

### Regional Water Authority REGIONAL DROUGHT CONTINGENCY PLAN AND REGIONAL WATER RELIABILITY PLAN JOINT MEETING

**Tuesday, May 16, 2017; 1:30 – 3:30 pm** 5620 Birdcage Street, Suite 110 Citrus Heights, CA 95610 (916) 967-7692

#### Agenda

	ΤΟΡΙϹ
1.	Introductions and Agenda Review
2.	Vulnerability Update
3.	Mitigation Actions/Opportunities Update
4.	Conjunctive Use Analysis Approach
5.	Next Steps
6.	Adjourn

#### **Upcoming Meetings:**

RDCP Webinar – July 12, 2017

#### Handouts:

- PPT
- Drought-Specific Vulnerability Table
- Structural Mitigation Action Table
- Non-Structural Mitigation Action Table
- Draft Evaluation Criteria and Metrics



# Today's Agenda

Vulnerability Assessment Update
 Mitigation Actions/Opportunities Update
 Conjunctive Use Analysis Approach
 Next Steps





# 1. Vulnerability Assessment Update







## RDCP Area



# **RDCP Six Required Elements**

	1. Drought Monitoring	Establish data metrics to indicate drought conditions	
(	2. Vulnerability Assessment	<ul> <li>Assess risks and impacts of current and future droughts</li> </ul>	)
	3. Mitigation Actions	Identify & prioritize actions to mitigate vulnerabilities	
	4. Response Actions	<ul> <li>Identify &amp; prioritize response actions to ongoing drought</li> </ul>	
	5. Operational & Administrative Framework	Define procedures for conducting drought monitoring, initiating mitigation and response actions	
		Define process for monitoring and updating the RDCP	
	RVA		ec





Drought-Specific Water Supply Vulnerabilities

- Low Reservoir Storage
- Low Flows in Rivers
- CVP Allocation Shortages
- Water Right Curtailments





Agency	Low Reservoir Storage	Low Flows in Rivers	CVP Allocation Shortages	Water Right Curtailments
DCP Partners				
Placer County Water Agency	$\bigcirc$ $\square$	$\bigcirc$		•
City of Folsom	•	$\bigcirc$	•	•
City of Roseville		0 🗆	•	$\bigcirc$
City of Sacramento	$\bigcirc$	•	0	•
San Juan Water District (Retail)	•	$\bigcirc$	•	•
Other Agencies in DCP Area				
California American Water	$\bigcirc$	$\bigcirc$ $\square$	•	•
Carmichael Water District	0 🗆	•		•
Citrus Heights Water District	•	0 🗆	•	•
City of Lincoln	0 🗆	0 🗆		0 🗆
Del Paso Manor Water District*	0 🗆	0 🗆		0 🗆
Fair Oaks Water District	•	0 🗆	•	•
Golden State Water Company*	0 🗆	0 🗆		0 🗆
Orange Vale Water Company	•	0 🗆	•	•
Rio Linda/Elverta Community Water District*	0 🗆	0	0 🗆	•
Sacramento County Water Agency*	$\bigcirc$	$\bigcirc$	0	0
Sacramento Suburban Water District	•	0 0	0	• •
= likelihood = Impact	tingency Plan, M&I = municip	iai and industriai, * = only uses g	roundwater in DCP area.	
	Nu <b>=</b> Madarat	ka 💻 Likula		

# RDCP M&I Agencies Affected by Drought-Specific

# Effect of Drought-Specific Water Supply Vulnerabilities on Reliability

Scenario	Findings
Wet Year	Sufficient supplies to meet demands
Driest Year	<ul> <li>Sufficient supplies to meet demands except for several agencies at build-out</li> <li>Deficits in City of Sacramento, SSWD, SCWA, City of Folsom, EID</li> </ul>
Highly Restricted Supply	<ul> <li>Representative of drought conditions (except for agencies solely reliant on groundwater)</li> <li>Beyond the requirements of Senate Bill 610 and Urban Water Management Plans</li> <li>Varies for each agency depending on its water supply portfolio</li> <li>10 of 16 agencies have deficit under current conditions</li> </ul>



