Modern Water Data Infrastructure for 21st Century Water Management

Internet of Water

Partnerships for progress

VISION

The Internet of Water envisions a world engaged in sustainable water resources management and stewardship enabled by open, shared, and integrated water data.

Integrated management requires

integrated data

To create a

full picture

We need to

find

access

use

As many pieces of the puzzle as possible

Discoverable, Accessible,
& Usable Water Data

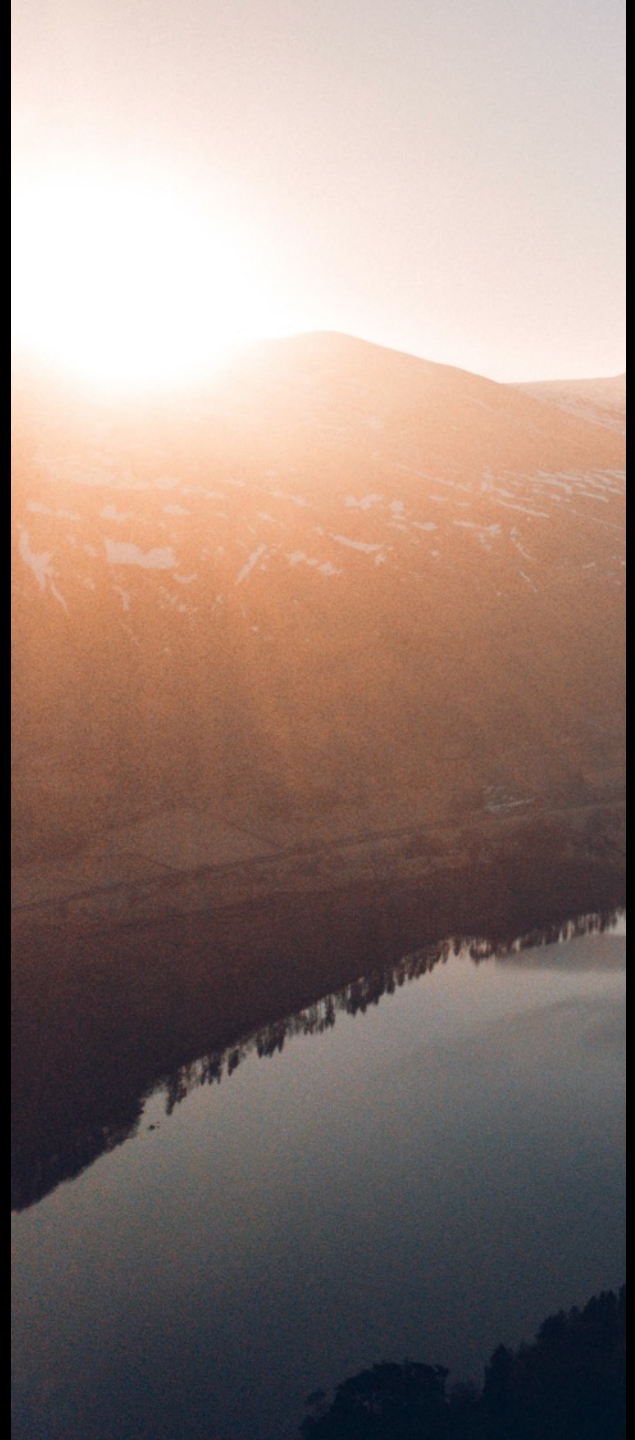
New Information
& Insights

Improved
Decision-making in the
Water Data Community

Better Water
Management Outcomes

Healthy Communities
& Ecosystems

Internet
of Water



An internet of water supports decision-making

Effective policy decisions begin with an important question

What source water protection measures should be taken?

Policy makers need information to make good decisions.

Which public water systems should be involved?

Which water intake facilities are in the watershed?

Data are needed to create good information for decision-making.

