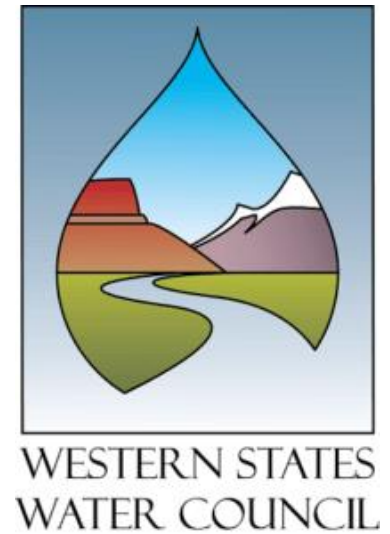


The Western States Water Data Access and Analysis Tool (WestDAAT) Update

Western States Water Council

2023 Fall Meetings, Anchorage Alaska

Sept 13, 2023



Adel Abdallah, Water Data Exchange (WaDE) Program Manager

Tony Willardson, WSWC Executive Director

Ryan James, WaDE Data Analyst



Water Data Exchange (WaDE) Program

Transforming Western Water Planning, Management, and Policy by
Sharing States Water Data Since 2011

The WaDE Program is committed to assisting WSWC member states in publicly sharing water rights, allocation, supply, and use data through a common streamlined and standardized service that enables regional analyses to inform water resources planning and policies

WaDE Database and Water Data Shared through WestDAAT

	#	Data Type	Data	# States sharing	WaDE database	WestDAAT
Stage 1	1	Water Rights	Owner, point of diversion, purpose of use, permitted flow or volume, place of use, water source name and type, priority date	18	Yes	Yes
	2	State Regulatory and Admin Overlays	Basins closed to new surface water diversions, groundwater management areas, natural resources districts, interstate stream and river compacts, etc.	15	Yes	No
Stage 2	3	State Site-Specific time series	State reservoir and state streamgages or groundwater observation wells	10	Yes	No
			State public-supply water use	4	Yes	
			Historic withdrawals related to water rights (e.g. CA, ND).	2	No	
	4	Area Aggregated time series	Available water supply, withdrawal, demand and delivered water as well as consumption or consumptive use	9	Yes	No

WaDE Data is FAIR

Findable

Metadata and data should be findable for both humans and computers

F

A

Interoperable

Data needs to work with applications or workflows for analysis, storage and processing

I

R

Accessible

Once found, users need to know how the data can be accessed

Reusable

The goal of FAIR is to optimise data reuse via comprehensive well-described metadata

<https://www.scibite.com/solutions/enterprise-fair-data-mdm/>

WSWC New Contractors



Andrew Campbell

Bachelor of Science in
Software Engineering from
Utah Valley University



Joseph Wirthlin

Pursuing Master of
Science in Economics at
the University of Utah



Internet
of Water
COALITION

[Our Story](#)

[Resources](#)

[Peer Network](#)

[Events](#)

[Newsroom](#)

