BEAR RIVER COMMISSION

226 South 200 West
Farmington, Utah 84025-2407
801-292-4662

MINUTES

BEAR RIVER COMMISSION REGULAR MEETING
ONE HUNDRED FORTY-THIRD COMMISSION MEETING
November 14, 2023

I. Call to order – The regular meeting of the Bear River Commission was called to order by Chairwoman Jody Williams at 1:30 p.m. on Tuesday, November 14, 2023, in Salt Lake City, Utah. This was the one hundred forty-third meeting of the Commission. Williams recognized Bart Argyle, Alternate Upper Bear River Commissioner from Utah who was filling in for Commissioner Weston. She then recognized two new Commissioners. Teresa Wilhelmsen, the Utah State Engineer and Director of the Utah Division of Water Rights became a Utah Commissioner in May. Mat Weaver, the Director of the Idaho Department of Water Resources became an Idaho Commissioner in November. Chair Williams also noted the retirement of Will Atkin after 37 years with the State of Utah and a member of the TAC.

Commissioner Weaver then, after reading it, moved to adopt a resolution of appreciation for the service of Gary Spackman, former Director of the Idaho Department of Water Resources, and Idaho Commissioner. Commissioner Wilhelmsen then read a resolution of appreciation for the service of Candice Hasenyager, Director of the Utah Division of Water Resources and Utah Commissioner, after which the Commission unanimously adopted the two resolutions of appreciation.

Chair Williams then had Commissioners and then those in attendance at the meeting introduce themselves. A list of attendees is attached and can be found in Appendix A. The agenda for the meeting was reviewed and approved by motion (Appendix B).

II. Approval of minutes of last Commission meeting (April 18, 2023) – Williams went over the last Commission meeting minutes. There were no comments or changes made to the minutes. A motion was made, and the minutes were then approved.

III. Commission Business – Williams then explained that the Commission was in need of a Secretary until the spring meeting. A nomination was made that Teresa Wilhelmsen serve as Commission Secretary, and upon motion, she was appointed. The Commission then received the Treasurer's report from Randy Staker (see Appendix C). Staker first reviewed the Statement of Income and Expenditures for FY2023. He noted that two of the FY2023 state assessment checks were not deposited until FY2024. He also reported that he had resolved the inappropriate service fees from the bank and anticipated a refund. The Commission ended the fiscal year with a cash balance of $68,080.85. Staker then turned to a review of the FY2024 income and expenses to date. Upon motion, the Treasurer's report was accepted.

IV. Summary of 2023 Water Supply – Don Barnett then presented a summary of what he termed an "amazing" water supply in 2023. He then reviewed the forecasted water supply which the Commission had received from NRCS at the April meeting, after which he compared the realized stream flows to the forecasted amounts. In general, the realized stream flows were less than the forecasted amounts, but they were still well above normal. He then reported on rainfall amounts which were below normal for May, June and July but above normal in August and September. Barnett reported that Woodruff Narrows reservoir remained above or near spillway elevation through most of the season and in the Central Division, interstate regulation was commenced three months later than the prior two years. Barnett then showed a bar chart which contrasted total diversion versus storage use in the Lower Division for 2022 versus 2023. The storage use was a fraction of the prior years' use which allowed Bear Lake to only drop about one foot during the irrigation season.

V. Great Salt Lake – The Commission then moved to two reports relative to the Great Salt Lake.

Stream and Diversion Measurement "Gap Analysis:" Blake Bingham, Utah Deputy State Engineer then addressed the Commission relative to a cooperative study between the Utah State Engineer's Office and USU (see Appendix E for Bingham's presentation). The focus of the study is to identify water measurement infrastructure deficiencies in the Great Salt Lake Basin. He indicated that the demand by stakeholders for water information is dramatically increasing. The State Engineer's Office also desires greater diversion coverage for water distribution. It is a one-year study to identify, in advance, the data gaps so that needs can be filled as funding becomes available. He then reviewed the process that is being followed. The first step is to gather data on each system and reduce it to conceptual diagrams of inflows and outflows. They are also creating a GIS database of diversions and measuring devices followed by a questionnaire to river commissioners and canal companies.

The next step is to meet with stakeholders on issues with management and water measurement and allow them to identify data needs. The needs fall into two categories: data needed for water distribution and data needed for research and planning. He indicated that Idaho and Wyoming have been invited to the Bear River meetings. A report is to be released in the spring of 2024.

Great Salt Lake Basin Integrated Plan: Laura Vernon, the Great Salt Lake Planner with the Utah Division of Water Resources then reported to the Commission (see Appendix E for Vernon's presentation). She indicated that the study plan was just released the week of the Commission meeting. She showed the maps which showed reductions in the Great Salt Lake over the years. She also showed a hydrograph which showed the 5.5 foot increase in lake elevation in 2023, but that only brought the lake up to the prior historic low elevation. The Utah legislative funding is paired with US Bureau of Reclamation funding to create a water budget for the basin so that trade-off analyses can be made. She discussed their efforts to create a number of building blocks which are integrated into the study. She then reviewed the work plan which they followed in developing the report. The goal is to ensure a resilient water supply for Great Salt Lake and all water uses, including people and the environment, throughout the watershed. Ultimately, the plan is to identify over the next three years trade-offs and impacts and then make recommendations. Based on a question, Vernon indicated that they would gladly include in discussions those from Idaho and Wyoming.

VI. Water quality Committee report– John Mackey, Director of the Utah Division of Water Quality then reported for the Water Quality Committee which met the day before. He reported that the Committee had heard a report on Thallium contamination to beef from cattle in the Malad River Basin. A joint Idaho/Utah effort has analyzed Thallium levels and identified elevated Thallium discharging from a spring which is tributary to the Malad River. The states have been working on a tri-state water quality monitoring effort with a report to come out in the future. There have also

been efforts on identifying required mitigation associated with wetland filling associated with the Bear Lake Marina expansion. With higher flows this year, turbidity in Bear Lake was up. Also, Mill foil has spread in the Bear Lake area and there have been efforts on treatment. The committee also heard a report on a quagga mussel finding in the Snake River in the Twin Falls area and a major effort for treatment in a short period of time. Mackey reported on funds which have recently been awarded for a number of small studies around Bear Lake. He also reported on the Committee's continuing discussions on Harmful Algal Blooms. He discussed a recent treatment of Mantua Reservoir. The Water Quality Committee had reviewed USGS gages and the Committee's continued participation in the Commission's gage costs. They had also agreed to extend the water quality platforms on Bear Lake for another year. He also reported that his office will be involved in looking at water quality needs as part of the data gap analysis study discussed by Bingham. The Water Quality Committee had also heard a report from NRCS on using PL566 funding for watershed projects.

The Commission then took a short break.

VII. Records & Public Involvement Committee report – Commission Stoddard asked Matt Anders to give the report for the committee. The committee reviewed the stream gages in the basin. There was a specific discussion on efforts afoot to update the Federal Priority Streamgaging program. They also discussed an increase in costs in the streamgaging costs. Anders noted that a Cub River point of diversion is being moved which may necessitate changing the reporting of the Idaho/Utah state line gage. There was also a discussion about providing input to USGS on its new data dashboard. There had also been discussion on efforts for the next biennial report. There had also been a discussion on an Oneida to state line tour. Anders reported that the WIS has been removed from the USU website and there is a discussion on the preservation of the data.

VIII. Operations Committee report – Commissioner Holmgren then gave the Operations Committee report. The Committee had reviewed water distribution in each of the divisions. There was no Compact distribution in the Upper Division. In the Central Division, there was no interstate regulation during the first three months. In the Lower Division there were weekly phone calls to coordinate distribution and Bear Lake releases. The committee had discussed the status of PacifiCorp's pump-back storage projects. The committee had reviewed Article VI of the Compact and the definitions and limitations on storage. There was also a report on the Idaho Bear River Adjudication efforts as well as water applications of interest to the group. The discussion included a filing by Twin Lakes in Idaho, a Great Salt Lake lithium filing in Utah and a CCM trust in Wyoming.

Connely Baldwin then reported on PacifiCorp operations (Baldwin's handout is included as Appendix G). He reported that the Bear Lake elevation, with a net runoff of 512,000 acre-feet came up about 7.5 feet in 2023. The storage release from Bear Lake was about 47,000 acre-feet with only about 14,000 acre-feet used as irrigation delivery. The high flows also affected operations at Soda, Oneida and Cutler with the drafting of reservoirs to accommodate high inflows. Baldwin also reported on PacifiCorp's pump storage projects.

IX. Technical Advisory Committee report – Matt Anders made the report for the Technical Advisory Committee. He reported on the TAC's efforts to create a task list, with priorities, for the TAC (see Appendix H). Under "Priority Tasks" Anders briefly discussed each of the three identified tasks. He indicated that the Water Delivery Schedule No. 1 for the Lower Division has not been updated since 2004 and that there is a need to review this list and compare it to the Idaho and Utah accounting models and make sure that everything is on the same page. As to the On-going Taks, Anders reported that PacifiCorp data appears to confirm the current values in the normal operating range, but that

with the Idaho adjudication, additional information may be learned which could affect the table. He then reported that the post September 30 Lower Division water rights accounting deals with previous requests from the Bear River Migratory Bird Refuge to regulation through October. The Refuge did not make a request in 2023, but this is a task to be prepared for such request in the future should it come. Anders indicated that the remaining items under this category are on-going assignments to the TAC.

Anders then turned to the items under the Depletions Update category. He indicated that the listed items come from the recommendations section of the 2019 Depletion Update. He noted that depletions updates will occur every five years above Stewart Dam and 10 years below. He noted that the TAC has reported previously to the Commission on OpenET technology, and that the TAC will keep close to this matter and provide updates. He also highlighted the fact that the TAC had not yet found a common method for estimating depletions from supplemental water rights, but it will continue to work on it.

Anders indicated that the TAC continues to stay aware of environmental and watershed health matters which may affect operations of the river, the TAC is monitoring the progress of the Idaho adjudication as well as the Great Salt Lake Basin Integrated Plan.

X. Management committee report – Commissioner Gebhart reported for the Management Committee. He indicated that they discussed the need for a Secretary and also the rotation of committee chairs at the spring meeting. There was also a discussion on a potential 2024 tour and the Management Committee discussed and supports the TAC priority task list. The Management Committee had also discussed the future meeting schedule.

XI. Engineer-Manager's report – Barnett reported that he had no additional items which had not been covered under other agenda items.

XII. State Reports –

Idaho – Commission Weaver reported for Idaho. He expressed appreciation for the efforts of the TAC, noting hundreds of hours of technical work which is the heavy lifting for the Commissioner's efforts. He reported on the status of several adjudications in Idaho and expressed the desire to wrap up these foundational efforts during his tenure. He indicated that for the first time ever they have been distributing water in the Port Neuf River system, which is adjacent to the Bear River system, in common priority with the Snake River Basin. He reported that this has been challenging and noted that the administration has not included junior groundwater rights but that they are moving forward to include them in the next several years. This will extend up into the Bancroft area which is adjacent to the Bear River drainage. In January IDWR received a petition to designate a drilling area of concern in the Monsanto area due to the migration of Vanadium and Molybdenum in the groundwater. IDWR has held a hearing and will make a decision soon. Weaver reported that cloud seeding is an area of focus in Idaho right now. A recommendation for carrying out a cloud seeding program in the Bear River has been made to the Idaho Water Resources Board beginning in 2025 and focusing on airborne seeding operations above 6500 feet. Total initial investment would be $1.4 million and $850,000 ongoing costs.

Utah – Blake Bingham reported for Commissioner Wilhelmsen who needed to slip out to another meeting. He started by expressing envy for the rapid pace at which Idaho has been completing adjudications, noting that Utah has one adjudication which has been ongoing since 1936. He noted the data gap analysis and Great Salt Lake Basin Integrated Plan, both of which had been reported earlier in the meetings and indicated that they are important ongoing efforts in Utah. He indicated

several years previous they had received about $300,000 for measuring devices in the Great Salt Lake Basin and they have installed 29 devices, with four within the Bear River basin. Fifty more devices are now planned, eight of which will be in the basin. He noted that one of the devices is on the L-Line Canal which they installed anticipating the desire to shepherd water to the Great Salt Lake. Bingham indicated that the Governor's Proclamation on appropriations in the Great Salt Lake Basin is still in effect and that the State Engineer will be making a report, with recommendations, to the Governor that month.

Bingham reported that on Mill Creek, Utah has installed three measuring devices, and they are analyzing the data and will be reaching out to Wyoming on their findings. Bingham also reported that the Utah Legislature has allocated $200 million for ag water optimization in the State with a fairly radical change in Utah water law which allows for the recognition of saved water, in a change application. He also reported that the Governor has appointed a Great Salt Lake Commissioner to coordinate efforts on the Great Salt Lake. He also discussed the efforts of the Great Salt Lake Strike Team which is focusing on potential policy change recommendations, and he reported that a public trust lawsuit has been filed on the Great Salt Lake. The named defendants are the Department of Natural Resources, the Division of Water Rights, and the Division of Forestry, Fire and State Lands. A petition has been filed to move the case to a water judge. Bingham reported that the Utah Waterways has been organized as a public and private collaboration effort as a one-stop for water education and conservation. They've released a state-wide marketing strategies report giving water users a hub to identify ways to market water to meet needs around the state. He also noted that the Utah Division of Water Resources was awarded the WaterSense Excellence Award from EPA for their efforts to promote water efficiency. Lastly, Bingham reported on a cloud seeding symposium which was recently held.

Wyoming – Commission Gebhart reported that the portion of the Colorado River in his state has garnered a lot of attention. He indicated that some of the Wyoming water trends are where users are seeking to secure their water rights or create additional supply or backup supply for their rights which are at risk under a curtailment or administration. He reported that there is a lot of interest in some of their tools that they have for temporarily shuttling water rights and water uses including exchange petitions as well as temporary water use agreements. The Wyoming Legislature is reanalyzing the pertinent statutes to see if they need updating to create more certainty. They have been reviewing options for water banking as an additional tool. Wyoming is also looking at rehabilitating or replacing their e-Permit system tool for water rights.

XIII. Other – Chair Williams then turned the time over to the Bear River Water Users Association. Emily Lewis reported for the association that they are in ongoing negotiations with PacifiCorp on pump back storage options. She also encouraged participation between the states on the development of Bear River models. There were no other stakeholders who desired to report to the Commission.

XIV. Next Commission meeting – Chairwoman Williams noted that the next Commission meeting was set for the Tuesday, April 16, 2024. The meeting is to be held in Salt Lake City, Utah. The meeting was then adjourned at about 4:30 p.m.

ATTENDANCE ROSTER

BEAR RIVER COMMISSION
REGULAR MEETING

Salt Lake City, Utah
November 14, 2023

IDAHO COMMISSIONERS
Mat Weaver
Kerry Romrell
Curtis Stoddard

UTAH COMMISSIONERS
Charles Holmgren
Bart Argyle
Teresa Wilhelmsen

WYOMING COMMISSIONERS
Brandon Gebhart
Adrian Hunolt
Tim Teichert

ENGINEER-MANAGER & STAFF
Don Barnett
Jacob Barnett

FEDERAL CHAIR
Jody Williams

OTHERS IN ATTENDANCE

IDAHO
Matt Anders, Department of Water Resources
James Cefalo, Department of Water Resources
Christopher Holmes, Department of Water Resources
Mark Ipsen, Alternate Commissioner
Josh Hanks, Bear River Watermaster

UTAH
Candice Hasenyager, Water Resources
Scott McGettigan, Water Resources
Blake Bingham, Deputy State Engineer
Skyler Buck, Division of Water Rights
John Mackey, Division of Water Quality
Ryan Merrill, Alternate Commissioner Lower
Clint Ballard, Lower Bear River
Laura Vernon, Division of Water Resources

WYOMING
Nick Dayton, State Engineer's Office
Trevor Hurd, State Engineer's Office
Kevin Payne, State Engineer's Office
Mel Fegler, State Engineer's Office

OTHERS
Connely Baldwin, PacifiCorp Energy
Buffi Morris, PacifiCorp Energy
Nathan Daugs, Cache Water District
Claudia and David Cottle, Bear Lake Watch
Brady Long, Bear Lake Watch
Emily Lewis, Bear River Water Users Association
Jim DeRito, Trout Unlimited
Ryan Rowland, USGS
Lynn de Freitas, Friends of Great Salt Lake
Randy Udy, Bear River Canal
Trevor Nielson, Bear River Canal
Mike Dunphy, U.S. Fish and Wildlife
Dwight Slaugh, USBR
Jeff DenBleyker, Jacobs Engineering

BEAR RIVER COMMISSION
ANNUAL MEETINGS

November 13 - 14, 2023

COMMISSION AND ASSOCIATED MEETINGS

November 13

9:00 a.m.	Water Quality Committee Meeting Board Room – Utah Division of Water Quality	Nelson

November 14

All meetings on November 14th will be held in person in Room 1040 of the Utah Department of Natural Resources Building (1594 West North Temple Street, Salt Lake City, UT).