# Highly Restricted Supply Scenario

### Example scenarios:

- Loss of access to supplies from Folsom Lake due to low lake elevations at least during summer months.
- Failure of primary water supply conveyance infrastructure
- Entire or partial loss of access to primary surface water supply (e.g., due to curtailments)



## Monthly Deficits During Highly Restricted Supply Scenario Under Current Conditions

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
DCP Partners												
Placer County Water Agency												
City of Folsom					5156	3855	4536	46%	5856			
City of Roseville												
City of Sacramento												
San Juan Water District (Retail)												
Other Agencies in DCP Area												
California American Water (Western Placer)												
Carmichael Water District												
Citrus Heights Water District						2896	35%	35%	2896			
City of Lincoln			4536								3336	
Del Paso Manor Water District*												
Fair Oaks Water District												
Golden State Water Company*												
Orange Vale Water Company			43196	4396								
Rio Linda/Elverta Community Water District*												
Sacramento County Water Agency*												
Sacramento Suburban Water District												
* Only uses groundwater in DCP area.												



### Monthly Deficits During Highly Restricted Supply Scenario Under Build-Out Conditions

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
DCP Partners												
Placer County Water Agency												
City of Folsom					3835	4536			4556	31%		
City of Roseville								3536	30%			
City of Sacramento	259%	26%	36%	37%	43356	4336	4536	443%	43556	-40%	31%	23336
San Juan Water District (Retail)												
Other Agencies in DCP Area												
California American Water (Western Placer)												
Carmichael Water District												
Citrus Heights Water District							29%	29%				
City of Lincoln												
Del Paso Manor Water District*												
Fair Oaks Water District												
Golden State Water Company*										41736	2536	
Orange Vale Water Company			42596	-47.7%								
Rio Linda/Elverta Community Water District*												
Sacramento County Water Agency*												
Sacramento Suburban Water District												



## Other Factors Affecting Vulnerabilities

- Climate Change
- Population Growth
- Other Factors
  - Long-Term Water Supply Contracts
  - Delta Water Quality Control Plan
  - California WaterFix
  - Others?





# 2. Mitigation Actions/Opportunities Update

ROA

() MWH. 555 () Stantec

(III) MWH. 🕅 🕥 Stantec

# **RDCP Six Required Elements**

1. Drought Monitoring	Establish data metrics to indicate drought conditions	
2. Vulnerability Assessment	<ul> <li>Assess risks and impacts of current and future droughts</li> </ul>	
3. Mitigation Actions	<ul> <li>Identify &amp; prioritize actions to mitigate vulnerabilities</li> </ul>	)
4. Response Actions	<ul> <li>Identify &amp; prioritize response actions to ongoing drought</li> </ul>	
5. Operational & Administrative Framework	<ul> <li>Define procedures for conducting drought monitoring, initiating mitigation and response actions</li> </ul>	
	Define process for monitoring and updating the RDCP	





## **Retained Mitigation Actions**

Structural	35 actions	<ul> <li>Intertie</li> <li>GW Well Rehabilitation</li> <li>GW Well New Installation</li> <li>GW Well Injection</li> <li>SW Treatment</li> <li>SW Storage</li> <li>Diversion</li> <li>Booster pump/ Pressure Reduction</li> <li>Recycled Water</li> </ul>
Non-Structural	21 actions	<ul> <li>Water transfers</li> <li>Wheeling</li> <li>Banking</li> <li>Modify Contracts/POU</li> <li>Federal Action &amp; Collaboration</li> </ul>
<b>YA</b>		

# **Evaluation of Structural Actions**

## Qualitative assessment of:

- 1. Contribution to Drought Resiliency
- 2. Project Status
- 3. Project Schedule
- 4. Implementation Complexity

