



# NWI

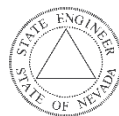
## Nevada Water Initiative

Southern Nevada Forum Committee on Economic  
Development

May 19, 2026

Presented by

**Kip Allander, Chief of Hydrology**

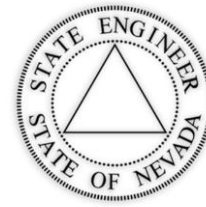


NEVADA DIVISION OF  
**WATER RESOURCES**

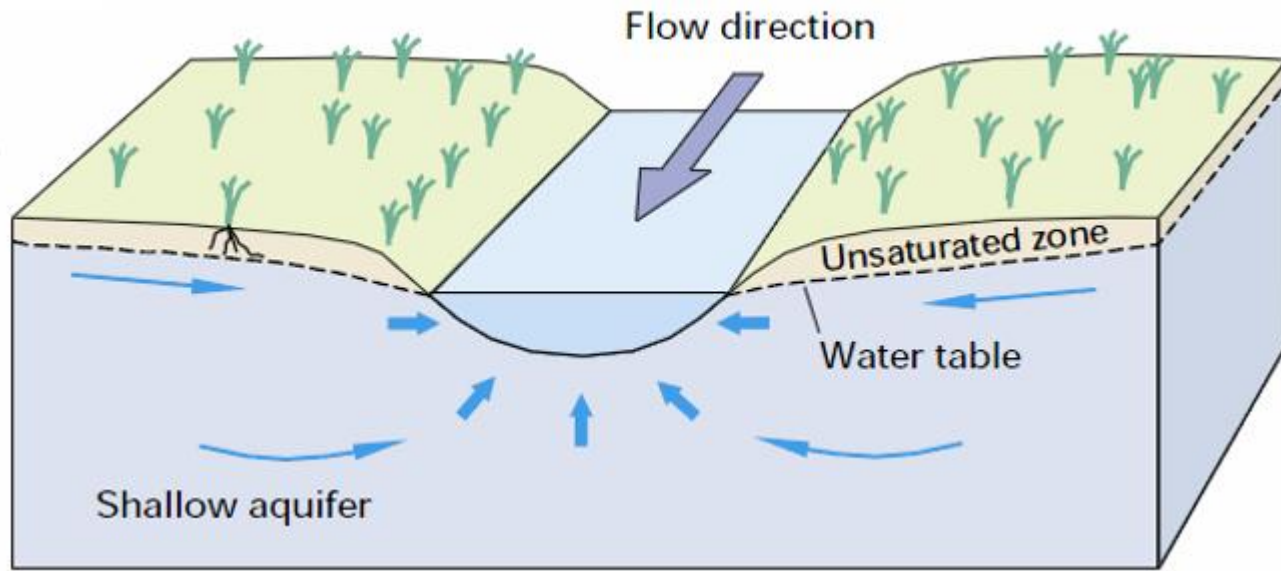


# What is NWI?

- Statewide effort to modernize groundwater assessments to update best available science.
- Comprehensive statewide approach for assessing and monitoring groundwater.
- Updates foundational groundwater estimates to reflect today's conditions, including:
  - Growing water demand
  - Prolonged drought
  - Manage over appropriated basins
  - Shift to conjunctive management

