IRVINE RANCH WATER DISTRICT

EMERGENCY OPERATIONS PLAN

September 2025

Irvine Ranch Water District

Paul Cook (Sep 29, 2025 14:01:34 PDT)

General Manager

WARNING: FOR OFFICIAL USE ONLY

Information contained in this document is exempt from FOIA (Exemption 2) and the California Public Records Act, in Government Code Sections 6254(k) and 6255.

Notice: This plan was developed to improve emergency preparedness, response and recovery and to satisfy the Standardized Emergency Management System requirements as presented in Title 19 of the California Code of Regulations and the National Incident Management System. It is understood that disaster preparedness is not an exact science, and this Emergency Operations Plan does not guarantee the safety of any individual, structure, asset or organization in a disaster.

AWIA Compliance and Certification

In late 2024 through early 2025, a probability-based Risk and Resilience Assessment (RRA) was conducted for the Irvine Ranch Water District (IRWD) per America's Water Infrastructure Act of 2018 (AWIA) and the American National Standards Institute (ANSI)/American Water Works Association (AWWA) J100 Standard using the Program to Assist Risk & Resilience Examination (PARRE) software tool. The results of this RRA were then used to review and update this Emergency Operations Plan (EOP) following the AWIA guidelines. AWIA has provided IRWD with a unique opportunity to expand the understanding of its risk profile and inform the development and update of this EOP to address identified threats and hazards. This EOP is compliant with existing organizational documents, related State of California requirements, and water industry standards and best practices including:

- AWWA G430-24 – Security Practices for Operation and Management (G430)
- AWWA G440-22 – Emergency Preparedness Practices (G440)
- U.S. Environmental Protection Agency (EPA) Community Water System Emergency Response Plan Template
- M19 Emergency Planning for Water and Wastewater Utilities
- California Office of Emergency Services (Cal OES) Emergency Plan Review Crosswalk 2018
- California Government Code (CA GOV) Section 8607. Disaster Preparedness, including Standardized Emergency Management System (SEMS)
- CA GOV Section 8607.2. Disaster Preparedness Plans for Water Agencies
- CA Health and Safety Code (CA HSC) Section 25500 - 25519. California Certified Unified Program Agency (CUPA), Hazardous Materials Business Plan (HMBP) and Spill Prevention Control and Countermeasures (SPCC) Plans
- CA HSC 116450 – 116485, Article 5. Public Notification
- California Senate Bill 92, Dam Safety Planning Division
- California Water Code 10620 – 10645, Urban Water Management Plans

The following table summarizes how this EOP meets the requirements outlined in AWIA.

EOP COMPLIANCE SUMMARY	
AWIA Requirement	**How Met**
1. Strategies and resources to improve the resilience of the system, including the physical security and cybersecurity of the system.	Strategies to improve system resilience were developed as part of the Risk and Resiliency Assessment (RRA) and are in this EOP: • Hazard Specific Response Plans (HSRP) are included as annexes that improve resilience against physical attacks to the District's physical infrastructure. • IRWD has developed in separate documents, strategies and resources to improve the resilience of its Information Systems (IS)/Supervisory Control and Data Acquisition (SCADA) infrastructure. • Additionally, the City of Irvine's Local Hazard Mitigation Plan provides additional information on resilience measures for IRWD facilities and assets. • Addition of CCTV cameras and enhanced access control measures implemented.
2. Plans and procedures that can be implemented, and identification of equipment that can be utilized, in the event of a malevolent act or natural hazard that threatens the ability of the community water system to deliver safe drinking water.	The EOP includes the following response procedures to support agency response to a malevolent act or natural hazard: • All-hazards emergency procedures are detailed in Section 4, Section 5, and Functional Checklists are included in Appendix E. Hazard-Specific Response Plans detail emergency procedures for specific malevolent acts and hazards included in the annexes. • Attachments identify emergency resources in the event of a major interruption of water supply. Additionally, each HSRP identifies equipment that must be considered, or is available, for use for specific hazards and threats.
3. Actions, procedures, and equipment which can obviate or significantly lessen the impact of a malevolent act or natural hazard on the public health and the safety and supply of drinking water provided to communities and individuals, including the development of alternative source water options, relocation of water intakes and construction of flood protection barriers.	This EOP includes the following response procedures to support protection of public health and the water supply: • Alternate water supply strategies have been included in Attachment G. Additionally, the HSRPs contain mitigation procedures for each hazard. • IRWD updates its Urban Water Management Plan every five years to support long-term resource planning including contingencies for a water shortage. The City of Irvine's Local Hazard Mitigation Plan provides additional information on mitigation measures for IRWD facilities and assets.
4. Strategies that can be used to aid in the detection of malevolent acts or natural hazards that threaten the security or resilience of the system.	Detection strategies for malevolent acts or natural hazards are included in the all-hazards plan and in each HSRP where appropriate. Additionally, the RRA documents identify existing countermeasures at IRWD facilities.

IRWD certified completion of the EOP update with the EPA on September 29, 2025. The EOP is next required to be recertified by September 30, 2030.

QUICK REFERENCE

IN THE EVENT OF AN EMERGENCY, FOLLOW THESE INSTRUCTIONS!

If an emergency occurs, first ensure that you, your family, and property are safe and secure.

If an emergency occurs during work hours, complete these steps **AS SOON AS POSSIBLE. Do not wait for someone else to do them.**

1. Call 9-1-1, send someone to meet responders and bring them to the emergency.
2. Alert others nearby of the emergency.
3. Call IRWD Safety & Security at 949-453-5712.

A. For a **MEDICAL EMERGENCY**:

1. Check surrounding area to be sure you are safe then approach victim.
2. Check for breathing and pulse.
3. Perform CPR or use AED if trained to do so.
4. Do not move victim.
5. The person calling 9-1-1 should stay on the phone with the dispatcher.
6. Follow any directions given by the dispatcher until responders arrive.

B. For an **EVACUATION EMERGENCY:**

1. Go outside away from the building to the designated assembly areas, unless instructed to another location.
2. Help anyone who needs assistance to the degree you are trained to do so.
3. Inform responders of anyone known to remain inside and approximate location if known.

C. For a **SHELTER-IN-PLACE EMERGENCY:**

1. Go inside or go to a safe space on the interior of the building, away from windows and outer doors, if possible.
2. As best as possible, environmentally isolate the room by sealing doors, windows, vents, etc. with tape, towels, or other items.
3. Turn off all ventilation/HVAC systems and close dampers to the degree possible.
4. Wait for further information.

D. For a **MAJOR DISASTER OR FIELD EMERGENCY:**

1. Turn on TV or radio to get more information.
2. Check for messaging from Communications or Safety & Security.
3. Notify Safety & Security of information you have observed/received.

E. For **EOC RESPONDERS:**

1. Your manager/supervisor or IRWD Alert will notify you (email, phone call, text) if you are required to report to the EOC. **DO NOT SELF-REPORT TO THE EOC!** (unless you have been instructed to do so based on your role).
2. Travel safely to the designated EOC.
3. Expect shifts to last as long as 12 hours during an emergency. Be prepared to stay for this period of time.
4. Check in at the EOC and receive a briefing from appointed supervisor.

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RECORD OF REVISIONS

DATE	SECTION REVISED	REVISED BY
8/2019	Acronyms, Section Two, Section Three, Section Four, Section Five, Attachments, Appendices and Hazard-Specific Response Plans	A. Kwon
9/2020	America's Water Infrastructure Act updates and additional revisions: • Introduction: Utility Overview, DAFN • Section 3: Emergency Organization: B. Policy Group: Emergency Authorities • Attachments: IRWD Key Contacts List (responsibilities added), Critical Customer Contact List, Primary Utility Components, Alternate Water Supply Strategy, Water Sampling and Analysis, Key Local Services, Family and Utility Personnel Well Being, Safe Work Practices Documents, Public Information Plan, Public Notification Procedures • Appendices: Position Checklists changes, EOC Communication Inventory and Maintenance, Recovery Plan Outline • Hazard-Specific Response Plans: Active Shooter, Water Contamination, Explosive Device, IRWD Hazardous Material Emergency Response Plan Reference	A. Stayton
12/2023	Revision and reorganization of the entire EOP. Major additions/edits include: • Addition of a "Disabilities, Access, and Functional Needs" strategy. • Addition of "Emergency Mission, Goals, Objectives, and Courses of Action" to the Concept of Operations. • Reorganization, renaming, and redefined responsibilities of the Policy Group, Emergency Operations Team, and Incident Response Teams. • Addition of the definition of an "emergency" and specific criteria to trigger EOP activation. • Revision of EOT Activation Levels to mirror current NIMS standards. • Replacement of the previous "Incident Operations Cycle" with a NIMS-compliant "EOC Action Planning Cycle." • Addition of a "Resource Management" strategy. • Removal of repetitive/redundant information.	CPARS Consulting, Inc. and S. Choi
9/2025	Hazard-Specific Response Plans: Developed a SCADA Cyberattack, Updated Earthquake and Wildfire Security Procedures: Update and development of Security Procedures 01 – 06 Appendix D(4): Added Primary EOC Floor Plan Attachment H: Updated Water Sampling and Analysis References	S. Choi

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ACRONYMS

CA DWR	California Department of Water Resources
CAL OES	California Office of Emergency Services
CAL/EPA	California Environmental Protection Agency
CALWARN	California Waste/Wastewater Agency Response Network
CPUC	California Public Utilities Commission
CUEA	California Utilities Emergency Association
DAFN	Disabilities and Access and Functional Needs
DHS	Department of Homeland Security
DSW	Disaster Service Worker
EOC	Emergency Operations Center
EOP	Emergency Operations Plan
EMT	Executive Management Team
EOT	Emergency Operations Team
EPA	Environmental Protection Agency
ESF	Emergency Support Function
FEMA	Federal Emergency Management Agency
GM	General Manager
IAP	EOC Action Plan
ICP	Incident Command Post
ICS	Incident Command System
IRT	Incident Response Team
IRWD	Irvine Ranch Water District
IS	Information Services

ACRONYMS

MAC	Multi-Agency or Inter-Agency Coordination
MARS	Metropolitan Member Agency Response System
MET	Metropolitan Water District of Southern California
MWDOC	Municipal Water District of Orange County
MWRP	Michelson Water Recycling Plant
NIMS	National Incident Management System
OASIS	Operational Area Satellite Information System
OCFA	Orange County Fire Authority
OCSD	Orange County Sanitation District
OCWA	Orange County Water Association
OCWD	Orange County Water District
PG	Policy Group
PIO	Public Information Officer
POTS	Plain Old Telephone Service
SCADA	Supervisory Control And Data Acquisition
SEMS	Standardized Emergency Management System
SOC	State Operations Center
SWRCB	State Water Resources Control Board
TS	Technical Specialist(s)
UOC	Utilities Operations Center
VOIP	Voice Over Internet Protocol
WEROC	Water Emergency Response Organization of Orange County

INTRODUCTION

Irvine Ranch Water District

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INTRODUCTION

A. IRVINE RANCH WATER DISTRICT MISSION AND VISION

The mission of Irvine Ranch Water District (herein referred to as IRWD or District) is to provide high quality water, sewer and watershed protection services to the communities of Irvine, Tustin, Lake Forest, Newport Beach, Orange, Costa Mesa and unincorporated areas of Orange County in an efficient, cost effective and environmentally sensitive manner to achieve a high level of customer satisfaction.