## Quantitative Assessment of:

- 1. Potential Cost
- 2. Potential Yield

**RV**/A

HWH. DOT Stantec

(III) MWH. Mile (Stantec

Environmental Sector Mitigation Actions

- Lower American River Modified Flow
   Standard
- Folsom Dam Temperature Control
   Device





ROA

(III) MWH. Stantec



R(A

# 4. Next Steps

D)		/ . \
	()	

## Next Steps

Draft RDCP

Draft RDCP Public Comment Period

**DPTF** Webinar

**Final RDCP** 

**DPTF** Meeting

June 28

June 28 - July 28

HWH. port Stantec

(III) MWH. port (Stantec

July 12

September 2017

September 2017



## RDCP M&I Agencies Affected by Drought-Specific Water Supply Vulnerabilities

Agency	Low Reservoir Storage	Low Flows in Rivers	CVP Allocation Shortages	Water Right Curtailments	Limitations on Sharing Supplies
DCP Partners					
Placer County Water Agency	O D	$\bigcirc$		•	
City of Folsom	•	$\bigcirc$		•	•
City of Roseville		$\bigcirc$		$\bigcirc$	
City of Sacramento	O D	•	0 🗆	• =	•
San Juan Water District (Retail)		$\bigcirc$	•	•	
Other Agencies in DCP Area					
California American Water	$\bigcirc$ $\square$	$\bigcirc$	•	•	
Carmichael Water District	$\bigcirc$ $\Box$	• •	0 🗆	•	•
Citrus Heights Water District		$\bigcirc$		•	
City of Lincoln	$\bigcirc$ $\Box$	$\bigcirc$	0 🗆	0	•
Del Paso Manor Water District*	$\bigcirc$ $\Box$	$\bigcirc$	0 🗆	$\bigcirc$	0
Fair Oaks Water District	•	$\bigcirc$		•	•
Golden State Water Company*		$\bigcirc$		0	
Orange Vale Water Company	•	$\bigcirc$	•	•	•
Rio Linda/Elverta Community Water District*	0	O 🗆	0	O 🗆	0
Sacramento County Water Agency*	$\bigcirc$ $\square$	$\bigcirc$		$\bigcirc$	0
Sacramento Suburban Water District	•	O D	0 🗆	•	
Key: CVP = Central Valley Project, DCP = Drought Cor	ntingency Plan, M&I = municip	al and industrial, * = only uses g	roundwater in DCP area.		
●= likelihood ■= Impact					
Magnitude: □ = None ■ = L	ow == Modera	te ■= High			MWH 📰 🜔 Stanted
RUA				-	

### Regional Drought Contingency Plan/Regional Water Reliability Plan Draft Evaluation Criteria and Metrics

#### • Contribution to Objective: Improve Drought Resiliency

- High = Increase access to back-up supplies during drought or emergency conditions.
- Moderate = Indirectly improves drought resiliency.
- Low = Limited to no benefit to drought resiliency, or beyond scope of drought contingency plan.

#### • Project Status (Structural)

- Pre-Design/Design = pre-design, design, construction
- Planning = Feasibility Studies, preliminary assessments, planning studies
- Conceptual = no planning studies available

#### Implementation Timeframe (Structural)

- High= < 5 years to implement
- Moderate = 5 10 years to implement
- Low= > 10 years to implement

#### • Implementation Complexity

- o Structural
  - Low= No/limited land acquisitions, no/limited environmental compliance/approvals, and/or high public acceptance
  - Moderate = Some land acquisitions, moderately complex environmental compliance/approvals, and/or moderate public acceptance
  - High= Extensive land acquisitions, complex environmental compliance/approvals, and/or low public acceptance
- o Non-Structural
  - Low= Coordination with two agencies only
  - Moderate = Coordination with multiple agencies
  - High= Coordination with Federal/State agencies

