



BVID OVERVIEW PACKET



A Comprehensive Overview of Baker Valley Irrigation District: Areas, Infrastructure, Water Management, and Strategic Partnership Needs for Sustainable Agricultural Delivery



JULY 21, 2025
ELAINE SWANSON

BVID Impact

Baker Valley Agriculture:

60% Wild grass Hay

10% Alfalfa

10% Small Grains

5% Corn

3% Potato

1% Mint

USDA/NASS Agriculture Census economic data for Baker County

2002-2022 (every five years)

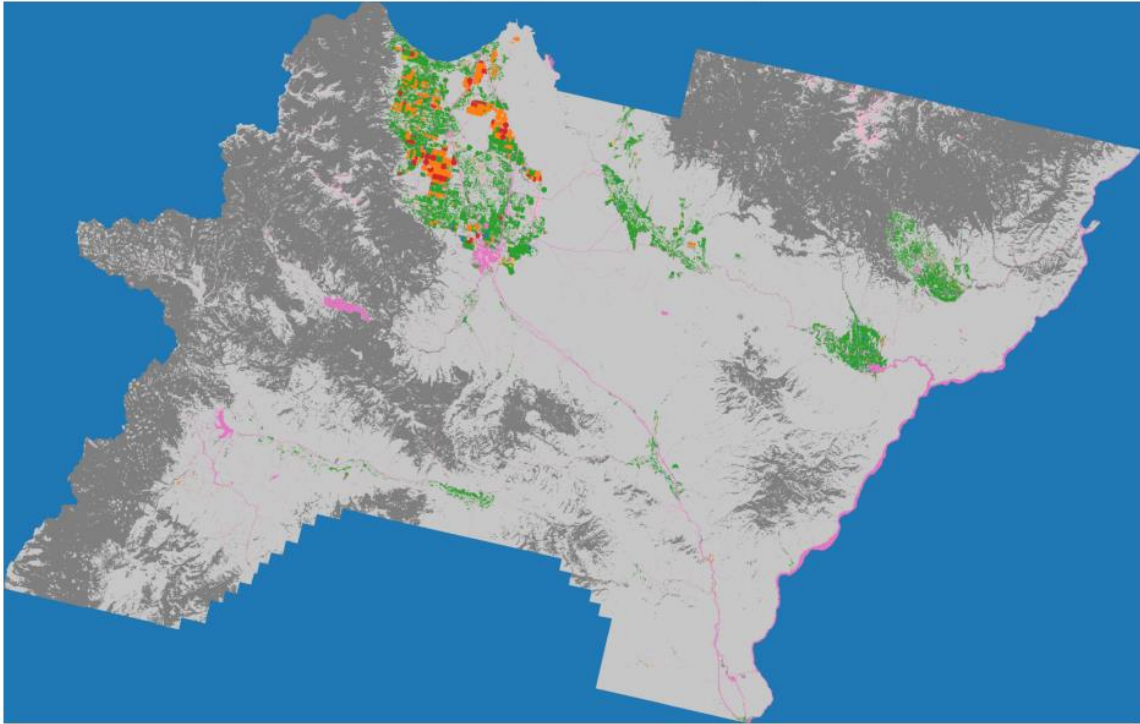
Baker Valley accounts for well over half of all agricultural production in Baker County, although our entire county it is consistently underreported in the census. Example: “Cattle and Calves” alone are likely around 17,000 head. However, these values give us useful estimates to work with:

Year	Farms (number)	Land in farms (acres)	Average size of farm (acres)	Median size of farm (acres)	Avg. value per farm (\$)	Avg. value per acre (\$)	Total cropland (acres)
2002	403	710,782	1,760	178	3,097,418	3,080	107,453
2007	688	837,251	1,217	122	3,039,718	4,073	130,408
2012	645	710,782	1,102	140	1,117,372	1,570	107,453
2017	705	754,855	1,070	170	1,337,390	1,767	130,408
2022	676	915,532	1,354	134	2,630,423	2,902	151,487