The Irvine Ranch Water District's vision is to achieve greater customer and employee satisfaction, increased reliability and resource conservation, and excellent external relationships with suppliers and others.

To fulfill the mission of delivering high quality and reliable services to its customers, IRWD prepares for emergencies, in close association with outside agencies, through the use of this emergency operations plan, through training of staff, and by conducting drills and exercises to ensure maximum readiness in the event of a disaster. The highest priority outputs are providing potable water for our customers and water for firefighting.

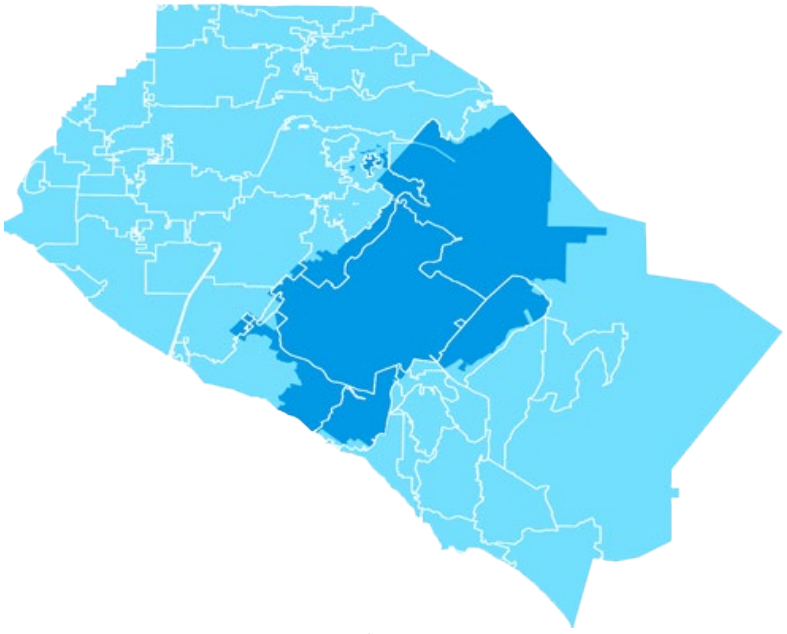


Figure A.1: Irvine Ranch Water District Service Area

B. UTILITY OVERVIEW

UTILITY INFORMATION	
Utility System Identification Number (PWSID)	3010092
Utility Name and Address	Irvine Ranch Water District 15600 Sand Canyon Avenue Irvine, California 92618

UTILITY INFORMATION		
Directions to Utility Headquarters	Irvine Ranch Water District Headquarters is located at the corner of Sand Canyon Avenue and Waterworks Way, midway between Interstate 5 to the northeast and Interstate 405 to the southwest	
Total Service Connections and Total Population Served	110,000 Service Connections	500,000 Population Served
Emergency Contact Person(s)	Director of Safety & Security	O: 949-453-5712

C. DISASTER SERVICE WORKERS

IRWD staff, as public employees of a political subdivision in the State of California, are designated Disaster Service Workers (DSW) under the California Emergency Services Act. In a disaster, DSWs are expected to report to work, regardless of whether their day-to-day functions are deemed essential. Non-essential public employees who are not required for continuity of operations or emergency response may be reassigned from their regular duties to assist any agency or organization carrying out its emergency response duties. DSWs may be required to work atypical hours or days of the week, or in nontraditional locations during an emergency. Employees acting as DSWs will be assigned duties within their scope of training, skill, and ability. As a DSW, IRWD staff will never be asked to perform any duty or function that they are not able to perform or have not received adequate training to complete.

D. PLAN PURPOSE

This Emergency Operations Plan (EOP) guides Irvine Ranch Water District (IRWD) staff to effectively manage response and recovery operations when an emergency impacts any operation that involves the Water District.

This EOP applies to all IRWD operations and all hazards regardless of the type of incident that resulted in the emergency. The EOP also includes hazard-specific annexes which provide procedures that are specific to certain incidents.

This EOP:

- Is comprised of a Base Plan to address all hazards and annexes to address specific hazards.
- Defines the emergency organizational structure and management system under which IRWD will operate.
- Describes the roles and responsibilities of IRWD staff who will respond to the emergency and provides a checklist for each key responder.
- Establishes clear lines of authority, responsibility, and communication for managing an emergency.
- Identifies the necessary technology, equipment, and facilities for responders to work effectively and efficiently.
- Defines the steps to be taken to activate the emergency teams and to operate an Emergency Operations Center (EOC).

E. PLANNING ASSUMPTIONS

The IRWD EOP is based on the following planning assumptions:

- The protection of life and safety of IRWD staff, contractors, visitors and customers is the foremost concern.
- Certain people will require assistance to evacuate facilities or perform other emergency response actions to stay safe; disabilities, access, and functional needs are not always obvious.
- IRWD will protect the public health by maintaining water quality and supplies.
- Damage assessment and initiation of repairs will be performed in a safe and timely manner and to the extent possible.
- Regular communication is maintained between IRWD management (Emergency Operations Team [EOT]) and field personnel (Incident Response Teams [IRTs]) to gain situational awareness.
- Limited information may be available to identify and assess a situation.
- Operations will return to normal as soon as possible.
- Damage assessments will be reported to Water Emergency Response of Orange County (WEROC).
- Mutual aid resources will typically be requested and coordinated through WEROC.
- IRWD may make resources available as mutual aid to other agencies once they are no longer needed within IRWD's own service area.
- Staff may not be immediately available to perform their usual duties or to respond to an emergency.

This EOP is compliant with local, state, and federal principles, frameworks, and guidelines for emergency response, including the National Incident Management System (NIMS), Standardized Emergency Management System (SEMS), and Incident Command System (ICS).

F. RELATIONSHIP TO OTHER PLANS

The EOP is not a standalone document; it provides the foundation for, and is supported by, hazard-specific annexes, appendices, and attachments, supporting procedures, and relationships to increase its ability to consistently provide water the communities it serves. IRWD maintains and updates the EOP, annexes, and associated procedures to incorporate lessons learned, current industry standards, new technologies, best practices, and the state of the District itself.

The EOP was written to align with and complement national, state and industry plans, including:

- National Response Framework
- California Emergency Resources Management Plan
- Emergency Management Mutual Aid Plan
- California State Emergency Plan
- Orange County Operational Area Emergency Operations Plan
- WEROC Emergency Operations Plan
- Sewer System Management Plan (SSMP)

The plans, procedures, and relationships maintained by IRWD include:

1. Emergency Operations Plan (EOP)
2. Hazard-Specific EOP Annexes

3. Function-Specific EOP Appendices
4. Security Procedures (SP-01 – SP-06)
5. Hazardous Materials Emergency Response Plan (HMERP)
6. Emergency Action Plans (EAPs) for Facilities and Dams
7. Incident Notification Standard Operating Procedure (SOP)
8. Resource Management Standard Operating Procedure (SOP)
9. EOP Multi-Year Training and Exercise Plan (MYTEP)
10. Water Quality and Availability Plans/Procedures, including water recycling and banking
11. Water Quality Monitoring Systems and Procedures
12. Membership in WEROC
13. Participation in local and regional exercises
14. Participation in mutual aid and other cooperative efforts through WEROC and the California Water/Wastewater Agency Response Network (CalWARN).

G. EMERGENCY PREPAREDNESS PROGRAM

This EOP is part of a larger program to help Irvine Ranch Water District prepare for, mitigate, respond to, and recover from a major emergency.

All IRWD staff are required to complete *ICS-100: Introduction to the Incident Command System (ICS)* training and Independent Study *(IS)-700: Introduction to the National Incident Management System (NIMS)* training; additional training requirements and recommendations are located in the IRWD Multi-Year Training and Exercise Plan (MYTEP).

The IRWD Emergency Preparedness Program is comprised of the following steps:

- **Step One and Two** - Prepare and develop the EOP.
- **Step Three** - Train IRWD staff on the EOP in addition to ICS courses.
- **Step Four** - Exercise staff on the EOP with drills and various exercises.
- **Step Five** - Update and maintain the EOP based on the lessons learned from the training, exercises, and any real-world activations.

