surface water deliveries.

¹ Electrical conductivity values represent converted total dissolved solids (TDS) concentrations for Shafter-Wasco Irrigation District’s (SWID) upper aquifer, as provided by the district, and lower aquifer, sourced from CV-SALTS. A conversion factor of 0.640 was applied to convert TDS mg/L to EC umhos/cm based on guidance issued by USDA in Agricultural Handbook 60 (1954). This conversion factor also correlates to the average TDS/EC relationship of these water quality parameters as measured during 2016, 2018, and 2020 in groundwater wells by North Kern Water Storage District (NKWSD), located near SWID and within same groundwater basin.
Friant-Kern Canal Water Quality Policy

Draft
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ACRONYMS

µS/cm microsiemens per centimeter (1 µS/cm = 1 µmhos/cm = 1/1,000 dS/m)

AF acre-feet

Ad hoc Committee Ad hoc Water Quality Committee

CV-SALTS Central Valley Salinity Alternatives for Long-term Sustainability

EC electrical conductivity

FKC Friant-Kern Canal

Friant Division Friant Division of the Central Valley Project

FWA Friant Water Authority

mg/L milligrams per liter

Policy Friant-Kern Canal Water Quality Policy

TDS total dissolved solids

Reclamation U.S. Department of the Interior, Bureau of Reclamation

RWA Recovered Water Account
BACKGROUND

The Ad hoc Water Quality Committee (Ad hoc Committee) is working to develop a comprehensive Friant-Kern Canal Water Quality policy (Policy) to be adopted by the Friant Division of the Central Valley Project (Friant Division). This Policy is in response to concerns regarding the implementation of programs and projects that could introduce water of a lesser quality to the Friant-Kern Canal (FKC), when compared to water quality of historic deliveries from Millerton Lake. This Policy would also be referenced in FKC projects as well as other projects that envision introducing water into the FKC. The Ad hoc Committee is composed of water district directors and managers from Arvin-Edison Water Storage District, Delano-Earlimart Irrigation District, Kern-Tulare Water District, Lindsay-Strathmore Irrigation District, Lower Tule River Irrigation District, Pixley Irrigation District, Porterville Irrigation District, Saucelito Irrigation District, Shafter-Wasco Irrigation District, and Terra Bella Irrigation District. The Ad hoc Committee is proposing a ledger mechanism to determine the required mitigation for introducing water of lesser quality into the FKC. This document describes the Draft Policy, which includes the Water Quality Mitigation Ledger, Water Quality Monitoring Program, and Water Quality Model.

WATER QUALITY MITIGATION LEDGER

The Water Quality Mitigation Ledger tracks and accounts for all inflows into and diversions from the FKC in order to determine appropriate mitigation for impacted water quality (attributable to the introduced water [or “Put”] and the corresponding distribution thereof [or “Take”]). The volume of additional surface water needed for mitigation, expressed as a percentage of the introduced water, or Put, is determined using an established mitigation rating curve. The mitigation rating curve is based on (1) constituent concentrations, and (2) agronomic principles that focus on leaching requirements in order to prevent constituent accumulation in the rootzone and resulting impacts on crops. This approach aims to balance concerns related to long-term groundwater quality with a multi-layered assessment of agronomic impacts as a durable solution. The process for developing the agronomic impacts evaluation and mitigation rating curve can be found in Attachment A – Agronomic Impacts and Mitigation.

The Water Quality Mitigation Ledger was developed utilizing a preliminary FKC water quality model that simulates water quality changes in the canal accounting for inflows, diversions, and various respective water quality conditions. A detailed example showing the ledger process is provided in Attachment B.

The principles of the Water Quality Mitigation Ledger and ledger process are detailed below:

1. The Water Quality Mitigation Ledger accounts for all inflows and diversions into and from the FKC, including diversions from Millerton Lake, groundwater and surface water pump-in and pump-back water, and all deliveries from the FKC.

2. The Water Quality Mitigation Ledger quantifies mitigation for Friant Division Long-Term Contractors that have an expectation to receive water consistent with quality conditions of Millerton Lake. Specifically, mitigation applies to the Take of Friant Division Class 1, Class 2, Recovered Water Account (RWA [Paragraph 16b]), and Unreleased Restoration Flows supplies. Friant Division Long-Term Contractors and third parties with supplies not delivered to the headworks of the FKC are not eligible to receive mitigation.

3. Mitigation is based on the water quality concentration of inflows above the established baseline. The mitigation rating curve is used to determine the volumetric percentage of introduced water, or Put, that each contractor that introduces water into the FKC, or “Contributor,” owes. The mitigation rating curve (Figure 1) was developed using agronomic leaching factors described in Attachment A. Existing FKC inlet drains are exempt from providing mitigation.

4. The established baseline is based on assumptions of current, minimum leaching practices by water users, or growers, in the region. Consistent with good agricultural practices, it is assumed that
growers are currently applying at least a 5 percent leaching fraction. Under the mitigation rating curve, this corresponds to an approximate electrical conductivity (EC) of 200 microsiemens per centimeter (μS/cm). It is assumed that growers are already managing the effects of applied water quality conditions up to 200 μS/cm of EC, and mitigation is only required for water quality conditions with incremental EC that exceed the baseline EC threshold of 200 μS/cm.

5. Mitigation volumes for each Put are distributed to each Friant Division Long-Term Contractor receiving an eligible Take, or “Taker,” downstream based on the volumetric proportion of the Take on a weekly basis.

6. Mitigation occurs in real time by the Contributor and offsets a like volume of each Taker’s supply at the end of a reporting period. Additional mitigation is not be required due to the water quality conditions of the mitigation.

7. Water quality conditions and flows are tracked daily. The ledger and required mitigation are balanced weekly and reported and transferred monthly.

Key:

\[ \mu S/cm = \text{microsiemens per centimeter} \quad (1 \mu S/cm = 1 \mu \text{mhos/cm} = 1/1,000 \text{ dS/m}) \]

*Figure 1. Proposed Mitigation Rating Curve based on Boron Sensitivity and Normalized to Electrical Conductivity*

**POLICY PRINCIPLES**

The principles for the Policy are detailed below:

1. The Water Quality Mitigation Ledger will apply to all programs beginning upon U.S. Department of the Interior, Bureau of Reclamation (Reclamation) approval of the Policy.

2. Friant Water Authority (FWA) will appoint the Water Quality Committee of Friant Division Long-Term Contractors and include representatives of all Friant Division contractor Contributors and impacted parties. This advisory committee will provide recommendations to FWA and Reclamation on operations and monitoring requirements of the FKC.

3. When the Friant Division Class 1 contract allocation is less than or equal to 25 percent, the Water Quality Committee of Friant Contractors will evaluate the current year operations as they relate to the Water Quality Mitigation Ledger.
4. The value of additional surface water provided by the mitigation rating curve is inclusive of additional costs for any changes in soil amendments needed to manage the incremental difference of water quality conditions.

5. The costs to implement and manage the Policy, including the Water Quality Mitigation Ledger, Water Quality Monitoring Plan (Attachment C), and Water Quality Model will be paid by the Contributors as determined and charged by FWA. Detailed information regarding the costs to implement and manage the Policy can be found in Attachment D.

6. If a future regulatory cost or equivalent fee (including but not limited to any fees or assessments by the California Department of Water Resources or the State Water Resources Control Board via one of its programs such as CV SALTS) is imposed on impacted Friant Division Long-Term Contractors and a portion of such fee can reasonably be attributed to the incremental difference of water quality conditions due to the Contributor’s actions, then the Water Quality Committee of Friant Contractors will address the matter. The Water Quality Committee of Friant Contractors shall determine potential impacts due to the Policy and make as-needed adjustments to reflect the additional regulations.

7. Defined Policy requirements may be re-evaluated if there is significant, scientifically-based justification (e.g., agronomic effects) and three out of five southern contractors (Arvin-Edison Water Storage District, Shafter-Wasco Irrigation District, Delano-Earlimart Irrigation District, South San Joaquin Municipal Utility District, or Kern-Tulare Water District) agree to re-open discussions.

**OPERATIONS CRITERIA**

Pump-in and pump-back operations will be governed by the following criteria:

1. FKC in-prism water quality that exceeds any of the following thresholds will require systematic ceasing of pump-in and pump-back operations, prioritizing the greatest Contributors until water quality conditions are below the threshold:
   a. Title 22. The Domestic Water Quality and Monitoring Regulations specified by the State of California Health and Safety Code (Sections 4010-4037), and Administrative Code (Sections 64401 et seq.), as amended.
   b. Water quality thresholds defined in Table 1. Table 1 accounts for constituent thresholds of sensitive crops, leaching requirements, regulated deficit irrigation during almond hull split from July 1 through August 31, and also provides flexibility in the second half of the contract year depending on observed water quality from March 1 through June 30.
      i. Table 1 presents alternative water quality thresholds for Period 3 (September 1 – February 28) that are dependent on the measured water quality during Period 1 (March 1 – June 30). If the measured average chloride concentration for Period 1 exceeds 70 mg/L, the chloride threshold remains at 102 mg/L for Period 3a. If the measured average chloride concentrations for Period 1 are less than or equal to 70 milligrams per liter (mg/L), the allowable chloride concentration increases from 102 mg/L to 123 mg/L for Period 3b.
      ii. It is estimated that an average of one week is required for in-prism water quality to turnover. Prior to the onset of the defined hull split period requirements (July 1), FWA will evaluate current canal operations and water quality conditions to determine if this one-week period should be adjusted.
Table 1. Friant-Kern Canal In-Prism Water Quality Thresholds

<table>
<thead>
<tr>
<th>Period</th>
<th>Salinity Threshold expressed as EC (µS/cm)</th>
<th>Chloride Threshold (mg/L)</th>
<th>Boron Threshold (mg/L)¹</th>
<th>SAR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Period 1</td>
<td>1,000²</td>
<td>102³</td>
<td>0.4</td>
<td>3</td>
</tr>
<tr>
<td>March 1 – June 30</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Period 2</td>
<td>500⁴</td>
<td>55⁴</td>
<td>0.4</td>
<td>3</td>
</tr>
<tr>
<td>July 1 – August 31</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Period 3a</td>
<td>1,000²</td>
<td>102³</td>
<td>0.4</td>
<td>3</td>
</tr>
<tr>
<td>September 1 – February 28</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Period 3b</td>
<td>1,000²</td>
<td>123⁵</td>
<td>0.4</td>
<td>3</td>
</tr>
<tr>
<td>September 1 – February 28</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes:

For additional detail, see Attachment A - Agronomic Impacts and Mitigation.

When Friant-Kern Canal in-prism water quality conditions in this table are exceeded, Friant Division Long-Term Contractors will work together to seek 1:1, unleveraged, and cost-neutral exchanges for pump-in and pump-back programs. This does not apply to spot-market or third-party exchanges.

1 Grapes are used as a representative crop for boron sensitivity and are prevalent in the Friant Division. They are used as a surrogate for many other sensitive crop types such as apricots, figs, and grapefruits. Threshold assumes conventional irrigation with minimum 20 percent leaching fraction applied.

2 Threshold assumes minimum of 20 percent leaching requirement applied and adjusted to account for regulated deficit irrigation during almond hull split period (July 1 – August 31) in order to not exceed maximum EC<sub>et</sub>. Almonds on Nemaguard rootstock are used as a representative crop for salinity sensitivity and are prevalent in the Friant Division. They are used as a surrogate for many other sensitive crop types such as apples, cherries, pears, pistachios, and walnuts.

3 Threshold assumes minimum of 20 percent leaching requirement applied and then adjusted to account for regulated deficit irrigation during almond hull split period (July 1 – August 31) in order to not exceed maximum Cl<sub>et</sub>. Almonds on Nemaguard rootstock used as a representative crop for chloride sensitivity. They are used as a surrogate for other sensitive crops including cherries, pistachios, and walnuts.

4 Threshold applies to almond hull split period when regulated deficit irrigation is applied to avoid hull rot. This threshold is used assuming irrigation applications are reduced to 50 percent of the tree water requirement and subsequently thresholds applied for the remainder of the year have been adjusted to account for additional salt accumulation. This threshold was developed with consideration of existing program operations, historical water quality data, and absolute water quality thresholds.

5 If the measured average chloride concentration in Period 1 (March 1 – June 30) is less than or equal to 70 mg/L, the allowable chloride threshold for Period 3 (September 1 – February 28) is increased to 123 mg/L.

Key:
µS/cm = microsiemens per centimeter (1 µS/cm = 1 µmhos/cm = 1/1,000 dS/m)
ASCE = American Society of Civil Engineers
Cl<sub>et</sub> = maximum chloride threshold of the saturated soil paste
EC = electrical conductivity of applied water
EC<sub>a</sub> = Soil salinity threshold for a given crop
FAO = Food and Agriculture Organization of the United Nations
Friant Division = Friant Division of the Central Valley Project
mg/L = milligrams per liter
SAR = sodium adsorption ratio
TDS = total dissolved solids
2. Pump-in or pump-back programs will not be introduced to the FKC during the Friant Division uncontrolled season as declared by Reclamation unless the program can assist in alleviating an FKC prorate or is below the baseline and therefore does not require mitigation.

3. Friant Division Long-Term Contractors will cooperate to maximize conveyance of additional, beneficial surface water supplies while still meeting water quality requirements and thresholds in the FKC. When FKC in-prism water quality conditions in Table 1 are exceeded, Friant Division Long-Term Contractors will work together to seek 1:1, unleveraged, and cost-neutral exchanges for pump-in and pump-back programs. This does not apply to spot-market or third-party exchanges.

ADDITIONAL IMPLEMENTATION REQUIREMENTS

In addition to the Policy Principles and Operations Criteria described above, several programmatic challenges were identified that will continue to be evaluated and addressed, and are as follows:

1. Identify all existing programs and pump-ins and determine which are exempt from the Policy (e.g., handling of City of Orange Cove flood flow pump-ins).

2. Address FWA’s authority to implement the Policy. FWA’s role is limited to complying with Federal and State laws and cannot adopt its own regulations, but could endorse or possibly adopt the Policy as “guidelines” and incorporate significant aspects of the proposed Policy as part of its CEQA approval for the Long-Term Recapture and Recirculation of Restoration Flows and FKC Pump-Back projects.

3. Coordinate with Reclamation in updating the 2008 Policy for Accepting Non-Project Water into the Friant-Kern and Madera Canals and work with Reclamation regarding the potential adoptions of the Policy.

4. Define standard operating procedures to account for mitigation and its administration, including contractual requirements with Reclamation (e.g., transfer agreements, Warren Act contracts); Water Quality Mitigation Ledger; and water quality threshold management.

5. Finalize the FKC Water Quality Monitoring Program and Water Quality Model.
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ACRONYMS AND ABBREVIATIONS

µmhos/cm  micromhos per centimeter (1 µmhos/cm = 1 µS/cm = 1/1,000 dS/m)
µS/cm  microsiemens per centimeter (1 µS/cm = 1 µmhos/cm = 1/1,000 dS/m)
Ad hoc Committee  Ad hoc Water Quality Committee
AEWSD  Arvin-Edison Water Storage District
ATP  adenosine triphosphate
AW  applied water
B  boron
Be  boron concentration of the saturated soil paste (rootzone boron)
Bet  maximum boron threshold of the saturated soil paste
Bw  boron concentration of applied irrigation water
Bsw  boron threshold for soil water concentration
Ca  calcium
Ca²⁺  calcium ion
CaCO₃  calcite or calcium carbonate
cfs  cubic feet per second
Check 21  Check Structure 21 at milepost 172,40 on the California Aqueduct
Cl⁻  chloride ion
Clₑ  chloride concentration of the saturated soil paste (rootzone chloride)
Clₘₜ  maximum chloride threshold of the saturated soil paste
Cl_w  chloride concentration of applied irrigation water
CO₂  carbon dioxide
CO₃²⁻  carbonate ion
CVC  Cross Valley Canal
DEID  Delano-Earlimart Irrigation District
dS/m  decisiemens per meter (1 dS/m = 1,000 µmhos/cm = 1,000 µS/cm)
EC  electrical conductivity
ECₑ  electrical conductivity of the saturated soil paste (rootzone salinity)
EC₀₂  electrical conductivity/salinity of irrigation drainage water
EC_w  electrical conductivity/salinity of applied irrigation water
ET  evapotranspiration
Fc  concentration factor
FKC  Friant-Kern Canal
Friant Division  Friant Division of the Central Valley Project
FWA  Friant Water Authority
Intermediate Water quality representing the average of California Aqueduct Check 21 and Cross Valley Canal water qualities

KTWD Kern Tulare Water District

LF leaching fraction

LR leaching requirement

Mg\(^{2+}\) magnesium ion

Mg magnesium

meq/L milliequivalents per liter

mg/L milligrams per liter (equivalent to ppm)

Na\(^+\) sodium ion

Na sodium

pH Measure of acidity or alkalinity

Policy Friant-Kern Canal Water Quality Policy

ppm parts per million (equivalent to mg/L)

RDI regulated deficit irrigation

SAR sodium adsorption ratio

SAR\(\text{adj}\) adjusted sodium adsorption ratio

SID Saucelito Irrigation District

SSJMUD South San Joaquin Municipal Utility District

SWID Shafter-Wasco Irrigation District

TDS total dissolved solids
BACKGROUND

The Ad hoc Water Quality Committee (Ad hoc Committee) is working to develop a comprehensive Friant-Kern Canal Water Quality Policy (Policy) to be adopted by the Friant Division of the Central Valley Project (Friant Division). This policy is in response to concerns regarding the implementation of programs and projects that could introduce water of a lesser quality to the Friant-Kern Canal (FKC), when compared to water quality of historic deliveries from Millerton Lake. This Policy would also be referenced in FKC projects as well as other projects that envision introducing water into the FKC. The Ad hoc Committee is composed of water district directors and managers from Arvin-Edison Water Storage District (AEWSD), Delano-Earlimart Irrigation District (DEID), Kern-Tulare Water District (KTWD), Lindsay-Strathmore Irrigation District, Lower Tule River Irrigation District, Pixley Irrigation District, Porterville Irrigation District, Saucelito Irrigation District (SWID), Shafter-Wasco Irrigation District, and Terra Bella Irrigation District. The Ad hoc Committee is proposing a ledger mechanism to determine the required mitigation for introducing water of lesser quality into the FKC. This attachment to the Policy describes agronomic effects, mitigation requirements, maximum water quality thresholds for key constituents developed for the FKC. The thresholds are specific to irrigation periods that correspond to the growing season and agricultural management practices during the year.

AGRONOMIC EFFECTS

When assessing the suitability of water for irrigation, three main hazards or “agronomic thresholds” are considered (Ayers and Westcot, 1985): (1) the salinity hazard (electrical conductivity of the applied irrigation water [EC\textsubscript{w}]), (2) the hazard posed by specific ions (chloride [Cl\textsuperscript{-}], boron [B], and sodium [Na\textsuperscript{+}]), and (3) the infiltration hazard (sodium adsorption ratio [SAR] and EC\textsubscript{w}). There are other parameters, such as acidity (pH) or alkalinity, sediments and nutrients that can affect calcite (CaCO\textsubscript{3}) deposits, emitter clogging, crop development, and corrosion, but these do not fall under “agronomic thresholds.”

The primary source of imported water is proposed to come from the Friant-Kern Canal Reverse Pump-Back Project. Water quality conditions from this project could range from existing conditions in the Cross Valley Canal (CVC) to that from the California Aqueduct, depending on respective canal operations. For the analysis presented herein, both CVC and California Aqueduct (measured at Check 21) water qualities were used, as well as a weighted average of those two sources (Intermediate) applied to show the range of potential imported water qualities. Source water quality concentrations are shown in Table 1 and Table 2.

### Table 1. Average Concentrations of Various Irrigation Water Quality Constituents

<table>
<thead>
<tr>
<th>LOCATION</th>
<th>TDS (/L)</th>
<th>EC\textsubscript{w} (μS/cm)</th>
<th>Boron (B) (mg/L)</th>
<th>Chloride (Cl\textsuperscript{-}) (mg/L)</th>
</tr>
</thead>
<tbody>
<tr>
<td>FKC\textsuperscript{1, 2}</td>
<td>24</td>
<td>40</td>
<td>0.04</td>
<td>1.9</td>
</tr>
<tr>
<td>CVC\textsuperscript{1, 3}</td>
<td>180</td>
<td>340</td>
<td>0.11</td>
<td>45.0</td>
</tr>
<tr>
<td>Intermediate\textsuperscript{4}</td>
<td>232</td>
<td>420</td>
<td>0.16</td>
<td>63.2</td>
</tr>
<tr>
<td>Check 21\textsuperscript{5}</td>
<td>283</td>
<td>500</td>
<td>0.21\textsuperscript{6}</td>
<td>81.3</td>
</tr>
</tbody>
</table>

Note:
1 Water quality data from AEWSD grab samples lab data from 2010 – 2019. Averages exclude months when mixing occurred.
2 Sample taken at terminus of FKC.
3 Sample taken at AEWSD CVC, Pumping Plant 6 or 6B Forebay.
4 Weighted average of CVC and Check 21 water quality.
5 California Aqueduct measured at Check 21 from 2009-2017.
6 Check 21 Boron measurements only available for years 1967 – 1976.

Key:
AEWSD = Arvin Edison Water Storage District
Check 21 = Check Structure 21 at milepost 172,40 on the California Aqueduct
CVC = Cross Valley Canal
\textmu S/cm = microsiemens per centimeter (1 \textmu S/cm = 1 \textmu mhos/cm = 1/1,000 dS/m)
EC\textsubscript{w} = electrical conductivity of applied water
FKC = Friant-Kern Canal
Intermediate = Water quality representing the average of California Aqueduct Check 21 and Cross Valley Canal water qualities
mg/L = milligrams per liter
TDS = total dissolved solids
Table 2. Average Monthly Electrical Conductivity, Chloride, and Boron Concentrations by Source and Year Type

<table>
<thead>
<tr>
<th>MONTH</th>
<th>CVC¹</th>
<th>CHECK 2¹²</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Wet³</td>
<td>Average⁴</td>
</tr>
<tr>
<td>January</td>
<td>431</td>
<td>369</td>
</tr>
<tr>
<td>February</td>
<td>570</td>
<td>433</td>
</tr>
<tr>
<td>March</td>
<td>261</td>
<td>273</td>
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<tr>
<td>April</td>
<td>--</td>
<td>204</td>
</tr>
<tr>
<td>May</td>
<td>385</td>
<td>384</td>
</tr>
<tr>
<td>June</td>
<td>257</td>
<td>292</td>
</tr>
<tr>
<td>July</td>
<td>286</td>
<td>308</td>
</tr>
<tr>
<td>August</td>
<td>323</td>
<td>326</td>
</tr>
<tr>
<td>September</td>
<td>429</td>
<td>360</td>
</tr>
<tr>
<td>October</td>
<td>396</td>
<td>356</td>
</tr>
<tr>
<td>November</td>
<td>368</td>
<td>349</td>
</tr>
<tr>
<td>December</td>
<td>--</td>
<td>39</td>
</tr>
</tbody>
</table>

Average Monthly Electrical Conductivity Concentrations by Source and Year Type (μS/cm)

<table>
<thead>
<tr>
<th>MONTH</th>
<th>CVC¹</th>
<th>CHECK 2¹²</th>
</tr>
</thead>
<tbody>
<tr>
<td>January</td>
<td>431</td>
<td>369</td>
</tr>
<tr>
<td>February</td>
<td>570</td>
<td>433</td>
</tr>
<tr>
<td>March</td>
<td>261</td>
<td>273</td>
</tr>
<tr>
<td>April</td>
<td>--</td>
<td>204</td>
</tr>
<tr>
<td>May</td>
<td>385</td>
<td>384</td>
</tr>
<tr>
<td>June</td>
<td>257</td>
<td>292</td>
</tr>
<tr>
<td>July</td>
<td>286</td>
<td>308</td>
</tr>
<tr>
<td>August</td>
<td>323</td>
<td>326</td>
</tr>
<tr>
<td>September</td>
<td>429</td>
<td>360</td>
</tr>
<tr>
<td>October</td>
<td>396</td>
<td>356</td>
</tr>
<tr>
<td>November</td>
<td>368</td>
<td>349</td>
</tr>
<tr>
<td>December</td>
<td>--</td>
<td>39</td>
</tr>
</tbody>
</table>

Average Monthly Chloride Concentrations by Source and Year Type (mg/L)

<table>
<thead>
<tr>
<th>MONTH</th>
<th>CVC¹</th>
<th>CHECK 2¹²</th>
</tr>
</thead>
<tbody>
<tr>
<td>January</td>
<td>74.5</td>
<td>54.4</td>
</tr>
<tr>
<td>February</td>
<td>104.0</td>
<td>63.0</td>
</tr>
<tr>
<td>March</td>
<td>21.0</td>
<td>21.8</td>
</tr>
<tr>
<td>April</td>
<td>19.0</td>
<td>21.4</td>
</tr>
<tr>
<td>May</td>
<td>--</td>
<td>31.4</td>
</tr>
<tr>
<td>June</td>
<td>48.5</td>
<td>46.1</td>
</tr>
<tr>
<td>July</td>
<td>28.5</td>
<td>33.7</td>
</tr>
<tr>
<td>August</td>
<td>39.6</td>
<td>40.7</td>
</tr>
<tr>
<td>September</td>
<td>53.0</td>
<td>48.4</td>
</tr>
<tr>
<td>October</td>
<td>76.0</td>
<td>55.0</td>
</tr>
<tr>
<td>November</td>
<td>68.5</td>
<td>54.8</td>
</tr>
<tr>
<td>December</td>
<td>55.5</td>
<td>46.7</td>
</tr>
</tbody>
</table>

Average Monthly Boron Concentrations by Source and Year Type (mg/L)²

<table>
<thead>
<tr>
<th>MONTH</th>
<th>CVC¹</th>
<th>CHECK 2¹²</th>
</tr>
</thead>
<tbody>
<tr>
<td>January</td>
<td>0.12</td>
<td>0.11</td>
</tr>
<tr>
<td>February</td>
<td>0.16</td>
<td>0.15</td>
</tr>
<tr>
<td>March</td>
<td>0.10</td>
<td>0.11</td>
</tr>
<tr>
<td>April</td>
<td>0.11</td>
<td>0.12</td>
</tr>
<tr>
<td>May</td>
<td>--</td>
<td>0.12</td>
</tr>
<tr>
<td>June</td>
<td>0.16</td>
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<tr>
<td>July</td>
<td>0.11</td>
<td>0.11</td>
</tr>
<tr>
<td>August</td>
<td>0.09</td>
<td>0.10</td>
</tr>
<tr>
<td>September</td>
<td>0.08</td>
<td>0.09</td>
</tr>
<tr>
<td>October</td>
<td>0.11</td>
<td>0.10</td>
</tr>
<tr>
<td>November</td>
<td>0.11</td>
<td>0.11</td>
</tr>
<tr>
<td>December</td>
<td>0.11</td>
<td>0.11</td>
</tr>
</tbody>
</table>

Note:
3. CVC wet year averages represent the monthly average for San Joaquin Index year types below normal, above normal, and wet and excludes months where there is mixing.
4. Average concentrations shown represent the average of all year types and excludes months where there is mixing.
5. CVC dry year averages represent the monthly average for San Joaquin Index year types dry and critical and excludes months where there is mixing.
6. Check 21 wet year averages represent the monthly average for San Joaquin Index wet year types only.
7. Check 21 critical year averages represent the monthly average for San Joaquin Index critical years only.

Key:
-- = no available data. CVC water quality in wet years during May were only mixed water quality.
AEWSD = Arvin-Edison Water Storage District
Check 21 = Check Structure 21 at milepost 172,40 on the California Aqueduct
CVC = Cross Valley Canal
μS/cm = microsiemens per centimeter (1 µS/cm = 1 µmhos/cm = 1/1,000 dS/m)
mg/L = milligrams per liter
SALINITY EFFECTS ON CROPS

The effects of salinity on crops are due to two separate properties in the saline media that can impact the crop individually but more often collectively (Läuchli and Grattan, 2012): (1) Salinity increases the electrical conductivity (EC) of the soil solution which reduces its the osmotic potential and (2) specific ions (i.e. Cl\(^{-}\), Na\(^{+}\) and B) in the soil solution can potentially be toxic to certain crops.

Osmotic effects occur when the concentration of salt in the soil solution is too high to allow for normal for crop growth. Dissolved salts reduce the osmotic potential of the soil solution. Plants must adjust osmotically through either the absorption of ions from the soil solution, or the synthesis and/or accumulation of organic solutes in the root cells. The synthesis of compatible organic solutes allows a plant to adjust osmotically and survive, but at the expense of plant growth (Munns and Tester, 2008). The synthesis of organic solutes requires a considerable amount of metabolic energy (i.e., adenosine triphosphate (ATP)) that is used for cell maintenance and osmotic adjustment that could otherwise be used for growth. As a result, salt-stressed plants are stunted, even though they may appear healthy in all other regards. Both processes of adjustment (accumulation of ions and synthesis of organic solutes) occur but the extent by which one process dominates depends on the type of crop and level of salinity (Läuchli and Grattan, 2012). And in a cell, compartmentalization is critical to keep toxic ions away from sensitive metabolic processes in the cytoplasm (Hasegawa et al., 2000). Such compartmentation is controlled by transport processes in the plasma membrane and tonoplast (i.e., vacuolar membrane). The efficiency of ion transport processes, as well as metabolic costs for organic-solute synthesis, differ from crop to crop and even within a species giving rise to different salinity tolerances.

TOXIC ION EFFECTS

Specific ions (i.e., Na\(^{+}\), Cl\(^{-}\), and B) in the soil solution can cause direct injury to crops, causing further crop damage from what occurs from osmotic effects. Typically, toxic ion effects are commonly found in woody perennials, such as tree and vine crops, while most annual row crops remain injury free unless salinity stress is severe. Woody perennial crops have little ability to exclude sodium or chloride from their leaves, and the plants are long-lived; hence, they often suffer toxicities at even moderate soil salinities. Typically, toxic ion effects become more critical to sensitive tree and vine crops over the years.

Chloride

Chloride and sodium toxicity can damage a plant/tree physically, biochemically and physiologically. As sodium and chloride move in the transpiration stream, they are deposited in the leaves. Older leaves have more water transpire from them and consequently have higher concentrations of sodium and chloride. Once accumulated in a leaf, sodium and chloride typically do not remobilize to other tissues. As the concentration in that leaf increases, the salts can physically desiccate cells causing injury in the form of leaf burn. Necrotic leaves no longer photosynthesize and produce carbohydrates for the tree, which in turn, will impact growth and production. But even before salts accumulate in leaves to levels that cause physical injury, those salts can reduce the chlorophyll content in leaves (Dejampour et al., 2012) and interfere with enzymatic activities affecting key metabolic pathways in both respiration and photosynthesis (Munns and Tester, 2008).

Boron

Although not a main “salinizing” constituent in applied irrigation water, boron can also cause injury to the crop. Boron is an essential micronutrient for plants, but the concentration range of plant-available boron in the soil solution optimal for growth for most crops is very narrow. Above this narrow range, toxicity occurs (Grieve et al., 2012). Boron toxicity, including how and where it is expressed in the plant, is related to the mobility of boron in the plant. Boron is thought to be immobile in most species where it accumulates in the margins and tips of the oldest leaves where injury occurs. However, boron can be re-mobilized by some species due to high concentrations of sugar alcohols (polyols) where they bind with boron and carry it to younger tissues (Brown and Shelp, 1997). These boron-mobile plants include almond, apple, grape, and most stone fruits. For these crops, boron concentrations are higher in younger tissue than in older tissue, and injury is expressed in young, developing tissues in the form of twig die back, gum exudation, and reduced
bud formation. Boron-immobile plants such as pistachio, tomato, and walnut do not have high concentrations of polyols, and the boron concentrates in the margins of older leaf tissues. Injury in these crops is expressed as the classical necrosis on leaf tips and margins.

**Sodium**

Sodium can be problematic to a crop in several ways. It can be directly toxic to the plant, it can interfere with the nutritional status of the plant (e.g., Na\(^+\)-induced calcium [Ca\(^{2+}\)] deficiency), or it can indirectly affect the crop due to its adverse effect on soil structure. Some trees are very sensitive and can develop Na\(^+\) toxicity when concentrations of Na\(^+\) are as low of 5 milliequivalents per liter (meq/L) (115 mg/L) in the soil water. However, this observation was made before scientists realized the importance of adequate Ca\(^{2+}\) in the soil water for root membrane stability to maintain their selectivity for ion uptake. With adequate Ca\(^{2+}\), such as that provided by gypsum applications, sodium toxicity may never be observed in these sensitive trees at such low sodium concentrations. Therefore, rather than having a threshold for Na\(^+\) per se, the sodium-calcium ratio in the soil solution is a better indicator of Na\(^+\) toxicity. The SAR of the applied irrigation water has been used as a surrogate for the sodium-calcium ratio, and the general rule is an SAR < 3 is not problematic.

\[
SAR = \frac{Na^+}{\sqrt{(Ca^{2+} + Mg^{2+})/2}}
\]

Where Na\(^+\), Ca\(^{2+}\), and magnesium ion (Mg\(^{2+}\)) concentrations are expressed in meq/L.

This is different when assessing sodium’s indirect effect on soil structural stability (see the Infiltration Hazard section that follows). Table 3 shows critical SAR of the applied irrigation water above which can cause injury or nutritional distress in sensitive crops. Table 4 shows the seasonal average SAR for various water sources.

<table>
<thead>
<tr>
<th>TABLE 3. Critical SAR of Applied Irrigation Water</th>
</tr>
</thead>
<tbody>
<tr>
<td>CROP(^1)</td>
</tr>
<tr>
<td>All Crops</td>
</tr>
</tbody>
</table>

Note:
\(^1\) Many tree crops are sensitive to Na\(^+\) toxicity after several years when sapwood converts to heartwood releasing Na\(^+\) from the root to the shoot. Most annual crops are insensitive to Na\(^+\) per se provided there is sufficient Ca\(^{2+}\) in the soil solution to maintain membrane integrity and ion selectivity. Hence, the ratio of sodium to calcium is more critical (Grattan and Grieve, 1992).

Key
- Ca\(^{2+}\) = calcium ions
- Na\(^+\) = sodium ions
- SAR = sodium adsorption ratio
Table 4. Seasonal Average SAR for Various Water Sources

<table>
<thead>
<tr>
<th>VALUE</th>
<th>FKC²³</th>
<th>CVC²⁴</th>
<th>INTERMEDIATE⁵</th>
<th>CHECK 21⁶</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average</td>
<td>0.46</td>
<td>1.68</td>
<td>1.99</td>
<td>2.27</td>
</tr>
<tr>
<td>Maximum</td>
<td>0.87</td>
<td>2.04</td>
<td>2.46</td>
<td>2.96</td>
</tr>
<tr>
<td>Minimum</td>
<td>0.28</td>
<td>1.10</td>
<td>1.61</td>
<td>1.79</td>
</tr>
</tbody>
</table>

Note:
1. March through October period.
3. Sample taken at terminus of FKC.
4. Sample taken at AEWSD CVC, Pumping Plant 6 or 6B Forebay.
5. Weighted average of CVC and Check 21 water quality.

