



Western States Water Council
50th Anniversary Council Meeting
Lake Tahoe, Nevada
July 8-10, 2015



W E S T E R N S T A T E S W A T E R C O U N C I L

5296 Commerce Drive, Suite 202 I Murray, Utah 84107 I (801) 685-2555 I FAX (801) 685-2559

Web Page: www.westernstateswater.org

MEMORANDUM

TO: Council Members and Others

FROM: Tony Willardson, Executive Director

DATE: July 1, 2015

RE: Briefing Books for the 50th Anniversary (178th) Council Meetings

Enclosed please find the briefing book for our meetings being held in Stateline, Nevada on July 8-10, 2015. The minutes from our last meetings held in Tulsa, Oklahoma are posted on our website (under Past Meetings) for your review.

On Wednesday, July 8, Council members are invited to participate in a WSWC session to review the WSWC's Vision on Water. This will be a one-hour session on Wednesday morning from 9:00 to 10:00 a.m.

Council members and guests are invited to join our Nevada hosts on a field trip, following the conclusion of the water vision review session. Please meet in the hotel lobby at 10:20 a.m. for departure. Registration is required and is \$50 per person. We expect to return to the Hard Rock Hotel by 5:00 p.m. Those who have registered and paid for the dinner cruise will board the shuttle at the Hard Rock Hotel at 5:15 p.m.

On Thursday, the WSWC Committee meetings will be held sequentially, beginning at 8:00 a.m. with the Water Resources Committee meeting. The Executive Committee will be held over lunch at 11:30 a.m., followed by the Water Quality Committee at 1:15 p.m., and the Legal Committee at 3:30 p.m. A reception will be held at the hotel from 6:00 – 7:00 p.m, and all Council members and guests are invited to attend. We wish to express our appreciation to our meeting sponsors, ***CDM Smith and Northwest Pipe Company!***

The Water Resources, Legal, Water Quality Committee meetings, and Full Council meeting will be available via teleconference and/or webinar. **Call-in instructions and information on how to participate via webinar are contained in the instructions following this memorandum.** In the event you have difficulties connecting, please call or text Tony at 801-573-7593 or Michelle at 801-615-1693.

We look forward to interesting and productive and especially memorable meetings at Lake Tahoe. If you have any questions regarding these matters, please let us know.

Attachment

CALL-IN AND WEBINAR INSTRUCTIONS

A. Call-In Information

The dates, times, and call-in information for each meeting are listed below. The below list also indicates which meetings will be available via webinar. Instructions on how to participate via webinar are contained in Section B, which follows.

For teleconference and webinar audio, **please use the dial-in numbers as indicated below.**

Pacific Daylight

Day, Date	Time	Meeting	Dial-in Number	Webinar
Thurs, July 9	8:00 am	WSWC Committee Meetings – all day	1-800-920-7487 Code: 28552447#	Yes
Fri, July 10	8:00 am	WSWC Full Council Mtg.	1-800-920-7487 Code: 28552447#	Yes

Please send request if you wish to participate via teleconference in the Executive Committee.

11:30 am	Executive Committee	Not set up	No
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B. General Webinar Instructions

Depending on your web browser and system configuration, you may experience problems accessing the webinar.

Please check and prepare your computer a day or two in advance of the meeting as follows:

1. Start your web browser
2. Visit <http://westerngovernors.webex.com>
3. Select “Setup / Event manager” (left side of page)

To participate via webinar, please follow the instructions below:

1. Go to <https://westerngovernors.webex.com/>
2. Select the meeting you wish to join.
3. If requested, enter your name and email address.
4. If a password is required, enter: “wswc” for all meetings
5. Click “Join.”
6. Follow the instructions that appear on your screen.

When you try to log in, you may receive a message that says you need Java to run the meeting software. If you do not have an up-to-date version of Java on your computer, the WebEx software should offer you a temporary application that you can run on your computer to make the WebEx application work correctly.

We recommend you place your phone on mute and under no circumstance place the call on hold. If you encounter troubles connecting to the audio (or other things), you may ask questions or communicate via the WebEx “chat” feature.

MATTHEW H. MEAD
GOVERNOR



STATE CAPITOL
CHEYENNE, WY 82002

Office of the Governor

June 30, 2015

Western States Water Council
5296 South Commerce Drive, Suite 202
Murray, UT 84107

RE: 50th Anniversary

Dear Members of the Western States Water Council and Supporting Agencies,

As Governor of Wyoming and Chairman of the Western Governors' Association (WGA), I congratulate you on the 50th anniversary of your organization. It takes half a century to reach the golden mark and Western States Water Council (WSWC) has achieved this distinction. Created in 1965 through a WGA resolution, the WSWC has built an impressive record of achievement.

I thank you for your service and for your important work on western water issues. Water is the West's most precious resource, and the collaborative work you do through the WSWC to make the most of this precious resource benefits all western states and all people in them. I encourage you to continue your efforts and remain visible, efficient and effective.

Like other states, Wyoming is proud of its affiliation with the WSWC. Floyd Bishop, a distinguished former Wyoming State Engineer, was an inaugural member, serving on the Executive Committee and in other capacities during the first decade. Our current State Engineer serves as Chair of this organization now. Other states would have similar history to relate about members past and present.

Congratulations again on your fifty years of service. I look forward to a continued strong relationship between WGA and WSWC. And, I look forward to the work ahead and all that will be accomplished.

Sincerely,

A handwritten signature in blue ink, appearing to read "Matthew H. Mead", is written over a horizontal line.

Matthew H. Mead
Governor

MHM:md

Tab A – Schedule of Meetings – Agenda –
30-day Notice

WESTERN STATES WATER COUNCIL
178th COUNCIL MEETING
Stateline, Nevada
July 8-10, 2015

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- B. Membership List
- C. WSWC Policy Positions

Sunsetting Positions

- #342 - Regarding water transfers and National Pollutant Discharge Elimination System (NPDES) discharge permits
- #343 - Supporting legislative action to establish a dedicated funding source for completion of federal rural water projects authorized by Congress
- #344 - WSWC Vision on Water

List of Current WSWC Policy Statements and Sunsetted Positions

- D. Budget
- E. U.S. Geological Survey (USGS) Groundwater and Streamflow Information Program
- F. USGS National Water Census
- G. Water Data Exchange (WaDE)
- H. WGA Drought Forum Report and WGA Policy Resolution on Water (2015-08)
- I. USBR Drought Response Program / Drought Contingency Planning
- J. U.S. Bureau of Reclamation (USBR) Major Rehabilitation and Replacement Needs Assessment
- K. "Reclamation Efficiency Act of 2015" (RE-ACT) Proposed Legislation
- L. Federal Water Data Coordination
- M. California Department of Water Resources (CDWR) and WSWC Agreements

FY 2015-2016 Draft Committee Work Plans

- Mc. Water Resources Committee
Executive Committee
Water Quality Committee
Legal Committee
WestFAST Workplan
- N. Proposed Changes to the WSWC Rules of Organization
- O. 2014/2015 Summary of WSWC Activities and Events
- P. Future WSWC Meetings
- Q. Environmental Protection Agency - Update
- R. U.S. Forest Service Best Management Practices Program / Groundwater Program
- S. Water Quality / Water Quantity Nexus Workshop / Good Samaritan Workshop
- T. Indian Water Rights Settlement Symposium
- U. Arches National Park Water Rights Agreement
- V. Hydraulic Fracturing
- W. Legislation and Litigation Update
- XYZ. Newsletter Index / Sunsetting Positions for Fall 2015 Meetings (#345 - #348)



SCHEDULE OF MEETINGS

WESTERN STATES WATER COUNCIL 177th Council Meetings and 50th Anniversary Commemoration

Hard Rock Hotel & Casino Lake Tahoe
Stateline, Nevada
July 8-10, 2015

<u>Date</u>	<u>Time</u>	<u>Meeting</u>	<u>Room</u>	<u>Adjournment</u>
<u>Wednesday, July 8</u>				
	8:00 am	Management Subcommittee (over breakfast)		
	9:00 am	Discussion on WSWC Vision on Water	Graceland B&C	10:00 am
	10:30 am	Field Trip – includes Boxed Lunch <i>(see registration form on our website for description and details)</i>		5:00 pm
	5:15 pm 6:00 pm	Shuttle Pick Up to Zephyr Cove for Dinner Cruise MS Dixie II Dinner Cruise		8:30 pm
<u>Thursday, July 9</u>				
	8:00 am	Water Resources Committee	Graceland B&C	11:15 am
	11:30 am	Executive Committee <i>(over lunch)</i>	Graceland B&C	1:00 pm
	1:15 pm	Water Quality Committee	Graceland B&C	3:15 pm
	3:30 pm	Legal Committee	Graceland B&C	5:30 pm
	6:00 pm	WSWC Reception	Graceland A	7:00 pm
<u>Friday, July 10</u>				
	8:00 am	Full Council Meeting Including <i>Photo Session</i>	Graceland B&C	11:30 am

MEETING SPONSORS: **CDM Smith and Northwest Pipe**

AGENDA
MANAGEMENT SUBCOMMITTEE
Hard Rock Hotel & Casino Lake Tahoe
Stateline, Nevada
July 8, 2015

Call to Order at: 8:00 a.m. (Pacific Daylight Time)
Conducting: Pat Tyrrell, Chair

Room: TBD (over breakfast)

TAB

1. **Welcome**
2. **Approval of Minutes**
- D 3. **Report on Budget and Finances** – Jerry Rigby
 - a. FY2014-2015 Budget Status Report
 - b. WGA DOE Grant Summary Report
 - c. EN Grants Status Report
 - d. FY 2015-2016 Proposed Budget/Dues Increase
 - e. Legal Counsel Position
- C 4. **Sunsetting Positions** – Tony Willardson

Sunsetting Policies

- | | |
|-------------|---|
| Wat Quality | #342 - Regarding water transfers and National Pollutant Discharge Elimination System (NPDES) discharge permits (June 8, 2012) |
| Wat Res | #343 - Supporting legislative action to establish a dedicated funding source for completion of federal rural water projects authorized by Congress (June 8, 2012) |
| Executive | #344 - WSWC Vision on Water (June 8, 2012) |

- N 5. **Proposed Changes to the WSWC Rules of Organization** – Pat Tyrrell
6. **Executive Director's Report** – Tony Willardson
 - H a. WGA/WSWC Activities and Meetings
 - O b. 2015/2016 Summary of WSWC Activities and Events
 - M c. Agreements with California Department of Water Resources (CDWR)
 - Improving Seasonal Precipitation Forecasting to support Drought Emergency Response
 - Expanding CDWR's California Irrigation Management Information System (CIMIS)
- Mc 7. **FY2015-2016 Draft Committee Work Plan** – Pat Tyrrell
- P 8. **Future WSWC Meetings**
 - a. WSWC Fall Meetings – October 7-9, 2015 – Manhattan, Kansas
 - b. WSWC Spring Meetings – TBD – Washington, DC
- XYZ 9. **Fall 2015 Meeting Sunsetting Positions**
 - #345 - Regarding federal water and climate data collection and analysis programs (October 12, 2012)
 - #346 - Supporting legislation to reauthorize the National Integrated Drought Information System (NIDIS) Act (October 12, 2012)
 - #347 - Supporting legislation to reauthorize the Reclamation States Emergency Drought Relief Act (October 12, 2012)
 - #348 - Regarding States' water rights and natural flows (October 12, 2012)
10. **Other Matters**

AGENDA
WATER RESOURCES COMMITTEE
Hard Rock Hotel & Casino Lake Tahoe
Stateline, Nevada
July 9, 2015

Called to Order at: 8:00 a.m. (Pacific Daylight Time)
Conducting: John Tubbs

Room: Graceland

TABS

1. **Welcome and Introductions**

2. **Approval of Minutes**

C 3. **Sunsetting Positions**

Sunsetting

#343 - Supporting legislative action to establish a dedicated funding source for completion of federal rural water projects authorized by Congress (June 8, 2012)

#344 - WSWC Vision on Water (June 8, 2012)

H 4. **WGA Drought Forums/Water Related Activities** – Carlee Brown

E 5. **USGS GW/Streamflow Information Program: Integrating Surface Water and Groundwater Monitoring into National Networks** – Pixie Hamilton, National Coordinator, Cooperative Water Program

F 6. **USGS National Water Census Update** – Sonya Jones, Science Advisor, Water

7. **NASA Satellite Data for Water Resources Management** – Dr. Michael Freilich, Director, Earth Sciences Division, National Aeronautics and Space Administration (NASA) and Mike Gunson, Jet Propulsion Laboratory (JPL)

G 8. **Water Data Exchange (WaDE) Update and WGA Summary Report** – Sara Larsen and Tony Willardson

BREAK

L 9. **Federal Water Data Coordination** – Pat Lambert, WestFAST Liaison

10. **Bureau of Reclamation Activities & Issues**

I a. Drought Response Program Funding/Drought Contingency Planning Funding – Dionne Thompson, USBR

J b. USBR Major Rehabilitation and Replacement Needs Assessment – Dionne Thompson, USBR

K c. Loan Guarantees and Re-ACT Legislation – Mark Limbaugh, The Ferguson Group and David Rabbitt, Board Member, Sonoma County Water Agency

M 11. **CDWR/WSWC Workshops and Activities** – Jeanine Jones

Mc 12. **FY2015-1016 Draft Committee Workplan** – Tony Willardson

13. **Other Matters/Adjourn**

AGENDA
EXECUTIVE COMMITTEE
Hard Rock Hotel & Casino Lake Tahoe
Stateline, Nevada
July 9, 2015

Call to Order at: 11:30 a.m. (Pacific Daylight Time)
Conducting: Pat Tyrrell, Chair

Room: Graceland

TAB

1. **Welcome and Introductions**
2. **Approval of Minutes**
- D 3. **Report on Budget and Finances – Jerry Rigby**
 - a. FY2014-2015 Budget Status Report
 - b. WGA DOE Grant Summary Report
 - c. EN Grants Status Report
 - d. FY 2015-2016 Proposed Budget/Dues Increase
 - e. Policy and Program Manager Position
- C 4. **Sunsetting Positions – Tony Willardson**

Sunsetting Policies

- | | |
|-------------|---|
| Wat Quality | #342 - Regarding water transfers and National Pollutant Discharge Elimination System (NPDES) discharge permits (June 8, 2012) |
| Wat Res | #343 - Supporting legislative action to establish a dedicated funding source for completion of federal rural water projects authorized by Congress (June 8, 2012) |
| Executive | #344 - WSWC Vision on Water (June 8, 2012) |

- N 5. **Proposed Changes to the WSWC Rules of Organization – Pat Tyrrell**
6. **Executive Director's Report – Tony Willardson**
 - H a. WGA/WSWC Activities and Meetings
 - O b. 2015/2016 Summary of WSWC Activities and Events
 - M c. Agreements with California Department of Water Resources (CDWR)
 - Improving Seasonal Precipitation Forecasting to support Drought Emergency Response
 - Expanding CDWR's California Irrigation Management Information System (CIMIS)

- Mc 7. **FY2015-2016 Draft Committee Work Plan – Pat Tyrrell**

- P 8. **Future WSWC Meetings**
- a. WSWC Fall Meetings – October 7-9, 2015 – Manhattan, Kansas
 - b. WSWC Spring Meetings – TBD – Washington, DC
 - c. Workshop Series on Seasonal Precipitation Forecasting
 - d. Workshop Series on Expanding CIMIS into Interstate Watersheds

- XYZ 9. **Fall 2015 Meeting Sunsetting Positions**
- #345 - Regarding federal water and climate data collection and analysis programs (October 12, 2012)
 - #346 - Supporting legislation to reauthorize the National Integrated Drought Information System (NIDIS) Act (October 12, 2012)
 - #347 - Supporting legislation to reauthorize the Reclamation States Emergency Drought Relief Act (October 12, 2012)
 - #348 - Regarding States' water rights and natural flows (October 12, 2012)

10. **Other Matters**

AGENDA

WATER QUALITY COMMITTEE MEETING

Hard Rock Hotel & Casino Lake Tahoe

Stateline, Nevada

July 9, 2015

Call to Order at: 1:15 pm
Conducting: J.D. Strong, Chair

Room: Graceland

TAB

1. **Welcome and Introductions**
2. **Approval of Minutes**
- C 3. **Sunsetting Position #342** - Regarding water transfers and National Pollutant Discharge Elimination System
- Q 4. **Environmental Protection Agency (EPA) Update**
 - a. EPA hydraulic fracturing study – Jeanne Briskin, Hydraulic Fracturing Research Coordinator, Office of Research and Development
 - b. Waters of the U.S. rule – Joan Card, Senior Policy Advisor, USEPA Region 8
 - c. Section 518 and TMDL “treatment as states” rulemaking efforts – Joan Card
 - d. Water transfers litigation – Joan Card
- R 5. **Forest Service Best Management Practices Program** – Jean Thomas
6. **Water Quality Issues in Nevada** – Kathy Sertic, Chief, Bureau of Water Quality Planning, Nevada Division of Environmental Protection
- S 7. **Water Quality/Water Quantity Nexus Workshop** – Fall 2015 Meeting, Manhattan, Kansas, October 6-7
- S 8. **Hard Rock Mine Remediation/Good Samaritan Workgroup** – Trisha Oeth
- Mc 8. **2015-2016 Draft Committee Workplan** – J.D. Strong
9. **Other Matters** – J.D. Strong
 - a. Regulations impacting aquifer recharge with reclaimed water in California and other states

AGENDA

LEGAL COMMITTEE MEETING Hard Rock Hotel & Casino Lake Tahoe Stateline, Nevada July 9, 2015

Call to Order at: 3:30 pm
Conducting: Jennifer Verleger, Chair

Room: Graceland

TAB

1. **Welcome and Introductions**
2. **Approval of Minutes**
- R 3. **Update: USFS Proposed Groundwater Management Directive:** Jean Thomas, USFS and Michelle Bushman
- T 4. **Indian Water Rights Settlement Symposium** – Susan Cottingham and Michelle Bushman
- U 5. **Arches National Park Water Rights Agreement** – Norm Johnson
6. **WSWC-WestFAST Federal Non-Tribal Water Rights Workgroup** – Michelle Bushman and Pat Lambert
- V 7. **BLM Hydraulic Fracturing Rule** – Steve Wells, Chief, BLM Division of Fluid Minerals
- W 8. **Roundtable: 50 Years of Western Water Law**
- W 9. **Legislation and Litigation Update** – Michelle Bushman
- Mc 10. **2015-2016 Draft Committee Workplan** – Jennifer Verleger
11. **Other Matters** – Jennifer Verleger

AGENDA

178th COUNCIL MEETING Hard Rock Hotel & Casino Lake Tahoe Stateline, Nevada July 10, 2015

Call to Order at: 8:00 a.m.
Conducting: Pat Tyrrell, Chair

Room: Graceland

TAB

1. **Welcome and Introductions**
2. **Approval of Minutes**
3. **Current Water Resources Issues in Nevada** – Jason King, Nevada State Engineer
4. **Department of the Interior's Water Resources Programs** – Jennifer Gimbel, Principal Deputy Assistant Secretary for Water and Science, U.S. Department of the Interior
- Break *Photo Session*
- Mc 5. **WestFAST Report and Workplan** – Becky Fulkerson, Bureau of Reclamation, WestFAST Chair
6. **Committee Reports** – Action Items
 - C, Mc A. **Water Resources Committee** – John Tubbs
 - C, Mc B. **Executive Committee** – Jerry Rigby
 - C, Mc C. **Water Quality Committee** – J.D. Strong
 - Mc D. **Legal Committee** – Jennifer Verleger
7. **WSWC Nominating Subcommittee** – Roland Westergard
8. **WSWC Retrospective: 50 Years of Progress through Cooperation, Coordination, and Collaboration** – Former WSWC Chairmen
9. **State Reports**
- P 10. **Future Council Meetings**
11. **Other Matters**

Tab B – Membership List

WESTERN STATES WATER COUNCIL

MEMBERSHIP LIST

July 1, 2015

OFFICERS

Chair - **Patrick Tyrrell**
Vice-Chair - **Jerry Rigby**
Secretary-Treasurer - **Jeanine Jones**

STAFF

Executive Director - **Tony Willardson**
Legal Counsel - **Michelle Bushman**
Federal Liaison - **Pat Lambert**
Hydrologist/Programmer - **Sara Larsen**
Office Manager - **Cheryl Redding**
Administrative Assistant - **Julie Groat**

Staff E-mail: twillardson@wswc.utah.gov
mbushman@wswc.utah.gov
patlambert@wswc.utah.gov
saralarsen@wswc.utah.gov
credning@wswc.utah.gov
jgroat@wswc.utah.gov

Address: 5296 South Commerce Drive
Suite 202
Murray, UT 84107
(801) 685-2555
(801) 682-2559 (fax)

ALASKA

***Honorable Bill Walker**
Governor of Alaska
P.O. Box 110001
Juneau, AK 99811-0001
(907) 465-3500

†**Brent Goodrum**, Director
Division of Mining, Land & Water
550 West 7th Avenue, Suite 1070
Anchorage, AK 99501-3579
(907) 269-8600
(907) 269-8904 (fax)
brent.goodrum@alaska.gov

†**Alice Edwards**
Deputy Commissioner
Department of Environmental Conservation
410 Willoughby, Suite 303
P.O. Box 11180
Juneau, AK 99811-1800
(907) 465-5066
(907) 465-5070 (fax)
alice.edwards@alaska.gov

†**David W. Schade** (Alt)
Natural Resources Manager III
Chief, Water Resources Section
Division of Mining Land & Water
Alaska Department of Natural Resources
550 W 7th Avenue, Suite 1020
Anchorage, AK 99501-3579
(907) 269-8645
david.w.schade@alaska.gov

ARIZONA

***Honorable Doug Ducey**
Governor of Arizona
Statehouse
Phoenix, AZ 85007
(602) 542-4331

****Thomas Buschatzke**, Director
Department of Water Resources
3550 North Central Avenue, 2nd Floor
Phoenix, AZ 85012-2105
(602) 771-8426
(602) 771-8681 (fax)
tbuschatzke@azwater.gov

Trevor Baggione, Director
Water Quality Division
1110 West Washington Street
Phoenix, AZ 85007
(602) 771-2321
(602) 771-4834 (fax)
baggione.trevor@azdeq.gov

L. William Staudenmaier, Attorney
Snell & Wilmer
One Arizona Center
400 East Van Buren Street, Suite 1900
Phoenix, AZ 85004-2202
(602) 382-6571
(602) 382-6070 (fax)
wstaudenmaier@swlaw.com

*Ex-Officio Member

**Executive Committee Member

†Council members denoted by this symbol are listed by virtue of their office, pending receipt of a letter of appointment by their Governor.

Cynthia Chandley, Attorney (Alt.)
Snell & Wilmer
One Arizona Center
400 East Van Buren Street, Suite 1900
Phoenix, AZ 85004-2202
(602) 382-6154
(602) 382-6070 (fax)
cchandley@swlaw.com

CALIFORNIA

***Honorable Jerry Brown**
Governor of California
State Capitol
Sacramento, CA 95814
(916) 445-2841

****Mark Cowin**, Director
Department of Water Resources
1416 Ninth Street
P.O. Box 942836
Sacramento, CA 95814
(916) 653-5791
(916) 653-5028 (fax)
mcowin@water.ca.gov

Thomas Howard
Executive Director
State Water Resources Control Board
P.O. Box 100
Sacramento, CA 95812-0100
(916) 341-5615
(916) 341-5620 (fax)
thoward@waterboards.ca.gov

Betty H. Olson
Professor
Civil & Environmental Engineering
University of California, Irvine
1361 SE II, Code: 7070
Irvine, CA 92697-7070
(949) 824-7171
(949) 824-2056 (fax)
bholson@uci.edu

Jeanine Jones, P.E. (Alt.)
Interstate Resources Manager
Department of Water Resources
1416 Ninth Street
P.O. Box 942836
Sacramento, CA 94236-0001
(916) 653-8126
(916) 653-5028 (fax)
jeanine.jones@water.ca.gov

COLORADO

***Honorable John Hickenlooper**
Governor of Colorado
State Capitol
Denver, CO 80203
(303) 866-2471

****James L. Eklund**, Director
Colorado Water Conservation Board
1313 Sherman Street, Room 721
Denver, CO 80203
(303) 866-3441
(303) 866-4474 (fax)
james.eklund@state.co.us

Trisha Oeth, Administrator
Water Quality Control Commission
OED-OLRA-A5
4300 Cherry Creek Drive South
Denver, CO 80246-1530
(303) 692-3468
(303) 691-7702 (fax)
trisha.oeth@state.co.us

Dick Wolfe
State Engineer
Colorado Division of Water Resources
1313 Sherman Street, Room 318
Denver, CO 80203
(303) 866-3581
(303) 866-3589 (fax)
dick.wolfe@state.co.us

Patrick J. Pfaltzgraff, Director (Alt.)
Water Quality Control Division
WQCD-DO-B2
4300 Cherry Creek Drive South
Denver, CO 80246-1530
(303) 692-3509
(303) 782-0390 (fax)
patrick.j.pfaltzgraff@state.co.us

Harold D. (Hal) Simpson (Alt.)
5967 South Birch Way
Centennial, CO 80121
(303) 771-3449 (home)
(303) 916-1093 (mobile)
halsimpson28@msn.com

John R. Stulp (Alt.)
Special Policy Advisor to the Governor for Water
IBCC Director
1313 Sherman Street, Suite 721
Denver, CO 80203
(303) 866-3441 x. 3257
john.stulp@state.co.us

IDAHO

***Honorable C. L. "Butch" Otter**

Governor of Idaho
State Capitol
Boise, ID 83720
(208) 334-2100

****Jerry R. Rigby**

Rigby, Andrus & Rigby, Chtd.
553 East 4th South
Rexburg, ID 83440
(208) 356-3633
(208) 356-0768 (fax)
jrigby@rex-law.com

†John Tippetts, Director

Department of Environmental Quality
Statehouse Mail
1410 North Hilton Street
Boise, ID 83706-1255
(208) 373-0240
(208) 373-0417 (fax)
john.tippetts@deq.idaho.gov

John Simpson

Barker, Rosholt & Simpson, LLP
P.O. Box 2139
Boise, ID 83701
(208) 336-0700
(208) 344-6034 (fax)
jks@idahowaters.com

Gary Spackman, Director (Alt.)

Idaho Department of Water Resources
The Idaho Water Center
322 East Front Street
P.O. Box 83720
Boise, ID 83720-0098
(208) 287-4800
(208) 287-6700 (fax)
gary.spackman@idwr.idaho.gov

KANSAS

***Honorable Sam Brownback**

Governor of Kansas
State Capitol, 2nd Floor
Topeka, KS 66612-1590
(785) 296-3232

****David W. Barfield, Chief Engineer**

Kansas Department of Agriculture
1320 Research Park Drive
Manhattan, KS 66502
(785) 564-6658
(785) 564-6779 (fax)
david.barfield@kda.ks.gov

Tracy Streeter, Director

Kansas Water Office
900 SW Jackson Street, Suite 404
Topeka, KS 66612
(785) 296-3185
(785) 296-0878 (fax)
tracy.streeter@kwo.ks.gov

Greg Foley

Executive Director, Division of Conservation
Kansas Department of Agriculture
1320 Research Park Drive
Manhattan, KS 66502
(785) 564-6621
(785) 564-6779 (fax)
greg.foley@kda.ks.gov

Chris W. Beightel, Program Manager (Alt.)

Water Management Services
Kansas Department of Agriculture
1320 Research Park Drive
Manhattan, KS 66502
(785) 564-6659
(785) 564-6779 (fax)
chris.beightel@kda.ks.gov

Christopher M. Grunewald (Alt.)

Assistant Attorney General
Civil Litigation Division
Kansas Attorney General's Office
120 SW 10th Avenue, 2nd Floor
Topeka, KS 66612-1597
(785) 291-3988
(785) 291-3767 (fax)
chris.grunewald@ag.ks.gov

Earl Lewis, Assistant Director (Alt.)

Kansas Water Office
900 SW Jackson Street, Suite 404
Topeka, KS 66612
(785) 296-3185
(785) 296-0878 (fax)
earl.lewis@kwo.ks.gov

Tom Stiles, Chief (Alt.)

Kansas Department of Health & Environment
Office of Watershed Planning
Signature Building
1000 SW Jackson Street
Topeka, KS 66612-1367
(785) 296-6170
(785) 291-3266 (fax)
tstiles@kdehs.gov

MONTANA

***Honorable Steve Bullock**

Governor of Montana
State Capitol
Helena, MT 59620
(406) 444-3111

****Tim Davis**

Administrator, Water Resources Division
Dept. of Natural Resources and Conservation
P.O. Box 201601
Helena, MT 59620-1601
(406) 444-6605
(406) 444-0533 (fax)
timdavis@mt.gov

George Mathieus, Administrator
Planning, Prevention & Assistance Division
Department of Environmental Quality
P.O. Box 200901
Helena, MT 59620-1601
(406) 444-7423
(406) 444-6836 (fax)
gemathieus@mt.gov

John Tubbs, Director
Dept. of Natural Resources and Conservation
P.O. Box 201601
Helena, MT 59620-1601
(406) 444-1948
(406) 444-0533 (fax)
jtubbs@mt.gov

Anne Yates

Chief Legal Counsel
Dept. of Natural Resources and Conservation
P.O. Box 201601
Helena, MT 59620-1601
(406) 444-0503
(406) 444-0533 (fax)
ayates@mt.gov

Tom Livers, Director (Alt.)
Department of Environmental Quality
P.O. Box 200901
Helena, MT 59620-1601
(406) 444-2544
(406) 444-4386 (fax)
tlivers@mt.gov

Mike Volesky (Alt.)

Deputy Director
Montana Fish, Wildlife & Parks
1420 East Sixth Avenue
P.O. Box 200701
Helena, MT 59620-0701
(406) 444-4600
(406) 444-4952 (fax)
mvolesky@mt.gov

Jay Weiner (Alt.)

Assistant Attorney General
Civil Services Bureau
Office of the Attorney General
215 North Sanders Street, 3rd Floor
Helena, MT 59620
(406) 444-2026
(406) 444-3549 (fax)
jweiner2@mt.gov

NEBRASKA

***Honorable Pete Ricketts**

Governor of Nebraska
State Capitol
Lincoln, NE 68509
(402) 471-2244

****James R. Macy**, Director
Department of Environmental Quality
1200 N Street, #400
Lincoln, NE 68508
(402) 471-2186
jim.macy@nebraska.gov

Patrick Rice, (Alt.)

Administrator
Water Management Division
Department of Environmental Quality
Suite 400, The Atrium
P.O. Box 98922
Lincoln, NE 68509-8922
(402) 471-2186
(402) 471-2909 (fax)
pat.rice@nebraska.gov

James C. Schneider, Acting Director (Alt.)

Department of Natural Resources
301 Centennial Mall South
Fourth Floor, State Office Building
P.O. Box 94676
Lincoln, NE 68509-4676
(402) 471-3141
(402) 471-2900 (fax)
jim.schneider@nebraska.gov

NEVADA

***Honorable Brian Sandoval**

Governor of Nevada
State Capitol
Carson City, NV 89701
(775) 687-5670

****Roland D. Westergard**

207 Carville Circle
Carson City, NV 89703
(775) 882-3506

Leo Drozdoff, Director

Dept. of Conservation and Natural Resources
901 South Stewart Street, Suite 5001
Carson City, NV 89701
(775) 684-2700
(775) 684-2715 (fax)
ldrozdoff@dcnr.nv.gov

Jason King

Nevada State Engineer
Division of Water Resources
901 South Stewart Street, Suite 2002
Carson City, NV 89701-9965
(775) 684-2861
(775) 684-2811 (fax)
jking@water.nv.gov

†David Emme (Alt.)

Administrator
Division of Environmental Protection
901 South Stewart Street, Suite 4001
Carson City, NV 89701-5249
(775) 687-9301
(775) 687-5856 (fax)
demme@ndep.nv.gov

NEW MEXICO

***Honorable Susana Martinez**

Governor of New Mexico
State Capitol
Santa Fe, NM 87501
(505) 476-2200

†Tom Blaine, State Engineer

Office of the State Engineer
Concha Ortiz y Pino Building
130 South Capitol Street, NEA Building
P.O. Box 25102
Santa Fe, NM 87504-5102
(505) 827-6175
(505) 827-6188 (fax)
tom.blaine@state.nm.us

†Ryan Flynn, Cabinet Secretary
New Mexico Environment Department
1190 Street Francis Drive, N4050
P.O. Box 26110
Santa Fe, NM 87502-0110
(505) 827-2855
ryan.flynn@state.nm.us

Bidtah N. Becker (Alt.)

Executive Director
Navajo Nation Department of Natural Resources
P.O. Box 9000
Window Rock, AZ 86515
(928) 871-6592
bidtahnbeker@navajo-nsn.gov

Eileen Grevey Hillson (Alt.)

AguaVida Resources
915 Camino Ranchitos NW
Albuquerque, NM 87114
(505) 238-0461 (cell)
(505) 898-0747 (fax)
ehillson@swcp.com

Maria O'Brien, Attorney (Alt.)

Modrall Sperling
Roehl Harris & Sisk, P.A.
500 Fourth Street NW
P.O. Box 2168
Albuquerque, NM 87103-2168
(505) 848-1800
(505) 848-9710 (fax)
mobrien@modrall.com

†Greg Ridgley (Alt.)

Office of the State Engineer
130 South Capital
Santa Fe, NM 87506-5108
(505) 827-6150
(505) 827-3887 (fax)
greg.ridgley@state.nm.us

John Utton, Attorney (Alt.)

Sheehan and Sheehan, P.A.
40 First Plaza NW, Suite 740
Albuquerque, NM 87102
(505) 247-0411
(505) 842-8890 (fax)
jwu@sheehansheehan.com

NORTH DAKOTA

***Honorable Jack Dalrymple**

Governor of North Dakota
State Capitol
Bismarck, ND 58505
(701) 224-2200

****Todd Sando**

North Dakota State Engineer
State Water Commission
900 East Boulevard
Bismarck, ND 58505-0850
(701) 328-4940
(701) 328-3696 (fax)
tsando@nd.gov

L. David Glatt, Chief

North Dakota Department of Health
Environmental Health Section
Gold Seal Center
918 East Divide Avenue
Bismarck, ND 58501-1947
(701) 328-5152
(701) 328-5200 (fax)
dglatt@nd.gov

Jennifer L. Verleger

Assistant Attorney General
Office of the Attorney General
500 North 9th Street
Bismarck, ND 58505
(701) 328-3537
(701) 328-4300 (fax)
jverleger@nd.gov

Michelle Klose (Alt.)

Assistant State Engineer
State Water Commission
900 East Boulevard Avenue
Bismarck, ND 58505-0850
(701) 328-4959
(701) 328-3696 (fax)
maklose@nd.gov

Andrea Travnicek (Alt.)

Senior Policy Advisory
Office of the Governor
600 East Boulevard Avenue
Bismarck, ND 58505-0001
(701) 328-2206
atravnicek@nd.gov

OKLAHOMA***Honorable Mary Fallin**

Governor of Oklahoma
State Capitol
Oklahoma City, OK 73105
(405) 521-2342

****J.D. Strong**

Executive Director
Oklahoma Water Resources Board
3800 North Classen Boulevard
Oklahoma City, OK 73118
(405) 530-8800
(405) 530-8900 (fax)
jdstrong@owrb.ok.gov

†Shellie Chard-McClary, Director

Water Quality Division
Oklahoma Dept. of Environmental Quality
P.O. Box 1677
Oklahoma City, OK 73101-1677
(405) 702-7100
(405) 702-7101 (fax)
shellie.chard-mcclary@deq.ok.gov

OREGON***Honorable John Kitzhaber**

Governor of Oregon
State Capitol
Salem, OR 97310
(503) 378-3100

****Thomas M. Byler, Director**

Oregon Water Resources Department
725 Summer Street NE, Suite A
Salem, OR 97301-1271
(503) 986-0900
(503) 986-0903 (fax)
thomas.m.byler@wrdd.state.or.us

†Jennifer Wigal

Water Quality Program Manager
Oregon Department of Environmental Quality
811 SW Sixth Avenue
Portland, OR 97204
(503) 229-5323
(503) 229-5408 (fax)
wigal.jennifer@deq.state.or.us

SOUTH DAKOTA***Honorable Dennis Daugaard**

Governor of South Dakota
State Capitol
Pierre, SD 57501
(605) 773-3212

****Steven M. Pirner, Secretary**

Dept. of Environment & Natural Resources
Joe Foss Building
523 East Capitol Avenue
Pierre, SD 57501-3181
(605) 773-5559
(605) 773-6035 (fax)
steve.pirner@state.sd.us

Kent Woodmansey, PE
Engineering Manager
Feedlot Permit Program
Dept. of Environment & Natural Resources
Joe Foss Building
523 East Capitol
Pierre, SD 57501-3181
(605) 773-3351
(605) 773-4068 (fax)
kent.woodmansey@state.sd.us

TEXAS

***Honorable Gregory W. Abbott**
Governor of Texas
State Capitol
Austin, TX 78711
(512) 463-2000

****Carlos Rubinstein**
Chairman
Texas Water Development Board
1700 North Congress Ave.
Austin, TX 78701
(512) 463-7354
(512) 475-2053 (fax)
carlos.rubinstein@twdb.texas.gov

Christopher Tobias "Toby" Baker
Texas Commission on Environmental Quality
P.O. Box 13087
Austin, TX 78711-3087
(512) 239-5515
(512) 239-5533 (fax)
toby.baker@tceq.texas.gov

John R. Elliott (Alt.)
Vice President
Headwaters Groundwater Conservation District
25 Lehmann Drive, Suite 102
Kerrville, TX 78028-6059
(830) 238-5176
(830) 238-4611 (fax)
elliottj@cebridge.net

Craig Estes, Senator (Alt.)
Texas Senate
2525 Kell Boulevard, Suite 302
Wichita Falls, TX 76308
(940) 689-0191
(940) 689-0194 (fax)
craig.estes@senate.state.tx.us

F. Scott Spears, Jr. (Alt)
Partner
Arenson & Spears
901 MoPac Expressway South
Austin, TX 78746-5797
(512) 327-4422
(512) 327-1524 (fax)
scottspearslegal@aol.com

UTAH

***Honorable Gary R. Herbert**
Governor of Utah
State Capitol
Salt Lake City, UT 84114
(801) 538-1000

****Walter L. Baker, Director**
Division of Water Quality
Department of Environmental Quality
195 North 1950 West, P. O. Box 144870
Salt Lake City, Utah 84114-4870
(801) 536-4300
(801) 536-4301 (fax)
wbaker@utah.gov

Eric Millis, Director
Division of Water Resources
1594 West North Temple, Suite 310
P.O. Box 146201
Salt Lake City, UT 84114-6201
(801) 538-7250
(801) 538-7279 (fax)
ericmillis@utah.gov

Dallin Jensen (Alt.)
Parsons, Behle, and Latimer
201 South Main Street
P.O. Box 45898
Salt Lake City, UT 84145-0898
(801) 532-1234
(801) 536-6111 (fax)
djensen@parsonsbhle.com

Norman K. Johnson (Alt.)
Assistant Attorney General
Utah State Attorney General's Office
1594 West North Temple, #300
Salt Lake City, UT 84116
(801) 538-7227
(801) 538-7440 (fax)
normanjohnson@utah.gov

WASHINGTON

***Honorable Jay Inslee**

Governor of Washington
State Capitol
Olympia, WA 98504
(360) 753-6780

****Maia Bellon, Director**

Department of Ecology
P.O. Box 47600
Olympia, WA 98504-7600
(360) 407-7001
(360) 407-6989 (fax)
maib461@ecy.wa.gov

Tom Loranger

Water Resources Program Manager
Washington Department of Ecology
P.O. Box 47600
Olympia, WA 98504-7600
(360) 407-6672
(360) 407-6574 (fax)
tlor461@ecy.wa.gov

Alan Reichman

Assistant Attorney General
Ecology Division, Water Section
Washington State Attorney General's Office
P.O. Box 40117
Olympia, WA 98504-0117
(360) 586-6748
(360) 586-6760 (fax)
alanr@atg.wa.gov

†Buck Smith (Alt.)

Senior Hydrogeologist
Water Resources Program
Washington Department of Ecology
3190 160th Avenue, SE
Bellevue, WA 98008
(425) 649-7147
(425) 649-7098 (fax)
buck.smith@ecy.wa.gov

WYOMING

***Honorable Matt Mead**

Governor of Wyoming
State Capitol
Cheyenne, WY 82001
(307) 777-7434

****Patrick T. Tyrrell**

Wyoming State Engineer
Wyoming State Engineer's Office
Herschler Building, 4th Floor East
Cheyenne, WY 82002
(307) 777-6150
(307) 777-5451 (fax)
patrick.tyrrell@wyo.gov

Christopher Brown

Senior Assistant Attorney General
Water and Natural Resources Division
123 Capitol Avenue
Cheyenne, WY 82002
(307) 777-3406
(307) 777-5451 (fax)
chris.brown@wyo.gov

Todd Parfitt, Director

Wyoming Dept. of Environmental Quality
Herschler Building, 4th Floor West
122 West 25th Street
Cheyenne, WY 82002
(307) 777-7555
(307) 777-7682 (fax)
todd.parfitt@wyo.gov

Sue Lowry (Alt.)

Interstate Streams Administrator
Wyoming State Engineer's Office
Herschler Building, 4th Floor East
122 West 25th Street
Cheyenne, WY 82002
(307) 777-5927
(307) 777-5451 (fax)
sue.lowry@wyo.gov

Harry LaBonde, Director (Alt.)

Wyoming Water Development Commission
6920 Yellowtail Road
Cheyenne, WY 82002
(307) 777-7626
(307) 777-6819 (fax)
harry.labonde@wyo.gov

†Kevin Frederick, Administrator (Alt.)

Wyoming Department of Environmental Quality
Herschler Building, 4th Floor West
122 West 25th Street
Cheyenne, WY 82002
(307) 777-7072
(307) 777-5973 (fax)
kevin.frederick@wyo.gov

WESTERN STATES WATER COUNCIL COMMITTEE ASSIGNMENTS

EXECUTIVE COMMITTEE

Vacant - Alaska
Thomas Buschatzke - Arizona
Mark Cowin - California
Jeanine Jones - California
(Alternate)*
James Eklund - Colorado
Hal Simpson - Colorado
(Alternate)*
Jerry Rigby - Idaho
(Vice-Chair)
David Barfield - Kansas
Tim Davis - Montana
Jim Macy - Nebraska
Roland Westergard - Nevada
Leo Drozdoff - Nevada
(Alternate)*
Tom Blaine - New Mexico
Todd Sando - North Dakota
J.D. Strong - Oklahoma
Thomas Byler - Oregon
Steve Pirner - South Dakota
Kent Woodmansey - South Dakota
(Alternate)*
Carlos Rubinstein - Texas
Walt Baker - Utah
Maia Bellon - Washington
Patrick T. Tyrrell - Wyoming
(Chair)

Management Subcommittee

Patrick Tyrrell
(Chair)
Jerry Rigby
(Vice-Chair)
Jeanine Jones
(Secretary/Treasurer)
Tony Willardson
(Executive Director)

Nominating Subcommittee

Roland Westergard (Chair) - Nevada
Hal Simpson - Colorado

Ex-Officio Representatives

*For purposes of Committee rosters, the designation as an "alternate" only reflect the person's function on the Committee.

Endangered Species Act Subcommittee

Roland Westergard - Nevada
Herman Settemeyer - Texas
Sue Lowry - Wyoming

Ex-Officio Representatives

FWS - Andrew Hautzinger
David Cottingham

Shared Water Vision Subcommittee

Sue Lowry - (Chair) - Wyoming
Hal Simpson - Colorado
Mike Volesky - Montana
Carlos Rubinstein - Texas
Pat Tyrrell - Wyoming

Ex-Officio Representatives

USBR - Dionne Thompson
Corps - John Grothaus
Ray Russo
Stu Townsley
EPA - Roger Gorke
USGS - Pixie Hamilton

Water Resources Infrastructure Subcommittee

Jeanine Jones - California (Chair)
Hal Simpson - Colorado
Mike Volesky - Montana

Ex-Officio Representatives

USBR - Dionne Thompson
Corps - Elliot Ng
EPA - Steve Albee
NRCS - Keith Admire
Doug Toews

LEGAL COMMITTEE

David Schade - Alaska
William Staudenmaier - Arizona
Cynthia Chandley - Arizona
(Alternate)*
Jeanine Jones - California
James Eklund - Colorado
Jerry Rigby - Idaho
John Simpson - Idaho
(Alternate)*
Chris Grunewald - Kansas
Anne Yates - Montana
Jay Weiner - Montana
(Alternate)*
Jim Macy - Nebraska
Roland Westergard - Nevada
Jason King - Nevada
(Alternate)*
Maria O'Brien - New Mexico
Greg Ridgley - New Mexico
(Alternate)*
Jennifer Verleger - North Dakota
(Chair)
Sara Gibson - Oklahoma
Thomas Byler - Oregon
Kent Woodmansey - South Dakota
John Elliott - Texas
Norman Johnson - Utah
Alan Reichman - Washington
Chris Brown - Wyoming
(Vice-Chair)

Non-Tribal Federal Water Needs Subcommittee

Melissa Hornbein - Montana
Ed Bagley - New Mexico
Dwight French - Oregon
Herman Settemeyer - Texas

Ex-Officio Representatives

BLM - Lee Koss
USFS - Jean Thomas
FWS - Andrew Hautzinger
DOD - Marc Kodack

Tribal Reserved Water Rights Subcommittee

William Staudenmaier - Arizona
Cynthia Chandley - Arizona
Jay Weiner - Montana
Bidtah Becker - New Mexico
Greg Ridgley - New Mexico
Arianne Singer - New Mexico
Norman Johnson - Utah

Water Transfers and the Public Interest

Jerry Rigby - Idaho
Pat Tyrrell - Wyoming

Natural Flows Subcommittee

Michelle Klose - North Dakota
J.D. Strong - Oklahoma
Jennifer Verleger - North Dakota
Carlos Rubinstein - Texas
Herman Settemeyer - Texas

WATER QUALITY COMMITTEE

Alice Edwards - Alaska
Trevor Baggione - Arizona
Thomas Howard - California
Betty Olson - California
(Alternate)*
Trisha Oeth - Colorado
Patrick Pfaltzgraff - Colorado
(Alternate)*
John Tippetts - Idaho
Tom Stiles - Kansas
George Mathieus - Montana
Tom Livers - Montana
(Alternate)*
Patrick Rice - Nebraska
David Emme - Nevada
Ryan Flynn - New Mexico
David Glatt - North Dakota
J.D. Strong - Oklahoma
(Chair)
Shellie Chard-McClary - Oklahoma
(Alternate)*
Jennifer Wigal - Oregon
Kent Woodmansey - South Dakota
Steve Pirner - South Dakota
(Alternate)*
Carlos Rubinstein - Texas
(Vice-Chair)
Todd Chenoweth - Texas
(Alternate)*
Walter Baker - Utah
Maia Bellon - Washington
Pat Tyrrell - Wyoming
Kevin Frederick - Wyoming
(Alternate)*
Todd Parfitt - Wyoming
(Alternate)*

Clean Water Act Subcommittee

Michelle Hale - Alaska
Ruth Hamilton Heese - Alaska
Trisha Oeth - Colorado
Barry Burnell - Idaho
Tom Stiles - Kansas
Michelle Klose - North Dakota
Jennifer Verleger - North Dakota
J.D. Strong - Oklahoma
Todd Chenoweth - Texas
Walt Baker - Utah
Stephen Bernath - Washington
Lauren Driscoll - Washington

Ex-Officio Representatives

Corps - Wade Eakle
EPA - Donna Downing

WATER RESOURCES COMMITTEE

David Schade - Alaska
Thomas Buschatzke - Arizona
Mark Cowin - California
Jeanine Jones - California
(Alternate)*
James Eklund - Colorado
John Stulp - Colorado
(Alternate)*
Dick Wolfe - Colorado
(Alternate)*
John Simpson - Idaho
Jerry Rigby - Idaho
(Alternate)*
David Barfield - Kansas
John Tubbs - Montana
Tim Davis - Montana
(Chair) (Alternate)*
James Schneider - Nebraska
Jason King - Nevada
Tom Blaine - New Mexico
Todd Sando - North Dakota
JD Strong - Oklahoma
Thomas Byler - Oregon
Kent Woodmansey - South Dakota
Carlos Rubinstein - Texas
Herman Settemeyer - Texas
(Alternate)*
Eric Millis - Utah
Tom Loranger - Washington
Patrick Tyrrell - Wyoming
Harry LaBonde - Wyoming
(Alternate)*
Sue Lowry - Wyoming
(Alternate)*

Border Water Issues Subcommittee

Jeanine Jones - California
Herman Settemeyer - Texas
Arizona
Idaho
Montana
New Mexico
North Dakota

Climate Adaptation and Drought Subcommittee

Jeanine Jones - California (Chair)

Ex-Officio Representatives

Corps - Rolf Olsen
NRCS - Mike Strobel

Water Information and Data Subcommittee

Lane Letourneau - Kansas
David Rodriguez - New Mexico
Julie Cunningham - Oklahoma
Barry Norris - Oregon
Robert Mace - Texas
Stephen Bernath - Washington
Pat Tyrrell - Wyoming
Sue Lowry - Wyoming

Ex-Officio Representatives

USBR - Becky Fulkerson
Corps - Steve Ashby
Boni Bigornia
USGS - Pixie Hamilton and Eric Evenson
NASA - Brad Doorn
NOAA - DeWayne Cecil
NRCS - Mike Strobel

Water Use Efficiency/Conservation Subcommittee

Sue Lowry - Wyoming (Chair)
John Longworth - New Mexico
Stephen Bernath - Washington

Ex-Officio Representatives

NRCS - Mike Strobel

Water Resources and Energy Subcommittee

William Staudenmaier - Arizona
Jeanine Jones - California
John Simpson - Idaho
Todd Sando - North Dakota
Robert Mace - Texas
Sue Lowry - Wyoming

Ex-Officio Representatives

Corps - John Grothaus

Committee Assignments

EXECUTIVE COMMITTEE

Vacant - Alaska
Thomas Buschatzke - Arizona
Mark Cowin - California
Jeanine Jones - California
(Alternate)*
James Ekund - Colorado
Hal Simpson - Colorado
(Alternate)*
Jerry Rigby - Idaho
(Vice-Chair)
David Barfield - Kansas
Tim Davis - Montana
Jim Macy - Nebraska
Roland Westergard - Nevada
Leo Drozdoff - Nevada
(Alternate)*
Tom Blaine - New Mexico
Todd Sando - North Dakota
J.D. Strong - Oklahoma
Thomas Byler - Oregon
Steve Pimer - South Dakota
Kent Woodmansey - South Dakota
Carlos Rubinstein - Texas
Walt Baker - Utah
Maia Bellon - Washington
Patrick T. Tyrrell - Wyoming
(Chair)

WATER QUALITY COMMITTEE

Alice Edwards - Alaska
Trevor Baggione - Arizona
Thomas Howard - California
Betty Olson - California
(Alternate)*
Trisha Oeth - Colorado
Patrick Pfaltzgraff - Colorado
(Alternate)*
John Tippets - Idaho
Tom Stiles - Kansas
(Alternate)*
George Mathieus - Montana
Tom Livers - Montana
(Alternate)*
Patrick Rice - Nebraska
David Emme - Nevada
Ryan Flynn - New Mexico
David Glatt - North Dakota
J.D. Strong - Oklahoma
(Chair)
Shellie Chard-McClary - Oklahoma
(Alternate)*
Jennifer Wigal - Oregon
Steve Pimer - South Dakota
Carlos Rubinstein - Texas
(Vice-Chair)
Todd Chenoweth - Texas
(Alternate)*
Walter Baker - Utah
Maia Bellon - Washington
Pat Tyrrell - Wyoming
Kevin Frederick - Wyoming
(Alternate)*
Todd Parfitt - Wyoming
(Alternate)*

WATER RESOURCES COMMITTEE

David Schade - Alaska
Thomas Buschatzke - Arizona
Mark Cowin - California
Jeanine Jones - California
(Alternate)*
James Ekund - Colorado
John Stulp - Colorado
(Alternate)*
Dick Wolfe - Colorado
(Alternate)*
John Simpson - Idaho
Jerry Rigby - Idaho
(Alternate)*
David Barfield - Kansas
John Tubbs - Montana
Tim Davis - Montana
(Chair) (Alternate)*
James Schneider - Nebraska
Jason King - Nevada
Tom Blaine - New Mexico
Todd Sando - North Dakota
JD Strong - Oklahoma
Thomas Byler - Oregon
Kent Woodmansey - South Dakota
Carlos Rubinstein - Texas
Herman Settemeyer - Texas
(Alternate)*
Eric Millis - Utah
Tom Loranger - Washington
Patrick Tyrrell - Wyoming
Harry LaBonde - Wyoming
(Alternate)*
Sue Lowry - Wyoming
(Alternate)*

LEGAL COMMITTEE

David Schade - Alaska
William Staudenmaier - Arizona
Cynthia Chandley - Arizona
(Alternate)*
Jeanine Jones - California
James Ekund - Colorado
Jerry Rigby - Idaho
John Simpson - Idaho
(Alternate)*
Chris Grunewald - Kansas
Anne Yates - Montana
Jay Weiner - Montana
(Alternate)*
Jim Macy - Nebraska
Roland Westergard - Nevada
Jason King - Nevada
(Alternate)*
Maria O'Brien - New Mexico
Greg Ridgley - New Mexico
(Alternate)*
Jennifer Verleger - North Dakota
(Chair)
Jerry Barnett - Oklahoma
Thomas Byler - Oregon
Kent Woodmansey - South Dakota
John Elliott - Texas
Norman Johnson - Utah
Alan Reichman - Washington
Chris Brown - Wyoming
(Vice-Chair)



WESTERN STATES FEDERAL AGENCY SUPPORT TEAM

(updated 03/03/2015)

D'Antonio, John (USACE)

Deputy District Engineer
Programs and Project Management
U.S. Army Corps of Engineers
Albuquerque District
4101 Jefferson Plaza NE
Albuquerque, NM 87109
(505) 342-3261
john.r.d'antonio@usace.army.mil

Dempsey, Lauren M. (DoD alternate)

Western Region Water Specialist
Air Force Western Regional Environmental
Office: AFCEC/CZO (San Francisco)
540 Airlift Drive, Suite C201
Travis AFB, CA 94535
(707) 424-8628
lauren.dempsey@us.af.mil

Doorn, Bradley (NASA)

Program Manager, Water Resources Program
Science Mission Directorate
Earth Science Division
National Aeronautics and Space Administration
300 E Street, SW
Washington, DC 20546
(202) 358-2187
bradley.doorn@nasa.gov

Ellsworth, Alan (NPS Alternate)

Water Advisor
National Parks Service
(202) 513-7181
alan_ellsworth@nps.gov

Ford, Larisa (BLM)

National Coordinator for Soil, Water, and Air
Bureau of Land Management
20 M Street South East Washington D.C. 20003-3503
(202) 912-7137
laford@blm.gov

Fulkerson, Becky (BoR, WestFAST Chair)

Policy Analyst
Bureau of Reclamation
1849 C Street NW
Washington, DC 20240-0001
(202) 513-0638
rfulkerson@usbr.gov

Gorke, Roger (EPA, WestFAST Vice-Chair)

Senior Policy Advisor, Office of Water
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, NW, MC 4101 M
Washington, DC 20460-001
(202) 564-0470
gorke.roger@epa.gov

Hamilton, Pixie (USGS)

Cooperative Water Program Coordinator
U.S. Geological Survey
12201 Sunrise Valley Drive, MS: 409
Reston, VA 20192
(703) 648-5061
pahamilt@usgs.gov

Hansen, Bill (NPS Alternate)

Water Rights Branch Chief
National Parks Service
(970) 225-3532
bill_hansen@nps.gov

Harvey, Ed (NPS)

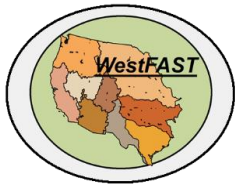
Chief, Water Resources Division
National Parks Service
(970) 225-3511
forrest_harvey@nps.gov

Hautzinger, Andrew (FWS)

Chief, Division of Water Resources
Fish and Wildlife Service
500 Gold Ave SW Room 4002
Albuquerque, NM 87102
(505) 248-7946
andrew_hautzinger@fws.gov

Kodack, Marc (DoD)

Office of the Assistant Secretary of the Army
Energy and Sustainability
U.S. Department of Defense
110 Army Pentagon, RM 3D453
Washington, DC 20310
(571) 256-4197
marc.d.kodack.civ@mail.mil



WESTERN STATES FEDERAL AGENCY SUPPORT TEAM

(updated 03/03/2015)

Lambert, Patrick (USGS)

WestFAST Liaison
Western States Water Council
5296 South Commerce Drive, Suite 202
Murray, UT 84107
(801) 685-2555
patlambert@wswc.utah.gov

Melton, Forrest (NASA, alternate)

Associate Program Manager for Water Resources,
Applied Sciences Program
National Aeronautics and Space Administration
NASA Ames Research Center, MS 232-21
Moffett Field, CA 94035-1000
(650) 604-2787
Forrest.S.Melton@nasa.gov

Pulwarty, Roger (NOAA)

Physical Scientist and Director, NIDIS
National Oceanic and Atmospheric Administration
325 Broadway R/PSD
Boulder, CO 80305
(303) 497-4425
roger.pulwarty@noaa.gov

Strobel, Michael (NRCS)

Director, National Water and Climate Center
USDA-Natural Resources Conservation Service
1201 NE Lloyd Boulevard, Suite 802
Portland, OR 97232
(503) 414-3055
michael.strobel@por.usda.gov

Thomas, Jean (FS)

Water Uses Program Leader
USDA Forest Service, WFW
1400 Independence Avenue SW, MS: 1121
Washington, DC 20250-1121
(202) 205-1172
jathomas02@fs.fed.us

Thompson, Dionne (Reclamation)

Acting Deputy Commissioner
External and Intergovernmental Affairs
Bureau of Reclamation
1849 C Street NW
Washington, DC 20240-0001
(202) 513-0616
dethompson@usbr.gov

Werner, Kevin (NOAA, alternate)

Regional Climate Services Director
NOAA Western Region
2725 Montlake Boulevard E, Room 216E
Seattle, WA 98112
(206) 860-3490 (office)
kevin.werner@noaa.gov

Zamuda, Craig (DoE)

Senior Policy Advisor
Office of Climate Change Policy and Technology
Office of Policy and International Affairs
U.S. Department of Energy
1000 Independence Avenue, SW
Washington, DC 20585
(202) 586-9038
craig.zamuda@hq.doe.gov

Tab C – WSWC Policy Positions

(See also No. 316, revised and reaffirmed July 17, 2009)

(See also No. 278, revised and reaffirmed July 21, 2006)

RESOLUTION
of the
WESTERN STATES WATER COUNCIL
regarding
WATER TRANSFERS
and
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
DISCHARGE PERMITS
Seattle, Washington
June 8, 2012
(revised and reaffirmed)

WHEREAS, on August 1, 2003 the Western States Water Council adopted a resolution regarding water transfers and National Pollutant Discharge Elimination System (NPDES) discharge permits; and

WHEREAS, on July 21, 2006, the Western States Water Council adopted a resolution that generally supported the U.S. Environmental Protection Agency's (EPA) proposed amendment to its Clean Water Act regulations as published on the June 7, 2006 Federal Register (Vol. 71, No. 109), which exempted water transfers from the NPDES permitting program.

WHEREAS, in those resolutions the Western States Water Council declared its position that the transport of water through constructed conveyances to supply beneficial uses should not trigger federal NPDES permit requirements, simply because the transported water contains different chemical concentrations and physical constituents; and

WHEREAS, in those resolutions the Western States Water Council also expressed support for the ability of each Western State to use available authorities to place appropriate conditions on water transfers to protect water quality; and

WHEREAS, on June 13, 2008, the EPA published in the Federal Register (Vol. 73, No. 115) a final amendment to its Clean Water Act regulations (40 CFR Part 122) that expressly excludes water transfers from regulation under the NPDES permitting program, and defines water transfers as an activity that conveys waters of the United States to another water of the United States without subjecting the water to intervening industrial, municipal, or commercial use; and

WHEREAS, the final rule relies on EPA's interpretation of the federal Clean Water Act and does not limit any ability of a State to use any available authority, including authority regarding nonpoint sources of pollution, to protect the water quality of the receiving water body in a water transfer;

WHEREAS, water transfers and water quality are essential to the social, economic and environmental well-being of the Western States, and

WHEREAS, the United States Court of Appeals in the case of *Friends of the Everglades v. South Florida Water Management Dist.*, 570 F.3d 1210 (11th Cir. 2009), upheld EPA's Water Transfer Rule holding it to be a reasonable construction of the Clean Water Act and therefore entitled to deference by the Federal Courts, and on which decision the United States Supreme Court subsequently denied a Petition for Writ of Certiorari;

Position No. 342
(See also No. 316, revised and reaffirmed July 17, 2009)
(See also No. 278, revised and reaffirmed July 21, 2006)

NOW, THEREFORE, BE IT RESOLVED that the Western States Water Council generally supports EPA's amendment to its Clean Water Act regulations as published in the June 13, 2008 Federal Register.

BE IT FURTHER RESOLVED that the Western States Water Council supports the use by a State of available authorities to protect the water quality of the receiving water body in a water transfer.

f:\position\2012\seattle jun8\pos 342 2012 npdes-transfers resol.doc

RESOLUTION
of the
WESTERN STATES WATER COUNCIL
regarding the
RURAL WATER SUPPLY PROJECT/INFRASTRUCTURE NEEDS
Stateline, Nevada
July 10, 2015

WHEREAS, in the West, water is indeed our “life blood,” a vital and scarce resource the availability of which has and continues to circumscribe growth, development, our economic and environmental well-being and quality of life; and

WHEREAS, across the West, rural and tribal communities are experiencing water supply shortages due to drought, declining streamflows and groundwater supplies, and inadequate infrastructure, with some communities hauling water over substantial distances to satisfy their potable water needs; and

WHEREAS, often water supplies that are available to these communities are of poor quality and may be impaired by naturally occurring and man-made contaminants, including arsenic and carcinogens, which impact communities’ health and their ability to comply with increasingly stringent federal water quality and drinking water mandates; and

WHEREAS, at the same time, many rural and tribal communities in the West are suffering from significant levels of unemployment and simply lack the financial capacity and expertise to finance and construct needed drinking water system improvements; and

WHEREAS, there are eight authorized and active rural water projects located in Montana, New Mexico, North Dakota, and South Dakota that have yet be completed at an estimated cost of around \$2.6 billion – while costs continue to increase due to delays, inflation and the rising costs of materials and labor – and at current levels of funding could completion of some project could be delayed beyond 2063; and

WHEREAS, there is a Federal responsibility to complete authorized rural water projects, particularly those intended to fulfill in part a solemn Federal promise and trust responsibility to compensate States and Tribes for lost resources as a result of the construction of Federal flood control projects and other actions; and

WHEREAS, recognizing Federal budget constraints, a modest increase in Federal expenditures would expedite completion of authorized projects and in the long run save taxpayer money while inadequate funding levels and untimely appropriations only increase delays and Federal costs and perpetuates rural and tribal communities’ hardships; and

WHEREAS, authorizing the increased use of Reclamation Fund revenues to expedite completion of these projects fulfills both financial and moral obligations that some beneficiaries have waited decades to see honored; and

WHEREAS, the Congress enacted the Rural Water Supply Act of 2006 (P. L. 109-451) and established the Bureau of Reclamation’s Rural Water Supply Program authorizing the agency to work with rural communities, states and tribes, to assess potable water supply needs and identify options to address those needs through appraisal investigations and feasibility studies; and

WHEREAS, federal expenditures for rural water projects actually generate significant returns on the investment through increased national and local economic benefits, as well as improvements in quality of life; and

WHEREAS, Reclamation Fund receipts are largely derived from water and power sales, project repayments, and receipts from public land sales and leases, as well as oil and mineral-leasing and related royalties, from western lands adjacent to rural and tribal communities; and

WHEREAS, western States are committed to continuing to work cooperatively with the Department of Interior and Bureau of Reclamation to meet our present rural water needs in the West for present and future generations, within the framework of state water law, as envisioned in Reclamation Act of 1902; and

WHEREAS, under the Reclamation Act of 1902, the Reclamation Fund was envisioned as the principle means for financing federal western water and power projects with revenues from western resources – but these receipts are only available for expenditure pursuant to annual appropriation acts; and

WHEREAS, with growing receipts -- in part due to energy development and high energy prices across the rural West -- and declining federal appropriations for Reclamation Act purposes, the unobligated balance grows larger and larger (and is expected to soon exceed \$16 billion), while the money is actually spent elsewhere for other federal purposes contrary to the Congress' original intent; and

WHEREAS, the WSWC has a long-standing policy in support of using receipts accruing to the Reclamation Fund for authorized projects, including rural and tribal water supply projects;

NOW THEREFORE BE IT RESOLVED, that the Western States Water Council strongly supports Administrative and Congressional action to expedited construction of authorized rural water supply projects in a timely manner, including projects that meet tribal trust and other federal responsibilities -- recognizing and continuing to defer to the primacy of western water laws and tribal settlements in allocating water among users.

BE IT FURTHER RESOLVED, that the Council recommend that the Administration and the Congress investigate the advantages of converting the Reclamation Fund from a special account to a true revolving trust fund with annual receipts to be appropriated for authorized purposes in the year following their deposit (similar to some other federal authorities and trust accounts).



WESTERN STATES WATER COUNCIL

5296 South Commerce Drive, Suite 202 / Murray, Utah 84107 / (801) 685-2559 / Fax (801) 685-2559

Web Page: www.westgov.org/hwswc

June 8, 2012

Position No. 343

Senator Jeff Bingaman, Chairman
Energy and Natural Resources Committee
United States Senate
SD-364 Dirksen Senate Office Building
Washington, DC 20510

Senator Lisa Murkowski, Ranking Member
Energy and Natural Resources Committee
United States Senate
SD-312 Dirksen Senate Office Building
Washington, DC 20510

Dear Senators:

On behalf of the Western States Water Council, which represents eighteen states, I am writing to express our support for legislative action to establish a dedicated funding source for the completion of federal rural water projects authorized by the Congress for construction by the Bureau of Reclamation. These projects include components that benefit both Indian and non-Indian rural communities. Many of these communities, particularly smaller communities, are struggling to provide adequate water supplies to meet the needs of their citizens of a quality consistent with federal mandates.

It is essential that these projects be completed in a timely manner for the benefit of these communities in fulfillment of long-standing promises and trust responsibilities, some dating back decades. Another important consideration is the impact on the federal budget and economic growth. Accelerated construction scheduling, made possible by a more timely federal investment of modest amounts, will minimize long-term federal expenditures and create more jobs now.

With respect to programmatic goals and funding priorities established pursuant to directives in any legislation, these should be developed in a transparent manner in consultation with the affected communities and States -- and should consider existing state water plans and priorities.

We appreciate the opportunity to express our interests and look forward to working with you to address this important need.

Sincerely,

A black and white photograph of a handwritten signature in cursive script, which appears to read "Phillip C. Ward".

Phillip C. Ward
Chairman
Western States Water Council

A VISION ON WATER

Western States Water Council

July 10, 2015

Mission Statement

To ensure that the West has an adequate, sustainable supply of water of suitable quality to meet its diverse economic and environmental needs now and in the future.

Our Present Condition

Water in the West is an increasingly scarce and precious resource, given population growth and an expanding range of often competing economic and ecological demands, as well as changing social values. Surface and ground water supplies in many areas are stressed, resulting in a growing number of conflicts among users and uses. A secure and sustainable future is increasingly uncertain given our climate, aging and often inadequate water infrastructure, limited knowledge regarding available supplies and existing and future needs and uses, and competing and sometimes un-defined or ill-defined water rights. The cost of reducing uncertainty and securing adequate quantities of water of suitable quality will continue to increase. Effectively addressing these challenges will require a collaborative, cooperative effort among states, and federal agencies and stakeholders that transcends political and geographic boundaries.

Future actions should be based on the following general principles:

Principles

- State primacy is fundamental to a sustainable water future. Federal water planning, policy, development, protection, and management must recognize, defer to, and support state laws, plans, and processes. Federal projects and programs should support, rather than dictate the development and implementation of state water plans and state water management programs.
[moved up from below]
- Water rights of tribal entities must be quantified, respected and protected.
- The federal government should streamline and minimize regulatory burdens, and consult with states when developing federal rules, regulations, directives, orders and policies. Markets and financial incentives should be used before federal regulatory mandates, recognizing costs and benefits, with local solutions developed to achieve national standards, focusing on results and innovation, not programs.
- Given the importance of the resource to our public health, economy, food security, and environment, water must be given a high public policy priority at all levels.
- Maintaining, replacing and expanding our water resources infrastructure is critical to a sustainable future. Innovative water supply strategies and new storage options should be

36 encouraged and supported to increase water availability and match demands with supplies of
37 suitable quality.

- 38 • Basic data gathering is critical for sound science and good decision making and should be a
39 priority for government at all levels. This includes information on both water supplies and uses.
- 40 • An integrated, balanced and collaborative approach to water resources management, recognizing
41 multiple needs, is critical to the environmentally sound and efficient use of our water resources.
42 [added below]
- 43 • We must understand and appreciate the value of water. Water conservation and efficient use
44 must be a policy imperative, a means to many ends, and part of an American and Western ethic
45 or way of life.
- 46 • A grassroots approach should be utilized in identifying problems and developing optimal
47 solutions. States, tribes, and local communities should work together to resolve water issues.
- 48 • Conflicts between water users and uses should be addressed first through negotiation and
49 mediation, avoiding litigation to all extent possible.
- 50 • Any approach to water resource management and development should accommodate sustainable
51 economic growth, which is enhanced by the protection and restoration of significant aquatic
52 ecosystems, and will promote economic and environmental security and quality of life.
- 53 • There must be cooperation among stakeholders at all levels and agencies of government that
54 recognizes and respects national, regional, state, local and tribal differences in values related to
55 water resources and that supports decision-making at the lowest practicable level.
- 56 • The appropriation, quantification, adjudication, control, use or distribution of water used in
57 irrigation, municipal, environmental or any other purpose and any vested property right acquired
58 thereby are a matter of state law, and should be fully recognized and given appropriate federal
59 deference.
- 60 • No unilateral act of Congress should be construed as affecting or intending to affect or in any
61 way to interfere with interstate compacts, decrees and negotiated water rights settlements and
62 similar agreements approved or ratified by the President and Congress, the states and tribes.
63
64

A VISION ON WATER

Western States Water Council

July 10, 2015

~~on March 15, 2012~~

Mission Statement

To ensure that the West has an adequate, sustainable supply of water of suitable quality to meet its diverse economic and environmental needs now and in the future.

Our Present Condition

Water in the West is an increasingly scarce and precious resource, given population growth and an expanding range of often competing economic and ecological demands, as well as changing social values. Surface and ground water supplies in many areas are stressed, resulting in a growing number of conflicts among users and uses. A secure and sustainable future is increasingly uncertain given our climate, aging and often inadequate water infrastructure, limited knowledge regarding available supplies and existing and future needs and uses, and competing and sometimes un-defined or ill-defined water rights. The cost of reducing uncertainty and securing adequate quantities of water of suitable quality will continue to increase. Effectively addressing these challenges will require a collaborative, cooperative effort among states, and federal agencies and stakeholders that transcends political and geographic boundaries.

Future actions should be based on the following general principles:

~~Our Vision~~Principles

- State primacy is fundamental to a sustainable water future. Federal W~~water~~ planning, policy, development, protection, and management must recognize, defer to, and support state laws, plans, and processes. Federal projects and programs should support, rather than dictate the development and implementation of state water plans and state water management programs.
[moved up from below]
- Water rights of tribal entities; must be quantified, respected and protected.
- The federal government should streamline and minimize regulatory burdens, and consult with states when developing federal rules, regulations, directives, orders and policies. and support implementation of state water plans and state water management. Markets and financial incentives should be used before federal regulatory mandates, recognizing costs and benefits, with local solutions developed to achieve national standards, focusing on results and innovation, not programs.

- Given the importance of the resource to our public health, economy, food security, and environment, water must be given a high public policy priority at all levels.
- Maintaining, replacing and expanding our water resources infrastructure is critical to a sustainable future. Innovative water supply strategies and new storage options should be encouraged and supported to increase water availability and match demands with supplies of suitable quality.
- Basic data gathering is critical for sound science and good decision making and should be a priority for government at all levels. This includes information on both water supplies and uses.
- An integrated, **balanced** and collaborative approach to water resources management, **recognizing multiple needs**, is critical to the environmentally sound and efficient use of our water resources. ~~States, tribes, and local communities should work together to resolve water issues.~~ [added below]
- We must understand and appreciate the value of water. Water conservation and efficient use must be a policy imperative, a means to many ends, and part of an American and Western ethic or way of life.
- A grassroots approach should be utilized in identifying problems and developing optimal solutions. ~~States, tribes, and local communities should work together to resolve water issues.~~
- Conflicts between water users and uses should be addressed first through negotiation and mediation, avoiding litigation to ~~all~~the extent possible.
- Any approach to water resource management and development should accommodate sustainable economic growth, which is enhanced by the protection and restoration of significant aquatic ecosystems, and will promote economic and environmental security and quality of life.
- There must be cooperation among stakeholders at all levels and agencies of government that recognizes and respects national, regional, state, local and tribal differences in values related to water resources and that supports decision-making at the lowest practicable level.
- The appropriation, quantification, adjudication, control, use or distribution of water used in irrigation, municipal, environmental or any other purpose and any vested property right acquired thereby are a matter of state law, and should be **fully** recognized and given appropriate federal deference.
- No unilateral act of Congress should be construed as affecting or intending to affect or in any way to interfere with interstate compacts, decrees and negotiated water rights settlements and similar agreements approved or ratified by the President and Congress, the states and tribes.



A VISION ON WATER

Adopted by the

Western States Water Council

on June 8, 2012

Our Present Condition

Water in the West is an increasingly scarce and precious resource, given population growth and an expanding range of often competing economic and ecological demands, as well as changing social values. Surface and ground water supplies in many areas are stressed, resulting in a growing number of conflicts among users and uses. A secure and sustainable future is increasingly uncertain given our climate, aging and often inadequate water infrastructure, limited knowledge regarding available supplies and existing and future needs and uses, and competing and sometimes un-defined or ill-defined water rights. Effectively addressing these challenges will require a collaborative, cooperative effort among states and stakeholders that transcends political and geographic boundaries.

Our Vision

- State primacy is fundamental to a sustainable water future. Water planning, policy, development, protection, and management must recognize, defer to, and support state laws, plans, and processes. The federal government should streamline regulatory burdens and support implementation of state water plans and state water management.
- Given the importance of the resource to our public health, economy, food security, and environment, water must be given a high public policy priority at all levels.
- An integrated and collaborative approach to water resources management is critical to the environmentally sound and efficient use of our water resources. States, tribes, and local communities should work together to resolve water issues. A grassroots approach should be utilized in identifying problems and developing optimal solutions.
- Any approach to water resource management and development should accommodate sustainable economic growth, which is enhanced by the protection and restoration of significant aquatic ecosystems, and will promote economic and environmental security and quality of life.
- There must be cooperation among stakeholders at all levels and agencies of government that recognizes and respects national, regional, state, local and tribal differences in values related to water resources and that supports decision-making at the lowest practicable level.

WSWC Policy Statements

The WSWC policy statements are posted on its website at <http://www.westernstateswater.org/policies-2/>.

Policy positions will be deactivated three years after their adoption, unless extended by formal action of the Council. The following is a brief description of all current positions, listed by date of adoption and corresponding number.

2015

- on State Primacy over Groundwater (April 17, 2015) - #380
- Supporting Federal Climate Adaptation Research (April 17, 2015) - #379
- Regarding Integrating Water and Energy Policy and Planning (April 17, 2015) - #378

2014

- Asserting state primacy on Protecting Ground Water Quality (October 10, 2014) - #377
- Supporting Indian Water Rights Settlements (October 10, 2014) - #376
- Outlining actions Federal agencies should take to expedite State General Stream Adjudications (October 10, 2014) - #375
- Supports the *Dividing the Waters* Program (October 10, 2014) - #374
- Letter commenting on the proposed rule developed by the EPA and the USACE to clarify the scope of Clean Water Act jurisdiction (combined file) (October 10, 2014) - #373
- Letter sending comments on the USFS Proposed Directive on Groundwater Resource Management, Forest Service Manual 2560 (October 3, 2014) - #372
- Regarding Water-Related Federal Rules, Regulations, Directives, Orders and Policies (August 11, 2014) - #371
- Regarding the Interpretive Rule Regarding Applicability of the Exemption from Permitting under Section 404(f)(1)(A) of the Clean Water Act to Certain Agricultural Conservation Practices – (August 11, 2014) - #370
- Regarding Clean Water Act jurisdiction (July 18, 2014) - #369
- Supporting the Water Resources Research Institutes (requesting Congress to maintain the federal authorization and financial support for the state WRI program) (July 18, 2014) - #368
- Regarding the Reclamation Fund (asks Congress to fully appropriate the receipts and collections accruing to the Reclamation Fund) (July 18, 2014) - #367

- Supporting Federal Research and Development of Updated Hydroclimate Guidance for Floods and Droughts (July 18, 2014) - #366
- Regarding Preemption of State Water Law in Federal Legislation (July 18, 2014) - #365
- Regarding the Clean Water State Revolving Fund and the Drinking Water State Revolving Fund (Apr 3, 2014) - #364
- Regarding the National Levee Safety Act of 2007 and the Interpretation of Levees and Water Supply Canals (Apr 3, 2014) - #363
- Regarding the Transfer of Federal Water and Power Projects and Related Facilities (Apr 3, 2014) - #362
- Regarding the Reclamation Safety of Dams Act of 1978 (Apr 3, 2014) - #361
- Regarding the Bureau of Reclamation's Maintenance, Repair and Rehabilitation Needs (Apr 3, 2014) - #360

2013

- Regarding pesticide applications and National Pollutant Discharge Elimination System discharge permits (October 3, 2013) - #359
- Urging Congress to reaffirm its deference to state water law, provide for the waiver of the United States' immunity to participation in state administrative and judicial proceedings, and provide for payment of fees required by state law (October 3, 2013) - #358
- In the form of a letter to Senate Energy and Natural Resources Committee leaders expressing continued support for implementation of the SECURE Water Act (October 3, 2013) - #357
- Regarding NASA's applied science research program (October 3, 2013) - #356
- Urging the Administration and the Congress to support water research and development programs at the Department of Energy National Laboratories. (June 26, 2013) - #355
- In the form of a letter to House Water Resources and Environment Subcommittee leaders in opposition to H.R. 1460, which would remove "fish and wildlife" as an authorized purpose for which the Corps can manage the Missouri River Mainstem Reservoir System (June 26, 2013) - #354
- Notes that the WSWC "...opposes any and all efforts that would diminish the primary and exclusive authority of states over the allocation of water resources used in hydraulic fracturing." (June 24, 2013 - #353
- Supports federal efforts to prepare for and respond to extreme weather events, including an expanded and enhanced west-wide extreme precipitation monitoring system. (June 26, 2013) - #352
- Supports federal legislative and administrative actions to authorize and implement reasonable hydropower projects and programs (April 5, 2013) - #351

- Supporting implementation of the Rural Water Supply Act of 2006 (April 5, 2013) - #350
- Urging the Administration and the Congress to give a high priority to federal programs, such as the National Oceanic and Atmospheric Administration's Regional Integrated Science and Assessments (RISA) program (April 5, 2013) - #349

2012

- Regarding States' water rights and natural flows (October 12, 2012) - #348
- Supporting legislation to reauthorize the Reclamation States Emergency Drought Relief Act (October 12, 2012) - #347
- Supporting legislation to reauthorize the National Integrated Drought Information System (NIDIS) Act, and accompanying letter to NOAA Administrator Lubchenco (October 12, 2012) - #346
- Regarding federal water and climate data collection and analysis programs (October 4, 2012) - #345
- WSWC Vision on Water (June 8, 2012) - #344
- Supporting legislative action to establish a dedicated funding source for completion of federal rural water projects authorized by Congress (June 8, 2012) - #343
- Regarding water transfers and National Pollutant Discharge Elimination System (NPDES) discharge permits (June 8, 2012) - #342

Sunsetted Positions

2015

- #338 Energy and Water Integration Act of 2011. (*outdated*)
- #341 Letter regarding concerns with the Bureau of Reclamation's proposed changes to the Reclamation Manual. (*outdated*)

2013

- #323 A Shared Vision on Water Planning and Policy. (*superceded by more recent position*)

2012

- #313 Letter Regarding National Water Research and Development Initiative Act. (*There is no current legislation*)
- #315 Letter to House Transportation and Infrastructure Committee leaders raising concerns regarding a draft bill entitled the Sustainable Watershed Planning Act. (*outdated, not reintroduced*)
- #317 Supporting the Bureau of Reclamation's Field Services Program. (*outdated*)
- #318 Offering general comments to CEQ on the Principles and Guidelines. (*outdated*)
- #319 Describing principles that are important to the Western states in considering a "national vision" for water policy. (*superceded by more recent position*)

2011

- #297 Strong support for legislation to establish a National Drought Council to improve national drought preparedness, mitigation, and response efforts. (*There is no current legislation*)
- #298 In cooperation with the Interstate Council on Water Policy expressing strong support for increased funding for the Cooperative Water Program and the National Streamflow Information Program. (*superceded by more recent position statements and letters*)
- #299 Supporting S. 2842, the Aging Water Infrastructure and Maintenance Act. (*enacted*)
- #300 Regarding introduction of the Cooperative Watershed Management Act of 2008 (S. 3085). (*enacted*)
- #301 Commenting on H.R. 135, the "21st Century Water Commission," specifically declaring that the WSWC be involved in the selection of members and that it include State and Native American involvement. (*Bill has not been reintroduced*)
- #302 Supporting the enactment of S. 895 to provide the Bureau of Reclamation with authority to assess rural water supply needs and for sufficient funding. (*enacted*)
- #303 Revised resolution in support of the Weather Modification Research and Technology Transfer Act. (*No federal research program or legislation has been reintroduced*)

- #306 Urging support for full funding of the USGS National Streamflow Information Program (NSIP) and sufficient funding for the Cooperative Water Program to match non-USGS contributions. *(outdated)*
- #307 Letter to Senator Bingaman, Senate Energy and Natural Resources Committee, expressing interest in S. 3231, the Omnibus Public Lands Management Act. *(outdated)*
- #311 Letter to Steve Stockton offering assistance to the Corps in their water planning initiative. *(outdated)*

2010

- #287 Setting forth the Council's past perspectives on a proposed "Twenty-First Century Water Commission." *(outdated - see #301 above)*
- #289 Support of the proposed Water Conservation, Efficiency and Management Act, to specifically authorize the Bureau of Reclamation's water conservation programs. *(separately authorized)*
- #290 Concern over the Administration's decision to zero out funding for the U.S. Bureau of Reclamation's Technical Assistance to States (TATS) Program. *(outdated)*
- #291/#292 Regarding the proposed Agricultural Water Enhancement Program. *(enacted)*
- #295 Concern over budget request for federal funding for water and wastewater treatment, specifically EPA's State Revolving Fund (SRF) Capitalization Grants. *(combined with #296 and replaced with #330 – Apr 15, 2011)*
- #296 Concern with OMB directive to EPA disallowing the use of SRF revenues to repay bonds. *(combined with #295 and replaced with #330 – Apr 15, 2011)*

2009

- #276 Urging the Congress and Administration to Continue to Recognize State Primacy Regarding Water Rights and Water Quality Certification in the Federal Licensing of Hydroelectric Projects. *(supplanted by WGA resolution)*
- #277 Letter commending the American Indian Environmental Office of EPA for its efforts in establishing the Tribal Water Program Council and expressing a hope that it would "offer an ongoing opportunity for state-tribal cooperation on issues of mutual interest." *(outdated)*
- #279 Support for legislation (S. 2751 and H.R. 5136) to create a National Integrated Drought Information System within the National Oceanic and Atmospheric Administration. *(authority enacted)*
- #280 Strong support for federal legislation, the National Drought Preparedness Act, to establish a national policy for drought and coordinate "proactive measures at all levels of government to plan, prepare and mitigate the serious impacts of drought." *(deferred to WGA resolution)*
- #281 Support for Reclamation's Water Conservation Field Services Program and "Bridging-the-Headgate" Partnerships. *(outdated)*

- #282 Regarding Federal Non-Tribal Fees in General Adjudications asking the Congress to pass legislation requiring the Federal government, when a party to a general water rights adjudication, to pay fees for costs imposed by the state to conduct the proceedings to the same extent as all other users. (*deferred to WGA resolution*)
- #283 Reiterating strong support for maintaining a thermal band as part of the Landsat Data Continuity Mission, and the necessary funding. (*separately updated*)

2008

- #262 Support for the U.S. Geological Survey's Cooperative Water Program (CWP) and opposes any effort to force the privatization of related USGS services. (*separately updated*)
- #268 The Western States Water Council endorses policy resolutions adopted by the Western Governors' Association, and will allow these policies to guide the Council in matters relevant to implementation and potential reauthorization of the Clean Water Act. (*deferred to WGA resolution*)
- #269 Water Efficiency Standards for Plumbing Products (*subsequently enacted*)
- #270 Reauthorization of the Farm Bill. (*reauthorized*)
- #271 Support for the National Aeronautics and Space Administration's Landsat Data Continuity Mission and calling for continued funding to include a thermal infrared sensor. (*superceded by 2009 WSWC Position No. 283*)
- #273 Support for the Nonpoint Source Grant program administered by the U. S. Environmental Protection Agency under Section 319 of the Clean Water Act. (*outdated*)

Tab D – Budget

Western States Water Council
Pro Forma Balance Sheet
As of June 30, 2015

	<u>Jun 30, 15</u>
ASSETS	
Current Assets	
Checking/Savings	
1000 · Cash	
1030 · Wells Fargo	13,310.66
1050 · Petty Cash	284.46
1130 · Investments Assess	572,638.73
1140 · Leave Payout Sinking Fund	132,790.36
1150 · Equip Replacement Fund	28,496.32
Total 1000 · Cash	<u>747,520.53</u>
Total Checking/Savings	747,520.53
Other Current Assets	
1300 · Prepaid Expenses	
1310 · Insurance	676.04
1320 · Postage	2,200.00
1350 · Meeting deposits	2,996.00
Total 1300 · Prepaid Expenses	<u>5,872.04</u>
Total Other Current Assets	<u>5,872.04</u>
Total Current Assets	753,392.57
Fixed Assets	
1500 · Fixed Assets	
1505 · Purchase amount	70,214.92
1510 · Accumulated Depreciation	(46,819.41)
Total 1500 · Fixed Assets	<u>23,395.51</u>
Total Fixed Assets	23,395.51
Other Assets	
1800 · Deposits	2,807.51
1900 · Amt for Compensated Absences	115,606.32
Total Other Assets	<u>118,413.83</u>
TOTAL ASSETS	<u>895,201.91</u>
LIABILITIES & EQUITY	
Liabilities	
Current Liabilities	
Accounts Payable	
2000 · Accounts Payable	1,856.21
Total Accounts Payable	<u>1,856.21</u>
Other Current Liabilities	
2200 · Payroll Liabilities	
2220 · FICA	765.86
2230 · FICAE	766.40
2240 · FITW	1,942.00
2260 · MEDI	179.12
2270 · MEDIE	179.12
2280 · SITW	2,552.00
2290 · SUTA	192.81
2300 · 1099 Withholdings	400.00
2310 · AD&D	23.88
2320 · CU Savings	100.00

Western States Water Council
Pro Forma Balance Sheet
As of June 30, 2015

	<u>Jun 30, 15</u>
2330 · Dental	294.51
2340 · Disability	185.15
2350 · Life	305.52
2360 · Medical	6,524.19
2370 · Pension	3,292.54
2380 · Pension Loans	327.03
2390 · PrePaid P/R Liabilities	(3,119.93)
2395 · Workers Comp Ins	147.90
Total 2200 · Payroll Liabilities	15,058.10
2400 · Pre-Billed Revenue	165,000.00
Total Other Current Liabilities	180,058.10
Total Current Liabilities	181,914.31
Long Term Liabilities	
2500 · Oblig for Compensated Absences	115,606.32
2520 · Current Yr Budget Offset / Comp	(3,500.32)
2550 · HRA - Willardson	3,408.39
2600 · Investment in Fixed Asset	
2605 · Current value	48,015.44
2610 · Adjust for depreciation	(46,819.41)
Total 2600 · Investment in Fixed Asset	1,196.03
2670 · Current Yr Budget Offset / F/A	3,000.00
Total Long Term Liabilities	119,710.42
Total Liabilities	301,624.73
Equity	
3900 · Retained Earnings	560,875.26
Net Income	32,701.92
Total Equity	593,577.18
TOTAL LIABILITIES & EQUITY	895,201.91

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Accrual Basis

Western States Water Council
Pro Forma Profit & Loss Budget Performance
June 2015

	Jun 15	Budget	Jul '14 - Jun 15	YTD Budget	Annual Budget
Ordinary Income/Expense					
Income					
4000 · Revenues					
4100 · Member States Assessments	0.00	42,500.00	495,000.00	510,000.00	510,000.00
4200 · Newsletter	400.00	316.67	3,800.00	3,800.00	3,800.00
4400 · WGA / WSWC Contracts					
4402 · WGA / DOE Grant	0.00		119,622.18		
4400 · WGA / WSWC Contracts - Other	0.00	8,300.00	0.00	99,600.00	99,600.00
Total 4400 · WGA / WSWC Contracts	0.00	8,300.00	119,622.18	99,600.00	99,600.00
4550 · Council Meeting Sponsors	0.00	125.00	7,320.55	1,500.00	1,500.00
4600 · Miscellaneous Income	0.00	416.67	0.00	5,000.00	5,000.00
4800 · Interest Income					
4810 · Savings	0.00		2,461.82		
4820 · Sinking Fund	0.00		605.63		
4830 · Equipment Fund	0.00		139.81		
4800 · Interest Income - Other	0.00	333.33	0.00	4,000.00	4,000.00
Total 4800 · Interest Income	0.00	333.33	3,207.26	4,000.00	4,000.00
Total 4000 · Revenues	400.00	51,991.67	628,949.99	623,900.00	623,900.00
Total Income	400.00	51,991.67	628,949.99	623,900.00	623,900.00
Expense					
6010 · Contingencies	3.20	450.00	4,767.81	5,400.00	5,400.00
6020 · Contracted Services	0.00	833.33	6,493.06	10,000.00	10,000.00
6030 · Equip Replacement Fund	250.00	250.00	3,000.00	3,000.00	3,000.00
6040 · Furniture & Equipment	0.00	125.00	292.74	1,500.00	1,500.00
6060 · Insurance	0.00		756.00	1,000.00	1,000.00
6090 · Annual & Sick Leave Funding	125.00	125.00	1,500.00	1,500.00	1,500.00
6110 · Maintenance Contracts	0.00	625.00	4,876.96	7,500.00	7,500.00
6160 · Meetings & Arrangements	(535.89)	1,858.33	20,212.47	22,300.00	22,300.00
6300 · Office Supplies	0.00	291.67	1,876.72	3,500.00	3,500.00
6400 · Payroll - Salaries	24,905.97	23,575.00	292,400.14	282,900.00	282,900.00
6490 · Payroll Taxes & Benefits					
6500 · Benefits					
6510 · Dental Insurance	322.84		3,818.42		
6520 · Life Insurance	24.40		354.82		
6530 · LT Disability Insurance	177.98		2,130.83		
6540 · Medical Insurance	6,904.42		84,112.52		
6550 · Pension Plan	3,326.65		48,201.58		
6500 · Benefits - Other	0.00	12,333.33	0.00	148,000.00	148,000.00
Total 6500 · Benefits	10,756.29	12,333.33	138,618.17	148,000.00	148,000.00
6600 · Taxes					
6610 · FICAE	1,544.16		18,241.20		
6630 · MEDIE	361.14		4,266.10		
6640 · SUTA	46.16		552.75		
6650 · Worker's Comp	152.02		1,664.60		
6600 · Taxes - Other	0.00	2,000.00	0.00	24,000.00	24,000.00
Total 6600 · Taxes	2,103.48	2,000.00	24,724.65	24,000.00	24,000.00
Total 6490 · Payroll Taxes & Benefits	12,859.77	14,333.33	163,342.82	172,000.00	172,000.00

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Accrual Basis

Western States Water Council
Pro Forma Profit & Loss Budget Performance
June 2015

	Jun 15	Budget	Jul '14 - Jun 15	YTD Budget	Annual Budget
6700 · Pension Management	0.00	300.00	5,504.61	3,600.00	3,600.00
6750 · Postage & Freight	0.00	416.67	2,900.86	5,000.00	5,000.00
6780 · Printing & Reproduction	59.03	833.33	3,466.83	10,000.00	10,000.00
6800 · Professional Fees					
6810 · Accounting	0.00	725.00	7,975.00	8,700.00	8,700.00
Total 6800 · Professional Fees	0.00	725.00	7,975.00	8,700.00	8,700.00
6850 · Rent	2,725.74	2,958.33	35,285.88	35,500.00	35,500.00
6890 · Reports & Publications	218.40	416.67	1,422.67	5,000.00	5,000.00
7020 · Telephone	0.00	291.67	2,337.99	3,500.00	3,500.00
7040 · Travel	0.92	3,750.00	41,570.69	45,000.00	45,000.00
Total Expense	40,612.14	52,158.33	599,983.25	626,900.00	626,900.00
Net Ordinary Income	(40,212.14)	(166.66)	28,966.74	(3,000.00)	(3,000.00)
Other Income/Expense					
Other Income					
8800 · Symposium Income					
8810 · AWMS	0.00		0.00	10,000.00	10,000.00
8820 · CDWR					
8823 · 3	0.00		15,000.00		
8820 · CDWR - Other	0.00		0.00	13,000.00	13,000.00
Total 8820 · CDWR	0.00		15,000.00	13,000.00	13,000.00
8870 · WQ/WQ	0.00		0.00	5,000.00	5,000.00
8890 · Sponsors	0.00	250.00	0.00	3,000.00	3,000.00
Total 8800 · Symposium Income	0.00	250.00	15,000.00	31,000.00	31,000.00
Total Other Income	0.00	250.00	15,000.00	31,000.00	31,000.00
Other Expense					
9100 · Symposium Expenses					
9110 · AWMS	0.00		0.00	10,000.00	10,000.00
9120 · CDWR					
9121 · 1	0.00		4,330.31	13,000.00	13,000.00
9122 · 2	0.00		291.32		
9123 · 3	5,893.19		6,643.19		
Total 9120 · CDWR	5,893.19		11,264.82	13,000.00	13,000.00
9170 · WQ/WQ	0.00		0.00	5,000.00	5,000.00
Total 9100 · Symposium Expenses	5,893.19		11,264.82	28,000.00	28,000.00
Total Other Expense	5,893.19		11,264.82	28,000.00	28,000.00
Net Other Income	(5,893.19)	250.00	3,735.18	3,000.00	3,000.00
Net Income	(46,105.33)	83.34	32,701.92	0.00	0.00

W S W C Proposed FY16 Budget

		Approved Budget FY2015			Estimated Total Income / Expense		Proposed Budget FY2016	% Change from FY2015 Estimated Expenditures
INCOME								Over / -Under
Member States Assessments	1	\$ 510,000.00			\$ 510,000.00	1	\$ 510,000.00	0.00%
Newsletter		\$ 3,800.00			\$ 3,500.00		\$ 3,500.00	0.00%
WGA / WSWC Contracts		\$ 99,600.00			\$ 119,622.00		\$ -	-100.00%
Other Contracts / EN Contract	5	\$ 5,000.00			\$ 9,000.00		\$ 105,300.00	100.00%
Council Meeting Sponsors		\$ 1,500.00			\$ 7,320.00		\$ 7,000.00	-4.37%
Symposium (AWMS)	2	\$ 10,000.00			\$ -		\$ -	100.00%
Symposium (CDWR)	2	\$ 13,000.00			\$ 13,000.00	2	\$ 164,120.00	1162.46%
Symposium (NIDIS)		\$ -			\$ -		\$ -	
Symposium (WQ/WQ)	2	\$ 5,000.00			\$ -		\$ -	
Symposium (WSWC / NARF)					\$ -	2	\$ 10,000.00	100.00%
Symposium Sponsors		\$ 3,000.00			\$ -		\$ 4,000.00	100.00%
Savings Interest		\$ 4,000.00			\$ 3,207.00		\$ 3,200.00	-0.22%
Other		\$ -			\$ -		\$ -	
TOTAL INCOME		\$ 654,900.00			\$ 665,649.00		\$ 807,120.00	21.25%
EXPENSE								
Accounting		\$ 8,700.00			\$ 7,975.00		\$ 8,700.00	9.09%
Annual & Sick Leave Funding		\$ 1,500.00			\$ 1,500.00		-	#VALUE!
Audit	3	\$ -			\$ -	3	\$ 8,500.00	100.00%
Contingencies		\$ 5,400.00			\$ 4,768.00		\$ 6,200.00	30.03%
Contract Services		\$ 10,000.00			\$ 8,000.00		\$ 12,000.00	0.00%
Equipment Replacement Fund		\$ 3,000.00			\$ 3,000.00		\$ 3,000.00	0.00%
Furniture-Equipment		\$ 1,500.00			\$ 293.00		\$ 700.00	138.91%
Insurance		\$ 1,000.00			\$ 756.00		\$ 800.00	5.82%
Maintenance Contracts		\$ 7,500.00			\$ 4,877.00		\$ 5,500.00	12.77%
Meeting Expenses		\$ 22,300.00			\$ 20,212.00		\$ 25,900.00	28.14%
Office Supplies		\$ 3,500.00			\$ 1,877.00		\$ 2,500.00	33.19%
Payroll Benefits		\$ 148,000.00			\$ 136,618.00		\$ 147,750.00	8.15%
Payroll Salaries		\$ 282,900.00			\$ 292,400.00		\$ 310,500.00	6.19%
Payroll Taxes		\$ 24,000.00			\$ 24,725.00		\$ 26,200.00	5.97%
Pension Management		\$ 3,600.00			\$ 5,505.00		\$ 5,500.00	-0.09%
Postage & Freight		\$ 5,000.00			\$ 2,901.00		\$ 3,200.00	10.31%
Printing & Reproduction		\$ 10,000.00			\$ 3,467.00		\$ 5,200.00	49.99%
Rent Expense		\$ 35,500.00			\$ 35,286.00		\$ 36,700.00	4.01%
Reports & Publications		\$ 5,000.00			\$ 5,223.00		\$ 5,250.00	0.52%
Symposium (AWMS)	2	\$ 10,000.00			\$ 12,622.00		\$ -	100.00%
Symposium (CDWR)	2	\$ 13,000.00			\$ -	2	\$ 135,120.00	#DIV/0!
Symposium (WQ/WQ)	2	\$ 5,000.00			\$ -		\$ -	100.00%
Symposium (WSWC / NARF)		\$ -			\$ -	2	\$ 10,000.00	-100.00%
Telephone		\$ 3,500.00			\$ 2,338.00		\$ 2,900.00	24.04%
Travel		\$ 45,000.00			\$ 41,571.00		\$ 45,000.00	8.25%
		\$ -						
TOTALS EXPENSES		\$ 654,900.00			\$ 615,914.00		\$ 807,120.00	31.04%
NET RESERVE GAIN(LOSS)		\$ -			\$ 49,735.00		\$ -	

1 Full dues from 17 states

2 Memo entries only -- projected income equals projected expense

3 Management subcommittee approved change to biannual audit

4 Current year decision to break out

5 NOAA contract

**WESTERN STATES WATER COUNCIL
FINANCIAL PROJECTIONS**

SCENARIO	note re expense	EXPENSE	% refers to expense	DUES	% refers to dues	note re income	INCOME	% refers to income	note re reserves	Change in Designated Funds	RESERVES
2002-03	1	460,675		25,000		1	462,885		1	(21,589)	248,369
2003-04	1	487,983	5.93%	25,000		1	473,010	2.19%	1	13,333	265,353
2004-05	1	442,174	-9.39%	25,000		1	455,994	-3.60%	1	(582)	274,153
2005-06	1	465,168	5.20%	25,000		1	488,055	7.03%	1	(994)	305,376
2006-07	1	479,477	3.08%	25,000		1	485,911	-0.44%	1	(2,250)	292,018
2007-08	1	531,712	10.89%	27,500	10%	1	586,263	20.65%	1	(2,484)	289,114
2008-09	1	580,712	9.22%	30,000	9.10%	1	567,874	-3.14%	1	170	262,483
2009-10	1	553,254	-4.73%	30,000		1	611,224	7.63%	1	(51,379)	277,353
2010-11	1	540,580	-2.29%	30,000		1	579,320	-5.22%	1	(16,935)	303,437
2011-12	1	539,166	-0.26%	30,000		1	616,949	6.50%	1	(39,275)	334,277
2012-13	1	612,157	13.54%	30,000		1	687,190	11.39%	1	(35,417)	370,185
2013-14	2	649,379	6.08%	30,000		2	687,919	0.11%	2	(11,337)	395,551
2014-15	3	615,914	0.61%	30,000		3	618,866	-9.94%	3	7,417	380,554
2015-16	4	807,120	24.29%	30,000		4	648,600	-5.72%	4		237,031

- 1** Actual Income, Expenditures and Reserves
- 2** Actual expenses before auditor adjustments
- 3** Based on estimated figures for fiscal year.
- 4** Based on proposed budget

- 5** Estimated projection

Western States Water Council
Balance Sheet
As of May 31, 2015

	<u>May 31, 15</u>
ASSETS	
Current Assets	
Checking/Savings	
1000 · Cash	
1030 · Wells Fargo	59,193.38
1050 · Petty Cash	284.46
1130 · Investments Assess	443,013.73
1140 · Leave Payout Sinking Fund	132,665.36
1150 · Equip Replacement Fund	28,246.32
Total 1000 · Cash	<u>663,403.25</u>
Total Checking/Savings	663,403.25
Other Current Assets	
1300 · Prepaid Expenses	
1310 · Insurance	676.04
1320 · Postage	2,200.00
1350 · Meeting deposits	2,996.00
Total 1300 · Prepaid Expenses	<u>5,872.04</u>
Total Other Current Assets	<u>5,872.04</u>
Total Current Assets	669,275.29
Fixed Assets	
1500 · Fixed Assets	
1505 · Purchase amount	70,214.92
1510 · Accumulated Depreciation	(46,819.41)
Total 1500 · Fixed Assets	<u>23,395.51</u>
Total Fixed Assets	23,395.51
Other Assets	
1800 · Deposits	2,807.51
1900 · Amt for Compensated Absences	115,606.32
Total Other Assets	<u>118,413.83</u>
TOTAL ASSETS	<u><u>811,084.63</u></u>
LIABILITIES & EQUITY	
Liabilities	
Current Liabilities	
Accounts Payable	
2000 · Accounts Payable	3,585.24
Total Accounts Payable	3,585.24
Credit Cards	
2100 · Wells Fargo Credit Cards	
2110 · 1003 9842 / TW	2,358.98
2120 · 1004 1129 / CR	1,338.49
2130 · 1011 2268 / MB	299.94
2150 · 1010 9447 / SL	446.58
Total 2100 · Wells Fargo Credit Cards	<u>4,443.99</u>
Total Credit Cards	4,443.99

Western States Water Council
Balance Sheet
As of May 31, 2015

	<u>May 31, 15</u>
Other Current Liabilities	
2200 · Payroll Liabilities	
2220 · FICA	765.88
2230 · FICAE	766.80
2240 · FITW	1,942.00
2260 · MEDI	179.11
2270 · MEDIE	179.11
2280 · SITW	2,871.00
2290 · SUTA	146.65
2300 · 1099 Withholdings	400.00
2310 · AD&D	23.88
2330 · Dental	249.30
2340 · Disability	173.25
2350 · Life	305.52
2360 · Medical	5,866.48
2370 · Pension	3,292.54
2390 · PrePaid P/R Liabilities	(3,271.07)
2395 · Workers Comp Ins	147.02
Total 2200 · Payroll Liabilities	<u>14,037.47</u>
2400 · Pre-Billed Revenue	30,000.00
Total Other Current Liabilities	<u>44,037.47</u>
Total Current Liabilities	52,066.70
Long Term Liabilities	
2500 · Oblig for Compensated Absences	115,606.32
2520 · Current Yr Budget Offset / Comp	(3,625.32)
2550 · HRA - Willardson	3,408.39
2600 · Investment in Fixed Asset	
2605 · Current value	48,015.44
2610 · Adjust for depreciation	(46,819.41)
Total 2600 · Investment in Fixed Asset	<u>1,196.03</u>
2670 · Current Yr Budget Offset / F/A	2,750.00
Total Long Term Liabilities	<u>119,335.42</u>
Total Liabilities	171,402.12
Equity	
3900 · Retained Earnings	560,875.26
Net Income	78,807.25
Total Equity	<u>639,682.51</u>
TOTAL LIABILITIES & EQUITY	<u><u>811,084.63</u></u>

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Accrual Basis

Western States Water Council
Profit & Loss Budget Performance
May 2015

	May 15	Budget	Jul '14 - May 15	YTD Budget	Annual Budget
Ordinary Income/Expense					
Income					
4000 · Revenues					
4100 · Member States Assessments	0.00	42,500.00	495,000.00	467,500.00	510,000.00
4200 · Newsletter	0.00	316.67	3,400.00	3,483.33	3,800.00
4400 · WGA / WSWC Contracts					
4402 · WGA / DOE Grant	50,334.45		119,622.18		
4400 · WGA / WSWC Contracts - Other	0.00	8,300.00	0.00	91,300.00	99,600.00
Total 4400 · WGA / WSWC Contracts	50,334.45	8,300.00	119,622.18	91,300.00	99,600.00
4550 · Council Meeting Sponsors	1,820.55	125.00	7,320.55	1,375.00	1,500.00
4600 · Miscellaneous Income	0.00	416.67	0.00	4,583.33	5,000.00
4800 · Interest Income					
4810 · Savings	210.68		2,461.82		
4820 · Sinking Fund	62.56		605.63		
4830 · Equipment Fund	13.25		139.81		
4800 · Interest Income - Other	0.00	333.33	0.00	3,666.67	4,000.00
Total 4800 · Interest Income	286.49	333.33	3,207.26	3,666.67	4,000.00
Total 4000 · Revenues	52,441.49	51,991.67	628,549.99	571,908.33	623,900.00
Total Income	52,441.49	51,991.67	628,549.99	571,908.33	623,900.00
Expense					
6010 · Contingencies	598.05	450.00	4,764.61	4,950.00	5,400.00
6020 · Contracted Services	0.00	833.33	6,493.06	9,166.67	10,000.00
6030 · Equip Replacement Fund	250.00	250.00	2,750.00	2,750.00	3,000.00
6040 · Furniture & Equipment	137.84	125.00	292.74	1,375.00	1,500.00
6060 · Insurance	0.00		756.00	1,000.00	1,000.00
6090 · Annual & Sick Leave Funding	125.00	125.00	1,375.00	1,375.00	1,500.00
6110 · Maintenance Contracts	235.72	625.00	4,876.96	6,875.00	7,500.00
6160 · Meetings & Arrangements	(73.41)	1,858.33	20,748.36	20,441.67	22,300.00
6300 · Office Supplies	308.19	291.67	1,876.72	3,208.33	3,500.00
6400 · Payroll - Salaries	24,705.34	23,575.00	267,494.17	259,325.00	282,900.00
6490 · Payroll Taxes & Benefits					
6500 · Benefits					
6510 · Dental Insurance	236.84		3,495.58		
6520 · Life Insurance	24.40		330.42		
6530 · LT Disability Insurance	172.00		1,952.85		
6540 · Medical Insurance	5,681.06		77,208.10		
6550 · Pension Plan	3,292.54		44,874.93		
6500 · Benefits - Other	0.00	12,333.33	0.00	135,666.67	148,000.00
Total 6500 · Benefits	9,406.84	12,333.33	127,861.88	135,666.67	148,000.00
6600 · Taxes					
6610 · FICA	1,531.74		16,697.04		
6630 · MEDIE	358.24		3,904.96		
6640 · SUTA	49.12		506.59		
6650 · Worker's Comp	151.14		1,512.58		
6600 · Taxes - Other	0.00	2,000.00	0.00	22,000.00	24,000.00
Total 6600 · Taxes	2,090.24	2,000.00	22,621.17	22,000.00	24,000.00
Total 6490 · Payroll Taxes & Benefits	11,497.08	14,333.33	150,483.05	157,666.67	172,000.00

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Accrual Basis

Western States Water Council
Profit & Loss Budget Performance
May 2015

	May 15	Budget	Jul '14 - May 15	YTD Budget	Annual Budget
6700 · Pension Management	0.00	300.00	5,504.61	3,300.00	3,600.00
6750 · Postage & Freight	38.72	416.67	2,900.86	4,583.33	5,000.00
6780 · Printing & Reproduction	1,142.17	833.33	3,407.80	9,166.67	10,000.00
6800 · Professional Fees					
6810 · Accounting	725.00	725.00	7,975.00	7,975.00	8,700.00
Total 6800 · Professional Fees	725.00	725.00	7,975.00	7,975.00	8,700.00
6850 · Rent	2,961.74	2,958.33	32,560.14	32,541.67	35,500.00
6890 · Reports & Publications	76.49	416.67	1,204.27	4,583.33	5,000.00
7020 · Telephone	468.78	291.67	2,337.99	3,208.33	3,500.00
7040 · Travel	2,080.12	3,750.00	41,569.77	41,250.00	45,000.00
Total Expense	45,276.83	52,158.33	559,371.11	574,741.67	626,900.00
Net Ordinary Income	7,164.66	(166.66)	69,178.88	(2,833.34)	(3,000.00)
Other Income/Expense					
Other Income					
8800 · Symposium Income					
8810 · AWMS	0.00		0.00	10,000.00	10,000.00
8820 · CDWR					
8823 · 3	0.00		15,000.00		
8820 · CDWR - Other	0.00		0.00	13,000.00	13,000.00
Total 8820 · CDWR	0.00		15,000.00	13,000.00	13,000.00
8870 · WQ/WQ	0.00		0.00	5,000.00	5,000.00
8890 · Sponsors	0.00	250.00	0.00	2,750.00	3,000.00
Total 8800 · Symposium Income	0.00	250.00	15,000.00	30,750.00	31,000.00
Total Other Income	0.00	250.00	15,000.00	30,750.00	31,000.00
Other Expense					
9100 · Symposium Expenses					
9110 · AWMS	0.00		0.00	10,000.00	10,000.00
9120 · CDWR					
9121 · 1	0.00		4,330.31	13,000.00	13,000.00
9122 · 2	0.00		291.32		
9123 · 3	356.50		750.00		
Total 9120 · CDWR	356.50		5,371.63	13,000.00	13,000.00
9170 · WQ/WQ	0.00		0.00	5,000.00	5,000.00
Total 9100 · Symposium Expenses	356.50		5,371.63	28,000.00	28,000.00
Total Other Expense	356.50		5,371.63	28,000.00	28,000.00
Net Other Income	(356.50)	250.00	9,628.37	2,750.00	3,000.00
Net Income	6,808.16	83.34	78,807.25	(83.34)	0.00

Tab E – USGS Groundwater and
Streamflow Information Program



Groundwater and Streamflow Information Program

Science to Address Societal Needs

The Groundwater and Streamflow Information Program serves as the national source of impartial, timely, rigorous, and relevant data for short- and long-term water decisions by local, State, Tribal, regional, and national stakeholders.