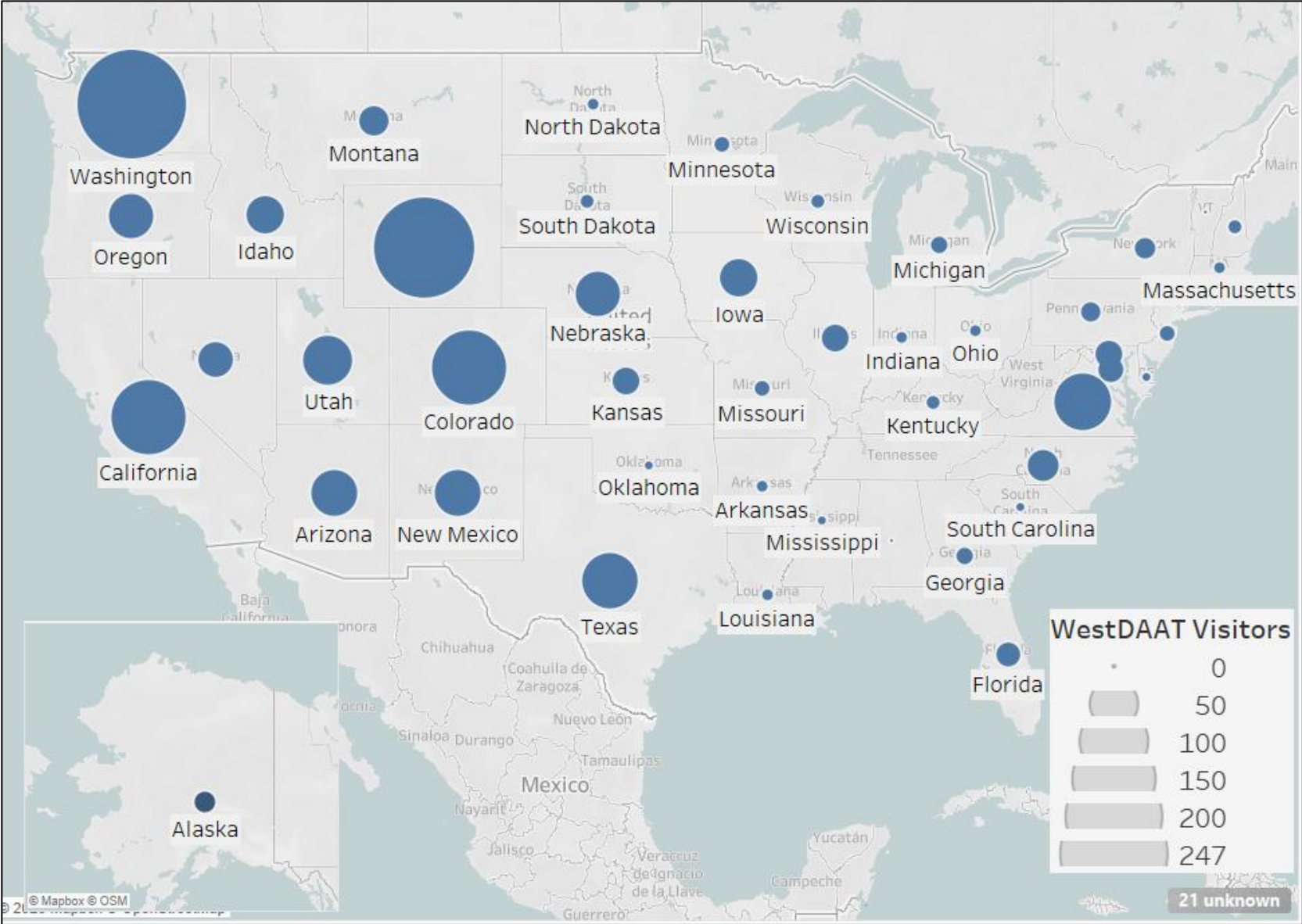


Unveiling WestDAAT

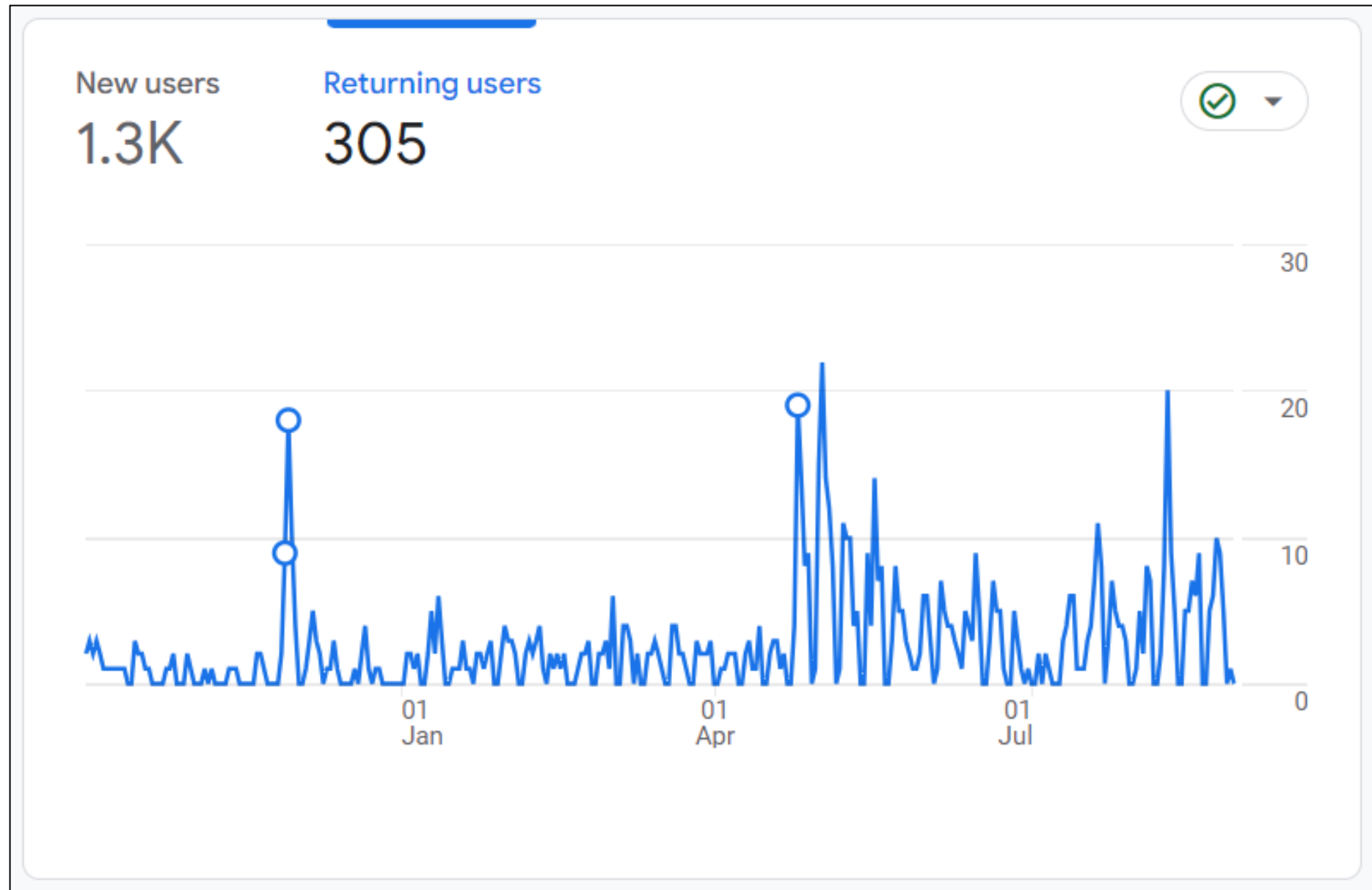
A Breakthrough for Water Rights Data Management in the Western
United States

<https://internetofwater.org/blog/unveiling-westdaat-a-breakthrough-for-water-rights-data-management-in-the-western-united-states>


WestDAAT unique visitors
across the US from
October 1, 2022, through
August 29, 2023. Total
1,300 unique visitors



WestDAAT's Unique Daily Returning Visitors



Administrative and Regulatory Overlays



WESTERN STATES
WATER COUNCIL


Instructions

Use filters to narrow down selection if desired.