Key
AEWSD = Arvin Edison Water Storage District
Check 21 = Check Structure 21 at milepost 172.40 on the California Aqueduct
CVC = Cross Valley Canal
FKC = Friant-Kern Canal
Intermediate = Water quality representing the average of California Aqueduct Check 21 and Cross Valley Canal water qualities
SAR = sodium adsorption ratio

INFILTRATION HAZARD

Sodium Adsorption Ratio

The SAR has been the standard used for assessing the infiltration hazard of applied irrigation water (Ayers and Westcot, 1985). But the actual infiltration hazard is assessed by balancing the opposite effects of salinity (EC<sub>w</sub>) and sodicity (i.e., SAR) on aggregate stability. High salinity and low SAR are both important in maintaining adequate soil structure, which promotes better infiltration. Even though coarse-textured soils infiltrate faster than fine-textured soils, the hazard exists for all soil types. Typically, the adjusted SAR (SAR<sub>adj</sub>) is used rather than the SAR as it more accurately accounts for CaCO₃ precipitation, and dissolution processes in the soil solution near the soil surface that control the free Ca<sup>2+</sup> concentration. Figure 1 shows the relationship between the EC<sub>w</sub> of the applied irrigation water and the SAR<sub>adj</sub> as it relates to zones of “likely reductions” in infiltration rates (red), “slight to moderate reductions” in infiltration rates (yellow) and “no reductions” in infiltration rates (blue), adapted from Hanson et al., 2006. The threshold value is, therefore, variable and is considered to be the line that separates the “blue” and “yellow” zones on Figure 1. It is very important to note that low EC<sub>w</sub> concentration (i.e., EC<sub>w</sub> < 200 µS/cm) causes a reduction in water infiltration regardless of the SAR. Figure 1 also compares this relationship with various water sources. Note that FKC water falls in the red "severe reduction in infiltration” zone because of its low EC<sub>w</sub> concentration, while water from the CVC or mixed with CVC water falls in the yellow "slight to moderate reduction in infiltration” zone. The addition of gypsum to FKC water increases the EC<sub>w</sub> concentration, moving the point to the right and away from the "severe reduction in infiltration” zone while slightly reducing the SAR.
Calcium-Magnesium Ratio

Calcium nutrition can be problematic under several conditions. Calcium deficiency can occur under low-saline conditions when the concentration of free calcium \( [Ca^{2+}] \) is \(< 1-2\) millimoles/L in the soil solution. Deficiency can also occur under high sodic conditions where \( Ca^{2+} \) precipitates out of the soil solution as it forms \( CaCO_3 \). Due to competition in the plant between calcium and magnesium at the root membrane, calcium nutrition could potentially be compromised when the calcium-magnesium ratio is generally less than 1 (Rhoades, 1992). Table 5 shows the seasonal average calcium-magnesium ratio for various water sources. Note the ratios for both FKC and CVC water are considerably higher than 1, while the ratio at California Aqueduct Check 21 is very close to 1 but will likely increase in the soil solution as the infiltrating water dissolves existing gypsum in the soil from previous amendment use. Therefore, calcium deficiencies, using CVC or Check 21 water or any mixture of the two, are unlikely.
Table 5. Seasonal Average Calcium-Magnesium Ratio for Various Water Sources

<table>
<thead>
<tr>
<th>VALUE</th>
<th>FKC, 3</th>
<th>CVC, 4</th>
<th>INTERMEDIATE 5</th>
<th>CHECK 21, 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average</td>
<td>3.54</td>
<td>4.37</td>
<td>1.55</td>
<td>0.92</td>
</tr>
<tr>
<td>Maximum</td>
<td>6.16</td>
<td>8.24</td>
<td>2.00</td>
<td>1.00</td>
</tr>
<tr>
<td>Minimum</td>
<td>0.17</td>
<td>2.14</td>
<td>1.20</td>
<td>0.77</td>
</tr>
</tbody>
</table>

Note:
Based on molar or equivalent concentrations.

1 March through October period.
3 Sample taken at terminus of FKC.
4 Sample taken at AEWSD CVC, Pumping Plant 6 or 6B Forebay.
5 Weighted average of CVC and Check 21 water quality.

Key
AEWSD = Arvin Edison Water Storage District
Check 21 = Check Structure 21 at milepost 172.40 on the California Aqueduct
CVC = Cross Valley Canal
FKC = Friant-Kern Canal
Intermediate = Water quality representing the average of California Aqueduct Check 21 and Cross Valley Canal water qualities
SAR = sodium adsorption ratio

PH AND BICARBONATE EFFECTS

The pH of both the applied irrigation water and the soil solution are important factors that may affect either the suitability of water for irrigation or its effect on nutrient availability to the crop. And many of the adverse effects of pH are associated with combined high alkalinity (high concentrations of bicarbonate [HCO₃⁻] and carbonate [CO₃²⁻]). In slightly alkaline waters (pH 7-8.3), the alkalinity is from bicarbonate. Only when the pH exceeds 8.3 does carbonate become present. The pH of the water is an indication of the activity of the hydrogen ion. The numerical pH value is expressed on a negative log scale such that a one-unit increase or decrease corresponds to a ten-fold increase or decrease in the hydrogen ion activity. Therefore, a change of soil pH from 6 to 8 corresponds to a hundred-fold decrease in the hydrogen ion activity.

The pH of applied irrigation water can affect irrigation equipment or cause calcite (i.e. lime) deposits on vegetation. Regarding irrigation equipment, the pH is one of several water quality factors than can influence corrosion of galvanized pipes or other metallic parts. The pH can also influence precipitation of calcite (CaCO₃) at the orifices of drip emitters or minisprinklers which will affect the system's overall performance. This can be problematic if alkaline irrigation water, combined with sufficiently high bicarbonate and calcium concentrations, is used over the long term without periodic acid flushes to reduce scale buildup. Calcite precipitation becomes more problematic if the pH of the applied irrigation water exceeds 8.5. In addition, if such water is sprinkler irrigated above the canopy, it can cause unsightly white deposits that form on leaves and fruit. While these deposits typically do not cause harm to the crop, they nonetheless can affect the aesthetic quality. Acid additions to the irrigation water will not only reduce the pH but will reduce the [HCO₃⁻], reducing the potential for CaCO₃ precipitation. Acid additions convert bicarbonate to carbon dioxide (CO₂) gas.

As the applied irrigation water infiltrates the soil, it interacts with the soil minerals. Therefore, the pH of the infiltrating water will change as it interacts with soil minerals, but soils are typically well buffered, as are soils in the FWA service area. Well buffered soils resist large changes in pH in the soil solution. The seasonal average pH of the irrigation water ranges from 7.1 to 8.4 depending upon the mixture of FKC water and California Aqueduct water. Because of the buffering capacity of the soil, this range in applied irrigation water pH will make little impact of the pH of the soil solution.

The pH of the soil solution has a profound influence on plant nutrient availability, nutrient uptake and ion toxicity to plants. The vast majority of soils that are cultivated for crop production around the world fall within the neutral, slightly acid and slightly basic pH range (i.e. pH 6-8). This is the general range where nutrient availability is optimal. However, there are those soils where the pH falls far from this normal range and these,
if not corrected to an adequate range, can pose adverse effects on crops. Soils that are highly acidic (pH < 5.5) or highly alkaline (pH > 8.5) present a spectrum of challenges for the plant including nutrient availability, ion toxicities, and nutrient imbalances influencing the ion relations and nutrition within the plant itself (Läuchli and Grattan, 2012).

Most nutrients are not equally available to plants across the pH spectrum (Epstein and Bloom, 2005). Several mineral nutrients are severely affected in these non-optimal pH soils, particularly calcium, potassium, phosphorus, and iron. The reactions of plants to these nutrient elements under extreme soil pH conditions can affect plant growth, physiological processes and their morphological development (Läuchli and Grattan, 2012). The majority of the soils irrigated with waters from districts within the FWA, however, fall in the slightly alkaline range with the pH in the rootzone between 7.5 and 8.3 (UC Davis Soilweb https://casoilresource.lawr.ucdavis.edu/gmap/). Therefore, these soils are slightly alkaline, based largely on the natural abundance of calcite in the soil, and are at the upper end of the optimal pH range. Depending on the alkalinity of the soil water and [Ca$^{2+}$], some of the Ca$^{2+}$ can precipitate out as CaCO$_3$ which decreases the calcium-magnesium ratio. Intermittent injection of acids in the applied irrigation water will reduce the pH and, consequently, the alkalinity of the water. Not only is this a maintenance measure to reduce calcite buildup on the orifices of drip emitters and minisprinklers, it drops the pH of the water which decreases bicarbonate, increases the [Ca$^{2+}$] and availability of other plant nutrients. Most growers in the San Joaquin Valley have some maintenance, acid-injection program in place. However, in Kern county, this may not be common practice in all districts. Acid applications, the residual gypsum in the soil and periodic applications of additional gypsum, are all a means of providing sufficient free Ca$^{2+}$ in soils in Kern country. Moreover, increasing the [Ca$^{2+}$] in the soil water simultaneously improves the calcium-magnesium ratio.

Sprinkler irrigated fruit and vegetable crops (approximately 20% of studied districts) could be susceptible to formation of white deposits on leaves and fruit, or “white wash,” and reduced marketability if bicarbonate concentrations, or [HCO$_3$], in applied irrigation water are too high (> 1.5 meq/L, leaving a white residue on the crop surface. Bicarbonate concentrations in the California Aqueduct water theoretically could cause “white washing” under sprinkler irrigation, especially during dry and breezy conditions. “White washing” is a concern to some growers and has been seen by growers occasionally in the study area; however, it is not known what the exact cause of the “white washing” was, whether it was from undiluted California Aqueduct water or some other source. Bicarbonate levels of 1.5 meq/L or 92 mg/L and higher may increase formation of white deposits. The seasonal average for [HCO$_3$] of CVC water is 78.5 mg/L. While this concentration is less than 92 mg/L, special management practices may be needed to mitigate or avoid “white wash” impacts during periods of elevated bicarbonate levels. These may include blending with higher quality sources or changing irrigation methods away from sprinklers that wet the foliage (Provost & Pritchard, 2012).

**CORROSION AND DEGRADATION OF MATERIALS**

The comparison of corrosion potential of California Aqueduct water and FKC water from Millerton Lake was performed by Provost & Pritchard in 2012 on several chemical constituents and calculated indices including: pH, Langelier Index, Ryzner Index, EC, resistivity, sulfates, and chlorides. This comparison generally showed that FKC water has a slight tendency to degrade concrete structures by leaching out minerals, but metallic corrosion will be low. Comparatively, California Aqueduct water will have a lower tendency to leach out minerals from concrete, and will have a more corrosive effect on metals, although there is only a slight difference between the two water sources in either case (Provost and Pritchard, 2012).

Materials such as brass, bronze, PVC, polyethylene, and stainless steel usually have a high corrosion tolerance, and therefore would not likely be affected by the exchange of source waters. The forecasted increase in corrosion from using more California Aqueduct water is likely manageable with the use of special coatings and proper selection of new materials and would likely result in minor increase in O&M costs (Provost and Pritchard, 2012).
AGRONOMIC LEACHING REQUIREMENTS

Agronomic leaching is the application of irrigation water in excess of the soil water holding capacity to neutralize the agronomic effects associated with increased salinity and ion toxicity in the crop rootzone. This approach aims to balance concerns related to long-term groundwater quality with a multi-layered assessment of agronomic impacts as a durable solution. The amount of leaching required, referred herein as maintenance leaching, depends upon the sensitivity of the crop to salinity and the irrigation water salinity. The higher the salinity of the applied irrigation water and the more sensitive the crop is to salinity, the greater the amount of leaching is required. This same leaching concept can also be applied to chloride and boron.

LEACHING FRACTION VS LEACHING REQUIREMENT

Often, leaching fraction (LF) and leaching requirement (LR) are used interchangeably. The two, in fact, are different. The LF is defined as the volume of water that drains below the rootzone divided by the volume of water that infiltrates the soil surface (equivalent to applied irrigation water assuming no surface runoff or evaporation). The LF can also be estimated based on the salinity of the applied irrigation water, or \( [EC_w] \), and that of the drainage water, or \( [EC_{dw}] \), where \( LF = \frac{EC_w}{EC_{dw}} \). The crop roots extract water from the rootzone leaving the salts behind. If the crop rootzone is divided in quarters, typically the top quarter uses 40% of the water, the second quarter 30%, third quarter 20% and bottom quarter 10%. Therefore, the salt concentration increases with soil depth. The lower the LF, the more salts accumulate and concentrate at lower depths.

Figure 2 is a representation of this relationship under conventional irrigation. The relationship between irrigation water salinity \( (EC_w) \) and soil salinity \( (EC_e) \) is linear but the slopes of the relationships are dependent upon the LF. The slopes decrease with increasing LF. The higher the LF, the higher the irrigation water salinity can be to maintain the yield of a crop. In Figure 2, note the dashed lines along the y-axis indicating the general salt tolerant categories as the salinity of the applied irrigation water changes.

Key:
- \( dS/m = \text{deciSiemens per meter} \) (1 \( \mu S/cm = 1 \mu \text{mhos/cm} = 1/1,000 \text{dS/m} \))
- \( LF = \text{leaching fraction} \)

Figure 2. Relationship Between Soil Salinity \( (EC_e) \) and Salinity of the Applied Irrigation Water \( (EC_w) \) under a Series of Steady-State Leaching Fractions (0.05 to 0.80) (from Ayers and Westcot, 1985)
The LF concept is attractive in that it allows predictions of average rootzone salinity (EC\textsubscript{e}) conditions from the applied irrigation water EC (EC\textsubscript{w}) and assumed LF. Knowing the scientifically determined salinity threshold value (EC\textsubscript{et}) for a particular crop, one can use this relationship to determine the maximum irrigation water salinity (EC\textsubscript{w}) for a given LF. The relationship between EC\textsubscript{w}, EC\textsubscript{e}, and LF also depends on irrigation management. That is, EC\textsubscript{e} = Concentration Factor (F\textsubscript{c}) \times EC\textsubscript{w} where ‘F\textsubscript{c}’ depends not only on the LF but the type of irrigation method. Applicable F\textsubscript{c} values for conventional irrigation methods such as furrow or flood, and high frequency irrigation methods, such as drip and minisprinklers, are provided in Table 6.

### Table 6. Concentration Factor Values for Conventional and High Frequency Irrigation (adapted from Suarez, 2012)

<table>
<thead>
<tr>
<th>LEACHING FRACTION (LF)</th>
<th>CONCENTRATION FACTOR (F\textsubscript{c})</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Conventional Irrigation</strong></td>
</tr>
<tr>
<td>0.05</td>
<td>2.79</td>
</tr>
<tr>
<td>0.10</td>
<td>1.88</td>
</tr>
<tr>
<td>0.20</td>
<td>1.29</td>
</tr>
<tr>
<td>0.30</td>
<td>1.03</td>
</tr>
<tr>
<td>0.40</td>
<td>0.87</td>
</tr>
<tr>
<td>0.50</td>
<td>0.77</td>
</tr>
</tbody>
</table>

The difference in F\textsubscript{c} values between conventional and high frequency irrigation is largely based on how crop roots respond to the salinity in the rootzone. Under conventional irrigation, crops typically respond to the average rootzone salinity (i.e. the seasonal average of the four rootzone quarters of salinity). Under high frequency irrigation, crops respond to the water uptake weighted salinity (i.e. the salinity in the top quarter is weighted 40 percent, salinity in the second quarter is weighted 30 percent, and so on). Because the salinity in the top quarter is lower where evapotranspiration (ET) is higher and higher in bottom where ET is lower, the average rootzone salinity is lower under high frequency irrigation.

The LR, on the other hand, is the lowest LF needed to sustain maximum yield given the applied irrigation water salinity concentration, or [EC\textsubscript{w}], and yield threshold for the given crop. In other words, it is the minimum leaching needed, given the crop type and water quality, to maintain the salinity (or chloride or boron), at the maximum rootzone concentration in the rootzone that the crop can tolerate. Any increase in rootzone concentration above this maximum level will cause injury or yield reductions. LR is an attractive concept because, given an irrigation water quality and crop sensitivity, the minimum leaching needed to sustain the rootzone salinity EC\textsubscript{e}, rootzone chloride (Cl\textsubscript{e}), or rootzone boron (B\textsubscript{e}) at levels that would avoid or reduce damage or yield losses can be estimated.

LR can be estimated using the following equation (Rhoades and Merrill, 1976; Ayers and Westcot, 1985):

\[
LR\% = \frac{EC\textsubscript{w}}{5(EC\textsubscript{et}) - EC\textsubscript{w}} \times 100
\]

EC\textsubscript{w} = Electrical conductivity of irrigation water
EC\textsubscript{et} = Soil salinity threshold for a given crop

Note that the LR relationship can apply to chloride and boron by substituting their respective irrigation water concentrations (i.e. Cl\textsubscript{w} or B\textsubscript{w}) and their threshold values (Cl\textsubscript{et} or B\textsubscript{et}). The LR equation assumes that crops respond to an average rootzone salinity created by a 40-30-20-10% root water extraction pattern, similar to LF predictions using conventional irrigation. The difference is that LR predicts the minimal LF to achieve maximal yields whereas the LF approach assumes an LF first, then predicts what the EC\textsubscript{e} will be given the EC\textsubscript{w} of the irrigation water. Both are similar but solve the problem from different directions.
LIMITATIONS TO THE STEADY-STATE LEACHING CONCEPT

The leaching fraction or requirement is an attractive concept but has limitations. First, the leaching concept assumes steady-state conditions and thus has no time element. Therefore, there is no accounting for how long leaching will take, which will differ depending upon the permeability of the soils. Second, the evapotranspiration (ET) of the crop is assumed to be independent of the average rootzone salinity, but it is not (Letey and Feng, 2007). A salt-stressed crop will use less water than a non-stressed crop. Consequently, crop ET will be reduced, and leaching, with the same quantity of applied irrigation water, will be increased. And third, in drip irrigated fields, actual LFs are difficult to quantify because LF, soil salinity, soil water content, and root density all vary with distance and depth from the drip lines.

In light of these limitations, recent studies have shown that the ECw and ECe relations described by Ayers and Westcot (1985), which are based on steady-state LF conditions, tend to be too conservative and overestimate soil salinity and, therefore, overestimate yield losses in most cases (Corwin and Grattan, 2018; Letey et al., 2011). Transient-state models may more accurately predict soil salinity, as well as soil chloride, sodium and boron, but they are more complicated and require many more site-specific inputs and assumptions. Therefore, transient models are still too cumbersome and time consuming to replace steady-state models.

The LF and LR concepts are both steady-state, so they assume the amount of irrigation is not limiting. The amount of water needed for irrigation can be estimated as:

\[ AW = \frac{ET}{1 - LR} \]

\( AW \) = applied water
\( ET \) = evapotranspiration or crop water requirement
\( LR \) = leaching requirement

The units for applied water (AW) and ET or crop requirement are typically depths of water (i.e. inches or millimeters). But in many cases, the amount of water is limiting and therefore crops can be under-irrigated and therefore not achieve the required leaching. In this case, the salts in the crop rootzone will increase over time. At some point, depending upon the salinity of the imported water and crop sensitivity, the salt content (or chloride or boron) can exceed the threshold level. Because the threshold values are based on seasonal averages, exceedances above the threshold are allowed to some degree without experiencing a reduction in yield. For example, if the average Cl-e was 100 mg/L for the first 2/3 the season and then reached 200 mg/L for the last 1/3 of the season due to insufficient leaching, almonds on “Nemaguard” rootstock would not be expected to be damaged because the seasonal average Cl-e would be 133 mg/L given the Cl-e threshold is 150 mg/L. Nevertheless, if the required leaching is not achieved, reclamation leaching would be required. Similarly, if the preseason soil salinity is over 150 mg/L and little to no leaching is applied during the season, injury would be expected to develop on almonds on “Nemaguard” rootstock. Therefore, the LR values for various crops and salinities are based on soils where the maintenance leaching fraction is achieved each irrigation. If the pre-existing soil salinity is initially high, then the soil is not at steady-state.

DIFFERENCE BETWEEN MAINTENANCE LEACHING AND RECLAMATION LEACHING

There is a distinct difference between maintenance leaching and reclamation leaching. Maintenance leaching occurs during each irrigation by applying more irrigation water than the soil can hold. This is the leaching fraction or requirement concept described above. Therefore, the AW is higher than the ET to accommodate the necessary leaching (see equation above). Reclamation leaching, on the other hand, occurs at the end of the irrigation season by applying excess irrigation water to flush the salts from the crop rootzone. Ideally, reclamation leaching would not be required if correct maintenance leaching is achieved each irrigation during the irrigation season. However, because some fields may not get the necessary leaching, salts can accumulate, and fields may require reclamation leaching at some time. In addition, low pressure systems such as drip and mini-sprinkler systems produce characteristic salt accumulation patterns in fields, even with sufficient downward leaching. Whether salts are building up in the rootzone or between drippers or
minisprinklers, reclamation leaching is a valuable preventative measure from time to time at the end of the irrigation season.

At the end of the irrigation season, salt can be removed by sprinkler irrigation (i.e equivalent to intermittent ponding). Figure 3 shows the extent of leaching needed to address rootzone salinity. For example, if the average rootzone salinity (ECe) at the end of the season is 3000 μS/cm and the goal is to reduce the salinity in the soil down to 600 μS/cm the salinity needs to be reduced to 600/3000 = 0.2 (y-axis) or 20% of what it was before leaching. Then the amount of sprinkler irrigation water to apply is 0.5 ft (x-axis) for every foot of soil to reclaim. If the goal is to reduce the top 2 feet, then 0.5 x 2ft = 1ft of water would be needed. This assumes the combined rainfall and applied reclamation leaching water needed.

![Figure 3. Reclamation Leaching Function under Sprinkler Irrigation or Intermittent Ponding (Ayers and Westcot, 1985).](image)

The amount of reclamation leaching can be reduced by the amount of effective rainfall. To take advantage of rainfall, reclamation leaching should ideally take place after the rainfall season but before spring budding and leaf out begins, typically from October/November through March.

LEACHING AND NITROGEN MANAGEMENT

It is also important to address nitrogen management strategies combined with the salt leaching strategies. Unlike salts, nitrogen is very dynamic in the rootzone as it undergoes form changes from organic pools to inorganic fractions (primarily nitrate [NO₃⁻] and ammonium [NH₄⁺]). Ammonium, and particularly nitrate, are the forms primarily taken up by plants. Nitrate, being an anion, is relatively mobile in soils and is highly susceptible to leaching below the rootzone. Once nitrate leaches below the rootzone, chemical transformations are less likely to occur, and nitrate commonly continues leaching downward and eventually ends up in the aquifers. A 2002 study conducted by the Lawrence Livermore National Laboratory concluded that nitrate contamination in groundwater is “the number-one contaminant threat to California’s drinking water supply” (LLNL 2002).

Rootzone salinity control and nitrogen management is a conflicting problem. It is necessary to leach salt from the rootzone to avoid damage from salinity or ion toxicity, but nitrates will unavoidably be leaching below the
rootzone as well. If soil salinity is low at the beginning of the irrigation season (see reclamation versus maintenance leaching), then leaching at less than the critical LR is possible to avoid salt damage. Then, salinity in the profile will steadily build up over the season while soil nitrogen will be depleted due to crop uptake. At the end of the irrigation season, salinity will be the highest, and nitrate will be the lowest. Therefore, reclamation leaching can be implemented at the end of the irrigation season, and the process cycle repeats itself.

**MITIGATION LEACHING REQUIREMENTS**

**ESTIMATING LEACHING REQUIREMENTS FOR MOST SENSITIVE CROPS**

The most sensitive crops in the Friant Division were used for this analysis. Crops selected were based on their varied sensitivities to salinity, chloride, and boron. By using the most sensitive crops, all crops with higher tolerances should also be protected. The most salt-sensitive crops, or those with the lowest soil salinity threshold (EC_{et}), are beans, carrots, onions (seed), melons, and strawberries. All have an EC_{et} of 1000 μS/cm. For chloride, the most sensitive crops are almonds and other stone fruits on “Nemaguard” rootstock. The threshold Cl_{et} is estimated to be 150 mg/L. The relationship between boron in the applied irrigation water and the saturated soil paste is more complicated because of boron’s high affinity to adsorb onto the soil. Irrigation water with higher boron concentrations than predicted can be used until the boron saturates the soil adsorption sites. Because of this complexity, Ayers and Westcot (1985) concluded that the “...maximum concentration (of boron) in the irrigation water are approximately equal to these values (boron tolerance reported based on soil water bases) or slightly less,” suggesting that applied irrigation water tolerances would be 0.5 – 0.75 mg/L which would protect the most sensitive crops. However, over the long term (more than several years), boron will behave similarly to salts and chloride (D. Suarez, US Salinity Laboratory, personal communication). With the boron threshold for soil water ranging from 0.5 – 0.75 mg/L, the B_{et} is equivalent to half of the soil water concentration, or 0.25 – 0.375 mg/L. For more information on conversions from saturated soil paste to soil water concentrations, see Ayers and Westcot (1985). To be conservative, and based on the above tree and vine crop sensitivities, the B_{w} threshold is assumed to be 0.25 mg/L.

Table 7 shows the acreage and percentage of sensitive crops for representative water districts, and sensitivities to boron, chloride, and EC within each representative water district.

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1 It is important to note that most ‘threshold’ values for chloride and boron reported in literature (e.g. Grieve et al., 2012) are based on the soil water concentration. The saturated soil paste concentration (i.e. Cl_{e} or B_{e}) for most mineral soils is about half this value over the long-term (Ayers and Westcot 1985).
Table 7. Percentage and Area of Sensitive Crop Types within Representative Water Districts

<table>
<thead>
<tr>
<th>CROP TYPE</th>
<th>WATER DISTRICT</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td></td>
<td>AEWSD</td>
<td>DEID</td>
<td>KTWD</td>
<td>SID</td>
<td>SSJMUD</td>
<td>SWID</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>%</td>
<td>Acres</td>
<td>%</td>
<td>Acres</td>
<td>%</td>
<td>Acres</td>
<td>%</td>
<td>Acres</td>
<td>%</td>
<td>Acres</td>
<td>%</td>
</tr>
<tr>
<td>Boron Sensitive&lt;sup&gt;5&lt;/sup&gt;</td>
<td>15%</td>
<td>18,883</td>
<td>5%</td>
<td>2,842</td>
<td>30%</td>
<td>5,969</td>
<td>6%</td>
<td>1,211</td>
<td>8%</td>
<td>4,629</td>
<td>1%</td>
</tr>
<tr>
<td>Berries&lt;sup&gt;1&lt;/sup&gt;</td>
<td>1%</td>
<td>761</td>
<td>2%</td>
<td>873</td>
<td>1%</td>
<td>200</td>
<td>n/a</td>
<td></td>
<td>&lt;1%</td>
<td>63</td>
<td>n/a</td>
</tr>
<tr>
<td>Cherries</td>
<td>2%</td>
<td>2,196</td>
<td>&lt;1%</td>
<td>228</td>
<td>1%</td>
<td>160</td>
<td>&lt;1%</td>
<td>22</td>
<td>&lt;1%</td>
<td>211</td>
<td>1%</td>
</tr>
<tr>
<td>Citrus</td>
<td>11%</td>
<td>15,024</td>
<td>2%</td>
<td>1,301</td>
<td>28%</td>
<td>5,609</td>
<td>4%</td>
<td>825</td>
<td>7%</td>
<td>4,355</td>
<td>n/a</td>
</tr>
<tr>
<td>Stone Fruits&lt;sup&gt;4&lt;/sup&gt;</td>
<td>1%</td>
<td>902</td>
<td>1%</td>
<td>440</td>
<td>n/a</td>
<td></td>
<td>2%</td>
<td>364</td>
<td>n/a</td>
<td></td>
<td>n/a</td>
</tr>
<tr>
<td>Chloride Sensitive&lt;sup&gt;6&lt;/sup&gt;</td>
<td>6%</td>
<td>7,593</td>
<td>22%</td>
<td>12,399</td>
<td>5%</td>
<td>1,040</td>
<td>17%</td>
<td>3,366</td>
<td>22%</td>
<td>13,577</td>
<td>56%</td>
</tr>
<tr>
<td>Almonds (Nemaguard rootstock)</td>
<td>6%</td>
<td>7,593</td>
<td>22%</td>
<td>12,399</td>
<td>5%</td>
<td>1,040</td>
<td>17%</td>
<td>3,366</td>
<td>22%</td>
<td>13,577</td>
<td>56%</td>
</tr>
<tr>
<td>EC Sensitive&lt;sup&gt;7&lt;/sup&gt;</td>
<td>7%</td>
<td>8,490</td>
<td>&lt;1%</td>
<td>175</td>
<td>n/a</td>
<td>&lt;1%</td>
<td>50</td>
<td>n/a</td>
<td>1%</td>
<td>375</td>
<td>2%</td>
</tr>
<tr>
<td>Carrots</td>
<td>3%</td>
<td>3,748</td>
<td>&lt;1%</td>
<td>100</td>
<td>n/a</td>
<td>n/a</td>
<td>&lt;1%</td>
<td>148</td>
<td>2%</td>
<td>784</td>
<td></td>
</tr>
<tr>
<td>Melons&lt;sup&gt;2&lt;/sup&gt;</td>
<td>1%</td>
<td>777</td>
<td>&lt;1%</td>
<td>74</td>
<td>n/a</td>
<td>&lt;1%</td>
<td>50</td>
<td>n/a</td>
<td>&lt;1%</td>
<td>75</td>
<td></td>
</tr>
<tr>
<td>Onions&lt;sup&gt;3&lt;/sup&gt;</td>
<td>3%</td>
<td>3,961</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>&lt;1%</td>
<td>228</td>
<td>&lt;1%</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Strawberries</td>
<td>&lt;1%</td>
<td>4</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>&lt;1%</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Data compiled from California Department of Water Resources Land Use Viewer (2017) developed by LandIQ using 2014 land use data. Districts provided updates to 2017 land use data where appropriate. DEID data was provided by the District, and data gaps were filled with LandIQ data.

Notes:

- Grape Crops in DEID take up 43% (26,443 ac) of the District’s land area.
- *n/a* indicates that there is zero amount of a crop type in a district.
- <sup>1</sup> Data Source lists Berries as “Bush Berries”
- <sup>2</sup> Data Source groups Melons with Squash and Cucumbers
- <sup>3</sup> Data Source groups Onions with Garlic
- <sup>4</sup> Stone Fruits include Apricots, Nectarines, Peaches, Plums, and Prunes
- <sup>5</sup> Boron Sensitive Crops include Berries, Citrus, and Stone Fruits
- <sup>6</sup> Chloride Sensitive Crops include Almonds
- <sup>7</sup> EC Sensitive Crops include Carrots, Melons, Onions, and Strawberries

Key:

- % = percentage
- AEWSD = Arvin-Edison Water Storage District
- DEID = Delano-Earlimart Irrigation District
- KTWD = Kern-Tulare Water District
- n/a = not applicable
- SID = Saucelito Irrigation District
- SSJMUD = South San Joaquin Municipal Utility District
- SWID = Shafter-Wasco Irrigation District
DEVELOPING MITIGATION LEACHING CURVES

This section describes quantification of mitigation based on leaching requirements for sensitive crops. This approach does not directly address the physical characteristics or dynamic nature of the rootzone, but rather is specific to sensitive crop types grown in the region and implementing sufficient leaching volumes to prevent crop injury. In addition, the volumetric mitigation quantified through this approach is not specific to a water district but is representative of all crops grown in the Friant Division.

For salinity, \( EC_{st} \) values were used to calculate LR values, as presented in Table 8 in percentages. For chloride or boron the same LR equation is used except irrigation water concentrations (i.e. \( Cl_{w} \) and \( B_{w} \)) in mg/L are used in place of \( EC_{w} \) and respective threshold \( Cl_{e} \) and \( B_{e} \) are used in place of \( EC_{et} \). At each location, the quantified LR by water quality constituent is based on the most stringent LR, which assumes all water is applied to the most sensitive crop. Analysis shows a long-term LR between 5.2 and 19 percent, using the average, seasonal statistics for EC, chloride, and boron concentrations.

Table 8. Leaching Requirements for Various Sensitive Crops by Water Source and Water Quality Constituent

<table>
<thead>
<tr>
<th>MOST SENSITIVE CROP</th>
<th>CVC</th>
<th>INTERMEDIATE</th>
<th>CHECK 21</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>EC</td>
<td>Cl(^{-})</td>
<td>B</td>
</tr>
<tr>
<td>Carrots, onions, melons, strawberries</td>
<td>6.7%</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Almonds (Nemaguard rootstock)</td>
<td>-</td>
<td>5.2%</td>
<td>-</td>
</tr>
<tr>
<td>Stone fruits, citrus, berries</td>
<td>-</td>
<td>-</td>
<td>8.0%</td>
</tr>
</tbody>
</table>

Key:
- B = boron
- Check 21 = Check Structure 21 at milepost 172.40 on the California Aqueduct
- \( Cl^{-} \) = chloride
- CVC = Cross Valley Canal
- \( EC \) = electrical conductivity
- Intermediate = Water quality representing the average of California Aqueduct Check 21 and Cross Valley Canal water qualities

Figures 4 through 6 show mitigation rating curves based on LR percentages, source water quality, and constituents of concern. Each mitigation rating curve was extended to show the maximum observed concentration from historical water quality data for both CVC and California Aqueduct Check 21 sources.

The LR percentages presented in Table 8 and Figures 4 through 6 represent quantified volumetric mitigation that would be applied as maintenance leaching. Maintenance leaching occurs at each irrigation by applying more water than the soil can hold, or in other words, the applied irrigation water is more than the crop requirement to accommodate the necessary leaching. The quantified LR assumes long-term steady-state conditions and does not account for leaching from rain or end-of-season reclamation practices. Any rain or end-of-season leaching will decrease the presented values.

The quantified LR assumes mitigation water is delivered and applied at the same time as surface water delivery is taken. In addition, it assumes mitigation water is of the same water quality as the surface water delivery. Therefore, mitigation is only quantified for water of the same imported quality and not for both reverse flow pump-back and Millerton Lake supplies. If maintenance leaching practices are followed, reclamation leaching is unnecessary, except for in driest of years when surface supply does not meet irrigation demand or to leach salts that have accumulated between drip emitters and mini sprinklers. Using the most stringent LR, it is assumed all mitigation water is applied to the most sensitive crop.
Key:

Check 21 = California Aqueduct Check 21
CVC = Cross Valley Canal
EC = electrical conductivity
μS/cm = microsiemens per centimeter (1 μS/cm = 1 μmhos/cm = 1/1,000 dS/m)
Intermediate = Water quality representing the average of California Aqueduct Check 21 and Cross Valley Canal water qualities

Figure 4. Leaching Requirement for Electrical Conductivity

Key:

Check 21 = California Aqueduct Check 21
CVC = Cross Valley Canal
EC = electrical conductivity
Intermediate = Water quality representing the average of California Aqueduct Check 21 and Cross Valley Canal water qualities
mg/L = milligrams per liter

Figure 5. Leaching Requirement for Chloride
Leaching Requirement Normalization

In order to best understand the LR relationships amongst EC, chloride, and boron and to confirm the dominant constituent trend, individual rating curves were normalized to an EC concentration scale. The EC concentration was used as it can be easily measured in real-time. Figure 7 shows the stacked, normalized mitigation rating curves for all three constituents of concern. Boron is the dominant or driving constituent and has the highest LR, regardless of source water quality. The required leaching based on that curve would be sufficient to prevent crop injury due to increased EC or chloride concentrations in applied irrigation water, and, therefore, the boron curve is the proposed mitigation rating curve for the Water Quality Mitigation Ledger (Figure 8). The method for normalizing each constituent curve is described below.
Normalization Method

As the three constituent curves have differing concentration scales and they do not show direct correlations to each other, the constituents were normalized to a common scale using the below equation.

$$X_{new} = \frac{X - X_{min}}{X_{max} - X_{min}}$$
In the equation, X represents the constituent concentration for EC, chloride, or boron. $X_{\text{min}}$ is the minimum average, seasonal, observed concentration for a given constituent from either California Aqueduct Check 21 or CVC water quality data. The maximum observed concentration corresponded with varying leaching requirements for each of the constituents. To ensure that all constituents were normalized to the same scale and the full range of possible constituent concentrations was considered beyond the highest observed concentration for California Aqueduct Check 21 water, $X_{\text{max}}$ represents the constituent concentration corresponding to a 25 percent LR. Figure 9 displays the normalized curves, and Table 9 presents the normalized data.

\[
EC = X_{\text{norm}}(EC_{\text{max}} - EC_{\text{min}}) + EC_{\text{min}}
\]

**Figure 9. Normalized Leaching Requirement curves for Electrical Conductivity, Chloride, and Boron**

Normalized concentration values were then converted back to EC using the equation below, where $X_{\text{norm}}$ represents the normalized concentration for chloride or boron. LR curves were then replotted using an EC scale (Figure 7).
Table 9. Constituent Normalization

<table>
<thead>
<tr>
<th>SOURCE WATER</th>
<th>ELECTRICAL CONDUCTIVITY</th>
<th>CHLORIDE</th>
<th>BORON</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Observed Concentration (μS/cm)</td>
<td>Normalized Value</td>
<td>Leaching Requirement</td>
</tr>
<tr>
<td>CVC</td>
<td>315</td>
<td>0.06</td>
<td>6.7%</td>
</tr>
<tr>
<td>Intermediate</td>
<td>397</td>
<td>0.17</td>
<td>8.6%</td>
</tr>
<tr>
<td>Check 21</td>
<td>479</td>
<td>0.29</td>
<td>10.6%</td>
</tr>
<tr>
<td>Maximum Observed</td>
<td>805</td>
<td>0.73</td>
<td>19.2%</td>
</tr>
<tr>
<td>Maximum normalization (25% Leaching Requirement)</td>
<td>1000</td>
<td>1.00</td>
<td>25.0%</td>
</tr>
</tbody>
</table>

Key:
CVC = Cross Valley Canal
μS/cm = microsiemens per centimeter
mg/L = milligrams per liter
APPLIED AGRONOMIC THRESHOLDS

The Policy includes maximum water quality thresholds for the FKC. Although the mitigation rating curve quantifies mitigation water to account for appropriate maintenance leaching, FKC water quality thresholds for EC, chloride, boron, and SAR were developed and are proposed herein. These thresholds aim to (1) balance supply reliability, water quality concerns, and agricultural practices, such as regulated deficit irrigation (RDI); and (2) ensure that the EC, Cl, or B limits are not exceeded for the most prevalent and sensitive crops in the Friant Division. The thresholds are specific to three irrigation periods that correspond to the growing season and agricultural management practices during the year:

- Period one represents the beginning of the growing season (March 1 – June 30);
- Period 2 represents timing of hull split and the duration of RDI practices in the Friant Division (July 1 – August 31); and
- Period 3 is inclusive of the remainder of the growing season and contract year (September 1 – February 28).