ID	Mitigation Action	Category	Partners	Benefit to Drought Resiliency	Project Cost - Capital (\$M)	Project Yield	Project Status	Implementation Timeframe (years)	Implementation Complexity
S-01	Construct a 30 cfs pipe Folsom South Canal to Folsom WTP to provide emergency backup when water cannot be drawn from Folsom Lake. The pipine could also provide non-potable irrigation to south Folsom Plan area, and the diversion of the canal could also serve SCWA and GSWC.	Intertie	Folsom, (potentially SCWA & GSWC)	High	\$30	15,000 AF (19 MGD)	Planning	>10	Moderate
S-02	Construct Folsom-EID intertie south of Highway 50 for drought and emergency use.	Intertie	Folsom, EID	High	\$2	2.0 MGD	Planning	5 - 10	Low
S-03	Construct Folsom-FOWD intertie for drought and emergency use to Zone 1 (historic district area of Folsom).	Intertie	Folsom, FOWD	High	\$4	5 MGD	Conceptual	>10	Low
S-04	Construct Folsom-GSWC (Cordova)-SCWA intertie to facilitate conjuctive use and, for drought and emergency use.	Intertie	Folsom, SCWA, GSWC	High	\$0.75 - \$1.5	4,000 AFY (2,500 GPM or 3 MGD)	Planning	<5	Low
S-05	Construct an additional SJWD-PCWA intertie (to connect to planned pipeline from Ophir WTP) for drought and emergency use.	Intertie	PCWA, SJWD	High	\$2	2 MGD, emergency	Conceptual	5 - 10	Low
S-06	Construct City of West Sacramento-City of Sacramento intertie to receive treated water for drought and emergency use.	Intertie	West Sac, Sac City	High	\$1 - \$10	2-10 MGD	Conceptual	>10	Moderate
S-07	Use/expand SSWD-CWD intertie on El Camino Avenue and address operational pressure differences for in-lieu opportunities and improving CWD's drought reliability.	Intertie	CWD, SSWD, Sac City	High	\$0.5 -\$2	1-5 MGD	Planning	<5	Low
S-08	Construct Foothill WTP raw water pipeline between PCWA and NID for drought and emergency use.	Intertie	PCWA, NID, wholesale partners	High	\$11.4	38 MGD	Pre-Design/ Design	5 - 10	Moderate
S-09	PCWA and NID explore oversizing facilities to increase redundancy and reliability of Bear River supplies.	Intertie	PCWA, NID, wholesale partners	High	\$10	25,000 AFY	Conceptual	5 - 10	Moderate
S-10	Replace uncontrolled valve at Franklin Road intiertie to improve delivery of water into City of Sacramento from SCWA for emergency use.	Intertie	SCWA, Sac City	Moderate	\$0.1-1	? MGD	Conceptual	<5	Low
S-11	CalAm to construct new intertie with SCWA via Mather Air Force Base in coordination with Aerojet, for emergency use.	Intertie	CaAm, SCWA, Aerojet	High	\$0.2-2	0.5 -1 MGD	Conceptual	5 - 10	Moderate

