# UPDATE ON PROGRAMS AND ACTIVITIES OF THE HUMBOLDT RIVER BASIN WATER AUTHORITY

Nevada Legislature's Interim Committee on Public Lands

July 26, 2018

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Humboldt River Basin Water Authority

AGENDA ITEM XIII - LANDS
Meeting Date: 07-26-18

# Overview of Humboldt River Basin Water Authority

- Established in 1995 by Elko, Eureka, Lander, Humboldt and Pershing Counties
- Organized to Oppose Proposal to Export in Excess of 300,000 acre feet of Groundwater from the Upper Humboldt River Basin to the Lower Carson River Basin (EcoVision Project)
- EcoVision Water Right Applications Denied By Nevada State Engineer As Speculative In Nature
- Fifteen-member Board of Directors; 3 appointed by each member county commission; includes at least one county commissioner from each member county; NMA representative appointed as non-voting member
- For Past 22 Years 15-Member HRBWA Board of Directors Have Continued to Meet Quarterly to Address Water Resource Issues of Concern

# Major Roles and Responsibilities

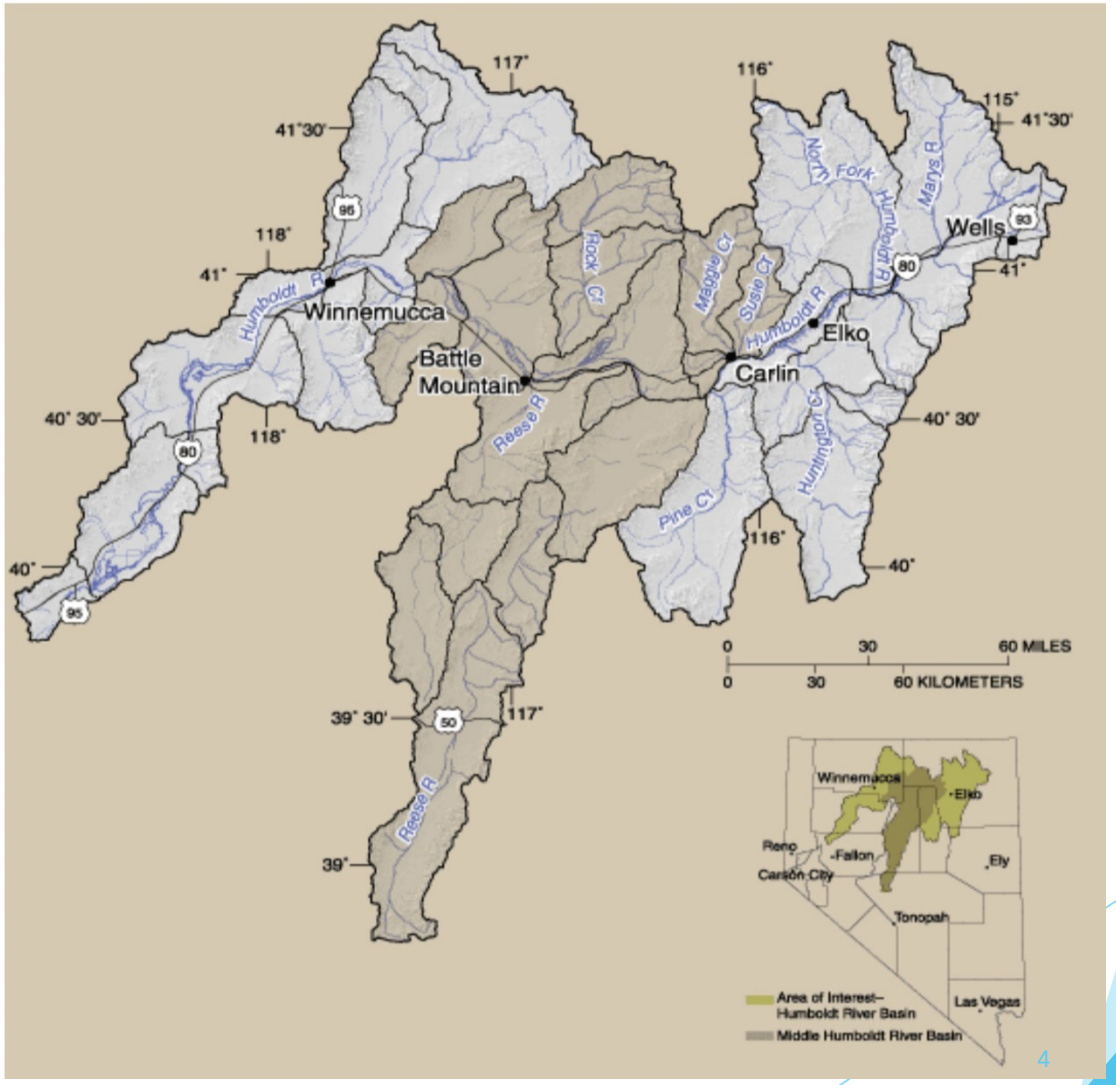
- Recognize and protect all existing decreed and certificated water rights
- Identify and seek to resolve inter-county water allocation and management issues
- Formulate positions for presentation to relevant local, state, and federal agencies
- Monitor water supply and demand within the Basin
- Monitor the extent to which proposals to develop and export Humboldt River Basin water may adversely affect the water balance for member counties within the Authority
- Recommend appropriate federal and state legislation for the management of surface and ground water within the Humboldt River Basin
- Encourage environmental stewardship of the recharge area ecosystem Humboldt River Basin