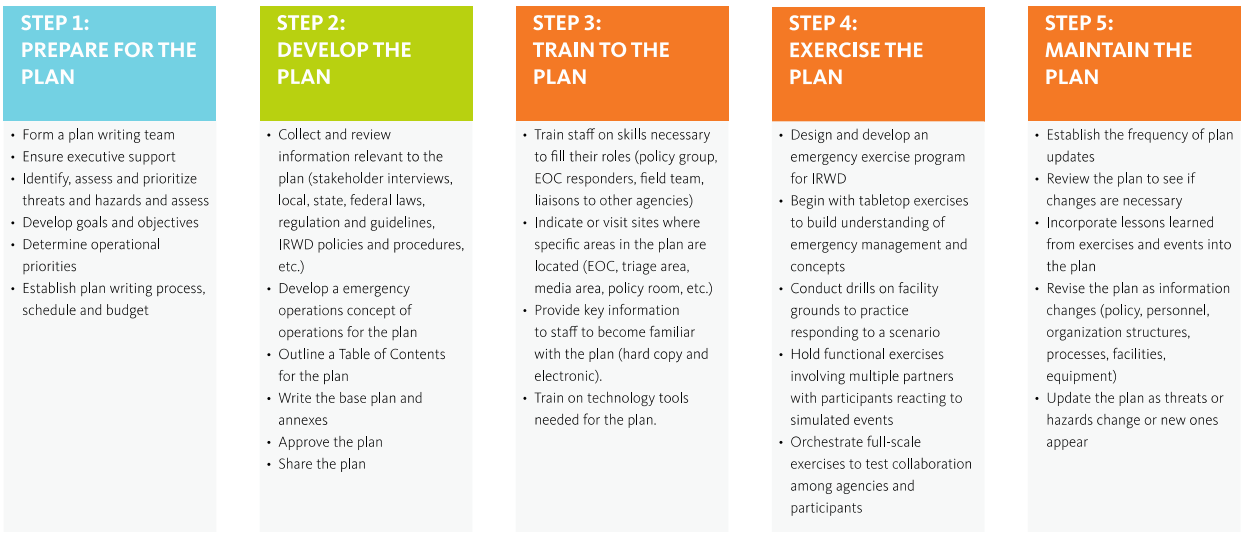


Figure A.2: Emergency Preparedness Program Diagram

Irvine Ranch Water District

H. DISABILITIES, ACCESS, AND FUNCTIONAL NEEDS

People with disabilities, older adults, children, limited English proficiency, and transportation disadvantaged may need support. IRWD's responsibilities for supporting individuals with disabilities, access, and/or functional needs (DAFN) includes:

- Ensuring IRWD facilities are Americans with Disabilities Act (ADA) compliant.
- Facility emergency plans (e.g., evacuation, shelter-in-place, lockdown) address the needs of individuals with DAFN (e.g., evacuation routes and muster areas are accessible), and associated maps/instructions either posted or provided are presented in an accessible manner.
- Fire alarms include flashing lights as well as bells to alert staff and visitors.
- Mass notification system messages will be distributed in multiple modes and formats to accommodate the needs of individuals with DAFN.
- In the event IRWD leads a response to the community (e.g., providing temporary emergency potable water), such services will be provided and communicated in an accessible manner.

Typically, IRWD's public safety partners and client jurisdictions are responsible for managing incidents affecting the general population. This includes developing and employing strategies that support individuals with DAFN. To the degree IRWD is supporting a public safety agency or jurisdiction's response to the general population (e.g., mass evacuation, mass care and shelter), it will assist with ensuring the response considers the needs of individuals with DAFN per the guidance of said public safety agencies/jurisdictions.

With regards to its own facilities, employees, and visitors, IRWD's disaster preparedness and response strategies, as captured in this EOP, will consider the needs of individuals with DAFN.

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SECTION ONE:

RISK ASSESSMENT

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SECTION ONE: RISK ASSESSMENT

A. HAZARD VULNERABILITY ASSESSMENT

Based on IRWD's experience and data available on natural and manmade hazards, the IRWD EOP subcommittee evaluated and ranked the hazards that may impact IRWD.

Natural hazards have been most prevalent historically and have had the greatest impact. As such, they feature prominently in the top ten risks. Manmade hazards such as cyberattacks are becoming more frequent and the growing threat is reflected in the risk ratings. The resulting table below provides the basis for planning priorities for IRWD. Hazard-specific annexes in this EOP were updated based on the risk rating prioritization.

Impact Rating x Probability Rating = Risk Rating

Impact Ratings	Probability Ratings	Risk Ratings
3 - High Impact	3 - High Probability	**High – 6 - 9**
2 - Medium Impact	2 - Medium Probability	**Medium – 3 - 5**
1 - Low Impact	1 - Low Probability	**Low – 1 - 2**

EVENT	IMPACT	PROBABILITY	RISK RATING
Earthquake	3	2	6
Active Shooter	3	2	6
IT Security (cyberattack)	2	3	6
Power Outage	3	2	6
SCADA Security (cyberattack)	3	2	6
Sewer Overflow	3	2	6
Water Supply Interruption	2	3	6
Wildfire	3	2	6
Dam Reservoir Overflow	2	2	4
Flood General	2	2	4
Water Contamination	3	1	3
Structural Damage from Explosive Device	3	1	3
Dam Reservoir Break	3	1	3
Hazardous Material Accident	3	1	3
Airplane Crash	3	1	3
Major Facility Building Fire	3	1	3
Pandemic	3	1	3
Nuclear Release	3	1	3
Severe Drought	1	3	3
Flood Michelson Water Recycling Plant	2	1	2
Bomb Threat	1	1	1

Figure 1.1: Hazard Risk Rating

The City of Irvine's Local Hazard Mitigation Plan provides additional information on hazard risks and mitigation measures for IRWD facilities and assets.

SECTION ONE: RISK ASSESSMENT

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SECTION TWO:

CONCEPT OF OPERATIONS

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SECTION TWO: CONCEPT OF OPERATIONS

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SECTION TWO: CONCEPT OF OPERATIONS

The Concept of Operations (ConOps) is the foundation on which IRWD's emergency operations are built. It defines at a high-level what the organization intends to achieve in an emergency and the framework around which IRWD will organize its emergency operations.

This ConOps identifies IRWD's goals, objectives, and courses of action for achieving its emergency mission and desired end-state. It thereby identifies the options for, and scope of, an IRWD emergency operation. The objectives and courses of action described herein identify *what* IRWD seeks to accomplish during an emergency operation, while other sections of this plan and its supporting appendices and annexes describe *how* IRWD will accomplish each objective or course of action.

A. EMERGENCY MISSION, GOALS, OBJECTIVES, AND COURSES OF ACTION

Mission

The preservation of life, property, and the environment is an inherent responsibility of local, state, and federal government. IRWD has a similar commitment to the preservation of life, property, and the environment as a political subdivision of the State of California and Orange County (special district).

As a critical infrastructure owner/operator—upon which citizens, government, businesses, and industry are dependent for the provision of life-sustaining potable water and recycled water and the collection and treatment of sewage—IRWD has the added responsibility to ensure the continued operations of its daily services. It must remain resilient despite the challenges associated with both natural and man-made incidents. As such, when an emergency, disaster, or other incident that threatens IRWD personnel, systems, facilities, or operations occurs, the mission of IRWD is to:

- Maintain safe and secure operations by protecting life, property, and the environment.
- Facilitate the efficient and environmentally sound provision of potable water and recycled water and the collection and treatment of sewage, which may include temporary workarounds, alternate sources, repairs, replacement, or construction of new systems.
- Meet its legal, regulatory, and financial requirements.

GOALS

In order to achieve its emergency mission, IRWD has established a number of goals which directly translate into its objectives and courses of action/tactics, identified in the next section. IRWD's incident management goals are as follows:

- Support efforts to safeguard people and alleviate human suffering among IRWD employees, contractors, visitors, and the community it serves in the face of emergencies.
- Support efforts to mitigate threats or remediate impacts to people, IRWD infrastructure/ facilities/systems, and the environment.
- Protect the confidentiality and validity of, and ensure access to, essential information, data, and information systems that facilitate IRWD operations.
- Resume time-sensitive essential functions and business operations in the event of their disruption.
- Facilitate, support, and integrate into the activities of public safety and other response and recovery agencies.
- Act as a resource and catalyst to assist IRWD partners and other operational stakeholders with their response and recovery efforts.

- Restore or repair IRWD infrastructure, systems, data, and staffing levels to achieve full functionality.
- Conform to accepted ethical, legal, regulatory, and insurance practices, and be consistent with the provisions and direction of IRWD and Board of Directors policies and expectations.

OBJECTIVES

IRWD has three (3) primary objectives in an emergency situation. For some of those objectives, there are multiple means by which IRWD may implement the objective or achieve a desired end-state. Those means are referred to as courses of action (or tactics), which will be selected by the EOT and implemented by IRTs as needed for the situation and as resources permit. The EOT Management Section and Section Coordinators will establish priorities, make assignments, and employ resources to achieve the selected course(s) of action. The IRWD Policy Group may offer advice or approve priorities as appropriate. These selections and supporting information will be solidified in an EOC Action Plan (See *Section 5: EOC Operations* for more information).

IRWD's three primary objectives directly correlate to the following three (3) phases of an incident: 1) Emergency Response, 2) Business Continuity, and 3) Recovery/Return to Normal Business.

OBJECTIVE 1: EMERGENCY RESPONSE

Emergency Response is the time immediately following an emergency event when tactical planning and practical activities are taking place to protect life and property; ensure safety; contain, eliminate, or mitigate the hazard(s)/threat(s) and/or its/their effects; and restore order in the hazard's immediate aftermath. IRWD is not a public safety or first response organization and does not have primary responsibility for many life/safety emergency response activities. Given the multi-jurisdictional nature of IRWD's operations, life/safety emergency response activities may involve a large number of agencies (e.g., City or County law enforcement and fire departments, other water/wastewater agencies, state, or federal agencies/regulators). Nonetheless, IRWD has a basic responsibility to coordinate the safe evacuation and accountability of its personnel, security of its assets, assessment of damages, and may provide IRWD resources and information to support the important efforts of emergency response/first responder agencies.