ID	Mitigation Action	Category	Partners	Benefit to Drought Resiliency	Project Cost - Capital (\$M)	Project Yield	Project Status	Implementation Timeframe (years)	Implementation Complexity
S-12	City of Lincoln to participate in construction of NID WTP (share of 2-5 MGD) to reduce reliance on /provide redundancy for PCWA supplies.	SW Treatment	Lincoln, NID	High	\$10 -\$50	2-5 MGD	Conceptual	5 - 10	High
S-13	Construct Ophir WTP to provide access to Middle Fork Project supplies upstream of Folsom Lake, to enhance conjunctive use and increase resiliency for droughts and emergencies.	SW Treatment	Lincoln, PCWA, Roseville. NID, CalAm, SJWD	High	\$301.4	30 MGD	Pre-Design/ Design	5 - 10	High
S-14	Construct Alder Creek Reservoir (175 TAF) and add diversion points for Grizzly Flat CSD (e.g. White Rock). The reservoir would serve agricultural demands in the EDCWA, and potentially enhance water supply and flood protection functions of Folsom Reservoir.	SW Storage	EDCWA, TBD	Moderate	\$500 - \$2,000	20-80 TAF	Planning	>10	High
S-15	CalAm to upgrate Mather Tank to connect to Rockingham well in coordination with Aerojet, for emergency use.	SW Storage	CaAm, Aerojet	High	\$12 - \$15	1-3 MGD	Conceptual	5 - 10	Low
S-16	Complete RiverArc to provide ability to divert American River supplies of the Sacramento River, to enhance conjunctive use and increase resiliency for droughts and emergencies.	Diversion	PCWA, Roseville, GSWC, Rio Linda, City of Sacramento, SCWA, CalAm	High	\$500 - \$2,000	20-80 TAF	Planning	>10	High
S-17	Rehabilitate City of Sacramento's existing groundwater wells and replace as water quality and aging infrastructure requires to maintain extraction capability for conjunctive use and energencies.	GW Well Rehabilitation	Sac City	High	\$0.5-\$2 per well	1-3 MGD each	Planning	<5	Low
S-18	Construct additional groundwater wells to replace aging City of Sacramento's wells, and to increase extraction capability for conjunctive use and energencies.	GW Well New Installation	Sac City	High	\$2 - \$4 per well	1-3 MGD each	Planning	5 - 10	Moderate
S-19	Pursue the construction of a groundwater well for RMCSD drought and emergency use.	GW Well New Installation	RMCSD	High	\$2 - \$4 per well	1-3 MGD	Planning	<5	Moderate
S-20	Retrofit 4 of Lincoln's existing wells for injection to expand conjunctive use opportunities.	GW Well Injection	Lincoln	Moderate	\$0.5-\$2 per well	1-3 MGD each	Planning	<5	Moderate
S-21	Lincoln to capture stormwater by storing for later use (e.g., flooding dormant crops) to offset some agriculture demands.	GW Well Injection	multiple agencies, Lincoln	Moderate	??	??	Conceptual	>10	Moderate

ID	Mitigation Action	Category	Partners	Benefit to Drought Resiliency	Project Cost - Capital (\$M)	Project Yield	Project Status	Implementation Timeframe (years)	Implementation Complexity
S-22	Expand Roseville's aquifer storage and recovery (ASR) program, including buidling conveyance to CTP and improving public acceptance of groundwater in the City.	GW Well Injection	Lincoln, PCWA, Roseville, others	Moderate	\$3M each, \$30M total	2.2 MGD	Planning	5 - 10	Moderate
S-23	Employ ASR in the SJWD's wholesale service area (by retrofiting existing wells in CHWD, FOWD, OVWC) to enhance conjunctive use and dry-year protection.	GW Well Injection	SJWD, CHWD, FOWD, OVWC	Moderate	\$0.5-\$2 per well	1-3 MGD each	Planning	5 - 10	High
S-24	CHWD to partner with SMUD for energy generation through pressure reduction project that help increase ability to share supplies.	Booster pump/ Pressure Reduction	CHWD	Moderate	??	??	Planning	5 - 10	Moderate
S-25	Address City of Sacramento's distribution system pressure (install booster pumps and flow control structure) to increase ability to share supplies with neighboring agencies to improve conjunctive use.	Booster pump/ Pressure Reduction	Sac City	Moderate	??	??	Conceptual	<5	Low
S-26	Construct booster pump between DPMWD and CWD, to provide CWD with groundwater during droughts and emergencies, and to provide DPMWD with surface water supplies to increase in-lieu recharge.	Booster pump/ Pressure Reduction	DPMWD, CWD	Moderate	\$1-\$3	1-5 MGD	Conceptual	<5	Low
S-27	Build a pump station to deliver MFP water supplies to Georgetown Divide PUD to provide another source of water to meet buildout demands.	Booster pump/ Pressure Reduction	EDCWA, PCWA	Moderate	??	??	Planning	5 - 10	Moderate
S-28	Install booster pump to enable City of Sacramento to wholesale water to SCWA's Northgate 880 service area, and to flow water from Northgate 880 service area to the City of Sacramento or wheeling to other systems.	Booster pump/ Pressure Reduction	SCWA, Sac City	Moderate	\$0.55	2.9 MGD (max)	Planning	<5	Low
S-29	Construct a scalping plant in Folsom with 1000-1400 AF capacity to provide an additional source of non-potable water.	Recycled Water	Folsom	High	\$40	2.6 MGD	Planning	>10	High
S-30	Increase Lincoln's capacity to provide recycled water via expansion of wastewater treatment plant and recycled water distribution system to provide an additional source of non-potable water.	Recycled Water	Lincoln, PCWA, Placer County	High	??	??	Planning	5 - 10	Moderate
S-31	Expand Roseville's recycled water system to provide an additional source of non-potable water.	Recycled Water	Roseville, PCWA	High	\$11	850 AFY	Planning	>10	Moderate