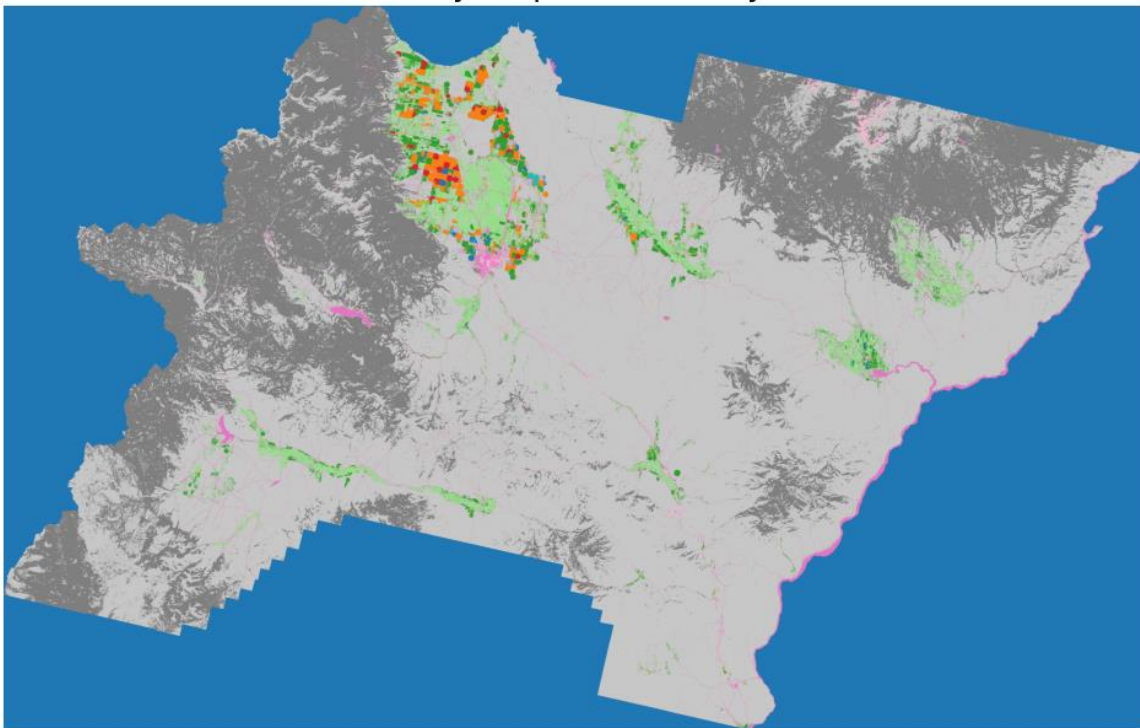
Year	Harvested cropland (acres)	Irrigated land (acres)	Ag. Products Sold (\$1,000)	Avg. per farm (\$)	Crops value (\$1,000)	Livestock value (\$1,000)	Cattle and Calves Inventory
2002	82,548	82,248	3,097,418	7,687	1,189,349	1,908,070	11,928
2007	103,254	91,920	3,039,718	4,420	1,139,607	1,900,111	11,877
2012	82,481	82,248	943,268	1,462	478,040	465,228	11,760
2017	103,254	91,920	1,051,377	1,491	601,239	450,138	11,989
2022	85,295	85,035	1,032,545	1,528	483,578	548,967	11,699

Year	Beef Cows	Milk Cows	Corn for grain (acres)	Wheat for grain (acres)	Barley for grain (acres)
2002	10,600	198		2,455	1,204
2007	10,435	157	68	2,263	1,112
2012	10,390	135		1,942	1,021
2017	10,678	143	68	2,263	1,112
2022	10,713	138	66	2,060	1,112

Baker County Cropland Data Layer 2008



Baker County Cropland Data Layer 2023



Mason Dam History + Specs

Mason Dam is a rolled-earth and rockfill structure 173 feet in height with a crest length of 895 feet. Phillips Lake, impounded behind the dam, covers 2,235 acres and has a total capacity of 95,570 acre-feet (active 90,570 acre-feet) at reservoir water surface elevation 4070.5 feet. There is 17,000 acre-feet of space reserved in the reservoir exclusively for flood control purposes. The remaining 73,570 acre-feet (90,747,258.97 cubic meters or 23 billion gallons) of space in the reservoir is for storage of water for irrigation up to reservoir water surface elevation 4062.37 feet.

