

# Introduction to Open and Transparent Water Data Publication at Department of Water Resources

California Water and Environmental Modeling Forum  
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# AB 1755 Legislation in a Nutshell



- Enacted September 2016, in recognition of the need for an authoritative, open-access data platform
- Requires publication of State-held water and ecological data on statewide platform
- First of its kind in the nation

# What Are FAIR Principles?

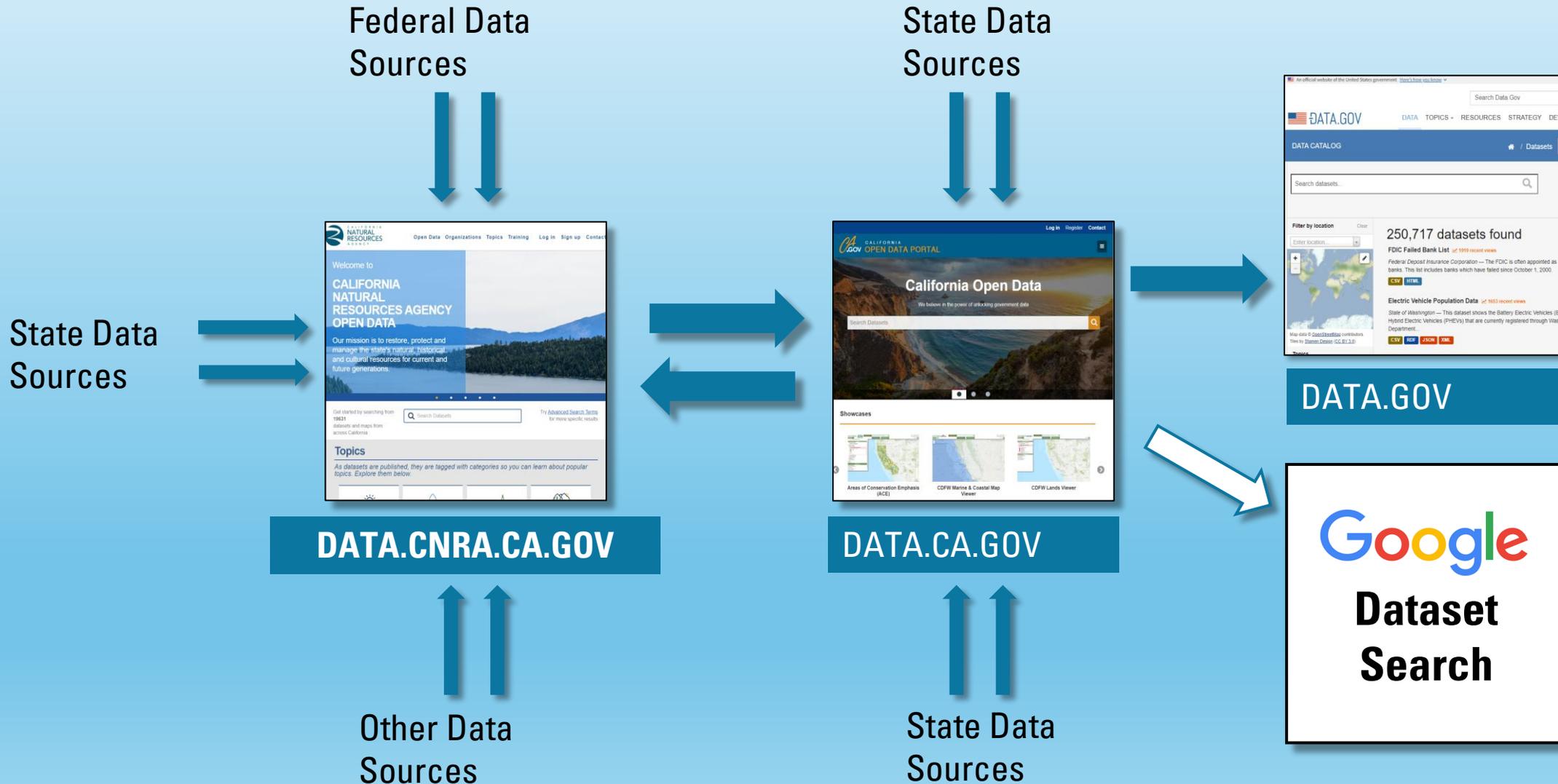
**Findable** – Metadata and data should be easy to find for both humans and computers.