ID	Mitigation Action	Category	Partners	Benefit to Drought Resiliency	Project Cost - Capital (\$M)	Project Yield	Project Status	Implementation Timeframe (years)	Implementation Complexity
S-32	Regional San to continue to expand recycled water opportunities with SCWA, City of Sacramento, and EGWD through the CoGen project and expansion of conveyance. The non-potable water supply would increase conjunctive use.	Recycled Water	Regional San, SCWA, Sac City, EGWD	High	??	??	Pre-Design/ Design	5 - 10	Moderate
S-33	Explore recycled water opportunities in partnership with Regional San by GWSC, OVWC, and CWD for conjunctive use.	Recycled Water	Regional San, GWSC, OVWC, CWD	Moderate	??	??	Conceptual	>10	High
S-34	PCWA to explore recycled water opportunities in West Placer growth area in partnership with Placer County, Roseville and Lincoln.	Recycled Water	PCWA, Roseville, Lincoln, Cal Am	Moderate	\$0.50	2,000 AFY	Planning	5 - 10	Moderate
S-35	Use Regional San's recycled water to offset groundwater pumping for South County Ag lands.	Recycled Water	Regional San, South County Ag	Low	??	??	Pre-Design/ Design	5 - 10	Moderate

ID	Mitigation Action	Category	Partners	Benefit to Drought Resiliency	Implementation Complexity
NS-01	CWD to partner with SSWD, GSWC, DPMWD, and/or FOWD to reduce in-district groundwater extraction and improve conjunctive use.	Water Transfers	CWD, SSWD, GSWC, DPMWD, FOWD	Moderate	Moderate
NS-02	RLECWD to form agreements with EDCWA, SSWD, City of Folsom and/or others to receive surface water via CTP extension to address groundwater contamination challenges and expand conjunctive use.	Water Transfers	SJWD, SSWD, Folsom, RLECSD, DPMWD, EDCWA, City of Sac	Moderate	Moderate
NS-03	SSWD to evaluate long-term partnership agreement options to improve water supply reliability and operational flexibility with SCWA, City of Sacramento, and/or others.	Water Transfers	SSWD, SCWA, Sac City	Moderate	Moderate
NS-04	Develop agreement with GSWC (Cordova) to provide City of Folsom's south of Hwy 50 development with groundwater during drought or emergency conditions.	Water Transfers	GWSC, Folsom	High	Low
NS-05	Expand agreement with SCWA to provide GSWC with surface water to improve conjunctive use and improve drought resiliency.	Water Transfers	GSWC, SCWA	High	Low
NS-06	Develop agreement with SSWD to supply SJWD with groundwater for droughts and emergencies.	Water Transfers	SJWD, SSWD	High	Low
NS-07	SJWD to improve conjunctive use by pursuing institutional arrangements via (1) short- and long-term transfers with agencies outside SJWD's existing service area (e.g., Folsom, EDCWA), and/or (2) new wholesale agreements.	Water Transfers	SJWD, Folsom, El Dorado	Moderate	Moderate
NS-08	Develop agreement with City of Sacramento to allow SCWA to wheel water to its Southwest Track during droughts and emergencies.	Wheeling	SCWA, Sac City	High	Low
