



# THE OPEN AND TRANSPARENT WATER DATA ACT

## OPEN WATER INFORMATION DATA ARCHITECTURE (OWIA)

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*Gary Darling*  
*California Department of Water Resources*  
*[gary.darling@water.ca.gov](mailto:gary.darling@water.ca.gov)*

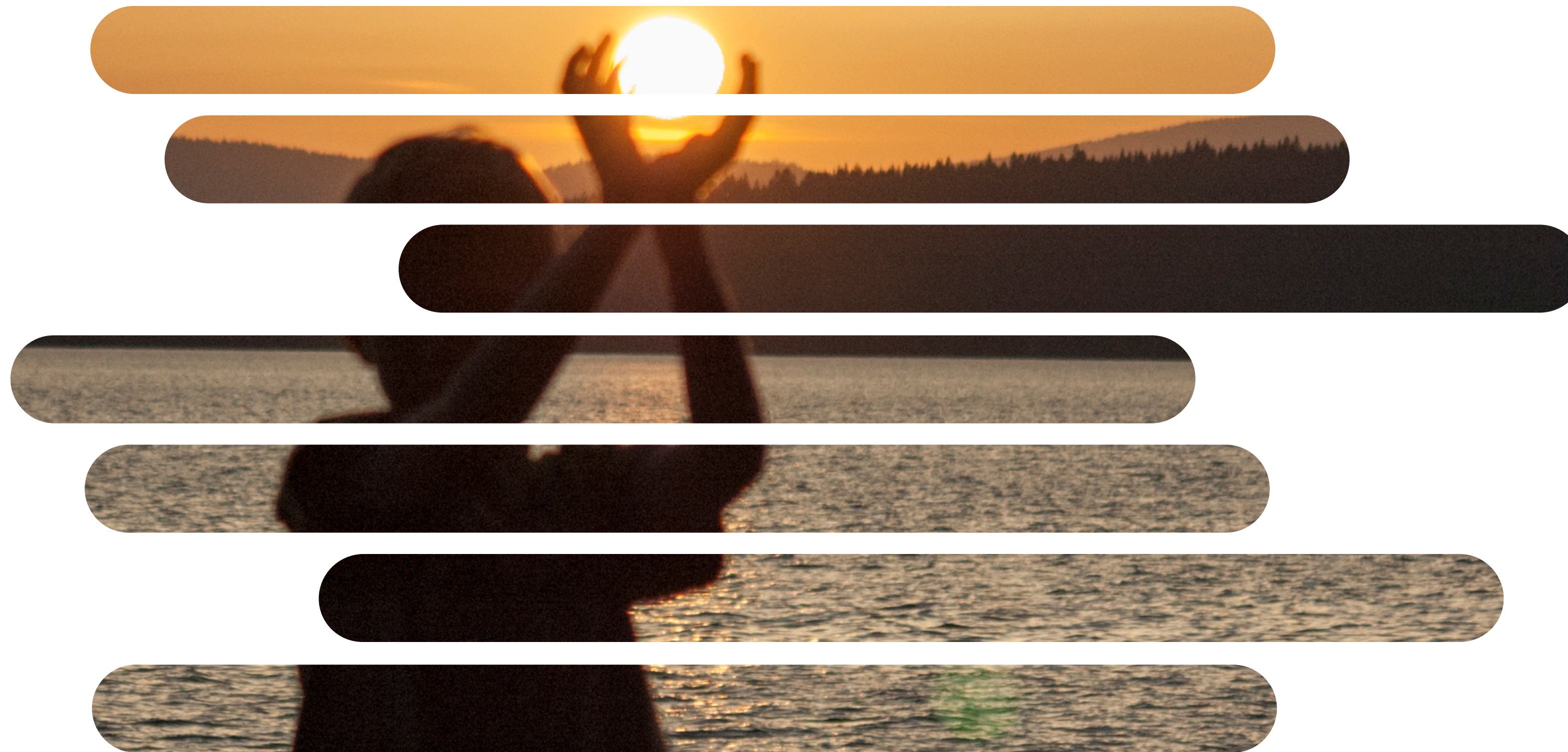


# THE OPEN AND TRANSPARENT WATER DATA ACT

THE CALIFORNIA DEPARTMENT OF WATER RESOURCES (DWR), IN CONSULTATION WITH THE CA WATER  
BOARDS, CA WATER QUALITY MONITORING COUNCIL, CA FISH AND WILDLIFE







Collaborative effort of (DWR), and the San Diego Supercomputer Center (SDSC), California Council on Science and Technology (CCST), UC Water, Lawrence Berkeley National Labs and NSF Big Data Hub

# DATA DRIVEN DECISION MAKING AND THE OPEN WATER INFORMATION ARCHITECTURE



# WHO?

Who needs

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# WHAT?

