Nevada Water Initiative: Securing Nevada's Water Future

Central Nevada Regional Water Authority

November 6, 2026

Presented by

Kip Allander, Chief of Hydrology

NWI
Nevada Water Initiative

Nevada Department of CONSERVATION & NATURAL RESOURCES

NEVADA DIVISION OF WATER RESOURCES

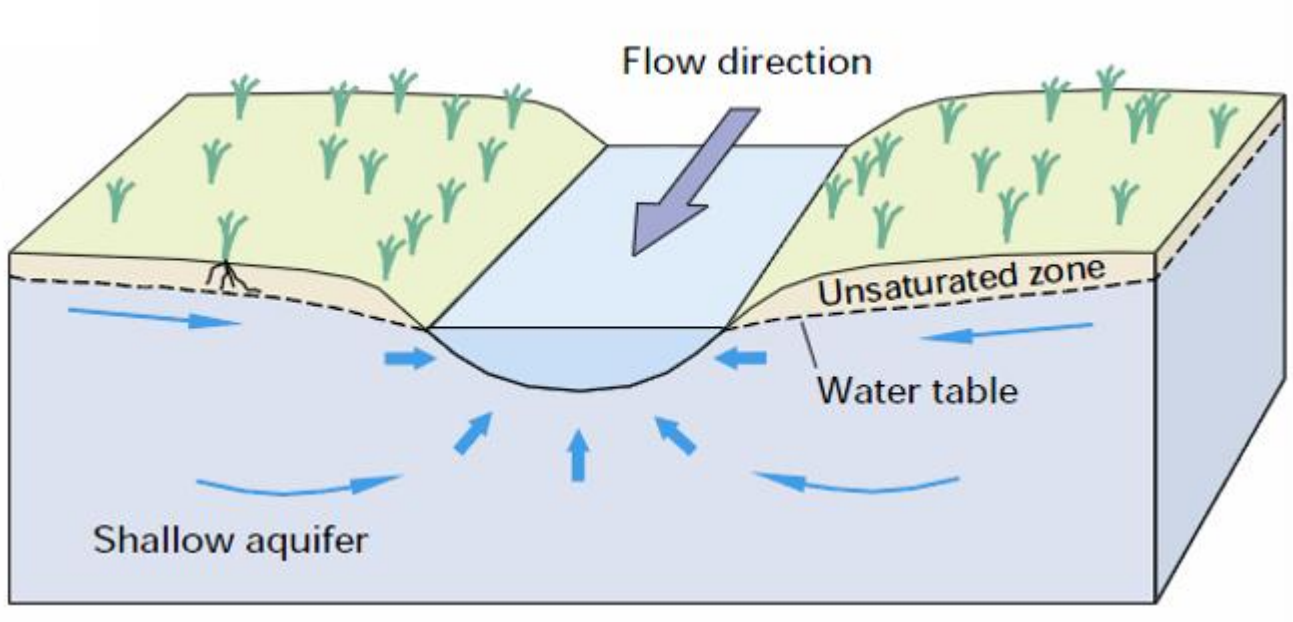


What is NWI?

