Engineering, Operations, & Technology Committee

Planning and Execution of Pipeline Shutdowns Within Metropolitan's Distribution System

Item 6c

August 18, 2025

Item 6c
Conveyance and Distribution Shutdown Planning and Execution

Subject

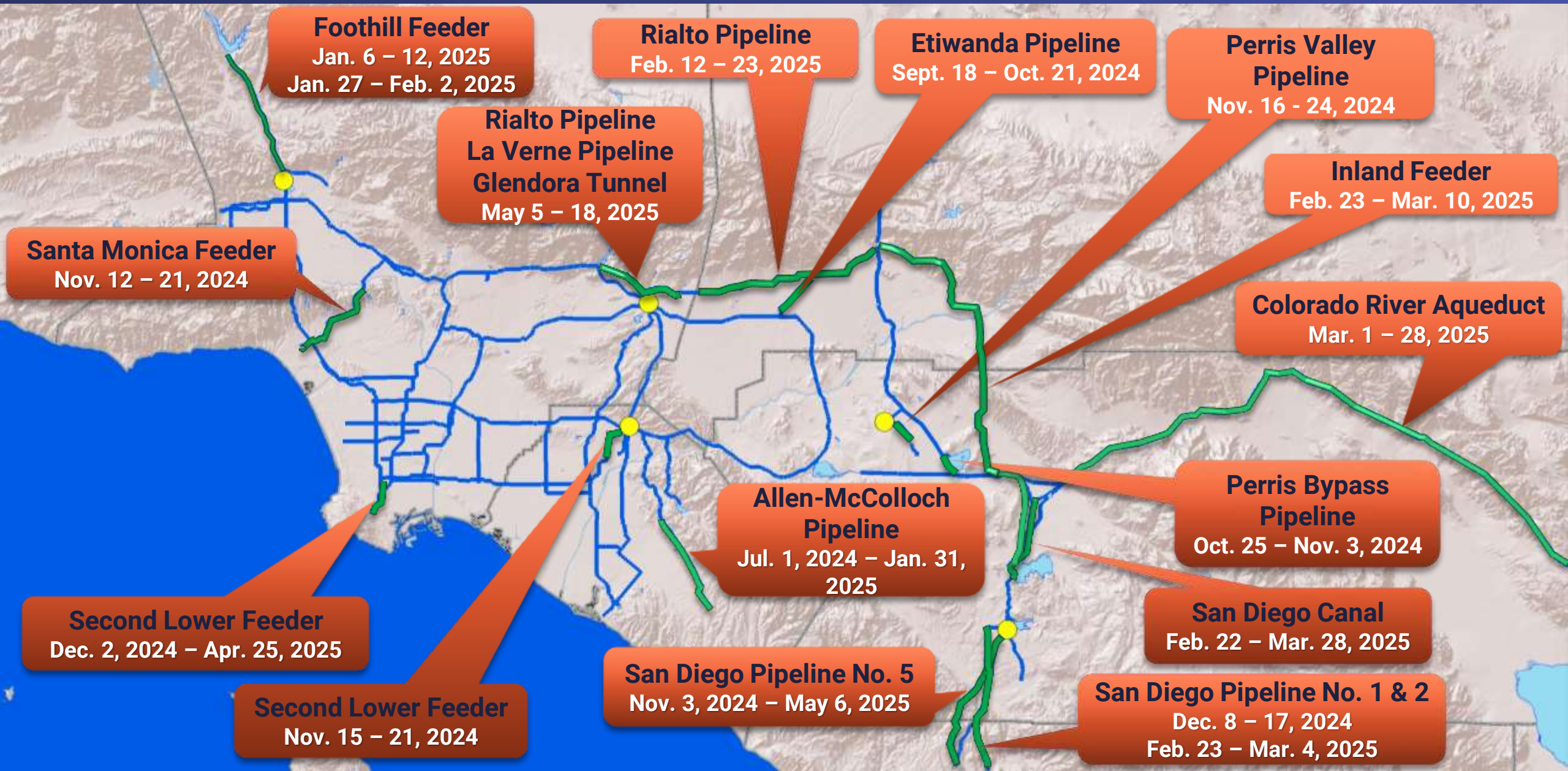
Conveyance and Distribution Shutdown Planning and Execution

