



BOX ELDER WATER MASTER PLAN

Executive Summary

**4TH LARGEST
IN UTAH BY
AREA** Box Elder
County

**5,746 TOTAL
SQUARE
MILES**

**934 SQUARE
MILES** of County
is water

65,006 2025
Population of Box
Elder County

70% of residents
live on eastern side
of County

43% of County is
Agricultural lands

BACKGROUND

Box Elder County initiated this Water Master Plan in response to a need for coordinated, county-wide water management including cooperation with land use planners and water resource planners. Planning was organized across seven regions to reflect local conditions. The process integrated local knowledge through over 50 interviews and multiple regional meetings with planners, municipalities, irrigation systems, private systems, and environmental groups.

The Master Plan process included identification of actions for local systems to consider as part of the regional plans. It also included an evaluation and development of a list of recommended regional actions and a list of recommended countywide actions.

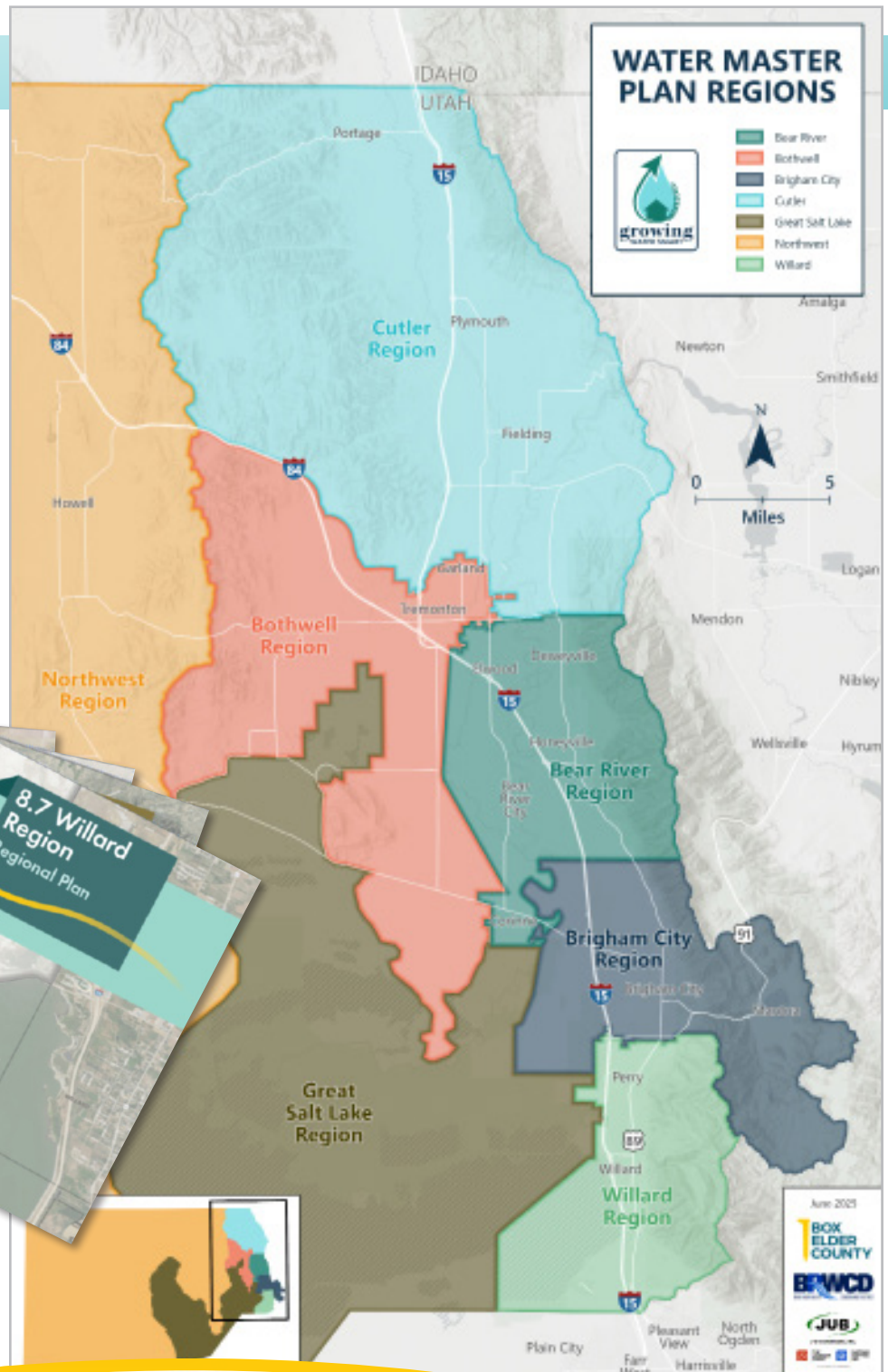
Plan Purpose:

The Box Elder Water Master Plan provides a strategic blueprint for managing our precious Box Elder County water resources; ensuring a reliable supply for our communities now and in the future.



Regions

Seven regions within the county were created as part of this planning effort to address distinct conditions and varying needs across the county. The plan includes a regional plan for each of the individual regions based on the information and data gathered and evaluated.