**Accessible** – Once the user finds the required data, they need to be able to access it.

**Interoperable** – The data need to interoperate with applications or workflows for analysis, storage, and processing.

**Reusable** – Metadata and data should be well-described so that they can be replicated and/or combined in different settings.

# Water and Ecological Data-Sharing



# Example Dataset: Data and Metadata

## GSP Monitoring Data

The Groundwater Sustainability Plan (GSP) Monitoring dataset contains the monitoring sites and associated groundwater level, subsidence or streamflow measurements collected by Groundwater Sustainability Agencies (GSA) during implementation of their GSP. All data is submitted to the Department of Water Resources (DWR) through the Sustainable Groundwater Management Act (SGMA) Portal's Monitoring Network Module (MNM).

The GSP Regulations established the monitoring network criteria (23 CCR § 354.34) and the data and reporting standard for monitoring sites and measurements (23 CCR § 352.4). The data fields associated with these datasets were created by DWR to ensure that GSAs electronically submit monitoring site and measurement data which meets the GSP Regulation's data and reporting standards. For additional information regarding GSAs, GSPs, and SGMA related monitoring, please view DWR's SGMA Portal Resources at <https://sgma.water.ca.gov/portal/>.

### Tags

GSP Groundwater Sustain... Monitoring Network

### Additional Info

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PUBLIC ACCESS LEVEL	Public
SPATIAL COVERAGE	
LAST UPDATED	April 14, 2023, 6:04 AM (UTC-07:00)
LICENSE	License not specified

## Data and Resources

 <b>Groundwater Level Sites</b> 🔥	Groundwater Level Site Location Information	 Preview	 Download
 <b>Groundwater Level Data</b> 🔥	Groundwater level measurements at varying collected time steps	 Preview	 Download
 <b>Subsidence Sites</b>	Subsidence Site Location Information	 Preview	 Download
 <b>Subsidence Data</b>	Subsidence measurements at varying collected time steps	 Preview	 Download
 <b>Stream Gage Sites</b>	Stream Gage Site Location Information	 Preview	 Download
 <b>Stream Gage Data</b>	Surface water head and discharge time series measurements	 Preview	 Download
 <b>Existing Sites</b>	Existing Site Location Information	 Preview	 Download
 <b>GSP Monitoring Data GIS Service</b> 🔥	This service is under development as part of ongoing enhancements to the SGMA	 More Info	 Go to resource
 <b>GSP Monitoring Sites (New - Under Development)</b>		 Preview	 Download
 <b>Sustainability Management Criteria (SMC) (New - Under Development)</b>		 Preview	 Download

# Open Data Informational Working Group – Goals



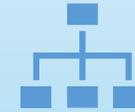
Improve **coordination** and foster **communication** across DWR organizations, programs, and data groups.



Identify DWR needs for policy, standards, protocols, guidance, and tools for open data publication and review, publication performance monitoring and assessment.



Provide high-level **oversight** of DWR open data publication.



Ensure **transparency** and **DWR-wide participation** in the development of data-related processes and products.



Support **building DWR data community**, **strengthening existing network** among data groups, and providing **support to publishing programs**.

# Supporting Open Data

- Convening communities of practice
- DWR Open Data Working Group
  - Data/Metadata
  - Training/Outreach
  - Data/Tools Alignment
- Open data guidance documents
- Open data curriculum

# Open Data Working Group

DWR Open Data Handbook  
September 2021



DWR Open Data Publishing Guide  
September 2021



# Open Data Handbook



**DOCUMENTS BEST  
PRACTICES**



**PROVIDES GUIDANCE FOR  
PUBLICATION – WHAT,  
HOW, WHEN, AND WHERE**



**DOCUMENTS STANDARDS**

# Open Data Handbook

## 1. Introduction

- Purpose of This Handbook
- Open and Transparent Water Data Act
- What is Open Data?
- Guiding Principles for Open Data
- Key Activities Needed in Preparing for Open Data Publication
- How Can DWR Programs Publish Their Data?

