



Engineering, Operations, & Technology Committee

Metropolitan's Dam Safety Initiatives Program

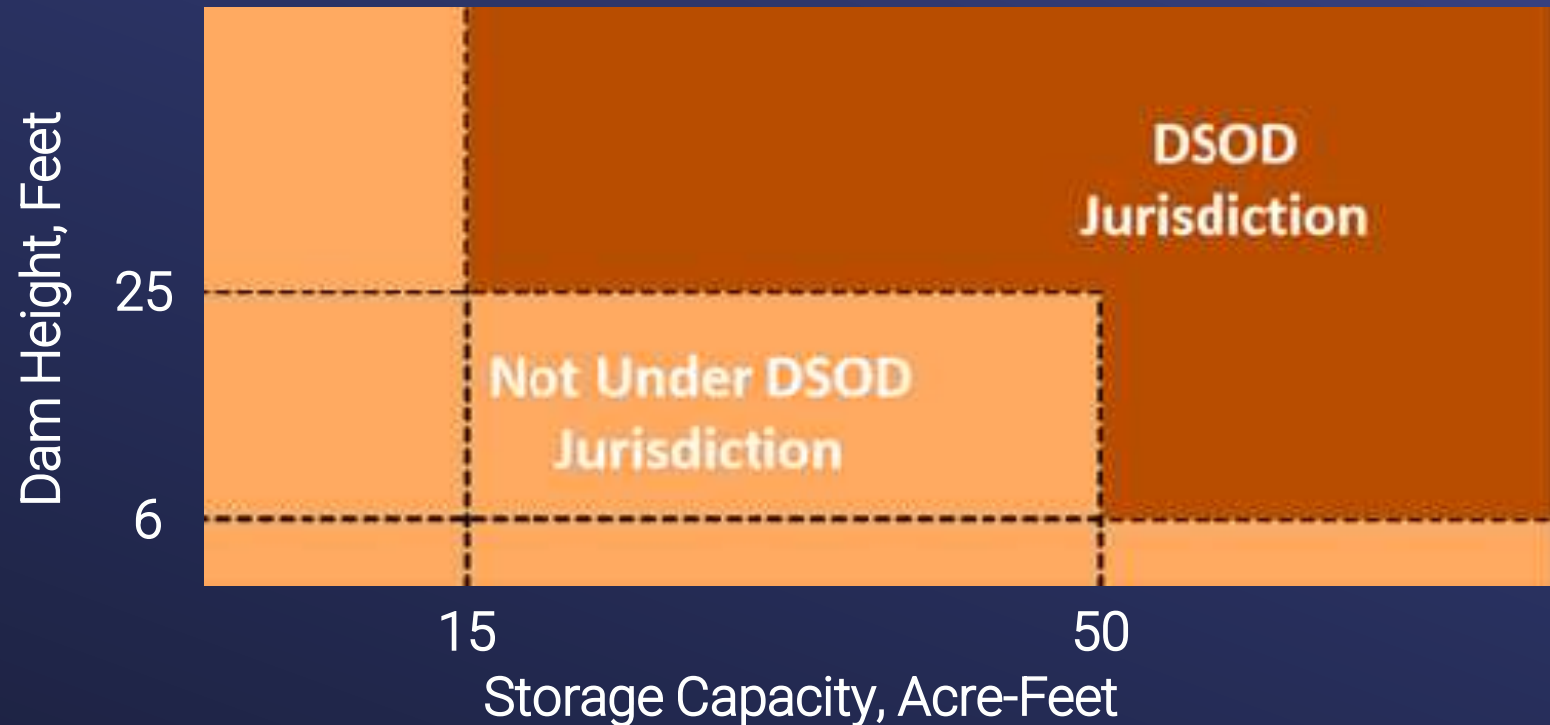
Item 7a

June 12, 2023

Metropolitan's Dams & Reservoirs