Courses of Action:

- ***Building Emergency/Evacuation Program:*** IRWD has trained its personnel on proper evacuation procedures and has assigned individuals at each facility to serve as part of an Evacuation Team, responsible for assisting with the evacuation and accountability of personnel and the maintenance and provision of basic first aid resources at IRWD facilities. Strategies and instructions have been developed to accommodate individuals with DAFN. All emergency extraction and medical needs will be referred to public safety agencies. No IRWD employee will provide emergency extraction or medical assistance beyond their capabilities and training.
- ***Emergency Notification System:*** IRWD may activate its emergency notification system to send messages to employees and other partners. Messages may include emergency instructions, recommended protective measures, or general situational information. Messages are issued in multiple modes and/or formats to accommodate individuals with DAFN.
- ***Liaison with Public Safety/First Responder Agencies:*** IRWD will assign and/or deploy qualified representatives to maintain a position within any Unified Command established by

public safety/first responder agencies for any incident that significantly impacts IRWD operations. Through this representative, IRWD will provide information to public safety/first responder agencies regarding IRWD operations, facilities, IRWD response actions and priorities, and share pertinent information from public safety agencies back to the EOT. This position will help communicate the needs of public safety agencies to the EOT, such as requests for IRWD resources, access to emergency notifications systems, and recommendations for protective actions.

- ***Resources for Public Safety/First Responder Agencies:*** Upon request, IRWD may deploy resources to support the life/safety, property preservation, hazard mitigation, and/or environmental remediation efforts of public safety/first responder agencies. Resources may include equipment, supplies, personnel, or services.
- ***Security and SCADA System Monitoring and Asset Protection:*** IRWD will provide 24-hour patrol of IRWD facilities to protect IRWD infrastructure, particularly following an incident that may render IRWD sites vulnerable to unauthorized intrusion. Security personnel will patrol designated areas and respond to calls for service. Security and SCADA systems will be monitored at all times to maintain domain awareness. Relevant information from these processes will be shared with, or referred to, public safety/ first responder agencies as appropriate.
- ***Infrastructure Damage Assessments:*** Before the EOT can coordinate an effective response and recovery effort, it must first have a complete understanding of the impacts on IRWD infrastructure/systems/resources. IRWD has multiple on-call damage assessment teams to conduct gross damage assessments following a destructive incident (e.g., earthquake, flood, landslide, severe weather event, explosion). These teams are designed to conduct timely inspections of prioritized IRWD infrastructures, including potable water systems, recycled water systems, natural treatment systems, collections systems, dams, major distribution systems, information technology, and electrical and mechanical systems. These inspections are not detailed engineering assessments, but will provide the EOT with sufficient information to grasp the situation and determine other appropriate courses of action. In addition, these teams are empowered to close infrastructures or shut-down systems for safety purposes or implement minor mitigation measures to prevent further impacts. Relevant information from these assessments will be shared with public safety/first responder agencies as appropriate.

OBJECTIVE 2: BUSINESS CONTINUITY

The Business Continuity phase is the time when IRWD will work to restore its mission critical functions, systems, and infrastructure at or above minimal levels required for minimum functionality. Business continuity operations may commence simultaneous to IRWD's support for emergency response efforts depending on the type and extent of the incident.

IRWD performs many operations and maintains multiple infrastructures that facilitate its aforementioned mission. Each of those functions and infrastructures has a timeframe in which it needs to be restored (e.g., within 12 hours, 1 week, 1 month, etc.) and a capability-level at which must not fall below (e.g., 80% of normal capability, 50%, etc.). IRWD's EOT will consider these things when determining which functions must be restored and to what degree. The EOT will collaborate with the Policy Group if the incident requires the implementation of a continuity strategy. The essential functions/infrastructures for which IRWD is responsible, and those that it will seek to restore to minimal levels during the business continuity phase, include, but may not be limited to:

- Accounts Payable
- Biosolids Recovery
- CEQA/NEPA Compliance
- Claims and Insurance
- Construction Management
- Crisis Communications
- Customer Services
- Dams and Reservoirs
- Electrical Systems/Infrastructure
- Employee and Family Benefits/Services
- Fleet Management
- Government Affairs
- Information Technology Systems/ Data
- Mechanical Infrastructure
- Natural Treatment Systems
- Payroll
- Potable Water Systems and Distribution
- Procurement
- Recycled Water Systems and Distribution
- Safety Program/ Compliance
- Security Systems and Monitoring
- Sewer and Storm Collections and Treatment
- Structural Infrastructure
- Water Quality Monitoring and Reporting
- Workers Compensation

Courses of Action:

- ***Continue Essential Function(s):*** Continuity of essential functions during an emergency does not typically mean maintaining the function at its pre-incident levels. Instead, the function is typically performed at diminished capacity; using fewer people and resources and potentially requiring more time than usual. This allows IRWD to provide bare-minimum service without the consequence of major operational impacts, while the rest of the organization focuses on the complete restoration of normal operations. Continuing essential functions may involve a variety of continuity strategies, which the EOT and Policy Group will determine based on the situation.
- ***Postpone or Suspend Essential Function(s):*** Based on the situation, leadership's priorities, and a cost-benefit analysis of anticipated consequences, IRWD may select to indefinitely postpone or suspend the function(s) or operation until normal business operations are fully restored or a new steady state is achieved.
- ***Acute Engineering Assessments of Infrastructure:*** During the emergency response phase, IRWD may conduct gross damage assessments of infrastructure to determine if any damage is visible. During this phase, IRWD may need to order acute engineering assessments as a follow up to gross damage assessments. Acute engineering assessments may find that visible damage is only superficial or superficial damage is actually structural. Engineering assessments will inform decisions related to infrastructure closures or openings, workarounds, and restoration/repair.
- ***Workarounds for Infrastructure and Systems:*** Infrastructure repairs and restoration efforts are typically time-consuming. Therefore, IRWD may implement temporary workarounds for infrastructure to meet minimum operating requirements in order to help facilitate the provision of potable water, recycled water, collection and treatment of sewage, and other systems (e.g., information technology, customer service). These workarounds may offer less capacity and capability than their pre-incident counterparts, and may not be sustainable for long-term operations; however, they offer a better option than taking no action or providing no service during the time it takes to restore IRWD to normal operations (potentially months to years later).

OBJECTIVE 3: RECOVERY/RETURN TO NORMAL

Recovery/Returning to Normal is a phase that involves the long-term restoration of IRWD facilities, infrastructure, systems, and business functions to their pre-incident levels or a satisfactory alternative that facilitates long-term business and IRWD operations. The Recovery/Return to Normal phase is not only the timeframe to achieve normal operations (e.g., rebuild infrastructure), but also the desired end-state of this phase. The EOT will collaborate with the Policy Group to determine what constitutes normal business and when it has been achieved. While IRWD works to restore normal operations, its business continuity efforts, and workarounds (the previous phase), will ensure the ongoing provision of minimum functionality.

Courses of Action:

- ***Develop Recovery Strategy:*** To guide its restoration efforts, IRWD will select and prioritize its recovery efforts. This process may involve all the planning typically involved in the construction of infrastructure or the establishment of a business operation (e.g., budget formulation, funding, stakeholder coordination, environmental analysis, permitting and approval, architectural and engineering plans, procurement). IRWD will then decide which restoration efforts to pursue, the sequence of events, assignments, and implement strategies to navigate any political, economic, environmental, social, or other barriers.
- ***Return to Pre-Incident Operations:*** IRWD's recovery efforts may result in a return to normal operations as they were prior to the incident. This may mean restoring functions or infrastructure to the same pre-incident capability-level. While capabilities may generally remain the same, this may still serve as an opportunity to provide better resources, implement new mitigation measures, or take other steps to improve the efficiency and/or sustainability of the function or infrastructure.

New Steady-State (Satisfactory Alternate Operations): An incident may be of such magnitude that it prevents IRWD from returning to its previous steady-state ("normal business operations") or may be influential in such a way that IRWD makes a strategic decision to permanently change its operations, services, or infrastructure. In these cases, IRWD will not return to its pre-incident steady-state, but will instead define a new steady-state (i.e., a viable long-term alternative that will become the new norm). All efforts defined in IRWD's Recovery Strategy will then be designed to achieve the new steady-state.

B. OVERALL EMERGENCY ORGANIZATIONAL STRUCTURE

The IRWD emergency operations organizational structure has been designed to assure that Irvine Ranch Water District management and personnel are responsive and coordinated in response to an emergency, and resources are made available as needed.

There are three types of IRWD teams, the Policy Group (PG), the Emergency Operations Team (EOT), and Incident Response Teams (IRTs) that will work closely together in the response to, and recovery from, an emergency.

SECTION TWO: CONCEPT OF OPERATIONS

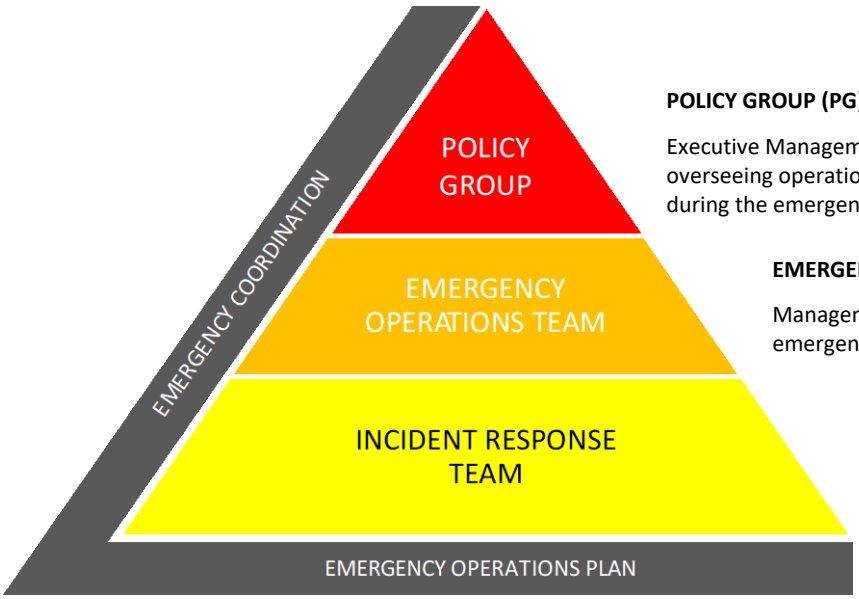


Figure 2.1: IRWD Emergency Response Teams

POLICY GROUP (PG)

Executive Management Team responsible for overseeing operations and making policy decisions during the emergency

EMERGENCY OPERATIONS TEAM (EOT)

Management and supervisory staff responsible for emergency communication, coordination, and support

INCIDENT RESPONSE TEAMs (IRTs)

Staff responsible for directly responding to incidents whether in the field or from another location.