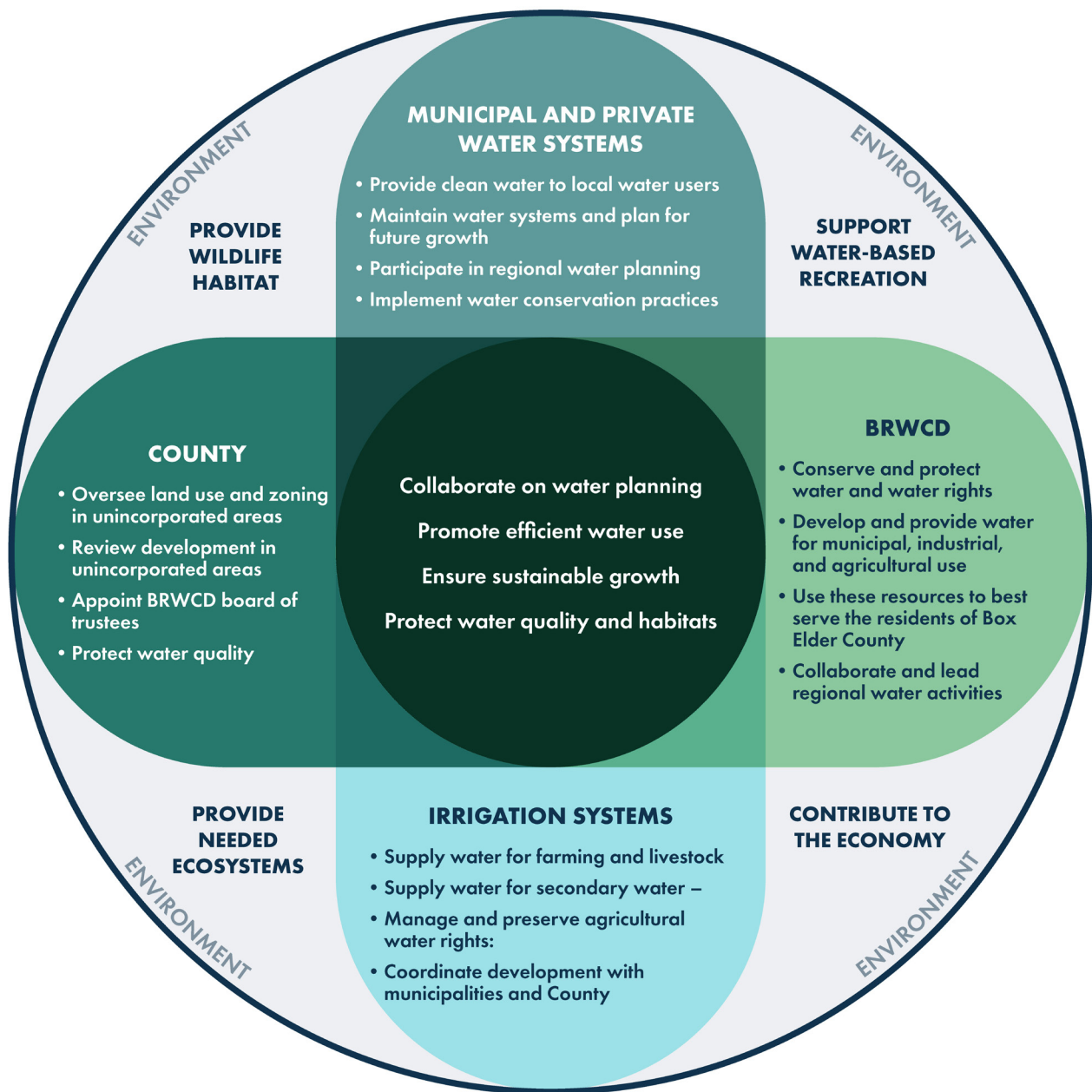
Roles of Water Users in the Plan Process

The Plan unites Box Elder County, BRWCD, municipalities, private systems, irrigation companies, and environmental partners to align land use and water planning.

Box Elder County and BRWCD operate as distinct entities with separate governance structures, yet their missions often intersect, particularly in the realm of water resource management and sustainable development. The County oversees land use and development in unincorporated areas, ensuring that growth aligns with zoning ordinances and long-term infrastructure planning. Meanwhile, BRWCD focuses on conserving, developing, and supplying water for municipal, industrial, and agricultural needs across the county. Both entities collaborate on water planning initiatives, promote efficient water use, and work to ensure that development occurs sustainably. This cooperative relationship is essential for balancing growth and meeting the evolving needs of Box Elder County's residents.

Roles of the County and BRWCD





Roles of Water Users

Municipal and private drinking water systems maintain infrastructure and plan for future drinking water needs. The county's irrigation systems play a vital role in supporting agriculture, preserving water rights, and coordinating with municipalities to balance urban development with farming needs. Environmental water needs are also a priority especially for sustaining habitats, recreation, and the local economy.

Overall, successful water management in the county depends on collaboration among the county, BRWCD, municipalities, private systems, irrigation companies, and environmental stakeholders to promote sustainable growth and protect vital water resources.

1.

ENGAGED STAKEHOLDERS

GOAL: Build shared understanding and trust through broad participation with communities and stakeholders

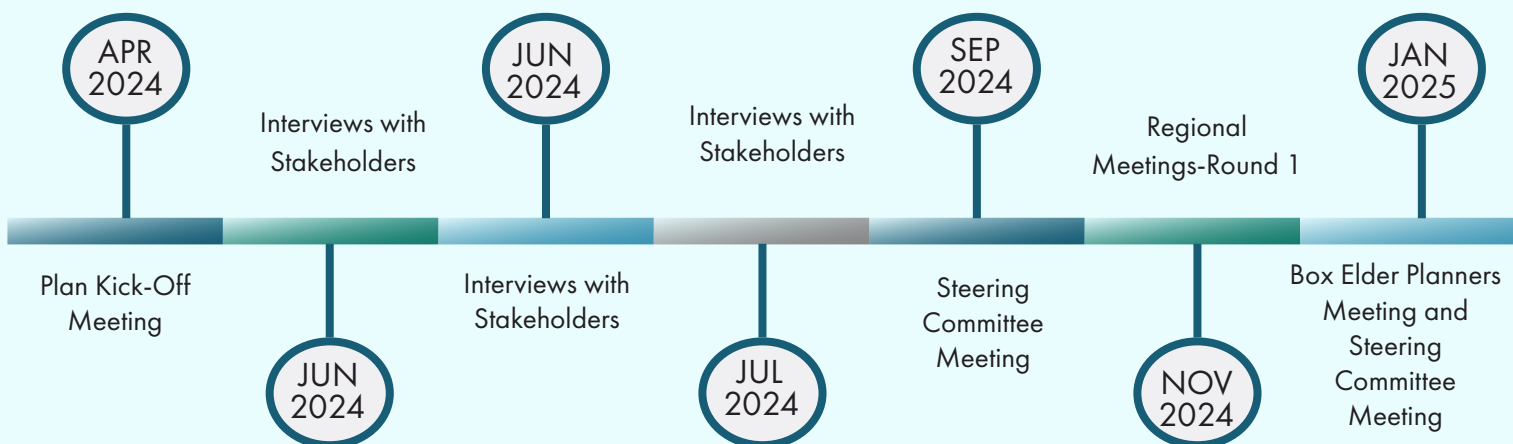
The planning team launched a countywide engagement process—It was an essential priority, as part of a Water Master Plan to meet the needs of all users, to engage as many different water users as possible across the entire county to fully understand the challenges and needs facing each of them.

