

WEBER RIVER WATERSHED COUNCIL MEETING

November 3, 2025
WEBER BASIN WATER

Attendees: Jeff Young, Richard Salas, Carly Payne, Carla Trentleman, John Crofts, Darren Hess, Rick Smith, Nicolas King, Jonathan Jennings, Richard Salas

Remote Attendees: Aspen Johnston, Brad Perry, Clint Brunson, Parker Wayment, Ryan Broadbent, Emily Bishop

CONDUCT BUSINESS-

- Not enough for voting counsel
 - Only 4 voting members

UPDATE OF COUNCIL DOCUMENTS, Carly Payne

- To reflect required template
- Definition of Council
- Minor changes in wording
- *Agenda item for next meeting

STATE WATERSHED COUNCIL, Rick Smith

- Forest service presentation-
 - Include recreation in council
 - Can invite forest service to present at council meeting
 - Include local representation (counties)
 - Issues to take back to the state

FUTURE MEETING

- Carly will present information on what other council meetings look like and what is discussed

GREAT SALT LAKE ADVISORY COUNCIL, John Crofts

- Great Salt Lake reaching dangerously low levels
 - Not just local level issue, regional issue
 - Fragile eco-system in Utah
 - Migratory bird refuge
- GSLAC created to bring a group together to:
 - Protect sustain, restore Great Salt Lake
 - Brings together different groups who have an interest in preserving The Great Salt Lake & conservation
- Southend- down one foot from last year
- Great Salt Lake needs constant attention
- Different groups involved- bring together everybody
 - Elected officials from:
 - Davis
 - Weber
 - Salt Lake

- Box Elder
 - Government groups
- Disaster management-
 - Every disaster and solution is local
 - Regional issue, everyone to do their part
- Do more outreach to our communities to help protect the lake
- Inflow dynamics
 - Evaporation
 - Bear River contributions
 - Breach flow
- Make sure additional inflows reach the Great Salt Lake
- 4,196 feet by the time the Olympics are in Salt Lake
 - Increase lake by 7 feet
 - Long term benefits if we work towards the goal
- Funding to align with priorities
 - Grant funding
 - Working with other entities
 - County to district partnerships
- Encourage Transparency
 - Improved reporting
 - Data sharing
 - Inflows
 - Diversions
 - Precipitation impacts
 - Monitoring & capacities

WINGS OVER WEBER, Richard Salas

- History of Snow Water Equivalent Measurement (SWE)
 - Key component of water for consumption
 - Not all water is created equal
 - Utah sees approximately 95% of its water from snowpack
- Airborne Snow Observatories
 - Need for better snow pack measurements
 - NASA originated in 2010, program concluded in 2019
 - Transferred to commercial space & began operations in 2019
 - ASO flights gather readings
 - Snow-free flight, flight & data acquisition
 - Fly over watershed, scanning
 - Snow product generation
 - Process & imaging retrievals
 - Snowpack & runoff modeling
 - Collected data models results forecast snowmelt runoff
 - Provides data to over 30 entities
 - Wings Over Weber ASO Project
 - Objectives-
 - Obtain real time & basin wide picture of seasonal snowpack
 - Improve runoff forecasting

- Inform operational decisions
- Project Areas
 - Headwater-Echo Reservoir- East Canyon- Park City
 - Majority of snowpack area
- Project Timeline
 - Began May 2024-Spring 2026
 - Moved 3rd flight to Spring 2027 (due to funding)
 - Final report fall 2027
 - Learn from implementation of the program
 - Forecast projections will be compared against stream gages to verify accuracy
- WY2025 Preliminary Results
 - Difference of -1cm (March reading)
 - Difference of 1cm (April reading)
- Flakes, Flights, & Forecast (CRAU)
 - First ASO project in Utah
 - Spearheaded by the Colorado River Authority of Utah
 - Partnerships between CRAU, Central Water Conservancy District of WRe, & Bureau of Reclamation
 - Project timeline 2024-2026
 - Areas encompassed
 - Part of the Uintah Basin & Uintah Mountains headwaters
 - During flights, try to capture entire project area