Hydrologic information is provided in real time and over the long-term to help minimize loss of life and property from water hazards and to protect, manage, and sustain water that is safe and available for drinking and for other competing water demands, including irrigation, energy, industry, recreation, and healthy ecosystems.

Specifically, short-term water decisions are related to flood forecasting, emergency response, reservoir releases, water-use restrictions, drinking water supplies, and recreation.

Long-term decisions are related to water-supply planning, infrastructure design, water quality protection and enhancement, floodplain and ecosystem management, energy development, resolving interstate, international, and tribal water disputes, and aquifer storage and recovery.

Groundwater provides drinking water to urban and rural communities, supports irrigation and industry, sustains the flow of streams and rivers, and maintains riparian and wetland ecosystems; groundwater data are increasingly important for tracking drought and groundwater depletion from overuse.



The USGS has responsibility within the Federal Government for collecting and disseminating accurate and unbiased information about flow in the Nation's rivers and streams. Streamflow data are used for a multitude of purposes, including to protect life and property, manage water supplies, and to plan recreational activities.



Partners

Partners include all DOI Bureaus, other Federal agencies (in particular DoD, DHS, EPA, FAA, FEMA, NASA, NIH, NOAA, NSF, NIST, USDA, DOE, DOC, DOS), State agencies (including geological surveys, departments of natural resources and environment, health agencies, and emergency management services), Tribes, universities, colleges, public schools, community and professional organizations and associations, private industry, public utilities, local governments, and the public.

Contact:

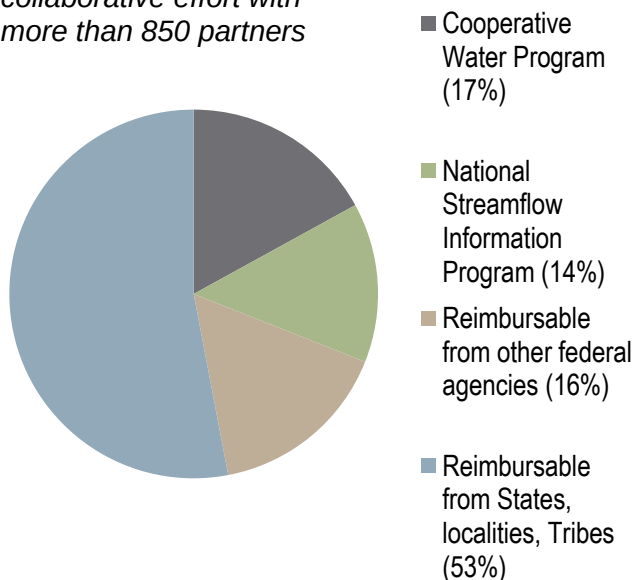
Pixie A. Hamilton
(804) -261-2602

pahamilt@usgs.gov

Program Details

Beginning in Fiscal Year 2016, this program will consolidate current activities related to USGS streamgaging, groundwater level monitoring (including the National Groundwater Monitoring Network), super gages, flood inundation mapping, and rapid deployment of mobile streamgages in flood-threatened communities during extreme events. It incorporates groundwater and streamflow monitoring activities of the Cooperative Water Program, the National Streamflow Information Program, Groundwater Resources Program, and some smaller elements of the Hydrologic Networks and Analysis and Hydrologic Research and Development Programs.

National Streamflow Network Funding – A collaborative effort with more than 850 partners



Vital components of the Groundwater and Streamflow Information program include—

- ✓ A unified national streamgaging network of about 8,130 real-time streamgages
- ✓ A growing network of interdisciplinary “Super Gages”
- ✓ Groundwater level networks, including the collaborative National Groundwater Monitoring Network (NGWMN)

- ✓ Development and application of hazard information and tools to minimize loss of life and property (flood inundation maps; time of travel; rapidly deployable gages)
- ✓ Research, development, and application of innovative techniques and technical oversight for cost-effective monitoring and record extension
- ✓ Management and development of instrumentation through the Hydrologic Instrumentation Facility
- ✓ Information management and delivery of hydrologic data

Recent Program Accomplishments

- Enhanced the stability of the USGS streamgaging network by fully funding 976 streamgages with Federal funds, which added an additional 180 fully funded USGS streamgages relative to 2013; supported monitoring at more than 8,100 streamgages and at more than 10,000 wells in collaboration with more than 850 partners.
- Began implementation of the National Groundwater Monitoring Network, which includes distribution of support through State cooperative agreements.
- Invested funds in (1) new, updated software (referred to as AQUARIUS Software for time series processing) used to analyze and manage streamflow data that remain reliable, reproducible, readily accessible, cost-effective, and of a high quality over the full range of hydrologic conditions; (2) web portals with increased access to nationwide and interdisciplinary information; and (3) applications for immediate delivery of observations on mobile devices.
- In cooperation with the Water Census instituted a national analysis of surface water records to examine the magnitude, frequency, and duration of drought occurrence in 21 major watersheds and provide a foundation for prediction of future drought occurrence. Findings will be released in 2015.

Tab F – USGS National Water Census

From: **Jones, Sonya** <sajones@usgs.gov>

Date: Wed, Jun 24, 2015 at 3:32 PM

Subject: Guidance for USGS State Water Use Financial Assistance (Grants)

To:

State Water Resource Agencies, Water Science Center Directors and Water Use Specialists:

The USGS received an appropriation in FY2015 to begin working with States to improve water use data collection, estimation, and reporting. Public Law 111-11 (SECURE Water Act) authorized the USGS to provide financial assistance to State water resource agencies to assist with the development and/or integration of water use datasets into databases developed or maintained by the USGS.

In an effort to provide additional information to USGS WSCs and our State partners about this new opportunity we have attached a financial assistance guidance document for the USGS State Water Use Data and Research (WUDR) Cooperative Agreements. This document provides details about both 2015 and 2016 technical and program requirements. The WUDR program will be carried out in close collaboration with the USGS National Water Use Leadership Team (NWULT), and USGS Water Science Center (WSC) Water Use Specialists (WUS), who will serve as a technical resource during categorical water use data collection and methods development activities. State recipients will be responsible for all data collection, methods development, and data management activities.

The NWULT has worked with USGS WUS to develop a contact list of the primary water use partner for each WSC, the USGS Office of Acquisitions and Grants (OAG) has received documentation for all 50 states, and the US Caribbean, for FY15 awards (\$26,000 each). OAG will reach out to the State contacts with instructions on how to apply for the FY15 awards. With these funds States will be asked to develop workplans outlining priorities for their use of funds and how USGS personnel will be an active partner with the States as they develop their plans. Beginning in FY16, program funds will be announced and awarded as part of a competitive process guided by a technical committee whose members will include representatives from the stakeholder community as well as USGS. We are in the process of completing approvals for the Paperwork Reduction Act and Program Announcements; our goal is to have the first competitive announcement published on Grants.gov in December 2015 with awards made in June 2016.

This fall the Interstate Council on Water Policy (ICWP), will hold a series of three Stakeholder meetings (in the Salt Lake City, UT, Chicago, IL, and Tuscaloosa, AL) to further develop the technical priorities of the WUDR Cooperative Agreements. The plans for these meetings are still in development and as they are finalized I will reach out to you all with more details.

We encourage State agency personnel and USGS Water Science Center personnel to begin communicating about the opportunities this funding provides, if you have any questions or would like any further information please feel free to contact me at your convenience.

Thank you,
Sonya Jones



Water Use Data and Research Financial Assistance Guidance

Background

Water managers across the United States require more complete, timely, and accurate water-availability information to support policy and decision-making, specifically, data associated with water withdrawals and consumptive use that are used to establish local and regional water budgets. State water resource agencies are the primary authorities responsible for regulating and collecting data on water supplies, allocations and rights. The U.S. Geological Survey (USGS), through its National Water Use Information program (NWUIP), is the only Federal agency that explicitly collects water-use data as a part of its mission. The NWUIP works with State, local, and Federal partners to consolidate dozens of disparate data sets to create comprehensive reports of water use in the United States every five years. Because of differences in methodology and data quality, USGS water-use compilations require significant effort to standardize (to the extent possible) such data between States. The NWUIP products form the basis of the water-use component of the National Water Census as called for by the SECURE Water Act (Section 9508, Public Law 111–11).

Recognizing the limitations of current water-use data, the SECURE Water Act authorized a program that supports activities related to data collection, methods research and development at the State level. The USGS Water Use Data and Research program will provide financial assistance, through cooperative agreements with State water resource agencies, to improve the availability, quality, compatibility and delivery of water-use data that is collected and/or estimated by States. The Act requires that these State water use and availability datasets be integrated with appropriate datasets that are developed and/or maintained by the USGS.

The total authorized funding for the Water Use Data and Research program is \$12.5 million over a period of five years. The maximum funding available in Federal fiscal year (FY) 2015 is \$1.352 million, the maximum funding available in FY 2016 will be \$1.5 million, depending upon Congressional approval. Funds will be coordinated with a single agency in each State; however, it is highly recommended that agencies within each State work together to address and improve water-use data. In addition, collaboration and coordination with USGS personnel, at both the Regional and Water Science Center levels, will be required as part of the program to ensure all program related activities are meeting technical requirements. In FY 2015, funds will be awarded non-competitively to all 50 States, the District of Columbia, and the U.S. Caribbean Territories, with each receiving \$26,000 to develop a workplan outlining individual State water-use data improvement priorities, and with the ultimate goal of States providing to the USGS withdrawal data and ancillary information for each major category of water use according to USGS baseline standards. These workplans will provide the basis for future grant awards through a competitive

process. **Workplans will be reviewed and approved by the USGS Water Use Data and Research program technical committee. In order to receive awards as part of the competitive process beginning in Federal FY 2016, pending funding appropriations from Congress, States must submit a completed workplan.**

The USGS, in collaboration with the Interstate Council on Water Policy (ICWP), will work with States to develop and implement this program. The ICWP will host three stakeholder meetings in 2015, to gather State partner input that will allow the USGS to begin planning for the competitive process, which will begin in FY 2016.

Baseline Standards

The USGS has identified baseline goals, and additional levels of data, for all major categories of water use (see table below), most of which have been estimated by the USGS and published every 5 years since 1985. These guidelines are provided to assist State water-resource agencies in determining areas in which to focus proposed work. States that currently meet the baseline standards outlined in Tier 1, for a specific water-use category, would focus on Tier 2 and Tier 3. States are not required to meet the baseline goals (Tier 1) in all categories before addressing Tier 2 and Tier 3 data needs. Data collected and studies conducted in Tiers 1, 2, and 3 should be designed to benefit both local and national estimates and provide information for water availability studies by water managers, academia, federal, and or local agencies. The definitions of basic water-use terms and categories as used by USGS can be found in USGS Circular 1405 (<http://pubs.usgs.gov/circ/1405/>).

In addition to the standards listed in the table, baseline goals (Tier 1) for most categories of water use include:

1. Facility or system withdrawals for the following categories: Public Supply, Self-supplied Industrial, Irrigation-Crop, Thermoelectric, Irrigation-Golf Course, Livestock (major facilities), Mining, and Aquaculture.
2. Withdrawals, deliveries or returns by water source – groundwater, surface water, reclaimed wastewater, wastewater effluent, and/or recycled water. For groundwater sources the aquifer should be identified.
3. Withdrawals by water type – fresh or saline

Category	BASELINE GOALS (Tier 1)	Tier 2	Tier 3
Public Supply	Monthly withdrawals reported by system, water source, and water type. Deliveries to domestic users from public-supply systems, and populations served.	Site-specific annual and monthly withdrawals (by intake, well, or well field) reported by water source, and by water type. Quantity of water purchased between systems, and source(s) of	Interbasin transfers. System uses (internal and other non-revenue uses) and losses. Improve estimates of populations served by site (for example, by surface-water intake, well or well field).

	Report system information relevant to HUC-8 and county, and groundwater withdrawals with aquifer designation.	purchased water. Quantity of water sold between systems. Reporting and/or verification of water deliveries for domestic, commercial, industrial, thermoelectric and other use.	Use of reclaimed wastewater for public or landscape irrigation.
Industrial	Annual withdrawals by facility, reported by water source, by water type, and industry classification. Groundwater withdrawals reported with reference to aquifer.	Site-specific (by intake and/or well) annual and monthly withdrawals reported by water source, by water type, and industry classification. Deliveries from public supply to industrial facility, and deliveries from other sources, such as treated wastewater.	Site-specific consumptive use estimates. Site-specific discharges to surface water, or land application.
Irrigation- Crop	Aggregate annual withdrawals reported by water source, by water type, acres irrigated, and method of irrigation. Aggregate areas may be sub-county levels, but are feasible to summarize to county or HUC8.	Site-specific monthly withdrawals by well and/or diversion from surface-water feature, or delivery from reclaimed wastewater. Monthly withdrawals reported by water source, water type, with associated acres irrigated and crop type, and method of irrigation system.	Consumptive use and conveyance loss estimates by aggregate area (sub-county, county, HUC8, or up to HUC12. Site-specific return flows.
Thermoelectric	Site-specific, annual and monthly withdrawals, and net power generation reported by cooling-system type (once-through or recirculating), by water source and by water type, and the source of the information (plant, govt. agency, etc.). Site-specific return flows.	Site-specific annual and monthly consumptive use.	

Self-Supplied Domestic	Self-supplied domestic populations, by HUC8 and county, and by water source.	Studies of actual metered domestic withdrawals, monthly by source. Improve estimates of self-supplied populations by utilizing property data and/or public water supply service areas, or other methods.	
Irrigation – Golf Courses	Site-specific annual and monthly withdrawals reported by water source, by water type, and acres irrigated. Groundwater withdrawals designated by aquifer.	Consumptive use estimates, by course, reported by month or annual. Acres irrigated by system type, by course.	
Livestock	Annual withdrawals for major facilities, reported by water source and by water type.	Site-specific annual and monthly withdrawals for all facilities reported by source of water, and by water type. Site-specific animal counts and animal type.	Improved and verified coefficients for water use per head for animal type, confined or open-range, seasonal variability, and other variables. Water withdrawals from sources supported by USDA programs to protect streams.
Mining	Annual withdrawals reported by HUC-8 and county, by source of water, and by water type.	Site-specific annual and monthly withdrawals. Site-specific commodity identified.	Evaluation/reporting on water use by process (commodity processing, dewatering, dust suppression, etc.). Reporting on return flows/discharge of water from dewatering.
Aquaculture	Annual withdrawals reported by HUC-8 and county, by source of water, and by water type.	Site-specific annual and monthly withdrawals. Site-specific facility information (method, species cultured, etc.)	
Commercial	Annual and monthly deliveries from public supply for commercial use.	Site-specific annual and monthly withdrawals for self-supplied establishments.	
Hydroelectric	Site-specific, annual		

Power	and monthly water use (water use to spin turbines) by water source and water type, and the source of the information (plant, govt. agency, etc.).		
Wastewater Treatment	Annual and monthly deliveries from wastewater treatment plants to other users. Specify category delivered to (i.e. industrial, thermoelectric, irrigation, etc.)		

Additional Requirements:

Data that are collected and/or estimated with program funds are subject to the following requirements:

1. All data must be stored in an electronic format.
2. A description of methods used to estimate values, coefficients, and/or other data must be provided.
3. A description of data quality assurance and control procedures must be provided.
4. Non-sensitive data, that is available for export or download from the state agency database, must be accessible to the USGS
5. The data must be made available to the USGS at the HUC8, county level, and aquifer (for groundwater sources).
6. Interaction with USGS Water Science Center personnel is required.

Beginning in the Federal FY 2016, Water Use Data and Research program funds will be announced and awarded as part of a competitive process that will be guided, annually, by a technical committee whose members will include representatives from the stakeholder community as well as USGS. Water Use Data and Research funds will be coordinated with a single agency in each State; however, it is highly recommended that agencies collaborate within States as part of the program.

Collaboration and coordination with USGS personnel, at both the Regional and Water Science Center levels, will be required to ensure data and research activities are meeting technical requirements. All data must be stored electronically and made available in formats appropriate for existing USGS databases. Additionally, methods used for data collection (estimated values, coefficients, etc.) and a description of data quality assurance and control will be required.

Application for FY 2015 Funds

The USGS Water Use Data and Research program will allocate funds equally among all partners for the development of workplans that will outline State water-use data and research priorities.

Application Submission Closing Date – July 30, 2015, 6:00 pm Eastern Daylight Time

Electronic Application Requirement – the USGS Office of Acquisitions and Grants will notify the main point of contact (identified in collaboration with Water Science Center personnel) when funds are available for allocation. This notification will include instructions for applying for FY 2015 awards.

Funds and Start Dates

A maximum of \$1.352 million will be available for support of cooperative agreements in FY 2015.

A maximum of \$1.5 million will be available in FY 2016, subject to the availability of funds through the Congressional approval.

Research Priorities for Competitively Awarded Funds

Beginning in FY 2016, and in subsequent years, program funds will be awarded through a competitive process. Annual Program Announcements will outline research priorities, which will be developed in collaboration with State partners. The research priorities identified below reflect the priorities outlined by the USGS National Water Use Information Program; to ensure this list is comprehensive, the USGS has contracted with the ICWP to host a series of Stakeholder Meetings which will be held between August 1, 2015, and November 1, 2015. Meeting locations will be in Salt Lake City, UT, Chicago, IL, and Tuscaloosa, AL. These meetings facilitate further discussions of these guidelines and other water-use related research priorities with State partners, with the goal of developing and outlining the data collection and research activities that will be used to guide the competitive process.

USGS Identified Research Priorities

- HUC 8 water-use reporting
- Water-tracking and Interbasin transfer (between HUC 8 units)
- System uses (internal and other non-revenue uses) and losses from public supply systems
- Irrigation: sources and volumes (including golf courses)
- Inventory of self-supplied industrial
- Mining: withdrawals with source and commodity identified
- Improvement of the domestic per capita coefficients
- Groundwater use: Identifying aquifer and HUC of withdrawal, and further refining the definition of saline/brackish water
- Estimation of public supply deliveries to customer groups or classes, such as commercial, industrial, and domestic
- Public supply systems stratified by socioeconomic factors
- Improved data collection and delivery

Involvement of Federal Employees

Federal employees, including USGS employees, are prohibited from serving as an investigator on any application submitted under this program. This does not prohibit cooperation or collaboration between USGS and non-USGS scientists; in fact, this program will be carried out with close collaboration between USGS researchers and State agencies; however, funds from the USGS Cooperative Water Program cannot be used to match funding from this program through a joint funding agreement (JFA). State agencies are integral to data collection, methods development, and data management activities, working with local cooperators and other federal agencies to facilitate project development and data acquisition and management. The USGS will manage and develop all the technical requirements and guidance associated with this program. Together the USGS and State collaborators will refine existing water-use databases, develop new techniques for estimating water use, and establish data management policies for sharing of water-use data that adhere to baseline standards previously developed by the USGS for water-use categories nationally. Data and information collected as part of this program must be stored electronically in existing USGS databases, but may be disseminated via a variety of means, including State series reports, graduate student theses, USGS series reports, and scientific publications that are jointly authored by USGS and their state partners.

Questions?

For Water Use Data and Research program management and/or support issues, please contact Melinda Dalton, (678) 924-6637, msdalton@usgs.gov

For Water Use Data and Research program technical questions and/or issues, please contact your USGS Regional Water Use Specialist:

Western Region (Alaska, Arizona, California, Idaho, Hawaii, Nevada, Oregon, Utah, Washington) – Molly Maupin, 208-387-1307, mamaupin@usgs.gov

Northeast Region (Connecticut, Delaware, District of Columbia, Illinois, Indiana, Kentucky, Maine, Maryland, Massachusetts, Michigan, New Hampshire, New Jersey, New York, Ohio, Pennsylvania, Rhode Island, Vermont, Virginia, West Virginia, Wisconsin) – Cheryl Dieter, 443-498-5537, cadieter@usgs.gov

Central Region (Arkansas, Colorado, Iowa, Kansas, Louisiana, Minnesota, Missouri, Montana, Nebraska, New Mexico, North Dakota, Oklahoma, South Dakota, and Texas, Wyoming) – Tammy Ivahnenko, 719-544-7155 x110, ivahnenk@usgs.gov

Southeast Region (Alabama, Florida, Georgia, Mississippi, North Carolina, US Caribbean Territories, South Carolina, Tennessee) – Melissa Harris, 615-837-4792, mharris@usgs.gov

Tab G – Water Data Exchange (WaDE) Progress Report

Summer Council Meeting - WaDE Progress Report

April 1, 2015 – June 30, 2015

The Western States Water Council (WSWC) has initiated a project to work with its member states to establish a framework that will allow for real-time access to state water allocation, availability, use, and planning data through a common portal. The project is referred to as the Water Data Exchange or WaDE Project.

WaDE Component Development: WaDE databases and code are largely finalized for the v0.2 deployments, but optimization of the tables and the general performance of the WaDE database has continued. This work is to increase the speed with which a query can be returned from RedHat's OpenShift cloud platform for larger datasets. This platform remains a good option for states who wish to share smaller "summary-level" datasets, or site-specific tables that have fewer than 100K records. Unfortunately, larger datasets tested during the first quarter of the year show a significant lag in performance, and retrieval speeds are unacceptably slow.

There are alternative hosting solutions for states with larger datasets. These include hosting the WaDE application locally, or hosting on a WSWC server that is purchased specifically for WaDE applications. Another alternative proposed by California's Department of Water Resources (CDWR) is to investigate the San Diego Supercomputing Center in California. The WaDE Program Manager and CDWR staff members are investigating this venue as a non-profit option for hosting and processing "big data." For more information, please review the FY2015 Exchange Network grant details (see EN Grants section below). These deployment scenarios are depicted graphically in technical diagrams under Tab G of member briefing books.

State Deployments: Utah and Wyoming are continuing to map and publish more of their data in WaDE. Colorado data-mapping is nearing completion, though a QA/QC process with Colorado's SEO office remains before the WaDE Beta Portal can be released for the public. Idaho, Oklahoma, Oregon, and Nebraska have begun the deployment process (e.g., data schema review, database/code install, or data-mapping steps). It is proposed that California, South Dakota, and Nevada will begin their WaDE deployment work as soon as their grant funding is confirmed. Other states have indicated that they would like to start soon as well.

WGA Final Report: WSWC staff worked with WGA to incorporate edits suggested by the Council and WGA at the 2015 Spring Meetings in Tulsa, OK. A final draft was accepted by WGA in May. The executive summary for this report is included in members' briefing book. The full report can be found at: <http://www.westernstateswater.org/publications/>.

Exchange Network Grant Partnerships: In 2012, WSWC coordinated a five-state application to the National Environmental Information Exchange Network (NEIEN) program, commonly referred to as the Exchange Network (EN) for funding to deploy the WaDE system. Texas (the grant lead state), Oklahoma, Idaho, Oregon, and Washington - the five state partners - have either begun the WaDE deployment process, or are completing contract agreements with the Texas Commission on Environmental Quality

(TCEQ) to allow them to be reimbursed for WaDE-related work as it is completed. The FY2013 EN-WaDE Grant partner's steering committee hold monthly conference calls/webinars to update the group, and evaluate progress toward the state's finishing the WaDE deployment steps. An account of the group's progress can be found here: <http://www.westernstateswater.org/wade/fy2013-en-grant/>. WSWC has completed their contract with TCEQ that allows them to request reimbursement for WaDE tasks, and has transitioned to this grant as its primary funding source.

In Fall of 2014, WSWC coordinated another EN grant application for funding in FY2015 with three states: California, South Dakota, and Nevada, with California's CDWR as the lead agency. This grant would provide the partners with funds for data development and WaDE deployment, and would also provide funding for WSWC to continue to coordinate the WaDE program for an additional year. WSWC and these partners received a "tentative award" notification that their application was accepted and fully funded in June. The grant application materials are currently under review with the EPA's Office of Grants and Debarment for final review. The FY2015 funds, if awarded, will be used to help migrate portions of California, South Dakota, and Nevada's data into the WaDE application.

Outreach and Collaboration: Outreach visits to the states have largely been concluded, with the exception of possible visits with the water agency staff in South Dakota, North Dakota, and Alaska, which may benefit from an in-person briefing on the WaDE program. There are a number of states that are beginning the WaDE deployment and data-mapping phase that might also benefit from an on-site visit to "jumpstart" their efforts. Please contact Sara Larsen, WaDE Program Manager at saralarsen@wswc.utah.gov, if your state agency needs a WaDE briefing meeting or a "jumpstart" on WaDE deployment.

Other related outreach efforts over this reporting period include increased participation in regional and national efforts to support "open data." One of the stated goals of the WaDE program is to encourage federal agencies to adopt standardized formats for sharing their data and then publishing these using web services. The U.S. Geological Survey (USGS) has been a leader on data dissemination with the publication of web services from the NWIS site. Other federal agencies have noted the increased access to data that web services in NWIS have provided and are beginning to discuss how to implement similar data-sharing programs for their water-related data. These initially fragmented discussions among the federal family coalesced during an Advisory Committee for Water Information (ACWI) meeting in June of 2014, and led to the formation of the Open Water Data Initiative (OWDI).

The group primarily responsible for stewarding the OWDI is the Subcommittee on Spatial Water Data (SSWD), commissioned under ACWI and the Federal Geographic Data Committee (FGDC) (<http://acwi.gov/spatial/>). WSWC envisions that WaDE will be an integral part of the OWDI infrastructure, as it will be providing authoritative water supply, availability, and use data from state water agencies in the West. WSWC is participating in SSWD conference calls, and a "use case" that is focused on drought/water supply in the West. The WaDE Program Manager is coordinating a workgroup that is geared toward discovery of water use related datasets, and is also coordinating efforts to address data integration and data quality reporting by heterogeneous and non-federal data suppliers (see JAWRA discussion below).

The OWDI Water Use Data workgroup is working to categorize and characterize water use datasets that are available nationally, regionally, and locally. They are determining publication dates and publication frequency, as well as dataset availability in “openly published” formats. To date, the workgroup has categorized and characterized over thirty major available sources for water use data at varying scales and at varying levels of maturity, and is working with USGS to provide these datasets and their metadata in an interface that allows for ease of discovery (<https://www.sciencebase.gov/catalog/>). The workgroup has also discussed the possibility of re-issuing the water use segment of the WSWC’s State Capabilities Survey at several stakeholder meetings conducted by the Interstate Council on Water Policy (ICWP) in Fall of 2015. If incorporated into the stakeholder meeting agenda, the survey would allow for a comprehensive national inventory of water use datasets curated by state agencies that reflect the original questions and approach of the broader survey WSWC issued in 2012. Having a broader understanding of the status of water use datasets around the country will help inform efforts to partner on USGS’ new Water Use Data and Research Financial Assistance Program (WUDR – see below).

Regarding data integration, the OWDI will provide a fully-scalable platform with the ability to support a wide variety of data from many providers. Most providers in OWDI will be larger, well-established agencies that have a history of providing well-documented, standardized, and archive-ready products. However, some potential partners may be smaller, distributed, and relatively unknown or untested as openly published data providers. The data these partners will provide are valuable and will fill in many data gaps, but may be variable in quality or supplied in non-standardized formats. They may also reflect the smaller partners’ variable budgets and missions, be intermittent, or of unknown provenance. A challenge for the OWDI will be to communicate the quality and the contextual “fitness” of data from providers other than the most well-established brands.

WSWC staff have been very involved in discussing standards and requirements that may be required of heterogeneous data partners to maintain the integrity of OWDI as a data source, while also encouraging participation. To generate discussion and to make some preliminary recommendations, the WaDE Program Manager coordinated a “special topics” journal article submission to the Journal of the American Water Resources Association (JAWRA) on water data quality and reporting, along with co-authors from the Environmental Protection Agency (EPA), USGS, and Aquatic Informatics. This manuscript is now under review with JAWRA editors.

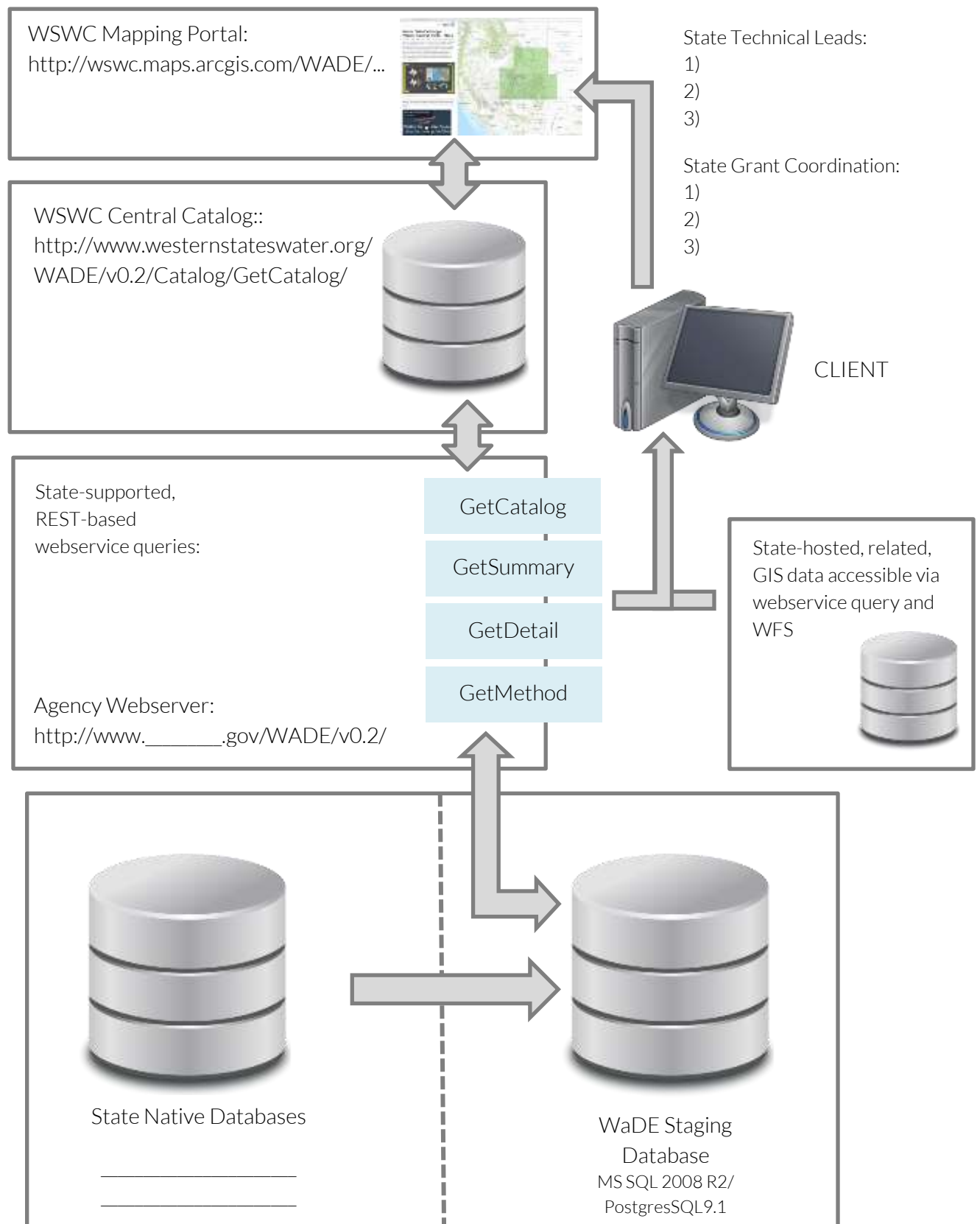
WSWC staff continue to assist with other federal program reviews as needed. To continue the work begun in Q1 with the National Water Use Information Program 10-Year Strategy Team, WSWC staff have reviewed and provided comments on the related USGS briefing materials. They have also attended informational meetings to review the proposed approach and venues for the newly appropriated WaterSmart grants that will be distributed to and solicited from the states for water use data development, and how that program may be organized for maximum benefit for the states and for the NWUIP program. Further information on the current status of the program will be discussed at the WSWC 2015 Summer Meetings during the Water Resources Committee meeting. WSWC staff are investigating the possibility of developing partnerships within its member states to apply specifically for water use data development programs, after the initial scoping funding amounts for FY2015 are utilized.

Lastly, the WaDE Program Manager was invited to speak at the USGS Congressional Briefing Series about their involvement and collaboration on the OWDI effort (<http://www.usgs.gov/solutions/>). This event is scheduled later in July and is meant to highlight various programs and initiatives for congress members, their staff, and the press. Tony Willardson, WSWC Executive Director, has been an invited speaker for this series in 2014 and in 2010, where he spoke about the importance of streamgage funding and the Landsat program, respectively.

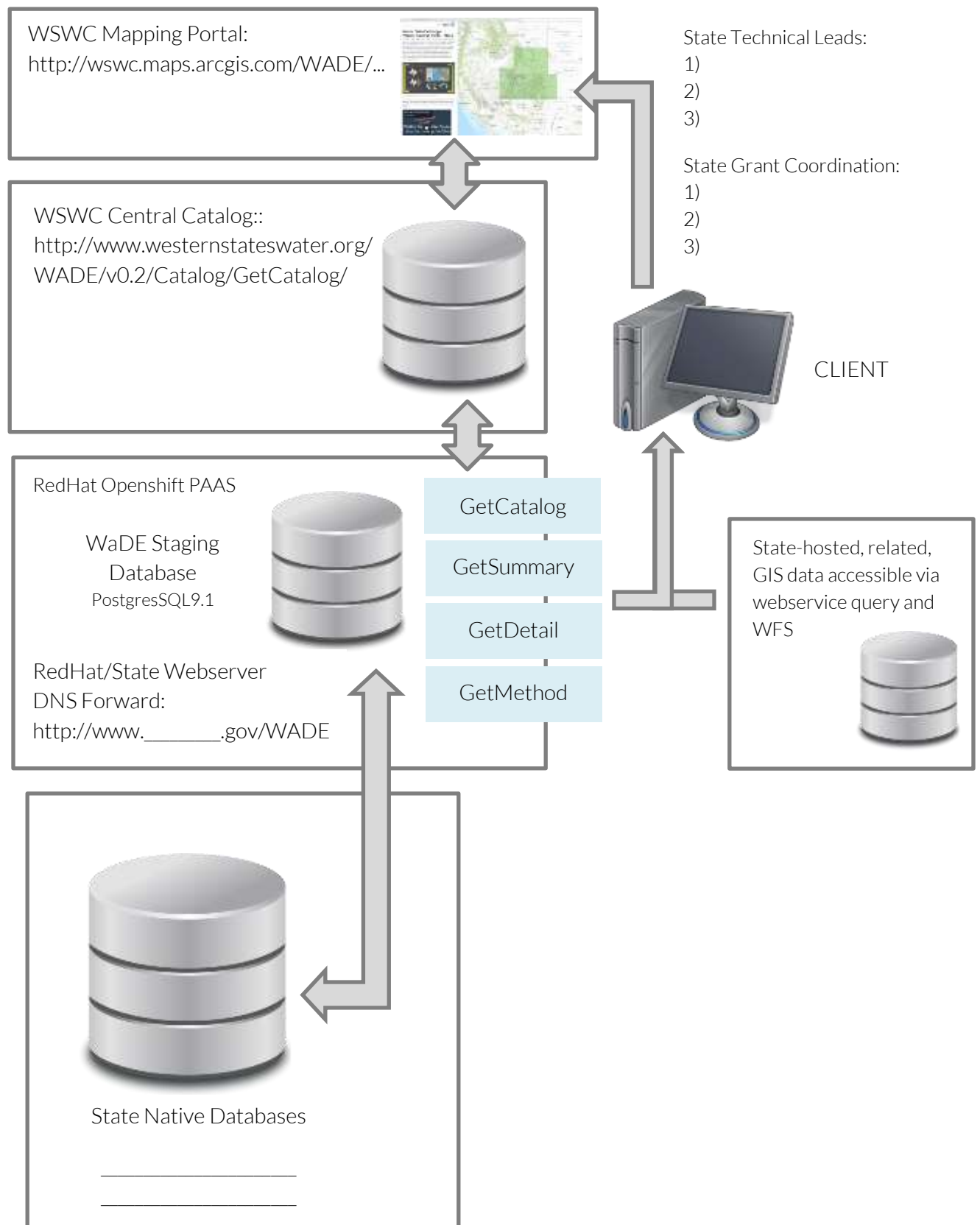
Other Related Activities: The WaDE Program Manager is working with WSWC's Legal Counsel to develop a mapping application for finding documentation related to federal, non-tribal reserve water rights. This will entail populating a database with document metadata and building a mapping application to interface with the database. The tentative release date for an initial prototype is Fall of 2015.

There are many other IT-related tasks that are performed at the WSWC offices. WSWC recently upgraded their server operating systems to Apple's Yosemite operating system, and updated their OSX server software to match. The WSWC website was recently upgraded for improved security and for back up reliability.

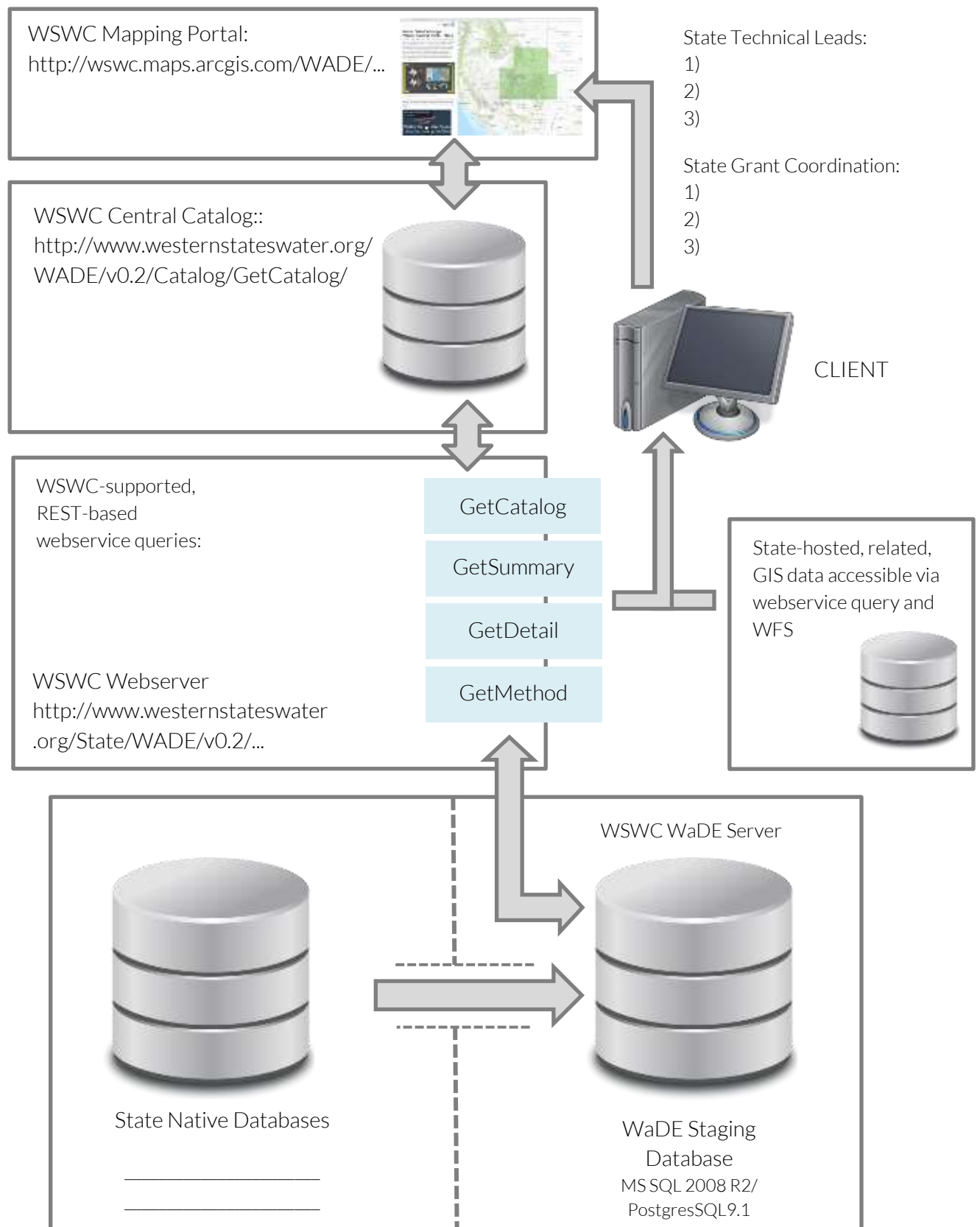
“On Premises” WaDE Deployment – STATE:

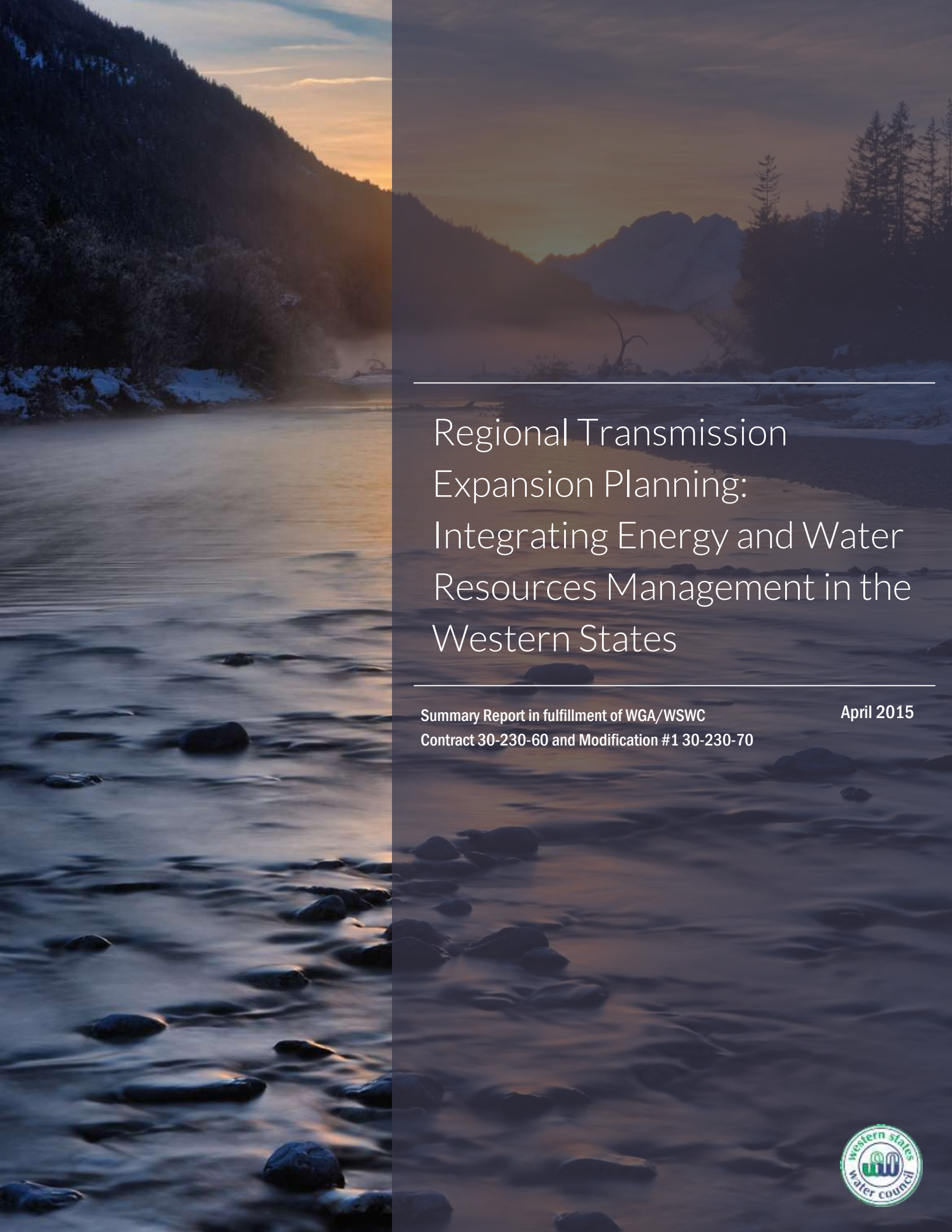


“RedHat” WaDE Deployment – STATE:



“WSWC-Hosted” WaDE Deployment – STATE:





Regional Transmission Expansion Planning: Integrating Energy and Water Resources Management in the Western States

Summary Report in fulfillment of WGA/WSWC
Contract 30-230-60 and Modification #1 30-230-70

April 2015





WESTERN STATES WATER
COUNCIL

5296 Commerce Drive, Suite 202

Murray, UT 84107

Phone: (801)685 - 2555

www.westernstateswater.org

Tony Willardson

Executive Director

twillardson@swsc.utah.gov

Nathan Bracken

Asst. Director & Legal Counsel

nbracken@swsc.utah.gov

Sara G. Larsen

WaDE Program Manager

saralarsen@swsc.utah.gov

Photo Credit - Pg. 5: P. Tyrrell
Boulder Lake Drainage, Wyoming

Executive Summary

In the West, water is a scarce resource, subject to increasing demands from growing uses. Water defines the quality of our lives and our environment. It can also circumscribe economic opportunities, including the development of our energy resources. There is no substitute for water. In comparison, western energy resources are abundant and diverse, and play a critical role in meeting the nation's needs for fuel and electricity. Increasing demands for new uses related to energy extraction, production, and transmission has and will have impacts on existing users and uses, including the environment. Many western rivers and aquifers are already fully appropriated, meaning there are more rights recognized to the use of water than the available supply. New energy development will have to compete with existing uses with prior rights such as irrigated agriculture, as well as growing municipal and industrial uses, and environmental demands.

Scarcity has led to the development of an appropriative system of rights to the use of water that provides economic and social stability and reduces conflicts. It recognizes a senior right to the first use to which water is put. This "first-in-time-first-in-right" principle has been criticized, but it provides certainty and a reasonably efficient market in water rights, that may allow energy companies to secure access to water even in dry years through leasing and other agreements. Water for energy may also be acquired through permanent transfers, sometimes over long distances, or the use of municipal wastewater or brackish waters. Treatment and transport of water consume energy and increase costs.

Drought impacts water and energy resources and exacerbates the allocation and management challenges. Both water and energy demands and supplies are effected. Air conditioning, irrigation and other water and power demands rise with temperatures. Hydropower accounts for twice the percentage of power generation in the West as the national average, and drops with flows. Also, higher temperatures negatively impact thermoelectric power generation efficiencies.



Executive Summary (con't)

Power production is expected to be a major driver of new water demand over the next decade.¹ The National Electricity Technology Laboratory has estimated that between the years 2005 and 2030, thermoelectric water consumption will increase by 42-63 percent.² While still small compared to total western water use, this is significant. The magnitude of the impact of future energy demands for water on other western water uses is at present uncertain. This is largely due to the general lack of accessible, reliable, and comprehensive data and information related to existing water uses, water supplies, and water availability, as well as summary data on market transfers of water from one use to another. For example, comprehensive information on transfers of water between uses, including agricultural use to electric power production and related energy needs, is currently not generally compiled by state water right administrators in any systematic way.

As part of the Council's deliberations related to the work described in this report, a policy position was adopted and forwarded for WGA's review that suggested numerous actions for further consideration to better integrate water and energy planning and policy.³ Each, with illustrative examples, is included in the Recommendations section of this report. Three are highlighted here.



Figure 1. Lake Mead Generators
Photo: Southern Nevada Water Authority

First, western states and federal agencies should support new and continued data gathering, analyses, and research needed to better understand the extent and limitations of our water and energy resources, specifically existing and projected future supplies and demands. Without a clearer understanding of present consumptive uses of water regionally, as well as refined projections of future energy development, an accurate and comprehensive assessment of the impacts to existing water users, and the cost of acquiring water for specified energy projects, is problematic. With WGA support, the WSWC initiated a Water Data Exchange (WaDE) program as a part of the Regional Transmission Expansion Project (RTEP) discussed in this report, to improve accessibility to available state data and information. WaDE deployment will be a significant step forward in understanding and evaluating our water resources and future changes in demands.

Second, better integration of water and energy policies and programs will require a concerted effort and the governors' continuing leadership, including continuing state participation in forums such as the State Provincial Steering Committee (SPSC), Scenario Planning Steering Group (SPSG), and Environmental Data Task Force (EDTF) as well as other similar groups.

¹ Western Electricity Coordinating Council (WECC), 10-yr Regional Transmission Plan: Plan Summary, 2011. See: http://www.wecc.biz/library/StudyReport/Documents/Plan_Summary.pdf.

² National Energy Technology Laboratory, Estimating Freshwater Needs to Meet Future Thermoelectric Generation Requirements, 2008. See: http://www.netl.doe.gov/technologies/coalpower/ewr/pubs/2008_Water_Needs_Analysis-Final_10-2-2008.pdf.

³ Western States Water Council, 2015. POSITION #378 of the WESTERN STATES WATER COUNCIL regarding Integrating Water and Energy Planning and Policy, adopted in Tulsa, Oklahoma on April 17, 2015. See: http://www.westernstateswater.org/wp-content/uploads/2012/10/WSWC-Resolution-regarding-Integrating-Water-and-Energy-Policy-and-Planning_2015Apr17.pdf.

Additional joint meetings, workshops, symposia, and webinars would be helpful in bringing water and energy planners together more regularly to better understand the energy/water nexus and consider appropriate collaborative actions to improve management of both resources.



Third, a public education effort is needed to communicate the value of energy and water conservation, and to encourage the use of “smart” technologies to improve the measurement and management of water and energy consumption, in the short and long-term. Consumers often don’t understand or appreciate the fact that when they turn on their faucet they use energy as well as water, and conversely when they switch on the light they are also consuming water. Sometimes the best way to reduce residential energy use is through water conservation measures.

Water is critical to energy development and its distribution. Hydropower and thermoelectric generation and transmission are two examples. Unlike energy resources, water is only “consumed” when it is rendered unavailable for other uses, such as through evaporative cooling. Water withdrawals from rivers and streams for thermoelectric power production may be considerable, but depending on the cooling technology used, the water may largely be returned to the hydrologic system where it is available to reuse. Power production accounts for some 41 percent of U.S. water withdrawals, but only about three percent of consumption. In the West, irrigated agriculture is the predominant water use in an arid climate, accounting for most of the withdrawals and diversions, as well as consumptive use through evapotranspiration from fields.

It has been said that “water runs uphill to money,” and money can move water geographically and between uses. In general, when it comes to decisions regarding where to site a power plant or other energy project, water-related costs are usually not now sufficiently high enough to “move the needle.” New investment in energy development will likely provide sufficient capital to acquire the necessary water resources. However, money does not always dictate the highest and best use of water, which is generally considered public property, until it is put to use in private enterprise. The public interest as expressed by social values and environmental protections will continue to be important considerations. Moreover, economic markets for water are limited both by the willingness of existing users to sell, and also the availability of the infrastructure needed to move water. Compared to electricity, water is much more difficult to move, given its volume and weight. It is also important to note that water withdrawals, transfers and treatment consume significant amounts of energy in the West.

Proposed water transfers and related markets are regulated by western states, which apply appropriative principles designed to protect existing users, including third parties, from injury. Water right information, specifically data on consumptive use, is another limiting factor. Western water law defines, measures and limits the exercise of water rights based on consumptive use. Transfers of water between uses are limited to the amount consumptively used in the past. However, consumptive

use is often difficult to determine, even on a case-by-case basis. Little data and no comprehensive summary of consumptive uses exist.

Against this backdrop, the Western States Water Council (WSWC) entered into an agreement with the Western Governors' Association (WGA) to assist with a Regional Transmission Expansion Project (RTEP) funded by the Department of Energy and designed to "enhance the states' capacity to effectively participate in [energy] transmission planning and development, and substantially improve the quality of information available to state and federal policy makers and regulators, as well as industry planners."⁴⁵ Regarding the energy and water nexus, WGA committed to work with state water managers and other agencies, as well as experts on water requirements of electric generation technologies to evaluate water issues associated with the siting, transmission, and mix of energy supplies, with a goal of anticipating challenges and assisting with development of future energy scenarios within existing and future water resource constraints. A more complete explanation of the RTEP effort is included in Appendix A.

Of note, the water availability models developed and enhanced through the RTEP efforts are valuable scoping level planning tools, but not sufficiently refined to provide reliable information for site-specific and project-specific decision-making, due largely to the limited availability of data on consumptive water uses and marketability. This has been a consistent RTEP theme, and the work was focused on planning considerations, not siting level information for new thermoelectric generation. Obtaining such information is a laborious and expensive process as there is no westwide database on water rights and water uses. However, the work undertaken by RTEP partners and the Western States Water Council (WSWC) described in this report, with the support of the Western Governors' Association (WGA), has been a significant step forward in the development of such a repository. WaDE deployment will facilitate more refined modeling in the future. This work will also provide valuable assistance in the development of a national assessment of water availability and uses, presently being undertaken by the U.S. Geological Survey (USGS), as well as future studies of energy and water needs.

The WSWC, representing state water managers appointed by the governors, agreed to assist in undertaking a number of tasks, the completion of which are described in detail in this report. These included: Task 1(a) assisting in compiling assessments from western states regarding water availability, water consumption and withdrawals, and projected water demands for municipal/industrial, agricultural, recreational, and environmental uses; Task 1 (b) assessing current and projected water scarcity by large river basin or aquifer system in the West, including both a physical and legal perspective; Task 1(c) considering drought and the potential implications of climate change and how they may affect river flows and water supply availability for energy development; Task 1(d) seeking to identify opportunities for the use of non-potable water resources; Task 2 preparing an analysis of legal, institutional, and administrative issues associated with new permits or transfers of water for energy development; Task 3(a) identifying policies that promote water-efficient energy technologies; Task 3(b) considering likely impacts to other water users and ways to mitigate or otherwise minimize those impacts; Task 3(c) convening water managers, electricity generators and regulators to make recommendations to the Governors for how electricity and water providers can better coordinate; and Task 4 participating in work with the national laboratories, and other efforts under RTEP, including the State and Provincial Steering Group, Scenario Planning Steering Group, and Environmental Data Task

⁴ WGA Statement of Project Objectives, 2009.

Force, which advise the Western Electric Coordinating Council (WECC) and its Transmission Expansion Planning Policy Committee (TEPPC). The WSWC served as liaison to ensure incorporation of water interests, and convened its members to assist in a review of the national labs' modeling efforts.⁶

In undertaking these tasks, it became apparent that much of the data and information needed to accomplish the anticipated work were simply not available or not easily accessible, and that obtaining such information would be a laborious and expensive process. Therefore, the WSWC initiated a westwide effort that would include making available information from WSWC member states on state water rights and water uses, as well as derived data and summary information on water availability from state and federal sources. This initiative became the WSWC's Water Data Exchange (WaDE) and a major focus of much of the WSWC's work under the WGA service agreement.⁷ This effort has included the development of a data exchange framework, database schemas, data exchange methods, mapping tools, web services, and data access portals. Beta testing with data from Colorado, Utah, and Wyoming is underway. As noted hereafter in detail, the WSWC's work with WGA's leadership has been essential in identifying and implementing the initial steps necessary to improve the water information and data available for sound decision-making related to future electric power generation and transmission planning, as well as to better integrate water and energy resources planning, conservation, development and management. The RTEP effort has helped develop a clearer understanding of the interrelated nature of our water and energy resources, and the importance of a collaborative approach to their conservation, development, management and wise use. It has also led to the development of valuable relationships that need to be encouraged.



⁶ WGA Service Agreement/Contract Number 30-23—60, Exhibit A – Western States Water Council Scope of Work , executed November, 24, 2010. See Appendix C.

⁷ Modification #1 to WGA Contract, executed on January 3, 2012.

The OWDI and Communicating Water Data Fitness and Quality: Accommodating New Data Providers while Maintaining High Data Standards

Authors: ¹Larsen, Sara; WaDE Program Manager, Western States Water Council, 5296 Commerce Drive, Ste. 202, Murray, UT 84107, saralarsen@wswc.utah.gov

²Hamilton, Stuart; Senior Hydrologist, Aquatic Informatics, Vancouver, British Columbia V6E 4M3, Canada

³Lucido, Jessica; Project Manager, U.S. Geological Survey, Madison, WI 53562

⁴Garner, Bradley; Hydrologist, U.S. Geological Survey, Flagstaff, AZ 86001

⁵Young, Dwane; Senior Data Advisor, U.S. Environmental Protection Agency, Washington, DC 20460

Abstract: Shared, trusted, timely data are essential elements for the cooperation needed to optimize economic, ecologic, and public safety considerations related to water. The OWDI will provide a fully-scalable platform with the ability to support a wide variety of data from many providers. Most providers will be larger, well-established, and trusted agencies that have a history of providing well-documented, standardized, and archive-ready products. However, some potential partners may be smaller, distributed, and relatively unknown or untested as data providers. The data these partners will provide are valuable and can be used to fill in many data gaps, but can also be variable in quality or supplied in non-standardized formats. They may also reflect the smaller partners' variable budgets and missions, be intermittent, or of unknown provenance. A challenge for the OWDI will be to communicate the quality and the contextual "fitness" of data from providers other than the most trusted brands. This paper reviews past and current approaches for documenting data quality. Three case studies are used to highlight processes and pathways for effective data-sharing and publication initiatives. The case studies also illustrate how partners may work together to find a data reporting threshold that encourages participation while maintaining high data integrity. And lastly, potential OWDI governance is proposed that may assist these smaller partners with short and long-term hosting solutions.

Tab H – Western Governors' Association
(WGA) Drought Forum Report and
Water Resolution (2015 – 08)

SPECIAL REPORT

JUNE 2015

Western Governors' Drought Forum

Chairman's Initiative of Nevada Gov. Brian Sandoval



WESTERN GOVERNORS' ASSOCIATION

westgov.org/drought-forum



GOV. BRIAN SANDOVAL
WGA Chairman

Dear Friends of the West,

During my year as chairman of the Western Governors' Association, I have led a regional discussion on a pervasive issue that impacts all of the western states: drought. Through the Western Governors' Drought Forum, we have created a framework for states, industry and communities to share best practices and policy options for drought response.

Most western states depend on just a few months of snowfall in the mountains to supply water for people, businesses and wildlife over the course of a full year. Consequently, it is crucial to share strategies on drought response before, during and after drought occurs.

Our Drought Forum discussions have shown that westerners are experts at innovating in response to water supply variability. They have also shown the importance of communicating across sectors and state lines to best respond to drought. Western states will continue to thrive, even with

the threat of drought, so long as we work together and make the most of the water we have.

This report is not the culmination of the Drought Forum; rather, it is designed as a guide to more detailed information available online. It also identifies policy issues which WGA will further explore in the coming years.

I invite you to continue the dialogue sparked by the Drought Forum with your own communities and colleagues. Western Governors will use the Drought Forum online resource library to inform our efforts and discussions about drought over the coming years. It is certainly a conversation that I plan to continue and expand within Nevada.

A handwritten signature in white ink, which appears to read "B. Sandoval".



JIM OGSBURY
WGA Executive Director

When Governor Brian Sandoval told me he wanted to focus on drought during his time as Chairman of the Western Governors' Association (WGA), I could not have been more enthusiastic.

Drought is an issue that fits squarely within the mission of WGA. While the topic is not unique to the West, for the past several years the map of drought conditions in the U.S. has seemed like a target with a bulls-eye on the western states. Given that much of the region is naturally arid, the consequences of western drought are especially acute. There is room for real innovation in drought management and response. Drought is bipartisan. And WGA has been a leader on drought policy for well over a decade.

That leadership significantly expanded under Gov. Sandoval's direction. Over the past year, the governors received input from a broad cross-section of experts, including such diverse voices as electricity providers, dairy farmers, state engineers, mining experts, environmental advocates, federal partners and water providers for the largest cities in the West. WGA went to five western states in five months to hold in-depth conversations about drought, only to turn around and hold five additional webinar discussions. We

learned a great deal during that time. One takeaway: despite the region's long experience with water scarcity issues, there is still room for innovation in drought management and a need for ongoing dialogue.

I am proud of what we have accomplished so far with the Drought Forum, but our work is not done. The Drought Forum online resource library on WGA's website will remain active and updated with new content in the years to come. We intend to keep the library stocked with valuable information for the governors as they continue to work through the complexities of drought.

If you have not yet done so, please send your best practices and case studies to help us build this resource. The Drought Forum is an ongoing discussion and we want to be sure your perspective is included.

Thank you to those who contributed to and supported the Drought Forum over the past year. We hope to partner with you again as we continue to work on this issue in the years to come.

Respectfully,

A handwritten signature in black ink that reads "Jim Ogsbury". The signature is fluid and cursive, with a large, sweeping "J" and "O".

EXECUTIVE SUMMARY

Recent drought throughout the West has affected economies and communities in ways both visible and hidden. Fallowed fields, bare streambeds and near-empty reservoirs provide stark reminders of drought's effects, but they do not tell the full story. Drought has also resulted in lost tourism revenues, increased fire risk, decreased quality of wildlife habitat, unemployment and livestock losses.

Through the Western Governors' Drought Forum, WGA has collected best practices, case studies and the insights of western leaders on drought response and management. These resources are collected in the Drought Forum online resource library, which is accessible at westgov.org/drought-forum.

This report is designed as a roadmap for the online resource library, pointing to specific drought management strategies and information available on the web. The report is arranged around seven key themes that have emerged from the Drought Forum thus far, including:

Data and Analysis – Data on snowpack, streamflow and soil moisture is essential to understanding drought and its evolution. Though a great deal of information already exists, water managers could benefit from enhanced drought data collection and real-time analysis at a higher resolution.

Produced, Reused and Brackish Water – Technologies exist to use produced, reused, recycled and brackish

water—industrial, municipal and groundwater sources traditionally considered to be marginal or wastewater. Adoption of these technologies has been limited by inadequate data, regulatory obstacles, financial barriers, public attitudes and logistical uncertainties.

Forest Health and Soil Stewardship – Better land management practices for forests and farmland may help improve water availability and soil moisture retention. Employing these management strategies can help water resource managers and farmers make the most efficient use of the water they have.

Water Conservation and Efficiency – Public awareness of drought has drawn increased attention to water conservation strategies for municipal, industrial and agricultural purposes. Cities and farmers are implementing water-saving technologies and reducing water use to mitigate the effects of drought.

Infrastructure and Investment – Infrastructure to store and convey water is crucial to drought management, but

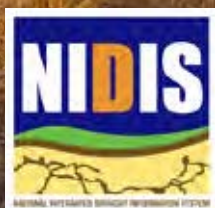
maintenance and expansion of that infrastructure is often difficult to fund. Westerners are looking for ways to make the most of existing infrastructure, while seeking creative solutions to develop new infrastructure with limited resources.

Working within Institutional Frameworks to Manage Drought – Legal and regulatory frameworks can sometimes limit the ability of state, local and federal agencies to respond quickly to drought conditions, but many are working to create innovative, flexible policy solutions within existing legal structures.

Communication and Collaboration – Communication among states, federal agencies, water providers, agricultural users and citizens is a crucial component of effective drought response. Open dialogue and information-sharing helps water users understand the challenges drought poses for other stakeholders, facilitating the opportunity for a unified response to drought.

This report and the accompanying online resource library will be foundational tools for governors as they weigh drought management strategies in the future. They will provide governors and water managers with robust resources to draw from to meet current drought challenges, as well as a medium for thought-provoking discussions to help policymakers plan for future periods of water scarcity.

WGA will continue the Drought Forum discussion in the coming years, updating the [online resource library](#) with new content. WGA will also maintain the framework for sharing drought best practices with ongoing webinars and meetings related to the key themes of this report.



The Western Governors' Drought Forum initiative is being conducted in partnership with NOAA's National Integrated Drought Information System.

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Learn what's available in the [Drought Forum online resource library](#) to guide planning and decision-making in the West for years to come.

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Meet the sponsors who helped make this important regional effort possible.



Nevada Gov. Brian Sandoval announced the creation of the Western Governors' Drought Forum on the boat ramp of the Lahontan Reservoir in northern Nevada, which suffered from exceptionally low water levels in 2014 due to drought.

WGA Chairman's Initiative

The First Year of the Western Governors' Drought Forum

The backdrop to Gov. Brian Sandoval's announcement of the Western Governors' Drought Forum illustrated the challenge posed by drought: Nevada's Lahontan Reservoir, where low water levels caused by drought had forced the closing of all boat launches and a 75 percent decrease in visitation in 2014 as compared to the previous year.

"The impact of drought in the West is clear to everyone here," Gov. Sandoval said at the September 2014 rollout event. "But it extends far beyond Lahontan Reservoir. California is experiencing 'exceptional drought.' And 'extreme drought' conditions continue in much of Nevada, Arizona, New Mexico, Colorado, Kansas, Oklahoma and Texas."¹

That regional impact spurred Gov. Sandoval to make the Drought Forum his cornerstone initiative as the Western Governors' Association Chairman. Gov. Sandoval set a goal to provide a framework for sharing best management practices on drought for state and industry leaders across the West.



Oklahoma Governor Mary Fallin, right, offered a keynote at a workshop in her state about managing drought in the energy sector. Michael Teague, the state's Secretary of Energy and Environment, also spoke.

The initial year of the Drought Forum was a multifaceted effort to build that framework through in-person workshops, a webinar series and an online resource library. In addition, WGA solicited case studies and best practices, highlighting innovations in drought response from across the region.

Workshops in Oklahoma, Arizona, California, Nevada and New Mexico examined the effects of drought on specific economic sectors by gathering leading thinkers from industry, non-profits, academia, and state, local and federal government. Through these sessions, WGA identified the management challenges drought poses, as well as strategies and policy options for effective drought response.

The Governors played a significant role, in part by hosting and participating in workshops. **Oklahoma Gov. Mary Fallin** spoke in Norman, noting that the state had suffered \$2 billion in losses from the drought of 2011-2012. The Governor cited her signing of the Oklahoma Water for 2060 Act, which establishes a goal for the state to use no more fresh water in 2060 than it did in 2012.²

Gov. Sandoval highlighted the bipartisan nature of the Drought Forum by speaking alongside **California Gov. Jerry Brown** at the Sacramento workshop. "I think the drought will test our imagination and our science, our technology and our political capacity to collaborate," Gov. Brown said.

The workshops also helped WGA discern themes for closer attention in a free five-part webinar series that broadened the Drought Forum audience by attracting a total of more than 1,200 registrants. The webinars are now available in the online resource library.

Drought Forum Meetings and Webinars

WORKSHOPS

Managing Drought in the Energy Sector

Hosted by Gov. Mary Fallin (OK)

Drought Impacts and Solutions in the Manufacturing, Mining and Industrial Sectors

Hosted by then-Gov. Jan Brewer (AZ)

Drought Impacts and Solutions in the Agricultural Sector

Hosted by Gov. Edmund G. Brown (CA)

Drought Impacts and Solutions in Water Supply

Hosted by Gov. Brian Sandoval (NV)

Drought Impacts and Solutions for Recreation and Tourism

Hosted by Gov. Susana Martinez (NM)

WEBINARS

Once Marginal, Now Crucial:

The Growing Demand for Re-used, Produced, and Brackish Water

Community Outreach and Consumer Technology for Municipal Water Use

Tip of the Spear: The Horizon for Drought Data and Technology

Managing Forest Health for Water Resources

One Size Doesn't Fit All:

Why Variation in Hydrology and Legal Structures means that Drought Looks Different across the West



California Gov. Jerry Brown offered opening remarks at the Drought Forum workshop on agriculture he hosted at his office in the California state capitol building.

Reflections of Drought in the West

Drought in the western states is often depicted through stark images: fallowed fields, exposed riverbeds, near-empty reservoirs and the broad “bathtub ring” at Lake Mead behind Hoover Dam. But drought is present in other, less obvious ways as well: elevated water temperatures in streams and rivers, for instance, and waning soil moisture levels not visible to the naked eye.

Conversations about western drought have traditionally focused on agriculture. In some western states, agriculture accounts for more than 90 percent of consumptive water use.³ Over a quarter of all farm acres in the West are irrigated, and the value of irrigated crops is markedly higher than dryland crops.⁴ So when water supplies are limited and farmers receive less water than their usual allocation, agricultural producers have to adjust how they do business. In some cases, the short-term response means letting some fields go fallow in favor of higher-value crops or selling more livestock than in an average year in order to moderate costs for the animals’ feed. In other cases, western farmers have found ways to use water more efficiently, as is illustrated in detail in the *Water Conservation and Efficiency* section of this report.

For urban water users, the sting of drought in past decades has been softened by water storage and water providers who have proactively planned to ensure reliable supplies. The severity of the multiyear drought in California removed that cushion for some, such as citizens of



The South Lake Dam in California’s Sierra Nevada shows signs of drought conditions affecting many states in the west.

Outingdale, California, where water curtailments in May 2015 forced the local water provider to truck in water for residents, limiting customers to just 50 gallons of water per person each day.⁵ Even for cities and states that are nowhere near such dire straits, public awareness of drought has dramatically increased due to reporting from media outlets and public outreach campaigns from water providers and states, such as Oregon’s #ORdrought social media campaign.⁶

Drought impacts wildlife habitat and the environment as well. Elk, mountain lions and bears have been sighted outside of their traditional habitat, at lower elevations and closer to population centers, in search of water and food during drought conditions.⁷ Aquatic habitat can diminish with low flows and the water that remains in the stream is often warmer, leading to poor conditions for some fish



California Gov. Edmund G. Brown Jr., center, and Department of Water Services Director Mark Cowin, right, watched as Frank Gehrke, chief of the California Cooperative Snow Surveys Program, discussed snow survey results on April 1, 2015, at an elevation of 6,800 feet in the Sierra. It was the first recorded early-April measurement that found no snow at the Phillips Station, an indication of the drought's severity. Courtesy of California Department of Water Resources

species. Low streamflow and reduced precipitation also bodes poorly for some native vegetation.

Drought creates dry conditions that can lead to devastating wildfires. Dry vegetation as a result of low precipitation, low soil moisture and high temperatures creates conditions for particularly hot fires that spread quickly and are difficult to control.⁸ This may be further exacerbated by standing dead trees killed by pine bark beetles infestations.⁹

Wildfire can have significant impacts on air quality and can, in some cases, affect a state's ability to comply with Clean Air Act (CAA) standards. Soot and ash contribute to particulate matter (PM) pollution, as does dust and

exposed dirt released by low soil moisture levels.¹⁰ This PM can affect human health in a variety of ways, from airway irritation and coughing, to aggravated asthma conditions, to decreased heart and lung function. Wildfire also increases ground-level ozone, as fire releases nitrogen oxides and volatile organic compounds.¹¹ These factors contribute to the regulatory challenge for states to meet federal National Ambient Air Quality criteria pollutant standards (commonly referred to as NAAQS) required by the CAA.

Low water levels in reservoirs can lead to reduced capacity for hydroelectric power generation, a source of more than a fifth of the power generated in the Mountain and Pacific West.¹² Hydropower generators have a minimum "power pool" threshold needed to reliably generate electricity.



Drought is a contributing factor to dust storms such as this 2013 storm in southeastern Colorado.

Courtesy of Jane Stulp, Stulp Farms

Drought's role in air quality

Drought can mean a decline in air quality, most commonly due to dust caused by low soil moisture or particulate matter released by wildfires. Despite vast improvements in land management practices since the devastating Dust Bowl of the 1930s, dust from dry soil remains difficult to prevent during drought conditions. The result can be enormous dust storms

like those experienced in southeastern Colorado in 2013 and captured in this photo by Jane Stulp of Lamar, Colorado. Learn more about how drought impacts air quality in the Drought Forum Science Brief, *How Drought Affects Air Quality*. Find that and more in the Drought Forum [online resource library](http://westgov.org/drought-forum) at westgov.org/drought-forum.

When reservoirs fall below that level, electricity generation costs increase. Prior to California's devastating multiyear drought, 14 percent of the state's power came from hydroelectric generation. The drought decreased that figure to 6 percent in 2014.¹³

Drought affects other parts of the energy sector, as well. Oil and natural gas extraction requires water. Coal mining operations use water to both remove coal from underground seams and to cool the machinery required to transport and process the product. All thermoelectric power generation requires water for cooling processes. Renewable energy generation requires water as well: utility-scale solar power generation requires water for both electricity generation and for cooling.

For recreation destinations, winter and summer alike, drought can have consequences for visitation and public perception. Water shortages during Colorado's intense drought of 2002 resulted in an estimated \$1.7 billion decrease in recreation revenue.¹⁴ Drought impacts river recreation, in particular; rafting, fishing, kayaking, and other water-related activities help drive an estimated \$25.6 billion of economic activity in the Colorado River Basin, and reliable flows are essential for these activities.¹⁵ Ski resorts use proactive public messaging and advanced snowmaking technology to ensure that visitors know their slopes are open, even if precipitation has been below-average.

Key Themes



Data and Analysis

“There is an adequate amount of technology available to accurately monitor and manage water usage and drought, but much of this technology is stuck at a very high level of decision making and is not trickling down to the state or local level.”

– Jay Famiglietti, Senior Water Scientist, NASA Jet Propulsion Laboratory, California Institute of Technology

Water managers measure drought through multiple factors, including mountain snowpack, soil moisture, streamflow, temperature and precipitation, reservoir levels and reported impacts. These measurements and reports enable water managers and users to piece together a picture of drought conditions.

Drought scientists pull this information together in a user-friendly map called the U.S. Drought Monitor that shows drought severity across the nation. Each week, collaborators affiliated with the National Oceanic and Atmospheric Administration (NOAA), the U.S. Department of Agriculture, and the National Drought Mitigation Center at the University of Nebraska-Lincoln analyze the latest information on water and other variables to generate this map, depicting four levels of drought severity. Additional information about the creation of the U.S. Drought Monitor is available in a Drought Forum Science Brief in the online resource library.

Additional resources for understanding and predicting drought are available at drought.gov, the online home of the National Integrated Drought Information System (NIDIS). NIDIS is a federal interagency program managed by NOAA that was authorized by Congress in 2006, and reauthorized in 2014, with support from WGA. The program is designed to provide decision-makers with the best available information and tools to prepare for drought, assess its potential impacts and mitigate its consequences.

Western Governors’ Drought Forum participants

Mapping Drought with the U.S. Drought Monitor

The U.S. Drought Monitor is a weekly map detailing the intensity of drought conditions across the nation.

Eleven climatologists from partner organizations take turns as the lead author of the Drought Monitor, synthesizing the data across timescales and geographic locations. Several states and federal agencies rely on the Drought Monitor to help determine if drought declarations are needed on a state or local basis.

Learn more about how the Drought Monitor is created in the Drought Forum Science Brief, *Creating the U.S. Drought Monitor*. Find that and more in the [Drought Forum online resource library](http://westgov.org/drought-forum) at westgov.org/drought-forum.

expressed a desire for continued (and, in some cases, increased) drought data, collection and analysis. In an informal survey of Drought Forum participants and partners, WGA found that the U.S. Drought Monitor, the National Resources Conservation Service’s (NRCS) snow survey, and the National Weather Center outlooks for temperature, precipitation and drought were the products most frequently used to track drought by state, local and federal government employees, business professionals, water managers and others in the West.¹⁶ Groundwater data, predictive climate models for drought and analytical tools that allow users to compare multiple datasets over time were all cited by respondents as ongoing needs.

Detailed data on water use—including residential, agricultural and industrial uses—help states and water providers manage their resources. The common refrain, “if you can’t measure it, you can’t manage it” was used

by Drought Forum participants to describe the need for water use data for both surface water diversions and groundwater pumping. Water managers require this data to confidently develop demand projections, whether or not drought conditions prevail. For water utilities, this information can inform strategies to implement conservation programs and adjust rate structures. For states, water use data provides a better sense of diversions, consumption and return flow of water, which is used by some states to facilitate water transfers and deliveries.

Several participants also emphasized the value of soil moisture monitoring—an important tool that helps scientists determine the severity of drought conditions.

“The way that data are produced and recorded at the local level is irreplaceable. Satellite monitoring and model-based estimates are important but a full portfolio of observations is needed,” Roger Pulwarty, Director of NIDIS said. “In the West, the sparseness of data on important drought metrics like *in situ* soil moisture measurements needs to be addressed.”

Soil moisture information currently collected by federal, state and local entities will soon be assimilated through the National Soil Moisture Network, a collaborative effort of NIDIS, NRCS and the US Geological Survey. Though presently in a pilot stage, the program is designed to one day provide real-time soil moisture data through an online network.¹⁷ Additionally, the National Aeronautics and Space Administration (NASA) is producing global soil moisture maps with its new Soil Moisture Active Passive observatory which launched in January 2015.¹⁸

Drought Forum participants also cited a need to increase the integration of water data resources to help better interpret water conditions. “Data stove-pipes exist because different agencies collect information for varying purposes—water quality and quantity data, for example, are often collected by different agencies with different objectives,” said Jeri Sullivan Graham, Brackish Water Work Group Coordinator for the New Mexico Energy, Minerals and Natural Resources Department. “Combining and interpreting these data thus becomes challenging.”

Existing water data sources are often available online, but state and local water managers may be unaware of the availability or location of these resources. “An overwhelming amount of data already exists regarding drought,” said John Andrew, Assistant Deputy Director of the California Department of Water Resources. “The issue

Tip of the Spear:

Webinar on the Horizon for Drought Data and Technology

Historic data on snow and water levels provide a frame of reference for current monitoring of drought conditions. WGA convened a webinar discussion on the ways that basic data is being used in conjunction with the latest modeling and satellite technology to inform drought management decisions. Find that webinar and more in the [Drought Forum online resource library](https://www.westernwatergovernors.org/drought-forum) at westgov.org/drought-forum.

lies in making it accessible to those who need it, when they need it.”

Improvements in predictive capability and measures of reliability for drought forecasting are also needed. Ongoing research to better understand the relationship between snowpack, rainfall, groundwater recharge, soil moisture and temperature could potentially improve predictions of water availability. Though scientists can forecast weather up to 10 days in advance, predictive capability for drought conditions a few months out is primarily a condition of El Niño Southern Oscillation (ENSO) climatic events. More work is needed to fully understand how ENSO-neutral periods relate to drought. In addition, research on climatic variability at both the decadal scale (for example, the Pacific Decadal Oscillation) and the seasonal scale would help scientists to better understand the dynamics of drought development.

The Western States Water Council — an organization of high-level state water managers from 17 continental western states and Alaska — is developing a platform called the Water Data Exchange (WaDE). This online tool will allow users to access state data on water allocation, supply, and demand through a single web portal. Once launched in December 2015, WaDE will help water planners across the West better understand water resources by providing them with a state-driven framework and state-managed data. This functionality will provide an additional mechanism for future Drought Forum discussions regarding water resource data.



Produced, Reused and Brackish Water

In response to limited and variable water availability, industry leaders are testing new technologies to harness water supplies once considered marginal. For sources such as re-used, recycled, produced and brackish water, technologies are emerging to use these sources, but implementation is not always simple. Treating these sources can be expensive and may require special environmental considerations. In some instances, regulatory uncertainty and lengthy permitting requirements can limit adoption.

“Produced water, flow back water, in the energy discipline have historically been viewed as a waste—a nuisance—something to be managed,” Ken Knox of Noble Energy said on the Drought Forum webinar, *The Growing Demand for Re-Used and Brackish Water*.¹⁹ “But the disposal, the treatment, the recycling of those wastewaters is now at the forefront of development of energy throughout the United States, North America, and frankly, the world.”

Produced water, when treated, has the potential to be reused for irrigation, stock watering, dust control or energy production onsite. But some energy representatives say that such opportunities are limited by the time it takes to obtain permits as well as regulatory complexity and uncertainty at varying levels of government.

Water treatment technologies exist for processing produced water on-site at the wellhead, according to Ed Steele of the General Electric Global Research Center. It is, however, very expensive to treat to recharge standards. Difficulties can arise with storing the water immediately after treatment. “Recharging aquifers with treated water would eliminate inefficiencies resulting from evaporative losses,” said Steele. “However, this concept faces considerable regulatory and legal liability challenges.”

Some business leaders and electricity providers are looking to “fit-to-use” water for their operations. Fit-to-use water is treated to the point that it can be used for certain industrial processes. For example, power provider NV Energy uses treated wastewater from hotels and casinos in the small town of Primm, Nevada, along with an advanced dry cooling system, to cool a 500-megawatt generating station. While a typical water-cooled 500-megawatt plant

may use up to 2,500 acre feet per year, a dry-cooled plant like the one in Primm uses roughly 200 acre feet per year.²⁰

Brackish water is a semi-saline source that can be treated for potable use by reverse osmosis. The process can be costly due to the energy used in processing and the costs of disposing the waste products that result from treatment. This high financial barrier can be a deterrent for municipalities, which have traditionally provided water to customers at relatively low prices.

Some water providers and state water managers are pursuing seawater desalination, which poses similar challenges as brackish water desalination in addition to its own unique challenges. Ocean water desalination plants can more easily dispose of brine waste resulting from the desalination process by discharging into the sea, but these plants tend to attract opposition because of the potential threat they may pose to marine life and habitats near the water intake and brine release sites. In addition, it is costly to treat and pump water uphill from the shoreline to residences at a higher elevation.²¹ Information about the Carlsbad desalination project under construction in San Diego is available on the Drought Forum webinar: *One Size Doesn't Fit All: Why Variation in Hydrology and Legal Structures means that Drought Looks Different across the West*.

A handful of western water providers are mixing recycled wastewater with traditionally-sourced water for human consumption, venturing closer to “potable reuse”—a practice colloquially known as “toilet-to-tap.” The towns of Big Spring, Texas, and Cloudcroft, New Mexico, have both implemented technology to treat wastewater for potable use after mixing with surface water supplies.²²

Once Marginal, Now Crucial: **Webinar on the Growing Demand for** **Re-used, Produced, and Brackish Water**

WGA delved into the growing interest in reused, brackish, and produced water with a webinar available in the Drought Forum online resource library. Listen to the discussion of how state and industry leaders are using sources once considered useless as an alternative means of water supply in the [Drought Forum online resource library](https://www.westgov.org/drought-forum) at [westgov.org/drought-forum](https://www.westgov.org/drought-forum).

Despite its limited adoption in the West, many Drought Forum attendees mentioned it as a partial solution to drought. For other communities, negative public perceptions about treated wastewater—what participants called the “yuck factor”—remains a deterrent regardless of the water’s quality.

Many communities that have not opted for direct potable reuse are reusing water for other purposes. Scottsdale, Arizona, for example, uses reclaimed water for irrigation purposes for 23 golf courses served by its water treatment plant. Remaining treated water is used to recharge the groundwater aquifer.²³



Forest Health and Soil Stewardship

“The forests are not as healthy as they used to be. In the last decade, over two million acres have burned. We need to protect our watersheds so they act like a sponge, not a parking lot.”

– Charlie Ester III, Manager, Water Resource Operations,
Salt River Project, Arizona

Land management practices may mitigate drought conditions by increasing runoff into stream systems and retaining moisture in the soil. Some water managers are taking an active role in forest management to improve water availability. The Salt River Project (SRP) in Phoenix, Arizona, has partnered with the National Forest Foundation to create the Northern Arizona Forest Fund. Through that program, SRP is thinning forests, using prescribed burns, and restoring riparian habitat to invest in the health of watersheds.

A recent analysis of forest management techniques indicated that runoff in thinned forests could be up to 20 percent higher than in un-thinned forests.²⁴ Unmanaged forests are thirstier, says study author Marcos Robles and his colleagues, because forests today are two to 44 times denser than they were prior to settlement by non-Tribal populations.²⁵ While the initial findings are promising, implementing thinning at a larger scale is cost-prohibitive when only the water runoff effects are considered. “The increases in water yields, in and of themselves, are probably not enough to warrant the level of investment that would be required to reach the scale that’s needed to see those runoff benefits,” Robles said. However, the investment merits consideration, “when

Managing Forest Health for Water Resources: *Webinar on the Connections Between Forestry and Water Availability*

WGA convened water and forest management leaders from the U.S. Forest Service, the City of Santa Fe, N.M., and The Nature Conservancy on a webinar to discuss proactive forest management methods that reduce wildfire risk and add security to municipal water portfolios. Find that webinar and more in the [Drought Forum online resource library](https://westgov.org/drought-forum) at westgov.org/drought-forum.

you package it with the reduced fire risk and erosion and sedimentation and the cost of cleanup.”

Some farmers are looking to make the most efficient use of their water resources by improving soil health. Soils with high organic matter are better at retaining water. Daniel Fullmer of the National Young Farmers Coalition remarked upon the dramatic difference in water retention between soils with 1.5 percent and 2.5 percent organic matter. The best farmers are able to achieve 11 percent organic matter, according to Fullmer – twice the levels of undisturbed forests.²⁶

The use of these water-conscious forest- and soil-management practices have significant implications not only for water supply, but also for other key resource management priorities in the West. Healthy, robust forests are more resistant to insect and disease predation as well as wildfires. Well-managed soil is more nutrient-dense and aerated, which is conducive to plant growth. Therefore, implementing land management practices can promote drought-resilient landscapes and mitigate the cascading effects of drought on ecosystems.



Water Conservation and Efficiency

Drought Forum participants—industry leaders and state water managers alike—talked about making the most efficient use of available water. Water re-use, technologies to reduce consumption, and increasing flexibility in transferring water all play a role in western water management in the face of drought.

Some industry leaders who participated in the Drought Forum noted an increased attention to water planning



in business decisions, even if that factor might have been considered minor prior to recent droughts. Nate Hines has observed this trend in his irrigation design business, Hines Inc. “We have developers coming to us saying water is our number one or number two cost right now—how can you help us make this work?” Hines said. “The increasing costs of water and drought are driving behavioral changes and retrofitting efforts.”

Land developers are thus considering water-saving equipment, efficient irrigation and drought-resistant landscaping when designing a new facility, rather than waiting until the end of development for this analysis. For example, Hines cited the example of a 4,000-acre development in Texas that had been planned to use water-intensive bluegrass; ultimately, native prairie grasses were chosen due to the water saving benefits.

Water-conscious consumers are encouraging the food and beverage industry to use less water, giving rise to “water footprint” monitoring. Businesses are increasingly rethinking their operations, down to the geometric design of the steeping and malting containers for brewing beer, for example.²⁷

Some municipal water providers—including those in

Cities Help Water Users See Just How Thirsty they Are

Cities are investing in technologies to help water users understand their own water consumption. Park City, Utah, uses an advanced metering infrastructure (AMI) capable of tracking water usage in real time. This has helped the Park City Water Department identify and deliver over 150 leak alerts to residents, 70 percent of which were addressed within 10 days of the notification.

The City of Roseville, California, includes charts on water users’ billing statements that compare household water use to neighbors and similar water users. This strategy employs competition and behavioral psychology to conserve water. The statements also include customized suggestions for how to use water more efficiently.

Other technologies allow users to view their water consumption using smart phone apps. [Learn more about this topic](#) by visiting the [Drought Forum online resource library](#) at westgov.org/drought-forum.



Some farmers use drip irrigation to apply water efficiently, close to the plant root zone. Agricultural water conservation achieved by drip irrigation helps farmers save water, but implementation of drip should account for local hydrological conditions.

Las Vegas and Los Angeles—are encouraging residents to reduce water use by offering rebates for turf removal in favor of less-thirsty landscaping. Utilities are also showing customers how much water they use in comparison to their neighbors through easy-to-interpret graphical information on bills and smart phone apps.

Western farmers are finding ways to use water more efficiently. Some farmers have increased their water efficiency by laser-leveling fields, lining canals, or implementing drip irrigation. In the Oklahoma Panhandle, farmers have adjusted irrigation methods, reduced tillage and switched to less consumptive crops. These agricultural producers have reduced water use for crop irrigation by 60 percent over the past 10 years while retaining the same amount of irrigated cropland and increasing the market value of agricultural products sold. A case study of the Panhandle Regional Water Plan is featured on the Drought Forum online resource library.

Agricultural irrigation often affects other parts of the water system. For areas with high permeability and interchange between surface water and groundwater,

return flows from agricultural water use make their way to local streams and underground aquifers. When water used in irrigation is reduced—or becomes more precisely delivered to plant root zones through the use of drip irrigation—it can sometimes result in less water for downstream users or instream flows. Several Drought Forum participants said that while measures to increase agricultural efficiency are quite useful in some areas, return flows and groundwater recharge should be taken into account where appropriate.

Increased urban water efficiency also helps western cities become more drought resilient and meet a significant portion of water demands for expanding populations. For example, Denver Water has invested in rebates to replace toilets with more efficient models and has led an outreach campaign to encourage customers to conserve water in household use and landscaping. As a result of these and other efforts, Denver Water's December 2014 demand was nearly the same as in December 1973, even though its customer base expanded by over 350,000 users in that period.²⁸



Infrastructure and Investment

Water infrastructure development and maintenance is crucial to water management, especially during drought. Deputy Secretary of Interior Michael Connor emphasized this point during his participation in the Drought Forum. “The Bureau of Reclamation (USBR) was originally intended to support states and develop water infrastructure. Today, the mission isn’t to reclaim the West as much as it is to sustain the West,” Connor said. “The West is still extremely fragile and sensitive to water scarcity; how we operate and manage reservoirs is crucial to dealing with drought.”

Federal programs such as the USBR’s WaterSmart program and the Environmental Protection Agency’s state revolving funds support repairs and modernization of existing infrastructure. In some instances, however, federal and state investment capacity is limited, so local governments shoulder more of infrastructure costs than they have in the past. Public-private partnerships and long-term local bonds can offer alternative funding mechanisms for local governments.

Drought conditions have put a spotlight on water infrastructure needs that already existed, in many cases. “So much of our water conveyance infrastructure is extremely outdated,” said Ron Thompson, General Manager of the Washington County Water Conservancy District in Utah. “At the state level there is good work being done in planning, but at the local level, they lack the resources to adequately update and replace infrastructure. Policy and regulations are barring water managers from dealing with this issue.”

Cities facing impending water shortages may require large capital investments to provide water security for their citizens. Southern Nevada Water Authority (SNWA), the water provider for the Las Vegas metro area, will soon complete a third intake for drawing water from Lake Mead in the event that the water level drops below the two existing water intakes in the reservoir. The three-mile long project required an \$817 million investment, seven years of construction and a custom-built tunnel-boring machine.²⁹ SNWA also plans to build a low lake level pumping station that will be used if Lake Mead falls below the water level required for existing pumping facilities.³⁰



Working within Institutional Frameworks to Manage Drought

For western state water managers, the frequency and severity of recent droughts have demanded a closer look at the ways water is currently managed. For example, California, Idaho and other states have streamlined frameworks for temporary transfers of water rights that allow more flexibility to move water relatively quickly.

Some Drought Forum attendees expressed the belief that states need to increase flexibility in water transfers to better address drought conditions, especially for transfers from agricultural use to instream flows for environmental purposes. Others expressed a desire for states to make permanent transfers of water easier. WGA produced a detailed report in 2012, *Water Transfers in the West*, which provides information on policy options for states to streamline the facilitation of water transfers and improve outcomes for all stakeholders.

Groundwater management poses additional challenges and opportunities for states in periods of drought. Groundwater basins can be managed to allow sustainable groundwater use with replenishment programs like ones managed by the Central Arizona Project throughout central and southern Arizona. During prolonged, severe droughts, however, drawing on a groundwater “savings account” may have its limitations as well. Nevada State Engineer Jason King recognized the stresses caused by pumping supplemental groundwater as a backup supply when surface water is unavailable. The state’s lead water manager said he may need to start considering curtailment of those rights in order to maintain the health of the aquifer.

Drought Forum participants also acknowledged the difficulties posed when water conservation measures allow water users to fully “consume” the water in a water right, decreasing return flows to the water system. Some called for water managers to consider policies that would encourage conserved water to be stored or left in-stream rather than put to new uses; others argued that the use of the conserved water is a necessary incentive for water saving strategies.



Communication and Collaboration

“Early communication about an impending water shortage – and the resulting groundwater pumping curtailments – allows stakeholders to transfer water usage to higher value crops, minimizing economic impacts of drought on agricultural producers.”

– Jason King, State Engineer, State of Nevada

Water systems—including infrastructure, hydrogeology and ecological networks—are dynamic and interconnected. Water management choices by one user or community can have consequences for others downstream, or in other economic and environmental sectors.

Pat Mulroy, Senior Fellow at the Brookings Institute and former General Manager of the Southern Nevada Water Authority, described a need for those who rely on water from the Colorado River to think of themselves as “citizens of a basin.”

“The years of competition and litigation over water need to come to an end,” Mulroy said. “Water resource management has to be strategic, built upon partnership and rational thought.”

Throughout the Drought Forum discussions, participants commented on the connections between water users and emphasized the need for collaboration and communication. A frequent theme was the importance of communications among state engineers and farmers, utilities and ratepayers, and federal, state and local agencies with overlapping jurisdictions.

For instance, the California Department of Water Resources worked closely with federal managers at the USBR to operate their respective water infrastructure systems in concert during drought conditions in 2014. The continuous communication and collaboration allowed them to minimize regulatory roadblocks impeding the transfer of water to where it was needed most.

Communication among states’ officials, federal agencies, water providers and citizens is another crucial component of drought response. Nevada state officials

Cross-Agency Collaboration in Addressing Record Drought in California

The drought in California led state and federal agencies to craft a unified plan in 2014 to balance the competing water needs in the state. Principals from six agencies communicated on a daily basis, forming a collaborative drought operations team able to address issues in real time. The partners took steps to streamline water transfers and schedule water deliveries in ways that helped conserve fish habitat. Watch a video in which state and federal partners describe the collaborative plan at the Drought Forum online resource library at westgov.org/drought-forum.

focused on the need to increase citizen awareness of drought conditions and conservation opportunities. “Citizen awareness is critical to the success of any drought or conservation measure,” said Cassandra Joseph, Senior Deputy Attorney General for Government and Natural Resources in Nevada. “It is difficult to achieve, but it is absolutely imperative that the general public understands the importance of water resource management.”

Water providers have traditionally communicated with residential customers about water use through monthly bills, but some utilities are now providing water information through an online interface using websites and smart phone apps that allow users to monitor their own water use more frequently. The Drought Forum online resource library includes a case study and a webinar entitled *Community Outreach and Consumer Technology for Municipal Water Use* with additional information.

Outreach to recreational water users such as rafters and kayakers regarding water releases from reservoirs helps to maintain tourism and quality of life during drought. “When reservoir operators and recreational interests share data and coordinate their needs, we can manage against the threat of low flows on our rafting and angling attractions, and sustain our local tourism and recreation economies through a drought,” Nathan Fey, Colorado River Program Director for American Whitewater, said.

CONCLUSION

During the Drought Forum workshop series, some participants expressed the sentiment that “drought is the new normal,” positing that states need to manage water based on that assumption. “Plan for drought as if it is a constant,” said Bill Staudenmaier, a partner at the law firm Snell & Wilmer in Phoenix. “If there happens to be a surplus, take every action possible to store it.” Others challenged the notion of drought as a “new normal,” emphasizing that droughts will continue to occur periodically but that states should be prepared for water variability in general, ready to cope with both wet years and dry years.

Drought’s consequences ripple across western economies, communities, and environments. Preventing or halting drought is impossible, but there are useful strategies for enhancing resilience to its effects.

WGA will continue to work on drought by enhancing its Drought Forum online resource library, hosting webinars and workshops and briefing state and federal policymakers. WGA will perform additional outreach to drought task forces in the western states to identify data gaps that need to be addressed. WGA will also compare

and contrast the approaches of these state task forces in order to identify additional best practices. In response to one of the key themes identified during the Drought Forum, WGA will work with state and federal partners to support robust data collection and enhanced analyses and tools for drought management.

Furthermore, the governors will consider the policy recommendations that emerged from the first year of Drought Forum as they work to improve the regional response to drought and to influence national decisions affecting water supply and resource management.

Western Governors'

A central goal of the Western Governors' Drought Forum is to create an online library that includes an ever-growing collection of resources to guide future planning and decision-making about drought in the West.

Visit the Drought Forum website: westgov.org/drought-forum



MEETINGS

Workshops hosted by Western Governors in Oklahoma, Arizona, California, Nevada and New Mexico gathered experts from government and industry to discuss drought's impact in various sectors – agriculture, water supply, recreation and tourism, energy, mining – and share policy solutions, case studies and best practices.

On the web:

[Meeting summaries, photos, agendas, lists of attendees.](#)



WEBINARS

The Drought Forum Webinar Series provides in-depth discussions with experts on topics that arose during the Drought Forum's regional workshops. Topics include the growing demand for re-used water, new drought data and technology, why drought looks different across the West, and how forest health is related to municipal water resource security.

On the web:

[Watch the webinars.](#)

Drought Forum



WESTERN
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SCIENCE BRIEFS

We've created a series of science briefs that dive deeper into how drought resources are developed and how drought impacts the daily lives of westerners. The briefs examine topics such as the work that goes into developing the weekly Drought Monitor to how drought impacts air quality.

On the web:

[Read, download science briefs.](#)

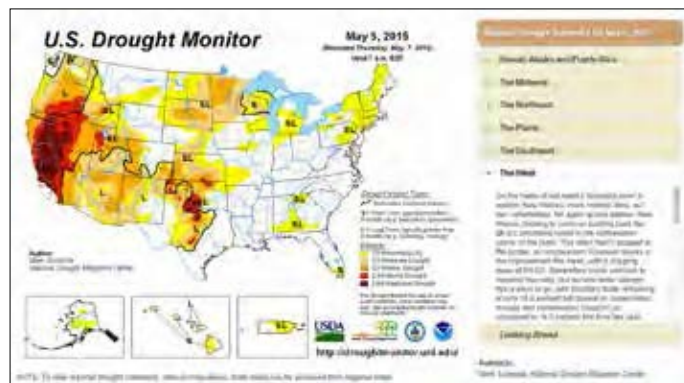


DATA & RESOURCES

The seasonal drought measurement and forecast “equation” includes temperature, precipitation and soil moisture. While the equation seems straightforward, these terms are dependent on a number of interrelated elements that vary across spatial and temporal scales. The impact each of these elements has on drought conditions – and predictions – varies given the time of year and the region in question.

On the web:

[Find tools that help gauge drought's impact on the West.](#)



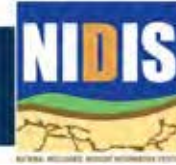
CASE STUDIES

California and federal agencies are collaborating to allocate scarce water supplies while balancing the needs of water users and protecting against devastating financial loss. The San Antonio Water System employs customer outreach that has resulted in a voluntary reduction of 40 percent in *per capita* consumption. WaterSmart software yields an average reduction in water use of 5 percent within a year of its use.

On the web:

[Watch videos of Case Study presentations.](#)

The Western Governors' Drought Forum initiative is being conducted in partnership with NOAA's National Integrated Drought Information System



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END NOTES

- ¹ Since the September 2014 rollout event, a wet spring has ameliorated or eliminated drought conditions in parts of the Southern Great Plains and Rocky Mountain region. Despite this much needed moisture for parts of the interior West, severe drought has made its way up the Pacific Coast; both Oregon and Washington are currently under gubernatorial drought declarations.
- ² Remarks of Gov. Mary Fallin, Oklahoma, on September 18, 2014. Also available from the following source: Wertz, Joe. "The Cost of Oklahoma's Drought: \$2 Billion in Two Years." State Impact, A Reporting Project of National Public Radio. Dec. 4, 2012.
- ³ "Irrigation & Water Use." U.S. Department of Agriculture Economic Research Service. June 7, 2013.
- ⁴ Schaible, Glenn, and Marcel Aillery. "Western Irrigated Agriculture: Production Value, Water Use, Costs, and Technology Vary by Farm Size." U.S. Department of Agriculture Economic Research Service. Sept. 2, 2013.
- ⁵ Marquis, Dave. "Foothill community of Outingdale in Stage 4 water emergency." ABC News 10. May 1, 2015.
- ⁶ "Governor Brown Declares Drought Emergencies in 8 Counties." Newsroom of Gov. Kate Brown, Oregon. May 22, 2015.
- ⁷ "CDFW Reminds the Public that Wild Animals Do Not Need Handouts." California Department of Fish and Wildlife. July 14, 2014.
- ⁸ Williams, A. P., C. D. Allen, C. I. Millar, T. W. Swetnam, J. Michaelsen, C. J. Still, and S. W. Leavitt. "Forest Responses to Increasing Aridity and Warmth in the Southwestern United States." *Proceedings of the National Academy of Sciences* 107.50 (2010): 21289–1294.
- ⁹ The impact of bark beetles on wildfire conditions across the West is variable and dependent on other conditions like soil moisture and temperature, but some studies suggest that it still is a factor in determining wildfire risk. For reference please see: Hicke, Jeffrey A., Morris C. Johnson, Jane L. Hayes, and Haiganoush K. Preisler. "Effects of Bark Beetle-caused Tree Mortality on Wildfire." *Forest Ecology and Management* 271 (2012): 81–90. Wertz, Joe. "The Cost of Oklahoma's Drought: \$2 Billion in Two Years." State Impact, A Reporting Project of National Public Radio. Dec. 4, 2012.
- ¹⁰ Wegesser TC, Pinkerton KE, Last JA. California Wildfires of 2008: Coarse and Fine Particulate Matter Toxicity. *Environmental Health Perspectives*. 2009;117(6):893–897. doi:10.1289/ehp.0800166.
- ¹¹ U.S. EPA. "Integrated Science Assessment of Ozone and Related Photochemical Oxidants" (Final Report). U.S. Environmental Protection Agency, Washington, DC, EPA/600/R-10/076F, 2013.
- ¹² "Hydropower in the West." National Hydropower Association. Statistics valid for 2013. <http://www.hydro.org/why-hydro/available/hydro-in-the-states/west/>
- ¹³ Bender, Sylvia, Deputy Director of the California Energy Commission—Energy Assessments Division. Personal correspondence, April 24, 2015.
- ¹⁴ Estimate includes \$200 million in losses to outfitters and \$800 thousand in lost revenue from fishing licenses. Hayes, M.J., M.D. Svoboda, C.L. Knutson and D.A. Wilhite (2004). Estimating the economic impacts of drought. 14th Conf. Appl. Climatol.
- ¹⁵ Southwick Associates, prepared for Protect the Flows. "Economic Contributions of Outdoor Recreation on the Colorado River & Its Tributaries." May 3, 2012.
- ¹⁶ Western Governors' Drought Forum survey. Administered May 6, 2015 – May 20, 2015. Total of 25 respondents. Results on file with WGA.
- ¹⁷ Maloney, Wayne. "Want to Know about Soil Moisture on your Farm? Soon, There May be an App for That." US Department of Agriculture. March 2, 2015.
- ¹⁸ "NASA Launches Groundbreaking Soil Moisture Mapper." National Aeronautics and Space Administration – Jet Propulsion Laboratory. January 31, 2015.
- ¹⁹ In energy production, "produced" water is an industrial wastewater that is released to the surface during energy extraction. "Flow back" water is that which is injected during hydraulic fracturing, then returns to the surface.
- ²⁰ Geraghty, Kevin, Vice President, Energy Supply, NV Energy. Personal correspondence, June 4, 2015.
- ²¹ Elimelech, M., and W. A. Phillip. "The Future of Seawater Desalination: Energy, Technology, and the Environment." *Science* 333.6043 (2011): 712–17.
- ²² Wythe, Kathy. "Reclaiming a Valuable, Clean Resource: Texas Cities Increasingly Embracing Potable Reuse." Texas Water Resources Institute. Summer 2013
- ²³ "Reclaimed Water: A Valuable Supply." Scottsdale Water Resources Division. http://www.scottsdaleaz.gov/Water/Water_Supply_Planning/Sustainable_Supply/Reclaimed_Water
- ²⁴ Robles MD, Marshall RM, O'Donnell F, Smith EB, Haney JA, Gori DF (2014) Effects of Climate Variability and Accelerated Forest Thinning on Watershed-Scale Runoff in Southwestern USA Ponderosa Pine Forests. *PLoS ONE* 9(10): e111092. doi:10.1371/journal.pone.0111092
- ²⁵ Scientists have long debated the role forests play in water availability, often within the context of afforestation and deforestation. While the scientific community has not come to consensus about the relationship between forestry practices and water runoff, several Drought Forum participants expressed interest in this developing field of research—especially because of the benefits forest management has for wildfire risk reduction and ecological health. For more information about the scientific debate, see: Ellison, David; Martyn N. Futter; and Kevin Bishop. "On the forest cover–water yield debate: from demand- to supply-side thinking." *Global Change Biology* (2012) 18, 806–820.
- ²⁶ "Resilient: Soil, water and the new stewards of the American West." Video. National Young Farmers Coalition. <http://www.youngfarmers.org/video/>
- ²⁷ This and other water-saving strategies are discussed in the best practices section of the [Drought Forum online resource library](#).
- ²⁸ Finley, Bruce. "Denver Water Use Dips to 40-year Low in 2014." *The Denver Post*. Feb. 10, 2015.
- ²⁹ Brean, Henry. "After seven years of digging, Vegas reaches its last straw." *Las Vegas Review Journal*. December 9, 2014.
- ³⁰ "Low Lake Level Pumping Station." Southern Nevada Water Authority. http://www.snwa.com/about/regional_pumping_low.html



WESTERN GOVERNORS' ASSOCIATION

1600 Broadway • Suite 1700
Denver, CO 80202
303.623.9378

www.westgov.org



facebook.com/westgov



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For More Information

westgov.org/drought-forum

DroughtForum@westgov.org



**Western Governors' Association
Policy Resolution 2015 - 08**

Water Resource Management in the West

A. BACKGROUND

1. Water is a crucial resource for communities, industries, habitats, farms, and Western states. Clean, reliable water supplies are essential to maintain and improve quality of life. The scarce nature of water in much of the West makes it particularly important to our states.
2. States are the primary authority for allocating, administering, protecting, and developing water resources, and they are primarily responsible for water supply planning within their boundaries. States have the ultimate say in the management of their water resources and are best suited to speak to the unique nature of Western water law and hydrology.
3. Many communities in the West anticipate challenges in meeting future water demands. Supplies are nearly fully allocated in many basins across the West, and increased demand from population growth, economic development, and extreme weather and fire events places added stress on those limited water resources. Sustainability of our natural resources, specifically water, is imperative to the foundations upon which the West was developed. Growth and development can only continue upon our recognition of continued state stewardship of our unique resources and corresponding responsibilities.
4. Strong state, regional and national economies require reliable deliveries of good-quality water, which in turn depend on adequate infrastructure for water and wastewater. Investments in water infrastructure also provide jobs and a foundation for long-term economic growth in communities throughout the West. Repairs to aging infrastructure are costly and often subject to postponement.
5. Western Governors recognize the essential role of partnership with federal agencies in Western water management and hope to continue the tradition of collaboration between the states and federal agencies.
6. Tribal governments and Western states also share common water resource management challenges. The Western Governors Association and Western States Water Council have had a long and productive partnership with tribes, working to resolve water rights claims.