NS-09	Roseville, SJWD, and Folsom to develop agreement with PCWA to receive supplies through Ophir WTP/PCWA system at times when diversion capacity through Folsom Dam limits realization of full conjunctive use potential.	Wheeling	Lincoln, PCWA, Roseville, Folsom	Moderate	Moderate
NS-10	Participate in regional groundwater bank.	Banking	GWSC, DPMWD, SSWD, SJWD, SCWA, Sac City, FOWD, CHWD	Moderate	High
NS-11	SJWD to enter into a banking agreement with one or more agencies in the SGA area (e.g., SSWD (NSA), CalAm, RLECWD, CWD, GSWC, SCWA (Arden), DPMWD) to maximize full use of supplies.	Banking	SJWD, CHWD, FOWD, SSWD (NSA), CalAm, RLECWD, CWD, GSWC, SCWA (Arden), DPMWD	Moderate	Moderate
NS-12	CalAm to develop process to improve PUC approvals of groundwater sales to improve conjunctive use and banking potenial.	Banking	CalAm	Low	High

ID	Mitigation Action	Category	Partners	Benefit to Drought Resiliency	Implementation Complexity
NS-13	Update City of Sacramento's Sacramento River/American River water rights contract to expand POU beyond city's boundary to improve conjunctive use.	Modify Contracts/POU	Sac City	Moderate	High
NS-14	Expand City of Sacramento's POU to wholesale SCWA's Arden system and Northgate 880 service area via Freeport Regional Water Authority and River Arc during droughts and emergencies.	Modify Contracts/POU	SCWA, Sac City	High	High
NS-15	Expand PCWA's CVP service area to improve conjunctive use opportunities with NID and wholesale agencies.	Modify Contracts/POU	PCWA, NID, wholesale partners	Moderate	High
NS-16	Modify EDCWA's SMUD Agreement Water (30 TAF/yr) without affecting SMUD's ability to generate hydropower to improve conjunctive use with a partnering agency (TBD).	Modify Contracts/POU	EDCWA, SMUD, TBD	Moderate	High
NS-17	City of Sacramento to explore options to encourage wholesale deliveries during Hodge Flow periods.	Modify Contracts/POU	Sac City	High	High
NS-18	EDCWA to get commitment by Reclamation leadership to collaborate with EDCWA on a priority basis to complete all remaining actions and expedite award of the Fazio contract by a certain date.	Federal Action & Collaboration	EDCWA, Reclamation	Moderate	High
NS-19	Commitment by Reclamation leadership to collaborate with Roseville, PCWA, SCWA and SMUD on a priority basis to promote a continuing partnership among the parties and develop a structured process and firm schedule for renewing LTWSCs by a certain date.	Federal Action & Collaboration	Roseville, PCWA, SCWA, SMUD, Reclamation	Moderate	High
NS-20	PCWA to establish with Reclamation a sustainable minimum instream flow and minimum storage for Lower American River and Folsom Reservoir to ensure availability of local supplies.	Federal Action & Collaboration	PCWA, Reclamation	High	High
NS-21	Attain temporary or permanent storage rights in Folsom Reservoir or further upstream in cooperation with Reclamation.	Federal Action & Collaboration	CWD, EID, or other local agencies for GW Storage	High	High