Purpose

Overview of activities required to plan and execute a conveyance and distribution system shutdown

Shutdown Drivers

FY 2024/25 Shutdown Schedule



Internal and External Coordination

Disinfection – Water Quality

Public Notice – External Affairs

Safety Plan – SRT

Site Visit – Member Agencies

Dewatering Location Information and Coordination

Dewatering with Filters

Metropolitan Water District of Southern California

Raw Water Discharge Plan

Raw water discharge from

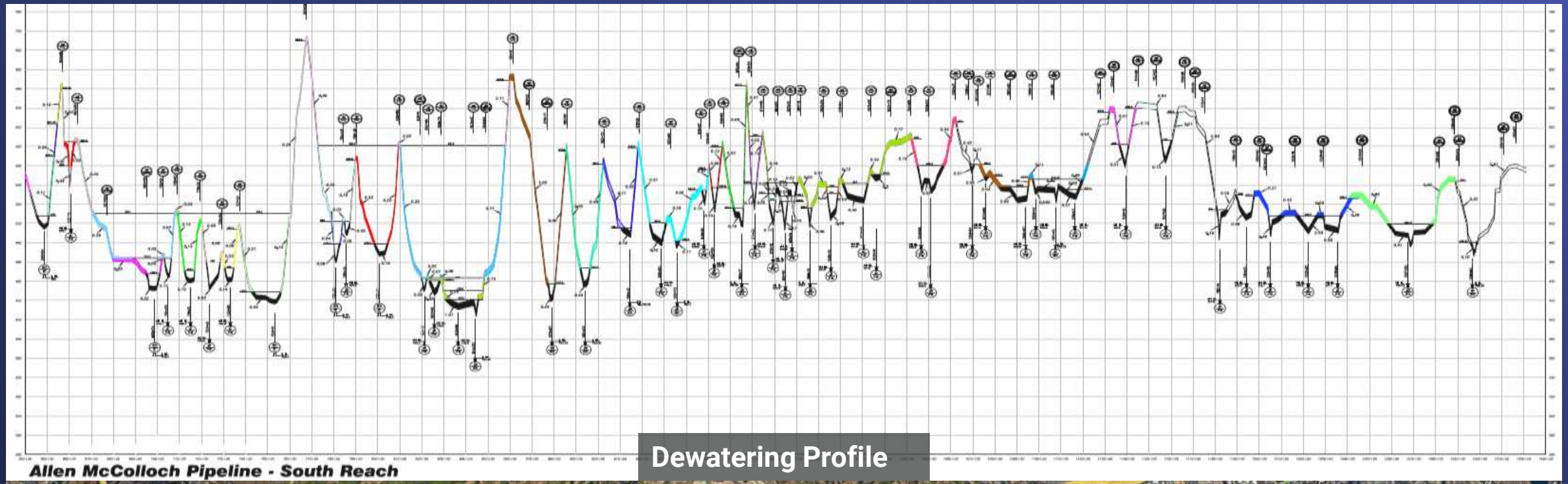
SAN DIEGO PIPELINE 5

Into Santa Margarita River Watershed Area

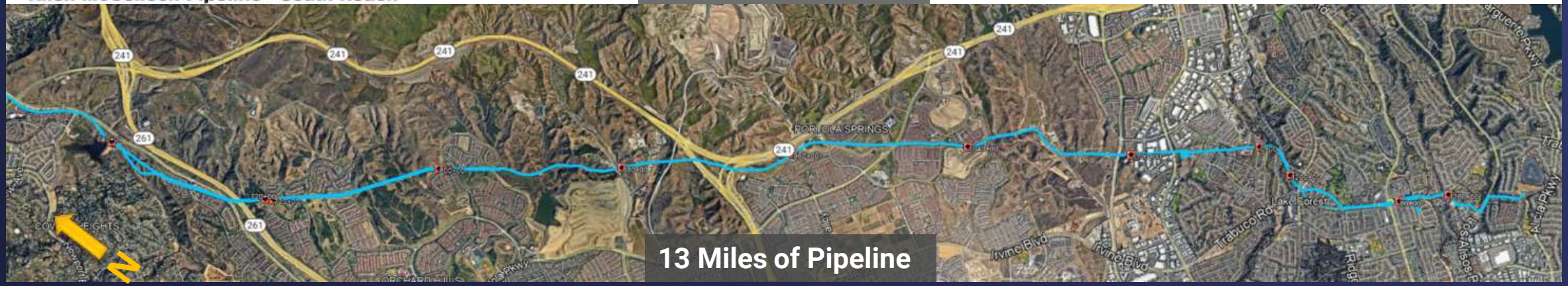