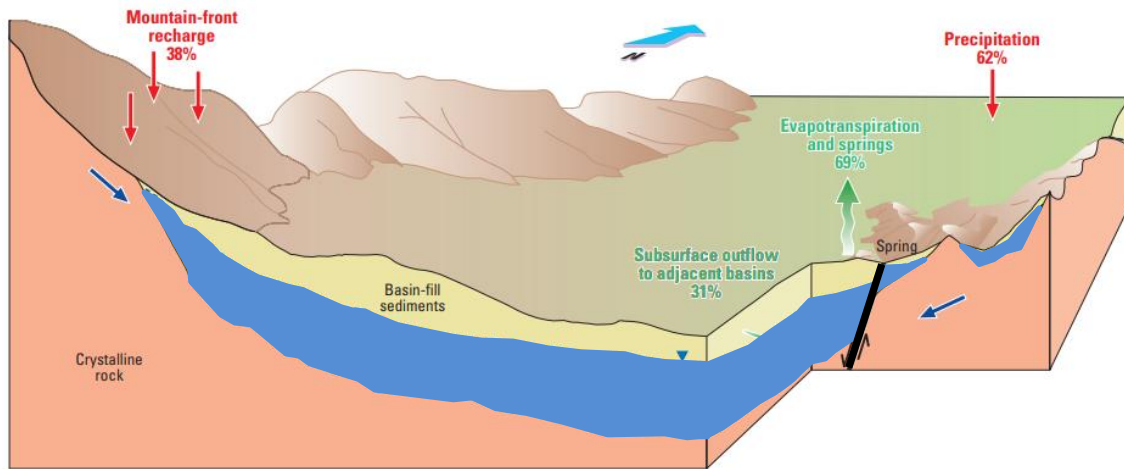


# Drivers of NWI – GW & SW connection



Groundwater and Surface water are often connected and should be managed as a single connected resource

# Drivers of NWI – Limitations of Management by Perennial Yield



Groundwater has historically been managed as if it were extracted from an isolated reservoir



# Drivers of NWI – 2017 Legislative Declaration



## 533.024 1(c)

“To consider the best available science in rendering decisions concerning the available surface and underground sources of water in Nevada.”

## 533.024 1(e)

“To manage conjunctively the appropriation, use and administration of all waters of this State, regardless of the source”

# Challenges to Nevadas Economy

- Water is needed for economic development.
- Navigating and understanding Conjunctive Management.
  - No rules, blueprint, roadmap, direction, instructions, guidance.
  - Issue is widespread across the West.
- Data, tools, and resources are needed to make successful applications for water.



# Examples of Tools that enable water resource management – Devils Hole Management Tool

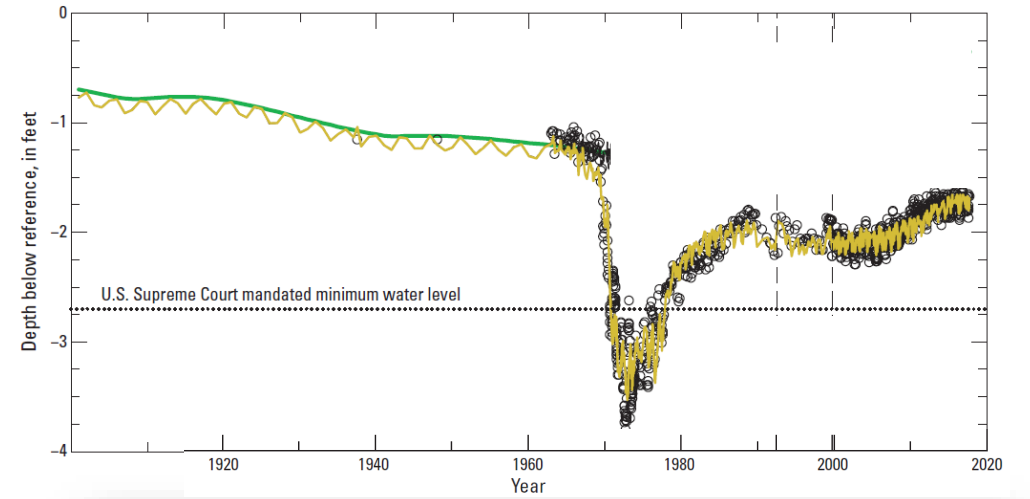


**USGS**  
science for a changing world

Prepared in cooperation with the U.S. Department of Energy Office of Environmental Management, National Nuclear Security Administration, Nevada Site Office, under Interagency Agreement DE-EM0004963

**Groundwater Characterization and Effects of Pumping in the Death Valley Regional Groundwater Flow System, Nevada and California, with Special Reference to Devils Hole**