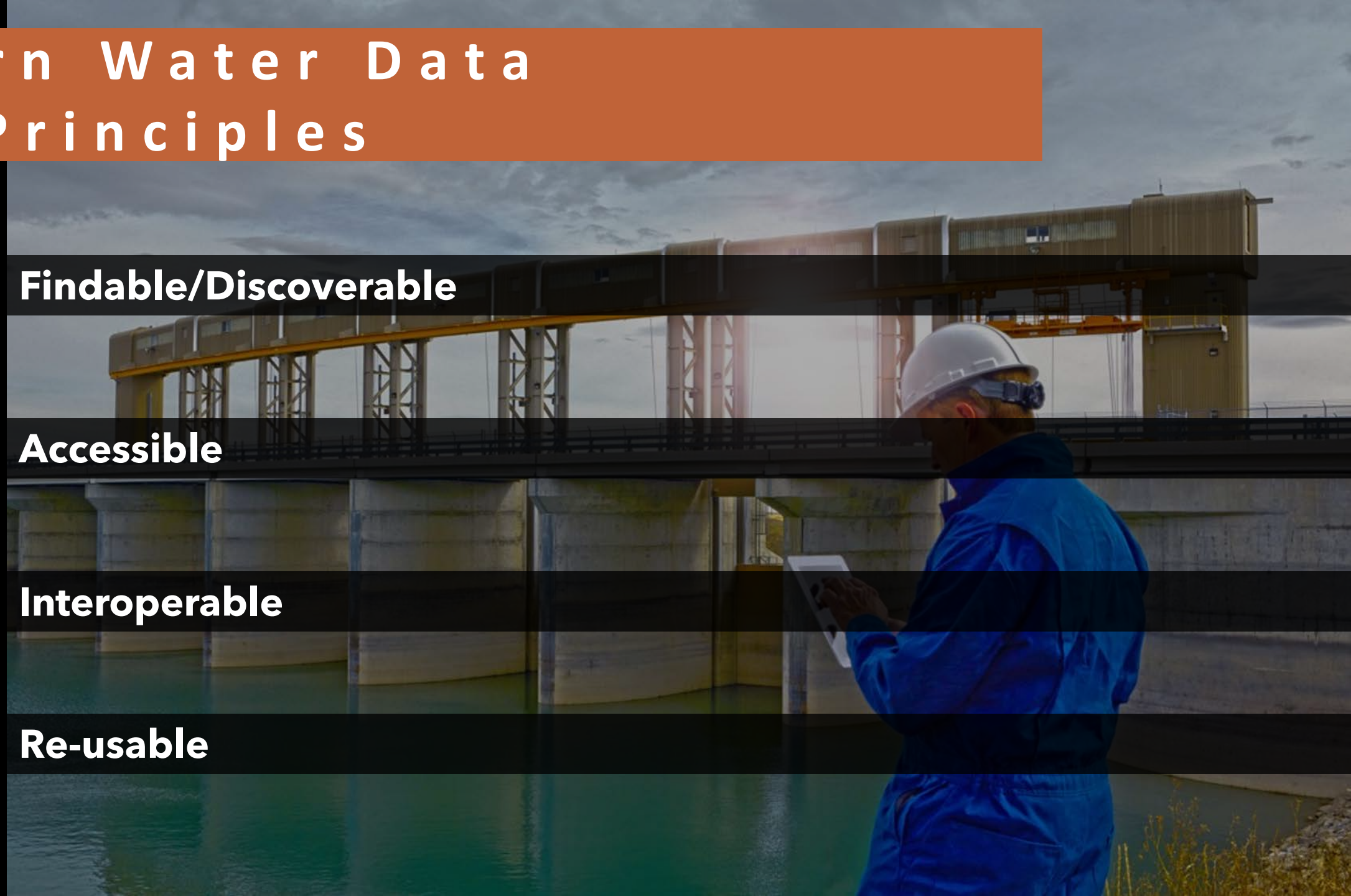
Findable, accessible, and usable data

The IoW helps you find and access data.

Access to good data leads to more effective policy decisions.