CLOUDSEEDING, Jonathan Jennings

- Cloud Seeding
 - Provide nuclei into a precipitating cloud to promote cloud droplet growth & ice nucleation
 - Rain enhancement or precipitation management
- Why cloud seed in Mountain West
 - Affordable new water production
 - Boom or bust SWE cycle
- Project Areas
 - Bear River Cloudseeding (Utah & Idaho based)
 - Drone based cloud seeding
 - Fly up to 15,000 feet
- Glaciogenic Seeding
 - Ice Nucleation
 - Water droplets too small to freeze, too small to collide & coalesce
 - Hygroscopic Seeding
- Hygroscopic Seeding
 - Maximizes warm rain process
 - Larger droplets, better collision & coalescence
- Materials
 - Silver Iodide
 - Resembles an ice crystal
 - Liquid propane

- Burst of evaporative cooling
 - Must occur in cloud
 - Calcium Chloride
 - 65% deliquescence relative humidity
 - No used in Utah
- Methodology
 - Ground-Based Generators
 - Used remotely
 - Rely on orographic lift to transport material
 - Seedability
 - Favorable liquid water content & surface winds
 - No blocking flow
 - Instability
 - Aircraft (for winter snowpack)
 - Fly in cloud, release material at needed temperatures
 - Icy conditions
 - Seedability
 - No icing conditions
 - Target in cloud or above
- Funding more drone programs
 - During testing didn't lose any drones
 - 6.5' wingspan able to cover large area
 - Will ice-up, but has secondary battery that heats on wings & sheds ice
- Operations
 - Forecasting- window of operations
 - Nowcasting- wind directions & speed, instrumentation
 - During Operations- look for changes in conditions & report on operation
- Evaluation of Operations
 - Biggest challenge in the field
 - Winter Programs
- Challenges with Winter Program
 - Snow redistribution
 - Not all increases are the same
 - With late snowpack, If we can delay runoff by one or two weeks will increase runoff
- How to overcome challenges
 - Large research program & model capabilities to evaluate programs
 - Better instrumentation
 - Radars
 - Radiometers
 - Cellometers
- Snowscape
 - Many partners
 - Field Campaign
 - Precipitation
 - Radiometers
 - Two x-band mobile radars
 - Aerosol measurements

- Snowpack Hydrology
 - CL-31 & CL-61 Ceilometers
- Outcome & Impacts
 - Improve science in cloud seeding evaluations
 - More accurate ROI & determine best budgeting practices
 - Research to operations
 - Strong collaborations
 - Improve western states confidence in funding cloud seeding as a water resource management & climate adaption tool
- Environmental Study
 - Baseline measurements
 - Sample Utah snowpack, stream water, lake water, & lakebed sediment
 - Looking for silver concentrations
 - Determine where to look for the silver concentrates
- Environmental Considerations
 - Silver & iodide have strong electronegativity
 - Doesn't dissolve in water
 - Studies have shown no impacts in Agl in the environment
 - No silver found in Utah
 - Utah will undergo an extensive environmental impact review during the winter & spring of 2026
- Long term water resource management tools
 - Cloud seeding has been ongoing for decades
 - Should be considered long-term water management strategy
 - Safe, effective & heavily researched
 - Cloudseeding is happening all across the globe

NEXT MEETING

- **January 26, 2026, 1:00pm Weber Basin Water**
 - We must have a quorum to take council actions including adopting revised documents, approving at least one new member, and voting on council officers. If anyone can't make it work, please send a proxy in your place.
- Reseat & appointment new council members (not enough in quorum to appoint)
- Elections- Postpone until next meeting
- Approve council documents
- Carly- report on what other councils are doing