Professional Paper 1863



**IN THE OFFICE OF THE STATE ENGINEER  
OF THE STATE OF NEVADA**

**#1338**

**ORDER**

**ESTABLISHING PROCEDURES FOR REVIEW OF APPLICATIONS TO  
APPROPRIATE OR CHANGE EXISTING RIGHTS FOR GROUNDWATER  
WITHIN THE AMARGOSA DESERT HYDROGRAPHIC BASIN (230), NYE  
COUNTY, NEVADA**

# Examples of Tools that enable water resource management – Humboldt Capture Query Tool\*

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### Humboldt Capture Query Tool

Prepared in cooperation with the Nevada Division of Water Resources and Desert Research Institute

Getting started ▾ More information ▾ Disclaimer ▾

**Legend**

- Humboldt River Basin
- Study area
- No data available

**Zoom in to see:**

- Hydrographic area
- Model grid

**Step 1: Select location**

Select a location by either clicking within the study area on the map, or by entering the coordinates below:

Latitude (decimal degrees):  
40.998034  
Value range: 39.51° to 41.87°

Longitude (decimal degrees):  
-117.543346  
Value range: -118.78° to -114.72°

**Zoom to**

**Step 2: Select pumping depth**

Results available for the following depth range in feet for this location: 1 - 3719

Depth below land surface (in feet):  
enter depth  
example: 500

**Step 3: Select pumping duration**

Groundwater pumping duration (1-100 years):

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### Humboldt Capture Query Tool Results

Capture results are based on simulated models and are approximate. Percentages are rounded; components may not total 100%. Accuracy and limitations are detailed in the [Middle Humboldt River Basin model](#).

After 50 years of groundwater pumping at location 40.998034, -117.543346, at a depth of 100 feet below land surface, groundwater is derived from the following sources:

**50 Years**

- Stream Capture
- Evapotranspiration Capt
- Storage Change

**Percentage of Pumping**

Years of Pumping

Years of Pumping	Stream Capture	Evapotranspiration Capture	Storage Change
1	1%	2%	97%
5	17%	14%	69%
10	32%	23%	45%
20	45%	32%	23%
25	48%	34%	18%
50	53%	39%	8%
75	55%	41%	5%
100	55%	42%	3%

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**ORDER #1329**

**ESTABLISHING INTERIM PROCEDURES FOR MANAGING GROUNDWATER APPROPRIATIONS TO PREVENT THE INCREASE OF CAPTURE AND CONFLICT WITH RIGHTS DECREED PURSUANT TO THE HUMBOLDT RIVER ADJUDICATION**

<https://www.usgs.gov/tools/humboldt-capture-query-tool>

\* HCQT is currently available for demonstration purposes.