Approach

Modern Water Data
FAIR Principles



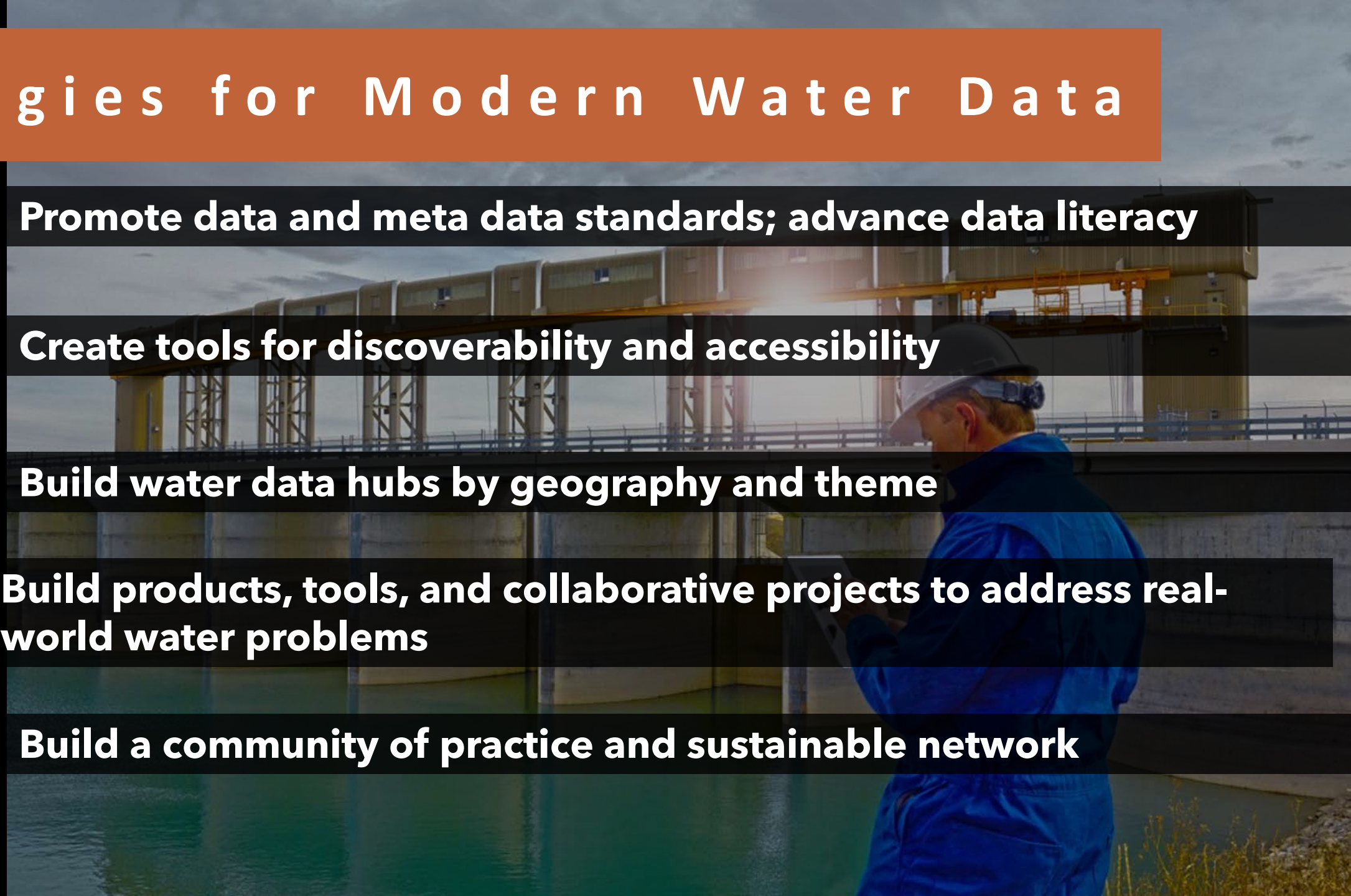
Findable/Discoverable

Accessible

Interoperable

Re-usable

Strategies for Modern Water Data



- Promote data and meta data standards; advance data literacy
- Create tools for discoverability and accessibility
- Build water data hubs by geography and theme
- Build products, tools, and collaborative projects to address real-world water problems
- Build a community of practice and sustainable network