Plan Kick-off Meeting

The Master Plan process began with a Plan Kickoff Meeting designed to gather initial input from a diverse audience of stakeholders across the county. The goal of this meeting was to introduce the planning process, define the scope, and begin identifying the most pressing water issues and concerns across the County.

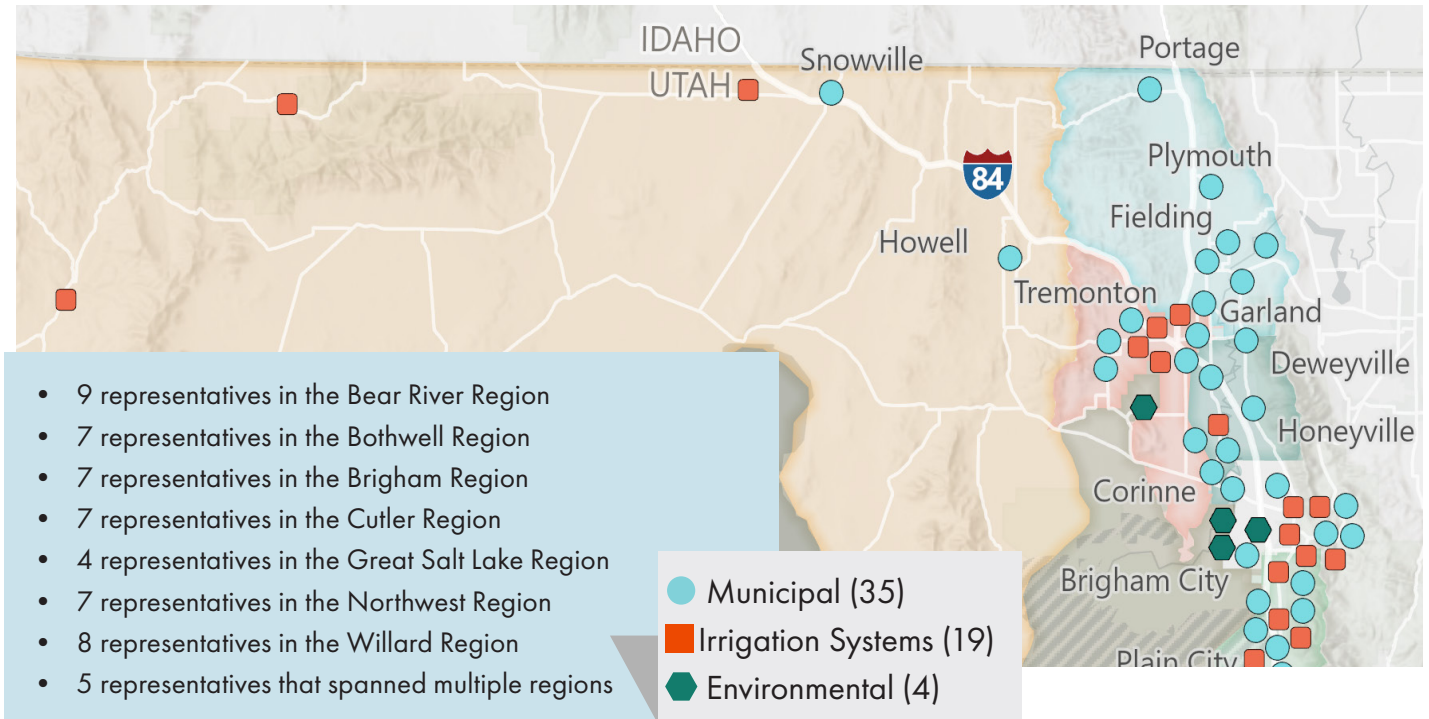
Created a Steering Committee

The Steering Committee was established as a core working group to guide the Master Plan process and ensure that key entities were represented in decision-making. Its primary purpose was to provide essential technical expertise, political support, and direction throughout the planning effort, ensuring the final recommendations were informed and broadly supported.