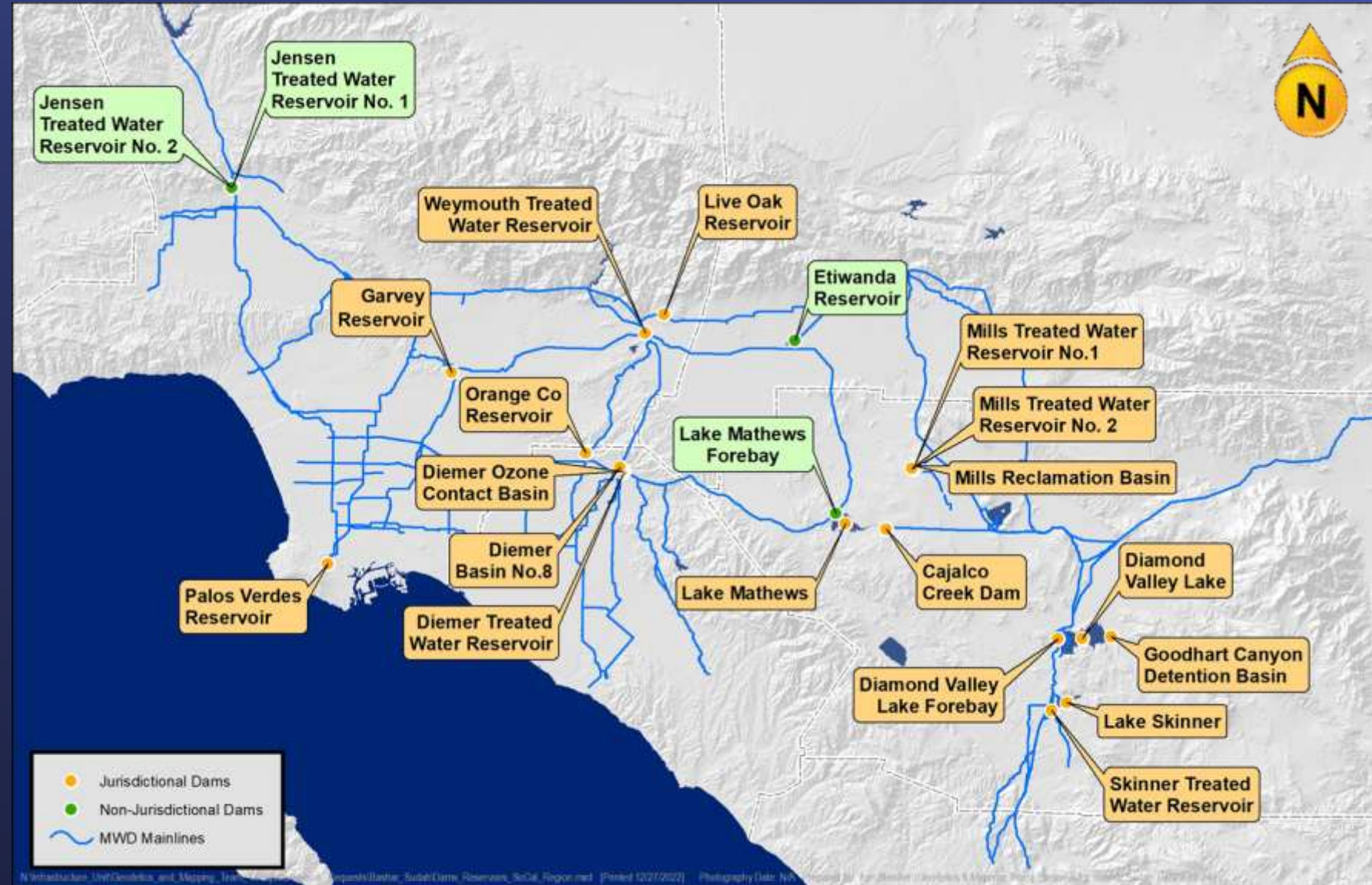
Overview

- 26 Reservoirs
- 20 Reservoirs & 24 dams under DSOD jurisdiction
 - Two reservoirs with multiple dams
 - Includes finished water reservoirs