Tools

Internet of Water

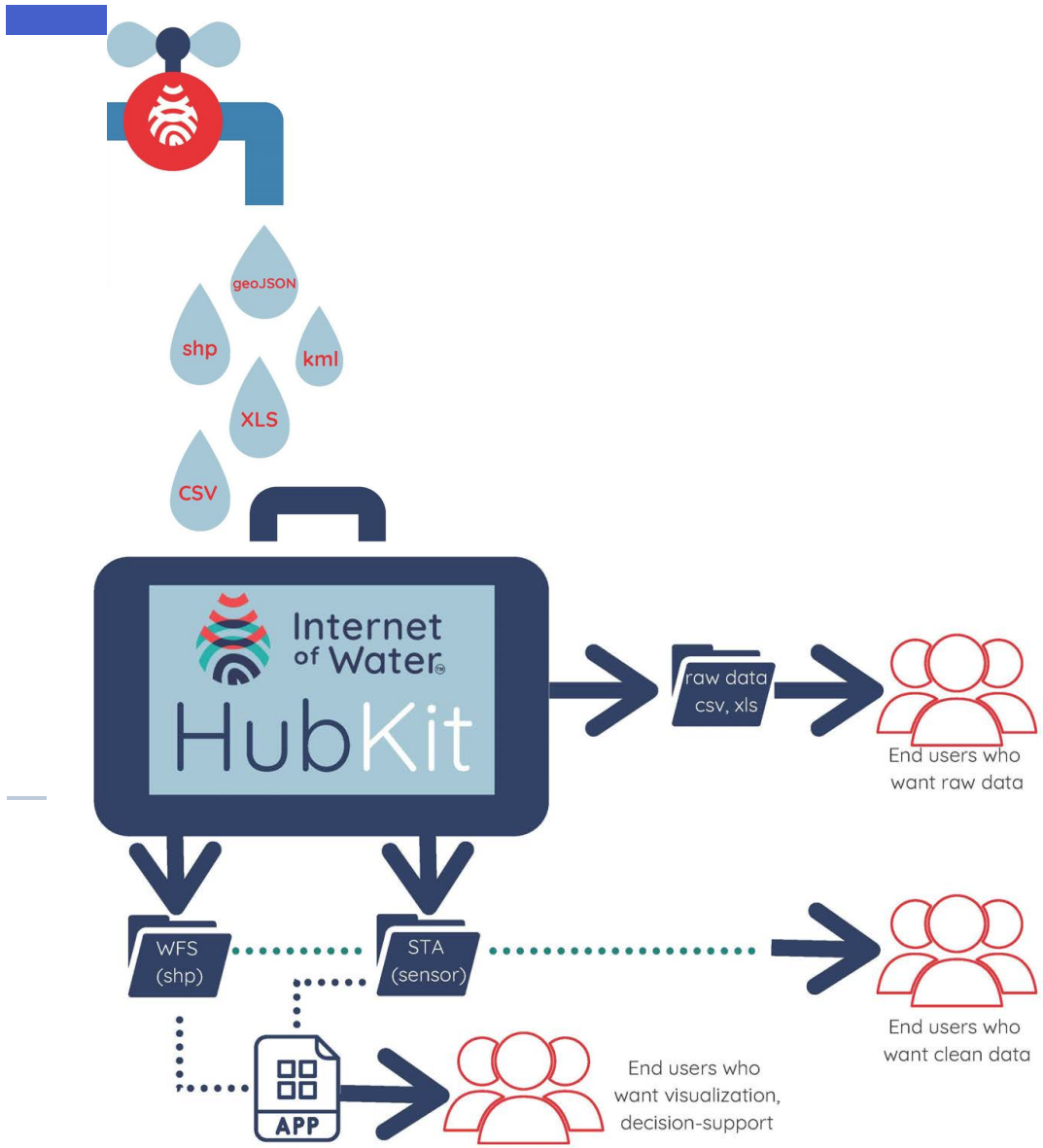
How Geoconnex works

USGS science for a changing world

Persistent IDs
A persistent, unique identifier for each location or feature for which data is published

Landing Pages
Provide stable locations on the internet representing real-world features that data can link to and be linked from

Links Data
Enables data to be linked together based on geography, hydrography, and key words



HubKit

A collection of modular software components that enable storage, metadata documentation, and publication of time series, spatial, and tabular data using OGC Standard web services.