Select State

Select Administrative/Regulatory Overlay

Select Water Source



WESTERN STATES
WATER COUNCIL

Instructions

Use filters to narrow down selection if desired.

Select State

AZ

Select Administrative/Regulatory Overlay


Active Management Area

Select Water Source

Administrative & Regulatory Overla

A web tool used to visualize regulatory overlays in the Western Ur

DISCLAIMER: This tool is under construction, not for public use, and has not yet been full



ipyleaflet | Tiles © Esri — Esri, DeLorme, NAVTEQ, TomTom, Intermap, iPC, USGS, FAO, NPS, NRCAN, GeoBase, K&

GIS User Community

Interoperable Data Hub for Western Water Data



BUREAU OF
RECLAMATION

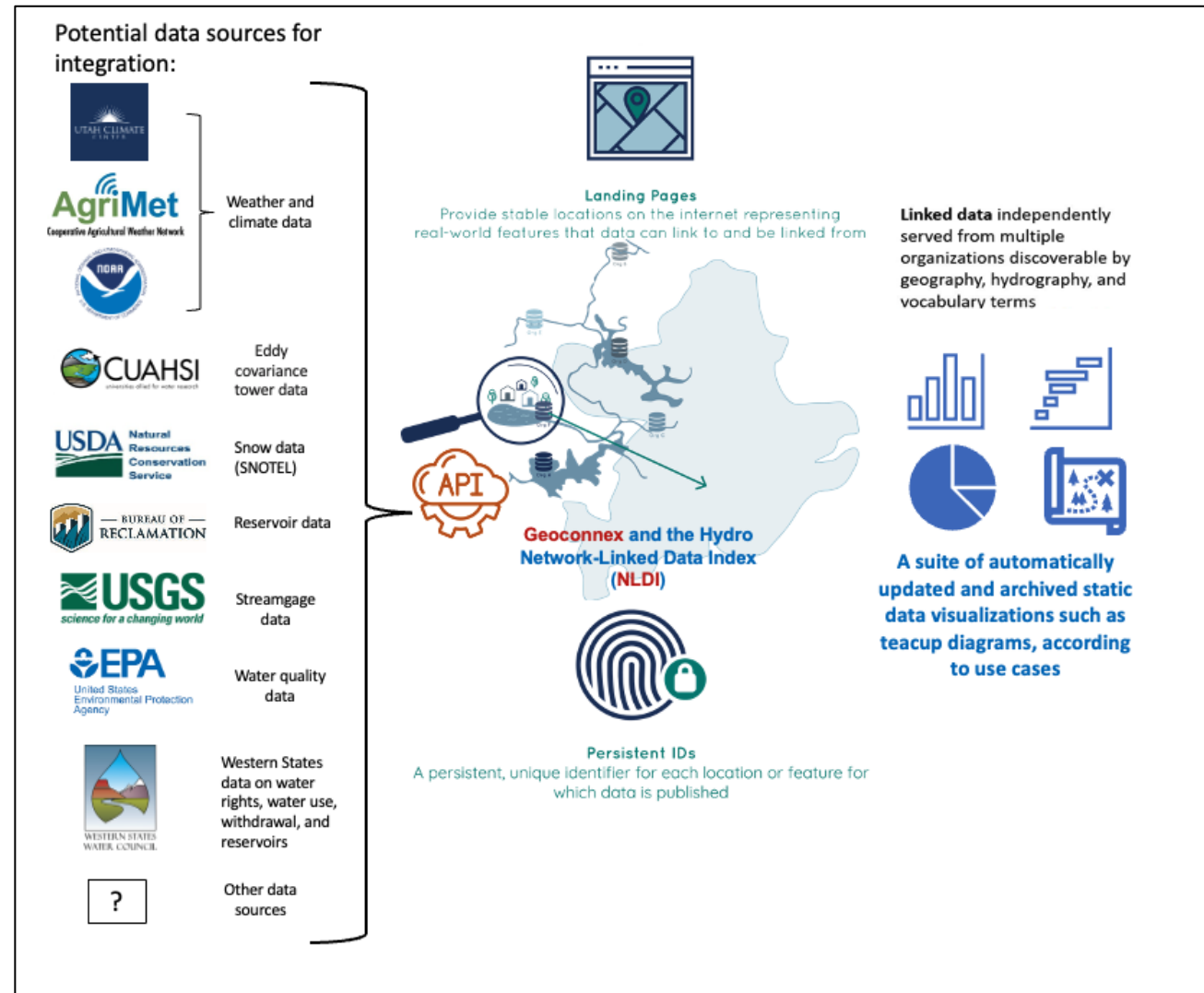


CENTER FOR
**GEOSPATIAL
SOLUTIONS**

Lincoln Institute of Land Policy



WESTERN STATES
WATER COUNCIL



Interoperable Data Hub for Western Water Data


SS Reservoir and

Instructions

Use filters to narrow down selection if desired.

