STATE OF COLORADO

Colorado Water Conservation Board Department of Natural Resources

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TO: Colorado Water Conservation Board Members

FROM: Becky Mitchell, Chief

Water Supply Planning Section

DATE: January 14, 2013

SUBJECT: Agenda Item 27, January 28-29, 2013 Board Meeting

Water Supply Planning Section – Overview of State Water Planning



John W. Hickenlooper Governor

Mike King

DNR Executive Director

Jennifer L. Gimbel CWCB Director

Staff Recommendation

This is an informational agenda item. Staff will provide the Board with an overview of a range of approaches to water planning and engage the Board in a discussion of key elements considered in the development of statewide water plans. The information presented comes from a review and summary of state water plans from across the nation, but focuses on the western U.S. The presentation will include why states complete state water plans, approaches to planning efforts, common elements of state water plans, and lessons learned from other state water planning efforts.

Background Information

State water planning is increasingly recognized as a vital foundational element to provide for the economic welfare and environmental health of a state, and to help ensure a high quality of life for its citizens. The CWCB has actively engaged in a variety of statewide water planning efforts for several decades. Most recently the completion of the Statewide Water Supply Initiative (SWSI) 2010 established several recommendations and key findings to help Colorado address its current and future water needs. As the CWCB seeks to implement these recommendations to address Colorado's water needs, and to begin a 2016 update to SWSI along with a state water plan, there are several options and priorities to consider. A closer look at how other states are approaching statewide planning will illustrate a variety of approaches, providing the Board with an additional frame of reference to consider as Colorado moves its planning efforts forward.

Discussion

In reviewing state planning efforts there are unique challenges and trends that tend to follow the major geographic regions of the country. Eastern states have tended to focus more on aging infrastructure and water quality, but recent droughts have brought a greater emphasis on water supply. In the central U.S. we see a combination of approaches to address the same challenges observed in the east, as well as a focus on flood control and navigation. After reviewing these trends it is apparent that a closer look at other western states is most applicable and useful to the Board. With this in mind, a review was completed for 19 "western" states (which align well with the member states of the Western States Water Council and Western Governors Association).

The attached table is a summary of these state's water planning efforts. The table highlights the following planning elements:

- State/Regional Planning Status
- Scope of Water Resources Planning and Management
- Alternatives Analysis
- Water Resources Planning and Management Planning Process
- Partnerships, Stakeholder and Public Involvement Process
- Governance Issues
- Budget Considerations
- Plan Development

The Statewide Water Supply Initiative reports contain many elements of state water plan efforts completed by other states. Staff will explore these similarities during the presentation.

