



Regional Drought Contingency Plan & Regional Water Reliability Plan Joint Meeting

October 12, 2016



now
part of



The Big Planning Picture



Drought Contingency
Plan (1.5 yrs)

Regional Reliability Plan (2 yrs)

Regional Model Development (2 yrs)

Regional Water Bank (3-4 yrs)

Today's Agenda

1. Introductions and Agenda Review
2. Regional Water Supply Reliability Program Branding
3. Drought Planning Task Force Meeting
4. Regional Water Reliability Plan Meeting
5. Discussion of Demonstration Banking/Recovery Project
6. Adjourn

Regional Water Reliability Program Branding

Roseville & PCWA



Drought Planning Task Force Meeting



What is an RDCP?

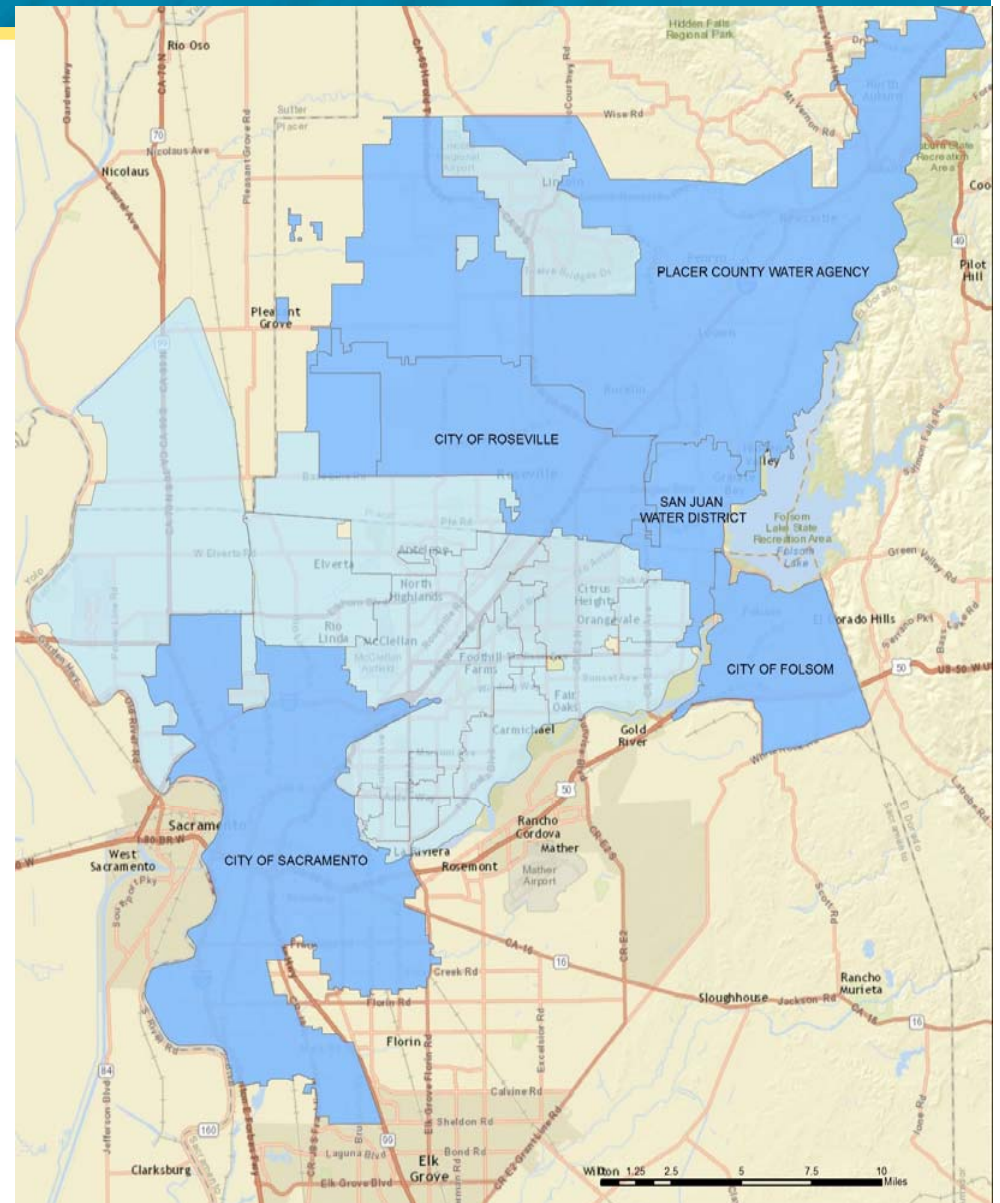
- Drought contingency planning processes are structured to address the following questions:
 - How will we recognize the next drought in the early stages?
 - How will drought affect us?
 - How can we protect ourselves from the next drought?
- Proactive approach to building long-term resiliency to drought
- \$200K planning grant from Reclamation Drought Response Program

North American Basin RDCP

- **GOAL** to increase the resiliency of the region's water resources in the face of future climate and drought conditions.
- **PURPOSE** is to develop (1) a prioritized list of actions to improve regional water supply reliability, and (2) recommendations for implementation
- **Study Participants:**
 - 5 water agencies with Reclamation water service and settlement contracts
 - 12 water agencies in North American Basin
 - RWA, Water Forum, DWR, Reclamation

NAB RDCP Planning Area

- 5 partners:
 - PCWA, City of Folsom, City of Roseville, City of Sacramento, SJWD
- 12 participating water agencies:
 - California American WC
 - Carmichael WD
 - Citrus Heights WD
 - City of Lincoln
 - Del Paso Manor WD
 - Fair Oaks WD
 - Golden State WC
 - Natomas Central Mutual WC
 - Orange Vale WC
 - Rio Linda/Elverta CWD
 - Sacramento County WA
 - Sacramento Suburban WD



RDCP Six Required Elements

1. Drought Monitoring

- Establish data metrics to indicate drought conditions

2. Vulnerability Assessment

- Assess risks and impacts of current and future droughts

3. Mitigation Actions

- Identify & prioritize actions to mitigate vulnerabilities

4. Response Actions

- Identify & prioritize response actions to ongoing drought


5. Operational & Administrative Framework

- Define procedures for conducting drought monitoring, initiating mitigation and response actions