And San Luis Rey River Watershed Area

- Dewatering locations tracked and monitored
- Additional control measures due to invasive mussels (Quagga/Golden)

Operational Planning



Dewatering Profile



13 Miles of Pipeline

Operational Planning

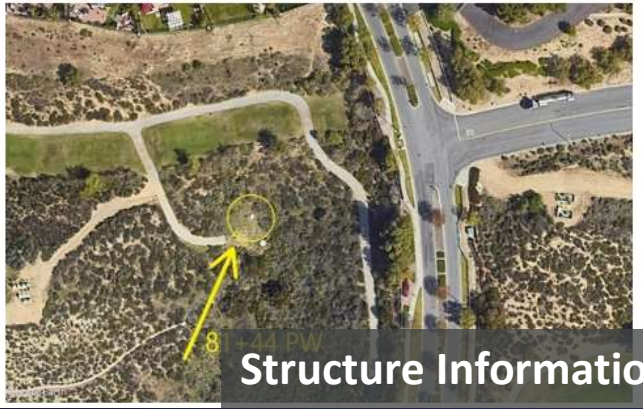
SLF 73+01 BO — Dewatering Location

Dewatering Information-*Diemer Plant below Guard Shack*

Gravity Discharge @ 5CFS
Volume –1.65AF Time- 4 Hours
Confirm 58+32 And 79+10 Open
Begin Flood and Pump
Remove Flange Cont. Pumping
Volume- .15A Time- 2 Hrs.
Equip. - 125kw Generator
Pumps- 3" Submersible
Hose-3" rigid 30' 3" Lay flat 30'