Comparison of State Water Plans in the West

NAME OF STATE	ALASKA	ARIZONA	CALIFORNIA	COLORADO	HAWAII	•				NEVADA		NORTH DAKOTA	OKI AHOMA	OREGON	SOUTH DAKOTA	TEXAS	UTAH	WASHINGTON	WYOMING
NAME OF STATE	ALAGRA	ARIZONA	OALII ORIVIA	COLORADO	HAWAII	IDAITO	TURITORIO	MONTANA	NEBICACIO	NEVADA	NEW INEXIOO	NORTH BAROTA	OKEAHOMA	OKECOK	COOMIDANOIA	TEXAC	OTALL	WAGIIINGTON	Wilding
NAME OF STATE AGENCY	Alaska Department of Natural Resources	Arizona Department of Water Resources	California Department of Water Resources	Colorado Water Conservation Board	Department of Land and Natural Resources, Commission on Water Resource Managment	Idaho Department of Water Resources and Idaho Water Resource Board	Kansas Water Office	Department of Natural Resources and Conservation, Montana Water Resources Division	Nebraska Department of Natural Resources	Department of Conservation and Natural Resources, Nevada Diivsions of Water Resources	Office of the State Engineer; Interstate Stream Commission	North Dakota State Water Commission	Oklahoma Water Resources Board	Oregon Water Resources Department	South Dakota Department of Environment and Natural Resources, Board of Water and Natural Resources	Texas Water Development Boan	Utah Department of Natural Resources, Division and Board of d Water Resources	Washington Department of Ecology	Wyoming Water Development Commission
STATE/REGIONAL PLANNING STATUS																			
Is there a comprehensive state-wide water resources plan?	No	Yes	Yes	Yes, not identified as a "plan"	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	No	Yes - implmentation focus	Yes	Yes	Yes - Locally focused	Yes
Is there published vision, mission, goals or objectives for water	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
resources of the state? SCOPE OF WATER RESOURCES PLANNING AND											In regional								
MANAGEMENT (Does the state plan or regional plans include?)											reports								
Consideration of external forces or trends?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes
Socioeconomic projections (population or other demographic characteristics)?	No	Yes	Yes	Yes	Yes?	Yes	Yes	No	No	Yes	Yes	Yes	Yes	No	No	Yes	Yes	Yes	Yes
Current and future water needs quantified (demand)	No	Yes	Yes	Yes	Yes?	Yes	Yes	?	No	Yes dated	Yes	Yes	Yes	No	Yes focused	Yes	Yes	Yes at local level	Yes
Water demand for M&I?	No	Yes	Yes	Yes	Yes?	Yes	Yes	?	No	Yes dated	Yes	Yes	Yes	No	Yes focused	Yes	Yes	Yes at local level	Yes
Additional breakdown of M&I demands?	No	?	?	Yes	Yes?	Yes	Yes	?	No	Yes	Yes	?	Yes	No	No	Yes	Yes	Yes at local level	Yes
Water demand for Ag?	No	Yes	Yes	Yes	Yes?	Yes	Yes	?	No	Yes	Yes	Yes?	Yes	No	No	Yes	Yes	Yes at local level	Yes
Water demand for in-stream (environmental needs)?	Yes on case by case basis	No?	Yes qualitative	Yes	Yes Qualitative	Yes	Yes	Yes	Yes	Yes but not fully developed program?	Yes	?	No - evaluating	Yes	considered	Yes	Yes	Yes at local level	Yes
Current and future water supplies?	No		Yes	Yes	No	Yes	Yes	Yes?	Yes	Not fully developed	Yes	Yes not sure on level of detail	Yes Refining	No	Yes	Yes	Yes	Yes at local level	Yes
Surface water availability component?	No	Yes	?	Yes	No	Yes	Yes	Yes?	Yes		Yes		Yes	No		Yes	Yes	Yes at local level	Yes
Groundwater availability component?	No	Yes	?	Yes but not quantified	Yes	Yes under further development	Yes	Yes	Yes		Yes		Yes	No		Yes	Yes	Yes at local level	Yes
Water quality component	No	No	Yes	Ensure Beneficial use	Yes	Ensure Beneficial use	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes at local level	Yes
Compartmentalized planning	Yes	No?	Yes and No	Yes	Yes and No	?	No?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Gap analysis between supply and demand state level	No	Yes		Yes	Yes	Yes	Yes	No	No	Yes	Yes	Yes	Yes	No	No	Yes	Yes	Yes at local level	Yes
Gap analysis between supply and demand watershed level	No			Yes	Yes	Yes	Yes	Yes	No	?	Yes	Yes?	Refining	No	No	Yes	Yes	Yes at local	Yes
Gap analysis between supply and demand regional level	No	Yes		Yes	Yes	Yes	Yes	Yes	No	?	Yes	Yes?	Refining	No	Yes	Yes	Yes	Yes at local level	Yes
Gap analysis between supply and demand at local level	No			Yes County Level	No	Yes	Yes	Yes	No	?	Yes	Yes?	Refining	No	Yes	Yes	Yes	Yes at local level	Yes
Hydrologic variability included	No		Yes	Yes	No	Yes	No	No?	?	?	Yes	?	Yes	Yes	Yes	Yes	Yes	Yes at local level	Yes
Climate change considerations included	Yes Qualitative	Qualitative	Yes	Qualitative	Yes	Qualitative	?	No?	?	?	Yes	?	Yes	Proposed	Not yet	Yes	Evauating	Yes	Evaluating
ALTERNATIVES ANALYSIS	No									Conceptual Only all alternatives				For below answers - Yes but not part of overall state plan	Project Specific				
Conservation	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Project Specific	Yes	Yes	Yes	Yes
Reuse	No	Yes	Yes	Yes	Yes	Yes	Yes	No?	No	No	Yes	No?	Yes	Yes	Project Specific	Yes	Yes	Yes	Yes
Conjunctive use	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes?	Yes	?	Project Specific	Yes	Yes	Yes	Yes
Transfers (both temporary and permanent)	No No	Yes Yes	Yes Yes	Yes Yes	No? No?	Yes Yes	No? Yes	Yes Yes	Yes No	No No	Yes Yes	Yes Yes	Yes Yes	? Yes	Project Specific Project Specific	Yes Yes	Yes Yes	Yes Yes	Yes Yes
New storage	NO	res	res	res	INO?	168	res	168	INO	INO	res	res	res	res	Froject Specific	162	res	res	res