6. Update Process

- Define process for monitoring and updating the RDCP

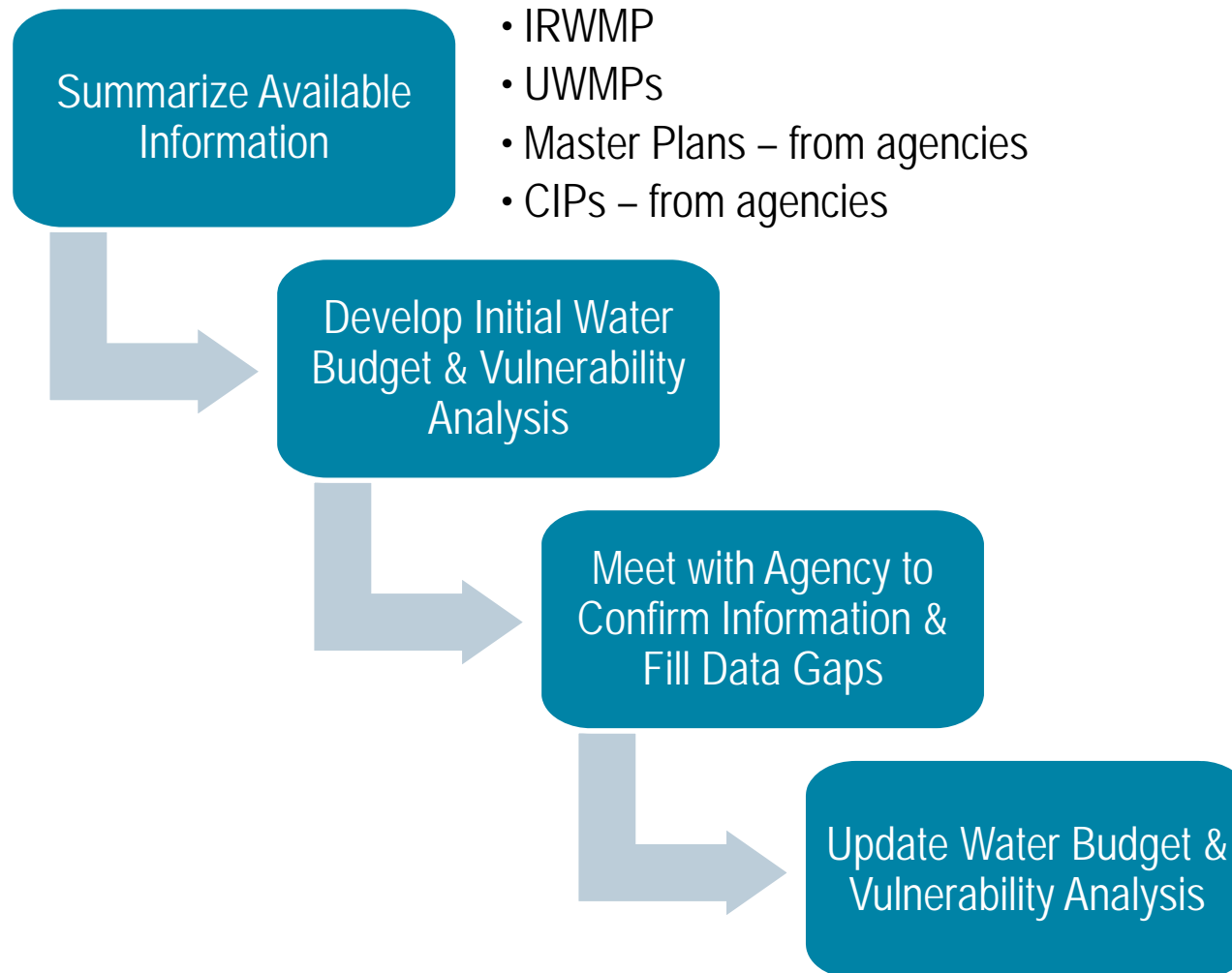
RDCP Scope

-  Task 1 – Establish Drought Planning Task Force
-  Task 2 – Develop Detailed Work Plan
-  Task 3 – Develop Communications & Outreach Plan
-  Task 4 – Develop Draft Regional Drought Contingency Plan
-  Task 5 – Prepare Final Regional Drought Contingency Plan
-  Task 6 – Reclamation Agreement Management

Information Gathering Process

- Purpose: to create data/information set needed for RDCP and RWRP
- Builds on existing regional and agency-specific planning:
 - 2012 System Optimization Review (SOR)
 - American River Basin IRWM Plan, 2013 Update
 - Agency-specific Water Shortage Contingency Plans
 - Agency-specific UWMPs
- Other needed data/information (Master Plans, CIPs, others) TO BE PROVIDED BY AGENCIES
- Agency interviews:
 - PRIOR to interviews: Agencies receive pre-populated template for review
 - DURING interviews: Validate data/info and collect additional (as needed); discuss vulnerabilities, mitigation and response actions, opportunities
- 2 test cases have helped refined process and template