9:00 a.m.	Records & Public Involvement Committee Meeting	Stoddard
10:00 a.m.	Operations Committee Meeting	Holmgren
11:30 a.m.	Informal Meeting of Commission	Barnett
11:35 a.m.	State Caucuses	Weaver/Wilhelmsen/Gebhart
1:30 p.m.	Commission Meeting	Williams

PROPOSED AGENDA
REGULAR COMMISSION MEETING
November 14, 2023

Convene Meeting: 1:30 p.m. **Chair:** Jody Williams

I.	Call to order	Williams
	A. Introduction of New Commissioners	
	B. Resolutions of Appreciation	
	C. Welcome of guests and overview of meeting	
	D. Approval of agenda	
II.	Approval of minutes of last Commission meeting (April 18, 2023)	Williams
III.	Commission Business	
	A. Election of Secretary	Williams
	B. Report of Treasurer	Staker
	1. 2023 budget closeout	
	2. 2024 expenditures to date	
IV.	Summary of 2023 Water Supply	Barnett
V.	Great Salt Lake	
	A. Data Gap Analysis	Bingham
	B. Basin Integrated Plan	Vernon
VI.	Water Quality Committee report	Mackey
VII.	Records & Public Involvement Committee report	Stoddard
VIII.	Operations Committee report	Holmgren
	A. Committee meeting	
	B. 2023 Lower Division operations	Baldwin
	C. PacifiCorp operations	Baldwin
IX.	Technical Advisory Committee report	Anders
X.	Management Committee report	Gebhart
XI.	Engineer-Manager's report	Barnett
XII.	State reports	
	A. Idaho	Weaver
	B. Utah	Bingham
	C. Wyoming	Gebhart
XIII.	Other	Williams
XIV.	Next Commission meeting (Tuesday, April 16, 2024, location?)	Williams

Anticipated adjournment: 4:30 p.m.

BEAR RIVER COMMISSION

STATEMENT OF INCOME AND EXPENDITURES
FY2023

FOR THE PERIOD OF July 1, 2022 to June 30, 2023

INCOME	CASH ON HAND	OTHER INCOME	FROM STATES	INCOME
Cash Balance 07-01-22	154,815.58			154,815.58
State of Idaho				
State of Utah				
State of Wyoming			45,000.00	45,000.00
Water Quality		6,469.34		6,469.34
Interest on Savings		4,743.76		4,743.76
Interest on Checking		99.81		99.81
Checking Service Charge		(1,051.38)		(1,051.38)
TOTAL INCOME TO 30-Jun-23	154,815.58	10,261.53	45,000.00	210,077.11

DEDUCT OPERATING EXPENSES

		APPROVED BUDGET	UNEXPENDED BALANCE	EXPENDITURES TO DATE
USGS Stream Gages Contract		47,920.00	-	47,920.00
	SUBTOTAL	47,920.00	-	47,920.00
EXPENDED THROUGH COMMISSION				
Personal Services	BIWC	76,821.00	-	76,821.00
Travel (Eng-Mgr)		1,200.00	(1,520.36)	2,720.36
Office Expenses		1,600.00	281.45	1,318.55
Printing Biennial Report		1,000.00	1,000.00	-
Treasurer Bond & Audit		1,400.00	1,300.00	100.00
Printing		1,600.00	10.60	1,589.40
Realtime Web Hosting		8,400.00	1,179.01	7,220.99
Clerical		10,149.00	8,068.25	2,080.75
Tour		2,500.00	274.79	2,225.21
Contingency		2,000.00	2,000.00	-
	SUBTOTAL	106,670.00	12,593.74	94,076.26
TOTAL EXPENSES		154,590.00	12,593.74	141,996.26
CASH BALANCE AS OF 06/30/2023				68,080.85

BEAR RIVER COMMISSION

DETAILS OF EXPENDITURES

FOR PERIOD ENDING June 30, 2023

937	USGS	47,920.00
938	Stone Fly	3,600.00
941	BIWC	6,401.75
942	BIWC	6,514.55
943	BIWC	6,476.49
944	BIWC	32,855.56
945	Stone Fly	3,620.99
946	CNA Surety	100.00
948	BIWC	28,027.53
949	BIWC	6,479.39

TOTAL EXPENDITURES	141,996.26

BANK RECONCILIATION

Cash in Bank per Statement 06/30/23	(30,022.86)
Plus: Intransit Deposits	
Less: Outstanding Checks	
Total Cash in Bank	(30,022.86)
Plus: Savings Account-Utah State Treasurer	98,103.71
CASH BALANCE AS OF 06/30/23	68,080.85

BEAR RIVER COMMISSION

STATEMENT OF INCOME AND EXPENDITURES
FY2024

FOR THE PERIOD OF July 1, 2023 to November 7, 2023

INCOME	CASH ON HAND	OTHER INCOME	FROM STATES	INCOME
Cash Balance 07-01-23	68,080.85			68,080.85
State of Idaho			90,000.00	90,000.00
State of Utah			90,000.00	90,000.00
State of Wyoming			45,000.00	45,000.00
Water Quality				3,274.67
Interest on Savings		3,051.08		3,051.08
Interest on Checking		4.63		4.63
Checking Service Charge		(120.71)		(120.71)
TOTAL INCOME TO 7-Nov-23	68,080.85	2,935.00	225,000.00	299,290.52

DEDUCT OPERATING EXPENSES

		APPROVED BUDGET	UNEXPENDED BALANCE	EXPENDITURES TO DATE
USGS Stream Gages Contract		49,120.00	-	49,120.00
	SUBTOTAL	49,120.00	-	49,120.00
EXPENDED THROUGH COMMISSION				
Personal Services	BIWC	80,662.00	60,498.00	20,164.00
Travel (Eng-Mgr)		1,200.00	1,093.60	106.40
Office Expenses		1,600.00	1,584.60	15.40
Printing Biennial Report		1,000.00	1,000.00	
Treasurer Bond & Audit		1,400.00	1,400.00	
Printing		1,600.00	1,599.60	0.40
Realtime Web Hosting		8,400.00	4,800.00	3,600.00
Clerical		10,859.00	10,808.25	50.75
Tour		2,500.00	2,500.00	
Contingency		2,000.00	2,000.00	
	SUBTOTAL	111,221.00	87,284.05	23,936.95
TOTAL EXPENSES		160,341.00	87,284.05	73,056.95
CASH BALANCE AS OF 11/07/23				226,233.57

BEAR RIVER COMMISSION

DETAILS OF EXPENDITURES

FOR PERIOD ENDING November 7, 2023

947	USGS	49,120.00
949	VOID	
950	StoneFly	1,800.00
951	BIWC	20,471.95
952	StoneFly	1,800.00

TOTAL EXPENDITURES	73,191.95

BANK RECONCILIATION

Cash in Bank per Statement 11/07/23	(3,195.89)
Plus: Intransit Deposits	
Less: Outstanding Checks	
Total Cash in Bank	(3,195.89)
Plus: Savings Account-Utah State Treasurer	229,429.46
CASH BALANCE AS OF 11/07/23	226,233.57

Amazing 2023's Water Supply

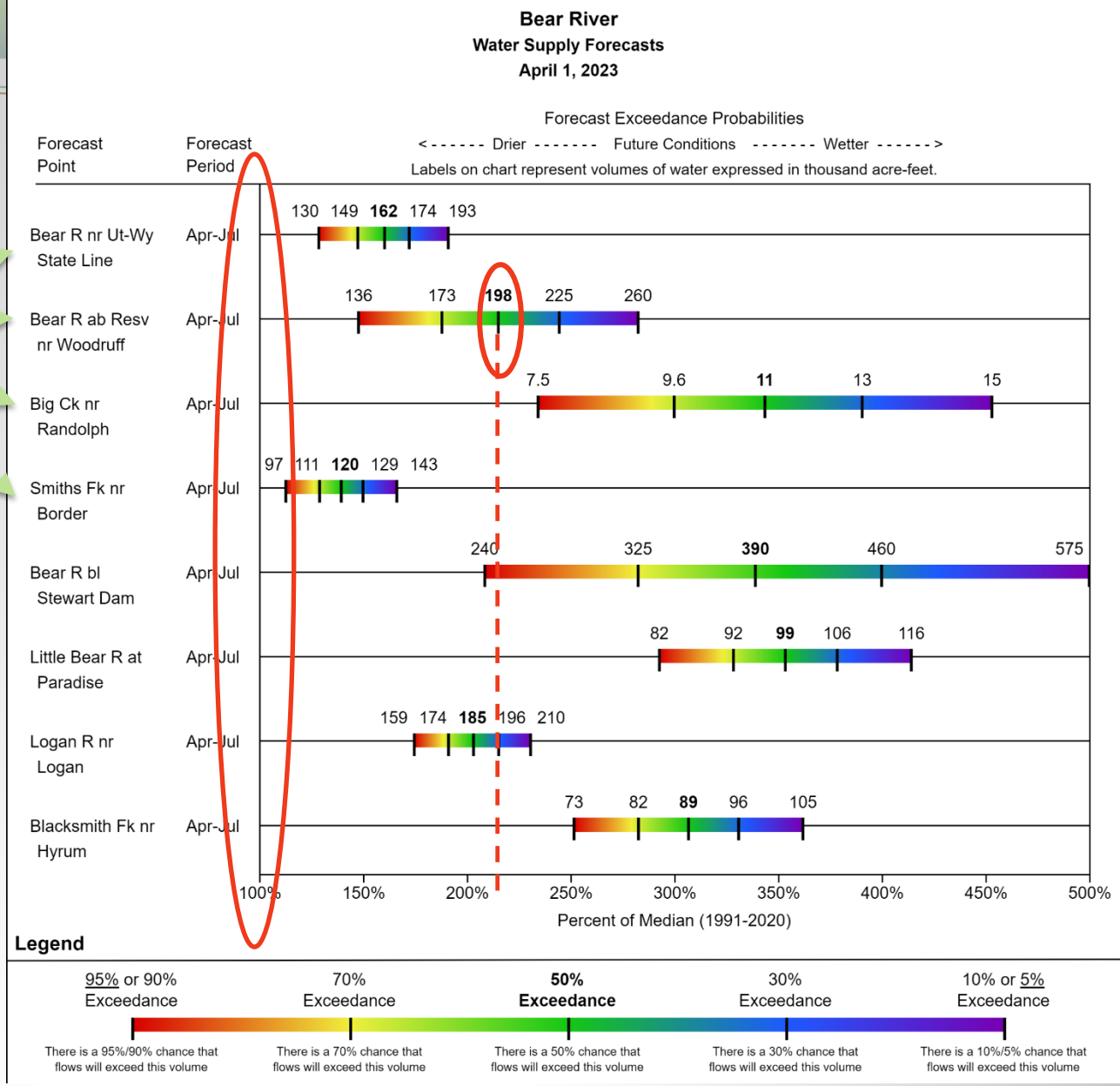
Bear River Commission
November 14, 2023
Salt Lake City, UT

BEAR RIVER COMMISSION

Streamflow forecasts for region

Forecast locations

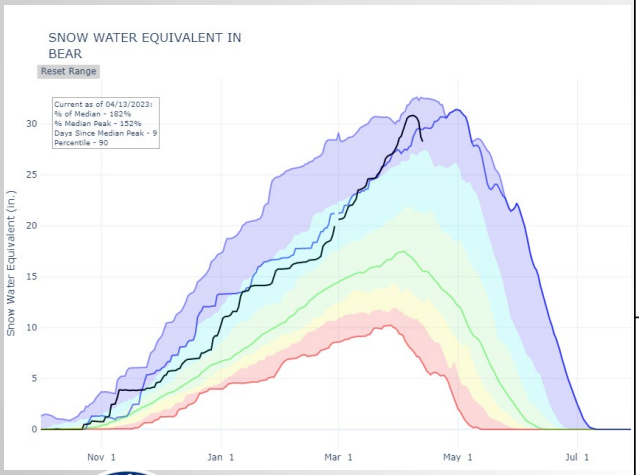
- Forecast values = #'s (in KAF), with 50% exceedance (most likely) in bold
- % normal values on x-axis
- Basin-wide: 230% of normal
- Individual forecast points range from 140% to 354% of normal



BEAR RIVER COMMISSION

Streamflow forecasts for region

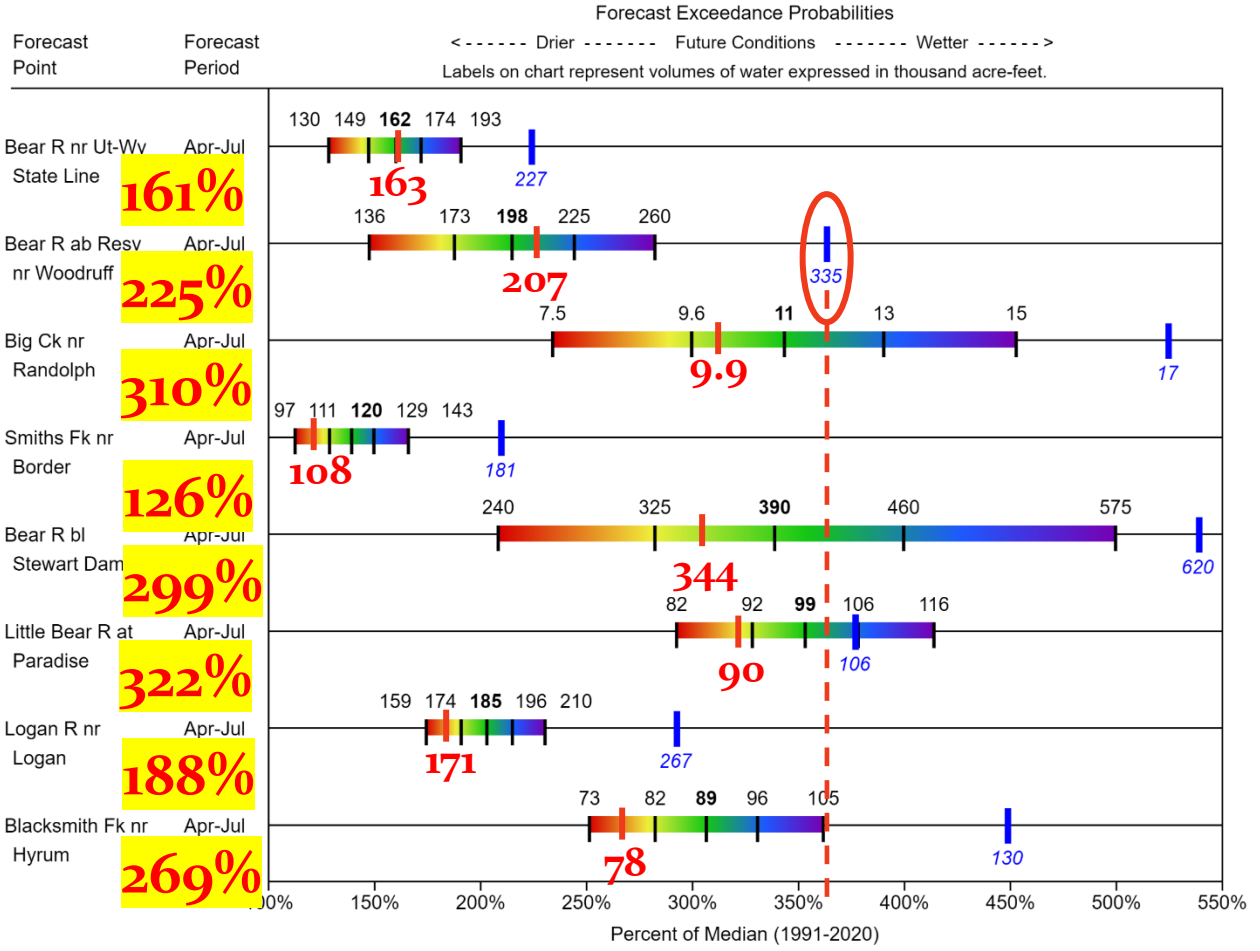
- Record maximum shown with dark blue lines
- Unlikely to break records at most locations, unless heavy snowfall is received through late spring (like 2011)



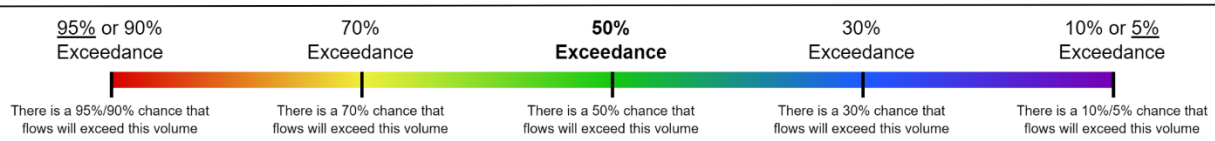
BEAR RIVER COMMISSION

Bear River
Water Supply Forecasts
April 1, 2023

Forecast Exceedance Probabilities



Legend



When selected, the following historic streamflow values and statistics will be shown.