B. GOVERNORS' POLICY STATEMENT

1. **State Primacy in Water Management:** As the preeminent authority on water management within their boundaries, states have the right to develop, use, control and distribute the surface water and groundwater located within their boundaries, subject to international treaties and interstate agreements and judicial decrees.

- a. **Federal Recognition of State Authority:** The federal government has long recognized the right to use water as determined under the laws of the various states; Western Governors value their partnerships with federal agencies as they operate under this established legal framework.

While the Western Governors acknowledge the important role of federal laws such as the Clean Water Act, the Endangered Species Act and the Safe Drinking Water Act, nothing in any act of Congress or Executive Branch regulatory action should be construed as affecting or intending to affect states' primacy over the allocation and administration of their water resources.

Reauthorization of the Water Resources Reform & Development Act, proposed federal surplus water rulemakings, and/or storage reallocation studies should recognize and defer to the states' legal right to allocate, develop, use, control, and distribute their waters, including but not limited to state storage and use requirements.

- b. **Managing State Waters for Environmental Purposes:** States and federal agencies should coordinate efforts to avoid, to the extent possible, the listing of water-dependent species under the Endangered Species Act (ESA). When ESA listings cannot be avoided, parties should promote the use of existing state tools, such as state conservation plans and in-stream flow protections, to conserve and recover species.
2. **Infrastructure Needs:** Aging infrastructure for existing water and wastewater facilities and the need for additional water projects cannot be ignored. Infrastructure investments are essential to our nation's continued economic prosperity and environmental protection, and they assist states in meeting federally-mandated standards.
 - a. **Federal Support for Infrastructure Investment:** Congress should provide adequate support for the Clean Water Act (CWA) and Safe Drinking Water Act (SDWA) State Revolving Funds. Further, Congress should fully utilize the receipts accruing to the Reclamation Fund for their intended purpose in the continuing conservation, development and wise use of western resources to meet Western water-related

needs, including the construction of Congressionally-authorized Bureau of Reclamation rural water projects and facilities that are part of a Congressionally-authorized Indian water rights settlement.

Congress should reauthorize Water Resources Reform & Development Act (WRRDA) legislation on a regular schedule and appropriate funding so all projects and studies authorized in WRRDA can be completed in a timely manner.

Congress also should consider facilitating greater investment in water infrastructure, utilizing such tools as loan guarantees, revolving funds, infrastructure banks and water trust funds.

Capital budgeting and asset management principles should be used to determine funding priorities based on long-term sustainability and not annual incremental spending choices. It should be accompanied by dedicated sources of funding with appropriate financing, cost-sharing, pricing and cost recovery policies.

- b. **Alternatives to Direct Federal Investment:** Federal and state policymakers should also consider other tools to promote investment in water infrastructure and reduce financing costs, including: public-private partnerships; bond insurance; risk pooling; and credit enhancements.

Congress should remove the state volume caps for private activity bonds used for water and wastewater projects, provide guaranteed tax-exempt status for bonds issued by state or local agencies to finance water infrastructure, provide loan guarantees, and otherwise support and encourage alternatives to direct federal investment of limited general funds.

- c. **Hydropower:** Congress and the Administration should authorize and implement appropriate hydropower projects and programs through efficient permitting processes that enhance renewable electric generation capacity and promote economic development, while ensuring protection of important environmental resources and indigenous people's rights.
- d. **Infrastructure Planning and Permitting:** Infrastructure planning and permitting guidelines, rules and regulations should be coordinated, streamlined and sufficiently flexible to: 1) allow for timely decision-making in the design, financing and construction of needed infrastructure; 2) account for regional differences; 3) balance economic and environmental considerations; and 4) minimize the cost of compliance.

- 3. **Western States Require Innovative and Integrated Water Management.** Western Governors believe effective solutions to water resource challenges require an integrated

approach among states and with federal, tribal and local partners. Federal investments should assist states in implementing state water plans designed to provide water for municipal, rural, agricultural, industrial and habitat needs, and should provide financial and technical support for development of watershed and river basin water management plans when requested by states.

Integrated water management planning should also account for flood control, water quality protection, and regional water supply systems. Water resource planning must occur within a framework that preserves states' authority to manage water through policies which recognize state law and the financial, environmental and social values of the water resource to citizens of the western states today and in the future.

- a. **Water Transfers:** Western Governors recognize the potential benefits of market-based water transfers, meaning voluntary sales or leases of water rights. The Governors support water transfers that avoid or mitigate damages to agricultural economies and communities while preventing injury to other water rights, water quality and the environment.
- b. **Energy Development:** Western Governors recognize that energy development and electricity generation may create new water demands. Western Governors recommend increased coordination across the energy and water management communities, and support ongoing work to assess the interconnection of energy and water through the Regional Transmission Expansion Planning Project for the Western interconnection and similar efforts.
- c. **Conservation and Efficiency:** Because of diminished water resources and declining and inconsistent snowpack, Western Governors encourage adoption of strategies to sustain water resources and extend existing water supplies further through water conservation, water reuse and recycling, desalination and reclamation of brackish waters, and reductions in *per capita* water use. The Governors encourage the use of and research into promising water-saving strategies.
- d. **Local Watershed Planning:** Western Governors encourage federal agencies and Congress to provide resources such as technical support to states and local watershed groups. States may empower these watershed groups to address local water issues associated with water quality, growth and land management to complement state water needs.
- e. **Intergovernmental Collaboration and Conflict Resolution:** Western Governors support the negotiated settlement of interstate water disputes, Indian and Hawaiian water rights claims, and other federal water needs and claims, the settlement of which are in the best interest of Western states.

- f. **State-Federal Coordination:** Western Governors recognize the important role of federal agencies in advancing sound water resource management in the Western states. Governors appreciate the efforts of federal agencies to coordinate water-related activities, particularly through the Western States Water Council, and support the continuation of these key state-federal partnerships.
- 4. **Western States Need Reliable Water Resource Information:** Basic information on the status, trends and projections of water resource availability is essential to sound water management.
 - a. **Basic Water Data:** Western Governors support the U.S. Geological Survey's Cooperative Water Program and National Streamflow Information Program (NSIP), the Natural Resources Conservation Service's Snow Survey and Water Supply Forecasting Program, the National Oceanic and Atmospheric Administration's (NOAA) weather and hydrology-related data collection, monitoring, and drought information programs, and the National Aeronautics and Space Administration's National Land Imaging (Landsat) Program with its thermal infrared sensor. Western Governors support federal efforts to coordinate water data gathering and information programs across multiple agencies.
 - b. **Extreme Weather Events Planning:** Western Governors recognize the significant potential impacts of extreme weather events and variability in water supplies. Western Governors urge Congress and the Administration to work closely with states and other resource managers to improve predictive and adaptive capabilities for extreme weather variability and related impacts. We specifically urge the federal government to place a priority on improving the sub-seasonal and seasonal precipitation forecasting capabilities that could support water management decision-making.
 - c. **Water Data Exchange:** The Western Governors' Association and the Western States Water Council have worked together to create the Water Data Exchange, an online portal that will enable states to share their water data with each other, federal agencies, and the public via a common platform. The Governors encourage the use of state water data in planning for both the public and private sectors.
- 5. **Drought Preparedness and Response:** As exceptional levels of drought persist across the West, Governors are leading on drought preparedness and response through the Western Governors' Drought Forum. The Drought Forum provides a framework for leaders from states, businesses, non-profits, communities, research organizations and federal agencies to share best practices and identify policy options for drought management. The Governors have identified several areas in need of additional attention from Drought Forum partners, including:

- a. **Data and Analysis:** Basic data on snowpack, streamflow and soil moisture is essential to understanding drought. Though a great deal of information already exists, enhanced drought data collection and real-time analysis at a higher resolution is essential. Governors support state and federal efforts to maintain adequate collection of drought and water data, enhance data networks where appropriate, and facilitate better use of existing information.

The Governors appreciate the collaborative efforts on drought provided through NOAA's National Weather Service River Forecast Centers and Weather Forecast Offices, and the Office of Atmospheric Research's labs and programs, such as the National Integrated Drought Information System (NIDIS).

- b. **Produced, Reused and Brackish Water:** Technology exists to use produced, reused, recycled and brackish water—sources traditionally considered to be marginal or wastewater. Adoption of this technology has been limited by inadequate data, regulatory obstacles, financial barriers, public attitudes and logistical uncertainties. Governors support regulatory streamlining and policy options to encourage use of produced, brackish, and re-used water where appropriate.
- c. **Forest Health and Soil Stewardship:** Better land management practices for forests and farmland may help improve availability and soil moisture retention. Wildfires can cause sediment runoff in water systems, leading to problems for reservoir management and water quality. Governors support policies and practices that encourage healthy and resilient forests and soils in order to make the most of existing water supplies.
- d. **Water Use Efficiency and Conservation:** Public awareness of drought has directed increasing attention to water conservation strategies, both in-home and on-farm. Governors encourage municipal, industrial and agricultural water conservation strategies as drought management strategy.
- e. **Infrastructure and Investment:** Water infrastructure to store and convey water is crucial to drought management, but maintenance and expansion of that infrastructure is often difficult to fund. Governors support efforts to make the most of existing infrastructure, while seeking creative solutions to add more infrastructure with limited resources.
- f. **Working within Institutional Frameworks to Manage Drought:** Legal frameworks and regulatory regimes can sometimes limit the ability of state, local and federal agencies to respond quickly to drought conditions. Governors believe that

innovative, flexible policy solutions, such as streamlined processing of temporary water transfers, should be considered when managing drought.

- g. **Communication and Collaboration:** Communication among state officials, federal agency representatives, water providers, agricultural users and citizens is a crucial component of effective drought response. The Western Governors' Drought Forum will continue to provide a framework for sharing best practices through its online resource library, informational webinars, and strategy-sharing meetings for the duration of this resolution.

C. **GOVERNORS' MANAGEMENT DIRECTIVE**

1. The Governors direct the WGA staff, where appropriate, to work with Congressional committees of jurisdiction and the Executive Branch to achieve the objectives of this resolution including funding, subject to the appropriation process, based on a prioritization of needs.
2. Furthermore, the Governors direct WGA staff to develop, as appropriate and timely, detailed annual work plans to advance the policy positions and goals contained in this resolution. Those work plans shall be presented to, and approved by, Western Governors prior to implementation. WGA staff shall keep the Governors informed, on a regular basis, of their progress in implementing approved annual work plans.

Western Governors enact new policy resolutions and amend existing resolutions on a bi-annual basis. Please consult westgov.org/policies for the most current copy of a resolution and a list of all current WGA policy resolutions.

Tab I – U.S. Bureau of Reclamation (USBR)
Drought Response Program /
Drought Contingency Planning

Drought Response Program

The Bureau of Reclamation's new Drought Response Program supports a proactive approach to drought. It will provide assistance to water users for drought contingency planning, including consideration of climate change information and to take actions that will build long-term resiliency to drought.

Program funding will be allocated through a competitive process. Funding opportunities for Drought Resiliency Projects and Drought Planning are anticipated in May 2015.

Drought Contingency Planning

Reclamation will provide financial assistance on a competitive basis for applicants to develop a drought contingency plan or to update an existing plan to meet the required elements described in the Drought Response Framework.

Most drought contingency planning processes are structured to address the three 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?

The planning process is structured to help planners answer these three questions and to encourage an open and inclusive planning effort that employs a proactive approach to build long-term resiliency to drought.

Drought Resiliency Projects

"Drought Resiliency" is defined as the capacity of a community to cope with and respond to drought. Under this element of the program, Reclamation will fund drought resiliency projects that will help communities prepare for and respond to drought. Typically, these types of projects are referred to as "mitigation actions" in a drought contingency plan.

Projects must meet one of the following goals:

- Increase the reliability of water supply
- Improve water management and increase operational flexibility
- Implement systems to facilitate voluntary sale, transfer or exchange of water
- Provide benefits for fish and wildlife and the environment

Emergency Response Actions

Reclamation will continue to undertake emergency response actions under the Drought Response Program to minimize losses and damages resulting from drought, relying on the authorities in Title I of the Drought Act, contingent on available funding. Emergency response actions are crisis driven actions in response to unanticipated circumstances. Eligible emergency response actions are limited to temporary construction activities and other actions authorized under Title I that do not involve construction of permanent facilities, including water purchases and use of Reclamation facilities to convey and store water.

For more information please visit www.usbr.gov/drought or contact Avra Morgan at 303-445-2906 or aomorgan@usbr.gov.

Tab J – U.S. Bureau of Reclamation Major
Rehabilitation and Replacement
Needs Assessment

114TH CONGRESS
1ST SESSION

S. 593

To require the Secretary of the Interior to submit to Congress a report on the efforts of the Bureau of Reclamation to manage its infrastructure assets.

IN THE SENATE OF THE UNITED STATES

FEBRUARY 26, 2015

Mr. BARRASSO (for himself and Mr. SCHLITZ) introduced the following bill; which was read twice and referred to the Committee on Energy and Natural Resources

A BILL

To require the Secretary of the Interior to submit to Congress a report on the efforts of the Bureau of Reclamation to manage its infrastructure assets.

1 *Be it enacted by the Senate and House of Representa-*
2 *tives of the United States of America in Congress assembled,*

3 **SECTION 1. SHORT TITLE.**

4 This Act may be cited as the “Bureau of Reclamation
5 Transparency Act”.

6 **SEC. 2. FINDINGS.**

7 Congress finds that—

8 (1) the water resources infrastructure of the
9 Bureau of Reclamation provides important benefits

1 related to irrigated agriculture, municipal and indus-
2 trial water, hydropower, flood control, fish and wild-
3 life, and recreation in the 17 Reclamation States;

4 (2) as of 2013, the combined replacement value
5 of the infrastructure assets of the Bureau of Rec-
6 lamation was \$94,500,000,000;

7 (3) the majority of the water resources infra-
8 structure facilities of the Bureau of Reclamation are
9 at least 60 years old;

10 (4) the Bureau of Reclamation has previously
11 undertaken efforts to better manage the assets of
12 the Bureau of Reclamation, including an annual re-
13 view of asset maintenance activities of the Bureau of
14 Reclamation known as the “Asset Management
15 Plan”; and

16 (5) actionable information on infrastructure
17 conditions at the asset level, including information
18 on maintenance needs at individual assets due to
19 aging infrastructure, is needed for Congress to con-
20 duct oversight of Reclamation facilities and meet the
21 needs of the public.

22 **SEC. 3. DEFINITIONS.**

23 In this Act:

24 (1) ASSET.—

1 (A) IN GENERAL.—The term “asset”
2 means any of the following assets that are used
3 to achieve the mission of the Bureau of Rec-
4 lamation to manage, develop, and protect water
5 and related resources in an environmentally and
6 economically sound manner in the interest of
7 the people of the United States:

8 (i) Capitalized facilities, buildings,
9 structures, project features, power produc-
10 tion equipment, recreation facilities, or
11 quarters.

12 (ii) Capitalized and noncapitalized
13 heavy equipment and other installed equip-
14 ment.

15 (B) INCLUSIONS.—The term “asset” in-
16 cludes assets described in subparagraph (A)
17 that are considered to be mission critical.

18 (2) ASSET MANAGEMENT REPORT.—The term
19 “Asset Management Report” means—

20 (A) the annual plan prepared by the Bu-
21 reau of Reclamation known as the “Asset Man-
22 agement Plan”; and

23 (B) any publicly available information re-
24 lating to the plan described in subparagraph
25 (A) that summarizes the efforts of the Bureau

1 of Reclamation to evaluate and manage infra-
2 structure assets of the Bureau of Reclamation.

3 (3) MAJOR REPAIR AND REHABILITATION
4 NEED.—The term “major repair and rehabilitation
5 need” means major nonrecurring maintenance at a
6 Reclamation facility, including maintenance related
7 to the safety of dams, extraordinary maintenance of
8 dams, deferred major maintenance activities, and all
9 other significant repairs and extraordinary mainte-
10 nance.

11 (4) RECLAMATION FACILITY.—The term “Rec-
12 lamation facility” means each of the infrastructure
13 assets that are owned by the Bureau of Reclamation
14 at a Reclamation project.

15 (5) RECLAMATION PROJECT.—The term “Rec-
16 lamation project” means a project that is owned by
17 the Bureau of Reclamation, including all reserved
18 works and transferred works owned by the Bureau
19 of Reclamation.

20 (6) RESERVED WORKS.—The term “reserved
21 works” means buildings, structures, facilities, or
22 equipment that are owned by the Bureau of Rec-
23 lamation for which operations and maintenance are
24 performed by employees of the Bureau of Reclama-
25 tion or through a contract entered into by the Bu-

1 reau of Reclamation, regardless of the source of
2 funding for the operations and maintenance.

3 (7) SECRETARY.—The term “Secretary” means
4 the Secretary of the Interior.

5 (8) TRANSFERRED WORKS.—The term “trans-
6 ferred works” means a Reclamation facility at which
7 operations and maintenance of the facility is carried
8 out by a non-Federal entity under the provisions of
9 a formal operations and maintenance transfer con-
10 tract or other legal agreement with the Bureau of
11 Reclamation.

12 **SEC. 4. ASSET MANAGEMENT REPORT ENHANCEMENTS**
13 **FOR RESERVED WORKS.**

14 (a) IN GENERAL.—Not later than 2 years after the
15 date of enactment of this Act, the Secretary shall submit
16 to Congress an Asset Management Report that—

17 (1) describes the efforts of the Bureau of Rec-
18 lamation—

19 (A) to maintain in a reliable manner all re-
20 served works at Reclamation facilities; and

21 (B) to standardize and streamline data re-
22 porting and processes across regions and areas
23 for the purpose of maintaining reserved works
24 at Reclamation facilities; and

1 (2) expands on the information otherwise pro-
 2 vided in an Asset Management Report, in accord-
 3 ance with subsection (b).

4 (b) INFRASTRUCTURE MAINTENANCE NEEDS AS-
 5 SESSMENT.—

6 (1) IN GENERAL.—The Asset Management Re-
 7 port submitted under subsection (a) shall include—

8 (A) a detailed assessment of major repair
 9 and rehabilitation needs for all reserved works
 10 at all Reclamation projects; and

11 (B) to the extent practicable, an itemized
 12 list of major repair and rehabilitation needs of
 13 individual Reclamation facilities at each Rec-
 14 lamation project.

15 (2) INCLUSIONS.—To the extent practicable,
 16 the itemized list of major repair and rehabilitation
 17 needs under paragraph (1)(B) shall include—

18 (A) a budget level cost estimate of the ap-
 19 propriations needed to complete each item; and

20 (B) an assignment of a categorical rating
 21 for each item, consistent with paragraph (3).

22 (3) RATING REQUIREMENTS.—

23 (A) IN GENERAL.—The system for assign-
 24 ing ratings under paragraph (2)(B) shall be—

1 (i) consistent with existing uniform
2 categorization systems to inform the an-
3 nual budget process and agency require-
4 ments; and

5 (ii) subject to the guidance and in-
6 structions issued under subparagraph (B).

7 (B) GUIDANCE.—As soon as practicable
8 after the date of enactment of this Act, the Sec-
9 retary shall issue guidance that describes the
10 applicability of the rating system applicable
11 under paragraph (2)(B) to Reclamation facili-
12 ties.

13 (4) PUBLIC AVAILABILITY.—Except as provided
14 in paragraph (5), the Secretary shall make publicly
15 available, including on the Internet, the Asset Man-
16 agement Report required under subsection (a).

17 (5) CONFIDENTIALITY.—The Secretary may ex-
18 clude from the public version of the Asset Manage-
19 ment Report made available under paragraph (4)
20 any information that the Secretary identifies as sen-
21 sitive or classified, but shall make available to the
22 Committee on Energy and Natural Resources of the
23 Senate and the Committee on Natural Resources of
24 the House of Representatives a version of the report
25 containing the sensitive or classified information.

1 (c) UPDATES.—Not later than 2 years after the date
 2 on which the Asset Management Report is submitted
 3 under subsection (a) and biennially thereafter, the Sec-
 4 retary shall update the Asset Management Report, subject
 5 to the requirements of section 5(b)(2).

6 (d) CONSULTATION.—To the extent that such con-
 7 sultation would assist the Secretary in preparing the Asset
 8 Management Report under subsection (a) and updates to
 9 the Asset Management Report under subsection (c), the
 10 Secretary shall consult with—

11 (1) the Secretary of the Army (acting through
 12 the Chief of Engineers); and

13 (2) water and power contractors.

14 **SEC. 5. ASSET MANAGEMENT REPORT ENHANCEMENTS**
 15 **FOR TRANSFERRED WORKS.**

16 (a) IN GENERAL.—The Secretary shall coordinate
 17 with the non-Federal entities responsible for the operation
 18 and maintenance of transferred works in developing re-
 19 porting requirements for Asset Management Reports with
 20 respect to the condition of, and planned maintenance for,
 21 transferred works that are similar to the reporting re-
 22 quirements described in section 4(b).

23 (b) GUIDANCE.—

24 (1) IN GENERAL.—After considering input from
 25 water and power contractors of the Bureau of Rec-

1 lamation, the Secretary shall develop and implement
2 a rating system for transferred works that incor-
3 porates, to the maximum extent practicable, the rat-
4 ing system for reserved works developed under sec-
5 tion 4(b)(3).

6 (2) UPDATES.—The ratings system developed
7 under paragraph (1) shall be included in the up-
8 dated Asset Management Reports under section
9 4(c).

10 **SEC. 6. OFFSET.**

11 Notwithstanding any other provision of law, in the
12 case of the project authorized by section 1617 of the Rec-
13 lamation Projects Authorization and Adjustment Act of
14 1992 (43 U.S.C. 390h–12c), the maximum amount of the
15 Federal share of the cost of the project under section
16 1631(d)(1) of that Act (43 U.S.C. 390h–13(d)(1)) other-
17 wise available as of the date of enactment of this Act shall
18 be reduced by \$2,000,000.

○

114TH CONGRESS
1ST SESSION

H. R. 1107

To require the Secretary of the Interior to submit to Congress a report on the efforts of the Bureau of Reclamation to manage its infrastructure assets.

IN THE HOUSE OF REPRESENTATIVES

FEBRUARY 26, 2015

Mr. GOSAR (for himself, Mr. AMODEI, Mr. BARTON, Mr. CARTWRIGHT, Mr. COFFMAN, Mr. FRANKS of Arizona, Mr. GARAMENDI, Mr. HARDY, Mr. HECK of Nevada, Mr. HUFFMAN, Mrs. KIRKPATRICK, Mr. TED LIEU of California, Mrs. LUMMIS, Mr. MCCLINTOCK, Mr. MILLER of Florida, Mr. PEARCE, Mr. SALMON, Mr. TIPTON, Mr. ZINKE, Mr. DENHAM, Mrs. NAPOLITANO, and Ms. SINEMA) introduced the following bill; which was referred to the Committee on Natural Resources

A BILL

To require the Secretary of the Interior to submit to Congress a report on the efforts of the Bureau of Reclamation to manage its infrastructure assets.

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2 Bureau of Reclamation provides important benefits
3 related to irrigated agriculture, municipal and indus-
4 trial water, hydropower, flood control, fish and wild-
5 life, and recreation in the 17 Reclamation States;

6 (2) as of 2013, the combined replacement value
7 of the infrastructure assets of the Bureau of Rec-
8 lamation was \$94,500,000,000;

9 (3) the majority of the water resources infra-
10 structure facilities of the Bureau of Reclamation are
11 at least 60 years old;

12 (4) the Bureau of Reclamation has previously
13 undertaken efforts to better manage the assets of
14 the Bureau of Reclamation, including an annual re-
15 view of asset maintenance activities of the Bureau of
16 Reclamation known as the “Asset Management
17 Plan”; and

18 (5) actionable information on infrastructure
19 conditions at the asset level, including information
20 on maintenance needs at individual assets due to
21 aging infrastructure, is needed for Congress to con-
22 duct oversight of Reclamation facilities and meet the
23 needs of the public.

24 **SEC. 3. DEFINITIONS.**

25 In this Act:

1 (1) ASSET.—

2 (A) IN GENERAL.—The term “asset”
3 means any of the following assets that are used
4 to achieve the mission of the Bureau of Rec-
5 lamation to manage, develop, and protect water
6 and related resources in an environmentally and
7 economically sound manner in the interest of
8 the people of the United States:

9 (i) Capitalized facilities, buildings,
10 structures, project features, power produc-
11 tion equipment, recreation facilities, or
12 quarters.

13 (ii) Capitalized and noncapitalized
14 heavy equipment and other installed equip-
15 ment.

16 (B) INCLUSIONS.—The term “asset” in-
17 cludes assets described in subparagraph (A)
18 that are considered to be mission critical.

19 (2) ASSET MANAGEMENT REPORT.—The term
20 “Asset Management Report” means—

21 (A) the annual plan prepared by the Bu-
22 reau of Reclamation known as the “Asset Man-
23 agement Plan”; and

24 (B) any publicly available information re-
25 lating to the plan described in subparagraph

1 (A) that summarizes the efforts of the Bureau
2 of Reclamation to evaluate and manage infra-
3 structure assets of the Bureau of Reclamation.

4 (3) MAJOR REPAIR AND REHABILITATION
5 NEED.—The term “major repair and rehabilitation
6 need” means major nonrecurring maintenance at a
7 Reclamation facility, including maintenance related
8 to the safety of dams, extraordinary maintenance of
9 dams, deferred major maintenance activities, and all
10 other significant repairs and extraordinary mainte-
11 nance.

12 (4) RECLAMATION FACILITY.—The term “Rec-
13 lamation facility” means each of the infrastructure
14 assets that are owned by the Bureau of Reclamation
15 at a Reclamation project.

16 (5) RECLAMATION PROJECT.—The term “Rec-
17 lamation project” means a project that is owned by
18 the Bureau of Reclamation, including all reserved
19 works and transferred works owned by the Bureau
20 of Reclamation.

21 (6) RESERVED WORKS.—The term “reserved
22 works” means buildings, structures, facilities, or
23 equipment that are owned by the Bureau of Rec-
24 lamation for which operations and maintenance are
25 performed by employees of the Bureau of Reclama-

1 tion or through a contract entered into by the Bu-
2 reau of Reclamation, regardless of the source of
3 funding for the operations and maintenance.

4 (7) SECRETARY.—The term “Secretary” means
5 the Secretary of the Interior.

6 (8) TRANSFERRED WORKS.—The term “trans-
7 ferred works” means a Reclamation facility at which
8 operations and maintenance of the facility is carried
9 out by a non-Federal entity under the provisions of
10 a formal operations and maintenance transfer con-
11 tract or other legal agreement with the Bureau of
12 Reclamation.

13 **SEC. 4. ASSET MANAGEMENT REPORT ENHANCEMENTS**
14 **FOR RESERVED WORKS.**

15 (a) IN GENERAL.—Not later than 2 years after the
16 date of enactment of this Act, the Secretary shall submit
17 to Congress an Asset Management Report that—

18 (1) describes the efforts of the Bureau of Rec-
19 lamation—

20 (A) to maintain in a reliable manner all re-
21 served works at Reclamation facilities; and

22 (B) to standardize and streamline data re-
23 porting and processes across regions and areas
24 for the purpose of maintaining reserved works
25 at Reclamation facilities; and

1 (2) expands on the information otherwise pro-
 2 vided in an Asset Management Report, in accord-
 3 ance with subsection (b).

4 (b) INFRASTRUCTURE MAINTENANCE NEEDS AS-
 5 SESSMENT.—

6 (1) IN GENERAL.—The Asset Management Re-
 7 port submitted under subsection (a) shall include—

8 (A) a detailed assessment of major repair
 9 and rehabilitation needs for all reserved works
 10 at all Reclamation projects; and

11 (B) to the extent practicable, an itemized
 12 list of major repair and rehabilitation needs of
 13 individual Reclamation facilities at each Rec-
 14 lamation project.

15 (2) INCLUSIONS.—To the extent practicable,
 16 the itemized list of major repair and rehabilitation
 17 needs under paragraph (1)(B) shall include—

18 (A) a budget level cost estimate of the ap-
 19 propriations needed to complete each item; and

20 (B) an assignment of a categorical rating
 21 for each item, consistent with paragraph (3).

22 (3) RATING REQUIREMENTS.—

23 (A) IN GENERAL.—The system for assign-
 24 ing ratings under paragraph (2)(B) shall be—

1 (i) consistent with existing uniform
2 categorization systems to inform the an-
3 nual budget process and agency require-
4 ments; and

5 (ii) subject to the guidance and in-
6 structions issued under subparagraph (B).

7 (B) GUIDANCE.—As soon as practicable
8 after the date of enactment of this Act, the Sec-
9 retary shall issue guidance that describes the
10 applicability of the rating system applicable
11 under paragraph (2)(B) to Reclamation facili-
12 ties.

13 (4) PUBLIC AVAILABILITY.—Except as provided
14 in paragraph (5), the Secretary shall make publicly
15 available, including on the Internet, the Asset Man-
16 agement Report required under subsection (a).

17 (5) CONFIDENTIALITY.—The Secretary may ex-
18 clude from the public version of the Asset Manage-
19 ment Report made available under paragraph (4)
20 any information that the Secretary identifies as sen-
21 sitive or classified, but shall make available to the
22 Committee on Energy and Natural Resources of the
23 Senate and the Committee on Natural Resources of
24 the House of Representatives a version of the report
25 containing the sensitive or classified information.

1 (c) UPDATES.—Not later than 2 years after the date
2 on which the Asset Management Report is submitted
3 under subsection (a) and biennially thereafter, the Sec-
4 retary shall update the Asset Management Report, subject
5 to the requirements of section 5(b)(2).

6 (d) CONSULTATION.—To the extent that such con-
7 sultation would assist the Secretary in preparing the Asset
8 Management Report under subsection (a) and updates to
9 the Asset Management Report under subsection (c), the
10 Secretary shall consult with—

11 (1) the Secretary of the Army (acting through
12 the Chief of Engineers); and

13 (2) water and power contractors.

14 **SEC. 5. ASSET MANAGEMENT REPORT ENHANCEMENTS**
15 **FOR TRANSFERRED WORKS.**

16 (a) IN GENERAL.—The Secretary shall coordinate
17 with the non-Federal entities responsible for the operation
18 and maintenance of transferred works in developing re-
19 porting requirements for Asset Management Reports with
20 respect to the condition of, and planned maintenance for,
21 transferred works that are similar to the reporting re-
22 quirements described in section 4(b).

23 (b) GUIDANCE.—

24 (1) IN GENERAL.—After considering input from
25 water and power contractors of the Bureau of Rec-

1 lamation, the Secretary shall develop and implement
2 a rating system for transferred works that incor-
3 porates, to the maximum extent practicable, the rat-
4 ing system for reserved works developed under sec-
5 tion 4(b)(3).

6 (2) UPDATES.—The ratings system developed
7 under paragraph (1) shall be included in the up-
8 dated Asset Management Reports under section
9 4(c).

○

Tab K – “Reclamation Efficiency Act of 2015”
(RE-ACT) Proposed Legislation

1 Title: To establish a water innovative financing program, and for other purposes.
2
3

4 Be it enacted by the Senate and House of Representatives of the United States of America in
5 Congress assembled,

6 SECTION 1. SHORT TITLE; TABLE OF CONTENTS.

7 (a) Short Title.—This Act may be cited as the “Reclamation Efficiency Act of 2015” or “RE-
8 ACT”.

9 (b) Table of Contents.—The table of contents of this Act is as follows:

10 Sec.1.Short title; table of contents.
11

12 TITLE I—DEAUTHORIZATION OF INACTIVE PROJECTS 13 AND PROGRAMS

14 Sec.101 Deauthorization of Inactive Projects
15

16 TITLE II—STORAGE, INTEGRATED WATER 17 MANAGEMENT AND RECYCLING

18 Sec.201.Definitions.

19 Subtitle A—Innovative Financing

20 Sec.211.Purposes.

21 Sec.212.Authority to provide assistance.

22 Sec.213.Applications.

23 Sec.214.Eligibility for assistance.

24 Sec.215.Determination of eligibility and project selection.

25 Sec.216.Secured loans.

26 Sec.217.Program administration.

27 Sec.218.State and local permits.

28 Sec.219.Regulations.

29 Sec.220.Limitation on use of authority.

30 Sec.221.Funding.

31 Sec.222.Report to Congress.

32 Subtitle B— Storage; Water Reuse and Integrated Regional

Water Management

Sec.231.Water storage projects.

Sec.232.Authorization of appropriations.

Subtitle C—Title Transfers

Sec.241.Authorization to transfer title.

TITLE I—DEAUTHORIZATION OF INACTIVE PROJECTS AND PROGRAMS.

SEC. 101. DEAUTHORIZATION OF INACTIVE PROJECTS.

(a) Purposes.--The purposes of this section are--

(1) to identify water resources development programs and projects authorized by Congress that are no longer viable for construction due to--

(A) a lack of local support;

(B) a lack of available Federal or non-Federal resources; or

(C) an authorizing purpose that is no longer relevant or feasible;

(2) to create an expedited and definitive process to deauthorize water resources development programs and projects that are no longer viable for construction; and

(3) to allow the continued authorization of water resources development programs and projects that are viable for construction.

(b) Comprehensive Status Reports.--

(1) Minimum funding list.--At the end of each fiscal year, the Secretary shall submit to the Committee on Energy and Natural Resources of the Senate and the Committee on Committee on Natural Resources of the House of Representatives, and make available on a publicly accessible Internet site in a manner that is downloadable, searchable, and sortable, a list of—

(A) Programs, projects, or separable elements of programs and projects authorized for construction for which funding has been obligated during the current fiscal year or any of the 6 preceding fiscal years;

(B) the amount of funding obligated for each such program, project, or separable element per fiscal year

(C) the current phase of each such program, project, and separable element; and

1 (D) the amount required to complete the current phase of each such program,
2 project, or separable element.

3
4 (2) Comprehensive backlog report.--

5 (A) In general.--The Secretary shall compile and publish a complete list of all
6 programs, projects, and separable elements of programs and projects of the
7 Bureau of Reclamation that are authorized for construction but have not
8 been completed.

9 (B) Required information.--The Secretary shall include on the list developed
10 under subparagraph (A) for each program, project, and separable element
11 on that list--

12 (i) the date of authorization of the program, project, or separable
13 element, including any subsequent modifications to the original
14 authorization;

15 (ii) the original budget authority for the program, project, or separable
16 element;

17 (iii) a brief description of the program, project, or separable element;

18 (iv) the estimated date of completion of the program, project, or
19 separable element;

20 (v) the estimated cost of completion of the program, project, or
21 separable element; and

22 (vi) any amounts appropriated for the program, project, or separable
23 element that remain unobligated.

24 (C) Publication.--

25 (i) In general.--Not later than 1 year after the date of enactment of this
26 paragraph, the Secretary shall submit a copy of the list developed
27 under subparagraph (A) to--

28 (I) the Committee on Energy and Natural Resources of the
29 Senate and the Committee on Natural Resources of the
30 House of Representatives; and

31 (II) the Director of the Office of Management and Budget.

32 (ii) Public availability.--Beginning on the date the Secretary submits
33 the report to Congress under clause (i), the Secretary shall make a
34 copy of the list available on a publicly accessible Internet site in a
35 manner that is downloadable, searchable, and sortable.”
36

37 (c) Interim Deauthorization List.--

38 (1) In general.--The Secretary shall develop an interim deauthorization list that identifies
39 each water resources development program or project, or separable element of a
40 program or project, authorized for construction before March 30, 2009, for which--

- 1 (A) construction was not initiated before the date of enactment of this Act; or
2 (B) construction was initiated before the date of enactment of this Act, but for
3 which no funds, Federal or non-Federal, were obligated for construction of
4 the program, project, or separable element of the program or project
5 during the current fiscal year or any of the 6 preceding fiscal years.
6

- 7 (2) Special rule for projects receiving funds for post-authorization study.--A program,
8 project, or separable element of a program or project may not be identified on the
9 interim deauthorization list, or the final deauthorization list developed under
10 subsection (d), if the program, project, or separable element received funding for a
11 post-authorization study during the current fiscal year or any of the 6 preceding fiscal
12 years.
13

- 14 (3) Public comment and consultation.--

- 15 (A) In general.--The Secretary shall solicit comments from the public and the
16 Governors of each applicable State on the interim deauthorization list
17 developed under paragraph (1).
18 (B) Comment period.--The public comment period shall be 90 days.
19

- 20 (4) Submission to congress; publication.--Not later than 90 days after the date of
21 submission of the list required by subsection (b), the Secretary shall--

- 22 (A) submit the interim deauthorization list to the Committee on Energy and
23 Natural Resources of the Senate and the Committee on Natural Resources
24 of the House of Representatives; and
25 (B) publish the interim deauthorization list in the Federal Register.
26

- 27 (d) Final Deauthorization List.--

- 28 (1) In general.--The Secretary shall develop a final deauthorization list of each water
29 resources development program or project, or separable element of a program or
30 project, described in subsection (c)(1) that is identified pursuant to this subsection.
31

- 32 (2) Identification of projects.--

- 33 (A) Criteria for inclusion.--

- 34 (i) In general.--The Secretary shall identify programs, projects, and
35 separable elements of programs and projects for inclusion on the
36 final deauthorization list that are no longer viable for construction
37 due to--

- 38 (I) a lack of local support;
39 (II) a lack of available Federal or non-Federal resources; or

- 1 (III) an authorizing purpose that is no longer relevant or
2 feasible;
- 3 (ii) Factors to consider.--The Secretary may identify programs,
4 projects, and separable elements of programs and projects for
5 exclusion from the final deauthorization list if the Secretary
6 determines, on a case-by-case basis, that a project or separable
7 element of a project is critical for interests of the United States,
8 based on the possible impact of the project or separable element of
9 the project on public health and safety, the national economy, or
10 the environment.
- 11 (iii) Consideration of public comments.--In making determinations
12 under clause (i) and clause (ii), the Secretary shall consider any
13 comments received under subsection (c)(3).
- 14 (B) Appendix.--The Secretary shall include as part of the final deauthorization
15 list an appendix that--
- 16 (i) identifies each program, project, and separable element of a
17 program or project on the interim deauthorization list developed
18 under subsection (c) that is not included on the final
19 deauthorization list; and
- 20 (ii) describes the reasons why the program, project, or separable
21 element is not included.
- 22
- 23 (3) Submission to congress; publication.--Not later than 120 days after the date on
24 which the public comment period under subsection (c)(3) expires, the Secretary
25 shall--
- 26 (A) submit the final deauthorization list and the appendix to the final
27 deauthorization list to the Committee on Energy and Natural Resources of
28 the Senate and the Committee on Natural Resources of the House of
29 Representatives; and
- 30 (B) publish the final deauthorization list and the appendix to the final
31 deauthorization list in the Federal Register.
- 32
- 33 (e) Deauthorization; Congressional Review.--
- 34 (1) In general.--After the expiration of the 180-day period beginning on the date of
35 submission of the final deauthorization report under subsection (d), a program,
36 project, or separable element of a program or project identified in the report is hereby
37 deauthorized, unless Congress passes a joint resolution disapproving the final
38 deauthorization report prior to the end of such period.
- 39
- 40 (2) Non-federal contributions.--

(A) In general.--A program, project, or separable element of a program or project identified in the final deauthorization report under subsection (d) shall not be deauthorized under this subsection if, before the expiration of the 180-day period referred to in paragraph (1), the non-Federal interest for the program, project, or separable element of the project provides sufficient funds to complete the program, project, or separable element of the project.

(f) General Provisions.--

(1) Definitions.--In this section:

(A) Secretary.—The term “Secretary” means the Secretary of the Interior

(B) Post-authorization study.--The term “post-authorization study” means--

(i) a review conducted by the Bureau of Reclamation including an initial appraisal that--

(I) demonstrates a Federal interest; and

(II) requires additional analysis for the project or separable element.

(C) Water resources development program or project.--The term “water resources development program or project” includes any water and related resource project or program of the Bureau of Reclamation.

(2) Treatment of project modifications.--For purposes of this section, if an authorized water resources development program, project, or separable element of the program or project has been modified by an Act of Congress, the date of the authorization of the program, project, or separable element shall be deemed to be the date of the most recent such modification.

TITLE II—STORAGE, INTEGRATED WATER MANAGEMENT AND RECYCLING

SEC. 201. DEFINITIONS.

In this title:

(1) ELIGIBLE ENTITY.—The term “eligible entity” means—

(A) a corporation;

(B) a partnership;

(C) a joint venture;

(D) a trust;

(E) a Federal, State, or local governmental entity, agency, or instrumentality; and

(F) a conservancy district, irrigation district, canal company, mutual water company, water users' association, Indian tribe, agency created by interstate compact, or any other entity that has the capacity to contract with the United States under Federal reclamation law.

(2) FEDERAL CREDIT INSTRUMENT.—The term “Federal credit instrument” means a secured loan or loan guarantee authorized to be made available under this title with respect to a project.

(3) INVESTMENT-GRADE RATING.—The term “investment-grade rating” means a rating of BBB minus, Baa3, bbb minus, BBB (low), or higher as assigned by a rating agency to project obligations.

(4) LENDER.—

(A) IN GENERAL.—The term “lender” means any non-Federal qualified institutional buyer (as defined in section 230.144A(a) of title 17, Code of Federal Regulations (or a successor regulation) (commonly known as “Rule 144A(a) of the Securities and Exchange Commission” and issued under the Securities Act of 1933 (15 U.S.C. 77a et seq.))).

(B) INCLUSIONS.—The term “lender” includes—

(i) a qualified retirement plan (as defined in section 4974 of the Internal Revenue Code of 1986) that is a qualified institutional buyer; and

(ii) a governmental plan (as defined in section 414 of the Internal Revenue Code of 1986) that is a qualified institutional buyer.

(5) LOAN GUARANTEE.—The term “loan guarantee” means any guarantee or other pledge by the Secretary to pay all or part of the principal of, and interest on, a loan or other debt obligation issued by an obligor and funded by a lender.

(6) OBLIGOR.—The term “obligor” means an eligible entity that is primarily liable for payment of the principal of, or interest on, a Federal credit instrument.

(7) PROJECT OBLIGATION.—

(A) IN GENERAL.—The term “project obligation” means any note, bond, debenture, or other debt obligation issued by an obligor in connection with the financing of a project.

(B) EXCLUSION.—The term “project obligation” does not include a Federal credit instrument.

(8) RATING AGENCY.—The term “rating agency” means a credit rating agency registered with the Securities and Exchange Commission as a nationally recognized statistical rating organization (as defined in section 3(a) of the Securities Exchange Act of 1934 (15 U.S.C. 78c(a))).

(9) RECLAMATION STATE.—The term “Reclamation State” means any of the States of—

(A) Arizona;

(B) California;
(C) Colorado;
(D) Idaho;
(E) Kansas;
(F) Montana;
(G) Nebraska;
(H) Nevada;
(I) New Mexico;
(J) North Dakota;
(K) Oklahoma;
(L) Oregon;
(M) South Dakota;
(N) Texas;
(O) Utah;
(P) Washington; and
(Q) Wyoming.

(10) SECRETARY.—The term “Secretary” means the Secretary of the Interior.

(11) SECURED LOAN.—The term “secured loan” means a direct loan or other debt obligation issued by an obligor and funded by the Secretary in connection with the financing of a project under subtitle A.

(12) SUBSIDY AMOUNT.—The term “subsidy amount” means the amount of budget authority sufficient to cover the estimated long-term cost to the Federal Government of a Federal credit instrument, as calculated on a net present value basis, excluding administrative costs and any incidental effects on Governmental receipts or outlays in accordance with the Federal Credit Reform Act of 1990 (2 U.S.C. 661 et seq.).

(13) SUBSTANTIAL COMPLETION.—The term “substantial completion”, with respect to a project, means the earliest date on which a project is considered to perform the functions for which the project is designed.

Subtitle A—Innovative Financing

SEC. 211. PURPOSES.

The purposes of this subtitle are—

(1) to promote increased development of critical water resources infrastructure by establishing additional opportunities for financing water resources projects;

(2) to attract new investment capital to infrastructure projects that are capable of generating revenue streams through user fees or other dedicated funding sources;

(3) to complement existing Federal funding sources and address budgetary constraints on Bureau of Reclamation programs; and

(4) to leverage private investment in water resources infrastructure.

SEC. 212. AUTHORITY TO PROVIDE ASSISTANCE.

(a) In General.—The Secretary may provide financial assistance under this subtitle to carry out projects within—

(1) any Reclamation State;

(2) any other State in which the Bureau of Reclamation is authorized to provide project assistance; and

(3) the States of Alaska and Hawaii.

(b) Selection.—In selecting projects to receive financial assistance under subsection (a), the Secretary shall ensure diversity with respect to—

(1) project types; and

(2) geographical locations.

SEC. 213. APPLICATIONS.

To be eligible to receive assistance under this subtitle, an eligible entity shall submit to the Secretary an application at such time, in such manner, and containing such information as the Secretary may require.

SEC. 214. ELIGIBILITY FOR ASSISTANCE.

(a) Eligible Projects.—The following projects may be carried out using assistance made available under this subtitle:

(1) A project for the reclamation and reuse of municipal, industrial, domestic, and agricultural wastewater, and naturally impaired ground and surface waters, which the Secretary, acting through the Commissioner of Reclamation, is authorized to undertake.

(2) Any water infrastructure project not specifically authorized by law that—

(A) the Secretary determines, through the completion of an appraisal investigation and feasibility study, would contribute to a safe, adequate water supply for domestic, agricultural, environmental, or municipal and industrial use; and

(B) is otherwise eligible for assistance under this title.

(3) A project for enhanced energy efficiency in the operation of a water system.

(4) A project for accelerated repair and replacement of an aging water distribution facility.

(5) A brackish or sea water desalination project.

(6) Acquisition of real property or an interest in real property for water storage, reclaimed or recycled water, or wastewater, if the acquisition is integral to a project described in paragraphs (1) through (5).

(7) A combination of projects, each of which is eligible under paragraphs (1) through (6), for which an eligible entity or group of eligible entities submits a single application.

(b) Activities Eligible for Assistance.—For purposes of this subtitle, an eligible activity with respect to an eligible project under subsection (a) includes the cost of—

(1) development-phase activities, including planning, feasibility analysis, revenue forecasting, environmental review, permitting, preliminary engineering and design work, and other preconstruction activities;

(2) construction, reconstruction, rehabilitation, and replacement activities;

(3) the acquisition of real property (including water rights, land relating to the project, and improvements to land), environmental mitigation, construction contingencies, and acquisition of equipment;

(4) capitalized interest necessary to meet market requirements, reasonably required reserve funds, capital issuance expenses, and other carrying costs during construction; and

(5) refinancing interim construction funding, existing long-term project obligations, or a secured loan or loan guarantee made under this subtitle.

SEC. 215. DETERMINATION OF ELIGIBILITY AND PROJECT SELECTION.

(a) Eligibility Requirements.—To be eligible to receive financial assistance under this subtitle, a project shall meet the following criteria, as determined by the Secretary:

(1) CREDITWORTHINESS.—

(A) IN GENERAL.—Subject to subparagraph (B), the project shall be creditworthy, as determined by the Secretary, who shall ensure that any financing for the project has appropriate security features, such as a rate covenant, to ensure repayment.

(B) PRELIMINARY RATING OPINION LETTER.—The Secretary shall require each applicant to provide a preliminary rating opinion letter from at least 1 rating agency indicating that the senior obligations of the project (which may be the Federal credit instrument) have the potential to achieve an investment-grade rating.

(2) ELIGIBLE PROJECT COSTS.—The eligible project costs of a project shall be reasonably anticipated to be not less than \$20,000,000.

(3) DEDICATED REVENUE SOURCES.—The Federal credit instrument for the project shall be repayable, in whole or in part, from dedicated revenue sources that also secure the project obligations.

(4) PUBLIC SPONSORSHIP OF PRIVATE ENTITIES.—In the case of a project carried out by an entity that is not a State or local government or an agency or instrumentality of a State or local government, the project shall be publicly sponsored.

(b) Selection Criteria.—

(1) ESTABLISHMENT.—The Secretary shall establish criteria for the selection of projects that meet the eligibility requirements of subsection (a), in accordance with paragraph (2).

1 (2) CRITERIA.—The selection criteria shall include the following:

2 (A) The extent to which the project is nationally or regionally significant.

3 (B) The extent to which assistance under this section would foster innovative public-
4 private partnerships and attract private debt or equity investment.

5 (C) The likelihood that assistance under this section would enable the project to
6 proceed at an earlier date than the project would otherwise be able to proceed.

7 (D) The extent to which the project uses new or innovative approaches.

8 (E) The amount of budget authority required to fund the Federal credit instrument
9 made available under this subtitle.

10 (F) The extent to which the project helps maintain or protect the environment.

11 (c) Receipt of Other Federal Funding.—Receipt of a Federal grant or contract or other Federal
12 funding to support an eligible project shall not preclude the project from being eligible for
13 assistance under this subtitle.

14 (d) Federal Requirements.—

15 (1) EFFECT OF SECTION.—Nothing in this section supersedes the applicability of other
16 requirements of Federal law (including regulations).

17 (2) NEPA.—A Federal action carried out regarding a loan or loan guarantee provided
18 under this subtitle shall not be considered to be a Federal action for purposes of the National
19 Environmental Policy Act of 1969 (42 U.S.C. 4321 et seq.).

20 SEC. 216. SECURED LOANS.

21 (a) Agreements.—

22 (1) IN GENERAL.—Subject to paragraphs (2) through (4), the Secretary may enter into
23 agreements with 1 or more obligors to make secured loans, the proceeds of which shall be
24 used—

25 (A) to finance eligible project costs of any project selected under section 215;

26 (B) to refinance interim construction financing of eligible project costs of any
27 project selected under section 215; or

28 (C) to refinance long-term project obligations or Federal credit instruments, if that
29 refinancing provides additional funding capacity for the completion, enhancement, or
30 expansion of any project that—

31 (i) is selected under section 215; or

32 (ii) otherwise meets the requirements of section 215.

33 (2) LIMITATION ON REFINANCING OF INTERIM CONSTRUCTION FINANCING.—A secured loan
34 under paragraph (1) shall not be used to refinance interim construction financing under
35 paragraph (1)(B) later than 1 year after the date of substantial completion of the applicable
36 project.

37 (3) RISK ASSESSMENT.—Before entering into an agreement under this subsection for a

1 secured loan, the Secretary, in consultation with the Director of the Office of Management
2 and Budget and each rating agency providing a preliminary rating opinion letter under
3 section 215(a)(1)(B), shall determine an appropriate capital reserve subsidy amount for the
4 secured loan, taking into account each such preliminary rating opinion letter.

5 (4) INVESTMENT-GRADE RATING REQUIREMENT.—The execution of a secured loan under
6 this section shall be contingent on receipt by the senior obligations of the project of an
7 investment-grade rating.

8 (b) Terms and Limitations.—

9 (1) IN GENERAL.—A secured loan provided for a project under this section shall be
10 subject to such terms and conditions, and contain such covenants, representations,
11 warranties, and requirements (including requirements for audits), as the Secretary
12 determines to be appropriate.

13 (2) MAXIMUM AMOUNT.—The amount of a secured loan under this section shall not
14 exceed the lesser of—

15 (A) an amount equal to 49 percent of the reasonably anticipated eligible project
16 costs; and

17 (B) if the secured loan does not receive an investment-grade rating, the amount of
18 the senior project obligations of the project.

19 (3) PAYMENT.—A secured loan under this section—

20 (A) shall be payable, in whole or in part, from State or local taxes, user fees, or other
21 dedicated revenue sources that also secure the senior project obligations of the relevant
22 project;

23 (B) shall include a rate covenant, coverage requirement, or similar security feature
24 supporting the project obligations; and

25 (C) may have a lien on revenues described in subparagraph (A), subject to any lien
26 securing project obligations.

27 (4) INTEREST RATE.—The interest rate on a secured loan under this section shall be not
28 less than the yield on United States Treasury securities of a similar maturity to the maturity
29 of the secured loan on the date of execution of the loan agreement.

30 (5) MATURITY DATE.—The final maturity date of a secured loan under this section shall
31 be not later than 35 years after the date of substantial completion of the relevant project.

32 (6) NONSUBORDINATION.—A secured loan under this section shall not be subordinated to
33 the claims of any holder of project obligations in the event of bankruptcy, insolvency, or
34 liquidation of the obligor of the project.

35 (7) FEES.—The Secretary may establish fees, as provided for in section 217(b) of this
36 subtitle, at a level sufficient to cover all or a portion of the costs to the Federal Government
37 of making a secured loan under this section.

38 (8) NON-FEDERAL SHARE.—The proceeds of a secured loan under this section may be
39 used to pay any non-Federal share of project costs required if the loan is repayable from
40 non-Federal funds.

(9) MAXIMUM FEDERAL INVOLVEMENT.—For each project for which assistance is provided under this subtitle, the total amount of Federal assistance from all sources, including the assistance provided under this subtitle, shall not exceed 80 percent of the total project cost.

(c) Repayment.—

(1) SCHEDULE.—The Secretary shall establish a repayment schedule for each secured loan provided under this section, based on the projected cash flow from project revenues and other repayment sources.

(2) COMMENCEMENT.—Scheduled loan repayment of principal or interest on a secured loan under this section shall commence not later than 5 years after the date of substantial completion of the project.

(3) DEFERRED PAYMENTS.—

(A) AUTHORIZATION.—If, at any time after the date of substantial completion of a project for which a secured loan is provided under this section, the project is unable to generate sufficient revenues to pay the scheduled loan repayments of principal and interest on the secured loan, the Secretary may allow the obligor, subject to subparagraph (C), to add unpaid principal and interest to the outstanding balance of the secured loan.

(B) INTEREST.—Any payment deferred under subparagraph (A) shall—

(i) continue to accrue interest in accordance with subsection (b)(4) until fully repaid; and

(ii) be scheduled to be amortized over the remaining term of the secured loan.

(C) CRITERIA.—

(i) IN GENERAL.—Any payment deferral under subparagraph (A) shall be contingent on the project meeting such criteria as the Secretary may establish.

(ii) REPAYMENT STANDARDS.—The criteria established under clause (i) shall include standards for reasonable assurance of repayment.

(4) PREPAYMENT.—

(A) USE OF EXCESS REVENUES.—Any excess revenues that remain after satisfying scheduled debt service requirements on the project obligations and secured loan and all deposit requirements under the terms of any trust agreement, bond resolution, or similar agreement securing project obligations may be applied annually to prepay a secured loan under this section without penalty.

(B) USE OF PROCEEDS OF REFINANCING.—A secured loan under this section may be prepaid at any time without penalty from the proceeds of refinancing from non-Federal funding sources.

(d) Sale of Secured Loans.—

(1) IN GENERAL.—Subject to paragraph (2), as soon as practicable after the date of substantial completion of a project and after providing a notice to the obligor, the Secretary may sell to another entity or reoffer into the capital markets a secured loan for a project

1 under this section, if the Secretary determines that the sale or reoffering can be made on
2 favorable terms.

3 (2) CONSENT OF OBLIGOR.—In making a sale or reoffering under paragraph (1), the
4 Secretary may not change the original terms and conditions of the secured loan without the
5 written consent of the obligor.

6 (e) Loan Guarantees.—

7 (1) IN GENERAL.—The Secretary may provide a loan guarantee to a lender in lieu of
8 making a secured loan under this section, if the Secretary determines that the budgetary cost
9 of the loan guarantee is substantially the same as that of a secured loan.

10 (2) TERMS.—The terms of a loan guarantee provided under this subsection shall be
11 consistent with the terms established in this section for a secured loan, except that the rate
12 on the guaranteed loan and any prepayment features shall be negotiated between the obligor
13 and the lender, with the consent of the Secretary.

14 **SEC. 217. PROGRAM ADMINISTRATION.**

15 (a) Requirement.—The Secretary shall establish a uniform system to service the Federal credit
16 instruments made available under this subtitle.

17 (b) Capital Reserve Fund.—

18 (1) IN GENERAL.—There is hereby established in the Treasury of the United States the
19 Reclamation Loan Finance Capital Reserve Fund, which shall be available for deposit of
20 capital reserve fees provided for under this subsection. Amounts deposited shall be credited
21 as offsetting collections.

22 (2) CAPITAL RESERVE FEES.—To the extent required by appropriations Acts, the
23 Secretary may assess, collect and spend capital reserve fees at a level that is sufficient to
24 cover—

25 (A) the costs of services of expert firms retained pursuant to subsection (d); and

26 (B) all or a portion of the costs to the Federal Government of servicing the Federal credit
27 instruments provided under this subtitle, including all or a portion of the outlays associated
28 with the provision of the Federal credit instruments under this subtitle. The capital reserve
29 fees shall be established at amounts that will result in the collection, during each fiscal year,
30 of an amount that can be reasonably expected to equal the outlays associated the provision
31 of the Federal credit instruments under this subtitle.

32 (c) Servicer.—

33 (1) IN GENERAL.—The Secretary may appoint a financial entity to assist the Secretary in
34 servicing the Federal credit instruments provided under this subtitle.

35 (2) DUTIES.—A servicer appointed under paragraph (1) shall act as the agent for the
36 Secretary.

37 (3) FEE.—A servicer appointed under paragraph (1) shall receive a servicing fee, subject
38 to approval by the Secretary.

39 (d) Assistance From Experts.—The Secretary may retain the services, including counsel, of

1 any organization or entity with expertise in the field of municipal and project finance to assist in
2 the underwriting and servicing of Federal credit instruments provided under this subtitle.

3 SEC. 118. STATE AND LOCAL PERMITS.

4 The provision of financial assistance for a project under this subtitle shall not—

5 (1) relieve any recipient of the assistance of any obligation to obtain any required State or
6 local permit or approval with respect to the project;

7 (2) limit the right of any unit of State or local government to approve or regulate any rate
8 of return on private equity invested in the project; or

9 (3) otherwise supersede any State or local law (including any regulation) applicable to the
10 construction or operation of the project.

11 SEC. 219. REGULATIONS.

12 The Secretary may promulgate such regulations as the Secretary determines to be appropriate
13 to carry out this subtitle.

14 SEC. 220. LIMITATION ON USE OF AUTHORITY.

15 Notwithstanding any other provision of law, nothing in this subtitle applies to any
16 Sacramento-San Joaquin Delta conveyance facility included within an approved Bay Delta
17 Conservation Plan.

18 SEC. 221. FUNDING.

19 (a) In General.—There is authorized to be appropriated to the Secretary to carry out this
20 subtitle \$150,000,000 for each of fiscal years 2016 through 2020, to remain available until
21 expended.

22 (b) Administrative Costs.—Of the funds made available to carry out this subtitle, the Secretary
23 may use for the administration of this subtitle not more than \$2,200,000 for each of fiscal years
24 2016 through 2020.

25 SEC. 222. REPORT TO CONGRESS.

26 Not later than 2 years after the date of enactment of this Act, and every 2 years thereafter, the
27 Secretary shall submit to the Committee on Energy and Natural Resources of the Senate and the
28 Committee on Natural Resources of the House of Representatives a report summarizing the
29 financial performance of the projects that are receiving, or have received, assistance under this
30 subtitle, including an assessment of whether the objectives of this subtitle are being met.

31 Subtitle B—Storage; Water Reuse and Integrated Regional 32 Water Management

33 SEC. 131. WATER STORAGE PROJECTS.

34 (a) Agreements.—The Secretary may enter into a cost-shared financial assistance agreement
35 with any non-Federal entity in a Reclamation State or the States of Alaska and Hawaii to carry

1 out the planning, design, and construction of any permanent water storage and conveyance
2 facility used to regulate and maximize the water supply arising from a project that is eligible for
3 assistance under this title or any other provision of law—

4 (1) to recycle impaired surface water and ground water; or

5 (2) to use integrated and coordinated water management on a watershed or regional scale.

6 (b) Financial Assistance.—In providing financial assistance under this section, the Secretary
7 shall give priority to storage and conveyance components that—

8 (1) ensure the efficient and beneficial use of water or reuse of recycled water;

9 (2) consistent with Secretarial Order No. 3297, dated February 22, 2010, support
10 sustainable water management practices and the water sustainability objectives of 1 or more
11 offices of the Department of the Interior or any other Federal agency;

12 (3)(A) increase the availability of usable water supplies in a watershed or region to
13 benefit people, the economy, and the environment; and

14 (B) include adaptive measures needed to address climate change, drought and future
15 demands;

16 (4) where practicable—

17 (A) provide flood control or recreation benefits; and

18 (B) include the development of incremental hydroelectric power generation;

19 (5) include partnerships that go beyond political and institutional jurisdictions to support
20 the efficient use of the limited water resources of the United States and the applicable
21 region; and

22 (6) generate environmental benefits, such as benefits to fisheries, wildlife and habitat, and
23 water quality and water-dependent ecological systems, as well as water supply benefits to
24 agricultural and urban water users.

25 (c) Federal Share.—The Federal share of the cost of a project carried out under subsection (a)
26 shall be—

27 (1) equal to the lesser of—

28 (A) 25 percent of total cost of the project; or

29 (B) \$20,000,000, adjusted for inflation; and

30 (2) nonreimbursable.

31 (d) Non-Federal Share.—The non-Federal share of the cost of a project carried out under
32 subsection (a) may include in-kind contributions to the planning, design, and construction of a
33 project.

34 (e) Title and Costs.—A non-Federal entity entering into a financial assistance agreement under
35 this section shall—

36 (1) hold title to all facilities constructed under this section; and

37 (2) be solely responsible for the costs of operating and maintaining those facilities.

1 (f) Approval.—The Secretary may enter into financial assistance agreements under this
2 section, if—

3 (1) annually or at such frequency as the Secretary deems appropriate, the Secretary
4 notifies the Committee on Energy and Natural Resources of the Senate, the Committee on
5 Natural Resources of the House of Representatives, the Committee on Appropriations of
6 the Senate, and the Committee on Appropriations of the House of Representatives of the
7 intent to enter into such agreements;

8 (2) No objection is raised by any such committee within 45 days of notification.
9

10 SEC. 232. AUTHORIZATION OF APPROPRIATIONS.

11 There is authorized to be appropriated \$300,000,000 to carry out this subtitle.

12 Subtitle C—Title Transfers

13 SEC. 241. AUTHORIZATION TO TRANSFER TITLE.

14 The Secretary may transfer to any non-Federal operating entity title to any Reclamation
15 project or facility, or any separable element of such a project or facility, that is authorized before
16 the date of enactment of this Act, if—

17 (1) all previous Federal construction contract obligations or other related repayment
18 contracts or agreements associated with the project have been paid out by a non-Federal
19 project beneficiary;

20 (2)(A) a project facility or separable element of such a facility is in need of rehabilitation
21 or improvement, as determined by the Secretary; and

22 (B) the non-Federal operating entity is otherwise eligible for a secured loan or loan
23 guarantee under this title;

24 (3) the title transfer meets all applicable Federal laws and regulations, as determined by
25 the Secretary; and

26 (4)(A) the Secretary notifies the Committee on Energy and Natural Resources of the
27 Senate and the Committee on Natural Resources of the House of Representatives of the
28 intent to transfer by not later than 60 days before the date of such intended transfer; and

29 (B) no objection to the transfer is raised by any such committee.

Tab L – Federal Water Data Coordination

Identifying New Opportunities: Developing a Coordinated National Soil Moisture Network

Dr. Michael L. Strobel
Director – USDA-NRCS National Water
and Climate Center
Portland, OR

Meeting a critical need

Soil moisture data are critical for assessing:

- Drought conditions
- Flood potential
- Estimates of crop yields
- Water supply forecasting
- Hydrologic models
- Impacts of climate change

Goal

- President's Climate Action Plan
- National Drought Resilience Partnership
- National Integrated Drought Information System (NIDIS)
- Develop a Coordinated National Soil Moisture Network

Data-rich: Data-challenged

- Many sources of information
- Highly variable:
 - Spatial distribution
 - Vertical data collection
 - Sensor types
 - Scale
 - Time
 - Data storage (format, distribution)
 - Applications

Integration

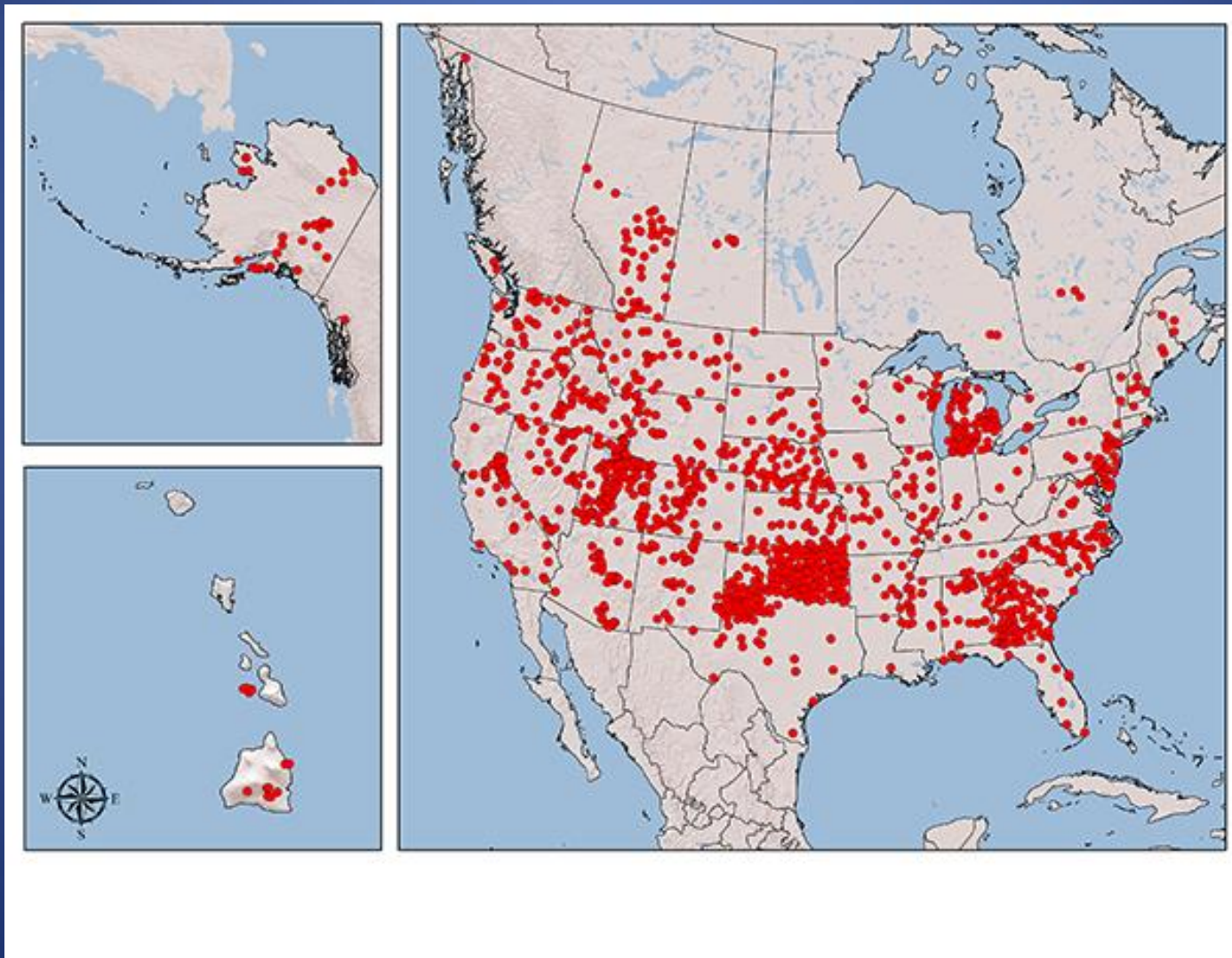
- In situ stations collecting point data
- Remote sensing at various scales
- Models



Selected Representative In Situ Soil Moisture Networks in the United States

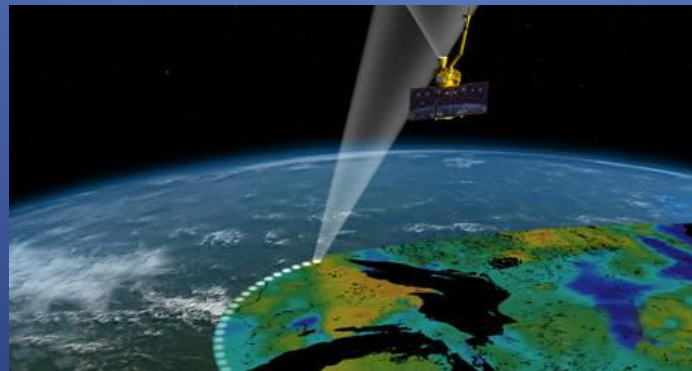
Network Name	Geographic Region	Number of Stations	Period of Record	Observing Depths (cm)
Agricultural Research Service (ARS)	Oklahoma	44	2005-present	5, 25, 45
AmeriFlux	United States	39	1997-present	Variable
Atmospheric Radiation Measurement (ARM)	Kansas, Oklahoma	17	1996-present	5, 15, 25, 35, 60, 85, 125, 175
Automated Weather Data Network (AWDN)	Nebraska	52	2006-present	10, 25, 50, 100
Climate Reference Network (CRN)	United States	114	2009-present	5, 10, 20, 50, 100
Cosmic Ray Soil moisture Observing Station (COSMOS)	United States	54	2008-present	Variable
Delaware Environmental Observing System (DEOS)	Delaware	29	2004-present	5
**Georgia Automated Environmental Monitoring Network (GAEMN)	Georgia	79	1992-present	Variable
Illinois Climate Network (ICN)	Illinois	19	1988-present	5, 10, 20, 50, 100, 150
Kansas Mesonet	Kansas	15	2008-present	5, 10, 20, 50, 100
Michigan Enviro-weather (Automated Weather Network, MAWN)	Michigan, Wisconsin	80	2000-present	5, 10
Missouri Agriculture Weather Network (MAW)	Missouri	8	2002-present	5, 10
**New Jersey Mesonet	New Jersey	10	2003-present	5
NOAA Hydrometeorological Testbed	Western U.S.	25	2004-present	Variable
North Carolina EcoNet	North Carolina	36	1999-present	20
Oklahoma Mesonet	Oklahoma	113	1998-present	5, 25, 60, 75
**Remote Automated Weather Stations (RAWS)	Western U.S.	50	1983-present	Variable
Snowpack Telemetry (SNOTEL)	Western U.S.	414	2000-present	Variable
Soil Climate Analysis Network (SCAN)	United States	203	1996-present	5, 10, 20, 50, 100
South Dakota Automated Weather Network (SDAWN)	South Dakota	11	2000-present	5, 10, 20, 50, 100
UA Fairbanks Water and Environmental Research Center (WERC)	Alaska	24	2000-present	Variable
West Texas Mesonet	Texas, New Mexico	64	2000-present	5, 20, 60, 75

Texas A&M University North American Soil Moisture Database



Remote Sensing Observations

- NOAA – soil moisture remote sensing through microwave and thermal infrared observations
- NASA – Recent launch of Soil Moisture Active/Passive (SMAP) satellite
- University of Arizona - Cosmic-Ray Soil Moisture Observing System (COSMOS)



Modeling

- Major land surface models:
 - The Noah
 - Variable Infiltration Capacity (VIC)
 - Sacramento (SAC)
 - Mosaic
 - Catchment
 - CPC Leaky Bucket (CPC LB)
 - Simple Biosphere (SiB)
 - Tiled ECMWF Scheme for Surface Exchanges over Land (TESSEL) LSMs
- NASA and NOAA – The North American Land Data Assimilation System (NLDAS) - multi-model approach

Coordination of Data Collection

- Models and remote sensing data provide spatial coverage of soil moisture for the U.S., but have coarse resolution
- Models generally only model near-surface soil conditions
- Models need to be calibrated to in situ measurements
- Different in situ networks provide differing data sets

Kansas City Workshop

November 2013

- Presented representative networks and models from various Federal, State and University groups.
- Next steps:
- Established a working group to address issues of scale and spatial distribution for networks, remote sensing platforms and modeling efforts
- Developing a nation-wide product from existing soil moisture data as a template for guiding a larger-scale effort
- Initiating a pilot soil moisture monitoring system for smaller regions to integrate all available soil moisture data types and assess how the data would be used by researchers, agencies and different sectors

Pilot Data Sets

In Situ:

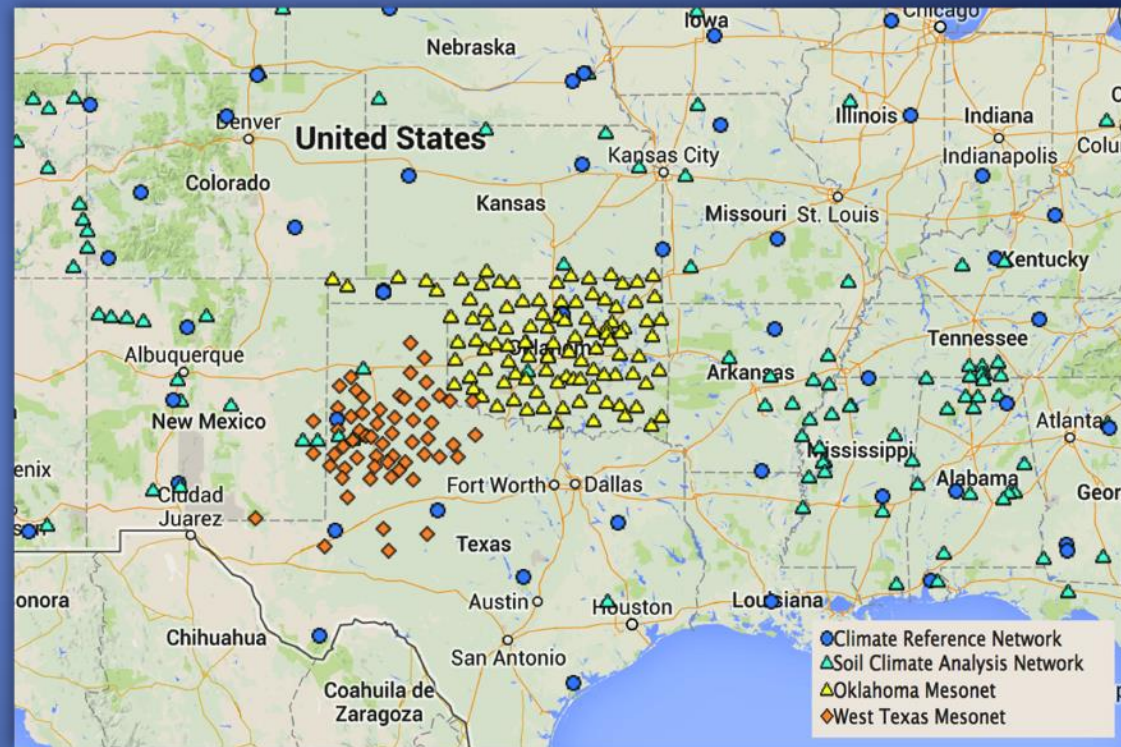
- Oklahoma Mesonet
- West Texas Mesonet
- US CRN
- SCAN

Station Metadata:

- NASMD

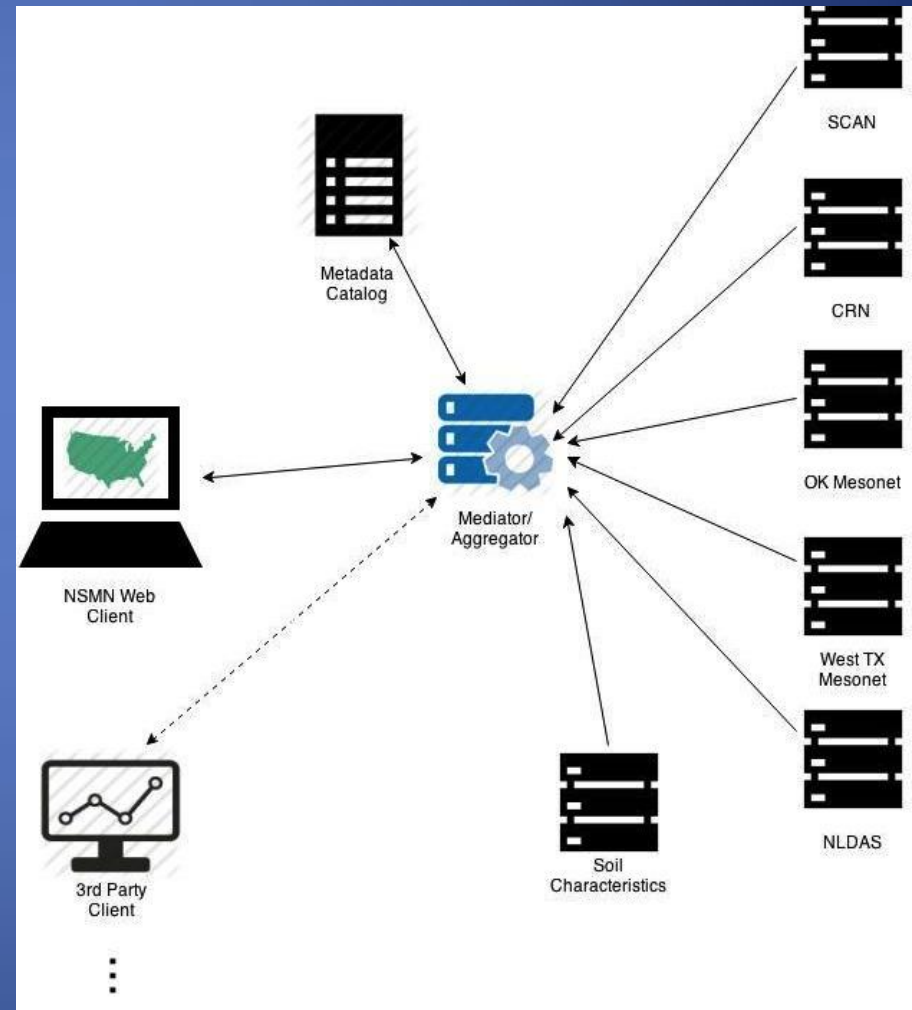
Modeled/Assimilated:

- NLDAS



Pilot System Components

- Site metadata and soil characteristics web service - Re-factor NASMD
- Catalog of data sets and service metadata
- CRN web service - [NCDC ArcServer](#)
- SCAN web service - [AWDB SOAP](#)
- OK Mesonet web service
- West TX Mesonet web service
- NLDAS web service - [USGS Geo Data Portal](#)
- Algorithm development for calculating percentiles, aggregating datasets
- Service mediator/aggregator
- Map-based visualization web tools



Pilot Objectives

- Proof-of-concept near real-time soil moisture network implementation
- Demonstrate the potential usefulness of a coordinated effort
- Demonstrate the benefits of in situ soil moisture (and related products) to a broad range of end users
- Identify best practices for calibration/validation and metadata characterization
- Effectively leverages the full variety of existing networks and modeling efforts.

Proposal for Development of a Pilot National Soil Moisture Network

Steven Quiring (TAMU) and Jessica Lucido (USGS CIDA)

Use Cases

1. Operational Drought Monitoring: Mike Brewer - NOAA, U.S. Drought Monitor
2. Experimental Land Surface Modeling: Greg Fall - NOAA/NOHRSC, Snow Modeling
3. Operational Hydrological Modeling: Eric Jones - NOAA, Arkansas-Red Basin River Forecast Center
4. Infectious Disease Modeling: CDC

Scope

Geographically located in the south-central planes of the US, the proposed National Soil Moisture Network (NSMN) Pilot will be comprised of both in-situ and assimilated soil moisture datasets. Four in-situ networks were chosen, two national networks and two state mesonets, based on their near real-time data availability, spatial density, soil characteristic metadata quality and level of technical support; the US Climate Reference Network, Soil Climate Analysis Network, Oklahoma Mesonet and West Texas Mesonet. An assimilated dataset was also chosen for inclusion, the North American Land Data Assimilation System. Furthermore, this location aligns with the Arkansas - Red Basin River Forecasting Center (RFC), which is one of the use cases. The focus will be on providing real-time soil moisture data via standard web services and map-based visualization tools.

The NSMN Pilot will provide users with a number of options for visualizing and mapping soil moisture conditions. To meet the needs of the four use cases listed above we will provide near real-time maps of volumetric water content, soil moisture percentiles and soil moisture anomalies. These maps will be available as dot plots (color coded circles at the station locations) and interpolated maps. Users will be able to visualize the in-situ and NLDAS soil moisture individually and on a map that shows both data sets overlaid.

Site metadata and soil characteristics will be provided via a web service for in-situ sites. An investigation will be conducted into existing standard data models for soil moisture time-series and soil characteristics as well as which soil characteristic parameters would be necessary to meet the needs of the use cases. If applicable, these data models will be adopted for the purpose of the pilot. The result of this pilot will be a proof-of-concept network and reference architecture implementation in order to inform the Coordinated National Soil Moisture Network Framework Document.

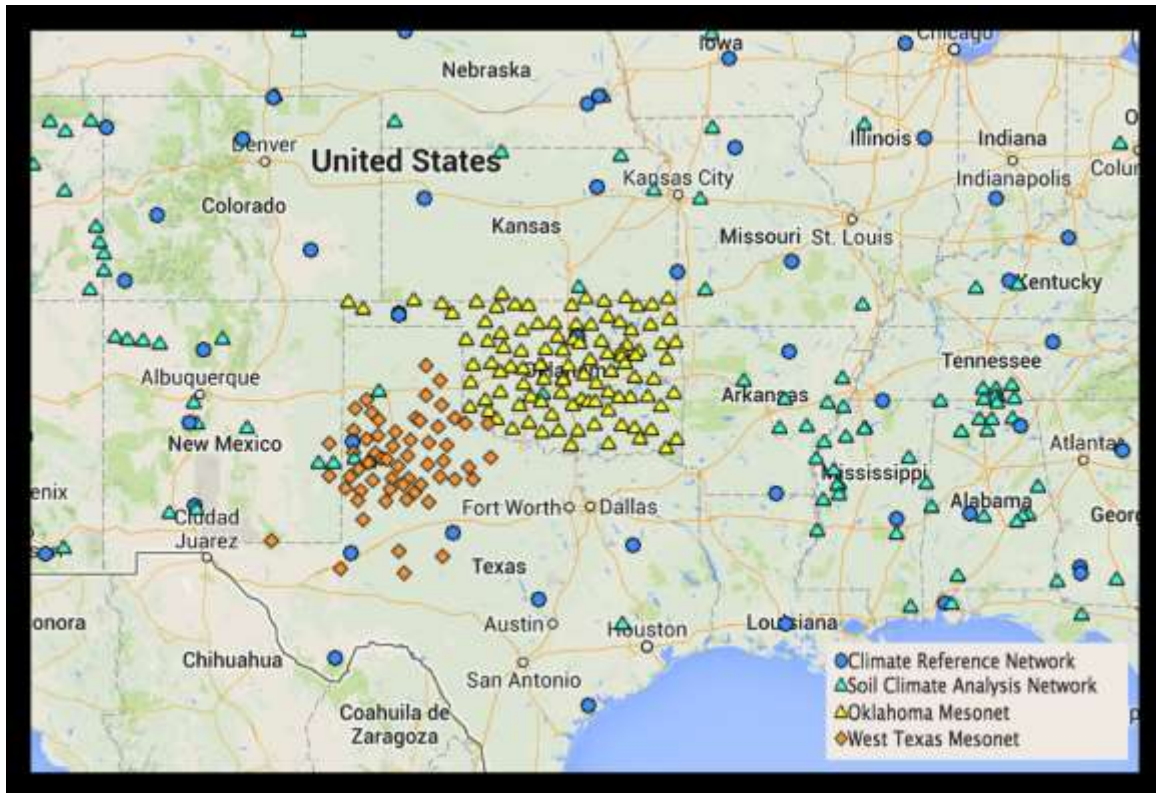


Figure 1. Proposed NSMN pilot location and in-situ networks.

System Architecture

A distributed network design was chosen given the focus on real-time data access and that web services already exist for many of the chosen datasets. Each soil moisture time-series data set will be served from its native location via standard web services where possible. In-situ site metadata and soil characteristic data will be stored in the North American Soil Moisture Database and likely served out via a Web Feature Service (WFS). A catalog of data sets and web service endpoints will be created and used to broker web service calls. This catalog may be implemented as a Catalog Service for the Web (CSW). Furthermore a mediation and aggregation service will be developed to intelligently request, compile and transform the distributed datasets from their native formats into a single standard output. The mediation framework is a critical component of the proposed architecture, which allows for distributed hosting and maintenance of data locally by the data owners while simplifying access through a single service interface. This will likely be a custom software component that takes native web services for each dataset as inputs and outputs a Web Coverage Service (WCS) or Web Mapping Service (WMS). These services may then be used to create spatial visualizations of the current soil moisture conditions via a map-based web application. Data and visualizations will be provided in both point and coverage form.

System Components:

- Site metadata and soil characteristics web service - Re-factor NASMD
- Catalog of data sets and service metadata
- CRN web service - [NCDC ArcServer](#)
- SCAN web service - [AWDB SOAP](#)
- OK Mesonet - coordinate web service development
- West TX Mesonet web service - coordinate web service development
- NLDAS web service - [USGS Geo Data Portal](#)
- Algorithm development for calculating percentiles, aggregating datasets
- Service mediator/aggregator
- Map-based visualization web tools

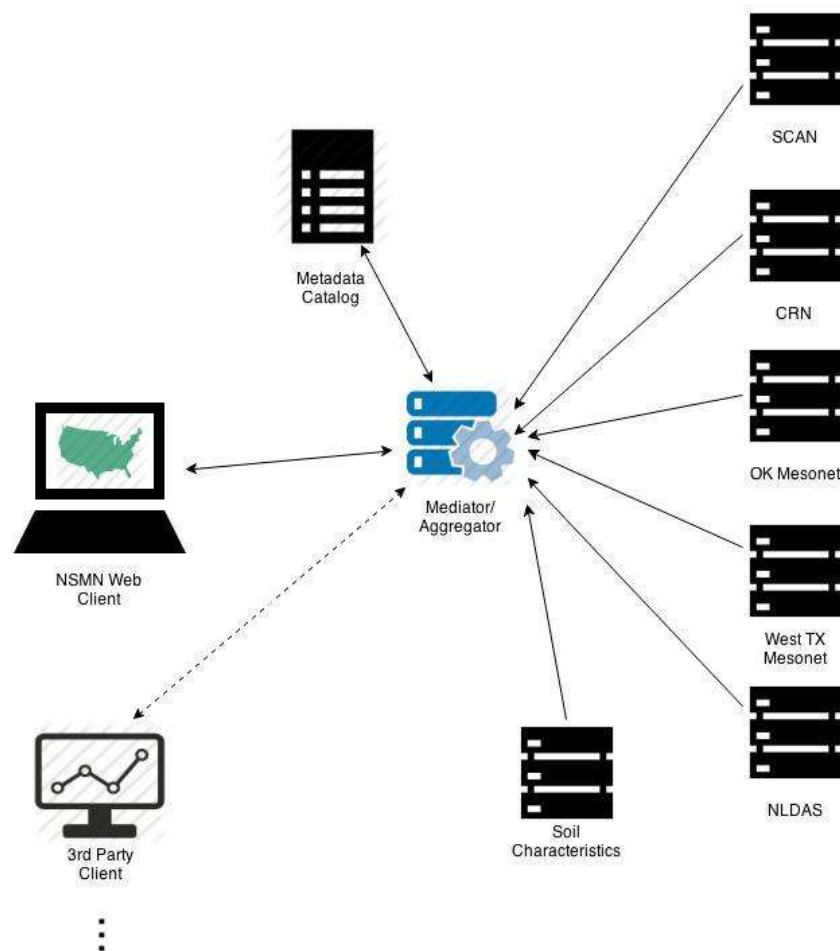


Figure 2. Architecture schematic of proposed NSMN pilot. Communication between mediator and/or data providers web clients would be in the form of web services.

Constraints

Pilot applications and data systems built for demonstration purposes only and will only remain active for one year unless further support is provided. Minimal support and service will be provided as is necessary for demonstration purposes.

Tab M – California Department of Water
Resources (CDWR) and WSWC
Agreements



W E S T E R N S T A T E S W A T E R C O U N C I L

5296 Commerce Drive, Suite 202 I Murray, Utah 84107 I (801) 685-2555 I FAX (801) 685-2559

Web Page: www.westernstateswater.org

May 6, 2015

Via email

Ms. Jeanine Jones
Department of Water Resources
1416 Ninth Street, P. O. Box 942836
Sacramento, CA 94236-0001

RE: Workshop Series for NOAA Engagement on Seasonal Precipitation Forecasting

Dear Jeanine:

The WSWC proposes entering an agreement to assist the California Department of Water Resources in implementing the Governor's emergency drought proclamation regarding improving seasonal precipitation forecasting to support drought emergency response and preparedness. The Council proposes, in coordination with CDWR, to organize, host and report on a series of four workshops intended to inform the federal government, specifically NOAA, of water agencies' needs for improved seasonal forecasting and to urge the federal government to prioritize federal budget support for applicable research, as well as its transition to operational use at NOAA's National Weather Service (NWS) Climate Prediction Center (CPC). Information from the workshops would be used to prepare materials for supporting greater federal investment in, and priority for, improving precipitation forecasting, materials that the Council could use when it contacts Congressional and Administration offices on federal budget priorities.

Operational outlooks of sub-seasonal to seasonal (S2S) precipitation are made by the NWS' CPC, but these forecasts have very low skill and do not take into consideration factors that may provide increased skill at a regional level in the Western States, such as atmospheric river storms or the Southwest monsoon. A parallel NOAA line office, the Office of Atmospheric Research (OAR) and its research labs, fund academic research projects that could help improve S2S forecasting, but this work is not integrated into the CPC operational outlooks and is not prioritized to serve water resources management. NOAA currently lacks a process across its line offices for interacting with information users, in this case water managers, to optimize research to improve S2S forecasting to support water management. Working through the NWS Western Region Headquarters in Salt Lake City and in coordination with NOAA's Western Regional Climate Services Director, the Council will bring together and focus attention on state water agency needs for better S2S forecasting, emphasizing to NOAA the urgency of increased federal investment in this area. NOAA's pending service assessment for the California drought highlights water users' needs for improved seasonal forecasting and offers an opportunity to push for prioritization of this work in the federal budget process. Although NOAA's National Integrated Drought Information System (NIDIS) program, managed within OAR, is charged by statute to improve drought early warning, NIDIS has not made much

Ms. Jeanine Jones

May 6, 2015

Page 2

progress in this area and external direction is needed to raise the priority placed on the research within OAR and its transition to operational use at CPC. Historically, NOAA's resources for enhanced weather prediction have been disproportionately directed to extreme weather events (i.e., hurricanes) that affect the eastern U.S. and support for Western needs has been lacking. A coordinated multi-state push for improved forecasting has a greater likelihood of receiving federal attention than a request from any single state such as California.

The workshops will bring together state water agencies, researchers whose work shows promise for improving forecasting at a regional scale, and high-level personnel from multiple NOAA line offices, including NOAA headquarters, to identify the most promising approaches for useful research that could provide near-term forecasting improvements to support drought early warning. Based on the workshop results, the Council will make recommendations to NOAA on approaches for making timely improvements to S2S precipitation forecasting. The workshops will include special attention to the seasonal forecasting needs associated with snowpack hydrology-dominated watersheds and to the longer lead times needed for Colorado River Basin forecasts.

A proposed budget is attached, and deliverables would include: four focused workshops with summary reports and outreach documents. We appreciate your consideration of this proposal, and look forward to your response. Please let me know if you have any questions.

Sincerely,



Tony Willardson
Executive Director

cc: Mark Cowin

Attachment: Budget

Budget Planning WSWC/CDWR Workshops July 2015 - June 2016

- 1- October 2015 in Salt Lake City held in coordination with the NWS Western Region Headquarters;
- 2- December 2015 in Las Vegas held in coordination with the Colorado River Board of California meeting at the Colorado River Water Users Association annual conference;
- 3- Spring 2016 in San Diego held in coordination with the southwestern NOAA RISA centers; and
- 4- Spring 2016 held in coordination with the Council's spring meeting, potentially at NOAA headquarters.

Hotel Meeting Room Rental/AV and Other Expenses

Item Description	Cost
Function Space	\$ 4200
Audio Visual / Rentals	\$ 4500
Shipping	\$ 500
TOTAL	\$ 9200

Travel Reimbursements – Speakers (Federal, State and Local)

Item Description	Airfare	Hotel Nights	Per Diem
Workshop 1	\$ 2000	\$ 1500	\$ 800
Workshop 2	\$ 2000	\$ 1500	\$ 800
Workshop 3	\$ 2000	\$ 1500	\$ 800
Workshop 4	\$ 2000	\$ 1500	\$ 800
Subtotal	\$ 8,000	\$ 6,000	\$ 3,200
TOTAL			\$ 17,200

WSWC Travel Expenses

Item Description	Cost
Airfare	\$ 5000
Hotel Lodging	\$ 5000
Per Diem	\$ 1500
TOTAL	\$ 11,500

WSWC Staff Time and Materials

Item Description	Cost
WSWC Staff Time	\$ 25000
Office Supplies, Mailings & Miscellaneous	\$ 3000
Report & Outreach Publications	\$ 9000
TOTAL	\$ 37,000

TOTAL Estimated costs

\$ 74,900



W E S T E R N S T A T E S W A T E R C O U N C I L

5296 Commerce Drive, Suite 202 I Murray, Utah 84107 I (801) 685-2555 I FAX (801) 685-2559

Web Page: www.westernstateswater.org

June 5, 2015

Via email

Ms. Jeanine Jones
Department of Water Resources
1416 Ninth Street, P. O. Box 942836
Sacramento, CA 94236-0001

RE: Workshop Series expanding on CDWR's CIMIS Irrigation Scheduling in Interstate Watersheds

Dear Jeanine:

The WSWC proposes entering an agreement to assist the California Department of Water Resources in implementing the Governor's emergency drought proclamation regarding improving agricultural water use efficiency and water conservation, through scoping expansion of the California Irrigation Management Information System (CIMIS) into interstate watersheds. The Council proposes, in cooperation with CDWR, to organize, host, and report on a series of workshops intended to bring together other operators of agricultural weather station networks, including the U.S. Bureau of Reclamation (USBR) and the U.S. Department of Agriculture (USDA) to evaluate possible approaches and the feasibility of extending CDWR's existing Spatial CIMIS network. Such an expansion into interstate watersheds would mutually benefit all participants and help with "ground-truthing" satellite data.

The Council proposes, with assistance from the Western Regional Climate Center at the University of Nevada's Desert Research Institute, to identify and evaluate networks that could provide suitable ground-truthing for Spatial CIMIS. The Council will then contact the network owners (public agencies and universities) to ascertain their interest in participating in Spatial CIMIS, and will convene an initial workshop with the network owners and CDWR to provide an overview of the Spatial CIMIS program and potential partnerships. The Council will prepare a workshop summary report, and based on the results of the workshop will then convene follow-up workshops with operators of potential partner networks and CDWR to identify the necessary agreements, software compatibility, station maintenance requirements, and other factors that would be needed to connect the partner networks. It is expected that the follow-up workshops will be held in coordination with USBR, USDA and others.

Upon completion of the workshops the Council, with assistance from the Western Regional Climate Center, will prepare a report to CDWR with recommendations on how to integrate identified partner agencies' agricultural weather station networks into Spatial CIMIS, and will then develop a sample agreement for doing so.

The Council will also conduct a survey to identify barriers to grower use of irrigation scheduling data in the partners' service areas, and ways to promote greater usage of irrigation

Ms. Jeanine Jones

June 5, 2015

Page 2

scheduling tools. The Council will develop and provide briefing materials on use of satellite imagery-based irrigation scheduling tools to water users at the annual meetings of the Colorado River Water Users Association and the Nevada Water Resources Association, and will post these materials on its website. The Council will also brief its member states regularly regarding the progress and results of this work.

A proposed budget is attached, and deliverables would include:

- (1) an initial assessment of potential partner networks, including any that may exist in Mexico's Colorado River service area, by September 30, 2015;
- (2) an initial workshop to be held in Southern California's Colorado River service area in Fall 2015 and will include a tour of representative CIMIS agricultural weather stations for participants;
- (3) briefing materials on use of irrigations scheduling tools by November 30, 2015;
- (4) follow-up workshops to be in locations determined by results of the initial work, by Spring 2016; and
- (5) a final report and agreement template by May 31, 2016.

We appreciate your consideration of this proposal, and look forward to your response. Please let me know if you have any questions.

Sincerely,



Tony Willardson
Executive Director

cc: Mark Cowin

Attachment: Budget

Western States Water Council Proposal
Workshop Series on expanding CDWR's CIMIS irrigation scheduling in interstate watersheds
June 5, 2015

Proposal: The WSWC proposes entering an agreement to assist the California Department of Water Resources in implementing the Governor's emergency drought proclamation regarding improving agricultural water use efficiency and water conservation, through scoping expansion of CDWR's California Irrigation Management Information System (CIMIS) into interstate watersheds. The Council proposes, in coordination with CDWR, to organize, host, and report on a series of workshops intended to bring together operators of agricultural weather station networks, including the U.S. Bureau of Reclamation (USBR) and the U.S. Department of Agriculture (USDA) to evaluate approaches and the feasibility of extending CDWR's existing Spatial CIMIS network. Such an expansion into interstate watersheds would mutually benefit all participants and help with "ground-truthing" satellite data.

Background: CDWR has operated its network of agricultural weather stations for providing irrigation scheduling information to growers and municipal landscape managers since the 1980s. Accurate estimates of reference evapotranspiration (ET) and crop-specific ET allow growers and landscape managers to improve water use efficiency by precisely scheduling irrigation to provide only the amount of water needed by plantings. In recent years CDWR partnered with NASA to expand the information provided by the approximately 140 CIMIS weather stations, through use of satellite remote sensing data to provide gridded estimates of ET throughout the state. CDWR has the capability to serve this remote sensing data throughout the West with its existing software system, but additional ground-truthing data in the form of agricultural weather station data are required.

California shares the Colorado River Basin, Klamath Basin, and Truckee/Carson/Walker Basin group with neighboring states. The Colorado River Basin, shared among seven states and the Republic of Mexico, has been experiencing sustained drought conditions for the last decade and a half, with a first-ever Lower Basin shortage declaration projected for 2016 or 2017. The Basin States and water users in the states have been working together to identify programs to conserve system water and to try to maintain Lake Mead levels above the shortage trigger elevations, to help reduce the severity of shortages. Ongoing implementation of Minute 319 of the U.S.-Mexico Boundary and Water Treaty includes development of binational agricultural water conservation and efficiency actions in Mexico's Colorado River service area. Shortage of irrigation water and drought impacts have been a recurring water management issue in the Klamath Basin shared between California and Oregon. In the California-Nevada Truckee, Carson, and Walker River Basins, chronic irrigation water shortages in the downstream portion of the basins are interrelated with management of water for environmental flows in the middle and lower watersheds. Promoting agricultural water conservation in these shared river basins improves drought resiliency throughout the basins.

Various existing agricultural weather station networks, such as the University of Arizona's AZ Met network or USBR's AgriMet network, cover localized areas of these interstate basins, and USDA has scattered agricultural weather stations at some of its experimental field sites. CDWR's Spatial CIMIS capability provides the tool to build on these scattered networks and expand irrigation scheduling information more broadly throughout the basins. There is additionally direct benefit to California CIMIS users located near the stateline, as nearby weather stations in neighboring states would improve the accuracy of the data they currently receive.

Scope: The Council proposes, with assistance from the Western Regional Climate Center at the University of Nevada's Desert Research Institute, to first identify and evaluate networks that would provide suitable ground-truthing for Spatial CIMIS. The Council will then contact the network owners (public agencies and universities) to ascertain their interest in participating in Spatial CIMIS, and will convene an initial workshop with the network owners and CDWR to provide an overview of the Spatial CIMIS program and potential partnerships. The Council will prepare a workshop summary report, and based on the results of the workshop will then convene follow-up workshops with operators of potential partner networks and CDWR to identify the necessary agreements, software compatibility, station maintenance requirements, and other factors that would be needed to connect the partner networks. It is expected that the follow-up workshops will be held in coordination with USBR, USDA and others.

Upon completion of the workshops the Council, with assistance from the Western Regional Climate Center, will prepare a report to CDWR with recommendations on how to integrate identified partner agencies' agricultural weather station networks into Spatial CIMIS, and will then develop a sample agreement for doing so.

The Council will also conduct a survey to identify barriers to grower use of irrigation scheduling data in the partners' service areas, and ways to promote greater usage of irrigation scheduling tools. The Council will develop and provide briefing materials on use of satellite imagery-based irrigation scheduling tools to water users at the annual meetings of the Colorado River Water Users Association and the Nevada Water Resources Association, and will post these materials on its website.

Schedule:

Initial assessment of potential partner networks, including any that may exist in Mexico's Colorado River service area, by September 30, 2015.

Initial workshop to be held in Southern California's Colorado River service area in Fall 2015 and will include a tour of representative CIMIS agricultural weather stations for participants.

Briefing materials on use of irrigations scheduling tools by November 30, 2015.

Follow-up workshops to be in locations determined by results of the initial work, by Spring 2016.

Final report and agreement template by May 31, 2016.

Proposed Budget: To be attached

Budget Planning
WSWC/CDWR Spatial CIMIS Workshops
July 2015 - June 2016

Hotel Meeting Room Rental/AV and Other Expenses

Item Description	Cost
Function Space	\$ 4800
Audio Visual / Rentals	\$ 4500
Shipping	\$ 700
TOTAL	\$ 10,000

Travel Reimbursements – Participants (Federal, State and Local)

Item Description	Airfare	Hotel Nights	Per Diem
Workshop 1	\$ 2500	\$ 2000	\$ 1000
Workshop 2	\$ 2500	\$ 2000	\$ 1000
Workshop 3	\$ 2500	\$ 2000	\$ 1000
Workshop 4	\$ 2500	\$ 2000	\$ 1000
Subtotal	\$ 10,000	\$ 8,000	\$ 4,000
TOTAL			\$ 22,000

WSWC Travel Expenses

Item Description	Cost
Airfare	\$ 6000
Hotel Lodging	\$ 6000
Per Diem	\$ 1000
TOTAL	\$ 13,000

WSWC Staff Time and Materials

Item Description	Cost
WSWC Staff Time	\$ 40000
Office Supplies, Mailings & Miscellaneous	\$ 3000
Report & Outreach Publications	\$ 12000
TOTAL	\$ 55,000

Contract/Consulting Assistance

Item Description	Cost
Contract for Consultants (Western Regional Climate Center, etc.)	\$ 25000
TOTAL	\$ 25,000

TOTAL Estimated costs

\$ 125, 000

Tab Mc – FY 2015-2016 Draft WSWC
Committee Work Plans and
2015-2017 WestFAST Workplan

**DRAFT
WATER RESOURCES COMMITTEE
WORK PLAN
2015/2016**

1. WATER DATA EXCHANGE (WaDE)

Work to date: This is a collaborative effort between the Western States Water Council (WSWC) and the Western States Federal Agency Support Team (WestFAST), continuing to build on efforts undertaken previously with the support of the Western Governors' Association (WGA), and the Department of Energy Labs. The Committee will lead the collaboration. These data are important for a number of applications. Some examples include, but are certainly not limited to: (a) state and regional water planning; (b) local watershed and urban planning and development; (c) siting of electric power generation and other energy production facilities; and (d) enabling a better understanding of the links between energy, water quantity and water quality. WaDE is consistent with and will seek to integrate other national efforts, including National Water Availability and Use Assessment (the Water Census), which is led by the U.S. Geological Survey (USGS), as well as federal open water data initiatives. WaDE will support these efforts by laying the groundwork for exchanging the core state data that may be used to support these studies.