Select State

CA, CO, ID, MT, NE, NV, OR, T

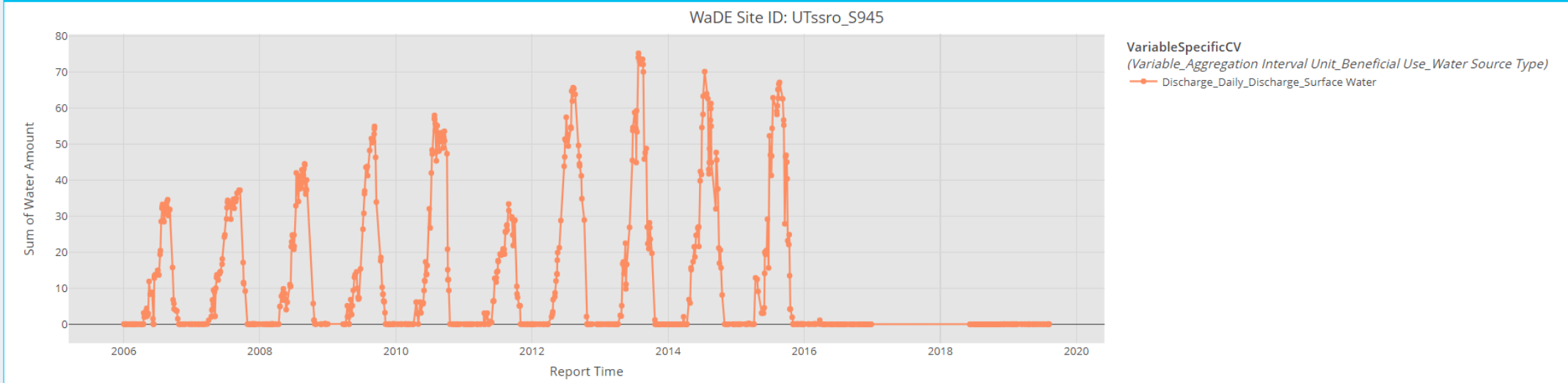


DEMO: WaDE Site-Specific Reservoir and Observation Site Time Series Data

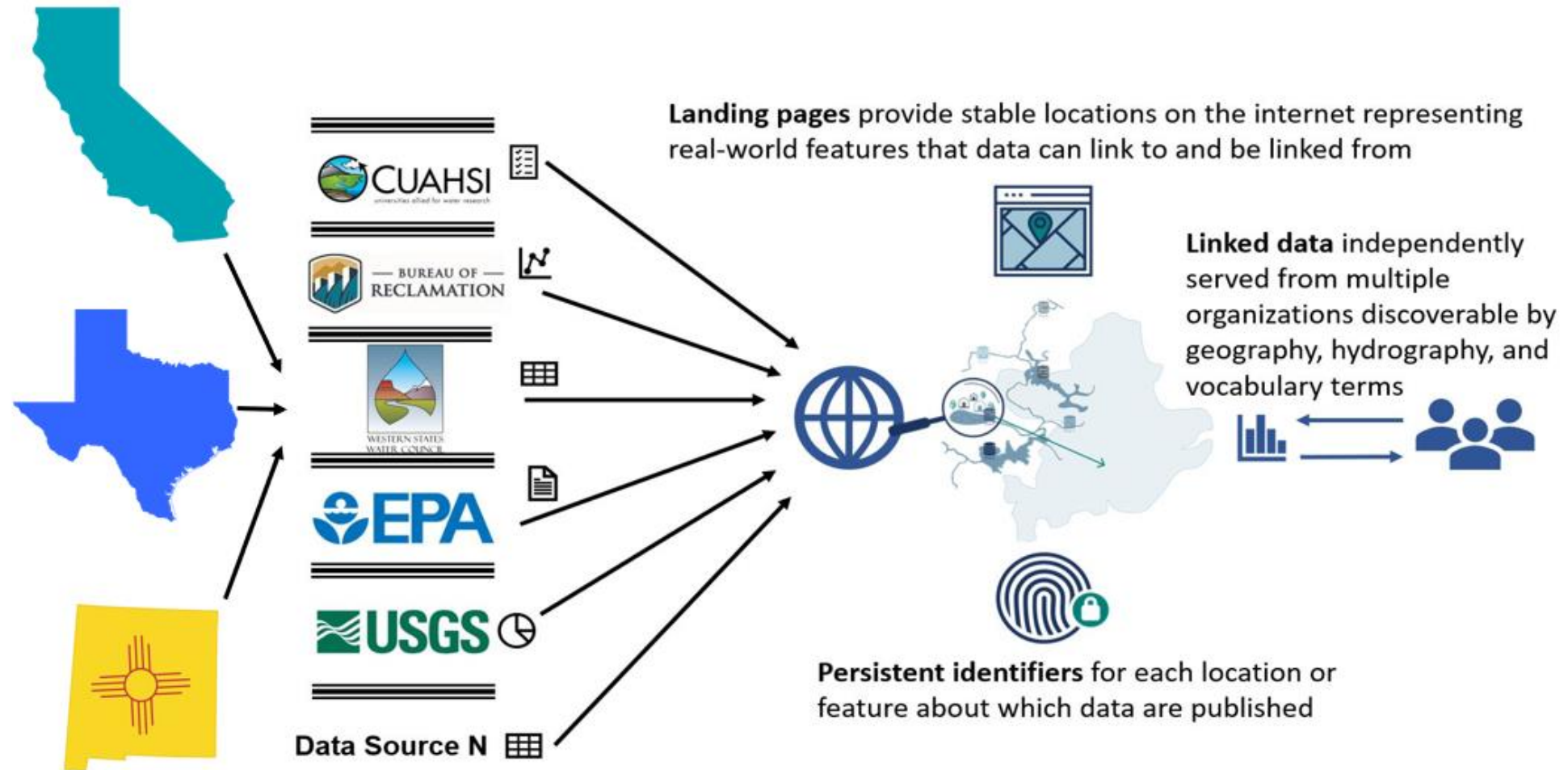
A web tool used to visualize and query historic water data for reservoir levels and observation site data across the Western United States.