Period of Record Minimum Streamflow KAF (Year)
1991-2020 Normal Streamflow KAF
Observed Streamflow KAF
Period of Record Maximum Streamflow KAF (Year)

Some forecasts may be for volumes that are regulated or influenced by diversions and water management.

Comparison of 2023 Monthly Precipitation in the Bear River Basin

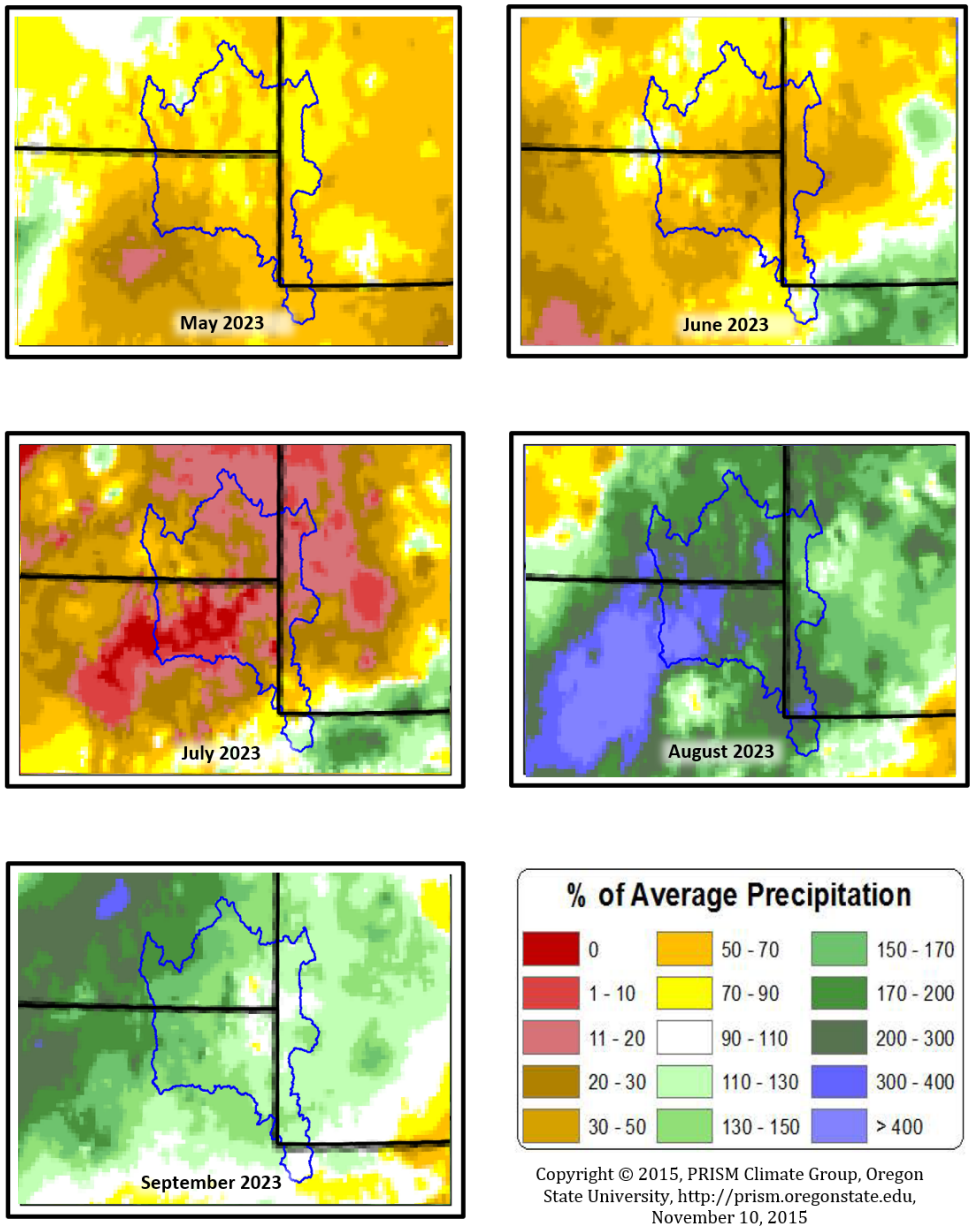
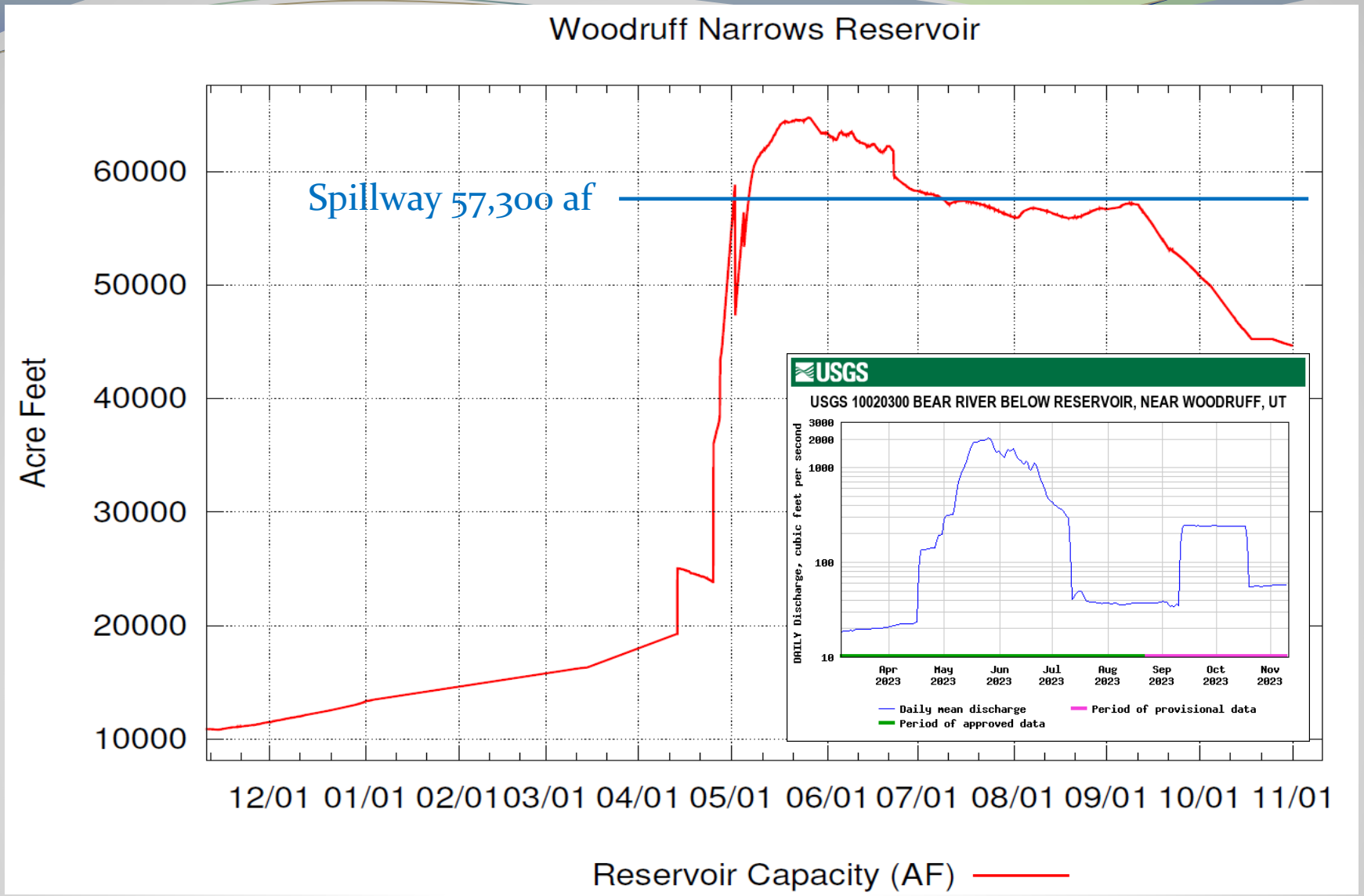
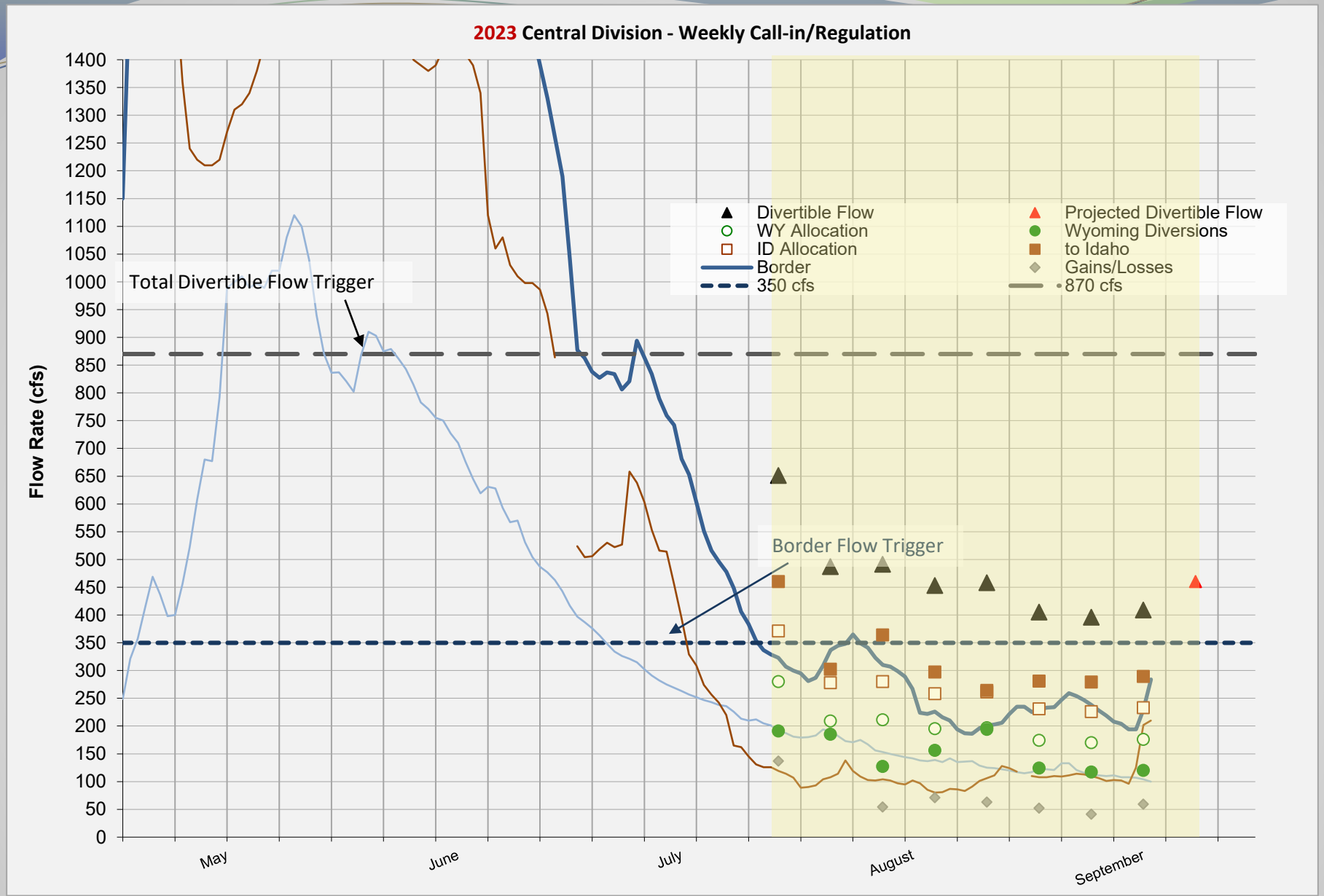


Figure 2023.1.b

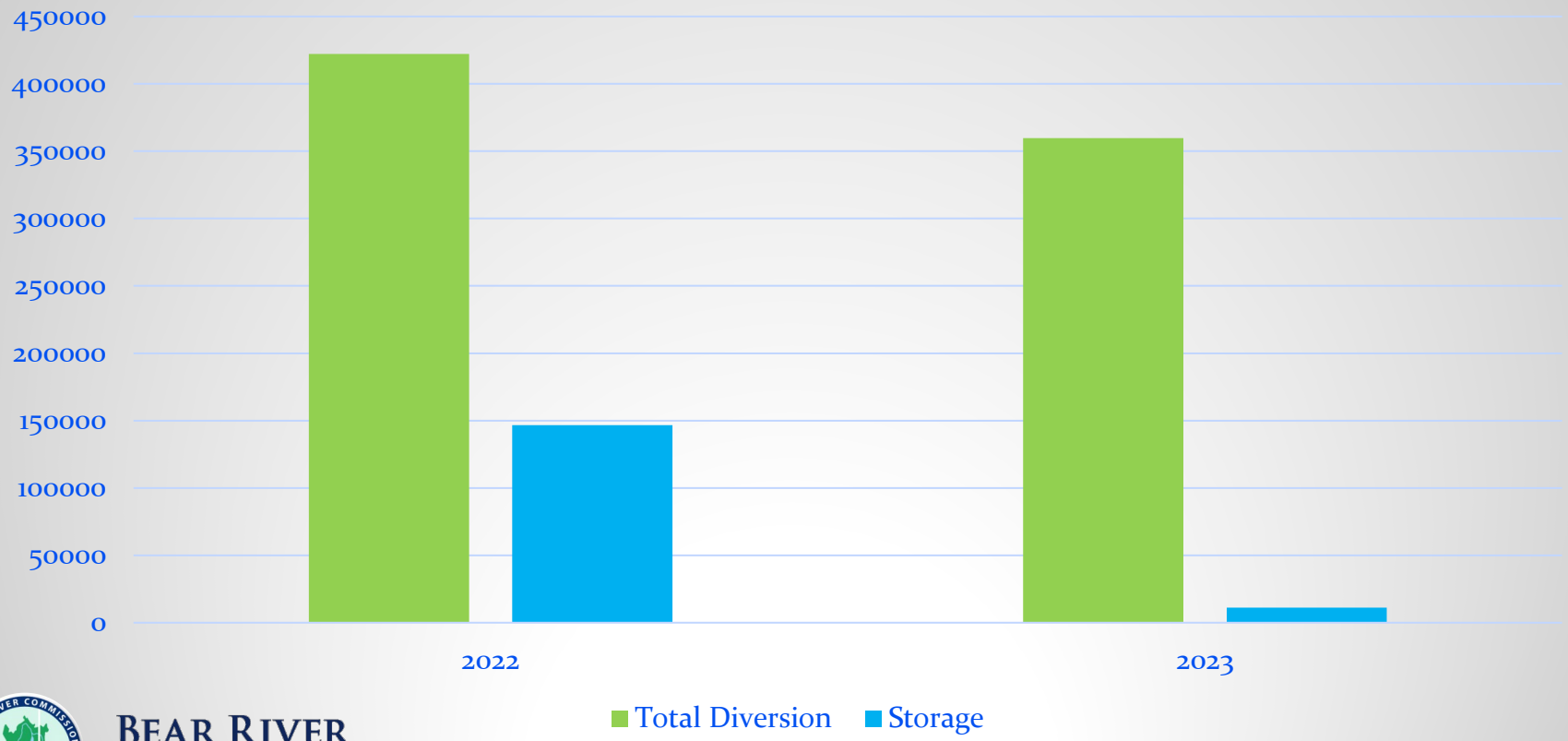


BEAR RIVER COMMISSION


2023 Central Division - Weekly Call-in/Regulation
Flow Rate (cfs)
1400
1350
1300
1250
1200
1150
1100
1050
1000
950
900
850
800
750
700
650
600
550
500
450
400
350
300
250
200
150
100
50
0
May
June
July
August
September
Total Divertible Flow Trigger
Border Flow Trigger
Divertible Flow
WY Allocation
ID Allocation
Border
350 cfs
Projected Divertible Flow
Wyoming Diversions
to Idaho
Gains/Losses
870 cfs