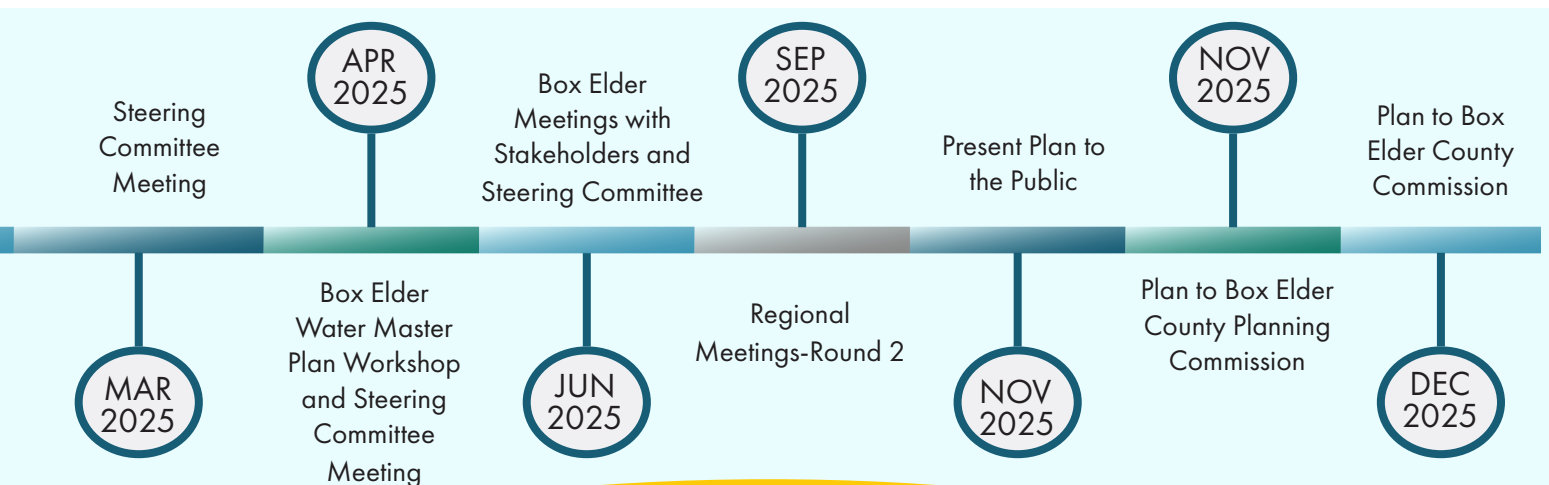
Interviewed Over 50 Stakeholders

Conducted interviews with key stakeholders to gather input across municipal, water districts, irrigation companies, agricultural operators, environmental groups and the public.



Held Two Rounds of Regional Meetings

The Master Plan included two rounds of regional meetings within the seven distinct areas to ensure a thorough understanding of local conditions. These sessions were crucial for identifying specific local and regional challenges and needs, enabling the planning team to accurately tailor solutions to the unique issues facing each area.



2.

COLLECTED & ANALYZED INFORMATION

GOAL: Understand existing and future water supplies throughout the County

To establish a shared understanding of current and future conditions, the team analyzed population growth, water supply and demand, infrastructure capacity, water rights, and conservation potential. Growth hot spots and resource gaps were mapped to inform each region's strategy.

RADAR Exercise

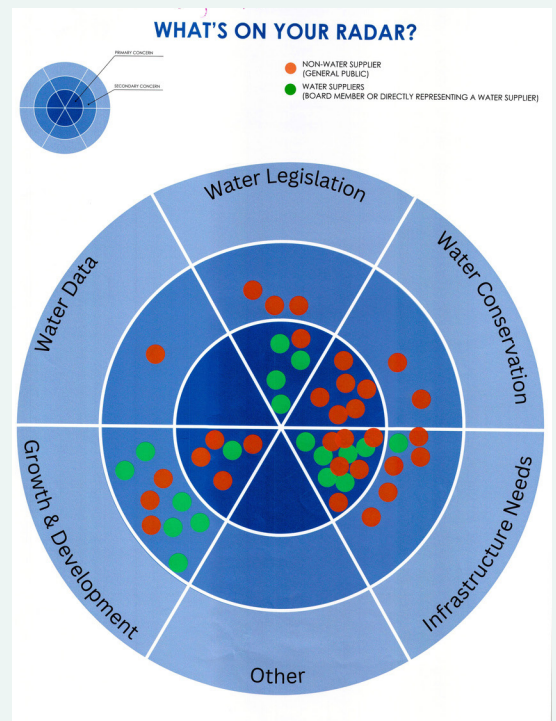
The RADAR Exercise was an activity held during the Public Kick-off Meeting where attendees placed dots on specific categories to provide their input on the concerns and priorities facing their respective regions. The outcomes of this exercise were vital, as they helped guide the subsequent development of stakeholder interview questions, regional meeting agendas, and the criteria used in the prioritization matrix.

Met with Community Planners

As an integral part of the planning process, the team held meetings with community planners from across the county. This was essential to ensure that the Master Plan's water strategies were fully integrated and aligned with existing and future land use and development goals outlined in municipal and county general plans.

Analyzed Growth

The team dedicated time to analyze future growth projections and development trends across the county, which is a necessary step for any long-range infrastructure plan. By understanding where and how the population is expected to expand, the Master Plan could accurately forecast future water demand and ensure that strategies for supply and infrastructure could support this anticipated expansion.