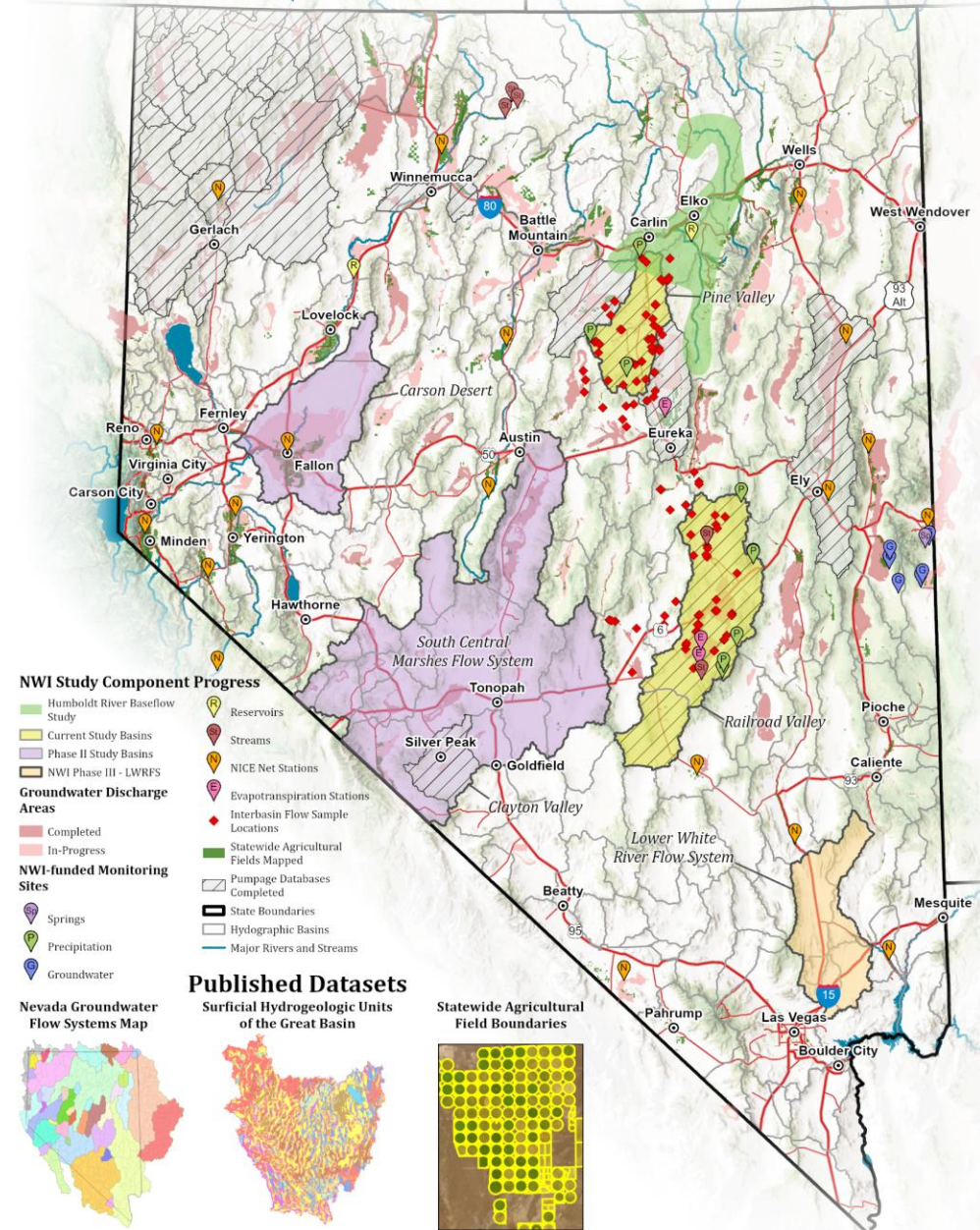
# Program Progress And Success

**Statewide Datasets:** Natural Discharge, Refined recharge approach, pumping

**Expanded Monitoring**

**Pilot Basins:** Pine