In what format...



# WHAT?

what data...

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# WHAT?

For what decision...



**What do we  
want the  
system to  
do?**

**WHAT DECISIONS DO WE NEED TO MAKE?**

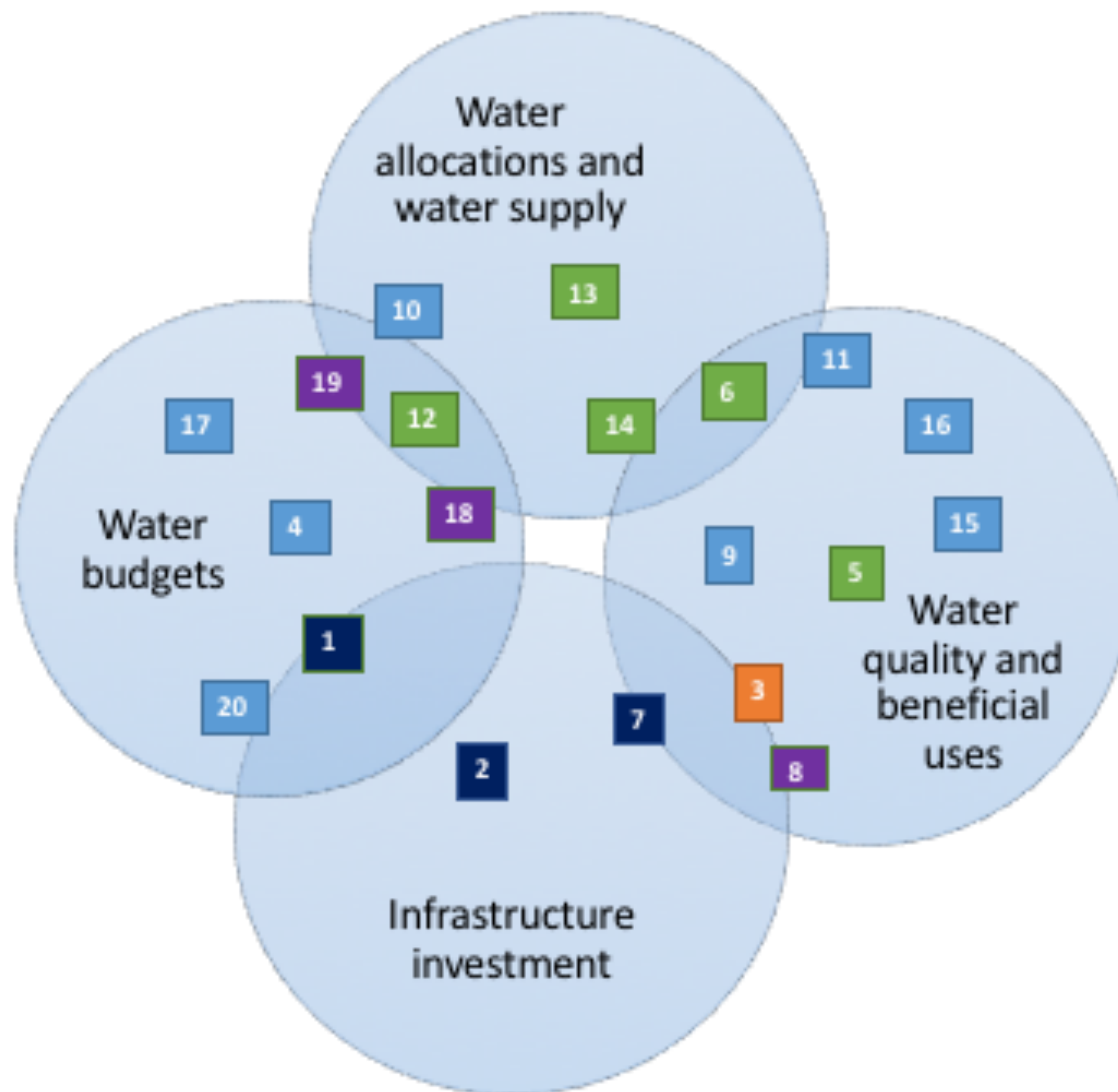
Use Cases



**WHAT DATA IS NEEDED FOR DECISIONS?**

**WHERE ARE THE DATA GAPS?**





Color coding indicates type of objective:

|                                 |                          |
|---------------------------------|--------------------------|
| Daily operational decisions     | Decision support systems |
| Programmatic implementation     | Reporting requirements   |
| Investment and policy decisions |                          |