User Friendly Interface

Easily configured with other data sources

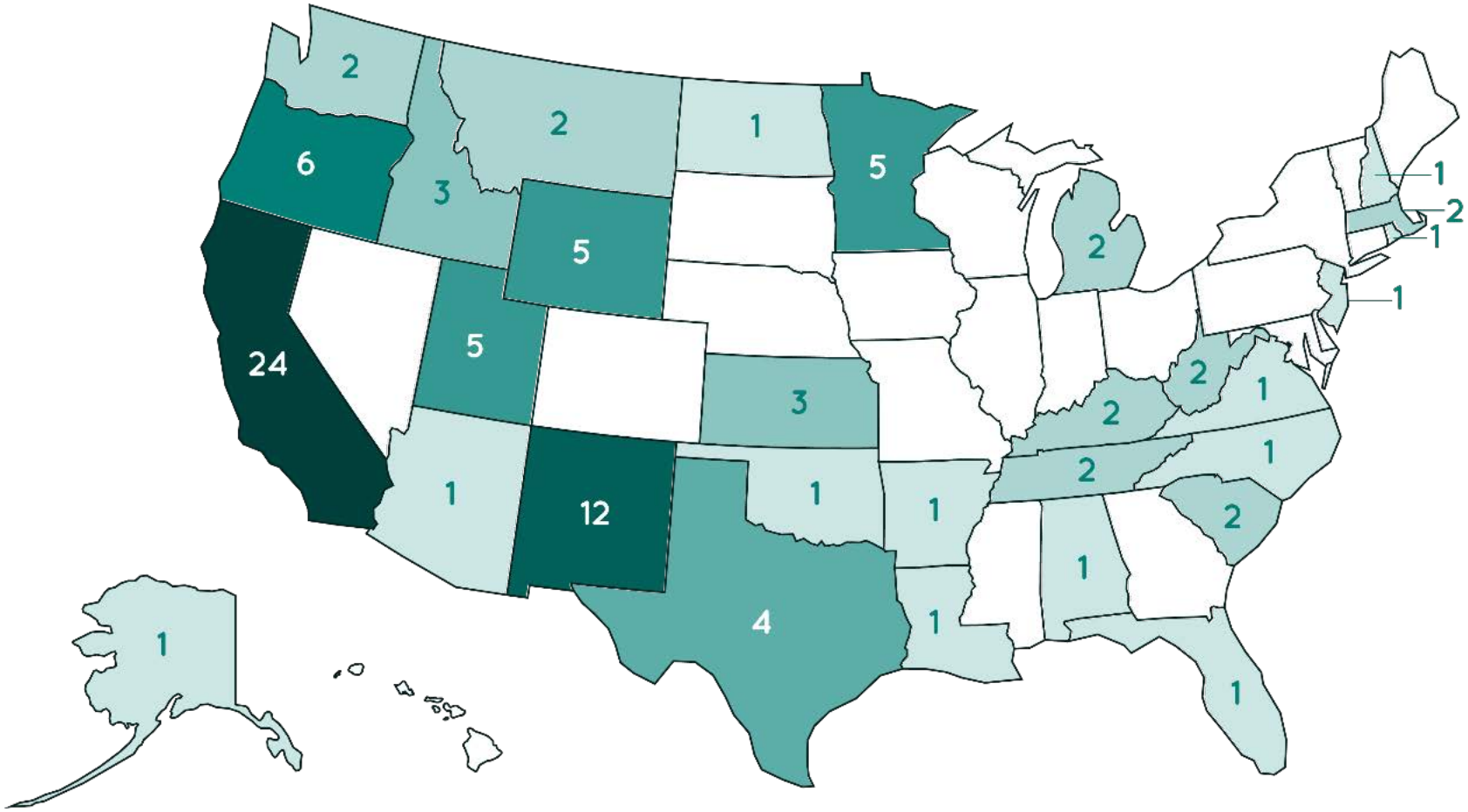
Includes a data translation feature


Engagement

IoW P2P Network

https://internetofwater.org/

IoW P2P Network Members



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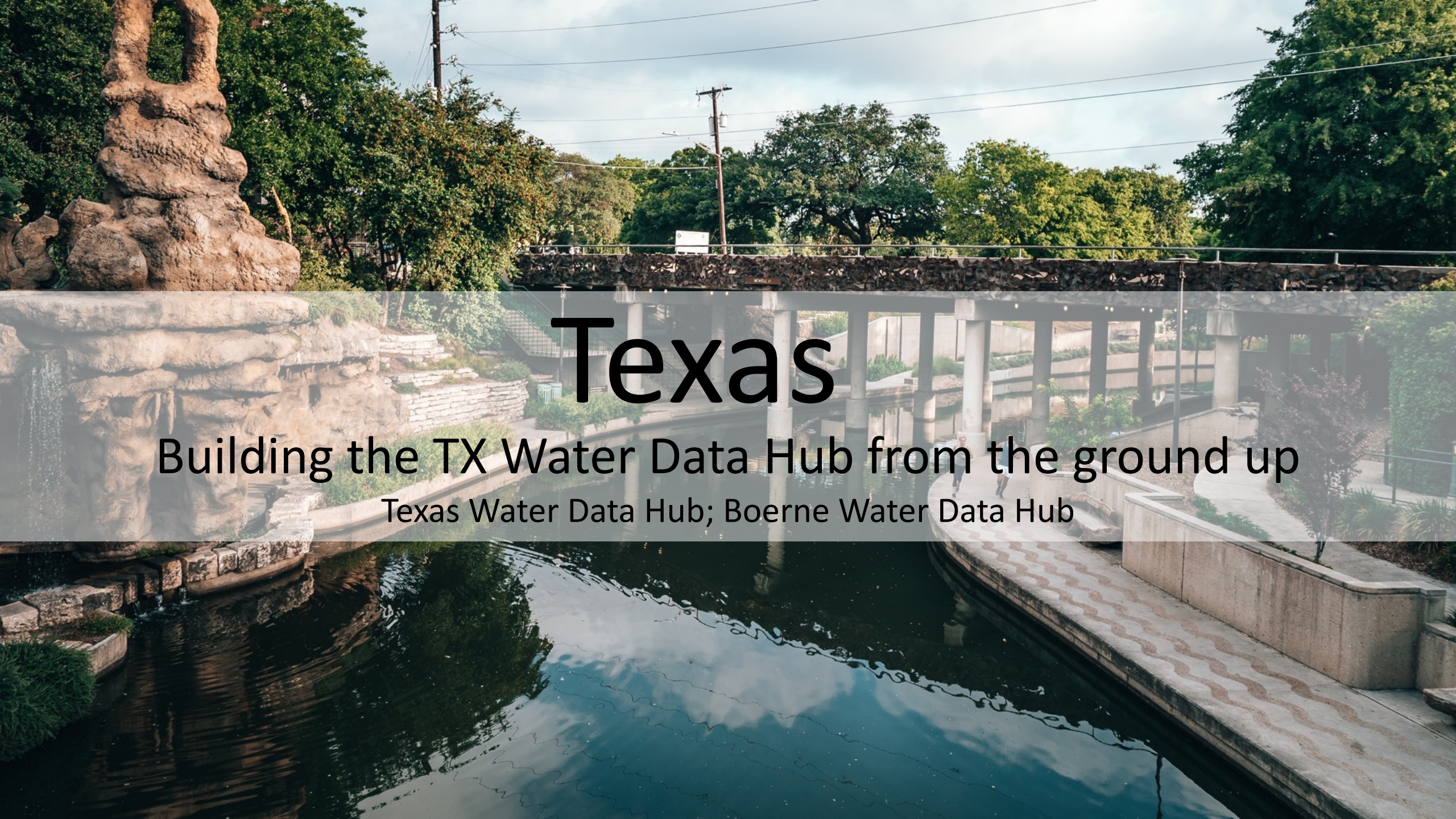
California

Partnering with state agencies



Texas

Building the TX Water Data Hub from the ground up

Texas Water Data Hub; Boerne Water Data Hub

North Carolina

Water Supply Dashboard

New Mexico

Water Data Initiative

2020 PLAN

According to legislation – the agencies develop and submit a plan to the governor and appropriate interim legislative committees.

GOALS FOR NM WDI

1. Provide IT support to improve data sharing
2. Develop robust IT and data infrastructure plan
3. Refine data standards
4. Continue stakeholder engagement opportunities