COMMISSION

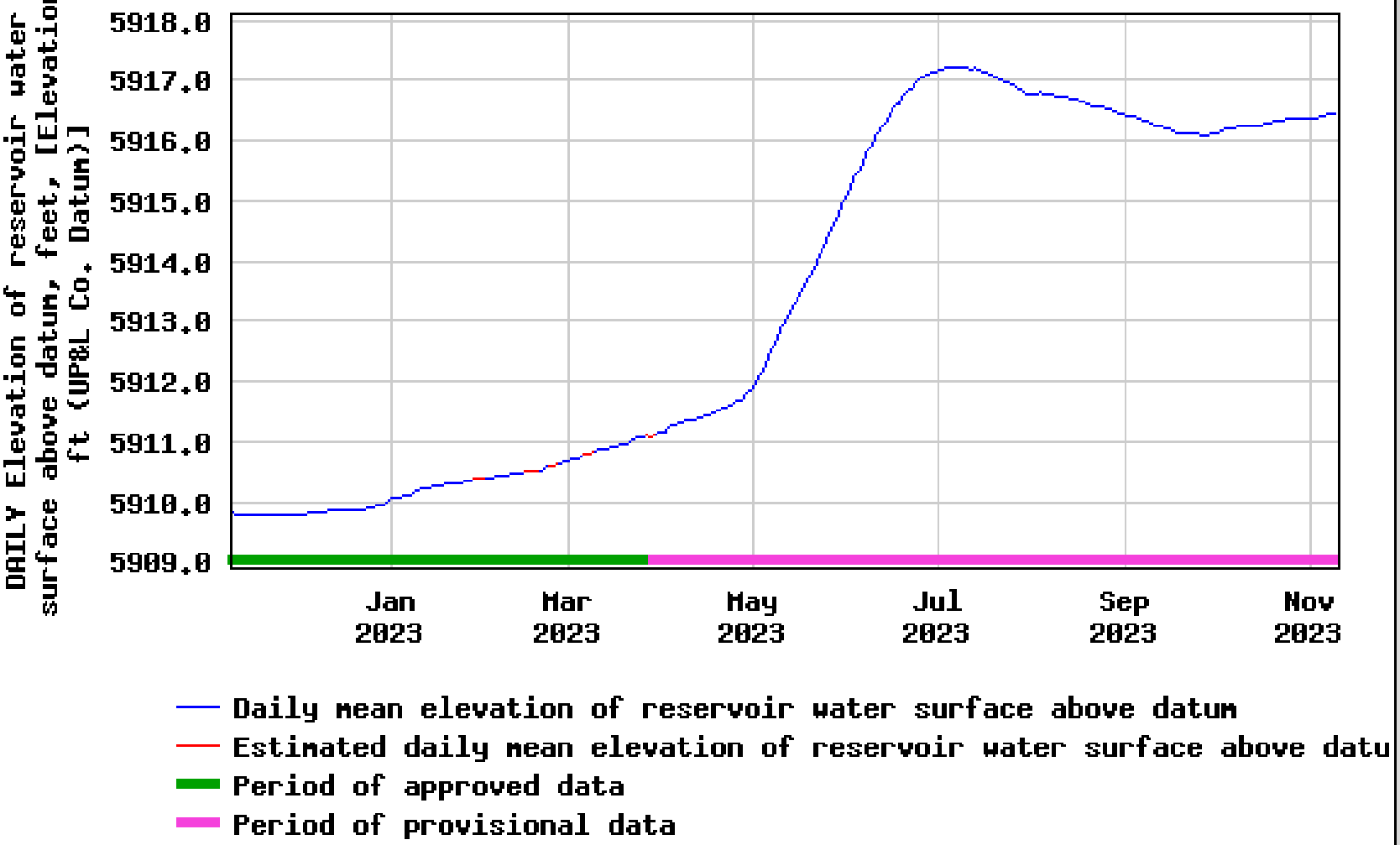
Lower Division Water Usage - AF



BEAR RIVER COMMISSION

USGS

USGS 10055000 BEAR LAKE AT STATE PARK MARINA NR GARDEN CITY, UT



BEAR RIVER COMMISSION

Stream and Diversion Measurement "Gap Analysis"

Bear River Commission Meeting
November 14, 2023

UtahState University

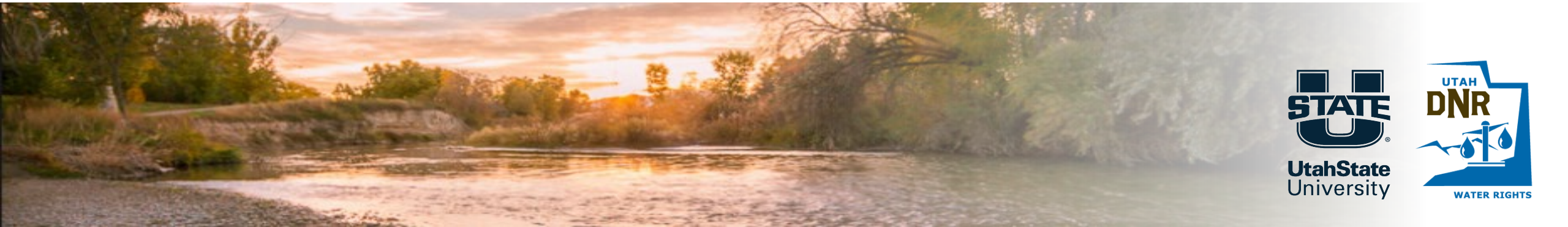
UTAH DNR WATER RIGHTS

Why are we conducting the Gap Analysis?

There are two main reasons that this Gap Analysis is being conducted:

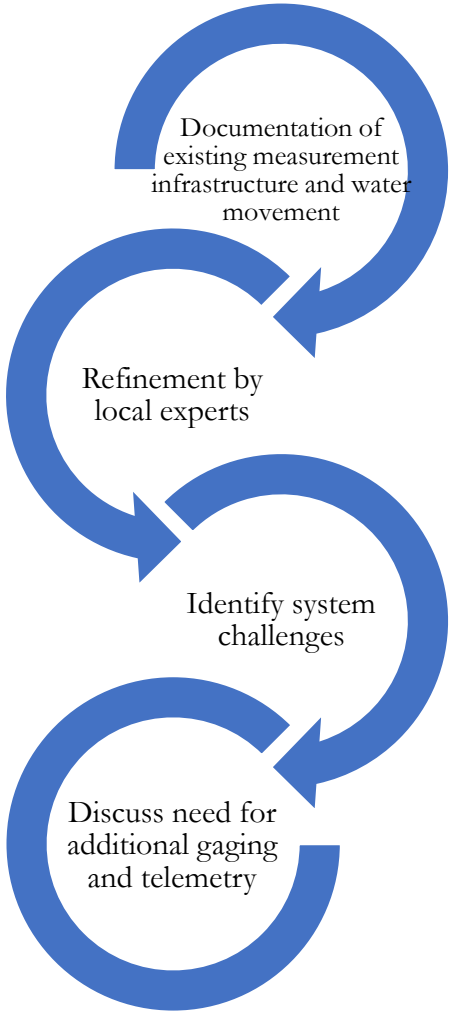
- **Water Data Access and Transparency**. Additional measurement and gaging gives broader access to water data and facilitates greater stakeholder transparency by providing more accurate and timely information about diversions, stream flows, and other hydrologic conditions.

- **Enhanced Water Management and Distribution.** It is critical to have sufficient data that enables the State Engineer to make informed decisions, facilitates flexibility for users to change elements of their water rights, and generally promotes wise stewardship of Utah's water resources.



Gap Analysis Deliverables

1. Evaluate existing stream and diversion measurement infrastructure systems and document water movement into and out of primary river systems.
2. Understand the measurement gaps local stakeholders identify in the existing water distribution systems and identify where new/updated measurement infrastructure might be desired.
3. Create a prioritized list of new/updated measurement infrastructure that would best serve Utah citizens by aiding in water distribution, management, planning, and research.



Scope: 20 Primary Systems

Bear River Watershed

- Logan
- Little Bear
- Blacksmith Fork
- Summit Creek
- Upper Bear-Randolph
- Cub
- Bear River Above Cutler
- Bear River Below Cutler

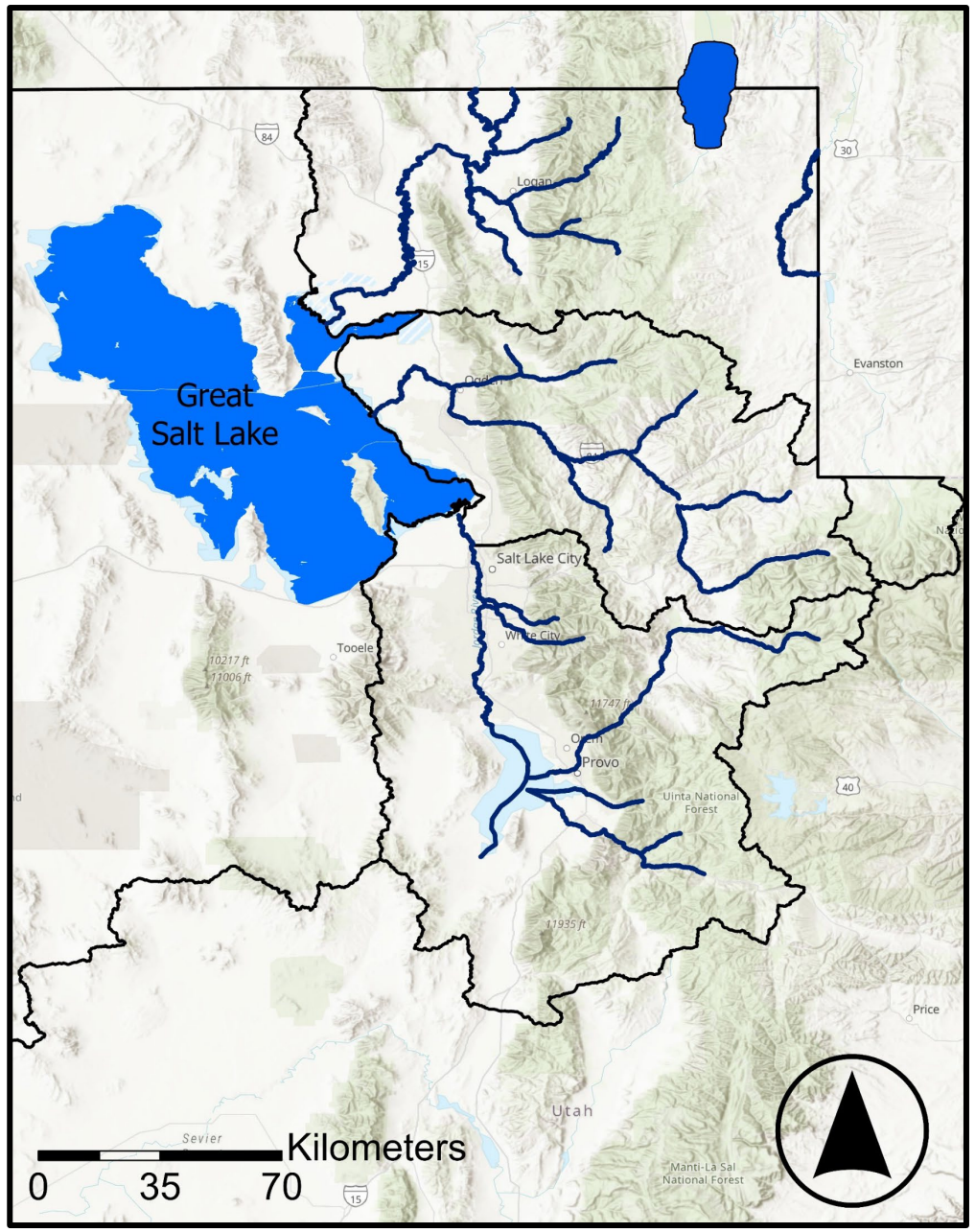
Weber River Watershed

- Chalk Creek
- Lost Creek
- East Canyon Creek
- Ogden
- Weber

Jordan River Watershed

- Little Cottonwood
- Big Cottonwood
- Spanish Fork
- Hobble Creek
- Provo
- Jordan

Great Salt Lake



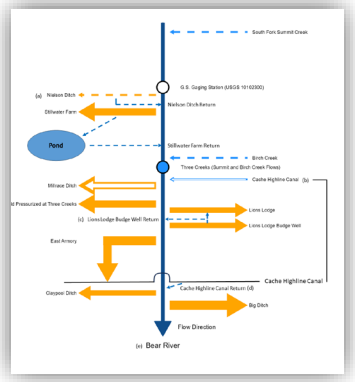
Process Overview

Gather information & shared understanding of Primary Systems with local experts

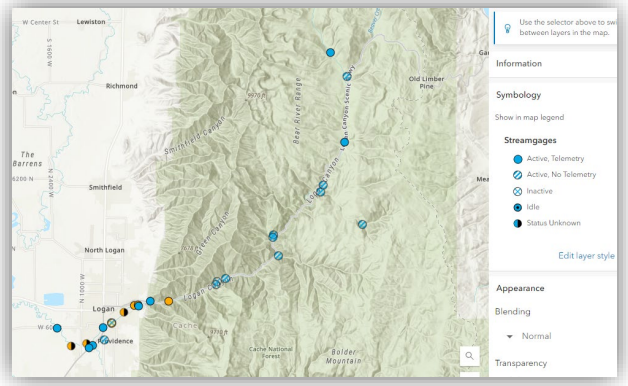
Review materials for accuracy and edit

Identify system challenges in relation to measurement infrastructure (or lack there-of)

Identify areas where additional gaging or upgrades could address identified system challenges*