- 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

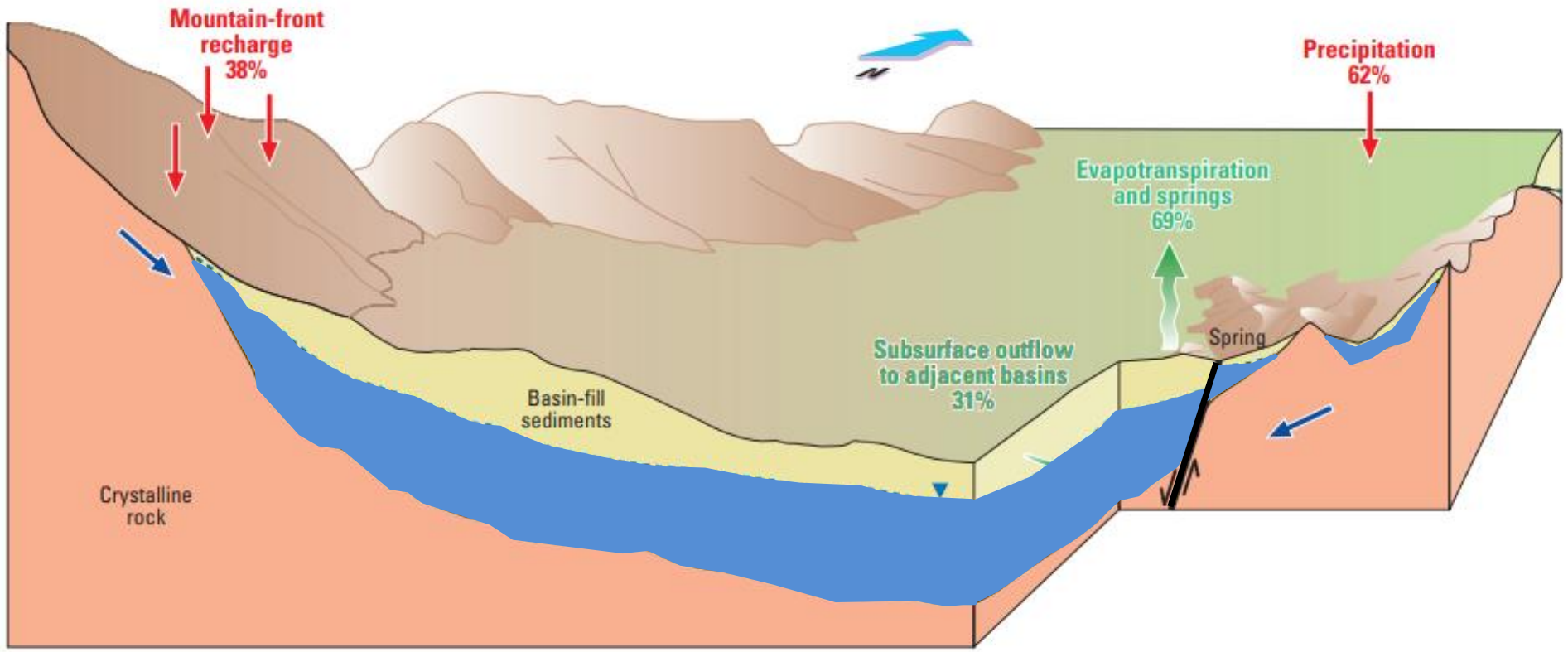


Groundwater & Surface Water Connection



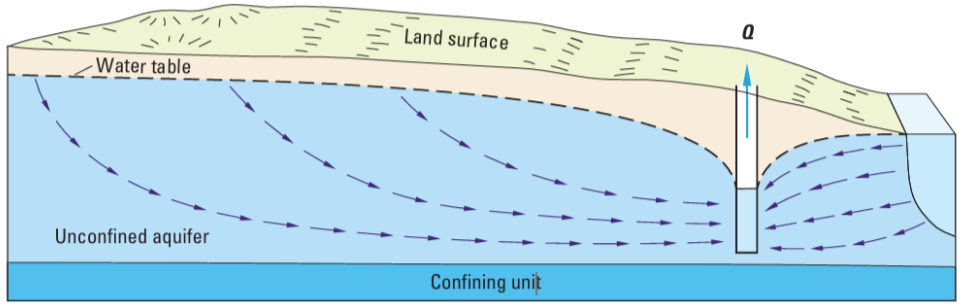
Groundwater and surface water are often connected and should be managed as a single connected resource