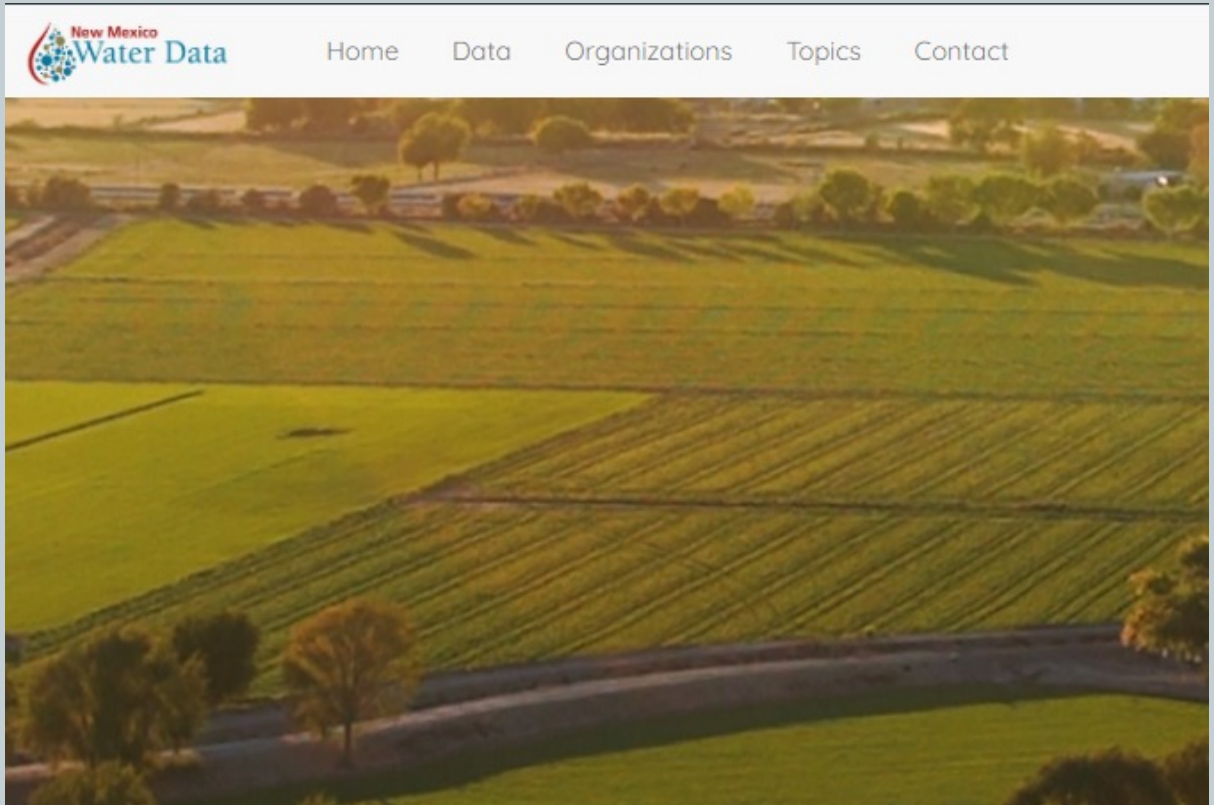
Includes appendix of materials and budget needs from agencies

