

# Engineering, Operations, & Technology Committee Metropolitan's Dam Safety Initiatives Program

Item 7a June 12, 2023

#### Overview

- 26 Reservoirs
- 20 Reservoirs & 24 dams under DSOD jurisdiction
  - Two reservoirs with multiple dams
- Dam Height, Feet DSOD Jurisdiction 25 Not Under DSOD Jurisdiction 6 15 50 Storage Capacity, Acre-Feet
- Includes finished water reservoirs

#### **Reservoir Locations**



Metropolitan's Dams & Reservoirs

Engineering, Operations, & Technology Committee

#### **Reservoir Locations**

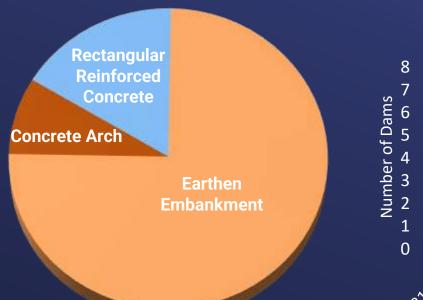


Metropolitan's Dams & Reservoirs

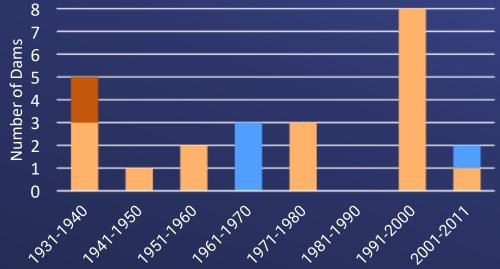
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#### **Jurisdictional Dam Portfolio**

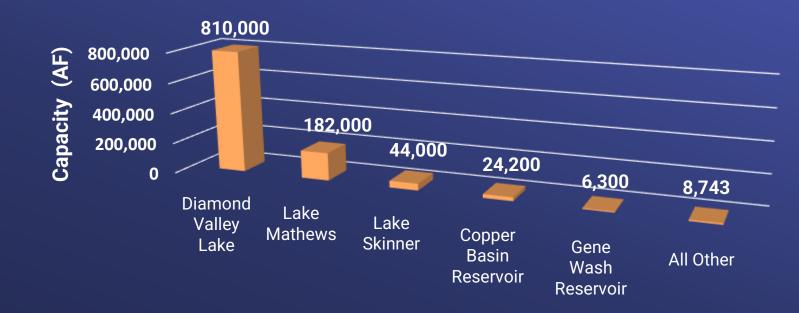
- Dam heights range from 15 to 284 feet
- Dam lengths range from 265 to 10,900 feet



#### Year Constructed



### **Reservoir Capacities**







Diemer Basin No. 8

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# **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 GPR Testing

Lake Skinner Spillway

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Loma Linda Rec Dam Breach Inundation Map Web Publisher Grand Terrade Riveraide 🗄 🗢 🖊 🖶 🧨 📕 🖉 🧱 🦣 👘 FAQ 🍭 Search dam or addr Q Jurupa Basir 500 8 Fairmount Park Chino Ranch #1 Woodcreat HIN Jurupa Valley Riverside Sunnymead Ranch loxsprin Los Angeles ige County Researching fary Stree tral Reservoir HJ Mills Re Moreno Valley Diemer Ozone Contact Basin Mockingbird Canyon Yorba Linda Harrison Stree Corona ullerton Onk Street Walnut Canyon Cajalco Creek Anaheim Villa Park Metz Road Debris Bas Orange Peters Canyon Lower Peters Canyon Retarding Basin Eastfoot Retarding Basin Lee Lake Santa Ana Testinchard Estates Retarding Basin Rattlesnake Canvon Sun City Syphon Canyon Marshburn Retarding Basin City of Riverside, County of Riverside, Esri, HER

DSOD Inundation Map Web Application – Lake Mathews Main Dam

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### **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

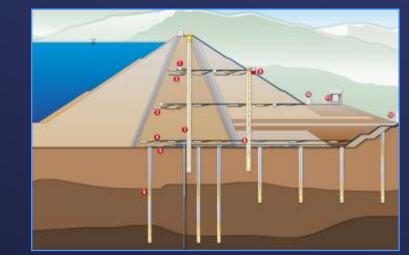
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	Our Program					
	Surveillance and Monitoring	÷.				
	Regular inspections	*				0
	Periodic Dam Safely Assessments					-
	Flood Inundation Maps	÷				
	Emergency Action Plans	~				

#### https://www.mwdh2o.com/how-we-plan/

# **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

# Dam Safety Assessments

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



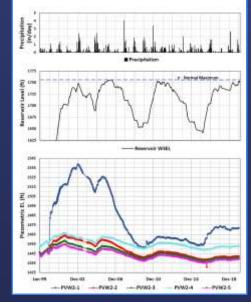
Copper Basin Dam

# Dam Safety Initiatives

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

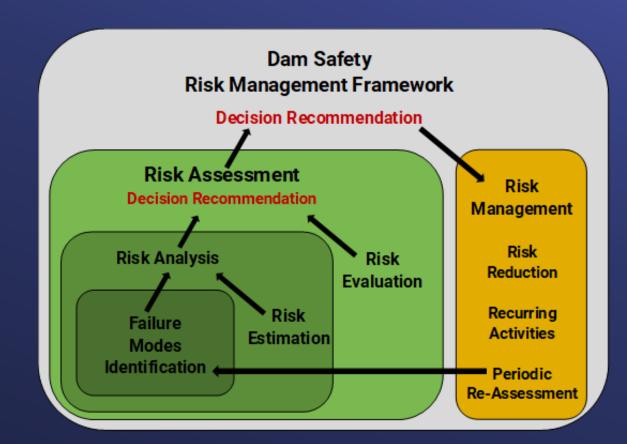


DVL Remote Monitoring Unit



# **Dam Safety Initiatives**

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



# 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