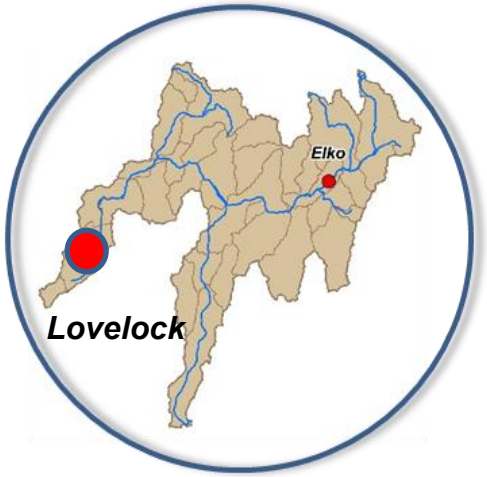
Perennial Yield Limitations

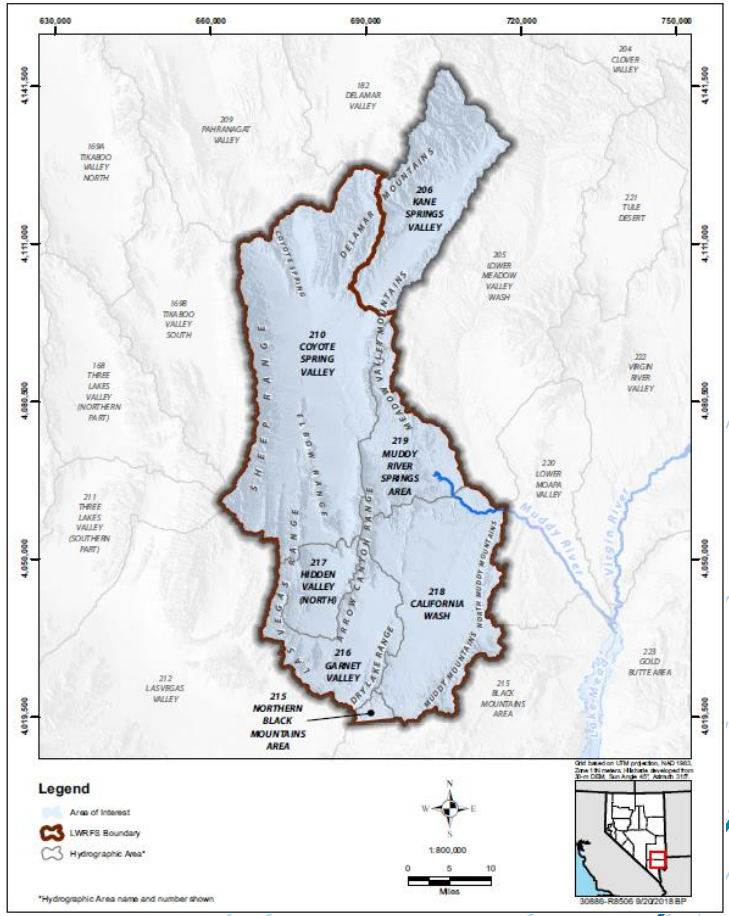


Groundwater has historically been managed as if it is from an isolated reservoir

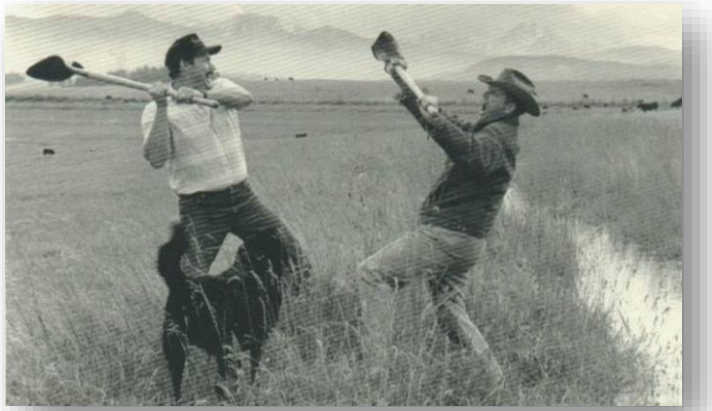
Conflict







Historical management approach has led to increased conflict over time



2017 Legislative Declaration

NRS 533.024(1)(c):

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

NRS 533.024(1)(e):

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

Challenges to Nevada's Economy

- Water availability shapes economic development
- Conjunctive management is complex and evolving
  - No clear rules, blueprint, roadmap, direction, or guidance for implementation
- Similar challenges are widespread across the West
- Data, tools, and resources are needed for successful water applications



Water Resource Management Objectives (WRMO's)

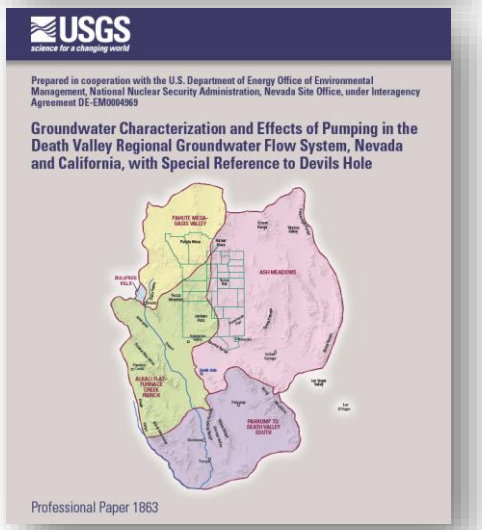
- Need to modernize water resource management
- Moving beyond the Perennial Yield by establishing WRMO's for each Basin
- Perennial yield is a surrogate WRMO for "Avoiding permanent depletion of groundwater"
- NRS establishes base WRMO's:
  - Must not conflict with existing rights (§533.370) or domestic wells §533.024(1b)
  - Must not be detrimental to public interest (§533.370)

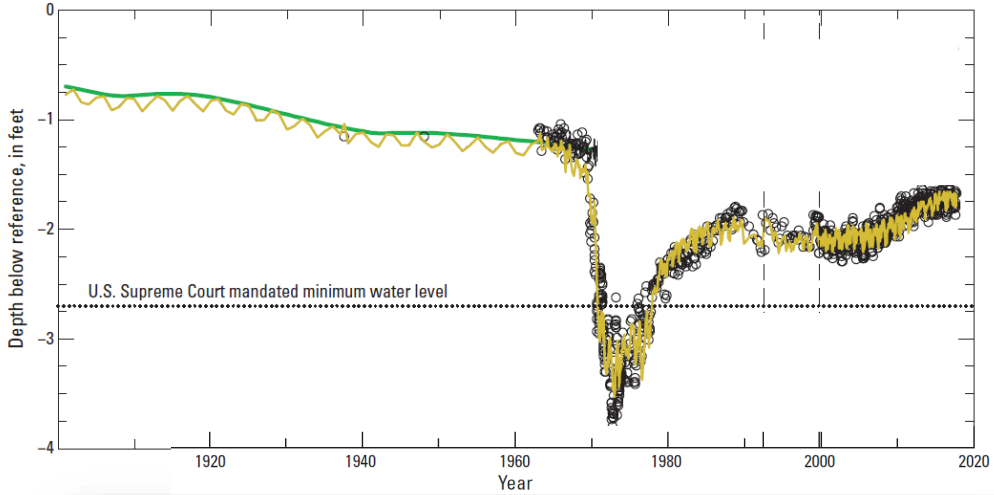


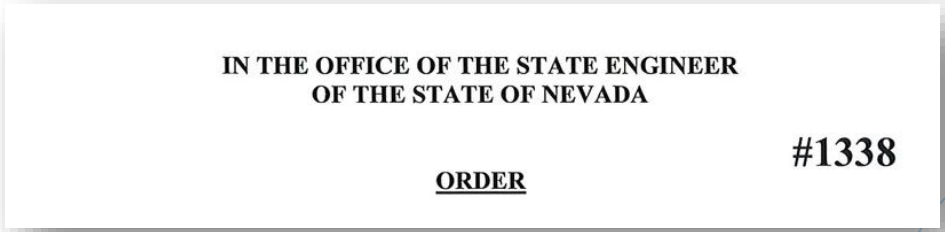
Management Tool in Practice: Devils Hole





