

# Water Data is Essential Infrastructure

## Data infrastructure is as essential as roads and bridges

Data is raw material for both economic growth and sustainable management of our environment. But unlike raw materials from the past century – like oil, steel, minerals – data, particularly public data, becomes more valuable the more widely it is used and shared.

To realize this value, California needs to plan, create, and invest in public water data, just as it does in roads, sewer systems, and water treatment plants. These investments will ensure that California has adequate water to meet the competing demands of a growing economy, a growing population, and the environment – a challenge made all the more difficult by volatile weather and a warming climate.

## The return on investment for increased access to public data is significant<sup>1</sup>

Physical infrastructure creates great benefits for the economy; so too does data infrastructure. These benefits are diverse and generate positive returns for state government, citizens, and the environment.

The economic value of data varies across sectors. Geospatial and environmental data, which include hydrological, environmental quality, and land-use information, tends to generate the highest return, and are core to water data infrastructure.

## Illustrative return on public open water data in California



California could see \$160 – 780M of economic benefit in the Water Management sector alone. Water management accounts for about 1% of California's economy, or \$40 – \$60B annually. Conservative estimates place the direct economic value of open access to public sector data at 0.4 – 1.3% through improvements in efficiency, decision-making, and infrastructure investments.<sup>2</sup>



California faces an anticipated \$73 billion dollars in water infrastructure investments over the next 20 years<sup>3</sup>. Improved access to public water data will optimize these investments. Given the size of the projects, even marginal improvements in infrastructure siting and design would generate massive benefits.



California spends nearly \$700 million each year to manage aquatic ecosystems important for birds, fish, and amphibians and for agricultural and people<sup>4</sup>. Improved water data will enable better, proactive decision-making around these critical systems.



California still lacks a robust and transparent water market. In large part, this is because the state can't track in real time how and where water is used and where it is needed. Open data will address this challenge by creating the transparency needed for California to weather the next drought.

**The economic return on investment for increased access to public data averages 39X in the US.**

**Water management:  
Significant cost savings**

**Resilient infrastructure:  
Safeguard the largest capital investments**

**Environmental flows:  
Better protect water-dependent ecosystems**

**Water markets:  
Flexibility to manage droughts**

<sup>1</sup> European Data Portal. *Creating Value through Open Data*. P.48.

[https://www.europeandataportal.eu/sites/default/files/edp\\_creating\\_value\\_through\\_open\\_data\\_0.pdf](https://www.europeandataportal.eu/sites/default/files/edp_creating_value_through_open_data_0.pdf)

<sup>2</sup> Open Data Institute. *The economic impact of open data: what do we already know?* <https://medium.com/@ODIHQ/the-economic-impact-of-open-data-what-do-we-already-know-1a119c1958a0>

<sup>3</sup> PPIC, *Paying for Water in California*, Technical Appendix B: Estimates of Water Sector Expenditures, Revenues, and Needs. P.11 and <https://www.epa.gov/cwns/clean-watersheds-needs-survey-cwns-2012-report-and-data>

# When the State Leads, Others Follow

## A mixed-model of infrastructure funding for water data

Roads offer a useful analogy for data as infrastructure. The national highway system provides essential interconnections across the country. State highways connect to that system, and local governments pave the last miles to connect towns and cities to the state and the country. Private entities who own and manage roads do so under regulation to ensure that they mesh with this system and are managed for public good. The same must be true for data.

Just as the costs of roads are shared between local, state, federal governments and private entities, data costs must be shared as well.

In the initial review of use-cases for AB 1755, the State managed about 50% of data, much of which is supplied by local entities, the federal government manages 40%, and the remaining data is managed by NGOs and academic partners. This pattern is consistent with what we know about other shared water data systems, such as the stream gage network.

## Public and private entities have essential roles in water data management

Government – state, local, and federal – has an essential and ongoing role in collecting and providing objective data on California’s water system. No other data provider has the neutrality or authority to provide this “ground-truth” for the State. The data life-cycle below highlights the primary roles of government and the private sector in developing and maintaining essential water data infrastructure:

