

American Academy of Environmental Engineers & Scientists

Woolsey Fire: A Water Agency's Experience

October 17, 2019



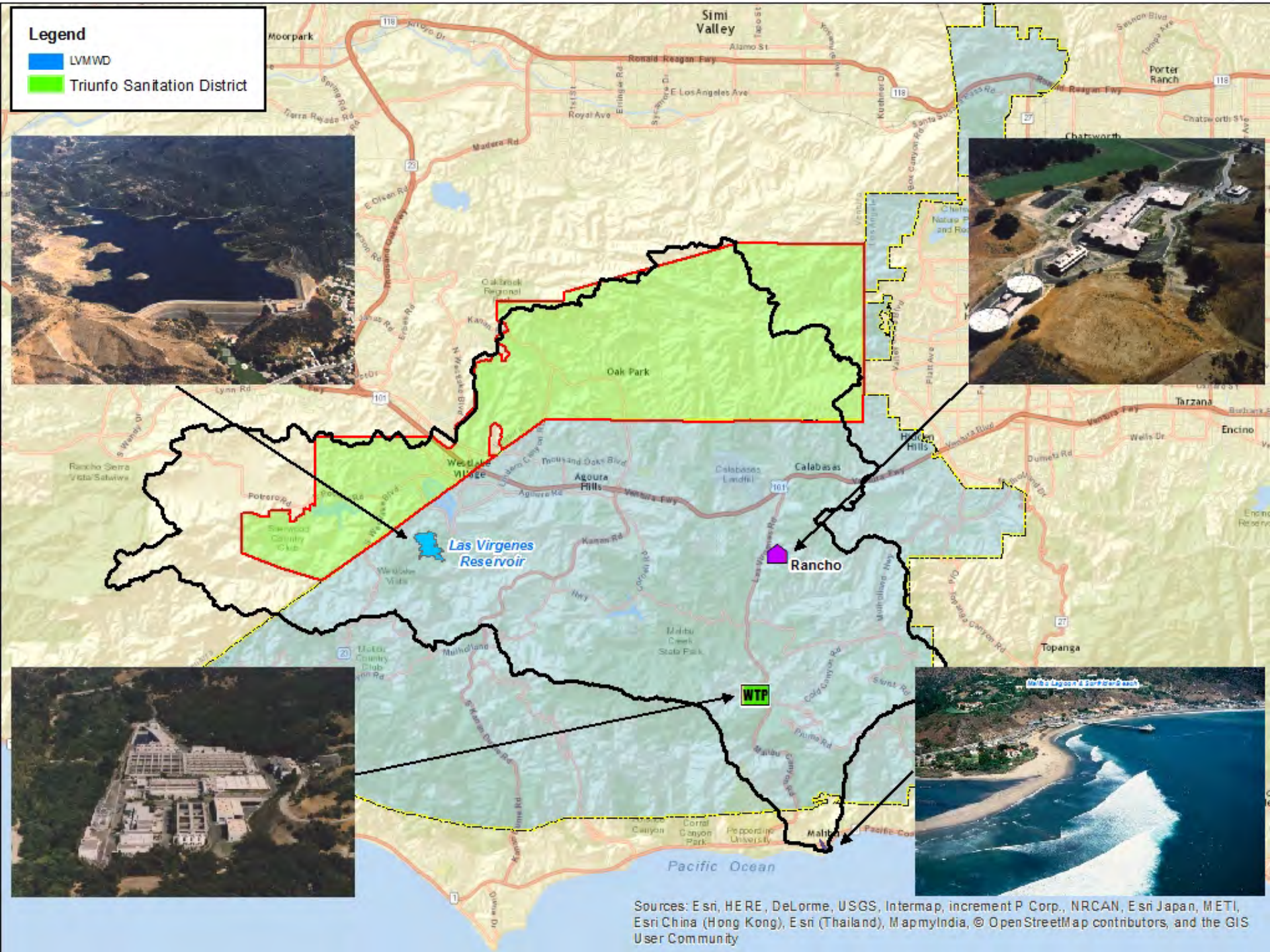
LVMWD Overview

- Retail water and wastewater agency:
 - Potable and recycled water service
 - Wastewater treatment
 - Biosolids composting
 - Renewable energy generation
- 122-square mile service area
- Early adopter of water recycling, serving 20% of overall demands
- All potable water purchased from Metropolitan Water District
- Provide sanitation services, wholesale recycled water and composting through a Joint Powers Authority



Legend

- LVMWD
- Triunfo Sanitation District



Sources: Esri, HERE, DeLorme, USGS, Intermap, increment P Corp., NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

November 8, 2018



- Major Santa Ana Wind Event
- 50 – 60 mph wind gusts
- At approximately 2:22pm SCE reported an outage near the Los Angeles and Ventura County borders (Chatsworth area) on the Santa Susana Field Laboratory property.
- Two minutes later at 2:24pm a small brush fire ignited, and because of the prevailing wind and the gusts grew, quickly
- At the same time down SR 101 (10 miles) in Thousand Oaks, the Hill Fire was burning and threatening homes and businesses
- Resources were spread thin and first responders began to be overwhelmed



Woolsey Fire Overview

- Mandatory evacuation of more than 295,000 people.
- Fire Jumped the 101 FWY on Nov. 9 at 4:30 a.m.
- Power outage across entire service area on Nov. 9 at 5:55 a.m., affecting 24 pump stations.
- Burned 96,949 acres and destroyed 1,643 structures and resulted in civilian 3 fatalities.



Emergency Response Actions

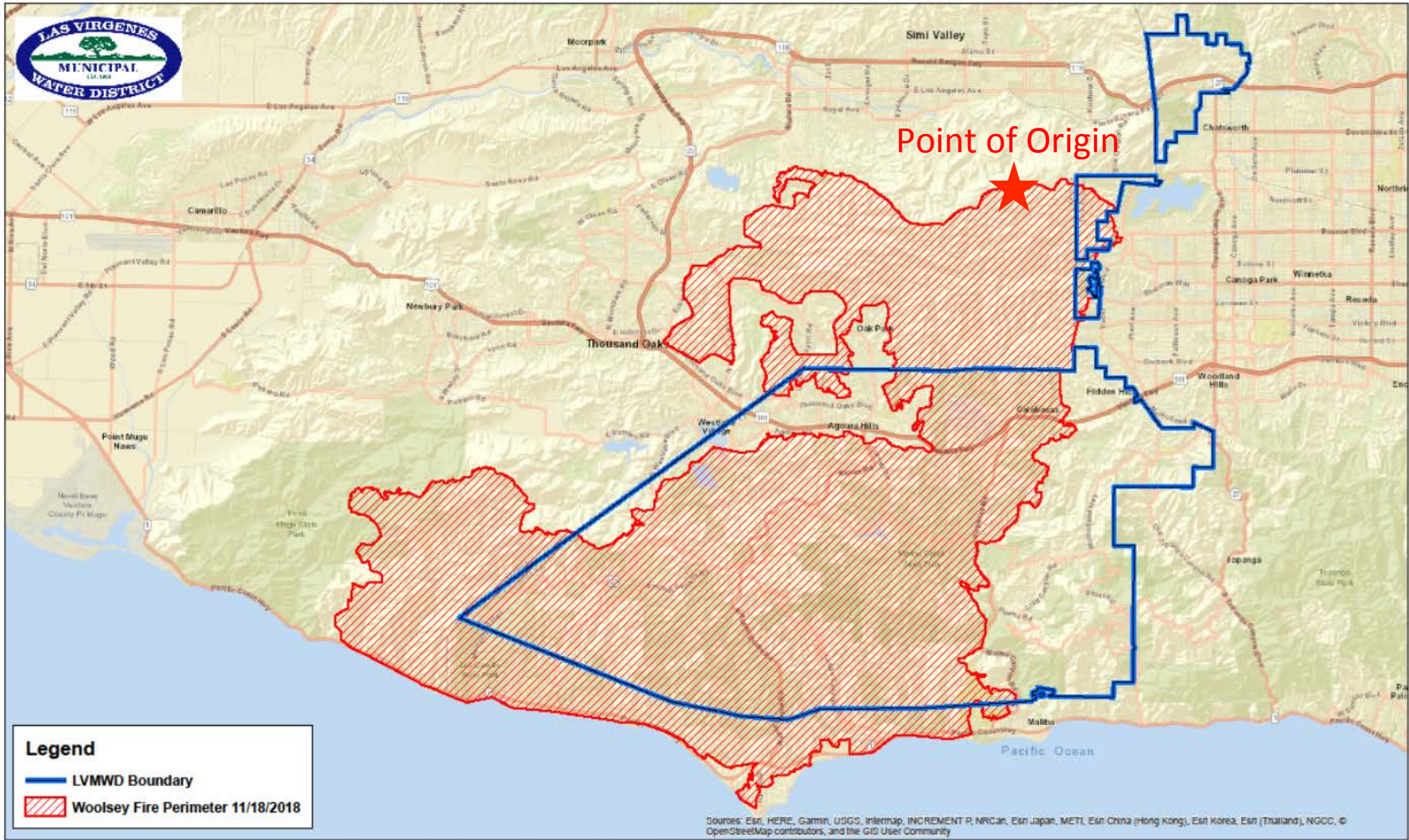
- Activated EOC at 4:00 p.m. and established Incident Command.
- Mobilized emergency generators and called for mutual aid.
- Requested and received additional flow/pressure from MWD via LV-2 Interconnection off West Valley Feeder No. 2.
- Developed and implemented emergency response priorities.
- Issued Customer Advisory (low pressure) and Boil Water Notice.
- Repaired water main leaks, fueled generators and shutoff services to 350 destroyed homes.