A common 'schema' or format that can be used for sharing water availability and data has been completed. A common portal has been created, with a link on the WSWC website, and a beta version is being tested with data from Colorado, Utah and Wyoming. Sixteen states have been interviewed regarding their existing data systems. Moreover, a mapping tool has been created to allow states to review data, beginning with that gathered from the States by Sandia National Lab. The states are evaluating the resources required for them to participate, and the WSWC has partnered with six states under an EPA Exchange Network grant to help states link up.

The Committee, through a Subcommittee and various work groups, will continue to gather information on state water availability and use data and summarize existing state capabilities. Work to help states to develop, disseminate, visualize and review data on water availability will continue.

2015/16: WSWC staff will continue working to help individual members states build their capacity to connect to WaDE. This will entail some site visits, as well as regular communication among members and state information technology staff to gather, input and manage data, testing the schema and refining products for presenting consumptive use and water availability information for decisionmaking.

Subcommittee:

Timeframe: Ongoing

2. DROUGHT, NIDIS and EXTREME WEATHER EVENTS

Work to Date: Drought is a recurring natural phenomenon, the effects of which can be minimized through appropriate planning and preparedness activities. California is experiencing an extreme continuing drought and other states are suffering as well.

Nevada Governor Brian Sandoval, WGA Chair, has led state efforts to identify best management practices, holding several forums and webinars, with support as appropriate from WSWC members. WSWC and WGA staff have also collaborated on related efforts, including a survey of western state drought planning and response, and a December 2014 workshop on drought related authorities of various federal agencies.

The Council supported congressional reauthorization of the National Integrated Drought Information System (NIDIS) to provide timely hydrologic and weather-related information for drought management and improve predictive capacity.

The Council has supports reauthorization of the Reclamation States Emergency Drought Response Act, to provide the Bureau of Reclamation with continuing drought planning, response and assistance capabilities.

Moreover, the Council has expressed its support for federal applied research and hydroclimate data collection programs to assist water agencies at all levels of government in adapting to weather extremes and climate variability and change (Position #339, March 15, 2012). The Council also supports development of an improved western observing system for extreme precipitation events and research to better understand hydroclimate processes (Position #332, July 29, 2011). Since 2006, the Council has held a number of workshops related to climate adaptation and extreme events, including future drought and floods.

The Council and California Department of Water Resources (CDWR) hosted a July 2012 workshop on extreme weather events, a September 2012 NIDIS reauthorization workshop, an April 2013 workshop on improving drought prediction. In May 2014, the Council also collaborated with the National Oceanic and Atmospheric Administration (NOAA) to prepare and present a congressional briefing on the importance of atmospheric research and monitoring programs. In June 2014, the Council held a Hydroclimate Monitoring & Data Workshop in cooperation with CDWR in San Diego.

2015/16: The Committee will continue working to improve preparedness and response to drought, floods and other extreme events in cooperation with member states, the WGA and WestFAST. The Council will also continue to support and advise WGA and NOAA with respect to the National Integrated Drought Information System (NIDIS), and other weather/climate monitoring and adaptation efforts (including RISAs work), as WGA seeks to coordinate federal and state efforts to address drought information needs and compile data on related impacts. The Council will also continue to assist California's DWR with its ongoing series of drought and extreme events workshops. The next in this series of workshops will be held in May 2015. The Council will work towards reauthorization of Reclamation's authorities, as well as evaluate drought related authorities of other federal agencies.

Time Frame: Ongoing

3. M3 INITIATIVE: MEASURING, MONITORING AND MANAGEMENT

The Council has a long history of working to improve the measurement, monitoring and management of western water resources and related data (see Position #320, October 16, 2009, and Position #326, October 29, 2010). Data collection, management, distribution and visualization are critical for sound decisionmaking, but related programs are often underappreciated and underfunded.

2015/16: The Council, in an attempt to better communicate the critical need for water data, will develop a “M3 Initiative,” revising and renewing its message to better bring attention to water data needs and develop strategies to meet those needs. Consistent reliable future funding will be one major focus for the initiative. There are a number of items under this functional area, divided as outlined below. Part of this effort will be to highlight critical measuring and monitoring “tools,” for any water management “toolbox,” and communicating their value for enhancing our ability to wisely manage water resources.

Subcommittee: Jeanine Jones (CA); James Eklund (CO); David Barfield (KS); Tim Davis (MT); Jim Schneider (NE); J.D. Strong (OK); Tom Byler (OR); Dr. Robert Mace (TX); Eric Millis (UT); and Sue Lowry (WY). Dr. Mace also represents the WSWC on the federal Advisory Committee on Water Information (ACWI), and Sue Lowry is also an ACWI member.

Time Frame: ongoing

A. USGS COOPERATIVE STREAMGAGING

Work to Date: The Council has consistently supported the fully-federally funded USGS National Streamflow Information Program (NSIP) and Cooperative Water Program (CWP), a federal/state streamgaging program partnership. The Council continues to urge the Congress to appropriate sufficient money to restore a 50-50% CWP funding match. As federal program costs have increased, western states have urged USGS to focus on basic data collection, as opposed to analysis and modeling studies.

2015/16: The Council, through the Committee, will continue working with the Interstate Council on Water Policy and other interested organizations to represent states’ interests in maintaining a viable and useful streamgaging network, focused on gathering basic water data and information. The Council will continue to pursue opportunities to support funding for USGS cooperative streamgaging and other important programs.

Timeframe: Ongoing

B. NRCS SNOW SURVEY AND WATER SUPPLY PROGRAMS

Work to Date: The Council has consistently supported the snow survey program, and urged the Congress to appropriate sufficient money to maintain and modernize the current system. Recent cuts have led to serious declines in program capabilities, with abandoned snow courses and threatening maintenance of SNOTEL sites. Further, sustained reductions in

resources threaten the continued viability of the program as it now exists, which could lead to the loss of critical long-term data essential for western water and emergency management.

2015/16: The Committee and Council will continue to pursue opportunities to support funding for the NRCS snow survey program and the related soil and climate analysis network (SCAN), as well as upgrading and modernizing the current snow survey and water supply forecasting system. The Council will also work with USDA, NRCS and the states to explore options for maintaining a sustainable system, including any state interest in funding specific SNOTEL sites, with a goal of helping NRCS ensure adequate funding is available for operation and maintenance.

Timeframe: Ongoing

C. LANDSAT 9 and NATIONAL LAND IMAGING PROGRAM

Work to Date: More and more states are using remote sensing, particularly Landsat thermal infrared (TIR) band data, for water rights administration and to better monitor and manage water use, especially agricultural water use. In 2010, following several years of work, the President's budget request to Congress included funding for the thermal infrared sensor (TIRS) as part of LDCM, largely in response to the Council's efforts. On February 11, 2013 LDCM was launched from Vandenberg Air Force Base in California, and has begun sending its first earth images. The Council has been credited with ensuring LDCM/Landsat 8 included TIRS, enabling states to continue to advance the application of the science to western water management and uses. In August 2014, the California Department of Water Resources and WSWC also sponsored a workshop on water-related uses of remote sensing capabilities at the NASA/JPL facilities in Pasadena.

2015/16: The Committee will continue to work towards the timely and orderly development of future Landsat missions to ensure the continued availability of TIRS data. The Committee will also work with member states, local and federal agencies to promote the increased use of remote sensing data.

Timeframe: Ongoing

D. GROUNDWATER MONITORING

Work to date: The Council supports USGS ground water measurement and monitoring, as expressed in Position #345 (October 12, 2012) regarding federal water and climate data collection and analysis programs. Moreover, groundwater measurement and monitoring are important components of a number of western state water management programs. Further, the Council continues to track federal groundwater efforts related to both quantity and quality (in cooperation with the Water Quality Committee).

2015/16: The Council will consider development of an appropriate groundwater component for its M3 Initiative, as well as working collaboratively with other state and federal interests and non-governmental organizations. The Council will also promote the use of existing state information on groundwater resources.

Subcommittee: Jim Schneider (NE); Dr. Robert Mace (TX)

Timeframe: Ongoing

4. NATIONAL WATER AVAILABILITY AND USE ASSESSMENT

Work to date: In 2010, the Council staff began working as part of a USGS Ad Hoc Group on a National Water Assessment to develop a strategic plan to improve the acquisition, storage and dissemination of data on existing surface and ground water supplies and uses, both consumptive and non-consumptive, identifying trends and common themes, as well as present and future events and factors that may affect future water supplies, including changing demographics, environmental policies, energy demands, and climate, etc. WaDE will better enable the western states to share water use, water allocation, and water planning data with one another and with the federal government. It will also seek to improve the sharing of Federal data that supports state water planning efforts.

2015/16: The Council will continue working with member states, USGS and various federal agencies to gather and disseminate water resources data using WaDE and other resources. The Council will consider partnering with USGS on facilitating funding to states for water data.

Subcommittee:

Timeframe: Ongoing

5. WESTERN WATER INFRASTRUCTURE PROJECTS AND PROGRAM FUNDING

Work to date: Many western states face overwhelming infrastructure financing needs, as well as declining budgets for ongoing services. The Council's origins are associated with challenges to augment and better manage the West's water supply. Augmenting the West's water supply continues to be a priority. The Council has in the past prepared reports on state water resources programs and project cost sharing and financing and analyzed state water use fees. In November 2010, the Council convened a symposium and summarized the proceeding in "Western Water Resources Infrastructure Strategies: Identifying, Prioritizing and Financing Needs." The latest in the series of symposia was held in November 2012 in Phoenix, Arizona. The Council also began compiling an updated summary of western state infrastructure financing authorities, funding sources, policies and programs.

The Council has also supported expenditures from the Reclamation Fund for authorized project purposes, including specifically authorized rural water supply projects and authorized projects as part of negotiated Indian water rights settlements.

2015/16: The Council will continue to call on the Congress to ensure that revenues raised from the development of western resources, specifically revenues accruing to the Reclamation Fund, are appropriated and expended as intended for the development and management of western

water resources (consistent with Position #333, July 29, 2011). The Council will otherwise support efforts to secure adequate federal funding to meet growing western water needs, and work to develop a strategy to communicate important infrastructure needs. The Council will focus on developing public-private partnerships to support this effort.

Time Frame: Ongoing

6. ENERGY & WATER RESOURCES – INTEGRATED MANAGEMENT

Work to date: The increase in demands for water to meet energy needs is raising interest in the interrelationship between water and power resources, including transportation fuels, and opportunities to better understand the energy-water nexus and maximize efficiencies. The Council has addressed various aspects of energy issues as they relate to water resources as part of its regular meetings, including the demand for water resources created by new energy development. Hydraulic fracturing is a current issue and long standing practice with which the states have considerable experience. (See Water Quality Committee workplan.) The use of water produced by energy development has also been discussed.

Since 2009, the Council has worked with the WGA to look at present and future water needs related to renewable and traditional energy production, and related impacts on water supplies. The Council has also urged the Administration and Congress to support Department of Energy hosted energy-water programs conducted at national laboratories (Position #355, June 26, 2013).

In 2012, the Council completed a review of the water requirements for concentrated solar power development in the Southwest and related institutional issues and permitting requirements, which has been published by the National Renewable Energy Lab (NREL).

2015/16: As resources permit, the Council will continue to compile existing information through WaDE addressing water availability and anticipated demands for energy resources development (and the implications for water use in the West). Further, the Council will consider and evaluate any federal legislation and other potential collaborative efforts in addressing energy and water needs.

The Council will evaluate as appropriate specific energy and water related issues as they arise, such as hydraulic fracturing and other practices.

Subcommittee: William Staudenmaier (AZ); James Eklund (CO); John Simpson (ID); Jim Schneider (NE); Todd Sando (ND); Robert Mace (TX); Eric Millis (UT); and Sue Lowry (WY).

Timeframe: Ongoing

7. WRDA/CORPS POLICIES

Work to date: The Council has in the past supported regular passage of a Water Resources Development Act (WRDA), and has addressed a number of specific policy issues, while not

taking any position on specific project authorizations. The Council has raised concerns with the Corps' approach to identifying and regulating the use of "surplus waters" and Corps drought authorities from Corps projects. Similarly, the Council has worked to exclude irrigation water supply canals from any new safety levee safety program.

2015/16: The Council will continue to work with the Congress and Corps on WRDA and Corps-related issues, including the treatment of irrigation canals under the proposed new levee safety program. Further, the Council will continue to work to ensure that state water rights and prerogatives are protected, specifically as it relates to natural flows, Corps storage and other issues.

Subcommittee: Todd Sando, Michelle Klose, and Jennifer Verleger (ND); Tracy Streeter (KS); and Tim Davis (MT)

A. CORPS SURPLUS WATER RULEMAKING

Work to date: A draft Corps surplus water rulemaking is pending. The Flood Control Act of 1944 specifically declared the policy of Congress to recognize the interests and rights of the Missouri River Basin States in determining the development of the watersheds within their borders and likewise their interests and rights in water use and control, and to preserve and protect to the fullest extent established and potential uses of the rivers' natural flows, those flows that would pass through the states in the absence of the Corps of Engineers dams. The federal government has long recognized the right to use water as determined under the laws of the various states. However, the Corps has indicated that all waters entering its Missouri River mainstem reservoirs are stored waters to be allocated and controlled by the federal agency and does not recognize the States' right to access natural flows, separate from the captured floodwaters stored within those reservoirs.

In October 2012, the Council adopted a resolution (#348) urging the Corps to recognize the legal rights of the States' to allocate water, wrote the Assistant Secretary of the Army for Civil Works regarding its concerns, and has met with Corps officials on different occasions, as well as discussed legislative clarifications with congressional staff. The Council has also surveyed its member states regarding their definition of stored waters and related storage rights.

2015/16: In consultation with the Legal Committee, the Committee will continue to work to address this issue and explore alternative solutions, including both administrative and congressional action.

8. BORDER WATER ISSUES

Work to date: Many WSWC member states are involved with water management issues that cross international boundaries. In 1999, the WSWC was invited to participate in a U.S.-Mexico Border Drought Workshop sponsored by the WGA, International Boundaries Water Commission (IBWC), and Mexican authorities. Also in 1999, the WSWC was asked to serve on an International Joint Commission (IJC) advisory committee reviewing water issues with Canada.

Cross border issues are growing in importance, as illustrated by the current conflict over the waters of the Rio Grande between Texas and Mexico, *or the waters of the Milk River between Montana and Canada.*

Council staff will continue to participate and represent western state interests in international water forums. The Committee will identify and assess related needs and oversee WSWC activities. The Committee will coordinate its efforts with those of other organizations in order to avoid duplication.

Subcommittee: Jeanine Jones (CA); Gary Spackman (ID); Tim Davis (MT); Tom Blaine (NM); Todd Sando (ND); Herman Settemeyer (TX); and Maia Bellon (WA).

Time Frame: Ongoing

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**D-R-A-F-T
EXECUTIVE COMMITTEE
WORK PLAN
2015/2016**

1. NEWSLETTER

Work to date: *Western States Water* provides members and others with accurate and timely information on various water resources topics at state, regional and national levels. It is provided as a free service to members, governors and their staff, member state water resource agencies, state water users associations, selected multi-state organizations, key Congressmen and their staffs, and top federal administration officials. Other public and private agencies and individuals may subscribe for a fee. It is primarily distributed via email, and is posted on our website, with password protection (for recent issues).

2015/16: Along with the Council's regular meetings, the newsletter requires our most significant commitment of staff resources, though that is usually ancillary to other efforts. The response from members and others receiving the newsletter has been consistently positive. The Council will continue to provide this service weekly via email, except for those who request a hard copy.

Time Frame: Ongoing

2. [50th ANNIVERSARY](#) and REGULAR MEETINGS

Work to Date: The first meeting of the Council was held in Stateline, Nevada in 1965, and regular meetings have been held since. Currently, the Council meets three times per year, rotating among the member states, which host the meetings at a location of their choice. Guest speakers and topics for discussion are scheduled according to members' interests and needs. External policy positions for consideration are noticed 30-days before the Council meets and are distributed not only to members, but also to WGA staff and the governors' staff. Any position statement not noticed may be brought before the Council for consideration at a meeting by unanimous consent, but if approved, must be sent to WGA for review prior to distribution consistent with mutually agreed upon procedures for policy coordination between WGA and WSWC.

2015/16: Nevada will host the [50th Anniversary](#) Summer 2015 meetings in Stateline, [on July 8-10. It will include a dinner cruise on Lake Tahoe as part of a field trip prior to the meetings and special commemorative social hour. Past members have been invited, as well as numerous guest dignitaries.](#)

[Various commemorative activities may also be undertaken from time to time during the year, as well as special newsletter articles to mark the 50th Anniversary of the creation of the Council.](#)

Kansas will host the Fall 2015 meetings in Manhattan, [on October 7-9](#). The Spring 2016 meetings will be held in Washington, D.C.

3. 50th ANNIVERSARY MEETING

~~2014/15: The Council will celebrate its 50th Anniversary in 2015. The first meeting was held in Stateline, Nevada on August 3, 1965. The Council's 40th Anniversary Commemoration was held there in 2005. Council members and staff will recognize and commemorate the 50th anniversary at the WSWC Summer 2015 meetings being held July 8-10, 2015.~~

Subcommittee: Roland Westergard, Jason King, Dave Barfield and Tracy Streeter

3. Western Water Conference - Strategies for Addressing Long-Term Drought and Climate Uncertainty

Work to date: The Council has been invited to participate in a conference with western academic interests from the Western Region Multistate Coordinating Committee on Water Resources and the Western Committee on Management and Policy Challenges in a Water-Scarce World, both supported by the U.S. Department of Agriculture. The planning committee includes representatives from Colorado State University, Utah State University and the University of Wyoming, among others. WGA has also been invited to participate. A number of preliminary scoping and planning calls have been held to determine appropriate topics and potential speakers. WSWC members and staff will participate in the planning and preparations, but there is no financial commitment.

2015/2016: The Conference is planned for ~~late~~ October 28-29, 2015 in Salt Lake City.

Subcommittee: ????

4. 2016 DC ADMINISTRATION and CONGRESSIONAL VISITS/CONTACTS

Work to date: In an ongoing effort to promote WSWC and WGA positions and priorities, in March 2015, Council officers, members and staff traveled to Washington, D.C. and ~~made~~ had over ~~—30~~ visits with Administration and Congressional officials ~~in support of WSWC and WGA positions and priorities~~. Native American Rights Fund (NARF) staff joined in many of the visits. ~~In 2013,~~ WSWC members and staff have also previously hosted or presented at briefings for congressional staff on the importance federal data gathering activities, including the Landsat thermal data, U.S. Geological Survey streamgaging programs, National Oceanic and Atmospheric Administration programs, including the National Integrated Drought Information System, River Forecast Centers, and Regional Integrated Science and Assessments, as well as of Indian water rights settlements (attended by 16 staffers). Some of the feedback from these meetings suggested a need for greater contact and communication between the Council and federal and congressional policymakers.

Of note, the Council was also invited to testify in support of S. 1365, the Authorized Rural Water Projects Completion Act, at a June 18 hearing before the Senate Energy and Natural Resources Committee's Water & Power Subcommittee. WSWC staff also contacted and visited a number of congressional offices while in Washington, D.C. Further, the Council also distributed three

policy positions adopted at its April meetings to all House and Senate members of western state delegations, related to (1) integrating water and energy policy and planning; (2) supporting state and federal applied research and hydroclimate data collection programs; and (3) recognizing the importance of state primacy over groundwater management.

2015/16: The Council's Officers and staff will again plan visits during the Council's in the Spring of 2016 meetings in the Washington, D. C. area to make Administration and Congressional contacts and advise them on major national water issues from the perspective of western states. WSWC members and staff will also schedule visits with individual congressional offices, as well as visits with WestFAST principals. The WestFAST Liaison Officer and WestFAST members will participate in these visits with Executive Branch agencies. Other trips and visits may be made as needed. The Council staff and members will also communicate our external positions as the need arises and continue to respond to requests for testimony, briefings and information from the Congress and the Administration.

Time frame: Spring 2016/Ongoing

Subcommittee: Management Subcommittee, J.D. Strong (OK), and others????

4. WGA/WSWC COORDINATION and COLLABORATION

Work to Date: The publication of the WGA/WSWC report(s) entitled "Water Needs and Strategies for a Sustainable Future," raised awareness of the challenges facing the West. The WGA adopted the 2006 and 2008 reports as policy, and the Council has worked to implement their recommendations, many of which have been completed. In June 2010, the Council completed and the WGA accepted a Progress Report summarizing implementation activities. In 2011, WGA adopted two comprehensive policy statements, one focused on water quantity and the other on water quality, and WGA revised and readopted these in December 2013.

Of particular note, a priority recommendation was establishment of the Western States Federal Agency Support Team (WestFAST) and the hiring of a liaison officer in the Council's offices. Both of which were accomplished in 2008.

The Council has worked closely with WGA on regulatory issues, especially the EPA's proposed and final rules related to Clean Water Act jurisdiction and the definition of Waters of the United States, as well as the U.S. Forest Service's proposed groundwater directive, which was subsequently withdrawn in part due to the Council's concerns.

2015/16: The Council and the Committee will continue to coordinate and consult with the WGA on matters that come before the Council and assist in the development and implementation of WGA water-related policies. ~~y in consultation with WGA.~~ WGA staff will be invited to attend and participate in our meetings, workshops and symposia.

As in the past, the Council may propose policy resolutions for WGA consideration. Further, the WSWC Chair and/or Executive Director will participate in WGA meetings as appropriate. Working with the WGA, the Council will also coordinate WestFAST activities and needs.

Time Frame: ongoing

Subcommittee: [Management Subcommittee](#)

5. WESTFAST

Work to date: WestFAST's creation has had many benefits. It is a unique forum for addressing western (and national) water issues that has brought together a dozen federal agencies to collaborate with each other and state agencies with water-related responsibilities. WestFAST addresses issues raised and discussed with the Council and WGA (which in turn support development and implementation of related federal policies and programs). WestFAST and the Council have also discussed development of a set of collaborative principles to guide federal/state working relationships. WestFAST is in its [sixth-seventh](#) year of existence.

2015/16: The Committee will continue to oversee the Council's work with WestFAST. Further, the Committee will work to ensure participating agencies realize the real and potential benefits of WestFAST, and work to build a sound foundation for continuing collaboration. The Council will also seek to build closer ties with WestFAST principals.

Time Frame: Ongoing

6. WATER MANAGEMENT SYMPOSIA

Work to date: An annual WSWC Water Management Symposium has traditionally been held under the auspices of the Executive Committee. However, the Committee has usually asked one of the other committees to take the lead. In odd numbered years, Indian Water Rights Settlement Symposia have been held.

In 2012, the Council held a symposium in November in Phoenix, Arizona in collaboration with relevant federal agencies, multiple stakeholders, and public and private experts on Western State Water Resources Infrastructure Needs & Strategies. It explored state financing authorities, policies, programs and projects, as well as public-private financing and cost sharing resources, with a goal of identifying common interests and promoting partnerships.

2015/16: The Council will again sponsor [an Indian Water Rights Settlement Symposium in Reno, Nevada on August 25-27, and the Committee will consider hosting a 2016](#) Water Infrastructure Symposium focused on streamlining regulatory requirements to facilitate timely construction of projects in an environmentally responsible manner.

Time Frame – [Summer 2015/Spring](#) 2016

7. ANNUAL REPORT

Since its organization in 1965, the Council has prepared and published an annual report. The annual report includes a brief discussion of the Council's formation and a detailed summary of its current membership and activities. It is a report of the Council's meetings, and provides an explanation of resolutions and positions and other actions taken by the Council. Further, it includes a description of other important activities and events, as well as workshops, seminars and symposia sponsored by the Council. It also describes the Council's involvement in major current water policy issues. Lastly, biennially, it includes an audit of the Council's finances, and current rules of organization. Recently, electronic copies have been distributed.

| **Time frame:** July-December

WATER QUALITY COMMITTEE
WORK PLAN
July 1, 2015 to June 30, 2016

1. HYDRAULIC FRACTURING

Work-to-Date: In June 2015, the Environmental Protection Agency (EPA) is preparing published a study on the relationship between hydraulic fracturing and drinking water, titled “Assessment of the Potential Impacts of Hydraulic Fracturing for Oil and Gas on Drinking Water Resources.” a final draft of which is expected in 2014. In May 2013~~March 2015~~, the Bureau of Land Management (BLM) ~~also~~ issued a ~~proposed-final~~ rule for hydraulic fracturing on public lands, which includes a variance process that would allow states to propose their own standards if they can prove that their regulations meet or exceed the requirements in BLM’s rule. In addition, EPA, the Department of Energy (DOE), and the Department of the Interior (DOI) agreed in April 2012 to develop a “Multi-Agency Unconventional Oil and Gas Research Program” to support policy decision by relevant state and federal agencies. The effort is intended to help support the White House’s March 2011 “Blueprint for a Secure Energy Future.”

The Western Governors’ Association ((WGA) Resolution #2014-4) and WSWC Position #353 state that: (1) federal efforts involving hydraulic fracturing should leverage state knowledge, experience, policies, and regulations; (2) such efforts should be limited, based upon sound science, and driven by states; and (3) that both organizations oppose any and all efforts that would diminish the primary and exclusive authority of states over the allocation of water resources used in hydraulic fracturing.

2015-2016: The Committee will work with the Water Resources and Legal Committees to support the WGA and WSWC positions, and will continue to monitor and update the WSWC on developments involving hydraulic fracturing, including but not limited to EPA’s study, BLM’s ~~proposed~~ rule, and the EPA/DOE/DOI research program.

The Committee will also work in collaboration with the Water Resources and Legal Committees to prepare a summary of the applicable WSWC states’ experiences with hydraulic fracturing. The summary will complement previous reports by the Groundwater Protection Council and others that describe how state programmatic elements and regulations ensure that hydraulic fracturing does not impair water resources and environmental values. Examples of the types of information sought for the summary include but are not limited to: (1) the impacts of hydraulic fracturing on water quality, if any; (2) examples of how state regulations and other efforts protect water quality; (3) the economic benefits of hydraulic fracturing; (4) water supplies and amounts used for hydraulic fracturing; (5) state interaction with federal agencies involving hydraulic fracturing; and (6) the degree to which states utilize oil and gas taxes and other revenue related to hydraulic fracturing to fund water-related efforts, including but not limited to water planning, water management, and water regulation and protection. WSWC staff will prepare the summary under the direction of the Committees, and will gather the necessary information through independent research and focused telephone interviews with select staff from the applicable WSWC state agencies. WSWC staff will also coordinate with other relevant state associations

and organizations to avoid duplicating prior efforts. It is envisioned that the full WSWC will review the summary.

Time Frame: 2015-2016, pending available staff time and resources.

2. WATER QUALITY/QUANTITY NEXUS

Work-to-Date: Paragraph (B)(3) of WGA Resolution #2014~~5~~⁵-03~~8~~⁸ states: “Western Governors believe effective solutions to water resource challenges require an integrated approach within among states and with federal, tribal and local partners. Federal investments should assist states in implementing state water plans designed to provide water for municipal, rural, agricultural, industrial and habitat needs, and should provide financial and technical support for development of watershed and river basin water management plans when requested by states. Integrated water management planning should also account for flood control, water quality protection, and regional water supply systems. Water resource planning ~~should~~^{must} occur within a framework that preserves states’ authority to manage water through policies which recognize state law and the financial, environmental and social values of the water resource to citizens of the western states today and in the future.” (emphasis added)

2015-2016: In conjunction with the Water Resources and Legal Committees, the Committee will hold an invitation only workshop to bring together state experts and other relevant stakeholders to discuss the interaction between water quality and quantity. The workshop will take place in conjunction with the WSWC’s 2015 fall meetings in Manhattan, Kansas on October 7-9, and will produce findings and policy options for the WSWC to consider as it supports WGA Resolution #2014~~2015~~²⁰¹⁵-03~~08~~⁰⁸. Ideally, the workshop will provide further insight on: (1) how state water quantity and quality regulations interact with each other; (2) how states can protect water quality within the existing framework of the prior appropriation doctrine; and (3) the proper relationship between federal environmental protections and the states’ primary and exclusive authority over the allocation of water resources. Under the WSWC’s direction, WSWC staff will prepare a summary of the meeting.

Time Frame: Fall 2015

3. CLEAN WATER ACT ISSUES

There are a number of ongoing Clean Water Act (CWA) issues that pertain to WSWC policies or are otherwise of interest that the Committee will monitor and address on an as needed basis. These issues are listed below in order of priority.

a. CWA Jurisdiction*

Work-to-Date: In 2011, the EPA and the U.S. Army Corps of Engineers released draft guidance intended to provide clearer, more predictable guidelines for determining which water bodies are subject to Clean Water Act (CWA) jurisdiction, consistent with the U.S. Supreme Court’s decisions in *Solid Waste Agency of Northern Cook County v. U.S. Army*

Corps of Engineers, 531 U.S. 159 (2001), and *Rapanos v. United States*, 547 U.S. 715 (2006).

In September 2013, the EPA and Corps withdrew the draft guidance. At the same time, the agencies announced that they had submitted a draft rule to clarify the extent of CWA jurisdiction to the Office of Management and Budget (OMB) for interagency review.

In 2013, the WSWC wrote EPA and the Corps a series of five letters requesting greater state consultation in the development of the rule. In addition, the WSWC created a CWA Rulemaking Workgroup to gather information on the WSWC member states' perspectives regarding the rulemaking and to identify further areas of consensus among the western states. In March 2014, the workgroup developed a letter that the WSWC sent to EPA and the Corps, setting forth a list of additional consensus comments on the rulemaking. The Western Governors' Association (WGA) sent a subsequent letter on March 25, 2014, that cited the WSWC's letter and urged the agencies to consult with the states individually and through the WGA before taking further action on the rulemaking.

On April 21, 2014, EPA and the Corps published a proposed rule in the Federal Register with an initial 90-day public comment period that was later extended to October 20, 2014, following requests from the WGA and other organizations for an extension. Following the rule's publication, EPA and the Corps engaged in a series of calls with the WSWC to discuss the states' questions and concerns about the rulemaking. WSWC Water Quality Committee Chair J.D. Strong of Oklahoma also testified on behalf of the WSWC and the WGA before the House Transportation and Infrastructure Committee regarding the rule on June 11, 2014.

The WSWC adopted Position #369 regarding CWA rulemaking efforts on July 18, 2014, during its summer meetings in Helena, Montana. The resolution replaces WSWC Position #330.5 and served as the basis of a comment letter the WSWC sent to EPA and the Corps on October 15, 2014. That letter called for the creation of a state-federal workgroup to refine and revise the rule and set forth a number of requested changes.

[On June 29, 2015, the EPA and the Corps published their final rule in the Federal Register.](#)

2015-2016: The Committee will continue to work with the Water Resources and Legal Committees through the Workgroup to follow and comment on the further development and/or implementation of the jurisdictional rule and other federal actions regarding CWA jurisdiction in accordance with the WSWC's positions.

Time Frame: Ongoing

CWA Rulemaking Workgroup: Michelle Hale (AK), Trisha Oeth (CO), Barry Burnell (ID), Tom Stiles (KS), Jon Patch (ND), Bill Schuh (ND), J.D. Strong (OK), Todd Chenoweth (TX), Walt Baker (UT), Laura Driscoll (WA), ~~Stephen Bernath (WA)~~, and Bill DiRienzo (WY).

*See Item 2 of the Legal Committee Workplan

b. State Revolving Funds (SRFs) and Infrastructure Financing

Work-to-Date: WSWC Position #364 urges the Administration and Congress to provide greater flexibility and fewer restrictions on state SRF management and stable and continuing appropriations to the SRF capitalization grants at funding levels that are adequate to help states address their water infrastructure needs. WGA resolution 2014-04 also supports the SRFs as “important tools” and requests greater flexibility and fewer restrictions on state SRF management.

Over the years, some budget requests from the Administration have proposed cuts to the SRF programs. Various acts of Congress have also authorized or retained a number of limitations on the use of SRF funds, including but not limited to: (1) “Buy American” provisions for iron and steel; (2) requirements that between 20% and 30% of SRF funds be used for principal forgiveness, negative interest loans, or grants subject to additional provisions; and (3) requirements that states use at least 10% of their SRF funds for green infrastructure, water or energy efficiency improvements, or other “environmentally innovative” activities.

For FY 2016, the President’s budget request seeks around \$1.1B for the Clean Water SRF, a cut of about \$332M from 2015 levels. The request also seeks \$1.2B for the Drinking Water SRF, a \$279M increase.

2015-2016: The Committee will support the WGA and WSWC positions. In particular, WSWC staff will continue to update the Committee on developments within Congress and the Administration that have the potential to impact the SRFs. As needed, Committee members and WSWC staff will also meet with the Administration and Congress to further the objectives of the WGA and WSWC positions.

Time Frame: Ongoing

c. EPA’s Water Transfers Rule

Work-to-Date: Paragraph B(2)(c) of WGA Resolution #2014-04 and WSWC Position [#316342](#) generally support EPA’s Water Transfers Rule (940 C.F.R. § 122.3(i)), which clarifies that water transfers from one “navigable” water to another are exempt from National Pollutant Discharge Elimination System (NPDES) permitting under Section 402 of the CWA. The rule states that transfers do not require NPDES permits if they do not add pollutants and if there is no intervening municipal, industrial, or commercial use between the diversion and the discharge of the transferred water.

On March 28, 2014, the U.S. District Court for the Southern District Court of New York (SDNY) vacated the rule in *Catskills Mountain Chapter of Trout Unlimited v. EPA (Catskills II)*, 2014 U.S. Dist. LEXIS 42545 (S.D.N.Y., March 2014). Among other things, the court reasoned that many of the types of conveyances contemplated by the rule would not be considered navigable waters under the jurisdictional standards set forth in the U.S. Supreme Court's *Rapanos* decision. The SDNY court further opined that language in the CWA regarding state rights and state primacy over water allocation support an interpretation that allows for a federal role in water allocation. EPA has appealed this decision to the Second Circuit Court of Appeals, along with 11 western states¹ and a number of western water providers that have intervened in the action to uphold the rule. California has also filed an amicus brief in support of the rule.

In addition, litigation regarding the rule is pending in the Ninth Circuit Court of Appeals in *ONRC Action v. Bureau of Reclamation*. This case stems from claims an environmental group filed against the Bureau of Reclamation, arguing that the agency should obtain an NPDES permit to operate a drain in the federal Klamath Project that transfers water between the Klamath River and Lower Klamath Lake near the border between Oregon and California. A federal district court disagreed with this assertion, reasoning that the CWA is ambiguous and that the rule is entitled to deference. This case marks the first time the Ninth Circuit will review the validity of EPA's rule, although it did issue a decision in 2003 before EPA promulgated the rule that rejected the "unitary waters" theory upon which the rule is based.

2015-2016: The Committee and WSWC staff will: (1) continue to support the WGA and WSWC positions; (2) monitor any and all activities impacting EPA's rule, including but not limited to the ~~SDNY-Second Circuit~~ and ~~9th-Ninth~~ Circuit litigation and possible efforts by EPA to reconsider the rule; (3) inform the WSWC of ongoing developments; and (4) take any other actions needed to support the WGA/WSWC positions regarding the rule.

Time Frame: Ongoing

d. Nutrients

Work-to-Date: EPA's Office of Water is working to carry out a National Nutrient Strategy to accelerate state adoption of numeric water quality standards while building the scientific and technical infrastructure needed to develop new criteria to address nitrogen and phosphorus pollution.

On March 16, 2011, then EPA Acting Assistant Administrator for Water Nancy Stoner issued a memo to EPA's Regional Administrators to synthesize key principles regarding the agency's technical assistance and collaboration with states. The memo urged the

¹ The 11 intervening states include: Alaska, the Arizona Department of Water Resources, Colorado, Idaho, Nebraska, Nevada, North Dakota, New Mexico, Texas, Utah, and Wyoming.

regions to place new emphasis on working with states to achieve near-term reductions in nutrient loadings. Most notably, the memo provided a “Recommended Elements of a State Nutrients Framework” to serve as a tool to “...guide ongoing collaboration between EPA regions and states in their joint effort to make progress on reducing nitrogen and phosphorus pollution.” It also asked each region to use the framework as a basis for discussions with interested and willing states, the goal of which would be to tailor the framework to particular state circumstances.

The Committee and WSWC staff have followed and updated the WSWC on EPA efforts involving nutrients. Various Committee meetings have also featured presentations from EPA and state officials on federal and state nutrient management efforts.

Paragraph B(3)(b) of WGA Resolution #2014-04 states that “...nutrients produced by non-point sources fall outside of NPDES jurisdiction and should not be treated like other pollutants that have clear and consistent thresholds over a broad range of aquatic systems and conditions.” The WGA’s resolution further states that states should have “sufficient flexibility” to utilize their own incentives and authorities to establish standards and control strategies to address nutrient pollution, rather than “being forced to abide by one-size-fits-all federal numeric criteria.” According to the WGA’s resolution, successful tools currently in use by states include best management practices, nutrient trading, and controlling other water quality parameters, among other “innovative” approaches.

2015-2016: The Committee and WSWC staff will monitor EPA’s nutrient efforts and inform the WSWC of ongoing developments. It will also ensure that the WSWC’s efforts do not duplicate those of the Association of Clean Water Administrators.

Time Frame: Ongoing

e. Treatment as States Rulemaking Efforts

Work-to-Date: EPA is engaged in two separate but related rulemaking efforts regarding the tribes’ ability to obtain “treatment as states” (TAS) status under Section 518 of the CWA, which is needed for tribes to operate certain CWA regulatory programs.

The first effort involves the development of a possible interpretive rule that could do away with current requirements that tribes must demonstrate that they have inherent authority to operate CWA regulatory programs. EPA has indicated that such a reinterpretation would consider Section 518 to be an express delegation of authority from Congress. EPA conducted pre-proposal outreach with the states, including the WSWC in August 2014, and ~~may intends to~~ publish an interpretive rule for public comment ~~at some point in in~~ mid-to-late 2015.

The second effort involves the development of a formal rule that will set forth the regulatory process by which tribes can obtain TAS status to operate the impaired water listing and total daily maximum daily load (TMDL) programs. EPA has indicated that Section 518 requires the development of the rule. The agency has also conducted pre-

proposal outreach with the states, including the WSWC in October 2014, and ~~may~~ intends to publish a draft rule for public comment ~~at some point in~~ mid-to-late 2015.

2015-2016: The Committee will continue to monitor these rulemakings and engage with EPA as appropriate.

Time Frame: Ongoing

f. **Pesticide Permits and National Pollutant Discharge Elimination System (NPDES) Permits**

Work-to-Date: The Sixth Circuit Court of Appeals' 2009 ruling in *National Cotton Council v. Environmental Protection Agency* vacated an EPA rule that exempted pesticide applications made in compliance with the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA). The decision has national implications because it consolidated rule challenges filed in eleven circuits, and because the U.S. Supreme Court declined to review the decision.

WSWC Position #~~328~~359 urges Congress to amend the CWA and FIFRA to clarify that FIFRA-compliant pesticide applications do not require NPDES permits. Paragraph B(2)(d) of WGA Resolution #2014-04 also states that the Western Governors support FIFRA's primary role in regulating pesticide applications to water, and will seek state-based solutions that compliment rather than duplicate FIFRA.

WSWC members and staff have supported these positions through multiple visits with Congressional officials. WSWC staff also completed a summary of state information and examples of how dual CWA-FIFRA regulation will impact western states. Most recently, legislation (H.R. 897) has been introduced in the 114th Congress that would overturn the Sixth Circuit's decision and prevent EPA and states from requiring NPDES permits for pesticide applications.

2015-2016: The Committee will continue to: (1) monitor and inform the WSWC about developments involving this issue; and (2) work with key Congressional members and their staff consistent with the WGA and WSWC positions to support legislation that would clarify that FIFRA-compliant pesticide applications do not require NPDES permits.

Time Frame: Ongoing

g. **Abandoned Hardrock Mine Remediation**

Work-to-Date: The WGA and WSWC have long supported legislation to amend the Clean Water Act (CWA) to protect authorized third parties, or "Good Samaritans," who

voluntarily clean up abandoned hardrock mines, from inheriting perpetual liability for the site under the CWA (WGA Policy Resolution #13-05).

A number of Good Samaritan bills have been introduced in Congress over the years, including legislation introduced by Senator Mark Udall (D-CO). These bills have been unsuccessful due to concerns about the potential impacts of amending the CWA and perceptions that sufficient protections already exist under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). However, considerable uncertainty exists as to whether CERCLA and other existing authorities provide Good Samaritans with sufficient protection from third party lawsuits for sites in which there is a continuing discharge of pollutants as defined by the CWA.

Over the past several years, the Committee has worked to support Good Samaritan legislation and other efforts to clean up abandoned hardrock mines, including multiple visits with Congress and the Administration, Congressional testimony in support of such legislation, and involvement in a WGA-organized Task Force focused on crafting an exemption for Good Samaritan activities by state governments.

In December 2012, the Environmental Protection Agency (EPA) issued a memorandum to clarify administrative protections for Good Samaritans. EPA's regulations require operators of sites that continue to discharge pollution after cleanup to obtain NPDES permits under the CWA. The memorandum clarifies that Good Samaritans who complete cleanup efforts pursuant to EPA policies will not be considered "operators" responsible for obtaining NPDES permits if they lack: (1) access and authority to enter the site; (2) an ongoing contractual agreement or relationship with the site owner to control discharges; (3) power or responsibility to make timely discovery of changes to the discharges; (4) power or responsibility to direct persons who control the mechanisms, if any, causing the discharges; and (5) power or responsibility to prevent and abate the environmental damage caused by the discharges. Nevertheless, the memorandum states that it "...does not address or resolve all potential liability associated with discharges from abandoned mines."

2015-2016: The Committee will coordinate with the WGA and encourage efforts to clean up abandoned hardrock mines, including but not limited to enactment of Good Samaritan legislation and efforts to support utilization of EPA's 2012 memorandum. As part of this effort, the Committee will work with key Congressional members/staff, Administration officials, and other stakeholders to develop and support efforts to clean up abandoned hardrock mines in accordance with the WGA's policies, including the possible development of a workgroup and/or workshop to bring together interested stakeholders to identify ways to facilitate abandoned hardrock mine remediation.

In addition to the above actions, the Committee will: (1) work with the Administration and Congress to provide liability protections to Good Samaritans under existing authorities; and (2) evaluate the prospects for Good Samaritan legislation.

Time Frame: Ongoing

**LEGAL COMMITTEE
WORK PLAN
July 1, 2015 to June 30, 2016**

**1. STATE AND FEDERAL COLLABORATION REGARDING THE
ADJUDICATION OF FEDERAL NON-TRIBAL WATER RIGHTS**

Work-to-Date: The Committee has created a Federal Non-Tribal Water Claims Subcommittee to evaluate ways the WSWC and WestFAST can improve the effective resolution of federal non-tribal water rights claims. The Subcommittee consists of WSWC members and WestFAST members, who serve in an *ex officio* capacity.

The Subcommittee issued a questionnaire in 2012 to WSWC member states, the Bureau of Land Management, the Bureau of Reclamation, the Department of Defense, the U.S. Army Corps of Engineers, the U.S. Fish and Wildlife Service, and the U.S. Forest Service. The questionnaire sought information on ways the WSWC and WestFAST could address the issues and challenges that involve federal non-tribal water right claims,¹ as well as examples of successful state and federal efforts to resolve these claims. Responses indicated a broad consensus that the WSWC and WestFAST could develop a clearinghouse of information to assist states and federal agencies in the effective resolution of federal non-tribal water rights claims.

On July 15-16, 2014, the WSWC and WestFAST held a workshop in Helena, Montana to discuss ways to improve the resolution of federal non-tribal water rights claims and to begin the process of developing a clearinghouse of information that states and tribes can use to resolve these claims. The WSWC and WestFAST subsequently created a joint state-federal workgroup to help develop the clearinghouse and implement the other recommendations that emerged from the workshop.

2015-2016: The Committee will work to carry out the recommendations and next steps that emerged from the workshop. Under the direction of the Committee, the workgroup will hold calls on a quarterly basis to discuss the development of the clearinghouse and to serve as a forum for information sharing and relationship building. The Workgroup will also advise the Committee about potential future actions the WSWC and WestFAST may take to address federal water needs and may hold webinars on specific topics of interest, including a webinar on the administrative issues associated with the McCarran Amendment.

Time Frame: Ongoing

Federal Non-Tribal Water Claims Subcommittee: David Schade (AK), Melissa Hornbein-Jay Weiner (MT), Greg Ridgley (NM), Jennifer Verleger and Michelle Klose (ND), and Dwight French (OR), Todd Chenoweth (TX), Norm Johnson (UT), Buck Smith (WA), and Pat Tyrrell and Chris Brown (WY). WestFAST members and agency staff participating in the Subcommittee in an *ex officio* capacity include: Jana Wilcox (Bureau of Land Management), Marc Kodack

¹ For the purposes of the questionnaire, the term “federal non-tribal water right claim” encompassed federal reserved right claims, federal state-based claims, and claims relating to the aforementioned federal agencies that do not involve water right claims made by a tribe.

(Department of Defense), Andrew Hautzinger (U.S. Fish and Wildlife Service), [Donald Anderson and Becky Fulkerson \(Bureau of Reclamation\)](#), [Jeff Hughes \(National Park Service\)](#) and Jean Thomas (U.S. Forest Service). [Other ex officio members of the Subcommittee include Kristen Geddes and Susan Joseph-Taylor \(NV\), Jonathan Allen \(OK\), Jesse Ratcliff \(OR\), and Abigail Boudewyns \(WY\).](#)

2. CWA JURISDICTION*

Work-to-Date: In 2011, the EPA and the U.S. Army Corps of Engineers released draft guidance intended to provide clearer, more predictable guidelines for determining which water bodies are subject to Clean Water Act (CWA) jurisdiction, consistent with the U.S. Supreme Court’s decisions in *Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers*, 531 U.S. 159 (2001), and *Rapanos v. United States*, 547 U.S. 715 (2006).

In September 2013, the EPA and Corps withdrew the draft guidance. At the same time, the agencies announced that they had submitted a draft rule to clarify the extent of CWA jurisdiction to the Office of Management and Budget (OMB) for interagency review.

In 2013, the WSWC wrote EPA and the Corps a series of five letters requesting greater state consultation in the development of the rule. In addition, the WSWC created a CWA Rulemaking Workgroup to gather information on the WSWC member states’ perspectives regarding the rulemaking and to identify further areas of consensus among the western states. In March 2014, the workgroup developed a letter that the WSWC sent to EPA and the Corps, setting forth a list of additional consensus comments on the rulemaking. The Western Governors’ Association (WGA) sent a subsequent letter on March 25, 2014, that cited the WSWC’s March 10 letter and urged the agencies to consult with the states individually and through the WGA before taking further action on the rulemaking.

On April 21, 2014, EPA and the Corps published a proposed rule in the Federal Register with an initial 90-day public comment period that was later extended to October 20, 2014, following requests from the WGA and other organizations for an extension. Following the rule’s publication, EPA and the Corps engaged in a series of calls with the WSWC to discuss the states’ questions and concerns about the rulemaking. WSWC Water Quality Committee Chair J.D. Strong of Oklahoma also testified on behalf of the WSWC and the WGA before the House Transportation and Infrastructure Committee regarding the rule on June 11, 2014.

The WSWC adopted Position #369 regarding CWA rulemaking efforts on July 18, 2014, during its summer meetings in Helena, Montana. The resolution replaces WSWC Position #330.5 and served as the basis of a comment letter the WSWC sent to EPA and the Corps on October 15, 2014, [Position #373](#). That letter called for the creation of a state-federal workgroup to refine and revise the rule and set forth a number of requested changes.

[On June 29, 2015, the EPA and the Corps published their final rule in the Federal Register. The final rule incorporates some of the changes requested in Position #373, including further clarity on jurisdiction over “other waters,” quantification of “significance” for nexus evaluations, and the deletion or definition of several vague terms.](#)

2015-2016: The Committee will continue to work with the Water Resources and Water Quality Committees through the Workgroup to follow and comment on the ~~further development and/or~~ implementation of the jurisdictional rule and other federal actions regarding CWA jurisdiction in accordance with the WSWC's and WGA's positions.

Time Frame: Ongoing

CWA Rulemaking Workgroup: Michelle Hale (AK), Trisha Oeth (CO), Barry Burnell (ID), Tom Stiles (KS), Jon Patch (ND), Bill Schuh (ND), J.D. Strong (OK), Todd Chenoweth (TX), Walt Baker (UT), Laura Driscoll (WA), ~~Stephen Bernath (WA)~~, and Bill DiRienzo (WY).

*See Item 3(a) of the Water Quality Committee Workplan

3. AD HOC GROUP ON RESERVED INDIAN WATER RIGHTS

Work-to-Date: The Western Governors' Association (WGA) and WSWC have long supported the negotiated resolution of Indian water rights claims (WSWC Position #376). As a result, the WGA and WSWC have worked with the Native American Rights Fund (NARF) for over thirty years as part of an Ad Hoc Group on Reserved Indian Water Rights to promote negotiated settlements.

Over the years, the Ad Hoc Group has carried out a number of activities to support the negotiated settlement of Indian reserved water rights claims, including frequent trips to Washington, D.C. to support policies that facilitate settlements and a biennial symposium on settlements that the WSWC and NARF hold every odd year. The Group has also worked to highlight the need to secure a permanent funding mechanism for authorized settlements and to identify alternative funding sources to help ensure that settlements authorized by Congress and approved by the President will be implemented.

In recent years, the WSWC and NARF have established regular meetings with the Deputy Secretary of the Interior's Office, the Secretary of the Interior's Indian Water Rights Office, and other Interior officials engaged in Interior's Indian water rights efforts. The WSWC and NARF have also held regular meetings with the White House Office of Management and Budget and other White House officials to support the WSWC's settlement policies.

2015-2016: The Committee will oversee WSWC's Ad Hoc Group efforts in the following areas: (1) activities to gather support for an appropriate remedy to settlement funding issues, including the development of a permanent settlement funding mechanism, the identification of other possible funding sources, and funding for federal assessment, negotiation, and implementation teams; (2) continue meeting with the Administration via the quarterly conference calls and other face-to-face opportunities to discuss key issues associated with Indian water rights settlements; and (3) hold the 2015 Symposium on the Settlement of Indian Reserved Water Rights Claims in Reno, Nevada on August ~~25-27, 2015~~ in partnership with the Pyramid Lake Paiute Tribe.

Time Frame: Ongoing

Reserved Rights Subcommittee: Bill Staudenmaier (AZ); Cindy Chandley (AZ); Jay Weiner (MT), Greg Ridgley (NM), and Norman Johnson (UT). NARF members participating in the

Subcommittee in an ex officio capacity include: John Echohawk, Joel Williams, Heather Whiteman Runs Him, Steve Moore, and David Gover. Other ex officio members include Susan Cottingham, Nathan Bracken, Stanley Pollack, David Mullon, Ryan Smith, Michael Bogert, Pamela Woodies, and Arianne Singer.

4. U.S. FOREST SERVICE PROPOSED GROUNDWATER DIRECTIVE

Work-to-Date: On May 6, 2014, the U.S. Forest Service published a proposed directive in the Federal Register that would create a “comprehensive direction” for the agency’s management of groundwater on National Forest System (NFS) land. In particular, the directive is intended to: (1) provide for consideration of groundwater resources in Forest Service activities; (2) encourage source water protection and water conservation; (3) establish procedures for reviewing new proposals for groundwater withdrawals on NFS land; (4) require the evaluation of potential impacts from groundwater withdrawals on NFS natural resources; and (5) provide for measurement and reporting to help build the agency’s understanding of groundwater resources on NFS land. Comments on the proposed directive are due August 4, 2014.

According to the Forest Service, the directive will not infringe on state-issued water rights or change how state groundwater and surface water quality regulations affect federal lands. However, while the directive would require the agency to comply with state law when filing groundwater use claims in state adjudications and administrative proceedings, it would, among other things: (1) require application of “...the Reservation or Winters Doctrine to groundwater, as well as surface water, consistent with the purposes of the Organic Administration Act, the Wild and Scenic Rivers Act, and the Wilderness Act;” (2) require the Forest Service to evaluate all applications to states for water rights on lands adjacent to NFS lands; and (3) would presume that groundwater and surface water are connected unless proven otherwise.

WSWC position #[340380](#) notes that no federal court has recognized a federal reserved water right to groundwater, and opposes “...efforts that would establish a federal ownership interest in groundwater or diminish the primary and exclusive authority of States over groundwater.” Similarly, WGA Resolution #[2014-032015-08](#), paragraph B(1)(a) states: “While the Western Governors acknowledge the important role of federal laws such as the Clean Water Act, the Endangered Species Act, and the Safe Drinking Water Act, nothing in any act of Congress or Executive Branch regulatory action should be construed as affecting or intending to affect states’ primacy over the allocation and administration of their water resources.”

On July 2, 2014, the WGA wrote Secretary of Agriculture Tom Vilsack to express concern that the directive “could have significant implications for our states and our groundwater resources.” WGA’s letter also asked Vilsack to respond to a series of questions regarding the directive. The WSWC subsequently sent a letter to the USFS on October 3, 2014 (Position #372) that outlined a number of questions and concerns about the directive, including: (1) its potential to infringe on state water management, (2) questions about the legal basis for the directive; and (3) the lack of state consultation in the development of the directive.

In December 2014, USFS Chief Tom Tidwell indicated that the USFS will not move forward with the directive until after agency personnel have engaged with states and other stakeholders to

better understand their concerns. After the USFS has completed this engagement, it will publish a revised directive in the Federal Register for public comment.

At the WSWC's request, the USFS met with the WSWC on February 13, 2015 to discuss the WSWC's concerns regarding the directive. The meeting identified a number of conceptual, consensus-based changes that may be able to address some of the WSWC's concerns.

On June 19, 2015, the USFS published a Notice of Withdrawal of the Proposed Directive in the Federal Register. The USFS acknowledged the States' concerns that the Proposed Directive would exceed USFS authority and infringe on States' authority to allocate water. The withdrawal will allow USFS to engage in further conversations with the States. USFS intends to use the input from States and others to develop new directives that create a consistent approach to evaluating and monitoring the effects on groundwater resulting from actions on USFS lands.

2015-2016: The Committee will use the results of the WSWC's February 2013 meeting with the USFS to develop consensus changes to the directive that could form the basis of potential comments for the WSWC to submit once the USFS re-publishes the directive for public comment. The Committee will also continue to monitor this issue and engage with the USFS as appropriate under the supervision of the WSWC and in close coordination with the WGA.

Time Frame: Ongoing

WestFAST

Western States Federal Agency Support Team

5296 South Commerce Drive, Suite 202, Murray, Utah 84107

Phone: (801) 685-2555 Fax: (801) 685-2559

WestFAST Agencies

2015-2017 Work Plan (July 1, 2015-June 30, 2017)

Agencies/Members

U.S. FOREST SERVICE
JEAN THOMAS

U.S. BUREAU OF
RECLAMATION
DIONNE THOMPSON
BECKY FULKERSON
(CHAIR)

U.S. ARMY CORPS OF
ENGINEERS
JOHN D'ANTONIO

U.S. ENVIRONMENTAL
PROTECTION AGENCY
ROGER GORKE (VICE
CHAIR)

NASA
BRAD DOORN
FORREST MELTON
(ALTERNATE)

U.S. FISH &
WILDLIFE SERVICE
ANDREW
HAUGHTZINGER

NATURAL RESOURCES
CONSERVATION
SERVICE
MICHAEL STROBEL

NATIONAL OCEANIC &
ATMOSPHERIC
ADMINISTRATION
ROGER PULWARTY
KEVIN WERNER
(ALTERNATE)

U.S. DEPARTMENT OF
ENERGY
CRAIG ZAMUDA

U.S. GEOLOGICAL
SURVEY
PIXIE HAMILTON

U.S. DEPARTMENT OF
DEFENSE
MARC KODACK
LAUREN DEMPSEY
(ALTERNATE)

U.S. BUREAU OF
LAND MANAGEMENT
RONALD MCCORMICK

NATIONAL PARKS
SERVICE
ED HARVEY
ALAN ELLSWORTH
(ALTERNATE)

FEDERAL LIAISON
OFFICER
PATRICK LAMBERT

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Western States Federal Agency Support Team (WestFAST)

FY 2015-17 Work Plan (7/1/2015-6/30/2017)

We hereby declare that we as WESTFAST partners will collaborate with the Western States Water Council to guide the development of an appropriate action plan for this partnership.

- An excerpt from *Declaration of Cooperation*

1.0 Introduction

The [Western States Federal Agency Support Team](#) (WestFAST) is a collaboration between 13 Federal agencies with water resource management responsibilities in the West.

WestFAST was formed in 2008 in response to [Western Governors' Association](#) (WGA) recommendations recorded in their report [Water Needs and Strategies for a Sustainable Future: Next Steps Report](#) (*Next Steps Report*), to support the [Western States Water Council](#) (WSWC) and the WGA through coordinating Federal efforts regarding water resources. Specifically, WestFAST's objective is to promote and facilitate coordination among federal agencies, and between states and federal agencies, to help the WSWC implement collaborative efforts outlined in its *Next Steps Report*. Some of the areas that the *Next Steps Report* identified for federal/state collaboration included: Water policy, Water to meet future demands, Water infrastructure, Indian water rights, Climate change, and endangered species. Subsequent WGA [Policy Resolutions \(2014-03 and 2014-4\)](#) have defined current western states water management priorities and goals including in the areas of innovative water management and reliable water data. WSWC's Executive, Legal, Water Resource, and Water Quality Committees have also established [work plans](#) defining critical areas of federal-state collaboration toward improving understanding and managing water resources in the west. This 2015-2017 work plan defines WestFAST priority goals and activities toward meeting the team's defined objectives. The work plan is presumed to be a living document that can be altered during the two-year plan period to reflect changes in western states and participation in WestFAST agency programs and needs.

Common to WGA and WSWC strategies and resolutions is the goal of encouraging and facilitating effective coordination and cooperation among local, state, and federal planners and managers:

"Developing optimal solutions to the challenges laid out in the 2006 WGA water report will require an integrated approach and greater partnerships among state, local and federal agencies. This approach should consider all needs together, develop effective solutions which are complementary rather than conflicting, and provide direction for selecting the most appropriate governmental entities or organizations for implementing solutions." (Next Steps Report)

“Western Governors recognize the important role of federal agencies in advancing sound water resource management in the Western states. Governors appreciate the efforts of federal agencies to coordinate water-related activities, particularly through the Western States Water Council, and support the continuation of these key state-federal partnerships.” (WGA Policy Resolution 2014-0, Water Resource Management in the West)

“... the Committee will work to ensure participating agencies realize the real and potential benefits of WestFAST, and work to build a sound foundation for continuing collaboration. The Council will also seek to build closer ties with WestFAST principals.” (WSWC Executive Committee 2014 Work Plan)

WestFAST will continue to promote the over-arching goal of improved collaboration among federal agencies, and between state, and federal agencies engaged in western water-resource issues. WestFAST will also continue work in the general themes of the six focus areas from the *Next Steps Report* and in support of collaborative efforts outlined in more recent WGA resolutions and WSWC committee work plans. Key tasks in the 2015-2017 WestFAST Work Plan include:

- Conducting case studies of most efficient and productive cooperation and collaboration practices between state and federal agencies.
- Reviewing assessments of Federal Agency drought information and services and identifying gaps and solutions.
- Better enabling the exchange of federal and state water data.
- Enhancing the visibility of WestFAST and the water-resource programs of its member agencies that support WSWC resource management goals.

In 2013-2014, WestFAST initiated a structure for improving collaboration between states and federal agencies and meeting our goals by organizing WestFAST into Workgroups to facilitate work with WSWC subcommittees on priority water resource issues. The WestFAST Drought Workgroup and Data Workgroup were stood up in 2013-14. An Infrastructure Workgroup will be created in 2015. These workgroups are comprised of current WestFAST members and other federal agency representatives with expertise and responsibility in workgroup focus areas and, we believe, will provide an effective framework for collaboration and alignment with WSWC subcommittee goals. WestFAST will also emphasis enlisting multiple representatives (primary and alternate) from participating agencies with preferred representation from both headquarters and field regional levels. We believe that this level of representation will provide better coverage and knowledge of national and regional programs and activities that effect western state water management.

2.0 Coordination and Collaboration

2.1 Interagency

The federal agencies that make up WestFAST all have unique roles within western water management. WestFAST provides a means for those agencies to collaborate in a way that they may not otherwise be able. WestFAST work will focus on three key areas of collaboration.

- Information sharing
- Participation in cross-agency groups, and
- Outreach

2.1.1 Information Sharing

All of the WestFAST agencies have a number of high-priority initiatives that can benefit from coordination with the other federal agencies. WestFAST provides a forum for these agencies to discuss these initiatives, and to allow for the agencies to better understand how they can better work together.

WestFAST members will continue to conference monthly. WestFAST workgroups will meet as needed to accomplish the activities of this plan. Beginning in 2015, WestFAST has recommended that its' agencies' principal leaders (WestFAST Principals) meet with WestFAST semiannually to review WestFAST accomplishments and discuss future coordination needs related to federal water resource programs and policies.

In 2015, WestFAST will begin developing and hosting regular “Informational Meetings,” held mainly via webinar, on topics of interest to WestFAST member agencies and other water-resource managers, scientists, and stakeholders. WestFAST has held several of these types of meetings in past years but beginning January 2015, these presentations and discussions will be held monthly. Topics will range from overviews of WestFAST-agency water-resource related programs and management models to “hot topics” on water-resource science and policy. Depending on the session topics, the webinar audience will range from internal-to-WestFAST to being open to all federal employees and interested state and local agencies.

2.1.2 Participation in Cross-Agency Groups

Another role of WestFAST is to participate in various cross-agency groups. WestFAST can provide a unique western perspective, and provide input based on interactions with the western states. WestFAST's participation in these groups provides additional linkages to other federal agencies, other groups, and other committees that may not otherwise occur.

Some examples of activities that WestFAST plans on engaging in 2015-2017 include:

- **National Water Census:** The [National Water Census](#) is a USGS research program on national water availability and use that develops new water accounting tools and assesses water availability at the regional and national scales. Research is designed to build decision support capacity for water management agencies and other natural resource managers. The Water Census, and USGS programs feeding into the Water Census including the Groundwater Resources Program, should be linked with activities being undertaken as part of the WSWC [Water Data Exchange \(WaDE\)](#). WestFAST will continue to engage

in Water Census activities in order to ensure that information is being shared between these two efforts.

- **Western Regional Partnership:** The [Western Regional Partnership \(WRP\)](#) is a Department of Defense led collaboration between federal, state, and tribal interests. They are working on issues in the southwestern U.S. WestFAST will continue to interact with the WRP. The WRP has already identified WestFAST and the WSWC as the go-to groups for water issues.
- **The Open Water Data Initiative:** WestFAST will continue to engage with and provide linkage from western states to initiatives and working groups forwarding the coordination of spatial water data among all levels of government. For example, in 2014 an “[Open Water Data Initiative](#)” was proposed by a working group comprised of leadership from Secretary of Interiors office, the USGS, NOAA, and Universities. The group proposed a new initiative that will integrate currently fragmented water information into a connected, national water data framework – an objective of great interest to the WSWC. The Open Water Data Initiative will be collaborative, building on the work of [the Integrated Water Resources Science and Service \(IWRSS\)](#) consortium, and engaging the [Subcommittee on Spatial Water Data \(SSWD\)](#), which is a shared subcommittee of the [Federal Geographic Data Committee \(FGDC\)](#) and the [Advisory Committee on Water Information \(ACWI\)](#). WestFAST will directly engage in this initiative through participation in associated workgroups and subcommittees such as the SSWD. The WestFAST Federal Liaison will work directly on the SSWD and link other WestFAST members and our agencies’ personnel to tasks as appropriate. A more detailed description of WestFAST plans in this initiative is presented in the “Data” section of this work plan.

2.1.3 Outreach

Since its original formation in 2008, efforts have been made to improve WestFAST visibility. This is primarily done via the WestFAST web site (<http://www.westgov.org/wswc/WestFAST.htm>) as well as through a WestFAST newsletter. In addition to this, WestFAST is beginning to reach out to other organizations to inform them on this unique federal/state collaboration. To continue to improve WestFAST visibility, in 2015 WestFAST will undertake the following activities:

1. Maintain and enhance the WestFAST web site with current WestFAST activities and events and updates on WestFAST agency programs and collaborative efforts.
2. Broadly publish information about WestFAST ‘Informational Meetings’ to federal employees, and Western State water-resource agencies and the WSWC as appropriate.
3. Continue to publish the WestFAST Newsletter on a monthly basis.

4. Develop WestFAST accomplishments reports that chronicle the activities of WestFAST.
5. Update the Fact Sheet describing WestFAST and develop a “WestFAST Primer” that can be used to introduce WestFAST to other Federal Departments and Bureaus and State and local collaborators.

Outreach is also part of the individual action plans of our WestFAST workgroups as described in subsequent sections by Workgroup focus areas

2.2 Federal-State

WestFAST agencies agree with and support the WSWC goal of developing “*integrated approaches and greater partnerships among state, local and federal agencies*” to find “*optimal solutions*” to the increasing challenges associated with water management in the west (quotes from *Next Steps Report*). In 2015-2017, WestFAST will study cases of successful collaboration in the development of agreements, directives, rules on policy and assessment in western water issues to define best practices common to productive and efficient engagement. The result of these studies will be an improved understanding of best practices that federal agencies can extend to engaging with states in the future. The scope of the study will include compilation and review of information on any policy limitations on the types of outreach a federal agency can conduct with the states under activities such as rule making. Study results will provide a reference guide to federal officials seeking to implement a new policy, roll-out a new initiative, or seeking input on future planning efforts.

There are numerous federal activities that are underway that require input and participation from the states. Additionally, there are specific issues that the WSWC is interested in that require continued coordination with the WestFAST team. WestFAST will continue to play a significant role in coordinating with the WSWC by frequent communication to the WSWC on various issues of interest. WestFAST will continue to facilitate proactive communication on new initiatives, the products of key western water programs, and any changes in scope and objective of existing programs. WestFAST will also work to connect WSWC to the appropriate agency staff and leaders to answer questions as they arise or to provide briefings on any issues of interest to WSWC. These communications will not be limited to participation in WSWC semi-annual conference but will be arranged as needed and will use the most-timely approach to consultation. WestFAST will focus in this area on the following activities:

1. WestFAST will continue to support the WSWC in defining best practices for addressing nontribal federal reserved water rights. In 2014, WestFAST worked with the WSWC to develop a Nontribal Federal Reserved Water Rights Workshop in July 2014 and followed up the event with helping to establish and active workgroup to discuss challenges and solutions relating to general stream adjudications, accommodating federal water needs within the state legal and administrative frameworks, and water-related issues associated with permitted activities and uses on federal land. WestFAST will continue to participate in the workgroup activities including identified documents to include in a clearinghouse of relevant information. WestFAST also will support regular conferences or workshops

for education and relationship-building opportunities, and to hold conference calls on a quarterly basis to serve as a forum to discuss notable developments.

2. WestFAST will continue to coordinate with the WSWC on the policies surrounding liability from the clean-up of abandoned mines (Good Samaritan).
3. As the WestFAST agencies continue to discuss the Water/Energy nexus, WestFAST will coordinate with the WSWC.
4. WestFAST will continue to provide the WSWC with information on the use of LandSAT and other remote sensing capabilities.

3.0 Support WSWC in implementation of the *Next Steps Report* and WSWC work plans

WestFAST plans to initiate and continue a number of activities related to priority water-resource issues in the west and associated recommendations and goals defined in the WGA *Next Steps Report* and current WSWC work plans. As noted, WestFAST has formed two workgroups - Drought and Data - and will form an “Infrastructure” Work Group in 2015 to better focus on priority issues in these areas identified in WSWC work plans and in federal agency program objectives.

Below is a list of recommendations from the WGA *Next Steps Report*, subsequent WGA resolutions, and from WSWC work plans (organized by WestFAST Work Group focus areas) that WestFAST will focus on in 2015-2017, and specific WestFAST response activities.

3.1 Drought Workgroup (The Drought Workgroup action plan also includes activities related to water availability and quality including impacts of climate change)

3.1.1 Drought Information and Planning:

Western Governors encourage federal agencies to partner with states in the gathering, coordination and effective dissemination of drought-related data between the federal government and states. (WGA Policy Resolution 2014-03, Water Resource Management in the West)

Work in cooperation with states to help communities develop drought preparedness plans, drought contingency plans, establish or enhance federal reservoir drought contingency plans, and be visible and engaged in all drought-related forums: nationally, regionally and locally. (Next Steps Report)

Activities:

- WestFAST member agencies continually strive to improve services related to drought in the areas of monitoring and information dissemination, projection tools and decision support system development, and the development of resiliency and response plans among others. Recent and ongoing Inter-agency collaborations and western-state sponsored drought forums in the face of a prolonged western drought provide an opportunity to assess the utility and limitations of federal drought programs and better understand information, tool, and support gaps. Robust solutions to observed

deficiencies in services, whether they involve improved access to existing tools or the development of new ones, will require collaboration among key WestFAST agencies. WestFAST will undertake, as a facilitator to collaboration, the following actions in this area.

- Assess the results of the reviews of drought activities and suggestions and recommendations defined in recent assessments such as in the Western Governors Association Drought Forum and the NOAA California Drought Services Assessment to determine opinions on priority drought information and services needs.
- Facilitate the communication of priority needs to ongoing inter-agency collaborations such as the National Drought Resiliency Partnership (NDRP). Review the progress and results of the NDRP and observed obstacles to optimal collaborative application of federal services in NDRP pilot studies. Summarize and review these needs with WestFAST drought agency leadership.
- Look for opportunities to utilize existing western states water resources forums to provide outreach and education on existing drought programs, tools, and data, including utility to and access by State drought programs that may fill identified gaps in drought information and services. Possible outreach opportunities might include: (1) WGA and WSWC annual meetings, (2) developing workshops that could be added onto scheduled conferences, and (3) use of the WestFAST Monthly Webinar Series or focused additional web conferences.
- WestFAST will continue to support the multiple phases of the WGA Drought Forum by (1) providing relevant WestFAST agency information and making available agency expertise over the scope of Forum topics and (2) reviewing WGA Drought Forum summaries of data and tool needs and compare needs to available agency products and define gaps and disconnects.

Governors support a comprehensive national policy that promotes a coordinated and integrated approach to future drought, including improved forecasting and monitoring, drought preparedness and planning, and efficient delivery of drought programs. (WGA Policy Resolution 2014-03, Water Resource Management in the West)

Activities:

- WestFAST will review progress on “Priority Actions” to improve the nation’s resilience to, and preparedness for, future droughts defined in multi-agency strategic planning efforts such as the 2012 National Drought Forum.

- WestFAST will identify next-step areas and develop plans to support progress in selected areas including the design, promotion, and implementation of specific inter-agency initiatives.

3.1.2 Water Availability

Basic information on the status, trends and projections of water-resource availability is essential to sound water management. (WGA Policy Resolution 2014-03, Water Resource Management in the West)

[Federal agencies should] Ensure there is an accurate assessment of the Nation's water availability and water demands, with the goal of integrating the information into state water resources planning, recognizing that a truly national assessment must begin at the state and local level with appropriate technical and financial support from the federal government. (Next Steps Report)

The Council will continue working with member states, USGS and various federal agencies to gather and disseminate water resources data using WaDE and other resources. The Council will continue to participate with USGS efforts to advance a National Water Assessment. (Draft Water Resources Committee Work Plan 2014-2015)

Activities: WestFAST will aid in coordination of National Water Census programs and actions with WSWC priorities and the WSWC M3 Initiative: Measuring, Monitoring, and Management. Specifically WestFAST will

- Provide updates on Water Census progress, products, and plans, and begin structured discussion and planning that improves data exchange (Fed-State) for Census components beyond WaDE.
- Facilitate the objectives (through outreach and coordination) of integrating Water Census data and products into state water resources planning.
- Brief WSWC on the results and data from completed Water Census Geographic Focus Area Studies.
- Engage WSWC and its Committees in planning and coordination of new Focus Area Studies in the west - the Rio Grande River Basin, and the Red River Basin.

Federal, state, and local agencies should further their efforts to investigate the availability and use of brackish waters to meet future water needs, particularly those of rural communities without other readily available sources of supply, and to identify ways to mitigate adverse impacts of brine disposal. (Next Steps Report, 13)

Activities:

- Investigation of the Nation's brackish waters is ongoing in several areas. The USGS is currently working through the Department of the Interior's WaterSMART initiative and the USGS Groundwater Resources Program to better understand location and character of brackish groundwater to expand development of the resource and provide a scientific basis for making policy decisions in a national assessment of brackish aquifers. The USBR's Brackish Groundwater National Desalination Research Facility in Alamogordo, NM is a focal point for developing technologies for the desalination of brackish and impaired groundwater found in the inland western states. WestFAST will work to ensure inter-agency awareness of the directions of these programs and that they are coordinated across WestFAST. WestFAST will brief the WSWC on the status and progress of these assessments and programs.
- WestFAST will help ensure that the WSWC is well informed of assessments looking at the impacts of brine disposal include produced water from energy development activities. Specifically, WestFAST will keep the WSWC briefed on the results and future plans of investigation such as the [EPA's Study of Hydraulic Fracturing for Oil and Gas and Its Potential Impact on Drinking Water Resources](#).

3.1.3 Water Quality

In conjunction with the Water Resources and Legal Committees, the Committee will hold an invitation only workshop to bring together state experts and other relevant stakeholders to discuss the interaction between water quality and quantity. (Water Quality Committee Work Plan)

Activities:

- WestFAST will work with the WSWC Water Quality Committee to develop the WSWC water-quality/water-quantity workshop and provide additional outreach from WestFAST agencies to improve understanding of the relationship of water quality to water quantity.
- The WestFAST Federal Liaison will work to coordinate Federal agency science programs within the Colorado River Basin Salinity Control Program toward informed development and operation of projects to reduce total dissolved solids in the Colorado River Basin surface water supplies.

3.2 Data Work Group

3.2.1 WSWC “M3 Initiative” – Measuring, Monitoring, and Management

Data collection, management, distribution and visualization are critical for sound decisionmaking... The Council, in an attempt to better communicate the critical need for water data, will develop a “M3 Initiative,” revising and renewing its message to better bring attention to water data needs and develop strategies to meet those needs... Part of this effort will be to highlight critical measuring and monitoring “tools,” for any water management “toolbox,” and communicating their value for enhancing our ability to wisely manage water resources. (Draft Water Resources Committee Work Plan 2014/2015)

The Council will consider development of an appropriate groundwater component for its M3 Initiative, as well as working collaboratively with other state and federal interests and non-governmental organizations. The Council will also promote the use of existing state information on groundwater resources. (Draft Water Resources Committee Work Plan 201-2015)

Activities:

- WestFAST will assist WSWC in their continued development of the M3 initiative including providing information water availability in federal data bases related to priority state information needs, ongoing programs that are collecting defined priority hydrologic data, and federal assessments of data gaps. WestFAST will consult with WSWC on the objectives and potential scope of a groundwater component to the WSWC M3 initiative.
- WestFAST will utilize WSWC meetings to regularly brief state managers on new and ongoing water data programs and collaboration opportunities including work WestFAST agencies are doing under the Open Water Date Initiative (described in subsequent sections of this report) and programs that will assist State Agencies in their efforts to quantify water supply and use.

3.2.2 Open Water Data and WaDE

State and federal water resource agencies should work together to provide universal access to the water-related data collected by all state, local, and federal agencies, as well as tools and models to better enable the synthesis, visualization, and evaluation of water-related data, including that to be shared with local governments (Next Steps 2008, page III, Objective 7).

Western Governors support federal efforts to coordinate water data gathering and information programs across multiple agencies. (WGA Policy Resolution Management in the West).

Activities:

- The Department of the Interior initiated through the Advisory Committee on Water Information (ACWI) and the Federal Geographic Data Committee (FGDC) the Open Water Data Initiative (OWDI). The initiative seeks to provide seamless access to water data using services-based approaches. As part of this work, ACWI has charged the Subcommittee on Spatial Water Data to scope and design a national Open Water Data Infrastructure. The effort will initially organize around use cases to define requirements for OWDI. Use cases have been defined that respond to societal needs and cover broad ranges of water resources sectors. The purpose of the use cases (defined below) is to identify critical data inputs, high-priority data sets, the current state of data availability and approaches to increasing data availability. Separate workgroups are addressing each use case in parallel.
 - National Flood Interoperability Experiment: This project will test new approaches to provide more accurate and more locally relevant flood predictions and warnings.
 - Drought - Water Availability and Water Supply: This project will identify a basin and seek to enable the exchange of critical information that is needed by water resource managers to make water supply decisions during drought. The WSWC is closely involved in this project since WaDE would be a key data source and since the states have the primary water resource management responsibilities and often make use of the federal data to make those decisions.
 - Spill Response: This project will evaluate approaches to share information to enable better notification to drinking water systems after a spill.

WestFAST will support the work of the “Use Case” work groups by (1) identifying staff with needed expertise for group membership, (2) supplying information on other ongoing work or resources that might be useful, and (3) through direct WestFAST member participation where beneficial.

The Bureau of Reclamation (BOR) is taking the lead in the OWDI Water Availability and Water Supply Use Case. Part of that activity will include assessing the interoperability of BOR data. WestFAST will assist BOR in engaging with WSWC to prioritize efforts to create interoperability in their data bases.

- In support of the OWDI and to continue to implement the principles of data sharing outlined in the WaDE project, U.S. EPA initiated a project to explore approaches to share continuous monitoring data. As part of

this project, EPA will develop a strategy for enabling a national network for sharing of sensor data using common formats. This strategy could be used for data collected by any sensor (both water quantity and water quality), and the strategy will address both state and federal data. WestFAST will work with EPA in implementation of the defined strategy for sharing sensor data among the WestFAST federal family and beyond.

- WestFAST will provide support to states and federal agencies in engaging in the National Groundwater Monitoring Network (NGWMN). The NGWMN Data Portal provides access to groundwater data from multiple, dispersed databases in a web-based mapping application. The portal contains current and historical data including water levels, water quality, lithology, and well construction. The NGWMN is transitioning from a pilot phase into full implementation. In the future, additional data providers to the network will be added. Limited funding to support state and local participation in implementation of the NGWMN may become available by the end of FY 2015. WestFAST will Support and facilitate the new implementation phase of the NGWMN by
 - Assisting with outreach and education components of implementation.
 - Assisting with the establishment of working and funding agreements between State Agencies and USGS.
 - Working with USGS program support staff to support technical assistance to states entering the program.
- WestFAST will work to optimize coordination of data collection, compilation, storage, and dissemination activities of the National Water Census with WSWC needs and programs such as WaDE. Data collection and compilation activities as part of Water Census programs include national estimates of water budget components for local watersheds, water use data for counties, tools to calculate statistics of daily streamflow records, modeled daily streamflow at ungaged stations, and access to records of aquatic biology. These Water Census Data are stored in the National Water Census Data Portal.

Specifically, for this work plan period, WestFAST will provide coordinating support to Water Census programs to improve data describing water use (e.g., water withdrawals and consumptive use). Proposed funding increases for WaterSMART will support financial resources, through grants to State water resource agencies, to improve the availability and quality of water-use data that States collect and the integration of that data with the USGS Water Census. WestFAST will provide support to the WaterSMART water-use program including

outreach and facilitating the implementation of state grants programs through working with WSWC

- WaDE
 - WestFAST will continue to support the WSWC on the implementation of the Water Data Exchange (WaDE) (see: <http://www.westgov.org/wswc/wade/>).
 - WestFAST will support the WSWC in the development of a common data standard for sharing water availability, use, allocation, and planning data.
 - WestFAST, in coordination with the WGA, DOE, WSWC, and the Sandia Labs will assist with the development of a metric that can be used to indicate relative water availability for energy production throughout the west in support of the Western Electricity Coordinating Council's (WECC) long-term planning process.
 - WestFAST will support the WSWC in designing web services that the states can deploy to share their water data.
 - WestFAST will identify ways that the WestFAST member agencies can better share data in a consistent format.
 - WestFAST will support the WSWC in the development of a 'Central Portal' to help synthesize and visualize the state and federal water data.
 - WestFAST will continue to engage and coordinate with the USGS Water Census to ensure that WaDE is complementary to that effort and to test and optimize data sharing between Water Census data bases and WaDE. WestFAST will consider opportunities to develop pilot assessments for the incorporation of federal agency data into WaDE and the extraction of water use data from WaDE as input to Water Census products.

3.3 Water Infrastructure

States, with assistance from relevant federal agencies, should provide institutional mechanisms and otherwise encourage regional water and wastewater projects to maximize economies of scale and minimize environmental impacts from smaller, piecemeal project development. (Next Steps Report)

Activities: WestFAST will work with WSWC in hosting an Infrastructure Workshop/Symposium in 2015-2016.

All levels of government, along with appropriate private sector involvement, should cooperate in the development and implementation of appropriate criteria for prioritizing

infrastructure needs, asset management strategies, policies, standards, techniques, and technologies. (Next Steps Report)

Activities: WestFAST will assist the Department of Interior and the Bureau of Reclamation in their efforts to better manage the BOR's infrastructure assets including a review of asset maintenance activities. WestFAST will work to facilitate BOR and state and local stakeholder cooperation in efforts to maintain reserved works at Reclamation facilities and assessing major repair and rehabilitation needs for reserved and transferred works.

Tab N – Proposed Changes to the WSWC Rules of Organization

RULES OF ORGANIZATION

Field Cod

Preamble

The Western States Water Council was created at the direction of western governors pursuant to a resolution adopted by the Western Governors' Conference during meetings in Portland, Oregon on June 10-13, 1965. The Council is a government entity, an instrumentality of each and every participating state, established to fulfill a number of governmental purposes on behalf of those states, including advising the governors on planning, conservation, development, management and protection of their water resources. As outlined herein, Council membership is comprised of States with member representatives appointed by the Governors of each participating State. The activities of the Council are subject to the control and supervision of the Governors of member States through their appointed representatives. The Council is funded by dues from member States, set by an Executive Committee, which also controls expenditures.¹

Article I - Name

The name of this organization shall be "THE WESTERN STATES WATER COUNCIL."

Article II - Purpose

The purpose of the Western States Water Council shall be to accomplish effective cooperation among western states in matters relating to the planning, conservation, development, management, and protection of their water resources, in order to ensure that the West has an adequate, sustainable supply of water of suitable quality to meet its diverse economic and environmental needs now and in the future.

Article III – Interstate Water Transfer Principles

Except as otherwise provided by existing compacts, the planning of western water resources development on a regional basis will be predicated upon the following principles for protection of states of origin:

- (1) All water-related needs of the states of origin, including but not limited to irrigation, municipal and industrial water, flood control, power, navigation, recreation, water quality control, and fish and wildlife preservation and enhancement shall be considered in formulating the plan.
- (2) The rights of states to water derived from the interbasin transfers shall be subordinate to needs within the states of origin.
- (3) The cost of water development to the states of origin shall not be greater, but may be less, than would have been the case had there never been an export from those states under any such plan.

Article IV - Functions

The functions of the Western States Water Council shall be to:

- (1) Undertake continuing review of all large-scale interstate and interbasin plans and projects for development, control or utilization of water resources in the Western States, and submit recommendations

¹ Revenue Ruling 57-128, 1957-1 C.B. 311 states: "In cases involving the status of an organization as an instrumentality of one or more states or political subdivisions, the following factors are taken into consideration: (1) whether it is used for a governmental purpose and performs a governmental function; (2) whether performance of its function is on behalf of one or more states or political subdivisions; (3) whether there are any private interests involved, or whether the states or political subdivisions involved have the powers and interests of an owner; (4) whether control and supervision of the organization is vested in public authority or authorities; (5) if express or implied statutory or other authority is necessary for the creation and/or use of such an instrumentality, and whether such authority exists; and (6) the degree of financial autonomy and the source of its operating expenses."

to the Governors regarding the compatibility of such projects and plans with an orderly and optimum development of water resources in the Western States.

(2) Investigate and review water related matters of interest to the Western States, and advise Council member states and governors as appropriate.

(3) Express policy positions regarding proposed federal laws, rules and regulations and other matters affecting the planning, conservation, development, management, and protection of water resources in Western States.

(4) Sponsor and encourage activities to enhance exchange of ideas and information and to promote dialogue regarding optimum management of western water resources.

(5) Authorize preparation of amicus briefs to assist western states in presenting positions on issues of common interest in cases before federal and state courts.

(6) Encourage collaboration among federal, state, tribal and local governments, public and private water resources associations and water-related non-governmental organizations.

Article V – State Membership and Member State Representatives

(1) The Council shall consist of the states of Alaska, Arizona, California, Colorado, Idaho, Kansas, Montana, Nebraska, Nevada, New Mexico, North Dakota, Oklahoma, Oregon, South Dakota, Texas, Utah, Washington, and Wyoming. Member states of the Western Governors' Association, which are not members of the Council, shall be added to membership if their respective Governors so request. The Executive Committee may, upon unanimous vote, confer membership upon other western states, which are not members of the Western Governors' Association, if their respective Governor so requests. The Executive Committee may also confer Associate Member status on states as described in section (45) below. Any state may withdraw from membership upon written notice by its Governor.

(2) Member state Governors may appoint not more than three member state representatives to the Council, but may name any number of standing alternate representatives.

(3) Member state representatives (members) and alternate representatives (alternates) so appointed may designate other individuals to represent them and participate in Council meetings and other activities provided that such designations are made in writing prior to the event by letter or email.

~~(4) In the event any state becomes delinquent in paying dues as set forth in Article V (5) for a period of three years, the state will be excluded from Council membership unless and until the current year's dues are paid.~~

~~(4) The Executive Committee of the Council shall set annual dues for Council participation and may, by unanimous vote, confer the status of Associate Member of the Council upon states it deems eligible. Associate Membership may be granted for a period of up to three years, during which time a state's appointed representatives may participate as observers in Council activities and receive all information disbursed by the Council. However, Associate Member states shall have no vote in Council matters. The Executive Committee shall, through regular Council voting procedures, establish the appropriate level of dues for Associate Member states. In addition to determinations concerning Associate Member states, the Executive Committee may, when appropriate, authorize and establish fees for participation in Council activities by non-member states and non-member state representatives (non-members).~~

~~(56)~~ If any state fails to pay the appropriate level of dues established by the Executive Committee of the Council, the privileges afforded by virtue of its membership to participate in Council activities and to receive all information dispersed by the Council may be withheld pending the payment of dues, beginning at the start of the fiscal year following the delinquency.

Article VI - Ex-Officio Members

The Governors of the member states shall be ex-officio members and shall be in addition to the regularly appointed members from each state.

Article VII - Officers

The officers of the Council shall be the Chair, Vice-Chair and Secretary-Treasurer. They shall be selected in the manner provided in Article VIII.

Article VIII - Selection of Officers

The Chair, Vice-Chair and Secretary-Treasurer, who shall be from different states, shall be elected from the Council by a majority vote at the annual regular summer meeting to be held each year. These officers shall serve one-year terms. However, the Chair and Vice-Chair may not be elected to serve more than two terms consecutively in any one office. In the event that a vacancy occurs in any of these offices, it shall be filled by an election to be held at the next scheduled regular Council meeting.

Article IX - Executive Committee

(1) Each Governor may designate one representative to serve on an Executive Committee which shall have such authority as may be conferred on it by these Rules of Organization, or by action of the Council. In the absence of such a designation by the Governor, representatives of each state shall designate one of their members to serve on the Executive Committee. Any Executive Committee member may designate in writing by letter or email an alternate to temporarily act on his/her behalf in his/her absence.

(2) The Executive Committee shall determine whether or not States are eligible for participation as members or associate members of the Council.

(3) The Executive Committee of the Council shall set annual dues for Council participation and may, by unanimous vote, confer the status of Associate Member of the Council upon states it deems eligible. The Executive Committee shall, through regular Council voting procedures, establish the appropriate level of dues for Associate Member states. In addition to determinations concerning Associate Member states, the Executive Committee may, when appropriate, authorize and establish fees for participation in Council activities by non-member states and non-member state representatives (non-members).

(4) The Executive Committee shall annually adopt a budget and oversee all Council expenditures and activities.

(5) The Executive Committee Council may establish other committees, subcommittees and work groups which shall have such authority as may be conferred upon them by action of the Council.

Article X – Voting and Policy Development

(1) Each state shall have one vote. Since state delegations consist of more than one person, but each state has only one vote, the Executive Committee member for each state shall be responsible as an internal state matter for coordinating and communicating the official position of the state relative to voting on proposed policy positions. An email message is sufficient to meet this requirement. Whenever a person who is not a Council representative is attending on behalf of a Council representative at a regular or special meeting, either in person or via conference call, a written notification to this effect must be provided to the Council offices to assure that the person is serving in the appropriate capacity.

(2) A quorum shall consist of a majority of the member states (excluding associate member states).

(3) No recommendation may be issued or position taken by the Council except by an affirmative vote of at least two-thirds of all member states, with the exception of the following:

(a) Recommendations and external policy positions concerning out-of-basin interstate transfers require a unanimous vote of all member states; and

(b) Action may be taken by a majority vote of all member states on all internal administrative matters.

(4) In any matter put before the Council for a vote, other than election of officers, any member state may upon request obtain one automatic delay in the voting until the next regular meeting of the Council. Further delays in voting on such matters may be obtained only by majority vote.

(5) The Council shall consider external policy positions for adoption at its three regular meetings held each year. No external policy matter may be brought before the Council for a vote unless advance notice of such matter has been mailed or emailed to each member of the Council at least 30 days prior to one of the Council's regular meetings.

(6) At the discretion of the Chair, in those instances where circumstances warrant consideration of an external policy position outside of the regular meetings, the Executive Committee may adopt positions at special meetings (including by conference call) provided that proposed positions are mailed or emailed to each member of the Executive Committee at least 10 days prior to the special meeting or conference call.

(7) Any proposed external policy positions can be added to the agenda of a regular or special meeting by unanimous consent of those states represented at the meeting provided that a quorum exists.

Article XI - Policy Coordination and Deactivation

With regard to external positions adopted at special meetings or added to the agenda of a meeting by unanimous consent, such external policy positions shall be communicated to the member governors of the Western Governors' Association (WGA) and the WGA Executive Director for review. If after 10 days no objection is raised by the governors, then the policy position may be distributed to appropriate parties. In extraordinary cases, these procedures may be suspended by the WGA Executive-Director ~~of the WGA~~, who will consult with the appropriate WGA lead governors before doing so.

Policy positions will be deactivated three years after their adoption. The Executive Committee will review prior to each regular meeting those policy statements or positions due for sunset. If a majority of the Executive Committee members recommend that the position be readopted by the Council, then such position shall be subject to the same rules and procedures with regard to new positions that are proposed for Council adoption.

Article XII - Conduct of Meetings

Except as otherwise provided herein, meetings shall be conducted under Robert's Rules of Order, Revised. A ruling by the Chair to the effect that the matter under consideration does not concern an out-of-basin transfer is an appealable ruling, and in the event an appeal is made, such ruling to be effective must be sustained by an affirmative vote of at least 2/3 of the member states.

Article XIII - Meetings

The Council shall hold regular meetings three times each year at times and places to be decided by the Chair, upon 30 days written notice. Special meetings may be called by the Chair, upon 10 days written notice.

Article XIV - Limitations

The work of the Council shall in no way defer or delay authorization or construction of any projects now before Congress for either authorization or appropriation.

Article XV - Dissolution

In the event of the dissolution of the Council, to the extent practical the assets of the Council shall be liquidated in a timely manner and evenly divided among those member states in good standing, at the time of the dissolution.

Article XVI - Amendment

These articles may be amended at any meeting of the Council by unanimous vote of the member states represented at the meeting. The substance of the proposed amendment shall be included in the call of such meetings.

Tab O – 2015/2016 Summary of WSWC Activities and Events

Western States Water Council

Summary of Activities

October 2014 – June 2015

WASHINGTON, DC VISITS

November 18-21, 2014 – WSWC members and staff, traveled to Washington, D.C. for over two dozen meetings with Administration and Congressional officials in support of WSWC priorities, including the WSWC's Clean Water Act (CWA) positions, drought, and basic data. Representatives from the Native American Rights Fund (NARF) also joined the WSWC for a series of visits in support of Indian water rights settlements, including meetings with White House officials, the Office of Management and Budget (OMB) and the Office of the Deputy Secretary of the Interior.

March 16-20, 2015 – WSWC members, staff and the WestFAST Liaison, traveled to Washington, D.C. and held over 30 visits, including a joint meeting with senior officials from the various WestFAST agencies, focused on improving state-federal collaboration. Congressional visits addressed Landsat, basic data programs, the CWA priorities, the Clean Water and Drinking Water State Revolving Funds, and the USFS' proposed groundwater directive. WSWC and NARF representatives also visited Congressional offices in support of Indian water rights settlements, and again met with White House officials, OMB, and the Office of the Deputy Secretary of the Interior.

TESTIMONY

On June 18, 2015, the Senate Energy and Natural Resources Committee held a hearing on Senate bills 539, 982, 1305, 1365, 1291, 1552, and 1533. WSWC Executive Director testified regarding the WSWC's views on S. 1365, a bill to authorize the Secretary of Interior to use designated funding to pay for construction of authorized rural projects. This is a reintroduction of the 2013 Tester bill (S. 715), with added mandatory funding for infrastructure relating to Indian water rights settlements. WSWC provided related testimony in 2013 based on Positions No. 343 and 367.

WSWC MEETINGS, SYMPOSIA AND WORKSHOPS

October 8-10, 2014 – The WSWC sponsored a State Drought Response Roundtable Discussion prior to the (176th) Council meetings in Scottsdale, Arizona.

December 8, 2014 – The WSWC hosted a meeting of state and federal officials to discuss federal drought assistance and related programs in Las Vegas, Nevada.

April 15-17, 2015 – The WSWC held its 177th Council Meetings in Tulsa, Oklahoma.

May 27-29, 2015 – The WSWC and California Department of Water Resources sponsored an Improving Sub-Seasonal and Seasonal Precipitation Forecasting for Drought Preparedness Workshop in San Diego, California.

SURVEYS

February 5, 2015 – *Western State Drought Planning and Response*. This survey followed two WSWC Drought Workshops and focused on state drought plans and Executive/Administrative response actions.

WGA COORDINATION

October 7-8, 2014 – WSWC Federal Liaison attended WGA Drought Forum in Phoenix, Arizona that focused on the manufacturing, mining and industrial sectors.

November 13-14, 2014 – WSWC Assistant Director/General Counsel participated in the WGA Drought Forum in Sacramento, California addressing agricultural impacts and solutions.

December 6-7/8-9, 2014 – WSWC Executive Director attended the WGA Drought Forum in Las Vegas, Nevada, and subsequent Drought Forum on water supply impacts and solutions.

March 11, 2015 - WSWC Executive Director moderated a WGA Drought Webinar on the use of data and technology for drought monitoring and prediction.

April 8-9, 2015 – WSWC Executive Director attended and reported to WGA SAC meeting in Denver, Colorado.

May 11, 2015 – WSWC Executive Director submitted a summary report on *Regional Transmission Expansion Planning: Integrating Energy and Water Resources* to WGA.

June 23-26, 2015 – WSWC Executive Director attended the WGA Drought Forum Meeting and the WGA Annual Meeting in Lake Tahoe, Nevada.

COORDINATION WITH OTHER ORGANIZATIONS

October 1-3, 2014 – WSWC Executive Director attended the Water Pipeline Roundtable in Park City, Utah.

October 14, 2014 – WSWC Executive Director attended the WECC Meeting in Salt Lake City, Utah.

October 29-30, 2014 – WSWC Executive Director attended the Eastern South Dakota Water Conference in Brookings, South Dakota.

November 3-6, 2014 – WaDE Program Manager attended the Annual AWRA Meeting in Tysons Corner, Virginia.

December 10-12, 2014 – WSWC Executive Director attended the CRWUA Meetings in Las Vegas, Nevada.

January 15-16, 2015 – WSWC Assistant Director/General Counsel presented on tribal water rights settlements at the Law Seminar in Phoenix, Arizona.

January 21-22, 2015 – WaDE Program Manager presented at the USGS Water Use Program Strategic Planning Meeting in Denver, Colorado.

January 28, 2015 – WSWC Executive Director attended the Missouri River Basin Interagency Roundtable in Omaha, Nebraska.

February 9-10, 2015 – WSWC Executive Director attended the WECC SPSG Meeting in Salt Lake City, Utah.

February 13, 2015 – USFS Officials and WSWC members and staff met in Denver, Colorado to discuss the USFS's proposed groundwater management directive and the WSWC's related concerns and comments.

February 19, 2015 – WaDE Program Manager gave a remote presentation during the Open Water Data Initiative (OWDI) Drought Use Case Meeting that was held in Boulder City, Nevada.

March 2-4, 2015 – WaDE Program Manager attended the NASA Applied Sciences Meeting in College Park, Maryland.

March 4, 2015 – WSWC/NARF held a call with the Secretary of the Interior's Indian Water Rights Office (SIWRO) to discuss an initiative to re-evaluate their approach to Indian water rights settlements. Representatives from ten states participated in the call.

May 12, 2015 – WaDE Program Manager attended the AWRA Utah Section Annual Conference in Salt Lake City, Utah.

May 18-21, 2015 – WSWC Executive Director attended the Colorado River Basin Salinity Control Forum Work Group and Forum Meetings in Salt Lake City, Utah.

June 4-5, 2015 – WSWC Legal Counsel attended ABA Water Law Conference in Denver, Colorado.

June 16-18, 2015 – WSWC Executive Director attended the UCOWR/NIWR/CUAHSI Conference in Las Vegas, Nevada.

June 22-24, 2015 – WaDE Program Manager attended the National Water Census Ad Hoc Committee Meeting in Washington, DC

LETTERS

October 3, 2014 – WSWC commented on the Proposed Directive on USFS Groundwater Resource Management.

October 15, 2014 – WSWC commented on the Clean Water Act jurisdiction rule that the Environmental Protection Agency and the U.S. Army Corps of Engineers have proposed.

March 19, 2015 – WSWC letter of support for NOAA proposal to develop a tool to integrate the various data sources and provide the comprehensive information needed to manage this critical resource.

COMMITTEES, TASK FORCES AND WORK GROUPS

Ad Hoc Group – WSWC Executive Director and Legal Counsel

Advisory Committee on Water Information (ACWI) Climate Adaptation Workgroup – WSWC Member Jeanine Jones of California

ACWI Subcommittee on Spatial Water Data – WaDE Program Manager

American Bar Association Water Law Conference Planning Committee – WSWC Legal Counsel.

American Water Resources Association (AWRA) – WSWC Executive Director and WaDE Program Manager

National Geospatial Advisory Committee, Landsat Advisory Group – WSWC Executive Director

National Water Census Ad Hoc Group - WaDE Program Manager

National Drought Resilience Partnership – WSWC Executive Director

Open Water Data Initiative (OWDI) Technical Development Workgroup, Drought/Water Supply Workgroup, and Water Use Data Workgroup Lead – WaDE Program Manager

WaDE - Exchange Network Grant FY2013 Steering Committee – WaDE Program Manager

USGS Water Use Strategic Planning Team – WaDE Program Manager

Western Electricity Coordinating Council (WECC) Scenario Planning Steering Group and Environmental Data Task Force – WSWC Executive Director

Tab P – Future WSWC Meetings

WESTERN STATES WATER COUNCIL

FUTURE MEETINGS

Upcoming Council Meetings/Host States

2015 Meetings

Fall – Manhattan, Kansas
October 7-9, 2015
Bluemont Hotel

2016 Meetings

Spring – Washington, D.C.
Summer – North Dakota (last hosted 7/11/2008 in Medora)
Fall – Utah (last hosted 7/17/09 in Park City)

2017 Meetings

Spring – Nebraska (last hosted 10/16/09 in Lincoln)
Summer – California (last hosted 10/29/10 in San Diego)
Fall – New Mexico (last hosted 4/15/11 in Santa Fe)

2015 Workshops / Symposia

WSWC/NARF Indian Water Rights Settlements Symposium
August 25-27, 2015 - Reno, NV
(Executive / Legal Committees)

Water Quality / Water Quantity Workshop
in conjunction with meetings in Kansas - Fall 2015
(Water Quality Committee)

WSWC/CDWR Workshops
to be determined

MEETING SCHEDULE

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[illegible]

Tab Q – Environmental Protection Agency - Update



FEDERAL REGISTER

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Part II

Department of Defense

Department of the Army, Corps of Engineers

33 CFR Part 328

Environmental Protection Agency

40 CFR Parts 110, 112, 116, *et al.*

Clean Water Rule: Definition of "Waters of the United States"; Final Rule

DEPARTMENT OF DEFENSE

Department of the Army, Corps of Engineers

33 CFR Part 328

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Parts 110, 112, 116, 117, 122, 230, 232, 300, 302, and 401

[EPA-HQ-OW-2011-0880; FRL-9927-20-OW]

RIN 2040-AF30

Clean Water Rule: Definition of "Waters of the United States"

AGENCY: U.S. Army Corps of Engineers, Department of the Army, Department of Defense; and Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: The Environmental Protection Agency (EPA) and the U.S. Army Corps of Engineers (Corps) are publishing a final rule defining the scope of waters protected under the Clean Water Act (CWA or the Act), in light of the statute, science, Supreme Court decisions in *U.S. v. Riverside Bayview Homes*, *Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers* (SWANCC), and *Rapanos v. United States* (Rapanos), and the agencies' experience and technical expertise. This final rule reflects consideration of the extensive public comments received on the proposed rule. The rule will ensure protection for the nation's public health and aquatic resources, and increase CWA program predictability and consistency by clarifying the scope of "waters of the United States" protected under the Act.

DATES: This rule is effective on August 28, 2015. In accordance with 40 CFR part 23, this regulation shall be considered issued for purposes of judicial review at 1 p.m. Eastern time on July 13, 2015.

FOR FURTHER INFORMATION CONTACT: Ms. Donna Downing, Office of Water (4502-T), Environmental Protection Agency, 1200 Pennsylvania Avenue NW., Washington, DC 20460; telephone number 202-566-2428; email address: CWAwaters@epa.gov v. Ms. Stacey Jensen, Regulatory Community of Practice (CECW-CO-R), U.S. Army Corps of Engineers, 441 G Street NW., Washington, DC 20314; telephone number 202-761-5856; email address: USACE_CWA_Rule@usace.army.mil.

SUPPLEMENTARY INFORMATION: This final rule does not establish any regulatory

requirements. Instead, it is a definitional rule that clarifies the scope of "waters of the United States" consistent with the Clean Water Act (CWA), Supreme Court precedent, and science. Programs established by the CWA, such as the section 402 National Pollutant Discharge Elimination System (NPDES) permit program, the section 404 permit program for discharge of dredged or fill material, and the section 311 oil spill prevention and response programs, all rely on the definition of "waters of the United States." Entities currently are, and will continue to be, regulated under these programs that protect "waters of the United States" from pollution and destruction.

State, tribal, and local governments have well-defined and longstanding relationships with the Federal government in implementing CWA programs and these relationships are not altered by the final rule. Forty-six states and the U.S. Virgin Islands have been authorized by EPA to administer the NPDES program under section 402, and two states have been authorized by the EPA to administer the section 404 program. All states and forty tribes have developed water quality standards under the CWA for waters within their boundaries. A federal advisory committee has recently been announced to assist states in identifying the scope of waters assumable under the section 404 program.

The scope of jurisdiction in this rule is narrower than that under the existing regulation. Fewer waters will be defined as "waters of the United States" under the rule than under the existing regulations, in part because the rule puts important qualifiers on some existing categories such as tributaries. In addition, the rule provides greater clarity regarding which waters are subject to CWA jurisdiction, reducing the instances in which permitting authorities, including the states and tribes with authorized section 402 and 404 CWA permitting programs, would need to make jurisdictional determinations on a case-specific basis.

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I. General Information

A. How can I get copies of this document and related information?

1. *Docket.* An official public docket for this action has been established under Docket Id. No. EPA-HQ-OW-2011-0880. The official public docket consists of the documents specifically referenced in this action, any public comments received, and other information related to this action. The official public docket also includes a Technical Support Document that provides additional legal and scientific discussion for issues raised in this rule, and the Response to Comments document. Although a part of the official docket, the public docket does not include Confidential Business Information or other information whose disclosure is restricted by statute. The official public docket is the collection of materials that is available for public viewing at the OW Docket, EPA West, Room 3334, 1301 Constitution Ave. NW., Washington, DC 20004. This Docket Facility is open from 8:30 a.m.

(i) *Adjacent*. The term *adjacent* means bordering, contiguous, or neighboring a water identified in paragraphs (1)(i) through (v) of this definition, including waters separated by constructed dikes or barriers, natural river berms, beach dunes, and the like. For purposes of adjacency, an open water such as a pond or lake includes any wetlands within or abutting its ordinary high water mark. Adjacency is not limited to waters located laterally to a water identified in paragraphs (1)(i) through (v) of this definition. Adjacent waters also include all waters that connect segments of a water identified in paragraphs (1)(i) through (v) or are located at the head of a water identified in paragraphs (1)(i) through (v) of this definition and are bordering, contiguous, or neighboring such water. Waters being used for established normal farming, ranching, and silviculture activities (33 U.S.C. 1344(f)) are not adjacent.

(ii) *Neighboring*. The term *neighboring* means:

(A) All waters located within 100 feet of the ordinary high water mark of a water identified in paragraphs (1)(i) through (v) of this definition. The entire water is neighboring if a portion is located within 100 feet of the ordinary high water mark;

(B) All waters located within the 100-year floodplain of a water identified in paragraphs (1)(i) through (v) of this definition and not more than 1,500 feet from the ordinary high water mark of such water. The entire water is neighboring if a portion is located within 1,500 feet of the ordinary high water mark and within the 100-year floodplain;

(C) All waters located within 1,500 feet of the high tide line of a water identified in paragraphs (1)(i) or (iii) of this definition, and all waters within 1,500 feet of the ordinary high water mark of the Great Lakes. The entire water is neighboring if a portion is located within 1,500 feet of the high tide line or within 1,500 feet of the ordinary high water mark of the Great Lakes.

(iii) *Tributary and tributaries*. The terms *tributary* and *tributaries* each mean a water that contributes flow, either directly or through another water (including an impoundment identified in paragraph (1)(iv) of this definition), to a water identified in paragraphs (1)(i) through (iii) of this definition that is characterized by the presence of the physical indicators of a bed and banks and an ordinary high water mark. These physical indicators demonstrate there is volume, frequency, and duration of flow sufficient to create a bed and banks and an ordinary high water mark, and thus

to qualify as a tributary. A tributary can be a natural, man-altered, or man-made water and includes waters such as rivers, streams, canals, and ditches not excluded under paragraph (2) of this definition. A water that otherwise qualifies as a tributary under this definition does not lose its status as a tributary if, for any length, there are one or more constructed breaks (such as bridges, culverts, pipes, or dams), or one or more natural breaks (such as wetlands along the run of a stream, debris piles, boulder fields, or a stream that flows underground) so long as a bed and banks and an ordinary high water mark can be identified upstream of the break. A water that otherwise qualifies as a tributary under this definition does not lose its status as a tributary if it contributes flow through a water of the United States that does not meet the definition of tributary or through a non-jurisdictional water to a water identified in paragraphs (1)(i) through (iii) of this definition.