#### Use case topics

1. Planning a groundwater recharge project
2. Financing groundwater recharge under Proposition 1
3. Management of environmental flows for salmon
4. Groundwater basin water budgets
5. Delta hydrographs
6. Water transfers for environmental purposes
7. Capital investment in headwaters restoration
8. Wetland and riparian mitigation and monitoring
9. Central Coast Ambient Monitoring Data Navigator tool
10. Urban Water Efficiency Explorer tool
11. Sacramento River real-time fishery decision platform
12. Water availability analysis for curtailments
13. Water rights licensing process
14. Water shortage vulnerability assessment
15. Decision support system for harmful algal blooms
16. Decision support system for mercury control
17. Groundwater basin water budgets (SWRCB)
18. Agricultural water management plan
19. Urban water management plan
20. Source-water basin water budgets



# STANDARDIZED USE CASES

Help us to achieve



Facilitation of shared  
decision making  
between institutions

Potential streamlining of  
reports to government

Better funding decisions for  
data acquisition

Identification of data gaps



# Data Sharing (between agencies and to the public)

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## **Federated Platforms**

**Gov Ops Open Data**

**CRNA Open Data**

**EPA Exchange Network**

**WaDE (Water Data Exchange)**

**Digital Libraries**

**DOE/NASA data systems**

**Data systems managed by not for profit and the private sector**



# OWIA

## OPEN WATER INFORMATION ARCHITECTURE

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Interoperable Data

Interoperable Metadata

Open Source Interoperability Tools

Standards and Conventions

Standard Operating Procedures





A photograph of a dense field of purple lupine flowers in a forest setting. The flowers are in full bloom, creating a vibrant purple carpet across the forest floor. Tall evergreen trees are visible in the background, their green needles contrasting with the purple of the flowers. The scene is captured from a slightly elevated angle, looking down into the field of flowers.

# OWIA

OPEN WATER INFORMATION ARCHITECTURE

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- OWIA provides interoperability of data between systems
- Not needed for all applications but could prove necessary for some important ones.
- Years to fully implement



# DOCUMENTATION

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Core Metadata (project open data)

Interoperable metadata

Versioning

Traceability

Data provenance

Digital Object Identifiers

Supplementary documents



# QUALITY CONTROL

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Interoperable data transformation

Versioning

Reproducibility

Anomaly detection and correction



# PUBLIC ACCESS

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Data Publication

Curation Protocols

Intellectual Property Rights Policies

Federated and distributed access  
(redundancy, multiple access points)



# OPEN SOURCE PLATFORMS

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Prevent stove piping due to proprietary platforms

Data Interoperability

Open Source Code Repositories



# DECISION SUPPORT TOOLS

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Standardized use cases to support the application of decision support tools

Interoperable data provide a gateway to a large universe of interoperable open source and proprietary tools

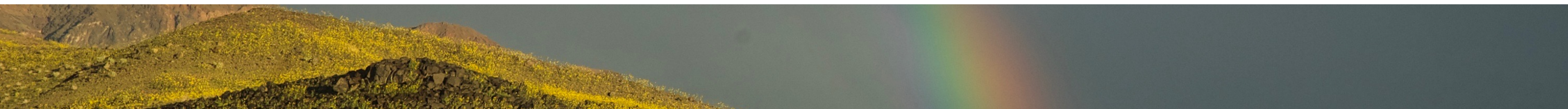


# OPEN WATER INFORMATION ARCHITECTURE (OWIA) TESTBED

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Looking for partners now in water data community

Hoping to start this summer





# WESTERN STATES WATER DATA ARCHIVE

HAS ITS TIME COME...





# USE CASE, OWIA DRAFT DOCUMENTS

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<https://eesa.lbl.gov/open-transparent-water-data-ca-workshop/documents/>





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[ab1755@water.ca.gov](mailto:ab1755@water.ca.gov)