Metropolitan's Dams & Reservoirs

Reservoir Locations



Metropolitan's Dams & Reservoirs

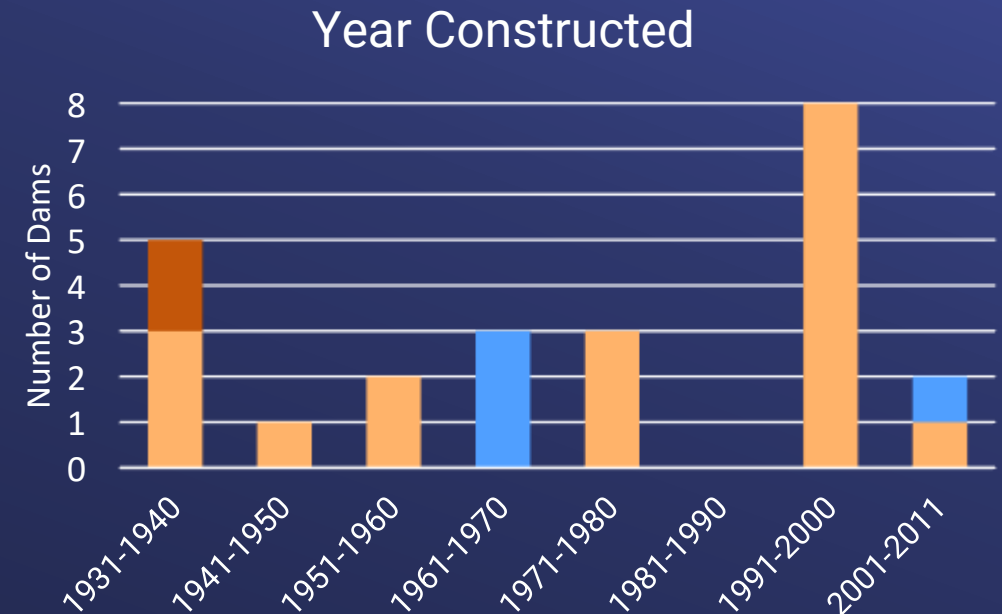
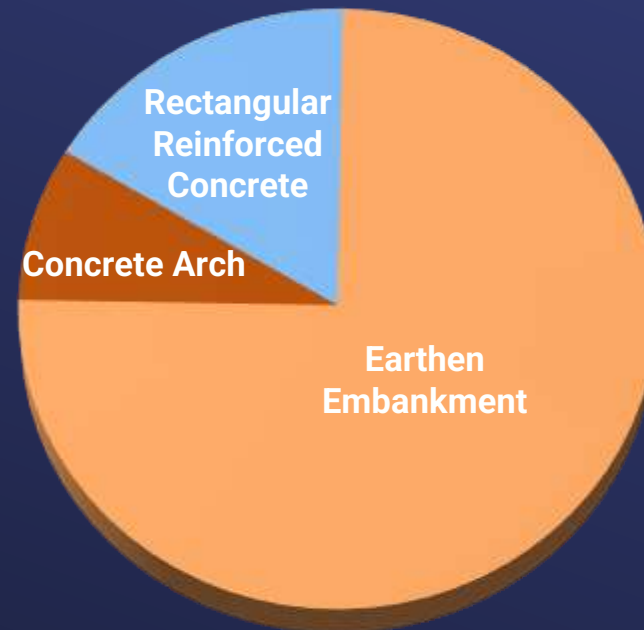
Reservoir Locations