Table 10 shows the established water quality constituent thresholds for each period as defined in the Policy. The threshold variations in Period 3, shown as Periods 3a and 3b, are described in more detail in the Threshold Flexibility subsection below.

Sections below describe methods applied to account for annual RDI practices; development of water quality thresholds, including thresholds for RDI; and adjustments to water quality thresholds to accommodate flexibility for water management within the Friant Division.
Table 10. Friant-Kern Canal In-Prism Water Quality Thresholds

<table>
<thead>
<tr>
<th>Period</th>
<th>Salinity Threshold expressed as EC (µS/cm)</th>
<th>Chloride Threshold (mg/L)</th>
<th>Boron Threshold (mg/L)¹</th>
<th>SAR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Period 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>March 1 – June 30</td>
<td>1,000²</td>
<td>102³</td>
<td>0.4</td>
<td>3</td>
</tr>
<tr>
<td>Period 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>July 1 – August 31</td>
<td>500⁴</td>
<td>55⁴</td>
<td>0.4</td>
<td>3</td>
</tr>
<tr>
<td>Period 3a</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>September 1 – February 28</td>
<td>1,000²</td>
<td>102³</td>
<td>0.4</td>
<td>3</td>
</tr>
<tr>
<td>Period 3b</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>September 1 – February 28</td>
<td>1,000²</td>
<td>123⁵</td>
<td>0.4</td>
<td>3</td>
</tr>
</tbody>
</table>

Notes:


For additional detail, see Attachment A - Agronomic Impacts and Mitigation.

When Friant-Kern Canal in-prism water quality conditions in this table are exceeded, Friant Division Long-Term Contractors will work together to seek 1:1, unleveraged, and cost-neutral exchanges for pump-in and pump-back programs. This does not apply to spot-market or third-party exchanges.

¹ Grapes are used as a representative crop for boron sensitivity and are prevalent in the Friant Division. They are used as a surrogate for many other sensitive crop types such as apricots, figs, and grapefruits. Threshold assumes conventional irrigation with minimum 20 percent leaching fraction applied.

² Threshold assumes minimum of 20 percent leaching requirement applied and adjusted to account for regulated deficit irrigation during almond hull split period (July 1 – August 31) in order to not exceed maximum ECₜₐ. Almonds on Nemaguard rootstock are used as a representative crop for salinity sensitivity and are prevalent in the Friant Division. They are used as a surrogate for many other sensitive crop types such as apples, cherries, pears, pistachios, and walnuts.

³ Threshold assumes minimum of 20 percent leaching requirement applied and then adjusted to account for regulated deficit irrigation during almond hull split period (July 1 – August 31) in order to not exceed maximum Clₑₜ. Almonds on Nemaguard rootstock used as a representative crop for chloride sensitivity. They are used as a surrogate for other sensitive crops including cherries, pistachios, and walnuts.

⁴ Threshold applies to almond hull split period when regulated deficit irrigation is applied to avoid hull rot. This threshold is used assuming irrigation applications are reduced to 50 percent of the tree water requirement and subsequently thresholds applied for the remainder of the year have been adjusted to account for additional salt accumulation. This threshold was developed with consideration of existing program operations, historical water quality data, and absolute water quality thresholds.

⁵ If the measured average chloride concentration in Period 1 (March 1 – June 30) is less than or equal to 70 mg/L, the allowable chloride threshold for Period 3 (September 1 – February 28) is increased to 123 mg/L.

Key:

µS/cm = microsiemens per centimeter (1 µS/cm = 1 µmhos/cm = 1/1,000 dS/m)
ASCE = American Society of Civil Engineers
Clₑₜ = maximum chloride threshold of the saturated soil paste
EC = electrical conductivity of applied water
ECₑₜ = Soil salinity threshold for a given crop
FAO = Food and Agriculture Organization of the United Nations
Friant Division = Friant Division of the Central Valley Project
mg/L = milligrams per liter
SAR = sodium adsorption ratio
TDS = total dissolved solids

REGULATED DEFICIT IRRIGATION

This section describes methods applied to account for annual RDI practices in the Friant Division for EC and chloride agronomic thresholds, specific to almonds. Note, grapes may also be deficit irrigated during the blooming period; however, the deficit irrigation period for grapes is not aligned with that of almonds, and grapes are most prone to boron toxicities. Consequently, a similar RDI analysis and threshold adjustment is unnecessary for grapes. See Boron Thresholds subsection in Water Quality Thresholds section for additional discussion on applied boron thresholds for grapes in the Friant Division.
Hull Rot Control

Hull rot is problematic in almond orchards in the San Joaquin Valley, and trees are particularly sensitive during the hull split period. Hull split is where 1 percent of the almonds exhibit split, and it typically lasts one to two weeks. The initiation of hull split depends on the almond variety, weather conditions, and tree stress. Although variety has the largest influence on hull-split timing, the temperature 90 days after flowering also affects the hull split initiation. Unseasonably cool temperatures delay hull split while unseasonably warm weather accelerates it.

Hull rot occurs due to infestation by one of two types of fungi, *Monilinia fructicola* or *Rhizopus stolonifera* (Holtz, 2009). Some almond varieties, particularly Nonpareil and Monterey, are more susceptible to fungal attack than are other varieties. High nitrogen application to an orchard combined with full irrigation, or irrigation to completely meet tree ET demands, at the time of hull split can make trees considerably more vulnerable to hull rot.

Hull rot can be largely controlled through a combination of nitrogen management, water management, and antifungal sprays. It is best controlled by RDI practices. A 2001 study showed that by cutting back irrigation to 50 percent of the trees’ water requirements between June 1 to July 31 (70 percent regulated) or July 1 to July 15 (85 percent regulated), hull rot was substantially reduced as evidenced by fewer dead leaf clusters and fewer dead spurs and branches (Teviotdale et al., 2001). Such mild to moderate water stress results in drier hull conditions, making trees less vulnerable to fungal attack. Many almond growers in the San Joaquin Valley have adopted RDI practices to help synchronize hull split timing and reduce potential for hull rot. To monitor the degree of tree stress, these growers have implemented the University of California recommendation of trying to maintain a stem water potential between -14 to -16 bars using pressure chambers by drying down the soil rootzone (B. Sanden, Personal communication, April 5-6, 2020). The more negative the number, the more stress the tree experiences. It could take between one to six weeks to achieve this stress level, depending on soil type and irrigation systems (B. Lampinen, personal communication, April 7, 2020). Growers should take care to not to stress trees too much because that could compromise kernel size as kernels continue to grow at the onset of hull split (Doll and Shackel, 2015). After almond harvest, irrigation is critical to maximize floral bud development for the subsequent season.

During the RDI period when there is no effective leaching, irrigation application is reduced to 50 percent of the tree water requirement, and some additional salts and chlorides accumulate in the rootzone. Absent leaching, the steady-state model breaks down because the salt content in the applied water would need to be zero to maintain the same rootzone salinity. In this situation, preseason irrigation management should target an adjusted soil salinity to maintain the appropriate soil salinity thresholds and avoid crop injury.

Regulated Deficit Irrigation Analysis

The RDI analysis applied a predictive model based on timing of flowering to estimate hull split for various types of almond varieties in different parts of the Central Valley (UC Fruit & Nut Research & Information Center, 2020). From the model and historical California Irrigation Management Information System (CIMIS) data from the AEWSD weather station, hull split was determined to typically initiate around the end of June or beginning of July and, depending upon the variety, continue through mid-August (B. Sanden, personal communication, April 6, 2020). To account for potential variances in hull split initiation in the Friant Division, an 8-week period (July 1 to August 31) was assumed for this RDI analysis. Determination of water quality thresholds during the RDI practices period, or Period 2, also considered effective rootzone depth, applied irrigation water quality, soil capacity, and irrigation requirements. The RDI analysis is considered to be conservative because: (1) rainfall was not considered; (2) surface irrigation was assumed, despite the fact that crops under high frequency drip irrigation (typical for most water districts in the Friant Division) are able to tolerate higher salinity for the same assumed LF; and (3) steady-state models typically overestimate rootzone salinity (Corwin and Grattan, 2018).

The RDI analysis was completed for both EC and chloride. Salt accumulation was quantified as a percentage increase, and then rootzone and applied irrigation water thresholds (assuming 20 percent maintenance leaching) were adjusted to maintain maximum EC_{et} or Cl_{et} through the season. Assuming steady-state
leaching, the analysis targeted maintenance of rootzone salinity at soil salinity thresholds of 150 mg/L for chloride, and 1,500 μS/cm for EC, resulting in adjustments to Cl\textsubscript{w} and EC\textsubscript{w} thresholds.

The RDI calculation assumed the effective rootzone to be between three and five feet (UC Almond Rootzone Workgroup, 2015). Soil was considered to be at field capacity meaning that volumetric soil moisture content was 25 percent, based on monthly average ET or irrigation water requirements for mature almonds in Kern County during months of July and August, 9.5 inches and 8.8 inches, respectively (Sanden, personal communication, April 6, 2020; Goldhamer 2012). The RDI calculation included soil water concentration thresholds of 300 mg/L for Cl\textsubscript{sw}, and 3,000 μS/cm for EC\textsubscript{sw}, or twice that of the thresholds expressed on a saturated soil paste basis.

During the RDI period, water was assumed to be applied at 50 percent ET\textsubscript{c}. The total amount of irrigation water required for 100 percent irrigation application, in inches, was calculated but then halved to account for 50 percent deficit irrigation. The amount of irrigation water during RDI periods was then multiplied by the irrigation water concentrations of salt and chloride to determine the percentage increase above the salt and chloride concentrations in the rootzone. Calculating the percentage increase of chloride in the rootzone meant first determining irrigation water and soil water amounts.

For example, 50 percent of the total ET for July and August was 9.1 inches, and the total water in the effective rootzone was 15 inches (rootzone depth (5 ft, or 60 inches) * 25 percent water content = 1.25 feet, or 15 inches). The 15 inches of soil water had 300 mg/L chloride at the beginning of the RDI period. After 9.1 inches of water was applied, adding salts to the soil water in the rootzone, the irrigation water concentration was 55 mg/L. The percentage of additional salt was determined by calculating the ratio of the salt added in the deficit irrigation water to that in the soil water, $(9.1 \text{ inches} \times 55 \text{ mg/L}) / (15 \text{ inches} \times 300 \text{ mg/L}) = 11$ percent. If the salt level in the rootzone remained at critical soil threshold levels at the end of the RDI period, the Cl\textsubscript{w} at the beginning of RDI period would have needed to be proportionally lower than the critical soil salinity threshold of 150 mg/L, such that the 150 mg/L threshold concentration would be achieved at the end of the season. Thus, the Cl\textsubscript{et} is reduced to 122 mg/L and the corresponding Cl\textsubscript{w} becomes 102 mg/L.

**WATER QUALITY THRESHOLDS**

This section presents the RDI analysis-based chloride and EC thresholds, boron thresholds, and adjustments to water quality thresholds to provide water management flexibility in the Friant Division.

**Chloride and Electrical Conductivity Thresholds**

Tables 11a and 11b show the RDI analysis for a variety of applied irrigation water qualities for chloride and EC, respectively. In consideration of historical water quality data representative of Kern-Fan or CVC programs that currently introduce water into the FKC, as well as temporal water quality trends, an applied irrigation water threshold for the RDI period was selected to be 55 mg/L Cl\textsubscript{w}. The Cl\textsubscript{w} value of 55 mg/L during the RDI period correlated to an adjusted Cl\textsubscript{w} of 102 mg/L for the remainder of the year, assuming a three-foot (36 inch) effective rootzone – a conservative assumption as the effective rootzone is assumed to be three to five feet (Table 12a).

The same logic described above for Cl\textsubscript{w} thresholds was applied to determine RDI EC\textsubscript{w} and adjusted EC\textsubscript{w} thresholds. The chloride threshold for the RDI period (55 mg/L) was approximately 49 percent greater than the average historical water quality of representative Kern-Fan programs for all year types during months of July and August (37 mg/L). The average EC\textsubscript{w} during July and August for all year types representative of Kern-Fan programs was 300 μS/cm, and a 49 percent increase is 447 μS/cm. Rounding up, the RDI threshold for EC\textsubscript{w} is 500 μS/cm, and, in order to maintain an EC\textsubscript{et} of 1,500 μS/cm, the adjusted EC\textsubscript{w} for the remainder of the year was 1,000 μS/cm.
### Table 11a. Regulated Deficit Irrigation Analysis for Chloride

<table>
<thead>
<tr>
<th>Cl&lt;sub&gt;w&lt;/sub&gt; (mg/L)</th>
<th>Effective Rootzone (in)</th>
<th>Sum ET&lt;sub&gt;c&lt;/sub&gt; Average (in)&lt;sup&gt;3&lt;/sup&gt;</th>
<th>RDI %</th>
<th>RDI Water (in)</th>
<th>Rootzone Water (in)&lt;sup&gt;2&lt;/sup&gt;</th>
<th>% Cl&lt;sub&gt;e&lt;/sub&gt; Increase</th>
<th>Adjusted Cl&lt;sub&gt;e&lt;/sub&gt; Needed (mg/L)</th>
<th>Adjusted Cl&lt;sub&gt;w&lt;/sub&gt; (mg/L)</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>36</td>
<td>18.3</td>
<td>50%</td>
<td>9.2</td>
<td>9</td>
<td>3.4%</td>
<td>145</td>
<td>121</td>
</tr>
<tr>
<td>10</td>
<td>60</td>
<td>18.3</td>
<td>50%</td>
<td>9.2</td>
<td>15</td>
<td>2.0%</td>
<td>147</td>
<td>122</td>
</tr>
<tr>
<td>20</td>
<td>36</td>
<td>18.3</td>
<td>50%</td>
<td>9.2</td>
<td>9</td>
<td>6.8%</td>
<td>140</td>
<td>117</td>
</tr>
<tr>
<td>20</td>
<td>60</td>
<td>18.3</td>
<td>50%</td>
<td>9.2</td>
<td>15</td>
<td>4.1%</td>
<td>144</td>
<td>120</td>
</tr>
<tr>
<td>30</td>
<td>36</td>
<td>18.3</td>
<td>50%</td>
<td>9.2</td>
<td>9</td>
<td>10.2%</td>
<td>135</td>
<td>112</td>
</tr>
<tr>
<td>30</td>
<td>60</td>
<td>18.3</td>
<td>50%</td>
<td>9.2</td>
<td>15</td>
<td>6.1%</td>
<td>141</td>
<td>117</td>
</tr>
<tr>
<td>40</td>
<td>36</td>
<td>18.3</td>
<td>50%</td>
<td>9.2</td>
<td>9</td>
<td>13.6%</td>
<td>130</td>
<td>108</td>
</tr>
<tr>
<td>40</td>
<td>60</td>
<td>18.3</td>
<td>50%</td>
<td>9.2</td>
<td>15</td>
<td>8.1%</td>
<td>138</td>
<td>115</td>
</tr>
<tr>
<td>50</td>
<td>36</td>
<td>18.3</td>
<td>50%</td>
<td>9.2</td>
<td>9</td>
<td>16.9%</td>
<td>125</td>
<td>104</td>
</tr>
<tr>
<td>50</td>
<td>60</td>
<td>18.3</td>
<td>50%</td>
<td>9.2</td>
<td>15</td>
<td>10.2%</td>
<td>135</td>
<td>112</td>
</tr>
<tr>
<td>55</td>
<td>36</td>
<td>18.3</td>
<td>50%</td>
<td>9.2</td>
<td>9</td>
<td>18.6%</td>
<td>122</td>
<td>102</td>
</tr>
<tr>
<td>55</td>
<td>60</td>
<td>18.3</td>
<td>50%</td>
<td>9.2</td>
<td>15</td>
<td>11.2%</td>
<td>133</td>
<td>111</td>
</tr>
</tbody>
</table>

Notes:
1 ET<sub>c</sub> averages from Sanden and Goldhamer based on water use of mature almond trees in Wasco area for July and August (Goldhamer and Girona 2012).
2 Rootzone at field capacity is 25 percent by volume.

Key:
- Cl<sub>e</sub> = chloride concentration in saturated soil paste or rootzone chloride
- Cl<sub>w</sub> = chloride concentration in applied irrigation water
- ET<sub>c</sub> = evapotranspiration or tree water use
- in = inches
- mg/L = milligrams per liter
- RDI = regulated deficit irrigation

### Table 11b. Regulated Deficit Irrigation Analysis for Electrical Conductivity

<table>
<thead>
<tr>
<th>EC&lt;sub&gt;w&lt;/sub&gt; (μS/cm)</th>
<th>Effective Rootzone (in)</th>
<th>Sum ET&lt;sub&gt;c&lt;/sub&gt; Average (in)&lt;sup&gt;3&lt;/sup&gt;</th>
<th>RDI %</th>
<th>RDI Water (in)</th>
<th>Rootzone Water (in)&lt;sup&gt;2&lt;/sup&gt;</th>
<th>% EC Increase</th>
<th>Adjusted EC&lt;sub&gt;e&lt;/sub&gt; Needed (μS/cm)</th>
<th>Adjusted EC&lt;sub&gt;w&lt;/sub&gt; (μS/cm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>36</td>
<td>18.3</td>
<td>50%</td>
<td>9.2</td>
<td>9</td>
<td>6.8%</td>
<td>1,400</td>
<td>1,120</td>
</tr>
<tr>
<td>200</td>
<td>60</td>
<td>18.3</td>
<td>50%</td>
<td>9.2</td>
<td>15</td>
<td>4.1%</td>
<td>1,440</td>
<td>1,150</td>
</tr>
<tr>
<td>300</td>
<td>36</td>
<td>18.3</td>
<td>50%</td>
<td>9.2</td>
<td>9</td>
<td>10.2%</td>
<td>1,350</td>
<td>1,080</td>
</tr>
<tr>
<td>300</td>
<td>60</td>
<td>18.3</td>
<td>50%</td>
<td>9.2</td>
<td>15</td>
<td>6.1%</td>
<td>1,410</td>
<td>1,130</td>
</tr>
<tr>
<td>400</td>
<td>36</td>
<td>18.3</td>
<td>50%</td>
<td>9.2</td>
<td>9</td>
<td>13.6%</td>
<td>1,300</td>
<td>1,040</td>
</tr>
<tr>
<td>400</td>
<td>60</td>
<td>18.3</td>
<td>50%</td>
<td>9.2</td>
<td>15</td>
<td>8.1%</td>
<td>1,380</td>
<td>1,100</td>
</tr>
<tr>
<td>500</td>
<td>36</td>
<td>18.3</td>
<td>50%</td>
<td>9.2</td>
<td>9</td>
<td>16.9%</td>
<td>1,250</td>
<td>1,000</td>
</tr>
<tr>
<td>500</td>
<td>60</td>
<td>18.3</td>
<td>50%</td>
<td>9.2</td>
<td>15</td>
<td>10.2%</td>
<td>1,350</td>
<td>1,080</td>
</tr>
<tr>
<td>600</td>
<td>36</td>
<td>18.3</td>
<td>50%</td>
<td>9.2</td>
<td>9</td>
<td>20.3%</td>
<td>1,200</td>
<td>960</td>
</tr>
<tr>
<td>600</td>
<td>60</td>
<td>18.3</td>
<td>50%</td>
<td>9.2</td>
<td>15</td>
<td>12.2%</td>
<td>1,320</td>
<td>1,050</td>
</tr>
</tbody>
</table>

Notes:
1 ET<sub>c</sub> averages from Sanden and Goldhamer based on water use of mature almond trees in Wasco area for July and August (Goldhamer and Girona 2012).
2 Rootzone at field capacity is 25 percent by volume.

Key:
- μS/cm = microsiemens per centimeter
- EC = electrical conductivity
- EC<sub>e</sub> = electrical conductivity of saturated soil paste or rootzone salinity
- EC<sub>w</sub> = electrical conductivity of applied irrigation water
- ET<sub>c</sub> = evapotranspiration or tree water use
- in = inches
- RDI = regulated deficit irrigation
By adjusting the Cl<sub>e</sub> and EC<sub>e</sub> thresholds for non-RDI irrigation periods, LR volumes for the assumed 20 percent leaching were adjusted by default, as LR is a function of the saturated soil paste concentration. Adjusted LR volumes and constituent thresholds affect the mitigation curve slope for each constituent. The adjusted curves for chloride and EC were plotted and were below the governing line, so the mitigation curve remained unchanged and further confirmed the conservative nature of the mitigation curve in ensuring that all constituents would be sufficiently mitigated.

**Boron Thresholds**

Table 12 shows B<sub>w</sub> thresholds for tree and vine crops above which injury occurs under differing irrigation management practices, or LF values of 10 and 20 percent. Grapes have a boron tolerance of 0.4 mg/L when the LF is between 10 to 25 percent (Grattan et al., 2015). The actual boron threshold tolerance range is 0.3-0.5 mg/L if one considers different combinations of the soil water threshold (B<sub>sw</sub>) tolerance (0.5 - 0.75 mg/L) and LF (10 - 25%).

The maximum in-prism water quality threshold for boron was set at 0.4 mg/L for all three irrigation periods (Periods 1, 2, and 3). Grapes were used as the representative crop for boron sensitivity because of their prevalence in the Friant Division, serving as a surrogate for other sensitive crop types, such as apricot, fig, and most citrus. The applied threshold assumed conventional irrigation with a LF minimum of 20 percent applied. This threshold applied to the LF concept, rather than the LR concept that was used in development of the mitigation curves.

**Table 12. Boron Tolerance of Various Crops**

<table>
<thead>
<tr>
<th>CROP</th>
<th>BORON CONCENTRATION OF APPLIED WATER (B&lt;sub&gt;w&lt;/sub&gt;) (mg/L)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Leaching Fraction 10%</td>
</tr>
<tr>
<td>Alfalfa</td>
<td>2.0</td>
</tr>
<tr>
<td>Apricot</td>
<td>0.4</td>
</tr>
<tr>
<td>Asparagus</td>
<td>4.8</td>
</tr>
<tr>
<td>Barley</td>
<td>1.4</td>
</tr>
<tr>
<td>Bean (kidney, lima, mung)</td>
<td>0.4</td>
</tr>
<tr>
<td>Bean, snap</td>
<td>0.5</td>
</tr>
<tr>
<td>Beet, red</td>
<td>2.0</td>
</tr>
<tr>
<td>Bluegrass, Kentucky</td>
<td>1.2</td>
</tr>
<tr>
<td>Broccoli</td>
<td>0.5</td>
</tr>
<tr>
<td>Cabbage</td>
<td>1.2</td>
</tr>
<tr>
<td>Carrot</td>
<td>0.7</td>
</tr>
<tr>
<td>Cauliflower</td>
<td>1.6</td>
</tr>
<tr>
<td>Celery</td>
<td>3.8</td>
</tr>
<tr>
<td>Cherry</td>
<td>0.4</td>
</tr>
<tr>
<td>Clover, sweet</td>
<td>1.2</td>
</tr>
<tr>
<td>Corn</td>
<td>1.2</td>
</tr>
<tr>
<td>Cotton</td>
<td>3.1</td>
</tr>
<tr>
<td>Cucumber</td>
<td>0.7</td>
</tr>
<tr>
<td>Fig, Kadota</td>
<td>0.4</td>
</tr>
<tr>
<td>Garlic</td>
<td>1.7</td>
</tr>
<tr>
<td>Grape</td>
<td>0.4</td>
</tr>
<tr>
<td>Grapefruit</td>
<td>0.4</td>
</tr>
<tr>
<td>Lemon</td>
<td>&lt;0.3</td>
</tr>
<tr>
<td>Lettuce</td>
<td>0.6</td>
</tr>
</tbody>
</table>


Key:

mg/L = milligrams per liter
In addition, the applied B\text{sw} threshold of 0.4 mg/L was far more conservative than those defined in literature by Ayers and Westcot (1985). This analysis indicated that B\text{sw} could be used as protective irrigation water thresholds (B\text{be}) because of the complexities related to boron adsorption and equilibrium concentrations with the soil water. Historical water quality data also indicate that CVC or California Aqueduct water would be below this threshold.

**Threshold Flexibility**

In evaluating and comparing the developed, in-prism water quality thresholds with temporal water quality trends during Period 1 (March 1 to June 30), or prior to the RDI period (July 1 to August 31), observed average constituent concentrations were typically below the proposed thresholds. If water with lower constituent concentrations was applied to a crop for the first four months of the growing season, assuming that the rootzone concentration was properly maintained, the rootzone concentration would decrease below the threshold and, even with reductions in irrigation and LFs, could allow the application of higher irrigation water concentrations during the post-RDI period. The period following RDI, or Period 3 (September 1 to February 28), is often used for reclamation leaching; however, it is also the period in which new sources of water may be available for the Friant Division. Thus, having flexibility in the allowable irrigation water quality could be opportune for increasing supply reliability for the region.

Based on the RDI analysis and evaluation of water quality temporal trends, the Policy proposes an alternative water quality threshold for chloride for Period 3 to provide flexibility for irrigation management. Determination of whether the alternative chloride threshold for Period 3 is applied is based on the average chloride concentration of the irrigation water during Period 1. The alternative value was developed considering historical, temporal water quality trends and applying a weighted average calculation to meet the targeted rootzone chloride threshold. If the average measured chloride concentration for Period 1 is less than or equal to 70 mg/L, the allowable chloride concentration threshold increases from 102 mg/L to 123 mg/L for Period 3. If the measured average chloride concentrations for Period 1 exceed 70 mg/L, the chloride threshold remains at 102 mg/L for Period 3. Figure 10 shows the proposed thresholds compared to the chloride water quality trends for CVC and California Aqueduct water sources by year type.
Because the average water quality for Kern-Fan or CVC programs for Period 1 (March 1 to June 30) was approximately 30 mg/L (see Table 2), 70 mg/L was chosen as a midpoint between the adjusted Cl<sub>w</sub> threshold determined in the RDI analysis and the average historic water quality. Using a weighted average approach, if 70 mg/L water was applied for the four months in Period 1, assuming an LR of 20 percent, the resulting Cl<sub>e</sub> would be 84 mg/L. With the target weighted average for Cl<sub>e</sub> of 122 mg/L, the necessary Cl<sub>e</sub> for Period 3, the six months post-RDI (September 1 – February 28) was determined using the following equation:

\[
\frac{84 \text{ mg}}{L} \times .4 + \text{ Cl}_w \times .6 = 122
\]

The resulting Cl<sub>e</sub> was 147 mg/L, correlating to a Cl<sub>w</sub> of 123 mg/L with an assumed 20 percent LR. This approach was conservative in that observed chloride concentrations for Kern-Fan programs were significantly lower than 70 mg/L, and these calculations did not consider rainfall or any reclamation leaching applied in addition to the assumed 20 percent maintenance leaching.

Note that adjusting the Cl<sub>e</sub> thresholds for non-RDI irrigation periods (Period 1 and Period 3) would adjust the LR volumes for the assumed 20 percent leaching provided by the mitigation curve. Adjusted curves were plotted and it was confirmed that even with a reduced Cl<sub>e</sub>, the established mitigation curve would provide adequate mitigation.

Figure 10. Chloride water quality trends by source water and year type with proposed water quality thresholds
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Friant-Kern Canal Water Quality Policy

Draft Attachment B – Water Quality Mitigation Ledger Example
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ACRONYMS

μmhos/cm  micromho per centimeter (1 μmhos/cm = 1 μS/cm = 1/1,000 dS/m)
μS/cm  microsiemens per centimeter (1 μS/cm = 1 μmhos/cm = 1/1,000 dS/m)
AF  acre-feet
Ad hoc Committee  Ad hoc Water Quality Committee
dS/m  deciSiemens per meter (1 dS/m = 1,000 μmhos/cm = 1,000 μS/cm)
EC  electrical conductivity
FKC  Friant-Kern Canal
Friant Division  Friant Division of the Central Valley Project
FWA  Friant Water Authority
Ledger  Water Quality Mitigation Ledger
mg/L  milligrams per liter
Policy  Friant-Kern Canal Water Quality Policy
TDS  total dissolved solids
Reclamation  U.S. Department of the Interior, Bureau of Reclamation
RWA  Recovered Water Account
BACKGROUND

The Ad hoc Water Quality Committee (Ad hoc Committee) is working to develop a comprehensive Friant-Kern Canal Water Quality policy (Policy) to be adopted by the Friant Division of the Central Valley Project (Friant Division). This Policy is in response to concerns regarding the implementation of programs and projects that could introduce water of a lesser quality to the Friant-Kern Canal (FKC), when compared to water quality of historic deliveries from Millerton Lake. As detailed in the Friant-Kern Canal Water Quality Policy, the Ad hoc Committee is proposing a ledger mechanism to determine the required mitigation for introducing water of lesser quality into the FKC. This attachment to the Policy describes the process to quantify mitigation using the Water Quality Mitigation Ledger (Ledger). The Ledger tracks and accounts for all inflows into and diversions from the FKC in order to determine appropriate mitigation for impacted water quality (attributable to the introduced water [or “Put”] and the corresponding distribution thereof [or “Take”]).

QUANTIFYING MITIGATION

Percent mitigation is based on the measured electrical conductivity (EC) of the non-Millerton Lake water introduced into the FKC, or Put. Using the developed mitigation rating curve (see Attachment A for additional information on development of the mitigation rating curve), a mitigation percentage is determined for each contractor that introduces water, or Put, into the FKC, or “Contributor.” Based on the total Put volume and mitigation percentage, a mitigation volume is calculated and then proportioned and distributed to downstream Takes. The sections below describe the six step process for calculating mitigation requirements. Table 1 provides definitions for variables used in quantifying mitigation requirements.

Table 1. Variable Definitions for Quantifying Mitigation

<table>
<thead>
<tr>
<th>Variable1</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>EC</td>
<td>Electrical conductivity, measured as µS/cm</td>
</tr>
<tr>
<td>MBaseline</td>
<td>Mitigation percentage for established baseline (5%)</td>
</tr>
<tr>
<td>MPut%</td>
<td>Mitigation percentage based on measured EC of Put</td>
</tr>
<tr>
<td>Madj%</td>
<td>Adjusted mitigation percentage to account for incremental impact above established baseline</td>
</tr>
<tr>
<td>Mvol,paid</td>
<td>Mitigation volume paid (AF)</td>
</tr>
<tr>
<td>Mvol,received</td>
<td>Mitigation volume received (AF)</td>
</tr>
<tr>
<td>Putvol</td>
<td>Volume of Put by district (AF)</td>
</tr>
<tr>
<td>RFvol</td>
<td>Volume contribution from reverse flow at the interface (AF)</td>
</tr>
<tr>
<td>TakePut%</td>
<td>Proportion by volume of each Take by Put district</td>
</tr>
<tr>
<td>Takevol</td>
<td>Total volume of the Take by district (AF)</td>
</tr>
<tr>
<td>Takevol,m</td>
<td>Volume of the Take that is eligible for mitigation (AF)</td>
</tr>
<tr>
<td>Takevol,nm</td>
<td>Volume of the Take that is not eligible for mitigation (AF)</td>
</tr>
</tbody>
</table>

Note:
1 Applicable water districts are represented by superscript letters following variables.

Key:
µS/cm = microsiemens per centimeter (1 µS/cm = 1 µmhos/cm = 1/1,000 dS/m)
AF = acre-feet
CALCULATING MITIGATION PAID

Step 1: Determine mitigation percentage based on measured electrical conductivity of Put

Using the mitigation rating curve (Figure 1), determine the required mitigation percentage on the y-axis based on measured EC of the Put on the x-axis.

Key:
μS/cm = microsiemens per centimeter (1 μS/cm = 1 μmhos/cm = 1/1,000 dS/m)

Figure 1. Mitigation Rating Curve, showing percent mitigation based on measured EC of the Put

Step 2: Calculate the adjusted mitigation percentage

The adjusted mitigation percentage represents the impact of the Put on the canal water quality above the established baseline. The established baseline water quality condition is an EC concentration of 200 μS/cm and represents a 5 percent maintenance leaching fraction (Figure 2). It is assumed that water users are already applying a 5 percent maintenance leaching fraction on all crops, regardless of type or sensitivity, so mitigation would only be required for impacts beyond the baseline condition.
Figure 2. Mitigation Rating Curve, showing established baseline and correlating percent mitigation

$M_{Baseline} =$ Mitigation percentage for established baseline (5%)

$M_{adj\%} =$ Adjusted mitigation percentage to account for incremental impact above established baseline EC

$M_{Put\%} =$ Mitigation percentage based on measured EC of Put

$M_{adj\%} = M_{Put\%} - M_{Baseline}$

**Step 3: Calculate mitigation volume paid**

Mitigation volume paid, or the volume of water owed by a Contributor based on the water quality of the introduced water, is calculated by multiplying the total volume of the Put ($Put_{vol}$) by the adjusted mitigation percentage ($M_{adj\%}$).

$M_{vol,paid} =$ Mitigation volume paid (acre-feet)

$Put_{vol} =$ Volume of Put by district (acre-feet)

$M_{vol,paid} = Put_{vol} \times M_{adj\%}$

**CALCULATING MITIGATION RECEIVED**

Mitigation volumes paid by each Contributor are proportioned based on volume of Takes downstream from each Put. Proportion calculations are done in a sequential process to accurately determine the individual impact of each Put on the system. In addition, when the FKC is operating under reverse flow or pump-back conditions, the portions of the FKC operating in gravity flow, reverse flow, and the Interface, or location where gravity flow and reverse flow meet, are all calculated separately.

**Step 4: Determine the volume of Take to be mitigated**

Mitigation applies to the Take of Friant Division Class 1 and Class 2 deliveries, Recovered Water Account (RWA [Paragraph 16b]) supplies, and supplies from Unreleased Restoration Flows. Friant Division Long-Term Contractors and third parties whose supply is not delivered to the headworks of the FKC are not eligible to receive mitigation and, thus, the total volume of each contractor’s Take may not be fully mitigated if a portion of the Take is met by a water supply not eligible for mitigation. In addition, a water district that is both a contributor and recipient of an eligible Take, or “Taker,” is not required to mitigate themselves. The variable,
Take$_{vol,nm}$ represents the volume of a Take that is ineligible for mitigation. This variable represents any portion of the Take volume that represents supply not delivered to the headworks of the FKC or a volume of a district’s Take that is met by the volume of their own Put.