Irvine Ranch Water District

SECTION TWO: CONCEPT OF OPERATIONS

C. EMERGENCY OPERATIONS PROCESS

In the event of an emergency, the emergency operations process is managed by the designated personnel based on the "Activation Level" assigned to the incident. Personnel can include the Policy Group Director, members of the Policy Group, Safety & Security staff, the Emergency Operations Center (EOC) Director, and/or an Incident Commander (IC) in the field.

The following nine step process details how IRWD Emergency Staff will engage during an incident.

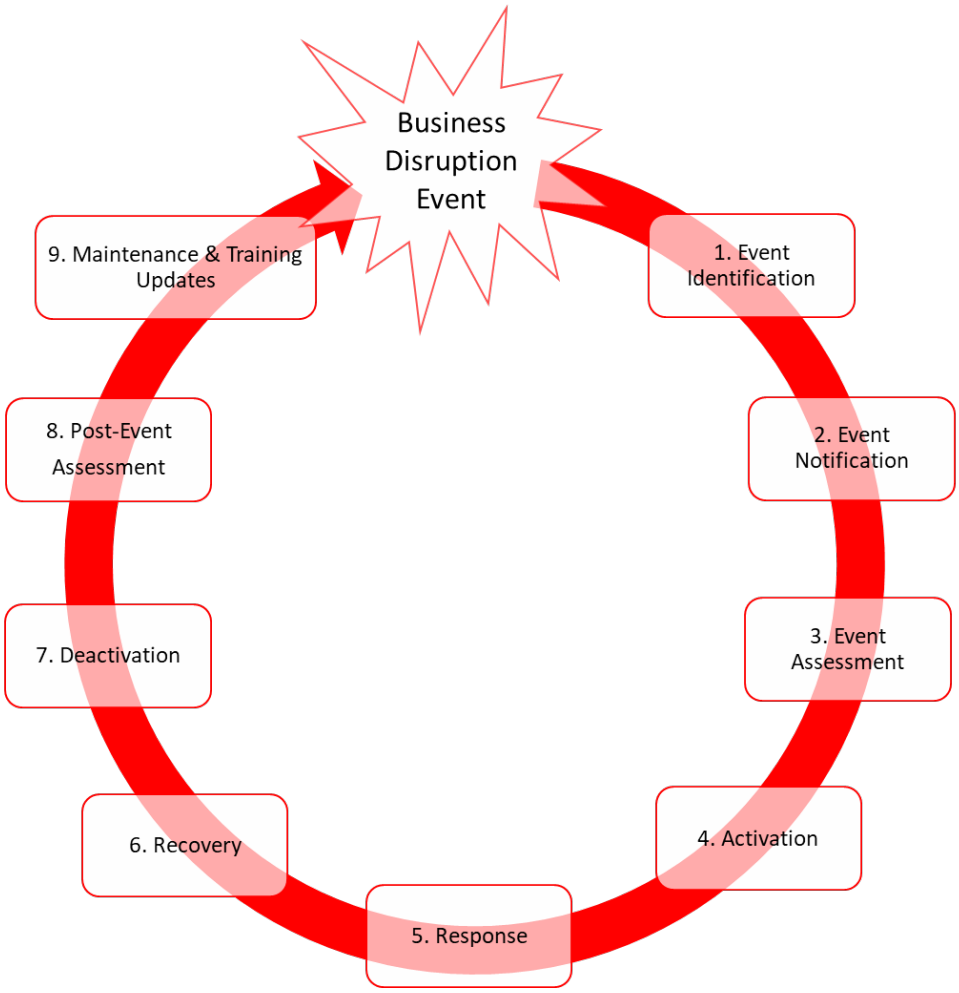


Figure 2.2: Emergency Operations Process Diagram

Irvine Ranch Water District

SECTION TWO: CONCEPT OF OPERATIONS

NO.	STEP	DESCRIPTION
1	**Event Identification**	An event or incident has been identified that may impact IRWD's staff or customer safety, its operations, or its brand/ image.
2	**Event Notification**	Notification of an impending threat or occurring incident may be received by various staff, including Safety & Security, Operations, or Information Systems (IS) staff, among others. Other staff will be notified accordingly.
3	**Event Assessment**	IRWD staff will assess the incidents or threats to determine the actual or potential impact.
4	**Activation**	The group assessing the incident will determine its severity and will decide whether to activate the EOP, set the "Activation Level," and whether to activate the EOC.
5	**Response**	Activated IRWD staff will follow efficient and effective emergency response processes. Collectively, these processes follow the Incident Action Planning (IAP) process (a.k.a. the Planning "P").
6	**Recovery**	Once the incident is contained, the IRWD emergency teams will transition to coordinate recovery efforts.
7	**Deactivation**	Based on the recommendations of the EOC Director and the approval of the Policy Group, the EOC and/or EOT will be deactivated and the IRWD emergency teams will be demobilized.
8	**Post-Event Assessment**	Within 30 days of the conclusion of the incident, members of the EOT and IRT will participate in a post-event assessment.
9	**Maintenance & Training Updates**	The Safety & Security team will update the EOP following an emergency, as appropriate, to reflect lessons learned, and will coordinate other corrective actions as appropriate.

SECTION TWO: CONCEPT OF OPERATIONS

D. LINES OF COMMUNICATION AND COORDINATION

Communication and coordination are two of the cornerstones of emergency operations. The following diagram illustrates the lines of communication and coordination between IRWD emergency responders and other stakeholders/partners.

At the center is IRWD's EOC; the nexus for information, communication, and coordination during an emergency. From the EOC, the EOT provides support to IRTs who are responding to an incident, information to the Public Information Officer (PIO) and Customer Service Department, and coordination with the Policy Group. As illustrated in Figure 2.3, multiple IRTS may be activated simultaneously to respond to either the same or multiple incidents. Those multiple IRTs may be organized by department, mission/task, location, or another factor. Most IRTs will typically work either independently or with other IRWD IRTs and will only communicate with the EOC. Some IRTs may integrate or communicate with public safety agencies as part of a Unified Command when the incident the IRT is responding to has repercussions on public safety.

Outside stakeholders in the outer circle may be in contact with various IRWD personnel as illustrated below.

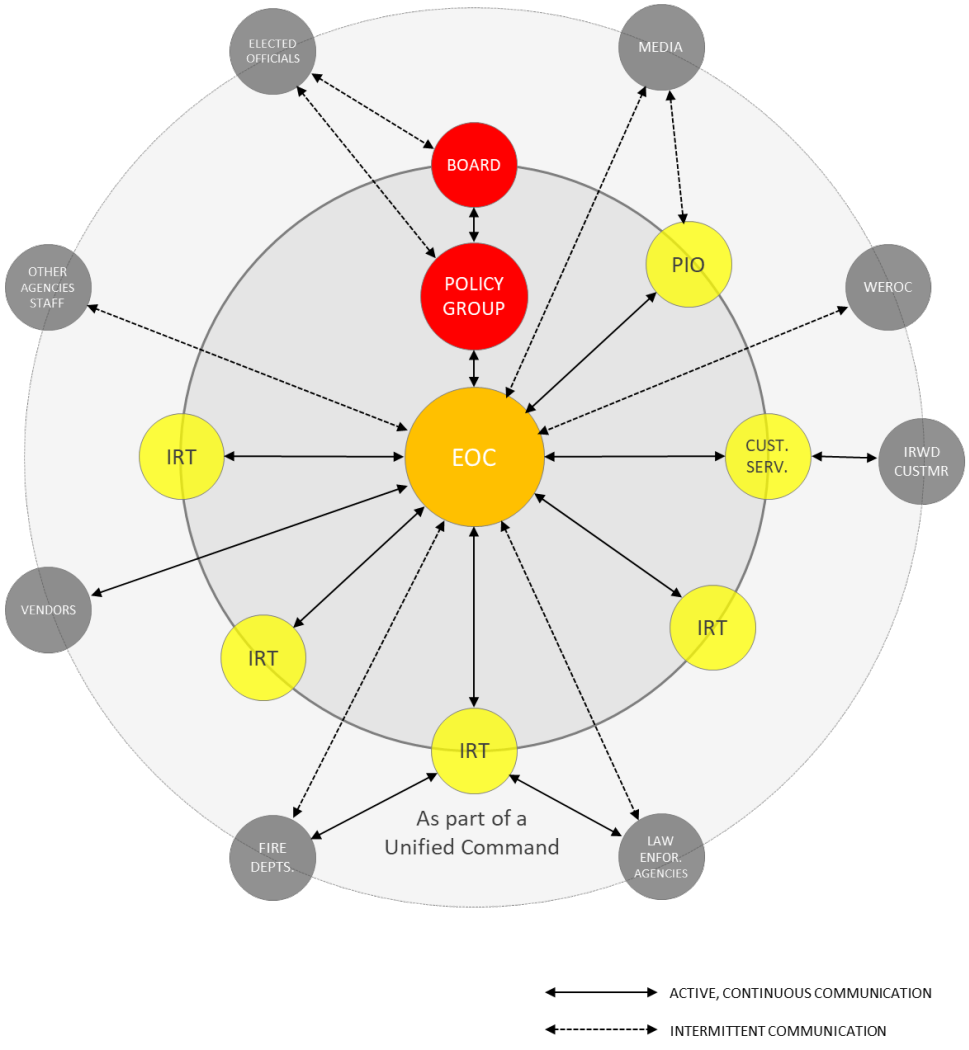


Figure 2.3: Lines of Communication and Coordination Diagram

Irvine Ranch Water District

SECTION TWO: CONCEPT OF OPERATIONS

E. EMERGENCY RESPONSE LEVELS (STANDARDIZED EMERGENCY MANAGEMENT SYSTEM)

The State of California's Standardized Emergency Management System (SEMS) is the system required by Government Code Section 8607(a) for managing emergencies involving multiple jurisdictions and agencies. Irvine Ranch Water District, as a special district, is categorized under SEMS as a "local government."