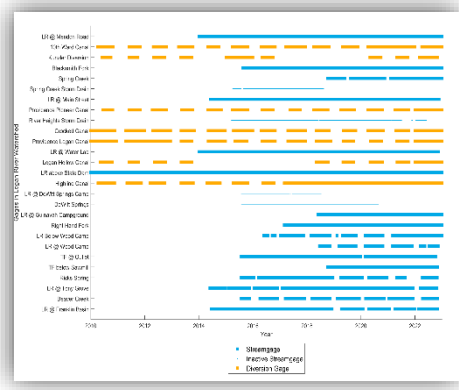
Flow Balance Diagram



ArcOnline Map

Diversion Questionnaire	FID			
Common or local name of the gaging / measurement station?	NAME	LOGAN AND NORTHERN AND LOGAN HOLLOW (BELOW FIRST DAM)	CACHE HIGHLINE CANAL (USGS)	PROVIDENCE-LOGAN IRRIGATION COMPANY
Other names or identifiers for the station?	NAME_ALT	Logan Island Pipeline/Logan Hollow	USGS gage 10108400	
Name of the diversion/canal being measured?	ID	Logan and Northern and Logan Hollow	Cache Highline Canal	Providence Logan Canal
Division of Water Rights Station_ID? (if none leave blank)	DWRI_ID	17	9840	18
What is the approximate distance (in feet) between the diversion point on the stream and the gaging/measurement station on the canal/diversion?	DIST	2000	500	900
Between the diversion point on the stream and the gaging/measurement station, is the diversion/canal lined, unlined, or piped?	LINE_ST	Piped	Piped	Unlined
Is the entire diversion/canal system following this station mostly lined, unlined or piped?	LINE			
If lined or piped, what year did this occur?	LINE_YR			
Northing of station? (Please provide as UTM Zone 12 NAD83)	NOR	4621224.064	4621540.08	4621159.063
Easting of station? (Please provide as UTM Zone 12 NAD83)	EAST	433812.223	436638.228	433440.223
Owner of the gaging or measurement station?	OWN	Cache Highline Irrigation Company	USGS	
Operator / maintenance entity responsible for maintaining the gaging or measurement station (if different from the owner)?	MAIN			
Type and description of current measurement device or gage (Pressure transducer/Bubbler/Parshall flume/Ultrasonic Flow Meter /Propeller Meter/etc...)?	MEAS	Ultrasonic Flow Meter		3ft Parshall Flume with Encoder

Gaging Information Worksheet



Gantt Chart

Process Overview

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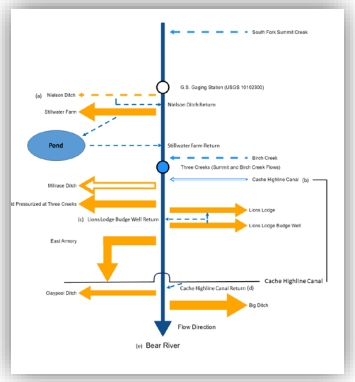
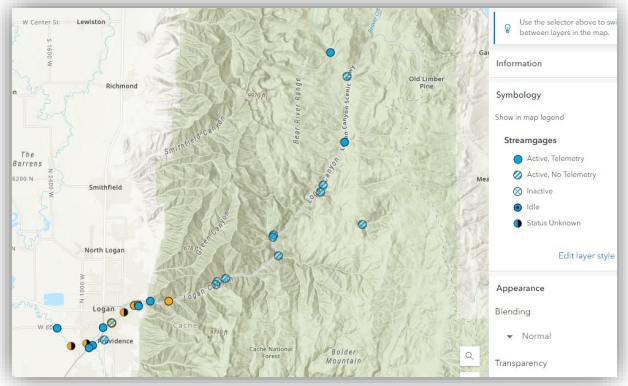


Flow Balance Diagram



ArcOnline Map

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Operator / maintenance entity responsible for maintaining the gaging or measurement station (if different from the owner)?	MAIN			
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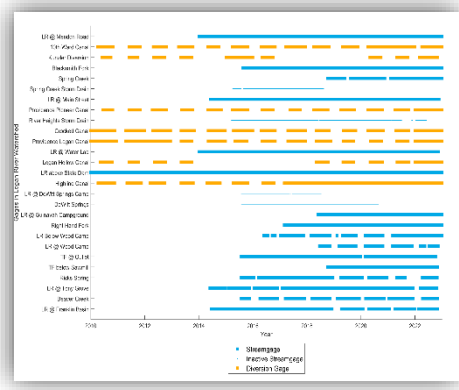
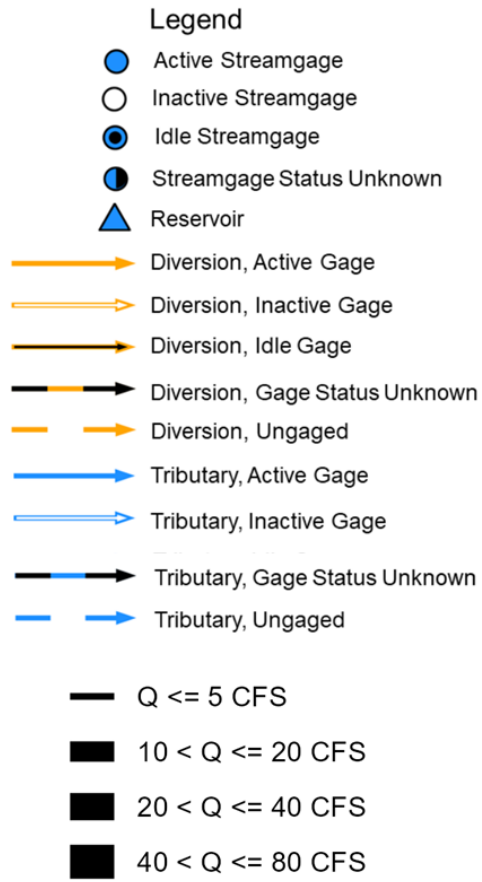
Gaging Information Worksheet



Gantt Chart

DWRi Gap Analysis DRAFT
Summit Creek
Flow Balance Diagram



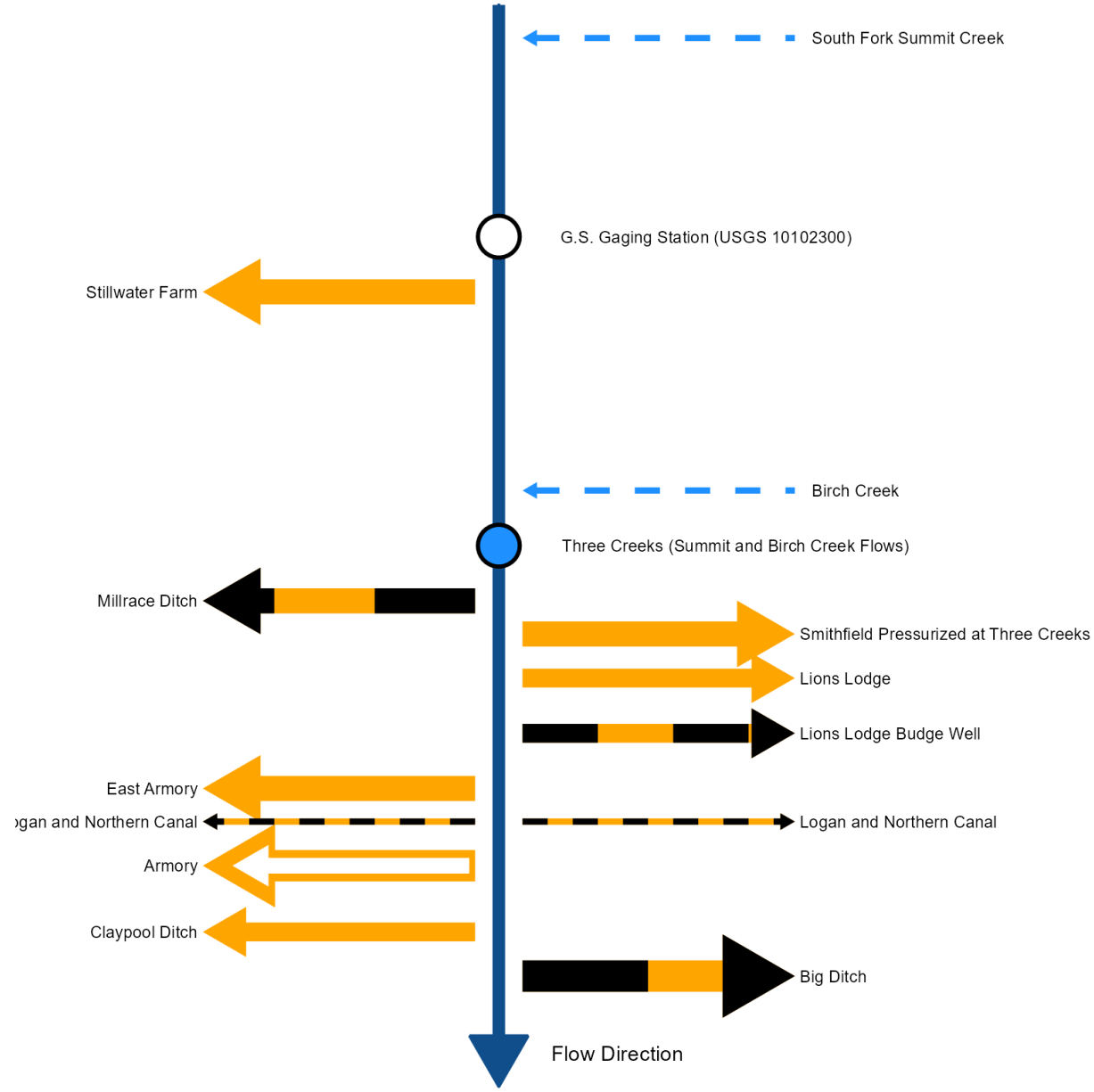


Figure Description:

Flow Balance Diagram of Summit Creek.
Diversion arrows are sized to represent the maximum measured flow for the full period of record. Tributary arrows are sized to represent the median flow in July and August for the full period of record. Tributary arrow reflects status of gage nearest to the confluence with the mainstem. Tribuaries with asterisks (*) indicate nearest stream gage is greater than 1 km from confluence with mainstem.

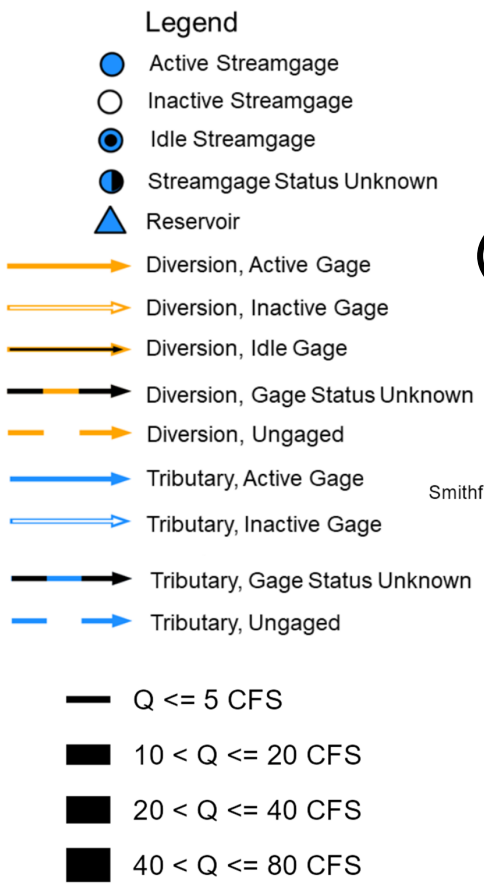
DWRi Gap Analysis DRAFT
Summit Creek
Flow Balance Diagram

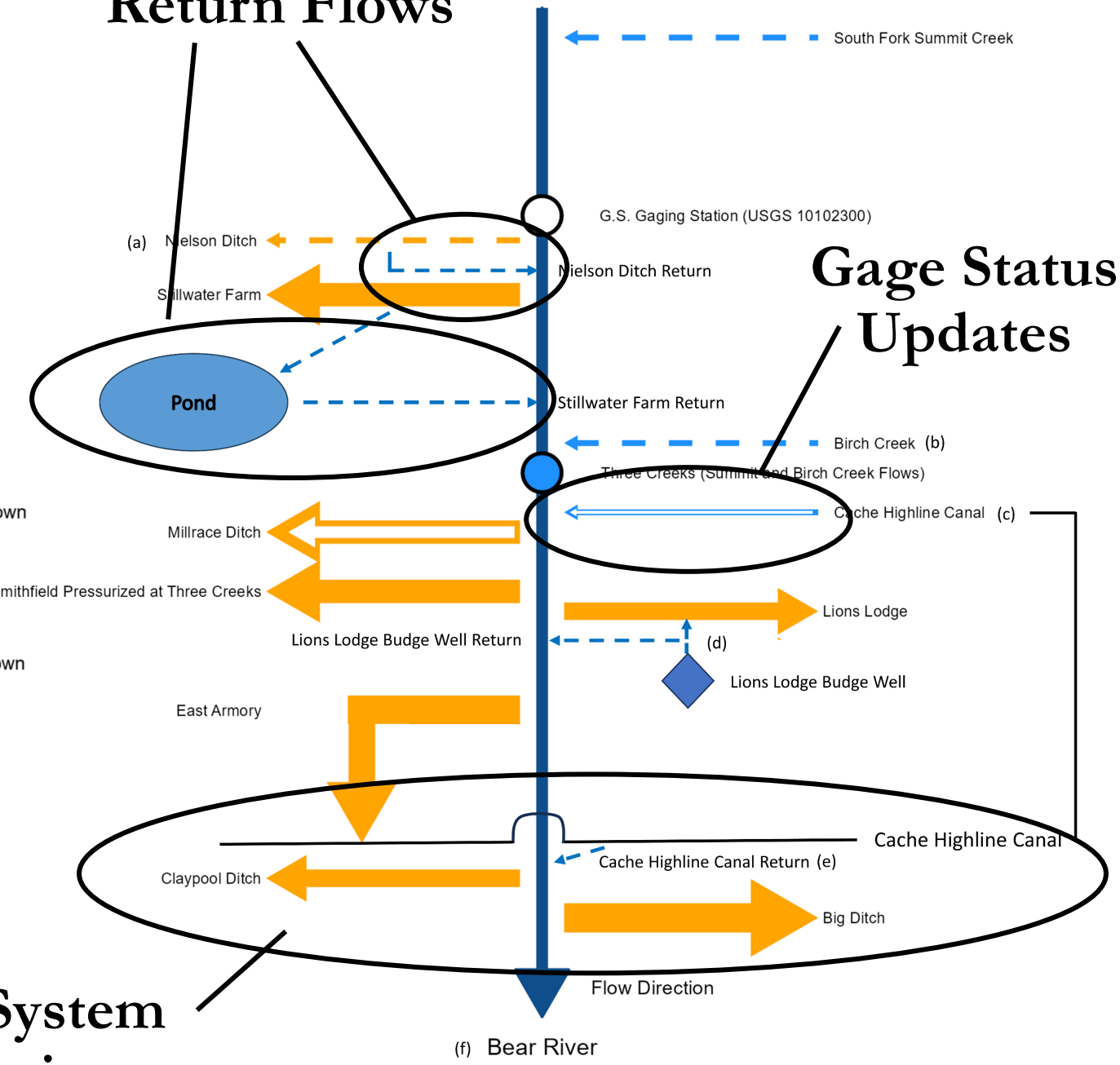
Local Expert Insights

Return Flows

Gage Status Updates

Unique System Mechanics





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a) Nielson ditch is only active during high water. River Commissioner estimates a maximum diversion of 3 CFS.
b) In very dry years, Birch Creek doesn't run. When it does, it is usually dry by June or July.
c) Gage closest to canal confluence with mainstem (USGS 10103010) is inactive, but there is a DWRi gage farther up the canal that is active.
d) Lion's Lodge Budge Well is a source of imported water and generally only feeds Lion's Lodge diversion. It can occasionally contribute to the mainstem during flood/high runoff events.
e) Cache Highline Canal contributes to the mainstem during flood/high runoff events.
f) Summit Creek should terminate as a tributary to the Bear River but hasn't in recent years. This is attributed to major groundwater losses below Big Ditch.

Use the selector above to swi
between layers in the map.