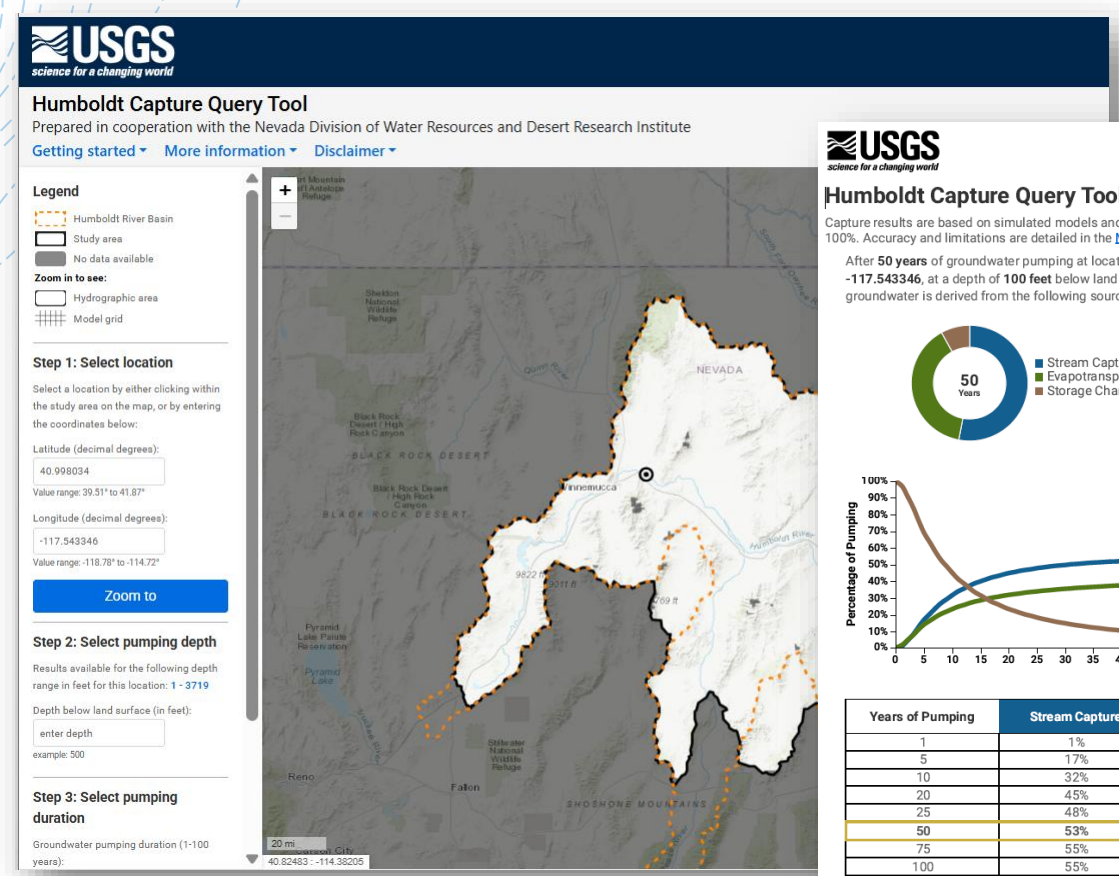


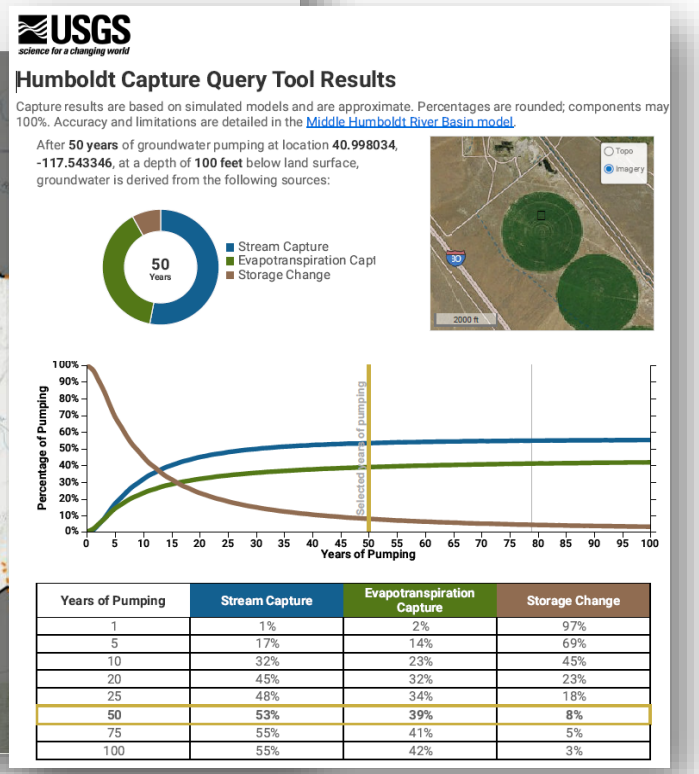




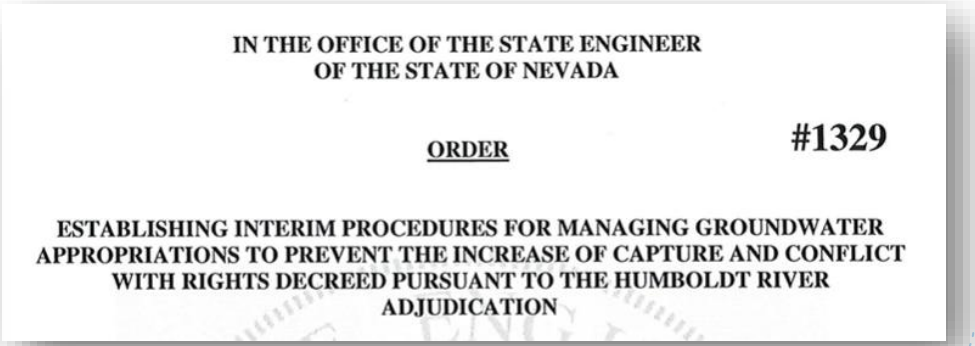
WRMO: No net water-level declines at Devils Hole over a 50-year period.