Metropolitan's Dams & Reservoirs

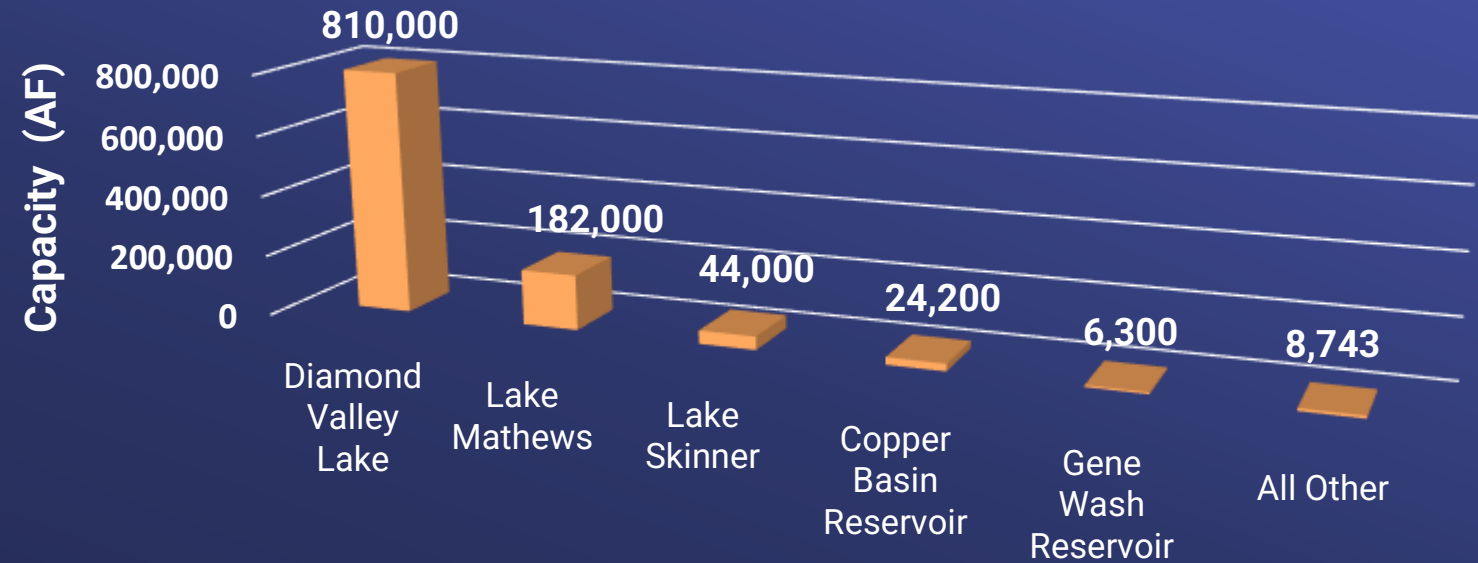
Jurisdictional Dam Portfolio

- Dam heights range from 15 to 284 feet
- Dam lengths range from 265 to 10,900 feet



Metropolitan's Dams & Reservoirs

Reservoir Capacities



Diamond Valley Lake



Diemer Basin No. 8

Metropolitan's Dams & Reservoirs

Dam Safety Regulations Updates

- California Senate Bill 92 in June 2017
 - Inundation Maps
 - Emergency Action Plans
- Spillway comprehensive assessments
 - Lake Mathews & Lake Skinner