DISCLAIMER: This tool is under construction, not for public use, and has not yet been fully approved by our member states.

Site Specific Water Use by Variable Specific Type



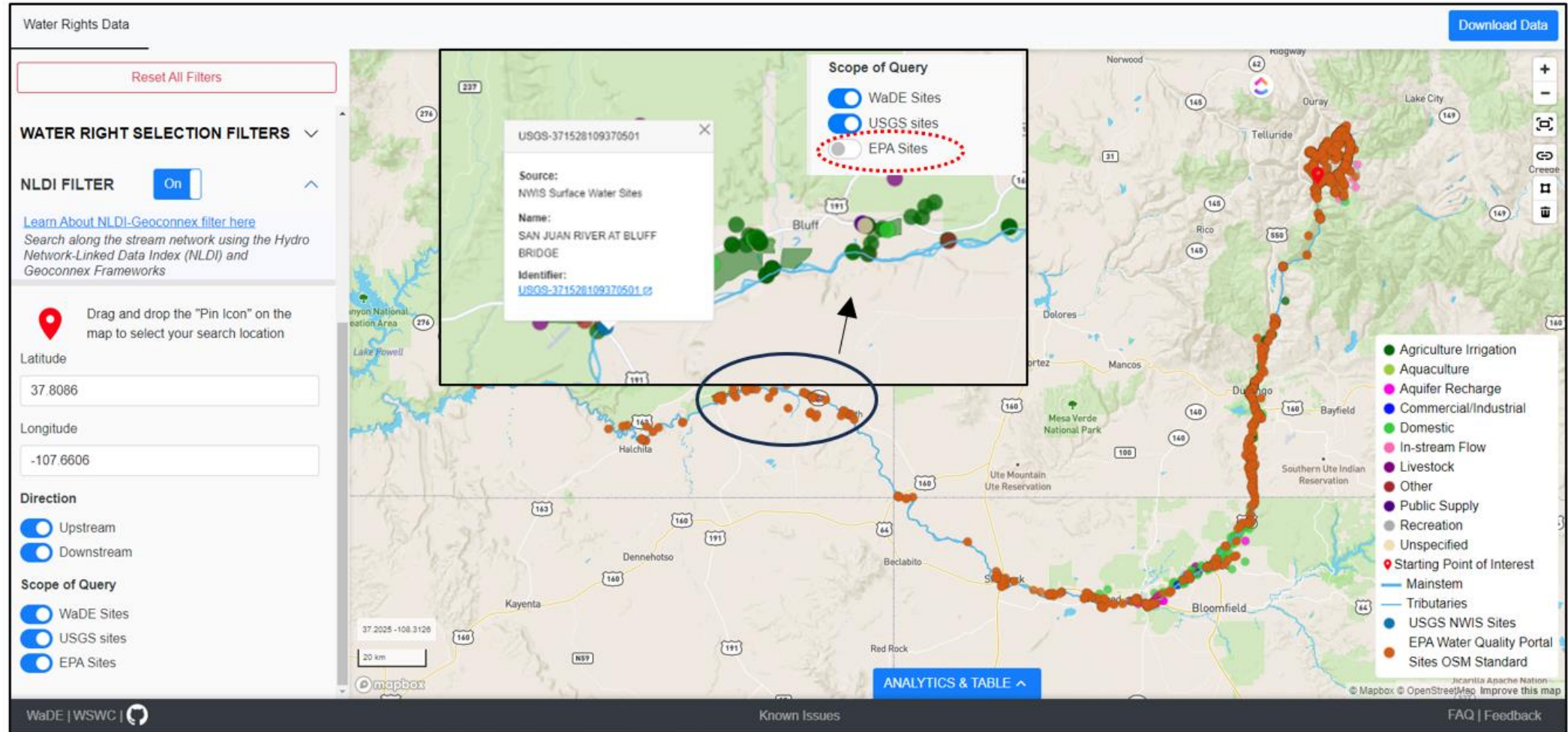
WaDE Integration with Geoconnex and NLDI



Geoconnex <https://internetofwater.org/events/geoconnex-a-community-index-for-water-data/>

The Hydro Network-Linked Data Index (NLDI): <https://waterdata.usgs.gov/blog/nldi-intro/>


WestDAAT Integration with the Hydro Network-Linked Index (NLDI) System



<http://tinyurl.com/3fmkmexn>

Water Conservation Tool Mockup

[← Back to Water Right Landing Page](#)

 **Water Conservation Estimation Tool** [Print](#)

CALCULATED SHAPE AREA FOR ALL IRRIGATED FIELDS
4,681 Acres
Note: Polygons must be smaller than 50,000 acres.


FUNDING ORGANIZATION [?](#)

Select Commission (?)