District Manager:

Warren Dickman + Warren Travis

Jim Colton, Years: 1973 - 2006

Jeff Colton, Years: 1996 - Current (took over in 2006)



General

Project	Baker
Dam Type	Rolled Earth and Rockfill
Location	17 miles from Baker
Longitude	-118.00003
Latitude	44.67335287
Watercourse	Powder River
Reservoir	Phillips Lake
Original Construction	1965-1968
National ID Number	OR00577

Dimensions

Crest Elevation	4082.0 ft
Structural Height	173.0 ft
Hydraulic Height (Normal Operating Depth at Dam)	152.5 ft
Crest Length	895.0 ft
Top of Joint Use Pool (Elevation)	4062.374 ft
Top of Active Conservation Pool (Elevation)	4050.63 ft
Top of Inactive Conservation Pool (Elevation)	3981.5 ft
Spillway Crest Elevation	4070.5 ft
Top of Dead Storage Pool (Elevation)	3975.0 ft
Streambed at Dam Axis	3918.0 ft

Hydraulics & Hydrology

Normal Water Surface Elevation	4062.37 ft
Spillway Capacity at Elevation	1,210 cfs at 4077.25 ft
Outlet Works Capacity at Elevation	875 cfs at 4070.5 cfs
Drainage Area	175 sq mi
Spillway Type	Ungated overflow chute at left abutment
Auxiliary Spillway	No
Total Water Storage at Elevation	73,570 ac-ft at 4062.37 ft

Please see attached map for Drainage Area (168 sq miles or 107,520 acres) which is slightly larger than what is recorded on B of Rec. As well as the BVID Boundary (42,000+ acres)

Of these 42,000+ acres:

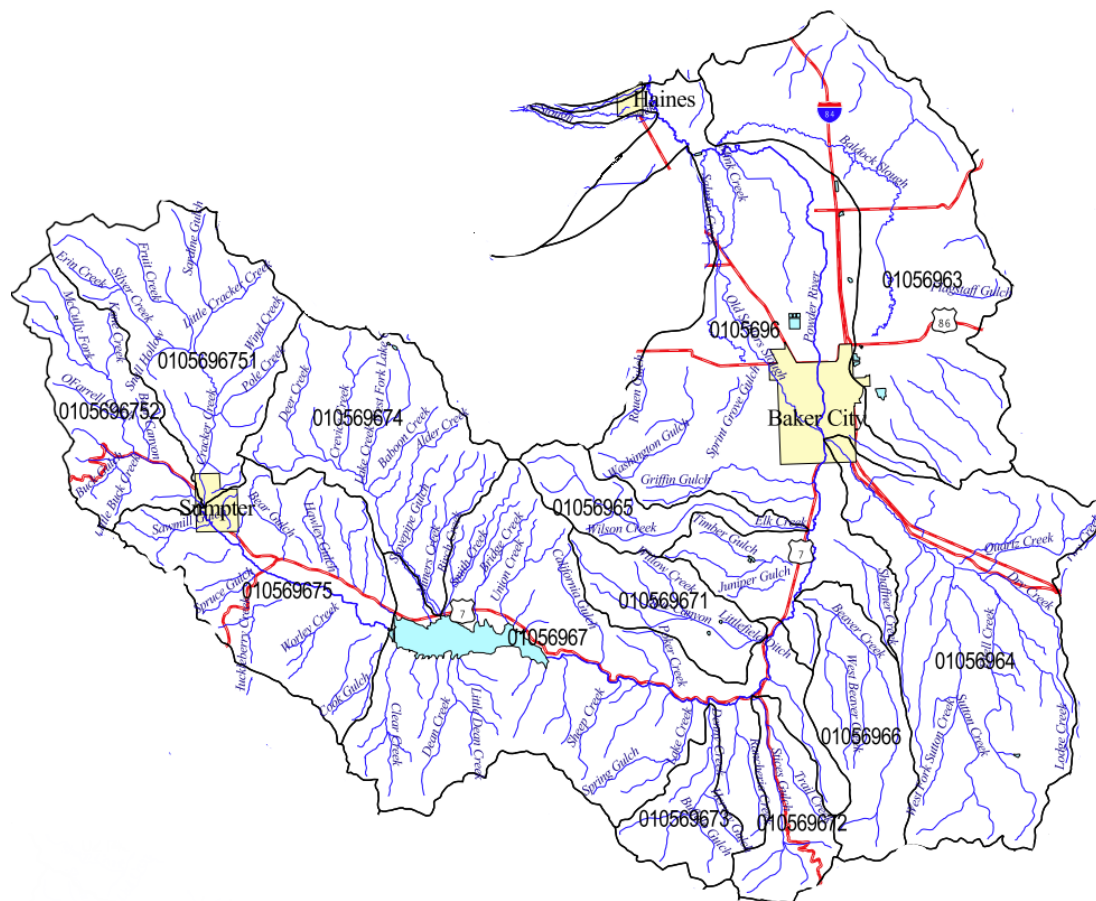
- 18,000 acres under supplemental water rights from 1958
- 12,000 acres under supplemental water rights from 1982
- 12,000 acres with direct (primary) water rights only