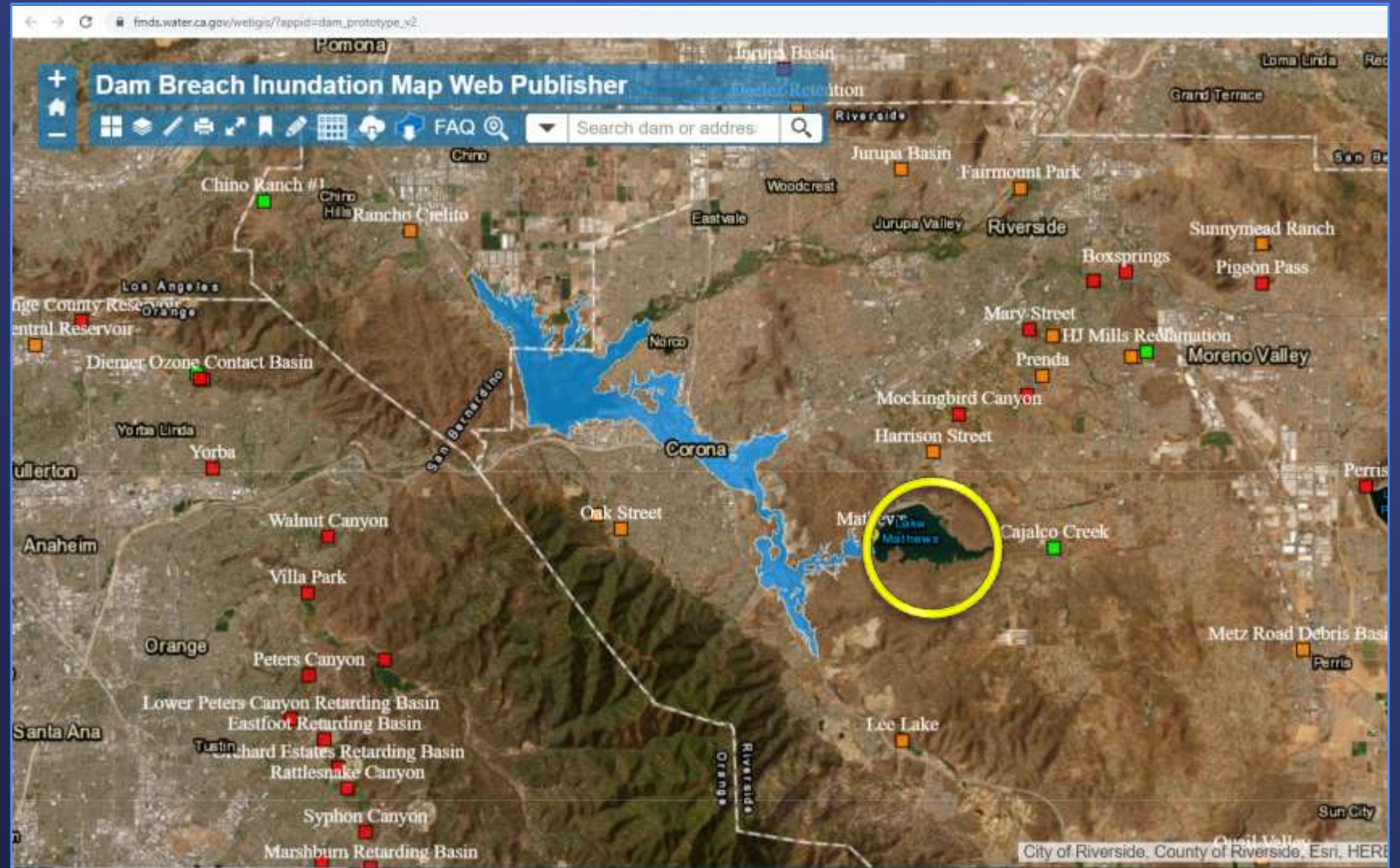
Lake Skinner Spillway



Lake Skinner Spillway GPR Testing

Inundation Maps – Lake Mathews Example

Metropolitan's Dams & Reservoirs

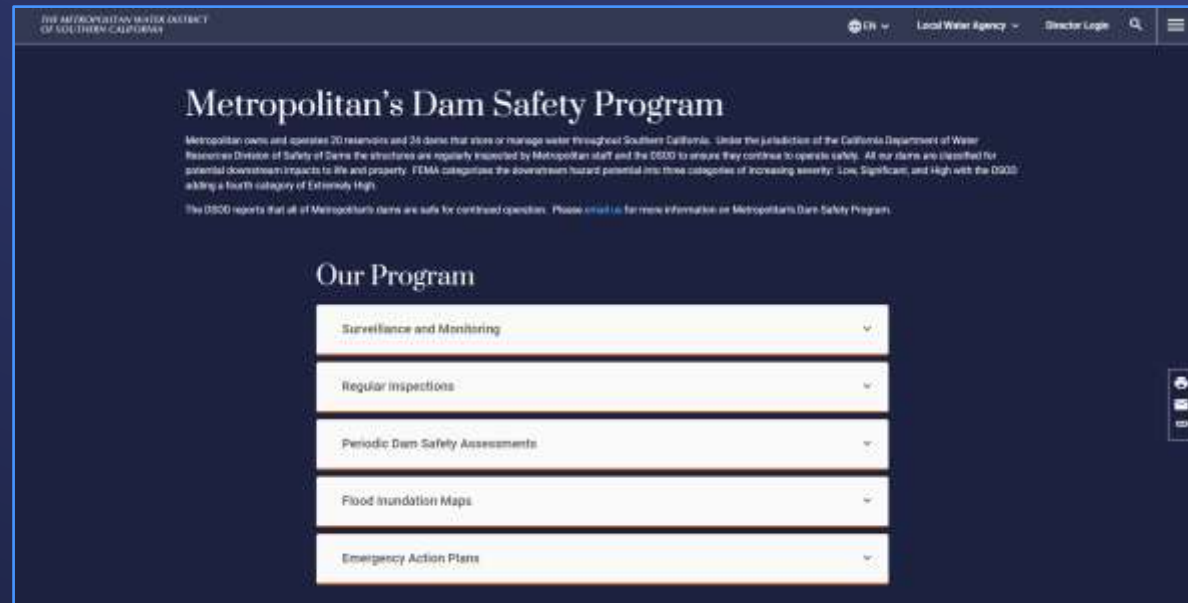


DSOD Inundation Map Web Application – Lake Mathews Main Dam

Metropolitan's Dams & Reservoirs

Emergency Action Plans (EAPs)

- Update EAPs per Cal OES requirements
- Outreach to local emergency agencies
- EAP updates & exercises
- 4 EAPs approved & 2 under Cal OES review
- Complete all EAP updates by 2024

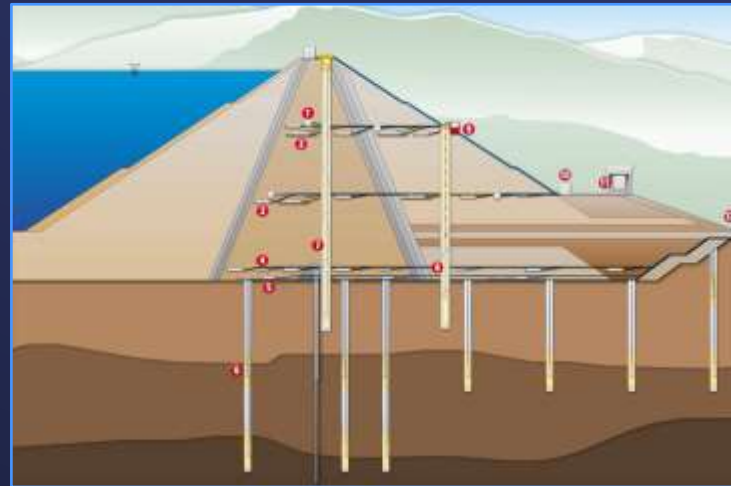


<https://www.mwdh2o.com/how-we-plan/>

Metropolitan's Dams & Reservoirs

Inspection & Monitoring Program

- Visual Inspections
 - Three Levels of Inspection:
 - 1 – by MWD staff in the presence of DSOD inspectors
 - 2 – by MWD staff monthly, quarterly or semi-annually
 - 3 – by MWD staff routinely
- Monitoring Instrumentation



Typical Dam Instrumentation Section



DVL Seepage Monitoring Station

Metropolitan's Dams & Reservoirs

Dam Safety Assessments

- Evaluate performance of dams & appurtenances
- Mandated by DSOD or initiated by staff
- Completed in-house or by consultants
- Identify necessary improvements



Copper Basin Dam

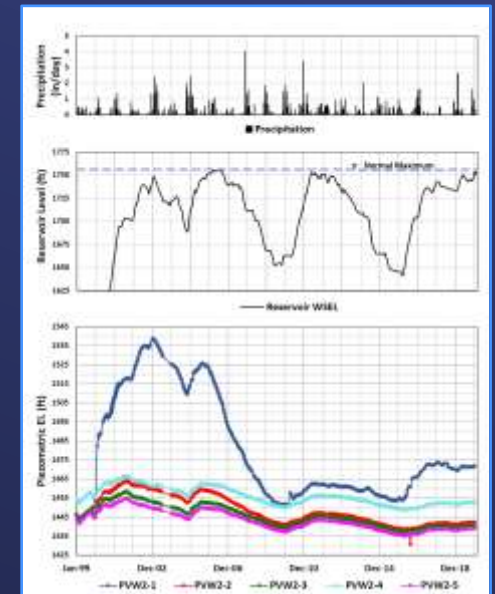
Metropolitan's Dams & Reservoirs

Dam Safety Initiatives

- Dam monitoring system upgrades
 - Initial installations at DVL & Garvey Reservoir
- Board action - April 2023
 - Instrumentation & data acquisition
 - Data management & dashboarding