Valley, Railroad Valley

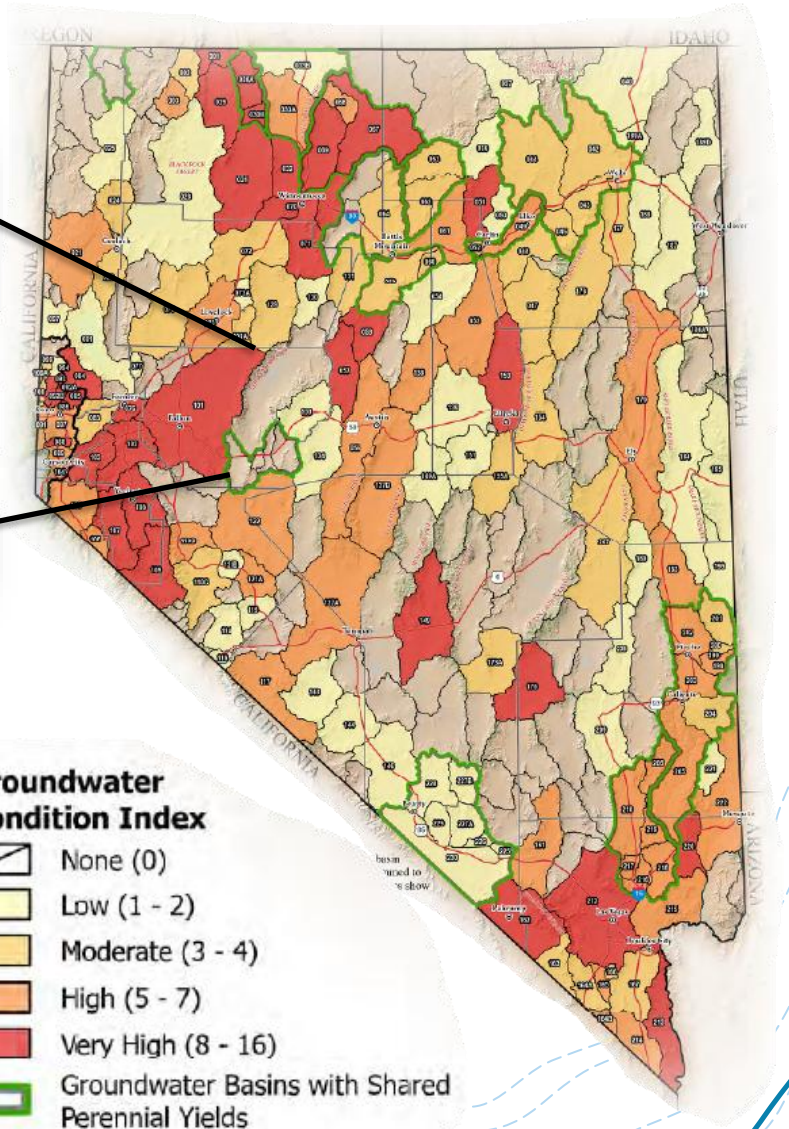
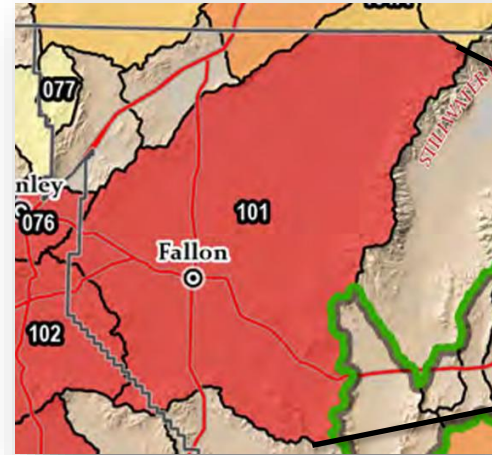
*\*Demonstrates strong momentum and continued need and investment in groundwater modernization.\**