SEMS incorporates the functions and principles of the Incident Command System (ICS), the mutual aid system, the Operational Area (OA) concept, and multi/inter-agency coordination.

Local governments must use SEMS to be eligible for reimbursement for their response-related personnel costs under the California Disaster Assistance Act (CDAA).

SEMS consists of five organizational levels, which are activated as necessary:

1. **Field**
2. **Local**
3. **Operational Area**
4. **Regional**
5. **State**

Field
The term "field" is used to designate the level at which tactical operations are being implemented to directly mitigate, respond to, or recover from a hazard or threat. This may literally be "in the field" (e.g., at a dam, pump station, treatment facility) or may take place from another location where direct tactical operations are being implemented (e.g., IS offices in the event of a cyber-incident). IRWD "field" teams directly responding to a hazard/threat will use ICS and may be integrated into a multi-agency or multi-jurisdiction Incident Command Post (ICP) (e.g., with OCFA or CAL FIRE). Resources for IRWD's field response are requested through its EOC.

Local
Each local government manages and coordinates the overall emergency response and recovery activities within its jurisdiction. Cities, counties, and special districts are considered local governments under SEMS. The collective response and recovery efforts of both municipalities and special districts in Orange County is coordinated through the Orange County Operational Area EOC.

If an emergency exceeds IRWD's capabilities, IRWD will request mutual assistance through WEROC or via the Operational Area EOC. WEROC is the entity responsible for coordinating mutual assistance among the water and wastewater agencies in Orange County. If a disaster occurs, IRWD will notify WEROC of any damage to its service area and provide availability of personnel and resources for mutual assistance. WEROC typically acts as the liaison between these agencies and the Operational Area's EOC.

Additionally, IRWD coordinates with other local governments through direct communications. IRWD coordinates regularly with Collaborating Organizations Active in Disaster - Orange County (COAD-OC). Private sector coordination occurs within the many business organization memberships held by IRWD which include:

Greater Irvine Chamber of Commerce	Association of CA Cities – Orange County (ACCOC)
Newport Beach Chamber of Commerce	Orange County Business Council
Lake Forest Chamber of Commerce	South OC Economic Coalition/ So OC Chamber of Commerce
Tustin Chamber of Commerce	Korean American Chamber of Commerce of Orange County
Sustain SoCal (formerly Sustain OC & CleanTech OC)	Black Chamber of Orange County
Asian American Business Association of Orange County	Hispanic Chamber of Commerce of Orange County
Filipino American Chamber of Commerce of Orange County	

Operational Area
The Operational Area is the intermediate level of the State of California's emergency management organization. It encompasses the geographic County of Orange and all political subdivisions in the County including special districts. The Operational Area manages and/or coordinates information, resources, and priorities among local governments within its area of responsibility. For water agencies, the Operational Area coordinates through WEROC.

The Operational Area also serves as the communication and coordination link between the local government level and the regional level.

Regional
The state is divided into six mutual aid regions and three administrative regions with Orange County located in Mutual Aid Region I and the Southern Administrative Region. In the event of a major disaster, the Southern Regional Emergency Operations Center (Southern REOC) will be activated. The Southern REOC manages and coordinates information and resources among the 11 Operational Areas/Counties within the Southern Region and is the liaison between those Operational Areas and the State Operations Center (SOC). It also serves as the coordination point for support from state agencies (such as the State Department of Drinking Water) for emergency response in the region.

In addition to the Southern REOC, WEROC coordinates with regional and state CalWARN mutual assistance coordinators at those levels. Working through WEROC, Metropolitan Water District of Southern California (MWD) and its Member Agency Response System (MARS) can direct resources for potable water; the California Utilities Emergency Association (CUEA) and its Utility Operations Center (UOC) is a conduit to all California utilities; and the California Waste/Wastewater Agency Response Network (CalWARN) can provide mutual assistance coordination with water and wastewater utilities from across the state.

State
At the state level, the State Operations Center (SOC) coordinates resources and information across administrative and mutual aid regions in response to requests from the REOCs and helps mobilize mutual aid resources from unaffected regions. The SOC also acts as the communication and coordination link between the state and federal and inter-state disaster response systems.

Federal

If an incident is determined to exceed the capabilities of the State of California or is considered a threat to national security, then the Federal Emergency Management Agency (FEMA) may mobilize federal resources and the involvement of other states to support the response and recovery to the incident. Federal support may be coordinated from a Joint Field Office (JFO) that will be set up at the local level in support of the incident. Federal Emergency Support Functions (ESFs) may be staffed to support specific areas of expertise in the response.

SECTION TWO: CONCEPT OF OPERATIONS

The following diagram illustrates the emergency response levels following SEMS and NIMS. Additionally, it shows the lines of communication between IRWD and coordination partners in the water industry. Thicker lines and arrows indicate SEMS levels of communication.

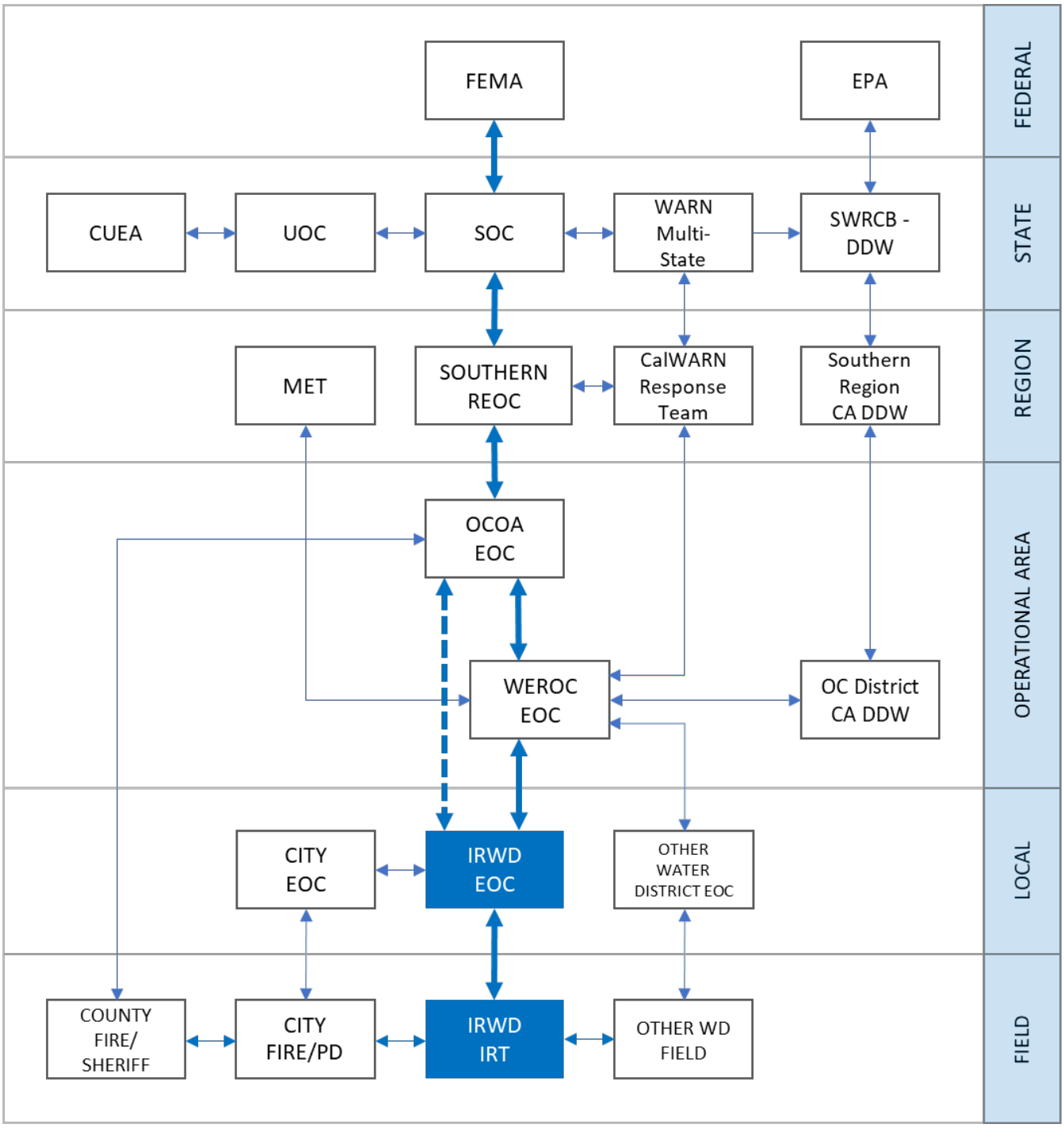


Figure 2.4: SEMS Emergency Response Levels Diagram

Irvine Ranch Water District

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SECTION THREE:

EMERGENCY ORGANIZATION

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SECTION THREE: EMERGENCY ORGANIZATION

A. EMERGENCY OPERATION GROUPS AND TEAMS

IRWD has developed a modified ICS structure to organize its emergency response teams. The intent for modifying the structure is to use ICS fundamentals, but reflect the operations of IRWD so staff may transition more efficiently from their regular, day-to-day roles to emergency response positions.

IRWD adheres to ICS organizational principles at the team level (Policy Group, Emergency Operations Team, and Incident Response Teams) and at the functional level (Management, Logistics, Operations, Finance & Administration). At the position level, a majority of the roles are identified by titles used in normal, day-to-day operations. As an example, on the Emergency Operations Team in the Logistics section, the positions are defined as Purchasing, Fleet and Facilities.