(iv) *Wetlands*. The term *wetlands* means those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.

(v) *Significant nexus*. The term *significant nexus* means that a water, including wetlands, either alone or in combination with other similarly situated waters in the region, significantly affects the chemical, physical, or biological integrity of a water identified in paragraphs (1)(i) through (iii) of this definition. The term "in the region" means the watershed that drains to the nearest water identified in paragraphs (1)(i) through (iii) of this definition. For an effect to be significant, it must be more than speculative or insubstantial. Waters are similarly situated when they function alike and are sufficiently close to function together in affecting downstream waters. For purposes of determining whether or not a water has a significant nexus, the water's effect on downstream (1)(i) through (iii) waters shall be assessed by evaluating the aquatic functions identified in paragraphs (3)(v)(A) through (I) of this definition. A water has a significant nexus when any single function or combination of functions performed by the water, alone or together with similarly situated waters in the region, contributes significantly to the chemical, physical, or biological integrity of the nearest water identified

in paragraphs (1)(i) through (iii) of this definition. Functions relevant to the significant nexus evaluation are the following:

- (A) Sediment trapping,
- (B) Nutrient recycling,
- (C) Pollutant trapping, transformation, filtering, and transport,
- (D) Retention and attenuation of flood waters,
- (E) Runoff storage,
- (F) Contribution of flow,
- (G) Export of organic matter,
- (H) Export of food resources, and
- (I) Provision of life cycle dependent aquatic habitat (such as foraging, feeding, nesting, breeding, spawning, or use as a nursery area) for species located in a water identified in paragraphs (1)(i) through (iii) of this definition.

(vi) *Ordinary high water mark*. The term *ordinary high water mark* means that line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.

(vii) *High tide line*. The term *high tide line* means the line of intersection of the land with the water's surface at the maximum height reached by a rising tide. The high tide line may be determined, in the absence of actual data, by a line of oil or scum along shore objects, a more or less continuous deposit of fine shell or debris on the foreshore or berm, other physical markings or characteristics, vegetation lines, tidal gages, or other suitable means that delineate the general height reached by a rising tide. The line encompasses spring high tides and other high tides that occur with periodic frequency but does not include storm surges in which there is a departure from the normal or predicted reach of the tide due to the piling up of water against a coast by strong winds such as those accompanying a hurricane or other intense storm.

* * * * *

PART 230—SECTION 404(b)(1) GUIDELINES FOR SPECIFICATION OF DISPOSAL SITES FOR DREDGED OR FILL MATERIAL

■ 13. The authority citation for part 230 is revised to read as follows:

Authority: 33 U.S.C. 1251 *et seq.*

■ 14. Section 230.3 is amended by:

■ a. Removing paragraph (b) and reserved paragraphs (f), (g), (i) and (l).

- b. Redesignating paragraphs (c) through (e) as paragraphs (b) through (d).
- c. Redesignating paragraphs (h) and (i) as paragraphs (e) and (f).
- d. Redesignating paragraph (k) as paragraph (g).
- e. Redesignating paragraphs (m) through (q) as paragraphs (h) through (l).
- f. Redesignating paragraph (q-1) as paragraph (m).
- g. Redesignating paragraph (r) as paragraph (n).
- h. Redesignating paragraph (s) as paragraph (o).
- i. Revising newly redesignated paragraph (o).
- j. Removing paragraph (t).

The revision reads as follows:

§ 230.3 Definitions.

* * * * *

(o) The term *waters of the United States* means:

(1) For purposes of the Clean Water Act, 33 U.S.C. 1251 *et seq.* and its implementing regulations, subject to the exclusions in paragraph (o)(2) of this section, the term "waters of the United States" means:

- (i) All waters which are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
- (ii) All interstate waters, including interstate wetlands;
- (iii) The territorial seas;
- (iv) All impoundments of waters otherwise identified as waters of the United States under this section;
- (v) All tributaries, as defined in paragraph (o)(3)(iii) of this section, of waters identified in paragraphs (o)(1)(i) through (iii) of this section;
- (vi) All waters adjacent to a water identified in paragraphs (o)(1)(i) through (v) of this section, including wetlands, ponds, lakes, oxbows, impoundments, and similar waters;
- (vii) All waters in paragraphs (o)(1)(vii)(A) through (E) of this section where they are determined, on a case-specific basis, to have a significant nexus to a water identified in paragraphs (o)(1)(i) through (iii) of this section. The waters identified in each of paragraphs (o)(1)(vii)(A) through (E) of this section are similarly situated and shall be combined, for purposes of a significant nexus analysis, in the watershed that drains to the nearest water identified in paragraphs (o)(1)(i) through (iii) of this section. Waters identified in this paragraph shall not be combined with waters identified in paragraph (o)(1)(vi) of this section when performing a significant nexus analysis.

If waters identified in this paragraph are also an adjacent water under paragraph (o)(1)(vi), they are an adjacent water and no case-specific significant nexus analysis is required.

(A) *Prairie potholes.* Prairie potholes are a complex of glacially formed wetlands, usually occurring in depressions that lack permanent natural outlets, located in the upper Midwest.

(B) *Carolina bays and Delmarva bays.* Carolina bays and Delmarva bays are ponded, depressional wetlands that occur along the Atlantic coastal plain.

(C) *Pocosins.* Pocosins are evergreen shrub and tree dominated wetlands found predominantly along the Central Atlantic coastal plain.

(D) *Western vernal pools.* Western vernal pools are seasonal wetlands located in parts of California and associated with topographic depression, soils with poor drainage, mild, wet winters and hot, dry summers.

(E) *Texas coastal prairie wetlands.* Texas coastal prairie wetlands are freshwater wetlands that occur as a mosaic of depressions, ridges, intermound flats, and mima mound wetlands located along the Texas Gulf Coast.

(viii) All waters located within the 100-year floodplain of a water identified in paragraphs (o)(1)(i) through (iii) of this section and all waters located within 4,000 feet of the high tide line or ordinary high water mark of a water identified in paragraphs (o)(1)(i) through (v) of this section where they are determined on a case-specific basis to have a significant nexus to a water identified in paragraphs (o)(1)(i) through (iii) of this section. For waters determined to have a significant nexus, the entire water is a water of the United States if a portion is located within the 100-year floodplain of a water identified in paragraphs (o)(1)(i) through (iii) of this section or within 4,000 feet of the high tide line or ordinary high water mark. Waters identified in this paragraph shall not be combined with waters identified in paragraph (o)(1)(vi) of this section when performing a significant nexus analysis. If waters identified in this paragraph are also an adjacent water under paragraph (o)(1)(vi), they are an adjacent water and no case-specific significant nexus analysis is required.

(2) The following are not "waters of the United States" even where they otherwise meet the terms of paragraphs (o)(1)(iv) through (viii) of this section.

(i) Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of the Clean Water Act are not waters of the United States.

(ii) Prior converted cropland. Notwithstanding the determination of an area's status as prior converted cropland by any other Federal agency, for the purposes of the Clean Water Act, the final authority regarding Clean Water Act jurisdiction remains with EPA.

(iii) The following ditches:

(A) Ditches with ephemeral flow that are not a relocated tributary or excavated in a tributary.

(B) Ditches with intermittent flow that are not a relocated tributary, excavated in a tributary, or drain wetlands.

(C) Ditches that do not flow, either directly or through another water, into a water identified in paragraphs (o)(1)(i) through (iii) of this section.

(iv) The following features:

(A) Artificially irrigated areas that would revert to dry land should application of water to that area cease;

(B) Artificial, constructed lakes and ponds created in dry land such as farm and stock watering ponds, irrigation ponds, settling basins, fields flooded for rice growing, log cleaning ponds, or cooling ponds;

(C) Artificial reflecting pools or swimming pools created in dry land;

(D) Small ornamental waters created in dry land;

(E) Water-filled depressions created in dry land incidental to mining or construction activity, including pits excavated for obtaining fill, sand, or gravel that fill with water;

(F) Erosional features, including gullies, rills, and other ephemeral features that do not meet the definition of tributary, non-wetland swales, and lawfully constructed grassed waterways; and

(G) Puddles.

(v) Groundwater, including groundwater drained through subsurface drainage systems.

(vi) Stormwater control features constructed to convey, treat, or store stormwater that are created in dry land.

(vii) Wastewater recycling structures constructed in dry land; detention and retention basins built for wastewater recycling; groundwater recharge basins; percolation ponds built for wastewater recycling; and water distributary structures built for wastewater recycling.

(3) In this paragraph (o), the following definitions apply:

(i) *Adjacent.* The term *adjacent* means bordering, contiguous, or neighboring a water identified in paragraphs (o)(1)(i) through (v) of this section, including waters separated by constructed dikes or barriers, natural river berms, beach dunes, and the like. For purposes of

adjacency, an open water such as a pond or lake includes any wetlands within or abutting its ordinary high water mark. Adjacency is not limited to waters located laterally to a water identified in paragraphs (o)(1)(i) through (v) of this section. Adjacent waters also include all waters that connect segments of a water identified in paragraphs (o)(1)(i) through (v) or are located at the head of a water identified in paragraphs (o)(1)(i) through (v) of this section and are bordering, contiguous, or neighboring such water. Waters being used for established normal farming, ranching, and silviculture activities (33 U.S.C. 1344(f)) are not adjacent.

(ii) *Neighboring*. The term *neighboring* means:

(A) All waters located within 100 feet of the ordinary high water mark of a water identified in paragraphs (o)(1)(i) through (v) of this section. The entire water is neighboring if a portion is located within 100 feet of the ordinary high water mark;

(B) All waters located within the 100-year floodplain of a water identified in paragraphs (o)(1)(i) through (v) of this section and not more than 1,500 feet from the ordinary high water mark of such water. The entire water is neighboring if a portion is located within 1,500 feet of the ordinary high water mark and within the 100-year floodplain;

(C) All waters located within 1,500 feet of the high tide line of a water identified in paragraphs (o)(1)(i) or (iii) of this section, and all waters within 1,500 feet of the ordinary high water mark of the Great Lakes. The entire water is neighboring if a portion is located within 1,500 feet of the high tide line or within 1,500 feet of the ordinary high water mark of the Great Lakes.

(iii) *Tributary and tributaries*. The terms *tributary* and *tributaries* each mean a water that contributes flow, either directly or through another water (including an impoundment identified in paragraph (o)(1)(iv) of this section), to a water identified in paragraphs (o)(1)(i) through (iii) of this section that is characterized by the presence of the physical indicators of a bed and banks and an ordinary high water mark. These physical indicators demonstrate there is volume, frequency, and duration of flow sufficient to create a bed and banks and an ordinary high water mark, and thus to qualify as a tributary. A tributary can be a natural, man-altered, or man-made water and includes waters such as rivers, streams, canals, and ditches not excluded under paragraph (o)(2) of this section. A water that otherwise qualifies as a tributary under this definition does not lose its status as a tributary if, for

any length, there are one or more constructed breaks (such as bridges, culverts, pipes, or dams), or one or more natural breaks (such as wetlands along the run of a stream, debris piles, boulder fields, or a stream that flows underground) so long as a bed and banks and an ordinary high water mark can be identified upstream of the break. A water that otherwise qualifies as a tributary under this definition does not lose its status as a tributary if it contributes flow through a water of the United States that does not meet the definition of tributary or through a non-jurisdictional water to a water identified in paragraphs (o)(1)(i) through (iii) of this section.

(iv) *Wetlands*. The term *wetlands* means those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.

(v) *Significant nexus*. The term *significant nexus* means that a water, including wetlands, either alone or in combination with other similarly situated waters in the region, significantly affects the chemical, physical, or biological integrity of a water identified in paragraphs (o)(1)(i) through (iii) of this section. The term "in the region" means the watershed that drains to the nearest water identified in paragraphs (o)(1)(i) through (iii) of this section. For an effect to be significant, it must be more than speculative or insubstantial. Waters are similarly situated when they function alike and are sufficiently close to function together in affecting downstream waters. For purposes of determining whether or not a water has a significant nexus, the water's effect on downstream (o)(1)(i) through (iii) waters shall be assessed by evaluating the aquatic functions identified in paragraphs (o)(3)(v)(A) through (I) of this section. A water has a significant nexus when any single function or combination of functions performed by the water, alone or together with similarly situated waters in the region, contributes significantly to the chemical, physical, or biological integrity of the nearest water identified in paragraphs (o)(1)(i) through (iii) of this section. Functions relevant to the significant nexus evaluation are the following:

(A) Sediment trapping,
(B) Nutrient recycling,
(C) Pollutant trapping, transformation, filtering, and transport,

(D) Retention and attenuation of flood waters,

(E) Runoff storage,

(F) Contribution of flow,

(G) Export of organic matter,

(H) Export of food resources, and

(I) Provision of life cycle dependent aquatic habitat (such as foraging, feeding, nesting, breeding, spawning, or use as a nursery area) for species located in a water identified in paragraphs (o)(1) through (3) of this section.

(vi) *Ordinary high water mark*. The term *ordinary high water mark* means that line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.

(vii) *High tide line*. The term *high tide line* means the line of intersection of the land with the water's surface at the maximum height reached by a rising tide. The high tide line may be determined, in the absence of actual data, by a line of oil or scum along shore objects, a more or less continuous deposit of fine shell or debris on the foreshore or berm, other physical markings or characteristics, vegetation lines, tidal gages, or other suitable means that delineate the general height reached by a rising tide. The line encompasses spring high tides and other high tides that occur with periodic frequency but does not include storm surges in which there is a departure from the normal or predicted reach of the tide due to the piling up of water against a coast by strong winds such as those accompanying a hurricane or other intense storm.

* * * * *

PART 232—404 PROGRAMS DEFINITIONS; EXEMPT ACTIVITIES NOT REQUIRING 404 PERMITS

■ 15. The authority citation for part 230 is revised to read as follows:

Authority: 33 U.S.C. 1251 *et seq.*

■ 16. Section 232.2 is amended by removing the definition of "wetlands" and revising the definition of "Waters of the United States" to read as follows:

§ 232.2 Definitions.

* * * * *

Waters of the United States means:

(1) For purposes of the Clean Water Act, 33 U.S.C. 1251 *et seq.* and its implementing regulations, subject to the exclusions in paragraph (2) of this

EPA Conference Call
Treatment as States Reinterpretation and Rulemaking
June 18, 2015

Summary

On June 18, EPA held a conference call with Oklahoma representatives, joined by representatives from Alaska, Colorado, South Dakota, and Wyoming, to discuss EPA's proposed rulemaking to provide increased opportunities to fully engage tribes in the Impaired Water Listing and TMDL Program by obtaining treatment as states (TAS) under CWA §303(d). In addition to this rulemaking, EPA anticipates releasing a proposed interpretive rule in mid-to-late 2015 that would allow eligible tribes to rely on CWA §518 as a congressional delegation of authority to facilitate the process of demonstrating their inherent authority to seek TAS for all CWA programs that can be delegated by EPA. EPA cited to Montana v. EPA (D. Mont. 1996) and subsequent cases that support the proposed interpretive rule. In conjunction with that interpretive rule, EPA plans at a later date to release the proposed rulemaking for CWA §303(d).

EPA noted that tribes would still be required to establish the geographic area of the reservation with maps/legal descriptions and references to their relevant treaty, that tribes would need to identify the specific waters to be regulated, and that affected states would still be notified and given the opportunity to comment prior to EPA making a determination. Eligible tribes that obtain CWA §303(d) TAS authority likely would first need to establish water quality standards prior to making impaired water listing determinations or developing TMDLs. The proposed rule could enable tribes to regulate both tribal and non-tribal dischargers to waters on their reservations. EPA does not intend to abrogate the legal process to establish tribal jurisdiction over land or water, and if any language in the proposed rules appears to do so, the states should raise this issue during the comment period. EPA added that it intends to seek public review and comments on both rulemaking efforts, even though the issue of inherent authority under CWA §518 will be addressed through an interpretive rule.

Mark Rupp, Ellen Gilinski, Fred Leutner, and Sarah Furtak from EPA provided a brief overview, an update on the status of the rulemaking process, and responded to questions from state representatives.

J.D. Strong, Executive Director, Oklahoma Water Resources Board, expressed the concern that EPA's efforts to streamline the process for tribes might skip over important steps that could be especially problematic for states like Oklahoma and Alaska with significant non-reservation based tribes. In particular, the geographic jurisdictional area of the applying tribe needs to be established early in the process, with early notice to, and pre-consultation opportunities for, the states so that both states and tribes can evaluate potential obstacles (e.g., existing TMDL regulations) before significant costs are incurred. J.D. Strong and Michelle Hale, Division of Water Director, Alaska Department of Water Conservation agreed that language acknowledging the unique non-reservation tribes of Oklahoma and Alaska should be explicitly written into the rule, including reference to the unique process established in Oklahoma by the 2005 Transportation Act (P.L. 109-59).

Trisha Oeth, Administrator, Colorado Water Quality Control Commission, raised similar concerns about potential effects of the streamlined TAS rule where Colorado and the Southern Ute differ in their interpretation of PL 98-290 with respect to which entity has jurisdiction over surface or ground water resources within the exterior reservation boundaries that are not held in trust for the benefit of the Tribe. EPA noted that it is aware of these unique situations, and recommended that the states raise these specific concerns again during the comment period.

Kent Woodmansey, Engineering Manager, South Dakota Department of Environment and Natural Resources, expressed concern about tribal authority over non-tribal members, particularly where tribes can determine which waters are impaired, impacting upstream users. EPA responded that the tribes must first have water quality standards in place in order to exercise CWA 303(d) authority. That process is subject to notice to the states.

Nephi Cole, Policy Advisor, Office of Wyoming Governor Matt Mead, asked whether EPA intended to reach out to the Governors of the individual states prior to publishing the proposed rules in the *Federal Register* as required by Executive Order 13132. EPA responded that, similar to the development of the WOTUS rule, the monetary threshold did not trigger the requirement to consult with the states. J.D. Strong questioned the authority EPA relied on to “conduct tribal consultation and coordination on the planned proposed rulemaking” in 2014, and how that differs from consultation with the states. EPA made the distinction that the tribes were not provided with actual language from the proposed rule nor were they solicited for help in drafting the rule; the tribes had no special status relative to the states in EPA’s outreach efforts.

Planned Proposed Rulemaking to Address the Process for Tribes to Obtain Treatment in a Similar Manner as States for the Clean Water Act Impaired Water Listing and Total Maximum Daily Load Program

Prepared by EPA Office of Wetlands, Oceans and Watersheds
May 2015

Issue

- There is tribal interest in obtaining Treatment in a Similar Manner as a State (TAS) for the Clean Water Act (CWA) Section 303(d) Impaired Water Listing and Total Maximum Daily Load (TMDL) Program.
- CWA section 518 provides that eligible tribes may seek TAS for CWA section 303; however existing regulations do not explicitly address how tribes obtain TAS for the 303(d) Program. Section 518 requires EPA to establish procedures for tribes to obtain TAS for the various CWA programs. Regulations are already in place expressly establishing a TAS process for most of the other relevant CWA programs available to tribes (*e.g.*, Water Quality Standards (WQS), National Pollutant Discharge Elimination System (NPDES), section 404 permitting for the discharge of dredged or fill material).

Action and Purpose

- EPA is developing a proposed rulemaking to provide more opportunities for tribes to fully engage in the Impaired Water Listing and TMDL Program.
- In this rulemaking, EPA would propose a process for tribes to apply to EPA for authority to establish lists of impaired waters and TMDLs pursuant to section 303(d) of the CWA.

Background

- EPA conducted tribal consultation and coordination on the planned proposed rulemaking from April 8, 2014 to June 6, 2014.
- About 40 tribes, including tribal representatives participating on the National Tribal Water Council and the inter-tribal consortium United South and Eastern Tribes, provided comments.
- Tribal comments were supportive of EPA's work on the proposed rulemaking.
- EPA conducted pre-proposal consultation and coordination with intergovernmental associations in October 2014¹.
 - EPA hosted a meeting on October 1, 2014 attended by representatives from the Association of Clean Water Administrators, National Conference of State Legislatures, Western Governors' Association (WGA), Environmental Council of States, and the Western States Water Council (WSWC).
 - Personnel from the State of Maine requested a follow-up meeting, which was held on October 28, 2014.

¹ The National Governors Association, National Conference of State Legislatures, Council of State Governments, Western Governors' Association, Southern Governors' Association, Midwestern Governors Association, Coalition of Northeastern Governors, Environmental Council of States, Association of Clean Water Administrators, and Western States Water Council were invited per a September 19, 2014 letter from Tom Wall, Director, Assessment and Watershed Protection Division.

- The WSWC also requested a follow-up meeting; personnel from 11 states and representatives from the WSWC and the WGA attended the meeting on October 30, 2014.
- Intergovernmental associations and member states, among other things, expressed interest in tribes' views on the planned proposed rulemaking, and the number and location of tribes that have TAS for the CWA Section 303(c) WQS Program.
- This planned proposed rulemaking to establish a TAS process for Listing and TMDLs is separate from the Agency's consideration of a new approach to tribal jurisdiction to administer CWA regulatory programs.

Status and Next Steps

- This effort is progressing. EPA staff members are continuing to review input received during consultation and coordination with tribes and states, and are developing a planned proposed rule for consideration within EPA.
- The proposal could be published in the *Federal Register* as early as mid-to-late 2015.
- There would then be 60 days for public comment, and opportunities for further consultation and coordination with states and tribes. No final action will be taken without full consideration of public comments.

For Further Information

- Further information on this planned proposed rulemaking is available at <http://water.epa.gov/lawsregs/lawsguidance/cwa/tmdl/policy.cfm>.
- To ask questions or provide comments, please email Sarah Furtak at furtak.sarah@epa.gov or write: Sarah Furtak, Watershed Branch (mail code 4503T), Assessment and Watershed Protection Division, Office of Water, U.S. Environmental Protection Agency, 1200 Pennsylvania Avenue, Washington, DC 20460.

Clean Water Act Tribal Provision

Discussion Paper Prepared by the U.S. Environmental Protection Agency
Office of Water and Office of General Counsel

May 2015

Purpose: This paper discusses a potential action that EPA is considering to revise its approach to tribal regulatory authority under the Clean Water Act (CWA or Act). From April to September 2014, EPA engaged in several discussions with tribes, states, and tribal and state organizations. During that time, we presented the basic concepts of the potential action, which had also been generally described in a 2011 EPA document titled *Plan EJ 2014: Legal Tools*. The pertinent part of that document and other information about EPA's potential action are available at <http://water.epa.gov/scitech/swguidance/standards/wqslibrary/tribal.cfm>.

Background: Congress enacted the CWA tribal provision (Section 518) as part of amendments to the statute in 1987. Among other things, Section 518 authorized EPA to treat eligible Indian tribes in a similar manner as states (a process that we refer to as TAS) for a variety of purposes, including administering each of the principal CWA regulatory programs and receiving grants under several CWA funding authorities. Section 518(e) establishes the eligibility criteria for TAS, including requirements that the tribe have a governing body carrying out substantial governmental duties and powers; that the functions to be exercised by the tribe pertain to the management and protection of water resources within the borders of an Indian reservation; and that the tribe be reasonably expected to be capable of carrying out the functions to be exercised in a manner consistent with the terms and purposes of the Act and applicable regulations. For ease of reference, relevant language from Section 518(e)(2) and (h)(1) (which defines Indian reservations for purposes of the CWA) is excerpted below.

...the functions to be exercised by the Indian tribe pertain to the management and protection of water resources which are held by an Indian tribe, held by the United States in trust for Indians, held by a member of an Indian tribe if such property interest is subject to a trust restriction on alienation, or otherwise within the borders of an Indian reservation... (Section 518(e)(2))

... 'Federal Indian reservation' means all land within the limits of any Indian reservation under the jurisdiction of the United States Government, notwithstanding the issuance of any patent, and including rights-of-way running through the reservation... (Section 518(h)(1))

In the early 1990's, EPA promulgated regulations establishing TAS application and review procedures for a range of CWA regulatory programs available to tribes. Section 518 makes no reference to any demonstration of regulatory authority to obtain TAS; rather, it requires only that the functions to be exercised by the applicant tribe pertain to the management and protection of reservation water resources. EPA nonetheless took a cautious approach by requiring that tribes seeking TAS for the purpose of administering a regulatory program under the Act must demonstrate their inherent jurisdiction to do so under principles of federal Indian law, including a demonstration of inherent authority over the activities of non-members of the

tribe on non-member-owned fee lands.¹ EPA recognized at the time that there was significant support for the proposition that Congress had intended to delegate authority to otherwise eligible tribes to regulate their entire reservations under the Act. Notably, in a plurality opinion of the U.S. Supreme Court, Justice White had even cited Section 518 as representing a congressional delegation of authority to Indian tribes.² EPA also stated the Agency's interpretation that in Section 518, Congress had expressed a preference for tribal regulation of surface water quality on reservations to assure compliance with the goals of the CWA. Nonetheless, in an abundance of caution, EPA opted at the time to require tribes to demonstrate, on a case-by-case basis, their inherent jurisdiction to regulate under the CWA. EPA was clear, however, that this approach was subject to change in light of further judicial or congressional guidance.³

Subsequent Developments: Since the promulgation of EPA's CWA TAS rules in the 1990's, there have been significant developments warranting reconsideration of EPA's initial cautious approach to tribal jurisdiction. At this point, EPA has approved TAS applications from 49 tribes for the purpose of administering CWA regulatory programs – all of which have been for CWA Section 303(c) water quality standards (WQS) and Section 401 certifications. There have been three judicial challenges to these actions, and in all cases EPA's determinations that the applicant tribes had demonstrated requisite jurisdiction and met the TAS requirements were upheld.⁴ Importantly, the first court to review a challenge to an EPA CWA TAS approval readily agreed with an argument proffered by the applicant tribe – participating as amicus – that Section 518 is properly interpreted as an express congressional delegation of authority to Indian tribes over their entire reservations. *Montana v. EPA*, 941 F. Supp. 945, 951-52 (D. Mont. 1996), *aff'd*, 137 F.3d 1135 (9th Cir.), *cert. denied*, 525 U.S. 921 (1998). The court also noted that a congressional delegation of authority to tribes “comports with common sense” to avoid a result where an interspersed mixing of tribal and state WQS could apply on a reservation depending on whether the waters traverse or bound tribal or non-Indian reservation land. *Id.*

Additional judicial guidance arrived several years later during a challenge to EPA's TAS regulation under a separate statute, the Clean Air Act (CAA). *Arizona Public Service Co. v. EPA*, 211 F.3d 1280 (D.C. Cir. 2000), *cert. denied*, 532 U.S. 970 (2001). EPA promulgated the CAA TAS rule in 1998 and in that context interpreted the CAA as including an express congressional delegation of authority to eligible Indian tribes to regulate their entire reservations under that statute. 63 Fed. Reg. 7254 (February 12, 1998). As part of its analysis upholding EPA's interpretation, the D.C. Circuit acknowledged similarities between the CAA and CWA

¹ Under principles of federal Indian law, demonstrations of inherent tribal authority over such non-member activities are guided by the principles expressed in *Montana v. United States*, 450 U.S. 544 (1981), and its progeny.

² *Brendale v. Confederated Tribes and Bands of the Yakima Nation*, 492 U.S. 408, 428 (1989).

³ A useful description of EPA's initial approach to tribal regulatory authority under the CWA can be found in the preamble to EPA's TAS regulations for the Section 303(c) water quality standards program. 56 Fed. Reg. 64876 (December 12, 1991).

⁴ *Wisconsin v. EPA*, 266 F.3d 741 (7th Cir. 2001), *cert. denied*, 535 U.S. 1121 (2002) (Sokaogon Chippewa Community); *Montana v. EPA*, 137 F.3d 1135 (9th Cir.), *cert. denied*, 525 U.S. 921 (1998) (Confederated Salish and Kootenai Tribes of the Flathead Reservation); *Montana v. EPA*, 141 F.Supp.2d 1259 (D. Mont. 1998) (Assiniboine and Sioux Tribes of the Fort Peck Reservation).

TAS provisions, as well as EPA's different approach under the CWA. 211 F.3d at 1291-92. The court noted with significance that EPA's approach under the CWA had not been subjected to judicial review and observed favorably the district court's statements in *Montana v. EPA* that Section 518 plainly indicates congressional intent to delegate authority to Indian tribes. *Id.* Ultimately, the D.C. Circuit recognized that EPA had taken a cautious approach under the CWA but that there was no reason to do so again under the CAA. *Id.*

A dissenting judge in the CAA case predicated his disagreement with the majority largely on the absence from the CAA of language expressly describing the reservation areas over which tribes would exercise jurisdiction as including *all* reservation lands *notwithstanding the issuance of any patent and including rights-of-way running through the reservation*. *Id.* at 1301-05. The dissent viewed this language as critical to an expression of congressional intent that tribes are to exercise delegated authority over all reservation lands, including lands owned by non-members of the tribes. *Id.* Notably, the dissent observed that the key "notwithstanding" language is, in fact, included in the relevant tribal provisions of the CWA. *Id.* at 1302 (also referencing *Brendale*, 492 U.S. at 428). The dissent noted that in spite of the statement in *Brendale*, EPA had determined not to treat CWA Section 518 as a congressional delegation; however, the dissent also observed that no court had yet resolved the issue. *Id.*

Although no court has decided the issue of whether CWA Section 518 constitutes an express delegation of authority to tribes, EPA believes it is of great import that the three courts that have considered the issue have favorably viewed such an interpretation: the U.S. Supreme Court in *Brendale*, the federal district court in *Montana v. EPA*, and the D.C. Circuit in *APS*. EPA also believes that the CAA TAS provision – enacted only three years after CWA Section 518 – provides useful guidance regarding Congress' understanding of the importance of uniform tribal regulation of mobile environmental pollutants within reservations, and that this understanding can fairly be traced back to the 1987 enactment of CWA Section 518. In light of this clear direction, EPA believes it is appropriate to revisit our interpretation of tribal regulatory authority under the CWA. Revising our interpretation and concluding definitively that Section 518 constitutes a congressional delegation of authority would eliminate unnecessary administrative burdens not set forth in the statute, would provide greater consistency in the processing of TAS applications across EPA statutes with similar tribal provisions, and would thus ultimately provide greater fairness to applicant Indian tribes.

Potential Change: If EPA proceeds with the new approach, a tribe applying for TAS to administer CWA regulatory programs would be able to rely on a congressional delegation under Section 518 as the source of its authority to regulate reservation waters, including the water-polluting activities of non-tribal members on their reservation lands. Tribes would no longer need to make a separate showing of inherent authority. All other aspects of the TAS criteria and regulatory procedures would remain unchanged.

Questions and Answers

During the 2014 outreach discussions, EPA received questions that helped clarify some of the issues that may be raised as we consider revising our interpretation of Section 518. We provide our initial views on some of those issues below.

1. Would the potential revised interpretation affect the processing of eligible tribes' CWA regulatory programs?

No. Tribes that receive TAS would remain subject to all existing requirements applicable to submission and review of their actual regulatory programs. EPA's review of a tribe's program submission – *e.g.*, a tribe's submission of water quality standards under Section 303(c) – involves a separate action from the approval of TAS eligibility. The potential revised interpretation would not approve any tribe's actual regulatory program; nor would it alter any applicable programmatic requirements.

2. Would the potential revised interpretation alter the geographic scope of TAS?

No. The potential revised interpretation would not affect – either by expanding or contracting – the geographic scope of tribal TAS eligibility under the CWA. Under Section 518, tribes can only obtain TAS status over their reservations. Tribes can seek TAS with respect to water resources pertaining to any type of on-reservation land, including, for example, reservation land held in trust by the United States for a tribe, reservation land owned by or held in trust for a member of the tribe, and reservation land owned by non-tribal members.⁵ But tribes cannot obtain TAS under the CWA for water resources pertaining to any non-reservation land.⁶ This basic limitation would be unaffected by the potential revised interpretation. In addition, EPA's existing CWA TAS regulations provide for applicant tribes to submit a map or legal description of the reservation area that is the subject of the TAS application. *See, e.g.*, 40 C.F.R. 131.8(b)(3)(i). This provision would continue to apply and would ensure that each tribe applying for a CWA regulatory program submits information adequate to demonstrate the location and boundaries of the subject reservation.

3. Would the potential revised interpretation affect tribal criminal enforcement authority?

No. The potential revised interpretation would not affect any existing limitations on tribal criminal enforcement authority. The interpretive change EPA is considering relates solely

⁵ For purposes of EPA's programs, Indian reservations include both formal reservations and informal reservations (*i.e.*, trust lands validly set aside for Indian tribes that have not been formally designated as an Indian reservation). *See, e.g.*, 56 Fed. Reg. at 64881.

⁶ Many tribes have rights to hunt, fish, gather resources, or perform other activities in areas outside of their reservations. To the extent the lands on which these rights are exercised are not Indian reservation lands as defined at 18 U.S.C. 1151(a), tribes cannot obtain TAS under the CWA for water resources pertaining to such lands.

to Indian tribes' civil regulatory authority to administer CWA programs on their reservations; it would not address or in any way alter the scope of tribal criminal enforcement jurisdiction.

4. Would interested entities still be able to comment on a tribe's assertion of jurisdiction?

Yes. EPA's existing CWA TAS regulations provide opportunities for potentially interested entities to provide input to EPA regarding any jurisdictional issues associated with a tribe's TAS application. For instance, EPA's TAS regulations for the CWA Section 303(c) WQS program include a process for notice to appropriate governmental entities – states, tribes and other federal entities located contiguous to the reservation of the applicant tribe – and provide an opportunity for such entities to comment on the applicant tribe's assertion of authority. EPA also routinely makes such notices broad enough – *e.g.*, through publication in local newspapers and electronic media – that other potentially interested entities can participate in the process. These procedures would continue to apply in full. Under the potential revised interpretation of Section 518, the principal jurisdictional issue would likely be the boundaries of the subject reservation.⁷ However, to the extent a particular application presents a separate jurisdictional issue, the existing notice-and-comment procedures would be available to raise such an issue to EPA for due consideration.

5. What about special circumstances unique to specific tribes?

EPA is aware that there could be unusual circumstances that limit or preclude a particular tribe's ability to accept or effectuate a congressional delegation of authority over its reservation. For example, there could be a separate federal statute establishing unique jurisdictional arrangements for a specific state or a specific reservation that could affect a tribe's ability to exercise authority under the CWA. It is also possible that provisions in particular treaties or tribal constitutions could limit a tribe's ability to exercise relevant authority. Existing CWA TAS regulations require applicant tribes to submit legal statements describing the basis for their assertions of authority and provide opportunities for potentially interested entities to comment on the assertion of authority. These requirements would continue to apply and would ensure that any special circumstances are addressed in a tribe's TAS application and that interested entities will have an opportunity to raise such issues and provide their views.⁸

⁷ EPA notes that the geographic scope of a tribe's TAS application – *i.e.*, the boundary of the reservation area that a tribe seeks to regulate – is already a relevant jurisdictional issue under EPA's current approach to tribal jurisdiction under the CWA. The potential revised interpretation would thus impose no additional burden on entities that wish to comment on an applicant tribe's reservation boundary.

⁸ EPA is aware that Section 10211(b) of the Safe, Accountable, Flexible, Efficient Transportation Equity Act of 2005 (SAFETEA), Public Law 109-59, 119 Stat. 1144 (August 10, 2005) established a unique TAS requirement with respect to Indian tribes located in the State of Oklahoma. Under Section 10211(b), tribes in Oklahoma seeking TAS under a statute administered by EPA for the purpose of administering an environmental regulatory program must, in addition to meeting applicable TAS requirements under the EPA statute, enter into a cooperative agreement with the State that is subject to EPA approval and that provides for the tribe and state to jointly plan and administer program requirements. This requirement exists apart from, and in addition to, existing TAS criteria, including the TAS criteria set forth in Section 518 of the CWA. The potential revised interpretation that EPA is considering

6. Would there be effects on tribes that EPA has previously found eligible for TAS?

No. There would be no effect on tribes that EPA has previously found eligible for TAS for the purpose of a CWA regulatory program.

7. Would the potential revised interpretation affect any EPA-approved state programs?

No. The potential revised interpretation would have no effect on the scope of existing state regulatory programs approved by EPA under the CWA. It would neither diminish, nor enlarge, the scope of such approved state programs.

8. How would tribes and states address differences in their respective regulatory programs?

Regulations already exist to address circumstances where a state or tribe believes that unreasonable consequences could arise or have arisen as a result of differing WQS set by states and eligible Indian tribes on common bodies of water. Section 518(e) of the CWA required EPA to provide a mechanism to address such situations. The Agency did so at 40 C.F.R. 131.7, which establishes a detailed dispute resolution mechanism. The potential revised interpretation would not affect that process; it would remain available as needed to address potential state/tribal issues.

9. Would the potential revised interpretation affect TAS applications for CWA grant funding?

The potential revised interpretation would not address or affect the TAS requirements or review process for tribes to receive grants. The receipt of grant funding does not involve any exercise of regulatory authority. Therefore, a determination of TAS eligibility solely for funding purposes does not, under existing regulations, require an analysis or determination regarding an applicant tribe's regulatory authority.

10. If EPA decides to move forward, what process will it use?

If EPA decides to move forward with the revised interpretation, we would publish a notice proposing the revision in the Federal Register and provide an opportunity for comment prior to proceeding with any final interpretive change. There will thus be an additional opportunity for interested entities to provide their views to EPA at that point.

relates solely to the interpretation of an existing CWA TAS requirement; it would thus have no effect on the separate TAS requirement of Section 10211(b) of SAFETEA.

Clean Water Act Tribal Provision

Overview Prepared by the U.S. Environmental Protection Agency
Office of Water and Office of General Counsel

May 2015

Summary

The majority of Indian reservations do not have water quality standards to protect human health and the environment. Only 40 of the more than 300 federally recognized tribes with reservations have completed the process of obtaining EPA's approval to be treated in a manner similar to a state (TAS) and adopted standards for their waters that EPA has approved.

EPA is considering a new approach to tribal authority to obtain TAS status for the water quality standards program and other Clean Water Act regulatory programs. The new approach would streamline the process for applicant tribes and advance cooperative federalism by facilitating tribal involvement in the protection of reservation water quality as intended by Congress.

Background

Since 1991, EPA has followed a cautious approach that requires applicant tribes to demonstrate their inherent authority to regulate waters and activities on their reservations under principles of federal Indian law.

The Agency has consistently stated that its approach was subject to change in the event of further congressional or judicial guidance addressing tribal authority under Section 518 of the Clean Water Act.

Having received such guidance, EPA is considering whether to reinterpret Section 518 as an express delegation of authority by Congress to eligible Indian tribes to administer regulatory programs over their entire reservations.

What would the new approach do?

It would allow tribes applying for TAS to administer CWA regulatory programs to rely on a congressional delegation under Section 518 as the source of authority to regulate their reservation waters. Tribes would no longer need to demonstrate their inherent authority to regulate under the CWA.

It would also bring EPA's treatment of tribes under the Clean Water Act in line with EPA's treatment of tribes under the Clean Air Act, which has similar statutory language addressing tribal regulation of resources in reservation areas.

What would not change under the new approach?

This new approach would not revise any text in EPA regulations.

All existing regulatory provisions would remain in effect, including those that provide for tribes to identify the boundaries of the reservation areas over which they seek to exercise authority and for adjacent state(s) to have an opportunity to comment to EPA on an applicant tribe's assertion of authority.

Would the new approach affect the geographic scope of TAS?

No. The proposal would neither expand nor contract the geographic scope of potential tribal TAS eligibility. Under the Clean Water Act, tribes can only obtain TAS status over their reservations.

Would the new approach affect any existing limitations on tribal criminal enforcement authority?

No. The proposal relates solely to civil regulatory authority.

What if my tribe or state has special circumstances affecting CWA regulatory authority?

There could be instances where special circumstances would limit or preclude a particular tribe's ability to accept or effectuate the congressional delegation of authority over its reservation. For example, there could be a separate federal statute establishing unique jurisdictional arrangements for a specific state or reservation. Any such issue would be addressed on a case-by-case basis and with the benefit of a full record of relevant information that would be developed during the processing of a particular tribe's application for eligibility to regulate under the Clean Water Act.

Who may be affected by or interested in this potential action?

- Federally recognized Indian tribes with reservations that could potentially seek eligibility to administer CWA regulatory programs, and other interested tribes.
- States adjacent to potential applicant tribes.
- Industries or municipalities discharging pollutants to waters within or adjacent to reservations of potential applicant tribes.

Would the potential action affect previous EPA approvals of TAS for water quality standards?

No. It would not affect the 49 previous EPA approvals of tribal TAS for water quality standards.

Would the proposal affect the scope of existing state regulatory programs approved by EPA under the Clean Water Act?

No. The new approach would have no effect on the scope of existing state regulatory programs approved by EPA under the CWA. It would not diminish or enlarge the scope of such approved state programs.

How would EPA adopt the new approach?

EPA would publish a notice in the Federal Register proposing the action and provide an opportunity for public comment before making any final change.

For more information

Contact Fred Leutner at Leutner.Fred@epa.gov or (202) 566-0378, or visit EPA's website at <http://water.epa.gov/scitech/swguidance/standards/wqslibrary/tribal.cfm>.

Potential Reinterpretation of a Clean Water Act Provision Regarding Tribal Eligibility to Administer Regulatory Programs

Prepared by the EPA Office of Science and Technology
May 2014

EPA took a cautious approach in 1991 when it interpreted a Clean Water Act (CWA) provision to mean that each tribe seeking to administer a regulatory program must demonstrate its own inherent regulatory authority. The demonstration has proven to be the most challenging and resource-intensive element of a tribe's application to be treated in a manner similar to a state ("TAS"). Based on EPA's experience and developments in the case law since 1991, EPA is considering a potential reinterpretation that could significantly reduce the burden on individual tribes applying for TAS.

I. CURRENT INTERPRETATION OF TAS PROVISION IN CWA

In the preamble to a 1991 TAS regulation,¹ EPA interpreted the CWA TAS provision at section 518 to mean that a tribe must demonstrate its inherent regulatory authority to be eligible to administer a regulatory program under the CWA. Further, where the tribe's reservation includes nonmember-owned fee lands, the tribe generally must demonstrate that nonmember activities on nonmember-owned fee lands could have a substantial, direct effect on the tribe's health or welfare – commonly known as the "*Montana test*."² EPA has issued guidance to tribes for complying with this interpretation when applying for the water quality standards program and section 401 certifications; a similar approach would be used for section 402 or 404 permit program applications.³

II. POTENTIAL REINTERPRETATION OF TAS PROVISION IN CWA

EPA is considering reinterpreting CWA section 518 as an express delegation by Congress to eligible tribes to administer CWA regulatory programs over their entire reservations irrespective of who owns the land. This would replace EPA's current interpretation that an applicant tribe must demonstrate its inherent authority. The potential reinterpretation is supported by: the plain language of section 518; a similar approach applied in implementing the Clean Air Act TAS provisions; and relevant judicial cases and EPA's experience since 1991. One effect could be a significant reduction in the time and effort for tribes to apply for and receive TAS.

EPA would accomplish the reinterpretation by issuing an interpretive rule after soliciting and considering public comments. The interpretive rule would be accompanied by a revision to EPA's current guidance for tribal applications. Neither the CWA statutory language nor EPA's implementing regulations would be revised, since the language of both supports the proposed reinterpretation. A tribe would still need to identify the boundaries of the reservation areas for which it seeks TAS eligibility to administer a regulatory program, and EPA will still provide states, other appropriate governmental entities, and the public the opportunity to comment on the tribe's assertion of authority before EPA approves or

¹ *Amendments to the Water Quality Standards Regulation That Pertain to Standards on Indian Reservations*, Final Rule, 56 FR 64895, Dec. 12, 1991.

² See *Montana v. U.S.*, 450 U.S. 544 (1981).

³ See *Strategy for Reviewing Tribal Eligibility Applications to Administer EPA Regulatory Programs*, EPA, 2008, <http://www.epa.gov/indian/laws/tas.htm>, Attachments B and C

disapproves TAS for the tribe. As with states, EPA will maintain oversight of any authorized tribal regulatory programs. EPA regulations also require states and authorized tribes to consider public comments before they act, such as when adopting water quality standards or issuing discharge permits.

III. STATUS OF THIS ACTION AND NEXT STEPS

During April-July, 2014, EPA is conducting pre-proposal consultation and coordination with tribes and states, consistent with relevant EPA and other federal policies. EPA welcomes the views of tribes and states at this early stage, and is open to requests for further consultation opportunities.

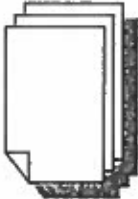
EPA will fully consider all comments and views received during this consultation and coordination. If EPA decides to proceed, the interpretive rule could be proposed in the Federal Register in Fall 2014 with a comment period of 60 days to follow. The reinterpretation would not become effective until all comments are considered and the interpretive rule is finalized, likely not before Fall 2015. In the meantime, EPA will continue to implement the current interpretation of the CWA TAS provision.

IV. FOR FURTHER INFORMATION

- Further information on this potential action is available at http://water.epa.gov/scitech/swguidance/standards/wqslibrary/tribes_index.cfm.
- To ask questions or provide comments, please email Fred Leutner at TASreinterpretation@epa.gov or write: Corey Buffo, Chief, Regional, State, and Tribal Standards Support Branch (mail code 4305T), Office of Water, U.S. Environmental Protection Agency, 1200 Pennsylvania Avenue, Washington, DC 20460.

Potential TAS Reinterpretation

Changes to Expect (shaded areas)

		Current Interpretation	After Reinterpretation
	Eligibility Criteria for TAS in CWA Sec. 518 and EPA regulations⁴ – the tribe must demonstrate that it...		
	1. Is federally recognized and has a reservation.	✓	✓
	2. Has a governing body carrying out substantial governmental duties and powers	✓	✓
	3. Has appropriate authority to regulate the quality of reservation waters. • Tribe must provide a map or legal description of reservation boundaries • Legal counsel must describe the basis of the tribe's authority by... • Tribe must identify the surface waters to be regulated	✓ Demonstrating inherent authority and, if fee lands on reservation, meeting the <i>Montana</i> test ✓	✓ Relying on the Congressional delegation of authority ✓
	4. Has (or has a plan for developing) the capability to administer the program	✓	✓
	Review Processes – for a tribal Water Quality Standards program		
	• EPA seeks comments on tribal TAS application's assertion of authority – from appropriate governmental entities, local parties (per § 131.8(c))	✓	✓
	• EPA seeks comments on EPA's factual findings concerning inherent tribal authority for TAS – from appropriate governmental entities, local parties (per EPA guidance)	✓	Not needed
	• Tribe seeks comments on its water quality standards before submitting to EPA for approval – from the public (per § 131.20)	✓	✓

⁴ The numbered elements are paraphrased from CWA section 518. The bulleted elements are paraphrased from selected provisions of EPA's TAS regulations for regulatory programs: 40 CFR §§ 131.8 (water quality standards), 131.4(c) (water quality certifications), 123.31-34 (section 402 permitting), and 233.60-62 (section 404 permitting).



WESTERN GOVERNORS' ASSOCIATION

Brian Sandoval
Governor of Nevada
Chairman

James D. Ogsbury
Executive Director

Headquarters:
1600 Broadway
Suite 1700
Denver, CO 80202

303-623-9378
Fax 303-534-7309

Washington, D.C. Office:
400 N. Capitol Street, N.W.
Suite 376
Washington, D.C. 20001

202-624-5402
Fax 202-624-7707

www.westgov.org

March 30, 2015

Honorable Gina McCarthy
Administrator
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, N.W. (1101A)
Washington, D.C. 20460

Dear Administrator McCarthy,

The purpose of this letter is to request increased consultation with states by the Environmental Protection Agency (EPA) during development of regulatory efforts regarding tribal authority under the Clean Water Act (CWA). Because states and the EPA work together as co-regulators under the CWA, we urge you to endow states with an early and meaningful role in the development of regulations that could have significant consequences for water quality management.

In particular, Western Governors urge greater state consultation by EPA in development of: (1) an interpretive rule that will outline the process by which tribes obtain "Treatment in a Similar Manner as a State" (TAS) status, and (2) a separate formal rule that will establish a program for tribal administration of Total Maximum Daily Load (TMDL) standards, pursuant to Section 303(d) of the CWA.

Western Governors recognize that Section 518(e) of the CWA directs the EPA to promulgate regulations on tribal TAS authority for CWA programs. We request that the Agency engage in thorough consultation on these TAS proposals with the western states, which typically have a larger tribal presence than other states and a greater likelihood of conflicting water standards.

Many western states count a dozen or more Indian tribes within their boundaries. When EPA grants TAS authority to tribes, water bodies currently regulated by states may become subject to duplicative — and potentially conflicting — standards. This creates a more complicated regulatory environment for water managers and users.

Congress clearly intended to avoid this outcome. We commend to your attention the following portion of CWA Section 518(e):

The Administrator shall, in promulgating such regulations, consult affected States sharing common water bodies and

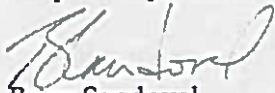
Honorable Gina McCarthy
March 30, 2015
Page 2

provide a mechanism for the resolution of any unreasonable consequences that may arise as a result of differing water quality standards that may be set by States and Indian tribes located on common bodies of water. *Such mechanism shall provide for explicit consideration of relevant factors including, but not limited to, the effects of differing water quality permit requirements on upstream and downstream dischargers, economic impacts, and present and historical uses and quality of the waters subject to such standards. Such mechanism should provide for the avoidance of such unreasonable consequences in a manner consistent with the objective of this Act* (emphases added).

Congress' imperative to avoid potential conflicts can only be achieved if states have a substantive role in the development of the proposals for tribal TAS authority and in future tribal action under the CWA.

The Western Governors appreciate EPA's outreach to state associations regarding these rulemaking efforts in the fall of 2014. We now ask for EPA to directly consult with the states on the specific provisions of the proposals for tribal TAS authority before they are drafted and released to the public for comment. It is through this type of collaboration that we will be able to best protect the waters of the West.

Respectfully,



Brian Sandoval

Governor, State of Nevada

Chairman, Western Governors' Association

Assessment of the Potential Impacts of Hydraulic Fracturing for Oil and Gas on Drinking Water Resources

Executive Summary

Executive Summary

Executive Summary

1 Since the early 2000s, oil and natural gas production in the United States has been transformed
2 through technological innovation. Hydraulic fracturing, combined with advanced directional
3 drilling techniques, made it possible to economically extract oil and gas resources previously
4 inaccessible. The resulting surge in production increased domestic energy supplies and brought
5 economic benefits to many areas of the United States.

6 The growth in domestic oil and gas production also raised concerns about potential impacts to
7 human health and the environment, including potential effects on the quality and quantity of
8 drinking water resources. Some residents living close to oil and gas production wells have reported
9 changes in the quality of drinking water and assert that hydraulic fracturing is responsible for these
10 changes. Other concerns include competition for water between hydraulic fracturing activities and
11 other water users, especially in areas of the country experiencing drought, and the disposal of
12 wastewater generated from hydraulic fracturing.

13 The U.S. Congress urged the U.S. Environmental Protection Agency (EPA) to study the relationship
14 between hydraulic fracturing and drinking water. This report synthesizes available scientific
15 literature and data to assess the potential for hydraulic fracturing for oil and gas to change the
16 quality or quantity of drinking water resources, and identifies factors affecting the frequency or
17 severity of any potential changes. This report can be used by federal, tribal, state, and local officials;
18 industry; and the public to better understand and address any vulnerabilities of drinking water
19 resources to hydraulic fracturing activities.

What is Hydraulic Fracturing?

20 Hydraulic fracturing is a stimulation technique used to increase oil and gas production from
21 underground rock formations. Hydraulic fracturing involves the injection of fluids under pressures
22 great enough to fracture the oil- and gas-producing formations. The fluid generally consists of
23 water, chemicals, and proppant (commonly sand). The proppant holds open the newly created
24 fractures after the injection pressure is released. Oil and gas flow through the fractures and up the
25 production well to the surface.

26 Hydraulic fracturing has been used since the late 1940s and, for the first 50 years, was mostly used
27 in vertical wells in conventional formations.¹ Hydraulic fracturing is still used in these settings, but
28 the process has evolved; technological developments (including horizontal and directional drilling)
29 have led to the use of hydraulic fracturing in unconventional hydrocarbon formations that could not
30 otherwise be profitably produced (see Figure ES-1). These formations include:

¹ Conventional formations often allow oil and natural gas to flow to the wellbore without hydraulic fracturing and typically contain trapped oil and natural gas that migrated from other subsurface locations. Hydraulic fracturing can be used to enhance oil and gas production from these formations. In unconventional formations, hydraulic fracturing is needed to extract economical quantities of oil and gas.

- 1 • **Shales.** Organic-rich, black shales are the source rocks in which oil and gas form on
2 geological timescales. Oil and gas are contained in the pore space of the shale. Some shales
3 contain predominantly gas or oil; many shale formations contain both.
- 4 • **Tight formations.** “Tight” formations are relatively low permeability, non-shale,
5 sedimentary formations that can contain oil and gas. Like in shales, oil and gas are
6 contained in the pore space of the formation. Tight formations can include sandstones,
7 siltstone, and carbonates, among others.
- 8 • **Coalbeds.** In coalbeds, methane (the primary component of natural gas) is generally
9 adsorbed to the coal rather than contained in the pore space or structurally trapped in the
10 formation. Pumping the injected and native water out of the coalbeds after fracturing
11 serves to depressurize the coal, thereby allowing the methane to desorb and flow into the
12 well and to the surface.

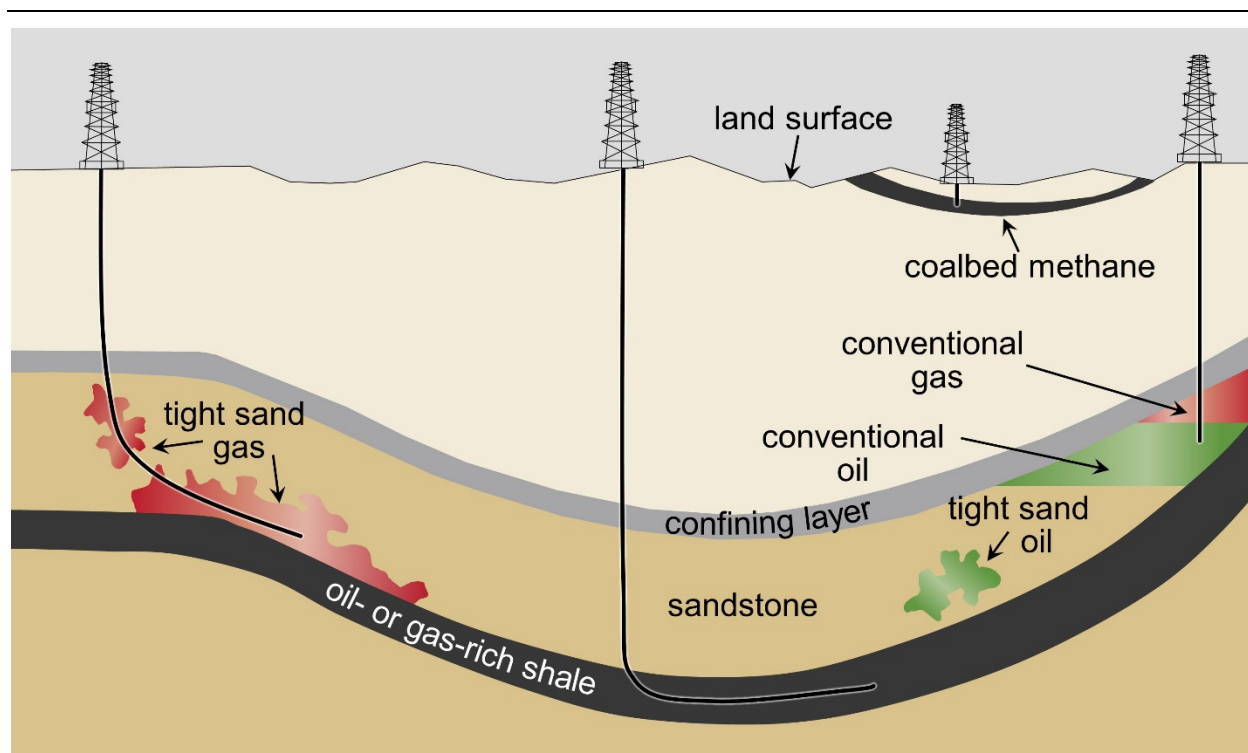


Figure ES-1. Schematic cross-section of general types of oil and gas resources and the orientations of production wells used in hydraulic fracturing.

Shown are conceptual illustrations of types of oil and gas wells. A vertical well is producing from a conventional oil and gas deposit (right). In this case, a gray confining layer serves to “trap” oil (green) or gas (red). Also shown are wells producing from unconventional formations: a vertical coalbed methane well (second from right); a horizontal well producing from a shale formation (center); and a well producing from a tight sand formation (left). Note: Figure not to scale. Modified from [USGS \(2002\)](#) and [Newell \(2011\)](#).

The combined use of hydraulic fracturing with horizontal (or more generically, directional) drilling has led to an increase in oil and gas activities in areas of the country with historical oil and gas production, and an expansion of oil and gas activities to new regions of the country.

Scope of the Assessment

We defined the scope of this assessment by the following activities involving water that support hydraulic fracturing (i.e., the hydraulic fracturing water cycle; see Figure ES-2):¹

- **Water acquisition:** the withdrawal of ground or surface water needed for hydraulic fracturing fluids;
- **Chemical mixing:** the mixing of water, chemicals, and proppant on the well pad to create the hydraulic fracturing fluid;
- **Well injection:** the injection of hydraulic fracturing fluids into the well to fracture the geologic formation;
- **Flowback and produced water:** the return of injected fluid and water produced from the formation (collectively referred to as produced water in this report) to the surface, and subsequent transport for reuse, treatment, or disposal; and
- **Wastewater treatment and waste disposal:** the reuse, treatment and release, or disposal of wastewater generated at the well pad, including produced water.

This assessment reviews, analyzes, and synthesizes information relevant to the potential impacts of hydraulic fracturing on drinking water resources at each stage of the hydraulic fracturing water cycle. Impacts are defined as any change in the quality or quantity of drinking water resources. Where possible, we identify the mechanisms responsible or potentially responsible for any impacts. For example, a spill of hydraulic fracturing fluid is a mechanism by which drinking water resources could be impacted.

Drinking water resources are defined within this report as any body of ground water or surface water that now serves, or in the future could serve, as a source of drinking water for public or private use. This is broader than most federal and state regulatory definitions of drinking water and encompasses both fresh and non-fresh bodies of water. Trends indicate that both types of water bodies are currently being used, and will continue to be used in the future, as sources of drinking water.

This assessment focuses on the potential impacts from activities in the hydraulic fracturing water cycle on drinking water resources. We do this so federal, tribal, state, and local officials; industry; and the public can better understand and address any vulnerabilities of drinking water resources to hydraulic fracturing activities. We do not address other concerns raised about hydraulic fracturing specifically or about oil and gas exploration and production activities more generally. Activities that

¹ In this assessment, we refer to the “EPA” when referencing other EPA studies. If a conclusion or analysis was done specifically by the authors of this assessment, we refer to it and its findings in the first person.

are not considered include: acquisition and transport of constituents of hydraulic fracturing fluids besides water (e.g., sand mining and chemical production) outside of the stated water cycle; site selection and well pad development; other infrastructure development (e.g., roads, pipelines, compressor stations); site reclamation; and well closure. A summary and evaluation of current or proposed regulations and policies is beyond the scope of this report. Additionally, this report does not discuss the potential impacts of hydraulic fracturing on other water users (e.g., agriculture or industry), other aspects of the environment (e.g., seismicity, air quality, or ecosystems), worker health or safety, or communities. Furthermore, this report is not a human health risk assessment. It does not identify populations that are exposed to chemicals, estimate the extent of exposure, or estimate the incidence of human health impacts.

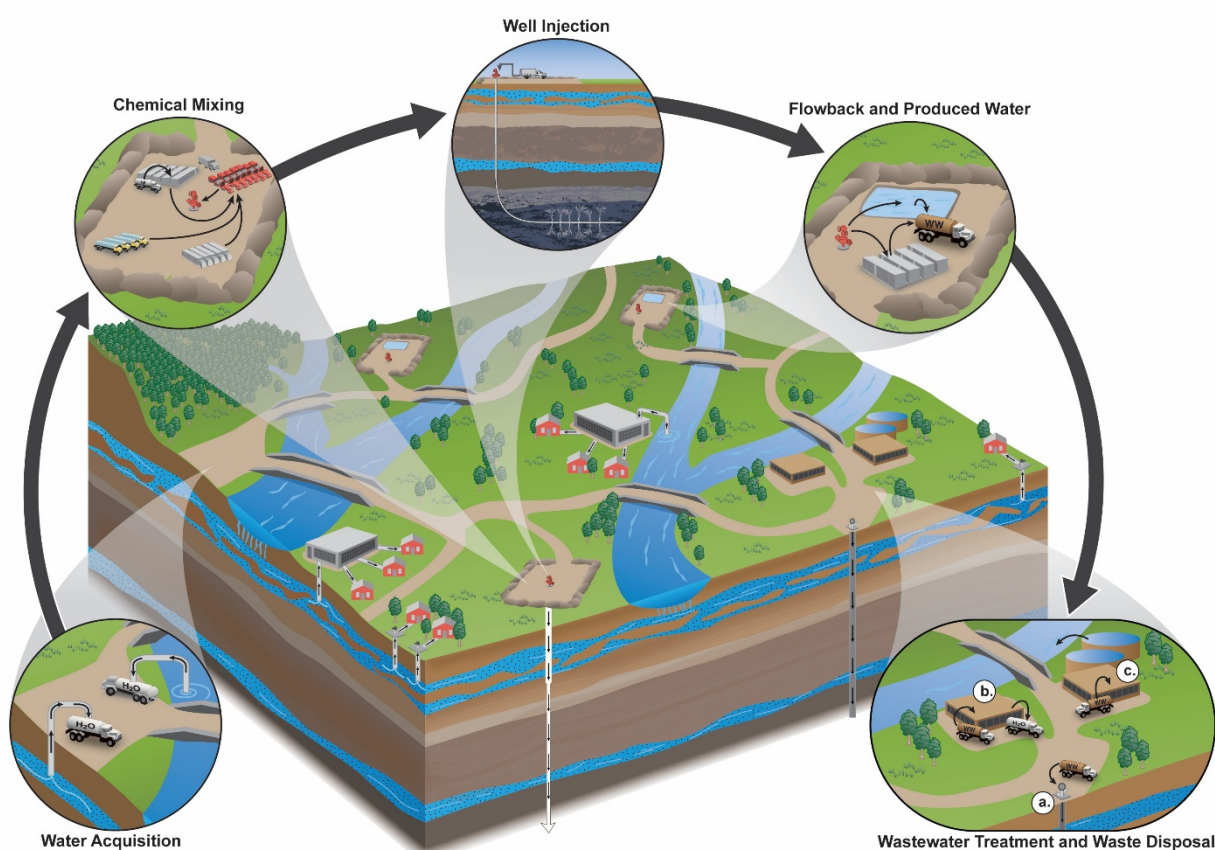


Figure ES-2. The stages of the hydraulic fracturing water cycle.

Shown here is a generalized landscape depicting the activities of the hydraulic fracturing water cycle and their relationship to each other, as well as their relationship to drinking water resources. Arrows depict the movement of water and chemicals. Specific activities in the “Wastewater Treatment and Waste Disposal” inset are (a) underground injection control (UIC) well disposal, (b) wastewater treatment and reuse, and (c) wastewater treatment and discharge at a centralized waste treatment (CWT) facility. Note: Figure not to scale.

Approach

This assessment relies on relevant scientific literature and data. Literature evaluated included articles published in science and engineering journals, federal and state government reports, non-governmental organization (NGO) reports, and industry publications. Data sources examined included federal- and state-collected data sets, databases maintained by federal and state government agencies, other publicly-available data and information, and data, including confidential and non-confidential business information, submitted by industry to the EPA.¹ The relevant literature and data complement research conducted by the EPA under its *Plan to Study the Potential Impacts of Hydraulic Fracturing on Drinking Water Resources* (hereafter referred to as the “Study Plan”) and published by scientific journals or as peer-reviewed EPA reports; those articles and reports are cited throughout this assessment. The research topic areas and projects described in the Study Plan were designed to meet the data and information needs of this assessment and were developed with substantial expert and public input.

Proximity of Current Activity and Drinking Water Resources

Thousands of wells are drilled and fractured every year in the United States, with activities concentrated in specific locations. We estimate 25,000-30,000 new wells were drilled and hydraulically fractured annually in the United States between 2011 and 2014. Additional, pre-existing wells (wells more than one year old that may or may not have been hydraulically fractured in the past) were also likely fractured. Hydraulic fracturing took place in at least 25 states between 1990 and 2013. The EPA’s analysis of disclosures made to FracFocus 1.0 (hereafter “FracFocus”) contained wells from 20 of these states.² Almost half of these wells were in Texas. Colorado was a distant second, while Pennsylvania and North Dakota were third and fourth, respectively. Hydraulic fracturing activities were further localized within the 20 states. Of the approximately 1,500 counties or county equivalents in these 20 states, slightly over 400 contained all of the wells disclosed to FracFocus during this time period. In Colorado, over 85% of the hydraulically fractured wells disclosed were located in two counties. The price of gas and oil may cause short term volatility in the number of wells drilled and fractured per year, yet hydraulic fracturing is expected to continue to expand and drive an increase in domestic oil and gas production in coming decades.

Hydraulically fractured wells can be located near residences and drinking water resources. Between 2000 and 2013, approximately 9.4 million people lived within one mile of a hydraulically

¹ Some information provided to the EPA in response to two separate information requests to service companies and well operators was claimed as confidential business information.

² FracFocus is a publicly accessible website (www.fracfocus.org) managed by the Ground Water Protection Council and the Interstate Oil and Gas Compact Commission where oil and gas production well operators may disclose information voluntarily or pursuant to state requirements about the ingredients used in hydraulic fracturing fluids at individual wells. The EPA analyzed disclosures from FracFocus 1.0 for over 38,000 oil and gas production wells hydraulically fractured between January 1, 2011 and February 28, 2013. A disclosure refers to data submitted for a specific oil and gas production well for a specific fracture date. Most wells had only one disclosure, but a small number of wells (876 wells) had multiple disclosures. For the purposes of this Executive Summary, we equate disclosures with wells when discussing this study.

1 fractured well. Approximately 6,800 sources of drinking water for public water systems were
2 located within one mile of at least one hydraulically fractured well during the same period. These
3 drinking water sources served more than 8.6 million people year-round in 2013.

4 Although proximity of hydraulic fracturing activities to a drinking water resource is not in of itself
5 sufficient for an impact to occur,, it does increase the potential for impacts. Residents and drinking
6 water resources in areas experiencing hydraulic fracturing activities are most likely to be affected
7 by any potential impacts, should they occur. However, hydraulic fracturing can also affect drinking
8 water resources outside the immediate vicinity of a hydraulically fractured well; a truck carrying
9 wastewater could spill or a release of inadequately treated wastewater could have downstream
10 effects.

Major Findings

11 From our assessment, we conclude there are above and below ground mechanisms by which
12 hydraulic fracturing activities have the potential to impact drinking water resources. These
13 mechanisms include water withdrawals in times of, or in areas with, low water availability; spills of
14 hydraulic fracturing fluids and produced water; fracturing directly into underground drinking
15 water resources; below ground migration of liquids and gases; and inadequate treatment and
16 discharge of wastewater.

17 We did not find evidence that these mechanisms have led to widespread, systemic impacts on
18 drinking water resources in the United States. Of the potential mechanisms identified in this report,
19 we found specific instances where one or more mechanisms led to impacts on drinking water
20 resources, including contamination of drinking water wells. The number of identified cases,
21 however, was small compared to the number of hydraulically fractured wells.

22 This finding could reflect a rarity of effects on drinking water resources, but may also be due to
23 other limiting factors. These factors include: insufficient pre- and post-fracturing data on the quality
24 of drinking water resources; the paucity of long-term systematic studies; the presence of other
25 sources of contamination precluding a definitive link between hydraulic fracturing activities and an
26 impact; and the inaccessibility of some information on hydraulic fracturing activities and potential
27 impacts.

28 Below, we provide a synopsis of the assessment's key findings, organized by each stage of the
29 hydraulic fracturing water cycle. We provide answers to the research questions presented in the
30 Study Plan and Chapter 1. While some citations are provided here, individual chapters should be
31 consulted for additional detail and citations.

Water Acquisition

32 Water is a major component of nearly all hydraulic fracturing operations. It typically makes up
33 almost 90% or more of the fluid volume injected into a well, and each hydraulically fractured well
34 requires thousands to millions of gallons of water. Cumulatively, hydraulic fracturing activities in
35 the United States used on average 44 billion gal of water a year in 2011 and 2012, according to the

1 EPA's analysis of FracFocus disclosures. Although this represents less than 1% of total annual water
2 use and consumption at this scale, water withdrawals could potentially impact the quantity and
3 quality of drinking water resources at more local scales.¹

Research Questions: Water Acquisition

- **What are the types of water used for hydraulic fracturing?**

4 Water for hydraulic fracturing typically comes from surface water, ground water, or reused
5 hydraulic fracturing wastewater. Hydraulic fracturing operations in the eastern United States
6 generally rely on surface water, while operations in the more semi-arid to arid western states
7 generally use mixed supplies of surface and ground water. In the Marcellus Shale in Pennsylvania,
8 for example, most water used for hydraulic fracturing originates from surface water, whereas
9 surface and ground water are used in approximately equal proportions in the Barnett Shale in
10 Texas (see Figure ES-3a,b). In areas that lack available surface water (e.g., western Texas), ground
11 water supplies most of the water needed for hydraulic fracturing.

12 Across the United States, the vast majority of water used in hydraulic fracturing is fresh, although
13 operators also make use of lower-quality water, including reused hydraulic fracturing wastewater.²
14 Based on available data, the median reuse of wastewater as a percentage of injected volumes is 5%
15 nationally, with the percentage varying by location.³ Available data on reuse trends indicate
16 increased reuse of wastewater over time in both Pennsylvania and West Virginia. Reuse as a
17 percentage of injected volumes is lower in other areas, including regions with more water stress,
18 likely because of the availability of disposal wells. For example, reused wastewater is
19 approximately 18% of injected volumes in the Marcellus Shale in Pennsylvania's Susquehanna
20 River Basin, whereas it is approximately 5% in the Barnett Shale in Texas (see Figure ES-3a,b).

¹ Water use is water withdrawn from ground- or surface water for a specific purpose, part or all of which may be returned to the local hydrologic cycle. If no water is returned, water use equals water consumption. Water consumption is water that is removed from the local hydrologic cycle following its use (e.g., via evaporation, transpiration, incorporation into products or crops, consumption by humans or livestock) and is therefore unavailable to other water users (Maupin et al., 2014). In the case of hydraulic fracturing, water can be consumed by the loss of injected water to subsurface zones or via underground disposal of wastewaters, among other means.

² In this assessment, hydraulic fracturing "wastewater" refers to both produced water and any other water generated as a hydraulic fracturing site. As used in this assessment, the term "wastewater" is not intended to constitute a term of art for legal or regulatory purposes.

³ Reused wastewater as a percentage of injected water differs from the percentage of wastewater that is managed through reuse, as opposed to other wastewater management options. For example, in the Marcellus in Pennsylvania, approximately 18% of injected water is reused produced water, while approximately 70% of wastewater or more is managed through reuse (Figure ES-3a).

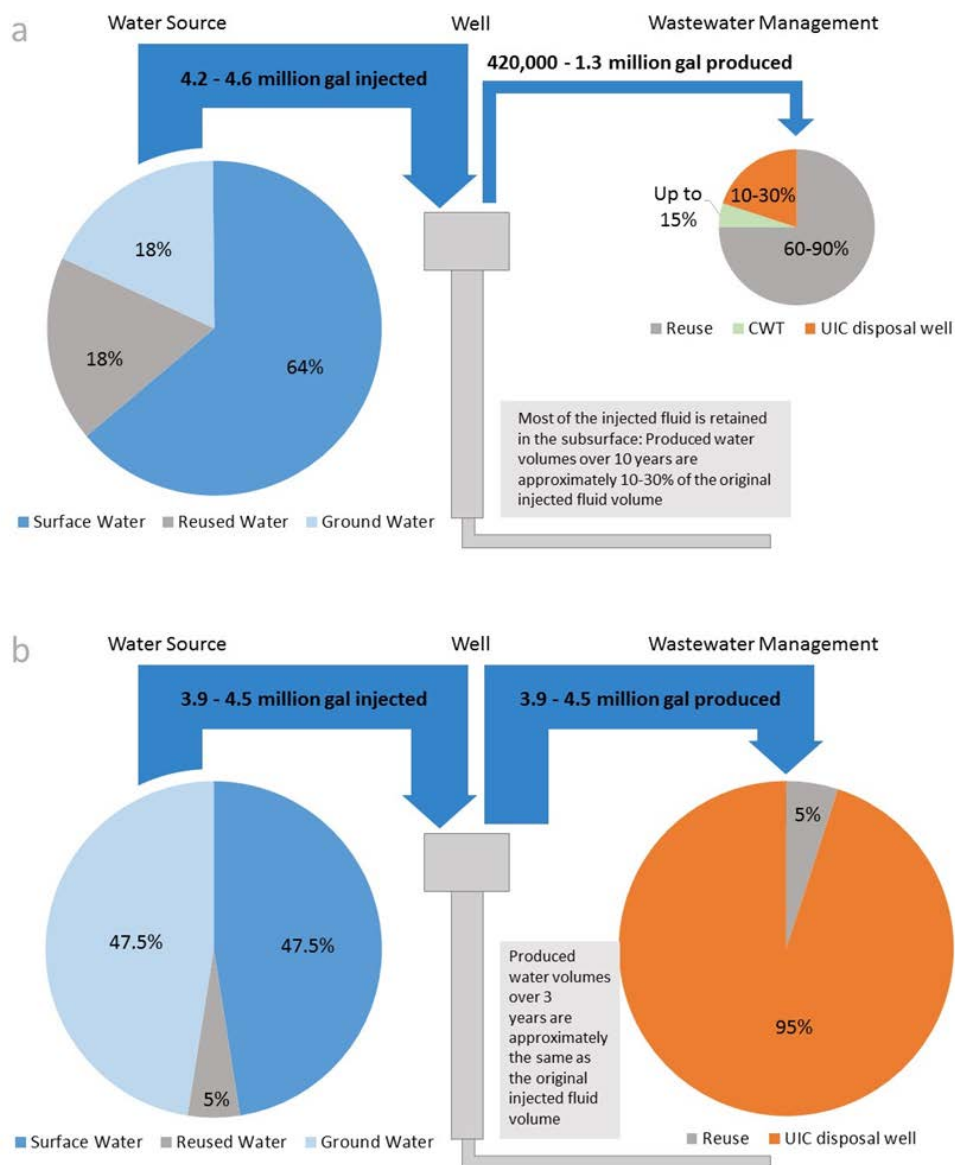


Figure ES-3. Water budgets representative of practices in the Marcellus Shale in the Susquehanna River Basin in Pennsylvania (a) and the Barnett Shale in Texas (b).

Pie size and arrow thickness represent the relative volume of water as it flows through the hydraulic fracturing water cycle. Wastewater going to a centralized waste treatment (CWT) facility may be either discharged to surface water or reused. Wastewater going to an underground injection control (UIC) well is disposed of below ground. These examples represent typical water management practices as depicted for the most recent time period reviewed by this assessment. They do not represent any specific well. Note: Values for Marcellus Shale are specific to the Susquehanna River Basin, except for the produced water volumes. The longest-term measurement available was from the West Virginia portion of the the Marcellus Shale.

- **How much water is used per well?**

The national median volume of water used per hydraulically fractured well is approximately 1.5 million gal (5.7 million L), according to the EPA's analysis of FracFocus disclosures. This estimate likely represents a wide variety of fractured well types, including vertical wells that generally use much less water per well than horizontal wells. Thus, published estimates for horizontal shale gas wells are typically higher (e.g., approximately 4 million gallons ([Vengosh et al., 2014](#))). There is also wide variation within and among states and basins in the median water volumes used per well, from more than 5 million gal (19 million L) in Arkansas, Louisiana and West Virginia to less than 1 million gal (3.8 million L) in California, New Mexico, and Utah, among others. This variation results from several factors, including well length, formation geology, and fracturing fluid formulation.

- **How might cumulative water withdrawals for hydraulic fracturing affect drinking water quantity?**

Cumulatively, hydraulic fracturing uses billions of gallons of water each year at the national and state scales, and even in some counties. As noted above, hydraulic fracturing water use and consumption are generally less than 1% of total annual water use and consumption at these scales. However, there are a few counties in the United States where these percentages are higher. For 2011 and 2012, annual hydraulic fracturing water use was 10% or more compared to 2010 total annual water use in 6.5% of counties with FracFocus disclosures analyzed by the EPA, 30% or more in 2.2% of counties, and 50% or more in 1.0% of counties. Consumption estimates followed the same general pattern. In these counties, hydraulic fracturing is a relatively large user and consumer of water.

High fracturing water use or consumption alone does not necessarily result in impacts to drinking water resources. Rather, impacts result from the combination of water use or consumption and water availability at local scales. In our survey of published literature, we did not find a case where hydraulic fracturing water use or consumption alone caused a drinking water well or stream to run dry. This could indicate an absence of effects or a lack of documentation in the literature we reviewed. Additionally, water availability is rarely impacted by just one use or factor alone. In Louisiana, for example, the state requested hydraulic fracturing operations switch from ground to surface water, due to concerns that ground water withdrawals for fracturing could, in combination with other uses, adversely affect drinking water supplies.

The potential for impacts to drinking water resources from hydraulic fracturing water withdrawals is highest in areas with relatively high fracturing water use and low water availability. Southern and western Texas are two locations where hydraulic fracturing water use, low water availability, drought, and reliance on declining ground water has the potential to affect the quantity of drinking water resources. Any impacts are likely to be realized locally within these areas. In a detailed case study of southern Texas, [Scanlon et al. \(2014\)](#) observed generally adequate water supplies for hydraulic fracturing, except in specific locations. They found excessive drawdown of local ground water in a small proportion (approximately 6% of the area) of the Eagle Ford Shale. They suggested water management, particularly a shift towards brackish water use, could minimize potential future impacts to fresh water resources.

The potential for impacts to drinking water quantity due to hydraulic fracturing water use appears to be lower—but not eliminated—in other areas of the United States. Future problems could arise if hydraulic fracturing increases substantially in areas with low water availability, or in times of water shortages. In detailed case studies in western Colorado and northeastern Pennsylvania, the EPA did not find current impacts, but did conclude that streams could be vulnerable to water withdrawals from hydraulic fracturing. In northeast Pennsylvania, water management, such as minimum stream flow requirements, limits the potential for impacts, especially in small streams. In western North Dakota, ground water is limited, but the industry may have sufficient supplies of surface water from the Missouri River system. These location-specific examples emphasize the need to focus on regional and local dynamics when considering potential impacts of hydraulic fracturing water acquisition on drinking water resources.

- ***What are the possible impacts of water withdrawals for hydraulic fracturing on water quality?***

Water withdrawals for hydraulic fracturing, similar to all water withdrawals, have the potential to alter the quality of drinking water resources. Ground water withdrawals exceeding natural recharge rates decrease water storage in aquifers, potentially mobilizing contaminants or allowing the infiltration of lower quality water from the land surface or adjacent formations. Withdrawals could also decrease ground water discharge to streams, potentially affecting surface water quality. Areas with large amounts of sustained ground water pumping are most likely to experience impacts, particularly drought-prone regions with limited ground water recharge.

Surface water withdrawals also have the potential to affect water quality. Withdrawals may lower water levels and alter stream flow, potentially decreasing a stream's capacity to dilute contaminants. Case studies by the EPA show that streams can be vulnerable to changes in water quality due to water withdrawals, particularly smaller streams and during periods of low flow. Management of the rate and timing of surface water withdrawals has been shown to help mitigate potential impacts of hydraulic fracturing withdrawals on water quality.

Chemical Mixing

Hydraulic fracturing fluids are developed to perform specific functions, including: create and extend fractures, transport proppant, and place proppant in the fractures. The fluid generally consists of three parts: (1) the base fluid, which is the largest constituent by volume and is typically water; (2) the additives, which can be a single chemical or a mixture of chemicals; and (3) the proppant. Additives are chosen to serve a specific purpose (e.g., adjust pH, increase viscosity, limit bacterial growth). Chemicals generally comprise a small percentage (typically 2% or less) of the overall injected fluid volume. Because over one million gallons of fluids are typically injected per well, thousands of gallons of chemicals can be potentially stored on-site and used during hydraulic fracturing activities.

On-site storage, mixing, and pumping of chemicals and hydraulic fracturing fluids have the potential to result in accidental releases, such as spills or leaks. Potential impacts to drinking water resources from spills of hydraulic fracturing fluids and chemicals depend on the characteristics of the spills, and the fate, transport, and the toxicity of chemicals spilled.

Research Questions: Chemical Mixing

- ***What is currently known about the frequency, severity, and causes of spills of hydraulic fracturing fluids and additives?***

The frequency of on-site spills from hydraulic fracturing could be estimated for two states, but not for operations nationally or for other areas. Frequency estimates from data and literature ranged from one spill for every 100 wells in Colorado to between approximately 0.4 and 12.2 spills for every 100 wells in Pennsylvania.¹ These estimates include spills of hydraulic fracturing fluids and chemicals, and produced water reported in state databases. Available data generally precluded estimates of hydraulic fracturing fluid and/or chemical spill rates separately from estimates of an overall spill frequency. It is unknown whether these spill estimates are representative of national occurrences. If the estimates are representative, the number of spills nationally could range from approximately 100 to 3,700 spills annually, assuming 25,000 to 30,000 new wells are fractured per year.

The EPA characterized volumes and causes of hydraulic fracturing-related spills identified from selected state and industry data sources. The spills occurred between January 2006 and April 2012 in 11 states and included 151 cases in which fracturing fluids or chemicals spilled on or near a well pad. Due to the methods used for the EPA's characterization of spills, these cases were likely a subset of all fracturing fluid and chemical spills during the study's time period. The reported volume of fracturing fluids or chemicals spilled ranged from 5 gal to more than 19,000 gal (19 to 72,000 L), with a median volume of 420 gal (1,600 L) per spill. Spill causes included equipment failure, human error, failure of container integrity, and other causes (e.g., weather and vandalism). The most common cause was equipment failure, specifically blowout preventer failure, corrosion, and failed valves. More than 30% of the 151 fracturing fluid or chemical spills were from fluid storage units (e.g., tanks, totes, and trailers).

- ***What are the identities and volumes of chemicals used in hydraulic fracturing fluids, and how might this composition vary at a given site and across the country?***

In this assessment, we identified a list of 1,076 chemicals used in hydraulic fracturing fluids. This is a cumulative list over multiple wells and years. These chemicals include acids, alcohols, aromatic hydrocarbons, bases, hydrocarbon mixtures, polysaccharides, and surfactants. According to the EPA's analysis of disclosures to FracFocus, the number of unique chemicals per well ranged from 4 to 28, with a median of 14 unique chemicals per well.

Our analysis indicates that chemical use varies and that no single chemical is used at all well sites across the country, although several chemicals are widely used. Methanol, hydrotreated light petroleum distillates, and hydrochloric acid were reported as used in 65% or more of wells, according to FracFocus disclosures analyzed by the EPA. Only 32 chemicals, excluding water, quartz, and sodium chloride, were used in more than 10% of wells according to the EPA's analysis

¹ Spill frequency estimates are for a given number of wells over a given period of time. These are not annual estimates nor are they for the lifetime of a well.

of FracFocus disclosures. The composition of hydraulic fracturing fluids varies by state, by well, and within the same service company and geologic formation. This variability likely results from several factors, including the geology of the formation, the availability and cost of different chemicals, and operator preference.

Estimates from the EPA's database developed from FracFocus suggest median volumes of individual chemicals injected per well ranged from a few gallons to thousands of gallons, with an overall median of 650 gal (2,500 L) per chemical per well. Based on this overall median and assuming 14 unique chemicals are used per well, an estimated 9,100 gal (34,000 L) of chemicals may be injected per well. Given that the number of chemicals per well ranges from 4 to 28, the estimated volume of chemicals injected per well may range from approximately 2,600 to 18,000 gal (9,800 to 69,000 L).

- What are the chemical, physical, and toxicological properties of hydraulic fracturing chemical additives?***

Measured or estimated physicochemical properties were obtained for 453 chemicals of the total 1,076 chemicals reported in hydraulic fracturing fluids. We could not estimate physicochemical properties for the inorganic chemicals or mixtures. The 453 chemicals have a wide range of physicochemical properties.

Properties affecting the likelihood of a spilled chemical reaching and impacting a drinking water resource include mobility, solubility, and volatility. Of the 453 chemicals for which physicochemical properties were available, 18 of the top 20 most mobile ones were reported in the EPA's FracFocus database for 2% or less of wells. Choline chloride and tetrakis (hydroxymethyl) phosphonium were exceptions and were reported in 14% and 11% of wells, respectively. These two chemicals appear to be relatively more common, and, if spilled, would move quickly through the environment with the flow of water. The majority of the 453 chemicals associate strongly with soils and organic materials, suggesting the potential for these chemicals to persist in the environment as long-term contaminants. Many of the 453 chemicals fully dissolve in water, but their aqueous solubility varies greatly. Few of the chemicals volatilize, and thus a large proportion of most hydraulic fracturing chemicals tend to remain in water.

Oral reference values and oral slope factors meeting the criteria used in this assessment were not available for the majority of chemicals used in hydraulic fracturing fluids, representing a significant data gap for hazard identification.^{1,2} Reference values and oral slope factors are important for understanding the potential human health effects resulting from exposure to a chemical. Chronic oral reference values and/or oral slope factors from selected federal, state, and international sources were available for 90 (8%) of the 1,076 chemicals used in hydraulic fracturing fluids. From

¹ A reference value is an estimate of an exposure to the human population (including susceptible subgroups) for a given duration that is likely to be without an appreciable risk of adverse health effects over a lifetime. Reference value is a generic term not specific to a given route of exposure.

² An oral slope factor is an upper-bound, approximating 95% confidence limit, on the increased cancer risk from a lifetime oral exposure to an agent.

U.S. federal sources alone, chronic oral reference values were available for 73 chemicals (7%) of the 1,076 chemicals, and oral slope factors were available for 15 chemicals (1%). Of the 32 chemicals reported as used in at least 10% of wells in the EPA's FracFocus database (excluding water, quartz, and sodium chloride), seven (21%) have a federal chronic oral reference value. Oral reference values and oral slope factors are a key component of the risk assessment process, although comprehensive risk assessments that characterize the health risk associated with exposure to these chemicals are not available.

Of the chemicals that had values available, the health endpoints associated with those values include the potential for carcinogenesis, immune system effects, changes in body weight, changes in blood chemistry, cardiotoxicity, neurotoxicity, liver and kidney toxicity, and reproductive and developmental toxicity. However, it is important to note that evaluating any potential risk to human populations would require knowledge of the specific chemicals that are present at a particular site, whether or not humans are exposed to those chemicals and, if so, at what levels and for what duration, and the toxicity of the chemicals. Since most chemicals are used infrequently on a nationwide basis, potential exposure is likely to be a local or regional issue, rather than a national issue. Accordingly, consideration of hazards and risks associated with these chemical additives would be most useful on a site-specific basis and is beyond the scope of this assessment.

- If spills occur, how might hydraulic fracturing chemical additives contaminate drinking water resources?***

There are several mechanisms by which a spill can potentially contaminate drinking water resources. These include overland flow to nearby surface water, soil contamination and eventual transport to surface water, and infiltration and contamination of underlying ground water. Of the 151 spills characterized by the EPA, fluids reached surface water in 13 (9% of 151) cases and soil in 97 (64%) cases. None of the spills of hydraulic fracturing fluid were reported to have reached ground water. This could be due to an absence of impact; however, it can take several years for spilled fluids to infiltrate soil and leach into ground water. Thus, it may not be immediately apparent whether a spill has reached ground water or not.

Based on the relative importance of each of these mechanisms, impacts have the potential to occur quickly, be delayed short or long periods, or have a continual effect over time. In Kentucky, for example, a spill impacted a surface water body relatively quickly when hydraulic fracturing fluid entered a creek, significantly reducing the water's pH and increasing its conductivity ([Papoulias and Velasco, 2013](#)).

Well Injection

Hydraulic fracturing fluids are injected into oil or gas wells under high pressures. The fluids flow through the well (commonly thousands of feet below the surface) into the production zone (i.e., the geologic formation being fractured) where the fluid injection pressures are sufficient to create fractures in the rock.

There are two major subsurface mechanisms by which the injection of fluid and the creation and propagation of fractures can lead to contamination of drinking water resources: (1) the unintended

1 movement of liquids or gases out of the production well or along the outside of the production well
2 into a drinking water resource via deficiencies in the well's casing or cement, and (2) the
3 unintended movement of liquids or gases from the production zone through subsurface geologic
4 formations into a drinking water resource. Combinations of these two mechanisms are also
5 possible.

Research Questions: Well Injection

- **How effective are current well construction practices at containing fluids—both liquids and gases—before, during, and after fracturing?**

6 Production wells are constructed to access and convey hydrocarbons from the formations in which
7 they are found to the surface, and to isolate fluid-bearing zones (containing oil, gas, or water) from
8 each other. Typically, multiple casings are emplaced and cemented along the wellbore to protect
9 and isolate the oil and/or natural gas from the formations it must travel through to reach the
10 surface.

11 Below ground drinking water resources are often separated from the production well using casing
12 and cement. Cemented surface casing, in particular, is an important well construction feature for
13 isolating drinking water resources from liquids and gases that may move through the subsurface. A
14 limited risk modeling study of selected injection wells in the Williston Basin in North Dakota
15 suggests that the risk of aquifer contamination from leaks inside the well to the drinking water
16 resource decreases by a factor of approximately one thousand when surface casing extends below
17 the bottom of the drinking water resource ([Michie and Koch, 1991](#)). Most wells used in hydraulic
18 fracturing operations have casing and a layer of cement to protect drinking water resources, but
19 there are exceptions: a survey conducted by the EPA of oil and gas production wells hydraulically
20 fractured by nine oil and gas service companies in 2009 and 2010 estimated that at least 3% of the
21 wells (600 out of 23,000 wells) did not have cement across a portion of the casing installed through
22 the protected ground water resource identified by well operators. The absence of cement does not
23 in and of itself lead to an impact. However, it does reduce the overall number of casing and cement
24 barriers fluids must travel through to reach ground water resources.

25 Impacts to drinking water resources from subsurface liquid and gas movement may occur if casing
26 or cement are inadequately designed or constructed, or fail. There are several examples of these
27 occurrences in hydraulically fractured wells that have or may have resulted in impacts to drinking
28 water resources. In one example, an inner string of casing burst during hydraulic fracturing, which
29 resulted in a release of fluids on the land surface and possibly into the aquifer near Killdeer, North
30 Dakota. The EPA found that, based on the data analysis performed for the study, the only potential
31 source consistent with conditions observed in two impacted monitoring wells was the blowout that
32 occurred during hydraulic fracturing ([U.S. EPA, 2015j](#)). In other examples, inadequately cemented
33 casing has contributed to impacts to drinking water resources. In Bainbridge, Ohio, inadequately
34 cemented casing in a hydraulically fractured well contributed to the buildup of natural gas and high
35 pressures along the outside of a production well. This ultimately resulted in movement of natural
36 gas into local drinking water aquifers ([Bair et al., 2010](#); [ODNR, 2008](#)). In the Mamm Creek gas field

in Colorado, inadequate cement placement in a production well allowed methane and benzene to migrate along the production well and through natural faults and fractures to drinking water resources ([Science Based Solutions LLC, 2014](#); [Crescent, 2011](#); [COGCC, 2004](#)). These cases illustrate how construction issues, sustained casing pressure, and the presence of natural faults and fractures can work together to create pathways for fluids to migrate toward drinking water resources.

Fracturing older wells may also increase the potential for impacts to drinking water resources via movement of gases and liquids from the inside of the production well or along the outside of the production well to ground water resources. The EPA estimated that 6% of 23,000 oil and gas production wells were drilled more than 10 years before being hydraulically fractured in 2009 or 2010. Although new wells can be designed to withstand the stresses associated with hydraulic fracturing operations, older wells may not have been built or tested to the same specifications and their reuse for this purpose could be of concern. Moreover, aging and use of the well can contribute to casing degradation, which can be accelerated by exposure to corrosive chemicals, such as hydrogen sulfide, carbonic acid, and brines.

- ***Can subsurface migration of fluids—both liquids and gases—to drinking water resources occur, and what local geologic or artificial features might allow this?***

Physical separation between the production zone and drinking water resources can help protect drinking water. Many hydraulic fracturing operations target deep formations such as the Marcellus Shale or the Haynesville Shale (Louisiana/Texas), where the vertical distance between the base of drinking water resources and the top of the shale formation may be a mile or greater. Numerical modeling and microseismic studies based on a Marcellus Shale-like environment suggest that fractures created during hydraulic fracturing are unlikely to extend upward from these deep formations into shallow drinking water aquifers.

Not all hydraulic fracturing is performed in zones that are deep below drinking water resources. For example, operations in the Antrim Shale (Michigan) and the New Albany Shale (Illinois/Indiana/Kentucky) take place at shallower depths (100 to 1,900 ft or 30 to 579 m), with less vertical separation between the formation and drinking water resources. The EPA's survey of oil and gas production wells hydraulically fractured by nine service companies in 2009 and 2010 estimated that 20% of 23,000 wells had less than 2,000 ft (610 m) of measured distance between the point of shallowest hydraulic fracturing and the base of the protected ground water resources reported by well operators.

There are also places in the subsurface where oil and gas resources and drinking water resources co-exist in the same formation. Evidence indicates that hydraulic fracturing occurs within these formations. This results in the introduction of fracturing fluids into formations that may currently serve, or in the future could serve, as a source of drinking water for public or private use. According to the data examined, the overall frequency of occurrence of this practice appears to be low, with the activity generally concentrated in some areas in the western United States. The practice of injecting fracturing fluids into a formation that also contains a drinking water resource directly affects the quality of that water, since some of the fluid likely remains in the formation following hydraulic fracturing. Hydraulic fracturing in a drinking water resource is a concern in the short-

term (should there be people currently using these zones as a drinking water supply) and the long-term (if drought or other conditions necessitate the future use of these zones for drinking water).

Liquid and gas movement from the production zone to underground drinking water resources may also occur via other production wells or injection wells near hydraulic fracturing operations. Fractures created during hydraulic fracturing can intersect nearby wells or their fracture networks, resulting in the flow of fluids into those wells. These well communications, or “frac hits,” are more likely to occur if wells are close to each other or on the same well pad. In the Woodford Shale in Oklahoma, the likelihood of well communication was less than 10% between wells more than 4,000 ft (1,219 m) apart, but rose to nearly 50% between wells less than 1,000 ft (305 m) apart ([Ajani and Kelkar, 2012](#)). If an offset well is not able to withstand the stresses applied during the hydraulic fracturing of a neighboring well, well components may fail, which could result in a release of fluids at the surface from the offset well. The EPA identified incidents in which surface spills of hydraulic fracturing-related fluids were attributed to well communication events.

Older or inactive wells—including oil and gas wells, injection wells, or drinking water wells—near a hydraulic fracturing operation may pose an even greater potential for impacts. A study in Oklahoma found that older wells were more likely to be negatively affected by the stresses applied by hydraulic fracturing in neighboring wells ([Ajani and Kelkar, 2012](#)). In some cases, inactive wells in the vicinity of hydraulic fracturing activities may not have been plugged properly—many wells plugged before the 1950s were done so with little or no cement. The Interstate Oil and Gas Compact Commission estimates that over one million wells may have been drilled in the United States prior to a formal regulatory system being in place, and the status and location of many of these wells are unknown ([IOGCC, 2008](#)). State programs exist to plug identified inactive wells, and work is ongoing to identify and address such wells.

Flowback and Produced Water

Water, of variable quality, is a byproduct of oil and gas production. After hydraulic fracturing, the injection pressure is released and water flows back from the well. Initially this water is similar to the hydraulic fracturing fluid, but as time goes on the composition is affected by the characteristics of the formation and possible reactions between the formation and the fracturing fluid. Water initially produced from the well after hydraulic fracturing is sometimes called flowback in the literature, and the term appears in this assessment. However, hydraulic fracturing fluids and any formation water returning to the surface are often referred to collectively as produced water. This definition of produced water is used in this assessment.

The amount of produced water varies, but typically averages 10% to 25% of injected volumes, depending upon the amount of time since fracturing and the particular well (see Figure ES-3a). However, there are exceptions to this, such as in the Barnett Shale in Texas where the total volume of produced water can equal or exceed the injected volume of hydraulic fracturing fluid (see Figure ES-3b). Flow rates are generally high initially, and then decrease over time throughout oil or gas production.

Impacts on drinking water resources have the potential to occur if produced water is spilled and enters surface water or ground water. Environmental transport of chemical constituents in produced water depends on the characteristics of the spill (e.g., volume and duration), the composition of spilled fluids, and the characteristics of the surrounding environment.

Research Questions: Flowback and Produced Water

- What is currently known about the frequency, severity, and causes of spills of flowback and produced water?***

Surface spills of produced water from hydraulically fractured wells have occurred. As noted in the Chemical Mixing section above, the frequency of on-site spills from hydraulic fracturing activities could be estimated for two states, but not nationally. Estimates of spill frequencies at hydraulic fracturing sites in Colorado and Pennsylvania, including spills of produced water, ranged from approximately 0.4 to 12.2 spills per 100 wells. Available data generally precluded estimates of produced water spill rates separately from estimates of overall spill frequency. Away from the well, produced water spills from pipelines and truck transport also have the potential to impact drinking water resources.

The EPA characterized spill volumes and causes for 225 cases in which produced water spilled on or near a well pad. These spills occurred between January 2006 and April 2012 in 11 states. The median reported volume per produced water spill was 990 gallons (3,750 L), more than double that for spills of hydraulic fracturing fluids and chemicals. The causes of produced water spills were reported as human error, equipment failure, container integrity failure, miscellaneous causes (e.g., well communication), and unknown causes. Most of the total volume spilled (74%) for all 225 cases combined was caused by a failure of container integrity.

- What is the composition of hydraulic fracturing flowback and produced water, and what factors might influence this composition?***

A combination of factors influence the composition of produced water, including: the composition of injected hydraulic fracturing fluids, the type of formation fractured, subsurface processes, and residence time. The initial chemical composition of produced water primarily reflects the chemistry of the injected fluids. At later times, the chemical composition of produced water reflects the geochemistry of the fractured formation.

Produced water varies in quality from fresh to highly saline, and can contain high levels of major anions and cations, metals, organics, and naturally occurring radionuclides. Produced water from shale and tight gas formations typically contains high levels of total dissolved solids (TDS) and ionic constituents (e.g., bromide, calcium, chloride, iron, potassium, manganese, magnesium, and sodium). Produced water also may contain metals (e.g., barium, cadmium, chromium, lead, and mercury), and organic compounds such as benzene. Produced water from coalbed methane typically has much lower TDS levels compared to other produced water types, particularly if the coalbed was deposited under fresh water conditions..

We identified 134 chemicals that have been detected in hydraulic fracturing produced water. These include chemicals added during the chemical mixing stage, as well as naturally occurring organic chemicals and radionuclides, metals, and other constituents of subsurface rock formations mobilized by the hydraulic fracturing process. Data on measured chemical concentrations in produced water were available for 75 of these 134 chemicals.

Most of the available data on produced water content are for shale and coalbed methane formations, while less data are available for tight formations, such as sandstones. The composition of produced water must be determined through sampling and analysis, both of which have limitations—the former due to challenges in accessing production equipment, and the latter due to difficulties identifying target analytes before analysis and the lack of appropriate analytical methods. Most current data are for inorganic chemicals, while less data exist for organic chemicals. Many more organic chemicals were reported as used in hydraulic fracturing fluid than have been identified in produced water. The difference may be due to analytical limitations, limited study scopes, and undocumented subsurface reactions.

- What are the chemical, physical, and toxicological properties of hydraulic fracturing flowback and produced water constituents?***

The identified constituents of produced water include inorganic chemicals (cations and anions, i.e., metals, metalloids, non-metals, and radioactive materials), organic chemicals and compounds, and unidentified materials measured as total organic carbon and dissolved organic carbon. Some constituents are readily transported with water (i.e., chloride and bromide), while others depend strongly on the geochemical conditions in the receiving water body (i.e., radium and barium), and assessment of their transport is based on site-specific factors. We were able to obtain actual or estimated physicochemical properties for 86 (64%) of the 134 chemicals identified in produced water.

As in the case of chemicals in hydraulic fracturing fluid, chemical properties that affect the likelihood of an organic chemical in produced water reaching and impacting drinking water resources include: mobility, solubility, and volatility. In general, physicochemical properties suggest that organic chemicals in produced water tend to be less mobile in the environment. Consequently, if spilled, these chemicals may remain in soils or sediments near spill sites. Low mobility may result in smaller dissolved contaminant plumes in ground water, although these chemicals can be transported with sediments in surface water or small particles in ground water. Organic chemical properties vary with salinity, and effects depend on the nature of the chemical.

Oral reference values and/or oral slope factors from selected federal, state, and international sources were available for 83 (62%) of the 134 chemicals detected in produced water. From U.S. federal sources alone, chronic oral reference values were available for 70 (52%) of the 134 chemicals, and oral slope factors were available for 20 chemicals (15%). Of the chemicals that had values available, noted health effects include the potential for carcinogenesis, immune system effects, changes in body weight, changes in blood chemistry, pulmonary toxicity, neurotoxicity, liver and kidney toxicity, and reproductive and developmental toxicity. As noted above, evaluating any potential risk to human populations would require knowledge of the specific chemicals that are

present at a particular site, whether or not humans are exposed to those chemicals and, if so, at what levels and for what duration, and the toxicity of the chemicals. The chemicals present in produced water can vary based on the formation and specific well, due to differences in fracturing fluid formulation and formation geology. Accordingly, consideration of hazards and risks associated with these chemicals would be most useful on a site-specific basis and is beyond the scope of this assessment.

- If spills occur, how might hydraulic fracturing flowback and produced water contaminate drinking water resources?***

Impacts to drinking water resources from spills or releases of produced water depend on the volume, timing, and composition of the produced water. Impacts are more likely the greater the volume of the spill, the longer the duration of the release, and the higher the concentration of produced water constituents (i.e., salts, naturally occurring radioactive material, and metals).

The EPA characterization of hydraulic fracturing-related spills found that 8% of the 225 produced water spills included in the study reached surface water or ground water. These spills tended to be of greater volume than spills that did not reach a water body. A well blowout in Bradford County, Pennsylvania spilled an estimated 10,000 gal (38,000 L) of produced water into a tributary of Towanda Creek, a state-designated trout fishery. The largest volume spill identified in this assessment occurred in North Dakota, where approximately 2.9 million gal (11 million L) of produced water spilled from a broken pipeline and impacted surface and ground water.

Chronic releases can and do occur from produced water disposed in unlined pits or impoundments, and can have long-term impacts. Ground water impacts may persist longer than surface water impacts because of lower flow rates and decreased mixing. Plumes from unlined pits used for produced water have been shown to persist for long periods and extend to nearby surface water bodies.

Wastewater Management and Waste Disposal

Hydraulic fracturing generates large volumes of produced water that require management. In this section we refer to produced water and any other waters generated onsite by the single term “wastewater.” [Clark and Veil \(2009\)](#) estimated that, in 2007, approximately one million active oil and gas wells in the United States generated 2.4 billion gal per day (9.1 billion L per day) of wastewater. There is currently no reliable way to estimate what fraction of this total volume can be attributed to hydraulically fractured wells. Wastewater volumes in a region can increase sharply as hydraulic fracturing activity increases.

Wastewater management and disposal could affect drinking water resources through multiple mechanisms, including: inadequate treatment of wastewater prior to discharge to a receiving water, accidental releases during transport or leakage from wastewater storage pits, unpermitted discharges, migration of constituents in wastewaters following land application, inappropriate management of residual materials from treatment, or accumulation of wastewater constituents in sediments near outfalls of centralized waste treatment facilities (CWTs) or publicly owned treatment works (POTWs) that have treated hydraulic fracturing wastewater. The scope of this

assessment excludes potential impacts to drinking water from the disposal of hydraulic fracturing wastewater in underground injection control (UIC) wells.

Research Questions: Wastewater Management and Waste Disposal

- **What are the common treatment and disposal methods for hydraulic fracturing wastewater, and where are these methods practiced?**

Hydraulic fracturing wastewater is managed using several options, including: disposal in UIC wells (also called disposal wells); through evaporation ponds; treatment at CWTs, followed by reuse or by discharge to either surface waters or POTWs; reuse with minimal or no treatment; and land application or road spreading. Treatment of hydraulic fracturing wastewater by POTWs was used in the past in Pennsylvania. This decreased sharply following new state-level requirements and a request by the Pennsylvania Department of Environmental Protection (PA DEP) for well operators to stop sending Marcellus Shale wastewater to POTWs (and 15 CWTs) discharging to surface waters.

Wastewater management decisions are generally based on the availability and associated costs (including transportation) of disposal or treatment facilities. A survey of state agencies found that, in 2007, more than 98% of produced water from the oil and gas industry was managed via underground injection ([Clark and Veil, 2009](#)). Available information suggests that disposal wells are also the primary management practice for hydraulic fracturing wastewater in most regions in the United States (e.g., the Barnett Shale; see Figure ES-3b). The Marcellus Shale region is a notable exception, where most wastewater is reused because of the small number of disposal wells in Pennsylvania (see Figure ES-3a). Although this assessment does not address potential effects on drinking water resources from the use of disposal wells, any changes in cost of disposal or availability of disposal wells would likely influence wastewater management decisions.

Wastewater from some hydraulic fracturing operations is sent to CWTs, which may discharge treated wastewater to surface waters, POTWs, or back to well operators for reuse in other hydraulic fracturing operations. Available data indicate that the use of CWTs for treating hydraulic fracturing wastewater is greater in the Marcellus Shale region than other parts of the country. Most of the CWTs accepting hydraulic fracturing wastewater in Pennsylvania cannot significantly reduce TDS, and many of these facilities provide treated wastewater to well operators for reuse and do not currently discharge treated wastewater to surface water.

Reuse of wastewater for subsequent hydraulic fracturing operations may require no treatment, minimal treatment, or more extensive treatment. Operators reuse a substantial amount (ca. 70-90%) of Marcellus Shale wastewater in Pennsylvania (see Figure ES-3a). Lesser amounts of reuse occur in other areas (e.g., the Barnett Shale; see Figure ES-3b). In certain formations, such as the Bakken Shale in North Dakota, there is currently no indication of appreciable reuse.