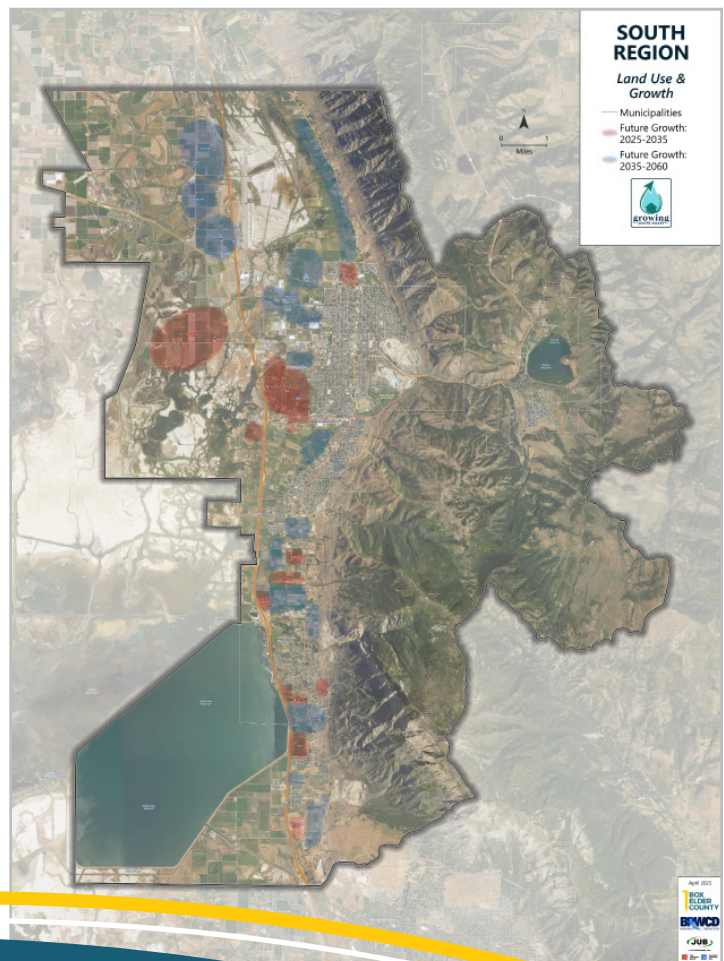
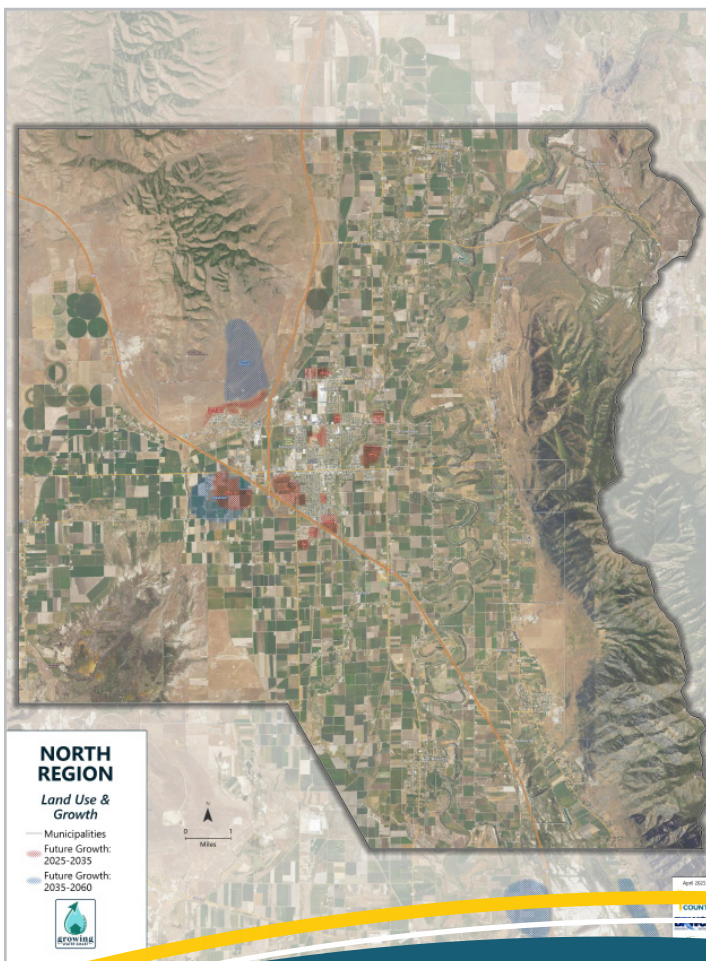


Water Demand Increase: South Area

Public Water Supplier	Estimated 2035 Units	Residential Use (gpcd) (DWRe)	Total Use (AF) (DWRe)	Increased Residential Use (AF)	% Increase of Total Use
Brigham City	1,150	140	7,703	523	7
Perry	600	53	1,963	103	5
South Willard	600	55	108	107	99
Willard	650	197	958	416	43

Water Demand Increase: North Area

Garland	230	99	352	74	21
Tremonton	3,185	124	2,923	1,283	44



3.

EVALUATED ACTIONS & STRATEGIES

GOAL: Identify and prioritize actions and strategies for long term county-wide water management

Best Management Practices (BMPs) were translated into candidate actions and scored with a multi-objective framework. This process prioritized actions with the highest shared benefit.

Infrastructure Improvements: Upgrade critical facilities, improve irrigation efficiency, and expand data monitoring networks.

Water Supply & Rights Management: Identify and responsibly develop new sources; require new development to bring water; support conversion of

agricultural water where feasible; monitor groundwater trends.

Water Management & Education: Strengthen inter-entity coordination; educate water users and developers; inform the public on legislation; align land use with water availability; monitor septic impacts.



INFRASTRUCTURE

- Replace aging infrastructure
- Improve connectivity between municipal systems
- Improve water measurement and monitoring
- Standardize secondary water requirements
- Improve irrigation efficiency



SUPPLY

- Identify water sources & develop water responsibly
- Ensure new development brings their own water
- Improve conversion of agricultural water to municipal uses
- Preserve agricultural lands
- Monitor groundwater levels



MANAGEMENT

- Strengthen coordination & agreements between water entities
- Educate water users & developers on conservation & efficient management
- Inform public of proposed water legislation
- Develop long-term funding strategies for water infrastructure
- Protect water rights
- Align land use planning & zoning with water sustainability goals
- Monitor effects of septic systems on groundwater & lot densities

A range of potential actions, such as new wells, distribution piping, conservation planning, were evaluated conceptually based on the desired best management practices/objectives. The results for each action were color-coded indicating their effectiveness.

Actions that were more effective were colored darker than those that were less effective. The following table shows some of the actions evaluated and is only shown to illustrate the process that was followed.

