Internet of Water

Better Water Data for Better Water Decisions

Peter Colohan, Director, Internet of Water
Center for Geospatial Solutions, Lincoln Institute of Land Policy
Principles and Philosophy

Philanthropic Project

Emerging Federal Initiative
Principles

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Internet of Water

Discoverable, Accessible, & Usable Water Data

New Information & Insights

Improved Decision-making in the Water Data Community

Better Water Management Outcomes

Healthy Communities & Ecosystems
1. EFFICIENCY, SUSTAINABILITY, & RESILIENCE - Water data are essential for efficient, equitable, sustainable, and resilient water planning, management, and stewardship.

2. USEFULNESS - Modern data infrastructure increases the usefulness of water data and enables its broadest possible application.

3. WATER EQUITY - Data equity is necessary for water equity; modern data infrastructure should be implemented and governed so that data are usable by and for overburdened communities.
4. FAIR - All water data produced for the public good should, by default, be findable, accessible, interoperable, and reusable (FAIR) for public use or authorized users.

5. SECURE - Security and privacy risks associated with sharing data can be mitigated using mechanisms for tiered access for authorized users.

6. STANDARDIZED - Commonly accepted data, metadata, and exchange standards should be adopted by water data producers to promote interoperability, efficiency, sharing, equity, and secondary uses of data.
WHO (Principles 6 to 9)

7. WHO HAS CONTROL? - Control and responsibility over data are best maintained by data producers.

8. WHO DETERMINES QUALITY AND USE? - Data producers are responsible for sharing data of known quality and documenting essential metadata; data users are responsible for determining whether data are appropriate for specific purposes and uses.

9. WHO HOLDS THE DATA? (EVERYONE) - Federated, distributed systems of interoperable public water data generally provide scalability and flexibility to meet the diverse needs of data producers and users.
• Place-based collaborative water data projects

• Common standards, advanced through a nationwide community of practice

• Essential new technologies
From Principles to Prototype: The Internet of Water Start-Up and Coalition

• The IoW project was formed in 2018 at Duke University’s Nicholas Institute for Environmental Policy Solutions. After a successful three-year start-up phase the IoW Coalition was formed.

• The IoW Coalition is led by the Center for Geospatial Solutions at the Lincoln Institute of Land Policy in partnership with Duke University, the Western States Water Council, the Water Data Collaborative, and the Consortium of Universities for the Advancement of Hydrologic Sciences, Inc.
Place-Based Projects
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North Carolina Water Supply Dashboard

Example Start-Up Phase Projects

Freshwater Harmful Algal Blooms Monitoring and Notification System in California

Improved Data Management and Decision Support in the Lower Pecos Valley
Common Standards & Peer 2 Peer Network
Peer-2-Peer Network Community of Practice

145 Members

33 States

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Federal Initiative
New Technology
Geoconnex

A search index for water data from all organizations
Before Geoconnex

Few relevant data sources

After Geoconnex

All relevant data sources
Emerging Federal Initiative