OpenET MODEL [?](#)

Select Model

MAP LAYER



ESTIMATED CONSUMPTIVE USE [?](#)
Select a time range to calculate consumptive use for the specified area for that time period

Choose Start Date

Choose End Date

AVERAGE HISTORIC TOTAL CONSUMPTIVE USE (DEPLETION) [?](#)
Across one or many fields
1,592 Acre-Feet

CONSERVATION ORGANIZATION COMPENSATION RATE [?](#)
You will be paid \$300 per acre-foot.
The commission will pay [Lorem ipsum...]

DESIRED COMPENSATION (\$)
Input values below to estimate the amount of savings you may be eligible for

\$ 600

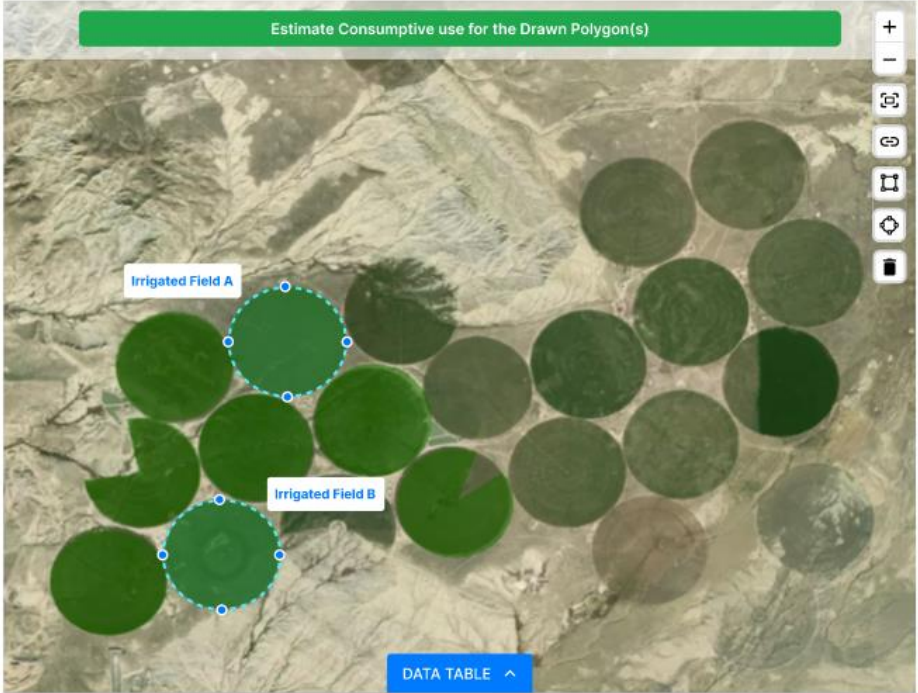
per acre-foot

Reset Values

CONSERVATION ESTIMATE [?](#)

Estimate consumptive use through OpenET for an irrigated field
Click once to begin drawing a polygon around your land by using the shape tool. Then, use the panel on the left to review estimates and potential compensation as part of a voluntary and temporary measure. [How does this work?](#)
Or, you can upload a file from your device. [Upload File](#)

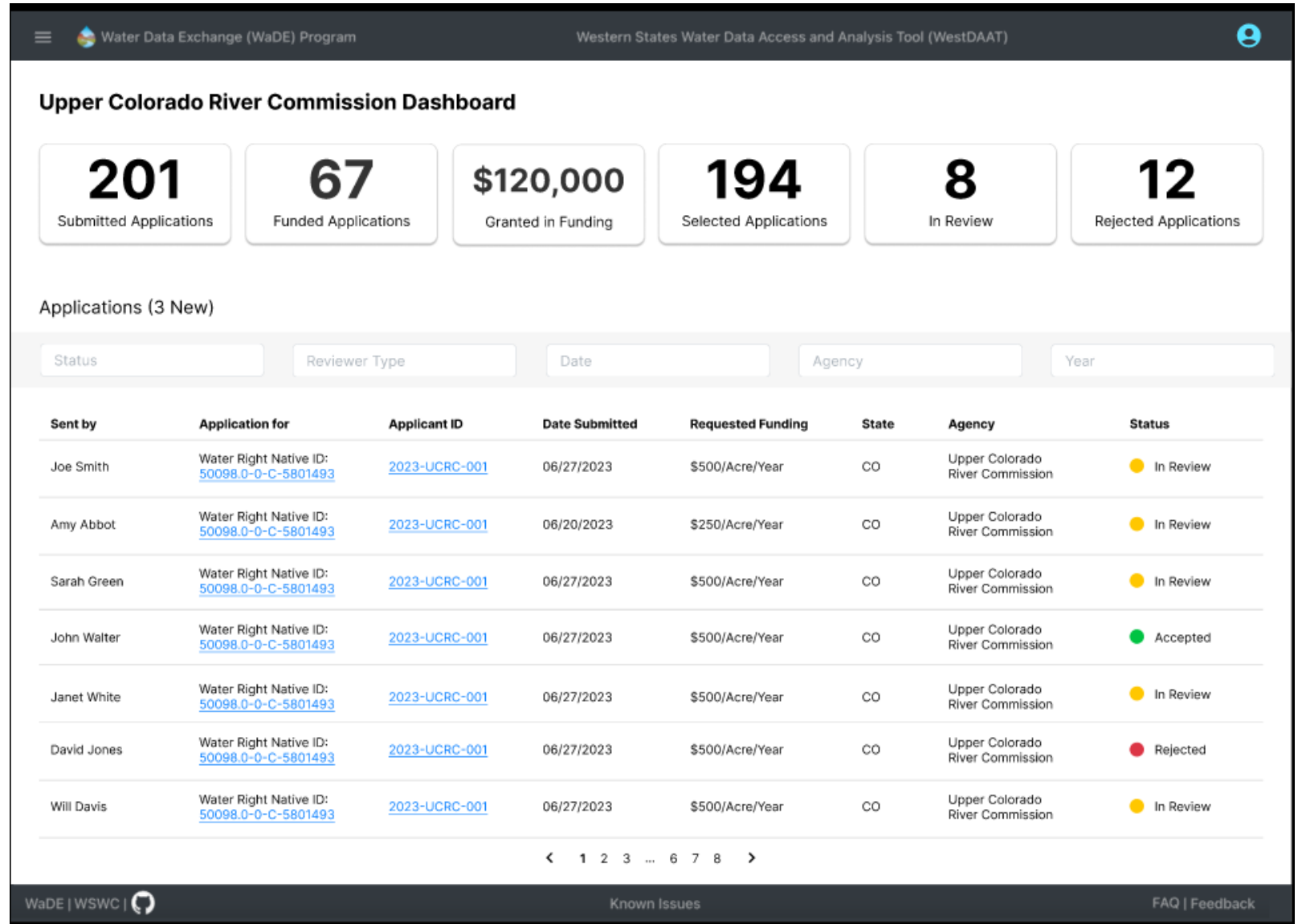
Estimate Consumptive use for the Drawn Polygon(s)