In order to calculate the volume of the Take eligible for mitigation ($\text{Take}_{vol,m}$), the volume of water supply not eligible for mitigation ($\text{Take}_{vol,nm}$) is subtracted from the total volume of the Take ($\text{Take}_{vol}$).

\[
\text{Take}_{vol} = \text{Total volume of the Take by district (acre-feet)}
\]

\[
\text{Take}_{vol,nm} = \text{Volume of the Take that is not eligible for mitigation (acre-feet)}
\]

\[
\text{Take}_{vol,m} = \text{Volume of the Take eligible for mitigation (acre-feet)}
\]

\[
\text{Take}_{vol,m} = \text{Take}_{vol} - \text{Take}_{vol,nm}
\]

**Step 5: Determine volume proportion of each Take by Put**

The volume of each Take is proportioned based on its downstream location in relation to each Put. Take proportions are calculated in a stepwise process by individual Put, and then Take proportions by Put are multiplied by the contributed mitigation volume as shown in Step 6.

\[
\sum \text{Take}_{vol} = \text{Sum volume of all Takes eligible for mitigation in relation to each Put (acre-feet)}
\]

\[
\text{RF}_{vol} = \text{Volume contribution from reverse flow at the Interface (acre-feet)}
\]

\[
\text{RF}_{vol} = \frac{\text{Reverse Flow Put}_{vol} - \text{Reverse Flow Take}_{vol}}{\text{Interface Take}_{vol}} \times \text{Interface Take}_{vol,m}
\]

\[
\text{Take}_{Put\%} = \text{Proportion by volume of each Take by Put district (e.g., for the proportion by volume of Take A from Put A, Take}^A_{Put\%}^A\).
\]

The proportion by volume calculation varies depending on the direction of flow in the canal at the location of the Take. The four equations below describe the necessary calculation depending on Take location and flow region. If the Take is located in a Gravity Flow region of the canal, equation 1 is used. If the Take is located in a Reverse Flow region, equation 2 is used. If the Take is located at the Interface of gravity and reverse flow, equations 3 or 4 are used depending on the volume proportion coming from each direction, respectively.

(1) Take located in the portion of FKC operating in **Gravity Flow**:

\[
\text{Take}_{Put\%} = \frac{\text{Take}_{vol,m}}{\sum \text{Take}_{vol,m}-\text{RF}_{vol}}
\]

(2) Take located in the portion of FKC operating in **Reverse Flow**:

\[
\text{Take}_{Put\%} = \frac{\text{Take}_{vol,m}}{\sum \text{Take}_{vol,m} + \text{RF}_{vol}}
\]

(3) Take located at **Interface** (proportion from Gravity Flow region of FKC):

\[
\text{Take}_{Put\%} = \frac{\text{Take}_{vol,m} - \text{RF}_{vol}}{\sum \text{Take}_{vol,m} - \text{RF}_{vol}}
\]

(4) Take located at **Interface** (proportion from Reverse Flow region of FKC):

\[
\text{Take}_{Put\%} = \frac{\text{RF}_{vol}}{\sum \text{Take}_{vol,m} + \text{RF}_{vol}}
\]

**Step 6: Determine volume of mitigation received by each Take**

Once the volume of each Take is proportioned by Put, Take proportions by Put are used to calculate the total volume of mitigation water received by each Take.

\[
\text{M}_{vol,\text{received}} = \text{Mitigation volume received (acre-feet)}
\]

\[
\text{M}_{vol,\text{received}} = \sum \text{Take}_{Put\%} \times \text{M}_{vol,\text{paid}}
\]
## LEDGER EXAMPLE WITH CALCULATIONS

This section walks through an example scenario to illustrate the six steps to calculate mitigation requirements. This example is purely hypothetical and is included to show the process for calculating mitigation using the proposed Ledger. Table 2 provides example inputs including flow region, water quality conditions, and flow and volume for Puts and Takes. Figure 3 is a schematic of the example scenario showing Puts and Takes by district and location on the FKC.

**Table 2. Ledger Example Inputs**

<table>
<thead>
<tr>
<th>Milepost Location</th>
<th>District</th>
<th>Put/Take</th>
<th>Direction of Flow</th>
<th>Flow (cfs)</th>
<th>Put Water Quality (µS/cm)</th>
<th>Volume (AF)</th>
<th>Volume of Take Eligible for Mitigation (AF)</th>
</tr>
</thead>
<tbody>
<tr>
<td>69.15</td>
<td>A</td>
<td>Put</td>
<td>Gravity</td>
<td>65</td>
<td>500</td>
<td>902</td>
<td>..</td>
</tr>
<tr>
<td>94.92</td>
<td>A</td>
<td>Take</td>
<td>Gravity</td>
<td>65</td>
<td>..</td>
<td>902</td>
<td>0</td>
</tr>
<tr>
<td>95.5</td>
<td>B</td>
<td>Take</td>
<td>Gravity</td>
<td>50</td>
<td>..</td>
<td>694</td>
<td>0</td>
</tr>
<tr>
<td>102.72</td>
<td>B</td>
<td>Put</td>
<td>Gravity</td>
<td>50</td>
<td>300</td>
<td>694</td>
<td>..</td>
</tr>
<tr>
<td>111.56</td>
<td>C</td>
<td>Take</td>
<td>Gravity</td>
<td>150</td>
<td>..</td>
<td>2,083</td>
<td>347</td>
</tr>
<tr>
<td>117.44</td>
<td>D</td>
<td>Take</td>
<td>Gravity</td>
<td>255</td>
<td>..</td>
<td>3,540</td>
<td>3,540</td>
</tr>
<tr>
<td>125</td>
<td>E</td>
<td>Take</td>
<td>Interface</td>
<td>100</td>
<td>..</td>
<td>1,388</td>
<td>347</td>
</tr>
<tr>
<td>137.17</td>
<td>F</td>
<td>Take</td>
<td>Reverse Flow</td>
<td>65</td>
<td>..</td>
<td>902</td>
<td>902</td>
</tr>
<tr>
<td>151.8</td>
<td>G</td>
<td>Take</td>
<td>Reverse Flow</td>
<td>100</td>
<td>..</td>
<td>1,388</td>
<td>1,388</td>
</tr>
<tr>
<td>151.8</td>
<td>C</td>
<td>Put</td>
<td>Reverse Flow</td>
<td>125</td>
<td>500</td>
<td>1,736</td>
<td>..</td>
</tr>
<tr>
<td>151.8</td>
<td>E</td>
<td>Put</td>
<td>Reverse Flow</td>
<td>75</td>
<td>500</td>
<td>1,041</td>
<td>..</td>
</tr>
</tbody>
</table>

Key:
- AF = acre-feet
- cfs = cubic feet per second
- µS/cm = microsiemens per centimeter

This example scenario only includes calculations for District A. Pump-Back is operational in this example scenario. Mitigation for the portion of the FKC operating by gravity and the portion of the FKC operating in reverse flow is calculated separately using the same method demonstrated in this example scenario, but not shown in this example. When necessary, separate calculations are done for the Interface location as it is influenced by flows from both the upper (gravity flow) and lower (reverse flow) portions of the canal. On the following pages, the calculations completed for this example scenario are shown in green text.
Figure 3. Schematic of Puts and Takes by district and location on the Friant-Kern Canal.
CALCULATING MITIGATION PAID

Step 1: Determine percent mitigation based on measured EC of Put

Using the mitigation rating curve, the measured electrical conductivity of the Put is found on the x-axis and is used to find the correlating required mitigation percentage on the y-axis.

As shown in Table 2, Put A has a measured EC of 500 µS/cm. Using the Mitigation Rating Curve shown below, the measured EC corresponds to a mitigation percentage of approximately 12.5% (Figure 4).

![Mitigation Rating Curve](image)

**Figure 4. Mitigation Rating Curve, showing percent mitigation based on measured water quality (EC) of the Put**

Step 2: Calculate the adjusted mitigation percentage

As shown in Figure 2, the mitigation baseline ($M_{Baseline}$) is 5 percent, correlating the established baseline EC concentration of 200 µS/cm to a 5 percent maintenance leaching fraction. Using the required mitigation percentage based on measured EC of Put ($M_{Put\%}$) calculated in Step 1, 12.5 percent, and the below formula, the adjusted mitigation percentage ($M_{adj\%}$) for Put A is calculated.

The established baseline water quality condition is an EC concentration of 200 µS/cm and represents a 5 percent maintenance leaching fraction

$$M_{adj\%}^A = M_{Put\%}^A - M_{Baseline}$$

$$M_{adj\%}^A = 12.5\% - 5\% = 7.5\%$$

Step 3: Calculate mitigation volume paid

Mitigation volume paid ($M_{vol,paid}$) is calculated by multiplying the total volume of Put A ($Put_{vol}^A$) of 902 AF (see Table 2) by the adjusted mitigation percentage ($M_{adj\%}$) of 7.5 percent calculated in Step 2.

$$M_{vol,paid}^A = Put_{vol}^A \times M_{adj\%}^A$$

$$M_{vol,paid}^A = 902 \text{ AF} \times 7.5\% = 68 \text{ AF}$$
CALCULATING MITIGATION RECEIVED

For this example, only the proportion of mitigation volume for each Take downstream of Put A is calculated. The total mitigation received by each Taker is calculated by summing the proportion of mitigation volume for each Put. Proportional results for all other Takes in this example are provided in the Water Quality Ledger Example Summary section below.

Step 4: Determine the volume of Take to be mitigated

In this example, the Puts are from programs being implemented by different water districts to meet all or a portion of their Take. It is assumed that all Takes are eligible for mitigation and, thus, the Take volumes to be mitigated are only reduced if the water district is also a Contributor. In this example, Put A is a program implemented by District A at Take A. Using the volume of Take A (Take_{vol}^A) of 902 AF and volume not eligible for mitigation (Take_{vol, nm}^A) of 902 AF from District A, which, in this example is the same as Put A (Put_{vol}^A) (see Table 2), the volume of Take eligible for mitigation for District A (Take_{vol,m}^A) is calculated.

\[
\text{Take}_{vol,m}^A = \text{Take}_{vol}^A - \text{Take}_{vol, nm}^A
\]

\[
\text{Take}_{vol,m}^A = 902 \text{ AF} - 902 \text{ AF} = 0 \text{ AF}
\]

Since District A is delivering an equivalent volume of their program at Put A, they have no volume of Take to be mitigated.

Step 5: Determine volume proportion of each Take by Put

For this example, the volume of each Take is proportioned based on its downstream location in relation to Put A. Takes A through D are downstream of Put A. Take E is the location of the Interface and influenced by both the gravity and reverse flow portion of the FKC (see Figure 3), thus Take F and G downstream of the Interface are removed from the proportion calculations. To complete the proportion calculations, the volume contribution from the reverse flow at the Interface (RF_{vol}) is determined using the formula below. Values used for Put and Take volumes are found in Table 2.

\[
RF_{vol} = \frac{\sum \text{Reverse Flow Put}_{vol} - \sum \text{Reverse Flow Take}_{vol} \times \text{ Interface Take}_{vol,m}}{\text{Interface Take}_{vol}}
\]

\[
RF_{vol} = \frac{(\text{Reverse Flow Put}^E_{vol} + \text{Reverse Flow Put}^D_{vol}) - (\text{Reverse Flow Take}^F_{vol} + \text{Reverse Flow Take}^G_{vol})}{\text{Interface Take}^E_{vol}} \times \text{ Interface Take}^E_{vol}
\]

\[
RF_{vol} = \frac{(1,041 \text{ AF} + 1,736 \text{ AF}) - (1,388 \text{ AF} + 902 \text{ AF})}{1,388 \text{ AF}} \times 347 \text{ AF} = 122 \text{ AF}
\]

The proportion by volume calculation varies depending on the direction of flow in the canal at the location of the Take. Since Takes A through D are located in the Gravity Flow region on the FKC, the equation below was used to calculate the proportion by volume of Takes A through D for Put A (Take_{put}^A). Please note that the volume of Take eligible for mitigation (Take_{vol,m}) was only calculated for District A, but not B, C, and D in this example using Step 4, therefore the volume of Take eligible for mitigation (Take_{vol,m}) for Districts B, C, and D are found in Table 2 and 3.
\[
\text{Take}_{\text{Put}\%} = \frac{\text{Take}_{\text{vol},m}}{\Sigma \text{Take}_{\text{vol},m} - R_{\text{vol}}}
\]

\[
\Sigma \text{Take}_{\text{vol},m} = \text{Take}_{\text{vol},m}^A + \text{Take}_{\text{vol},m}^B + \text{Take}_{\text{vol},m}^C + \text{Take}_{\text{vol},m}^D + \text{Take}_{\text{vol},m}^E
\]

\[
\Sigma \text{Take}_{\text{vol},m} = 0 \text{ AF} + 0 \text{ AF} + 347 \text{ AF} + 3,540 \text{ F} + 347 \text{ AF} = 4,234 \text{ AF}
\]

\[
\text{Take}^A_{\text{Put}\%} = 0 \text{ AF} / (4,234 \text{ AF} - 122 \text{ AF}) = 0% \\
\text{Take}^B_{\text{Put}\%} = 0 \text{ AF} / (4,234 \text{ AF} - 122 \text{ AF}) = 0% \\
\text{Take}^C_{\text{Put}\%} = 347 \text{ AF} / (4,234 \text{ AF} - 122 \text{ AF}) = 8.4% \\
\text{Take}^D_{\text{Put}\%} = 3,540 \text{ AF} / (4,234 \text{ AF} - 122 \text{ AF}) = 86.1%
\]

Proportions representing gravity and reverse flow influences at the Interface are calculated separately.

Take E represents the Interface in this example. Because only Put A is being considered, the example only shows the calculation for the proportion of the Take at the Interface influenced by gravity flow. Table 3 shows all calculated proportions for Take E by each Put.

\[
\text{Take}^E_{\text{Put}\%} = (347 \text{ AF} - 122 \text{ AF}) / (4,234 \text{ AF} - 122 \text{ AF}) = 5.5%
\]

**Step 6: Determine volume of mitigation received by each Take**

Once the volume proportions for each Take are calculated for each Put, the mitigation volume received can be calculated using the formula below. For this step, the calculation is only shown for Take C. Please note that all the values required for this calculation have been determined in this example, with the exception of the 18 AF \( (M_{\text{vol,paid}}) \) value that would have been determined using Steps 1-3.

\[
M_{\text{vol,received}} = \Sigma \text{Take}_{\text{Put}\%} \cdot M_{\text{vol,paid}}
\]

\[
M_{\text{vol,received}}^C = (\text{Take}^C_{\text{Put}\%} \cdot M_{\text{vol,paid}}^A) + (\text{Take}^C_{\text{Put}\%} \cdot M_{\text{vol,paid}}^B)
\]

\[
M_{\text{vol,received}} = 8.4% \cdot 68 \text{ AF} + 8.4% \cdot 18 \text{ AF} = 7.3 \text{ AF}
\]

**WATER QUALITY LEDGER EXAMPLE SUMMARY**

Table 3 provides calculated values for each Put and Take in the Water Quality Ledger example.
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<table>
<thead>
<tr>
<th>Milepost</th>
<th>District</th>
<th>Put/ Take</th>
<th>Flow Region</th>
<th>Put Volume (Put&lt;sub&gt;vol&lt;/sub&gt;) (AF)</th>
<th>Take Volume (Take&lt;sub&gt;vol&lt;/sub&gt;) (AF)</th>
<th>Step 1</th>
<th>Step 2</th>
<th>Step 3</th>
<th>Step 4</th>
<th>Step 5</th>
<th>Mitigation Volume Received (Take&lt;sub&gt;vol&lt;/sub&gt;,received) (AF)</th>
</tr>
</thead>
<tbody>
<tr>
<td>69.15 A</td>
<td>Put</td>
<td>Gravity</td>
<td>902 NA</td>
<td>500 12.5%</td>
<td>7.5% 68.0</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>94.92 A</td>
<td>Take</td>
<td>Gravity</td>
<td>NA 902</td>
<td>--</td>
<td>-- 902</td>
<td>0</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>95.5 B</td>
<td>Take</td>
<td>Gravity</td>
<td>NA 694</td>
<td>--</td>
<td>-- 694</td>
<td>0</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>102.72 B</td>
<td>Put</td>
<td>Gravity</td>
<td>694 NA</td>
<td>300 7.6%</td>
<td>2.6% 18.0</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>111.56 C</td>
<td>Take</td>
<td>Gravity</td>
<td>NA 2,083</td>
<td>--</td>
<td>-- 1,736</td>
<td>347</td>
<td>8.4%</td>
<td>8.4%</td>
<td>-</td>
<td>-</td>
<td>7.3</td>
</tr>
<tr>
<td>117.44 D</td>
<td>Take</td>
<td>Gravity</td>
<td>NA 3,540</td>
<td>--</td>
<td>-- 3,540</td>
<td>1,736</td>
<td>86.1%</td>
<td>86.1%</td>
<td>-</td>
<td>-</td>
<td>74.0</td>
</tr>
<tr>
<td>125 E</td>
<td>Take</td>
<td>Interface</td>
<td>NA 1,388</td>
<td>--</td>
<td>-- 1,041</td>
<td>347</td>
<td>5.5%</td>
<td>5.5%</td>
<td>5.0%</td>
<td>5.0%</td>
<td>15.1</td>
</tr>
<tr>
<td>137.17 F</td>
<td>Take</td>
<td>Revers e Flow</td>
<td>NA 902</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>902</td>
<td>-</td>
<td>-</td>
<td>37.4%</td>
</tr>
<tr>
<td>151.8 G</td>
<td>Take</td>
<td>Revers e Flow</td>
<td>NA 1,388</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>1,388</td>
<td>-</td>
<td>-</td>
<td>57.6%</td>
</tr>
<tr>
<td>151.8 C</td>
<td>Put</td>
<td>Revers e Flow</td>
<td>1,736 NA 500</td>
<td>12.5%</td>
<td>7.5%</td>
<td>130.2</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>151.8 E</td>
<td>Put</td>
<td>Revers e Flow</td>
<td>1,041 NA 500</td>
<td>12.5%</td>
<td>7.5%</td>
<td>78.1</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
</tbody>
</table>

**Key:**
- AF = acre-feet
- µS/cm = microsiemens per centimeter (1 uS/cm = 1 umhos/cm = 1/1,000 dS/m)
Friant-Kern Canal Water Quality Policy

Draft Attachment C – Water Quality Monitoring Plan
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TABLES

Table 1. Check Structure Locations for Real-Time Measurements of Electrical Conductivity ......................................... 2

ACRONYMS

µmhos/cm micromhos per centimeter (1 µmhos/cm = 1 µS/cm = 1/1,000 dS/m)
µS/cm microsiemens per centimeter (1 µS/cm = 1 µmhos/cm = 1/1,000 dS/m)
Ad hoc Committee Ad hoc Water Quality Committee
dS/m deciSiemens per meter (1 dS/m = 1,000 µmhos/cm = 1,000 µS/cm)
CVC Cross Valley Canal
EC electrical conductivity
FKC Friant-Kern Canal
Friant Division Friant Division of the Central Valley Project
FWA Friant Water Authority
IOS Intellisite Operation System
Policy Friant-Kern Canal Water Quality Policy
Reclamation U.S. Department of the Interior, Bureau of Reclamation
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BACKGROUND

The Ad hoc Water Quality Committee (Ad hoc Committee) is working to develop a comprehensive Friant-Kern Canal (FKC) water quality policy to be adopted by Friant Division of the Central Valley Project (Friant Division) Long-Term Contractors in response to concerns regarding the implementation of programs, which would introduce water of a lesser quality when compared to water quality of historic deliveries from Millerton Lake. For the purpose of measuring and classifying water quality of “introduced water” within the FKC, this attachment to the FKC Water Quality Policy (Policy) describes key elements and actions required for implementation of a water quality monitoring plan. The water quality monitoring plan would be inclusive of water quality monitoring and testing for “introduced” water and FKC in-prism water, real-time reporting, and a FKC blending model (i.e. FKC Water Quality Model).

WATER QUALITY MONITORING

Water quality monitoring and testing for “introduced” water and FKC in-prism water will support implementation of the Policy and would be conducted in addition to existing and ongoing FKC water quality monitoring programs.

The Bureau of Reclamation’s (Reclamation) Policy for Accepting Non-Project Water into the Friant-Kern and Madera Canals (2008) includes requirements for monitoring water quality conditions for specific constituents to demonstrate compliance with California drinking water standards (Title 22), plus other constituents of concern recommended by the California Department of Health Services. According to this Reclamation policy, water quality conditions for pump-in programs (not including reverse-flow, pump-back) are required to be tested once per year. Friant Water Authority (FWA) is not proposing additional testing for pump-in programs at this time. However, in addition to reporting results of water quality conditions to Reclamation for review, these results are required to be reported to the FWA for use as inputs to the FKC Water Quality Mitigation Ledger and FKC Water Quality Model. FWA will use water quality data and these tools to effectively manage water quality thresholds and determine required mitigation as defined in the FWA Policy.

FWA will monitor existing groundwater quality data from existing data sources, which include:

- State Water Resources Control Board’s Groundwater Ambient Monitoring and Assessment Groundwater Information System;
- United States Geological Service’s National Water Information System;
- California Department of Water Resources Sustainable Groundwater Management Act Data Viewer; and,
- Groundwater Sustainability Agencies.

FWA will also coordinate with Kern County Water Agency on a weekly basis on Cross Valley Canal (CVC) operations and associated CVC water quality.

The following sections describe continuous, real-time monitoring of conductivity in the FKC; reverse-flow, pump-back operations event-based sampling and measurement of specific water quality constituents; and procedures for reporting and integrating water quality data into the FKC Water Quality Mitigation Ledger and FKC Water Quality Model for forecasting water quality conditions.

SURFACE WATER QUALITY MONITORING

FWA staff will implement continuous, real-time monitoring of in-prism water quality conditions in the FKC. Additionally, event-based water quality sampling and analysis will be performed during reverse-flow, pump-back operations. Measured water quality data will be reported weekly to Friant Contractors and used as inputs for the FKC Water Quality Mitigation Ledger and FKC Water Quality Model.
In-Prism Conductivity Measurements

Conductivity meters (or sondes) will measure and record real-time in-prism electrical conductivity (EC), measured as microsiemens per centimeter (µS/cm), every 15 minutes at the FKC check structures and corresponding mileposts shown in Table 1. Collected EC data will be uploaded to FWA’s Intellisite Operation System (IOS) in real-time. These continuous, in situ measurements of electrical conductivity will provide real-time data on incremental water quality changes and mixing in the canal and will assist in water quality threshold management.

Table 1. Check Structure Locations for Real-Time Measurements of Electrical Conductivity

<table>
<thead>
<tr>
<th>Check Structure</th>
<th>Milepost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Little Dry Creek</td>
<td>5.50</td>
</tr>
<tr>
<td>Kings River</td>
<td>28.52</td>
</tr>
<tr>
<td>Sand Creek</td>
<td>46.04</td>
</tr>
<tr>
<td>Dodge Ave</td>
<td>61.03</td>
</tr>
<tr>
<td>Kaweah River</td>
<td>71.29</td>
</tr>
<tr>
<td>Rocky Hill</td>
<td>79.25</td>
</tr>
<tr>
<td>Fifth Ave</td>
<td>88.22</td>
</tr>
<tr>
<td>Tule River</td>
<td>95.67</td>
</tr>
<tr>
<td>Deer Creek</td>
<td>102.69</td>
</tr>
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<td>White River</td>
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<td>130.03</td>
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<td>Shafter</td>
<td>137.20</td>
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<tr>
<td>Kern River</td>
<td>151.81</td>
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In addition, FWA staff will perform electrical conductivity measurements using hand-held conductivity meters as-needed, such as during:

- servicing of real-time monitoring equipment;
- unexpected real-time monitoring equipment outages;
- confirmation of real-time monitoring equipment measurements; and,
- targeted in-prism measurements.

Sampling and Laboratory Testing During Reverse-Flow, Pump-Back Operations

During reverse-flow, pump-back operations, weekly water quality sampling will be performed within the CVC near the FKC/CVC Intertie. Grab samples will be collected by FWA staff and provided to a Reclamation approved, third-party laboratory for testing. At a minimum, grab samples collected during reverse-flow pump-back operations will be analyzed for the following agronomic constituents of concern:

- Bicarbonate
- Boron
- Calcium
- Chloride
- Electrical Conductivity
- Iron
- Magnesium
- Manganese
- Nitrate
- pH
- SAR
- Sodium
- Total Dissolved Solids
Samples will be tested for constituents required by Title 22 standards during initiation of pump-back activities and/or if it is anticipated that operations within the CVC will significantly change mixed water quality conditions (i.e. influence from California Aqueduct, Kern River, Kern Fan).

**FRIANT-KERN CANAL WATER QUALITY MODEL**

Implementation of the water quality monitoring plan and collection of water quality data will be accompanied by the FKC Water Quality Model, a volumetric mass-balance model of the entire FKC. The FKC Water Quality Model will serve as a water quality forecast tool to assist Friant Division Long-Term Contractors in making real-time operation decisions. The calibration and operation of this model will require compilation of surface water quality data collected, as described above, as well as forecasts of water orders. The model output will initially be manually reported, with eventually integrated with IOS.

**WATER QUALITY REPORTING AND COMMUNICATIONS**

IOS will report real-time, continuous FKC in-prism electrical conductivity measurements. In addition, FWA staff will provide a weekly summary report to Friant Division Long-Term Contractors on:

- FKC current and forecasted operations;
- FKC current in-prism monitoring and forecasted water quality conditions; and,
- pertinent pump-in programs’ operations and water quality conditions.

**WATER QUALITY MONITORING COSTS**

The following section includes the scope and estimate of capital and annual costs for the components of the water quality monitoring plan. Detailed budget information for all components and implementation of the **FKC Water Quality Policy** can be found in Attachment D.

FWA staff-specific monitoring duties will include:

- Bi-weekly maintenance and calibration of real-time water quality monitoring equipment
- Performance of water quality sampling during pump-in operations and coordination of laboratory testing of water quality samples
- Coordination with Friant Division Long-Term Contractors on water quality data monitoring and analysis
- Management of water quality and operations database
- Performance of weekly water quality reporting and forecasting using the FKC Water Quality Model

**Water Quality Testing Equipment**

FWA staff will perform only in-prism electrical conductivity measurements, whereas all other water quality constituent testing will be conducted by a third-party laboratory.

FWA will install fourteen (14) Seametrics CT2X conductivity meters at each FKC check structure identified in Table 1 for continuous, real-time water quality monitoring. Costs for purchase and installation of the real-time water quality monitoring equipment, including integration with IOS, is approximately $51,500 ($1,612 per unit cost and total of $28,880 for installation). It is assumed the useful life of a Seametrics CT2X conductivity meter is about 10 years. Additionally, FWA staff will maintain two (2) existing handheld Hanna DIST5 conductivity meters.

Real-time water quality monitoring equipment and handheld conductivity meters will be calibrated and maintained according to manufacturer recommendations. Costs for maintenance of equipment is estimated to be about 10% of the capital cost ($5,150 annually).
Laboratory Testing

BSK Associates Laboratory Fresno was contacted to provide estimate of representative costs per sample for laboratory testing of collected grab samples. Processing and analysis was estimated to be approximately $1250 per sample for testing Title 22 organics and inorganics, excluding dioxin and TCPs. This estimated cost assumes a turnaround time of 5 business days, which is required to quantify total dissolved solids. For the purposes of this cost estimate, it is assumed laboratory testing will occur for six months per year, or an average of 26 samples taken annually at the CVC intertie. To account for the possibility of extended operations or any other additional needs for laboratory testing, a ten percent contingency was added to the anticipated annual costs for laboratory testing. The total estimated annual cost for laboratory testing is $35,750.
Friant-Kern Canal Water Quality Policy

Draft Attachment D – Water Quality Policy Cost Allocation
CONTENTS
BACKGROUND .......................................................................................................................................................... 1
CAPITAL AND ANNUAL COSTS ................................................................................................................................. 1
Friant Water Authority Staff ........................................................................................................ 1
Water Quality Testing Equipment and Laboratory Testing ........................................................... 1
COST ALLOCATION ................................................................................................................................................... 1

ACRONYMS
$/acre-foot  dollar per acre-foot
Ad hoc Committee  Ad hoc Water Quality Committee
FKC  Friant-Kern Canal
Friant Division  Friant Division of the Central Valley Project
FWA  Friant Water Authority
O&M  operations and maintenance
Policy  Friant-Kern Canal Water Quality Policy
BACKGROUND

The Ad hoc Water Quality Committee (Ad hoc Committee) is working to develop a comprehensive Friant-Kern Canal (FKC) water quality policy to be adopted by the Friant Division of the Central Valley Project (Friant Division) in response to concerns regarding the implementation of programs, which would introduce water of a lesser quality, when compared to water quality of historic deliveries from Millerton Lake. This attachment to the FKC Water Quality Policy (Policy) describes the estimated capital and annual costs to implement and administer the Policy, including Water Quality Monitoring Plan, Water Quality Mitigation Ledger, Water Quality Model.

CAPITAL AND ANNUAL COSTS

This section includes the scope and estimate of capital, replacement, and annual costs for the components of the Policy.

FRIANT WATER AUTHORITY STAFF

For implementation of the Policy, one full-time equivalent additional Friant Water Authority (FWA) staff person will be required to:

- Maintain and calibrate conductivity meters on a bi-weekly basis
- Perform water quality sampling during pump-in operations
- Coordinate laboratory water quality testing
- Coordinate with Friant Division Long-Term Contractors on water quality data monitoring and analysis
- Manage water quality and operations database
- Perform weekly water quality reporting and forecasting using FKC Water Quality Model
- Perform weekly analysis to determine mitigation and distribution to respective Friant Division Long-Term Contractors using the FKC Water Quality Mitigation Ledger
- Coordinate with U.S. Department of the Interior, Bureau of Reclamation’s South-Central California Area Office on water quality reporting, mitigation, and contractual requirements
- Coordinate and facilitate FWA committee on water quality

Compensation, or cost, for this one full-time additional staff is assumed to be about $100,000 per year (including salary and benefits). Additionally, about $25,000 per year is assumed to be required by the FWA Executive Team and Operations and Maintenance (O&M) Management and Administration team to implement and administer to the Policy.

Total additional cost for FWA staff implementation of the Policy is estimated to be $125,000 per year.

WATER QUALITY TESTING EQUIPMENT AND LABORATORY TESTING

As described in Attachment C – FKC Water Quality Monitoring Plan, initial capital and annual maintenance costs for water quality testing equipment are estimated to be about $51,500 and $5,150, respectively. Water quality testing equipment, specifically, Seametrics CT2X conductivity meters, are assumed to require replacement every 10 years. Annual costs for laboratory testing costs are estimated to be $35,750.

COST ALLOCATION

Costs for implementation and administration of the Policy will be paid initially by the subset of Friant Division Long-Term Contractors who pay for FKC O&M to the FWA and subsequently will be reimbursed by contractor’s that introduce water (Put) into the FKC (Contributor). The Contributor will pay a dollar per acre-foot ($/acre-foot) surcharge, or ‘Policy Surcharge,’ that will be credited back to the Friant Division Long-Term Contractors who pay for O&M to the FWA. The Policy Surcharge is based on an estimate of total annual costs divided by average annual deliveries of pump-in programs into the FKC. The Policy Surcharge will be applied to all introduced water even if it is not required to provide mitigation as defined in the Policy.
Total annual costs are estimated to be $172,000 per year, and include:

- Interest and amortization of capital costs for water quality testing equipment ($51,500), assuming 3% interest over 10-year useful life (i.e. replacement every 10 years), $6,040 per year
- Annual maintenance and laboratory testing costs, $40,900 per year
- FWA staff, $125,000 per year

Pump-in programs are estimated to deliver 75,000 acre-feet per year to the FKC. This estimate includes existing programs and a portion of potential future programs.

Based on this, the initial Policy Surcharge is $2.29 per acre-foot and will be escalated 3% per year. Annual costs and deliveries will be reassessed every year and compared to estimates provided in this attachment to determine if any adjustments are required to the Policy Surcharge.
DATE: July 23, 2020

TO: Board of Directors

FROM: Donald M. Davis, General Counsel
Nicholas Muscolino, Esq.

SUBJECT: Resolution Authorizing Acceptance of Interests in Real Property

SUMMARY:

Before deeds and other instruments conveying property to FWA can be recorded, the Board must adopt a resolution authorizing designated officer(s) to execute certificates of acceptance of such real property interests. To satisfy this requirement, the Board will need to adopt a resolution authorizing the CEO or the COO to execute certificates of acceptance for real property interests conveyed to FWA.

RECOMMENDED ACTION:

The Executive Committee recommended that the Board adopt the proposed resolution authorizing the CEO and the COO to execute certificates of acceptance for real property interests conveyed to FWA.

SUGGESTED MOTION:

I move that the Board adopt the proposed resolution authorizing the CEO and the COO to execute certificates of acceptance for real property interests conveyed to FWA.

DISCUSSION:

California law prohibits County Recorders from recording any instruments conveying any interest in real property to a government agency for public purposes without the consent of the public entity. (Gov. Code § 27281.) Per statute, that consent must be evidenced by a certificate of acceptance attached to or printed on the deed.

Historically, FWA has not owned any real property in its own name. However, FWA may acquire property in its own name in connection with the FKC Middle Reach Capacity Correction Project prior to reconveying such interests to the Bureau of Reclamation, and there may be other future instances where FWA may need to hold title to property interests, which include easements. As noted above, before any deeds and other instruments conveying property interests to FWA can be recorded, the Board must adopt a resolution authorizing designated officer(s) to execute certificates of acceptance. To satisfy this requirement, a resolution has been prepared authorizing the CEO or the COO to execute certificates of acceptance for real property interests conveyed to FWA.

ATTACHMENTS:

Resolution & Form of Certificate of Acceptance
RESOLUTION NO. 2020-01

A RESOLUTION OF THE BOARD OF DIRECTORS OF THE FRIANT WATER AUTHORITY AUTHORIZING THE CHIEF EXECUTIVE OFFICER AND CHIEF OPERATING OFFICER TO EXECUTE CERTIFICATES OF ACCEPTANCE FOR DEEDS AND GRANTS RELATING TO THE CONVEYANCE OF REAL PROPERTY INTERESTS TO THE FRIANT WATER AUTHORITY FOR PUBLIC PURPOSES

BOARD OF DIRECTORS OF THE FRIANT WATER AUTHORITY RESOLVES AS FOLLOWS

Section 1. Findings. The Board finds as follows:

A. Government Code section 27281 provides that deeds, grants and other instruments conveying any interest in or easement upon real estate to public entities for public purposes will not be accepted for recordation without the consent of the grantee public entity evidenced by a certificate or resolution of acceptance.

B. Government Code section 27281 provides that public entities by resolution may authorize one or more officers or agents to accept and consent to such deeds or grants of interest in real property.

C. The Board desires to authorize each of the Chief Executive Officer and Chief Operating Officer to execute certificates of acceptance relating to the acquisition of property interests for public purposes.

Section 2. Authorization to Execute Certificates of Acceptance. The Chief Executive Officer and the Chief Operating Officer are hereby each authorized to execute Certificates of Acceptance for deeds or grants conveying any interest in, or easement upon, real property to the Friant Water Authority for public purposes.

Section 3. Form of Certificate of Acceptance. The form of Certificate of Acceptance used by the Authority will be substantially in the form set forth in Government Code section 27281 as the statute may be amended from time to time.

APPROVED AND ADOPTED on ______________, 2020.