Information Gathering Process

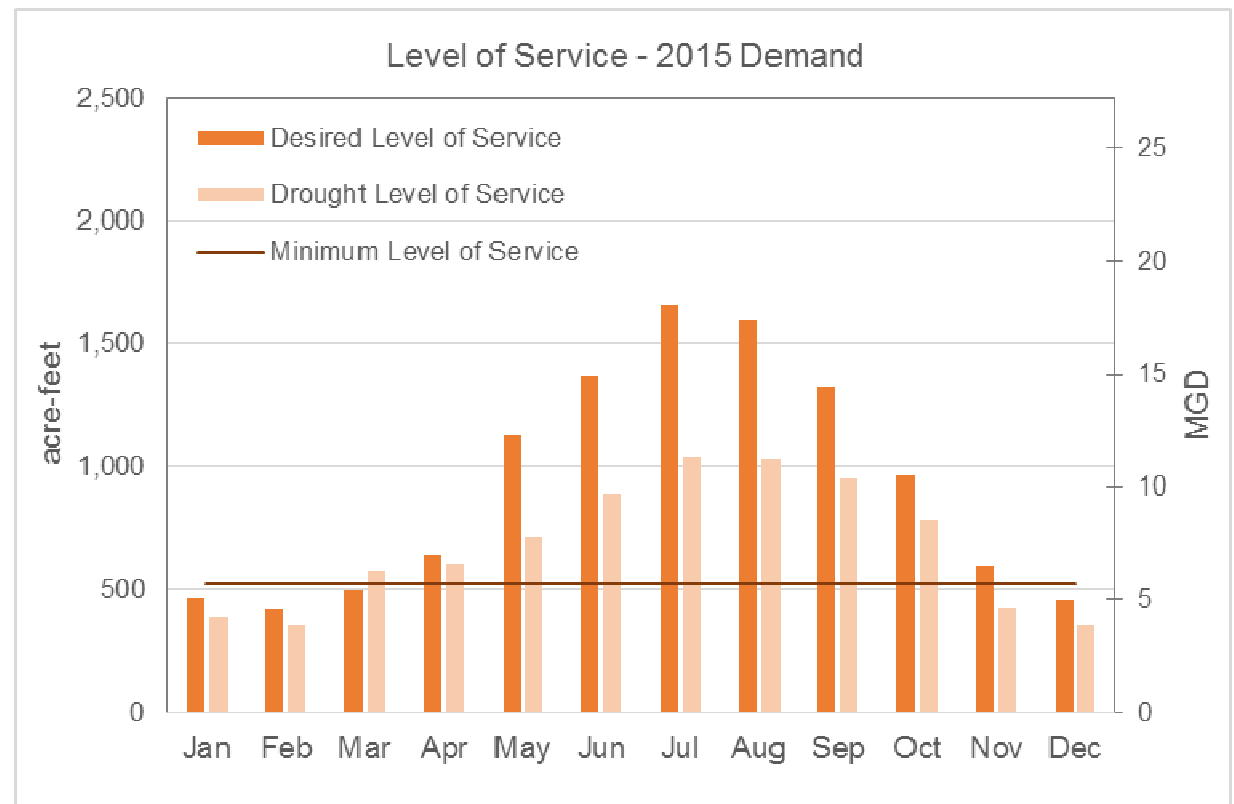


Agency Information

1. Available Water Supplies (Water Rights, Contracts)
2. Production Capacity (WTP, Wells)
3. Water Demand (2015, Build-out)
4. Reliability Targets (Desired, Drought, Minimum)
5. Regional Interties (Existing and Planned)
6. Cost of Water by Source

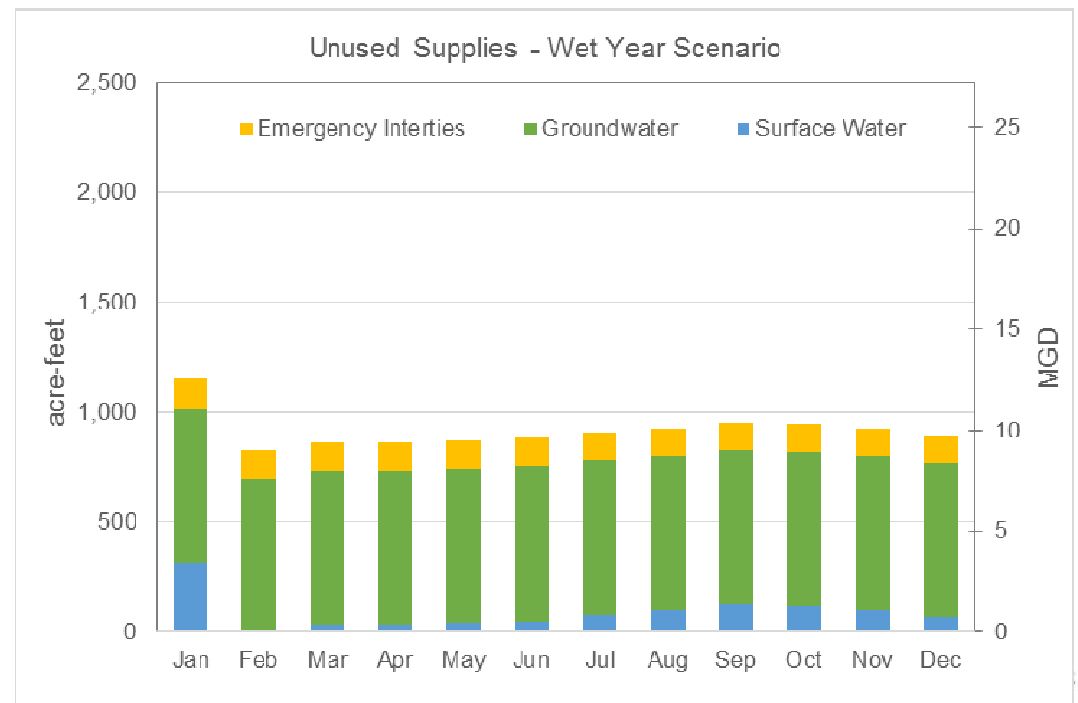
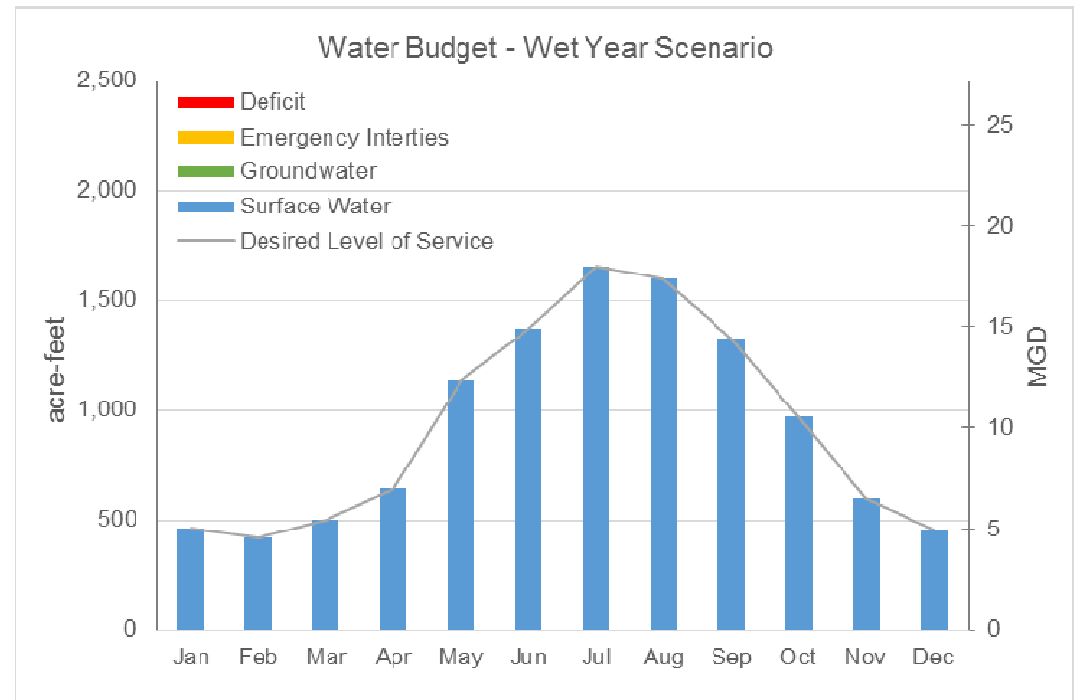
Level of Service - Example