Information

Symbology

Show in map legend

Streamgages

- Active, Telemetry
- Active, No Telemetry
- Inactive
- Idle
- Status Unknown

Edit layer style

Appearance

Blending

Normal

Transparency

	Diversion Questionnaire	FID			
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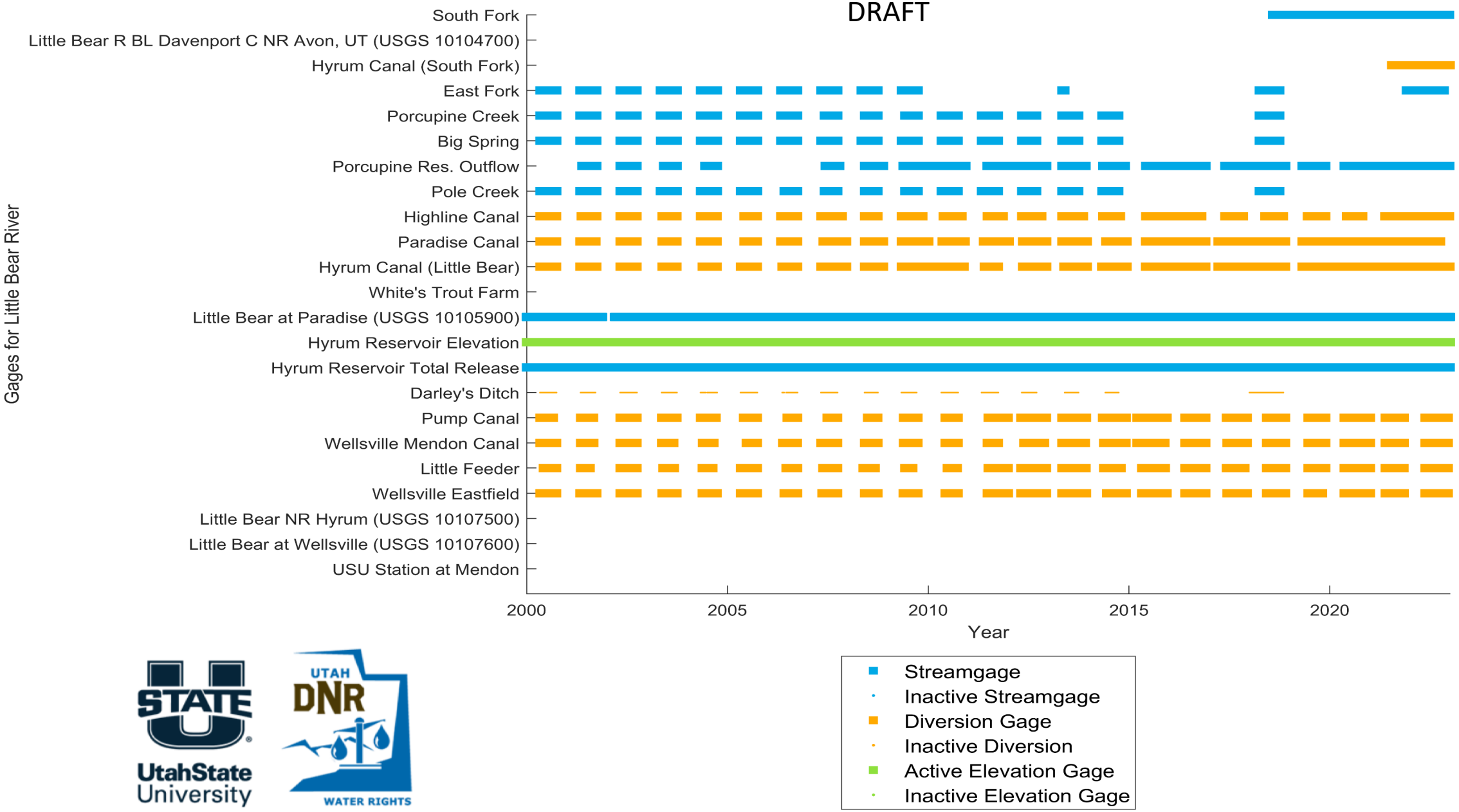
DRAFT



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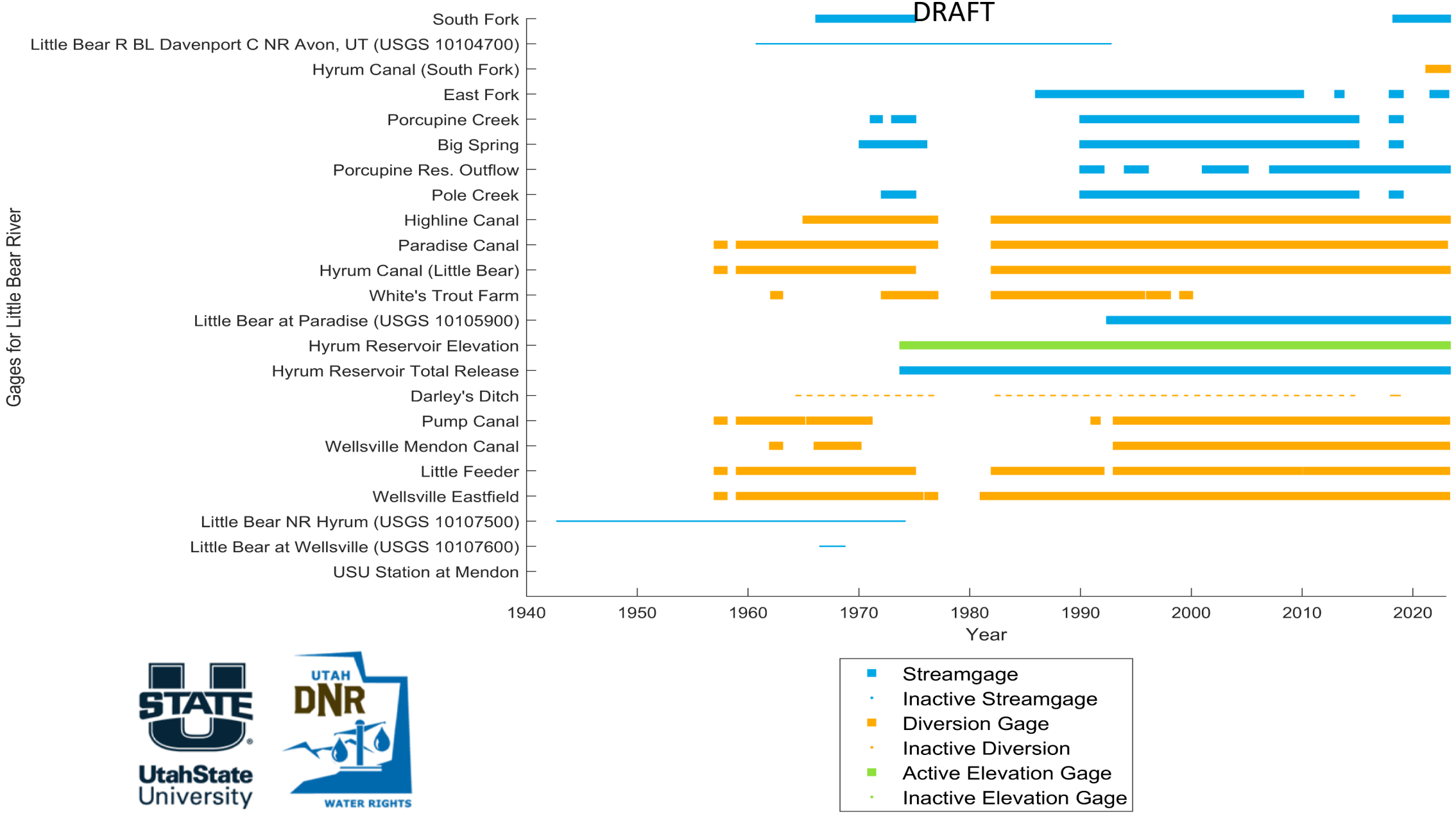
DRAFT



UtahState University

UTAH DNR WATER RIGHTS

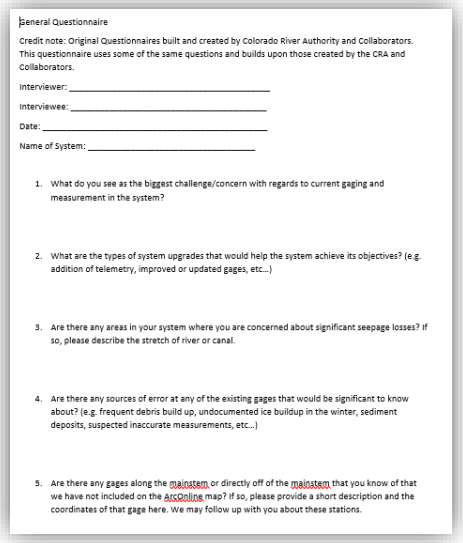
Process Overview

Gather information & shared understanding of Primary Systems with local experts

Review materials for accuracy and edit

Discuss system challenges in relation to measurement infrastructure (or lack there-of)

Identify areas where additional gaging or upgrades could address identified system challenges*



General Questionnaire

Credit note: Original Questionnaires built and created by Colorado River Authority and Collaborators. This questionnaire uses some of the same questions and builds upon those created by the CRA and Collaborators.

Interviewer: _____

Interviewee: _____

Date: _____

Name of System: _____

1. What do you see as the biggest challenge/concern with regards to current gaging and measurement in the system?
2. What are the types of system upgrades that would help the system achieve its objectives? (e.g. addition of telemetry, improved or updated gages, etc...)
3. Are there any areas in your system where you are concerned about significant seepage losses? If so, please describe the stretch of river or canal.
4. Are there any sources of error at any of the existing gages that would be significant to know about? (e.g. frequent debris build up, undocumented ice buildup in the winter, sediment deposits, suspected inaccurate measurements, etc...)
5. Are there any gages along the mainstem or directly off of the mainstem that you know of that we have not included on the ArcOnline map? If so, please provide a short description and the coordinates of that gage here. We may follow up with you about these stations.

General Questionnaire

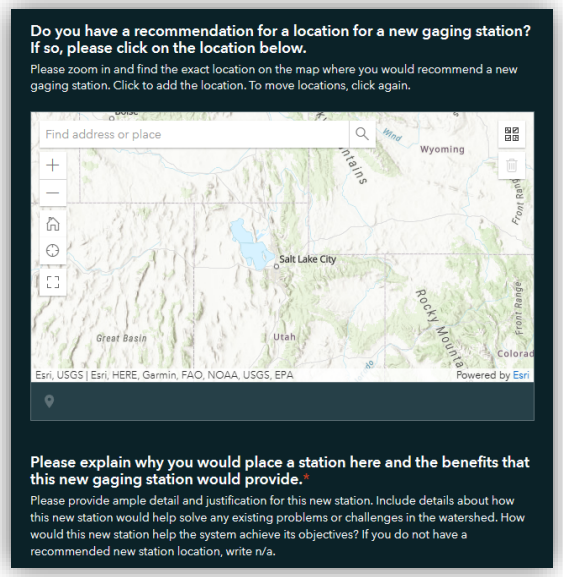
Process Overview

Gather information and share understanding of Primary System with local expert

Review materials for accuracy and edit

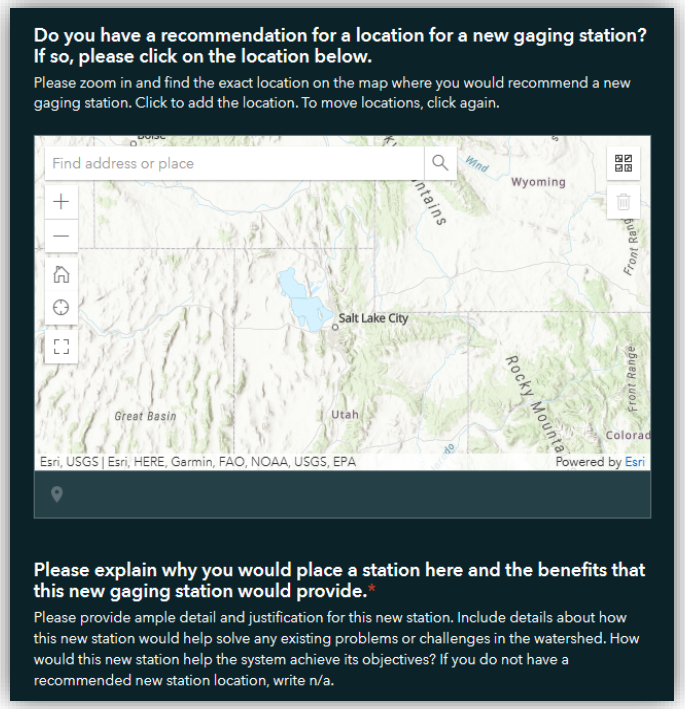
Identify system challenges in relation to measurement infrastructure (or lack there-of)

Identify areas where additional gaging or upgrades could address identified system challenges



Proposed Gaging Survey

Proposed Gaging



Proposed Gaging Survey

Distribution & Delivery

Division of Water Rights
- Distribution & Regional Engineers
- River Commissioners

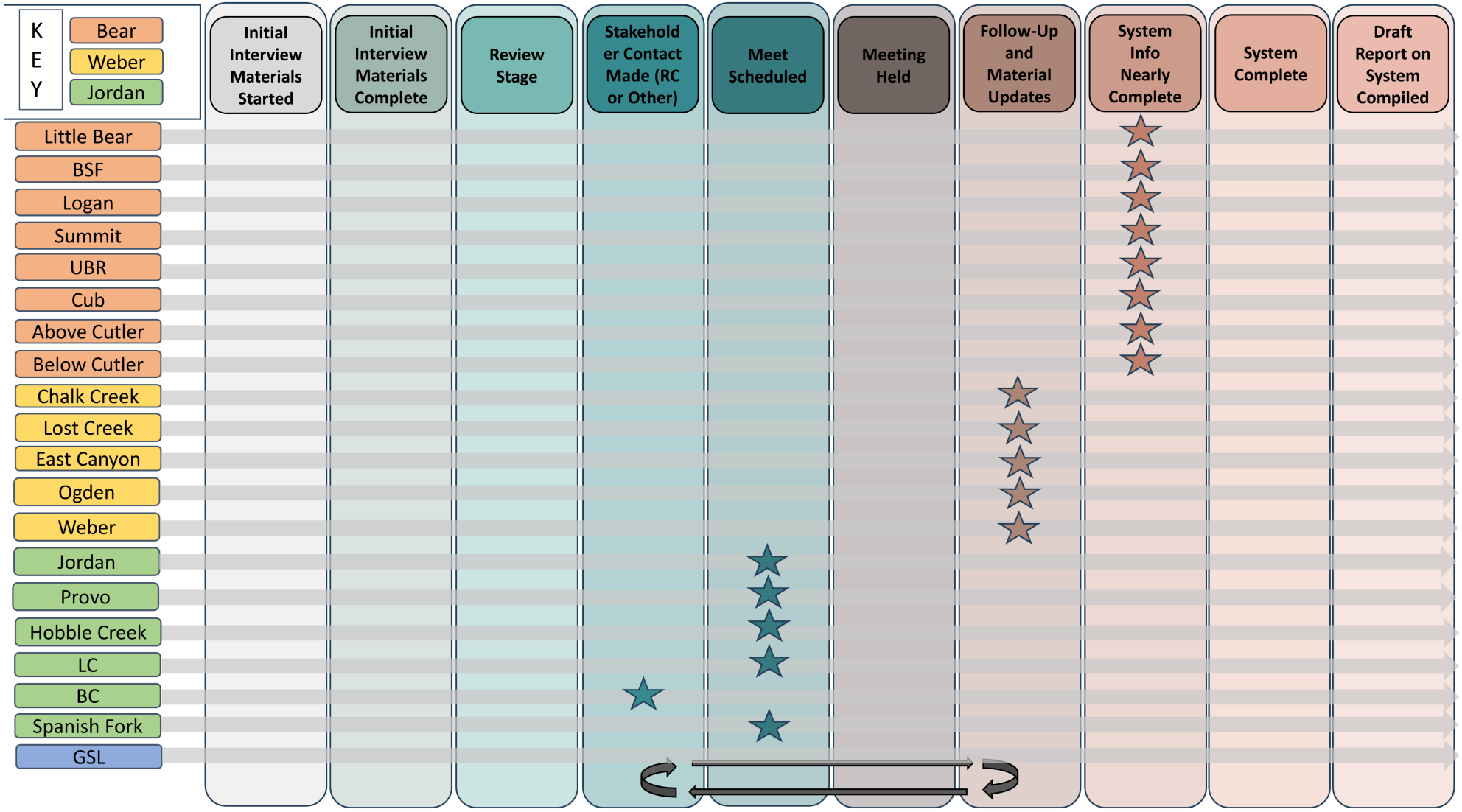
Stakeholders w/ D&D responsibilities

Research & Planning

Other Stakeholders
- Federal Agencies
- State Agencies
- Local Municipalities
- Research Institutions
- NGOs
- Etc...