Comparison of State Water Plans in the West

NAME OF STATE	ALASKA	ARIZONA	CALIFORNIA	COLORADO	HAWAII	•				NEVADA		NORTH DAKOTA	OKI AHOMA	OREGON	SOUTH DAKOTA	TEXAS	UTAH	WASHINGTON	WYOMING
HAME OF STATE	ALAGRA	ANIZONA	CALII ORIVIA	COLORADO	HAWAII	IDAIIO	KANOAO	WONTANA	NEDITAGRA	NEVADA	NEW MEXICO	NORTH DAROTA	OKLAHOWA	OKEGON	JOOTH DAROTA	ILAAO	UIAII	WASHINGTON	WIOMING
								Department of											
					Department of Land			Natural Resources		Department of									
			0.11		and Natural	Idaho Department of		and Conservation,		Conservation and	000 611 011				South Dakota Department		Utah Department of		
	Alaska Department of Natural	Arizona Department of	California Department of	Colorado Water	Resources, Commission on Water	Water Resources and Idaho Water	Kansas Water	Montana Water Resources	Nebraska Department of	Natural Resources, Nevada Dilvsions of	Office of the State Engineer; Interstate	North Dakota State Water	Oklahoma Water	Oregon Water Resources	of Environment and Natural Resources, Board of Water	Texas Water	Natural Resources, Division and Board of	Washington Department	Wyoming Water Development
NAME OF STATE AGENCY	Resources	Water Resources	Water Resources	Conservation Board	Resource Managment	Resource Board	Office	Division	Natural Resources	Water Resources	Stream Commission	Commission	Resources Board	Department	and Natural Resources	Development Board	Water Resources	of Ecology	Commission
Enlarged storage	No	Yes	Yes	Yes	No?	Yes	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Project Specific	Yes	Yes	Yes	Yes
Infrastructure Rehabilitation	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Project Specific	Yes	Yes	Yes	Yes
Reallocation of storage space	No	?	Yes	Yes	No	Yes	Yes	Yes	No	No	Yes	2	Yes	?	Project Specific	Yes	Yes	Yes	Yes
Water infrastructure	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Project Specific	Yes	Yes	Yes	Yes
WATER RESOURCES PLANNING AND MANAGEMENT PLANNING		163	163	163	163	163	163	163	140	INO	163	163	163	163	1 Toject opecino	163	163	163	163
Regional approaches	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	No	Yes
River basin/watershed approaches	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	?	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Systems-based approaches Is this infrastructure?	No	No?	?	No	No	No	Yes	Yes	No	No	No	No .	Yes	No	Yes	Yes	Yes	No	Yes
Local approaches	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Shared vision planning (collaborative modeling approaches)	No	No?	Yes	100	Yes	2	No	No	No	No	No	No	Yes	No	No	Yes	No	Yes	Yes
Adaptive management	No	Yes?	Yes	Yes	No	?	No?	No	No	No	No	No	Yes	No	No	Yes	No	No	No
IRWM approaches	No	Y&N	Yes		Yes	?	Yes	No	No	No	No?	No	Yes	No	No	Yes	Yes?	No	No
Research component	Yes limited	Yes	Yes	Yes	Yes	Yes	Yes	?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Education component	Yes limited	Yes	Yes	Yes	Yes	Yes	Yes	?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sustainability consideration	No	Yes but	Yes	Yes	Yes	Yes	No use	?	Yes	No	No?	No?	Yes	Yes	Yes	Yes	?	Yes?	?
,		qualified			1		wisely	'					1				1		-
Drought management component	No	Yes	Yes	Yes	Yes Need	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
E / P	Maria	N. O. Istili		NI	Support	NI.	NI.	NI-O	N1.	N1.	N1.	NI.	N1.	V	NI.		NI.	N1.	NI.
Emergency/disaster approach	Not in	No Outside	Yes	No outside	No	No	No	No?	No	No	No	No	No	Yes separate	No	Yes	No	No	No
No. 1 of the second second	agency	agency	.,,	agency			.,						.,					_	
Navigation/marine transportation considerations	Yes at	No	Yes	No	No coastal	No	Yes	?	No	No	No	Yes?	Yes	No?	Yes?	?	No	?	No
	program				different														
51 - 1 - 10 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	level	NI-O			authority			NI-O		V	14:-0			V					
Flooding/flood control/flood damage reduction considerations	Yes at	No?	Yes	No	No?	Yes	Yes	No?	Yes	Yes	Yes?	Yes	Yes	Yes separate	Yes	Yes	Yes	Yes	Yes
	program																		
Huden american de la desarta de	level	Vaa	Na	NIa	Ne	V	Na	N-O	NaO	Na O	NI-	N-O	V	N-O	Vaa	2	NI-	?	No?
Hydropower considerations	Yes at	Yes	No	No	No	Yes	No	No?	No?	No?	No	No?	Yes	No?	Yes	ſ	No	ſ	NO?
	program																		
Water-based recreation considerations	level Yes at	No	Yes	Yes	Yes	Yes	Yes	Yes?	Yes	Yes	Yes?	Yes?	Yes	Yes?	Yes	Yes	Yes	Yes	YEs
Water-based recreation considerations		INO	162	res	168	162	162	1621	165	res	resr	1621	168	resr	165	162	162	165	TES
	program level																		
In-stream flow considerations	Yes at	No?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No?	Yes	Yes	Yes	Yes	Yes	Yes	Yes
III-sti earii now considerations	program	140:	163	163	163	163	163	163	163	163	163	140:	163	163	163	163	163	163	163
	level																		
Established priorities for water management	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes?	Yes
Established priorities for water resources funding	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes?	Yes	No	Yes	Yes	Yes	No	Yes	Yes	Yes	No?	Yes
Asset management	No	No	Yes	No	No issue/need	No?	Yes?	No?	No	No	No	Yes?	Refining	No	No	Yes	No	No	No
			qualitative?				. 551					. 551		.,,	.,,			.,0	
Identified hot spots or critical need areas	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes and No	Yes	Yes	Yes	Yes	Yes, refining	No	Yes	Yes	Yes	?	Yes
PARTNERSHIPS, STAKEHOLDER AND PUBLIC INVOLVEMENT	Not in									Not actively									
PROCESS	Planning									planning at									
FRUCESS	riaililiig									present 1995									
										Process									
Direct stakeholder involvement process	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No?	Yes	No?	No	Yes	Yes	Yes	Yes
NGO involvement	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No?	Yes	Yes	No	Yes	Yes	Yes	Yes?
Federal agency involvement	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Local government involvement	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Water provider involvement	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
GOVERNANCE ISSUES	. 55			.00			. 55												
Water agreements	?	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	?	Yes	Yes	Yes		Yes
Water compacts	?No	Yes	Yes	Yes	No	Yes	Yes	Yes?	Yes	Yes	Yes	Yes	Yes	?	?	Yes?	Yes		Yes
Water conflicts	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Conflict resolution process	No	Not formal	Not formal	Not formal	No	Not formal	Not formal	Not formal	Not formal	Not formal	Not formal	Not formal	Not formal	Not formal	Not formal	Not formal	Not formal	No formal	Not formal
Common reduction process	140	Hot formal	. TOU TOUTING	Hot formal	140	Hochonnal	. tot loillial	. TOU TOURING	. tot lollilal	Hot formal	riorionnal	Hochomia	Horionnal	i vocionnal	HOURINIA	Hot formal	Hot formal	i io ioiiilai	Hot formal