- Desired (Average of 2011-2014 water use)
- Drought (2015 water use)
- Emergency (Average Oct-May 2015 water use)



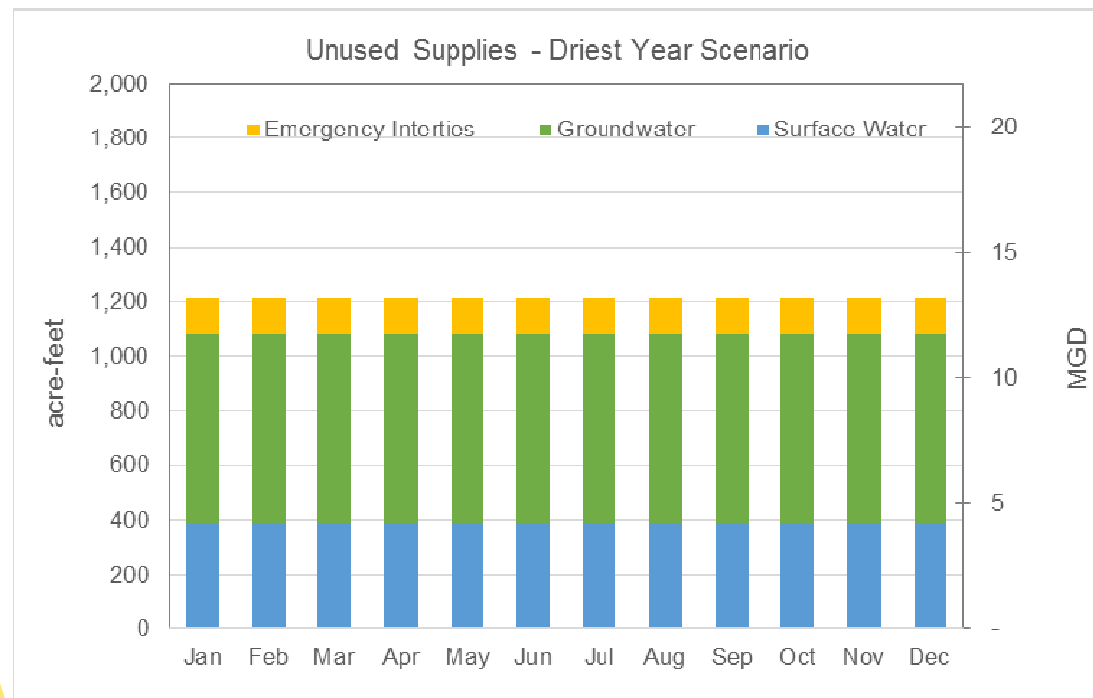
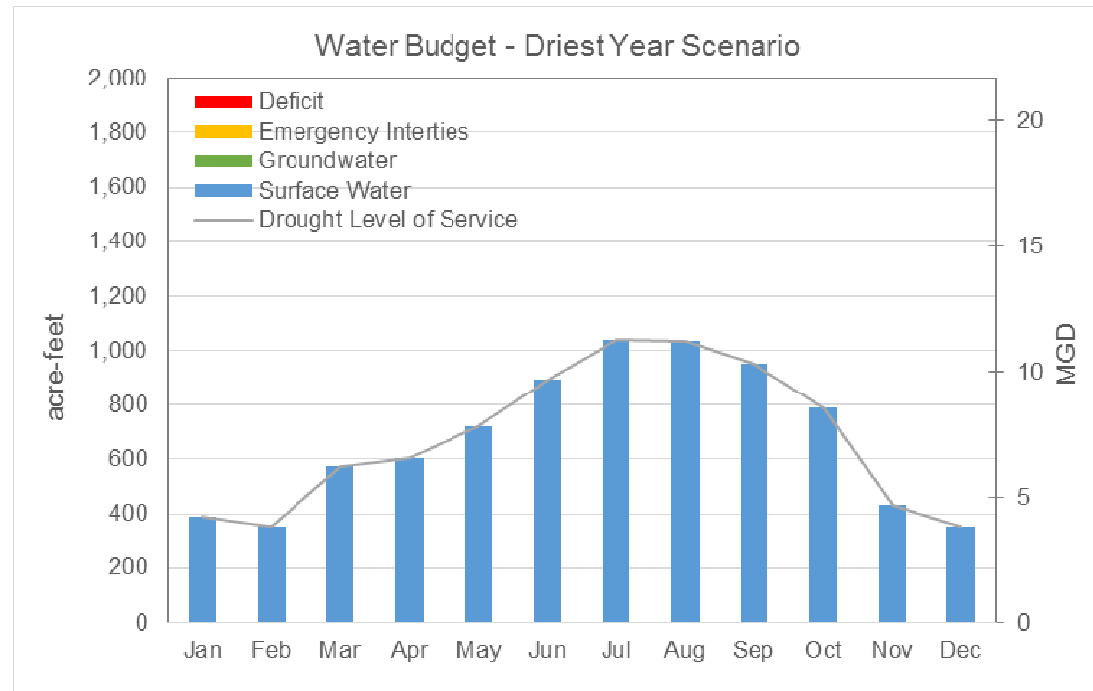
Water Budget & Vulnerability Analysis – Example