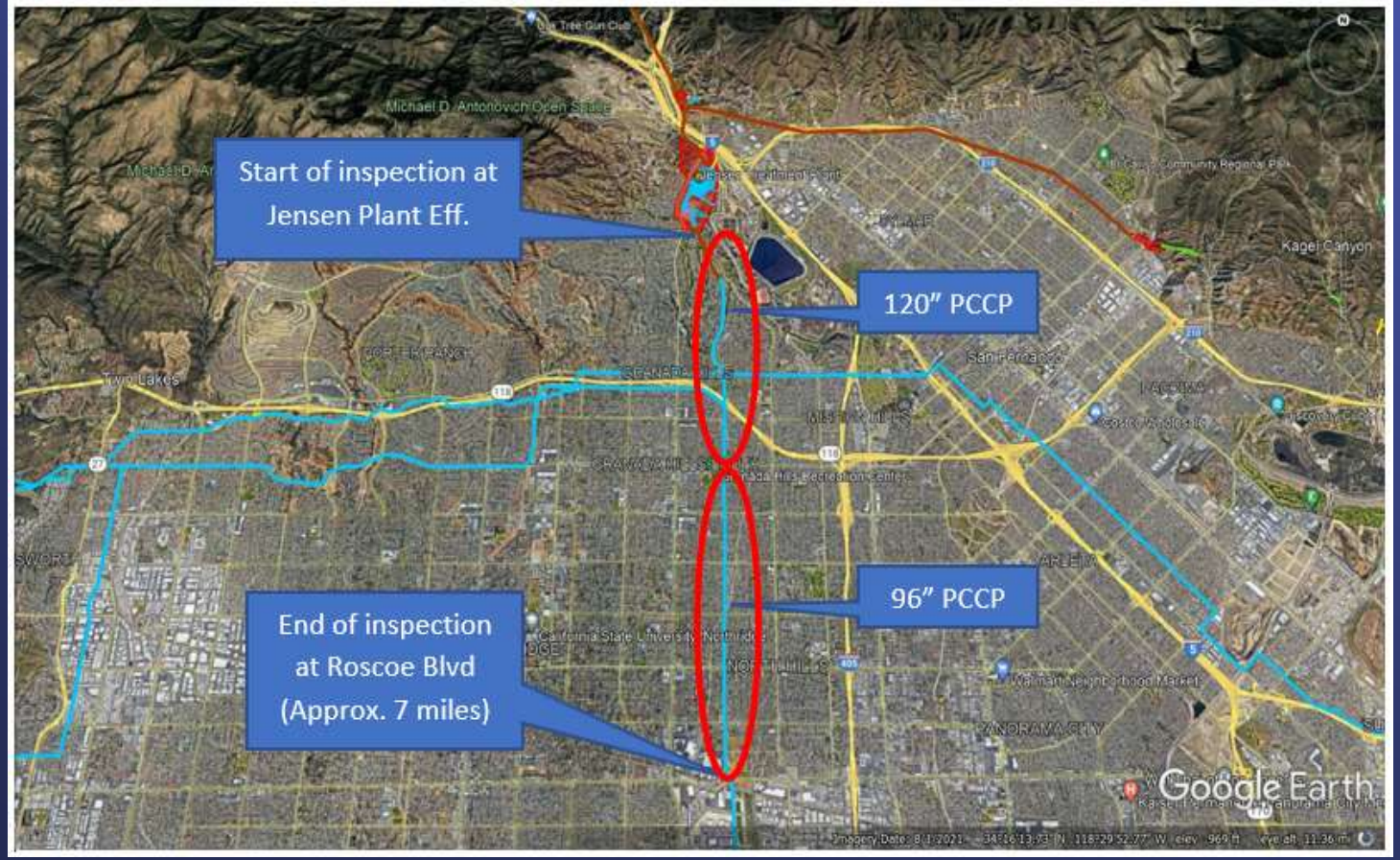
SLF 81+44 PW — Dewater Location

Dewatering Information –*Valley View Ave/Golf Course*



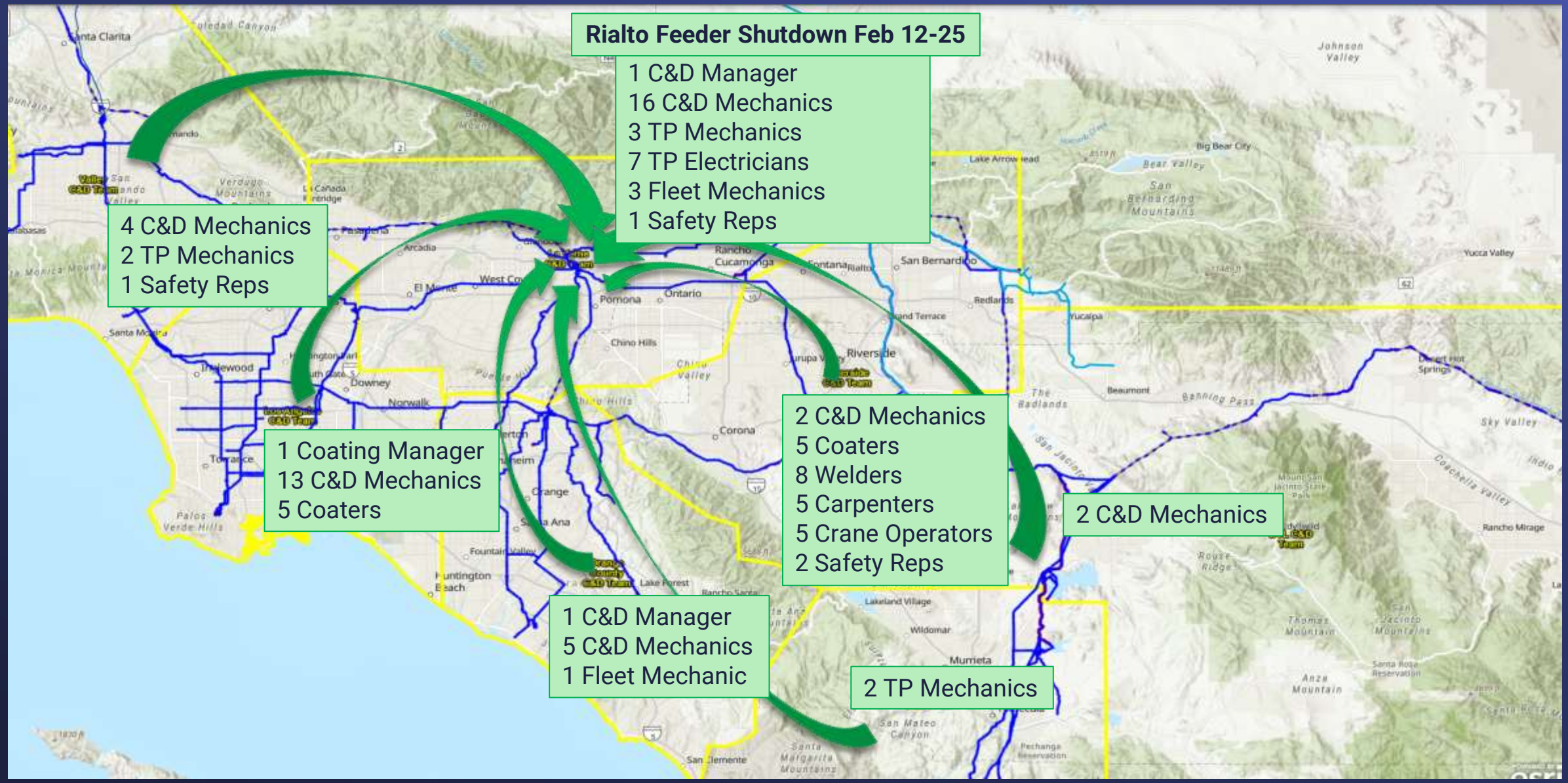
Flood and pump @ 800GPM
Volume –.25 AF Time- 2 hours
Confirm 79+10 and 84+26 open
Remove Flange Cont. Pumping
Equip.-70kw generator
Hose – 6" rigid 30', 6" lay flat 40'
Pump – 6" & 3" submersible
NOTE: Approx. 15' push