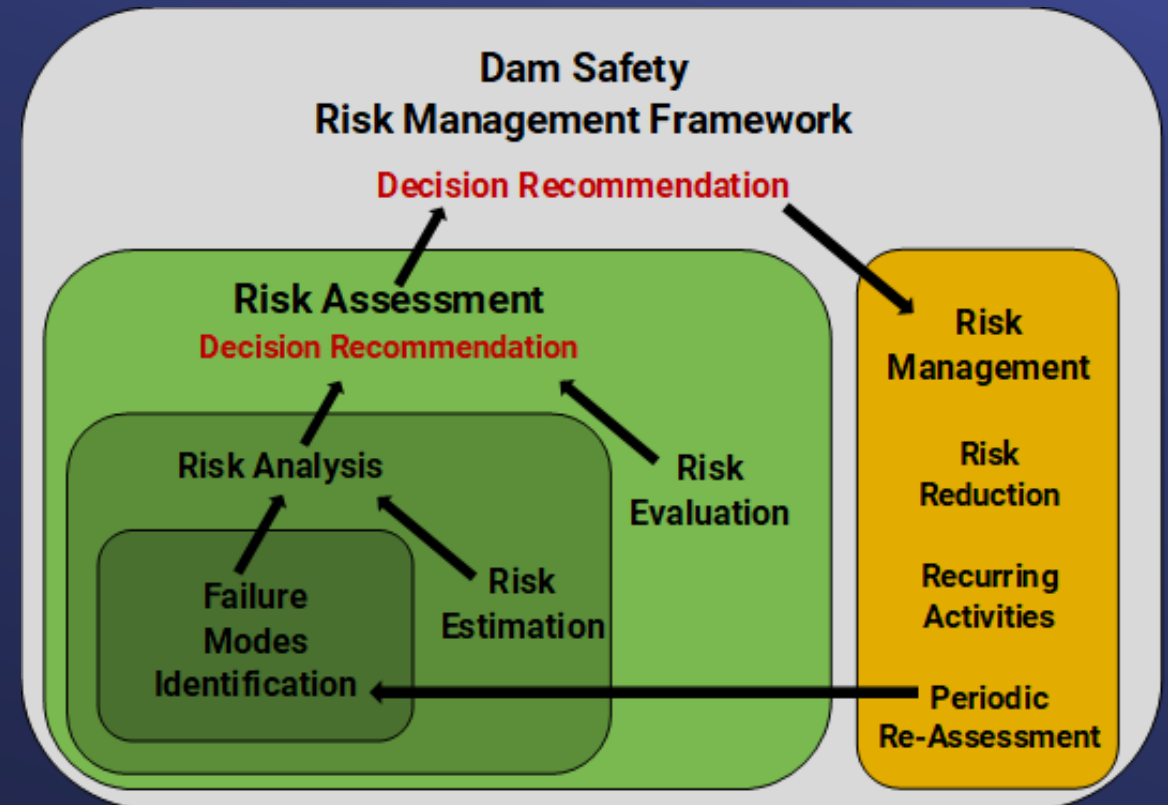


DVL Remote Monitoring Unit



Dam Safety Initiatives

- Industry standards and best practices
- DSOD anticipated protocols
- Dam Risk Assessments
 - Identify potential failure modes
 - Estimate risk
 - Risk reduction measures



Metropolitan's Dams & Reservoirs

Summary

- Complete dam monitoring systems upgrades at DVL & Garvey Reservoir by 2024
- Begin Dam Risk Assessments in 2023
- Planned Board Action for Copper Basin Discharge Valve Replacement contract award
- Continue work on EAPs, with completion by 2024
- Continue routine dam monitoring & reporting