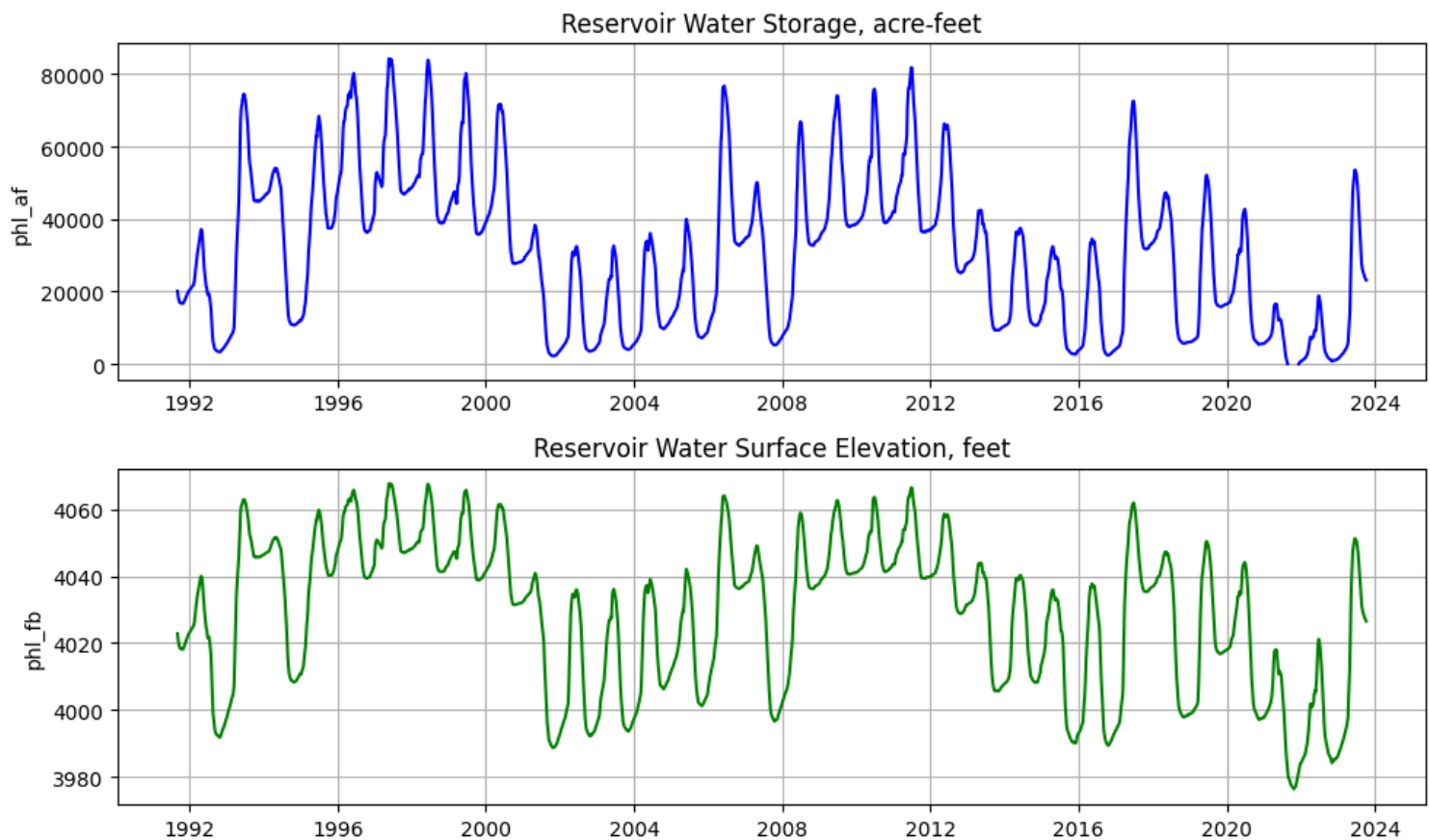
Water Management & Flow Data Summary

Water sources -- Creek List

Important ones that flow in below the reservoir:

- No name @ Mason
- California
- Sheep
- Lockhart
- Denny
- Stices
- Auburn
- Beaver
- Sheffner
- Elk
- Griffin
- Sutton
- Salmon / Nelson
- Irby dr.
- Baldock
- Kirkland





Known loss points or inefficiencies

- Shaw-Stewart, Baldock Slough to Gravel, Kevin Shaw
- City CMPS (culverts) on 15th/Broadway and 17th street
- Stockwater system on Estes, Taggart, Corral I and II, Payton Chandler Ditch, Geddes. Runs water down in ditches
- Delivery schedules (talk about) and irrigation windows
 - **Crop**
 - Alfalfa Hay
 - Corn (Field)
 - Corn (Sweet)
 - Grain (Spring)
 - **Growing Season**
 - April 10 – October 1
 - May 5 – October 1
 - May 15 – September 5
 - April 1 – August 16

- | | |
|------------------|---------------------------|
| ○ Crop | ○ Growing Season |
| ○ Grain (Winter) | ○ March 15 – August 1 |
| ○ Grass Seed | ○ April 1 – March 31 |
| ○ Mint | ○ March 30 – August 7 |
| ○ Onions | ○ April 20 – September 15 |
| ○ Pasture | ○ March 20 – October 30 |
| ○ Peas | ○ April 10 – July 25 |
| ○ Potatoes | ○ May 10 – October 10 |

Brief Watershed Overview

- Please see the Powder River Basin Watershed Counsel website for their publications and resources. They just published the [2025-2035 Watershed Restoration Action Plan](#)

Downstream Pressures:

In-stream water rights with ODFW and E. coli with DEQ

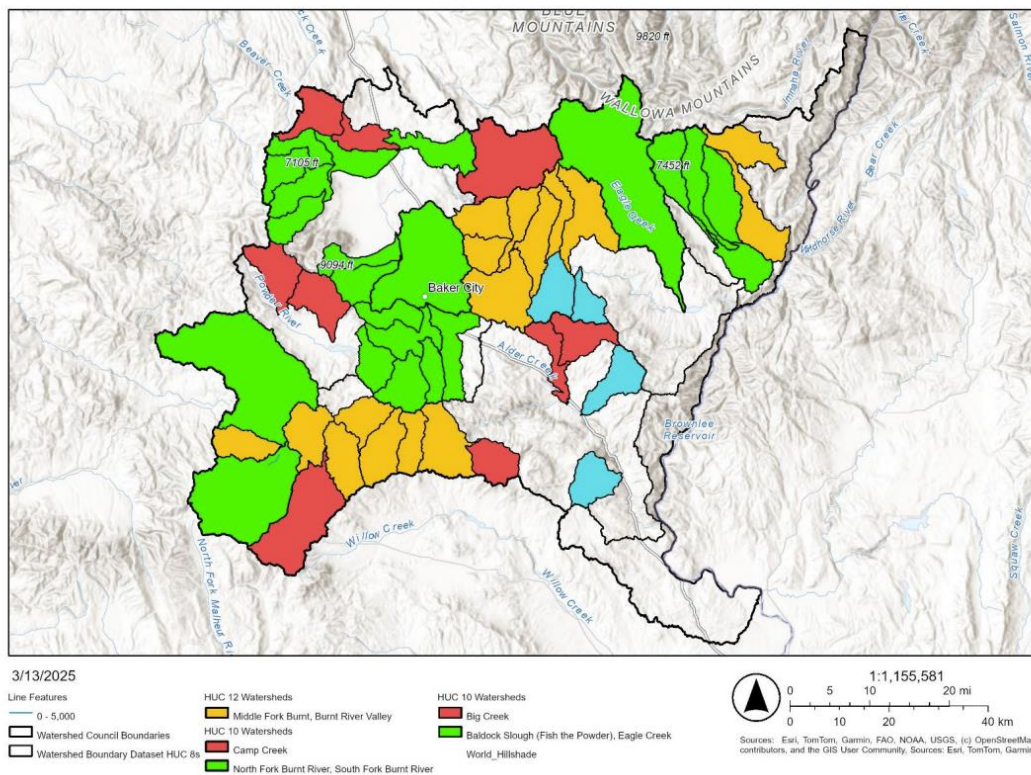
ODFW: Sage grouse and Instream water rights

DEQ: Current natural resources issues common to each subbasin include the Powder Basin Total Maximum Daily Load (TMDL) for E. coli developed by the State of Oregon Department of Environmental Quality (DEQ), observed and predicted climate change impacts, and 2024 wildfire recovery.