In some cases, wastewater is used for land applications such as irrigation or road spreading for deicing or dust suppression. Land application has the potential to introduce wastewater constituents into surface water and ground water due to runoff and migration of brines. Studies of

road spreading of conventional oil and gas brines have found elevated levels of metals in soils and chloride in ground water.

- How effective are conventional POTWs and commercial treatment systems in removing organic and inorganic contaminants of concern in hydraulic fracturing wastewater?***

Publicly owned treatment works using basic treatment processes are not designed to effectively reduce TDS concentrations in highly saline hydraulic fracturing wastewater—although specific constituents or constituents groups can be removed (e.g., metals, oil, and grease by chemical precipitation or other processes). In some cases, wastewater treated at CWTs may be sent to a POTW for additional treatment and discharge. It is blended with POTW influent to prevent detrimental effects on biological processes in the POTW that aid in the treatment of wastewater.

Centralized waste treatment facilities with advanced wastewater treatment options such as reverse osmosis, thermal distillation, or mechanical vapor recompression, reduce TDS concentrations and can treat contaminants currently known to be in hydraulic fracturing wastewater. However, there are limited data on the composition of hydraulic fracturing wastewater, particularly for organic constituents. It is unknown whether advanced treatment systems are effective at removing constituents that are generally not tested for.

- What are the potential impacts from surface water disposal of treated hydraulic fracturing wastewater on drinking water treatment facilities?***

Potential impacts to drinking water resources may occur if hydraulic fracturing wastewater is inadequately treated and discharged to surface water. Inadequately treated hydraulic fracturing wastewater may increase concentrations of TDS, bromide, chloride, and iodide in receiving waters. In particular, bromide and iodide are precursors of disinfection byproducts (DBPs) that can form in the presence of organic carbon in drinking water treatment plants or wastewater treatment plants. Drinking water treatment plants are required to monitor for certain types of DBPs, because some are toxic and can cause cancer.

Radionuclides can also be found in inadequately treated hydraulic fracturing wastewater from certain shales, such as the Marcellus. A recent study by the [PA DEP \(2015b\)](#) found elevated radium concentrations in the tens to thousands of picocuries per liter and gross alpha and gross beta in the hundreds to thousands of picocuries per liter in effluent samples from some CWTs receiving oil and gas wastewater. Radium, gross alpha, and gross beta were also detected in effluents from POTWs receiving oil and gas wastewater (mainly as effluent from CWTs), though at lower concentrations than from the CWTs. Research in Pennsylvania also indicates the accumulation of radium in sediments and soils affected by the outfalls of some treatment plants that have handled oil and gas wastewater, including Marcellus Shale wastewater, and other wastewaters ([PA DEP, 2015b](#); [Warner et al., 2013a](#)). Mobilization of radium from sediments and potential impacts on downstream water quality depend upon how strongly the radium has sorbed to sediments. Impacts may also occur if sediment is resuspended (e.g., following storm events). There is no evidence of radionuclide contamination in drinking water intakes due to inadequately treated hydraulic fracturing wastewater.

Hydraulic fracturing wastewaters contain other constituents such as barium, boron, and heavy metals. Barium in particular has been documented in some shale gas produced waters. Little data exist on metal and organic compound concentrations in untreated and treated wastewaters in order to evaluate whether treatment is effective, and whether there are potential downstream effects on drinking water resources when wastewater is treated and discharged.

Key Data Limitations and Uncertainties

This assessment used available data and literature to examine the potential impacts of hydraulic fracturing from oil and gas on drinking water resources nationally. As part of this effort, we identified data limitations and uncertainties associated with current information on hydraulic fracturing and its potential to affect drinking water resources. In particular, data limitations preclude a determination of the frequency of impacts with any certainty. These limitations and uncertainties are discussed in brief below.

Limitations in Monitoring Data and Chemical Information

While many activities conducted as part of the hydraulic fracturing water cycle take place above ground, hydraulic fracturing itself occurs below ground and is not directly observable. Additionally, potential mechanisms identified in this assessment may result in impacts to drinking water resources that are below ground (e.g., spilled fluids leaching into ground water). Data that could be used to characterize the presence, migration, or transformation of chemicals in the subsurface before, during, and after hydraulic fracturing were found to be scarce relative to the number of hydraulically fractured oil and gas production wells. Specifically, local water quality data needed to compare pre- and post-hydraulic fracturing conditions are not consistently collected or readily available. The limited amount of data collected before and during hydraulic fracturing activities reduces the ability to determine whether hydraulic fracturing affected drinking water resources in cases of alleged contamination.

Information (identity, frequency of use, physicochemical and toxicological properties, etc.) on the chemicals associated with the hydraulic fracturing water cycle is not complete and limits understanding of potential impacts on drinking water resources. Well operators claimed at least one chemical as confidential at more than 70% of wells reported to FracFocus and analyzed by the EPA. The identity of these chemicals, and other chemicals in produced water, are needed to understand their properties and would also help inform what chemicals to test for to establish baseline conditions and to test for in the event of a suspected drinking water impact. Of the 1,173 total chemicals identified by the EPA in hydraulic fracturing fluid and flowback and produced water, 147 have chronic oral reference values and/or oral slope factors from the sources that met the selection criteria for inclusion in this assessment. Because the majority of chemicals identified in this report do not have chronic oral reference values and/or oral slope factors, risk assessors at the local and regional level may need to use alternative sources of toxicity information that could introduce greater uncertainties.

Other Contributing Limitations

We found other limitations that hamper the ability to fully assess the potential impacts of hydraulic fracturing on drinking water resources nationally. These include the number and location of hydraulically fractured wells, the location of drinking water resources, and information on changes in industry practices. The lack of a definitive well count particularly contributes to uncertainties regarding total water use or total wastewater volume estimates, and would limit any kind of cumulative impact assessment. Lack of specific information about private drinking water well locations and the depths of drinking water resources in relation to hydraulically fractured rock formations and well construction features (e.g., casing and cement) limits the ability to assess whether subsurface drinking water resources are isolated from hydraulically fractured oil and gas production wells. Finally, this assessment is a snapshot in time, and the industry is rapidly changing (e.g., the number of wells fractured, the location of activities, and the chemicals used). It is unclear how changes in industry practices could affect potential drinking water impacts in the future. Consideration of future development scenarios was not a part of this assessment, but such an evaluation could help establish potential short- and long-term impacts to drinking water resources and how to assess them.

Conclusions

Through this national-level assessment, we have identified potential mechanisms by which hydraulic fracturing could affect drinking water resources. Above ground mechanisms can affect surface and ground water resources and include water withdrawals at times or in locations of low water availability, spills of hydraulic fracturing fluid and chemicals or produced water, and inadequate treatment and discharge of hydraulic fracturing wastewater. Below ground mechanisms include movement of liquids and gases via the production well into underground drinking water resources and movement of liquids and gases from the fracture zone to these resources via pathways in subsurface rock formations.

We did not find evidence that these mechanisms have led to widespread, systemic impacts on drinking water resources in the United States. Of the potential mechanisms identified in this report, we found specific instances where one or more of these mechanisms led to impacts on drinking water resources, including contamination of drinking water wells. The cases occurred during both routine activities and accidents and have resulted in impacts to surface or ground water. Spills of hydraulic fracturing fluid and produced water in certain cases have reached drinking water resources, both surface and ground water. Discharge of treated hydraulic fracturing wastewater has increased contaminant concentrations in receiving surface waters. Below ground movement of fluids, including gas, most likely via the production well, have contaminated drinking water resources. In some cases, hydraulic fracturing fluids have also been directly injected into drinking water resources, as defined in this assessment, to produce oil or gas that co-exists in those formations.

The number of identified cases where drinking water resources were impacted are small relative to the number of hydraulically fractured wells. This could reflect a rarity of effects on drinking water

resources, or may be an underestimate as a result of several factors. There is insufficient pre- and post-hydraulic fracturing data on the quality of drinking water resources. This inhibits a determination of the frequency of impacts. Other limiting factors include the presence of other causes of contamination, the short duration of existing studies, and inaccessible information related to hydraulic fracturing activities.

This state-of-the-science assessment contributes to the understanding of the potential impacts of hydraulic fracturing on drinking water resources and the factors that may influence those impacts. The findings in this assessment can be used by federal, state, tribal, and local officials; industry; and the public to better understand and address any vulnerabilities of drinking water resources to hydraulic fracturing activities. This assessment can also be used to help facilitate and inform dialogue among interested stakeholders, and support future efforts, including: providing context to site-specific exposure or risk assessments, local and regional public health assessments, and assessments of cumulative impacts of hydraulic fracturing on drinking water resources over time or over defined geographic areas of interest. Finally, and most importantly, this assessment advances the scientific basis for decisions by federal, state, tribal, and local officials, industry, and the public, on how best to protect drinking water resources now and in the future.

References for Executive Summary

- Ajani, A; Kelkar, M. (2012). Interference study in shale plays. Paper presented at SPE Hydraulic Fracturing Technology Conference, February 6-8, 2012, The Woodlands, TX.
- Bair, ES; Freeman, DC; Senko, JM. (2010). Subsurface gas invasion Bainbridge Township, Geauga County, Ohio. (Expert Panel Technical Report). Columbus, OH: Ohio Department of Natural Resources. <http://oilandgas.ohiodnr.gov/resources/investigations-reports-violations-reforms#THR>
- Clark, CE; Veil, JA. (2009). Produced water volumes and management practices in the United States (pp. 64). (ANL/EVS/R-09/1). Argonne, IL: Argonne National Laboratory. [http://www.circleofblue.org/waternews/wp-content/uploads/2010/09/ANL EVS R09 produced water volume report 2437.pdf](http://www.circleofblue.org/waternews/wp-content/uploads/2010/09/ANL_EVS_R09_produced_water_volume_report_2437.pdf)
- COGCC. Colorado Oil and Gas Conservation Commission Order No. 1V-276. (2004). <https://cogcc.state.co.us/orders/orders/1v/276.html>
- Crescent (Crescent Consulting, LLC). (2011). East Mamm creek project drilling and cementing study. Oklahoma City, OK. <http://cogcc.state.co.us/Library/PiceanceBasin/EastMammCreek/ReportFinal.pdf>
- EIA (Energy Information Administration). (2015a). Glossary. Available online at <http://www.eia.gov/tools/glossary/>
- IOGCC (Interstate Oil and Gas Compact Commission). (2008). Protecting our country's resources: The states' case, orphaned well plugging initiative. Oklahoma City, OK: Interstate Oil and Gas Compact Commission (IOGCC). <http://iogcc.myshopify.com/products/protecting-our-countrys-resources-the-states-case-orphaned-well-plugging-initiative-2008>
- Maupin, MA; Kenny, JF; Hutson, SS; Lovelace, JK; Barber, NL; Linsey, KS. (2014). Estimated use of water in the United States in 2010. (USGS Circular 1405). Reston, VA: U.S. Geological Survey. <http://dx.doi.org/10.3133/cir1405>
- Michie, TW; Koch, CA. (1991). Evaluation of injection-well risk management in the Williston Basin. J Pet Tech 43: 737-741. <http://dx.doi.org/10.2118/20693-PA>

- [Newell, R.](#) (2011). Shale gas and the outlook for U.S. natural gas markets and global gas resources. Presentation presented at US EIA presentation at OECD Meetings, June 21, 2011, Paris, France.
- [ODNR, DMRM.](#) (Ohio Department of Natural Resources, Division of Mineral Resources Management). (2008). Report on the investigation of the natural gas invasion of aquifers in Bainbridge Township of Geauga County, Ohio. Columbus, OH: ODNR.
<http://oilandgas.ohiodnr.gov/portals/oilgas/pdf/bainbridge/report.pdf>
- [PA DEP](#) (Pennsylvania Department of Environmental Protection). (2015b). Technologically enhanced naturally occurring radioactive materials (TENORM) study report. Harrisburg, PA.
<http://www.elibrary.dep.state.pa.us/dsweb/Get/Document-105822/PA-DEP-TENORM-Study-Report-Rev.0-01-15-2015.pdf>
- [Papoulias, DM; Velasco, AL.](#) (2013). Histopathological analysis of fish from Acorn Fork Creek, Kentucky, exposed to hydraulic fracturing fluid releases. *Southeastern Naturalist* 12: 92-111.
- [Scanlon, BR; Reedy, RC; Nicot, JP.](#) (2014). Will water scarcity in semiarid regions limit hydraulic fracturing of shale plays? *Environmental Research Letters* 9. <http://dx.doi.org/10.1088/1748-9326/9/12/124011>
- [Science Based Solutions LLC.](#) (2014). Summary of hydrogeology investigations in the Mamm Creek field area, Garfield County. Laramie, Wyoming. <http://www.garfield-county.com/oil-gas/documents/Summary-Hydrogeologic-Studies-Mamm%20Creek-Area-Feb-10-2014.pdf>
- [U.S. EPA](#) (U.S. Environmental Protection Agency). (2015j). Retrospective case study in Killdeer, North Dakota: study of the potential impacts of hydraulic fracturing on drinking water resources [EPA Report]. (EPA 600/R-14/103). Washington, D.C.
- [USGS](#) (U.S. Geological Survey). (2002). Natural gas production in the United States [Fact Sheet]. (USGS Fact Sheet FS-113-01). Denver, CO.
- [Vengosh, A; Jackson, RB; Warner, N; Darrah, TH; Kondash, A.](#) (2014). A critical review of the risks to water resources from unconventional shale gas development and hydraulic fracturing in the United States. *Environ Sci Technol* 48: 36-52. <http://dx.doi.org/10.1021/es405118y>
- [Warner, NR; Christie, CA; Jackson, RB; Vengosh, A.](#) (2013a). Impacts of shale gas wastewater disposal on water quality in western Pennsylvania. *Environ Sci Technol* 47: 11849-11857.
<http://dx.doi.org/10.1021/es402165b>

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Tab R – U.S. Forest Service (USFS) Best
Management Practices Program /
USFS National Groundwater
Overview



Overview of the Forest Service National Best Management Practices Monitoring Program

In the mid-2000s, the Forest Service (FS) committed to the Office of Management and Budget and the Environmental Protection Agency to put a system of national best management practices (BMPs) in place to improve consistency, comparability, and accountability. The National BMP Program was developed in response to this commitment and consists of four main components: 1) the National Core BMP Technical Guide (Vol. 1, FS-990a, April 2012); 2) the National Core BMP Monitoring Technical Guide (Vol. 2, FS-990b, in prep); 3) revised national direction; and 4) a national data management and reporting system. The FS initiated implementation of the National BMP Program through a letter from the National Forest System (NFS) Deputy Chief in 2012 to advance the Agency's compliance with the management of nonpoint source pollution and address the 2012 planning rule requirement for national BMPs (36 CFR 219.8(a)(4)). The National BMP Program helps fulfill Agency requirements associated with the federal Clean Water Act (CWA) and state water quality programs and allows the Agency to demonstrate improvements in performance and accountability at multiple scales.

The National Core BMPs (Technical Guide, Volume 1) integrate local, state, regional, tribal, and industry BMP prescriptions under one umbrella to facilitate an agencywide BMP monitoring program. The National Core BMPs are general and non-prescriptive for the broad range of activities that occur on NFS lands. The National Core BMPs require the use or development of site-specific BMP prescriptions for projects or activities based on local site conditions and requirements to achieve compliance with established state, tribal, or national water quality goals. These prescriptions are based on existing state BMPs, regional Forest Service guidance, land management plan standards and guidelines, BMP monitoring information, and professional judgment. Standardization improves consistency and efficiency, ensures that Forest Service resource professionals use best available science to develop site-specific BMP prescriptions, and ultimately improves water quality on NFS lands.

The National Core BMP Monitoring Protocols (Draft Technical Guide, Volume 2) are designed to evaluate BMP implementation and effectiveness during land and resource management activities on national forests and grasslands. The protocols are written to evaluate BMP performance by assessing the outcomes of BMP implementation, such as determining if sediment was delivered to a waterbody, regardless of the site-specific BMP prescription used. Implementation monitoring is a two-step process involving a review of project documents to determine what site-specific BMP prescriptions were intended for the project or activity followed by a field review process to assess how well the prescribed BMPs were applied. The implementation evaluation is designed to answer the question: "Did we do what we said we were going to do?" The effectiveness monitoring is a field review process to assess evidence of sediment or other pollutants leaving the project or activity area and entering the aquatic management zone (AMZ) or nearby waterbody. The effectiveness evaluation is designed to answer the question: "Were the site-specific BMP prescriptions, as implemented, effective at protecting water quality?"

National BMP Monitoring has been implemented on nearly all national forests and grasslands over the last three years (FY13-15). Information gained from National BMP monitoring will be used to improve the National Core BMPs, selection of site-specific BMP prescriptions, and land and resource management activities through a process of identifying corrective actions and applying adaptive management principles.

The amended internal agency directives will revise direction for BMPs for water quality protection on National Forest System (NFS) lands. Specifically, the proposed amendments would modify existing direction to formally establish a national system of BMPs and associated monitoring protocols and require their use on NFS lands to meet Agency mandates to protect water quality from adverse effects of land and resource management activities.

Contact: Robert Harper, Director Watershed, Fish, Wildlife, Air and Rare Plants Staff, 202-205-1671.



Overview and Status of the Forest Service Groundwater Program

On May 6, 2014, the Forest Service published the proposed national groundwater directive for public comment and initiated tribal consultation. The comment period was extended twice to allow all interested parties to provide comment and closed on October 3, 2014, after 150 days. Though the directive was welcomed by some states and tribes and many in the conservation community, the intent, purpose, and content of the proposed directive was misinterpreted by a number of states and other stakeholders. In addition, many groups linked the proposed directive to other federal regulatory efforts around water. In an effort to create the opportunity to be able to continue important conversations with states, tribes, and others, with a clean slate, on June 19, 2015, the Forest Service formally withdrew the May 2014 proposed groundwater directive.

All of the efforts of the Forest Service regarding stewardship of water resources are carried out to help ensure that abundant clean water is available for the public's use and enjoyment. The Forest Service recognizes that many of its activities and the activities of its authorization holders have the potential to affect groundwater critical to maintaining healthy watersheds and abundant clean water. Under existing law, the Forest Service must evaluate and disclose the potential for these activities to affect water resources, including groundwater, prior to making a decision to implement or authorize them. As a part of its decision, the Agency must include mitigation measures and/or terms and conditions to agreements, contracts, and authorizations to appropriately protect those resources. The May 2014 proposed groundwater directive was intended to prevent, when possible, contamination or impact to groundwater, improve environmental analyses and decision making, reduce uncertainty and cost associated with litigation, increase efficient use and conservation of groundwater, and help focus inventory and monitoring activities. The withdrawal of the May 2014 proposal does not change the original need for direction to the field on stewardship of groundwater resources. The Agency will continue to make decisions about its activities and those of others on the national forests and grasslands that could affect groundwater resources without an established framework for some time to come. Hopefully, through continued dialogue with stakeholders, a new directive can be proposed in the near future that can meet the Agency's needs and address the concerns raised about the 2014 proposal.

The Forest Service appreciates the efforts of the Council to engage in discussions around the proposed directive. We felt those discussions were very productive and provided some opportunity to identify a path forward to a new directive. We also believe that the concept of new or enhanced agreements between the Agency and the state water agencies would be beneficial to explore further, perhaps through the development of a template with the Council that could be adjusted to meet the specific needs of each state. We look forward to finding opportunities to move forward on these efforts in the near future.

The Forest Service is continuing to work to better address its stewardship responsibilities for groundwater resources on National Forest System lands. As a part of that work, we have developed a new internal technical guide on groundwater inventory, monitoring, and assessment. That technical guide is in the final stages of editing. We will be sharing the final draft with Council staff in the near future to get their perspective.

Contacts: Robert Harper, Director, Watershed, Fish, Wildlife, Air and Rare Plants Staff, 202-205-1671
Nicholas Douglas, Director, Minerals and Geology Management, 703-605-4545

Notices

Federal Register

Vol. 80, No. 118

Friday, June 19, 2015

This section of the FEDERAL REGISTER contains documents other than rules or proposed rules that are applicable to the public. Notices of hearings and investigations, committee meetings, agency decisions and rulings, delegations of authority, filing of petitions and applications and agency statements of organization and functions are examples of documents appearing in this section.

DEPARTMENT OF AGRICULTURE

Forest Service

RIN 0596-AC51

Proposed Directive on Groundwater Resource Management, Forest Service Manual 2560

AGENCY: Forest Service, USDA.

ACTION: Notice of withdrawal of proposed directive.

SUMMARY: On May 7, 2014, the Forest Service published an action proposing to amend its internal agency directives for the National Forest System (NFS), Watershed and Air Management to establish direction for management of groundwater resources on NFS lands (79 FR 25815). The proposed amendment was intended to provide internal agency direction on the consideration of groundwater resources in Agency activities, approvals, and authorizations; encourage source water protection and water conservation; establish systematic procedures for reviewing new proposals for groundwater withdrawals on NFS lands; and require the evaluation of potential impacts from groundwater withdrawals on public resources on NFS lands. That notice invited public comment on the proposal.

DATES: Not applicable.

ADDRESSES: No further comments will be accepted on this proposal.

FOR FURTHER INFORMATION CONTACT: Robert Harper, Director, Watershed, Fish, Wildlife, Air and Rare Plants Staff, (202) 205-1671.

SUPPLEMENTARY INFORMATION: The Agency has determined that its proposal does not adequately meet its needs. Therefore, the Agency hereby withdraws the proposal to amend its internal Agency directives for Watershed and Air Management to establish direction for management of groundwater resources on National Forest System lands and will engage in

a public conversation to develop revised proposed directives.

The response to the proposal from conservation organizations and Tribes was generally favorable; however, States and a number of other organizations raised concerns that the proposed directive would exceed the Agency's authorities and infringe on State authorities to allocate water. The proposed directives did not, and any future actions will not, infringe on State authority, impose requirements on private landowners, or change the long-standing relationship between the Forest Service, States, and Tribes on water.

The intent of any new groundwater proposed directive or next steps would be to establish a clearer and more consistent approach to evaluating and monitoring the effects of actions on groundwater resources of the National Forest System. It is clear the Agency must have further discussions with key publics on this issue. The decision to withdraw the May 2014 groundwater proposed directives will allow these conversations to take place. The Forest Service will use the additional input received from engagements with States and other citizen groups to develop new proposed directives to create a consistent approach to evaluating and monitoring effects to groundwater resulting from actions on NFS lands.

Dated: June 15, 2015.

Thomas L. Tidwell,
Chief, Forest Service.

[FR Doc. 2015-15151 Filed 6-18-15; 8:45 am]

BILLING CODE 3411-15-P

DEPARTMENT OF AGRICULTURE

Rural Business-Cooperative Service

Notice of Funds Availability (NOFA) for the Rural Microentrepreneur Assistance Program for Fiscal Year 2015

AGENCY: Rural Business-Cooperative Service, USDA.

ACTION: Notice.

SUMMARY: This Notice is to invite applications for loans and grants under the Rural Microentrepreneur Assistance Program (RMAP) pursuant to 7 CFR part 4280, subpart D, for fiscal year (FY) 2015. Funding to support \$14.190 million in loans and \$2.086 million in

grants is currently available. The RMAP funds were provided through the Agricultural Act of 2014, Public Law 113-79, on February 7, 2014 (2014 Farm Bill). RMAP provides the following types of support: loan only, combination loan and technical assistance grant, and subsequent technical assistance grants to Microenterprise Development Organizations (MDO).

All applicants are responsible for any expenses incurred in developing their applications or costs incurred prior to the obligation date.

DATES: Applicants may apply during a Federal fiscal quarter to be considered for the next quarter's funding. Complete applications for loan only, and combination loan and grant, must be received in the U.S. Department of Agriculture (USDA) Rural Development State Offices no later than 4:30 p.m. (local time) on the last day prior to the beginning of each Federal fiscal quarter to be considered for funding. Applications received after a Federal fiscal quarter deadline will be reviewed and evaluated for funding in the next Federal fiscal quarter. Applications that have not competed for four consecutive quarters, depending on funding availability, may be considered in FY 2016.

The subsequent microlender technical assistance grant (existing MDOs with a microentrepreneur revolving loan fund) will be made, non-competitively, based on the microlender's microlending activity and availability of funds. To determine the microlender technical assistance grant awards for FY 2015, the Agency will use the microlender's outstanding balance of microloans as of June 30, 2015, to calculate this amount. MDOs that are eligible for an annual grant may apply.

ADDRESSES: Applications and forms may be obtained from any Rural Development State Office or online at <http://www.rd.usda.gov/programs-services/rural-microentrepreneur-assistance-program>. Applicants must submit an original complete application to the USDA Rural Development State Office in the State where the applicant's headquarters is located. A list of the USDA Rural Development State Offices addresses and telephone numbers can be found online at <http://www.rurdev.usda.gov/StateOfficeAddresses.html>.

Tab S – Water Quality / Water Quantity Nexus Workshop

WSWC Water Quality/Water Quantity Nexus Workshop
Manhattan, Kansas
October 6-7, 2015

Draft Agenda Notes

2015-2016 Proposed Work Plan

In conjunction with the Water Resources and Legal Committees, the Committee will hold an invitation only workshop to bring together state experts and other relevant stakeholders to discuss the interaction between water quality and quantity. The workshop will take place in conjunction with the WSWC's 2015 fall meetings in Manhattan, Kansas on October 7-9, and will produce findings and policy options for the WSWC to consider as it supports WGA Resolution #2015-08.¹

Ideally, the workshop will provide further insight on: (1) how state water quantity and quality regulations interact with each other; (2) how states can protect water quality within the existing framework of the prior appropriation doctrine; and (3) the proper relationship between federal environmental protections and the states' primary and exclusive authority over the allocation of water resources. Under the WSWC's direction, WSWC staff will prepare a summary of the meeting.

Walt Baker Proposed Topics

1. I like the report-out by states *[see item 1.a. below from 1997 Workshop topics]* on the nature of their water quantity/quality interaction. Specifically I believe it would be interesting to learn of the constraints and enablers that govern this interaction.
2. A discussion of 401 certifications, water quality standards, reuse, designated uses and anti-degradation reviews will be important touchstones for the water quantity folks to hear. Conversely, the water quality folks should hear from the water quantity folks about the doctrine of prior appropriation, beneficial uses, return flows, and change applications.
3. Data management is a key overlap and I believe there is a great opportunity for synergy in that area. A good example is how the water quality and quantity folks from Utah, Idaho and Wyoming are working together to gather data on the Bear River.
4. A discussion about how the states deal with instream flows would be interesting.
5. A discussion of how (or even if) the new WOTUS will affect how the water quality folks conduct business and any impact this may have on water quantity matters.
6. A discussion of how controlling NPS pollution may affect water rights may be appropriate.

¹ Paragraph (B)(3) of WGA Resolution #2015-08 states: "Western Governors believe effective solutions to water resource challenges require an integrated approach among states and with federal, tribal and local partners. Federal investments should assist states in implementing state water plans designed to provide water for municipal, rural, agricultural, industrial and habitat needs, and should provide financial and technical support for development of watershed and river basin water management plans when requested by states. Integrated water management planning should also account for flood control, water quality protection, and regional water supply systems. Water resource planning must occur within a framework that preserves states' authority to manage water through policies which recognize state law and the financial, environmental and social values of the water resource to citizens of the western states today and in the future." (emphasis added)

Other Potential Topics (1997 Workshop)

- I. **State Regulations: intersection of water quantity and water quality regulations**
 - a. Report on each state's quantity/quality laws (merger, conflict) – case study/practical example
 - b. Multiple state departments/agencies vs. one, communication and coordination
 - c. Viewing quantity and quality holistically or as separate issues
 - d. Hydraulic fracturing, reuse/storage injection wells, water quality of deep wells
 - e. Environmental vs. Water Rights complaints/litigation
 - f. Other resource considerations: funding, personnel, backlog, institutional memory
 - g. Emergency suspension of water use to protect quality
 - h. Conjunctive surface/groundwater use, coordinated substitute supply
 - i. Growth management and planning
 - j. Data collection, modeling, decision making
 - k. Initiatives/Incentives, results

- II. **Prior Appropriation Doctrine: protecting water quality within the prior appropriation framework**
 - a. Beneficial use and public interest/public trust considerations
 - b. Private rights/public goods
 - c. Instream flows and senior water rights
 - d. Irrigation/stock watering and return flows
 - e. Change in use/location permits, transfers, evaluation of impact on water quality
 - f. Fully appropriated streams/basins
 - g. One water user's pollution loss is another water user's nutrient gain

Adam Schempp, director of ELI's Western Water Program, is willing to attend and discuss his report, "At the Confluence of the Clean Water Act and Prior Appropriation"

- III. **State Primacy and Federal Regulations: relationship between federal environmental protections and states' primary and exclusive authority over the allocation of water resources**
 - a. Clean Water Act
 - i. Water quality standards, point sources, TMDLs, wetland protection
 - ii. Waters of the United States – limits of jurisdiction, uncertainty for quality/quantity
 - iii. Wallop amendment (CWA not to interfere with state allocations of water), court interpretation (goal vs. operative amendment)
 - b. Drinking Water Act, Clean Air Act, FERC, Endangered Species Act
 - c. Federal Agency Coordination/Conflict
 - d. Impact of "red tape" on quality/quantity
 - e. Balancing water uses in the stream vs. water out of the stream (state-designated uses of water and the criteria to protect the designated use) (Washington Tacoma case)
 - f. Dilution of pollution, water treatment
 - g. Protecting watersheds and aquifer recharge, water-rock interaction in aquifer
 - h. Quality issues vs. Flow issues (e.g., salinity and low seasonal flow; large run-off events and temporary mine pollution; drought and flood) ("minimum flows to meet CWA objectives") (higher volume for more out-of-stream users = poorer quality water in arid states?)
 - i. Water quality/quantity concerns of downstream users across state/tribal boundaries
 - j. Quantifying "historic" uses and water quality
 - k. Need for flexibility with changing circumstances
 - l. Regulatory takings

Hard Rock Mine Remediation
Good Samaritan Workshop
October 6, 2015?

Draft Agenda Notes

2015-2016 Work Plan

The Committee will coordinate with the WGA and encourage efforts to clean up abandoned hardrock mines, including but not limited to enactment of Good Samaritan legislation and efforts to support utilization of EPA's 2012 memorandum. As part of this effort, the Committee will work with key Congressional members/staff, Administration officials, and other stakeholders to develop and support efforts to clean up abandoned hardrock mines in accordance with the WGA's policies, including the possible development of a workgroup and/or workshop to bring together interested stakeholders to identify ways to facilitate abandoned hardrock mine remediation.

In addition to the above actions, the Committee will: (1) work with the Administration and Congress to provide liability protections to Good Samaritans under existing authorities; and (2) evaluate the prospects for Good Samaritan legislation.

Proposed Workshop Objectives

- (1) Meet the key stakeholders in person to create positive working relationships
- (2) Provide some orientation/historical context to make sure we are all on the same page
- (3) Bring everyone up to speed on the current state of the law, the abandoned mines, related water quality issues, and efforts hindered/helped by current laws
- (4) Have a brainstorming session to discuss key interests and sticking points
- (5) Set a plan for working together toward common goals, particularly legislation language that would work for the interested parties.

Tab T – Indian Water Rights Settlement Symposium

Western States Water Council & Native American Rights Fund

SYMPOSIUM ON THE SETTLEMENT OF INDIAN RESERVED WATER RIGHTS CLAIMS

**August 25-27, 2015
Peppermill Hotel and Casino
Reno, Nevada**

The Western States Water Council and Native American Rights Fund will cosponsor a Symposium on the settlement of Indian reserved water rights claims on August 25-27, 2015. The meetings will be held at the Peppermill Hotel and Casino in Reno, Nevada. A number of topics will be addressed by experts and participants regarding completed and ongoing negotiated settlements.

We expect another excellent conference. Successful symposia have been held since 1991. The primary meeting format consists of panel discussions with presenters who have been involved in negotiated settlements representing tribal, state, local, and federal governments, interest groups, congressional staff, and others. The meeting schedule provides opportunities for informal interchange and cultural enlightenment. Participant feedback from the meetings has been very positive. Continuing Legal Education Credit will be available for lawyers who attend.

For more information as it becomes available, see our websites at:
<http://www.westernstateswater.org> and <http://narf.org/water/>.

Sponsors are welcome and encouraged to contact Tony Willardson, WSWC Executive Director.



Western States Water Council

5296 Commerce Drive, Suite 202
Murray, UT 84107

Phone (801) 685-2555
www.westernstateswater.org

**SYMPOSIUM
ON THE
SETTLEMENT OF INDIAN RESERVED WATER RIGHTS CLAIMS
AGENDA**

MONDAY, AUGUST 24, 2015

5:00 – Early Registration
7:00 pm

TUESDAY, AUGUST 25, 2015

7:00 am Registration

8:30 am ***Introductory Remarks***

John Echohawk, Executive Director, Native American Rights Fund
Tony Willardson, Executive Director, Western States Water Council

Invocation – by invitation

9:00 am **WELCOME & REMARKS**

Congressman Mark Amodei (invited)

9:30 am **KEYNOTE ADDRESS**

Stephen Roe Lewis, Governor, Gila River Indian Community

10:00 am Break

NEGOTIATION OF INDIAN WATER RIGHTS CLAIMS: THE BASICS

10:30 am **Gathering Background Information and the Role of Technicians in Negotiations**

MODERATOR – WSWC Member

Oregon (proposed)

Blackfeet Tribe (proposed)

Doug Oellermann, Native American Affairs, Bureau of Reclamation

Noon Lunch Break (on your own)

1:30 pm **Identifying Parties and Issues and How Negotiations Bind Larger Groups**

MODERATOR – Cindy Chandley

Clive Strong, Natural Resources Division Chief, Idaho Attorney General's Office

Clayton Matt, Confederated Salish and Kootenai Tribes of the Flathead Reservation

John Bezdek, Office of the Solicitor, Department of Interior

John Weldon, Partner, Salmon, Lewis & Weldon, PLC

3:00 pm Break

3:30 pm **SECURING FUNDING FOR SETTLEMENTS**

MODERATOR – Ryan Smith, Shareholder, Brownstein Hyatt Farber Schreck, LLP
Sandra Fabritz-Whitney, Director of Water Strategy, Freeport McMoRan Copper & Gold, Inc.
Mary Pavel, Sonosky, Chambers, Sachse, Enderson & Perry
Bob Wolf, Director, Program and Budget, Bureau of Reclamation
Melanie Stansbury, Minority Staff, Senate Energy and Natural Resources (invited)

5:00 pm Adjourn

6:00 pm Reception

WEDNESDAY, AUGUST 26, 2015

8:30 am **WELCOME & REMARKS**
Nevada Governor Brian Sandoval (invited)

PRESENTATION
Jodi Gillette, Sonosky, Chambers, Sachse, Enderson & Perry (invited)

THE ADMINISTRATION’S SETTLEMENT POLICY

9:15 am **Presentation**
Mike Connor, Deputy Secretary, Department of Interior (invited)
Letty Belin, Senior Counselor to the Deputy Secretary, Department of Interior (invited)
Pamela Williams, Indian Water Rights Office

10:45 am Break

11:00 am **Response Panel**
MODERATOR – Michael Bogert
Arianne Singer, Deputy General Counsel, New Mexico Office of State Engineer
Neil Beyron, Chairman, Tule River Tribe
Stanley Pollack, Assistant Attorney General, Water Rights Unit, Navajo Nation Department of Justice

Noon Lunch Break (on your own)

1:00 pm **DESCRIPTION OF THE PYRAMID LAKE PAIUTE TRIBE’S WATER RIGHTS SETTLEMENT**
MODERATOR – Heather Whiteman Runs Him
Jason King, Nevada State Engineer (invited)
Vinton Hawley, Chairman, Pyramid Lake Paiute Tribe

2:30 pm **FIELD TRIP**
Pyramid Lake Paiute Tribe Settlement Water Features

6:00 pm

DINNER AND CULTURAL PRESENTATION AT PYRAMID LAKE PAIUTE RESERVATION

THURSDAY, AUGUST 27, 2015

SETTLEMENT LEGISLATION: GETTING BILLS THROUGH CONGRESS

8:30 am

Congressional Outlook for Indian Water Rights Settlements

MODERATOR – David Gover

Kiel Weaver, Majority Staff, House Natural Resources Subcommittee on Water, Power and Oceans (invited)

Kris Keifer, General Counsel, Senator Jeff Flake of Arizona (invited)

Stratton Edwards, Legislative Counsel, Capitol Hill Consulting Group (invited)

Anthony Walters, Staff Director and Chief Counsel for the Minority, Senate Indian Affairs Committee (invited)

Brandon Ashley, Senate Indian Affairs (invited)

10:15 am

Break

10:30 am

Response Panel

MODERATOR – Steve Moore

Jay Weiner, Assistant Attorney General, Montana

Mark Macarro, Chairman, Pechanga Band of Luiseño Indians (invited)

Camille Touton, Counselor to the Assistant Secretary of Interior for Water and Science

11:45 am

WRAP-UP/SUMMARY

Nathan Bracken, Of Counsel, Smith Hartvigsen, PLLC

12:15 pm

Adjourn



MAY 19 2015

The Honorable Rob Bishop
Chairman, Committee on Natural Resources
House of Representatives
Washington, DC 20515

Dear Mr. Chairman:

Thank you for your letter dated February 26, 2015, describing the process that the Natural Resources Committee intends to follow when considering future Indian water-rights settlements during the 114th Congress.

The Department of the Interior and the Department of Justice appreciate your support of the longstanding policy of the United States that disputes regarding Indian water rights should be resolved through negotiated settlement rather than through litigation. This Administration has made the Federal Government's commitment to addressing the water needs of Native American communities through Indian water-rights settlements a high priority. Over the past 6 years, with the Administration's support, Congress has enacted 6 complete water settlements that resolved well over a century of litigation and bitter disputes involving 9 Indian tribes. It is encouraging that the Committee is willing to consider and potentially support Indian water settlements, consistent with the Federal trust responsibility to American Indians and with Federal policy promoting Indian self-determination and economic self-sufficiency. Given the likelihood that drought conditions across the West will intensify conflict over water supplies, the importance to both Indian tribes and their non-Indian neighbors of resolving Indian water-rights claims continues to grow.

We understand and appreciate your personal commitment to introduce only settlement legislation that the Administration supports. We are happy to assist by forwarding settlements that we support, along with proposed authorizing legislation, to the Committee. We note that this transmittal does not, of course, change the nature of such settlements. They remain collaborative efforts that reflect Administration input rather than proposals that are predominantly the work of the Administration.

The Administration's policy of support for negotiations is premised on a set of general principles embodied in the *Criteria and Procedures for the Participation of the Federal Government in Negotiations for the Settlement of Indian Water Rights Claims* (55 FR 9223, March 12, 1990) (*Criteria and Procedures*), including that the United States participate in water settlements consistent with its responsibilities as trustee to Indians; that Indian tribes receive equivalent benefits for rights which they, and the United States as trustee, may release as part of a settlement; that Indian tribes should realize value from confirmed water rights resulting from a settlement; and that settlements are to contain appropriate cost-sharing proportionate to the benefits received by all parties benefiting from the settlement.

Your letter asks that we provide views on whether a particular settlement reflects an overall benefit to the taxpayers when balanced against the potential costs and consequences of continued uncertainty and litigation. Although these factors can be difficult to quantify, we have considered and will continue consider them in our review of settlements in accordance with the *Criteria and Procedures*. The *Criteria and Procedures* recognize that water-rights settlements address a wide variety of claims, including not only quantification of reserved Indian water rights but also all outstanding water claims in a basin and potential claims by tribes against the United States or by tribes and the United States against third parties. 55 FR 9223 (Criteria 1, 3). This includes consideration of the potential costs to all parties—Federal and non-Federal, tribal and non-tribal—in a manner that reflects “[a]ll tangible and intangible costs.” 55 FR 9223-24 (Criteria 5, 8, 12); *see also* 55 FR 9224 (cost estimates should consider “the risk to all parties from any aspect of the claim and all pending litigation without a settlement”) (*C & P Procedures* Phase II 1.a). The *Criteria and Procedures* further recognize that settlement negotiations should be “conducive to long-term harmony and cooperation among all interested parties through respect for the sovereignty of the States and tribes in their respective jurisdictions” and that settlements should “promote economic efficiency on reservations and tribal self-sufficiency.” 55 FR 9223 (Criteria 7, 10). As a result, the costs and consequences of litigation to Federal and non-Federal parties are not generally susceptible to simple quantification.

We understand that the Committee would like the Department of Justice to be available to testify on any water-rights settlement legislation that the Committee is considering. As you know, any testimony provided by a Department of the Interior official or other Administration official reflects the views of the entire Administration and not merely those of the witness or the Department on whose behalf the witness is testifying. In addition, there are significant legal and policy constraints on the Department of Justice’s ability to discuss non-public aspects of pending or potential litigation. Steering clear of these constraints presents challenges. Subject to those constraints, and assuming adequate notice is provided, the Department of Justice will work with the Committee to address the Committee’s interests in future water-rights settlements, but we cannot commit in advance to accepting any specific hearing invitation.

Finally, we note that the Committee has asked that both a proposed settlement and the legislative text needed to implement it be fully approved by all parties and submitted to the relevant court before being transmitted to the Committee. We will work with all parties to accommodate these requests, but note that this is a change from existing procedure and there may be circumstances in which it is difficult or impossible to comply fully with these requests. For example, such action may not accord with court rules or procedural orders in a particular case. Moreover, courts generally do not issue advisory opinions regarding settlements, and it may be counter-productive or otherwise problematic to submit the proposed settlement and legislative text to a court in some cases.

Time has shown, again and again, that Indian water-rights settlements minimize conflict and help create conditions that improve water-resources management by providing certainty, which in turn promotes economic development, improves relationships, and encourages collaboration

The Honorable Rob Bishop
May 19, 2015

among neighboring communities. We, and our teams, look forward to working with you and the Committee to attain our common goal of achieving fiscally responsible settlements that benefit Indian tribes, the settling parties, and all American taxpayers.

Sincerely,



Alletta D. Belin
Chair, Working Group on
Indian Water Settlements
Department of the Interior



Peter J. Kadzik
Assistant Attorney General
for Legislative Affairs
Department of Justice

cc: The Honorable Raul Grijalva

U.S. House of Representatives

Committee on Natural Resources

Washington, DC 20515

February 26, 2015

The Honorable Eric Holder
Attorney General
Department of Justice
950 Pennsylvania Avenue, NW
Washington, DC 20530

The Honorable Sally Jewell
Secretary
Department of the Interior
1849 C Street, NW
Washington, DC 20240

Dear Mr. Attorney General and Madame Secretary:

The House Natural Resources Committee (Committee) has primary authorizing jurisdiction over the legislative resolution of Indian water rights claims within the House of Representatives. Additionally, given the longstanding policy of the United States that disputes regarding Indian water rights should be resolved through negotiated settlement rather than through litigation, both of your Departments play key roles in negotiating and developing settlements regarding these claims before they are ever considered by Congress.

The Committee recognizes that settlements to these matters are generally preferable to protracted litigation, which does little to provide water supply and financial certainty for settling and other parties. Importantly, settlements, if crafted correctly, can also provide relief to the United States from burdensome legal obligations and benefit all American taxpayers. The Committee recognizes that the Executive branch is charged with implementing existing Indian water rights settlement criteria and procedures designed to meet these goals.¹

¹ Department of the Interior Working Group on Indian Water Settlements for the Participation of the Federal Government in Negotiations for the Settlement of Indian Water Rights Claims, Federal Register, Vol. 55, No. 48, March 12, 1990.

The Honorable Eric Holder
The Honorable Sally Jewell
February 26, 2015
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Due to the direct linkage between your efforts in negotiating the proposed resolution of these claims and our responsibility in enacting such proposals both for the benefit of the United States interests and to help Tribal and non-tribal parties, it is important that we work together to facilitate Congressional consideration when you have reached resolution.

Due to growing federal debt and increased budgetary pressures from existing Indian water rights settlements, it is important that the proposed settlements, their proposed legislation and the federal costs associated with them be fiscally responsible and justified in order to protect the American taxpayer and future Tribal needs.

As Chairman of the Committee, I write this letter to inform you of the process that the Committee intends to follow when considering future Indian water rights settlements during this Congress and to inform you of the assistance the Committee will need from you and your designees in order to proceed forward.

Given the role your Departments have in negotiating each proposed settlement, to help expedite the Committee's consideration of proposed legislation enacting such settlement that is fiscally responsible, your departments – in concurrence with the Office of Management and Budget – must also play a significant and initial role in certifying and explaining the Administration's support of the financial aspects of legislation codifying such settlement to the Committee. Put simply, your Departments must convey support for and forward the settlements and the proposed authorizing legislation, specifically including federal spending levels, before any Committee consideration takes place.

To that end:

1. I anticipate each of you will provide a statement to the Committee affirming that each proposed settlement resolution transmitted by your Department adheres to the current criteria and procedures.

2. I ask that your Departments specifically affirm to the Committee that a settlement meets Criteria 4² and 5(a) and (b)³ to ensure that the American taxpayer is deriving benefits from any such settlement prior to Committee consideration. Related to such determination, both Departments will be expected to affirm that a particular settlement represents a net benefit to the American taxpayer as compared to the consequences and costs of not settling litigation, and specifically support the federal financial authorization included in the proposed legislative text.
3. For settlement legislation to be considered, the Attorney General or his/her designee must have conveyed to a court and all settling parties have agreed, in writing, to the settlement pending a legislative resolution before it is forwarded to the Committee for it to be considered.
4. Both Departments and the settling parties must have approved, in writing, the legislative text needed to codify the settlement before it is transmitted to the Committee and have provided that proposed text to the relevant court.
5. Based on precedent⁴, the Committee requests that the Department of Justice consent to being available to testify if any legislative text is considered by the Committee related to such proposals.

² Criteria 4, as included in Federal Register, Vol. 55, No. 48, March 12, 1990 states: "The total cost of a settlement to all parties should not exceed the value of the existing claims as calculated by the Federal Government."

³ Criteria 5(a) and (b), as included in Federal Register, Vol. 55, No. 48, March 12, 1990 state: "Federal contributions to a settlement should not exceed the sum of the following two elements: a. First, calculable legal exposure – litigation costs and judgment obligations if the case is lost; Federal and non-Federal exposure should be calculated on a present value basis taking into account the size of the claim, value of the water, timing of the award, likelihood of loss. b) Second, additional costs related to Federal trust or programmatic responsibilities (assuming the U.S. obligation as trustee can be compared to existing precedence.) – Federal contributions relating to programmatic responsibilities should be justified as to why such contributions cannot be funded through the normal budget process."

⁴ Testimony of Mr. Peter Steenland, Appellate Section Chief, Department of Justice, before the Joint Hearing on S.2259 before the Subcommittee on Water and Power of the Senate Committee on Energy and Natural Resources and the Senate Committee on Indian Affairs, S. Hrg. 103-943, Aug. 4, 1994.

The Honorable Eric Holder
The Honorable Sally Jewell
February 26, 2015
Page 4

6. Both Departments must list the legal claims being settled in any document transmitting legislative text; and
7. Such settlements and proposed legislation shall not include financial authorizations for claims already settled by Congress or claims that have no legal basis.

The actions of your Departments, as outlined above, will play a very critical role in expediting the Committee's consideration of these important settlement efforts. If your Departments follow this process -- starting with settlement legislation being proposed and supported by the Administration -- it is my intent to then introduce the settlement legislation at the Administration's request and consider such legislation in the Committee at the appropriate time. In conclusion, it is my intent that your actions prior to Committee consideration will determine whether negotiated settlements proceed in the legislative process.

I look forward to working with you to help achieve fiscally responsible settlements that help federally recognized tribes, other settling parties and the American taxpayer.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Rob Bishop', with a long horizontal flourish extending to the right.

Rob Bishop
Chairman

cc: The Honorable Raul Grijalva

Tab U – Arches National Park Water Rights Agreement

**ARCHES NATIONAL PARK
WATER RIGHTS AGREEMENT**

This Agreement is made and entered into by the United States of America ("United States") and the State of Utah ("Utah" or the "State").

RECITALS

A. Utah has initiated statutory adjudications of water rights entitled, "IN THE MATTER OF THE GENERAL DETERMINATION OF RIGHTS TO THE USE OF WATER, BOTH SURFACE AND UNDERGROUND, WITHIN THE DRAINAGE AREA OF THE COLORADO RIVER IN SAN JUAN, GRAND AND UINTAH COUNTIES, UTAH AND EXCLUSIVE OF THE GREEN RIVER DRAINAGE," filed in the Seventh Judicial District, Grand County, State of Utah, as Civil No. 810704477, and "IN THE MATTER OF THE GENERAL DETERMINATION OF RIGHTS TO THE USE OF WATER, BOTH SURFACE AND UNDERGROUND, WITHIN THE DRAINAGE AREA OF THE PRICE RIVER AND THE DRAINAGE AREA OF THE GREEN RIVER FROM THE CONFLUENCE OF THE PRICE AND GREEN RIVERS TO THE CONFLUENCE OF THE GREEN AND COLORADO RIVERS, EXCLUDING THE DRAINAGE AREA OF THE SAN RAFAEL RIVER IN UTAH," filed in the Seventh Judicial District, Carbon County, State of Utah, as Civil No. 8598. These adjudications are commonly referred to as the Southeastern Colorado River General Adjudication and the Price/Green Rivers General Adjudication respectively (the "General Adjudications") and encompass the area within which Arches National Park (the "Park") is located, which area is within the Colorado River and Green River drainages (Areas 01 and 92). The United States has not yet been joined as a party in the General Adjudications. However, in order to remove any causes of present and future controversy over the use of water at the Park, the United States and Utah have conducted negotiations regarding a federal reserved water right for the Park.

B. These negotiations have resulted in the recognition of a federal reserved water right of the United States for the Park, subject to the terms and conditions set forth herein.

AGREEMENT

NOW, THEREFORE, based on the mutual promises contained herein, the parties agree to the following:

1. Establishment of Arches National Park. Arches National Monument (the "Monument") was established and subsequently expanded pursuant to the Antiquities Act of June 8, 1906, 34 Stat. 225, 16 U.S.C. § 431, by Presidential Proclamation No. 1875, 46 Stat. 2988, dated April 12, 1929; Presidential Proclamation No. 2312, 53 Stat. 2504, dated November 25, 1938; Presidential Proclamation No. 3360, 74 Stat. c79, dated July 22, 1960; and Presidential Proclamation No. 3887, 83 Stat. 920, dated January 20, 1969. On November 12, 1971, pursuant to the National Park Service Organic Act of August 25, 1916, 64 Stat. 535, 16 U.S.C. § 1, Congress, in Public Law 92-155, 85 Stat. 422, established Arches National Park by including the lands comprising the Monument within the Park and abolishing the Monument. The Park was subsequently expanded pursuant to Public Law 103-93, 107 Stat. 995, dated October 1, 1993; Public Law 105-329, 112 Stat. 3060, dated October 30, 1998 (as amended by Public Law 106-176, 114 Stat. 32, dated March 10, 2000); and Public Law 105-335, 112 Stat. 3139, dated October 31, 1998; as implemented by Exchange Patent No. 19221, dated December 9, 1998; and Exchange Patent No. 19310, dated April 4, 2000. The purposes for which the Monument and the Park were established include the preservation and protection of areas containing extraordinary examples of wind-eroded sandstone formations; the preservation of areas for scientific research; the protection of objects of geologic, historic, and scientific interest; and the conservation of "the scenery and the natural and historic objects and the wildlife therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations" (54 U.S.C. § 100101). The lands comprising the Park and the dates on which the lands were reserved from the public domain or otherwise acquired for Park purposes are shown in the attached Appendix A and are described in the applicable proclamations, public laws, and patents identified herein.

2. Recognition of Federal Reserved Water Right. To fulfill the purposes for which the Park was established and subject to the terms and conditions of this Agreement, the United States has a federal reserved water right to all naturally occurring water underlying, originating within, or flowing through the Park (which includes perennial, intermittent and ephemeral streams, springs, seeps, groundwater, and other natural sources of water) that was unappropriated as of the relevant dates of reservation or acquisition of the lands now within the boundaries of the Park. The United States' federal reserved water right shall have a single priority date of April 12, 1929 for the administrative uses discussed in paragraph 3.1 below, and seven separate priority dates for the in situ and instream uses discussed in paragraph 3.2 below, which priority dates shall correspond to the seven dates on which the lands comprising the Park were reserved from the public domain or otherwise acquired for Park purposes: April 12, 1929, November 25, 1938, July 22, 1960, January 20, 1969, November 12, 1971, December 9, 1998, and April 4, 2000, with the priority date of a particular place of use being the date of reservation or acquisition of those lands, as shown in Appendix A.

3. Uses of Federal Reserved Water Right. The United States' federal reserved water right may be used as follows:

3.1 Administrative Uses. In the exercise of its federal reserved water right, the United States may, for administrative uses, divert up to 120 acre-feet per year (AFY) and deplete up to 60 AFY from within the boundaries of the Park. Such administrative uses include but are not limited to: domestic, culinary, irrigation, landscaping, and campground uses; the excavation, restoration, and preservation of ruins; the construction, operation, and maintenance of visitor facilities; and other administrative uses that shall satisfy the existing and future requirements for the operation and protection of the Park. In addition, the United States may divert such additional amounts of water as are necessary for emergency fire suppression within the Park, and such diversions shall not be charged against the maximum annual diversions and depletions that the United States may make for administrative uses, as described in this paragraph.

3.2 In Situ and Instream Uses. The remainder of the water reserved to

the United States pursuant to its federal reserved water right shall remain in its free flowing and natural condition for in situ and instream uses (collectively "in situ uses") that shall satisfy and promote the purposes for which the Park was established. Such in situ uses include but are not limited to providing water for: riparian and wetland vegetation and ecosystems; hanging gardens; geomorphologic processes; wildlife habitat and watering; and other uses that shall satisfy and promote the scenic, conservation, preservation, protection, recreational, and other purposes for which the Park was established.

4. Subordination of In Situ Uses. The United States hereby subordinates the portion of its federal reserved water right held for in situ uses (but not administrative uses) as follows:

4.1 Subordination to Existing Water Rights. The United States hereby subordinates the portion of its federal reserved water right held for in situ uses to the following (collectively "Existing Water Rights"): (1) all valid existing water rights that have been perfected and are of record in the Utah Division of Water Rights (the "Division") as of the date of the last party's signature to this Agreement (the "Effective Date"), except for the wells administered under Utah Water Right No. 01-1130 (F71691), which water right was issued for a fixed time in accordance with Utah Code Ann. § 73-3-8(2) and is expressly excluded from this subordination; (2) any valid diligence claims that are submitted to the Division after the Effective Date; and (3) any applications to appropriate, change, or exchange water with proposed points of diversion and places of use outside the Park but within the Protection Zone, as defined in Paragraphs 5 and 5.1 below, and that have been approved by the Utah State Engineer prior to the Effective Date, but that have not yet been perfected.

4.2 Inapplicability of Subordinations. The foregoing subordinations shall no longer be operative as to any Existing Water Rights that subsequently lapse or are withdrawn, forfeited, abandoned, lost through nonuse, or otherwise terminated or reduced. The subordinations also shall not apply to or otherwise affect the portion of the United States' federal reserved water right held for administrative uses. Finally, the subordinations shall not be construed as providing consent to any applications to

appropriate, change, or exchange water filed with the Division after the Effective Date and shall not limit the United States' right to protest any such applications.

5. Protection Zone. Utah hereby recognizes and establishes a protection zone (the "Protection Zone") to protect the flow of perennial, intermittent, and ephemeral streams, seeps, springs, and other naturally-occurring water within the Park whose source is surface water or groundwater from the Entrada aquifer. For purposes of this Agreement, the "Entrada aquifer" is defined as the Slick Rock Member of the Entrada Sandstone, the Moab Member of the Curtis Formation, and all other rock units lying above the Moab Member of the Curtis Formation to and including the ground surface. Geologic units below the Entrada aquifer are not included in the Protection Zone.

5.1. Areas Within Protection Zone. The Protection Zone is comprised of the area from the ground surface to the base of the Entrada aquifer located within the following drainage basins:

5.1.1 Courthouse Wash and Sevenmile Canyon Drainage Basins. The Protection Zone includes the area outside of the Park boundaries within that part of the drainage basins of Courthouse Wash and Sevenmile Canyon lying north and east of the Moab Fault or the Moab Splay Fault, as depicted in Appendix B.

5.1.2 Salt Wash Drainage Basin. The Protection Zone includes the area outside of the Park boundaries within that part of the drainage basin of Salt Wash lying south of the Township 22 South and Township 23 South dividing line, and lying within Sections 33, 34, and 35, of Township 22 South, Range 20 East, SLB&M, as depicted in Appendix B.

5.2. Diversion Limits Within Protection Zone. The State Engineer shall not approve: (a) any application to appropriate surface water or groundwater within the Protection Zone filed after the Effective Date; or (b) any pending (previously filed and unapproved) change application or exchange application as of the Effective Date, or any new change application or exchange application filed with the Division after the Effective Date, that seeks to withdraw surface water or ground water from the Protection Zone, if the proposed diversion of water under the pending or new change or exchange

application would constitute the withdrawal of a new or increased quantity of surface water or groundwater from the Protection Zone (e.g., a pending or new change or exchange application whose previously approved source is surface water or groundwater outside the Protection Zone).

6. Relationship Between United States' Federal Reserved Water Right and Its State-Based Appropriative Water Rights. In addition to the federal reserved water right recognized by this Agreement, the United States also currently owns five state-based appropriative water rights for the Park, which are listed and summarized in the attached Appendix C (the "state-based rights").

6.1 Federal Reserved Water Right Number. Upon execution of this Agreement, the State Engineer shall assign a water right number in the Utah Division of Water Rights' records for the federal reserved water right recognized by this Agreement.

6.2 Merger of State-Based Appropriative Rights. Upon the issuance of final, non-appealable decrees in the General Adjudications confirming and adjudicating the federal reserved water right recognized by this Agreement, the United States' state-based rights shall be merged into the portion of its federal reserved water right held for administrative uses, and diversions and depletions for administrative uses under the merged rights shall thereafter be governed solely by the diversion and depletion limits of Paragraph 3.1.

7. Entirety of Federal Reserved Water Right. The federal reserved water right recognized herein includes all water rights of every nature and description derived under federal law from the doctrine of federal reserved water rights from all sources of water, both surface and underground, and includes all types and kinds of uses whatsoever, and encompasses the entire federal reserved water right held by the United States for the Park as now constituted. Absent Congressional or Presidential action, the federal reserved water right for the lands now constituting the Park shall not be enlarged, expanded, or re-quantified.

8. Issuance of Proposed Determinations. The United States has not been joined as a party in the Southeastern Colorado River General Adjudication or the Price/Green Rivers General Adjudication pursuant to the 43 U.S.C. § 666. Upon joinder of the United States in these adjudications, Utah agrees to issue, within a reasonable time, Proposed Determinations or, in the event Proposed Determinations have already been issued, Addenda to the Proposed Determinations, consistent with the terms of this Agreement. The parties hereto will cooperate to obtain interlocutory decrees on the Proposed Determinations or Addenda, provided that this Agreement shall remain binding on the parties if and when such interlocutory decrees are entered and after the entry of the final decrees, except to the extent that any of the provisions of the operative decrees conflict with the terms of this Agreement.

9. Modification of Agreement. The provisions of this Agreement may be modified only in writing and upon the mutual consent of the parties to this Agreement, which consent shall not be unreasonably withheld.

10. Limitations on Effect of Agreement. Nothing in this Agreement shall constitute an admission, waiver, or precedent as to any party for any other federal reserved water right claim, or create any third party rights. Without limiting the foregoing, nothing in this Agreement shall be construed or interpreted to:

10.1 In any way affect any water rights of the United States other than the water rights held by the United States for the Park in the Colorado River Basin within the context of the Southeastern Colorado River General Adjudication and/or the Price/Green Rivers General Adjudication;

10.2 Establish any precedent or standard to be used for the quantification of federal reserved water rights in any other judicial or administrative proceeding;

10.3 Limit in any way the rights of the parties or any person to litigate any issue or question not resolved by this Agreement;

10.4 Restrict the power of the United States to reserve water in the future, or to acquire additional rights to the use of water under the laws of Utah;

10.5 Restrict the power of Utah or the State Engineer to allocate, administer, or distribute the waters of the State, except as expressly provided in this Agreement; or

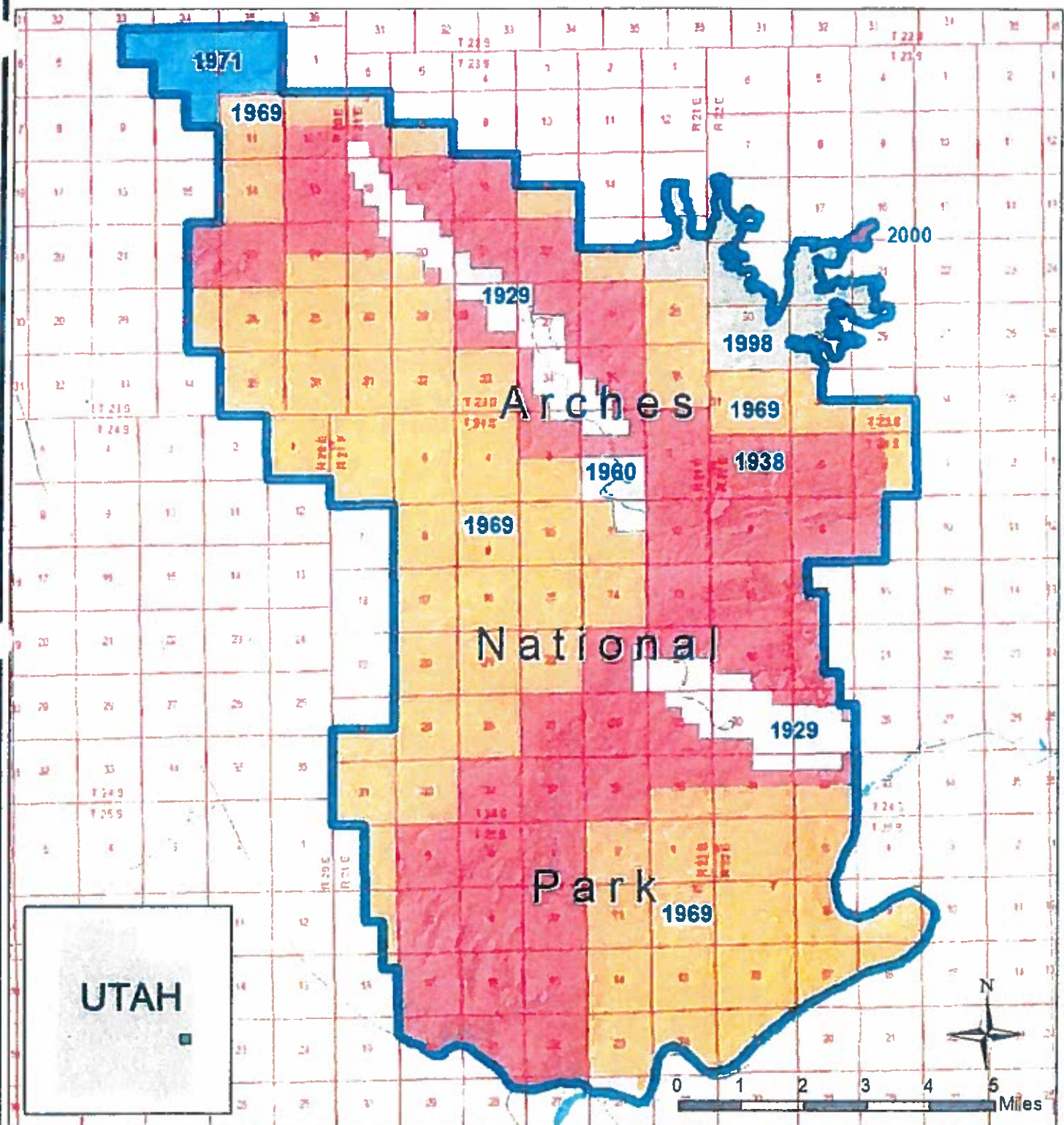
10.6 Settle other federal reserved water rights of the United States.

11. Protection of Federal Reserved Water Right Under State Law. The federal reserved water right of the United States, as set forth and quantified herein, shall be administered and protected under State law in the same manner as any water right originating under State law, without losing its character as, or the attributes of, a federal reserved water right as provided under federal law. Pending the issuance of interlocutory and/or final decrees in the General Adjudications adjudicating the federal reserved water right, the United States may develop and/or use water for administrative uses under the federal reserved water right in accordance with the diversion and depletion limits set forth in Paragraph 3.1, above, provided that it gives at least 90 days prior written notice to the State Engineer.

12. Duplicate Copies. This Agreement may be executed in duplicate. Each of the duplicate copies bearing original signatures shall be deemed an original.

Appendix A

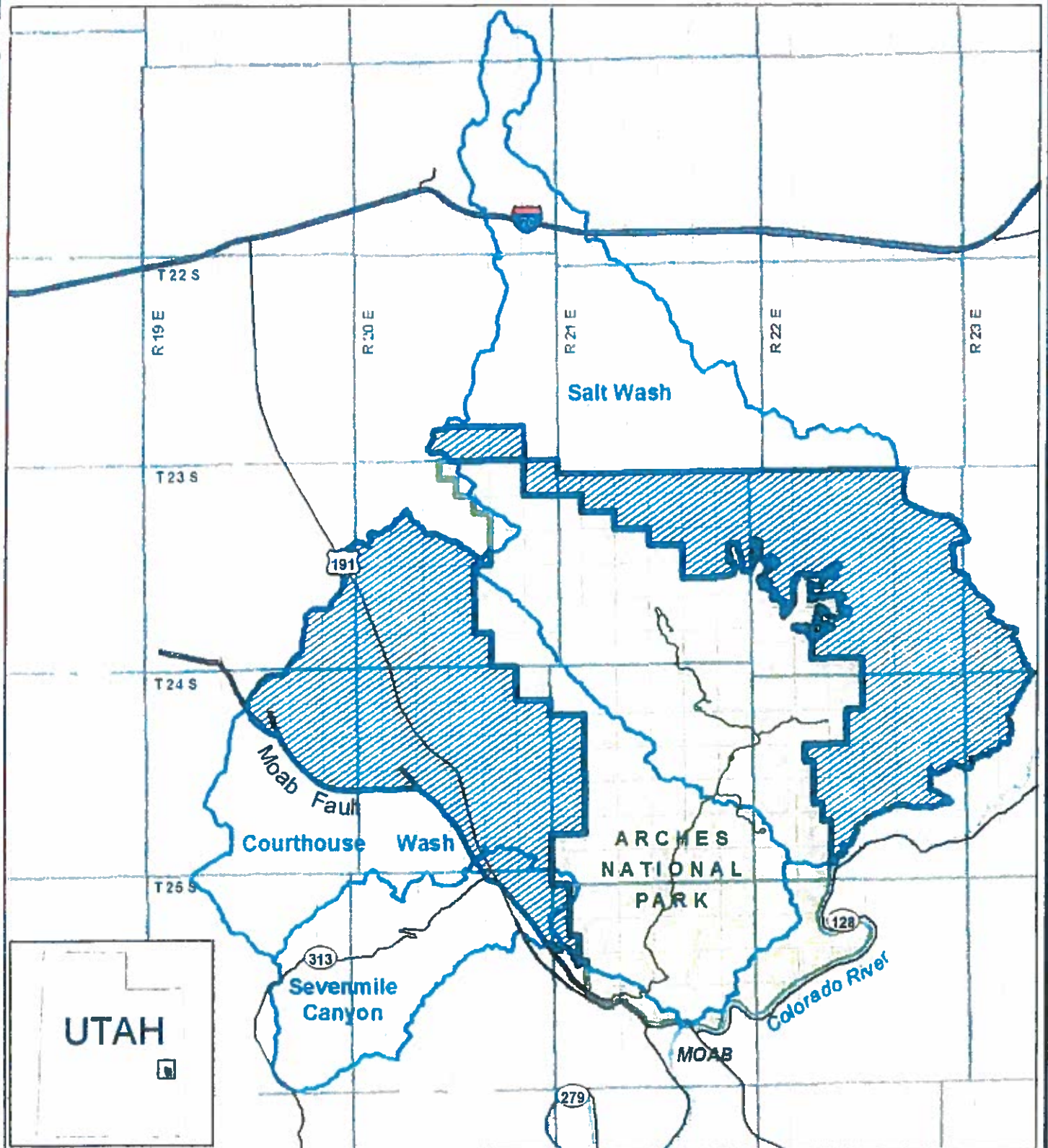
Arches National Park Land Reservations



- | | |
|--|---|
|  Park boundary |  Proclamation No. 3887, 83 Stat. 920, January 20, 1969 |
|  Proclamation No. 1875, 46 Stat. 2988, April 12, 1929 |  Public Law 92-155, 85 Stat. 422, November 12, 1971 |
|  Proclamation No. 2312, 53 Stat. 2504, November 25, 1938 |  Public Law 105-329, 112 Stat. 3060, October 30, 1998 |
|  Proclamation No. 3360, 74 Stat. C79, July 22, 1960 |  Utah Exchange Patent No. 19310, April 4, 2000 |

Appendix B

Arches National Park Protection Zone



-  Protection Zone
-  Arches National Park
-  Watershed Boundary

0 2.5 5 10
Miles



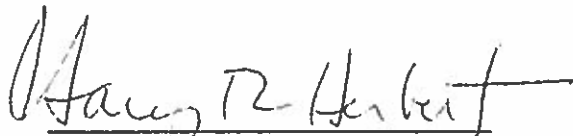
APPENDIX C

The United States' five state-based appropriative water rights for administrative uses in the Park as of the Effective Date.

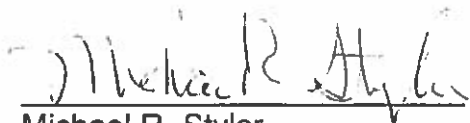
<i>Water Right No.</i>	<i>Water Source</i>	<i>Diversion Works</i>	<i>Priority Date</i>	<i>Point of Diversion (Salt Lake Base and Meridian)</i>	<i>Place of Use</i>	<i>Type of Use</i>	<i>Period of Use</i>	<i>Current Diversion Rate (cfs)</i>
01-25	Headquarters Well #1	8 in. Dia. Well - 120 ft. Deep	May 17, 1940	N. 617 ft., W. 148 ft. from E4 Cor. Sec. 20, T25S, R21E	Within the Exterior Boundaries of the Park	Domestic and Other	01/01-12/31	.044
01-28	Unnamed Spring	Spring	October 03, 1949	S. 294 ft., W. 885 ft. from N4 Cor. Sec. 30, T24S, R22E	Within the Exterior Boundaries of the Park	Livestock	01/01-12/31	.0008
01-114	Devil's Garden Well	8 in. Dia. Well - 1100 ft. Deep	May 25, 1962	S. 73 ft., E. 1376 ft. from W4 Cor. Sec. 27, T23S, R21E	Within the Exterior Boundaries of the Park	Domestic and Other	01/01-12/31	.0223
05-420	Devil's Garden Well	8 in. Dia. Well - 1100 ft. Deep	May 25, 1962	S. 73 ft., E. 1376 ft. from W4 Cor. Sec. 27, T23S, R21E	Within the Exterior Boundaries of the Park	Domestic and Other	01/01-12/31	.0223
01-166	Headquarters Well #2	8 in. Dia. Well - 172 ft. Deep	September 11, 1981	S. 2700 ft., W. 3600 ft. from NE Cor. Sec. 21, T25S, R21E	Within the Exterior Boundaries of the Park	Domestic and Other	01/01-12/31	.06

It being resolved and agreed to as delineated above, the undersigned parties express their mutual agreement hereto this 22nd day of May, 2015.

For the State of Utah:



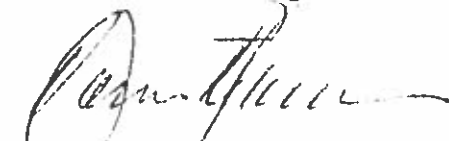
Gary Herbert
Governor



Michael R. Styler
Executive Director
Department of Natural Resources



Kent L. Jones, P.E.
State Engineer
Division of Water Rights



Norman K. Johnson,
Assistant Attorney General
Chief, Natural Resources Division

For the United States:



Laura Joss
National Park Service, Intermountain Region
Deputy Regional Director



Kate Cannon
National Park Service
Superintendent, Arches National Park



Ramsay Laursoo Kropf
Deputy Solicitor, Water Resources
U.S. Department of the Interior



Thomas K. Snodgrass, Senior Attorney
John C. Cruden, Assistant Attorney General
U.S. Department of Justice
Environment and Natural Resources Division

Tab V – Hydraulic Fracturing

**RESOLUTION
of the
WESTERN STATES WATER COUNCIL
regarding
HYDRAULIC FRACTURING
Casper, Wyoming
June 26, 2013**

WHEREAS, hydraulic fracturing is a process that injects sand, water, and other fluids, including various chemical compounds, underground to aid in the extraction of oil and natural gas; and

WHEREAS, hydraulic fracturing has been used for over 60 years in conventional oil and gas production, with over one million wells having been fractured in the United States alone; and

WHEREAS, although concerns about hydraulic fracturing have been voiced by some, western states have experienced few, if any, adverse impacts involving water quality and water allocation attributable to hydraulic fracturing; and

WHEREAS, states have primary and exclusive authority over the allocation and administration of rights to the use of water used in hydraulic fracturing operations; and

WHEREAS, hydraulic fracturing is responsible for significantly increasing the nation's ability to recover oil and gas, lessening its dependence on foreign energy supplies and providing billions of dollars in direct and indirect economic benefits each year, including hundreds of thousands of jobs; and

WHEREAS, states have decades of experience, knowledge, and information regulating hydraulic fracturing and other oil and gas activities; and

WHEREAS, states are best positioned to regulate hydraulic fracturing because of their understanding of regional and local conditions and their ability to tailor regulations to fit the needs of the local environment; and

WHEREAS, states currently employ a range of programmatic elements and regulations to ensure that hydraulic fracturing does not impair water resources and environmental values, including but not limited to requirements pertaining to well permitting, well construction, the handling of exploration and production waste fluids, the closure of wells, and the abandonment of well sites.

NOW, THEREFORE, BE IT RESOLVED, that federal efforts involving hydraulic fracturing, including efforts to study potential adverse impacts on water quantity and quality, should leverage state knowledge, experience, policies, and regulations.

BE IT FURTHER RESOLVED, that federal efforts to study the potential impacts of hydraulic fracturing on water resources should be limited in scope, based upon sound science, and driven by states given the lack of significant widespread impacts associated with hydraulic fracturing in the experience of our member states and increasingly limited federal funds.

BE IT FURTHER RESOLVED, that the Western States Water Council opposes any and all efforts that would diminish the primary and exclusive authority of states over the allocation of water resources used in hydraulic fracturing.



FEDERAL REGISTER

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Part III

Department of the Interior

Bureau of Land Management

43 CFR Part 3160

Oil and Gas; Hydraulic Fracturing on Federal and Indian Lands; Final Rule

DEPARTMENT OF THE INTERIOR**Bureau of Land Management****43 CFR Part 3160**

[LLWO300000 L13100000.PP0000 14X]

RIN 1004-AE26

Oil and Gas; Hydraulic Fracturing on Federal and Indian Lands**AGENCY:** Bureau of Land Management, Interior.**ACTION:** Final rule.

SUMMARY: On May 11, 2012, the Bureau of Land Management (BLM) published in the **Federal Register** a proposed rule titled Oil and Gas; Well Stimulation, Including Hydraulic Fracturing, on Federal and Indian Lands. Because of significant public interest in hydraulic fracturing and this rulemaking, on May 24, 2013, the BLM published in the **Federal Register** a supplemental notice of proposed rulemaking and request for comment titled Oil and Gas Hydraulic Fracturing on Federal and Indian Lands. The BLM has used the comments on the supplemental proposed rule and the earlier proposed rule in drafting this final rule. Key changes to the final rule include the allowable use of an expanded set of cement evaluation tools to help ensure that usable water zones have been isolated and protected from contamination, replacement of the “type well” concept to demonstrate well integrity with a requirement to demonstrate well integrity for all wells, more stringent requirements related to claims of trade secrets exempt from disclosure, more protective requirements to ensure that fluids recovered during hydraulic fracturing operations are contained, additional disclosure and public availability of information about each hydraulic fracturing operation, and revised records retention requirements to ensure that records of chemicals used in hydraulic fracturing operations are retained for the life of the well. The final rule also provides opportunities for the BLM to coordinate standards and processes with individual states and tribes to reduce administrative costs and to improve efficiency.

DATES: This final rule is effective on June 24, 2015.**ADDRESSES:**

Mail: U.S. Department of the Interior, Director (630), Bureau of Land Management, Mail Stop 2134 LM, 1849 C St. NW., Washington, DC 20240, Attention: 1004-AE26.

Personal or messenger delivery: Bureau of Land Management, 20 M

Street SE., Room 2134 LM, Attention: Regulatory Affairs, Washington, DC 20003.

FOR FURTHER INFORMATION CONTACT:

Steven Wells, Division Chief, Fluid Minerals Division, 202-912-7143 for information regarding the substance of the rule or information about the BLM’s Fluid Minerals Program. Persons who use a telecommunications device for the deaf (TDD) may call the Federal Information Relay Service (FIRS) at 1-800-877-8339 to contact the above individual during normal business hours. FIRS is available 24 hours a day, 7 days a week to leave a message or question with the above individual. You will receive a reply during normal business hours.

SUPPLEMENTARY INFORMATION:**Executive Summary**

The BLM final rule on hydraulic fracturing serves as a much-needed complement to existing regulations designed to ensure the environmentally responsible development of oil and gas resources on Federal and Indian lands, which were finalized nearly thirty years ago, in light of the increasing use and complexity of hydraulic fracturing coupled with advanced horizontal drilling technology. This technology has opened large portions of the country to oil and gas development.

The BLM began work on this rule in November 2010, when it held its first public forum amid growing public concern about the rapid expansion of complex hydraulic fracturing. Since that time, the BLM has published two proposed rules and held numerous meetings with the public and state officials, as well as many tribal consultations and meetings. The public comment period was open for more than 210 days. During this period, the BLM received comments from more than 1.5 million individuals and groups. The BLM reviewed and analyzed these comments based on thoughtful analysis and robust dialogue, which resulted in a rule that is more protective than the previous proposed rules and current regulations. It also strengthens oversight and provides the public with more information than is currently available, while recognizing state and tribal authorities and not imposing undue delays, costs, and procedures on operators. The final rule fulfills the goals of the initial proposed rules: To ensure that wells are properly constructed to protect water supplies, to make certain that the fluids that flow back to the surface as a result of hydraulic fracturing operations are managed in an environmentally

responsible way, and to provide public disclosure of the chemicals used in hydraulic fracturing fluids.

The final rule also: (1) Improves public awareness of where hydraulic fracturing has occurred and the existence of other wells or geologic faults or fractures in the area, as well as communicates what chemicals have been used in the fracturing process; (2) Clarifies and strengthens existing rules related to well construction to ensure integrity and address developments in technology; (3) Aligns requirements with state and tribal authorities with regard to water zones that require protection; and (4) Provides opportunities to coordinate standards and processes with individual states and tribes to reduce costs, increase efficiencies, and promote the development of more stringent standards by state and tribal governments.

Various types of hydraulic fracturing have long been used on a relatively small scale to complete or to re-complete conventional oil and gas wells. More recently, hydraulic fracturing has been coupled with relatively new horizontal drilling technology in larger-scale operations that have allowed greatly increased access to shale oil and gas resources across the country, sometimes in areas that have not previously or recently experienced significant oil and gas development. These newer wells can, among other complexities, be significantly deeper and cover a larger horizontal area than the operations of the past. This increased complexity requires additional regulatory effort and oversight.

Rapid expansion of this practice and its complexity have caused public concern about whether fracturing can lead to or cause the contamination of underground water sources, whether the chemicals used in fracturing pose risks to human health, and whether there is adequate management of well integrity and the fluids that return to the surface during and after fracturing operations.

The BLM’s regulations that address issues surrounding hydraulic fracturing are at least 25–30 years old, and pre-date the current common use of the practice. In 2011, the Natural Gas Subcommittee of the Secretary of Energy’s Advisory Board recommended that the BLM undertake a rulemaking to ensure well integrity, water protection, and adequate public disclosure. Prior to that, in 2009 the American Petroleum Institute published a guidance document titled “Hydraulic Fracturing Operations-Well Construction and Integrity Guidelines, First Edition,

October 2009,” commonly known as HF1, to provide guidance and highlight industry recommended practices for well construction and integrity for those wells that will be hydraulically fractured. The purpose of the guidance was to ensure protection of shallow groundwater aquifers and the environment while enabling economically viable development of oil and natural gas resources. More recently, regulations from states, such as Colorado and Wyoming, and professional papers, such as King, George, SPE 152596, (Feb. 2012), focused on the estimation, analyses, and control of risks from hydraulic fracturing operations. All of these factors have led to, and informed, this rulemaking. To ensure that these standards adequately address emerging technological developments and health and environmental protections, the BLM will evaluate the adequacy of this rulemaking 7 years after the date of publication.

Pursuant to the Federal Land Policy and Management Act (FLPMA), Indian mineral leasing laws, and other statutes, the BLM is charged with administering oil and gas operations in a manner that protects Federal and Indian lands while allowing for appropriate development of the resource. The BLM oversees approximately 700 million subsurface acres of Federal mineral estate and carries out some of the regulatory duties of the Secretary of the Interior for an additional 56 million acres of Indian mineral estate across the United States. Currently, nearly 36 million acres of Federal land are under lease for potential oil and gas development in 33 states. As of June 30, 2014, there were approximately 47,000 active oil and gas leases on public lands, and approximately 95,000 oil and gas wells. Like other BLM regulations, this final rule applies to oil and gas operations on public lands (which include split estate lands, *i.e.*, lands where the surface is owned by an entity other than the United States), as well as operations on Indian lands, to ensure that these lands and communities all receive the same level of protection as provided on public lands.

Oil and gas leasing decisions on public lands are made through a thorough, deliberative, and transparent process rooted in Resource Management Plans (RMPs) that cover virtually all BLM-administered public land and related mineral estate. Oil and gas decisions contained within BLM RMPs also apply to lands where the surface is privately owned, but the mineral estate is in Federal ownership. The BLM establishes, amends, and revises RMPs

as required by the FLPMA with involvement by the community and stakeholders. As part of the land use planning process, the BLM engages the public in a variety of ways and conducts environmental reviews as required by the National Environmental Policy Act (NEPA), and other applicable natural and cultural resource protection authorities. While the public makes known to the BLM which lands they are interested in leasing, prior to leasing any lands, the BLM undertakes the appropriate NEPA review and provides an opportunity for the public to review and comment on the analyses and documents that the agency prepares.

Existing Requirements

Relevant existing requirements for oil and gas operations are set out at 43 CFR 3162.3–1 and Onshore Oil and Gas Orders 1, 2 and 7. Most of these requirements have been in place for at least 25 years. This final rule will supplement the existing requirements, which will remain in place. On either Federal leaseholds, or Indian lands, an operator may not begin operations until it has filed an Application for a Permit to Drill (APD) with the BLM and received approval from the BLM to commence operations. Existing Federal law requires the BLM to post notices of APDs for oil and gas development on public lands for public inspection for 30 days, during which time the public may express any concerns to the BLM’s authorized officer as the agency conducts a site-specific environmental analysis of the proposed well site proposal. Those concerns and other issues identified earlier in the process, or during site examinations, may result in conditions of approval (COA) on the operator’s drilling permit that require, forbid, or control specified activities or disturbances. Examples of COAs include providing for road improvements and erosion control measures, or applying seasonal restrictions on some activities. In addition, baseline water testing is a best management practice that the BLM encourages. The BLM may require water testing and monitoring, particularly if water quality impacts are a significant concern based on local conditions, and where the BLM or a cooperating landowner or manager manages the surface estate where testing could yield useful water quality information. This is consistent with what several states, including California, Colorado, and Wyoming, are already doing. The BLM does not post for public inspection notices of APDs for Indian oil and gas leases or agreements because there is no requirement in the Indian leasing

statutes similar to that in Section 17 of the Mineral Leasing Act.

Under Onshore Oil and Gas Order 1, Approval of Operations, the location of the well must be identified and important aspects of the proposed operations described. Onshore Order 2 requires all usable water zones to be protected by steel casing and cement, and requires the casing, once in place, to be pressure tested. Casing and cement must meet specific design criteria, which BLM engineers verify as part of the permit review process. When a well is no longer capable of producing, Onshore Order 2 mandates minimum standards for the placement, quality, and verification of cement plugs to ensure that any remaining oil and gas cannot migrate into usable water zones. BLM inspectors witness aspects of drilling and plugging operations to ensure that the operator is in compliance with Onshore Order 2 and the permit to drill.

New Requirements

With this rule, the BLM establishes new requirements to ensure wellbore integrity, protect water quality, and enhance public disclosure of chemicals and other details of hydraulic fracturing operations. The rule requires an operator planning to conduct hydraulic fracturing to do the following:

- Submit detailed information about the proposed operation, including wellbore geology, the location of faults and fractures, the depths of all usable water, estimated volume of fluid to be used, and estimated direction and length of fractures, to the BLM with the APD or a Sundry Notice and Report on Wells (Form 3160–5) as a Notice of Intent (NOI) to hydraulically fracture an existing well;
- Design and implement a casing and cementing program that follows best practices and meets performance standards to protect and isolate usable water, defined generally as those waters containing less than 10,000 parts per million of total dissolved solids (TDS);
- Monitor cementing operations during well construction;
- Take remedial action if there are indications of inadequate cementing, and demonstrate to the BLM that the remedial action was successful;
- Perform a successful mechanical integrity test (MIT) prior to the hydraulic fracturing operation;
- Monitor annulus pressure during a hydraulic fracturing operation;
- Manage recovered fluids in rigid enclosed, covered or netted and screened above-ground storage tanks, with very limited exceptions that must be approved on a case-by-case basis;

- Disclose the chemicals used to the BLM and the public, with limited exceptions for material demonstrated through affidavit to be trade secrets;
- Provide documentation of all of the above actions to the BLM.

Specifically, this final rule will add to existing requirements by providing information to the BLM and the public on the location, geology, water resources, location of other wells or fracture zones in the area, and fracturing plans for the operation before the well is permitted. To ensure well integrity, the final rule will require specified best practice performance standards for all wells, including cement return and pressure testing for surface casing, cement evaluation logs for intermediate and production casing, and remediation plans and cement evaluation logs for any surface casing that does not meet performance standards.

The final rule eliminates the use of “type wells” in demonstrating well integrity, and requires that specified best practices be used and demonstrated for all wells, not just a sample well. For surface casing, the final rule does not require a cement evaluation log (CEL) for each well, substituting other equally or more protective performance standards, including cement returns and pressure testing. For any surface casing not meeting these performance standards, an approved remedial plan and CEL will be required. For intermediate and production casing not cemented to the surface, a CEL will be required for all wells.

The final rule will require interim storage of all produced water in rigid enclosed, covered, or netted and screened above-ground tanks, subject to very limited exceptions in which lined pits could be used.

Public disclosure of all chemicals, subject to limited exceptions for trade secret material, will be required after fracturing operations are complete. The existing database, FracFocus (<http://fracfocus.org>), can be used for this disclosure.

FracFocus is managed by the Ground Water Protection Council (GWPC), a non-profit organization of state water quality regulatory agencies, and by the Interstate Oil and Gas Compact Commission (IOGCC), a multi-state government agency charged with balancing oil and gas development with environmental protection. The BLM will continue to work with FracFocus in coordination with the U.S. Department of Energy (DOE) to ensure that the recommendations of the Secretary of Energy’s Advisory Board for

improvement of the database are made.¹ Specifically, the BLM is in the process of finalizing a Memorandum of Understanding (MOU) with the GWPC to ensure, among other things, that the database can be searched and downloaded easily. In a press release² on February 26, 2015 GWPC and the IOGCC, joint venture partners in the FracFocus initiative, announced the release of improvements to FracFocus’ system functionality. The new features for 2015 include:

- Reducing the number of human errors in disclosures
- Expanding the public’s ability to search records
- Providing public extraction of data in a “machine readable” format and
- Updating educational information on chemical use, oil and gas production, and potential environmental impacts.

As a part of the MOU with GWPC, FracFocus will automatically notify the BLM when an operator uploads chemical disclosure information about a Federal or Indian well. The BLM will obtain the information from FracFocus and keep those records in compliance with all pertinent record management requirements.

The BLM developed this final rule with the intention of improving public awareness and strengthening oversight of hydraulic fracturing operations without introducing unnecessary new procedures or delays in the process of developing oil and gas resources on public and Indian lands. Some states, including Alaska, Arkansas, Colorado, Illinois, Michigan, New Mexico, Ohio, Oklahoma, Pennsylvania, Texas, Utah, and Wyoming have regulations in place addressing hydraulic fracturing operations. Operators with leases on Federal lands must comply with both the BLM’s regulations and with state operating requirements, including state permitting and notice requirements to the extent they do not conflict with BLM regulations. To address concerns from states and tribes about possible duplicative efforts, the final rule provides that in situations in which specific state or tribal regulations are demonstrated to be equal to or more protective than the BLM’s rules, the state or tribe may obtain a variance. Such a variance will allow for enforcement of the more protective state or tribal rule.

For many years, the BLM has maintained a number of agreements

with certain states and tribes concerning implementation of the various regulatory programs in logical and effective ways. The BLM will work with states and tribes to establish formal agreements that will capitalize on the strengths of partnerships, and reduce duplication of effort for agencies and operators, particularly by implementing the final rule as consistently as possible with state or tribal regulations.

The provisions in this final rule provide for the BLM’s consistent oversight and establish a baseline for environmental protection across all public and Indian lands undergoing hydraulic fracturing. The BLM has analyzed the costs and the benefits of this proposed action in an accompanying Regulatory Impact Analysis available in the rulemaking docket. The BLM estimates that the rule will impact about 2,800 hydraulic fracturing operations per year, but that it could impact up to 3,800 operations per year based on previous levels of activity on Federal lands and growing activity on Indian lands. The BLM estimates that the compliance cost will be about \$11,400 per well, or about \$32 million per year. On average this equates to approximately 0.13 to 0.21 percent of the cost of drilling a well.

Many of the requirements generally are consistent with industry guidance, the voluntary practice of operators, and some are required by state regulations. So to the extent that industry is already in compliance, the cost of several of the provisions may be overestimated. The improvements also provide significant benefits to all Americans by avoiding potential damages to water quality, the environment, and public health. The rule creates a consistent, predictable, regulatory framework, in accordance with the BLM’s stewardship responsibilities for hydraulic fracturing under the FLPMA and the Indian mineral leasing statutes.

I. Background

- II. Discussion of the Final Rule and Comments on the Proposed Rules
- III. Procedural Matters

I. Background

Well stimulation techniques, such as hydraulic fracturing, are commonly used by oil and natural gas producers to increase the volumes of oil and natural gas that can be extracted from wells. Hydraulic fracturing techniques are particularly effective in enhancing oil and gas production from shale gas or oil formations. Until quite recently, shale formations rarely produced oil or gas in commercial quantities because shale does not generally allow the flow of hydrocarbons to wellbores unless

¹ Secretary of Energy’s Advisory Board recommendations can be downloaded from <http://energy.gov/seab/downloads/fracfocus-20-task-force-report>.

² <http://www.gwpc.org/major-improvements-fracfocus-announced>.

physical changes to the properties of the rock can be induced. The development of horizontal drilling, combined with hydraulic fracturing, has made the production of oil and gas from shale feasible. Hydraulic fracturing involves the injection of fluid under high pressure to create or enlarge fractures in the reservoir rocks. The fluid that is used in hydraulic fracturing is usually accompanied by proppants, such as particles of sand, which are carried into the newly fractured rock and help keep the fractures open once the fracturing operation is completed. The proppant-filled fractures become conduits for fluid migration from the reservoir rock to the wellbore and the fluid is subsequently brought to the surface. In addition to the water and sand (which together typically make up 98 to 99 percent of the materials pumped into a well during a fracturing operation), chemical additives are also frequently used. These chemicals can serve many functions in hydraulic fracturing, including limiting the growth of bacteria and preventing corrosion of the well casing. The exact formulation of the chemicals used varies depending on the rock formations, the well, and the requirements of the operator.

Some simple types of hydraulic fracturing techniques have been used on a small scale in oil and gas production for decades. However, as discussed in different parts of the preamble, hydraulic fracturing operations in recent years have become more complex, involving the exploration of and production from significantly deeper formations and across much larger subsurface areas through the use of horizontal drilling techniques.

The BLM estimates that about 90 percent of the approximately 2,800 new wells spudded in 2013 on Federal and Indian lands were stimulated using hydraulic fracturing techniques. Over the past 10 years, there have been significant technological advances in horizontal drilling, which is now frequently combined with hydraulic fracturing. This combination, together with the discovery that these techniques can release significant quantities of oil and gas from large shale deposits, has led to production from geologic formations in parts of the country that previously did not produce significant amounts of oil or gas. The expansion of exploration and production across the United States has significantly increased public awareness of hydraulic fracturing and the potential impacts that it may have on water quality and water consumption, and increased calls for stronger regulation and safety protocols. The BLM's engineers and field managers

have decades of experience exercising oversight of these wells during the evolution of this technology. This expertise, together with input from the public, industry, state, academic and other experts discussed below, forms the basis for the decision that new rules are needed and for the requirements contained in this rule.

The BLM's existing hydraulic fracturing regulations are found at 43 CFR 3162.3–2. Those regulations were established in 1982 and last revised in 1988, long before the latest hydraulic fracturing technologies were developed or became widely used. The Department of the Interior (Department) held a forum on hydraulic fracturing on November 30, 2010, in Washington, DC, attended by the Secretary of the Interior and more than 130 interested parties. The BLM later hosted public forums (in Bismarck, North Dakota on April 20, 2011; Little Rock, Arkansas on April 22, 2011; and Golden, Colorado on April 25, 2011) to collect broad input on the issues surrounding hydraulic fracturing. More than 600 members of the public attended the April 2011 forums. Some of the comments frequently heard during these forums included concerns about water quality, water consumption, and a desire for improved environmental safeguards for surface operations. Commenters also strongly encouraged the agency to require public disclosure of the chemicals used in hydraulic fracturing operations on Federal and Indian lands. Some commenters from the oil and gas industry suggested changes that would make the implementation of the rule more practicable from their perspective, while others opposed adoption of any such rules affecting hydraulic fracturing on the Federal mineral estate.

Around the time of the BLM's forums, at the direction of President Obama, the Secretary of Energy convened a Shale Gas Production Subcommittee (Subcommittee) of the Secretary of Energy Advisory Board to evaluate hydraulic fracturing issues. The Subcommittee met with industry, service providers, state and Federal regulators, academics, environmental groups, and many other stakeholders. On August 18, 2011, the Subcommittee issued initial recommendations in its "90-day Interim Report." The Subcommittee issued its final report, titled "Shale Gas Production Subcommittee Second Ninety Day Report" on November 18, 2011. The Subcommittee recommended, among other things, that more information be provided to the public about hydraulic fracturing operations, irrespective of whether those operations occur on the

Federal mineral estate, including disclosure of the chemicals used in fracturing fluids. The Subcommittee also recommended the adoption of stricter standards for wellbore construction and testing. The final report also recommended that operators engaging in hydraulic fracturing undertake pressure testing to ensure the integrity of all casings, as well as the use of FracFocus as a means to report the use of hydraulic fracturing chemicals. These reports are available to the public from the Department of Energy's Web site at <http://www.shalegas.energy.gov>.

On May 11, 2012, the BLM published in the **Federal Register** the initial proposed rule titled "Oil and Gas; Well Stimulation, Including Hydraulic Fracturing, on Federal and Indian Lands" (77 FR 27691). The comment period on the initial proposed rule closed on July 10, 2012. At the request of public commenters, on June 26, 2012, the BLM published in the **Federal Register** a notice extending the comment period for 60 days (77 FR 38024). The extended comment period closed on September 10, 2012. The BLM received over 177,000 comments on the initial proposed rule from individuals, Federal and state governments and agencies, interest groups, and industry representatives.

After reviewing the comments on the proposed rule, the BLM published a supplemental notice of proposed rulemaking on May 24, 2013 (78 FR 31636). The BLM received numerous requests for extension of the comment period on the supplemental proposed rule. Because of the complexity of the rule and well stimulation procedures, the BLM extended the comment period on the rule for 60 days. The closing date of the extended comment period was August 23, 2013. The BLM received over 1.35 million comments on the supplemental proposed rule. Substantive comments on the initial proposed and supplemental proposed rules that informed the BLM's decisions on the final rule are discussed in the section-by-section discussion of this preamble.

This final rule applies to all wells regulated by the BLM, whether on Federal, tribal, or individual Indian trust or restricted fee lands. The lands covered by the rule have not changed since the rule was first proposed.

Tribal Consultation and Coordination With States

Tribal consultation is a critical part of this rulemaking effort, and the Department is committed to making sure tribal leaders play a significant role as the BLM and the tribes work together

to develop resources on public and Indian lands in a safe and responsible way. During the proposed rule stage, the BLM initiated government-to-government consultation with tribes on the proposed rule and offered to hold follow-up consultation meetings with any tribe that desired to have an individual meeting. In January 2012, the BLM held four regional tribal consultation meetings, to which over 175 tribal entities were invited. To build upon established local relationships, the individual follow-up consultation meetings involved the local BLM authorized officers and management, including BLM State Directors. The BLM distributed copies of a draft rule to affected federally recognized tribes in January 2012 and invited comments from affected tribes, which were also considered in developing this final rule. After the issuance of the proposed rule, tribal governments, tribal members, and individual Native American mineral owners were also invited to comment directly on the proposed rule.

In June 2012, the BLM held additional regional consultation meetings in Salt Lake City, Utah; Farmington, New Mexico; Tulsa, Oklahoma; and Billings, Montana. Eighty-one tribal members representing 27 tribes attended the meetings. In these sessions, the BLM and tribal representatives engaged in substantive discussions of the proposed hydraulic fracturing rule. A variety of issues were discussed, including, but not limited to, the applicability of tribal laws, validating water sources, inspection and enforcement, wellbore integrity, and water management, among others. Additional individual consultations with tribal representatives have taken place since that time. Also, consultation meetings were held at the National Congress of American Indian Conference in Lincoln, Nebraska, on June 18, 2012, and at New Town, North Dakota on July 13, 2012.

After publication of the supplemental proposed rule, the BLM again held regional meetings with tribes in Farmington, New Mexico, and Dickinson, North Dakota in June 2013. Representatives from six tribes attended. The discussions included a variety of tribal-specific and general issues. One change resulting from those discussions is the re-drafting of final section 3162.3–3(k) to clarify that tribal and state variances are separate from variances for a specific operator. The BLM again offered to follow up with one-on-one consultations, and several such meetings were held with individual tribes. Several tribes, tribal members, and associations of tribes provided comments on the supplemental

proposed rule. The BLM understands the importance of tribal sovereignty and self-determination, and seeks to continuously improve its communications and government-to-government relations with tribes. Responses from tribal representatives informed the agency's actions in defining the scope of acceptable hydraulic fracturing operations. One of the outcomes of these meetings is the requirement in this rule that operators certify to the BLM that operations on Indian lands comply with applicable tribal laws.

In March 2014, the BLM invited tribes to participate in another meeting in Denver, Colorado. Representatives from seven tribes attended. There was significant discussion of issues raised in the comments on the supplemental proposed rule. The BLM subsequently held several consultations with individual tribes.

The BLM has been and will continue to be proactive about tribal consultation under the Department's Tribal Consultation Policy, which emphasizes trust, respect, and shared responsibility in providing tribal governments an expanded role in informing Federal policy that impacts Indian lands.

Several tribal representatives and tribal organizations commented that the hydraulic fracturing rule should not apply on Indian land, or that tribes should be allowed to decide not to have the rule apply on their land (that is, "opt out" of the rule). However, the Indian Mineral Leasing Act (IMLA) provides in a pertinent part as follows: "All operations under any oil, gas, or other mineral lease issued pursuant to the terms . . . of this title or any other Act affecting restricted Indian lands shall be subject to the rules and regulations promulgated by the Secretary of the Interior." 25 U.S.C. 396d. The Department has consistently applied uniform regulations governing mineral resource development on Indian and Federal lands. Thus, an "opt out" provision would not be consistent with the Department's responsibilities under IMLA, and the final rule does not provide such an option.

There has also been a suggestion that the Secretary should delegate her regulatory authority to the tribes if the tribe has regulations that meet or exceed the standards in the BLM regulation. The IMLA does not authorize the Secretary to delegate her regulatory responsibilities to the tribes, and therefore the final rule does not include a delegation provision. Nonetheless, there are opportunities for tribes to assert more control over oil and gas operations on tribal land by entering

into Tribal Energy Resource Agreements under the Indian Energy Development and Self-Determination Act (part of the Energy Policy Act of 2005), and to pursue contracts under the Indian Self-Determination and Education Assistance Act of 1975.

Also, the final rule defers to state (on Federal land) or tribal (on Indian land) designations of aquifers as either requiring protection from oil and gas operations, or as exempt from the requirement to isolate water-bearing zones in section 3162.3–3(b), so long as those designations are not inconsistent with protections required pursuant to the SDWA (also see the definition of "usable water"). Revised section 3162.3–3(k) provides that for lands within the jurisdiction of a state or a tribe, that state or tribe could work with the BLM to craft a variance that would allow compliance with state or tribal requirements to be accepted as compliance with the rule, for state or tribal provisions that are found to meet or exceed this rule's standards. The BLM would enforce the variance as the Federal rule and the appropriate State or tribe would enforce the variance under its authority.

The BLM will continue its coordination with states and tribes to establish or review and strengthen existing agreements related to oil and gas regulation and operations. During the rulemaking process, the BLM hosted multiple discussions with state governments to enhance coordination with oil and gas permitting, inspection, and enforcement. In August 2013, and then again in March 2014, the Acting Assistant Secretary for Land and Minerals Management invited the Governors and their representatives from those states with significant oil and gas operations, to meet with the BLM and discuss the objectives of the ongoing rulemaking as well as potential options for establishing agreements to assist in implementing the BLM's oil and gas program. The BLM's overall intent for these discussions is to minimize duplication and maximize flexibility through its coordination with states and tribes. We anticipate that these new and improved agreements will reduce regulatory burdens and increase efficiency, while fulfilling the Secretary's responsibilities mandated by statutes as steward for the public lands and trustee for Indian lands. As this rule is implemented, the BLM will continuously review these agreements along with the new variance process allowed by the rule, and consider improvements as necessary.

On Federal lands, the BLM enforces BLM regulations and lease conditions,

and the states enforce their oil and gas regulations. On Indian lands, the BLM enforces Federal regulations and the terms of the leases, and the tribes have the power to enforce their own law.

Disclosure of Chemicals

The BLM is working closely with the GWPC and the IOGCC, in coordination with the DOE, to provide for the disclosure of chemicals in the hydraulic fracturing fluids by the operators to the BLM through the existing public access Web site, www.fracfocus.org. As of June 2013, the FracFocus database was upgraded to FracFocus 2.0. These upgrades were designed to enhance several aspects of the site's functionality, such as its search and reports features and geographic information system mapping, for all users. As mentioned earlier, the GWPC and IOGCC, joint venture partners in the FracFocus initiative, announced the release of several improvements to FracFocus' system functionality. The new features are designed to reduce the number of human errors in disclosures, expand the public's ability to search records, provide public extraction of data in a "machine readable" format, and update educational information on chemical use, environmental impacts from oil and gas production, and potential environmental impacts. The new self-checking features in the system will help companies detect and correct possible errors before disclosures are submitted. This feature will detect errors verifying that Chemical Abstract Service (CAS) numbers meet the proper format.

As of March 1, 2015, this online database includes information provided by operators concerning oil and gas wells in 20 states, and it is our understanding that a few more states are considering use of this database. It includes information from over 72,700 wells and from more than 500 companies. The list of states currently using FracFocus and the states considering using FracFocus are listed as follows:³

States currently using FracFocus	States proposing to use FracFocus
1 Alabama	1 Alaska.
2 California	2 Florida.
3 Colorado	3 Kentucky.
4 Illinois	4 Nevada.
5 Kansas.	
6 Louisiana.	
7 Michigan.	
8 Minnesota.	
9 Mississippi.	

States currently using FracFocus	States proposing to use FracFocus
10 Montana.	
11 Nebraska.	
12 North Dakota.	
13 Ohio.	
14 Oklahoma.	
15 Pennsylvania.	
16 South Dakota.	
17 Tennessee.	
18 Texas.	
19 Utah.	
20 West Virginia.	

The Secretary of Energy Advisory Board's Task Force on FracFocus 2.0 has identified a number of areas in which FracFocus needs improvement.⁴ The BLM is in continued discussion with the GWPC and expects further progress in ensuring that the site meets key elements addressed by the Task Force report. Specifically, the BLM expects improvement in the database to allow users to search by chemical, well, company, or geography; in quality control; and in the capacity to handle high volumes of information.

The BLM recognizes the efforts of some states to regulate hydraulic fracturing and seeks to avoid duplicative regulatory requirements. It is important to recognize that a major impetus for a separate BLM rule is that states are not legally required to meet the stewardship standards that apply to public lands and do not have trust responsibilities for Indian lands under Federal laws. Thus, the rule may expand on or set different standards from those of states that regulate hydraulic fracturing operations. This final rule encourages efficiency in the collection of data and the reporting of information by allowing operators in states that require disclosure on FracFocus to meet both the state and the BLM requirements through a single submission to FracFocus.

The BLM encourages the public disclosure of all chemicals used in any hydraulic fracturing operation. However, because the identities of some chemicals may be entitled to protection under Federal law as trade secrets, the BLM is allowing that information to be withheld if the operator and any other owner of the trade secret submit affidavits containing specific information explaining the reasons for the claim for protection. If the BLM has questions about the validity of the claim for protection, the BLM can require the operator to provide the withheld information to the bureau, and then

would make a determination as to whether the data is properly withheld from the public.

Existing Oil and Gas Development Process

The BLM has an extensive process in place to ensure that operators conduct oil and gas operations in an environmentally sound manner that protects resources. This rule adds specific requirements for hydraulic fracturing operations, which supplement the existing requirements. The following is a description of these existing processes and requirements:

Resource Management Plans. Section 202 of the FLPMA requires the BLM to develop and maintain land use plans (the BLM refers to these plans as Resource Management Plans, or RMPs). The RMP serves as the basis for all land use decisions the BLM makes, including decisions to allow oil and gas leasing, allow oil and gas leasing under certain conditions, or prohibit oil and gas leasing altogether. The RMP applies to public lands, including the Federal mineral estate; however, it does not apply to Indian land or to surface estates managed by other Federal agencies such as the USDA Forest Service. The tribes and other Federal agencies rely on their own planning guidance when determining if their lands are suitable for oil and gas development. The FLPMA also requires that the public be given ample opportunity to participate in the development, maintenance, and revision of land use plans. Regulations implementing the FLPMA (43 CFR 1610.2) require the BLM field offices to publish notices to prepare, amend, or revise RMPs in the **Federal Register** and local newspapers. In addition, the BLM must send notices to groups and individuals who have expressed an interest in being involved in BLM activities or who have participated in the past.