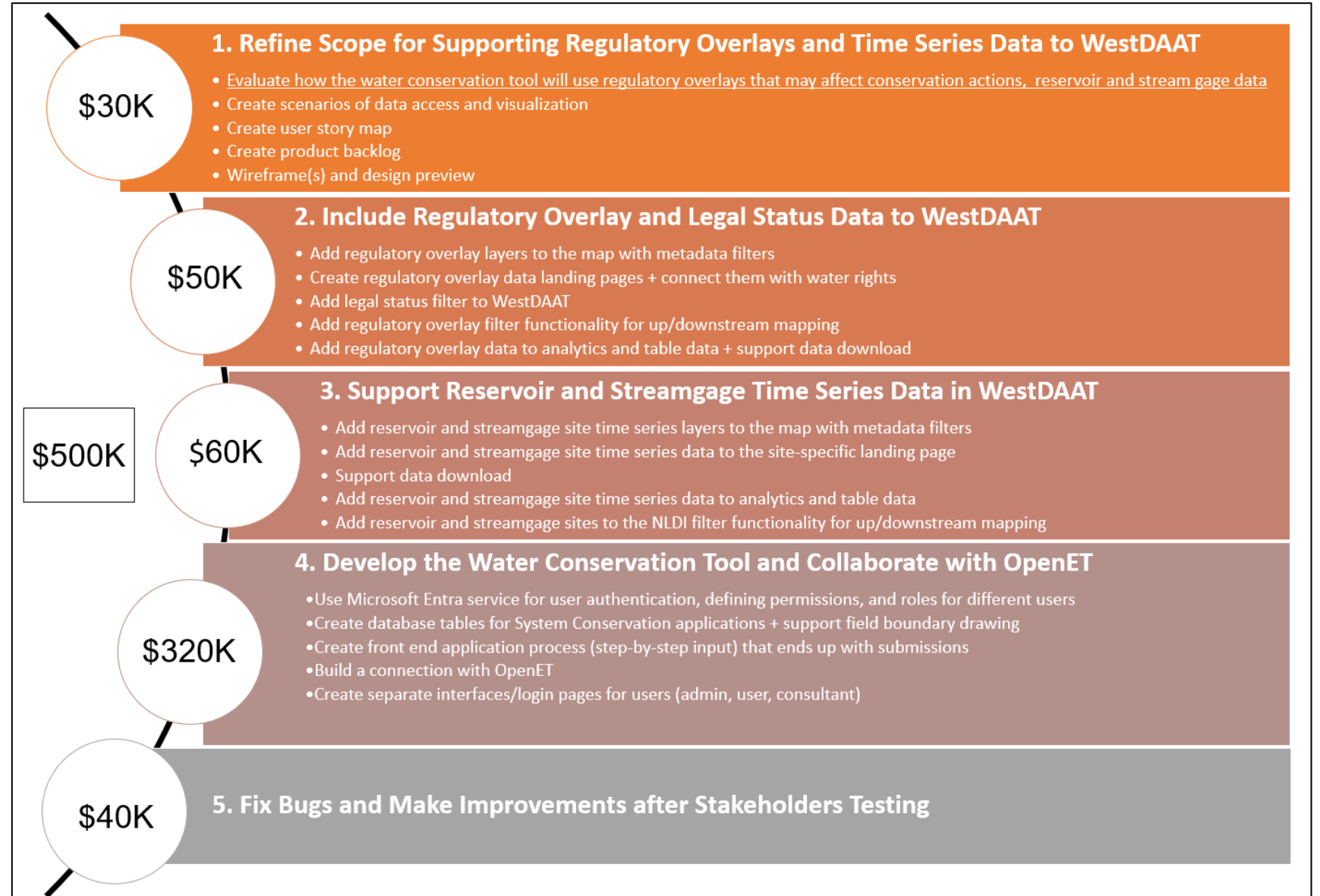
DATA TABLE ^

< 1 / 9 >

Water Conservation Tool Mockup



What's Next? Second Stage Development

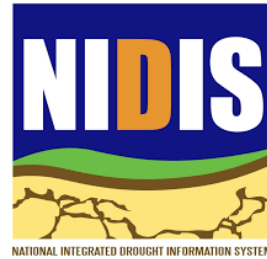




BUREAU OF
RECLAMATION



United States
Department of
Agriculture



OPENET



Funders, Collaborators & Partners



Water Foundation
Mitchell Foundation
BHP Foundation
MOORE Foundation
EPA Exchange Network

WSWC Member State Agencies



Thank You!