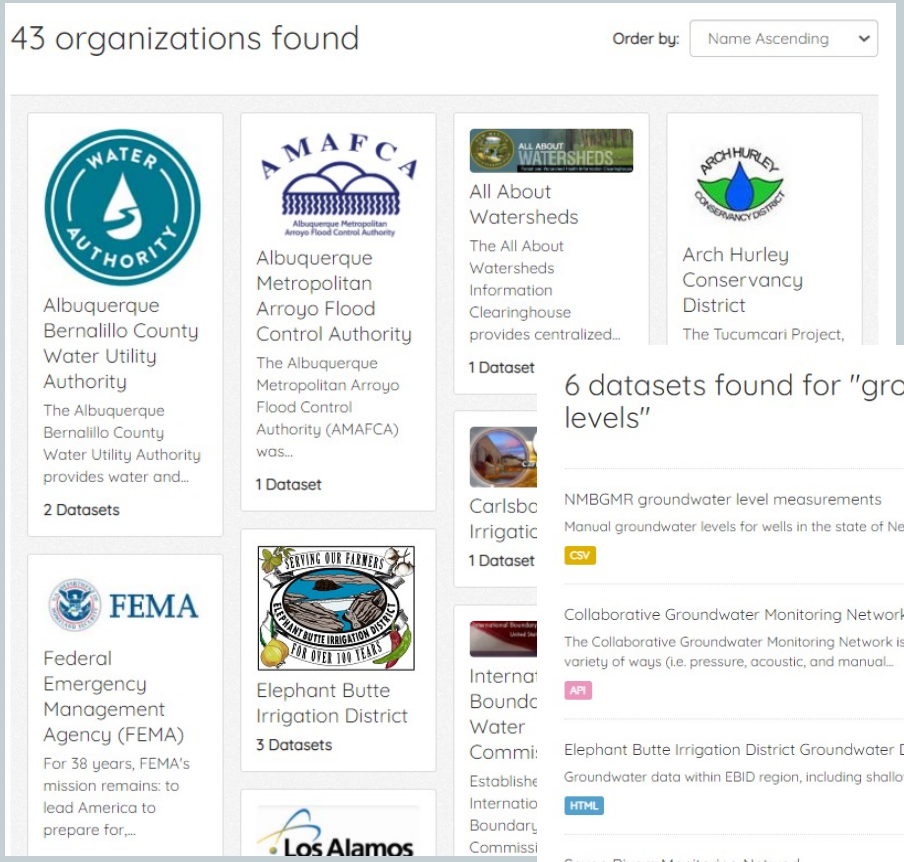
To be updated September 2021

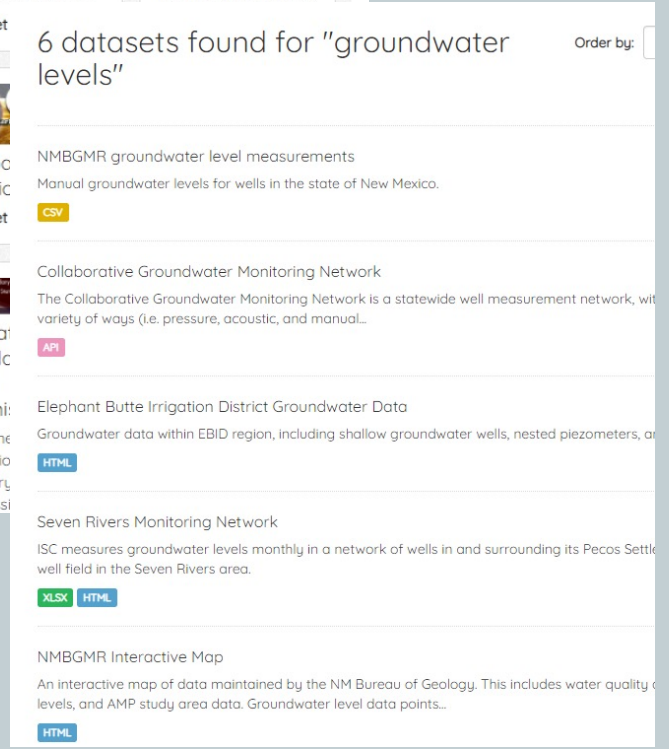
newmexicowaterdata.org

DATA CATALOG

- Initial data inventory where we can illuminate the different data sources & their readiness
- Built in CKAN platform (open source) on google cloud