_________________________________
Chris Tantau, Chair of the Board of Directors

ATTEST:

_________________________________
Cliff Loeffler, Secretary of the Board
I, Cliff Loeffler, Secretary/Treasurer of the Friant Water Authority, certify that Resolution No. 2020-__ was duly adopted by the Board of Directors of the Friant Water Authority at a regular meeting held on __________, 2020, by the following vote:

AYES:

NOES:

ABSTAIN:

ABSENT:

________________________
Cliff Loeffler, Secretary/Treasurer
Friant Water Authority
CERTIFICATE OF ACCEPTANCE

This is to certify that the interest in real property conveyed by the deed or grant dated ______, 202_, from ______ to the Friant Water Authority, a California joint powers authority (“Grantee”), is hereby accepted by the undersigned officer pursuant to authority conferred by Resolution No. ___ of Grantee’s Board of Directors adopted on July __, 2020, and the Grantee consents to recordation thereof by its duly authorized officer.

FRIANT WATER AUTHORITY, a California Joint Powers Authority

By: _____________________________________________________________________
Its: ___________________________ [Insert CEO or COO]
Date: ____________________________
SUMMARY:
Staff has developed a draft of the General Member Budget needs for FY 2021. The current FY 2021 Draft GM Budget, at $2,291,500, reflects an increase of $177.5K from FY 2020, at $2,114,000. This is an 8.40% increase overall.

The following categories reflect the larger increases or decreases being proposed.

**Special Counsel:**
For FY 2021 the Special Counsel category has increased $299.5K. This increase is the result of FWA’s participation in the litigation regarding the BiOps (California vs. Ross), and the State Water Project CEQA action (TCCA vs. DWR). The engagements with the law firms Kaplan, Kirsch Rockwell and Stoel Rives are the major additions to this category.

**Professional Support – Operations:**
This category is forecasted to have a $98K decrease for FY 2021 due to a reduced forecast in needs from consultants.

**Dues Fees and Contributions:**
For FY 2021 there is an increase of $26.5K. This is the result of an anticipated increase of in the application fee to SWRCB, (Area of Origin application), of $15.5K, an estimated increase of in CVPWA dues, which is based on the number of FWA General Members and a $5K increase in TFRA contributions based on their approved budget.

**Airborne Snow Observatory:**
Currently this item is not budgeted for FY 2021 as the level of participation by the State and U.S. Bureau of Reclamation (Reclamation), is uncertain. The original proposed Budget in FY 2017 for this item was $750K. There have been two payments made to DWR for the Program in the past 3 years totaling $576K. FWA has received cost share contributions from South Valley Water Association and San Joaquin River Exchange Contractors Water Authority in the amount of $197,583.30 for the program. In most years, FWA committed budget funds for flights that ended up being funded partially or fully by state or federal.
sources, lessening the overall financial burden for members. The net FWA expense Program-to-Date is $378,622.70 or 50.48% of the original proposal.

For FY 2021 potential funding requirements, see the attached Airborne Snow Observatory FY 2021 Funding Possibilities.

**RECOMMENDED ACTION:**
Discussion item only, no action necessary.

**ATTACHMENTS:**
Draft FY 2021 General Member Budget.

Airborne Snow Observatory FY 2021 Funding Possibilities.
### General Members Budget
#### Fiscal Year 2021

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Airborne Snow Observatory FY 2021 Funding Possibilities:

In FY 2019, Proposition 84 local assistance funding was used to fund all ASO activities. In FY 2020, Reclamation provided all funding through the San Joaquin River Restoration Program (SJRRP). Based on coordination with the DWR, the State only has $500k in FY 2021 funding that will be prioritized for basins with local cost-sharing and those in need of bare earth surveys (which San Joaquin is not). There is still discussion of a natural resources bond or budget trailer bill, but is unlikely. Reclamation (through SJRRP) is proposing to cover the costs for at least one flight and iSnobal modeling for FY 2021. There is potential that additional surveys could be added by SJRRP if external funding becomes available (e.g. unused FY 2020 funding); however, that will likely not be known till September. Reclamation has asked if water users can provide for costs of up two flights and post-processing (approximately $320-340k) with option for up to four total flights (up to $680k).

Proposed FY 2021 SJRRP Contribution

<table>
<thead>
<tr>
<th>Task</th>
<th>Notes</th>
<th>Low Estimate</th>
<th>High Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>iSnobal Modeling for 6 months (Jan-Jun)</td>
<td>Transfer iSnobal modeling from USDA-ARS to vendor</td>
<td>$95,000</td>
<td>$200,000</td>
</tr>
<tr>
<td>Base Cost</td>
<td>Aircraft mobilization and instrument calibration</td>
<td>$50,000</td>
<td>$75,000</td>
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<tr>
<td>Cost per Survey</td>
<td>Cost dependent on survey frequency</td>
<td>$160,000</td>
<td>$170,000</td>
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<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>$305,000</strong></td>
<td><strong>$445,000</strong></td>
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</table>

Suggested Water User FY 2021 Contribution

<table>
<thead>
<tr>
<th>Task</th>
<th>Notes</th>
<th>Low Estimate</th>
<th>High Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 surveys</td>
<td>Cost dependent on survey frequency</td>
<td>$320,000</td>
<td>$340,000</td>
</tr>
<tr>
<td>Optional 2 additional surveys</td>
<td>Cost dependent on survey frequency</td>
<td>$320,000</td>
<td>$340,000</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>$320,000 - $640,000</strong></td>
<td><strong>$340,000 – $680,000</strong></td>
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</table>

Ideally, flight frequency would occur February 1, March 1, April 1, then three additional successive flights during snowmelt period (at 15-25 day intervals based on hydrology), for a total of six surveys. For comparison, we had four flights in FY 2020. SJRRP contract with vendor would target funding by the February 1 flight.
AGENDA REPORT

DATE: July 23, 2020
TO: Board of Directors
FROM: Alex Biering, Government Affairs and Communications Manager
      Johnny Amaral, Chief of External Affairs
SUBJECT: External Affairs Update

SUMMARY:
Update on State and Federal legislation and communications activities.

RECOMMENDED ACTION:
None; informational only.

SUGGESTED MOTION:
None; informational only.

DISCUSSION:

State Affairs

On June 29, Governor Newsom signed the FY 20/21 California Budget. It includes $202 billion in spending. In negotiations between the Governor and Legislature, they came to an agreement to replace the $14 billion in cuts he’d originally proposed with other “gimmicks” such as delayed payment plans, borrowing from internal funds, more optimistic tax revenue estimates, and withdrawing almost $8 billion from the state’s $16 billion rainy day fund. Since California moved its tax deadline to July 15 this year, there may be some additional adjustments made to the budget once the Governor and members have a better sense of how tax revenues look. There will also likely be a number of trailer bills passed to specify how the budget is spent. As of now, it does not appear that the Legislature will proceed with a natural resources bond in 2020, and the Governor has dropped his plans for one as well.

August 31 is the deadline for bill passage and the Legislature has seven weeks to consider 700 bills before then. However, complicating matters, on July 7 six members of the Assembly or their staff tested positive for COVID-19, and the Capitol was shut down until further notice. As a result, whereas both houses of the Legislature were set to return to session on July 13, the Legislature subsequently announced that they would be returning on July 27.
Federal Affairs

Senate Republicans announced they will release details of their next coronavirus relief proposal sometime this week. Senate Majority Leader Mitch McConnell (R-KY) and House Republican Leader Kevin McCarthy (R-CA) met with Treasury Secretary Steven Mnuchin and White House Chief of Staff Mark Meadows on Monday to discuss details of the package. Some in the media have reported there may be disagreement between Congressional Republicans and the White House on some proposed provisions such as a plan to allocate billions of dollars to states to assist with testing and contact tracing. These issues will need to be worked out before the GOP proposal is released.

Some reports indicate the GOP proposal will largely resemble the CARES Act which was passed by the House in March. The proposal may include extended unemployment insurance, tax incentives for employers, and a new round of stimulus checks, but it is not likely to include a new round of direct aid to state and local governments or the full $600 per week in unemployment assistance. Bloomberg notes “Republicans plan to include some level of unemployment subsidy, and to allow more flexibility for use of remaining state aid funds provided in the CARES Act, with an estimated tens of billions of that funding still unspent. But people familiar with the drafting process don’t expect new appropriations, as part of an effort to keep the legislation within a $1 trillion cap that Republicans and the White House have set.” It is important to note that many reports about the details of the GOP’s proposal remain speculative; the proposal is clearly still being negotiated and consensus has yet to be reached.

The House and Senate were in recess last week, but the House held “Committee Work Days” all week. No votes are scheduled in either chamber until the week of July 20.

The House Energy and Water Development Appropriations Subcommittee released their FY 2021 E&W bill on July 7. In their bill, the House majority proposes that the Bureau of Reclamation would receive about the same as FY 2020 and the Friant Kern Canal was listed in the WIIN Act list but the bill states it would not release any funding until Interior requests WIIN Act funds for water reuse and recycling and desalination projects, which could come soon. But, at the end of the bill starting on page 69, the subcommittee appropriates an additional $3 billion to Reclamation in emergency funding (COVID-19) to include, among other things, the following provisions:

- (3) not less than $200,000,000 shall be for construction activities, for which the Federal share of the cost shall not be more than 50 percent and for which the non-Federal share of not less than 50 percent may be provided in cash or in-kind, related to projects found to be feasible by the Secretary of the Interior and which are ready to initiate for the repair of critical Reclamation canals where operational conveyance capacity has been seriously impaired by factors such as age or land subsidence, focusing on those that would imminently jeopardize Reclamation’s ability to meet water delivery obligations;

- (11) $200,000,000 shall be for Section 10004 of the Omnibus Public Land Management Act of 2009 (Public Law 111–11) – San Joaquin River Settlement Act

While it is still unclear what will come of this emergency funding in the Senate, it bears watching as it appears the Friant Kern Canal would receive the lion’s share of the “not less than” $200M 50-50 funding. The total earmarked funding is about $836M less than the $3B, which would allow Reclamation to add
even more funding if needed. There is nothing in the language that indicates whether or not the funds are non-reimbursable. Both the regular and the emergency funding provisions include language that restricts the use of federal funds on the study or construction of the Shasta Reservoir Raise.

**BUDGET IMPACT:**

None.

**ATTACHMENTS:**

Legislative tracker (July 8, 2020); Family Farm Alliance Executive Director’s Report (July 2020); News release: “McCarthy Applauds Final Feasibility Report on Repairs to the Friant-Kern Canal” (July 6, 2020).
## Legislative Tracker

**FRIANT WATER AUTHORITY**

**July 17, 2020**

### State Bills

<table>
<thead>
<tr>
<th>Bill</th>
<th>Title (Author) &amp; Date</th>
<th>Description</th>
<th>Positions</th>
<th>FWA</th>
<th>ACWA</th>
<th>Status</th>
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<tbody>
<tr>
<td>AB 1839</td>
<td>Economic, environmental, and social recovery: California COVID-19 Recovery Deal (Bonta) – 5/7/20 version</td>
<td>Would enact the California COVID-19 Recovery Deal. The bill would make a series of legislative findings and declarations pertaining to the coronavirus (COVID-19) pandemic and various economic, environmental, and social conditions in the state. The bill would state the intent of the Legislature that the state adopt a policy framework with principles and goals committed to accomplish specified economic, environmental, and social objectives and priorities as part of the state’s COVID-19 recovery spending. The bill would state that the Legislature establishes various spending rules for the COVID-19 recovery, including adopting spending measures that prohibit businesses, organizations, or agencies from accepting public funds for any long-term projects that prolong the emission of greenhouse gases or lead to the expansion of fossil fuel projects and ensuring that recovery spending includes specific measures for California populations and communities most negatively impacted by COVID-19.</td>
<td>NYC</td>
<td>Watch</td>
<td></td>
<td>Dead</td>
</tr>
<tr>
<td>AB 2482</td>
<td>Agriculture: environmental farming programs and grants (Stone) – 2/19/20 version</td>
<td>Would require the Department of Food and Agriculture, upon appropriation by the Legislature of additional funds, to administer the State Water Efficiency and Enhancement Program (grant program) to provide grants to agricultural operations to implement irrigation systems that reduce greenhouse gases and energy use and increase water use efficiency, as prescribed. The bill would also require the department to fund culturally competent training on irrigation and nutrient management, authorize the department to contract with qualified third parties to measure grant program outcomes, and require the department to adopt guidelines for the grant program.</td>
<td>NYC</td>
<td>NYC</td>
<td></td>
<td>Dead</td>
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</table>

1 Updates since the last version are included in **bold text.**
<table>
<thead>
<tr>
<th>Bill</th>
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<tbody>
<tr>
<td>AB 2502</td>
<td>Groundwater sustainability plans: impacts on managed wetlands (Quirk) – 2/19/20 version</td>
<td>The act prescribes that GSPs contain certain required contents and requires that plans contain, where appropriate and in collaboration with the appropriate local agencies, additional analyses or components, including, among others, control of saline water intrusion, wellhead protection areas and recharge areas, a well abandonment and well destruction program, well construction policies, and impacts on groundwater dependent ecosystems. This bill would add impacts to managed wetlands, as specified, to the additional analyses or components that a plan is required to contain when appropriate.</td>
<td>NYC</td>
<td>Oppose</td>
<td></td>
<td>Dead</td>
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<tr>
<td>AB 2518</td>
<td>Voluntary stream restoration landowner liability (Wood) – 2/19/20 version</td>
<td>Would exempt a landowner who voluntarily allows land to be used for such a project to restore fish and wildlife habitat from civil liability for property damage or personal injury resulting from the project if the project is funded, at least in part, by a state or federal agency that promotes or encourages riparian habitat restoration, unless the property damage or personal injury is caused by willful, intentional, or reckless conduct of the landowner or by a design, construction, operation, or maintenance activity performed by the landowner.</td>
<td>NYC</td>
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<td></td>
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<tr>
<td>AB 2642</td>
<td>Department of Conservation: Multibenefit Land Conversion Incentive Program (Salas) – 5/5/2020 version</td>
<td>Would require the Department of Conservation to establish and administer a program named the Multibenefit Land Conversion Incentive Program for purposes of providing grants to groundwater sustainability agencies or counties, or other specified entities designated by groundwater sustainability agencies or counties, for the development or implementation of local programs supporting or facilitating multibenefit land conversion at the basin scale. The bill would establish procedures for the department’s administration of the program and would require the department to develop guidelines to implement the program and to exercise its expertise and discretion in awarding program funds to eligible applicants.</td>
<td>PRO: Audubon California, Environmental Defense Fund, California Association of Resource Conservation Districts, California Habitat Conservation Planning Coalition</td>
<td>NYC</td>
<td>Support if Amended</td>
<td>Dead</td>
</tr>
<tr>
<td>AB 2720</td>
<td>California Environmental Quality Act: negative declarations and mitigated negative declarations: groundwater recharge projects (Salas) – 2/20/20 version</td>
<td>Would require the lead agency, for a groundwater recharge project on agricultural land fallowed as a result of management actions required by a groundwater sustainability plan, to prepare a negative declaration or a mitigated negative declaration if there is substantial evidence in the record that a project or a revised project would not have a significant environmental impact. Because a lead agency would be required to determine whether there is substantial evidence in the record that a project would not have a significant environmental impact, this bill would impose a state-mandated local program.</td>
<td>NYC</td>
<td>NYC</td>
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<td>Bill</td>
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<td>AB 3054</td>
<td>California Environmental Quality Act: judicial challenge: litigation transparency: identification of contributors (Salas) – 2/21/20 version</td>
<td>Would require a plaintiff or petitioner, in an action or proceeding brought pursuant to the California Environmental Quality Act, to disclose the identity of a person or entity that contributes $1,000 or more, as specified, toward the plaintiff’s or petitioner’s costs of the action or proceeding. The bill also would require the plaintiff or petitioner to identify any pecuniary or business interest related to the project or issues involved in the action or proceeding of those persons or entities. The bill would authorize a court to, upon request of the plaintiff or petitioner, withhold public disclosure of a contributor if the court finds that the public interest in keeping that information confidential clearly outweighs the public interest in disclosure.</td>
<td></td>
<td>NYC</td>
<td>Favor</td>
<td>Dead</td>
</tr>
<tr>
<td>AB 3256</td>
<td>Wildfire Prevention, Safe Drinking Water, Climate Resilience, Drought Preparation, and Flood Protection Bond Act of 2020 (Garcia) – 6/8/20 version</td>
<td>Would enact the Wildfire Prevention, Safe Drinking Water, Climate Resilience, Drought Preparation, and Flood Protection Bond Act of 2020, which, if approved by the voters, would authorize the issuance of bonds in the amount of $6,980,000,000 pursuant to the State General Obligation Bond Law to finance projects for a wildfire prevention, safe drinking water, climate resilience, drought preparation, and flood protection program.</td>
<td>PRO: Environmental NGOs, land trusts, RCDs, flood control districts</td>
<td>NYC</td>
<td>Favor if Amended</td>
<td>Referred to Rules Committee 6/8.</td>
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<td>Bill</td>
<td>Title (Author) &amp; Date</td>
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<tr>
<td>AB 3279</td>
<td>California Environmental Quality Act: administrative and judicial procedures (Friedman) – 7/1/20 version</td>
<td>(1)The California Environmental Quality Act (CEQA) requires a lead agency, as defined, to prepare, or cause to be prepared, and certify the completion of an environmental impact report (EIR) on a project that it proposes to carry out or approve that may have a significant effect on the environment or to adopt a negative declaration if it finds that the project will not have that effect. CEQA also requires a lead agency to prepare a mitigated negative declaration for a project that may have a significant effect on the environment if revisions in the project would avoid or mitigate that effect and there is no substantial evidence that the project, as revised, would have a significant effect on the environment. This bill would instead require that a court, to the extent feasible, commence hearings on an appeal within 270 days of the date of the filing of the appeal. This bill contains other related provisions and other existing laws.</td>
<td>PRO: Property management groups, commercial real estate groups, business groups and chambers of commerce, PCL, timber groups OPP: Center on Race, Poverty &amp; the Environment, Sierra Club California, State Building and Construction Trades Council of California, Physicians for Social Responsibility - Los Angeles, Communities for a Better Environment, California Environmental Justice Alliance, Leadership Counsel for Justice &amp; Accountability</td>
<td>NYC</td>
<td>Support if Amended</td>
<td>Currently in Assembly Env. Quality Committee.</td>
</tr>
<tr>
<td>ACA 3</td>
<td>Clean Water for All Act (Mathis) – 3/20/19 version</td>
<td>Would require, commencing with the 2021–22 fiscal year, not less than 2% of specified state revenues to be set apart for the payment of principal and interest on bonds authorized pursuant to the Water Quality, Supply, and Infrastructure Improvement Act of 2014; and for water supply, delivery, and quality projects administered by DWR, and water quality projects administered by the SWRCB, as provided. Funds would be continuously appropriated and distributed as follows: 5% to pay down Prop. 1; 57% to be disbursed by DWR for water supply, delivery, and quality projects, including for conveyance, recharge, subsidence abatement, and storage; 38% to the SWRCB for water quality projects. DWR would be required to give priority to projects that address deferred maintenance; the SWRCB couldn’t use the funding to address water quality enforcement actions.</td>
<td>PRO: San Gabriel Valley Water Authority, Howard Jarvis Taxpayers Association, Friant Water Authority</td>
<td>Support</td>
<td>Watch</td>
<td>Failed passage in Water, Parks &amp; Wildlife on 4/30; reconsideration granted.</td>
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<td>Bill</td>
<td>Title (Author) &amp; Date</td>
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<td>SB 559</td>
<td>California Water Commission: Friant-Kern Canal conveyance restoration (Hurtado) – 7/3/19 version</td>
<td>Would appropriate $400 million from the General Fund for actions to restore conveyance capacity on the Friant-Kern Canal. Amended to remove appropriation, leaving policy in place but requiring funding in the budget. Also amended to require cost-share, establish California Water Commission as disbursing agency, and require public briefings.</td>
<td>PRO:</td>
<td></td>
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<td>Now likely to be heard in Assembly Appropriations in August.</td>
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<td>Association of California Water Agencies, Western Growers Association, Arvin-Edison Water Storage District, Friant Water Authority, Tulare County, Tulare County Farm Bureau, Kern County, Kern County Hispanic Chamber of Commerce, Pixley Irrigation District, Tea Pot Dome Water District, South Valley Water Association, Fresno County Kern-Tulare Water District, Fresno Farm Bureau, Lower Tule River Irrigation District, Shafter-Wasco Irrigation District</td>
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<td>OPP:</td>
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<td>Sierra Club California</td>
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<td>SB 931</td>
<td>Local government meetings: agenda and documents (Wieckowski) – 4/2/20 version</td>
<td>Would require, if the local agency has an internet website, a legislative body or its designee to email a copy of, or website link to, the agenda or a copy of all the documents constituting the agenda packet if the person requests that the items be delivered by email. The bill would require, where the local agency determines it is technologically infeasible to send a copy of all documents constituting the agenda packet or a website link containing the documents by electronic mail or by other electronic means, the legislative body or its designee to send by electronic mail a copy of the agenda or a website link to the agenda and mail a copy of all other documents constituting the agenda packet in accordance with the mailing requirements. By requiring local agencies to comply with these provisions, this bill would impose a state-mandated local program.</td>
<td>NYC</td>
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<td></td>
<td>Dead</td>
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<td>SB 974</td>
<td>California Environmental Quality Act: small disadvantaged community water system: exemption (Hurtado) – 6/18/20 version</td>
<td>Would, with certain specified exceptions, exempt from CEQA certain projects that primarily benefit a small disadvantaged community water system by improving the small disadvantaged community water system’s water quality, water supply, or water supply reliability, by encouraging water conservation, or by providing drinking water service to existing residences within a disadvantaged community where there is evidence of contaminated or depleted drinking water wells. The bill would also define various terms for purposes of this exemption. Because a lead agency would be required to determine whether a project qualifies for this exemption, this bill would impose a state-mandated local program.</td>
<td></td>
<td>NYC</td>
<td>Watch</td>
<td>Currently in Assembly Committee on Nat'l Resources.</td>
</tr>
<tr>
<td>SB 1028</td>
<td>Agriculture: Cannella Environmental Farming Act of 1995: Environmental Farming Incentive Program (Dodd) – 3/19/20 version</td>
<td>Would require the Advisory Panel on Environmental Farming to assist government agencies to incorporate the conservation of natural resources and ecosystem services practices into agricultural programs. The bill would require the Department of Food and Agriculture, with advice from the panel, to establish and administer the California Environmental Farming Incentive Program, subject to an appropriation by the Legislature. The bill would require the program to support on-farm practices seeking to optimize environmental benefits while supporting the economic viability of California agriculture by providing incentives to farmers or ranchers who want to pursue adopting management practices that contribute to wildlife habitat and result in on-farm activities that provide multiple conservation benefits, as prescribed.</td>
<td></td>
<td>NYC</td>
<td>NYC</td>
<td>Dead</td>
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<tr>
<td>SB 1101</td>
<td>Water and Climate Science Advisory Board (Caballero) – 3/25/20 version</td>
<td>Would require the Department of Water Resources to convene a Water and Climate Science Advisory Board to consist of 5 members with certain qualifications appointed by the department, the agency, and the State Water Resources Control Board, as provided. The bill would require board members to serve 3-year terms. The bill would require the department to consult with the board when initiating, reviewing, or expanding policies or guidelines regarding impacts of climate change on water resources. The bill would require the department to establish an internal process for department review of and comment on the work of the board, which shall be made publicly available.</td>
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<td>NYC</td>
<td>NYC</td>
<td>Currently in Rules Committee</td>
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<tr>
<td>Bill</td>
<td>Title (Author) &amp; Date</td>
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<td>SB 1188</td>
<td>The California Water Plan (Stern) – 4/8/20 version</td>
<td>Current law requires the Department of Water Resources to update every 5 years the plan for the orderly and coordinated control, protection, conservation, development, and use of the water resources of the state, which is known as The California Water Plan. Current law requires the department to include a discussion of various strategies in the plan update, including, but not limited to, strategies relating to the development of new water storage facilities, water conservation, water recycling, desalination, conjunctive use, water transfers, and alternative pricing policies that may be pursued in order to meet the future needs of the state. This bill would require the department to include in the plan update, instead of a discussion of various strategies, a discussion of various strategies for increasing regional water resilience, as defined.</td>
<td></td>
<td>NYC</td>
<td>NYC</td>
<td>Dead</td>
</tr>
<tr>
<td>SB 1320</td>
<td>Climate change: California Climate Change Assessment (Stern) – 6/18/20 version</td>
<td>Would require the Office of Planning and Research to develop the California Climate Change Assessment, in coordination with the Natural Resources Agency, the State Energy Resources Conservation and Development Commission, and the Strategic Growth Council, and in consultation with partner public agencies designated by the office. The bill would require the office to conduct the assessment every 2 years and to publish the assessment in October of each odd-numbered year. The bill would require the assessment to assess and report the impacts and risks of climate change and identify potential solutions to inform legislative policy, as provided. The bill would require the assessment to include sector-specific liability projections that assess the impacts of climate change under varied emissions scenarios for the years 2025, 2030, 2050, and 2100.</td>
<td></td>
<td>NYC</td>
<td>NYC</td>
<td>Currently in Assembly Committee on Nat’l Resources.</td>
</tr>
<tr>
<td>SB 1356</td>
<td>Groundwater sustainability agency: financial authority (Borgeas) – 2/21/20 version</td>
<td>The Sustainable Groundwater Management Act authorizes a groundwater sustainability agency to impose fees to fund the costs of a groundwater sustainability program and requires a groundwater sustainability agency to hold at least one public meeting prior to imposing or increasing a fee. The act requires that a groundwater sustainability agency make the data upon which the proposed fee is based publicly available at least 10 days prior to the meeting. This bill would make nonsubstantive changes to the provisions authorizing groundwater sustainability agencies to impose fees.</td>
<td></td>
<td>NYC</td>
<td>NYC</td>
<td>Currently in Rules Committee</td>
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MEMORANDUM

TO: BOARD OF DIRECTORS AND ADVISORY COMMITTEE
FROM: DAN KEPPEN, EXECUTIVE DIRECTOR
SUBJECT: EXECUTIVE DIRECTOR’S REPORT
DATE: JULY 6, 2020
CC: MARK LIMBAUGH, NORM SEMANKO

This executive director’s report (EDR) is intended to keep you apprised as to what is happening behind the scenes on policy issues the Alliance is engaged in, some of which we will discuss on our next joint teleconference of the Board of Directors and Advisory Committee, scheduled for Friday, July 10, at noon (Pacific, including Arizona) 1:00 p.m. (Mountain); 2:00 p.m. (Central), 3:00 p.m. (Eastern). In the past month, our efforts have focused on the federal response to COVID-19, multiple water infrastructure developments in Congress, a new climate change report released by House Democrats, and Klamath “takings” litigation and public relations related to that litigation. These issues and other matters important to our members are further discussed in this EDR.

This report is intended for your use, but I understand that you may wish to share this information with your local board members and close associates. I would ask that you be circumspect when you distribute this, however.

FEDERAL RESPONSE TO COVID-19 PANDEMIC

Hopes of a summer-time decline in the spread of COVID-19 were dashed in the weeks following Memorial Day when the number of reported infections surged again in the past month. The New York Times reports the U.S. surpassed 50,000 new coronavirus cases in a single day for the first time on July 2. At least eight states reported single-day case records including California, and Montana in the West. At a recent Bloomberg event, Treasury Secretary Steve Mnuchin said he expects “a spectacular rebound” of the economy in the third quarter, predicting the U.S. will be out of a recession by the end of the year. Secretary Mnuchin’s comments contradict those of Federal Reserve Chair Jerome Powell, who said in recent testimony to the Senate Banking Committee that “significant uncertainty remains about the timing and strength of the recovery.”
U.S. workers filed another 1.5 million new applications for jobless benefits in the third week of June, as the coronavirus pandemic continued to upend the labor market, the Labor Department reported. More than 19.5 million people remain on unemployment rolls.

1. **Impacts to Western Agriculture and Rural Communities**

Western U.S. agriculture is facing one of its biggest crises since the Great Depression, as the COVID-19 pandemic has impacted markets, disrupted the food supply chain, collapsed commodity prices, and intensified labor challenges. Rural communities on average were more vulnerable to the public health and economic crisis after a decade of slower recovery from the last recession, compared with more populated areas. They are also more reliant on industries like agriculture, mining, and manufacturing.

The Western Governors’ Association (WGA) last month released its Reimagining the Rural West Initiative report with a dozen recommendations to drive economic development efforts in the West, as businesses and towns try to recover from the pandemic. The initiative, led by WGA Chair and Governor Doug Burgum (NORTH DAKOTA), follows a series of workshops hosted by Republican and Democratic governors over the past year, including one last summer in Vail (COLORADO), which Farm Alliance president Patrick O’Toole and I attended. I also participated in a panel discussion in Vail – moderated by Governor Burgum - on areas where constructive environmental funders and Western farmers and ranchers can engage.

The WGA proposes focusing on advantages like better access to outdoor recreation and higher quality of life that “can serve to attract new residents, or entice young people to stay or return to their rural hometowns.” That includes changing the metrics and requirements for federal programs that support rural development, including loans and grants from the Agriculture and Commerce departments. The plan also focuses on improving food and water access in the West, noting the higher distribution costs and logistical challenges in more remote communities that can make it harder to supply fresh and healthy foods.

2. **Paycheck Protection Program**

The Paycheck Protection Program (PPP) was extended an additional five weeks until August 8. President Trump signed the bill into law on Saturday. Nearly $130 billion remains available for loans, and PPP loans will be forgiven provided participants abide by certain rules, which were recently eased. The Small Business Administration has announced that it plans to resume accepting applications today (July 6).

3. **Federal Farm Rescue Payments**

The U.S. Department of Agriculture (USDA) has already distributed a quarter of its $16 billion in farm rescue payments in the last month. However, several ag sectors – including apple and potato growers - are still appealing to be included in the program. Rep. Dan Newhouse (R-WASHINGTON), and twenty-five other lawmakers, sent a letter to USDA Secretary Sonny Perdue urging that America’s apple growers be included in the USDA’s economic relief efforts.
The Members argue the coronavirus has drastically damaged apple growers and noted “these producers are often the backbones of rural communities.”

4. **Coronavirus Food Assistance Program Applications**

USDA’s Farm Service Agency (FSA) will now accept applications for the Coronavirus Food Assistance Program (CFAP) through an online portal, expanding the options available to producers to apply for this program, which helps offset price declines and additional marketing costs because of the coronavirus pandemic. FSA is also leveraging commercial document storage and e-signature solutions to enable producers to work with local service center staff to complete their applications from home. Through the portal, producers with secure USDA login credentials—known as eAuthentication—can certify eligible commodities online, digitally sign applications and submit directly to the local USDA Service Center. Producers who do not have an eAuthentication account can learn more and begin the enrollment process at farmers.gov/sign-in. The digital application is only available to sole proprietors / single-member business entities.

5. **Cutting Regulations to Aid Economic Recovery**

In a memo last month, the White House Office of Management and Budget asked federal agencies to prepare lists of regulations that may inhibit economic recovery during the pandemic. The lists are to include temporary regulatory actions agencies have taken in response to the COVID-19 pandemic that warrant the issuance of a permanent measure to promote economic recovery. Potentially targeted regulatory actions could include labor, energy, and environmental regulations, but the impacts of the memo on these regulations are currently uncertain. President Trump’s Executive Order 13924 orders federal agencies to roll back or change regulations “that may inhibit economic recovery” in order to boost the economy impacted by the COVID-19 pandemic. The order does not provide specific instructions but is a blanket message across the U.S. government to help the economy recover by easing regulation.

6. **Response by Congress**

While Democrats and Republicans, along with the White House, agree on the need to enact more COVID-19 relief before the August recess, the next round of relief seems likely to be much more focused. GOP leaders have generally called for economic, education and public health related relief, along with legal immunity for small businesses as the country experiences an increase in COVID-19 cases nationwide as the economy reopens. White House officials also are calling for more targeted relief for small businesses and to properly equip schools to reopen in the fall. They also are looking at more direct payments to individuals to continue economic recovery. Democrats are pushing their $3 trillion "Health and Economic Recovery Omnibus Emergency Solutions (Heroes) Act” passed by the House last month which contains trillions in funds for state and local governments. GOP leaders, while stating that they are less than enthusiastic about rewarding poorly run states with more stimulus money, seem to support assistance to localities (such as cities and counties) suffering from lost tax revenues due to the pandemic.
7. **Alliance Actions**

Our representatives in Washington, D.C. – Mark Limbaugh, and The Ferguson Group (TFG)- have been closely monitoring the federal response to the pandemic. In recent months, I’ve participated in several briefings, describing how Western agriculture has been impacted by the government response, and summarizing the Alliance’s work, advocating that any infrastructure stimulus package include Western water provisions, and our efforts to ensure that the irrigation industry be considered “essential”. Briefings have been provided in ZOOM sessions hosted by the Idaho Water Users Association, Tri-States (IDAHO, OREGON, and WASHINGTON), Pacific Power community liaisons (OREGON) and a group of federal and state conservative policy interests and think tanks, including the Heritage Foundation.

**TRUMP ADMINISTRATION ACTIONS**

8. **Appointments**

President Trump plans to formally nominate William Pendley as Director of the Bureau of Land Management (BLM). Mr. Pendley must be confirmed by the Republican-controlled Senate, but that is not guaranteed given election year politics and his somewhat controversial positions on federal management of public lands. He will certainly face fierce opposition from Senate Democrats, but it is not certain that moderate Republicans up for reelection this year will support his nomination. Mr. Pendley, as the former president of the conservative Mountain States Legal Foundation, was a sharp critic of BLM and other federal land management agencies. He has served as acting BLM director since July 2019.

Sen. Joni Ernst (R-IA) announced that she will vote in Committee against Mr. Doug Benevento, President Trump's nominee for the Environmental Protection Agency’s (EPA) Deputy Administrator over uncertainty in EPA’s management of the ethanol and biodiesel renewable fuel standard (RFS). Sen. Ernst is a member of the Senate Environment and Public Works (EPW) Committee which has jurisdiction over EPA nominations, and her one GOP vote could stop the nomination from reaching the Senate floor if all EPW Democrats remain united in their opposition. In recognizing Mr. Benevento's nomination does not have enough support, EPW Chairman John Barrasso (R-WY) decided the panel would not take up his nomination.

9. **Department of Interior (DOI): Funding Request for Water Storage Projects**

Interior Assistant Secretary for Water and Science Timothy Petty last month requested $108.7 million in funding for surface water storage infrastructure projects in the western United States, including $15 million for the Shasta Dam enlargement project in northern California. In order for surface water storage infrastructure projects to be funded under Section 4007 of the Water Infrastructure Improvements for the Nation (WIIN) Act, DOI must send Congress a letter requesting project funding by name and amount. Congress then must include these projects in the annual Energy and Water Development and Related Agencies Appropriations Act in order to fund these projects. DOI last sent a [letter](#) requesting funds for surface water storage infrastructure projects in February 2019. Congress funded almost all of these projects in the Fiscal Year 2020
McCarthy Applauds Final Feasibility Report on Repairs to the Friant-Kern Canal

July 6, 2020

Today, the U.S. Bureau of Reclamation sent Congress the final Feasibility Report under Section 4007 of the Water Infrastructure Improvements for the Nation (WIIN) Act for the Friant-Kern Canal Middle Reach Capacity Correction Project. This marks a critically important step forward in restoring lost water capacity to the communities served by eight irrigation and water districts along the Friant-Kern Canal.

“Water is the lifeblood that supports our communities and the food we grow on the eastside of the Central Valley,” said McCarthy. “However, subsidence on the Friant-Kern Canal is adversely impacting many communities’ ability to get the water they contract and pay for through the canal, including in Kern and Tulare Counties.

“I want to commend Interior Secretary David Bernhardt and Bureau of Reclamation Commissioner Brenda Burman for their work on finalizing this feasibility report, which under the WIIN Act now makes this project eligible to receive construction funds from Congress. I also want to thank Friant Water Authority Chairman Chris Tantau, CEO Jason Philips, and other local stakeholders for their support and commitment to advancing this project.