# What is next – Carson Desert

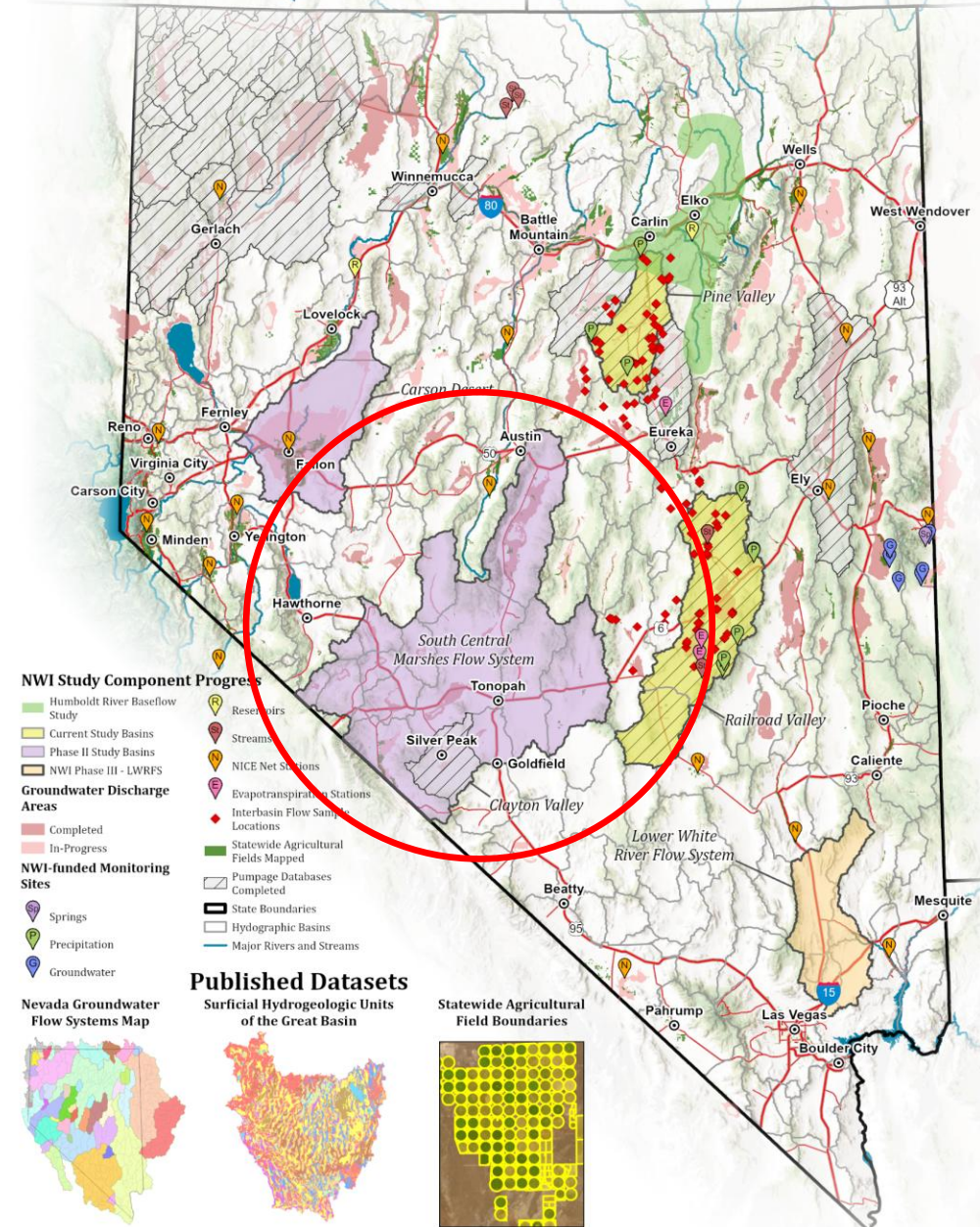
- Identified as area of very high concern for Groundwater.
- Based on estimate of perennial yield from 1975.
- No additional GW appropriated since 1995.
- Substantial water likely available when secondary recharge considered.
- Study is ~80% funded, begins this summer.