What Were We Doing?

- Monitoring our Distribution System
- Communicating with Incident Command
- Monitoring Social Media
- Shutting off connections to burned structures
- Fielding phone calls from customers
- Minimizing damage to infrastructure
- Communicating with tanks and pump stations
- PPE to personnel





Point of Origin

2/3 of LVMWD Land Area Burned

Creepy Headquarters Morning





Emergency Operations Center



Rancho Las Virgenes Composting Facility



Westlake Filtration Plant



Tapia



WATER DISTRICT

What We Saw...



















Lessons Learned

- Activate early and apologize later (if necessary)
- Water agency personnel are first responders; be safe
- Set up 12-hr. shifts and send people home to rest
- Some chaos is normal, but try to manage it
- Request mutual aid before you need it
- Document from the start for FEMA reimbursement
- Test emergency generators under load periodically



Lessons Learned

- Send a representative to Fire Incident Command (IC)
- Explain importance of facilities IC Liaison Officer
- Issue public notices and updates without delay
- Emergency response is a sprint; disaster recovery is a marathon
- Social Media is essential to communication during a disaster
- Mass Notification System?



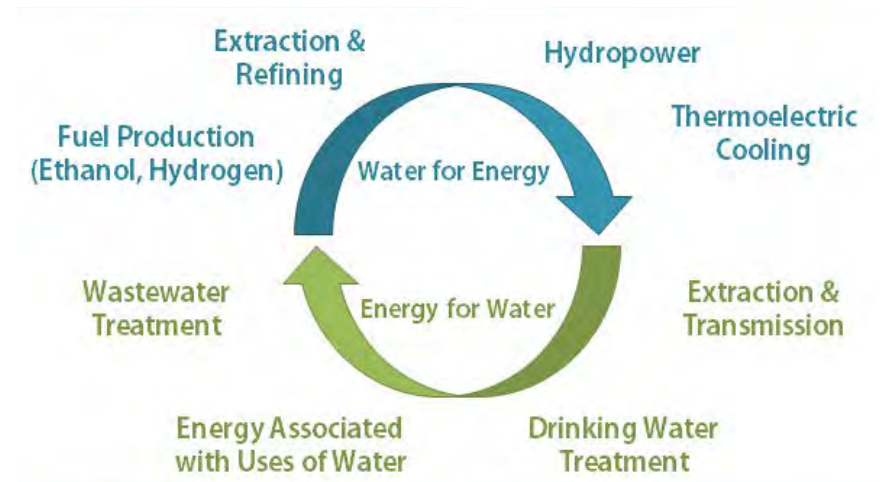
Increasing Risk of Power Outages

- Climate Change
- Natural disaster (earthquake, flood and wildfire)
- Severe weather conditions
- Excessive Power Demand
- Vehicle Accidents
- Excavation-related Accidents
- Public Safety Power Shutoffs



Water-Energy Nexus

- Water and energy are inextricably linked.
- Energy and power production requires water.
- Water production, treatment and distribution requires energy.
- Effective emergency response requires BOTH water and energy.



Investment in Emergency Backup Power

- Evaluate all water and wastewater system facilities.
 - Natural gas backup drivers
 - Stationary generators w/automatic transfer switches
 - Mobile generators
- Implement more rigorous testing.
 - Exercise monthly; annual load testing
 - NFPA 110
 - SCAQMD Rule 1470 / CARB Airborne Toxic Control Measure



Planning a More Resilient Water System

- Greater degree of redundancy
 - Backup power for all essential treatment and pumping systems with automatic transfer switches
 - Interconnections with neighboring water systems
 - Larger amounts of gravity storage
 - Looped distribution systems w/isolation valves
- Participation in Mutual Aid Agreements
- Emergency Response Planning
- On-Site Fuel Storage and Delivery Capabilities
- Routine Maintenance and Testing of Equipment
- Emergency Contracts w/Key Vendors
- Improved Communication w/Power Utility Representatives
- Well-Trained Employees





Mike McNutt, Public Affairs and
Communication Manager
Las Virgenes Municipal Water District

www.lvmwd.com

mmcnutt@lvmwd.com

(818) 251-2124