“There is still work to be done, but Reclamation’s actions today represent a significant milestone in supporting the more than one million acres of farmland that provide sustenance to the United States and across the globe.”
The following statements were also issued on the feasibility report:

“Thanks to President Trump and Leader McCarthy, today’s resulting action furthers the Trump Administration’s commitment to America’s hardworking farmers who need water to feed our nation. Earlier this year, President Trump and I joined Leader McCarthy and other elected officials in the House in Bakersfield where the President signed the 'Memorandum on Developing and Delivering More Water Supplies in California,' directing the Department to invest in western water infrastructure and provide water to California’s communities and farms.” – Interior Secretary David Bernhardt

“Addressing reliable water and power delivery in the west is a top priority for the Trump Administration, and the 50-year old Friant-Kern Canal is front and center. Restoring the capacity along the middle stretch of the canal is critical to providing reliable water supplies to one of the most agriculturally-productive regions in the nation. Thank you Leader McCarthy and colleagues for your strong support for the Friant-Kern Canal Middle Reach Capacity Correction Project.” – Reclamation Commissioner Brenda Burman

“On behalf of Friant Water Authority and its members, I want to thank Secretary Bernhardt, Commissioner Burman, Leader McCarthy, and our other federal partners and congressional representatives who have helped maintain momentum for reaching this critical milestone. The nearly 15,000 farms and dozens of communities who rely on the Friant-Kern Canal are deeply appreciative of your leadership and support for this project, which is absolutely critical to maintaining jobs and economic prosperity for our agricultural communities in the San Joaquin Valley.” – Friant Water Authority Chairman Chris Tantau

“For nearly three years, Friant Water Authority staff and team of consultants have been working in partnership with the Bureau of Reclamation to assess the magnitude of the Friant-Kern Canal’s conveyance challenges, and developing alternatives for addressing it. This final study not only affirms that this project is feasible, but that it provides a high value for investment by local and federal partners.” – Friant Water Authority CEO Jason Philips
“As the southernmost district on the Friant-Kern Canal, the cumulative effects of the canal’s constriction land at our doorstep. And, as the single largest Class 2 water contractor, we live and die by our ability to recharge groundwater aquifers using canal supplies. With the feasibility study now complete, we can move forward to repairing the canal and restoring needed water supplies for our farmers and small communities who rely on the recharge water it delivers.” – Arvin-Edison Water Storage District President Edwin Camp

“Even if your job doesn’t have anything to do with agriculture, if you live in the San Joaquin Valley, water matters to your quality of life. Today’s milestone is a critical step in implementing a project that will help our region thrive as we work towards long-term groundwater sustainability.” – Porterville Irrigation District Chairman Eric Borba

“The full utilization of our existing water conveyance infrastructure, which includes the Friant-Kern Canal, is paramount to the long-term economic viability of production agriculture in the San Joaquin Valley. The Kern County Farm Bureau, its Board of Directors and members, and the communities it serves depend on accessibility to surface water supplies in order to maintain one of the most productive agricultural regions in the world. Therefore, the Kern County Farm Bureau is in full support of restoring the capacity of the Friant-Kern Canal, and is encouraged by Bureau of Reclamation’s development of the final feasibility report that will help make this into a reality.” – Kern County Farm Bureau President John Moore

“This repair is an essential project so that growers serviced by the Friant-Kern Canal can continue the essential service of producing food. As SGMA groundwater restrictions loom, every gallon of surface water provided is one less gallon of groundwater extracted.” – Tulare County Farm Bureau President John Guthrie

Background

- Built between 1939 and 1944, the Friant-Kern Canal is 152 miles long, delivering water from Millerton Lake to the eastern side of the Central Valley for
irrigation and conjunctive use purposes, and terminates near Bakersfield, California.

- In 2017, the Friant Water Authority discovered significant subsidence (up to 2 feet in some areas) along 33 miles of the Friant-Kern Canal in Tulare and Kern Counties. The subsidence has reduced the canal’s capacity to deliver water by 60% to the Arvin-Edison Water Storage District, Delano-Earlimart Irrigation District, Kern Tulare Water District, Sausalito Irrigation District, Shafter-Wasco Irrigation District, South San Joaquin Municipal Utility District, Tea Pot Dome Water District, and Terra Bella Irrigation District.

- In 2017, one of the wettest years in recent history, 300,000 acre-feet of water could not be delivered through the Friant-Kern Canal to those who contract and pay for it due to subsidence.

- In 2016, the bipartisan Water Infrastructure Improvements for the Nation (WIIN) Act, which was championed by McCarthy, was signed into law. Section 4007 of the law created a process by which water infrastructure projects, like the Friant-Kern Canal Middle Reach Capacity Correction Project, can be authorized by Congress and provided Federal funds of up to 50% of total project costs. With the U.S. Bureau of Reclamation (BoR) issuing a final feasibility report for the Friant-Kern Canal Middle Reach Capacity Correction Project, funds can now be requested by the U.S. Department of the Interior (DOI) and subsequently appropriated by Congress for construction of this project.

- The Friant-Kern Canal Middle Reach Capacity Correction Project Feasibility Report is the first such report to be sent by the DOI and BoR to Congress following enactment of the WIIN Act in 2016.

- Prior to the feasibility report being finalized, Congress already provided $4,550,000 to this project for studies and pre-construction work at the request of the DOI.

- The BoR estimates the Friant-Kern Canal Middle Reach Capacity Correction Project will cost $500,000,000, which will be financed through a combination of Federal and non-Federal funds. Specifically, this project will repair subsidence on the canal between Mile Posts 88.2 and 121.5.
Energy and Water appropriations bill, which was included in Public Law 116-94. However, Congressional Democrats blocked the requested funds for the Shasta Reservoir Enlargement Project, which is almost ready for construction.

The Alliance for nearly two decades has advocated to mitigate for the high costs associated with reallocating water to the environment and away from agriculture and municipal needs by restoring certainty to critical irrigation and city water supplies and meeting environmental needs in the process. That certainty can be provided by building new water supply enhancement projects that can help keep pace with growing Western water demands. The Alliance in 2014 published a report provides answers to frequently asked questions about these types of projects.

10. DOI, Bureau of Reclamation

a. Title Transfers

DOI in the past month has used new authority provided by the “John D. Dingell, Jr. Conservation, Management, and Recreation Act” to transfer for the first time the title to federal water projects to the local non-federal operating entities in Utah and North Dakota. The two Reclamation projects transferred from Utah were the Emery County Project and the Uintah Basin Replacement Project. Both provide irrigation water, as well as serve some recreation, municipal and other industrial purposes. Such a transfer of federal property previously would have taken years and required Congress to pass a specific law codifying the move, but the Dingell Act, which was signed into law last year included provisions that streamlined the title transfer process. Reclamation also last week sent a notice to Congress announcing its intent to transfer federal ownership of the Oakes Test Area located near Oakes, North Dakota, to the Dickey-Sargent Irrigation District.

As you know, title transfer is a voluntary conveyance of ownership for water projects including dams, canals, laterals, and other water-related infrastructure to the beneficiaries of those facilities. Transfers are one of several positive means of strengthening control of water resources at the local level. However, despite the benefits, local water agencies are many times discouraged from pursuing title transfer because the process is expensive and slow. Moreover, until recently, every title transfer currently requires an act of Congress to accomplish, regardless of whether the project covers 10 acres or 10,000 acres.

Congress provided the authority for these and other qualified title transfers in Title VIII of P.L. 116-9, the Dingell Act. As required by the Act, Reclamation’s action is a written notification that begins a 90-day congressional review, after which the Department will complete the ownership transfer unless Congress enacts a joint disapproval resolution within that time period. The Family Farm Alliance in 2019 worked closely with Reclamation on the Directive & Standard for title transfers that do not require Congressional authorization. Alliance Advisory Committee member Tom Knutson (NEBRASKA) and I both testified before a House subcommittee in the last Congress in support of title transfer legislation. It is encouraging to see the quick progress the local water organizations made using this new streamlined process. I will continue to urge other Western water managers to work with Interior and Reclamation to do the same, where possible, while we have such high-level political attention being paid to this issue.
b. WaterSMART Grant Funding Opportunities

Reclamation is launching the 2021 WaterSMART Water and Energy Efficiency Grant funding opportunity that supports water management organizations developing projects that result in quantifiable and sustained water savings, increase the production of hydropower, and support broader water reliability benefits. Applications for these grants are due on Sept. 17, 2020, at 4 p.m. MDT. Reclamation is also extending the deadline for the 2021 Drought Resiliency Projects funding opportunity while raising the maximum federal award for each of the two groups of projects. These Reclamation grant programs support the Department of the Interior’s commitment to meeting the President’s Memorandum on Promoting the Reliable Supply and Delivery of Water in the West. Earlier today, I shared with you a chart that Reclamation prepared for Congress that describes all WaterSMART programs.

For the Water and Energy Efficiency Grants, funding is available in two groups. This program provides up to $500,000 per agreement for projects that can be completed in two years and up to $2 million per agreement for projects that can be completed in three years. Recipients must match the funding with a minimum 50% cost-share. Learn more about this available grant at www.grants.gov by searching for grant number BOR-DO-21-F001. Learn more about the Water and Energy Efficiency Grants at www.usbr.gov/WaterSMART/weeg.

The Drought Resiliency Projects funding opportunity announced on May 4, 2020, is being extended until August 5, 2020, at 4 p.m. MDT. The funding available for each project has been increased up to $500,000 for projects that can be completed in two years and up to $1.5 million for projects that can be completed in three years. The funding opportunity is available at www.grants.gov by searching funding opportunity number BOR-DO-20-F002. Learn more about the Drought Program at www.usbr.gov/drought. Eligible applicants for funding include states, tribes, irrigation districts, water districts or other organizations with water and power delivery authority located in the western U.S. or territories. Alaska and Hawaii are also eligible to apply.

11. Department of Agriculture (USDA): New Steps to Curb Wildfire Risks

U.S. Secretary of Agriculture Sonny Perdue last month issued a memorandum to Forest Service Chief Vicki Christiansen providing direction that will serve as a blueprint to help modernize the agency’s systems and approaches to ensure national forests and grasslands continue to meet the needs of the American people. This announcement follows an April decision by Secretary of the Interior David Bernhardt to construct and maintain a system of up to 11,000 miles of strategically placed fuel breaks to control wildfires within a 223 million-acre area in portions of California, Idaho, Nevada, Oregon, Utah, and Washington. Secretary Perdue’s direction will encompass four areas of the agency’s work:

- Increasing the productivity of national forests and grasslands;
• Valuing grazing heritage and the national grasslands;
• Increasing access to national forest system lands; and
• Expediting environmental reviews to support active management.

A priority Family Farm Alliance initiative in recent years has been to advocate for active forest management that could potentially increase water yield, improve water quality, provide for jobs, and reduce the cost of firefighting, while increasing forest resiliency.

12. U.S. Army Corps of Engineers (Corps): Levee Safety

The Corps has extended the comment period for its draft agency guidance, Engineer Circular (EC) 1165-2-218: U.S. Army Corps of Engineers Levee Safety Program, through July 27. It establishes internal policy for understanding, prioritizing, and managing flood risks. Most levees in the Corps Levee Safety Program are operated and maintained by non-federal levee sponsors. This guidance lays a path forward for the Corps and levee sponsors to partner in managing levee-related flood risks. The EC will be temporary. After two years, the Engineer Circular will either be revised, rescinded, or converted to an Engineer Regulation, which does not expire. Mark Limbaugh and I are reviewing the EC to make sure concerns we had regarding this program several years ago do not re-emerge. Comments should be directed to www.regulations.gov, Docket #COE-2020-0003. Also, see Https://www.usace.army.mil/Missions/Civil-Works/Levee-Safety-Program/.

13. EPA: Endangered Species Act Consultation Process for Pesticides

EPA earlier this month, in collaboration with federal partners, met a congressional commitment by submitting its second report to Congress highlighting the progress achieved to date with creating a more efficient and effective review process regarding pesticide impacts under the Endangered Species Act (ESA). Highlights of the report include:

• How a new method announced in March 2020 for conducting biological evaluations under the ESA will assure that pesticide registration review actions under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) do not jeopardize endangered species;
• How incorporating recent revisions to regulations associated with the ESA consultation process helps with efficiency across agencies; and,
• What the agencies are doing to improve communications and outreach, and how they are actively soliciting stakeholder feedback and engagement during the consultation process.

The ESA is a proven and critical tool for ensuring the recovery and protection of the nation’s most vulnerable species and habitats. However, for decades EPA’s approach for assessing pesticides risks to endangered species resulted in costly, time-consuming litigation and delays in pesticide registration decision-making. As directed by Congress through the 2018 Farm Bill, EPA, DOI, U.S. Department of Commerce, USDA, and the White House Council on Environmental Quality established an interagency working group (IWG) in 2018 tasked with providing recommendations and implementing a strategy to improve the ESA consultation process for pesticides. The first report from the IWG was submitted to Congress last December and identified several proposals to
improve the ESA consultation process for pesticide registration and registration review, plans for implementation of those proposals, and areas of consensus and continuing topics of debate.

EPA’s decision was questioned by some environmental organizations but welcomed by many agricultural groups, including the Alliance. EPA in the Northwest had previously failed to establish clear procedures for its pesticide effects determinations and subsequent actions consistent with 1988 amendments to the ESA. This had resulted in unnecessary restrictions without any indication that Pacific Northwest salmon would benefit.

14. EPA / Corps: Clean Water Act “Waters of the U.S.” Litigation

Attorneys with Clean Water Act (CWA) resumes are a busy lot these days, as courts across the country wrangle with legal interpretations of the landmark environmental law, which turns 50 in two years. The new Trump Administration “waters of the U.S.” (WOTUS) rule is the target of much of the litigation, while implications of an important recent Supreme Court CWA groundwater case are only now becoming more fully realized. A federal judge in San Francisco last month denied a motion by a coalition of Democratic state attorneys generals to issue a nationwide injunction of the Trump Administration’s new regulation over which “waters of the U.S.” are protected under the CWA. In his ruling, U.S. District Court Richard Seeborg found that the plaintiffs did not show they had a strong enough challenge to the *Navigable Waters Protection Rule* to warrant a preliminary injunction. Hours later, a different federal judge in Colorado granted that state's request to put implementation of the WOTUS rule on hold in the state. U.S. District Court Judge William Martinez concluded that the state was likely to succeed in proving that the Trump Administration's definition of WOTUS violated the *Rapanos* ruling and would ultimately be struck down. The new WOTUS rule is in effect in 49 states as of June 22.

The number of parties battling over the controversial rule is growing, and appears to span the political spectrum. Conservative private property interests, environmental groups, industry, and tribes have all joined the fray over the new WOTUS rule. With all these various parties and with court actions scattered across the country, uncertainty will abound, particularly in the near-term. The litigation will undoubtedly run beyond Election Day, so the future of this WOTUS rule likely depends on whether Trump wins a second term. However, Judge Seeborg’s decision to date is likely the one that has greatest bearing in the coming months. Alliance General Counsel Norm Semanko believes Judge Seeborg’s decision is the most significant development so far. It means there will be no nationwide preliminary stay on the Trump Rule while the litigation proceeds. The Alliance spent considerable time as the *Navigable Waters Protection Rule* was being developed, and provided multiple formal comment letters to the federal agencies over the past three years. Overall, we are supportive of the new rule.

15. White House: NEPA Overhaul

The White House Office of Information and Regulatory Affairs within OMB has completed its review of the Trump Administration’s recent overhaul of regulations implementing the National Environmental Policy Act (NEPA). The proposed plan would, among other things "streamline"
environmental impact statements (EIS) under NEPA by setting two-year time limits on federal agency analyses and limiting EIS documents to 150-pages. The proposal would also remove consideration of a project's "cumulative" impacts on the climate and proposes to remove "conflict of interest" provisions for those conducting environmental reviews. The final rule could be released by the Council on Environmental Quality (CEQ) any time.

DEVELOPMENTS IN CONGRESS

Mark Limbaugh reports that the Senate has limited time until the August recess to take up another COVID-19 stimulus bill, deal with 12 FY 2021 appropriations bills, and consider pent up energy and climate legislation, along with moving the confirmations of a list of Trump Administration nominees to head up federal agencies and fill empty federal judgeships. Senate GOP leaders have yet to begin negotiations on yet another COVID-19 stimulus, but with the Administration and congressional Democrats clamoring for more pandemic relief for state and local governments, individual stimulus checks, unemployment extensions and possibly more small business aid, we believe bipartisan, bicameral stimulus talks with the White House may begin again sometime in July. Senate appropriators are still deadlocked over potentially controversial Democrat riders on FY 2021 spending bills but talks continue to break the log jam in order to move some or all of these bills prior to the August recess. House Appropriations Subcommittees are scheduled to begin marking up their FY 2021 spending bills after the July 4 break, with the goal of passing the bills on the House floor before August. The House and Senate are in recess this week, but the House will be holding “Committee Work Days” all week. No votes are scheduled in either chamber until the week of July 20.

16. Appropriations

Mark Limbaugh reports that The House Appropriations Committee has set a frantic schedule in July for subcommittee markups of FY 2021 spending bills, with Interior–Environment (Interior Dept./EPA) and Energy–Water (Army Corps/Bureau of Reclamation/Energy Dept.) bills to be released today along with several other House spending bills. House Leadership plans to pass all 12 FY 2021 spending bills by the end of the month. Mark believes it is likely that the House will move the spending bills in multiple packages, known as minibuses, or a single package of legislation, known as an omnibus. FY 2021 funding levels are set at similar levels to the current fiscal year, with only a $5 billion total increase across the government above current spending levels.

To help move things along this summer, House leadership has called for most amendments or riders on FY 2021 spending bills to be settled in committee rather than in a partisan floor fight that could stall progress on all spending bills. Controversial riders have in the past stalled legislative progress, and there appears to be several areas where that could happen again this year, such as potential riders over confederate flags, environmental or climate policies, and funding for continued construction of the wall at the Mexican border. Top Democratic and Republican appropriators have had success in moving spending bills through committee in the past by agreeing to leave out such partisan provisions.
As House markups get underway, the Senate has already stalled on their work on FY 2021 spending bills over a partisan dispute with Democrats saying they want to offer provisions related to the pandemic, which the GOP says should be considered as part of separate emergency spending legislation. Regardless of what progress is made, it is widely expected Congress will need to pass a stopgap continuing resolution (CR) to avert a shutdown when the new fiscal year begins, and current funds run out on October 1. Mark expects the CR to run at least through the elections and perhaps until the next presidential inaugural, potentially leaving it to a new Administration and Congress to wrap up FY 2021 spending work.

**ALLIANCE INITIATIVES**

17. **2021 Annual Conference Location**

The board of directors in May authorized the Alliance to enter into a contract with the Silver Legacy in Reno (NEVADA) for our February 2021 Annual Conference. I executed that contract on behalf of the Alliance last week.

18. **Western Water Infrastructure**

Several legislative vehicles are emerging to carry a series of Western water infrastructure bills introduced in the 116th Congress, including a $1.5 trillion infrastructure and stimulus bill that was passed by the floor of the House of Representative before the July 4 recess. These developments are discussed further below.

   a. **H.R. 2 – “Moving Forward Act”**

Last week, in a near party line vote, the House passed an aggressive $1.5 trillion infrastructure package, the *Moving Forward Act* (H.R. 2). Going beyond routine highway and surface transportation funding, the legislation provides $500 billion in highway and transit funds, $100 billion for schools, $100 billion for affordable housing, $100 billion for broadband, $70 billion in investments in the electric grid, $30 billion for hospitals, and $25 billion for the Postal Service. The measure also includes $82.49 billion for water infrastructure, including $10 billion for the Corps construction account, $750 million for Reclamation’s storage account, $700 million for water management improvements, $500 million for water recycling, $200 million for desalination and $150 million for environmental restoration, watershed health and drought preparedness.

   i. **Water Right Settlement Provisions of H.R. 2**

Division L of the bill- “Public Lands, Tribal Communities, and Resilient Natural Infrastructure” - includes a water resources infrastructure title with provisions for tribal water settlements, water management and restoration activities, water resources research, and groundwater recharge planning. The Senate earlier in June approved a package of tribal water settlement bills similar to those included in Division L, including S.886, from Sen. Tom Udall (D-NM). The *Indian Water Rights Settlement Extension Act* would extend the Reclamation Water Settlements Fund.
established in the Omnibus Public Land Management Act of 2009 (P.L. 111-11) for 20 years. In early 2019, the Alliance conditionally supported the intent of this legislation, since water rights settlements will continue to move forward, with or without the fund. Future settlements that are authorized by Congress will hit the Bureau of Reclamation’s budget even harder.

ii. Western Water Infrastructure and Drought Resiliency Provisions

Subtitle B of this division is the FUTURE Drought Resiliency Act, an updated version of a discussion draft bill crafted by Rep. Jared Huffman (D-CALIFORNIA) and released for public comment in January 2020. This subtitle provides approximately $3.5 billion for Western water infrastructure and drought resiliency measures, including $750 million for sustainable, multi-benefit water storage projects; $500 for water recycling and reuse projects; and $260 million for innovative water desalination projects. Significant investment and support are also provided for important water infrastructure projects and measures intended to address fish and wildlife species decline in areas of the West. It includes numerous bills approved by the Committee on Natural Resources during the 116th Congress, including H.R. 4891 (Torres Small – NEW MEXICO), H.R. 3723 (Levin – CALIFORNIA), H.R. 5347 (Cox – CALIFORNIA), and H.R. 1162 (Napolitano – CALIFORNIA), as well as western water infrastructure priorities publicly requested and informed by numerous stakeholder organizations, including major water utilities, cities, water districts, conservation organizations, and tribes.

The water subtitle builds on the oversight work of the House Water, Oceans and Wildlife (WOW) Subcommittee chaired by Rep. Huffman in the 116th Congress. In 2019, the Subcommittee held several hearings to inform the development of “sustainable water policy”. Alliance representatives testified at several of those hearings. We reviewed the discussion draft and, working with our members, developed a detailed comment letter for Subcommittee staff earlier this year. Certain provisions in the legislation raise concerns, while others address matters important to our members. As previously reported, the Alliance supported two of the proposed amendments to H.R. 2, one offered by Rep. John Garamendi (D-CALIFORNIA) and the other by Rep. Jim Costa (D-CALIFORNIA). Neither was included in the package that was debated by the House last week. TFG prepared a detailed memo breaking down the 2,300+ page bill, including the nearly 400 amendments, which I shared with you earlier today. President O’Toole, Mark Limbaugh, and I later this week will discuss putting together a summary of what we like and do not like about H.R. 2, which we will share with you for your input.

iii. Stakeholder Reaction to H.R. 2

Several urban water agencies and conservation groups have expressed support for all or part of the FUTURE Drought Resiliency Act or the draft legislation it is based on. The urban entities are likely interested in the $500 million H.R. 2 provides for recycling programs and $260 million for desal projects, among other provisions. Conservation groups support the overall climate change focus of H.R. 2 and billions of dollars provided for fish and wildlife conservation programs. However, industry groups including the American Farm Bureau Federation, Agricultural Retailers Association and American Petroleum Institute took issue with provisions to increase limits on the electric vehicle credits and expand infrastructure like charging stations, among others. They
argued that Congress should “maximize investment dollars in infrastructure that benefit all Americans, not a small subset of the automobile fleet.”

iv. The Fate of H.R. 2

While both Senate Republicans and the White House have expressed desire to pass a bipartisan infrastructure package, the White House issued a veto threat for the bill in its current form. The package is “heavily biased against rural America,” the White House said. Senate Majority Leader Mitch McConnell deemed it "dead on arrival" calling it a "multi-thousand-page cousin of the Green New Deal masquerading as a highway bill." In Congress, lawmakers seek “payfors” to offset spending or tax cuts contained in bills. A “payfor” is necessary under “paygo” rules that do not allow legislation to be financed through deficit spending. In the past, “paygo” rules have been suspended for certain emergency legislation. The bill would still need to be reconciled with infrastructure legislation from the Republican-controlled Senate moving forward. So, right now, it is unclear how much of the bill will ultimately be enacted.

That said, the package will serve as a starting point for negotiations with Senate Republicans on reauthorizing surface transportation programs, which expire on September 30, as well as negotiations on further coronavirus recovery funding or stimulus programs. It will also certainly serve as a template for Democrats' action on climate change (see related discussion under Item 18) in the next Congress, should they capture the White House and Senate.

b. Water Resources Development Act (WRDA) of 2020

While Democrats and Republicans have disagreements over the House infrastructure bill, we have been told there is bipartisan consensus regarding WRDA. House Transportation and Infrastructure (T&I) Chairman Peter DeFazio (D-OREGON) has included GOP Members in drafting the water legislation and expects the bill to be released sometime this month. Meanwhile, the Senate EPW Committee has approved two water bills (America’s Water Infrastructure Act and Drinking Water Infrastructure Act) and a transportation bill on a bipartisan basis, and has floated the idea of combining all three in an infrastructure package. Congress has made it a priority to pass a WRDA bill every two years, with a Senate version (the America’s Water Infrastructure Act (AWIA)) already approved by the EPW Committee for a future Senate floor vote. WRDA is a biennial piece of legislation that is the main vehicle for authorizing water projects to be studied, planned, and developed by the Corps. It is also the legislative vehicle for implementing policy changes with respect to the Corps’ water resource projects and programs. As such, this legislation is important to the rural communities of the Western United States.

Family Farm Alliance President Pat O’Toole in September 2019 testified before the EPW Committee, which held a brainstorming hearing on ideas for the 2020 WRDA. The Alliance also developed a comment letter that was transmitted to the EPW Committee before the markup. Our position assumes that the Senate WRDA under consideration will not necessarily be a Corps-centric bill, but could provide a vehicle to address other national and Western water resources challenges, as well. This has happened in past Congresses, with the passage of the WIIN Act of
2016 and AWIA of 2018. We believe a Western water title of the bill could provide a vehicle for several other water bills currently being considered in Congress, although recent indications suggest that will be an uphill battle.

c. **Wyden – Merkley Water Bill**

U.S. Sens. Ron Wyden and Jeff Merkley (D-OREGON) last week introduced legislation intended to help communities in Oregon and across the West experiencing high levels of drought. Their bill is intended to improve water access for agriculture and conservation by funding projects that improve dam safety, create more resilient watersheds, and benefit agricultural and urban water users. We had some constructive conversations with Senator Wyden’s staff as that bill was being drafted, and we definitely influenced the WaterSMART provisions. However, we also have some of the same concerns as we do with some of the environmental provisions of H.R. 2 (above), which we shared with the Wyden shop. I was quoted in the Merkley-Wyden press release on this matter, and noted that we appreciated Senator Wyden’s leadership and look forward to closely working with the Senator to “improve specific provisions to ensure the bill’s effectiveness and purpose is achieved in a way that works for all water users”.

d. **Public Lands Bill**

Last month, the Senate voted 73-25 to pass S. 3422, the "Great American Outdoors Act" (GAOA), that would permanently and fully fund the Land and Water Conservation Fund for the first time since it was created in 1964 at $900 million annually, paid for by offshore oil and gas revenue. The bill would also create a five-year trust fund to draw down some of the $20 billion backlog of deferred maintenance projects at national parks and other public lands around the country that are managed by DOI. Senate Leadership decided not to allow any amendments to be considered on the bill during final debate. One of those proposed amendments, crafted by Senator McSally (R-ARIZONA), would have provided financing provisions to help the Bureau of Reclamation – the nation’s largest wholesale water provider – address aging infrastructure challenges.

The Alliance and several other Western water interests sent letters requesting support from Majority Leader McConnell and Minority Leader Schumer for the inclusion of Senator McSally’s amendment in S. 3422. “GAOA provides direct funding for deferred maintenance for every federal asset management agency within the Department of the Interior, except Interior’s primary water management agency – Reclamation,” the Alliance letter stated. The Alliance shared the letter with Western Senate Members, encouraged them to support this amendment, and urged association members to send similar letters to their Senators. We had an opportunity to address pressing maintenance needs within all of the resource management agencies at Interior, including Reclamation. Unfortunately, no amendments on the GAOA were allowed by Senate leadership.

The bill now moves to the House, where a bipartisan majority stands ready to pass the bill and move it to the President’s desk, who has indicated he would sign the legislation. Interior Secretary David Bernhardt sent House Natural Resources Chairman Raúl Grijalva (D-ARIZONA) a letter,
urging quick passage of a “clean bill”. House Minority Leader Kevin McCarthy (R-CALIFORNIA) has also endorsed the bill. The bill will go through the House Rules Committee before coming to the floor, potentially allowing members to file amendments they would like to see made to the final bill. However, there has been no indication from House Democratic leadership as to whether such amendments will be allowed, similar to the Senate process. If amendments are considered, we will work with our allies to mount an effort similar to what we attempted in the Senate.

e. Other Alliance Efforts

The Alliance - working with the California Farm Bureau and Western Growers Association – in April sent similar letters to Congress and the White House, urging that aging Western water infrastructure be addressed as further measures are considered to help the U.S. economy recover from the ongoing coronavirus crisis. The letters were signed on to by over 150 Western water and agricultural interests. The Alliance recently worked with its member irrigation districts to compile a list of such projects West-wide. It is staggering in its breadth, and amounts to $6.8 billion dollars. Most districts are struggling to find affordable financing to get these projects done.

Last month, the Alliance widely circulated an opinion piece co-signed by National Water Resources Association President Christine Arbogast and Alliance President O’Toole, advocating that the time is now for Congress to invest in Western water infrastructure. Pat and Christine have been invited to participate in a podcast interview with the International Real Estate, Inc., whose real assets advisor saw the column in the Reno Gazette. This podcast would appear on the Institutional Investing in Infrastructure website (https://irei.com/institutional-investing-infrstructure/), as well as on iTunes, Stitcher and Podomatic. The Alliance last month also distributed a video that underscores the importance of investing in Western water infrastructure, prepared by Alliance member Farmers Conservation Alliance. Finally, I briefed the Intermountain West Joint Venture (IWJV) Government Relations Committee on June 19 on some of the key water infrastructure bills in Congress. IWJV understands that sustaining agricultural irrigation is absolutely critical to meeting the needs of waterfowl and other wetland-dependent migratory birds.

19. Climate Smart Agriculture

The Alliance continues to engage and discuss potential effects and impacts of climate change in the West, building upon the interest created by the Alliance’s report on climate change that was issued in 2007 and active engagement addressing climate change on Capitol Hill. The Alliance board of directors at its 2020 annual meeting supported its long-time policy of using climatic extremes and findings from its climate change report to advocate for “climate-smart” agriculture and needed changes in Western water policy. Through our involvement on the Steering Committee of the North American Climate Smart Agriculture Alliance (NACSSA), we have been monitoring United National global climate talks over the past two years and bringing the voice of North American producers and land managers to the discussion table. NACSSA believes public policy should provide incentives for climate-friendly and common-sense farm improvements.
NACSAA last month submitted a detailed set of policy and program recommendations to the Senate Democrats' Special Committee on the Climate Crisis. The submission, which was made in response to the Committee's request for input from agriculture and rural leaders, represents a collaborative effort by NACSAA's partners to call attention to the profound and critical role agriculture plays in bridging gaps in policy arenas - from food security and nutrition, to energy and national security, to rural development and job creation, to environmental protection and climate mitigation. The Family Farm Alliance later this summer will likely play a key role in crafting the water recommendations for a white paper that NACSAA will drop into United Nations Food and Agriculture Organization global climate change discussions.

Much of the Alliance’s recent work in the climate arena is done through our involvement with Solutions from the Land (SfL), which was created seven years ago as an ambitious undertaking to advance land-based solutions to global challenges. SFL’s vision is that, by 2030, America's farms, ranches and forests are at the forefront of resolving food system, energy, environmental and climate challenges and achieving global sustainable development goals.

a. House Democrats Select Committee on the Climate Crisis Report

Many see H.R. 2 (see related discussion, Item 17a, above) as a messaging document from Democratic leadership, similar to the Select Committee on the Climate Crisis report released last week. This committee is charged with delivering ambitious climate policy recommendations to Congress, in order to achieve substantial and permanent reductions in pollution and other activities that contribute to the climate crisis. The long-awaited document, which runs 538 pages, was crafted largely without input from Committee Republicans and is widely seen as a climate guide for Democrats if they win control of government in 2021. Amid widespread protests over racial inequality, environmental justice is a focus throughout the report. That includes an environmental justice enforcement push at EPA and a new proposed amendment to the Civil Rights Act to protect victims of environmental and climate injustice. The full report can be accessed here and a one pager on the ag chapter can be seen here.

In a statement released last week, SfL applauded the House climate change report's authors for recognizing the critical role America's farmers, ranchers and foresters can play in providing valuable climate and ecosystem services. Among the noteworthy recommendations are proposals to boost conservation technical and financial assistance funding; provide crop insurance discounts to producers who adopt climate smart agriculture practices such as no-till and cover crops; implement a low carbon fuel standard to enable the full potential of biofuels to be realized; increase funding for agricultural research and USDA's Climate Hubs; and incentivize farmers and ranchers to incorporate energy efficiency and generate renewable energy.

Still, a number of provisions will require additional review, possibly with an eye toward what might be more reasonable and effective means by which the sector can take on the ever-growing crisis. While the report calls for investments in water storage and infrastructure, it falls short in its consideration of how water should be allocated, especially given the increasing demand placed on water resources by expanding metropolitan areas at the expense of rural and agricultural needs. While consideration is given by the report for the water needs of fish and wildlife, it appears to
come at the expense of the needs of U.S. farmers, who, without adequate access to water, could not maintain their status as the providers of food, feed, fiber, clean energy and a host of ecosystems services. With a focus on the negative environmental impacts of dams, the report undercuts the multiple benefits and essential nature of dams to Western irrigated agriculture and rural communities.

Many other industry groups that did weigh in on the report were not especially enthusiastic. The National Cattlemen’s Beef Association, for example, said the plan was “unfortunately the product of partisan discussions that failed to encompass important constituent communities across the country.” We are still digesting the full report, and would welcome your feedback on the report.

b. Other Efforts in Congress

Most pieces of the climate blueprint are not likely to go anywhere during this Congress, considering Republicans widely oppose the plan and lawmakers are more focused on managing the pandemic and recession. But there is some bipartisan interest in advancing climate-friendly farm policies. Rep. Josh Harder (D-CALIFORNIA) will introduce a bill that would set up a $2.5 billion grant fund to help farmers invest in more fuel efficient vehicles, sequester carbon in their soil, and make other changes aimed at cutting greenhouse gas emissions, according to POLITICO. The bill is backed by both ag and environmental groups. Co-sponsors include California Democrat Representatives T.J. Cox and Jim Costa. A bipartisan group of senators, including Senate Agriculture ranking member Debbie Stabenow (D-Mich.), introduced a measure aimed at legitimizing carbon markets in the ag sector. The bill is backed by the American Farm Bureau, as well as a long list of food companies and other corporations interested in carbon offsets.

20. **County of Maui v. Hawai'i Wildlife Fund**

As previously reported, the 9th U.S. Circuit Court of Appeals has remanded *County of Maui v. Hawai'i Wildlife Fund* back to the U.S. District Court for the District of Hawaii, which earlier determined that Maui County violated the CWA with its discharges of a pollutant to groundwater. The Alliance signed on to an amicus brief that was submitted to the Court for this case. In deciding the case, the U.S. Supreme Court last month determined that federal permits would be required for discharges to groundwater if it is the “functional equivalent of a direct discharge”, yet another litmus test for CWA jurisdiction over discharges of a pollutant. The high court sent the decision back to the 9th Circuit to revisit its conclusion that a CWA permit was required for a Maui County wastewater reclamation facility discharge of effluent to the groundwater, asserting that the polluted effluent that traveled through groundwater to the ocean was “fairly traceable” to the facility.

While individual States must be allowed to exercise primacy and make future NPDES permitting decisions, it falls to EPA to provide guidance to the States and the regulated community regarding discharges to ground water, particularly any exemptions that may apply. However, it appears that EPA is grappling with its options for providing policy “clarity” to the Supreme Court’s decision, including potential rulemaking, guidance, and other measures. Recent comments by a regional administrator for EPA suggests the agency may be thinking of passing the buck to the states for
determining what a “functional equivalent” is rather than doing guidance or rulemaking on the
ground water conduit issues, at least in the immediate future. We will continue to dig into this and
work with our allies to find ways to best influence this matter.