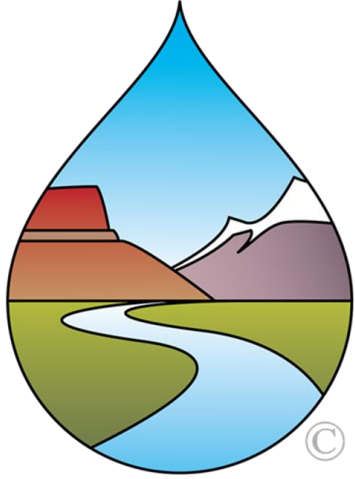


Adel Abdallah, WaDE Program Manager
Ryan James, WaDE Data Analyst
Western States Water Council
adelabdallah@wswc.utah.gov

Eklutna Historical Park

<https://westdaat.westernstateswater.org/?state=N4lgtghgDiBcoC8D2SwBkCmA3DAbOAJAOwB0ArAJxkDMADAQEwAcNIRRTANCLhAC4BLPgFcAJhjgA2AiQAsk2tO64kAOwDmQsRNGBaArIolqCspIC%2B3MAGc4Ia3wBOGDH2u6sBAiHNA>





Live Demo

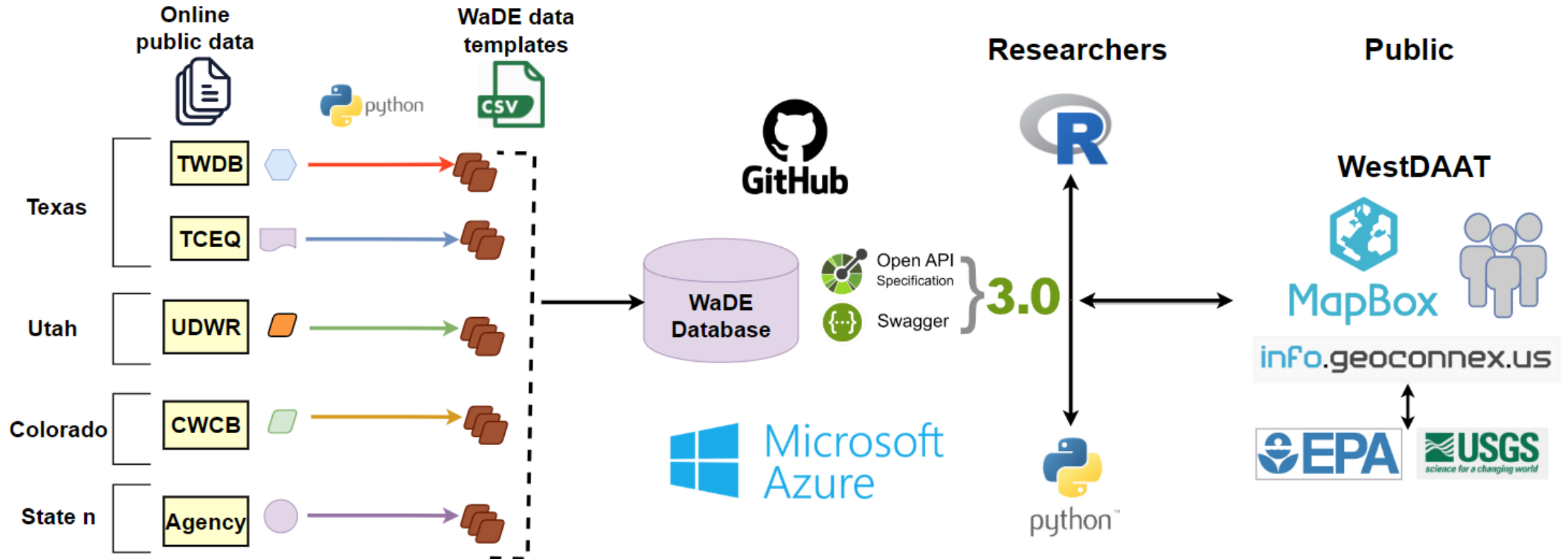
WestDAAT

<https://westdaat.westernstateswater.org/>

Prototypes

1. Reservoir and Gage Data
<https://waterdataexchangewswc.shinyapps.io/SiteSpecificReservoirAndObservationSiteDemo/>
2. Aggregated Area Water Budget Data
<https://waterdataexchangewswc.shinyapps.io/AggregatedBudgetWaterUseDemo/>
3. Public Supply Water Data
<https://waterdataexchangewswc.shinyapps.io/SiteSpecificPublicSupplyWaterDemo/>

WaDE 2.0 Architecture



<https://github.com/WSWCWaterDataExchange>