DEQ has developed a Total Maximum Daily Load (TMDL) for the Powder River Basin to address impairments to water quality caused by high amounts of bacteria (E. coli) which was adopted in summer of 2024. Sources of E. coli bacteria in surface waters include fecal contamination from humans, domestic animals, and wildlife. The Powder River Basin TMDL identifies sources of pollution and 6 specific areas where E. coli reductions are necessary to attain state water quality standards. The TMDL addresses bacteria impairments in the Powder River, Burnt River, and Brownlee Subbasins. DEQ will continue to develop TMDL's for the Powder Basin in the future to address other impaired water quality parameters which may include dissolved oxygen and temperature.

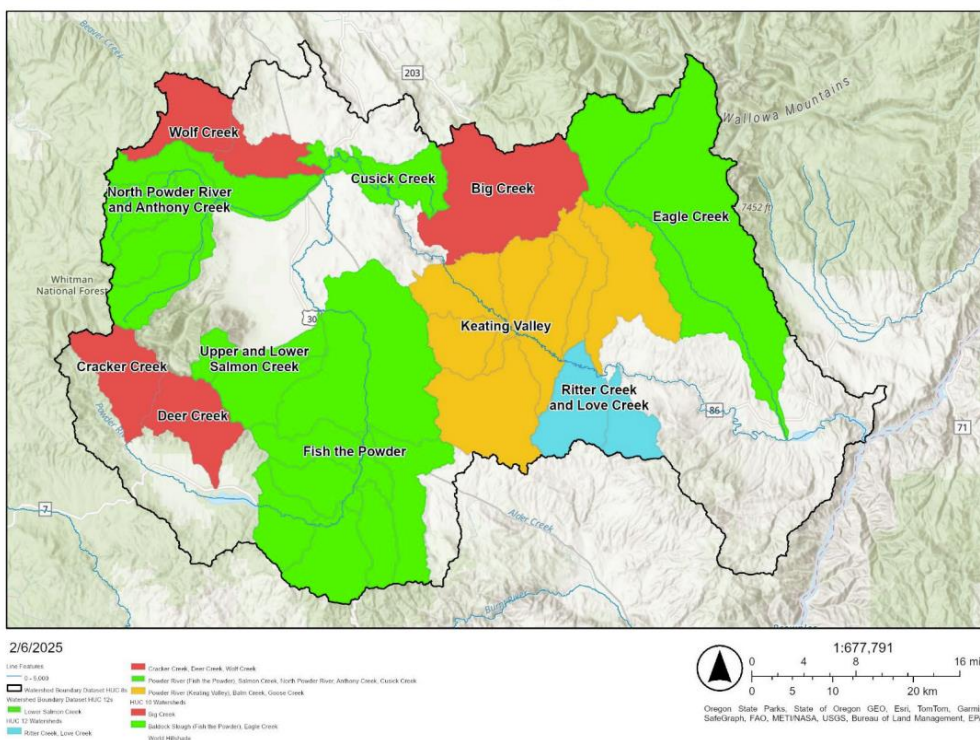
Powder River Basin

Powder Basin Geographic Focus Areas



Powder River Subbasin

Powder River Subbasin - Geographic Focus Areas



Infrastructure & Equipment

Pumps:

Pump alarm

Pumps/motors

Pipe relief

Flood control

Logging river, MAN-LIFT, chipper

SAGO pond weed / ALGAE

EPPINGER Pipeline & the Estes Company Pipeline

Saverly trash barrier (Inflatable - TUFFBOOM Worthington | Waterway Barriers)

Relift (diagram “intake screen over fish screen”)

FLASH DAMS deteriorating

Hughes Dam

Staffing & Capacity Summary

- Four people manage critical infrastructure. Only **two staff members** from 2018 till 2024
- Missing roles (Mechanic + digital operations + Certified Water Right Examiner)
- Funding limitations for hiring/training – Dam Training in December 2025
- Delayed or deferred work due to scale mismatch

Strategic Goals & Partnership Needs

- Goals: digitizing maps, improving safety, upgrading equipment + infrastructure
- Digitize 120 years of water records
- Purchase: Computer, monitor, software, tablets, subscription
- Conservation and climate adaptation priorities
- What we need from partners:
 - Technical modeling/data support
 - Grant collaboration
 - Project planning and documentation assistance
- Funding priorities: staffing, automation, mapping, maintenance