Typically, the first step in the development or revision of an RMP is for the BLM to hold public scoping meetings to identify the primary issues that the BLM should consider and address in the RMP. If, for example, the public identifies tracts of land that are heavily used for recreational activities or that hold special environmental significance, the BLM may consider closing these tracts to oil and gas leasing or placing restrictions on development. Restrictions can include limiting the timing of oil and gas activities to avoid certain impacts, setbacks from sensitive resources, establishing limits on surface disturbance, and prohibiting surface occupancy entirely. Some areas, such as wilderness areas or land within an

³ See updated FracFocus link: <http://www.fracfocus.org/welcome>.

⁴ Secretary of Energy's Advisory Board recommendations (<http://energy.gov/seab/downloads/fracfocus-20-task-force-report>) includes the areas of improvement.

incorporated city, are closed to leasing by law. In addition to public scoping, the BLM coordinates with state, county, and local governments, Indian tribes, and other Federal agencies.

Once various land use options have been developed the BLM generally analyzes the environmental impacts of the alternatives through an Environmental Impact Statement (EIS), which offers additional opportunity for public involvement. For proposed land use decisions, such as keeping areas open for oil and gas leasing, environmental impacts are assessed based on a Reasonable Foreseeable Development (RFD) Scenario that projects the estimated levels and types of industry activity and the associated surface disturbance that might occur during the life of the RMP. Because the RMP and EIS generally cover all the Federal land and mineral estate administered by a BLM field office, the impact analysis is typically done on a broad scale. Mitigation measures developed through the draft RMP and EIS process can be implemented as stipulations on oil and gas leases. In addition to compliance with the National Environmental Policy Act (NEPA), the BLM must comply with the National Historic Preservation Act and the Endangered Species Act (ESA) and engage in a consultation process with the U.S. Fish and Wildlife Service under the ESA, if threatened or endangered species or critical habitat may be affected.

Once a draft RMP and EIS are developed, the public has an additional opportunity to review and comment on the analysis and proposed mitigation measures in the EIS. When all comments have been considered, the BLM develops a final RMP and EIS. The Record of Decision finalizes the RMP, selecting a final action to be adopted from a reasonable range of alternatives and explaining the rationale for the decision. Once the Record of Decision is signed, the BLM makes all land use decisions, including oil and gas development decisions, in accordance with the RMP.

Leasing Process. The next step in the oil and gas development process is the designation of parcels to be offered for lease, and an additional environmental review. Under existing regulations, the public may nominate tracts of land that they would like to see leased. It is far more common, however, for members of the industry to express interest in an area being offered for lease. The BLM first must ensure that the proposed tracts are under Federal jurisdiction and are open to leasing in accordance with the RMP. The next step is to conduct a

second NEPA review—typically through an Environmental Assessment (EA)—to address potential impacts that could be caused by oil and gas development within the nominated area. The NEPA review conducted at the leasing stage “tiers” from the RMP EIS. In other words, the issues, analysis of potential impacts, mitigation measures, and decisions in the RMP EIS are carried through to the NEPA review conducted at the leasing stage.

An interdisciplinary team consisting of resource specialists develops the NEPA documentation. The interdisciplinary team visits the site to gather on-the-ground data on potential impacts and mitigation measures. After the site visit, an EA is drafted, including coordination with county, state, and Federal agencies, and consultation with Indian tribes, if applicable, in the area proposed for leasing. EAs are posted on the BLM Web site and are available in the public room(s) at BLM field offices for public review and comment, typically for a 30-day period. The BLM reviews and addresses comments received during that 30-day period when it finalizes the EA. Specific mitigation measures are developed in the context of the NEPA review and are included in a notice to potential bidders of an oil and gas lease at a lease sale. If the environmental review concludes with a finding that the proposed lease issuance would result in no significant impacts to the quality of the human environment (FONSI), then the lease parcel can be included in the next scheduled lease sale without any further NEPA analysis. Upon issuance by the BLM, the lease allows the operator to conduct operations on the lease.

Exploration and development requirements. The BLM has existing regulations, including Onshore Oil and Gas Orders, to ensure that operators conduct oil and gas exploration and development in an environmentally responsible manner that protects other resources. These requirements will remain in place and will be supplemented by this final rule.

Existing section 43 CFR 3162.3–1 and Onshore Order 1 require an operator to get approval from the BLM prior to drilling a well. The operator must submit an APD containing all of the information required by Onshore Order 1. This includes a completed Form 3160–3, Application for Permit to Drill or Re-Enter, a well plat, a drilling plan, a surface use plan, bonding information, and an operator certification.

Upon receiving a drilling proposal on Federal lands, the BLM is required by existing section 3162.3–1(g) to post information for public inspection for at

least 30 days before action to approve the APD. The information must include: The company/operator name; the well name/number; and the well location described to the nearest quarter-quarter section (40 acres), or similar land description in the case of lands described by metes and bounds, or maps showing the affected lands and the location of all tracts to be leased and of all leases already issued in the general area. Where the inclusion of maps in such posting is not practicable, the BLM provides maps of the affected lands available to the public for review. The public posting is in the office of the BLM authorized officer and in the appropriate surface managing agency office, if other than the BLM. Some field offices also make this information available on the field office Web site. The public may review the posted information and provide any input they would like the BLM to consider during its environmental analysis. If the public has questions and concerns regarding drilling proposals, they can meet with BLM staff and share those concerns.

The drilling plan is a critical, detailed, and multi-faceted component of the APD that allows BLM engineers and geologists to complete an appraisal of the technical adequacy of, and environmental effects associated with, the proposed project. The drilling plan must include:

- Geological information, including the name and estimated tops of all geologic groups, formations, members, and zones as well as the estimated depths and thickness of formations, members, or zones potentially containing usable water, oil, gas, or prospectively valuable deposits of other minerals that the operator expects to encounter, and their plans for protecting such resources.

- Minimum specifications for blowout prevention equipment that will be used to keep control of well pressures encountered while drilling.

- A description of the proposed casing program, including the size, grade, weight, and setting depth of each casing string.

- Detailed information regarding the proposed cementing program, including the amount and types of cement the operator will use for each casing string, which is critical in establishing a barrier outside the casing between any hydrocarbon bearing zones and usable water zones. BLM engineers evaluate the proposed cementing program to ensure that the volume and strength of the cement is adequate to achieve the desired protections.

- Information regarding the proposed drilling fluid and proposed testing, logging, and coring procedures.

- An estimate of the expected bottom-hole pressure and any anticipated abnormal pressures, temperatures, or potential hazards that the well may encounter. BLM geologists and engineers review this information to determine if any other anticipated hazards exist and to ensure that there will be adequate mitigation to address those hazards.

- Other information that may be pertinent, including the directional drilling plan for deviated or horizontal wells so that BLM engineers can look for potential issues with existing wells.

Just as the drilling plan allows the BLM to ensure the down-hole technical adequacy of the proposed project, the surface use plan provides the BLM with information needed to ensure safe operations, adequate protection of the surface resources, groundwater, and other environmental components in areas where the BLM manages the surface.

The surface managing agency must approve surface use plans where the BLM does not manage the surface. The Bureau of Indian Affairs is considered to be the surface management agency for Indian lands. In the surface use plan, operators must also describe any Best Management Practices (BMPs) they expect to use. BMPs are mitigation measures applied to oil and natural gas drilling and production to help ensure that operators conduct energy development in an environmentally responsible manner. BMPs can protect water, wildlife, air quality, and landscapes. The BLM encourages operators to incorporate BMPs into their plans. Information concerning BMPs is available on the BLM's Web site at: http://www.blm.gov/wo/st/en/prog/energy/oil_and_gas/best_management_practices.html.

Where the BLM manages the surface, the operator's surface use plan should incorporate the BLM's "Surface Operating Standards and Guidelines for Oil and Gas Exploration and Development," which is commonly referred to as "The Gold Book." The BLM developed "The Gold Book" to assist operators by providing information on obtaining permit approval and conducting environmentally responsible oil and gas operations. It is available on the BLM's Web site at: http://www.blm.gov/wo/st/en/prog/energy/oil_and_gas/best_management_practices/gold_book.html.

In general, the surface use plan must include the following:

- Location and description of, as well as maintenance plan for, existing and new roads the operator plans to use to access the proposed well.

- A map showing all known wells, regardless of their status (producing, abandoned, etc.) within a one-mile radius of the proposed location so that the BLM can ensure the proposal does not conflict with any current surface use. The BLM also uses this well information to identify any potential downhole conflicts or issues between the existing wells and the proposed well.

- A map or diagram showing the location of all production facilities and lines the operator will install if the well is successful (a producing well), as well as any existing facilities.

- Information concerning the water supply, such as rivers, creeks, springs, lakes, ponds, and wells that the operator plans to use for drilling the well.

- A written description of the methods and locations it proposes for safe containment and disposal of each type of waste materials that result from drilling the proposed well. The narrative must include plans for the eventual disposal of drilling fluids and any produced oil or water recovered during testing operations.

- A diagram in the surface use plan of the proposed well site layout.

- A plan for the surface reclamation or stabilization of all disturbed areas.

Another component of the APD is proof of adequate bond coverage as required by existing 43 CFR 3104.1 for Federal lands and 25 CFR 211.24, 212.24, and 225.30, for Indian lands. These regulations require the operator or the lessee to have an adequate bond in place prior to the BLM's approval of the APD. If the BLM determines that the current bond amount is not sufficient, the BLM can require additional bond coverage. The BLM determines the need for bond increases by considering the operator's history of violations, the location and depth of wells, the total number of wells involved, the age and production capability of the field, and any unique environmental issues.

Upon receipt of a complete APD, the BLM will schedule an onsite inspection with the operator so that the BLM and operator may further identify site-specific resource concerns and requirements not originally identified in the application.

The onsite inspection team will include the BLM, a representative of any other surface management agency and the operator or permitting agent. When the onsite inspection is on private surface, the BLM will invite the surface owner to attend. The purpose of the

onsite inspection is to discuss the proposal; determine the best location for the well, road, and facilities; identify site-specific concerns and potential environmental impacts associated with the proposal; and discuss the conditions of approval or possible environmental BMPs. If the BLM identifies resource conflicts, the BLM has the authority to require the operator to move surface facilities to locations that would reduce resource impacts while still allowing development of the leased minerals.

Site-Specific Environmental Review. After the BLM has reviewed the operator's proposed plans and conducted the onsite inspection, the BLM will prepare an environmental document in conformance with NEPA and its implementing regulations. The extent of the environmental analysis process and the time frame for issuance of a decision will depend upon the complexity of the proposed action and resulting analysis, the significance of the environmental effects disclosed, and the completion of appropriate consultation processes. Regardless of the complexity of the proposed action, the environmental document will always consider the impacts to cultural resources, endangered species, surface water, and groundwater. An interdisciplinary team of BLM resource specialists will conduct the analysis.

The environmental analysis may be conducted for a single well, a group of wells, or for an entire field. The public is welcome to provide input to the BLM for inclusion in the analysis. As discussed previously, the BLM posts notices of all Federal APDs for public inspection in the authorizing office. For large projects, such as field development environmental assessments or environmental impact statements, the BLM will go through public scoping and may issue a draft analysis for public comment prior to completing the final analysis and issuing a decision.

The environmental analysis will identify potential impacts from the proposed action. The BLM will develop any necessary conditions of approval to mitigate those potential impacts. If unacceptable impacts are identified, the BLM will ask the operator to modify its proposal, or the BLM may deny the application. The BLM will attach the conditions of approval to the approved APD that the operator must follow. Examples of conditions of approval include road improvements, additional erosion control, or seasonal restrictions on some activities. In cases where the BLM manages the surface, the BLM may also require baseline water testing prior to drilling.

Compliance with Onshore Oil and Gas Order No. 2. Upon BLM's approval of an APD, the operator may commence drilling of the well. In addition to the approved plan and the conditions of approval, the operator must also comply with the requirements of Onshore Oil and Gas Order No. 2, (Onshore Order 2), which details the BLM's uniform national standards for the minimum levels of performance expected from operators when conducting drilling operations on Federal and Indian lands. Many of the requirements of Onshore Order 2 ensure the protection of usable water.

Onshore Order 2 also requires the operator to:

- Conduct the proposed casing and cementing programs as approved to protect and isolate all usable water zones, lost circulation zones, abnormally pressured zones, and any prospectively valuable deposits of minerals. It also requires the operator to report all indications of usable water.
- Employ technical measures to center the casing in the drilled hole prior to cementing in order to ensure wellbore integrity. It also requires the operator to cement the surface casing up to the surface either during the primary cement job or by remedial cementing, which ensures that all usable water zones behind the surface casing are isolated and protected.
- Wait until the cement for all casing strings achieves a minimum of 500 pounds per square inch (psi) compressive strength at the casing shoe prior to drilling out the casing shoe and utilize proper cementing techniques.
- Pressure test the casing prior to drilling out the casing shoe to ensure the integrity of the casing. The operator must also conduct a pressure integrity test of each casing shoe on all exploratory wells, and on that portion of any well approved for a 5,000 psi blowout preventer. The pressure test ensures the integrity of the cement around the casing shoe.

In addition, Onshore Order 2 identifies the minimum requirements for blowout prevention equipment and the minimum standards for testing the equipment. Proper sizing, installation, and testing of the blowout prevention equipment ensures that the operator maintains control of the well during the drilling process, which is necessary for protection of usable water zones.

Post-Approval Inspections and Reporting. The BLM conducts inspections of drilling operations to ensure that operators comply with the Onshore Order 2 drilling regulations, the approved permit, and the conditions of approval. The BLM drilling

inspections consist of two general types of inspections: Technical and environmental. The BLM petroleum engineering technicians conduct technical inspections of the drilling operations such as witnessing the running and cementing of the casing, witnessing the testing of the blowout prevention equipment, and detailed drilling rig inspections. Such inspections also include review of documentation such as the third-party cementing job ticket that describes the cementing operation, including the type and amount of cement used, the cement pump pressures, and the observation of cement returns to the surface, if applicable.

The BLM natural resource specialists conduct environmental inspections of drilling operations that focus primarily on the surface use portion of the approved drilling permit. This includes inspection of the access road, the well pad, and pits. While the BLM does not have the budget or personnel to inspect every drilling operation on Federal and Indian minerals, the BLM conducts inspections in accordance with an annual risk-based strategy to ensure compliance with the regulations, lease stipulations, and permits.

Within 30 days after the operator completes a well, the operator is required by existing regulations to submit a BLM Well Completion or Recompletion Report and Log (Form 3160-4), which provides drilling and completion information. Similar to completion of a new well, an existing well can be recompleted to restore productivity and thus produce oil or gas which would have otherwise been abandoned. This document includes the actual casing setting depths and the amount of cement the operator used in the well, together with information regarding the completion interval between, for example, the top and bottom of the formation, the perforated interval, and the number and size of perforation holes. The operator is also required to submit copies of all electric and mechanical logs. The BLM reviews this information to ensure that the operator set the casing and pumped the cement according to the approved permit.

Compliance with Onshore Oil and Gas Order No. 7. Once a well goes into production, water is often produced with the oil and gas. The water tends to be of poor quality and is not generally suitable for drinking, livestock, or other uses and, therefore, must be disposed of properly. Onshore Oil and Gas Order No. 7 (Onshore Order 7) regulates the disposal of produced water. Under Onshore Order 7, operators must apply

to the BLM for authorization to dispose of produced water by injecting the water back into a suitable formation, by storing it in pits, or by other methods approved by the BLM. If the water will be stored in pits, the BLM requires specific design standards to ensure the water does not contaminate the environment or pose a threat to public health and safety.

Post-Drilling Inspections. After a well has been drilled and completed, the BLM continues to inspect the well until it has been plugged and abandoned, and the surface has been rehabilitated. During the production phase of the well, the BLM inspections focus on two primary issues: Production and the environment. The Federal Government (Federal leases) or an Indian tribe or individual Indian allottee (Indian leases) receive a royalty on the oil and gas removed or sold from the lease based on the volume, quality, and value of the oil and gas. Royalties from Federal leases are shared with the state as provided by statute. Production inspections are conducted by the BLM to ensure the volume and quality of the oil and gas is accurately measured and properly reported. Environmental inspections are conducted by the BLM to ensure that wellpads and facilities are in compliance with regulations, Onshore Orders, and approved permits. Environmental inspections include ensuring that pits are properly constructed, maintained, and protected from wildlife; identifying leaking wells or pipelines; ensuring that the wellsite and facilities are properly maintained; and ensuring that proper erosion controls and rehabilitation measures are in place.

Well Plugging, Abandonment and Site Restoration. When a well has reached the end of its economic life, Federal regulations require that it be plugged and abandoned to prevent oil and gas from leaking to the surface or contaminating water bearing zones or other mineral zones. An operator may request well abandonment or the BLM may require it. In either case, the operator must submit a proposal for well plugging, including the length, location, type of cement, and placement method to be used for each plug. The operator must also submit a plan to rehabilitate the surface once the well has been plugged. The goal of surface rehabilitation is to remove obvious visual evidence of the pad and to promote the long-term stability of the site and vegetation.

The BLM inspects both well plugging and surface restoration. Well plugging inspections are completed to ensure the plugs are set in accordance with the

procedure approved by the BLM. The inspector will witness the depth and volume of cement used in a plug as well as the physical verification of the top of a plug. When an operator has completed surface restoration, it will notify the BLM or the surface management agency. The surface protection specialists of the BLM or of the surface management agency will inspect the site to ensure the restoration is adequate. Once the BLM or the surface management agency is satisfied with the restoration efforts, the BLM will approve the operator's Final Abandonment Notice.

The regulations and Onshore Orders that have been in place to this point have served to provide reasonable certainty of environmentally responsible development of oil and gas resources on public lands, but are in need of revision as extraction technology has advanced. The final rule will complement these existing rules by providing further assurance of wellbore integrity, requiring with limited exception public disclosure of chemicals used in hydraulic fracturing, and ensuring safe management of recovered fluids. Taken together these regulations establish baseline environmental safeguards for hydraulic fracturing operations across all public and Indian lands.

II. Discussion of the Final Rule and Comments on the Proposed Rules

As was discussed in the initial and supplemental proposed rules, the BLM is revising its hydraulic fracturing regulations, found at 43 CFR 3162.3–2, and adding a new section 3162.3–3. Existing section 3162.3–3 is retained and renumbered. As stewards of the public lands and minerals and as the Secretary's regulator for operations on oil and gas leases on both public and

Indian lands, the BLM has evaluated the increased use of hydraulic fracturing practices over the last decade and determined that the existing rules for hydraulic fracturing require updating.

The FLPMA directs the BLM to manage the public lands so as to prevent unnecessary or undue degradation, and to manage those lands using the principles of multiple use and sustained yield. The FLPMA defines multiple use to mean, among other things, a combination of balanced and diverse resource uses that takes into account long-term needs of future generations for renewable and non-renewable resources. The FLPMA also provides that the public lands be managed in a manner that will protect the quality of their resources, including, but not limited to, ecological, environmental, and water resources. The Mineral Leasing Act and the Mineral Leasing Act for Acquired Lands authorize the Secretary to lease Federal oil and gas resources, and to regulate oil and gas operations on those leases, including surface-disturbing activities.

The Act of March 3, 1909, the Indian Mineral Leasing Act and the Indian Mineral Development Act assign regulatory authority to the Secretary over Indian oil and gas leases on trust lands (except those excluded by statute, *i.e.*, the Crow Reservation in Montana, the ceded lands of the Shoshone Reservation in Wyoming, the Osage Reservation in Oklahoma, and the coal and asphalt lands of the Choctaw and Chickasaw Tribes in Oklahoma). The Secretary has delegated to the BLM her authority to oversee operations on Indian mineral leases through the Departmental Manual (235 DM 1.K), and the Bureau of Indian Affairs' regulations

provide that 43 CFR part 3160 applies to oil and gas operations on Indian lands. See 25 CFR 211.4, 212.4, and 225.4. The Secretary also approved the authorities section of the regulations which give the BLM authority under the Indian minerals statutes.

As discussed in the background section of this preamble, the increased use of well stimulation activities over the last decade has generated concerns among the public about hydraulic fracturing and about the chemicals used in hydraulic fracturing. This final rule is intended to increase transparency for the public regarding the fluids used in the hydraulic fracturing process, provide assurance that wellbore integrity is maintained throughout the fracturing process and ensure that the fluids that flow back to the surface from hydraulic fracturing operations are properly stored, disposed of, or treated. The BLM's engineers and field managers have decades of experience exercising oversight of these wells during the evolution of this technology. This expertise, together with input from the public, industry, state, academic and other experts discussed below, forms the basis for the decision that new rules are needed and for the requirements contained in this rule.

The following chart explains the major changes between the supplemental proposed rule and this final rule. A similar chart explaining the differences between the proposed and supplemental proposed rules appears in the supplemental proposed rule at 78 FR 31641 and a chart explaining the differences between the existing regulations and the original proposed rule appears in the proposed rule at 77 FR 27694.

Supplemental proposed regulation	Final regulation	Substantive changes
43 CFR 3160.0–5 Definitions	43 CFR 3160.0–5 Definitions	This final rule makes a series of changes to the definitions section. The term "master hydraulic fracturing plan" is added. The definition of a cement evaluation log is moved from §3162.2–3(e)(2) to the definitions section. The term "confining zone" is now defined because that term is used in revised §3162.3–3(d). The term "refracturing" is deleted from this section and the rest of the rule. The term "usable water" is updated to remove the requirement to identify usable water only via drill log. The final rule also clarifies the definition of "usable water".
43 CFR 3162.3–2 Subsequent Well Operations.	43 CFR 3162.3–2 Subsequent Well Operations.	Paragraph (a) of this section is modified slightly by removing the phrase "the operator" because it is redundant.
43 CFR 3162.3–3(a) Hydraulic Fracturing.	43 CFR 3162.3–3(a) Subsequent Well Operations; Hydraulic Fracturing.	The final rule clarifies the application of this rule to wells at various stages of completion on the publication and effective date, and clarifies what sections of the rule apply based on a table which distinguishes leases with approved APDs from leases without approved APDs, as well as leases with approved APDs that do not have wells spudded.
43 CFR 3162.3–3(b) Isolation of Usable Water to Prevent Contamination.	43 CFR 3162.3–3(b) Isolation of Usable Water to Prevent Contamination.	The term "refracturing" is deleted.

Supplemental proposed regulation	Final regulation	Substantive changes
43 CFR 3162.3–3(c) When an Operator Must Submit Notification for Approval of Hydraulic Fracturing.	43 CFR 3162.3–3(c) How an Operator Must Submit a Request for Approval of Hydraulic Fracturing.	Paragraphs (c)(1) and (2) of this section are revised non-substantively and for clarity. Paragraph (c)(3) is revised to remove references to refracturing. As in the supplemental proposed rule, the operator may submit the hydraulic fracturing proposal either in the APD or as an NOI. The final rule removes “type wells” from this section. In the final rule a request to hydraulically fracture can be submitted for a group of wells in a master hydraulic fracturing plan. Paragraph (c)(4) is added to address and clarify when an operator must submit a new NOI.
43 CFR 3162.3–3(d) What the Notice of Intent Sundry Must Include.	43 CFR 3162.3–3(d) What a Request for Approval of Hydraulic Fracturing Must Include.	Consistent with other changes in this rule, the final rule replaces the procedure for submitting an NOI for multiple wells through a type well submission, and instead allows submission of a master hydraulic fracturing plan. Paragraph (d)(1) is revised to require specific information regarding wellbore geology, including information regarding the formation into which hydraulic fracturing fluids are to be injected, the estimated depths of the confining zones and occurrences of usable water. Paragraph (d)(2) is revised to require a map showing information regarding known or suspected faults and fractures. Paragraph (d)(4) is also revised to require submission of a map showing information about the trajectory of the wellbore and estimated direction and length of the fractures that will be propagated and all existing wellbore trajectories for all wells within one-half mile of the wellbore that will be hydraulically fractured.
43 CFR 3162.3–3(d)(2)	43 CFR 3162.3–3(d)(2)	The final rule deletes the requirement to submit occurrences of usable water by use of a drill log and instead allows flexibility in how to obtain the information.
43 CFR 3162.3–3(d)(3)	43 CFR 3162.3–3(d)(3)	The final rule eliminates the requirement to submit the proposed measured depth of perforations or the open hole interval and estimated pump pressures and makes it clear that the wells referred to in this provision are water supply wells.
43 CFR 3162.3–3(d)(4)	43 CFR 3162.3–3(d)(4)	The final rule combines paragraphs (ii) and (iii) into a revised paragraph (ii) to read “the maximum anticipated surface pressure that will be applied during the hydraulic fracturing process.” The revised terminology encompasses the intent of the previous two paragraphs. Supplemental proposed rule paragraph (iv) is now paragraph (iii) and is revised in the final rule, and the word “calculated” is deleted, to reinforce the lack of certainty of the information in the APD or NOI at this stage of operations. Supplemental proposed rule paragraph (v) is deleted and replaced with a revised paragraph (iv), which seeks the estimated minimum vertical distance to the nearest usable water aquifer above the fracture zone. New paragraph (v) asks for the measured depth of the proposed perforated or open hole interval. Both the old paragraph (v) and the new paragraph (iv) aim to provide guidance to the BLM on protecting usable water zones.
43 CFR 3162.3–3(d)(5)	43 CFR 3162.3–3(d)(5)	The final rule eliminates some of the specific details of the fluid recovery plan, focusing on estimated volume, proposed handling methods and proposed disposal methods. Further, the timeline is being clarified to better reflect the scope of the plan. This paragraph is also revised by adding a provision asking for information about the handling of recovered fluids between the time of the start of hydraulic fracturing operations and the approval of the disposal of produced fluids under BLM's regulations, which are currently contained in existing Onshore Order 7. Paragraph (i) is revised by eliminating the three circumstances that were listed where the volume of recovered fluid must be estimated, but keeping the requirement to estimate the volume of fluid to be recovered. New paragraph (ii) asks for the proposed methods of handling recovered fluids by cross reference to paragraph (h) of this section, which requires the use of rigid enclosed, covered or netted and screened above-ground tanks to store these fluids (with a limited exception for the use of lined pits). Paragraph (iii) of this section is revised by making clear the methods of handling recovered fluids that must be described in the application.
None	43 CFR 3162.3–3(d)(6)	The final rule includes a requirement for a surface use plan of operations if the hydraulic fracturing operation would cause additional surface disturbance. By reference to paragraph (e), it requires documentation that an adequate cement job occurred for all casing strings designed to isolate usable water.
43 CFR 3162.3–3(d)(6)	43 CFR 3162.3–3(d)(7)	Because of new paragraph (d)(6), the former paragraph (d)(6) is re-numbered as paragraph (d)(7), and is revised to make it clear that the requirement may apply to an APD as well as a NOI.

Supplemental proposed regulation	Final regulation	Substantive changes
43 CFR 3162.3(e) Monitoring of Cementing Operations and Cement Evaluation Log Prior to Hydraulic Fracturing.	43 CFR 3162.3–3(e) Monitoring and Verification of Cementing Operations Prior to Hydraulic Fracturing.	The title of this section is revised to better reflect the content of the final rule.
43 CFR 3162.3–3(e)(1)	43 CFR 3162.3–3(e)(1)	This paragraph is revised to make it clear that the information request is for any casing string used to isolate usable water zones. The section is also revised to require that the information be submitted to the authorized officer 48 hours prior to the start of hydraulic fracturing operations unless the authorized officer approves a shorter time.
43 CFR 3162.3–3(e)(2)	43 CFR 3162.3–3(e)(2)	New paragraph (e)(2) replaces supplemental proposed rule paragraph (e)(2) and requires that prior to hydraulic fracturing operations the operator must determine and document that there is adequate cement for all casing strings to isolate usable water. For surface casing, the operator must observe cement returns to the surface and document any indications of inadequate cement following the new requirements of this paragraph. For intermediate or production casing, if the casing is not cemented to the surface, the operator must run a CEL demonstrating that there is at least 200 feet of adequately bonded cement protecting the deepest usable water zone. If the casing is cemented to the surface, then the operator must follow the same requirements as for surface casing established earlier in this section.
43 CFR 3162.3–3(e)(3), (e)(4), and (e)(5).	43 CFR 3162.3–3(e)(3)	Final paragraph (3) combines revised supplemental proposed rule paragraphs (3), (4), and (5). For any well where there is an indication of inadequate cement, the operator must follow the provisions of this paragraph. The operator must notify the BLM of the inadequate cement within 24 hours of discovering it (paragraph (3)(i)) and submit a plan to the BLM requesting approval of remedial action to achieve adequate cement (paragraph (3)(ii)). This section also addresses emergency situations where an operator may request oral approval of remedial action to correct inadequate cement. Such oral approvals must be followed by written notice within 5 business days following oral approval. The operator must also verify that the remedial action was successful with a CEL or other method BLM approves in advance (paragraph (3)(iii)). Consistent with the supplemental proposed rule, the operator must submit a subsequent report for the remedial action including a certification that the remedial action followed the approved plan and was successful (paragraph (3)(iv)). Under paragraph (3)(v), the operator must submit to the BLM the results of the CEL or other testing method that showed that the remedial action was successful at least 72 hours before starting hydraulic fracturing operations.
43 CFR 3162.3–3(f) Mechanical Integrity Testing Prior to Hydraulic Fracturing.	43 CFR 3162.3–3(f) Mechanical Integrity Testing Prior to Hydraulic Fracturing.	Paragraph (1) of this section is revised to include the words “that will be applied during the hydraulic fracturing process,” to clarify the timing of the requirement. Paragraph (2) of this section is revised by replacing the word “treating” with the word “surface” in the second sentence of this paragraph.
43 CFR 3162.3–3(g) Monitoring and Recording During Hydraulic Fracturing.	43 CFR 3162.3–3(g) Monitoring and Recording During Hydraulic Fracturing.	This paragraph has been revised to delete the term “refracturing,” and clarifies the actions that operators must take when pressure within the annulus increases by more than 500 pounds per square inch as compared to the pressure immediately preceding the stimulation.
43 CFR 3162.3–3(h)	43 CFR 3162.3–3(h) Management of Recovered Fluids.	This section has undergone numerous changes. The final rule requires that fluids recovered be stored in above-ground tanks prior to disposal under BLM’s regulations (currently in Onshore Order 7). Paragraphs (1) and (2) specify the very limited conditions under which an authorized officer may approve a lined pit in lieu of a tank.
43 CFR 3162.3–3(i) Information that Must be Provided to the Authorized Officer After Completed Operations.	43 CFR 3162.3–3(i) and (i)(1) Information that Must be Provided to the Authorized Officer After Hydraulic Fracturing is Completed.	The heading of this section is revised to make it clearer. Paragraph (i)(1) of this section is also revised to require the operator to provide information about each additive in the hydraulic fracturing fluid. This will help to account for proppants as well as chemical additives.
43 CFR 3162.3–3(i)(2)	43 CFR 3162.3–3(i)(2), (i)(3), and (i)(5).	This section has been revised to seek only the actual sources and locations of the water used in the hydraulic fracturing fluid. The pressure information requested in the supplemental proposed rule is covered in the final rule by paragraph (3) and the depth of perforations and open hole interval is part of new paragraph (5).
43 CFR 3162.3–3(i)(3)	43 CFR 3162.3–3(i)(3)	The final rule seeks the maximum surface pressure rather than the actual surface pressure and no longer seeks the flush rate or the final pump pressure concentration in the fracturing fluid.

Supplemental proposed regulation	Final regulation	Substantive changes
43 CFR 3162.3–3(i)(4)	43 CFR 3162.3–3(i)(4)	This section requires the report to include the actual, estimated, or calculated fracture length, height, and direction. This section remains as proposed.
None	43 CFR 3162.3–3(i)(5)	New paragraph (5) requires information previously contained in paragraph (2), regarding the actual measured depth of perforations or the open-hole interval.
None	43 CFR 3162.3–3(i)(6)	New paragraph (6) requires operators to report the total volume of fluid recovered between the time that hydraulic fracturing is completed and when the operator starts to report water produced from the well to Office of Natural Resources Revenue (ONRR).
43 CFR 3162.3–3(i)(5)(i)	43 CFR 3162.3–3(i)(7)	The final rule revises this renumbered paragraph to clearly outline the timeframe for reporting information pertaining to fluid recovery.
43 CFR 3162.3–3(i)(5)(ii)	43 CFR 3162.3–3(i)(7)(i)	This final section is renumbered, but is similar to the supplemental proposed rule.
43 CFR 3162.3–3(i)(5)(iii)	43 CFR 3162.3–3(i)(7)(ii)	The final rule would simplify this section by removing the reference to Onshore Order No. 7 and seek information on disposal method, such as injection, recycling, or off-lease storage.
43 CFR 3162.3–3(i)(6)	Deleted	This section is deleted and is unnecessary because the Authorized Officer can always require an explanation of any deviation under (i)(10) of this section.
43 CFR 3162.3–3(i)(7)	43 CFR 3162.3–3(i)(8)	The final rule renumbers this section. Paragraphs (8)(ii) and (8)(iii) are revised to make it clear that the provisions only apply to hydraulic fracturing fluid constituents once they arrive on the lease.
43 CFR 3162.3–3(i)(8)	43 CFR 3162.3–3(i)(9)	The final rule renumbers this section. The well logs and records of adequate cement bonds, including the cement monitoring report and any cement evaluation log, are no longer required to be submitted under this section because this information is covered either in the APD or NOI under paragraph (e) of this section.
43 CFR 3162.3–3(j) Identifying Information Claimed to be Exempt from Public Disclosure.	43 CFR 3162.3–3(j) Identifying Information Claimed to be Exempt from Public Disclosure.	The final rule at paragraph (j)(1) strengthens the affidavit provisions to ensure that operators fully describe and attest to the basis for their claim of exemption from public disclosure for trade secrets. The affidavit must be signed by a corporate officer or the equivalent responsible official of the operator. The affidavit must identify and provide contact information for the owner of the withheld information, if it is not the operator. New paragraph (j)(2) provides that if the operator relies on facts supplied by another entity, it must include an affidavit from a responsible official of that entity verifying those facts. Former paragraph (j)(2) has been renumbered (j)(3) without substantive change. Former paragraph (j)(4) has been renumbered as paragraph (j)(5) and is revised by requiring that the operator maintain records of the information claimed to be exempt from disclosure until the later of the BLM's approval of a final abandonment notice, or 6 years from completion of hydraulic fracturing operations for Indian lands, or 7 years from completion of hydraulic fracturing operations for Federal lands, as is consistent with applicable law. Any subsequent operator is responsible for maintaining access to those records. The final rule also adds a new paragraph (j)(6) to this section requiring the operator to submit the chemical family name or other similar descriptor for information claimed to be exempt from disclosure.
43 CFR 3162.3–3(k) Requesting a Variance from the Requirements of this Section.	43 CFR 3162.3–3(k) Requesting a Variance from the Requirements of this Section.	The final rule revises the variance provisions to allow for individual variances and state/tribal variances in different sections. Most of the substantive information in this section has not changed, but has been re-organized and revised for clarity. One revision to this section is made to make the rule consistent with Onshore Order 1 by clarifying that the decision on whether to approve a variance request is not administratively appealable to either the State Director or to the Interior Board of Land Appeals under 43 CFR part 4.

Section-by-Section Discussion of the Revised Proposed Rule and Discussion of Comments

Comments Addressed in This Rule

In this preamble, the BLM discusses many of the comments received on the supplemental and proposed rules. Commenters provided detailed and helpful information that assisted in framing the issues and ultimately in

producing this final rule. The Department does not address every comment in this final rule, because the changes in this rule have mooted some comments on the initial proposed rule and the supplemental proposed rule. Other comments were not central to the evaluation the BLM has undertaken, and thus discussion of those few comments would not contribute to the public's

understanding of the reasons for the final rule.

Additionally, not every change in the final rule responds to a specific comment. Some revisions clarify the final rule, and still other revisions allow this final rule to be more effective or reduce inefficiencies.

PART 711—TSCA CHEMICAL DATA REPORTING REQUIREMENTS

■ 1. The authority citation for part 711 continues to read as follows:

Authority: 15 U.S.C. 2607(a).

■ 2. In § 711.6, in Table 2 of paragraph (b)(2)(iv), the following CASRN numbers are removed as set forth below.

§ 711.6 Chemical substances for which information is not required.

* * * * *

(b) * * *

(2) * * *

(iv) * * *

TABLE 2—CASRN OF PARTIALLY EXEMPT CHEMICAL SUBSTANCES

CASRN	Chemical
61788–61–2	Fatty acids, tallow, Me esters.
67762–26–9	Fatty acids, C14–18 and C16–18-unsatd., Me esters.
67762–38–3	Fatty acids, C16–18 and C–18-unsatd., Me esters.
67784–80–9	Soybean oil, Me esters.
129828–16–6	Fatty acids, canola oil, Me esters
515152–40–6	Fatty acids, corn oil, Me esters.

[FR Doc. 2015–06933 Filed 3–27–15; 8:45 am]

BILLING CODE 6560–50–P

DEPARTMENT OF THE INTERIOR**Bureau of Land Management****43 CFR Part 3160**

[LLWO300000 L13100000.PP0000 14X]

RIN 1004–AE26

Oil and Gas; Hydraulic Fracturing on Federal and Indian Lands*Correction*

In rule document 2015–06658, appearing on pages 16128–16222, in the Issue of March 26, 2015, make the following corrections:

§ 3162.3–3 Subsequent well operations; Hydraulic fracturing. [Corrected]

1. On page 16218, in § 3162.3–3 (a)(5), in the table in the first column, in the fifth row, the entry “(5) Authorized drilling operations were completed after September 22, 2015.” should read “(5) Authorized drilling operations were completed after December 26, 2014.”

2. On the same page, in § 3162.3–3, in the same table, in the first column, in the sixth row, the entry “(6) Authorized drilling activities were completed before September 22, 2015” should read “(6) Authorized drilling activities were completed before December 26, 2014.”

[FR Doc. C1–2015–06658 Filed 3–26–15; 4:15 pm]

BILLING CODE 1505–01–D

OFFICE OF PERSONNEL MANAGEMENT**45 CFR Part 800**

RIN 3206–AN12

Patient Protection and Affordable Care Act; Establishment of the Multi-State Plan Program for the Affordable Insurance Exchanges; Correction

AGENCY: Office of Personnel Management.

ACTION: Final rule; correction.

SUMMARY: The Office of Personnel Management (OPM) is correcting a final rule that appeared in the **Federal Register** of February 24, 2015 (80 FR 9649). The document implementing modifications to the Multi-State Plan (MSP) Program based on the experience of the Program to date.

DATES: Effective March 26, 2015.

FOR FURTHER INFORMATION CONTACT: Cameron Stokes by telephone at (202) 606–2128, by FAX at (202) 606–4430, or by email at *mspp@opm.gov*.

SUPPLEMENTARY INFORMATION: In FR Doc. 2015–03421, appearing on page 9649 in the **Federal Register** of Tuesday, February 24, 2015, the following corrections are made:

1. On page 9655, in the third column, the heading “List of Subjects in 5 CFR part 800” is revised to read, “List of Subjects in 45 CFR part 800.”

2. On page 9655, in the third column, the last paragraph should be revised to read:

“Accordingly, the U.S. Office of Personnel Management is revising part

800 to title 45, Code of Federal Regulations, to read as follows:”

U.S. Office of Personnel Management.

Steve Hickman,

Regulatory Affairs, Office of the Executive Secretariat.

[FR Doc. 2015–07330 Filed 3–26–15; 4:15 pm]

BILLING CODE 6325–64–P

DEPARTMENT OF HEALTH AND HUMAN SERVICES**Administration for Children and Families****45 CFR Part 1340****Technical Regulation: Removal of Child Abuse and Neglect Prevention and Treatment Act Implementing Regulations**

AGENCY: Children’s Bureau, Administration on Children, Youth and Families, Administration for Children and Families, Department of Health and Human Services (HHS).

ACTION: Final rule.

SUMMARY: The Administration for Children and Families is removing the Child Abuse Prevention and Treatment Act (CAPTA) regulations in their entirety. These regulations no longer apply to the CAPTA programs they were originally designed to implement because of major legislative changes to CAPTA since the regulations were issued.

DATES: This rule is effective June 29, 2015.

Tab W – Legislation and Litigation Update

LEGISLATION AND LITIGATION UPDATE
178TH WSWC MEETINGS
LAKE TAHOE, NEVADA – JULY 8-10, 2015

Compiled By:
Michelle Bushman
WSWC Legal Counsel
mbushman@wswc.utah.gov

This summary describes developments regarding notable legislation and litigation that pertain to WGA/WSWC policies or are otherwise of interest. It focuses primarily on developments that have taken place since the beginning of the 114th Congress. This update is current as of July 1, 2015, and the legislative portion is organized in reverse chronological order according to bill number. For some bills, this document uses modified versions of summaries prepared by the Congressional Research Service.

NOTABLE LEGISLATION

Bill Number(s)	Summary	Dates/Status	Sponsor(s)
H.R. 2705	Issue – Clean Water Act/EPA “Waters of the United States” Rule Title – Federal Regulatory Certainty for Water Act: To clarify the definition of navigable waters as navigable-in-fact or permanent or continuously flowing bodies of water (streams, oceans, rivers, lakes) connected to navigable-in-fact waters. The bill excludes waters without a continuous surface water connection, man-made/natural channels containing intermittent or ephemeral flow, and wetlands, playa lakes, prairie potholes, wet meadows, we prairies, and vernal pools that lack a continuous surface water connection. The bill prohibits the aggregation of wetlands and waters for determinations of navigable waters.	6/9/15: H.R. 2705 introduced in the House and referred to the Committee on Transportation and Infrastructure	Rep. Mac Thornberry (R-TX) introduced H.R. 2705
H.R. 2599	Issue – Clean Water Act/EPA “Waters of the United States” Rule	6/1/15: H.R. 2599	Rep. David Rouzer

	Title – Don't Ignore the Will of the American People Act: To prohibit the obligation of certain funds until the Administrator of the Environmental Protection Agency withdraws the rule relating to the definition of “waters of the United States”.	introduced in the House and referred to Committees on Energy and Commerce, Agriculture, Transportation and Infrastructure, and Science, Space and Technology	(R-NC) introduced H.R. 2599
H.R. 2489	Issue – Reclamation/Infrastructure Title – Dam Rehabilitation and Repair Act: To amend the National Dam Safety Program Act to establish a program to provide grant assistance to States for the rehabilitation and repair of deficient dams, and for other purposes	5/21/2015: H.R. 2489 introduced in the House and referred to Committee on Transportation and Infrastructure	Rep. Sean Maloney (D-NY) introduced H.R. 2489 with co-sponsor Rep. Christopher Gibson (R-NY)
S. 501/H.R. 1406	Issue – Indian Water Rights Settlement/Infrastructure Title – New Mexico Navajo Water Settlement Technical Corrections Act: Amends the Omnibus Public Land Management Act of 2009 to expand the current authorization for the construction or rehabilitation and operation and maintenance of conjunctive use wells in the San Juan River Basin, Little Colorado River Basin, and Rio Grande Basin in New Mexico to include the planning and design of those wells. Revises the percentages of funds authorized for the Navajo-Gallup Water Supply Project, conjunctive use wells, and San Juan River Irrigation Projects that may be made available for specified purposes.	2/12/15: S.501 introduced in Senate, referred to Committee on Indian Affairs 3/17/15: H.R. 1406 introduced in House, referred to Committee on Natural Resources 5/11/15: Committee on Indian Affairs reported amended version of S.501 to Senate 5/21/15: House passed	Senator Tom Udall (D-NM) introduced S.501 with co-sponsor Senator Martin Heinrich (D-NM) Rep. Ben Ray Lujan (D-NM) introduced H.R. 1406

		S.501 without amendment by unanimous consent 6/25/15: Subcommittee on Water, Power and Oceans held hearings on H.R. 1406	
H.R. 2898	Issue – California/Drought Title – Western Water and American Food Security Act of 2015: To provide drought relief in the State of California, and for other purposes.	6/25/15: H.R. 2898 introduced in the House and referred to the Committees on Natural Resources and Agriculture	Rep. David Valado (R-CA) introduced H.R. 2898 with 24 Republican and 1 Democratic co-sponsor
H.R. 1732	Issue – Clean Water Act/EPA “Waters of the United States” Rule Title – Regulatory Integrity Protection Act: To preserve existing rights and responsibilities with respect to waters of the United States, and for other purposes. The bill requires the Environmental Protection Agency (EPA) and Army Corps of Engineers (Corps) to withdraw their proposed WOTUS rule (79 Fed. Reg. 22188, April 21, 2014), by a 261-155 vote, including 25 Democrats. The bill requires the agencies to withdraw the regulatory proposal and any related rule (e.g. RIN 2040-AF30) within 30 days, and to go through a collaborative and transparent consultation process with state and local stakeholders, beginning within the next 3 months. The bill also requires the agencies to further consider public comments, economic analyses, the EPA Science Advisory Board report on “Connectivity of Streams and Wetlands to Downstream Waters,” and “recognize, preserve, and protect the primary rights and responsibilities of the States to protect water quality...and to plan and control the development and use of land and water resources in the States.”	4/13/15: H.R. 1732 introduced in the House and referred to the Committee on Transportation and Infrastructure 4/27/15: Committee on Transportation and Infrastructure reported an amended version of H.R. 1732 5/12/15: House passes H.R. 1732 261-155, a largely Republican vote	Senator Bill Schuster (R-PA) introduced H.R. 1732 with 68 Republican and 2 Democratic co-sponsors

		that included 25 Democrats 5/13/15: Senate received H.R. 1732	
S. 1305/H.R. 2273	Issue – Reclamation/Infrastructure Title –None: To amend the Colorado River Storage Project Act to authorize the use of the active capacity of the Fontenelle Reservoir.	5/12/15: S.1305 introduced in the Senate and referred to the Committee on Energy and Natural Resources 5/12/15: H.R. 2273 introduced in the House and referred to the Committee on Natural Resources 6/18/15: Subcommittee on Water and Power held hearings on S.1305 6/25/15: Subcommittee on Water, Power and Oceans held hearings on H.R. 2273	Senator John Barrasso (R-WY) introduced S. 1305 with co-sponsor Senator Michael Enzi (R-WY) Rep. Cynthia Lummis (R-WY) introduced H.R. 2273
S.1291	Issue – Reclamation/Infrastructure Title – None: A bill to authorize early repayment of obligations to the Bureau of Reclamation within the Northport Irrigation District in the State of Nebraska. The bill authorizes any landowner within the Northport Irrigation District in Nebraska to repay, at any time, the construction costs of project facilities allocated to the landowner's	5/12/15: S.1291 introduced in the Senate and referred to the Committee on Energy and Natural Resources	Senator Deb Fischer (R-NE) introduce S.1291

	land within the District. Provides that upon discharge in full of the obligation for repayment of all such costs, the parcels of land shall not be subject to the ownership and full-cost pricing limitations under federal reclamation law. Directs the Department of the Interior, upon request, to provide to the landowner who has repaid such costs in full a certificate acknowledging that the landholding is free of such limitations.	6/18/15: Subcommittee on Water and Power held hearings on S.1291	
S. 1552	Issue – Rural Water Projects Title – Clean Water for Rural Communities Act: To authorize the Dry-Redwater Regional Water Authority System and the Musselshell-Judith Rural Water System in the State of Montana, and for other purposes.	6/11/15: S.1552 introduced in the Senate and referred to the Committee on Energy and Natural Resources 6/18/15: Subcommittee on Water and Power held hearings	Senator Steve Daines (R-MT) introduced S.1552 with co-sponsor Senator Jon Tester
S. 1365	Issue – Reclamation/Infrastructure/Rural and Tribal Water Projects Title – Authorized Rural Water Projects Completion Act: The bill would provide \$80 million per year for each of fiscal years 2015 through 2035 to complete the construction of rural water projects that have already received Congressional authorization. Other projects may be eligible for funding if: (1) a feasibility study is submitted to the Secretary of the Interior by February 27, 2015; and (2) Congress authorizes the project's construction after S. 1365's enactment. Title I of S. 1365 would provide funding for eligible rural water projects by establishing a Reclamation Rural Water Construction and Settlement Implementation Fund (the "RWP" Fund) within the U.S. Treasury, and within the RWP Fund a separate Rural Water Project Account and Reclamation Infrastructure and Settlement Account, that would be financed from revenues that would otherwise be deposited in the Reclamation Fund. These monies would not be subject to further appropriation, would be in addition to other amounts appropriated for the authorized projects, and should not result in corresponding offsets to other critical Reclamation and Department of the Interior programs. The Secretary of the Interior would also invest the portion of these receipts not needed to meet current	5/18/15: S.1365 introduced in the Senate and referred to the Committee on Energy and Natural Resources 6/18/15: Subcommittee on Water and Power held hearings on S.1365	Senator John Testor (D-MT) introduced S. 1365 with 5 Democratic and 1 Republican co-sponsors

	expenses, and the resulting interest and proceeds from the sale or redemption of any obligations would become part of the RWP Fund. The RWP Fund would terminate in September 2035, at which point its unexpended and unobligated balance would transfer back to the Reclamation Fund. Before expenditures from the RWP Fund could be made, Section 202(b)(1) of S. 1365 would require the Secretary of the Interior to develop programmatic goals to ensure that the authorized projects are constructed as expeditiously as possible, and in a manner that reflects the goals of the Rural Water Supply Act of 2006. The bill would also require the Secretary to develop funding prioritization criteria that would consider: (1) the “urgent and compelling need” for potable water supplies in affected communities; (2) the status of the current stages of completion of a given project; (3) the financial needs of affected rural and tribal communities; (4) the potential economic benefits of the expenditures on job creation and general economic development in affected communities; (5) the ability of an authorized project to address regional and watershed level water supply needs; (6) a project’s ability to minimize water and energy consumption and encourage the development of renewable energy resources, such as wind, solar, and hydropower; (7) the needs of Indian tribes and tribal members, as well as other community needs or interests; and (8) such other factors as the Secretary deems appropriate. <i>*WSWC Position #343 supports previous legislative efforts to establish a dedicated funding source for the completion of federal rural water projects authorized by Congress for construction by the Bureau of Reclamation</i> <i>**WSWC Position #376 supports steps to ensure that any water settlements will be funded without a corresponding offset, including cuts to some other tribal or essential Interior Department program</i> <i>***Tony Willardson, WSWC Executive Director, testified 6/18/15 before Senate Committee on Energy and Natural Resources Subcommittee on Water and Power (contained as attachments WSWC Policies #343 and #376)</i>		
S. 1125	Issue – Indian Water Rights Settlement Title – Blackfeet Water Rights Settlement Act: To authorize and implement the water	4/28/15: S. 1125 introduced in the Senate	Senator John Testor (D-MT) introduced

	rights compact among the Blackfeet Tribe of the Blackfeet Indian Reservation, the State of Montana, and the United States, and for other purposes.	and referred to the Committee on Indian Affairs	S.1125 with co-sponsor Steve Daines (R-MT)
H.R. 2227	Issue – Extreme Weather Events Title – Strengthening the Resiliency of Our Nation on the Ground Act: To minimize the economic and social costs resulting from losses of life, property, well-being, business activity, and economic growth associated with extreme weather events by ensuring that the United States is more resilient to the impacts of extreme weather events in the short- and long-term, and for other purposes.	5/1/2015: H.R. 2227 introduced in the House and referred to Committee on Transportation and Infrastructure	Rep. Scott Peters (D-CA) introduced H.R. 2227 with 18 Democratic and 1 Republican co-sponsor
H.R. 1060	Issue – Reclamation/Infrastructure Title – Sacramento Valley Water Storage and Restoration Act: Directs the Department of the Interior, acting through the Bureau of Reclamation, to: (1) finalize and publish in the Federal Register the feasibility study authorized in the Water Supply, Reliability, and Environmental Improvement Act, for enlargement of the Los Vaqueros Reservoir in Contra Costa County, California; (2) work with the Department of Commerce, the Army Corps of Engineers, and the Environmental Protection Agency, by June 30, 2015, to coordinate the efforts of the relevant agencies and work with the state of California, the Sites Project Authority, and other stakeholders to complete and issue the final joint environmental impact statement and report on the Sites Project (the Sites Reservoir in Glenn and Colusa Counties, California, and related facilities, including associated water conveyance and hydropower generation and transmission facilities); and (3) enter into agreements with the Authority to carry out such work as the Bureau and the Authority mutually agree is appropriate to ensure that all studies and environmental reviews are completed on an expeditious basis and that the shortest applicable process under the National Environmental Policy Act is utilized, including in the completion of the final feasibility study and final joint environmental impact statement and report on the Sites Project. Amends the Calfed Bay-Delta Authorization Act to: (1) authorize construction of the Sites Reservoir in Colusa County if Interior determines that the project is feasible; and (2) direct the Bureau, at the Authority's request, to enter into a project partnership agreement	2/25/2015: H.R. 1060 introduced in the House and referred to the Committee on Natural Resources	Rep. Doug LaMalfa (R-CA) introduced H.R. 1060 with three Republican co-sponsors from California

	for the Authority to provide full project management control for construction of the Sites Project, or a separable element of the Project, in accordance with plans approved by Interior. Authorizes and directs: (1) the Bureau to advance the Sites Project as a non-federal project if the Bureau determines and Interior concurs that the Project can be expedited by the Authority as a non-federal project and that there is a demonstrable federal interest for the Project to be constructed and operated as a non-federal project, and (2) Interior to execute and implement a long-term agreement with the Authority for the coordination of operations of the Central Valley Project and the Sites Project. Directs the Bureau to: (1) be the lead federal agency for the purposes of all federal reviews, analyses, opinions, statements, permits, licenses, or other approvals or decisions required under federal law to allow either the Bureau or the Authority to construct the Sites Project; and (2) take such steps as necessary to ensure that all such reviews, approvals, or decisions required to allow either the Bureau or the Authority to construct the Sites Project are completed on an expeditious basis and utilize the shortest applicable process.		
S.1416	Issue – Federal Reserved Water Rights Title – None: amends Title 54, US Code, to limit the authority of the President to reserve implied or express water rights in designating a national monument, and to require that water rights associated with the designation of a national monument be acquired under state laws.	5/21/15: S.1416 introduced in the Senate and referred to the Committee on Energy and Natural Resources	Senator Jeff Flake (R-AZ) introduced S. 1416 with three Republican co-sponsors
H.R. 2097	Issue – Reclamation/Infrastructure Title – Bureau of Reclamation Surface Water Storage Streamlining Act: Sets forth provisions governing feasibility studies for surface water storage projects initiated by the Department of the Interior under the Reclamation Act of 1902 (project studies). Requires a project study initiated after enactment of this Act to: (1) result in the	4/29/15: H.R. 2097 introduced in the House and referred to the Committee on Natural Resources	Rep. Dan Newhouse (R-WA) introduced H.R. 2097 with four Republican co-

	completion of a final feasibility report within three years; (2) have a maximum federal cost of \$3 million; and (3) ensure that personnel from the local project area, region, and headquarters levels of the Bureau of Reclamation concurrently conduct the required review. Sets forth factors for extending such timeline for complex projects. Requires Interior, within 90 days after the initiation of a project study, to: (1) initiate the process for completing reviews, including environmental reviews, required to be completed as part of such study; (2) convene a meeting of federal, tribal, and state agencies required to act; and (3) provide information that will enable required reviews and analyses to be conducted by other agencies in a thorough and timely manner. Directs Interior to: (1) expedite the completion of any ongoing project study initiated before the enactment of this Act; and (2) proceed directly to preconstruction planning, engineering, and design of a project that it determines is justified. Sets forth requirements applicable to: (1) project studies initiated after enactment of this Act for which an environmental impact statement is prepared under the National Environmental Policy Act of 1969 (NEPA); (2) other project studies initiated before enactment for which an environmental review process document is prepared under NEPA; and (3) any project study for the development of a non-federally owned and operated surface water storage project for which Interior determines there is a demonstrable federal interest and that is located in a river basin where other Bureau water projects are located, that will create additional water supplies that support Bureau water projects, or that will become integrated into the operation of Bureau water projects. Sets forth the authorities and responsibilities of the joint lead agency, which may be a project sponsor, and the federal lead agency in the environmental review process, including: (1) the preparation and use of environmental documents; (2) establishing a plan for coordinating public and agency participation; (3) working with cooperating and participating agencies to identify and resolve issues that could delay process completion or result in the denial of any approval required for the project study; and (4) establishing,		sponsors
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	upon request, memoranda of agreement with the project sponsor, Indian tribes, and state and local governments to carry out the early coordination activities. Requires a federal lead agency to serve in that capacity for the entirety of all non-federal projects that will be integrated into a larger system owned, operated, or administered by the Bureau. Directs Interior, upon determining that a project can be expedited by a non-federal sponsor and that there is a demonstrable federal interest in expediting the project, to advance it as a non-federal project. Requires a federal jurisdictional agency to complete any required approval or decision for the environmental review process on an expeditious basis. Provides for a reduction of funds for such an agency that fails to render such a decision by a specified deadline. Directs Interior to: (1) survey the use by the Bureau of categorical exclusions in projects since 2005 and propose a new categorical exclusion for a category of activities if merited, and (2) establish a program to measure and report on progress made toward improving and expediting the planning and environmental review process. Requires Interior to develop and submit annually a Report to Congress on Future Surface Water Storage Development that identifies: (1) the costs and benefits of, the non-federal interests associated with, and the support for project reports, proposed project studies, and proposed modifications to authorized surface water storage projects and project studies that are related to the missions and authorities of the Bureau, that require specific congressional authorization, that have not been congressionally authorized, that have not been included in any previous annual report, and that, if authorized, could be carried out by the Bureau; and (2) any project study that was expedited under this Act.		
S. 1533	Issue – Reclamation/Infrastructure Title – Water Supply Permitting Coordination Act: Establishes the Bureau of Reclamation as the lead agency for purposes of coordinating all reviews, analyses, opinions, statements, permits, licenses, or other approvals or decisions (reviews) required under federal law to construct new surface water storage projects on lands administered	6/9/15: S. 982 introduced in the Senate and referred to the Committee on Energy and Natural Resources	Senator John Barrasso (R-WY) introduced S.1533

	by the Department of the Interior or the Department of Agriculture, exclusive of any easement, right-of-way, lease, or any private holding (qualifying projects). Directs the Bureau: (1) upon receipt of an application for a qualifying project, to identify any federal agency that may have jurisdiction over a required review; and (2) to notify such agency that it has been designated as a cooperating agency unless the agency notifies the Bureau that the agency has no jurisdiction or authority over the project, has no expertise or information relevant to the project or any associated review, or does not intend to submit comments other than in cooperation with the Bureau. Requires each cooperating agency to submit to the Bureau: (1) a timeframe for completing the agency's authorizing responsibilities, (2) all environmental review material produced in the course of carrying out activities required under federal law consistent with the project schedule, and (3) all relevant project data. Allows a state in which a qualifying project is being considered to choose to: (1) participate as a cooperating agency; and (2) make subject to the processes of this Act all state agencies that have jurisdiction over the project, are required to conduct or issue a review, or are required to make a determination on issuing a permit, license, or approval for the project. Lists as the principal responsibilities of the Bureau under this Act to: (1) serve as the point of contact for applicants, state agencies, Indian tribes, and others regarding proposed projects; (2) coordinate preparation of unified environmental documentation that will serve as the basis for all federal decisions necessary to authorize the use of federal lands for qualifying projects; and (3) coordinate all federal agency reviews necessary for the development and construction of qualifying projects. Authorizes the Department of the Interior to accept and expend funds contributed by a non-federal public entity to expedite the evaluation of a permit of that entity related to a qualifying project or activity for a public purpose under its jurisdiction. Directs Interior to ensure that all final permit decisions are made available to the public, including on the	6/18/15: Subcommittee on Water and Power held hearings on S. 1533	
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H.R. 2689	Issue – WRRDA Title – None: To clarify the scope of eligible water resources projects under the Water Resources Development Act of 1986 and the Water Resources Reform and Development Act of 2014, and for other purposes.	6/9/15: H.R. 2689 introduced in the House and referred to the Committee on Transportation and Infrastructure	Representative Mimi Walters introduced H.R. 2689 with 9 Democratic co-sponsors and 2 Republican co-sponsors
H.R. 1830/S.982	Issue – Department of Interior/Department of Agriculture/State Primacy over Water Rights Title – Water Rights Protection Act: Prohibits the Department of the Interior and the Department of Agriculture from conditioning or withholding the issuance, renewal, amendment, or extension of any permit, approval, license, lease, allotment, easement, right-of-way, or other land use or occupancy agreement (permit) on the limitation or encumbrance of any water right or the transfer of any water right to the United States or any other designee, or any other impairment of any water right under state law by federal or state action; requiring any water user (including a federally recognized Indian tribe) to apply for or acquire a water right in the name of the United States under state law as a condition of such a permit; asserting jurisdiction over groundwater withdrawals or impacts on groundwater resources, unless consistent with state groundwater resource laws, regulations, and policies; or infringing on the rights and obligations of a state in evaluating, allocating, and adjudicating state waters originating on or under, or flowing from, land owned or managed by the federal government.	4/16/15: H.R. 1830 introduced in the House and referred to the Committees on Natural Resources and Agriculture 4/16/15: S. 982 introduced in the Senate and referred to the Committee on Energy and Natural Resources 6/18/15: Subcommittee on Water and Power held hearings on S.982	Representative Scott Tipton introduced H.R. 1830 with 25 Republican co-sponsors Senator John Barrasso introduced S.982 with 11 Republican co-sponsors
S. 1045/ H.R. 1935	Issue – 10th Amendment/State Primacy Title – Restoring the 10th Amendment Act: for the public comment period of proposed agency rules, authorizes a designated state official to submit to the head of the federal	4/22/15: H.R. 1935 introduced in the House and referred to the	Senator Roger Wicker introduced S.1045 with 8

	agency a legal brief challenging the constitutionality of the rule under the Tenth Amendment to the Constitution. The bill directs the agency head: (1) to notify the designated official of each state within 15 days after such a brief was submitted; (2) to post prominently on the front page of the agency's website a link to the brief; and (3) within 15 days after posting such link, to certify in writing that such rulemaking does not violate the Tenth Amendment and post the certification prominently on the agency's website next to the briefs pertaining to the rule, unless the agency determines not to finalize such proposed rule. After an agency head posts such a certification, the bill authorizes the designated state official to commence a civil action against the agency on the grounds that the rule violates the Tenth Amendment. The bill allows the state official to bring the action in the U.S. district court for the district in which the official's place of business is located, or any other venue or jurisdiction provided by law. The bill directs the appropriate U.S. court of appeals to grant expedited review of a decision by the district court in such an action.	House Committee on the Judiciary 4/22/15: S.1045 introduced in the Senate and referred to the Committee on the Judiciary	Republican co-sponsors Representative John Culberson (R-TX) introduced H.R. 1935
S. 1140	Issue – Clean Water Act/ EPA “Waters of the United States” Rule Title – Federal Water Quality Protection Act: directs the agencies to follow a number of principles in clarifying that the Clean Water Act is intended to protect waters of the U.S. from pollution. Those that should be included are traditional navigable waters and interstate waters; streams identified on maps at the scale used by EPA to identify potential sources of drinking water; streams with enough flow to carry pollutants to a navigable water, based on a quantifiable and statistically valid measure of flow for that geographic area; wetlands situated next to a water of the U.S. that protect water quality by preventing the movement of pollutants to navigable water; and areas unlawfully filled without a required permit. Waters that should not be included are waters located below the surface of the land, including soil water and groundwater; waters not located within a body of water (such as a river, stream, lake, wetland), including channels that have no bed, bank or ordinary high	4/30/15: S.1178 introduced in the Senate and referred to the Environmental and Public Works Committee 5/19/15: Subcommittee on Fisheries, Water and Wildlife held hearings on S.1140 6/10/15: Committee on Environmental and Public Works reported	Senator John Barrasso introduced S. 1140 with 37 Republican and 3 Democratic co-sponsors

	water mark or surface hydrologic connection to traditional navigable water; isolated ponds, stormwater and floodwater management systems; wastewater management systems; municipal and industrial water supply management systems; agricultural water management systems; streams that do not have enough flow to carry pollutants to navigable waters; prior converted cropland; and areas lawfully filled pursuant to a permit or areas exempt from permitting. Waters of the U.S. would not be defined on the basis of use by an organism, including a migratory bird; the supply of water to a groundwater aquifer and the storage of water in an isolated waterbody; the water cycle, including the supply of water through evaporation, transpiration, condensation, precipitation, overland flow, and movement of water in an aquifer. The bill specifically directs that the agencies consult with the states under Federalism Executive Order 13132, undertake economic analyses under the Regulatory Flexibility Act, comply with the Small Business Regulatory Enforcement Fairness Act and the Unfunded Mandates Reform Act, and comply with Executive Orders 12866 and 13563 on improving regulation. <i>*The bill addresses many of the concerns regarding consultation with the states raised by the Western States Water Council.</i>	with an amendment in the nature of a substitute	
S. 1178	Issue – Clean Water Act/EPA “Waters of the United States” Rule Title – Defending Rivers from Overreaching Policies Act of 2015: finds that the WOTUS rule was premature due to the current lack of scientific “consensus regarding the best methods or metrics to quantify or predict hydrologic or chemical connectivity.” Without this consensus, there is insufficient information to determine which hydrologic connections are scientifically significant. The bill proposes the temporary creation of a 9-member Supplemental Scientific Review Panel and a 15-member Ephemeral and Intermittent Stream Advisory Commission. Both the Panel and the Commission would consist of unpaid, bipartisan-appointed experts in the biogeosciences. The Commission members would have additional expertise with the CWA permitting process, as well as balanced representation of the interests of developers, agriculture, timber, energy, mineral,	4/30/15: S.1178 introduced in the Senate and referred to the Environmental and Public Works Committee 6/10/15: The Committee on the Judiciary held hearings on S.1178	Senator Jeff Flake (R-AZ) introduced S.1178 with co-sponsor Senators John McCain (R-AZ) and Deb Fischer (R-NB)

	environment, recreation, State and local elected officials and agencies, and the general public. The Panel would have a year to make majority recommendations on scientifically sound metrics, accounting for regionally-variable flows, to quantify degrees of connectivity between traditionally navigable waters and other bodies of water. The Commission would then be appointed and would have an additional six months to develop criteria to define a significant nexus to traditional navigable waters, using the metrics developed by the Panel, ensuring that the criteria account for regional variability of water bodies and wetlands. The EPA and Corps would be prohibited from making or implementing any WOTUS rule until receipt of the Commission’s final report.		
S. 980	Issue – Clean Water Act (CWA)/Navigable Waters/Waters of the United States (WOTUS) Title – Defense of Environment and Property Act of 2015: would amend the CWA to define “navigable-in-fact” waters, excluding isolated water bodies and wetlands without a continuous surface water connection, and natural or man-made channels with intermittent or ephemeral water flow as drainage from periodic rainfall. The bill would prohibit the promulgation of WOTUS rules or guidance without express Congressional authorization. For determinations of CWA jurisdiction, the bill would mandate payment of double damages for regulatory takings (diminishing fair market value/economic viability), and expedited judicial review of determinations affecting State and individual water use or development. The bill would prohibit the aggregation of waters to determine Federal jurisdiction, and groundwater are expressly considered State water.	4/16/15: S.980 introduced in the Senate and referred to the Environmental and Public Works Committee	Senator Rand Paul introduced S.980 with co-sponsor Senators Ted Cruz (R-TX), Mitch McConnell (R-KY), Marco Rubio (R-FL), Orrin Hatch (R-UT), Mike Lee (R-UT), and Chuck Grassley (R-IA).
H.R. 1710	Issue – Water Resources Reform and Development Act (WRRDA) of 2014/Drought Title – Drought Resilience Investment Act of 2015: Would amend the 2014 WRRDA, which passed last year, to provide additional financing options for water infrastructure projects carried out in states in which the Governor has issued a drought emergency declaration. The bill exempts water resource infrastructure projects that receive federal credit assistance under the Water Infrastructure Finance and Innovation Act, allowing financing from the proceeds of tax exempt obligations, qualified tax credit bonds or a	3/26/15: H.R. 1710 introduced in the House and referred to the Committees on Transportation and Infrastructure and Energy and Commerce	Rep. Jerry McNerney (D-CA) introduced H.R. 1709 with co-sponsor Representatives Michael Honda (D-CA), Doris Matsui

	Build America Bond, which would otherwise be prohibited by the WRRDA.		(D-CA) and Jared Huffman (D-CA)
H.R. 1709	Issue – Safe Drinking Water Act (SDWA)/Drought Title – None: Would amend the SDWA to provide for the assessment and management of the risks of drought to drinking water. The bill would authorize the development of a strategic plan to evaluate the risks of drought to public water systems, to establish a comprehensive list of effects of drought on drinking water and human health, and to summarize factors that cause drought and exacerbate its effects. The strategic plan would also establish guidance on the quantification and detection of such effects, recommend treatment options, and authorize cooperative agreements with and technical assistance to states and public water systems to manage the risks. The bill would require information coordination and consultation with states, local water systems, federal agencies and others with relevant knowledge of the effects of drought on drinking water.	3/26/15: H.R. 1709 introduced in the House and referred to the House Committee on Energy and Commerce	Rep. Jerry McNerney (D-CA) introduced H.R. 1709 with co-sponsor Representatives Doris Matsui (D-CA), Lois Capps (D-CA), Paul Tonko (D-NY), and Michael Honda (D-CA)
H.R. 1705	Issue – Clean Water Act (CWA)/Water Infrastructure Title – Clean Water Affordability Act: would amend the CWA to assist municipalities and regional sewer authorities that would experience a significant hardship raising the revenue necessary to finance projects and activities related to the implementation of a CWA program. The bill would authorize an assessment of local or regional economic conditions to determine the financial capability of communities to invest in water quality improvements and affordability or hardship to individual utility customers. The bill also amends the CWA to modify the effluent limitations during peak wet weather events, allowing states to adopt water quality standards to accommodate receiving waters and establish management practices for the discharge of pollutants from collection systems servicing publicly owned treatment works. The peak wet weather flow practices and techniques are intended to prevent damage to treatment facilities, maximize delivery of flow to treatment facilities, and provide cost-effective controls during peak wet weather	3/26/15: H.R. 1705 introduced in the House and referred to the Committee on Transportation and Infrastructure	Rep. Robert Latta (R-OH) introduced H.R. 1705 with co-sponsors Rep. Timoth Walz (D-MN) and Brad Ashford (D-NE)

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H.R. 1668	Issue – Endangered Species Act (ESA)/Drought Title – Save Our Water Act: During times of severe, extreme and exceptional drought (as designated by the U.S. Drought Monitor and determination of the Secretary of the Army, the Secretary of Interior, or Governor), the bill would suspend the application of the ESA to releases from water storage facilities by federal and state agencies. The bill does not prohibit the application of state law, and water releases are still permitted upon certification by the Secretary or Governor that the water release will not harm the economy or require water uses to take conservation measures. The bill’s sponsor, Rep. Tom McClintock (R-CA), provided the following additional information in a press release: This bill incorporates language that will stop the appalling practice of sacrificing tens of thousands of acre-feet of water for the comfort of fish when the human population is in immense peril	3/26/15: H.R. 1668 introduced in the House and referred to the Committee on Natural Resources	Rep. Tom McClintock (R-CA) introduced H.R. 1668
H.R. 1623	Issue – CWA/ National Pollutant Discharge Elimination System (NPDES) Permits Title – None: Would amend the CWA to increase the length of the NPDES permit cycle under Section 402 from five to twenty years. This summary is based on a description provided by the bill’s sponsor. A press release from the bill’s sponsor, Rep. Sam Graves (R-MO), explained the reason for the legislation, stating: “Municipalities are often forced to take out a twenty-year loan for each NPDES permit, meaning that at any time, they are paying off loans for four different five-year permits.” The press release also included the following quote from Rep. Graves: Many of these municipalities are already struggling financially, and having	3/25/15: H.R. 1623 introduced in the House and referred to the Committee on Transportation and Infrastructure	Rep. Sam Graves (R-MO) introduced H.R. 1623 with the other Republican members of Missouri’s Congressional delegation and Rep. Steve Russell (R-OK)

	to pay off multiple loans at once is an added burden that simply does not make sense. The common-sense solution is to increase the length of the NPDES permit cycle to match the time a municipality is in debt to one permit cycle. Our bill will do just that.		
S. 828	Issue – Hydraulic Fracturing Title – The Fracturing Regulations are Effective in State Hands (FRESH) Act: Would declare that states have the sole authority to regulate hydraulic fracturing on all land within their boundaries, including federal land. Under the bill, oil and gas companies would still be required to comply with applicable state laws. The bill is a response to a new rule the Department of the Interior finalized on March 20, setting forth new regulations to govern hydraulic fracturing on federal and tribal lands. Among other things, the rule includes a process by which states and tribes can request a variance if they have equal or more protective regulations in place. This summary is based on a description provided by the bill’s sponsor. The text of this legislation was not available when this summary was prepared. However, a press release from the bill’s sponsor, Senate Environment and Public Works Committee Chair Jim Inhofe (R-OK), said: The past 60 years have proven that states are in the best position to understand their unique geologies and to determine what their energy needs are and what regulations are necessary to support and protect their communities. Even [Secretary of the Interior] Sally Jewell has said fracking has been done safely for many, many years. This is why I have introduced legislation...to ensure states, and not the federal government, will continue to have the sole authority in regulating hydraulic fracturing. <i>*WSWC Policy #353 urging federal hydraulic fracturing efforts to leverage state expertise and opposing efforts to diminish state primacy over the allocation of water resources used in hydraulic fracturing.</i>	3/19/15: S. 828 introduced in the Senate and referred to the Committee on Energy and Natural Resources	Senate Environment and Public Works Committee Chair Jim Inhofe (R-OK) introduced S. 828 with 28 Republican co-sponsors

	**WGA Resolution 2013-09, paragraph B(3) stating that states “have effectively regulated the practice of hydraulic fracturing and redundant federal regulation is not required.”		
H.R. 1515	Issue – Hydraulic Fracturing/SDWA Title: Safe Hydration is an American Right in Energy Developed (SHARED) Act of 2015: Would amend the SDWA to require testing of underground sources of drinking water in connection with hydraulic fracturing and public disclosure of the results of the testing. The SHARED Act is one of four so-called “Frack Pack” bills aimed at closing oil and gas “loopholes” involving hydraulic fracturing. The other bills include the FRAC Act (S. 785/H.R. 1482) regarding the SDWA, the FRESHER Act (H.R. 1460) regarding the CWA, and the BREATHE Act (H.R. 1548) regarding the Clean Air Act. <i>*WSWC Policy #353 urging federal hydraulic fracturing efforts to leverage state expertise and opposing efforts to diminish state primacy over the allocation of water resources used in hydraulic fracturing.</i> **WGA Resolution 2013-09, paragraph B(3) notes that states “have effectively regulated the practice of hydraulic fracturing and redundant federal regulation is not required.”	3/19/15: H.R. 1515 introduced in the House and referred to the Committee on Energy and Commerce.	Rep. Jan Schakowsky (D-IL) introduced H.R. 1515 with 23 Democratic co-sponsors
S. 785/H.R. 1482	Issue – Hydraulic Fracturing/SDWA Title – Fracturing Responsibility and Awareness of Chemicals (FRAC) Act of 2015: Would require the disclosure of the chemicals used in hydraulic fracturing and would remove the oil and gas industry’s exemption from requirements in the SDWA’s Underground Injection Control program, otherwise known as the “Halliburton Exemption.” The FRAC act is one of four so-called “Frack Pack” bills aimed at closing what their sponsors consider to be “loopholes” involving hydraulic fracturing. The other bills include the SHARED Act (H.R. 1515) regarding the SDWA, the FRESHER Act (H.R. 1460)	3/18/15: S. 785 introduced in the Senate and referred to the Committee on Environment and Public Works 3/19/15: H.R. 1482 introduced in the House and referred to the Committee on Energy	Senator Robert Casey (D-PA) introduced S. 785 with 11 Democratic co-sponsors Rep. Diana DeGette (D-CO) and Rep. Chris Gibson (R-NY) introduced H.R. 1482 with 54

	regarding the CWA, and the BREATHE Act (H.R. 1548) regarding the Clean Air Act. <i>*WSWC Policy #353 urging federal hydraulic fracturing efforts to leverage state expertise and opposing efforts to diminish state primacy over the allocation of water resources used in hydraulic fracturing.</i> <i>**WGA Resolution 2013-09, paragraph B(3) stating that states “have effectively regulated the practice of hydraulic fracturing and redundant federal regulation is not required.”</i>	and Commerce	Democratic co-sponsors
H.R. 1460/ S.1554	Issue – CWA/Hydraulic Fracturing Title – Focused Reduction of Effluence and Stormwater Runoff Through Hydrofracking Environmental Regulation (FRESHER) Act of 2015: Would amend Section 402 of the CWA to revoke an exemption for and gas companies regarding stormwater runoff permits. Would also require the Department of the Interior to conduct a study to understand the effects of oil and gas operations on surface waters. The FRESHER is one of four so-called “Frack Pack” bills aimed at closing what their sponsors consider to be “loopholes” involving hydraulic fracturing. The other bills include the FRAC Act (S. 785/H.R. 1482) and SHARED Act (H.R. 1515) regarding the SDWA and the BREATHE Act (H.R. 1548) regarding the Clean Air Act. <i>*WSWC Policy #353 urging federal hydraulic fracturing efforts to leverage state expertise and opposing efforts to diminish state primacy over the allocation of water resources used in hydraulic fracturing.</i> <i>**WGA Resolution 2013-09, paragraph B(3) stating that states “have effectively regulated the practice of hydraulic fracturing and redundant federal regulation is not required.”</i>	3/19/15: H.R. 1460 introduced in the House and referred to the Committee on Transportation and Infrastructure 6/11/15: S. 1554 introduced in the Senate and referred to the Committee on Environment and Public Works	Rep. Matt Cartwright (D-PA) introduced H.R. 1460 with 64 Democratic co-sponsors Senator Benjamin Cardin (D-MD) introduced S. 1554 with 3 Democratic co-sponsors
H.R. 1370	Issue – U.S. Army Corps of Engineers/Missouri River Title – None: Directs Corps to revise the Missouri Mainstem Reservoir System Master	3/16/15: H.R. 1370 introduced and referred to the Committee on	Rep. Sam Graves (R-MO)

	Water Control Manual and any related regulations to delete fish and wildlife as an authorized purpose of the Corps and elevate flood control as the highest priority of authorized purposes of the Corps at all times. (CRS Summary)	Transportation and Infrastructure	
H.R. 1296	Issue – California/San Luis Rey Indian Water Rights Settlement Title – None: Would amend the San Luis Rey Indian Water Rights Settlement Act (P.L. 100-675) regarding the water rights claims of the La Jolla, Ricon, San Pasqual, Pauma, and Pala Band of Mission Indians in California to clarify certain settlement terms. The legislation would also authorize the federal government to execute the settlement agreement, recognize the Bands’ reserved water rights claims, and confirms benefits to allottees in the agreement. The bill does not authorize any federal funding. <i>*WSWC Policy #376 supporting the negotiated resolution of Indian water rights settlements.</i> <i>** WGA Resolution #2015-08, paragraph B(3)(e) supporting the negotiated resolution of Indian water rights settlements.</i>	3/4/15: H.R. 1296 introduced in the House and referred to the Committee on Natural Resources	Rep. Duncan Hunter (R-CA) introduced H.R. 1296 with eight co-sponsors, including a bipartisan group of Representatives from California and Rep. Tom Cole (R-OK)
S. 741/H.R. 1278	Issue – EPA/Water Infrastructure Title – Water Infrastructure Resiliency and Sustainability Act of 2015: Would require EPA to establish and implement a program, to be known as the Water Infrastructure Resiliency and Sustainability Program. Under the program, EPA would award grants in each of fiscal years 2016 through 2020 to owners or operators of water systems to increase the resiliency or adaptability of infrastructure to ongoing or forecasted changes (based on the best available research and data) to the hydrologic conditions of a region of the United States. Grants would require a non-federal cost share up to 50%. The legislation would authorize \$50M for each of fiscal years 2016 through 2020 under H.R. 1278 and \$50M for each of fiscal years 2015 through 2019 under S. 741. (CRS Summary) <i>**WGA Resolution #2015-08, paragraph B(2) regarding water infrastructure needs.</i>	3/4/15: H.R. 1278 introduced in the House and referred to the Committees on Transportation and Infrastructure, Energy and Commerce, and Natural Resources 3/16/15: S. 741 introduced in the Senate and referred to the Committee on Environment and Public Works	Senator Benjamin Cardin (D-MD) introduced S. 741 with cosponsors Senate Majority Leader Harry Reid (D-NV) and Senator Barbara Boxer (D-CA) Rep. Lois Capps (D-CA) introduced H.R. 1278 with 17 Democratic co-sponsors

S. 653	Issue – Water Resources Research Amendments Act of 2015 Title – Would amend the Water Resources Research Act of 1984 to: (1) declare that additional research is required to increase the effectiveness and efficiency of new and existing treatment works through alternative approaches, including non-structural alternatives, decentralized approaches, energy use efficiency, water use efficiency, and actions to extract energy from wastewater; (2) require each water resources research and technology institute to arrange for research that fosters the exploration of new ideas that expand understanding of water resources (currently, of water-related phenomena); (3) direct the Department of the Interior to report to specified congressional committees annually on each institute's compliance with matching fund requirements and provisions permitting the use of funds only to reimburse direct cost expenditures incurred for the conduct of the water resources research program; and (4) authorize a total of \$9.5M per year through 2020 for such institutes. (CRS Summary) <i>*WSWC Policy #368 supporting the Water Resources Research Institutes.</i>	3/4/15: S. 653 introduced in the Senate and referred to the Committee on Environment and Public Works 6/9/15: S. 653 passed the Senate without amendment by unanimous consent 6/10/15: S.653 received in the House and referred to the Committee on Natural Resources	Senator Benjamin Cardin (D-MD) introduced S. 653 with co-sponsor Senator John Boozman (R-AR)
S. 611/ H.R. 2853	Issue – SDWA/Water Infrastructure Title – Grassroots Rural and Small Community Water Systems Assistance Act: Would reauthorize the SDWA's technical assistance and training provision for \$15M per year through 2020. The bill's sponsor, Senators Roger Wicker (R-MS) and Heidi Heitkamp (D-ND), introduced similar legislation (H.R. 654) in the 113th Congress. <i>**WGA Resolution #2014-03, paragraph B(2) regarding water infrastructure needs.</i>	2/27/15: S. 611 introduced in the Senate and referred to the Committee on Environment and Public Works 6/9/15: S. 611 passed the Senate without amendment by unanimous consent 6/23/15: H.R. 2853 introduced in the House, referred to the	Senators Roger Wicker (R-MS) and Heidi Heitkamp (D-ND) introduced S. 611 with 19 co-sponsors Rep. Gregg Harper (R-MS) introduced H.R. 2853 with co-sponsor Rep. Paul Tonko (D-NY)

		Committee on Energy and Commerce	
H.R. 1203	Issue – CWA/Section 404 Title – None: Would amend the CWA to clarify that the EPA does not have the authority to retroactively disapprove of a Section 404 permit after it has been issued by the U.S. Army Corps of Engineers. See summaries for H.R. 896 and S. 234 for similar legislation.	3/2/15: H.R. 1203 introduced in the House and referred to the Committee on Transportation and Infrastructure	Rep. David McKinley (R-WV) with co-sponsors Rep. Collin (D-MN) Peterson, the Ranking Member of the House Agriculture Committee, and Representatives Evan Jenkins (R-WV) and Alexander Mooney (R-WV)
S. 593/H.R. 1107	Issue – Bureau of Reclamation/Maintenance and Rehabilitation Title – Bureau of Reclamation Transparency Act: would require the Secretary of the Interior to: (1) report to Congress on Reclamation efforts to manage all Reclamation facilities and to standardize and streamline data reporting and processes for purposes of managing such facilities, and (2) update such report biennially. The bill would also require the report to include a detailed assessment of major repair and rehabilitation needs at all Reclamation projects and an itemized list of major repair and rehabilitation needs of individual facilities at each project. <i>*WSWC Policy #360 urging Congress and the Administration to work together to develop a standardized process to provide information regarding its maintenance and rehabilitation (M&R) needs, and urging Reclamation to ensure that information regarding its M&R needs is accessible and easy to understand.</i>	2/26/15: S. 593 introduced in the Senate and referred to the Energy and Natural Resources Committee 2/26/15: H.R. 1107 introduced in the House and referred to the Committee on Natural Resources 6/18/15: Subcommittee on Water and Power held hearings on S. 593 6/25/15: Subcommittee	Senator John Barrasso (R-WY) introduced S. 593 with co-sponsor Senator Brian Schatz (D-HI) Rep. Paul Gosar (R-AZ) introduced H.R. 1107 with 22 bipartisan co-sponsors

		on Water, Power, and Oceans held hearings on H.R. 1107	
H.R. 1093	Issue – EPA/CWA/Wastewater and Stormwater Title – Clean Water Compliance and Ratepayer Affordability Act of 2015: Would authorize EPA, in coordination with appropriate state, local, and regional authorities, to carry out a pilot program under which EPA work cooperatively with and facilitate the efforts of municipalities to develop and implement integrated plans to meet their wastewater and stormwater obligations under the CWA in a more cost-effective and flexible manner.	2/26/15: H.R. 1093 introduced in the House and referred to Committee on Transportation and Infrastructure	Rep. Steve Chabot (R-OH) introduced H.R. 1093 with six co-sponsors
S. 544/H.R. 1030	Issue – Environmental Protection Agency (EPA) Science Title – Secret Science Reform Act of 2015: Would prevent EPA from creating regulations based on science that is not the “best available,” “specifically identified,” and publically available online in a manner “...sufficient for independent analysis and substantial reproduction of research results.” Republicans say the bill addresses concerns that EPA has based some of its regulations on “secret” data and information that it has not made public. However, Democrats say the bill prevents EPA from using relevant scientific data, including confidential medical information that is legally protected from public disclosure. President Obama has threatened to veto the bill.	2/24/15: S. 544 introduced in the Senate and referred to the Senate Committee on Environment and Public Works 2/24/15: H.R. 1030 introduced in the House and referred to the Science Committee 3/2/15: House Science Committee reports H.R. 1030 3/18/15: House passes H.R. 1030 241-175, largely along party lines with Republican support 6/22/15: Senate	Senator John Barrasso (R-WY) introduced S. 544 with 7 co-sponsors House Science Committee Chair Lamar Smith (R-TX) introduced H.R. 1030 with 28 co-sponsors

		Committee on Environment and Public Works reports S. 544 with an amendment and places it on the Legislative Calendar.	
S. 543/H.R. 1029	Issue – EPA Science Advisory Board (SAB) Title – EPA Science Advisory Board Reform Act of 2015: Would require EPA to disclose the identity of persons nominated to the SAB, including the entities that made the nomination, and accept comments on nominees. The bill would also require nominees to disclose financial relationships and interests that are relevant to the SAB’s advisory activities. In addition, the bill would require that at least 10% of the SAB be from state, local, or tribal government. The bill passed 236-181 on March 17, along party lines with Republican support. Republicans say H.R. 1029 is needed to address shortcomings in the SAB process, which they say includes limited public participation, EPA interference with expert advice, and potential conflicts of interest. Democrats largely oppose the bill, arguing that it would allow delays in EPA’s regulatory process and make it easier for industry representatives to serve on the SAB even if they have a financial conflict of interest. <i><u>**Testimony of WGA Executive Director Jim Ogsbury before the House Appropriations Subcommittee on Interior, Environment, and Related Agencies on April 10, 2014, page 3, urging Congress to ensure that state experts comprise at least 10% of the SAB and its panels.</u></i>	2/24/15: S. 543 introduced in the Senate and referred to the Senate Committee on Environment and Public Work 2/24/15: H.R. 1029 introduced in House and referred to the House Science Committee 3/2/15: House Science Committee reports H.R. 1029 3/17/15: House passes H.R. 1029 236-181, largely along party lines with Republican support	Senator John Boozman (R-AR) introduced S. 543 along with co-sponsors Senators Joe Manchin (D-WV) and James Inhofe (R-OK), the Chair of the Senate Environment and Public Works Committee Rep. Frank Lucas (R-OK) introduced H.R. 1029 with 24 co-sponsors, including Rep. Collin Peterson (D-MN), the Ranking Members of the House Agriculture Committee
S. 438	Issue – Reclamation Fund/Indian Irrigation Projects Title – Irrigation and Rehabilitation for Indian Tribal Governments and Their	2/10/15: Introduced in Senate and referred to Senate Indian Affairs	Senate Indian Affairs Committee Chair John Barrasso

	Economies Act (“Irrigate” Act): Would direct \$35M per year through 2036 from the Reclamation Fund into an Indian Irrigation Fund to build and maintain Indian irrigation projects. The legislation is similar to an amendment Senator Barrasso introduced last Congress to S. 715. In addition to funding Indian irrigation projects, S. 715 would have used funding from the Reclamation Fund to support authorized rural water projects and projects that are part of authorized Indian water rights settlements. <i>*WSWC Policy 367 supporting the use of the Reclamation Fund to support western water infrastructure projects.</i>	Committee 3/4/15: Senate Indian Affairs Committee holds hearing on S. 438 3/18/15: Senate Indian Affairs Committee reports S. 438	(R-WY) introduced S. 438 with co-sponsors Senators Jon Tester (D-MT), Orrin Hatch (R-UT), Michael Enzi (R-WY), Steve Daines (R-MT), and Michael Bennet (D-CO)
H.R. 963	Issue – CWA/Abandoned Hardrock Mines/Good Samaritan Remediation Title – Hardrock Mining Reform and Reclamation Act of 2015: Would authorize a number of activities and reforms to facilitate the clean-up of abandoned hardrock mines. Title IV of the bill would enact the Good Samaritan Cleanup of Abandoned Hardrock Mines Act of 2015, which would encourage third parties with no legal responsibility for the mine (Good Samaritans) to engage in remediation efforts by amending the CWA to create a new permitting program. Good Samaritans who comply with the terms of the permits issued under the program would be shielded from CWA liability so long as they comply with the terms of the permit. <i>**WGA Resolution 2013-05, paragraph B(2) calling on Congress to amend the CWA to protect Good Samaritans from becoming perpetually liable for discharges that continue at an abandoned mine after clean-up.</i>	2/13/15: H.R. 963 introduced in the House and referred to the Committees on Natural Resources and Transportation and Infrastructure	House Natural Resources Committee Ranking Member Raul Grijalva (D-AZ) introduced H.R. 963 along with 26 Democratic co-sponsors
H.R. 897	Issue – CWA/Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA)/NPDES Permits/Pesticide Applications Title – Reducing Regulatory Burdens Act of 2015: Would amend the CWA and FIFRA to clarify that FIFRA-compliant pesticide applications do not require NPDES permits. The bill would overturn the Sixth Circuit Court of Appeals’ <i>National Cotton Council v. EPA</i>, 533 F.3d 927 (6th Cir. 2006), decision, which required NPDES permits for pesticide applications even if they comply with FIFRA. The bill is also similar to H.R. 935, which Gibbs introduced in 2013. That bill passed the House 267-161 but stalled in the Senate.	2/11/15: H.R. 897 introduced in the House and referred to the Committees on Agriculture and Transportation and Infrastructure 3/19/15: House	Rep. Bob Gibbs (R-OH) introduced H.R. 897

	<i>*WSWC Policy #359 supporting legislation to amend FIFRA and the CWA to clarify that FIFRA-compliant pesticide applications do not require NPDES permits.</i> <i>**WGA Resolution #14-04, paragraph B(2)(d), supporting primary role of FIFRA in regulating pesticide applications.</i>	Agriculture Committee reports H.R. 897 by voice vote	
H.R. 896	Issue: CWA/Section 404 Permits Title: Regulatory Certainty Act of 2015: Would amend the CWA to prevent EPA from retroactively vetoing Section 404 permits issued by the Corps. Specifically, the bill would require that EPA exercise its veto authority during a period of time that: (1) begins on the date the Corps notifies EPA that it has completed all procedures for processing a 404 permit relating to the specification of a defined area as a disposal site and is ready to determine whether the permit should be issued; and (2) ends on the date the Corps issues a 404 permit. The bill would require that the period last at least 60 days and that the Corps can only issue a permit after it has provided notice to EPA. The bill would only apply to permit applications submitted after its enactment. H.R. 896 is similar to S. 234 summarized below.	2/11/15: Introduced in the House and referred to the Committee on Transportation and Infrastructure	Rep. Bob Gibbs (R-OH)
S. 384	Issue – Internal Revenue Service/Water Leasing Title – Water and Agriculture Tax Reform Act of 2015: Would amend the Internal Revenue Code to permit tax-exempt mutual ditch or irrigation companies to earn income from dispositions of certain real property and stock interests without affecting their tax-exempt status. The bill would also require that such income be used to pay the costs of operations, maintenance, and capital improvements of such a company.	2/5/15: Introduced in the Senate and referred to the Committee on Finance	Senator Mike Crapo (R-ID) introduced S. 384 with co-sponsors Senators Michael Bennet (D-CO), Cory Gardner (R-CO) and Michael Enzi (R-WY)
S. 338/ H.R. 1814	Issue – Land and Conservation Fund Title – None: Would permanently reauthorize the Land and Water Conservation Fund,	2/2/15: S. 338 introduced in the Senate and placed on the Senate	Senator Richard Burr (R-NC) introduced S. 338

	which provides funds and matching grants to federal, state, and local governments for the acquisition of land and water, and easements on land and water.	Legislative Calendar 4/15/15: H.R. 1814 introduced in the House and referred to the Committee on Natural Resources	with a group of 10 bipartisan co-sponsors, including western Senators Michael Bennet (D-CO), Jon Tester (D-MT), and Martin Heinrich (D-NM) Rep. Raul Grijalva (D-AZ) introduced H.R. 1814 with 164 Democratic and 13 Republican co-sponsors
H.R. 813	Issue – Corps Reservoir Operations Title: Fixing Operations of Reservoirs to Encompass Climatic and Atmospheric Science Trends (FORECAST) Act: Would require the Corps to review reservoir operations within one year after receiving a request from a nonfederal sponsor of a reservoir. In conducting the review, the Corps would consider the water control manual and rule curves and use improved weather forecasts and run-off forecasting methods. In carrying out a review, the bill would require the Corps to determine if a change in reservoir operations would improve core functions at a reservoir, including whether a change would: (1) reduce risks to human life, public safety, and property; (2) reduce the need for future disaster relief; (3) improve local water storage capability and reliability in coordination with the nonfederal sponsor and other water users; (4) restore, protect, or mitigate the impacts of a water resources development project on the environment; or (5) improve fish species habitat or population within the boundaries and downstream of a water resources project. If the Corps determines that using improved weather and run-off forecasting methods	2/9/2015: H.R. 813 introduced in the House and referred to the Committee on Transportation and Infrastructure	Rep. Jared Huffman (D-CA) introduced H.R. 813 with 11 Democratic co-sponsors

	improves one or more core functions at a reservoir, the bill would require it to incorporate such changes into its operations and to update the water control manual.		
H.R. 594	Issue – CWA Jurisdiction/Waters of the U.S. Rulemaking Title – Waters of the U.S. Regulatory Overreach Protection Act of 2015: Would require EPA and the U.S. Army Corps of Engineers to withdraw their proposed rule regarding CWA jurisdiction. In addition to withdrawing the rule, the bill would prohibit EPA and the Corps from using the rule, the now-withdrawn draft guidance the agencies developed in 2011, and any “...successor document, or any substantially similar proposed rule or guidance, as the basis for any rulemaking or decision regarding the scope or enforcement of the [CWA].” The bill further specifies that using such documents “...shall be grounds for vacating the final rule, decision, or enforcement action.” Going forward, the rule would require EPA and the Corps to consult with state and local officials to develop recommendations for a regulatory proposal that would identify those waters that are covered and not covered under the CWA, consistent with U.S. Supreme Court rulings. In developing these recommendations, the bill would require the agencies to consult with state and local officials that represent a “broad cross-section” of regional, economic, and geographic perspectives, and consider state and local input regarding the “...differences in State and local geography, hydrology, climate, legal frameworks, economies, priorities, and needs.” It would also require the agencies to explore with state and local officials whether federal CWA objectives can be attained by means other than through a new regulatory proposal. Within a year after the bill’s enactment, EPA and the Corps would be required to publish a draft report in the Federal Register for public comment that describes the recommendations developed with states and local officials. The agencies would only be able to include a recommendation in the draft report if there is a consensus. If consensus is not possible, the draft report must identify those areas where consensus was reached, those areas where consensus was not made, and the reasons for continuing disagreements. A final report addressing the comments the agencies receive would be due to Congress two years after the bill’s enactment.	1/28/15: H.R. 594 introduced in the House and referred to the Committee on Transportation and Infrastructure’s Subcommittee on Water Resources and the Environment	Rep. Paul Gosar (R-AZ) introduced H.R. 594 along with 185 co-sponsors, including House Appropriations Committee Chair Hal Rogers (R-KY) and House Agriculture Committee Ranking Member Collin Peterson (D-MN)

	<i>*WSWC Comments on the rule (Policy #373), Policy #369 regarding CWA jurisdiction, Policy #370 requesting withdrawal of the interpretive rule regarding agricultural exemptions, and related letters dated 3/10/14 12/23/13, 11/20/13, 11/5/13, 4/10/13, and 7/29/11 (attached to WSWC Policy #373).</i> <i>**WGA Resolution #2014-04, paragraph B(1)(a) regarding CWA jurisdiction and related letters dated 8/27/14, 5/30/14, and 3/25/14 and Congressional testimony before the Senate Appropriations Subcommittee on Interior, Environment, and Related Agencies on 5/23/14 and before the House Appropriations Subcommittee on Interior, Environment, and Related Agencies on 4/10/14.</i> <i>***Joint WSWC-WGA Congressional testimony dated 6/11/14 before the House Transportation and Infrastructure Subcommittee on Water Resources and Environment (contained as an attachment to WSWC Policy #373).</i>		
H.R. 499	Issue – State Volume Caps/IRS Title – Sustainable Water Infrastructure Act of 2015: Would amend the Internal Revenue Code to exempt from state volume caps tax-exempt facility bonds for sewage and water supply facilities. <i>**WGA Resolution #2015-08, paragraph B(2)(b) urging Congress to remove state volume caps.</i>	1/22/15: H.R. 499 introduced in the House and referred to the Committee on Ways and Means	Representatives John Duncan (R-TN) and Bill Pascrell (D-NJ) introduced H.R. 499 with 6 co-sponsors
S. 176/H.R. 291	Issue – Bureau of Reclamation/U.S. Geological Survey (USGS)/EPA/Water Infrastructure/Water Reuse/Water Resources Research Institutes Title – Water in the 21st Century Act: would create a financing program within the Department of the Interior to offer long-term, low-cost financing for eligible water infrastructure projects in the West that are directly and indirectly associated with Bureau of Reclamation projects. Eligible projects and activities include reuse, new infrastructure, energy efficiency, and desalination, as well as construction, reconstruction, rehabilitation, and replacement activities, among others. The program would receive about \$100M per	1/31/15: S. 176 introduced in the Senate and referred to the Committee on Environment and Public Works 1/31/15: H.R. 291 introduced in the House	Senator Barbara Boxer (D-CA) introduced S. 176 with Senate Minority Leader Harry Reid (D-NV) and Senator Dianne Feinstein (D-CA)

	year. Second, the bill would authorize \$700M for Reclamation to work with state and local entities on storage, conveyance, and water reuse projects. Reclamation's share of such projects would be the lesser of 50% of the project's total cost or \$15M. Third, the bill would direct the USGS to establish an open water data system to improve water data availability, enhance data use, and ensure timely distribution of water data and information. The bill would authorize "such sums as are necessary" for this program. Fourth, the bill would require EPA to lead an inter-agency effort that would include Reclamation, the Department of Agriculture, and others to develop National Drought Resilience Guidelines for states, local governments, and water agencies. The guidelines would create a framework of non-regulatory recommendations to help strengthen drought preparedness efforts. Fifth, the bill would authorize "such sums as are necessary" to create a new EPA grant program that would help water systems carry out various efforts, including projects to conserve water and improve water quality. The grants would provide up to 50% of project costs. Other notable provisions would: (1) authorize Interior to transfer ownership of Reclamation projects to non-federal entities; (2) re-authorize the Water Resources Research Act to authorize \$9M per year through 2020 for water supply research and other purposes at the water resources research institutes; (3) re-authorize the Water Desalination Act of 1996, and provide \$6M per year through 2020 for Interior to study desalination and water reuse; and (4) authorize the Corps to review reservoir operations, at the request of non-federal sponsors, to determine if operational changes are needed. <i>*WSWC Policy #368 supporting the Water Resources Research Institutes.</i> <i>*WSWC Policy #362 regarding the transfer of federal water and power projects and related facilities.</i>	and referred to the Committees on Natural Resources, Transportation and Infrastructure, and Science	Rep. Grace Napolitano (D-CA) introduced S. 176 with 28 Democratic co-sponsors
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	**WGA Resolution #2015-08, paragraph B(2) regarding water infrastructure needs.		
S.208/H.R. 399	Issue – Borders/ESA/National Environmental Policy Act (NEPA) Title – Secure our Borders First Act: Seeks to improve border security by requiring the Department of Homeland Security to achieve “operation controls” along the nation’s borders with Canada and Mexico. As part of this goal, the bill would waive over a dozen environmental laws on federal lands within 100 miles of either border, including the ESA, NEPA, the Wilderness Act, the Wild and Scenic Rivers Act, the Federal Land Policy Management Act, the National Wildlife Refuge System Administration Act, and the National Park Service Organic Act. The bills would also prohibit the Secretaries of Agriculture and the Interior from restricting certain U.S. Customs and Border Protection Service activities on federal land located within 100 miles of the U.S. borders with Mexico and Canada. The Service would have “immediate access” to these lands to build and maintain roads and barriers, use vehicles for patrols, install communications and surveillance equipment, and deploy temporary tactical infrastructure. The bill would have no “force or effect” on state or private lands, and would not supersede, replace, negate, or diminish tribal treaties. The legislation is part of a larger Republican effort to respond to the President’s executive actions protecting undocumented immigrants. The bills’ supporters have indicated that the waivers and other provisions are needed due to concerns that federal environmental laws are hindering efforts to control the borders, a view that conservation and environmental groups dispute.	1/16/15: H.R. 399 introduced in the House and referred to the Committees on Homeland Security, Armed Services, Natural Resources, and Agriculture 1/21/15: S. 208 introduced in the Senate and referred to the Committee on Homeland Security 1/21/15: House Committee on Homeland Security holds mark-up session on H.R. 399 1/27/15: House Committee on Homeland Security reports an amended version of H.R. 399 1/27/15: House Committees on Agriculture, Natural Resources, and Armed Services discharge H.R.	Senator Ron Johnson (R-WI) introduced S. 208 with 3 Republican co-sponsors Rep. Michael McCaul (R-TX) introduced H.R. 399 with 29 Republican co-sponsors

		399	
S.234	Issue: CWA/Section 404 Permits Title: Regulatory Fairness Act of 2015: Would present the EPA from retroactively vetoing Section 404 permits approved by the Corps by amending the CWA to define the period of time in which EPA is authorized to restrict or deny a permit for the discharge of dredged or fill materials into navigable waters under Section 404. Specifically, the bill would require that such period: (1) begins on the date that the Corps publishes a notice for the discharge of dredged or fill material into navigable waters at specified disposal sites, and (2) ends on the date the Corps issues the permit. Any previous action by the EPA that occurred outside of this period to deny or restrict a permit or to prohibit the specification of any defined area as a disposal site would be nullified. The bill would further require that EPA make all the information and data that it reviewed in making a determination publicly available. (CRS Summary) S. 234's sponsor, Senator David Vitter (R-LA), introduced an identical bill (S. 54) in the 114th Congress prior to introducing S. 234. S.234 is similar to H.R. 896, described above.	1/22/15: S. 234 introduced in the Senate and referred to the Environment and Public Works Committee	Senator David Vitter (R-LA) introduced S. 234 with 9 co-sponsors, including
S. 133	Issue – Klamath Basin/Oregon/California/Indian Water Rights/Hydropower Title – The Klamath Basin Water Recovery and Economic Restoration Act of 2014: Intended to end decades of conflict in the Klamath Basin, located on the border between California and Oregon, by authorizing federal efforts to help implement three related agreements: (1) the Klamath Hydroelectric Settlement Agreement (KHSA) to study the potential removal of four hydroelectric dams owned by PacifiCorp; (2) the Klamath Basin Restoration Agreement (KBRA) to resolve water rights disputes between tribal and non-tribal entities, among other measures; and (3) the Upper Klamath Basin Comprehensive Agreement (UKBCA), which sets forth water management and environmental restoration measures to resolve water disputes between irrigators and tribes in the Upper Klamath	1/8/15: Introduced in the Senate and referred to the Committee on Energy and Natural Resources	Senator Ron Wyden (D-OR) introduced S. 133 with co-sponsors Senators Jeff Merkley (D-OR), Dianne Feinstein (D-CA), and Barbara Boxer (D-CA)

	Basin. Estimated federal costs are expected to total around \$500M. Of note, S. 133 is similar to S. 2379, which bill cleared the Senate Energy and Natural Resources Committee. However, no companion legislation was introduced in the House, due in part to concerns about the agreements' dam removal provisions. <i>*WSWC Policy #376 supporting the negotiated resolution of Indian water rights settlements</i> <i>** WGA Resolution #2015-08, paragraph B(3)(e) supporting the negotiated resolution of Indian water rights settlements</i>		
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NOTABLE LITIGATION

Case Names	Issue - EPA's/USACE's Waters of the United States Rule
<i>North Dakota, et al. v. EPA et al.</i> , U.S. District Court, Southeastern District of North Dakota	On June 29, 2015, the Environmental Protection Agency (EPA) and the U.S. Army Corps of Engineers (USACE) published their Final Rule on the Waters of the United States (WOTUS) in the Federal Register. Three lawsuits challenging the rule were immediately filed by 18 states in U.S. District Courts in North Dakota, Texas and Ohio.
<i>Texas, et al. v. EPA et al.</i> , U.S. District Court, Southern District of Texas, Case 3:15-cv-00162	Despite the EPA's repeated assurances that the WOTUS rule does not expand its jurisdiction, the states interpret the rule as a clear threat to state primacy over water resources, as well as a threat to principles of cooperative federalism under the Clean Water Act; a violation of the 10 th Amendment and the limits of Congressional Commerce Clause powers; reaches beyond the constraints imposed by cases like <i>Riverside Bayview</i> , <i>SWANNC</i> , and <i>Rapanos</i> ; and is an arbitrary and capricious rule under the Administrative Procedures Act.
<i>Ohio and Michigan v. U.S. Army Corp of Engineers et al.</i> , U.S. District Court, Southern District of Ohio, Eastern Division, Case 2:15-cv-02467	The meaning of "waters of the United States" affects which waters agencies can require such things as Water Quality Standards, Total Maximum Daily Loads, permitting under the National Pollutant Discharge Elimination System, and Section 404 dredge/fill permits. Applications for permits are already costly, time-consuming and uncertain (with punitive fines for failure to follow procedure), and the new WOTUS rule increases all three. The states' use and management over waters will be burdened by the increased regulation, requiring expenditure and commitment of additional state resources. The expansion displaces state authority over water quality and related land and water resources.
Courts	
U.S. District Court, Southeastern District of North Dakota	The states object to the failure of the agencies to consult with the states prior to publishing the proposed rule, and the

District Court, Southern District of Texas	Corps' issuance of an Environmental Assessment when an Environmental Impact Statement was merited.
District Court, Southern District of Ohio	The final WOTUS rule expands per se jurisdiction over intrastate non-navigable waters and wetlands, as well as ephemeral streams, floodplains and channels that are usually dry. The final WOTUS rule fails to account for unique hydrologic circumstances of the states, and fails to account for frequency and duration of flow. The rule claims per se jurisdiction over neighboring waters regardless of a significant nexus or continuous surface connection. The rule references 100-year floodplains, many of which are not mapped. The rule imposes onerous jurisdictional determinations on individual landowners who lack the necessary expertise.
Relevant Dates	
6/29/15: EPA and USACE published Final Rule on Waters of the United States; three lawsuits filed by 18 states.	In <i>North Dakota, et al. v. EPA et al.</i>, 13 states challenge the WOTUS rule for unlawful expansion of the Agencies' jurisdiction over state land and water resources beyond the limits established by Congress under the Clean Water Act (CWA). They seek declaratory and injunctive relief for violations of the Administrative Procedures Act (APA), the CWA, the National Environmental Policy Act (NEPA), the Commerce Clause and the 10th Amendment. In <i>Texas, et al. v. EPA et al.</i>, three states challenge the WOTUS rule as an unconstitutional and impermissible expansion of federal power over states, their citizens and property owners. The CWA was intended to protect water quality, not to regulate states' water and land use. The states seek relief for violations of the APA, the Commerce Clause, 10th Amendment, and CWA. In <i>Ohio and Michigan v. U.S. Army Corp of Engineers et al.</i>, two states seek relief for violations of the APA, CWA, Commerce Clause, and 10th Amendment.
Case Names	Issue – BLM's Hydraulic Fracturing Rule
<i>Wyoming and Colorado v. US Department of the Interior and Bureau of Land Management</i> , U.S. District Court Wyoming, Case 2:15-cv-00043-SWS	On March 20, the Department of the Interior finalized regulations to govern hydraulic fracturing on federal land. The rule only applies to the use of hydraulic fracturing on federal and tribal lands and includes a process by which states and tribes can request a variance from provisions for which they have an equal or more protective regulation in place. Other parts of the rule require: (1) a validation of well integrity and strong cement barriers between the wellbore and water zones through which the wellbore passes; (2) higher standards for interim storage of recovered waste fluids from hydraulic fracturing; and (3) more detailed information on the geology, depth, and location of preexisting wells to help the Bureau of Land Management better evaluate and manage unique site characteristics.
Courts	
U.S. District Court of Wyoming	On May 29, Wyoming and Colorado filed a motion for a preliminary injunction to halt the implementation of the Bureau of Land Management (BLM's) 2015 hydraulic fracturing regulations, seeking to maintain the status quo until the case is decided on its merits. The states are pursuing the injunction on the grounds that the rule exceeds the BLM's jurisdiction as

Relevant Dates 05/29/15: Wyoming and Colorado file Motion for Preliminary Injunction to halt the June 24 implementation of BLM's hydraulic fracturing rule until the case is decided 06/23/15: D. Wyo. issues temporary stay	limited by Congress, leading to the irreparable harm of an immediate loss of the states' "exclusive sovereignty over hydraulic fracturing." The motion briefly reviews the history of BLM's limited authority to regulate fracking, explains how the BLM's new fracking rule duplicates the states' regulations, and outlines the financial and irreparable harms the rule is expected to cause. The motion rejects the BLM's claims to authority under the Federal Land Policy and Management Act and various mineral leasing acts and Indian mineral statutes, arguing that the Safe Water Drinking Act and 2005 Energy Policy Act expressly grant to states the authority to regulate hydraulic fracturing. A hearing is currently scheduled for June 23, and the BLM is scheduled to begin enforcement of its fracking rule on June 24. On June 23, the U.S. District Court of Wyoming stayed the implementation of the Bureau of Land Management's Hydraulic Fracturing Rule, pending the BLM's submission of its Administrative Record, now due July 22. The Rule was originally scheduled to take effect June 24. Wyoming, Colorado, North Dakota and other petitioners are seeking a preliminary injunction to postpone enforcement of the Rule until the end of the case. Following the lodging of the Administrative Record and an opportunity for petitioners to file additional citations in support of the injunction, the Court will rule on the motions. <i>*WGA's energy resolution (#2013-09) recognizes that states have effectively regulated hydraulic fracturing and that "redundant federal regulation is not required." (WSW #2019)</i>
Case Names <i>Friends of the Everglades v. EPA</i>, 699 F.3d 1280 (11th Cir. 2009) <i>Catskills Mountains Chapter of Trout Unlimited, et al v. EPA</i>, 2014 U.S. Dist. LEXIS 42535 (March 2014)	Issue – EPA's Water Transfers Rule <i>Nothing of note has occurred in this case since the April update; oral arguments still pending.</i> In 2008, EPA promulgated its "Water Transfers Rule" (40 C.F.R. § 122.3(i)) clarifying that certain water transfers do not require NPDES permits under the CWA. When EPA finalized the rule in 2008, opponents immediately challenged it in the Southern U.S. District Court of New York (SDNY). Protective challenges filed in multiple circuits were consolidated in the 11th Circuit, and the SDNY challenge was stayed pending the outcome of the 11th Circuit action. Following a decision in a related Lake Okeechobee case, the 11th Circuit dismissed the consolidated challenges for lack of original subject matter jurisdiction, and the SDNY case was decided on March 28, 2014, vacating EPA's rule.
Courts Southern U.S. District Court of New York (SDNY) 2nd Circuit Court of Appeals	EPA subsequently appealed the SDNY's decision to the 2nd Circuit, together with 11 western intervening states and western water providers. Opening briefs were filed by EPA and the western states in September 2015, and various parties involved in the action filed response and reply briefs in early 2015. The court is expected to set a date for oral arguments in the coming months.