Wet/Average Year Scenario



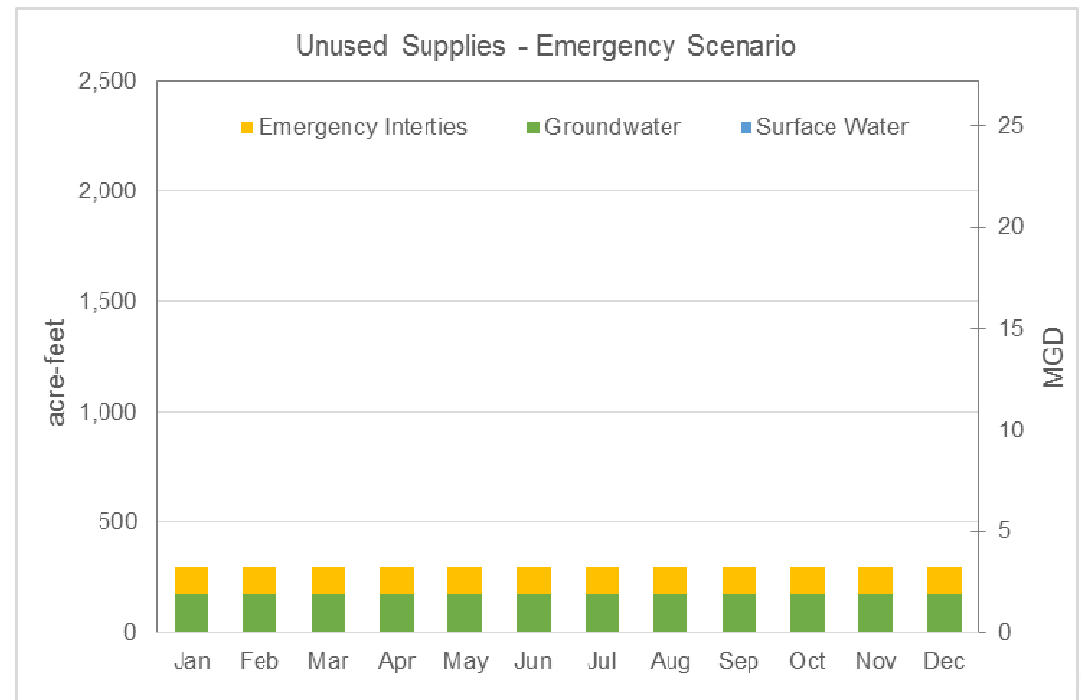
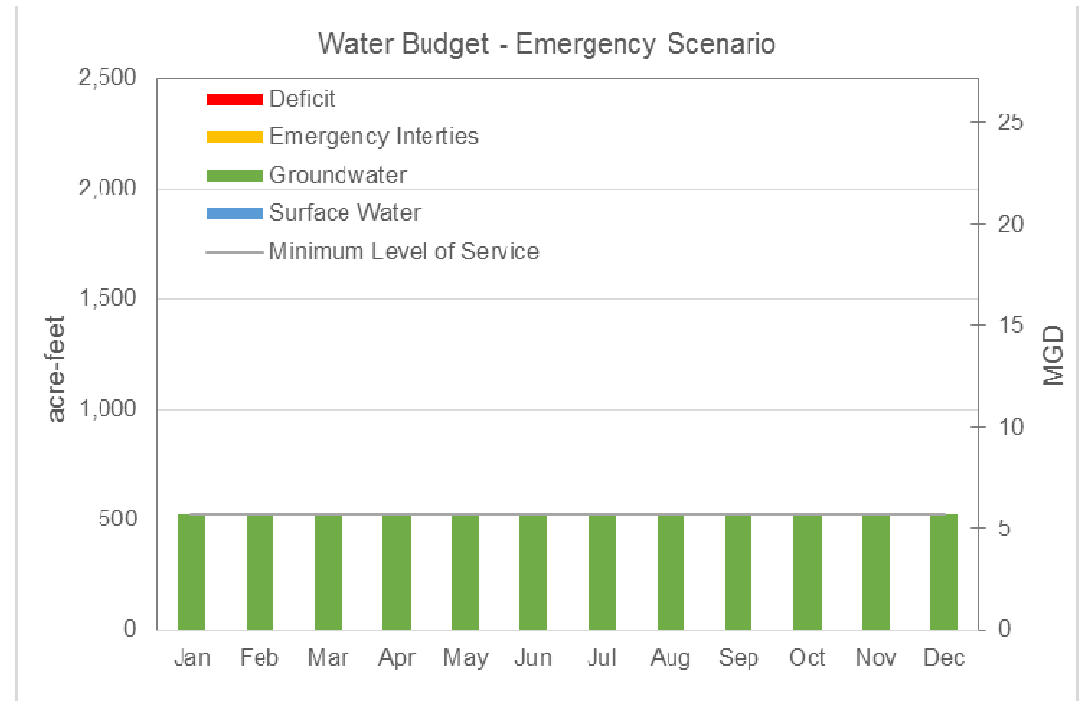
Water Budget & Vulnerability Analysis – Example

Driest Year Scenario



Water Budget & Vulnerability Analysis – Example

Emergency Scenario



RDCP Drought Monitoring

Intent of drought monitoring is to decrease the amount of time it takes to:

- recognize below normal supply
- begin “response actions”

Tasks

- Summarize available water availability data
- Summarize water supply conditions indices
- Explore potential water supply index updates

Daily Statewide Hydrologic Update

October 11, 2016

Data as of 11:59:59 PM on October 11, 2016



Regional river forecast conditions reflect river forecast guidance products issued jointly by CNRPC/DWR, NWS Weather Forecast Offices issue the official watches, warnings, statements, and advisories.