# Humboldt River Basin Geography

Drainage area of 7,410 square miles (larger than HI, CT, DE, RI)

330 miles in length with no outlet

Divided into an upper, middle and lower division



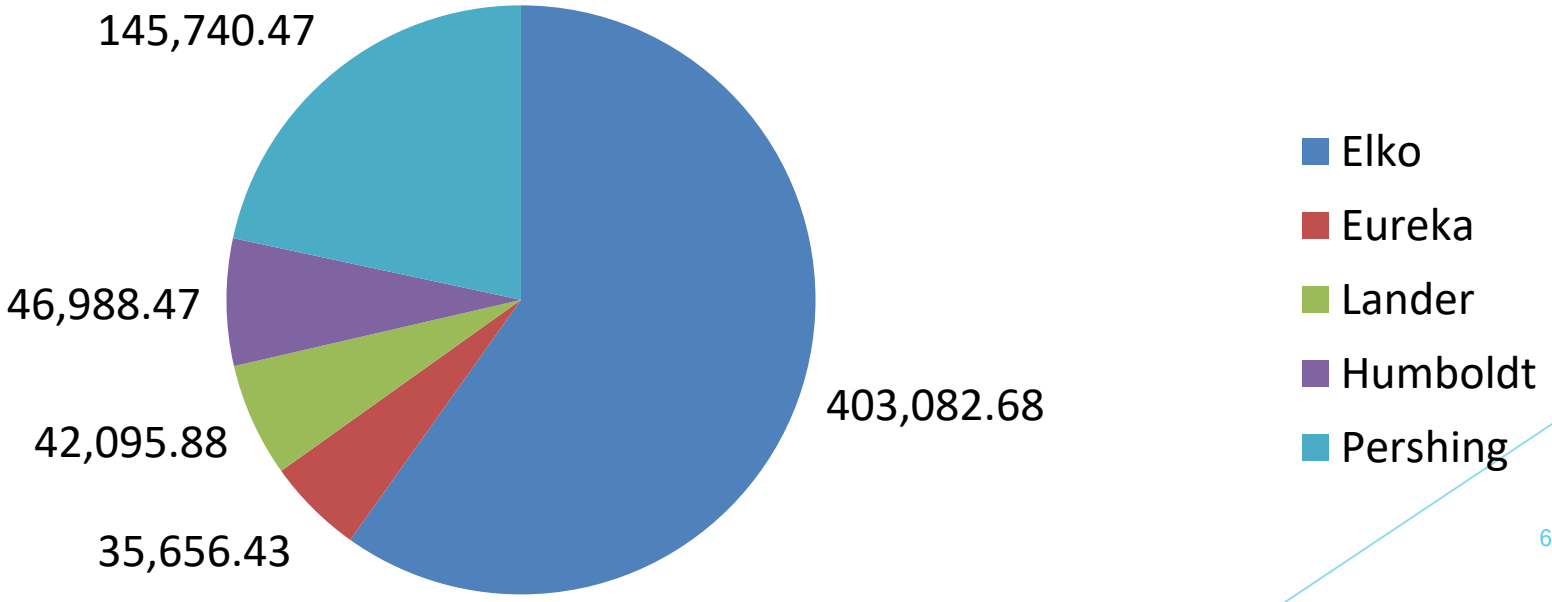
# Humboldt River Basin History

- Population Growth in Nevada Spawns Demand for Agricultural Products
- 1900 – 42,235 persons
- 1910 – 81,875 persons
- Historically High Flows During Period Between 1905 and 1925 (300,000 plus AFY)
- Increasing Agricultural Production Led to Conflicts Among Users
- January 17, 1923 – State Engineer Filed Final Order of Determination with Court
- Bartlett Decree Entered October 1931
- Edwards Decree Entered October 1935
- Period of Substantial Drought Related Decline in Flows Begins in 1925 and Continues through 1935
- Decrees Based Upon Irrigated Acreage During Time of Plenty of Water, Ignoring Significant Drought Related Reductions in Humboldt River Flows
- Most Senior Humboldt River System Surface Right – 1861