Structure Information

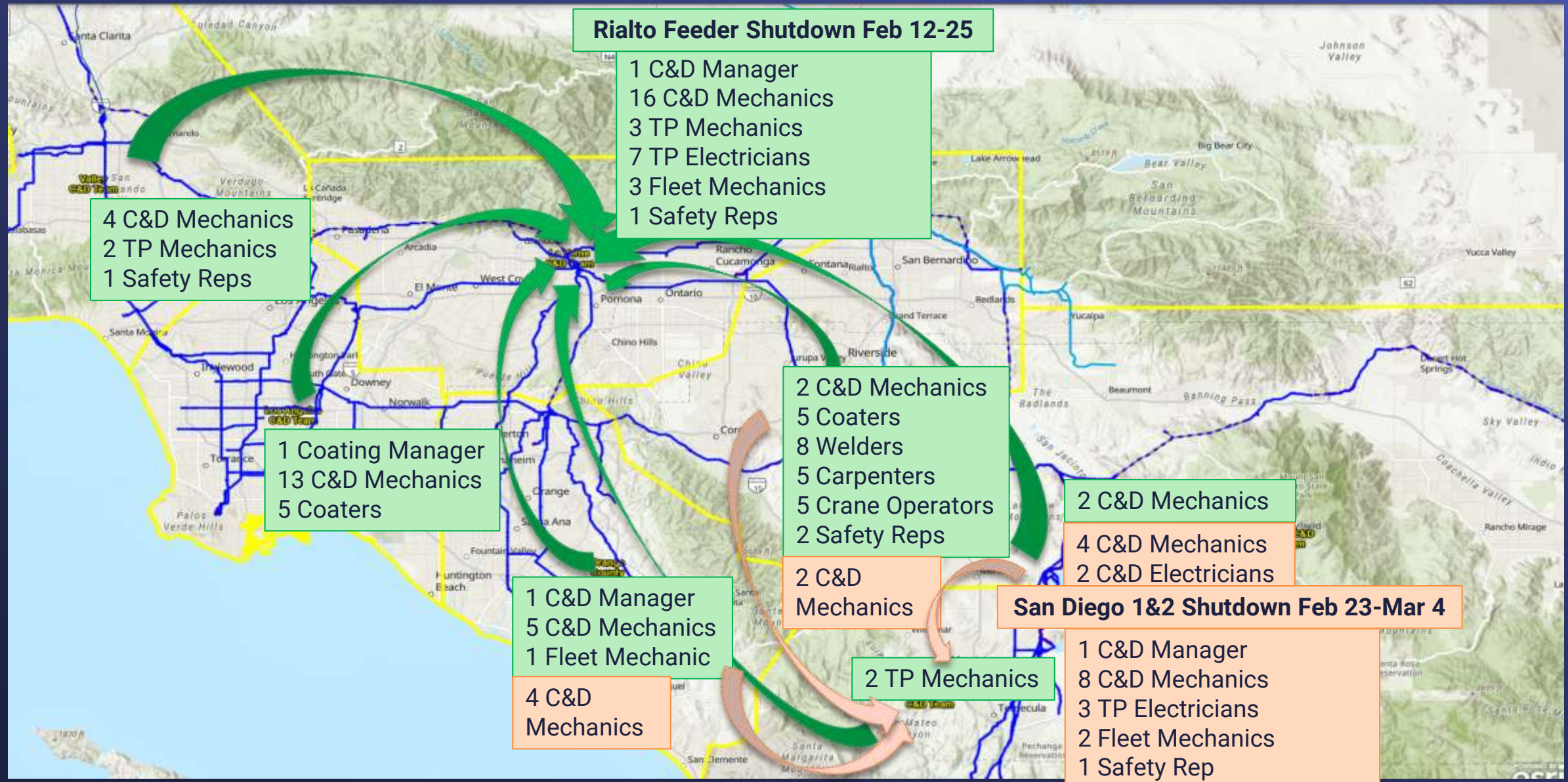


- Shutdown overview for staff briefings
- Location-specific information

Personnel Movement for Shutdown Support



Personnel Movement for Shutdown Support



Equipment Staging

OC-88 Staging for AMP Shutdown

Etiwanda Staging for Rialto Shutdown

- Remote locations near shutdown often used as base of operations
- Fleet logistics are of great importance

Clearance Procedures

Switching / Valving Instructions ↔ | Protected | +Between | +End Row | -Delete Row | Clearance Number

ASS / VI Number		Instruction Number	WA-001-24	Clearance To Be Issued?	Yes
Location	V-08 to SDC V-06	Rev.	0	Unavailable From	2/21/2024
Equipment or Line	San Diego Canal			Start Time	400
Reason	SDC concrete lining repairs			Unavailable To	3/7/2024
Location	Operation	Instructions / Equipment to be Operated		Outage Request #	4417