Sacramento Region Summary

Precip: 8-Station Index			
Season to Date	33%	%Avg year	1%
Northern Sierra Snow Water Content			
% to Date	n/a	%Apr 1	n/a
Reservoir Storage			
Reservoir	%Hist.Avg.	%Capacity	*Enchr
Shasta	101%	60%	-1594
Oroville	72%	44%	-1649
New Bullards	110%	66%	-237
Folsom	65%	30%	-593

San Joaquin Region Summary

Precip: 6-Station Index			
Season to Date	0%	%Avg year	0%
Central Sierra Snow Water Content			
% to Date	n/a	%Apr 1	n/a
Reservoir Storage			
Reservoir	%Hist.Avg.	%Capacity	*Enchr
New Melones	39%	22%	-1638
Don Pedro	97%	65%	n/a
Exohequer	81%	36%	n/a
Millerton	110%	43%	n/a

Tulare Lake Region Summary

Precip: Tulare Precipitation Index			
Season to Date	0%	%Avg year	0%
Southern Sierra Snow Water Content			
% to Date	n/a	%Apr 1	n/a
Reservoir Storage			
Reservoir	%Hist.Avg.	%Capacity	*Enchr
Pine Flat	50%	17%	n/a
Terminus	81%	5%	-73
Sucess	49%	7%	-36
Isabella	52%	16%	-163

State Region Summary

Precip: Statewide Precipitation Index			
Season to Date	n/a	%Avg year	n/a
Statewide Snow Water Content			
% to Date	n/a	%Apr 1	n/a
Reservoir Storage			
Reservoir	%Hist.Avg.	%Capacity	*Enchr

CDEC
State Climatologist
State Meteorologist
California Cooperative Snow Surveys

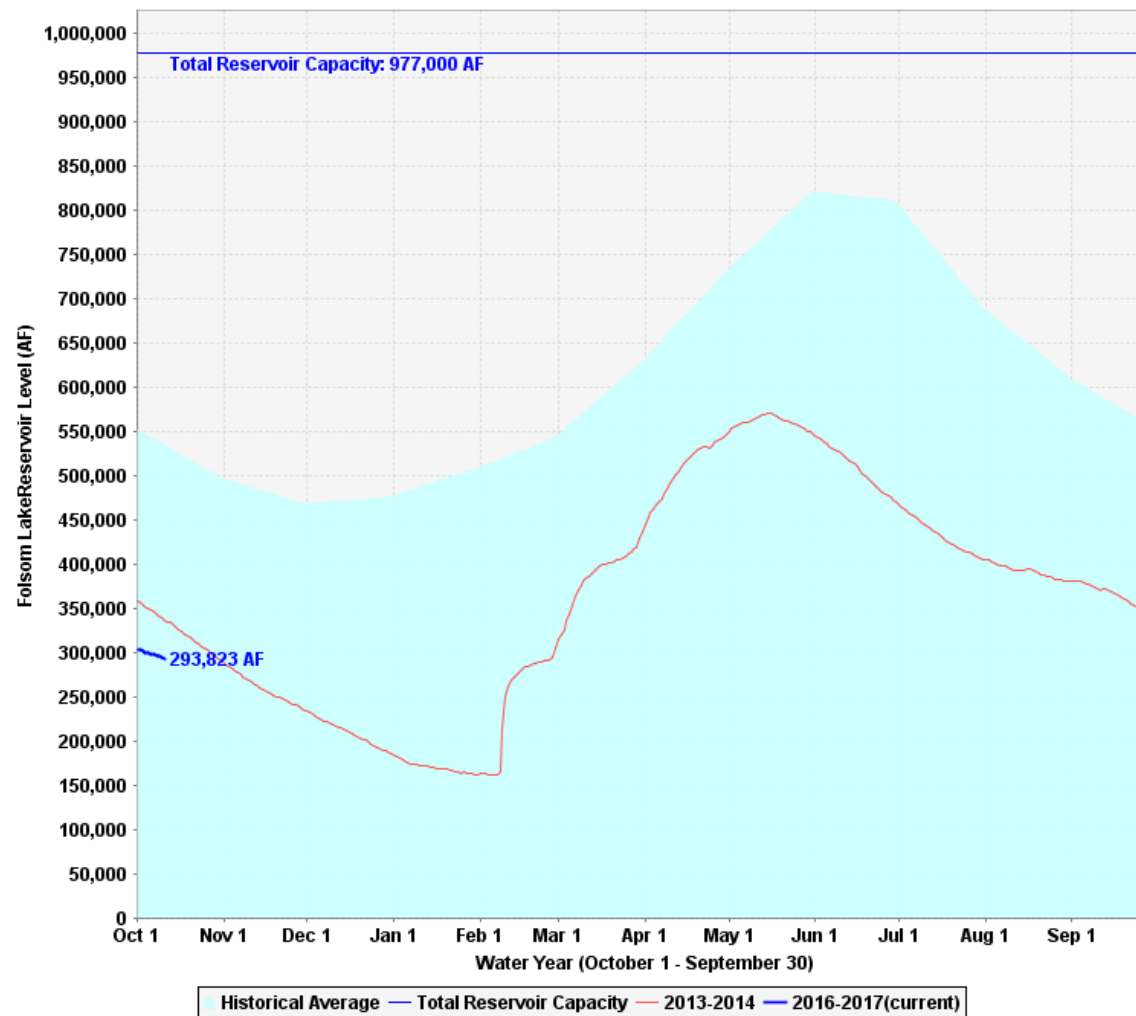
*Enchr = Flood Spate Encroachment in 1,000 acre-ft