Management Tool in Practice: Humboldt Capture Query Tool*





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%



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

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

WRMO: Cannot increase capture along the Humboldt River or its tributaries over a 50-year period

* HCQT is currently available for demonstration purposes.

Progress & Success

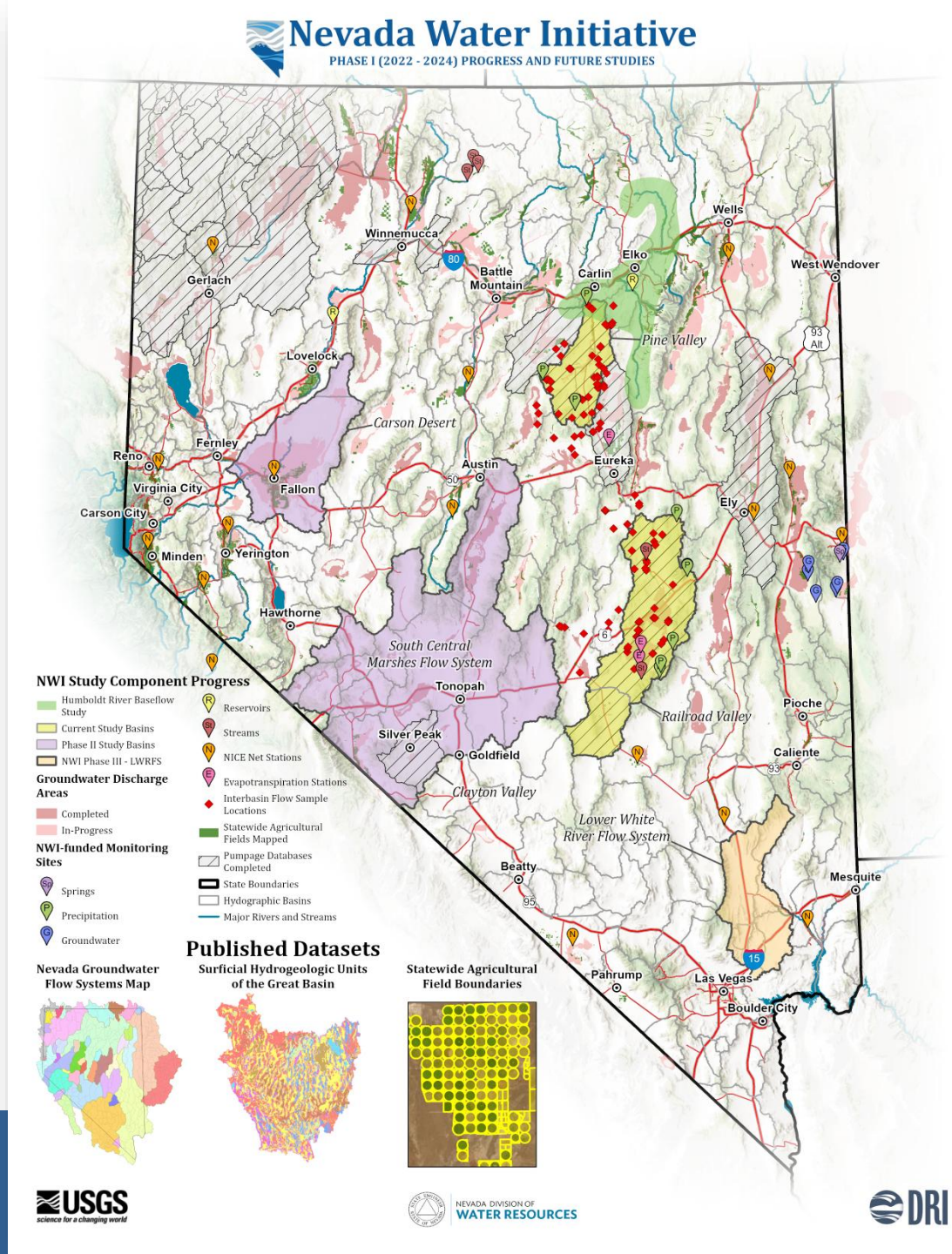
Statewide Datasets: Natural Discharge, Refined recharge approach, pumping inventories

Demo Basins: Pine Valley, Railroad Valley

Expanded Measurement: Surface water, groundwater, precipitation, and evapotranspiration networks

Interpretations: New potentiometric surface maps, interbasin flow analysis, recharge and discharge rates

Demonstrates strong momentum and continued need and investment in modernizing groundwater management.