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																			1
																			1
					Department of Land			Department of Natural Resources		Department of									1
					and Natural	Idaho Department of		and Conservation,		Conservation and					South Dakota Department		Utah Department of		1
	Alaska Department		California		Resources,	Water Resources		Montana Water	Nebraska	Natural Resources,	Office of the State			Oregon Water	of Environment and Natural		Natural Resources,		Wyoming Water
	of Natural	Arizona Department of	Department of	Colorado Water	Commission on Water	and Idaho Water	Kansas Water	Resources	Department of	Nevada Diivsions of		North Dakota State Water	Oklahoma Water	Resources	Resources, Board of Water	Texas Water		Washington Department	Development
NAME OF STATE AGENCY	Resources		Water Resources	Conservation Board	Ü	Resource Board	Office	Division	Natural Resources	Water Resources	Stream Commission	Commission	Resources Board	Department	and Natural Resources	Development Board		of Ecology	Commission
Regulating water use (e.g, permits)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
BUDGET CONSIDERATIONS																			
Governor's priority areas	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?
State budget areas	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?
State budget priorities	No	Yes	Yes	Yes	Yes	Yes	Yes	?	?	?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes?	Yes
Water infrastructure funding	No	Yes	Yes	Yes	No	Yes	Yes	Yes	?	?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes?	Yes
PLAN DEVELOPMENT																			
Plan Revision Timetable	No	Yes	Yes	Ongoing	Yes	Yes	Yes	No	No	No	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes
Plan Implementation Strategy	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	No	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes?	Yes
Monitoring Strategy	No	Yes	Yes	Qualitative	Not formal	Qualitative	Yes	Not formal	Yes	No	Yes	Yes not formal	Yes	No	Yes	Yes	Yes	Yes	Yes