STEP	TIME	LOCATION	OPERATION	INSTRUCTIONS / EQUIPMENT TO BE OPERATED	INITIALS
				Remove From Service	
			Note	SDC_____ request #4420. LVPL flow limited to 45CFS, V-09, V-10 and V-11 open 100%,Weir bords installed on SDC/LVPL delivery weir/ weir bords removed on CLC/LVPL delivery weir during duration of clearance.	
1		DVL	Check	San Diego Canal drawdown complete	
2		West Portal	Install	Blocker gate at San Jacinto pipeline V-04 structure, Install L/D, D/L_____ and tag#_____	
3		SDC Turnout	Install	Blocker gate U/S of V-08 radial gate, Install L/D, D/L_____ and tag#_____	
4		DVL	Close	DVL connection canal wheel Gate, Install L/D, D/L_____ and Tag#_____	
5		DVL	Open	DVL connection canal wheel Gate Disc. Sw. Install, D/L_____ and Tag#_____	
6		SD Canal Skinner	Close	Lake Skinner Inlet Radial Gate V-06, use LO/BO	
7		SD Canal Skinner	Close	E Lake Skinner Bypass slide gate #1 (West), Install L/D, D/L_____ and Tag#_____	
8		SD Canal Skinner	Close	E Lake Skinner Bypass slide gate #2 (Center), Install L/D, D/L_____ and Tag#_____	
9		SD Canal Skinner	Close	E Lake Skinner Bypass slide gate #3 (East), Install L/D, D/L_____ and Tag#_____	
10		SD Canal Skinner	Open	E Lake Skinner Bypass slide gate #1 (West) Disc. Sw., Install D/L_____ and Tag#_____	
11		SD Canal Skinner	Open	E Lake Skinner Bypass slide gate #2 (Center) Disc Sw. Install, D/L_____ and Tag#_____	
12		SD Canal Skinner	Open	E Lake Skinner Bypass slide gate #3 (East) Disc. Sw., Install D/L_____ and Tag#_____	
13		SD Canal Skinner	Close	LSBP-1 BFV 72", Install L/D,D/L_____ and Tag#_____	
14		SD Canal Skinner	Close	LSBP-1 BFV 72" Bypass Plug Valve Install L/D,D/L_____ and Tag#_____	
15		SD Canal Skinner	Open	LSBP-1 BFV 72" Disc. Sw., Install D/L_____ and Tag#_____	
16		SD Canal Skinner	Close	LSBP-2 BFV 96", Install L/D,D/L_____ and Tag#_____	
17		SD Canal Skinner	Close	LSBP-2 BFV 96" Bypass Plug Valve Install L/D,D/L_____ and Tag_____	
18		SD Canal Skinner	Open	LSBP-2 BFV 96" Disc. Sw., Install D/L_____ and Tag#_____	
19		SD Canal Skinner	Close	LSBP-3 BFV 48", Install L/D,D/L_____ and Tag#_____	
20		SD Canal Skinner	Close	LSBP-3 BFV 48" Bypass Plug Valve Install L/D,D/L_____ and Tag#_____	
21		SD Canal	Open	LSBP-3 BFV 48" Disc. Sw., Install D/L_____ and	
22					

Example of Clearance Checklist

Locked out Electrical Equipment

Locked out Mechanical Equipment

Shutdown Execution

Shift Change at OC-88 for AMP Shutdown

- 13-hour shift rotation to allow for overlap
- Safety Meeting and update from Shutdown Managers before each shift
- New shift relieves current shift at various locations

Shutdown Execution

Coordination at Central Location

Status Board Used to Track Progress

- Shutdown Managers coordinate daily activities
- Adjust from previous shift progress or setbacks
- Monitor and track crews over long distances

Shutdown Execution

Flange Removal and Installation

Pumping at Low Points of Pipeline

Preventative Work Completed During Shutdowns

Inspection Team Preparing for Entry

- Technology used to locate broken wires in Prestressed Concrete Cylinder Pipelines

PCCP Pipeline Inspection

- Engineering inspections
- Structural and corrosion, typically

Corrective Work Completed During Shutdowns

Coating Repair at Red Mountain Sleeve Valves

Sleeve Valve Installation

Upper Feeder Bridge Expansion Joint

Capital Improvement Work Completed During Shutdowns

Valve Installation at Wadsworth Bypass

Tie-in at Rialto Pipeline

Tee Installation at Badlands Surge Tower

Making it Happen, Together

San Diego Canal Inspection


THE METROPOLITAN WATER DISTRICT OF
SOUTHERN CALIFORNIA
1928