Relevant Dates	
	<i>See full summary of litigation in the Tulsa, Oklahoma briefing binder, Tab U, April 2015</i> <i>*WSWC Policy #342, generally supporting EPA's water transfers rule.</i> <i>**WGA Resolution #14-04, Paragraph B(2)(c), generally supporting EPA's water transfers rule.</i> <i>***Joint letter from WGA and WSWC urging EPA to appeal the SDNY decision dated 5/12/14.</i> <i>Special thanks to Peter Nichols, Special Asst. Attorney General for Colorado and New Mexico, who provided much of the information used in the summary of this litigation.</i>

- 600** *Ancestral Pueblo/Hohokam Indians develop water distribution systems*
- 1500** *Spanish explorers introduce livestock and ditch systems called acequias*
- 1769** *Spanish settlements, with water rights established by Spanish law (CA)*
- 1822** *Ft. Ashley fur traders develop drinking and irrigation water along Provo River (UT)*
- 1830** INDIAN REMOVAL ACT
- 1831** US Treaty with the Ottawa tribe (KS)
- 1832** US Treaty with the Kickapoo tribe (KS)
US Treaty with the Piankashaw and Wea tribes (KS)
- 1833** US Treaty with the Oto and Missouri tribes (KS)
- 1836** US Treaty with the Sauk and Fox tribes (KS)
- 1837** US Treaty with the Potawatomi tribe (KS)
- 1840** Republic of Texas adopts riparian law, reasonable use for irrigation (TX)
- 1841** PRE-EMPTION ACT
- 1842** US Treaty with the Wyandot tribe (KS)
- 1845** Texas statehood (TX)
- 1847** *Mormons arrive in Salt Lake Valley, begin cultivating farmland and diverting City Creek water (UT)*
- 1848** *Gold discovered on American River (CA)*
- 1850** California statehood (CA)
Mormon Station/Genoa founded as a trading station along the Carson River, irrigating crops and supplying California gold seekers (NV)
- 1852** Utah Territorial Legislature adopts the appropriation doctrine; county courts authorized to allocate water resources (UT)
- 1855** *Irrigation diversion constructed by Mormon colonists on Las Vegas Creek. (NV)*
- 1856** *Irrigation canals built in Cache Valley (UT)*
- 1859** *Oliver Wozencraft promotes idea of irrigating the Imperial Valley*
- 1861** Kansas statehood (KS)
- 1862** PACIFIC RAILWAY Act - authorized construction of a transcontinental railroad.
- 1863** HOMESTEAD ACT
- 1864** Klamath Tribe Reservation created (OR)
- 1863** Arizona Territory established (AZ)
Idaho Territory established (ID)
Dry farming begins in northern Utah (UT)
- 1864** Howell Code adopted by Arizona Territorial Legislature, establishing the doctrine of prior appropriation for surface water "First in Time, First in Right" (AZ)
Nevada Statehood (NV)

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| <p>1865 <i>Lower Colorado River lands begin to be set aside for American Indians</i></p> <p>1866 MINING ACT - Congress confirmed water rights initiated and maintained by appropriation for mining, agriculture, manufacturing
DITCH ACT - recognized common-law practices of local water users in the western territories and maintained and protected those rights</p> <p>1867 Spirit Lake Reservation and Devil's Lake Reservation created by treaty (ND)
Shoshone Wind River Indian Reservation (WY)</p> <p>1869 <i>First Transcontinental ("Pacific") Railroad completed ("Golden Spike" at Promontory Summit, Utah)</i></p> <p>1870 PLACER ACT</p>
<p>1872 Yellowstone National Park established (first national park)</p> <p>1873 TIMBER CULTURE ACT</p>
<p>1875 <i>John Wesley Powell issues report of Colorado River explorations</i>

Lemhi Indian Reservation set aside by President Ulysses S. Grant for Shoshonis, Bannocks and Tukuarikas (ID)</p> <p>1877 DESERT LAND ACT - encouraged and promoted the economic development of the Western states by allowing individuals to apply for a desert-land entry to reclaim, irrigate, and cultivate arid and semi-arid public lands (water rights to be acquired through state law)
Duck Valley Indian Reservation set aside by President Hayes for the Shoshonis and Paiutes (ID)</p>
<p>1882 Turtle Mountain Reservation created by treaty (ND)</p> <p>1883 <i>Northern Pacific Railroad completed</i></p> | <p>1865 Bannack (mining community) Statutes adopted by Territorial Legislature, recognizing English common law and riparian water law (MT)</p> <p>1866 Nevada Legislation provides a method for appropriators to record diversions with the county recorder (NV)

Dakota Territorial Legislature initially adopts the riparian water rights system (ND, SD)
<i>Melrose (first) oil production well drilled (TX)</i></p> <p>1867 Nebraska statehood (NB)</p>
<p>1869 Wyoming Territorial Legislature enacts water laws for appropriations and construction of diversion ditches (WY)</p> <p>1870 <i>Burlington and Missouri River Railroad Company promoting settlement of lands near the railroad (NB)</i>
<i>Texas drought (TX)</i></p> <p>1871 <i>Ft. Sidney irrigation ditches built (NB)</i></p>
<p>1873 <i>Transbasin 7-mile pipeline constructed by hand in six weeks over rough terrain to carry Sierra Nevada water from Tahoe Basin to Virginia City to meet the growing water needs of the Comstock silver mine (2.2 million gallons per day) (NV)</i></p> <p>1874 Cattle ranchers claim Willow Creek irrigation rights in Upper Snake River Valley (ID)</p> <p>1875 Utah Territorial Legislature authorizes the formation of local irrigation districts (UT)

Wyoming Territorial Legislature passed the Irrigation Act (beneficial use) (WY)</p> <p>1877 <i>Ridenbaugh Canal started in Boise (ID)</i>
Nebraska Legislature acknowledges prior appropriation in a limited way to accommodate some irrigation projects (NB)</p>
<p>1881 Dakota Territorial Legislature shifts toward prior appropriation doctrine (ND, SD)</p> <p>1882 <i>First large appropriation of water for Kearney Canal for power (NB)</i></p>
<p>1884 <i>Lincoln County canal built (NB)</i></p> <p>1885 <i>Texas two-year drought (TX)</i></p> |
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1886	MINING ACT	1886	Territorial Water Code establishes irrigation districts overseen by water commissioners (WY)
1887	GENERAL ALLOTMENT (DAWES) ACT - allotment of Indian lands for grazing and to heads of families	1887	<i>Harsh winter kills open-range cattle, increasing claims for irrigation water to grow winter feed</i> (WY)
		1888	Territorial Office of Engineer created (WY)
		1889	<i>Kansas oil production begins</i> (KS) Montana statehood (MT) South Dakota statehood (SD) Washington statehood (WA) North Dakota statehood; adopts Dakota Territory statutes (ND) St. Rayner Irrigation Laws - begins to abrogate riparian water law with the doctrine of prior appropriation, beneficial use (NB) Nevada Legislation prohibits unlawful waste of water, provides for storage of water to encourage milling and mining and to reclaim land, and provides for land condemnation for reservoirs (NV) <i>USGS stream gauge measurement program on rivers and tributaries in Nevada</i> (NV) Texas Legislature adopts prior appropriation law (TX)
		1890	Idaho statehood (ID) Wyoming statehood, state water laws revised from territorial laws, four water divisions created corresponding to four river drainage basins, and State Board of Control created (WY) <i>Nebraska suffered from "the most disastrous drought the West had known." (Summer temperatures above 100 degrees, rainfall dropped from average 26" to 12" for the entire year, leading to abandoned farms and expansion of irrigation)</i> (NB) Oklahoma Territory Legislature statutes on natural flow of stream not owned by adjacent property owner (OK)
1894	CAREY ACT cedes up to 1 million acres to any Western state willing to undertake reclamation (irrigation) of the land.	1894	<i>Idaho develops 630,000 acres of irrigated farmland under the Carey Act</i> (ID)
		1895	Idaho Office of the State Engineer created, administering the first comprehensive irrigation law for the uniform use of public water (ID)

- Nebraska Appropriation and Irrigation Law completes the abrogation of riparian water rights (for post-1895 acquired lands) and provides administrative procedures to acquire and regulate water rights, with jurisdiction transferred from courts to the State Board of Irrigation (later the Department of Water Resources), and established preference for domestic, then agricultural, then manufacturing uses of water (NB)
- Nebraska State Board of Irrigation handles the adjudication of ~1,000 pre-1895 water rights claims in approximately three years. (NB)
- Texas Legislature refines prior appropriation law (TX)
- 1897** FOREST SERVICE ORGANIC ACT - conservation of favorable water flows and production of timber
- 1899** RIVERS AND HARBORS ACT (RHA) - primarily protects navigation and prohibits discharge that would interfere with water transportation
- 1896** Utah statehood; *East Canyon Dam built* (UT)
- 1897** Oklahoma Territory Legislature adopted prior appropriations law, dual water rights systems; first commercial oil well completed (OK)
- Utah Office of State Engineer created (UT)
- 1900** *Austin Dam destroyed by flooding in the Colorado River watershed* (TX)
- 1901** *First deliveries of Colorado River water to farmland in Imperial Valley* (CA)
- Swan Falls Dam completed on Snake River to provide power to mines in Silver City (later a power source for Idaho Power Co.)* (ID)
- Nevada Legislation creates State Board of Irrigation (NV)
- Spindletop oil well erupts from salt dome* (TX)
- 1902** RECLAMATION ACT - establishes the U.S. Bureau of Reclamation, funding for irrigation projects in the Western states: "the right of the use of water acquired under the provision of this Act shall be appurtenant to the land irrigated, and beneficial use shall be the basis, the measure, and the limit of the right."
- 1903** Nevada Irrigation Act - provided for appropriation of public waters for beneficial use; Nevada Office of State Engineer created (NV)
- Utah Water and Irrigation Code (UT)
- 1904** Texas court confirms the English law of rule of capture regardless of impact on neighboring wells (TX)
- 1905** *Gila National Forest established (Gila River Forest Reserve, 1899) (transferred to the USFS 1906)*
- 1905** *Construction of Milner Dam and Northside Project for irrigation of approximately 400,000 acres on the south side of the Snake River* (ID)

Clark v. Nash - water rights "are not the same in the arid and mountainous states of the west that they are in the states of the east...because of the totally different circumstances in which their inhabitants are placed...This court (US S. Ct.) must recognize the difference of climate and soil, which render necessary these different laws in the states so situated."

North Dakota Legislature unequivocally recognizes prior appropriation, creating a dual system of water rights (ND)

Oklahoma Territorial Legislature establishes beneficial use doctrine (OK)

McLaughlin Agreement Act (Indian reservation lands and water rights) (WY)

Oregon Office of State Engineer (OR)

Construction begins on the Strawberry Valley Project to deliver water to farmers (UT)

1906 US-Mexico Treaty apportions Rio Grande waters

1907 New Mexico Territorial Water Code enacted, Territorial Engineer created (NM)

Oklahoma statehood (OK)

South Dakota Legislature adopts a comprehensive water law, prior appropriation (SD)

Wyoming Irrigation District Laws (WY)

1908 Winters v. U.S. - Indian Reserved Water Rights, sufficient to fulfill the purposes of the reservation, priority date established the date of the reservation

1908 Minidoka Dam completed (ID)
Texas four-year drought; offshore oil drilling begins (TX)

1909 *Zion National Park established*

1909 Oregon Water Rights Act (OR)

1910 Arizona Constitution adopted, rejecting riparian rights and confirming existing appropriations (AZ)

Rexburg Decree - judge determines water rights on the Snake River above Blackfoot (ID)

1911 *Theodore Roosevelt Dam completed* (AZ)

1912 Arizona statehood (AZ)

New Mexico statehood; prior appropriation doctrine and Territorial Water Code adopted in state constitution (NM)

1913 Foster Decree - judge determines water rights from Blackfoot to Milner; last Snake River rights until the 1987 Snake River Basin Adjudication. (ID)

Nevada Legislation provides for groundwater appropriation and conservation (NV)

Texas Board of Water Engineers abolishes riparian rights for post-1895 lands (TX)

1914 *Paddock Viaduct completed* (TX)

First Dam completed on Logan River (UT)

Washington Water Code Commission Report shows chaos in water rights allocation (WA)

1915 *Lahontan Dam completed on the Carson-Truckee River*

1915 *Arrowrock Dam completed on Boise River* (ID)
Austin Dam destroyed by floods (again), followed by a three-year drought (TX)

1916 National Park Service created

1916 *Elephant Butte Reservoir construction completed* (NM)

1917 Kansas Water Commission (KS)

- Kansas agricultural boom due to WWI, European nation's need for food - thousands of previously uncultivated acres were planted in wheat. (KS)*
- Washington Water Code (WA)
- 1918** *Lake Overholser completed (OK)*
- Texas Drouth Relief Law (TX)
- 1919** *Grand Canyon National Park*
- 1919** Public Water Code (AZ)
- Division of Irrigation (KS)
- Mettler v. Ames Realty Co. closed down riparian rights, favoring prior appropriation: The doctrine of appropriation was born of the necessities of this state and its people... Our conclusion is that the common-law doctrine of riparian rights has never prevailed in Montana since the enactment of the Bannack Statutes in 1865; . . . [and] that it is unsuited to the conditions here (MT)
- 1920** OIL AND GAS LEASING ACT
- 1920** *High-scale irrigation canals begin on High Plains (TX)*
- 1921** *JE Church provided a report on snowpack surveying studies to forecast spring runoff in river basins for the 1921-22 Biennial Report from the Nevada State Engineer's Office (NV)*
- Utah Water Storage Commission (UT)
- 1922** Wyoming v. Colorado - appropriative water rights and state lines
- 1922** La Plata River Compact signed between CO, NM
- Colorado River Compact signed by CA, CO, NV, NM, UT (7.5 million acre-feet each to upper and lower basins)
- 1923** Wyoming Board of Health authorized to regulate water pollution (WA)
- 1924** *Texas two-year drought (TX)*
- 1925** MWD formed to build the Colorado River Aqueduct (CA)
- Stock Watering Act (NV)
- Texas Legislature authorizes Water Control and Improvement Districts (TX)
- 1926** Texas court determines riparian rights attached to ordinary flow and underflow of rivers (TX)
- 1927** *American Falls Dam completed on the Snake River (ID)*
- Kansas Division of Water Resources created, consolidating the Kansas Water Commission and the Division of Irrigation (KS)
- Great Mississippi Flood affects TX, OK, KS and other states*
- Cutler Reservoir completed (UT)*
- 1928** Congress approves Boulder Canyon Project Act (authorizing Boulder/Hoover Dam) and 1922 Colorado River Compact
- 1928** California Constitution amended, requires water use be "reasonable and beneficial" (CA)

1928-1934 Worst drought of 20th century - establishes water benchmarks

- 1929** California Limitation Act (CA)
 Kansas Levee Law , and Obstructions in Steams (KS)
Arches National Monument established (became Arches National Park in 1971) (UT)
 Brazos River Conservation and Reclamation District to develop and manage water resources of the entire river basin (TX)

1930-1941 Dust Bowl

Thousands of acres of newly cultivated land (planted to supply the warring nations of Europe during WWI) allowed to lay fallow during the recession of the 1920s and became part of the "dust bowl" of the 1930s (KS)

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| <p>1931 Construction begins on Hoover Dam</p> <p>1934 TAYLOR GRAZING ACT - "nothing in this Act shall be construed or administered in a way to diminish or impair any right to the possession and use of water for mining, agriculture, manufacturing and other purposes"</p> <p>1935 Completion of Hoover Dam</p> <p><u>Wyoming v. Nebraska</u> - North Platte River diversions</p> <p>1937 RIVERS AND HARBORS ACT (RHA) - amended</p> <p>1938 Rio Grande Compact signed NM, CO, TX
FLOOD CONTROL ACT</p> | <p>1931 State Water Plan (CA)
 New Mexico Groundwater Code adopted (NM)
 Oregon Hydroelectric Commission created to manage power plants (OR)</p> <p>1933 Central Valley Project (CVP) Act passed (CA)
 Ogden River and Provo River Projects (UT)</p> <p>1934 Lower Colorado River Authority established, charged with flood control, water supply and electricity (builds 6 dams over the next decade) (TX)</p> <p>1935 Interstate Steam Commission created to investigate, protect, conserve and develop New Mexico's waters (NM)
 <i>El Vado Dam construction completed (NM)</i>
 Metropolitan Water District Act (UT)</p> <p>1937 Army Corps of Engineers authorized by RHA to construct CVP features (CA)
 <i>Avalon Dam and Sumner Dam construction completed (NM)</i>
 North Dakota Water Conservation Commission (ND)</p> <p>1938 First Groundwater Study Group (AZ)
 <i>Caballo Dam construction completed (NM)</i>
 <i>Lower Colorado River Authority installs 50 rain gauges for a comprehensive watershed reporting system (TX)</i></p> <p>1939 Nevada Underground Water Act (NV)
 Willamette River Basin Commission formed (OR)
 Texas Soil and Water Conservation Board established (TX)
 Colorado River-Great Basin Project created to deliver water from Green River to Wasatch Front (UT)</p> <p>1940 MWD completes 242-mile long Colorado River Aqueduct; first deliveries in 1941 (CA)
 <i>Conchas Dam construction completed (NM)</i>
 <i>Austin Dam rebuilt (later renamed Tom Miller Dam) (TX)</i></p> <p>1941 Water Storage Law (KS)</p> |
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- Massive flooding in New Mexico (NM)*
Water Conservancy District Act (UT)
- 1942** *Grand Coulee Dam completed (WA)*
- 1943** Republican River Compact (CO, KS, NB)
- 1944** U.S.-Mexico Water Treaty, 1.5 million acre-feet of Colorado River water in normal years (reduction for extraordinary drought or serious accident to US irrigation system); Rio Grande water below Ft. Quitman, TX
- FLOOD CONTROL ACT
- 1944** Colorado River Compact ratified by AZ
 Costilla Creek Compact signed by CO, NM
- 1945** State Water Resources Control Board created (CA)
 Groundwater Code adopted, requires registration of wells (AZ)
 Kansas Water Appropriations Act (KS)
 North Dakota Office of the State Engineer combined the State Water Commission (ND)
 Texas Department of Health authorized to enforce public drinking water standards (TX)
Central Utah Project, an extension of the Colorado River-Great Basin Project (UT)
 Washington Groundwater Code (WA)
- 1947** *Lake Hefner completed (OK)*
 State Irrigation Board established to create water conservation districts (OR)
Hydraulic fracturing of Hugoton gas field (KS)
- 1948** Upper Colorado River Compact - creates commission and apportions water among Upper Basin States (CO, NM, UT, WY) and AZ; states and Congress ratify
- FEDERAL WATER POLLUTION CONTROL ACT
- 1948** Arizona Groundwater Code restricts drilling of new irrigation wells in Critical Groundwater Areas; Central Arizona Project (CAP) plans; Arizona Interstate Stream Commission (AZ)
- Cascade Dam completed (ID)*
 Pecos River Compact signed by NM, TX
- 1949** Arkansas River Compact (CO, KS)
 Bureau of Land Management created
- Snake River Compact (ID, WY)
- Canadian River Compact signed by NM, OK, TX
- Yellowstone River Compact between MT, ND, WY
- 1949** Groundwater Appropriations statute (OK)
 Texas Legislature declares groundwater to be private property, provides for the establishment of underground water conservation districts (TX)
 Improvement District Act and Weber Basin Project (UT)
Halliburton successfully uses fracking in Stephens County, OK and Archer County, TX (OK, TX)
- 1950** *Anderson Ranch Dam completed on the South Fork of the Boise River (ID)*
Kansas has over 30,000 producing oil wells (KS)
- Texas seven-year drought (TX)*
- 1951** Second Groundwater Study Commission (AZ)
Great Flood of Kansas River and others (KS)
 Upper Columbia River Basin Commission established (OR)

- High Plains Underground Conservation District created; *Dallas City Council passes a resolution limiting lawn watering (TX)*
- Jordan Valley Water Conservancy District (UT)
Wyoming Natural Resources Board created (WY)
- 1952** Devil's Hole National Monument established
McCarran Amendment - waived sovereign immunity in lawsuits concerning ownership or management of water rights affecting the United States; federal water rights could be tried/adjudicated in state courts
- 1953** *CJ Strike Dam completed on the Snake River (ID)*
Falcon Dam completed (TX)
- 1954** WATERSHED PROTECTION AND FLOOD PROTECTION ACT
- 1955** *Construction begins on the three Hells Canyon dams (ID)*
Severe nine-year drought in New Mexico (NM)
Pollution Remedies Act (OK)
Ground Water Act; Water Resources Board (OR)
South Dakota Water Law, comprehensive revision of water laws, groundwater subject to appropriation; creation of pre-cursor to Water Management Board (SD)
- 1956** COLORADO RIVER STORAGE PROJECT ACT - approves Upper Basin projects Flaming Gorge Dam and Glen Canyon Dam
- Trinity River Authority created (TX)
- 1956** *Lucky Peak Dam and Palisades Dam completed (ID)*
Pecos River Adjudication begins; initial declaration of Rio Grande underground water basin (NM)
- 1957** Bear River Compact (ID, UT, WY)
- 1957** *Golden Spike National Historic Site established; transferred to federal ownership and administration in 1965 (UT)*
Oklahoma Water Resources Board created, State Water Policy adopted (OK)
Torrential floods; Texas Legislature creates Texas Water Development Board and passes the Water Planning Act (TX)
Title 41 water laws include a more comprehensive groundwater code and the formation of Water Conservancy Districts (WY)
- 1959** *Brownlee Dam completed (ID)*
Oregon statehood (OR)
Contract for storage space in proposed Fontenelle Reservoir authorized (WY)
- 1961** *Oxbow Dam completed (ID)*
Controlled Groundwater Areas (MT)
North Dakota Cloud Modification Project (ND)
Texas six-year drought (TX)
- 1962** *Navajo Dam construction completed (NM)*

- 1963** *Arizona v. California*, decrees allocation of Colorado River to Lower Basin AZ (2.8 maf), CA (4.4 maf), and NV (0.3 maf); expands federal reserved water rights, which apply to all federally reserved public lands (national forests, national recreation areas, national wildlife refuges)
- 1963** *Abiquiu Dam construction completed*; state engineer adopts conjunctive management of surface and groundwater, judicially approved (NM)
North Dakota Legislature repeals riparian rights statute, ending the ability to acquire riparian water rights; pre-1963 riparian rights still recognized if not otherwise lost (ND)
Oklahoma Legislature passes new appropriations law in effort to reconcile incompatible prior appropriations and riparian systems (OK)
Utah Division of Water Rights (UT)
- 1964** Aamodt water rights litigation begins (NM)
Central Utah Water Conservancy District (UT)
- 1965** **WATER QUALITY ACT**
WESTERN STATES WATER COUNCIL CREATED
Sam Rayburn Dam completed (TX)
Utah Department of Natural Resources (UT)
- 1966** *Glen Canyon Dam completed*
Kansas-Oklahoma Arkansas River Compact (KS, OK)
- 1967** North Dakota State Water Commission adopts water quality standards for surface waters (ND)
Water Rights Adjudication Act (TX)
Water Rights Claims Registration (WA)
- 1968** COLORADO RIVER BASIN PROJECT ACT - authorized Arizona's CAP, safeguards California's 4.4 maf priority in times of shortage
Animas-La Plata Compact signed by CO, NM
- 1968** *Hells Canyon Dam completed* (ID)
Oklahoma Water Resources Board completes the vested rights proceedings across the state except for the Grand River System (OK)
Texas Water Development Board adopts a second state water plan (TX)
- 1969** NATIONAL ENVIRONMENTAL POLICY ACT
Oregon Department of Environmental Quality established (OR)
Amistad Dam and Toledo Bend Reservoir completed (TX)
Minimum Water Flows and Levels Act (WA)
Wyoming Department of Economic Planning and Development created; exempt wells eliminated - all wells require permit (WY)
- 1970** NATIONAL ENVIRONMENTAL QUALITY ACT; NATIONAL ENVIRONMENTAL PROTECTION ACT
Big Blue River Compact (KS, NB)
- 1970** Montana Fish and Game Commission granted legislative Murphy rights, appropriated water on 12 streams to maintain instream flows for fish and wildlife habitat (MT)
Texas two-year drought (TX)
- 1971** *Heron Dam construction completed* (NM)
Water Resources Act and Water Well Construction Act (WA)
- 1972** CLEAN WATER ACT (expansion of Federal Water Pollution Control Act (1948))
Arkansas-Oklahoma Arkansas River Compact (AR, OK)
Dworshak Dam completed (ID)
Kansas Groundwater Management District Act - establishes five groundwater management districts (KS)

ENDANGERED SPECIES ACT

- 1973 US-Mexico Water Treaty Minute 242, establishes salinity standards for water delivered to Mexico
- 1974 SAFE DRINKING WATER ACT; WATER RESOURCES DEVELOPMENT ACT
COLORADO RIVER BASIN SALINITY CONTROL ACT
- 1975 Natural Resources Defense Council v. Calloway, US Army Corps of Engineers interpreted its CWA jurisdiction too narrowly.
- Corps guidelines re-written to claim jurisdiction over navigable waters, their tributaries and wetlands
- 1976 Cappaert v. United States - injunction against groundwater pumping jeopardizing the Devil's Hole pupfish, expanding the reach of the federal reserved water rights doctrine
- FEDERAL LAND MANAGEMENT POLICY ACT
- 1977 Corps regulations define discharge as "any addition of dredged materials into the waters of the United States."
- CLEAN WATER ACT (amendments)
- 1978 United States v. New Mexico - Forest Service's claim of reserved water rights for instream flow (fish, wildlife, recreation) denied - reservation limited to purposes in Organic Act of 1897 (Rio Mimbres River in Gila National Forest)
- Red River Compact (AR, LA, OK, TX)
- Montana Constitutional Convention: "All existing rights to the use of any waters...are hereby recognized and confirmed," Article IX (MT)
- Montana Water Use Act (adjudication, permitting, recording, consumptive use and minimum instream flows) (MT)
- Natural Resource Districts begin groundwater management (NB)
- Water Law amended for sustainable groundwater withdrawals (SD)
- Stream Water Law amended (OK)
- 1973 Construction begins on CAP (AZ)
- Powder River Basin Adjudication begins (MT)
- Oklahoma Groundwater Law (OK)
- 1974 Water Rights Registration Act (*pre-1919 surface water rights claims; triggers Gila River and Little Colorado Adjudications*) (AZ)
- Water Plan Storage Act (KS)
- 1975 Klamath River Basin Adjudication begins - *Oregon Water Resources Department notifies 25,000 local property owners of adjudication; 1,200 notices of intent to state a claim filed* (OR)
- Cochiti Dam construction completed (NM)
- Houston-Galveston Subsidence District created, authorized to restrict groundwater pumping (TX)
- 1976 Teton Dam completed; collapses the first time it's filled (*end of the federal dam building age in Idaho*) (ID)
- WSWC Water Quality Committee created
- 1977 Stockpond Water Rights Registration Act and amendments to Groundwater Code (AZ)
- New Mexico legislation for San Juan-Chama Project is completed (NM)
- General Adjudication Statute; Big Horn General Adjudication begins (WY)
- 1978 Ak-Chin Indian Water Rights Settlement Act (amendments 1984, 1992, 2000) (AZ)
- Amendment of Kansas Groundwater Management District Act to establish Groundwater Use Control Areas - to remedy/control excessive declines in surface flows or groundwater (KS)
- Lake Limestone, Lake Granger, Lake Georgetown and Lake Fork Dam Reservoirs all completed (TX)

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| <p>1979 U.S. Supreme Court appoints special master to review Tribal Lower Basin Colorado River water rights (master recommends in 1982-83 that tribal water claims be upheld, Supreme Court rejects recommendation and refuses to reopen <i>Arizona v. California</i>)</p> <p>1981 Corps guidance letter: CWA 404 permit not required for removal of soil or dredging - beginning a "loophole" debate.</p> <p>1982 <u>Texas v. New Mexico</u> re Pecos River filed</p> <p>1983 <u>U.S. v. Adair</u> ruled that Klamath Tribes retained water rights to support traditional hunting and fishing activities, but left the quantification of those rights to Oregon (OR)</p> <p>1985 <u>United States v. Riverside Bayview Homes, Inc.</u>, Corps has expanded jurisdiction over wetlands next to a navigable body of water of the United States, even if not inundated or frequently flooded by the adjacent waterway.</p> <p><u>Kansas v. Colorado</u>, seeking compliance with the Arkansas River Compact</p> <p>1987 Corps guidance manual defining jurisdictional wetlands as [1] water at or near the surface for some period of time, [2] wet vegetation present, [3] soil periodically saturated</p> | <p>1979 Senate Bill 76 created the Montana Water Court and the Montana Reserved Water Rights Compact Commission (MT)
Arkansas Riverbed Authority chartered by Indian Nations (OK)
Wyoming Water Development Commission (WY)</p> <p>1980 Groundwater Management Act - establishes Active Management Areas (AZ)
McPherson Intensive Groundwater Use Control Area established (KS)
Declaration of last undeclared portion of the Rio Grande underground water basin (NM)</p> <p>1981 Pawnee River Valley Intensive Groundwater Use Control Area established (KS)</p> <p>1982 Southern Arizona Water Rights Settlement Act, settling Indian Water Rights with San Xavier and Shuk Toak Districts, Tohono O'Odham Nation (formerly Papago) tribes (AZ)</p> <p>1983 <u>Swan Falls</u> case declares 1901 priority water rights for Idaho Power (ID)
Water Transfer Act (KS)
<i>Sardis Reservoir completed</i> (OK)
Texas Wildlife Conservation Act passes, with authority over fish resources (TX)</p> <p>1984 Swan Falls Agreement between Idaho Power and the State of Idaho, setting minimum stream flows to protect hydroelectric generation (ID)
Burton and Lower Smoky Hill River Intensive Groundwater Use Control Areas established (KS)
Revised Texas Water Plan, conservation more economical than developing new resources (TX)</p> <p>1985 <i>CAP begins operation</i> (AZ)
Hays Intensive Groundwater Use Control Area established (KS)
Groundwater Management and Protection Act - allows Natural Resources Districts to create Groundwater Management Plans for quality and quantity (NB)
Water Resources Commission (OR)
Assiniboine and Sioux Tribes of the Fort Peck Indian Reservation Water Compact (MT)</p> <p>1986 Underground Water Storage Act (AZ)
Arkansas River Valley Intensive Groundwater Use Control Area established (KS)
Water Assurance Program Act (KS)
Southwest Pipeline Project (ND)</p> <p>1987 Snake River Basin Adjudication begins (ID)
Edwards Underground Water District develops the first region-wide drought management plan (TX)</p> |
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WATER QUALITY ACT amendments

- 1988** Drought Review and Reporting Committee (NV)
Oregon Water Resources Department created
Upper Basin states begin program to protect four endangered fish
MWD agrees to pay for Imperial Valley conservation measures in exchange for the water conserved (CA)
Salt River Pima-Maricopa Indian Community Water Rights Settlement Act of 1988 (AZ)
San Luis Rey Indian Water Rights Settlement Act of 1988 (CA)
Upper Smoky Hill River Valley Intensive Groundwater Use Control Area established (KS)
Brantley Dam completed (NM)
Texas two-year drought (TX)
- 1989** Southern Nevada Water Authority Groundwater Importation Project - *Las Vegas Valley Water District filed 146 water-right applications to appropriate groundwater in 27 hydrographic basins (NV)*
- 1990** Corps Guidance Letter 90-5: land clearing activities with mechanized equipment constitute point source discharge subject to CWA 404 permitting

EPA listed Carson River Mercury Site as a Superfund site due to historic Comstock Lode mills that used mercury to separate silver and gold from the ore; concerns about game fish in Carson River and Lahontan Reservoir (NV)
- 1990** Fallon Paiute Shoshone Indian Tribes Water Rights Settlement Act (NV)
Truckee-Carson-Pyramid Lake Water Rights Act, settling water rights of the Pyramid Lake Paiute Tribe (CA, NV)
Fort Hall Indian Water Rights Act (ID)
Fort McDowell Indian Community Water Rights Settlement Act (AZ)
Growth Management Act (WA)
- 1991** Southern Nevada Water Authority formed (NV)
Floodplain Zoning Ordinances Act (KS)
Texas Clean Rivers Act to reduce nonpoint source water pollution (TX)
Method combining hydraulic fracturing with horizontal drilling developed, increasing production of shale oil (TX)
- 1992** GRAND CANYON PROTECTION ACT - releases from Glen Canyon Dam to meet environmental, tribal, cultural and recreational interests
- 1992** Ten Tribes Colorado River Basin Partnership formed
Northern Cheyenne Tribe Water Compact (MT)
Jicarilla Apache Tribe Water Settlement Act (NM)
San Carlos Apache Tribe Water Rights Settlement Act (amended 1994, 1997) (AZ)

Ute Indian Rights Settlement Act (UT)
Idaho issues moratorium on new water rights in the Snake River Basin upstream from Weiser (ID)
Walnut Creek Intensive Groundwater Use Control Area established (KS)
- 1993** CAP substantially complete, delivers water to Tucson, Phoenix, farmers and tribes (AZ)

- Great Flood of the Mississippi and Missouri Rivers affects KS, NB, ND, SD and other states, destroying crops and property*
- Oklahoma Legislature responds to court decision by recognizing only limited domestic riparian rights along with vested riparian rights; Oklahoma Department of Environmental Quality created, consolidating eight agencies (OK)
- Watershed Management Program created to coordinate activities (OR)
- Texas Legislature creates Edwards Aquifer Authority in response to federal court ruling limiting groundwater pumping to maintain continuous flow of springs for endangered aquatic species (TX)
- 1994** US v. Oregon - required the participation of the Klamath Tribes in the adjudication process, resulting in an additional 400 federal claims 21 years into the Klamath River Basin Adjudication process
- 1994** Yavapai-Prescott Indian Tribe Water Rights Settlement Act (AZ)
- Underground Water Storage, Savings and Replenishment Act; Water Protection Fund (AZ)
- Forest River Colony Artificial Recharge Project begins (ND)
- Yellowstone National Park Glacier National Park Big Hole National Battlefield Water Compact (MT)
- 1995** *Water transfer proposed between Imperial Irrigation District and San Diego County Water Authority (CA)*
- Assured and Adequate Water Supply Rules established (AZ)
- Idaho Legislature approves a management program that authorizes groundwater districts to jointly manage groundwater pumping; junior groundwater users can offset their effects on senior water users by purchasing water or paying them (ID)
- Texas one-year drought devastates agriculture (TX)*
- 1996** Reclamation adopts new criteria for periodic high flow releases into the Grand Canyon to restore/improve habitat
- Interior Secretary orders California to implement plan to reduce its average use of 5.2 maf of Colorado River water to "live within" its 4.4 maf apportionment.
- 1996** Arizona Water Banking Authority established - underground storage of full CAP allotment and Colorado River water on behalf of NV and CA (AZ)
- Zion National Park Water Rights Settlement Agreement (UT)
- Nebraska Legislature restructures the Ground Water Management and Protection Act for integrated management and conjunctive use of ground and surface water, recognizing for the first time the hydrologic connection (NB)
- 1997** Upper Missouri National Wild & Scenic River Bear Trap Canyon Public Recreation Site Water Compact; Benton Lake National Wildlife Refuge, Black Coulee National Wildlife Refuge Water Compact (MT)
- North Dakota blizzards and spring floods (ND)*
- Oregon Plan for Salmon and Watersheds (OR)

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| <p>1998 <u>Kansas v. Nebraska</u>, seeking compliance with the Republican River Compact</p> <p>1999 Interior Secretary's interstate banking rule (Offstream Storage of Colorado River Water...) allowing Lower Basin states to store water in Arizona aquifers</p> | <p>1998 Watershed Planning Act (WA)</p> <p>1999 Chippewa Cree Tribe of the Rocky Boy's Reservation Indian Reserved Water Rights Settlement Act (MT)
Crow Tribe Water Compact (MT)</p> <p><u>In re the General Adjudication of all Rights to Use Water in the Gila River System and Source (Gila III)</u> - Arizona Supreme Court federal reserved rights for ground and surface water, Indian and non-Indian reservations (AZ)</p> <p>Chippewa Cree Tribe of the Rocky Boy's Indian Reservation Water Compact (MT)
Red Rock Lakes National Wildlife Refuge Water Compact (MT)
Drought Preparedness Council (TX)
<i>Public water suppliers begin a media campaign, "Slow the Flow" (UT)</i></p> <p>2000 States negotiate Interim Surplus Guidelines for Colorado River Compact
Shivwits Band of the Paiute Indian Tribe of Utah Water Rights Settlement Act (UT)
Colorado Ute Settlement Act Amendments of 2000, settling Southern Ute and Ute Mountain Ute Tribes, and Navajo Nation water rights (CO)
Governor's Water Management Commission (AZ)</p> |
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2000 Multi-year drought along Colorado River

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| <p>2001 Colorado River Interim Surplus Guidelines adopted by Reclamation
<u>SWANCC v. US</u>, overturned a migratory bird regulation protecting isolated wetlands, questioned whether Congress intended CWA jurisdiction over isolated wetlands (in this case, formed in an abandoned sand and gravel pit that local governments wanted to use as a nonhazardous waste site.)</p> <p><i>Rio Grande stops flowing into the Gulf of Mexico</i></p> | <p>2001 Agreement for Interstate Water Banking (AZ, CO, NV)
<u>In re the General Adjudication of all Rights to Use Water in the Gila River System and Source (Gila V)</u> - Arizona Supreme Court Indian reservations may include water for multiple present and future uses. (AZ)
Gros Ventre and Assiniboine Tribes of the Fort Belknap Indian Reservation Water Compact (MT)</p> <p>Drought forces Idaho water users to use most of the reservoir water for irrigation, cutting leases for salmon migration for the first time in ten years. (ID)
Water Banking Act (KS)</p> |
| <p>2002 <u>Borden Ranch Partnership v. US Army Corps of Engineers</u>, US Supreme Court 4-4 split allows 9th Cir. decision to stand, fining rancher, wetlands restoration after 7ft. metal shanks used to plow land; method is "mechanized," causes a change in the soil, and constitutes discharge of pollutant under CWA.</p> | <p>2002 Cherokee, Choctaw, and Chickasaw Nations Claims Settlement Act
Texas Water Development Board obligates state funding for the development of water resources and becomes the first comprehensive statewide water management plan (TX)</p> |

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| 2003 | Interior Secretary orders California's Colorado River allocation limited to 4.4 million acre-feet | 2003 | Quantification Settlement Agreement for Colorado River water (CA)
Construction begins on Animas-La Plata to fulfill Ute Settlement water rights (CO, NM)
Zuni Indian Tribe Water Rights Settlement Act (AZ)
Governor's Drought Task Force (AZ)
Pecos Settlement Agreement signed (NM, TX)
New Mexico's State Water Plan accepted (NM) |
| | | 2004 | MWD-PVID sign 35-yr agreement to pay farmers to fallow and rotate crops, transferring saved water to urban Southern California (CA)

Arizona Water Settlements Act, settling Gila River Indian Community, Tohono Oodham Nation water rights and establishes CAP obligations (AZ)
Snake River Water Rights Act, settling Nez Perce Tribe water rights (ID)
<i>Idaho groundwater pumping crisis</i> (ID)
Tinpanogos Cave National Monument Water Right Settlement Agreement (UT)
New Mexico Active Water Resources Management framework regulations promulgated by State Engineer (NM) |
| 2005 | Lower Basin Multi-Species Conservation Program - 50-yr agreement to restore habitat between Hoover Dam and US-Mexico border | 2005 | <i>Lake Powell water storage 33% of capacity</i>
Navajo Nation water rights settlement agreement signed by parties; State Engineer declares all remaining groundwater basins in the state (NM) |
| 2006 | <u>Rapanos v. United States</u> , [Scalia: CWA protects only relatively permanent standing or continuously flowing bodies of water that are connected to traditional navigable waters, and wetlands with a continuous surface connection to actual waterways so that there is no clear demarcation between waters and wetlands.]
[Kennedy: CWA jurisdiction requires a significant nexus between wetlands and navigable waters, requiring the wetlands alone or in combination to significantly affect the chemical, physical, and biological integrity of other protected waters.] | 2006 | Aamodt and Taos water rights settlement agreements signed by the parties (NM)
Lake Powell Pipeline Act (UT) |
| 2007 | Seven States Agreement and federal Record of Decision signed - includes Lower Basin shortage guidelines and rules to store conserved water in Lake Mead and agreement to "equalize" storage in Lake Mead and Lake Powell for interim period (until 2026) | 2007 | Idaho Supreme Court rules that the State has discretion in how it decides to administer its "first come, first served" doctrine; <i>Idaho orders farmers to shut off water to 16,000 acres pending court rulings</i> (ID)
Bowdoin National Wildlife Refuge Water Compact; Fort Keogh Livestock and Range Research Laboratory Water Compact (MT)
Increase in widespread oil hydrofracturing (ND) |
| | | 2008 | Soboba Band of Luiseño Indians Settlement Act (CA) |

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| | | 2009 | Northwestern New Mexico Rural Water Projects Act (Navajo-Gallup Water Supply Project/Navajo Nation Water Rights) (NM)
Shoshone-Paiute Tribes of Duck Valley Water Rights Settlement Act (NV)
Blackfeet Water Compact (MT) |
| | | 2010 | Crow Tribe Water Rights Settlement Act (MT)
White Mountain Apache Tribe Water Rights Quantification Act (AZ)
Aamodt Litigation Settlement Act, settling Nambé, Pojoaque, San Ildefonso, and Tesuque Pueblos water rights (NM)
Taos Pueblo Indian Water Rights Settlement Act (NM) |
| 2011 | <u>Montana v. Wyoming</u> (efficient irrigation and Yellowstone River Compact) | 2011 | Animas-La Plata project completed (CO, NM) |
| 2012 | <i>Colorado River Basin Supply and Demand Study released</i>
<u>PPL Montana v. Montana</u>
New protocol for high-flow releases from Glen Canyon Dam | 2012 | <i>Proposed Colorado River Cooperative Agreement between Front Range and Western Slope entities (CO)</i>
<i>Condit Hydroelectric Dam removed from the White Salmon River (WA)</i> |
| | | 2013 | Klamath River Basin Adjudication complete (OR)
Upper Missouri River Breaks National Monument Water Compact (MT) |
| | | 2014 | California regulates groundwater (CA)
Idaho Legislature direct cigarette tax revenues be spent on aquifer-recharge projects (ID)
Upper Klamath Basin Comprehensive Agreement signed (OR, CA) |
| 2015 | EPA & USACE final WOTUS rule
Lawsuits filed against EPA & USACE by ND, AK, AZ, CO, ID, MT, NB, NV, SD, WY, NM, TX and other states | 2015 | Arches National Park Water Rights Agreement (UT) |

14-1823(L)

14-1909(con), 14-1991(con), 14-1997(con), 14-2003(con)
To Be Argued By:
ROBERT WILLIAM VALEN

United States Court of Appeals

FOR THE SECOND CIRCUIT

Docket Nos. 14-1823(L), 14-1909(con),
14-1991(con), 14-1997(con), 14-2003(con)

CATSKILL MOUNTAINS CHAPTER OF TROUT UNLIMITED, INC.,
THEODORE GORDON FLYFISHERS, INC., CATSKILL-DELAWARE
NATURAL WATER ALLIANCE, INC., FEDERATED SPORTSMEN'S
CLUBS OF ULSTER COUNTY, INC., RIVERKEEPER, INC.,
(Caption continued on inside cover)

ON APPEAL FROM THE UNITED STATES DISTRICT COURT
FOR THE SOUTHERN DISTRICT OF NEW YORK

REPLY BRIEF FOR DEFENDANTS-APPELLANTS UNITED STATES ENVIRONMENTAL PROTECTION AGENCY AND GINA MCCARTHY

PREET BHARARA,
United States Attorney for the
Southern District of New York,
Attorney for Defendants-Appellants
United States Environmental
Protection Agency and Gina
McCarthy,
86 Chambers Street, 3rd Floor
New York, New York 10007
(212) 637-2722

ROBERT WILLIAM VALEN,
BENJAMIN H. TORRANCE,
Assistant United States Attorneys,
Of Counsel.

WATERKEEPER ALLIANCE, INC., TROUT UNLIMITED, INC.,
NATIONAL WILDLIFE FEDERATION, ENVIRONMENT AMERICA,
ENVIRONMENT NEW HAMPSHIRE, ENVIRONMENT RHODE
ISLAND, ENVIRONMENT FLORIDA, STATE OF NEW YORK,
CONNECTICUT, DELAWARE, ILLINOIS, MAINE, MICHIGAN,
MINNESOTA, MISSOURI, WASHINGTON,

Plaintiffs-Appellees,
GOVERNMENT OF THE PROVINCE OF MANITOBA, CANADA,
Consolidated Plaintiff-Appellee,

MICCOSUKEE TRIBE OF INDIANS OF FLORIDA,
FRIENDS OF THE EVERGLADES, FLORIDA WILDLIFE
FEDERATION, SIERRA CLUB,

Intervenor Plaintiffs-Appellees,

—v.—

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, GINA
McCARTHY, in her official capacity as Administrator of the United
States Environmental Protection Agency,

Defendants-Appellants-Cross Appellees,
STATE OF COLORADO, STATE OF NEW MEXICO, STATE OF
ALASKA, ARIZONA DEPARTMENT OF WATER RESOURCES,
STATE OF IDAHO, STATE OF NEBRASKA, STATE OF NORTH
DAKOTA, STATE OF NEVADA, STATE OF TEXAS, STATE OF
UTAH, STATE OF WYOMING, CENTRAL ARIZONA WATER
CONSERVANCY DISTRICT, CENTRAL UTAH WATER
CONSERVANCY DISTRICT, CITY AND COUNTY OF DENVER,
by and through its BOARD OF WATER COMMISSIONERS, CITY
AND COUNTY OF SAN FRANCISCO PUBLIC UTILITIES
COMMISSION, CITY OF BOULDER [COLORADO], CITY OF
AURORA [COLORADO], EL DORADO IRRIGATION DISTRICT,
IDAHO WATER USERS ASSOCIATION, IMPERIAL IRRIGATION
DISTRICT, KANE COUNTY [UTAH] WATER CONSERVANCY
DISTRICT, LAS VEGAS VALLEY WATER DISTRICT, LOWER
ARKANSAS VALLEY WATER CONSERVANCY DISTRICT,
METROPOLITAN WATER DISTRICT OF SOUTHERN
CALIFORNIA, NATIONAL WATER RESOURCES ASSOCIATION,
SALT LAKE & SANDY [UTAH] METROPOLITAN WATER
DISTRICT, SALT RIVER PROJECT, SAN DIEGO COUNTY WATER
AUTHORITY, SOUTHEASTERN COLORADO WATER
CONSERVANCY DISTRICT, THE CITY OF COLORADO SPRINGS,
acting by and through its enterprise COLORADO SPRINGS

UTILITIES, WASHINGTON COUNTY [UTAH] WATER DISTRICT,
WESTERN URBAN WATER COALITION, [CALIFORNIA] STATE
WATER CONTRACTORS, CITY OF NEW YORK,

Intervenor Defendants-Appellants-Cross Appellees,
NORTHERN COLORADO WATER CONSERVANCY DISTRICT,
Intervenor Defendant,

—v—

SOUTH FLORIDA WATER MANAGEMENT DISTRICT,
Intervenor Defendant-Appellant-Cross Appellant.

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United States Court of Appeals

FOR THE SECOND CIRCUIT

Docket Nos. 14-1823(L), 14-1909(con),
14-1991(con), 14-1997(con), 14-2003(con)

REPLY BRIEF FOR DEFENDANTS-APPELLANTS UNITED STATES ENVIRONMENTAL PROTECTION AGENCY AND GINA MCCARTHY

Preliminary Statement

Faced with ambiguous text in a complex statute with multiple goals, the Environmental Protection Agency exercised its discretion to interpret that text and resolve the issue of whether water transfers require a permit under the National Pollutant Discharge Elimination System. The plaintiffs in this action contend that the resulting Water Transfers Rule—the codification of EPA's longstanding and consistently held position—is unlawful. But their attack rests on a misunderstanding of the Clean Water Act, whose competing purposes they essentially ignore; on an overbroad understanding of the NPDES program; and on a distortion of EPA's regulation, in which plaintiffs claim EPA considered all the "waters of the United States" to be a "single water body." To the contrary, EPA reasonably understood the balance of goals struck by Congress: the agency construed the statutory term "addition . . . to navigable waters" to mean addition to those waters collectively, with the

result that water transfers are not governed by the NPDES program, which focuses on preventing the introduction of pollutants to the Nation's waters from the outside world while at the same time preserving states' prerogatives and flexibility in the management and allocation of those waters. EPA's Rule lay well within the agency's discretion, and accordingly must be upheld under the deferential *Cheuron* standard.

ARGUMENT

The Water Transfers Rule Should Be Upheld as a Reasonable Interpretation of an Ambiguous Statute

A. The Statute Is Ambiguous

As EPA explained in its opening brief, the text of the statutory provision is ambiguous: "any addition of any pollutant to navigable waters" can refer to an addition to a particular water body or to navigable waters considered collectively. While this Court has previously adopted the first of these two interpretations, it did so on a blank slate, without an agency construction it was required to defer to. Thus, nothing in this Court's precedent forecloses EPA's interpretation—nor do the purposes, structure, or legislative history of the statute. Because Congress cannot be found to have "directly spoken to the precise question at issue," *City of Arlington v. FCC*, 133 S. Ct. 1863, 1868 (2013), the statute must be viewed as ambiguous at *Cheuron*'s first step, as both the district court and the

Eleventh Circuit held (SPA 47, 59-60); *Friends of the Everglades v. South Florida Water Management District (Friends I)*, 570 F.3d 1210, 1227 (11th Cir. 2009); accord *ONRC Action v. Bureau of Reclamation*, Civ. No. 97-3090-CL, 2012 WL 3526828 (D. Or. Aug. 14, 2012), appeal pending, No. 12-35831 (9th Cir.).

1. The Statutory Text

Plaintiffs do not persuasively dispute that the text is subject to the reading adopted by EPA: that the words "any addition of any pollutant to navigable waters from any point source" can reasonably be read to refer to an addition to navigable waters considered collectively. 33 U.S.C. § 1362(12). There is no dispute that the word "addition" is undefined, and plaintiffs concede that "'waters' can refer to multiple water bodies, such as 'the waters of the Gulf coast.'" (Brief for the States of New York *et al.* ("States Br.") 40).

The plaintiff States maintain that the statute's reference to "waters in the plural" means Congress did not mean "one, unitary water." (States Br. 40). But the Rule does not, contrary to plaintiffs' position, adopt a view that the waters of the United States are a "single water body." Instead, the Rule reflects the view that the multiple water bodies of the United States should be considered collectively when referred to in the phrase "addition . . . to navigable waters"—consistent with that statute's plural usage, as well as the definition of "navigable waters" to mean "the waters of the United States." 33 U.S.C. § 1362(7) (emphasis added). For the same reason, the Supreme Court plurality's statement in *Rapanos v. United*

States, 547 U.S. 715, 732 (2006) (plurality opinion), that "waters of the United States" cannot refer to "water in general" is immaterial. (States Br. 41-42).¹

Plaintiffs assert that the use of "navigable waters" in provisions regarding states' activities under the Clean Water Act means that "navigable waters" cannot refer to all of the waters of the United States collectively, as those provisions are limited to waters within the respective states. (States Br. 43). But that limitation is clearly spelled out in the text of all of the provisions plaintiffs point to. See 33 U.S.C. §§ 1313(c)(2)(A) & (c)(4) ("the navigable waters involved"), (e)(3) ("navigable waters within such State"), 1314(d)(1)(A)-(B) ("those waters within the State . . . navigable waters in such State"); 1315(b)(1)(A)-(B) ("navigable waters in such State . . . navigable waters of such State"); 1329 (navigable waters "within the State," "in the State," and "in such State"). Thus, if anything, these provisions imply that when Congress meant to limit the broad, collective

¹ The phrase "unitary waters" may arguably, but misleadingly, suggest a single water body. But the inaccurate implication of this shorthand—a term not used by EPA in the Rule—should not be held to control what EPA actually said or did in its rulemaking. As the Eleventh Circuit recognized, the "unitary waters" theory merely means the interpretation of the Act under which no "addition" occurs when existing pollutants are moved from one water body within the waters of the United States to another. *Friends I*, 570 F.3d at 1217, 1227.

term "navigable waters" to a portion of those waters, it did so expressly.

Nor do plaintiffs dispute that Congress routinely qualified the terms "waters" or "navigable waters" in the Act when it wanted to make clear that it referred to individual water bodies. See, e.g., 33 U.S.C. §§ 1254(a)(3) ("any navigable waters"), 1311(m)(4) ("the receiving waters"), 1312(a) ("in a specific portion of the navigable waters"), 1313(d)(1)(B) ("those waters or parts thereof"), 1314(f)(2)(F) ("any navigable waters"); see also *Friends I*, 570 F.3d at 1223 (noting the use of "any" to modify "navigable water" or "navigable waters" in other statutes when individual water bodies were intended). Congress's use of qualifiers (including the word "any") elsewhere in the statute to refer to individual bodies of water suggests that it did not mean individual bodies in § 1362(12). See *Dean v. United States*, 556 U.S. 568, 573 (2009) ("Where Congress includes particular language in one section of a statute but omits it in another section of the same Act, it is generally presumed that Congress acts intentionally and purposely in the disparate inclusion or exclusion." (quotation marks and alteration omitted)). While other provisions of the Clean Water Act might not unambiguously use "navigable waters" in a collective sense (States Br. 42, 45-46), that does not show that this provision is unambiguous in the opposite direction. Instead, by modifying the phrase "navigable waters" elsewhere, Congress has showed that it knows how to eliminate ambiguity when it desires. Congress's decision not to do so in § 1362(12) demonstrates that, at the least, the meaning can reasonably

be construed collectively. *Friends I*, 570 F.3d at 1223-25.

In the clause at issue, § 1362(12)(A), Congress uses the word "any" three times, modifying every noun except "navigable waters." As the Eleventh Circuit held, plaintiffs' reading would add a fourth "any" to the three already in the statutory phrase, a textual addition that is inconsistent with plaintiffs' argument that the plain language is unambiguously in their favor. *Friends I*, 570 F.3d at 1224. Although plaintiffs try to avoid the significance of that omission by arguing that § 1362(12) uses "any" only to eliminate the possibility of exceptions (States Br. 45-47), they do not advocate the logical consequence of their own argument, that the omission of the fourth "any" should be read to imply that exceptions exist to the unmodified "navigable waters." Regardless, the more natural reading is that Congress omitted "any" because it intended to refer to "navigable waters," defined as "the waters of the United States," collectively.

Plaintiffs rely on the Supreme Court's statement that "[e]very point source discharge is prohibited unless covered by a permit," *City of Milwaukee v. Illinois*, 451 U.S. 304, 318 (1981) (emphasis omitted), to conclude that water transfers require a permit. (E.g., States Br. 29-30). But that analysis begs the question: by its terms, *Milwaukee's* broad statement only applies to a "discharge"—and a "discharge of a pollutant" exists only where there is an "addition of any pollutant to navigable waters," 33 U.S.C. § 1362(12)(A), precisely the language in dispute in this appeal.

Plaintiffs similarly characterize the Rule as “‘exempt[ing] categories of point sources’” from the NPDES program. (States Br. 30 (quoting *NRDC v. Costle*, 568 F.2d 1369, 1377 (D.C. Cir. 1977)); Brief for Catekill Mountains Chapter of Trout Unlimited *et al.* (“Trout Br.”) 24, 25-28, 30-35; Brief for Miccosukee Tribe of Indians *et al.* (“Tribe Br.”) 4, 11, 34, 36). But nothing in the Rule purports to exempt a category of point sources from the statutory discharge prohibition (33 U.S.C. § 1311); rather, EPA has reasonably interpreted the prohibition on “any addition of any pollutants to navigable waters from any point source” as not including water transfers in the first place. Thus, there is no conflict with *Miccosukee*’s statement that § 1314(f), which refers to “changes in the movement, flow, or circulation of any navigable waters,” “does not explicitly exempt nonpoint pollution sources from the NPDES program if they also fall within the ‘point source’ definition.” *South Florida Water Management District v. Miccosukee Tribe of Indians*, 541 U.S. 95, 106 (2004). The plaintiff States omit the word “explicitly” from this quotation (States Br. 59), but no one disputes that § 1314(f) has no such explicit exemption. Instead, the question is whether Congress’s reference to water transfers in a provision “which concerns nonpoint sources,” *Miccosukee*, 541 U.S. at 106, either implicitly suggests that water transfers be addressed through nonpoint programs, or, at the least, demonstrates the ambiguity of the statute. (Brief for EPA Defendants-Appellants (“Gov’t Br.”) 30-31).

To some degree, plaintiffs’ objection to this point appears to rest on a misunderstanding: they insist

that because water transfers occur through a “point source” (e.g., a tunnel or ditch), they cannot logically be addressed by nonpoint source programs. (States Br. 59-60). This argument misapproaches the scope of such programs. EPA has explained that the term “nonpoint source” generally includes all “[s]ources not regulated under [33 U.S.C. § 1342, i.e., NPDES] or [§ 1344 for fill and dredged material].” 73 Fed. Reg. 33,697, 33,702 n.6 (June 13, 2008) (citing *National Wildlife Federation v. Consumers Power*, 862 F.2d 580, 582 (6th Cir. 1988) (“‘nonpoint source’ is shorthand for and includes all water quality problems not subject to [§ 1342]” (quotation marks omitted))). Thus, nonpoint source programs are not limited to addressing runoff (States Br. 10 n.2); if water transfers are not regulated under the NPDES program, any pollutants transferred may be addressed under other CWA provisions, including those addressing nonpoint sources of pollution.

Moreover, the fact that the caption of the section containing the codified Rule is “exclusions” is irrelevant. 40 C.F.R. § 122.3; (Trout Br. 27). The text of the regulation itself plainly states that a water transfer does not require a permit, 40 C.F.R. § 122.3(i), and “the title . . . cannot limit the plain meaning of the text.” *INS v. St. Cyr*, 533 U.S. 289, 308-09 (2001) (quotation marks omitted). And in any event, “exclusions” and “exemptions” are not the same: to say that water transfers are “excluded” from NPDES permit requirements is merely to say they are not included in those requirements. See American Heritage Dictionary of the English Language (5th ed. 2014) (available at www.ahdictionary.com) (defining “ex-

empty" as "[t]o free from an obligation, duty, or liability to which others are subject," and "exclude" as "[t]o prevent from being included, considered, or accepted").

2. The Structure, Purpose, and Legislative History Do Not Resolve the Ambiguity

The core of plaintiffs' argument stems not from the statutory text, but from a one-sided view of the policies underlying the Clean Water Act. (*E.g.*, States Br. 33-38; Trout Br. 28-29; Tribe Br. 8-9, 20). This Court has viewed such arguments skeptically, because it takes a "high level of clarity" in purpose and structure "to resolve textual ambiguity" at *Chevron* step one. *Cohen v. JP Morgan Chase & Co.*, 498 F.3d 111, 120 (2d Cir. 2007). Because the "court's task is not to infer what Congress might have said about the issue in dispute if it had considered the matter," but only to decide "whether Congress has directly spoken to [that] precise question," *id.* at 120-21 (quoting *Cheuron U.S.A. Inc. v. NRDC*, 467 U.S. 837, 842 (1984)), the Court will only deem the structure and purpose of a statute to eliminate a textual ambiguity "if they compel a particular conclusion as to Congress's intent." *Id.* at 121 (emphasis added).

Plaintiffs cannot meet this test. Although they suggest that Congress's only relevant intent was to improve water quality (States Br. 33, 41, 42), that is simply not so. As the government's opening brief explained, while the Clean Water Act has the objective of restoring and maintaining the integrity of the Nation's waters, Congress coupled this goal with a

strong policy preference, expressed in the statute itself, to respect the roles and rights of states and avoid burdening state authority over water allocation. (Gov't Br. 28-32). Thus, Congress provided that the statute may not be construed as impairing states' rights or jurisdiction over their waters. 33 U.S.C. § 1370(2). Further, in the same section in which Congress stated its water quality objective, *id.* § 1251(a), Congress announced its policy to "recognize, preserve, and protect the primary responsibilities and rights of States" to address pollution, *id.* § 1251(b), not to impair states' authority "to allocate quantities of water within its jurisdiction," *id.* § 1251(g), and to require federal and state authorities to address pollution and water management programs "in concert," *id.*²

This "welter of consistent and inconsistent goals," *Catskill Mountains Chapter of Trout Unlimited, Inc. v. City of New York (Catskill I)*, 273 F.3d 481, 494 (2d Cir. 2001), negates plaintiffs' argument that the purposes of the Clean Water Act are so clear that they can resolve the textual ambiguity in "any addition . . . to navigable waters." See *Friends I*, 570 F.3d at 1225-27. Plaintiffs ignore the Act's competing goals and fo-

² While plaintiffs correctly observe that § 1251(b) and (g)'s statements of policy were enacted five years after the original CWA (Trout Br. 29 n.11), it was still reasonable for EPA to take account of the statutory purposes as expressed by Congress, even though expressed some time later. See *FDA v. Brown & Williamson Tobacco Corp.*, 529 U.S. 120, 143 (2000).

cus exclusively on pollution prevention, but "it frustrates rather than effectuates legislative intent simpliciter to assume that whatever furthers the statute's primary objective must be the law." *Rodriguez v. United States*, 480 U.S. 522, 526 (1987). The Act's other goals, as stated by Congress, inform a fair construction of the statute as a whole, and demonstrate that Congress's purposes do not compel the reading of the text advocated by plaintiffs. Though it is true that the Supreme Court has held that the CWA's allocation provisions do not "limit the scope of water pollution controls," *PUD No. 1 of Jefferson County v. Washington Dep't of Ecology*, 511 U.S. 700, 720-21 (1994), they do indicate Congress's objectives and priorities, which EPA may properly consider in determining (and resolving) ambiguity in the statute. See *Microsukee*, 541 U.S. at 108 ("It may be that constraining the NPDES program to cover such transfers would therefore raise the costs of water distribution prohibitively, and violate Congress' specific instruction that 'the authority of each State to allocate quantities of water within its jurisdiction shall not be superseded, abrogated or otherwise impaired' by the Act.").

Moreover, the existence of "nonpoint source" programs under the Act that apply even in the absence of an "addition . . . to navigable waters," supports EPA's interpretation of the statute. See, e.g., 33 U.S.C. §§ 1288, 1314(f), 1329; (Gov't Br. 8-9, 30-32). These provisions—along with state clean water laws and federal statutes like the Safe Drinking Water Act—provide a mechanism for addressing water pollution even where the NPDES program does not apply.

Congress's discussion of water transfers in section 1314(f), "which concerns nonpoint sources," *Microsukee*, 541 U.S. at 106, and the dissimilarity of pollution associated with water transfers from the type of municipal and industrial pollution that Congress was focused on controlling at the source through the NPDES program, see 73 Fed. Reg. at 33,702-03, supports EPA's conclusion that it is reasonable to interpret "addition . . . to navigable waters" in a fashion that leaves pollution associated with water transfers to programs outside of the NPDES program. (Gov't Br. 30-32, 41).

Plaintiffs characterize the CWA as focusing almost exclusively on individual water bodies, which they maintain means that "addition . . . to navigable waters" cannot reasonably be read to address waters collectively, and point to various provisions addressing individual water bodies. (States Br. 33-35, 40-41; Tribe Br. 12-20). That conclusion simply does not follow. Congress can reasonably require individualized treatment of water bodies in some provisions governing the details of water body protection, but not in an overarching provision that provides the distinct function of deciding when permits are required in the first instance.³

³ Plaintiffs rely on *Northern Plains Resource Council v. Fidelity Exploration & Development Co.*, 325 F.3d 1155, 1162 (9th Cir. 2003), to argue that the CWA focuses on receiving waters. (States Br. 36, 41). But in that case, neither a water transfer nor the meaning of "addition . . . to navigable waters" was at

Nor does interpreting "any addition . . . to navigable waters" to refer to additions to waters collectively somehow "conflict[]" with the intended jurisdictional purpose of the term "navigable waters." (States Br. 44-45). It is true that "navigable waters" and "waters of the United States" define the scope of the CWA's coverage. *Solid Waste Agency of Northern Cook Cnty. v. U.S. Army Corps of Engineers*, 531 U.S. 159, 171-72 (2001). But that jurisdictional scope is the same for the Act as a whole whether the waters are considered collectively or individually. That the Water Transfers Rule adopts the collective view does not change this jurisdictional scope. In any event, the Rule expressly does not purport to define the meaning of "waters of the United States." (SPA 125 n.2).⁴

In sum, neither the text, structure, nor purposes of the CWA give unequivocal guidance to the meaning of "any addition . . . to navigable waters," such that plaintiffs' reading is "compel[led]." *Cohen*, 498 F.3d at 120. Under *Cheuron*, then, it is the agency, not the courts, that is authorized to choose among the

issue: the question was whether unaltered groundwaters (which is not part of the navigable waters) discharged into navigable waters was a "pollutant."

⁴ Ironically, the district court accused the government of expanding the meaning of "navigable waters" (SPA 111-12), while plaintiffs now object to EPA's supposed contraction of that term (States Br. 44-45). Neither contention is correct.

permissible interpretations of the statute. *City of Arlington*, 133 S. Ct. at 1868.⁵

3. Prior Judicial Decisions Do Not Control or Contradict EPA's Interpretation

Plaintiffs assert that this Court has already held that the CWA's language is unambiguous, and that a permit is therefore required for water transfers. That argument rests on a misreading of the precedent and a misunderstanding of how *Cheuron* deference works.

Cheuron itself contemplated that deference is still accorded to an agency construction when it differs from the "reading the court would have reached if the question initially had arisen in a judicial proceeding." 467 U.S. at 843 n.11. Indeed, deference is due to an agency's construction even when a court has already interpreted the statute in a different way, unless it held the statute to be unambiguous. *National Cable & Telecommunications Ass'n v. Brand X Internet Services*, 545 U.S. 967, 982-83 (2005).

Contrary to plaintiffs' view (States Br. 24-28; Trout Br. 1-2, 15-22; Tribe Br. 8, 12-15), as both the district court and the Eleventh Circuit have concluded, neither *Catskill I* nor *Catskill II* held that the CWA unambiguously requires an NPDES permit for water transfers. *Friends I*, 570 F.3d at 1221-22;

⁵ As noted in EPA's opening brief, the legislative history also does not resolve the ambiguity. (Gov't Br. 31). The plaintiffs do not seriously argue to the contrary.

(SPA 41); (Gov't Br. 32-33). If this Court had meant to do so, it would have distinguished *Gorsuch* and *Consumers Power* on the basis of this unambiguous meaning; but instead it differentiated those cases because EPA had not yet adopted its opinion on water transfers in a regulation with the force of law entitled to deference. (Gov't Br. 32-33); see *Catskill I*, 273 F.3d at 490; *Catskill Mountains Chapter of Trout Unlimited, Inc. v. City of New York (Catskill II)*, 451 F.3d 77, 82, 83 n.5 (2d Cir. 2006). Had EPA promulgated such a regulation—as it now has—the Court explained that “[*Cheuron*] deference might be appropriate.” *Catskill I*, 273 F.3d at 490-91. But *Cheuron* deference does not apply to an unambiguous statute. *Roberts v. Sea-Land Serv., Inc.*, 132 S. Ct. 1350, 1363 n.12 (2012); *Nat'l Ass'n of Home Builders v. Defenders of Wildlife*, 551 U.S. 644, 665 (2007). Nor does the *Skidmore* framework the Court actually applied in *Catskill I* and *Catskill II*. *Christensen v. Harris Cty.*, 529 U.S. 576, 591 n.* (2000) (Scalia, J., concurring) (both *Cheuron* and *Skidmore* deference inapplicable if “the statute is unambiguous”). Although plaintiffs describe this Court’s decisions as merely “referenc[ing] *Skidmore* . . . as background law” that “would apply” only “if there were ambiguity in the Act” (States Br. 26-27 (emphasis added)), the Court’s language flatly contradicts that reading: “the deference described in [*Skidmore*] is applicable. We thus defer to the agency interpretation according to its ‘power to persuade’ [according to *Skidmore*].” *Catskill II*, 451 F.3d at 82 (quotation marks omitted).

The Court’s conclusion that the statute is ambiguous was repeated when *Catskill II* stated that the

New York City had relied on “a reasonable, albeit incorrect, interpretation of a statute.” 451 F.3d at 89. Although plaintiffs suggest that this language is taken out of context (States Br. 27), the meaning is perfectly clear: even though the Court disagreed (outside *Cheuron*’s deferential framework) with it, the collective interpretation of “navigable waters” was “reasonable.” And being “susceptible to two or more reasonable meanings” is the very definition of ambiguity. *NRDC v. Muszynski*, 268 F.3d 91, 98 (2d Cir. 2001).

In addition, neither *Microsukee* nor *L.A. County* forecloses a finding of ambiguity at *Cheuron* step one. (States Br. 31; Trout Br. 20-22). In *Microsukee*, the Court held that no NPDES permit is required for a water transfer if the donating and receiving water bodies are not “meaningfully distinct.” 541 U.S. at 109, 112. But plaintiffs commit the logical fallacy of inverting this proposition to mean that if the bodies are distinct, then a permit is required for a transfer. The Court did not say that, and expressly left open the question of whether a permit is required for a transfer between distinct water bodies. *Id.* Similarly, in *Los Angeles County Flood Control Dist. v. NRDC*, the Court simply applied its holding in *Microsukee* that the flow of water from one portion of a water body to another did not constitute a “discharge of a pollutant” because the two portions were part of the same water body. 133 S. Ct. 710, 713 (2013). Plaintiffs suggest that *L.A. County*’s statement that, under *Microsukee*, “a water transfer would count as a discharge of pollutants under the CWA only if the canal and the reservoir were ‘meaningfully distinct water bodies’” means the Supreme Court has decided that

permits are required for water transfers. *Id.* at 713; (Trout Br. 21-22; State Br. 32). That paraphrase of *Micosukee's* holding suggests only that meaningfully distinct water bodies are a necessary prerequisite for a permit, but not the only one. Regardless, this imprecise dicta cannot have answered the very question that *Micosukee* left open: it is entirely implausible that the Supreme Court meant to resolve this question by addressing it in passing where it was not necessary to resolution of the case, much less without discussing EPA's already-issued interpretation in the Water Transfers Rule.

4. EPA Considered the Ambiguity at Issue

Plaintiffs attempt to avoid these issues at the threshold, claiming EPA "may not defend the Rule" by relying on ambiguity in the term "navigable waters," because the Rule's preamble stated the "legal question" is the meaning of "addition." (States Br. 39 (citing SPA 126)). But it is clear that EPA's position is no "post hoc rationalization": the preamble makes clear that EPA considered the meaning of "addition" in the context of the phrase "any addition . . . to navigable waters" based on its considered view that navigable waters must be considered collectively. 73 Fed. Reg. at 33,701; (Gov't Br. 15-16). This Court, the Supreme Court, and the Eleventh Circuit have all recognized that the term "addition" cannot be understood outside that context. *Catskill I.*, 273 F.3d at 492 (in section entitled "Defining 'Addition,'" observing that one has not "added" soup to a pot by lifting and redepositing a ladlefull); *Micosukee*, 541 U.S. at 109-10 (same); *Friends I.*, 570 F.3d at 1217 (same). In

short, one cannot sensibly define "addition" without considering what one is adding to.

Along similar lines, the Trout plaintiffs argue that no deference is due because EPA allegedly did not rely on "unitary waters theory." (Trout Br. 6-14). First of all, their argument rests on their suggestion that "unitary waters" means a single body of water, rather than a collection of water bodies. *See supra* at 4 n.1; (Trout Br. 9). Second, it depends on a 2005 EPA interpretive memorandum that lacks the more developed interpretation of the statutory text included in the agency's explanation of its ultimate decision (compare 73 Fed. Reg. at 33,701, 33,705 n.10, *with* JA 271)—and, in any event, did not "walk-away" from a collective understanding of "navigable waters" (Trout Br. 10-11). Third, their argument depends on an inconclusive and irrelevant telephone message from 2005. (Trout Br. 12-13; *see* Gov't Br. 55 n.11). It is the promulgation of the Rule that is the "final agency action" that is reviewable in the courts, 5 U.S.C. § 704, and the documents explaining EPA's rationale—the Rule's preamble and EPA's response to public comments—are replete with evidence that EPA considered and reasonably resolved the relevant ambiguities. 73 Fed. Reg. 33,697-33,708 (preamble); (JA 1238-94) (response to comments); (Gov't Br. 54-56 & n.11).

B. The Water Transfers Rule is a Permissible Interpretation of the Statute and Supported by a Reasoned Explanation

Although the district court correctly concluded that the Water Transfers Rule is a permissible interpretation of the statute, it erred in holding that EPA had failed to provide a reasoned interpretation. (Gov't Br. 34-56). Nothing in plaintiffs' arguments warrants holding otherwise.

1. The Water Transfers Rule Is Based on a Permissible Interpretation of the Clean Water Act

The interpretation of the statute as "any addition . . . to navigable waters" considered collectively is one of the interpretations to which the statute is reasonably subject, and thus a permissible interpretation, as both the district court and the Eleventh Circuit held. (SPA 92, 104-05); *Friends I*, 570 F.3d at 1219; see *Sash v. Zenk*, 428 F.3d 132, 136 (2d Cir. 2005) (agency's interpretation is one of two reasonable ones, and "must therefore be upheld").

As discussed above, the statutory text is ambiguous, and the purposes and structure of the Act support the collective interpretation of "addition . . . to navigable waters." EPA has adopted the reasonable collective interpretation in light of the importance of water transfers to the national infrastructure; Congress's intent to avoid burdening state control over water allocations and resources, as reflected in 33 U.S.C. §§ 1251(b), 1251(e), and 1370; and the fact that nonpoint source programs and other federal and

state laws will apply in appropriate cases to pollution associated with water transfers. See, e.g., 73 Fed. Reg. 33,698-99, 33,701-02; (JA 1244-45, 1269-70); (Gov't Br. 16-17, 36-37).

That EPA's interpretation is one of long standing, while not a requirement under *Chevron*, provides additional support for the interpretation's reasonableness. *Entergy Corp. v. Riverkeeper, Inc.*, 556 U.S. 208, 224-25 (2009); *Smiley v. Citibank (South Dakota), N.A.*, 517 U.S. 735, 740-41 (1996); (Gov't Br. 37). Plaintiffs' claim that a 1975 opinion of EPA's general counsel took a different view is incorrect: that opinion involved return flows of water after use for agricultural irrigation, and such flows are not water transfers within the meaning of the Rule because they involve an intervening "industrial, municipal or commercial use." 40 C.F.R. § 122.3(c); (Trout Br. 55); *In re Riverside Irrigation Dist.*, EPA Off. Gen. Counsel, Opinion No. 21, 1975 WL 23864, at *1-4 (June 27, 1975); (JA 1246-47, 1275, 1279 (EPA response to comments)). Nor does plaintiffs' reliance on the statements of certain former EPA officials in their personal capacities deserve any weight. (Trout Br. 54-56); see, e.g., *Smiley*, 517 U.S. at 743 (doubting that statement made by even current individual agency officer to particular constituents could establish binding policy). Plaintiffs cannot dispute that since the enactment of the Clean Water Act, water transfers have been regulated under NPDES only in response to judicial decisions or where the transferring activity itself introduces pollutants to the waters of the United States. (Gov't Br. 11); 73 Fed. Reg. at 33,699-700.

2. EPA Provided a Reasoned Explanation for its Adoption of the Rule

a. An Agency's Explanation of Its Choice at Chevron Step Two

Plaintiffs ask the Court to review the agency's explanation of its choice between reasonable interpretations of the statute far more strictly than permitted by *Chevron*. As discussed in more detail in the government's opening brief, although an agency may not choose among permissible interpretations by picking an interpretation "out of a hat," *Village of Barrington v. Surface Transportation Bd.*, 636 F.3d 650, 660 (D.C. Cir. 2011), the courts nonetheless owe "considerable deference" to the agency's explanation of its choice, *Detzel v. Sullivan*, 895 F.2d 58, 59, 63 (2d Cir. 1990); accord *Barrington*, 636 F.3d at 660, 665 ("highly deferential" review). An agency's explanation of its choices on a matter of statutory interpretation should be upheld unless it is "patently inconsistent with the statutory scheme." *Continental Air Lines, Inc. v. Dep't of Transportation*, 843 F.2d 1444, 1452 (D.C. Cir. 1988); *Texas Utilities Elec. Co. v. FCC*, 997 F.2d 925, 932 (D.C. Cir. 1993); (Gov't Br. 37-39).

b. EPA Adequately Explained Its Choice Among Permissible Interpretations

EPA's explanation of its decision, described at length in the preamble to the Rule and EPA's response to comments, and reviewed in the government's opening brief, is not "patently inconsistent with the statutory regime," but rather directly in furtherance of it. (Gov't Br. 40-42). After identifying the

individual and collective interpretations of the statute (Gov't Br. 40); 75 Fed. Reg. at 33,700, EPA carefully described the role and importance of water transfers and Congress's policy to preserve primary state authority over water resources and water allocations. (Gov't Br. 41); 73 Fed. Reg. at 33,698-99, 33,702. The agency considered that water transfers typically convey pollutants (Gov't Br. 41); 75 Fed. Reg. at 33,699, 33,702, but observed that the pollution potentially associated with water transfers is not the type of municipal and industrial pollution that Congress was focused on controlling at the source through the NPDES program; that other provisions, such as the references to water transfers in 33 U.S.C. § 1314(f), supported an understanding of water transfers as generally governed by the Act's nonpoint source provisions; and that these nonpoint source provisions, and other provisions of the Clean Water Act and other federal and state law, may apply to address issues arising from pollution in water transfers. (Gov't Br. 41); 73 Fed. Reg. at 33,699, 33,702-03; (JA 1244-45, 1269-70). EPA thus reasonably explained why, in light of the various indications of congressional intent, it adopted what the district court acknowledged to be a permissible interpretation: that "water transfers . . . do not constitute an 'addition' to navigable waters to be regulated under the NPDES program." 73 Fed. Reg. at 33,703; (SPA 92, 104-05).

Plaintiffs err in suggesting that courts defer to an agency only where the government can demonstrate that "the agency has applied expertise." (States Br. 65). Rather, "*Chevron* is rooted in a background

presumption of congressional intent: namely, 'that Congress, when it left ambiguity in a statute' administered by an agency, 'understood that the ambiguity would be resolved, first and foremost, by the agency, and desired the agency (rather than the courts) to possess whatever degree of discretion the ambiguity allows.'" *City of Arlington*, 133 S. Ct. at 1868 (quoting *Smiley*, 517 U.S. at 740-41); *Brand X*, 545 U.S. at 980-81; *Cheuron*, 467 U.S. at 843-44. It is this implied delegation of authority, rather than a record of the application of special expertise in a particular case, that gives rise to *Cheuron* deference. Consistent with that framework, courts routinely uphold agency constructions of statutes even if the agencies did not rely on their expertise. For instance, in *Mayo Foundation for Medical Education and Research v. United States*, the Court upheld the Treasury Department's interpretation of whether medical residents were "students" within the meaning of a tax statute. 131 S. Ct. 704, 708 (2011). The Court concluded that the "'ultimate question'" did not turn on application of specific expertise, but only on whether Congress "'would have intended, and expected,'" the agency to fill the statutory gap. *id.* at 714 (quoting *Long Island Care at Home, Ltd. v. Coke*, 551 U.S. 158, 173 (2007)). "Regulation, like legislation, often requires drawing lines"; in affirming the agency's exercise of that discretion, the Court simply noted that the agency's statutory interpretation was "perfectly sensible," that it had determined it "would further the purpose" of the statute, and it "did not act irrationally"—with no mention of any Treasury "expertise" in physicians' employment or training. *Id.* at 714-15. The cases cit-

ed by plaintiffs do not say otherwise. See *Brand X*, 545 U.S. at 1003 (noting agency's "expert policy judgment" in that case, but not making expertise a prerequisite for *Cheuron* deference); *Pension Benefit Guar. Corp. v. LTV Corp.*, 496 U.S. 633, 651-52 (1990) (describing the existence of "practical agency expertise" not as a requirement for deference, but as one of multiple underlying justifications for *Cheuron* deference).

Of course, EPA did consider the policies underlying the statute in detail. Plaintiffs incorrectly maintain that EPA failed to sufficiently consider the statute's water quality goals or standards. (States Br. 68-69; Trout Br. 42-44; Tribe Br. 34). But EPA expressly considered the CWA's water quality objective, the potential for the transmission of pollution through water transfers, and the role of water quality standards. (Gov't Br. 46-47); 73 Fed. Reg. at 33,699, 33,701-03, 33,705-06. EPA recognized that water quality standards were among the tools that would remain available to states to mitigate potential pollution from water transfers outside the NPDES program, 73 Fed. Reg. at 33,705-06—and plaintiffs agree (Trout Br. 44). Although plaintiffs accuse EPA of merely "mentioning" these issues without properly considering them (States Br. 69), that argument is belied by the record (*e.g.*, 73 Fed. Reg. at 33,699, 33,701-03, 33,705-06) and reflects plaintiffs' true complaint, which is merely their disagreement with the result.⁶

⁶ Indeed, plaintiffs criticize EPA for reaching a conclusion that the plaintiff States affirmatively as-

Plaintiffs also insist that EPA failed to consider the rights of downstream states. (States Br. 17, 69-70). But EPA explained that states can make use of their water quality standards and related Total Maximum Daily Load ("TMDL") programs to address water transfer problems. 73 Fed. Reg. at 33,705. When establishing water quality standards, states must ensure that those standards "provide for the attainment and maintenance of the water quality standards of downstream waters." 40 C.F.R. § 131.10(b). Moreover, NPDES permits must include effluent limits to the extent necessary to achieve those water quality

standards as fact in the administrative process, and that the intervenor plaintiffs have subsequently conceded in litigation. (*Compare* Trout Br. 45 (arguing that EPA improperly concluded that "most of the thousands of Water Transfers in the United States do not result in substantial impairment"; States Br. 72 n.13 (same); (Tribe Br. 33) (same), *with* (JA 526) (comment submitted in the administrative process on behalf of all of the plaintiff States except Washington, conceding that the "vast majority" of water transfers "will not degrade the quality of the receiving waters"); *Friends of the Everglades v. EPA*, No. 08-13652 & consolidated cases, Corrected Initial Brief [for Friends of the Everglades *et al.*, at 46 (11th Cir. Aug. 26, 2011) (brief filed by three of the intervenor plaintiffs, stating: "EPA opined that 'most of the thousands of the water transfers in the United States do not result in substantial impairment.' The record supports that conclusion.")).

standards and to comport with wasteload allocations in TMDLs. 40 C.F.R. §§ 122.44(d)(1), 122.44(d)(1)(vii)(B) and 130.7. Thus, when states—whether upstream or downstream of a water transfer—issue NPDES permits to entities discharging pollutants, the limitations in those permits must be set to achieve water quality standards in the downstream state. To the extent that the pollution in question is not covered by an NPDES permit, as EPA explained, its management and mitigation may generally be addressed as part of nonpoint source programs or state water quality permitting programs outside the scope of NPDES. 73 Fed. Reg. at 33,706. Although plaintiffs allege that these programs will not provide the same degree of water quality protection as requiring NPDES permits for water transfers, this argument again boils down to their disagreement with the balance among the competing interests of concern to Congress that the agency struck, something that is within the agency's discretion. *City of Arlington*, 133 S. Ct. at 1868.

Along the same lines, plaintiffs criticize EPA's reference to Congress's intent to avoid "unduly" or "unnecessarily" interfering with state authority over water allocation, arguing that the Rule therefore must "depend[] on factual assumptions that EPA did not support or explain" (States Br. 2-3, 71-73) or that those burdens could have been reduced by "general permits" or "variances" (States Br. 56-57, 75-76). But EPA did not suggest that it relied on a cost-benefit review of the type suggested by plaintiffs, and nothing requires EPA to have done so. *See American Textile Mfrs. Inst., Inc. v. Donovan*, 452 U.S. 490, 510

(1981) ("When Congress has intended that an agency engage in cost-benefit analysis, it has clearly indicated such intent on the face of the statute."). To the contrary, the Rule was not premised on assumptions about specific costs or benefits but on the conclusion that EPA's interpretation of the statute was more conducive to Congress's goal of avoiding undue interference. (Gov't Br. 50). An agency is permitted to take those goals into account, even without making specific findings of fact to support them. See *Mayo*, 131 S. Ct. at 715 (upholding agency decision as "further[ing] the purpose" of a statute without reference to agency factfinding on that issue); *LTV Corp.*, 496 U.S. at 651-52 (upholding agency interpretation based on conclusion that certain pension plans would "frustrate one of the objectives" of statute because they would reduce "employee resistance" to plan termination, without referring to factfinding on those issues). As long as the decision is within Congress's delegation and the agency acts permissibly, it may rely on its "judgments about the way the real world works" without formal findings of fact.⁷ *LTV Corp.*, 496 U.S. at 651.

⁷ Nor is there any support for plaintiff's contention that EPA "affirmatively refus[ed] to consider any facts on either side of that line." (States Br. 74). The agency simply drew a line that, in its judgment, honored the statutory purposes best. See *Mayo*, 131 S. Ct. at 716. The case plaintiffs cite, *NRDC v. Daley*, 209 F.3d 747, 754-56 (D.C. Cir. 2000), concerned a highly fact-bound inquiry, and is therefore inapposite.

Plaintiffs next accuse EPA of failing to consider "alternatives," including giving EPA the authority to designate certain water bodies not to be covered by NPDES. (Trout Br. 46-48; Tribe Br. 34-35). But EPA was not crafting a program from whole cloth; rather, it was interpreting statutory language—"any addition . . . to navigable waters." That language can be read to refer to water bodies collectively, and can be read to refer to water bodies individually, but cannot be read to refer to some but not all water bodies. (Gov't Br. 49).

C. The District Court Should Not Have Vacated the Rule

The government has explained that even if the district court's decision correctly held that EPA failed to provide a reasoned explanation for selecting what the district court acknowledged to be a permissible interpretation of the Act, the district court erred in partly vacating the Water Transfers Rule, as opposed to merely remanding the Rule for further consideration by the agency. (Gov't Br. 56-58). Plaintiffs do not respond to the government's arguments on this issue, and have therefore waived those points. *Norton v. Sam's Club*, 145 F.3d 114, 117-18 (2d Cir. 1998). Thus, at a minimum, this Court should reverse the district court's partial vacatur of the Rule.

Further, although two of the plaintiff groups ask this Court to vacate the rule in its entirety (Trout Br. 3, 22, 58; Tribe Br. 37), the Court lacks jurisdiction to do so, as the plaintiffs have not cross-appealed and therefore may not "enlarge[] [their] own

rights" or "lessen[] the rights of [their] adversary" under the judgment being appealed. *Jennings v. Stephens*, — U.S. — No. 13-7211, 2015 WL 159277, at *5 (Jan. 14, 2015) (quoting *United States v. American Railway Express Co.*, 265 U.S. 425, 435 (1924)).

CONCLUSION

The judgment of the district court should be reversed.

Dated: New York, New York
January 26, 2015

Respectfully submitted,

PREET BHARARA,
*United States Attorney for the
Southern District of New York,
Attorney for Defendants-
Appellants United States
Environmental Protection
Agency and Gina McCarthy.*

ROBERT WILLIAM YALEN,
BENJAMIN H. TORRANCE,
*Assistant United States Attorneys,
Of Counsel.*

CERTIFICATE OF COMPLIANCE

Pursuant to Rule 32(a)(7)(C) of the Federal Rules of Appellate Procedure, the undersigned counsel hereby certifies that this brief complies with the type-volume limitation of Rule 32(a)(7)(B). As measured by the word processing system used to prepare this brief, there are 6973 words in this brief.

PREET BHARARA,
*United States Attorney for the
Southern District of New York*

By: ROBERT WILLIAM YALEN,
Assistant United States Attorney

Tab XYZ – Newsletter Index and Sunsetting
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**POSITION
of the
WESTERN STATES WATER COUNCIL
regarding
FEDERAL WATER AND CLIMATE DATA COLLECTION AND ANALYSIS PROGRAMS
San Antonio, Texas
October 12, 2012**

WHEREAS, the Western States Water Council is a policy advisory body representing eighteen states, and has long been involved in western water conservation, development, protection, and management issues, and the member states and political subdivisions have long been partners in cooperative federal water and climate data collection and analysis programs; and

WHEREAS, in the West, water is a critical, vital resource and sound decisionmaking demands accurate and timely data on precipitation, temperature, soil moisture, snow depth, snow water content, streamflow, groundwater and similar information; and

WHEREAS, the demands for water and related climate data continue to increase along with our population, and this information is used by federal, state, tribal, and local government agencies, as well as private entities and individuals to: (1) forecast flooding, drought and other climate-related impacts; (2) project future water supplies for agricultural, municipal, and industrial uses; (3) estimate streamflows for hydropower production, recreation, and environmental purposes, such as for fish and wildlife management, including endangered species needs; and (4) facilitate water management and administration of water rights, decrees and interstate compacts; and

WHEREAS, without timely and accurate information, human life, health, welfare, property, and environmental and natural resources are at considerably greater risk of loss; and

WHEREAS, critical and vital information is gathered and disseminated through a number of important federal programs including, but not limited to: (1) the Snow Survey and Water Supply Forecasting Program, administered by the National Water and Climate Center (NWCC) in Portland, Oregon, and funded through USDA's Natural Resources Conservation Service (NRCS); (2) NWCC's Soil and Climate Analysis Network (SCAN); (3) the U.S. Geological Survey's (USGS) Cooperative Streamgaging Program and National Stream Flow Information Program, which are funded through the Department of Interior; (4) Landsat thermal data acquired through the National Atmospheric and Space Administration (NASA) and USGS; (5) USGS ground water measurement and monitoring; and (6) the National Oceanic and Atmospheric Administration's (NOAA) National Weather Service and Climate Programs Office; and

WHEREAS, state-of-the-art technology has been developed to provide real or near real-time data with the potential to vastly improve the water-related information available to decisionmakers in natural resources and emergency management, and thus better protect the public safety, welfare and the environment; and

WHEREAS, over a number of years, the lack of capital investments in water data programs has led to the discontinuance, disrepair, or obsolescence of vital equipment needed to maintain existing water resources related data gathering activities; and

WHEREAS, there is a serious need for adequate and consistent federal funding to maintain, restore, modernize, and upgrade federal water and climate programs not only to avoid the loss or further erosion of

critical information and data, but also to address new emerging needs, with a primary focus on coordinated data collection and dissemination.

NOW THEREFORE BE IT RESOLVED, that the Western States Water Council urge the Administration and the Congress to give a high priority to the allocation and appropriation of sufficient funds for these critical, vital programs which benefit so many, yet have been or are being allowed to erode to the point that it threatens the quantity and quality of basic data provided to a myriad, growing and diffuse number of decisionmakers and stakeholders, with significantly adverse consequences.



W E S T E R N S T A T E S W A T E R C O U N C I L

5296 Commerce Drive, Suite 202 I Murray, Utah 84107 I (801) 685-2555 I FAX (801) 685-2559

Web Page: www.westgov.org/lwswc

November 6, 2012

Position No. 346

Dr. Jane Lubchenco, Administrator
National Oceanic and Atmospheric Administration
1401 Constitution Avenue, NW
Room 5128
Washington, DC 20230

Dear Dr. Lubchenco:

The Western States Water Council, a policy advisory body whose members are appointed by their Governors and represent eighteen states, strongly supports reauthorization of the National Integrated Drought Information System (NIDIS), as articulated in the attached position. We also wish to express our thanks for NOAA's participation in the recent workshops that we co-sponsored with the California Department of Water Resources on extreme weather events and on reauthorization of the NIDIS program. Extreme events – whether droughts or floods – are defining factors for western water management.

We appreciate NOAA's coordination with the states in its implementation of the NIDIS program. The program's regional pilot projects are proving to be a useful way for working with state and local water agencies in developing information to support drought early warning systems. Further, NIDIS has been making good progress in consolidating federal research information to depict the emerging status of drought conditions in many areas of the country.

It would be highly valuable to our member states and to local water agencies if NOAA were able to develop new approaches for intraseasonal to interannual (ISI) drought prediction as part of its NIDIS efforts. The operational products now being provided by the National Weather Service (NWS) lack the skill and spatial coverage needed for water management decision support. We recognize that the El Niño-Southern Oscillation (ENSO) is presently the primary source of skill in ISI forecasting, and urge NOAA to place a priority on maintaining monitoring systems such as the Tropical Atmosphere Ocean array that are used to track the status of ENSO conditions in the Pacific.

As was discussed at our extreme events workshop, one tool that could be useful in improving drought predictive capability is improved understanding of how extreme storms contribute to ending or mitigating drought. We have been impressed by the NOAA Hydrometeorology Testbed's work in California to understand and improve forecasting of the atmospheric river events that are major contributors to annual water supply, and whose presence or absence is a determining factor in whether or not the water year will be wet or dry. We have supported expansion of this important work on extreme precipitation more broadly in the West

(brochure enclosed). We would hope that NOAA could combine this better understanding of extreme precipitation with other information, such as how the Madden-Julian Oscillation or Arctic Oscillation might modulate the expression of ENSO, to improve ISI prediction of drought.

The Council looks forward to collaborating with NOAA in working on the extreme events that define western water management. We want to work with you to identify opportunities for operationalizing NOAA's research, and to help you in building support for the observations and monitoring that are the backbone of weather and climate forecasting and decision support for water management.

Sincerely,

A handwritten signature in blue ink, appearing to read "Phillip C. Ward". The signature is stylized with a large initial "P" and a distinct "W".

Phillip C. Ward, Chairman
Western States Water Council

Enclosures

**POSITION
of the
WESTERN STATES WATER COUNCIL
regarding
REAUTHORIZATION OF
THE NATIONAL INTEGRATED DROUGHT INFORMATION SYSTEM (NIDIS) ACT
San Antonio, Texas
October 12, 2012**

WHEREAS, the Western States Water Council is a policy advisory body representing eighteen states, and has long been involved in western water conservation, development, protection, and management issues, and the member states and political subdivisions have long been partners in cooperative federal water and climate data collection and analysis programs; and

WHEREAS, drought has been, is, and will be an ongoing fact of life in the relatively arid West; and

WHEREAS, in 2012 drought conditions existed throughout much of the western and central parts of the U.S., covering an area amounting to about two-thirds of the Nation; and

WHEREAS, the NIDIS Act of 2006, Public Law 109-430, was enacted to provide an effective drought early warning system, coordinate federal research in support of a drought early warning system, and build upon existing forecasting and assessment programs; and

WHEREAS, the authorization of appropriations in the 2006 Act extended from fiscal year 2007 through fiscal year 2012; and

WHEREAS, there is a need for maintaining and improving existing monitoring networks that help provide drought early warning as well as tracking impacts of drought; and

WHEREAS, there is a need for developing new monitoring technologies, such as remote sensing, that provide more timely data availability and better spatial coverage for assessing drought impacts; and

WHEREAS, present approaches for intraseasonal to interannual weather/climate forecasting are not capable of providing early warning of drought, a capability that would be immensely useful for managing water resources to lessen drought impacts; and

WHEREAS, the only factor now providing limited understanding of drought prediction is the El Niño-Southern Oscillation (ENSO), and continuing federal research to develop new predictive capability at intraseasonal to interannual time scales – such as research on the influence of other ocean-atmosphere interactions on ENSO – is sorely needed; and

WHEREAS, there is a continuing need for a federal role in coordination of research programs related to drought early warning and prediction;

NOW THEREFORE BE IT RESOLVED, that the Western States Water Council supports legislation to reauthorize the National Integrated Drought Information System (NIDIS) Act.

**POSITION
of the
WESTERN STATES WATER COUNCIL
regarding
REAUTHORIZATION OF
THE RECLAMATION STATES EMERGENCY DROUGHT RELIEF ACT
San Antonio, Texas
October 12, 2012**

WHEREAS, the Western States Water Council is a policy advisory body representing eighteen states affiliated with the Western Governors' Association; and

WHEREAS, since 1976, the Council has been actively involved in national drought preparedness, planning and response, as well as related policy development and implementation; and

WHEREAS, in 2012 severe to extreme drought conditions exist throughout much of the western and central parts of the U.S., covering an area amounting to about two-thirds of the Nation; and

WHEREAS, drought has been, is, and will be an ongoing fact of life in the relatively arid West; and

WHEREAS, the Reclamation States Emergency Drought Relief Act of 1991 (43 U.S.C. 2214(c)) and subsequent reauthorization through fiscal year 2012 has expired; and

WHEREAS, Title I provided the Bureau of Reclamation with authority for construction, management, and conservation measures to alleviate the adverse impacts of drought, including mitigation of fish and wildlife impacts, and provided Reclamation with the flexibility to meet contractual water deliveries by allowing acquisition of water to meet requirements under the Endangered Species Act, benefiting contractors at a time when they are financially challenged; and

WHEREAS, additionally, Title I authorized Reclamation to participate in water banks established under state law, facilitate water acquisitions between willing buyers and willing sellers, acquire conserved water for use under temporary contracts, make facilities available for storage and conveyance of project and non-project water, make project and non-project water available for non-project uses, and acquire water for fish and wildlife purposes on a non-reimbursable basis; and

WHEREAS, Title I also allowed Reclamation, as a "last resort," to help smaller, financially-strapped towns, counties, and tribes without the financial capability to deal with the impacts of drought; and

WHEREAS, Title II authorized Reclamation to prepare or participate in the preparation of cooperative drought contingency plans for the prevention or mitigation of adverse effects of drought conditions; and

WHEREAS, Title II authorized Reclamation to conduct studies to identify opportunities to conserve, augment, and make more efficient use of water supplies available to Federal Reclamation projects and Indian water resource developments in order to be prepared for and better respond to drought conditions; and

WHEREAS, Title II authorized the Secretary of the Interior to study establishment of a Reclamation Drought Response Fund to be available for defraying those expenses which the Secretary determined necessary to implement drought plans prepared under the Act, and to make loans for nonstructural and minor structural activities for the prevention or mitigation of the adverse effects of drought; and

WHEREAS, there is a continuing need for authority allowing Reclamation the flexibility to continue delivering water to meet authorized project purposes, meet environmental requirements, respect state water rights, work with all stakeholders, and provide leadership, innovation, and assistance; and

WHEREAS, proposed legislative action would reauthorize the Act through 2017, and raise the limit on authorized appropriations.

NOW THEREFORE BE IT RESOLVED, that the Western States Water Council strongly supports legislation to reauthorize the Reclamation States Emergency Drought Relief Act.

POSITION
of the
WESTERN STATES WATER COUNCIL
regarding
STATES' WATER RIGHTS AND NATURAL FLOWS
San Antonio, Texas
October 12, 2012

WHEREAS, the Western States Water Council strongly supports preservation of the States' inherent right to develop, use, control, and distribute water; and

WHEREAS, States have exclusive authority over the allocation and administration of rights to the use of surface water located within their borders and are primarily responsible for protecting, managing and otherwise controlling the resource; and

WHEREAS, States are in the best position to protect and allow for the orderly and rational allocation and administration of the resource through state laws and regulations that are specific to their individual circumstances; and

WHEREAS, the Flood Control Act of 1944 specifically declared the policy of Congress to recognize the interests and rights of the Missouri River Basin States in determining the development of the watersheds within their borders and likewise their interests and rights in water use and control, and to preserve and protect to the fullest extent established and potential uses of the rivers' natural flows, those flows being the natural flows that would pass through the states in the absence of the U.S. Army Corps of Engineers dams; and

WHEREAS, the federal government has long recognized the right to use water as determined under the laws of the various states; and

WHEREAS, the various states have the authority and duty to manage permitting of stored water to supplement natural flows; and

WHEREAS, federal agencies in the western states, such as the Bureau of Reclamation, generally recognize western water laws and natural flows through reservoir operations, with releases from storage that supplement natural flows, and water service contracts that supplement natural flow; and

WHEREAS, representatives of the U.S. Army Corps of Engineers have indicated that all waters entering its Missouri River mainstem reservoirs are stored waters to be allocated and controlled by the U.S. Army Corps of Engineers without recognition of the States' rights to natural flows being separate from the captured floodwaters stored within those reservoirs.

NOW, THEREFORE, BE IT RESOLVED, that the Western States Water Council urge the Army Corps of Engineers to recognize the legal right of the States to the development, use, control, distribution and allocation of the States' surface waters.

BE IT FURTHER RESOLVED, that any policy of the U.S. Army Corps of Engineers to require storage contracts to access natural flows within a reservoir boundary would be a violation of the States' rights to develop, use, control, and distribute surface water.

BE IT FURTHER RESOLVED, that the Western States Water Council opposes any and all efforts that would diminish the primary and exclusive authority of States over the allocation of surface water.

**Nebraska abstained from voting on the position.*