Stakeholder/ Entity	Action Alternatives	Added redundant capacity for community systems such as interconnects (P of concern/yr)	Population served (thousands)	Reduced surface water used for irrigation (acre-feet/yr)	Distribution pipes replaced or upgraded (miles)	High meters/water data covered (BSC/yr)	Lengthen water covered (miles/yr)	Supply added/ surface consumption reduced (MG/yr)	Current water rights put to beneficial use or expanded high use status (MG/yr)	Percent of water for processing lands that is converted for MSU uses and purchased for use in the other parts of the county (MG/yr)	Negative impacts to agriculture lands (value)	Increased ground water made available for analysis (value)	Improved understandi g of water quality (value)	Estimates involved in an agreement, or sharing resources (number)	Capital cost without a grant (\$)	Capital cost without a grant (\$/acre foot)	Potential level of grant funding for project cost	Likelihood of receiving grant	Proximity to existing connections (miles)	Are adequate water rights available (Yes/No)	Improved understandi g (value)	Extent of outreach and public education (value)	See EIR influence on new water related BPS (value)
		High	1.0-2.0	High	High	High	High	1.0-2.0	1.0-2.0	High	High	High	High	High	1-2	\$1-5M	\$1-5M	1-5M	High	1	High	High	High
		High	1.0-2.0	High	High	High	High	1.0-2.0	1.0-2.0	High	High	High	High	High	1-2	\$1-5M	\$1-5M	1-5M	High	1	High	High	High
		High	1.0-2.0	High	High	High	High	1.0-2.0	1.0-2.0	High	High	High	High	High	1-2	\$1-5M	\$1-5M	1-5M	High	1	High	High	High
		High	1.0-2.0	High	High	High	High	1.0-2.0	1.0-2.0	High	High	High	High	High	1-2	\$1-5M	\$1-5M	1-5M	High	1	High	High	High
BEAR RIVER REGION																							
SRP01	Bear River Regional Well & Distribution - Build a new pipeline from Harper State Well to Carleton and additional wells along the pipeline route, consolidation of resources.	High	1.0-2.0	High	High	High	High	1.0-2.0	1.0-2.0	High	High	High	High	1-2	\$1-5M	\$1-5M	1-5M	High	1	High	High	High	
BOTHWELL REGION																							
SRP02	Bothwell Water Infrastructure - Purge funding and evaluate improvements to add new, larger piping from Bothwell to Thompson and add water storage to address growth in west and south. Bothwell, Thatcher, Potosi, West Corral, Upton, Roll, Central, and Thompson.	High	1.0-2.0	High	High	High	High	1.0-2.0	1.0-2.0	High	High	High	High	1-2	\$1-5M	\$1-5M	1-5M	High	1	High	High	High	
SRP03	Bothwell County Treatment Plant Study - Study possibility of building a regional treatment plant to treat water from sources in the Bothwell locale.	High	1.0-2.0	High	High	High	High	1.0-2.0	1.0-2.0	High	High	High	High	1-2	\$1-5M	\$1-5M	1-5M	High	1	High	High	High	
SRP04	Additional County Storage - Build a 3 to 6 million gallon/year near Thompson.	High	1.0-2.0	High	High	High	High	1.0-2.0	1.0-2.0	High	High	High	High	1-2	\$1-5M	\$1-5M	1-5M	High	1	High	High	High	
SRP05	Commercial Secondary System - Develop a new secondary water system supplied by water in the Bothwell locale.	High	1.0-2.0	High	High	High	High	1.0-2.0	1.0-2.0	High	High	High	High	1-2	\$1-5M	\$1-5M	1-5M	High	1	High	High	High	

Recommended regional and county-wide actions listed in the Master Plan report are presented using a standard framework referred to as the IRAR framework. IRAR is an acronym that stands for Issue, Rule, Analysis, and Recommendation.

IRAR Framework Analysis	
Issue	Identifies the water-related problem, challenge, or need. These were derived from stakeholder interviews, regional meetings, and technical assessments
Rule	Refers to applicable laws, policies, best practices, planning mandates, or standards that may be relevant to the issue or recommendation
Analysis	Describes how the evaluated actions align with BMPs (objectives) identified through the stakeholder process and technical objectives
Recommendation	Proposes actionable strategies, identifies responsible parties, and outlines steps



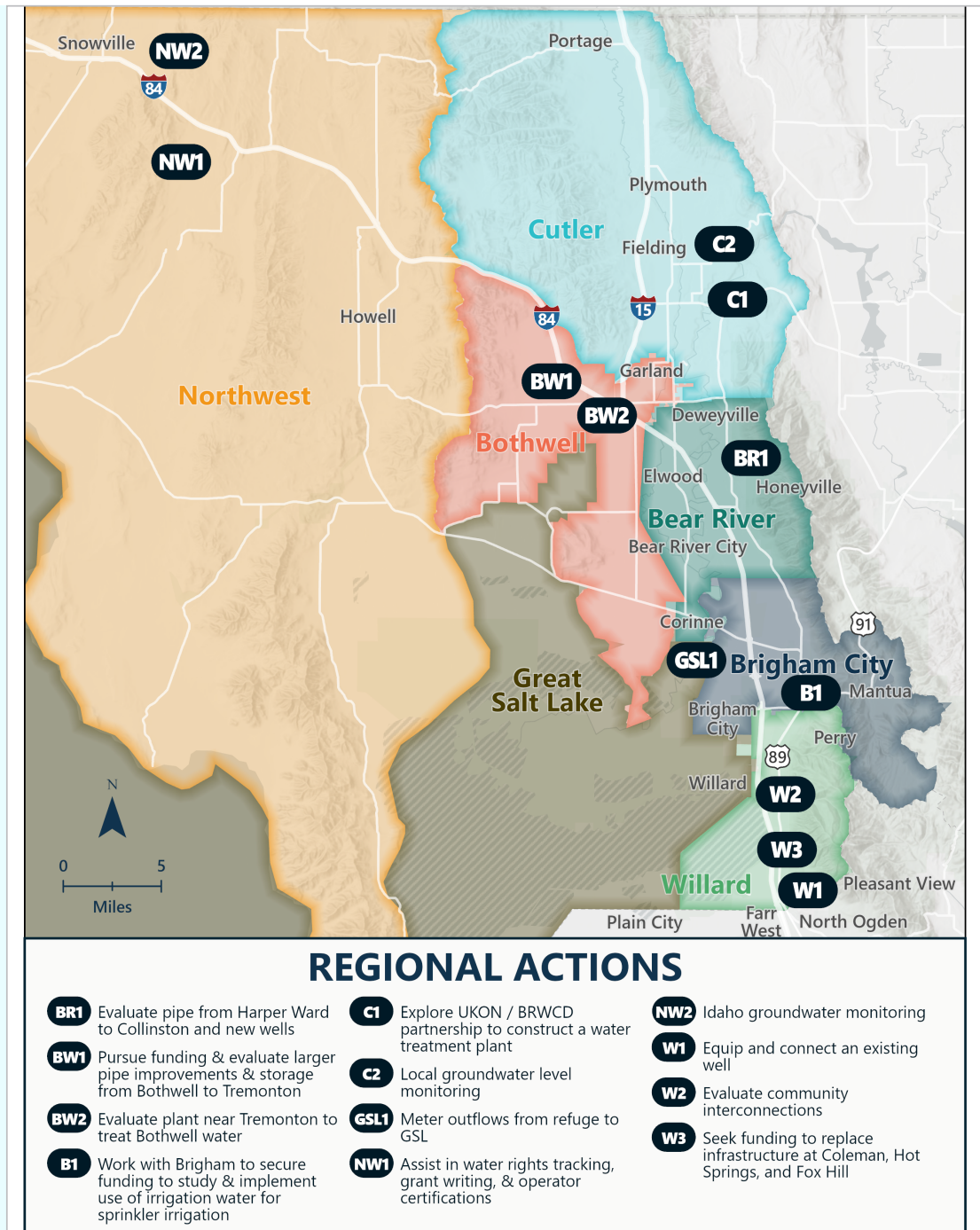
4.