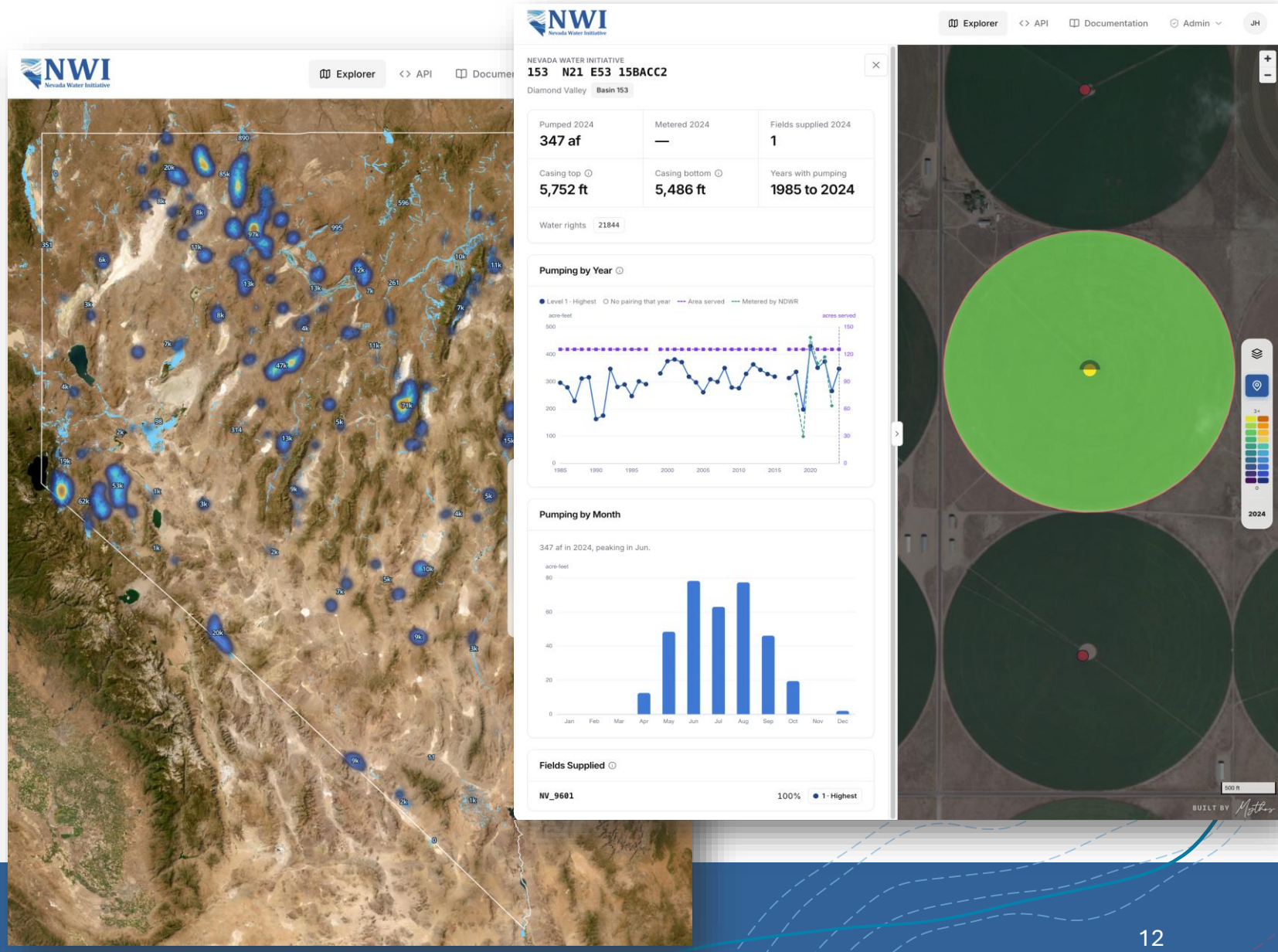


Agricultural Water Use Inventory

Statewide:
- Irrigated fields mapped through time
- Monthly pumpage estimates
- 1985 - 2025
- Linked to Pumping wells.

Supports:
- Establishing WRMO's
- Conjunctive use, GMPs, pumpage inventories, etc.

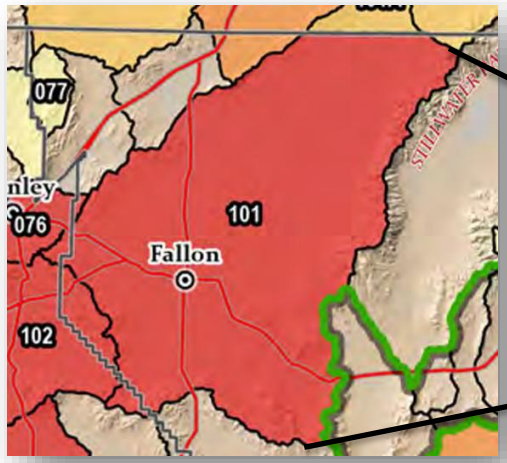
Open Access to Data:
- Interactive explorer
- To be updated annually