## 2023 Groundwater Condition Index



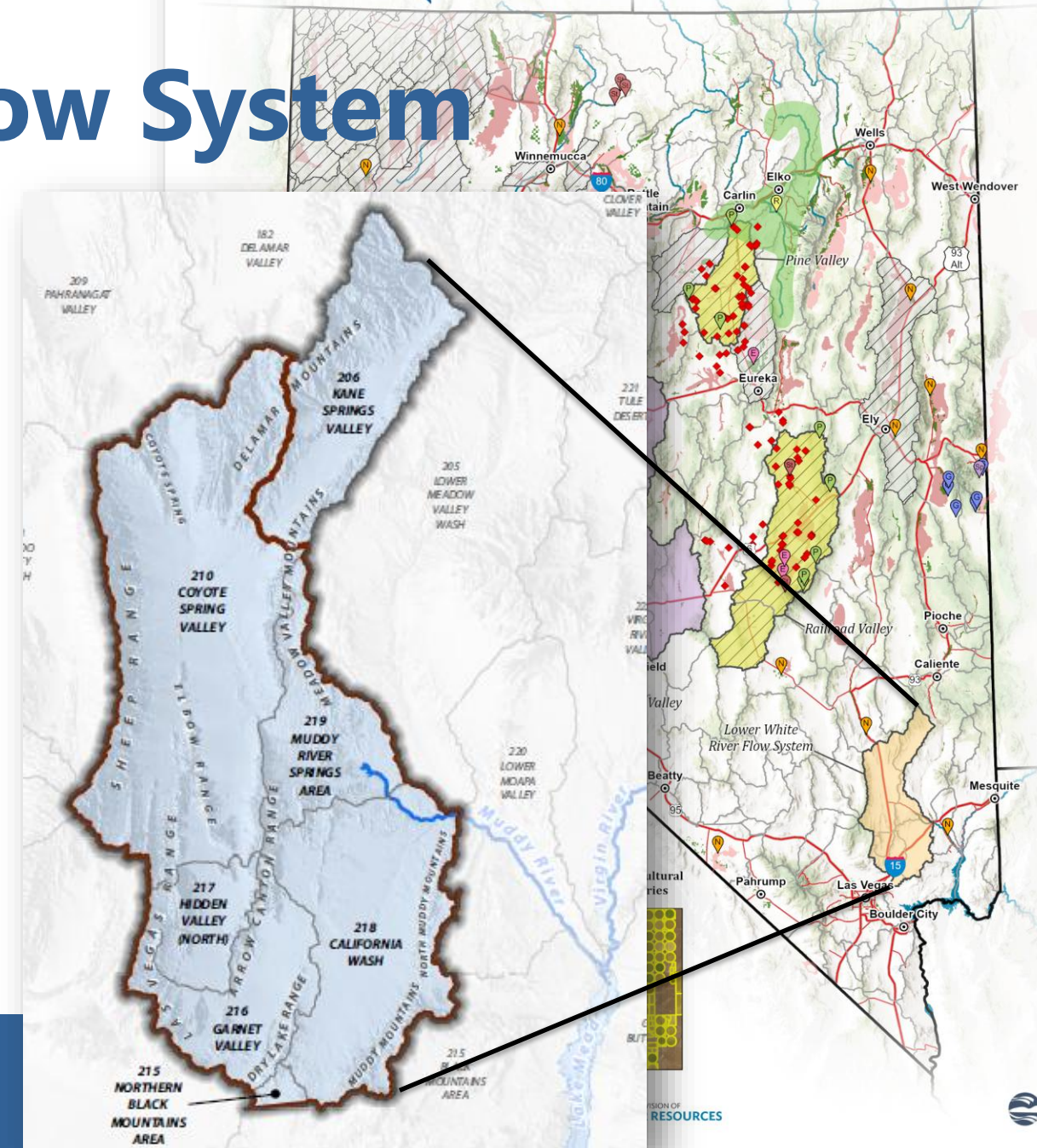
# What is next – South Central Marshes Flow System

- 14 Hydrographic Basins centered around Tonopah area.
- Substantial errors in original water budget estimates.
- Misunderstanding of flow system and flow between basins.
- Much economic potential related to mining and renewable energy.
- Funded, work begins this summer.



# What is next – Lower White River Flow System

- Recent substantial update to our understanding of this flow system.
- Muddy River Springs emits from large, well connected aquifer system that spans multiple basins.
- Senior rights and Desert Dace dependent on outflow from the Springs.
- Tool is needed to predict changes to Spring outflow to support water right decisions.
- Project to begin ~2028.
- Currently not funded.



# Benefits to Nevada

- Updates groundwater availability information to reflect today's conditions and support long-term water security.
- Provides updated water budgets, data, models, water management tools that inform sound, science-based decisions.
- Ensures transparent, science-base foundation for managing Nevada's water resources.
- Supports economic development with reliable information for planning and growth.
- Enables more successful applications for water resources.



# NWI Program – Long Term Need

- Consistent Funding over the next Decade+ at ~\$2M/year
  - For rapid progression of science across the States Hydrographic Basins.
  - Maintain the expertise that has been developed under current ARPA funded program.
  - Continue to develop tools, data sets, and foundational science.
  - Streamline application process and success to support economic development.

## Investments & Current Momentum

- \$6.4M State ARPA + \$3.2M matching (DRI & USGS) – ending late 2026
- \$1.5M federal earmark (FY26) for Phase II
  - Carson Desert + \$200K match CWSD
  - South-Central Marshes Flow System

# Thank You

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Nevada Division of Water Resources

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<https://water.nv.gov/programs/nevada-water-initiative>



**NWI**  
Nevada Water Initiative

*The bridge to Nevada's water security*