List of New/Updated Measurement Infrastructure

Progress and Anticipated Timeline



Nov. 1

Weber Watershed Completed

Jordan Watershed Completed

Gap Analysis Draft Report Complete (Start of Utah Legislative Session)

Jan. 16

Final Report Complete

Spring 2024

How to Engage in the Process

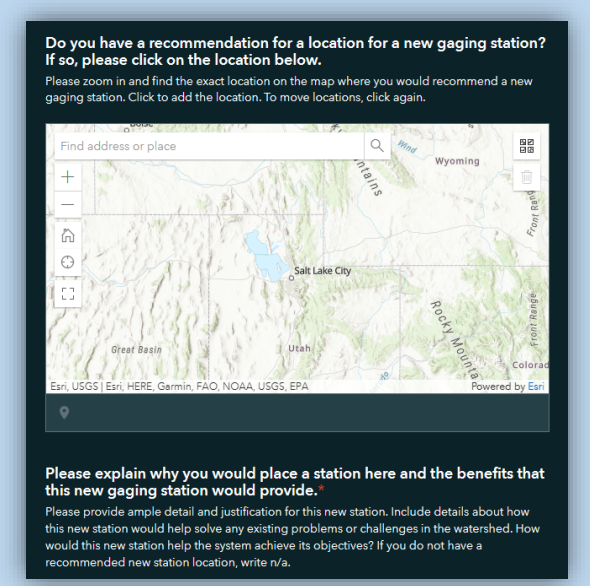
Review Available Resources

- Flow Balance Diagrams of River Systems in the Bear River Watershed
- Arc Online Map with Measurement Device Locations and Attributes in the Bear River Watershed

Attend Watershed Stakeholder Meetings

- Bear River
- Weber River
- Jordan River

Propose a new/updated gage



Give Feedback

If you wish to:

1. Provide feedback on any of the currently available resources, or
2. Be contacted when planned resources are ready for review,

Planned Resource Development

- Arc Online Maps (as above) for Weber and Jordan River Watersheds
- Flow Balance Diagrams for primary systems in the Weber and Jordan River Watersheds, as well as Great Salt Lake
- A map with all proposed new/updated measurement stations by stakeholders to identify overlapping interests and opportunities for collaboration

Questions?

USU Team Contacts
Eileen Lukens*: eileen.lukens@usu.edu
Eryn Turney*: e.turney@usu.edu
Sarah Null: sarah.null@usu.edu
Bethany Neilson: bethany.neilson@usu.edu
*denotes primary contacts

DWRi Team Contact
Blake Bingham: blakebingham@utah.gov

November 14, 2023
Bear River Commission

Great Salt Lake Basin Integrated Plan

Laura Vernon
Division of Water Resources

GREAT SALT LAKE ELEVATION

RECORD HIGH
4211.65 FEET

AVERAGE
4202.2 FEET

RECORD LOW*
4188.5 FEET
*PROVISIONAL

4194.00 FEET

UTAH DNR WATER RESOURCES

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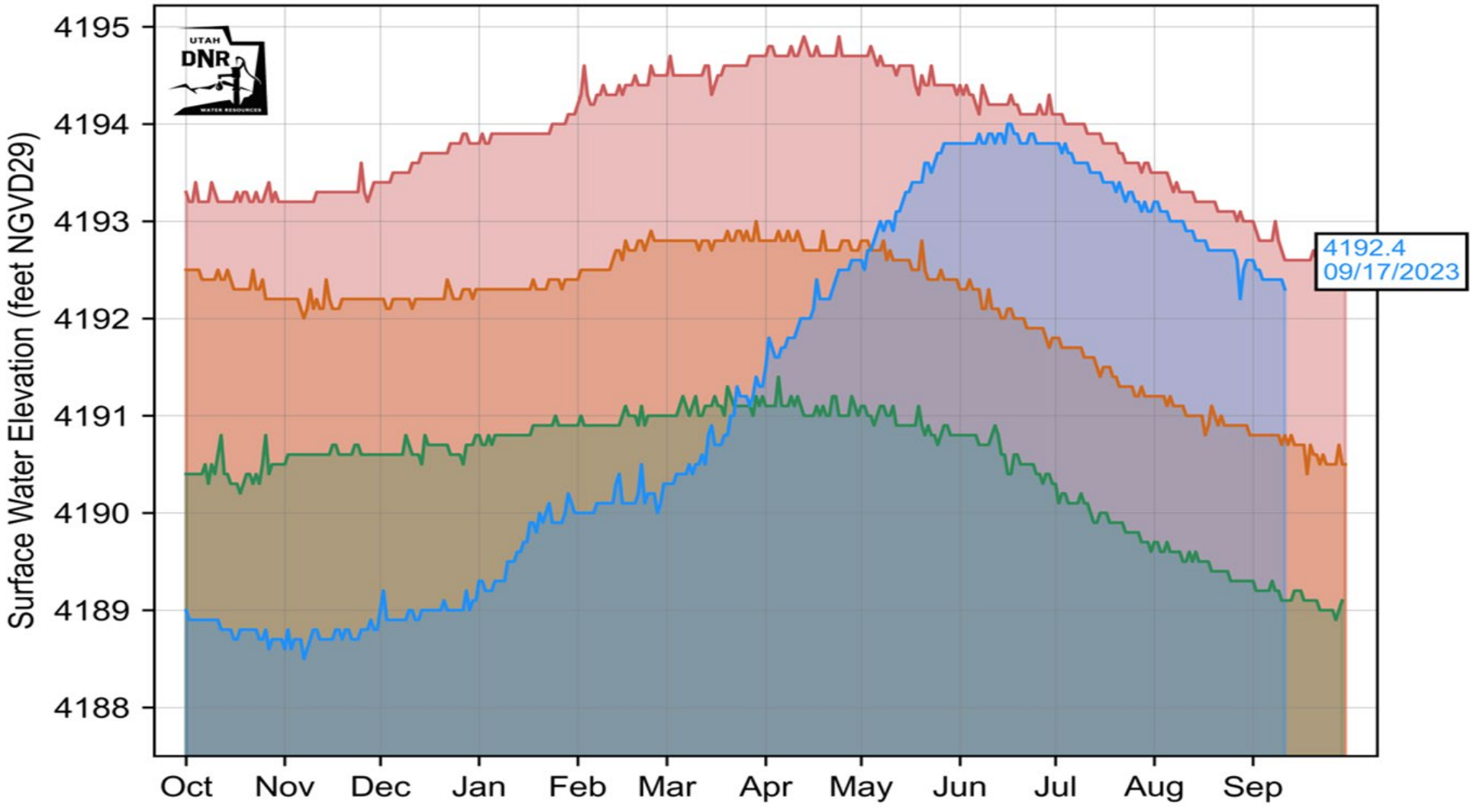
gslbasinplan.utah.gov | gslbasinplanning@utah.gov

Great Salt Lake South Arm Elevation



Source: USGS Saltair Boat Harbor Station 10010000; USGS South Side of Causeway 10010024 when Saltair gage is unavailable. Recent data is provisional and subject to revision.

Water surface elevation labeled on the graph is the 5-day mean.

Integrating Efforts

HB 429 Great Salt Lake Watershed Integrated Water Assessment ($5M, Finish by Nov 2026)

U.S. Bureau of Reclamation WaterSmart Basin Study ($3.1M Match)

"Identify and evaluate BMPs that may be used to provide a reliable water supply that:

- Meet water quality objectives
- Meet agricultural water objectives
- Accommodate anticipated growth and economic development
- Provide adequate flow to sustain GSL, GSL's wetlands, and other ecological functions in GSL's watershed"

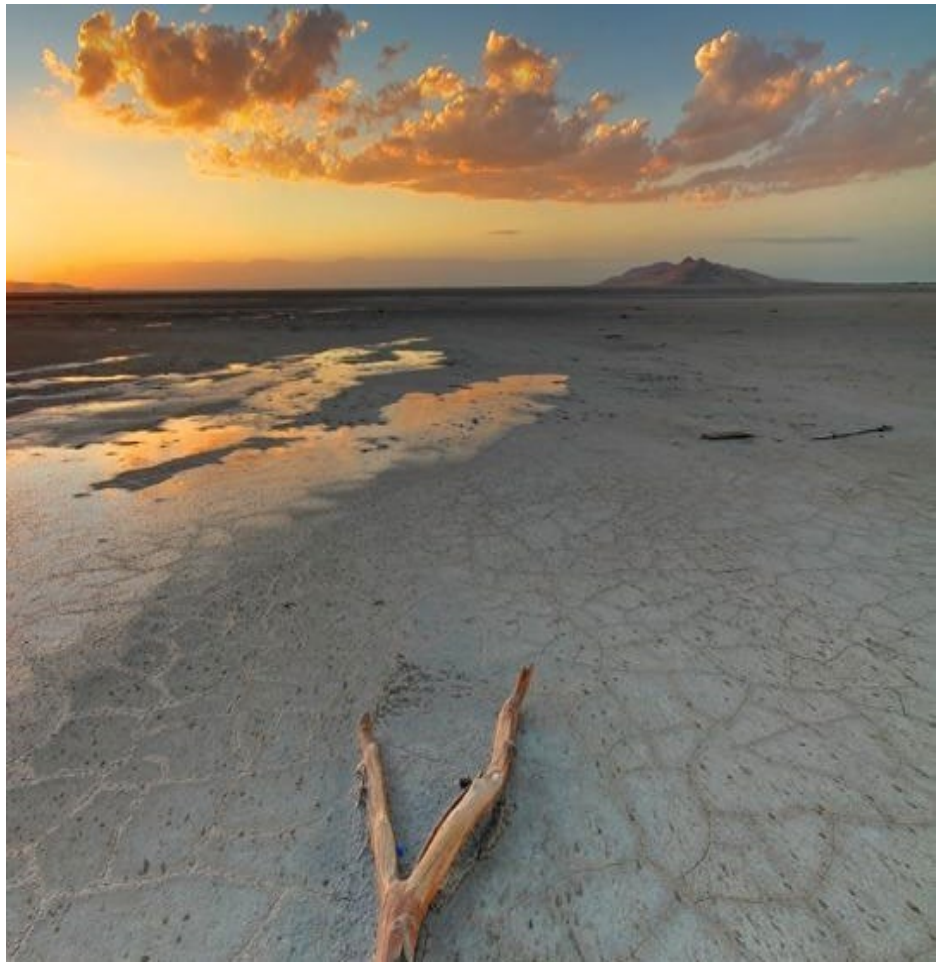
-HB429

"Provide a thorough trade-off analysis to help decision-makers balance water supply and demand, and avoid deterioration of agriculture, industry, and ecosystems"

- Reclamation Basin Study

The Challenge

- Ensuring a resilient water supply requires extraordinary vision and collaborative effort. Solutions remain socially and technically complex as demands on this limited resource continue to increase.
- Today's water management decisions shape tomorrow's possibilities.



An Integrated Approach to Work Plan Development

Become a partner, learn more

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Work Plan Development

Stakeholder Engagement

- Situational Assessment
- Focus Group Workshops
- Outreach
- Advisory Group
- Steering Committee

Workplan Development

Technical Formulation

- Building Block Definition
- Question Hierarchy
- Literature Review
- Interviews & Workshops
- Gap Analysis
- Opportunity Review
- Prioritization

The Work Plan for the GSLBIP

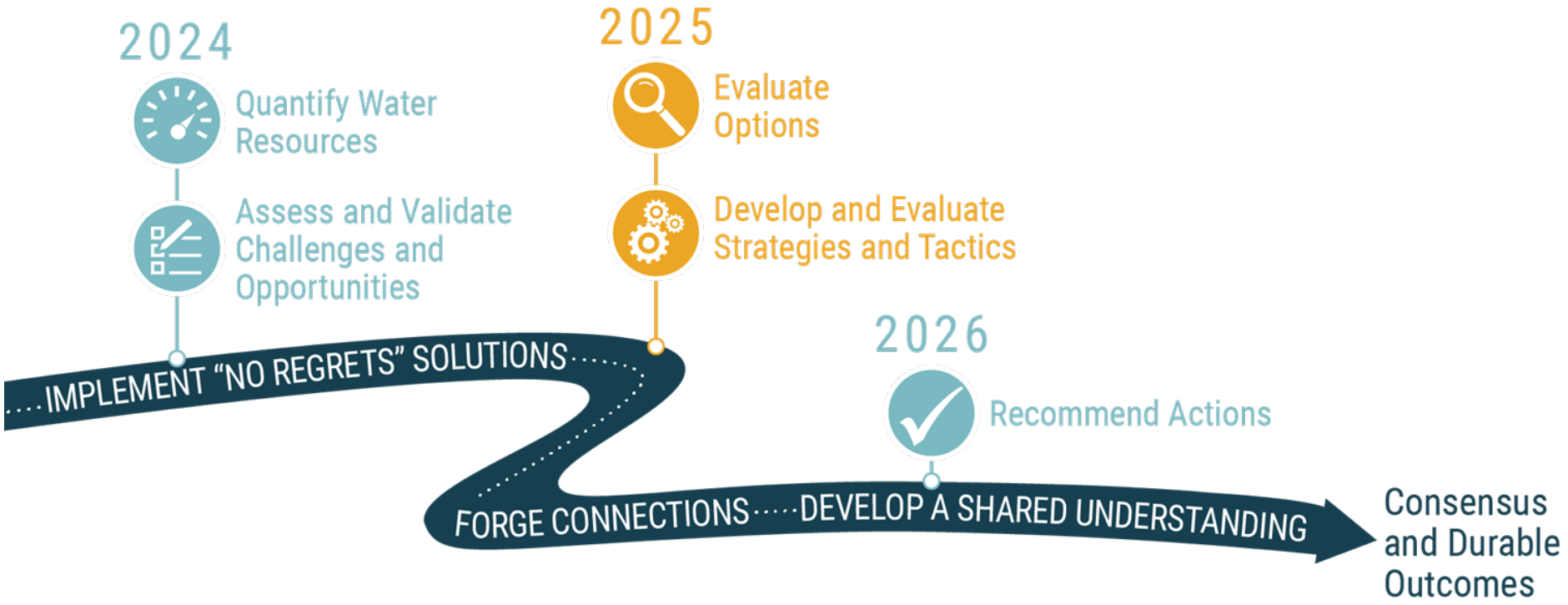
Our Goal

Ensure a resilient water supply for Great Salt Lake and all water uses, including people and the environment, throughout the watershed.