## 2. Open Data Governance

- Governance Structure
- Roles for Open Data Publication

## 3. Guidelines: Identification, Assessment, Data Preparation, Publication, and Updates and Revision

- Data Identification and Inventory
- Data Assessment
  - Types of DWR Data
  - Level of Restrictions for Data Publication
- Data Preparation
  - Standardization
  - Data Management Plan
  - Data Quality Management
  - Metadata
  - Data Dictionary
  - Category, Tags, or Keywords
  - Controlled Vocabularies and Thesauri
  - Data Formats
- Data Publication
  - Publication Risk Management
- Data Updates and Revisions
  - Levels of Revision

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# Open Data Publishing Guide



**PROVIDES STEP-BY-STEP  
PROCESS FOR METADATA  
PREPARATION AND DATA  
PUBLICATION ON CNRA  
PLATFORM**



**INCLUDES CHECKLISTS  
AND BEST PRACTICES  
FOR TABULAR DATA  
PREPARATION**



**LISTS CONTACTS AND  
RESOURCES**

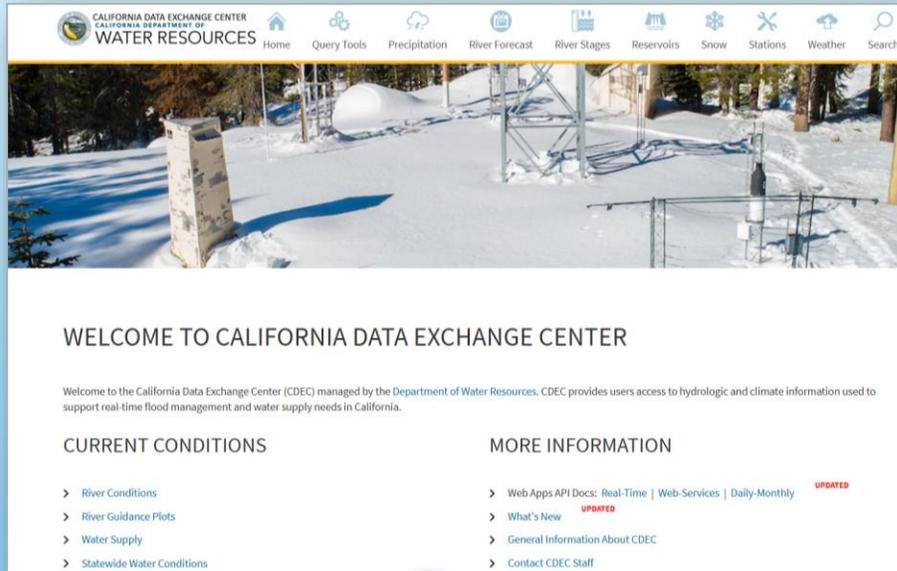
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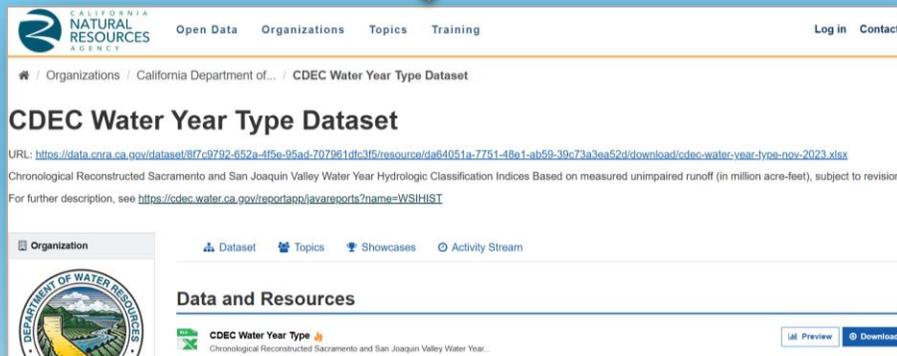
# Data Standards

- Data standards and protocols
  - Identify a Data Steward
  - Publish and Document on an Open Data Platform
  - Access Data
- Data reporting formats
- Collaborating with the California Water Data Consortium on future data standards informed by user conversations