DEVELOPED A RECOMMENDED ACTION PLAN

GOAL: Deliver a coordinated roadmap of regional and county-wide actions for sustained, adaptive implementation.

Regional Actions

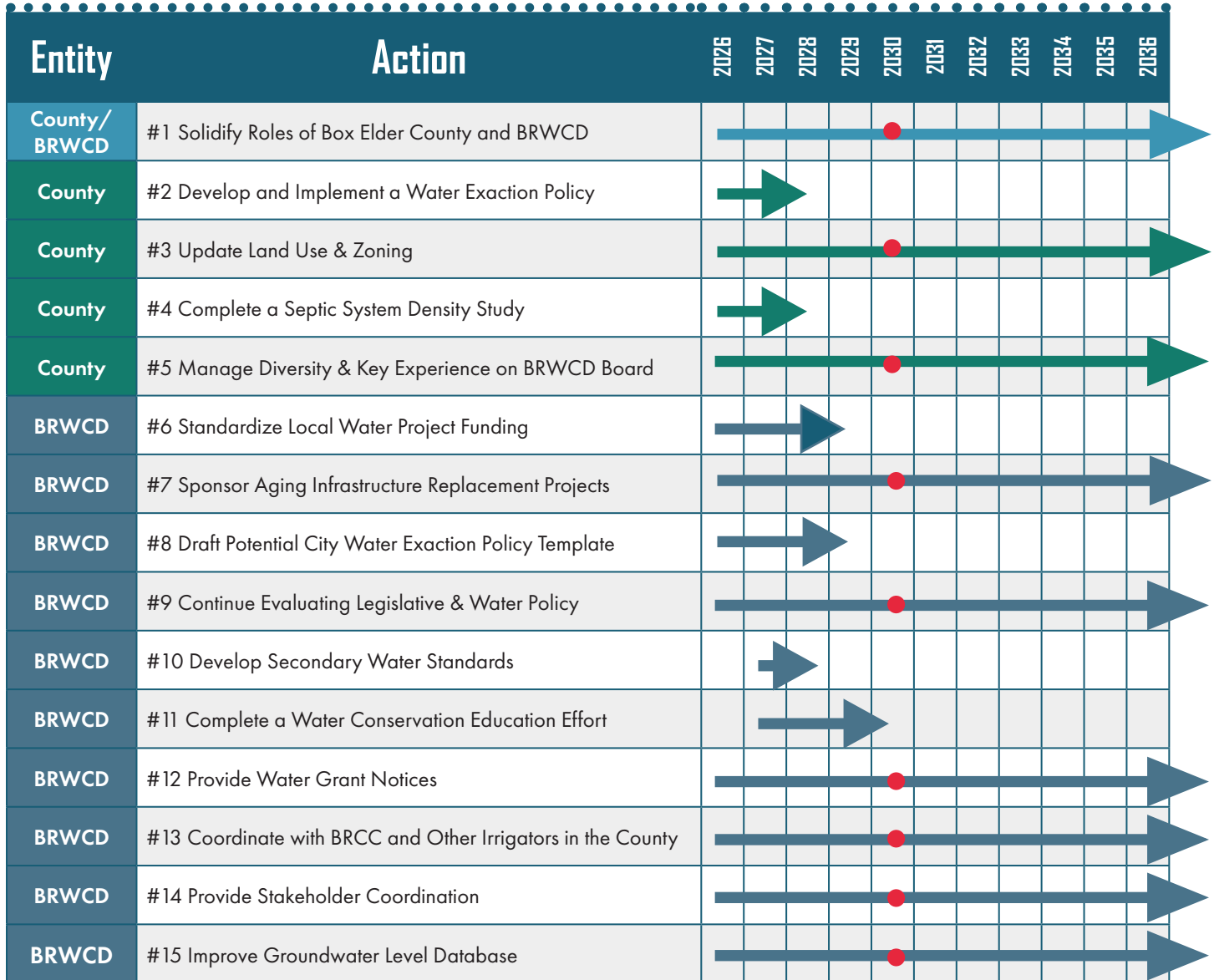
Evaluation identified 12 Regional Actions with significant cross-jurisdictional impact. These actions are prioritized for collaborative implementation, supporting a unified and flexible approach across the county.



County-Wide Actions

In addition to the Regional Actions, the evaluation identified a separate category of county-wide actions that possess a broader scope of impact across multiple regions. These crucial actions were assigned to either Box Elder County or the BRWCD to lead, recognizing their roles as the foundational partners in county-wide water governance and ensuring that the most impactful projects are implemented at the highest level of coordination.

Figure 9-B: Timeline of Recommended Actions



* ● Milestone Check-in

This living plan supports flexible, region-specific actions within a unified county-wide vision. Implementation will proceed through defined milestones, with periodic review and adjustment as conditions evolve.