WESTERN HOT SPOTS

21. Colorado River

There’s been growing recent media coverage about recent farmland acquisitions being made in
Colorado’s Grand Valley by Water Asset Management, a New York City-based hedge fund with
deep pockets, including this story, which ran in the May edition of “Inside Climate News”. This
coverage is generating concerns from others on the West Slope, who fear that speculators are
buying farmland in the Grand Valley, hoping to make money by sending the water downstream to
California. Check out the guest column by Greg Walcher, president of the Natural Resources
Group and a Western Slope native, which appeared in the Grand Junction Sentinel.

The University of Arizona Water Resources Research Center last month hosted its virtual annual
meeting in Tucson. Former Arizona Governor and U.S. Interior Secretary Bruce Babbitt and
Bureau of Reclamation Commissioner Brenda Burman were the two keynoted speakers. Mr.
Babbitt in May publicly rolled out his “better, more equitable pathway” for reducing the Colorado
River water deficit. It involves retiring several hundred thousand acres of irrigated agriculture,
mostly alfalfa and forage crops, which he claims consume more than 80% of total water use in the
Basin. He believes USDA’s Conservation Reserve Program could be employed to contract with
landowners to retire marginal and environmentally sensitive agricultural lands in exchange for
rent. Governor Babbitt at the meeting focused on the important, growing, and contentious issue of
water transfers, from within Arizona’s allocation, off the Colorado River to serve the urban areas
of central Arizona. He highlighted the problem that Arizona water law and policy have
“historically been an insider game,” that has not included all the important stakeholders necessary
to create robust solutions. He suggested that the legislature create a statutory committee with
representatives from all stakeholder groups tasked with developing legislation.

Commissioner Burman focused on the incredible progress made over the past 25 years in
managing the Colorado River, and the important role that the State of Arizona has played.
Reclamation is reviewing the effectiveness of the 2007 guidelines that address shortages and
surpluses of water, and efforts to conserve water in Lake Mead along the Nevada-Arizona border.
A draft is expected in August, and a final report in December.

Mark Limbaugh and I last month also worked with Senate Energy and Natural Resources
Committee staff on draft legislation that would address Department of Energy desal research,
modeling and other desal activities in the Lower Colorado River Basin. As drafted, the bill seemed
pretty benign to us.

22. California’s Central Valley

In a big win for Central Valley agriculture and water users and the Trump Administration, U.S.
District Court Judge Dale A. Drozd last month denied the motion for a preliminary injunction filed
by environmental groups as to Shasta Dam operations. This positive ruling is welcome news as it relates to the Administration's 2019 biological opinions and implementing the Bureau of Reclamation’s updated plan for the long-term operation of the Central Valley Project and the State Water Project. The tweet from the Interior Department can be seen here.

23. Klamath Basin (CALIFORNIA / OREGON)

The U.S. Supreme Court last month denied a petition requesting that it review a lower court decision that ruled Klamath Project irrigators were not entitled to compensation for the reallocation of water under the Endangered Species Act (ESA) in 2001. Klamath Project facilities divert and deliver water from Upper Klamath Lake and the Klamath River to approximately 175,000 acres straddling the Oregon – California border. The case arose after Reclamation precluded water deliveries in 2001 in order to maintain water elevations in Upper Klamath Lake for sucker species in Upper Klamath Lake that are ESA-listed as endangered and provide flows for coho salmon in the Klamath River. The plaintiffs in the case asserted that because water rights are property under state law, the federal government was required, under the Fifth Amendment to the U.S. Constitution, to pay compensation for taking the rights. The case, originally filed in the U.S. Court of Federal Claims in the fall of 2001, has had an extremely long history. A trial took place in the Court of Federal Claims in 2017. Ultimately, last year, the U.S. Court of Appeals for the Federal Circuit agreed with the trial court that the plaintiffs were not entitled to compensation because there existed senior, tribal rights for lake levels and flows in at least as great amounts as were required under the ESA. That logic meant that no property was actually taken, according to the trial court.

The petition for review to the Supreme Court – known as a petition for writ of *certiorari* – focused on fundamental misunderstandings and misapplications of Western water law by the federal courts, both of which are located in Washington, D.C. A multitude of public and private parties, including the Alliance, filed briefs supporting that the Court accept the case for review. The Alliance board of directors in March agreed to support the irrigator plaintiffs again as this case went before the Supreme Court. The Alliance and KWUA co-hosted two webinars to further brief interested parties on this matter in April.

In an effort to maximize public relations associated with the Supreme Court’s consideration the Klamath takings case, we worked with other amicus parties to maximize exposure of the takings case in the time period leading up to the hearing. Part of that effort included conversations with Kimberly Strassel, a member of the editorial board for *The Wall Street Journal*, which ultimately declined to weigh in on the matter. We generated quite a bit of other press in the weeks leading up to the SCOTUS decision, including a blog post on Water Wrights, a story in DTN Progressive Farmer, a guest column in Western Farmer Stockman magazine, and a guest editorial co-authored by Congressmen Greg Walden (R-OREGON) and Doug LaMalfa (R-CALIFORNIA) that appeared in the Washington Examiner.

The disappointing move by the Supreme Court was somewhat offset by last week’s announcement that the Senate had passed a critically needed fix to the 2018 WRDA that will provide relief to
Klamath Basin irrigators who have been hard-hit by drought. In 2018, WRDA included language that was essential for irrigators in the Klamath Basin to effectively use $10 million in drought relief funds that the lawmakers had previously secured. The new technical correction provides clear flexibility in how the relief may be used, enabling irrigators to access the funding when there is a severe shortage of water, like there is this summer. Senator Jeff Merkley (D-OREGON) used his seat on the Senate EPW Committee to include the language in the Senate’s WRDA reauthorization. With WRDA stalled, Senator Merkley pivoted and introduced the language with Senator Ron Wyden (D-OREGON) as a stand-alone bill. Rep. Walden introduced companion legislation in the House. With the bill’s passage in the Senate, the next step for it to be passed by the U.S. House of Representatives.

24. Columbia and Snake River Basins

The U.S. EPA issued a long-awaited CWA proposal to limit water temperatures along 900 miles of the Columbia and Lower Snake rivers, in Oregon and Washington, intended to protect endangered salmon from overheating. Actions to achieve the standards will likely center on operational changes at the 15 hydropower dams in the target area, as well as enhancements to cold-water flows from tributary rivers. Water managers believe bringing down water temperatures across such a large river system will be difficult.

ADMINISTRATIVE AND MISCELLANEOUS

- Jessica Fox, the senior technical executive with the Electric Power Research Institute has connected the Alliance with the coordinator for the National Alliance for Water Innovation (NAWI), who will reach out and invite us to participate in an interview focused on agriculture water issues. Jessica, who serves on the NAWI agriculture subgroup advisory committee, spoke at our 2020 conference, and was impressed with our organization.

- Rep. Scott Tipton (R-COLORADO) was defeated in a primary election last week by Lauren Boebert, a conservative restaurateur and gun-rights activist. Boebert — whose Rifle, Colo., restaurant advertises the fact that its wait staff open-carries firearms — hit Tipton for his record on immigration and co-sponsoring coronavirus legislation that would give aid to local governments. Mr. Tipton, a fifth-term congressman from Colorado’s Western Slope, has been a strong ally of the Alliance, and we worked with his office closely on low-head hydropower legislation that was signed into law by President Obama in 2013. Boebert will face Democrat Diane Mitsch Bush, who lost to Tipton in 2018 by 8 percentage points, in the November general election.

I appreciate all the helpful input I have received from many of you in the past month. Please do not hesitate to contact me if you have any questions about this report.
DATE: July 23, 2020

TO: Board of Directors

THROUGH: Douglas DeFlitch, Chief Operating Officer

FROM: Janet Atkinson and Bill Swanson, Stantec

SUBJECT: Friant-Kern Canal Capacity Correction Project Update

SUMMARY:
The FKC Capacity Correction Project (Project) is to correct the conveyance capacity problems caused by subsidence and original Project design deficiency from MP 88 (Fifth Avenue Check) to MP 121.5 (Lake Woollomes Check). The Board of Directors (BOD) selected the proposed alternative that consists of a parallel or realigned canal along with enlargement of certain segments of the existing canal (Canal Enlargement & Realignment – “CER”) at the April 25, 2019 BOD meeting for continued design development, environmental compliance and permitting. Current work items include 1) final design; 2) environmental compliance/permitting activities; and 3) land acquisition program.

DISCUSSION/UPDATE: The following is a summary of the work completed since the last BOD update:

Reclamation Schedule Update and Coordination Meetings  – Several working group meetings were conducted (Environmental, Right-of-Way, Design, and Project Management). Provided below is the current milestone implementation schedule.

<table>
<thead>
<tr>
<th>Milestone</th>
<th>Date</th>
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<tbody>
<tr>
<td>NOI/NOP Published</td>
<td>December 2, 2019</td>
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<tr>
<td>Feasibility Report provided to OMB</td>
<td>January 28, 2020</td>
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<tr>
<td>30-Percent Design Report - Final</td>
<td>February 24, 2020</td>
</tr>
<tr>
<td>NOA/Draft EIS/EIR Published</td>
<td>May 08, 2020</td>
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<tr>
<td>Biological Opinion Issued</td>
<td>July 31, 2020</td>
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<tr>
<td>Project Section 106 Complete</td>
<td>August 4, 2020</td>
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<tr>
<td>100-Percent Bid Issue Design Completion</td>
<td>October 20, 2020</td>
</tr>
<tr>
<td>NOA/NOD/FEIS/EIR Published</td>
<td>September 18, 2020</td>
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The above is a fairly aggressive schedule that the team is committed to meeting. It is anticipated that it will take several months after the ROD is published to finalize activities such as permit acquisition, right-of-way acquisition and funding program. It is estimated that a construction contract award would occur in the first half of FY 2021. With the selection of Reclamation as the contracting entity for the project, significant efforts will be made to progress the completion of the engineering plans and specifications and make the documents ready to issue for bidding this fall.

**Significant Project Milestone Achieved** – Reclamation and FWA released the Draft EIS/EIR on May 8th for a 45-day public review period that closed on June 22nd. The public review period is now closed and the team is preparing responses to comments received and preparing the final EIS/EIR.

**Feasibility Report** – Reclamation submitted the Administrative Draft Feasibility Report to OMB on January 28th. On July 6th, Reclamation submitted the Final Feasibility Report to Congress. This is the first such report to be sent by the Department of the Interior and this region of Reclamation to Congress following the enactment of the Water Infrastructure Improvements for the Nation (WIIN) Act in 2016. This action now makes the Project eligible to receive construction funds from Congress and represents a significant milestone in the Project’s implementation schedule.

As reported previously, Reclamation notified FWA that an Ability to Pay (ATP) analysis will need to be provided with the Administrative Draft Final Feasibility Report to demonstrate financial feasibility in order to seek reimbursable Federal funding under the WIIN Act. Stantec has continued to progress the ATP analysis and has continued coordination with FWA to describe the elements of the project financing plan. Stantec is also coordinating with Reclamation and FWA staff to identify Friant Division contractors from which financial information will be required.

**Environmental Compliance, Cultural Resources and Permitting**

- Continued weekly calls with Environmental team to discuss progress on NEPA/CEQA and permitting, continued bi-weekly calls with the Project Management Group to discuss progress with Management Group.
- Reviewed comment letters on Draft EIS/R, and completed draft responses to individual comments.
- Completed preparation of Final Draft EIS/R including the draft Mitigation Monitoring and Reporting Plan (MMRP) for the Project, presently under review by Reclamation.
- Continued to conduct check-in meetings with the United States Army Corps of Engineers regarding permitting, their involvement as a cooperating agency, and status of their review of the wetland delineation.
- Discussed the status of the 401 certification application with the Regional Water Quality Control Board.
• Made minor revisions to the Section 106 Report.
• Conducted a kickoff call for the preparation of the project specific Historic Properties Treatment Plan (HPTP).
• Reviewed draft final BiOp from USFWS for Buena Vista Lake shrew and San Joaquin kit fox.
• Completed preparation of the draft California Department of Fish and Wildlife (CDFW) Section 1600 Streambed Alteration Agreement application that is presently under review.
• Completed the preparation of a draft strategy paper for consultation with CDFW that is presently under review by Reclamation.
• Conducted second nesting Swainson’s hawk and raptor survey within the project area and prepared draft memorandum documenting results of the survey.
• Initiated planning for coordination with the San Joaquin Valley Air Pollution Control District (SJVAPCD) for the Voluntary Emission Reduction Agreement (VERA).

Engineering and Design

• Conducted 5th Tulare County coordination call to progress the design coordination and steps to further a Memorandum of Understanding (MOU) for the project. Several details were discussed; including temporary road closures and detours during construction, traffic control, permanent elimination of road connectivity at Avenue 120 and Avenue 32, survey monumentation, and design standards. MOU discussion items included type of encroachment permit and other issues such as whether FWA would need a license or easement for proposed siphon roadway crossings within the County Right-of-Way (ROW). Discussion also included follow-up to County’s request to establish a reimbursement process to address County staff time spent supporting the project (i.e. reviews, etc.). Regularly scheduled coordination meetings are planned in order to effectively progress the coordination items.
• Conducted a coordination call with CALTRANS regarding State Highway 190 crossing of the new parallel canal. Provided 60 percent submittal for CALTRANS review.
• Received additional comments on the 60 percent submittal and responded to comments.
• Conducted design review submittal meetings with Friant Division Contractors to discuss design elements and obtain input on turnout delivery designs and irrigation delivery lines relocations. Prepared follow up design information to assist with the Contractors design review. Received substantive review comments and working on addressing comments. Comments from several Contractors are still outstanding, which is impacting the ability of the design to progress.
• Continued development of hydraulic, engineering and cost analyses to support construction bid packaging recommendations.
• Received Reclamation review comments for the 60-percent Opinion of Probable Construction Cost (OPCC) for the Project, prepared response to comments and received consensus on responses.
• Continued structural, electrical, mechanical, and civil designs including development of turnout drawings, check structures, canal plan and profiles, and roadway crossings.
• Continued preparation of draft technical specifications.
• Conducted field survey work.
• Continued to update utility tracking logs, updated mapping files with utility information and developed potholing plan. Conducted utility relocation coordination meetings and initiated preparation of utility relocation information to support coordination with utility owners.
• Conducted a meeting with Reclamation to discuss the Draft Geotechnical Interpretive Report (GIR), and completed additional analyses. Conducted follow call with Reclamation to discuss the results of the analyses and started preparation of final GIR.
• Received comments on the draft Geotechnical Road Crossing Siphons Report and started preparation of final document.
• Conducted design and construction bid packaging briefings with Reclamation.
• Prepared updated construction cash flow analyses for multiple scenarios.
• Reclamation, FWA and Stantec discussed the purpose and need for preservation of Tulare County bridges in the Project area. Reclamation is supportive of the maintaining the bridges in place for the near-term until further review of reuse options for the segments of the canal being taken out of service can be conducted, and intends to so advise Tulare County officials.

Land Acquisition

• Continue to make progress on the action items established during joint Friant, BOR, Stantec bi-weekly meetings.
• BRI continues to work with the Federal Appraisal Valuation Service Office (AVSO) to complete the standard template for all appraisals. AVSO has revisited some the same sections of the appraisals that have been agreed on before, which has slowed progress. BRI continues to explore ways to streamline the process as changes are finalized.
• BRI has submitted 12 appraisals to AVSO for review, this includes 15 APNs. Four (4) appraisals have been approved.
• BRI has plans to make two First Written Offers after the purchase agreement template for the Project is approved by BOR Solicitors.
• BRI has submitted an updated Right of Way schedule to FWA for final approval to send to BOR. The updated schedule also addresses the utility relocation milestones, and a second set of acquisition dates to track new utility parcels and other miscellaneous parcels.
• The final three ASTM 1527-13 Phase 1 Environmental Site Assessments (Phase 1 ESA) have been reviewed and accepted by BOR.
• FWA and BRI have reviewed all the Phase 1 reports. FWA and BOR will likely make a final determination as to which properties, if any, require a Phase 2 investigation by the end of July. The preliminary indication is that none of the land to be acquirees appears to be impacted by the presence of significant levels of hazardous materials.
• BRI continues to work with the County of Tulare to determine the best way to acquire property rights over county roads in locations where the realigned canal will cross such roads. The final determination with maps is on target to be delivered by end of July to the County of Tulare and BOR for approval.
• The utility relocation coordinator, OPC, has completed a tour of the project area to facilitate identification of utility conflicts. Utility conflicts are where a current utility owners’ facility if left in place will be in the new Right of Way area. These will be the focus of the utility relocation coordinators efforts.
• OPC directly participates in ROW group meetings on matters related to utility issues/rights/easements determination.
• OPC continues to work with Stantec to develop accurate conflict mapping for all utility owners. Focus will be on SCE submittals of conflict maps.
• OPC attended meetings with Stantec with various irrigation district owners to discuss the resolution of Project conflicts with their facilities.
• OPC has sent Relocation Claim Letters to various utilities whose facilities have been identified as having conflicts.
• OPC will continue research and review of prior rights documents regarding responsibility for utility relocation costs.

Landowner Coordination and Outreach

• *Landowner Access:* Activities for the period have included initial engagement for Aug. 3 and 4 surveys for sensitive botanical species in an area surrounding Deer Creek.

• *Right-of-Way Team Meetings:* Coordinated and facilitated weekly Right-of-Way Team meetings with FWA, Reclamation, BRI and Stantec staff to coordinate landowner engagement, appraisal and real estate activities, and design coordination. ROW meetings are held weekly, with sessions including Reclamation staff held on the first and third Tuesday at 1:30 p.m.; a ROW meeting for FWA and consultant staff is held the second and forth Wednesday at 9 a.m.

• *Tulare County Coordination Meetings:* Held a coordination meetings with the County of Tulare Department of Public Works, FWA, BRI and Stantec on July 1 and 15 to discuss reimbursement agreements, permits, design coordination, road closures and vacates, and preservation of county bridges in the Area of Potential Effect. County staff plan to review their comments on the 60% Design Document on July 20, and then relay the comments to the Project Team. FWA has accepted the proposed staffing and rate schedule from the County. Coordination activities continue to determine the type and function of a reimbursement agreement and Memorandum of Understanding with the County regarding the processing of needed County approvals and permits. Meetings are held the first and third Wednesdays at 2 p.m.

• *Road/Bridge Vacates:* Engagement with landowners associated with the planned vacations of public roadway sat Avenue 32 and Avenue 120 (also known as Hesse Avenue) are on-going. Regarding Avenue 32, landowners on the north and south (between Roads 184 and 192 have provided their verbal support to vacate the roadway to avoid construction of a siphon. Regarding Avenue 120, staff have researched ingress/egress rights and have preliminarily identified a farm road on the east end of the Avenue 120 that may provide alternate ingress/egress.

FUTURE ACTIVITIES PLANNED. The following describes activities planned for the next reporting period.

• *Feasibility Report:* Continue the Ability to Pay analysis described in the Feasibility Report section above.

• *Environmental Compliance, Cultural Resources and Permitting:* Continue coordination calls with Reclamation and FWA. Receive Reclamation comments on the Final EIS/R (July 17th), and complete the Final EIS/R based on comments received (July 24th) including the MMRP. Continue permitting support for the project including: follow-up for the 401 permit application to the Regional Board for Deer Creek and White River; continued coordination with the Corps of Engineers to determine appropriate permit [letter of permission/nationwide permit], continue discussion with CDFW to determine best path regarding submitting a consistency determination package for San Joaquin Kit fox and/or ITP (i.e. CESA compliance); conduct botany survey to observe for special-status plant species;
complete Swainson’s hawk (raptor) survey memorandum; and complete preparation of 1600 permit for submittal to CDFW. Begin preparation of the Historic Properties Treatment Plan. Initiate discussion with the SJVAPCD for the Voluntary Emissions Reductions Agreement (VERA)

- **Engineering and Design** - Anticipate receiving closure on comments received on the 60% design submittal. Continue activities to progress designs from the 60% towards the 90% level of completion scheduled for August. Continue to progress the utility research. Continue to coordinate with Friant Division Contractors on the turnout designs. Continue coordination with Caltrans and Tulare County to inform the design. Support permit applications as needed. Complete the final GIR. Initiate discussions with Reclamation on roles and responsibilities for completion of construction bidding documents.

- **Land Acquisition** - The following activities are planned for next month. Have asked for update
  - BRI will continue to process the initial Approval to Acquire following BOR’s approval of Just Compensation. Initial purchase agreements will be processed for review and approval by FWA and BOR.
  - BRI will also continue completing Preliminary Title Report Opinions for submittal to Reclamation.
  - BRI will continue to make First Written Offers for the parcels that have Approval to Acquire.
  - If necessary, BRI will submit the Environmental Site Assessments (Phase 2) contract proposals to FWA for approval of a contractor in order to start the Phase 2 site assessments as needed.
  - OPC will continue to contact those owners identified on the utility log to request as-built mapping to deliver to the Stantec design team for plotting.
  - Potholing coordination planning will continue, with identification of locations and Permit to Enter will be drafted for private landowners.
  - Continue to work with the County of Tulare to streamline the Right of Way process for the acquisition of Right of Way over portions of the County Road system.
  - OPC will deliver conflict maps and relocation claim to SCE, Ducore, and SCG.
  - Continued research and review of prior rights documents.

- **Landowner Coordination and Outreach** - Planned activities include continued coordination for botanical surveys on Aug. 3 and 4; road vacation activities for Avenue 120 Bridge and Avenue 32, including a July 20 meeting with County staff; consultations with the County of Tulare for preservation of public bridges within the Area of Potential Effect; support of ROW and Tulare County meetings, and support of as-needed meetings.
SUMMARY

At the Board’s request, a draft Finance Plan (Plan) has been prepared to both track and evaluate different funding options for the Friant-Kern Canal Middle Reach Capacity Correction Project (Project). In particular, the draft Plan looks at the various funding sources identified to date, including federal and non-federal contributions, and the funding needed from Friant Water Authority (FWA) and Friant Division Contractors to proceed with the Project. The availability and timing of federal funding will directly affect when significant non-federal funding will be required to maintain the Project schedule. The Plan shows different funding paths as well as two different construction cash flows. The Plan will continue to be updated as details regarding funding sources are further analyzed and confirmed.

RECOMMENDATION

This item is for information only.

ATTACHMENT:

Draft Finance Plan
1. **Introduction**

The purpose of this Finance Plan (Plan) is to evaluate different funding options for the Friant-Kern Canal Middle Reach Capacity Correction Project (Project). In particular, the Plan looks at the various funding sources, including federal and non-federal contributions, and the funding needed from Friant Water Authority (FWA) and Friant Division long-term contractors (Contractors) to proceed with the Project. The availability and timing of federal funding will affect when significant non-federal funding will be required to maintain the contract schedule. The Plan shows different funding paths as well as two different construction cash flows.

2. **Description of Project**

Since completion of construction by the Bureau of Reclamation (Reclamation) in 1951, the Friant-Kern Canal (FKC) has lost its ability to fully meet its previously designed and constructed capacity, resulting in restrictions on water deliveries to the Friant Division Contractors. The reduction in capacity is a result of several factors, including regional land subsidence that has occurred over the past several decades, original design deficiency, and other factors that prevent the intended flow capacity. The Middle Reach has lost over fifty percent of its original design capacity, reducing deliveries to Contractors, as well as reduced deliveries during wet years, and reduced ability to meet water management goals identified in the San Joaquin River Settlement Agreement.

The full Project will restore capacity in an approximately 33 mile portion of the FKC from milepost 88 to milepost 121.5.

3. **Description of Funding Scenarios**

The Plan includes cash flow requirements for two different construction schedules. The first shows the current estimate, based on funding from the federal government that includes appropriations in fiscal years 2022 and 2023. A second funding plan is shown, based on identified federal funding. The third funding plan is based on a second construction schedule that defers some work in the first year and a half of construction to later years. This is shown to evaluate the ability to continue funding the Project even if federal funding does not extend beyond already identified sources. For purposes of this draft Plan, federal funding does not include borrowing under the Water Infrastructure Finance & Innovation Act (WIFIA), if such financing is available in the future.
4. **Funding**

This initial Plan is at a relatively high level, simply identifying federal and non-federal funding as discussed below.

**Federal Funding**

Federal funding includes both reimbursable and non-reimbursable contributions. Non-reimbursable contributions are those payments FWA is not required to pay back to the federal government. One example of a reimbursable federal contribution would be when federal appropriations that are spent towards the Project require a repayment agreement with the Bureau of Reclamation. Such repayment agreements may be up to 40 years. The Plan assumes that $86.5 million of federal funding will be non-reimbursable, and that the Bureau will provide the majority of funding (up to 90%) for the Project in the first year, or until federal funding is exhausted. The Plan also recognizes that most federal contributions will require a non-federal match equal to the federal contribution to eligible Project costs. Approved federal funding includes:

a. Public Law 111-11, section 10203 (Restoration Act funding), that has been authorized equal to $41.8 million, of which $6.3 million has been utilized for planning and design through fiscal year 2019.

b. WIIN Act Funding equal to $75.55 million (this includes $71 million expected in fiscal year 2021).

In addition to the identified federal funding, the Plan includes scenarios in which FWA receives up to another $9 million in funding under PL 111-11 and $124 million of additional WIIN Act funding through future federal appropriations in future fiscal years. As noted above, all federal funds under the WIIN Act must be matched with non-federal funding – and future amounts of federal funding could be limited by the ability to generate non-federal matching funds. Table 1. shows potential federal funding for the full project at a cost of up to $500 million.
Non-Federal Funding

Since federal funding under the WIIN Act must be matched with non-federal funding, non-federal (local) funding must be identified to pay for the balance of the project. The Plan is based on the bulk of early funding coming from federal resources (either reimbursable or non-reimbursable), likely through the first half of fiscal year 2021/22. At that point, substantial non-federal sources will be required to meet construction cash flow requirements. Non-federal funding includes funding from FWA, direct funding from Contractors for Zone 3 investments, payments from Groundwater Sustainability Agencies (GSAs), guarantees or Contractor funding for Zone 2 capacity, and/or state grants or loans.

In 2019, the FWA Board approved a resolution of preliminary support for an FWA cost share for the Project of up to $50 million. In addition, FWA distributed a Request for Interest (RFI) for investments in Zone 3 to the Friant Contractors. Three respondents indicated there may be interest of up to approximately $250 million in total, but also noted additional information and details would need to be worked out. Discussions with the GSAs are ongoing – and a recent study by Stantec indicated that the financial impact on the operations of the FKC of the additional subsidence caused by transitional overdraft pumping permitted under the GSAs’ groundwater sustainability plans (GSPs) would be at least $263 million. FWA is also evaluating the benefits of applying for a WIFIA loan as a financing vehicle, recognizing the limitation on all federal funding of 80%, as well as certain issues associated with WIFIA funding projects such as the Project (i.e., the federal government has established criteria that makes WIFIA funding for locally operated and funded federal projects difficult to obtain.)
5. **Construction Cash Flows**

The Plan includes funding scenarios for two different construction cash flows. Each Project cash flow assumes that construction on proposed Segments D&E is initiated early in the Project. The first cash flow shown, is based on receiving the funding identified in Table 1. The second cash flow defers some Project costs in order to extend the payments from the federal government, assuming only identified federal funding is received. The total cost of construction is estimated to be about $485 million, including costs incurred or obligated through fiscal year 2020. The cash flow requirements have been estimated by Stantec and are shown below. The construction cost assumes the Project is bid at the end of calendar 2020, and initiates construction in 2021. Table 2 shows the estimated cash flow requirements for the two alternatives by quarter.

As shown in Table 2, a total of approximately $38 million is deferred beginning in the third quarter of 2021 through the third quarter of 2022. It should also be noted that the total cost of the project remains the same as these costs are simply shifted later in the construction schedule, which may be an optimistic assumption.

Table 2. Construction Cash Flows

<table>
<thead>
<tr>
<th>Calendar Year</th>
<th>Full Project Original Plan</th>
<th>Full Project Deferred</th>
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<tbody>
<tr>
<td>Prior Periods</td>
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<td>43,059,000</td>
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<td>2022 Q4</td>
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<tr>
<td>2023 Q1</td>
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<td>69,566,000</td>
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<tr>
<td>2023 Q2</td>
<td>33,673,000</td>
<td>50,517,000</td>
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<tr>
<td>2023 Q3</td>
<td>33,837,000</td>
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<tr>
<td>2024 Q2</td>
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<td>3,145,000</td>
</tr>
<tr>
<td>2024 Q3</td>
<td>2,810,000</td>
<td>2,810,000</td>
</tr>
<tr>
<td>2024 Q4</td>
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<td>485,803,000</td>
<td>485,803,000</td>
</tr>
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6. **Cash Flow and Funding**

The Plan includes three different funding scenarios. Each of the scenarios assume federal funding will be equal to 90% of the construction costs until federal funding is exhausted.
Scenario 1. The first funding scenario is based on the current construction cash flow schedule and assumes that future federal authorizations as shown in Table 1 are acquired. As shown in Figure 1, non-federal funding would total approximately $235.8 million. In addition, non-federal funding would be relatively limited until the third quarter of calendar year 2022, when a contribution of about $37 million would be needed to keep the Project on schedule. Federal funding would include additional appropriations under the WIIN Act. It is also estimated that approximately $86.5 million of federal funding would be non-reimbursable.

Figure 1. Funding with Future Federal Appropriations

The following table (Table 3.) shows the non-federal cash flows by quarter and fiscal year, given the current construction cash flow and federal funding as shown in Table 1 above. Fiscal year 2022/23 is the year with the largest need for funding, totaling $161.1 million.
Scenario 2. The second scenario shows what happens if future federal funds are not available. This scenario utilizes the same construction cash flow schedule as in Scenario 1., but federal funding is limited to a total of $135.4 million, of which the same $86.5 million would be non-reimbursable. As shown in Figure 2 and Table 4 below, a non-federal payment of approximately $25.9 million would be required as early as the first quarter of 2022.
Scenario 3. The third scenario utilizes the “deferred” construction cash flow. Under this scenario, approximately $38 million of costs are moved from the third quarter of 2021 through the third quarter of 2022 into future periods. This scenario also assumes that only the identified federal funding of $135.4 million of federal funding is acquired. The value of deferring some expenditures during the five quarters beginning in the third quarter of 2021 is that federal funding is extended, and the first substantial non-federal funding would not be required until the second quarter of 2022 – a non-federal funding need of about $37 million (see Figure 3).

Table 4. Non-federal cash flow

<table>
<thead>
<tr>
<th>Calendar Year</th>
<th>Non-Federal Funding</th>
<th>Total by Fiscal Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prior Periods</td>
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<tr>
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<td>2021 Q1</td>
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<td>2023 Q2</td>
<td>33,673,000</td>
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</tr>
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<tr>
<td>2023 Q4</td>
<td>6,567,000</td>
<td></td>
</tr>
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<td>2024 Q2</td>
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<tr>
<td>2024 Q4</td>
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<tr>
<td>Total</td>
<td>350,454,000</td>
<td>350,454,000</td>
</tr>
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</table>

Figure 3. “Deferred” Schedule with Identified Federal Funding
Quarterly non-federal cash flows, along with fiscal year requirements, for Scenario 3 are also shown in Table 5 below. As shown, fiscal year non-federal requirements in 2021/22 are $102.9 million, followed by over $200 million in fiscal year 2022/23 as costs are shifted from fiscal year 2021/22 into 2022/23. Additional review of this adjusted construction cash flow will be needed to reduce and level out some of these impacts. This would likely result in a longer construction schedule and higher overall costs – but, would defer the need for substantial non-federal contributions until later in fiscal year 2021/22.

<table>
<thead>
<tr>
<th>Calendar Year</th>
<th>Non-Federal Funding</th>
<th>Total by Fiscal Year</th>
</tr>
</thead>
<tbody>
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<td><strong>Total</strong></td>
<td>350,453,000</td>
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</table>

Table 5. Non-federal cash flows

7. **Next Steps**

The current version of the Finance Plan simply looks at three different funding schedules to determine the different levels of non-federal funding required, as well as to provide an estimate of amount and timing of that funding. In order to secure federal funding, non-federal funds will need to be identified and commitments from FWA, downstream Contractors or other non-federal sources will need to be secured. In addition to such matching funds, FWA will be working with the Friant Contractors on repayment mechanisms for those financing instruments that will be repaid over time (e.g., FWA borrowings, repayment agreements with the Bureau, etc.) The Plan will be expanded to show different repayment scenarios, including sensitivity to interest rates. Federal funding beyond that already acquired will need to be identified to construct the full Project. In addition, working with the Friant Contractors and GSAs, financing schedules that identify the steps and actions required to acquire funds in the appropriate timeframe will need to be developed.
BACKGROUND:

On June 5, 2020, Friant Water Authority distributed a Request for Interest (RFI) to Friant Contractors to help determine the Contractors potential interest in providing funding for the Middle Reach Capacity Correction Project (Project), in exchange for capacity/priority in the additional capacity funded by these voluntary payments. FWA is actively pursuing funding sources, including from the state and federal government, as well as the Tule Sub-basin Groundwater Sustainability Agencies. Staff is developing a Finance Plan to fund the Project (a first draft presented at this meeting), envisioning different levels of funding sources associated with the Project. The RFI is the first step in determining the level of potential voluntary funding from Friant Contractors to assist in fully funding the Project construction costs.

SUMMARY:

FWA received five responses to the RFI from the following agencies:

- a. Arvin-Edison Water Storage District
- b. Kern-Tulare Water District
- c. Madera Irrigation District
- d. A combined response from Porterville Irrigation District, Saucelito Irrigation District, and Terra Bella Irrigation District on behalf of the Eastern Tule GSA and the Renewable Resources Group
- e. Delano-Earlimart Irrigation District and Southern San Joaquin Municipal Utility District

Of the five responders, only Madera indicated they did not seek to fund capacity. DEID/SSJMWD did not provide a specified level of funding but indicated interest in supporting funding necessary to restore capacity to provide flow rates that protect historical delivery levels, with a buffer. The other three entities provided levels of interest ranging from $10 million for Kern-Tulare up to $140 million for Arvin-Edison (at the high end of their stated range.) The combined response of Porterville, Saucelito, and Terra Bella noted interest up to $130 million.

The RFI noted that none of the expressions of interest were binding or a commitment to funding, and each of the responders described issues that would need to be addressed over the next several months as funding is solidified. These issues include:

1. Identifying the amount of Zone 2 funding to help set the amount of Zone 3 capacity available (and the resulting amount of funding required).
2. Clarification of the “rules” and operating procedures for Zone 3 capacity and priority.

3. Address “upstream constraints” needed to deliver the full Project restored capacity.

4. Ensure that those agencies that might pay through a GSA weren’t also required to pay through a contribution to FWA – effectively paying twice.

5. Ensuring that contributions for Zone 3 funding could result in a capacity interest or other asset that can be recognized on the balance sheet.

6. Funding would likely require a Proposition 218 process for additional revenues as there was not enough funding available in some agencies’ existing budgets.

Staff will continue to work with the group of Contractors who have expressed interest to address these concerns as part of development of the Finance Plan.

**ATTACHMENTS:** Five RFIs submitted
RESPONSE TO REQUEST FOR INTEREST IN CAPACITY

Provide the following information in this form or as narrative answers. Narrative answers can reference source documents (include the name of the document and relevant pages or sections). Provide any referenced documents as attachments.

Section A: Contact Information

1. Name and address of Friant Contractor:

   Arvin-Edison Water Storage District
   20401 Bear Mountain Blvd.
   Mailing: PO Box 175
   Arvin, CA 93203-0175

2. Primary point of contact

   Name: Jeevan S. Muhar
   Title: Engineer-Manager
   Organization: AEWSD
   Street Address: 20401 Bear Mountain Blvd
   City/State/Zip: Arvin, CA 93202
   Phone: 661-747-0062
   E-mail: jmuhar@aewsd.org

3. Secondary point of contact

   Name: David A. Nixon
   Title: Deputy General Manager
   Organization: AEWSD
   Street Address: 20401 Bear Mountain Blvd
   City/State/Zip: Arvin, CA 93202
   Phone: 661-747-8594
   E-mail: danaewsd@aol.com

Section B: Funding and Capacity Interest

1. Please indicate the amount of funding your agency would be willing to provide for Zone 3 funding (in dollars).

   Approximately $40 to $140 million depending on amount of Zone 2 funding/capacity
2. Assuming capacity would be valued at $200,000 per cfs, please indicate the amount(s) of capacity that your agency is requesting.