The overall responsibilities of the three teams are:

- **Policy Group (PG)** — Executive Management Team responsible for overseeing operations and making policy decisions during the emergency.
- **Emergency Operations Team (EOT)** — Management and supervisory staff responsible for emergency communication, coordination, and support.
- **Incident Response Teams (IRTs)** — Staff responsible for tactically and directly responding to incidents whether in the field or from another location.

B. POLICY GROUP

The Policy Group is the executive level oversight and strategic decision-making body for IRWD during a crisis. The Policy Group makes strategic, financial, and policy decisions in response to requests or issues presented to it by the EOT. If the effects of a crisis require executive decision-making, have potential long-term implications on the reliability and/or reputation of IRWD, or requires significant changes in existing policies, the Policy Group will be convened to address those concerns. Decisions made by the Policy Group are implemented by the EOT /EOC and by IRTs under the direction of the EOT.

Following is a list of emergency-related topics and issues that would warrant Policy Group involvement, consideration, and/or approval:

- Actions impacting the health and/or safety of District personnel
- Legal matters, authorities, and restrictions
- Regulatory matters, authorities, and restrictions
- Financial authorities and restrictions
    - Emergency procurement (e.g., exceptions to the bid process, increased spending limits, access to emergency funds, insurance, and claims)
- Personnel policies
    - Reporting requirements including any emergency service of District officers or employees (Disaster Service Workers)
    - Alternate assignments, alternate schedules, claims, compensation, dismissal, disciplinary actions
- Brand/reputation implications

- Political implications (i.e., interface with elected/appointed officials)
- Interpretation of District policy or setting policy
- Validation of District emergency response/recovery priorities
- Approval of Public Information Plan and messaging to customers and the public
- Communications with the Board, elected officials, etc.
-
- Strategies for long-term recovery or restoration (e.g., capital investment)

The Policy Group may also undertake the following actions when activated:

- Issue an Initial Policy Statement to guide the EOT to help "frame" response activities. The Initial Policy Statement may inform priorities and objectives for the emergency.
- Determine communications channels between the EOC/EOT and Policy Group
- Determine the Policy Group decision-making process
- Provide information to the Board of Directors as appropriate
- Determine which staff to add to the Policy Group for support

1. Policy Team Members

Following is the composition of the IRWD Policy Group:

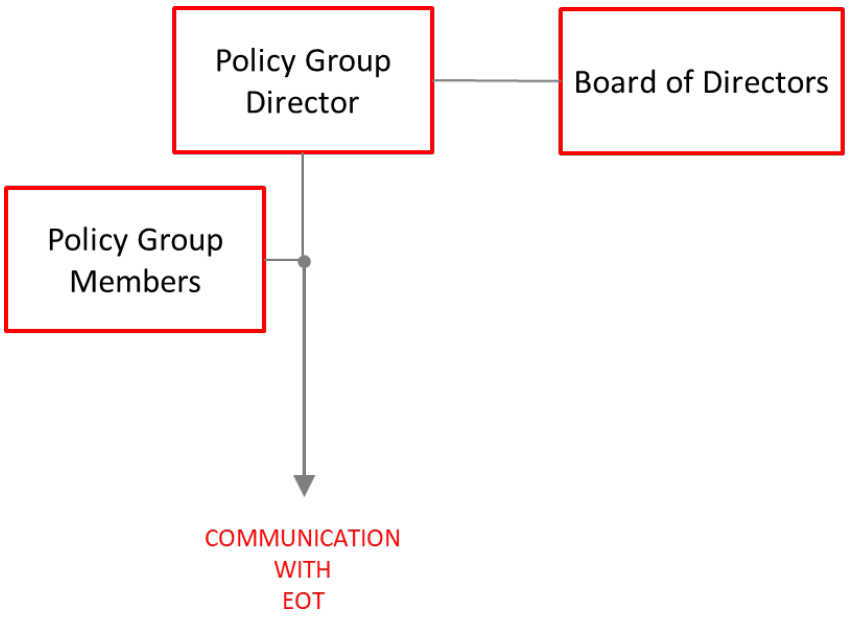


Figure 3.1: Policy Group Organization Chart

Policy Team Member	Roles and Responsibilities
Standing Members	
Policy Group Director	The Policy Group Director will lead, manage, and coordinate the Policy Group. The Policy Group Director will: • Prioritize the health and well-being of IRWD staff • Monitor overall risk to Irvine Ranch's reputation

Irvine Ranch Water District

Policy Team Member	Roles and Responsibilities
	• Set/approve priorities and strategic objectives as presented by the EOT • Make policy and strategic decisions with support from the Policy Group • Communicate and coordinate with the EOT/EOC Director • Communicate with the Board of Directors • Provide media communications (in coordination with the PIO)
Other Policy Group Members	Other Policy Group members will advise the Policy Group Director on decisions and policies associated with the emergency. These positions will: • Make recommendations on priorities and objectives to the Policy Group Director • Help facilitate requests mutual assistance with WEROC and other response partners • Provide recommendations addressing water quality concerns and issue boil water orders or others, as appropriate • Approve the use of IRWD owned, purchased, or leased resources • Request the suspension of regulatory requirements • Review and coordinate approval of the use of emergency funds • Advise the Policy Group Director on risk management matters • Advise on personnel policies • Notify IRWD employees and/or next-of-kin affected by the emergency • Interface with public officials as directed by the Policy Group Director or requested by the EOC/EOT Director • Assess legal impacts of the crisis • Consult with IRWD general counsel as required • Provide legal perspective on policy setting

2. Relationship between Policy Group and Emergency Operations and Incident Response Teams

The Policy Group supports, advises, and helps to achieve the overall response and recovery strategies developed by the EOT Decisions made by the Policy Group are communicated to, or facilitated by, the EOC Director and are implemented by the EOT at the EOC. The Policy Group may convene at a location near the EOC, at another physical location, or operate remotely if communications permit it.

The role of the EOT at the EOC is to facilitate and support IRWD's on-scene response during an incident. The EOT may relieve the Incident Commander and/or IRTs of the burden of external coordination and securing additional resources. The Incident Commander or IRT has direct tactical and operational responsibility for conducting incident management activities.

The senior executives in the Policy Group hold emergency authorities that may be delegated to the designated EOC Director. Delegation of authority may be in writing (established in advance) or verbally during an emergency, followed by proper documentation. The EOC Director may also request delegation of authority from the Policy Group.

In summary, the Policy Group provides the following to the EOC Director and emergency operation:

1. Policy
2. Mission

3. Strategic direction
4. Authority

C. EMERGENCY OPERATIONS TEAM

The EOT serves as the centralized support, coordination, communication, and management center during an emergency. The key responsibilities of the EOT are:

1. Establishing communications
2. Assessing the incident
3. Maintaining overall situational awareness
4. Supporting the needs identified and actions taken by the Incident Response Team(s)
5. Identifying, assessing, and prioritizing critical issues
6. Ensuring consistent communications and coordination with the Policy Group and the IRTs
7. Communicating with internal and external stakeholders, including the public, media, and customers, as required
8. Developing an Incident Action Plan (IAP)
9. Providing tracking, documentation, and reporting

The EOT will be physically located in the primary or alternate EOC or using a virtual EOC.

The EOT/EOC will be led by an EOC Director. Considerations for identifying individuals eligible to fill the EOC Director position are as follows:

- A senior IRWD employee empowered on a regular basis to make significant decisions regarding the operations and budget of IRWD.
- Individual that has the broadest understanding of the IRWD enterprise, including the business goals, priorities, functions, underlying processes, the people, and expertise involved with those processes, and IRWD stakeholders.
- Individual with the broadest understanding of the roles of all personnel on the PG, EOT, and IRTs and their functions.
- Not the person expected to be the “face” of IRWD before the Board of Directors, cities or the County, media, or other groups.
- Trained and exercised on this EOP in accordance with IRWD incident management program requirements.
- Completed ICS 100, 200, and 300 courses.
- Available to work extended hours or remain at the worksite for an extended duration.
- Ability to be decisive in environments with limited information.
- Organized, detail-oriented, and communicates well.
- Gives clear directions, but does not micromanage.
- Remains calm in stressful situations.

In order to have an operational EOT/EOC, the EOC Director position must be filled. All other positions are optional. Therefore, initially, and regardless of planned assignment, the EOC Director may be the first EOT member to arrive and will be responsible for fulfilling all ICS functions until additional personnel arrive. As additional staff arrive, EOC Director authority may transfer on the basis of who has primary authority for overall control of the incident, seniority, or another appropriate factor. As an incident grows in size and complexity, the EOC Director may delegate authority for performing certain activities to others, as required. When expansion is required, the EOC Director will establish other

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Management Section positions (e.g., Public Information Officer, Safety & Security Officer, Liaison Officer, etc.) and General Staff positions (i.e., Operations, Planning, Logistics, and Finance/Administration Section Coordinators) to address incident needs.

IRWD will identify and train a cadre of staff to fill supervisory positions in its emergency organizational structure capable of responding to large and complex emergencies (e.g., Activation Level I) prior to an emergency (e.g., Officers [Management Section], Section Coordinators, and Branch Directors). Section Coordinators and Branch Directors will be able to:

- Transition their focus from individual tasks to the management of the Section/Branch as a whole
- Provide oversight of assignments and monitor progress
- Ensure communications within and among Sections/Branches
- Monitor adherence to procedures/policies/priorities
- Establish and maintain situational awareness
- Reassign personnel and responsibilities as necessary
- Ensure all necessary resources are being provided to Section/Branch staff
- Proactively establish Section/Branch objectives
- Identify shortfalls and areas of concern
- Conducting load balancing
- Ensure continuity of leadership in their absence

For these reasons, it is important to have experienced and trained supervisors in these positions during larger and more complex incidents. For smaller or less complex activations that may occur on a more routine basis (e.g., Activation Levels II or III), IRWD may select supervisors (e.g., Section Coordinators, Branch Directors) at the time of the incident. Those may be times when there is less activity in the EOC and/or EOT Section and the Section Coordinator or Branch Director themselves may be responsible for fulfilling all the tasks of vacant units under them.