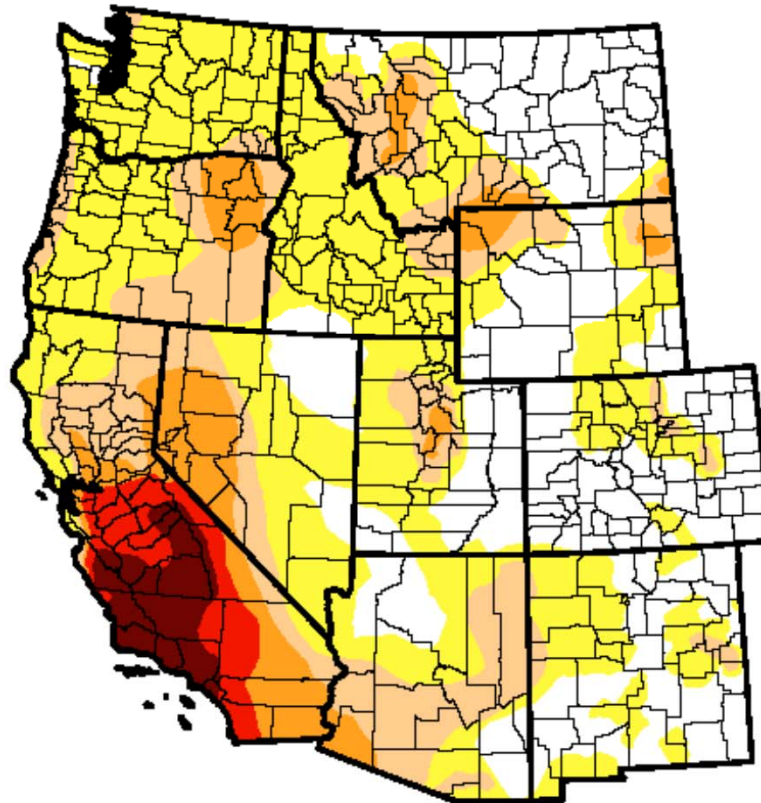
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Folsom Lake Storage



U.S. Drought Monitor West



October 4, 2016

(Released Thursday, Oct. 6, 2016)

Valid 8 a.m. EDT

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	31.30	68.70	30.14	13.10	5.73	2.81
Last Week 9/27/2016	27.78	72.22	30.95	13.45	5.77	2.81
3 Months Ago 7/5/2016	34.80	65.40	28.08	11.08	5.80	2.81
Start of Calendar Year 12/29/2015	33.17	66.83	45.07	29.30	15.92	6.85
Start of Water Year 9/27/2015	27.78	72.22	30.95	13.45	5.77	2.81
One Year Ago 10/5/2015	25.71	74.29	57.06	42.43	26.44	7.62

Intensity:

D0 Abnormally Dry	D3 Extreme Drought
D1 Moderate Drought	D4 Exceptional Drought
D2 Severe Drought	

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

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<http://droughtmonitor.unl.edu/>



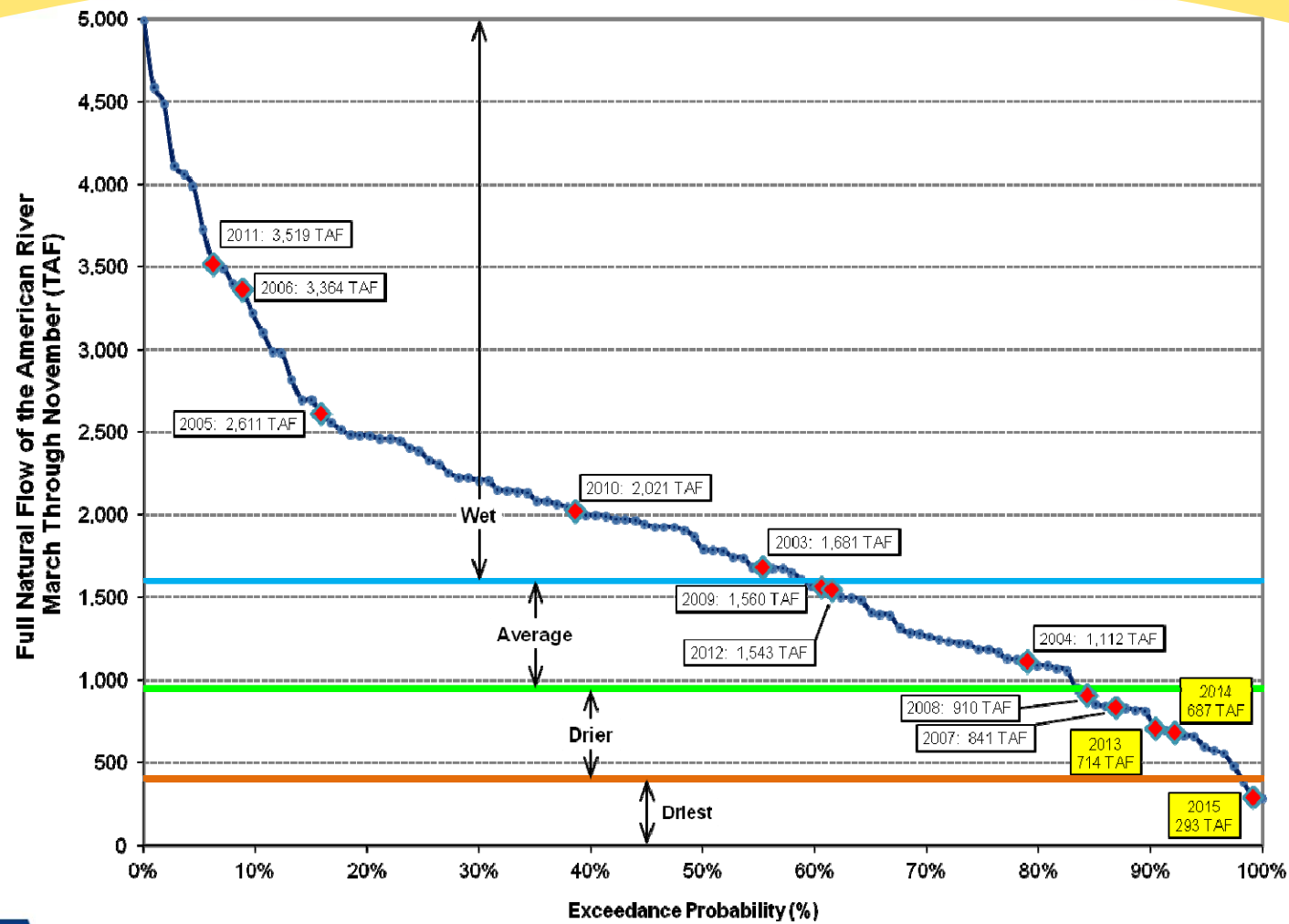
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Sacramento River Index