200 to 700 cfs (but dependent on Zone 2 commitments and Zone 3 “rules”)

3. Please indicate your agency’s preferred funding method or methods (mark each that apply) (break down by %):

   _____ _____% Lump sum payment for permanent Zone 3 capacity rights
   _____ _____% Annual payments for permanent Zone 3 capacity rights
   _____ _____% Loan to FWA in exchange for Zone 3 capacity rights that adjust with repayment
   _____ _____% Guarantee or backstop in exchange for Zone 3 “residual” capacity rights
   _____ _____% Other method. Please describe.

   Willing to consider all above methods

4. Please indicate each of your agency’s source or sources of funding for capacity rights and provide your best estimate of the applicable %:

   _____ Reserves
   _____ Annual revenues (for guarantees or annual loan payments)
   _____ Friant Contractor borrowing
   _____ Other. Please describe.

   Likely to require 100% fundraising including additional Prop 218 (no money within current budgeting process)

5. Please provide comments or other suggestions regarding ways to participate in funding Zone 3 of the Project

   Looking to partner with Landowners and 3rd parties for water management programs
RESPONSE TO REQUEST FOR INTEREST IN CAPACITY

Provide the following information in this form or as narrative answers. Narrative answers can reference source documents (include the name of the document and relevant pages or sections). Provide any referenced documents as attachments.

Section A: Contact Information

1. Name and address of Friant Contractor:
   
   Kern-Tulare Water District

2. Primary point of contact

   Name: Steven C. Dalke
   Title: General Manager
   Organization: Kern-Tulare Water District
   Street Address: 5001 California Avenue, Suite 102
   City/State/Zip: Bakersfield, CA 93309
   Phone: (661) 327-3132
   E-mail: sdalke@kern-tulare.com

3. Secondary point of contact

   Name: Skye B. Grass
   Title: Resources Manager
   Organization: Kern-Tulare Water District
   Street Address: 5001 California Avenue, Suite 102
   City/State/Zip: Bakersfield, CA 93309
   Phone: (661) 327-3132
   E-mail: skye@kern-tulare.com

Section B: Funding and Capacity Interest

1. Please indicate the amount of funding your agency would be willing to provide for Zone 3 funding (in dollars).

   $10,000,000

2. Assuming capacity would be valued at $200,000 per cfs, please indicate the amount(s) of capacity that your agency is requesting.

   50 cfs
3. Please indicate your agency’s preferred funding method or methods (mark each that apply) (break down by %):

- 20% Lump sum payment for permanent Zone 3 capacity rights
- 80% Annual payments for permanent Zone 3 capacity rights
- Loan to FWA in exchange for Zone 3 capacity rights that adjust with repayment
- Guarantee or backstop in exchange for Zone 3 “residual” capacity rights
- Other method. Please describe.

Click or tap here to enter text.

4. Please indicate each of your agency’s source or sources of funding for capacity rights and provide your best estimate of the applicable %:

- 20% Reserves
- 80% Annual revenues (for guarantees or annual loan payments)
- Friant Contractor borrowing
- Other. Please describe.

Click or tap here to enter text.

5. Please provide comments or other suggestions regarding ways to participate in funding Zone 3 of the Project

It will be important to fix upstream capacity constraints.

KTWD is also a member of ETGSA and does not want to pay twice.
RESPONSE TO REQUEST FOR INTEREST IN CAPACITY

Provide the following information in this form or as narrative answers. Narrative answers can reference source documents (include the name of the document and relevant pages or sections). Provide any referenced documents as attachments.

Section A: Contact Information
1. Name and address of Friant Contractor:
   Madera Irrigation District

2. Primary point of contact
   Name: Thomas Greci
   Title: General Manager
   Organization: Madera Irrigation District
   Street Address: 12152 Ros 28 1/4
   City/State/Zip: Madera, Ca 93637
   Phone: 559-673-3514
   E-mail: tgreci@madera-id.org

3. Secondary point of contact
   Name: Dina Nolan
   Title: Assistant General Manager
   Organization: Madera Irrigation District
   Street Address: 12152 Road 28 1/4
   City/State/Zip: Madera, Ca 93637
   Phone: 559-673-3514
   E-mail: Dina@madera-id.org

Section B: Funding and Capacity Interest
1. Please indicate the amount of funding your agency would be willing to provide for Zone 3 funding (in dollars).
   $0.00

2. Assuming capacity would be valued at $200,000 per cfs, please indicate the amount(s) of capacity that your agency is requesting.
   0 cfs
3. Please indicate your agency’s preferred funding method or methods (mark each that apply) (break down by %):

- ___ ___% Lump sum payment for permanent Zone 3 capacity rights
- ___ ___% Annual payments for permanent Zone 3 capacity rights
- ___ ___% Loan to FWA in exchange for Zone 3 capacity rights that adjust with repayment
- ___ ___% Guarantee or backstop in exchange for Zone 3 “residual” capacity rights
- ___ ___% Other method. Please describe.

N/A

4. Please indicate each of your agency’s source or sources of funding for capacity rights and provide your best estimate of the applicable %:

- ___ Reserves
- ___ Annual revenues (for guarantees or annual loan payments)
- ___ Friant Contractor borrowing
- ___ Other. Please describe.

N/A

5. Please provide comments or other suggestions regarding ways to participate in funding Zone 3 of the Project

N/A
RESPONSE TO REQUEST FOR INTEREST IN CAPACITY

Provide the following information in this form or as narrative answers. Narrative answers can reference source documents (include the name of the document and relevant pages or sections). Provide any referenced documents as attachments.

Section A: Contact Information

1. Name and address of Friant Contractor:

   Porterville ID, Saucelito ID, & Terra Bella ID for themselves and on behalf of the Eastern Tule GSA and the Renewable Resources Group

2. Primary point of contact

   Name: Sean P. Geivet
   Title: General Manager
   Organization: PID, SID, & TBID
   Street Address: 24790 Avenue 95
   City/State/Zip: Terra Bella, CA 93270
   Phone: 559-361-5523
   E-mail: sgeivet@ocsnet.net

3. Secondary point of contact

   Name: Aubrey Mauritson
   Title: Attorney
   Organization: Ruddell, Stanton, Bixler, Mauritson & Evans, LLP
   Street Address: 1102 N. Chinowth
   City/State/Zip: Visalia, CA 93291-4113
   Phone: 559-733-5770
   E-mail: amauritson@visalialaw.com

Section B: Funding and Capacity Interest

1. Please indicate the amount of funding your agency would be willing to provide for Zone 3 funding (in dollars).

   $130,000,000

2. Assuming capacity would be valued at $200,000 per cfs, please indicate the amount(s) of capacity that your agency is requesting.

   650 cfs
3. Please indicate your agency’s preferred funding method or methods (mark each that apply) (break down by %):

- [ ] 100% Lump sum payment for permanent Zone 3 capacity rights
- [ ] ___% Annual payments for permanent Zone 3 capacity rights
- [ ] ___% Loan to FWA in exchange for Zone 3 capacity rights that adjust with repayment
- [ ] ___% Guarantee or backstop in exchange for Zone 3 “residual” capacity rights
- [ ] ___% Other method. Please describe.

In discussions on funding methods at this time

4. Please indicate each of your agency’s source or sources of funding for capacity rights and provide your best estimate of the applicable %:

- [ ] Reserves
- [ ] Annual revenues (for guarantees or annual loan payments)
- [ ] 100% Friant Contractor borrowing
- [ ] Other. Please describe.

This is part of the funding method discussions

5. Please provide comments or other suggestions regarding ways to participate in funding Zone 3 of the Project

It will be critical that the Zone 2 capacity be fixed to finally determine the interest in Zone 3 funding.
July 2, 2020

Jason R. Phillips  
Chief Executive Officer  
Friant Water Authority  
854 N. Harvard Ave.  
Lindsay, CA 93247

Via Email: Zone3RFI@friantwater.org and jphillips@friantwater.org

Re: DEID and SSJMUD Response to Friant Water Authority Request for Interest - Zone 3

Dear Mr. Phillips:

Delano-earlimart Irrigation District (DEID) and Southern San Joaquin Municipal Utility District (SSJMUD) (together, the “Districts”) are in receipt of Friant Water Authority’s (FWA) June 5, 2020 email soliciting responses to a Request for Interest (RFI) for Financing of the Friant-Kern Canal (FKC) Middle Reach Capacity Correction Project (Project).

The Districts are involved in ongoing discussions with FWA and other FKC contractors, both upstream and downstream of the Project, to review items related to Project costs and funding. The Districts, along with others, previously provided a Zonal funding alternative for FWA consideration that is complementary with FWA’s Zonal funding approach. We look forward to continued dialog and refinement of the Project funding plan in the future.

The Districts are also in discussions with FWA and other FKC contractors situated in and downstream of the Project (including their respective General Counsels, Bond Counsels, Tax Counsels, Municipal Advisors, and Accountants) to ensure that Project funding participation accurately and satisfactorily translates into an ownership interest that can be recognized on the Districts’ Balance Sheets from a tax, legal, and accounting perspective. These items are critical for the Districts as it relates to their current debt obligations, future fiscal performance metrics, and to ensure that any future debt related to the Project can be classified as tax exempt if a municipal bond issuance is undertaken.

The Districts appreciate the first two model runs provided by FWA related to potential Project benefits. Further model revision is requested so that FKC contractors located in and
downstream of the Project can understand the direct and proportional contractual benefit provided by the Project along with potential impacts if the Project is constrained in its capacity at certain levels.

While the Districts are unable to provide firm financial commitments as it relates to this RFI response, with further model revision and clarification of the remaining financial items noted above, the Districts will be in a better position to evaluate what funding levels they may wish to consider. In the interim, the Districts would like to clearly convey that they are extremely interested in Project funding participation at levels that provide for flow rates in the FKC that protect historical access to contracted supplies along with some level of buffer. Further Project funding interest may also be present to account for some level of increased delivery.

The Districts look forward to working directly with FWA and other interested FKC contractors on the continued development of the Project funding plan.

Sincerely,

Eric R. Quinley
General Manager

On behalf of: Delano-Earlimart Irrigation District
Southern San Joaquin Municipal Utility District
July 21, 2020

Chris Tantau
Chairman of the Board
Friant Water Authority

Subject: Friant-Kern Canal Subsidence Fix and Funding

Dear Chairman Tantau,

Please include this letter from the Orange Cove Irrigation District (OCID) in the upcoming July 2020 Friant Water Authority Board of Directors Packet.

First, OCID genuinely appreciates the effort and creativity of Friant staff, consultants, and Directors to identify an implementable capacity correction project that is acceptable to Friant Contractors. Not surprisingly the hardest part is proving to be funding.

The current rift among long-term Friant Contractors coupled with the prolonged pandemic is certainly frustrating engaged discussion among Contractors. The lack of open communication and deliberation hinders arriving at an agreeable outcome. It is hoped that this letter encourages broader funding issue dialogue. Next week’s funding workshop is critical and ahead of that meeting, OCID provides a few thoughts for consideration for those very important discussions.

The Authority recently released a Request for Interest (RFI) to solicit / gauge interest in Zone 3 investment. The responses indicate a willingness from investors to put up-to $280 million dollars towards the fix, this is seemingly very good news, but OCID believes caution is advised.

Based on responses, the real source(s) of capital are undisclosed. It is certain that money will pass through individual Friant Contractors (Arvin Edison WSD, Kern-Tulare WD, Porterville ID, Saucelito ID and Terra Bella ID) and those Contractors are considered to be the “investors” but the source of funds and an understanding of the business model and expectation of private equity providing those funds, is unknown. In addition to the noted contractors, the Eastern Tule GSA and one private entity, the Renewable Resources Group (RRG) have been identified as investors.

Quite frankly, the OCID Board is uneasy with potential unintended operational consequences that may come from private investor equity. Private investment has not been part of Friant’s history, at least not anywhere remotely close to this scope and scale of water supply impact. Changes to operating principals could negatively affect many FKC long-term Friant Contractors. Private money involved could be a game changer for the Friant Division. Eyes need to be wide open!

The level of concern related to private equity investment depends on the amount of Zone 3 funding dollars used to get the Canal back to its historically used maximum conveyance
capacity, which we understand is somewhere around 2,500 cubic feet per second. In other words, OCID believes, that to provide maximum durable protection to FKC long term contractors, $0.00 Zone 3 dollars should go toward reestablishing the capacity to at least 2,500 cfs. If Zone 3 dollars are used to create capacity above this level, or more comfortably, above this level with some buffer (say 3,000 cfs) all the way up to the original design capacity, there is lesser, but still concern.

To illustrate this concern, consider that it has been a long-held position of the Friant Board, that water management actions / programs shall not lead to a net loss of water from the Valley. Private investment will not consider this tenet to be foundational. If a greater return on investment results from transferring water out of the Valley; that would become a new foundational objective – this potential conflict in motivation must not to be discounted or ignored.

It is the view of OCID that funds to recover capacity should come from the following sources, in order of priority:

1. **Tule Basin GSA’s** - The amount of mitigation funds must be unrelated to the availability of money from all other sources, including the United States, Friant Contractors, and private investment.

2. **Federal Non-Reimbursable Funds** – OCID appreciates the efforts of the Authority and the level of interest and work by the federal government to help the Authority in its mission to maximize capabilities to deliver water made available by the United States. It is not lost on OCID that the leadership of the Authority is instrumental in fostering the spirit of assistance we are seeing from the United States on not only this, but many Friant Division issues.

If and only if these two sources do not provide funds needed to correct the capacity to the historical maximum deliveries (2,500 – 3,000 cfs), should FKC Contractors be asked to pay. If there are insufficient dollars from the combined Tule Basin GSA mitigation funds / federal sources, then and only then should funds be sought from:

3. **Friant Contractors:**
   a. **Downstream Friant Contractors** – *Direct and Indirect Beneficiaries.* As demonstrated in the Feasibility Study and the responses to RFI, the ability to convey water in the FKC by those that have contractual rights or by others who can use their contractual rights, is an investment. The benefits to these contractors are all different depending on their Class 1 and Class 2 contract quantities, as previous analysis has shown. Additionally, maximizing deliveries to all Friant reduces the O&M rate per acre foot. In other words, downstream interests are direct beneficiaries and indirect beneficiaries.
   b. **Upstream Friant Contractors** - *Indirect Beneficiaries.* Previous analysis shows that a restored Canal capacity results in increased average annual FKC water deliveries. By virtue of the mechanics of the Friant O&M Cost Recovery Methodology, there is a benefit to upstream (and downstream) FKC contractors due to a reduction on the O&M rate per acre foot.

If and only if the above sources provide sufficient funds to correct the capacity to the historical maximum deliveries (2,500 – 3,000 cfs), should accepting private equity be considered:

4. **Investor Funding** – OCID believes the Authority should not accept equity from private entities, however, we can appreciate there are compelling perspectives for accepting those funds to construct a Canal to original design capacity / utility, particularly under SGMA. Understanding how all contractors feel about this point, not just the
downstream contractors, and not just FKC Contractors and not just FWA Contractors must be a topic of discussion.

General Concern with Private Equity in the Friant Division

There is a long history of Friant Division districts collaborating under a common voice to maximize the water supply benefits to the Eastern San Joaquin Valley and to provide reliable water supply to Friant Division landowners engaged in producing food and fiber for our nation. There are tremendous commonalities among us; the farming commonality and broad regional societal and economic benefits from this engine maintain Friant Division cohesion.

Certainly, land in the Friant Division is enduring and will be here forever (figuratively speaking of course – nothing lasts forever). The water supply, however, is a fluid key ingredient (literally speaking). As they say, “water moves uphill toward money”, and the OCID has concerns with investors’ maneuvering and profiting on the value of water in and of itself, disregarding its direct utility and benefit to the Valley.

Private investment and the power of significant capital resources has a way of bringing about change; change in leadership, change in regulation, change in law, change in politics and changes in policies that may very well threaten what the Friant Division has built over the last 70 years.

The OCID believes in a fair distribution of funding to repair the Canal, predicated on the above noted sources and principles. OCID appreciates that in the short-term, paying for impacts caused by others is objectionable, but Friant Districts must come together and contribute to the funding solution to minimize or better yet eliminate all together private equity.

OCID urges Friant Contractors to consider the risks and make long-term decisions in Friant water users and the Valley’s collective interest.

Sincerely,

Harvey Bailey
Chairman
Orange Cove Irrigation District

David A. Brown
Director
Orange Cove Irrigation District
DATE: July 13, 2020
TO: Board of Directors
FROM: Austin Ewell
SUBJECT: Water Blueprint for the SJV

SUMMARY:

The Water Blueprint for the San Joaquin Valley (Blueprint) continues to hold its monthly Executive Committee and Sub-Committee meetings as well as the Large Group meetings via Zoom. We are seeing a growing number of participants. Some 70 participants make up the Blueprint Large Group including Farm Bureaus, Water Authorities, Districts, Growers, Trade Associations, NGOs, Fresno State, GSAs, Refuges, BOR and white land interests. A comprehensive and collaborative plan is under development that the San Joaquin Valley through a broad coalition can support and advocate for with a focus on solutions in coordination with key stakeholders.

The Large Group and the following committees listed below are pursuing the goals of Blueprint, including funding opportunities and working in conjunction with other stakeholders.

**Socio-Economic Impact Analysis (EIA) Phase I completed, Phase II being developed:** A number of presentations and events have been completed including recent presentations with MBK, State Contractors, DWR and BOR relating to modeling and project results. A follow up meeting took place with leadership at DWR; they are looking to identify a POC for participation. Phase II of the plan will look at a solution set being developed with the Technical Committee and others. Stantec and MBK are providing planning and engineering services to support the development, evaluation, and selection of activities that will be pursued with the support of the Blueprint entity.

**Convening Process:** Several meetings have recently taken place with various stakeholders and elected to discuss FSU hosting a convening process to review water user’s needs and discuss the diverse interests of these groups into the Blueprint and similar efforts. The convening process could look at implementation of SGMA in the San Joaquin Valley, development of a water supply plan to minimize loss of working lands, degradation of groundwater quality, loss or jobs, and other regional economic impacts. Development of an environmental plan to manage land use changes for agricultural lands that unavoidably must come out of production, and develop safe, clean affordable water supplies for disadvantaged communities.

**DAC/SDAC Drinking Water Feasibility Studies:** An application to the State for the FKC Feasibility Study has been submitted. Fresno State, Self Help and the Exchange Contractors are working to prepare a similar application for submittal for the DMC and neighboring communities. The objective of the Project is to identify the technical, financial, and institutional feasibility of providing surface water deliveries from the Canals to recharge basins, or other types of facilities, to improve drinking water
conditions (accessibility, affordability, quality and quantity) for DACs and SDACs located in the Study Area.

The Committees are working on the following matters:

1) Regional Representation & Technical Support: The Technical Committee recently presented engineering and modeling results to the Department of Water Resources, Bureau of Reclamation and State Contractors. A meeting with Stantec, KRWA, FWA and others took place to discuss the Belmont/Kings river check project. The Committee continues to review possible funding and partnership opportunities. The Blueprint has engaged Provost & Pritchard to review possible grant and loan funding opportunities. Other meetings with Regional Coordinators are being scheduled to discuss the project list and related matters.

2) Engagement and Outreach (i.e. Disadvantaged Communities, Environmental Organizations & Urbans). Recent discussions with EDF, TNC and others to possibly identify pilot projects to locate recharge opportunities and environmental enhancement. With the submittal of the FKC project the group is looking at opportunities to do the same on the DMC and CA aqueduct. Fresno State is looking to co-host a Water Stakeholder Summit referenced earlier as the Conveying process.

3) Funding, Finance & Governance: Blueprint has sent 2020 invoices and payments are being received. An updated budget has been prepared for 2020 to reflect the governance structure, project management, the remaining economic report work as well as related services. The budget shortfalls will affect resources for SGMA and will likely have an impact on state funding sources as well as a possible Bond.

4) Advocacy & Public Relations: Meetings with State legislators took place the week of June 22nd in Sacramento and follow up discussions have ensued. Blueprint and Committee members are continuing discussions with elected and key Administration officials about the details and implementation of the Blueprint and funding opportunities.

RECOMMENDED ACTION:

There is no recommended action at this time. The Board gave initial direction to pursue this collective effort and report back on its status.

BUDGET IMPACT:

None

ATTACHMENTS:

None
Operations & Maintenance Report
A compilation of current FWA operations and maintenance activities throughout the 152-mile canal system.
June 2020
OPERATION & MAINTENANCE REPORT

SAFETY, EDUCATION & TRAINING

- Operations Department held tailgate safety meetings in the Lindsay yard; outlying field offices staff attended the C&M meetings.
- Lindsay staff discussed upcoming projects associated with realignment project and the forthcoming 2020-2021 dewatering workload.
- Delano Forman discussed FWA rules and regulations on heat illness. Items such as drinking water availability, access to shade daytime temperatures, first aid and Emergency response

Education & Training

- Operations Department is completing online training courses on the Target Solutions website.
- Delano routine walk through safety inspection of Delano Facilities. Monthly fuel tank inspection, fire extinguishers sign off tags, power tool cords, guards, and housekeeping. Inspections documented/filed and submitted to safety officer

Accidents & Injuries

- Friant staff has worked 1,572 days without a lost-time injury accident.

MAINTENANCE SUPERVISION

GENERAL SUPERINTENDENT REPORT

Subsidence

- Staff worked with Stantec on Water Quality monitor program
- Staff continued to work with Stantec on environmental compliance from MP 88.22 to MP 121.8 for the new canal alignment project and canal hydraulic modeling for the Water Quality program.
- Facilitated a first step process with the County of Tulare and Stantec for middle reach plan reviews.
- Staff applied aquatic herbicide in the unlined section for the ongoing milfoil problem.
- General Superintendent worked with staff on scheduling and crew coverage during the COVID-19 social distance protocol
- Created a project timeline for potential dewatering projects and presented to the District Managers during the monthly meeting
- Submitted an estimated drawdown schedule to all District Managers and interested parties

Personnel Items

- Staff worked on several personnel items, including annual reviews, policy conformance, and other matters.
- Staff filled the vacant Lindsay Forman position with one of the two candidates applying for the position.
CONSTRUCTION & MAINTENANCE
FOREMEN REPORTS: ORANGE COVE, LINDSAY, & DELANO MAINTENANCE
Weed & Pest Control

- The following is a summary of the chemical products used during the month by maintenance staff for weed and pest control on various canal sections and the product inventory on hand:

<table>
<thead>
<tr>
<th>PRODUCTS</th>
<th>UNITS</th>
<th>MAINTENANCE YARD USAGE</th>
<th>TOTAL USAGE</th>
<th>END OF MONTH ON-HAND</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Orange Cove</td>
<td>Lindsay</td>
<td>Delano</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clearcast</td>
<td>Gal</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Copper Sulfate - Old Bridge</td>
<td>Lbs.</td>
<td>13,900</td>
<td>3950</td>
<td>0</td>
</tr>
<tr>
<td>Copper Sulfate - Chem One</td>
<td>Lbs.</td>
<td>3050</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Argos Copper</td>
<td>Gal</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Captain XTR</td>
<td>Gal</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Deploy</td>
<td>Gal</td>
<td>10</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Diphacinone</td>
<td>Lbs.</td>
<td>68</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Diuron 4L - Loveland</td>
<td>Gal</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Diuron 4L - Drexel</td>
<td>Gal</td>
<td>0</td>
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<td>0</td>
</tr>
<tr>
<td>Lifeline</td>
<td>Oz</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Weather Guard Complete</td>
<td>Oz</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Finale</td>
<td>Oz</td>
<td>0</td>
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<tr>
<td>Milestone VM</td>
<td>Oz</td>
<td>0</td>
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<td>0</td>
</tr>
<tr>
<td>Nautique SePro</td>
<td>Gal</td>
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</tr>
<tr>
<td>Roundup - Custom</td>
<td>Gal</td>
<td>44</td>
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<tr>
<td>Roundup - Pro Conc</td>
<td>Gal</td>
<td>48</td>
<td>140</td>
<td>171</td>
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<tr>
<td>Forfeit 280</td>
<td>Oz</td>
<td>0</td>
<td>518</td>
<td>0</td>
</tr>
<tr>
<td>Sonar Genesis</td>
<td>Gal</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Cheetah</td>
<td>Oz</td>
<td>6560</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

- Delano weed & pest applicators continue the use of Roundup custom as part of the annual weed control program in the Lake Woollomes Reservoir right of way areas.
- Delano weed & pest applicators continue the use of Roundup pro concentrate as part of the annual weed control program in the Delano maintenance section.
- Delano staff continues the use of copper sulfate as part of an algae control program in the Delano maintenance section.
- Lindsay maintenance staff initiated the application of Forfeit 280 for the post-emergence control of grasses and broadleaf weeds along the canal and right of ways.
- Lindsay maintenance staff continued with the application of Roundup for the post-emergence control of grasses and broadleaf weeds along the canal and right of way.
• Lindsay maintenance staff continued with the application of Roundup Custom for the control of broadleaf weeds and grasses along the FKC.
• Lindsay maintenance staff initiated the application of copper sulfate in the canal prism for the control algae in the FKC.
• Lindsay maintenance staff continued with the use of the "GopherX" unit for the control of California ground squirrels.
• Orange Cove maintenance staff continued the application of Roundup Pro as part of the annual weed control.
• Orange Cove maintenance staff hand cleared vegetation from around canal structures.
• Orange Cove maintenance staff continued the application of Diphacinone to the canal right-of-way for the control of California ground squirrel.
• Orange Cove maintenance staff continued the removal of accumulated vegetation from siphon inlets.
• Orange Cove maintenance staff continued the removal of woody vegetation from canal embankment and toe as directed in the most recent O&M exam.
• Orange Cove maintenance staff cleaned out several cross drainages that were filled with debris after heavy rain.

Canal & Diversion Structures
• Delano maintenance staff continues embankment maintenance to upper and lower embankments and around structures such as blockhouses, turnouts, bridge abutments, etc. using a utility tractor or motor grader and earth moving equipment. By backfilling eroded areas, compacting, and grading in materials. Embankment maintenance will prevent erosion to the inside/outside banks, roads, gate structures, and concrete liners.
• Delano maintenance staff continues the fabrication and installation of two pump and trash rack stands.
• Delano maintenance staff continues painting bar gates, bollard posts, guard railings, warning signs, liner markers, structures, security fence wings, electrical panels, and blockhouse doors.
• Delano maintenance staff continues their structure gate maintenance for the year, repairs on radial and slide gates such as oil leaks, gearboxes, motor couplers, wire rope inspection, etc. Staff lubed all grease points and wire ropes, repair all metalwork, security fence repairs, deck cleaning, touch up painting, buoy ball, and wire rope replacement and debris removal.
• Lindsay maintenance staff continued to remove the trash that was illegally dumped along the Friant-Kern Canal.
• Lindsay maintenance staff continued with the fabrication and installation of 16 transmitters well covers in the Lindsay Maintenance Section. The existing covers need to be replaced due to poor design and damage.
• Lindsay maintenance staff replaced the gate stem with a new stainless-steel stem. The old actuator was also replaced with a new and larger actuator.
• Orange Cove maintenance staff continued to remove debris from the waterways and at check structures that have been blown or dumped into the canal.
• Orange Cove maintenance staff conducted inspections of the lining and made notes for areas needing repairs.
• Orange Cove maintenance staff built and repaired fencing in several locations.
• Orange Cove staff replaced corroded copper dump bins at headworks. New stainless-steel bins fabricated in the Orange Cove welding shop were installed and should provide many more years of service verse the previous steel bins.
• Orange Cove maintenance staff installed eight antenna poles to assist the tech services department.

O&M Roads
• Dela no maintenance staff continues road base gravel & decompose granite to various checks and turnout structures to prevent erosion and safe vehicle entry during wet conditions. Gravel base is ¾ inch crush rock spread out from dump truck and graded in using utility tractor.
• Orange Cove maintenance staff continued road patching repairs on FKC operation roadways and added several drainage pipes to help alleviate future flooding.
• Orange Cove maintenance staff continued grading canal non-operational roadways and wide areas, as necessary.
• Orange Cove maintenance staff repaired Several gates on the FKC canal roads
Yard & Building
- Delano maintenance staff continues to perform their routine maintenance and repairs, such as yard cleaning, warehouse & Shop housekeeping, vehicle & equipment repairs, facility improvements, and office duties.
- Orange Cove maintenance staff continued to perform the routine office and yard maintenance activities.
- Lindsay maintenance staff repaired the posts and chain link fence after a vehicle accident caused significant damage to the NW corner of the boundary fence.

Right-of-Way Maintenance
- Delano maintenance staff continues the removal of illegally dumped trash and remove debris from gate structures. All trash and debris removed from Authority Right of ways will be transported to the local solid waste/recycling facility.
- Delano maintenance staff continue bar gate and bollard post repairs and installations. Bar gates and bollard posts are necessary for the prevention of unauthorized vehicles from entering the Friant-Kern Canal right-of-way and structured areas.
- Delano maintenance staff continue to repair and install security fencing to prevent public access from entering the Friant-Kern Canal right-of-way and structured areas.
- Orange Cove maintenance staff continue to remove illegally dumped items along the right-of-way. Trash and debris were removed and transported to the local solid waste/recycling facility or stored for future disposal.
- Orange Cove maintenance staff continued repair of washouts and installed funnel drains and correcting drainage issues.
- Lindsay maintenance staff continued with the repairs of the fencing in the Strathmore area that is continually being cut to gain unauthorized access to the canal and right-of-way.
- Orange Cove canal maintenance workers began Boom truck Training with sights on obtaining a boom truck operator licensing.
Vehicle & Heavy Equipment

The following is a summary of the vehicle and heavy equipment preventive maintenance services and repairs made by the technical services staff.

<table>
<thead>
<tr>
<th>DELANO, ORANGE COVE &amp; LINDSAY</th>
<th>TYPE</th>
<th>QUANTITY</th>
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<tbody>
<tr>
<td>In-House Inspections</td>
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<td>C - Annual</td>
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<td>BIT - 90-Day Heavy Equipment</td>
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<td>Outside Inspections</td>
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<td></td>
<td>C - Annual</td>
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</tr>
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<tr>
<td></td>
<td>Smoke Test</td>
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<th>DELANO, ORANGE COVE &amp; LINDSAY</th>
<th>TYPE</th>
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<tr>
<td>In-House Repairs</td>
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<td>Heavy Equipment</td>
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<td>Outside Repairs</td>
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<tr>
<td></td>
<td>Heavy Equipment</td>
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</tr>
</tbody>
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ENGINEERING ACTIVITIES

ENGINEER AND ENGINEER TECHNICIAN REPORT

SENIOR ENGINEER

- Staff created a floor plan for Lindsay; for staff to plan an office layout.
- Friant Water Authority GIS system progress.
  - Engineering Technician conference calls with Stantec.
    - Discussed shared use of GIS maps, data, and layers that could advance our system with minimal cost and time.
    - Discussed technical assistance/networking with FWA with engineering companies and Irrigation Districts.
- Pump-Back Project

FWA has assigned Ian Buck-Macleod to the project team. His experience with the Pump Back Project on the private side will bring a coordinated environmental-engineering-construction effort. The team assumes construction will start next year. FWA is looking for funding to start the project after June 2021.
FKC survey ROW survey Inventory
  o Organized and updated the FKC 1930s-1950s USBR Survey Records.
  o Found all surveyed ROW units involved. Engineering will track more documents from storage or USBR microfilm.
  o The original survey was done in 6 separate projects from 1935 – 1950.
  o Restored 6 historical paper record books to archive (white glove use).
  o Creating identical paper record books for office use.
  o Scanned books to archive historical survey documents on PDF to view without touching. Now can print & access on network or mobile.
  o Engineering Technician using GIS to Index and organize record location on map.

OPERATIONS ACTIVITIES

OPERATIONS SUPERVISOR REPORTS

- Operations Staff during the month of June delivered 88,494 acre-feet. Total water diverted year-to-date to FKC Contractors was 153,570 acre-feet
- Reported sump pump deliveries of 9 acre-feet and year to date total of 96 acre-feet.
- Staff Adjusted 10 transmitters and reset zeroes after calibration.
- Staff completed 75 head tests for the month of June.
- Staff completed and sent out the ROWD's for the month of June.
- Staff installed a new Honeywell recorder at Tipton Ditch.
- Staff installed a new transmitter at OC#7.
- Staff assisted QPCS with antenna installs at OC#4 and OC#8.
- Staff continued working on venturi lid replacements.
- Staff performed battery maintenance for the solar panels at the Kaweah downstream blockhouse.
- Staff opened all PID gates and flushed out venturi lines.
- Staff installed a bulkhead at Poplar Ditch.

ELECTRICAL

- Staff repaired the Honeywell outlet for Shafter/Wasco #2.
- Staff replaced the gearbox for gate #2 at the Shafter/Wasco Check.
- Staff checked the brakes for the gate #1 motor at Tule Check.
- Staff performed PMs at Garfield, Little Dry, 5th Avenue, Deer Creek, North Kern, Kern Check, Woollomes, And Poso Creek.
- Staff performed blockhouse PMs at Kings River, Gould, and Enterprise.
- Staff completed a layout for the OC yard panel upgrade.
- Staff pulled electrical and comm wires from gate #1 at Porter Slough so the actuator post could be fixed.
- Staff unwired and pulled the gate #2 actuator at #4 Ditch.

SCADA

- Staff added 24 East #2, 40 N&S, and 8 N&S to Clearscada.
- Staff added gates 1 and 4 to the Kings River WW mimic.
- Staff worked on Scada programming to resolve issues with Intellisite display.
• Staff installed an antenna pole @ 24 East.
• Staff worked with Intellisite in the installation of directional antennas for better communications.

INFRASTRUCTURE MANAGEMENT

DIRECTOR OF TECHNOLOGY REPORT

ADMINISTRATIVE SUPPORT
• Staff completed the Weed & Pest reports and submitted the Monthly Summary Pesticide use report to each county (Fresno, Tulare, Kern).
• Staff completed the compilation of the Operation and Maintenance report, submitting the final to the Superintendent.
• Staff continued to provide the Accounting department with reconciliation, voucher completion, and invoice collection support.
• Staff entered vehicle odometer readings weekly through the fleet management system to track preventative maintenance.
• Staff provided Webex host services for the Board of Directors, Executive Committee, and Finance Committee Meetings.

INFORMATION TECHNOLOGY MANAGEMENT
• A considerable amount of time was spent on activities initiated by the Authority’s response to the COVID 19 pandemic. Activities include end-user support, the configuration of devices for remote access, and working with supervisors and managers to meet their department requirements.
• For the server refresh project, final engineering calls were held with Nutanix and Dell Technologies. Proposals are being reviewed, with recommendations scheduled for July.
• The Internet contract with Vast Network was renewed on a three-year term. Vast Network provided fiber Internet service to the Lindsay office. The previous service contract was for 100 MB Internet service; the new term was negotiated to 750 MB with no additional cost. The additional bandwidth will benefit Internet-based meeting software, backup replication, remote workers, and overall network performance.
• The last phase of the security updates scheduled for FY20 was completed. Cisco Umbrella, a DNS filtering tool, was provisioned. DNS filtering filters Internet-bound traffic for websites that are known for malware, controls web traffic to meet Authority policies, and manages Internet usage.
• The Authority’s VPN solution, Cisco AnyConnect, was upgraded to the latest version, improving reliability, and auto installing the Cisco Umbrella client to endpoints.
• Major revision upgrades were installed on the Nutanix Prism software. Prism is the control and management software for the Authority virtual server infrastructure.

SCADA / IOS
• The Operations Supervisor and Intellisite development team made significant process on the deployment of antennas and mounts in the twenty sites that have the most significant telemetry issues and performing the system upgrades on the check structures that are needed for the site security enhancements.