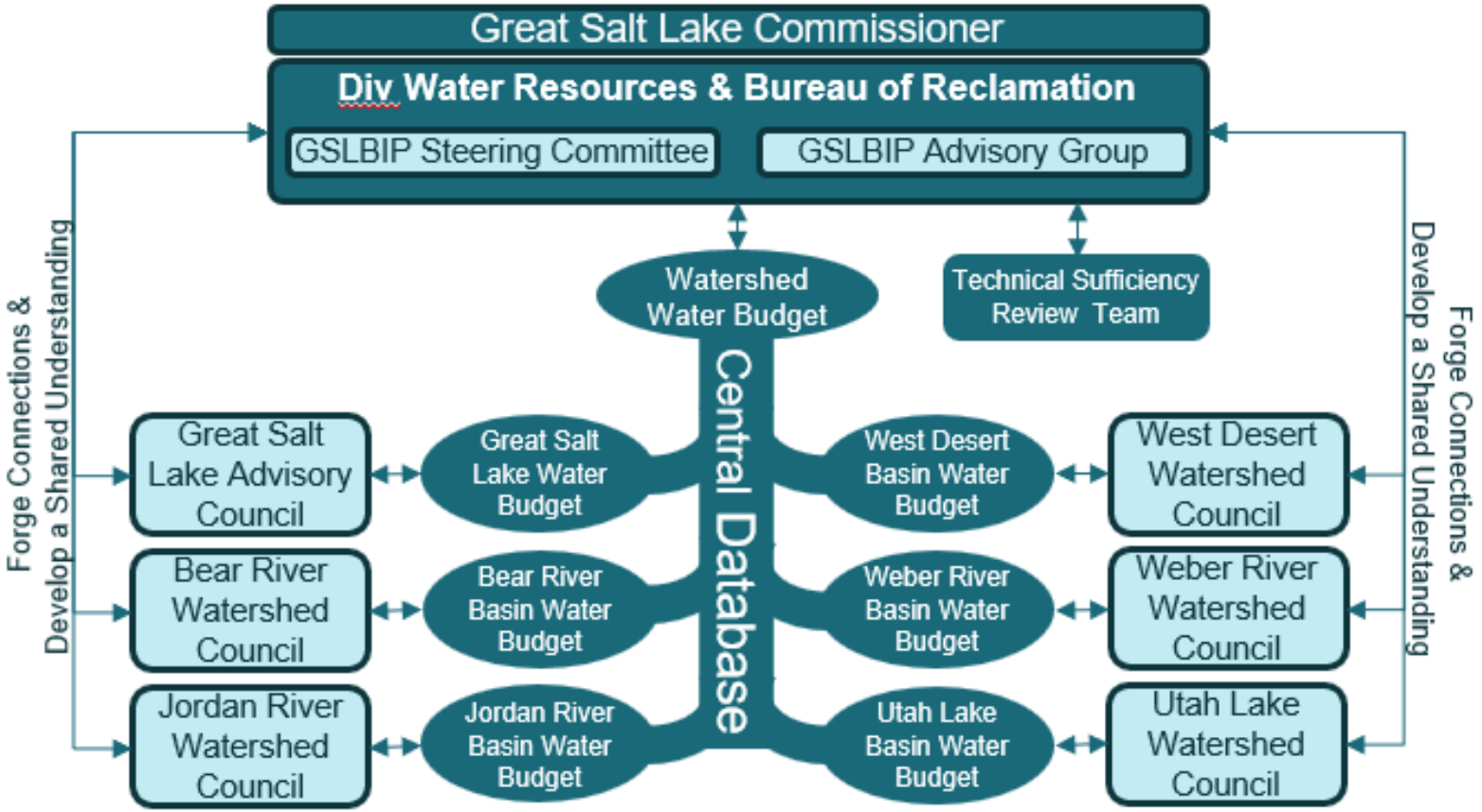
Our Objectives

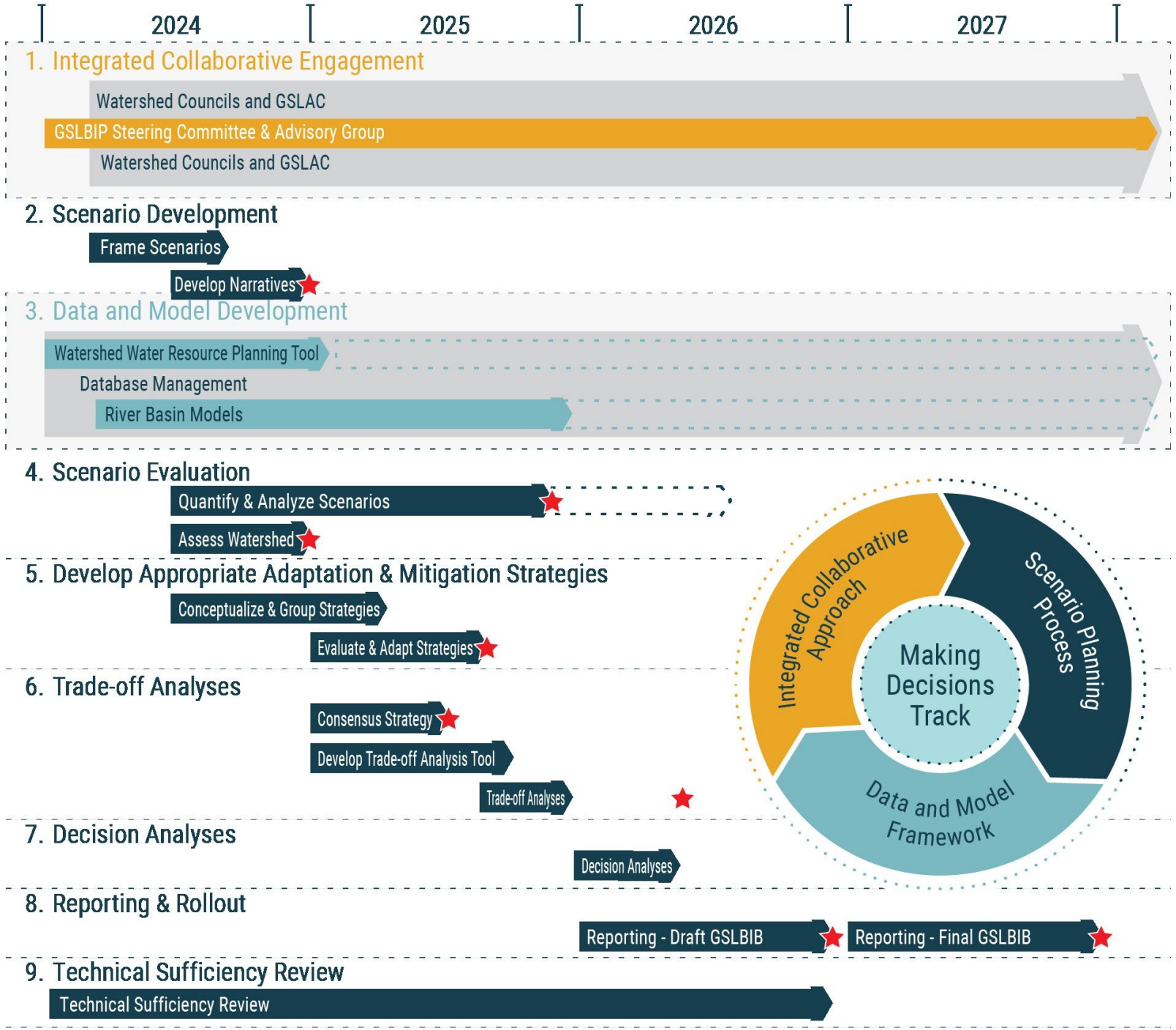
1. Forge connections
2. Develop a shared understanding
3. Quantify water resources
4. Evaluate options
5. Recommend actions

An Integrated Approach

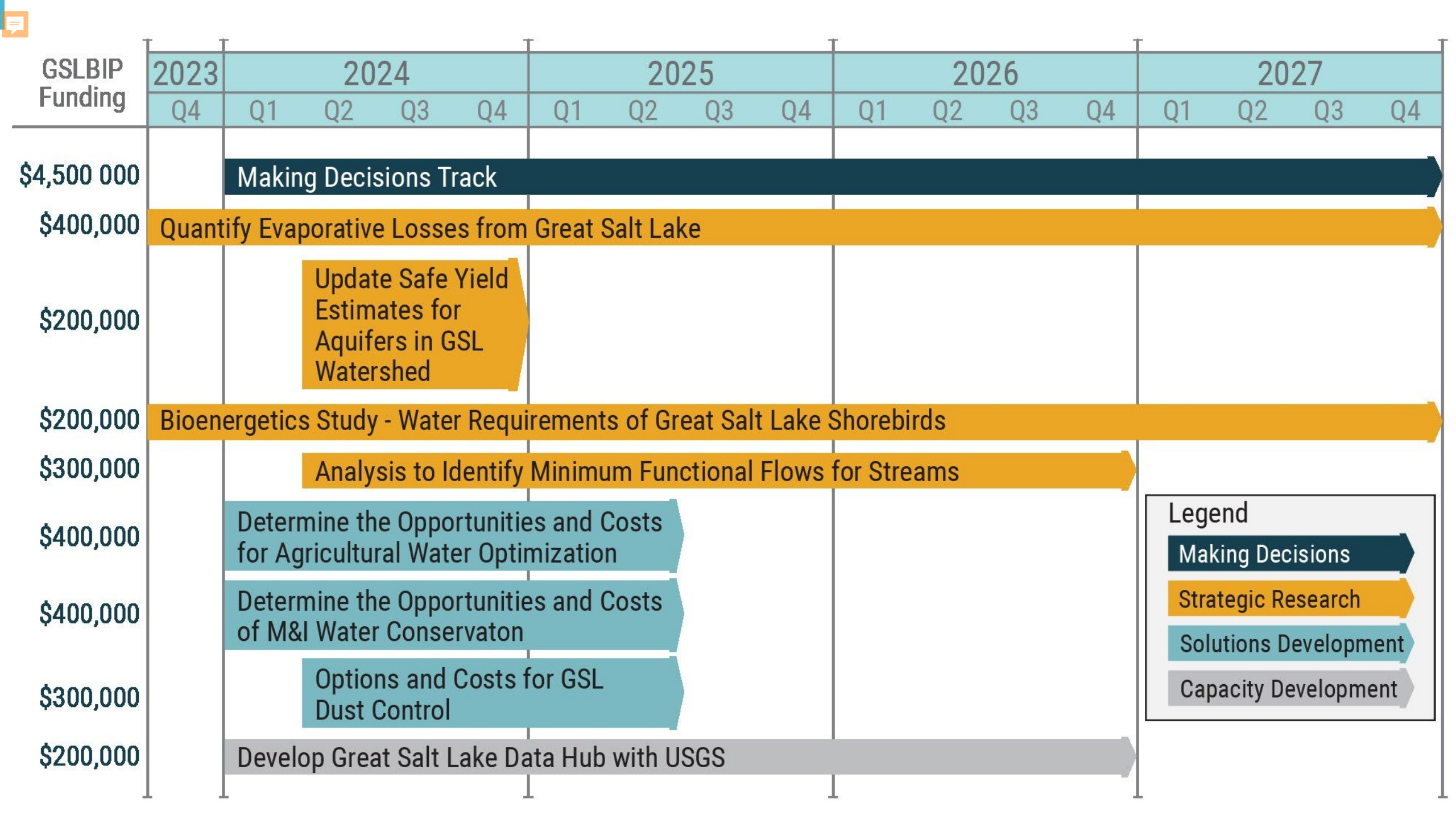


An Integrated Collaborative Approach





UTAH DNR WATER RESOURCES


GSLBIP Funding
2023
2024
2025
2026
2027
Q4
Q1
Q2
Q3
Q4
Q1
Q2
Q3
Q4
Q1
Q2
Q3
Q4
Q1
Q2
Q3
Q4
$4,500 000
Making Decisions Track
$400,000
Quantify Evaporative Losses from Great Salt Lake
$200,000
Update Safe Yield Estimates for Aquifers in GSL Watershed
$200,000
Bioenergetics Study - Water Requirements of Great Salt Lake Shorebirds
$300,000
Analysis to Identify Minimum Functional Flows for Streams
$400,000
Determine the Opportunities and Costs for Agricultural Water Optimization
$400,000
Determine the Opportunities and Costs of M&I Water Conservaton
$300,000
Options and Costs for GSL Dust Control
$200,000
Develop Great Salt Lake Data Hub with USGS
Legend
Making Decisions
Strategic Research
Solutions Development
Capacity Development

Workplan Rollout

- Mid-November release
- November 15 presentation to legislature
- December 7 open house
- 45 + day review period
- BIP work begins January 2024

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SUMMARY OF WATER YEAR 2023 BEAR LAKE OPERATIONS AND ANTICIPATED 2024 CONDITIONS

Date	Hydrologic Information/Event	Contents (% of Full) Discharge (% of Normal)
10-01-22	Bear Lake Beginning Elevation - 5,910.09 ft.	498,099 af (35%)
11-06-22	Bear Lake Low Elevation - 5,909.71 ft. (see note 1)	473,731 af (33%)
	Rainbow Inlet Canal Discharge	415,000 af (158%)
	Bear River Discharge Below Stewart Dam	3,600 af
	Bear Lake Net Runoff (Computed Total Inflow less Lake Evaporation)	512,000 af (159%)
07-09-23	Bear Lake High Elevation - 5,917.23 ft.	972,752 af (68%)
	Outlet Canal Releases: 6/26 - 9/27 (94 days of irrigation releases)	114,000 af
07-24-23	Outlet Canal Maximum Release - 1,070 cfs	
	Bear Lake Storage Release (see note 2, irrigation release 15,400 acre-feet)	47,400 af
09-30-23	Bear Lake Ending Elevation - 5,916.11 ft.	896,118 af (63%)
	Bear Lake Settlement Agreement "System Loss" Volume	32,000 af

Notes:
1 Low contents prior to start of storage.
2 Net irrigation storage release from Bear Lake, subtracting Rainbow inflow and the decreed adjustment for the natural yield of Bear Lake and Mud Lake area. Includes system loss volume.
3 Due to uncontrolled flow from (welcome) rain events. Whenever water flows below Cutler during the irrigation season any storage water in the system at Cutler is the first water out. Natural flow goes to irrigators.

Current Status
Currently, all inflow at Stewart Dam is being stored in Bear Lake. No high-runoff releases are planned for winter 2023-2024. Winter flows are expected to bring Bear Lake near 5,918.0 by March 31st. The Bear Lake daily average elevation on November 12, 2023 was 5,916.45. The seasonal minimum elevation was 5,916.10 feet on September 28, 2023. This represents only a 1.1-foot decrease from the spring high elevation.

Summary of Water Year 2023
The Bear Lake Irrigation Storage Allocation for 2023 was 245,000 acre-feet. Runoff was well above normal, with Bear Lake net runoff at 512,000 acre-feet. The Bear Lake area reported extremely deep spring snowpack. Declines in Bear Lake levels appeared to be significantly reduced due to runoff associated with this local and regionally heavy snowpack.

High runoff operations were not necessary at Bear Lake, but PacifiCorp power reservoirs reduced the impact of downstream inundation. High flows resulted in 2,200 cfs in the Gentile Valley area in excess of the 1,500 cfs bankfull flow. Also, below Cutler a peak flow of 8,500 cfs occurred in excess of the 6,500 cfs bankfull flow. Daily average inflows peaked 200 cfs above peak outflow at both Soda and Cutler.

Bear Lake storage released for irrigation (omitting system loss water) was only 15,400 acre-feet.

Estimated 2024 Irrigation Allocation and Bear Lake Elevations
The estimated 2023 irrigation season allocation will be 245,000 acre-feet. Soil moisture at the basin's SnoTel gages is currently normal.

Operational Notes
- Bear River Black Canyon Recreational Water Releases occurred as normal except that two events were rescheduled to fall after Labor Day due to a combination of boater desires and fall maintenance at Grace plant. The fall dates were coordinated with the Gentile Canal watermaster to reduce the impact.
- Federal Energy Regulatory Commission relicensing efforts are complete at Cutler. The final license application has been filed. The 401 Water Quality Certificate for Cutler Reservoir was received on October 13, 2022 from the Utah Division of Water Quality. We expect a new Federal Energy Regulatory Commission license in approximately 6 months.
- PacifiCorp held public meetings about the proposed Oneida and Cutler pumped-storage hydropower projects and released an Initial Consultation Document for the Oneida project which begins the process for a Federal Energy Regulatory Commission license amendment and plans to request a 20-year extension to the current license (extending expiration from 2033 to 2053).

Priority List of TAC Assignments

Priority Tasks	On-going Tasks	Depletions Updates
1) Update upstream storage reservoir allocations	a. Determine if an update to the Bear Lake Mud Lake Equivalency table is warranted	i. Create a schedule for the 2024 depletions update
2) Create a draft interstate tributary delivery procedure	b. Participate in potential post September 30 Lower Division water right accounting	ii. Determine if an update to the municipal depletions procedure is needed
3) Review Water Delivery Schedule No. 1 for the Lower Division and determine if any updates or revisions are warranted	c. On-going review of the status of stream gages and provide recommendations	iii. Review in detail the inputs to the Woodruff Narrows model and make changes if necessary
	d. Keep the Commission apprised of public involvement and outreach opportunities	iv. Continue to follow development of OpenET methodologies and report to the Management Committee
	e. Continue to invite discussions on Environmental and Watershed Health activities and bring such matters to the Commission as warranted	v. Consider options for annual updates to GIS datasets
	f. Provide input for the biennial reports and Commission's website	vi. Consider how the Commission should appropriately support additional weather stations within the Bear River Basin
		vii. Review options for a common methodology for estimating depletions from supplemental water rights and determine data deficiencies