# CNRA Open Data Platform and CDEC



<https://cdec.water.ca.gov/>

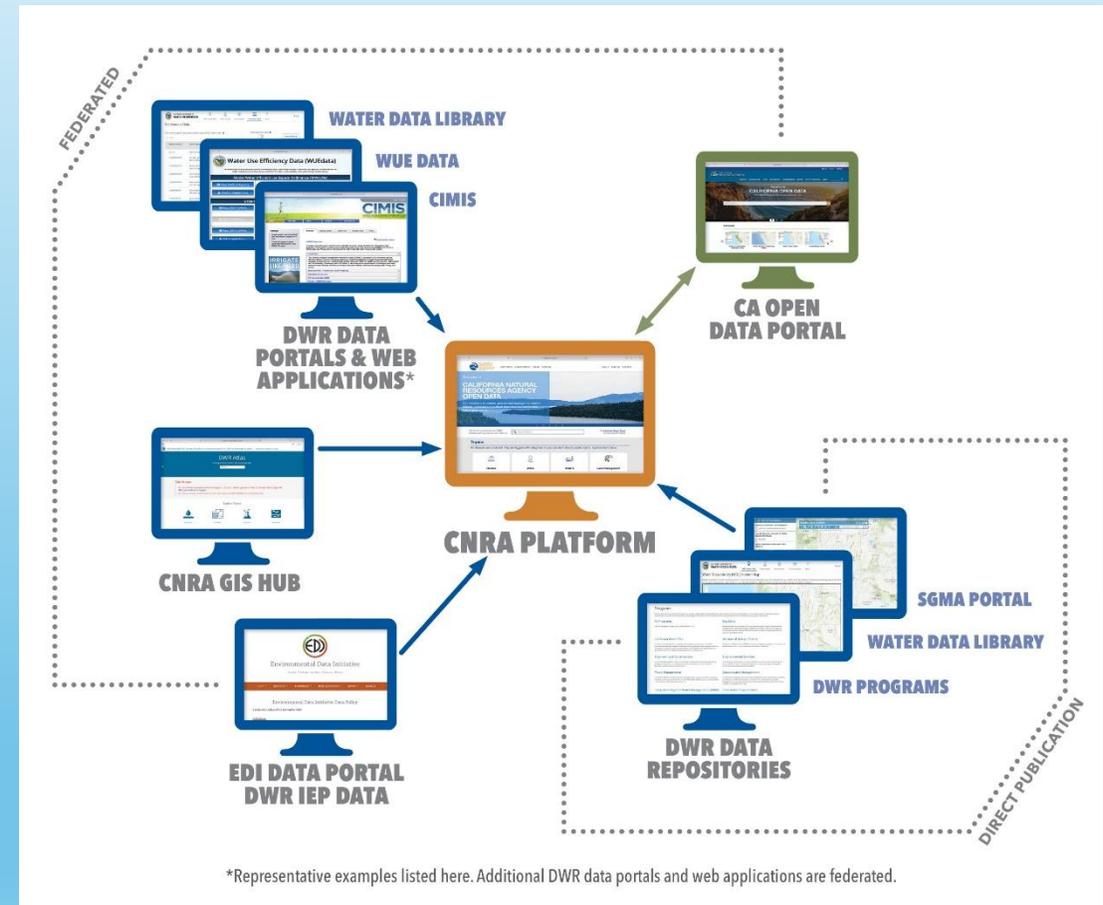


<https://data.cnra.ca.gov/dataset/cdec-water-year-type-dataset>

- Working to Federate CDEC data to CNRA Open Data platform
- CDEC is an aggregator/ distributor of real-time data used in a variety of decision-making processes
- The importance and unique characteristics of CDEC data makes this federation a challenge
  - Real time data – continuously updated
  - Many datasets are quite large
  - Most datasets are not quality controlled

# CNRA Open Data Platform and CDEC

- Snow water equivalent (SWE) data in machine readable format through a webservice link
  - SWE data updated daily/monthly
  - Most data is verified, if not QC'ed
  - Metadata, station information, and other relevant information in one page
- More data to be linked but not all datasets are suitable to be shared via Open Data Portal





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**Thank you!**