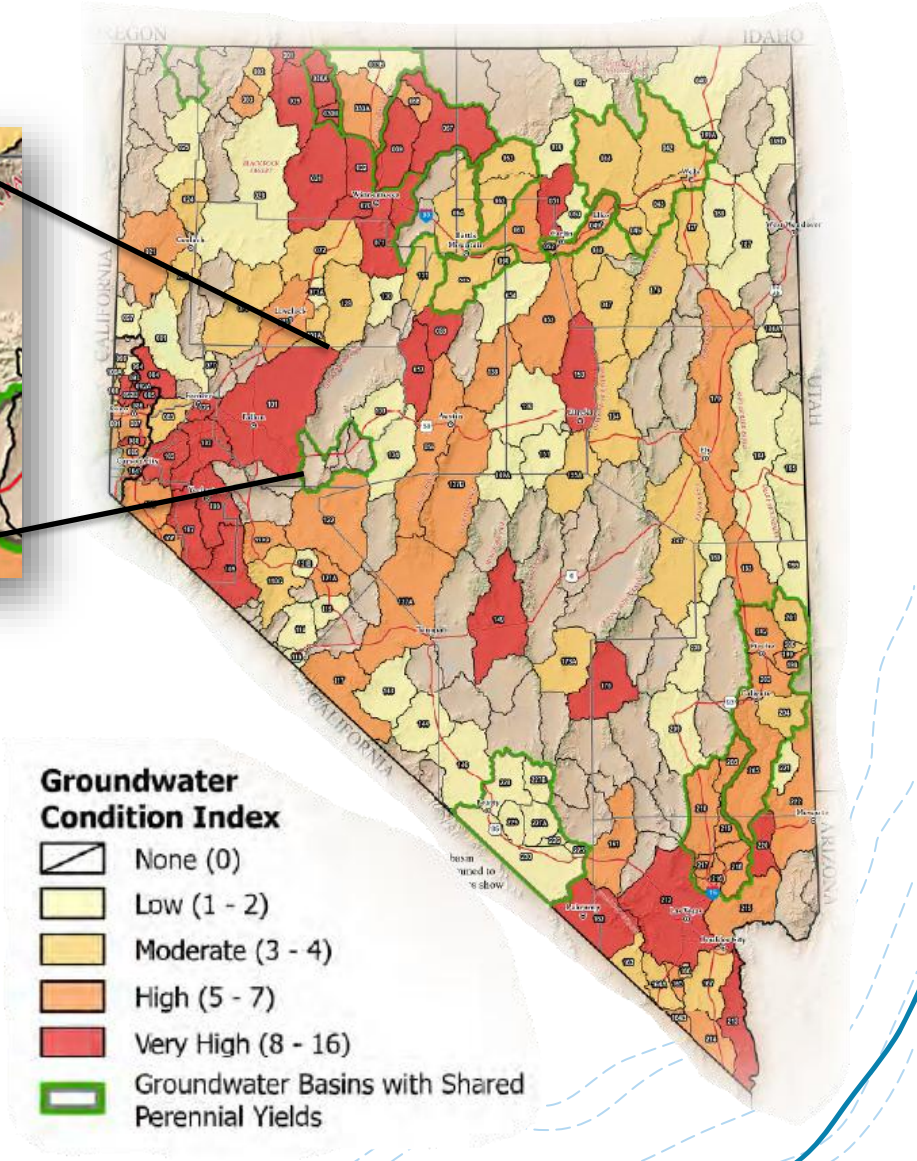


Looking Ahead: Carson Desert

- Identified as area of very high concern for groundwater.
- Based on estimate of perennial yield from 1975.
- No additional groundwater appropriated since 1995.
- Substantial water likely available when secondary recharge considered.
- Study is ~80% funded, begins in 2027.
- Includes public process to establish WRMO's