Water Year	Runoff (million acre-ft)	Year Type
1995	12.89	Wet
1996	10.26	Wet
1997	10.82	Wet
1998	13.31	Wet
1999	9.80	Wet
2000	8.94	Above Normal
2001	5.76	Dry
2002	6.35	Dry
2003	8.21	Above Normal
2004	7.51	Below Normal
2005	8.49	Above Normal
2006	13.20	Wet
2007	6.19	Dry
2008	5.16	Critical
2009	5.78	Dry
2010	7.08	Below Normal
2011	10.54	Wet
2012	6.89	Below Normal
2013	5.83	Dry
2014	4.07	Critical
2015	4.01	Critical
Year Type	Water Year Index (million acre-feet)	
Wet	Equal to or greater than 9.2	
Above Normal	Greater than 7.8, and less than 9.2	
Below Normal	Greater than 6.5, and equal to or less than 7.8	
Dry	Greater than 5.4, and equal to or less than 6.5	
Critical	Equal to or less than 5.4	

Water Forum Year Type



RDCP Drought Monitoring Discussion

Are there other local sources of data to consider?

Are there other indices that could be useful?

Any thoughts on a modified local index?

At what point have you declared drought?

RDCP Next Steps

Agency Data/Information Request

ASAP

Assemble Available Information for RDCP
Agencies)

Oct – early Nov
2016

Circulate Information to RDCP Agencies for
Review

early Nov 2016

RDCP Agency Interviews

mid Nov – mid Dec
2016

Next DPTF Meeting (discuss interview results, drought
monitoring results, preview mitigation/response actions)

early Jan 2017

BREAK



Regional Water Reliability Plan Meeting



IRWM Planning Grant Application Status Update

- RWRP Task 6 – Prepare Proposition 1 IRWM Planning Grant Application
 - To develop portions of RWRP that address potential effects of climate change on water supply availability and necessary response and mitigation actions to help ensure long-term water supply reliability in RWRP area
 - If awarded, will offset some local contributions for RWRP effort
- Proposed IRWM Planning Project = Prepare an update IRWM Plan that:
 - Meets all 2016 IRWM Planning Standards as described in 2016 IRWM Grant Program Guidelines
 - Addresses changed conditions in the ARB region following 2013 Update
 - Reflects implementation of 2013 Update and other ongoing efforts

IRWM Planning Grant Tasks and Grant Request

Proposed 2018 Update Tasks	Update to:		
	Meet 2016 IRWM Plan Standards	Address Changed Conditions	Reflect IRWM Plan Implementation & Ongoing Efforts
Category (a): Project Administration			
Task 1 – Administration	To Meet Grant Agreement Requirements		
Task 2 – Invoicing			
Task 3 – Reporting			
Category (b): Plan Update			
Task 4 – Update Region Description			
4.1 Update Climate Analysis	■	■	
4.2 Update Water Quality	■		
4.3 Update Basic Information		■	■
Task 5 – Update Planning Coordination and Integration	■	■	■
Task 6 – Update IRWM Plan Governance		■	■
Task 7 – Update IRWM Plan Framework			
7.1 Update Objectives and Strategies	■	■	■
7.2 Update Project Review Process	■		
7.3 Update IRWM Web-based Interface	■		
7.4 Update and Add Projects; Conduct Project Prioritization and Vetting	■	■	■
Task 8 – Update IRWM Plan Implementation	■	■	■
Task 9 – Prepare IRWM Plan Update			
9.1 Draft IRWM Plan Update	■	■	■
9.2 Final IRWM Plan Update	■	■	■
Category (c): IRWM Plan Outreach			
Task 10 – IRWM Plan Development Outreach	■		
Task 11 – IRWM Plan Public Workshops	■	■	■

\$250K Grant Request

\$187.3K

\$36.8K

\$4.7K
\$21.2K



IRWM Planning Grant Schedule

Applications Due

Sep 23, 2016

Release Draft Funding Recommendations

Anticipated Nov
2016

Release Final Awards

Anticipated Jan
2017

Status of Project Agreements

- 11 of 21 possible agreements received to date
 - FOWD
 - SJWD
 - DPMWD
 - RMCSD
 - SSWD
 - SJWD
 - GSWC
 - RLECWD
 - CWD
 - Roseville
 - Folsom
 - SRCSD
- \$126,600 of \$276,000 in Phase 1 committed

Status of Scope



Task 1 – Vulnerability Assessment



Task 2 – Mitigation Actions & Response Actions



Task 3 – Conjunctive Use Program Operational Analysis



Task 4 – Implementation Road Map



Task 5 – Documentation & Reporting



Task 6 – Prepare Proposition 1 IRWM Planning Grant Application



Task 7 – CVP Partner Engagement



Task 8 – Administrative Activities

RWRP Next Steps

Agency Data/Information Request

ASAP

Assemble Available Information for RWRP Agencies

Oct – early Nov 2016

Circulate Information to RWRP Agencies for Review

early Nov 2016

RWRP Agency Interviews

mid Nov – mid Dec 2016

Next RWRP Meeting (discuss interview results, preview mitigation/response actions, preview conjunctive use operational analysis)

early Jan 2017

Groundwater Banking Discussion and Potential Demonstration Project



Demonstration Project Purposes

- Early action to reveal long-term issues that could emerge under a future water bank
 - Agency to agency transactions/agreements
 - Actual volumes that can be banked/recovered
 - Response to environmental filing
- Provide benefit to USBR to motivate their engagement as we seek to develop future water bank
- Demonstrate ability to make banking or recovery actions in “real-time”
- Demonstrate ability to manage a bank under a single entity
- Confirm physical attributes of existing system
- Observe groundwater basin response during recovery operations
- Prove role of administrative fee to fund management of water bank

Demonstration Project Needs

- Regional
 - Environmental documentation
 - RWA agreement with USBR
 - RWA agreement with participating agencies
 - Monitoring/mitigation plan
- Individual Agency
 - New or revised inter-agency agreements?
 - Metered interconnections

Discussion/Next Steps

- Interest in participating?
- Waiting to confirm with USBR their interest
- Begin collecting information on ability for banking/recovery
- Funding for environmental document and monitoring plan
- Plan to begin banking actions