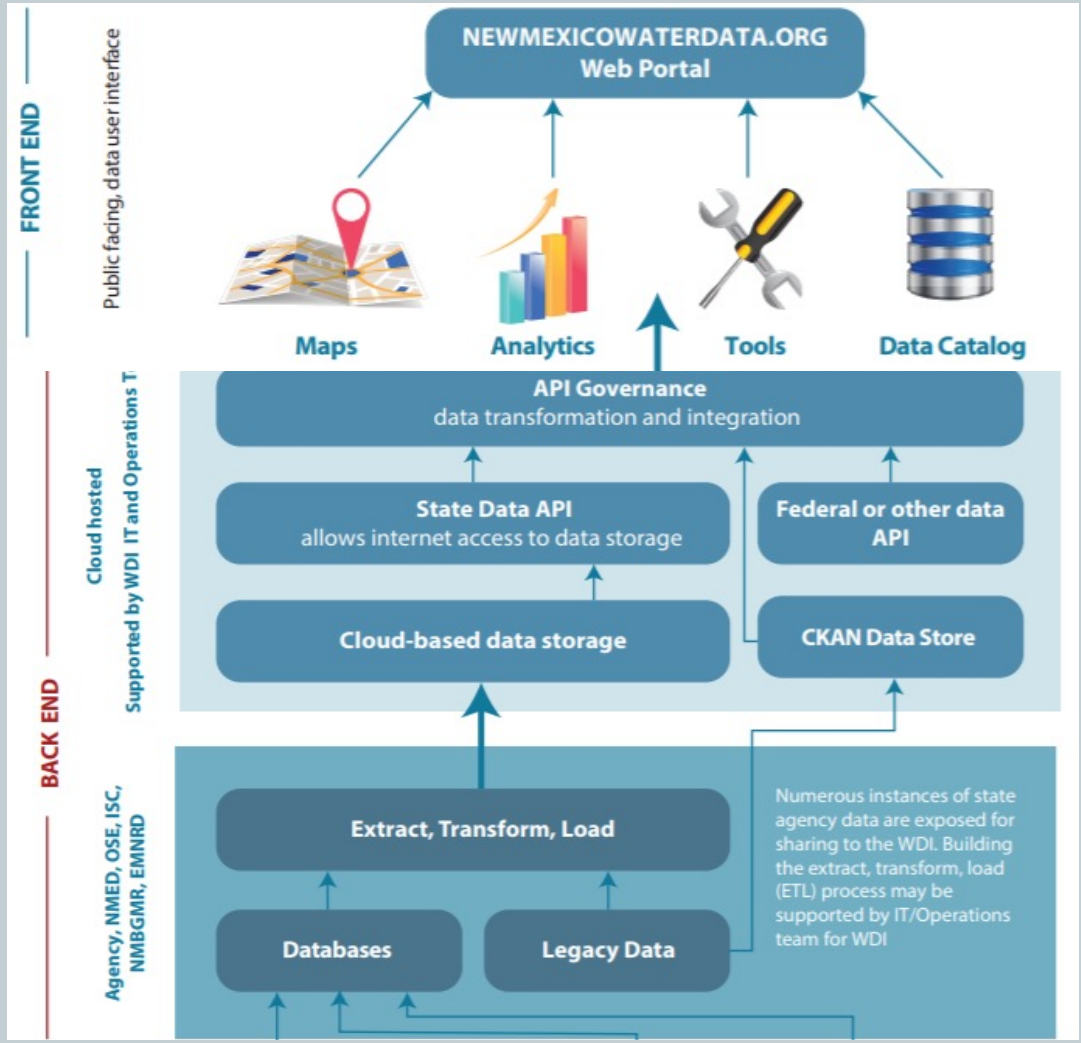






FEDERATING NM WATER DATA

1. **Agencies collect, maintain and host data**
   - Only share data when ready & QCed
   - Align with data standards as much as possible
2. **Share data**
   - Work with IT team to connect using open source tools (OGC's SensorThings API)
3. **Integrate data**
   - Collaborating to build transformations
4. **Easy access to data**
   - Data available to build tools, analytics, or download and use through web interface



New Mexico Water Data

Internet of Water

GROUNDWATER LEVELS
A USE CASE

Confluence Home Recent

Technical Working Group

Pages

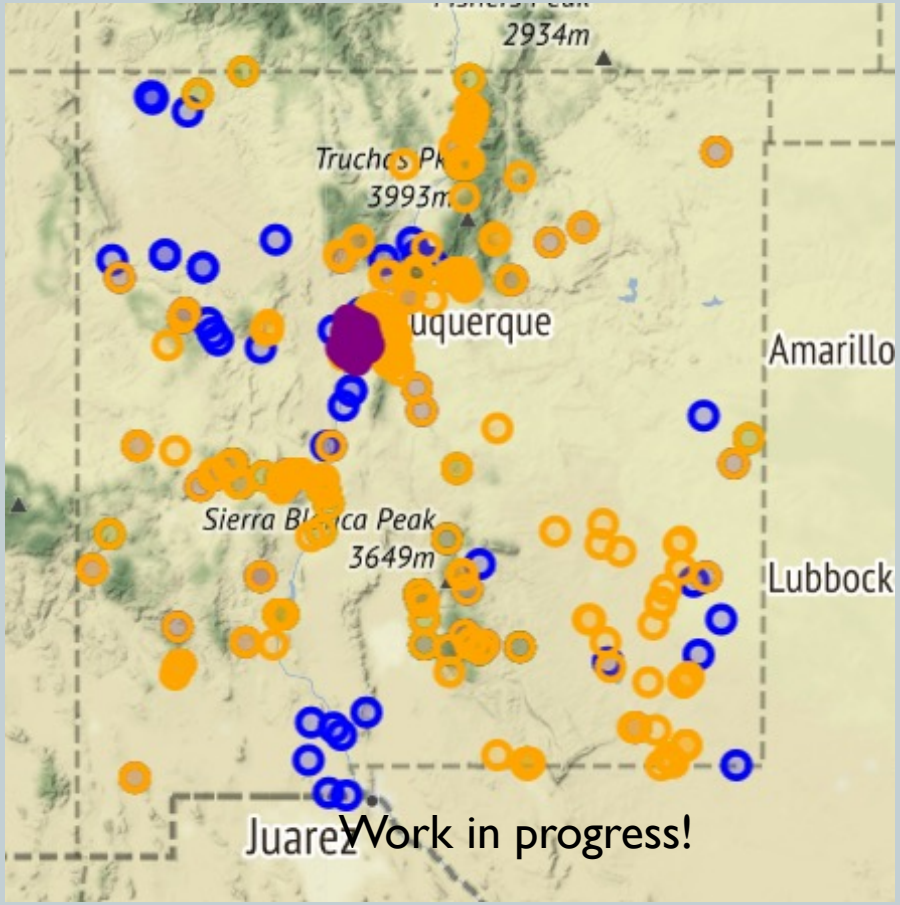
- CKAN Catalog Review
- Standards Development
  - Glossary of Terms
  - Standard Units
  - Site Metadata
  - Water Quantity-Related Datasets
    - Groundwater Levels
    - Produced Water Injections/G...
    - Water Use
  - Water Quality-Related Datasets
- Sensor Things

Where do we have active monitoring of groundwater levels?

And (more importantly) where do we not?

A crosswalk of common agency datasets is below:

Recommended Standard (NGWMN)	USGS	NMBGMR	ABQ	OSE
Agency Cd	agency_cd	Calculate in crosswalk	Calculate in crosswalk	Calculate in crosswalk
Site No	site_no	PointID, OSEWellID	sys_loc_code, facility_id	OSE Well #
Time	lev_tm	TimeMeasured		Time
Date	lev_dt	DateMeasured	measurement_date	Date
Depth to Water Below Land Surface in ft	lev_va	DepthToWaterBGS	water_level	Depth to Water (feet below ground surface)
Accuracy Value	lev_acy_cd	Need		
Water level in feet relative to NAVD88	Calculate in crosswalk	Calculate in crosswalk	Calculate in crosswalk	Calculate in crosswalk
Observation Method	lev_meth_cd	MeasurementMethod	measurement_method	



Work in progress!

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New Mexico Water Data

Internet of Water™

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