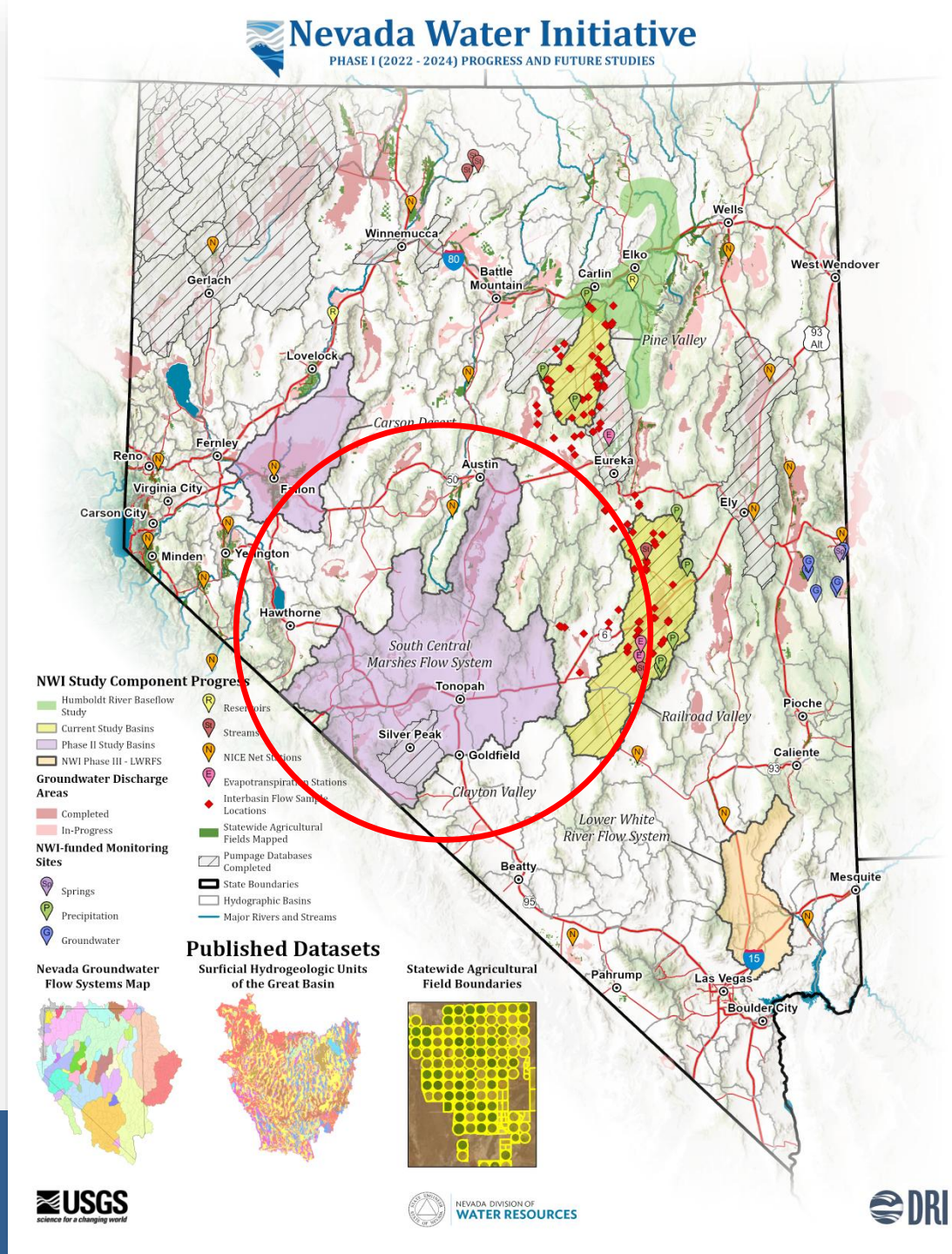
2023 Groundwater Condition Index



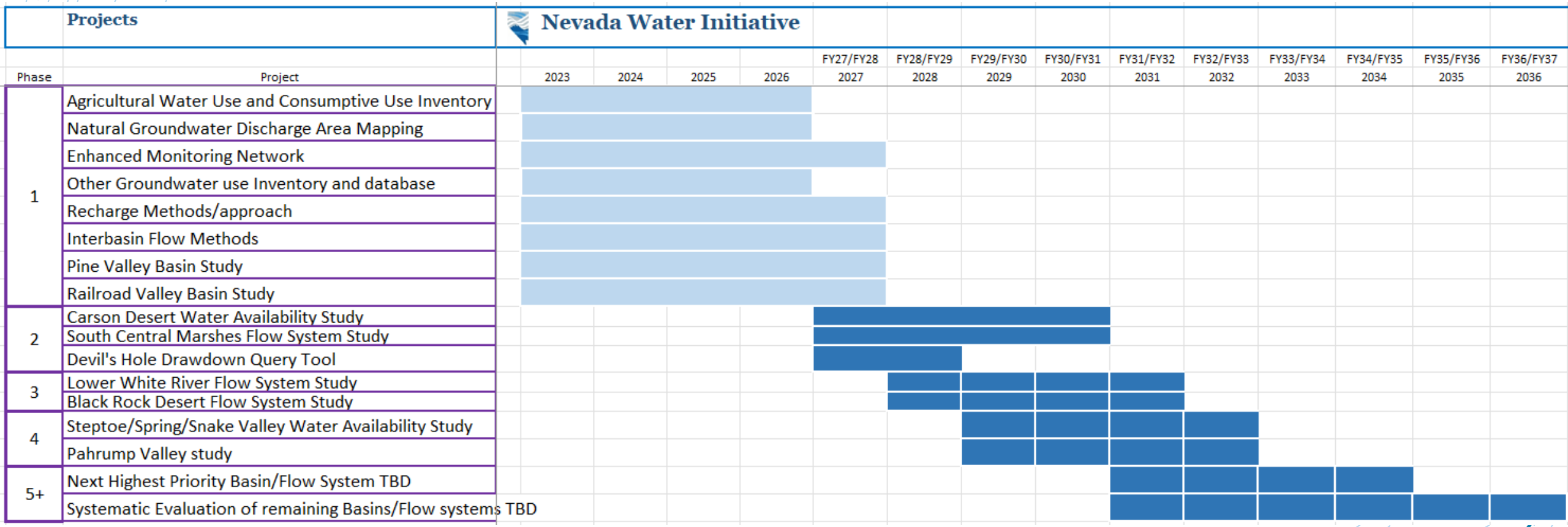


Looking Ahead: South Central Marshes Flow System

- 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 2027.



Looking Ahead:
Future Studies and Investigations*



* Tentative plan – subject to change

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-based foundation for managing Nevada's water resources.
- Supports economic development with reliable information for planning and growth.
- Enables more successful applications for water resources.



Long-Term Investment in Water Management

- Need consistent funding over the next decade (~$2M/year)
- Supports rapid advancement of science across hydrographic basins
- Maintains expertise developed under current ARPA-funded program
- Continues development of tools, datasets, and foundational science
- Streamlines application processes to better 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

NWI
Nevada Water Initiative

The bridge to Nevada's water security

Kip Allander, Chief of Hydrology
Nevada Division of Water Resources

Phone: 775-684-2800

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