# Humboldt River Basin Characteristics

- Mean Annual Discharge at Palisade is Approximately 290,000 acre feet
- Approximately 690,000 acre feet of Decreed Surface Water Rights
- Highly efficient reuse of agricultural irrigation water runoff is key to meeting demand which greatly exceeds annual average flows.

## Distribution of Humboldt River System Decreed Surface Water Rights by County (acre-feet)



# Humboldt River Basin Characteristics (Cont'd.)

Groundwater

- Approximately 469,000 acre feet of Perennial Groundwater Yield
- Approximately 757,758 acre feet of Committed Groundwater Rights
- Very Little Unappropriated Groundwater Remains Available, 23 of 34 Groundwater Basins are Over-Appropriated
- All Groundwater Basins within the Humboldt River Basin have been Designated by the Nevada State Engineer as Requiring Special Management
- Long-term over-pumping of groundwater basins is impacting base flow of the Humboldt River

# Annual Variations in Surface Water Flow Produce Economic and Environmental Uncertainty




Photos: Rye Patch Reservoir Pre and Post Drought; Left, Nevada Division of State Parks; Right, Reno Gazette Journal.

# The Humboldt River Basin Economy

- Water is of primary importance to the economy of the Humboldt River Basin Counties
- The Humboldt River Basin has been one of the Nation's and the world's important sources of gold, silver, copper, mercury, and tungsten
- Diverse agricultural production (hay, grain, potatoes, livestock, garlic, onions)
- Key infrastructure in place • Interstate 80; U.S. 93; U.S. 95 • Mainline railroad serving Port of Oakland • Natural gas transmission • Electrical energy transmission

# Factors Contributing To Diminished Base Flow of the Humboldt River

- Loss of Proper Functioning Riparian Areas
- Groundwater Pumping
  - Agriculture
  - Mining, Milling and Dewatering
  - Municipal and Industrial
- Warming Trends
  - Reduced Snowpack
  - Earlier Runoff
- Drought

# Water Resource Issues Requiring Resolution within Humboldt River Basin – Lack of Storage

- Storage in upper Humboldt River Basin is not available for consumptive uses such as irrigation.
- Storage in lower Humboldt River Basin requires adequate upper and middle-Humboldt River flow to move water to Rye Patch Reservoir.
- During years of average and better flows, lack of upstream storage results in losses of water to evaporation in the Humboldt Sink.
- Little to no storage capacity results in little to no drought reserve within the Humboldt River Basin.

Left: South Fork Reservoir

# Issue of Unpermitted Pit Lake Evaporation from Mining Operations Resolved by Nevada State Engineer in New Policy

- New or expanding mines with pit lakes required to comply by securing water rights covering pit lake evaporation. Marigold Mine first to seek mandatory compliance.
- Existing mines with pit lakes encouraged to voluntarily comply by securing water rights covering pit lake evaporation. Newmont Gold first to voluntarily comply.

Lone Tree Mine pit lake in vicinity of Battle Mountain

# Moving Forward

- **Drought Resiliency**
  - Increased Storage
    - Aquifer, Storage and Recovery
    - Reservoir Enhancements and New Upstream Reservoirs
  - Cloud Seeding
- **Restore Base Flow/Balance Demand with Sustainable Supply**
  - Division of Water Resources Capture Analysis and Conjunctive Management
  - Reduce Demand through Conservation
  - Curtailment by Priority and Augmentation to Mitigate Curtailment Impacts
  - No Change in Place Of Use for Existing Supplemental Groundwater Rights to Points of Diversion Proximate to Decreed Surface Waters
  - No New Applications for Supplemental Groundwater Rights Where Point of Diversion is Proximate to Decreed Surface Waters
- **Technological Fixes**
  - Low Water Use Crops
  - Improved Irrigation
  - Water Holding Soil Amendments

# Recommendations to the Public Lands Committee

- Support enhanced funding to Nevada Division of Water Resources to continue progress in processing the backlog of water right applications and to continue to improve online data sources.

- Continue Support for Cloud Seeding Activities in Nevada.

- Continue Support for the implementation of projects that improve water efficiency for agricultural and livestock production.

# For Additional Information or Questions Contact:

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