Water Master Plan Recognition

Project Leads

Scott Lyons, Box Elder County Community Development Director
Chance Baxter, BRWCD General Manager
Chris Slater, J-U-B Engineers
Quinn Dance, J-U-B Engineers
Josh King, J-U-B Engineers, The Langdon Group
Emily Benson, J-U-B Engineers, The Langdon Group
Emily Mead, J-U-B Engineers

Key Stakeholders

JL Nicholas, Corrine City Public Works
Bruce Nelson, Mayor Honeyville City
Tyler Pugsley, Brigham City Public Works Director
Lyle Holmgren, Mayor of Tremonton
Joe Summers, Bothwell Water
Lesley Kendrick, Deweyville Mayor
Marcus Abel, Town of Mantua Public Works Director
Steve Woerner, Elwood Town
Kelly Lemmon, Collinston Water United
Jeremy Kimpton, Willard City
Riggin Holmgren, Bear River City & ACME Water
Linda Bourne, Garland Mayor
Robert Barnhill, Perry City, City Administrator
Chuck Earl, Fielding Mayor
Brodie Calder, UKON Board Member
Derek Oyler, UKON President
Randy Udy, Bear River Canal
Steve Norman, West Corrine Water Company
Monica Holdaway, Box Elder County Chamber of Commerce
Stephanie Tugaw-Madson
Trevor Nielson, General Manager Bear River Canal Company
Tim Munns, Agricultural Representative
Shane Baton, Mayor Corrine City
Kendral Norman, Corrine City Recorder
PJ Botts, Mayor Brigham City
Jeff Humprey, General Manager Pineview Water Systems
Troy McNeely, Public Works Director Honeyville City
Lesley Kendrick, Mayor Town of Deweyville
Shane Perkins, Marble Hills Water Company

Mike Waite, Brigham City Water Superintendent
Don Wallentine, Town of Mantua Board Member
Blaine Anderson, Sunset Park Water Company
Jon Webb, Sunset Park Water Company
Richard Garrett, Collinston Water United
Kyle Potter, Collinston Water United
Nathan Spackman, Town of Deweyville
Joe Summers, Bothwell Cemetery & Water Corporation

Steering Committee

Madeline Brown, Willard City Planner (Willard Region)
Jay Capener, Bear River Canal Company (Cutler Region)
Randy Udy, Bear River Canal Company (Cutler, Bear River, Brigham, Bothwell Regions)
Steve Norman, West Corrine Water Company (Bothwell Region)
Monica Holdaway, Box Elder County Chamber of Commerce (Brigham Region)
Stephanie Tugaw-Madson (Brigham Region)
Trevor Nielson, Bear River Canal Company (Cutler, Bear River, Brigham, Bothwell Regions)
Chance Baxter, BRWCD General Manager
Tim Munns (Northwest Region)
Bruce Nelson, Honeyville Mayor (Bear River Region)
Lyle Holmgren, Mayor of Tremonton (Bothwell Region)
Scott Lyons, Box Elder County Community Development Director
Boyd Bingham, Box Elder County (Northwest, All Regions)

Community Planners

Jeremy Kimpton, Willard City
Madeline Brown, Willard City
Brittany Alfau, Bear River Association of Governments
Tony Elkins, Brigham City
Ryan Halverson, UDOT Region 1
Christy Dahlberg, Wasatch Front Regional Council
Natalie Tippets, Bear River Health Department
Bob Barnhill, Perry City

Scott Lyons, Box Elder County Community Development Director
Jeff Seedall, Tremonton City
Bill Cobabe, Tremonton City
Marcus Wager, Box Elder County
Mark Bradley, Brigham City

BRWCD Board Members

Lyle Holmgren, Mayor of Tremonton
Joe Summers, Bothwell Cemetery & Water Corporation
Lesley Kendrick, Mayor Town of Deweyville
Kelly Lemmon, Collinston Water United
Brodie Calder, UKON Board Member
Jay Capener, Bear River Canal Company
Tim Munns, Agricultural Representative
Chance Baxter, BRWCD General Manager
DJ Bott, Mayor Brigham City
Boyd Bingham, Box Elder County

Stakeholder Interviews

IRRIGATION WATER

Mantua Irrigation
Box Elder Creek Water Users Association
Harper Irrigation Company
North String Irrigation
Bigfield Irrigation
Pineview Water Systems
Bear River Canal Company
Highland Ditch Company
Central Canal Company
Ferry Farms
3 Mile Creek Irrigation
Blue Creek Irrigation
Taylor Farms
The Rose of Snowville
North Side Raft River Irrigation Companies
Spencer Land and Livestock
Poulson Farms
6d Land and Livestock
Willard Irrigation

GREAT SALT LAKE ENTITIES

Bear River Migratory Bird Refuge
Salt Creek Waterfowl Management Area (UDWiR)
Bear River Club Company
Chesapeake Duck Club

CULINARY WATER

Brigham City Corporation
Mantua Culinary Water Systems
ACME Water Company
Collinston Water System
Corrine City Corporation
Deweyville Municipal Water System
Elwood Town
Harper Ward Water System
Honeyville Municipal Water System
West Corrine Water Company
Bothwell Cemetery and Water Corporation
Garland City Corporation
Sunset Park Water Company
Thatcher (Marble) Hills Water Company
Thatcher-Penrose Service District
Tremonton City Corporation
Beaver Dam Water System
Nucor Steel Corporation
Riverside North Garland Water Company
Portage Municipal Water System
UKON Water Company
Willow Creek Water Company
East Grouse Creek Pipeline Company
Howell Town Water Department
Northrop Grumman
Snowville City Water System
BRWCD South Willard System
Coleman Mobile Home Court
Fox Hill Mobile Home Community
Hot Springs Trailor Court
Perry City Water System
South Willard Water Company
Willard City Water System
Plymouth Town



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GROUP



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MAPPING
INC.

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