SECTION THREE: EMERGENCY ORGANIZATION

1. Emergency Operation Team Members

Following is the composition of the IRWD Emergency Operations Team:

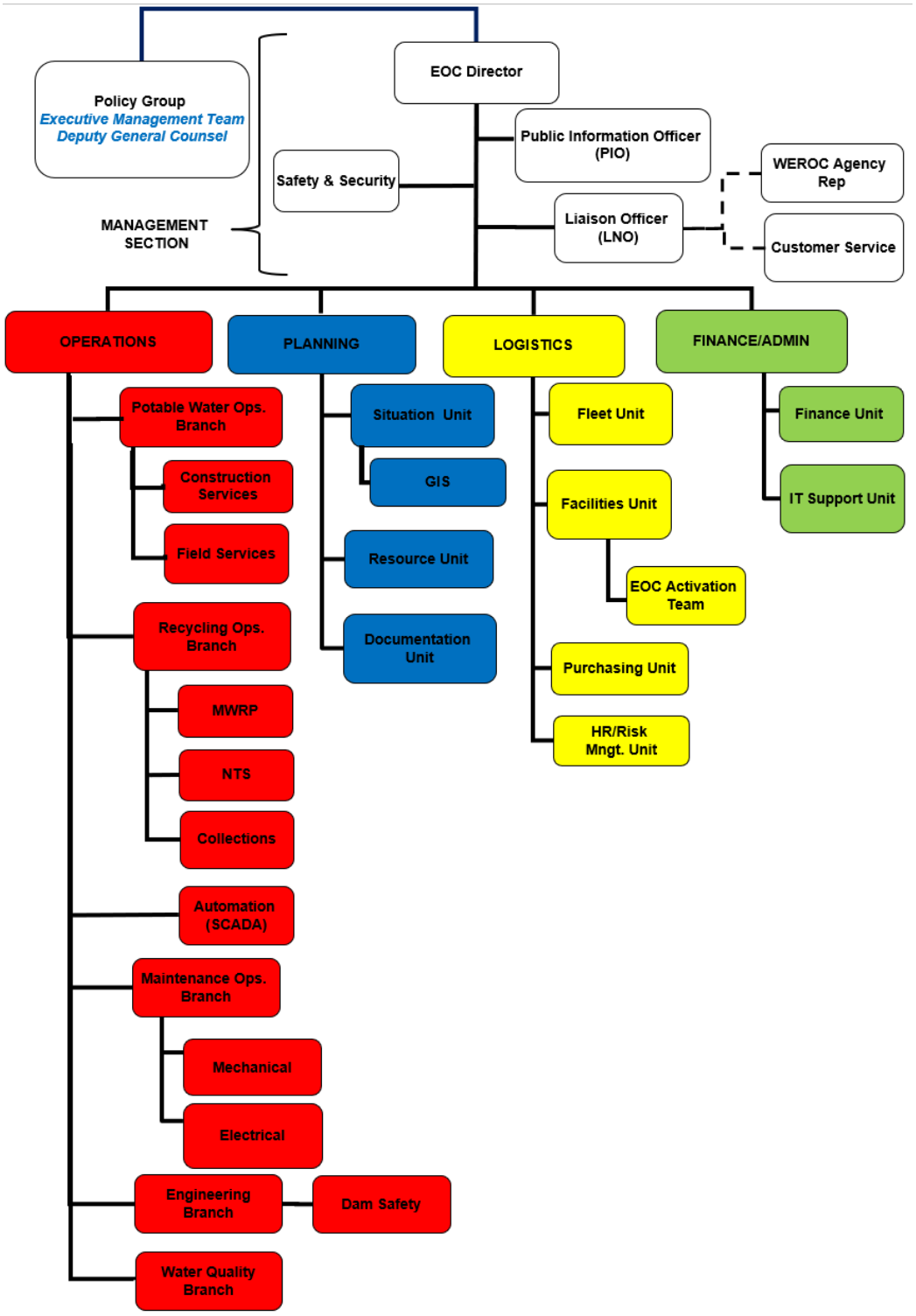


Figure 3.2: Emergency Operations Team

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EOT Member	Roles and Responsibilities
Management Section	
EOC Director	EOC Director has overall responsibility and authority for the management of the EOT and operation of the EOC. This position will ensure that the EOC is staffed and operated at a level appropriate and proportionate for the emergency. The EOC Director will communicate directly with the Policy Group. The position of EOC Director should be pre-established where the same person/ department is always in-charge of the EOC regardless of the type of emergency. • Exercise overall management responsibility for coordination between IRWD departments, teams, resources, and external partners/agencies. • Provide information, receive directions, request authorities, and coordinate actions with the Policy Group. • Establish appropriate EOC staffing level and monitor organizational effectiveness. • Set priorities for response and recovery efforts. • Ensure that inter-agency coordination is accomplished effectively.
Public Information Officer (PIO)	The Public Information Officer (PIO) is the liaison between the EOT and the media and the public. A primary source of information for the Public Information function will be the Planning Section. The PIO will provide guidance, as appropriate, to other departments/agencies on the release of emergency-related information. Please refer to IRWD's Crisis Communications Plan for more detailed information. • Serve as the central coordination point for the public information campaign (e.g., media releases, press conferences, website updates, social media posts). • Develop a Public Information Plan. • Ensure that the public and customers within the affected area receive critical information that is as complete, accurate, and consistent as possible. • Conduct press conferences, in conjunction with the Policy Group Director, members of the Policy Group, and/or the EOC Director.
Safety & Security Officer	When activated, the Safety & Security Officer position at the EOC is to ensure that safe and secure working conditions are established and maintained for all IRWD personnel and facilities supporting the operation. • Ensure buildings and other facilities used in support of the operation are in safe operating condition and are appropriately secured. • Monitor operational procedures to ensure they are conducted in a safe, correct, and consistent manner. • Monitor security to ensure policies and procedures are followed. • Coordinate safety and security resources, as necessary. • Stop or modify unsafe operations. • Prepare or review, approve, and submit all safety plans and safety messages, including those messages needed for inclusion in the EOC Action Plan.

EOT Member	Roles and Responsibilities
Liaison Officer	The Liaison Officer (LNO) serves as the primary point of contact between IRWD and external agencies and/or coordinating partners, including all incoming Agency Representatives (AREPs) that report to the IRWD EOC and any AREPs sent by IRWD to other EOCs or similar locations (e.g., WEROC, City EOCs, other water district EOCs). • Ensure that AREPs are provided with the necessary workspace, communications, and information to perform their responsibilities. • Ensure position-specific guidelines, policy directives, situation reports, and the EOC Action Plan are provided to AREPs. • Maintain communication with IRWD AREPs at other locations (e.g., WEROC, Customer Services Dept.). • Communicate and coordinate with external agencies and partner organizations on behalf of IRWD.
Customer Service Unit	The LNO acts as the liaison between the EOT and the customer service staff responding to issues affecting customers during an emergency. The Customer Service Unit: • Provides customer-related information to the EOT. • Coordinates with the PIO for messaging to customers. • Coordinates alerting (CodeRed) and communications systems as requested. • Maintains communication with call center(s) to ensure two-way information flow. • Provides status updates to the Planning Section via the LNO.
Planning Section	
Planning Section Coordinator	The Planning Section Coordinator (PSC) is responsible for managing the Planning Section and reporting to the EOC Director. The position is also responsible for facilitating situational awareness, facilitating the EOC Action Planning process, gathering, and analyzing information, keeping decision-makers informed, and tracking resources. • Collect, analyze, and display situational information. • Prepare periodic Situation Reports. • Facilitate planning meetings and briefings. • Prepare and distribute the EOC Action Plan. • Track resource needs. • Provide technical support services to the various EOT sections and branches. • Document and maintain files on all emergency response activities.
Situation Unit/GIS	The Situation Unit/GIS position assists the Planning Section Coordinator in the creation, maintenance, and display/dissemination of situational awareness. The position develops an integrated common operational picture of the emergency events using images, infographics, information overlays on geographic maps, and other visuals.

EOT Member	Roles and Responsibilities
	• Collect and synthesize information coming from the field, departments, and EOC personnel into visuals that communicate the situation and response activities. • Check the data for accuracy, identify gaps, and develop intelligence products for staff. • Develop maps, models, infographics, images, and other geospatial representations of data, etc. as requested. • Display, project, or distribute maps and other situational awareness products to EOT and other responders, as appropriate.
Resource Unit	The Resource Unit position is responsible for maintaining the status of all assigned tactical resources and personnel associated with IRWD's emergency operations. This is achieved by overseeing the check-in of all tactical resources and personnel, and maintaining a status-keeping system indicating current location and the status of significant response resources. • Record all equipment/resource and personnel usage time (separately), including contract, rented, and borrowed equipment assigned to the incident (for cost recovery purposes). • Identify current or potential shortfalls in resources and consider potential alternative strategies for optimal resource utilization.
Documentation Unit	The Documentation Unit acts as a scribe during meetings, collects and organizes documentation, and assists the Planning Section Coordinator in creating the EOC Action Plan and any other plans or reports for the EOC. • Collect, organize, and store all completed emergency related documentation. • Distribute EOC situation reports and EOC Action Plans. • Maintain an electronic archive of all Situation Reports and Action Plans associated with the incident. • Assist the Planning Section Coordinator in the preparation and distribution of the After-Action Report.
Other Technical Specialists (TS)	Emergencies may require the use of Technical Specialists (e.g., Computer modeling, cybersecurity, hazardous materials, scientific) who have specialized knowledge and expertise. Tech Specialists may be integrated into the Planning Section or may be assigned wherever their services are required. • Provide technical expertise and advice to Command and General Staff as needed. • Attend meetings and briefings as appropriate to clarify and help to resolve technical issues within area of expertise.
Logistics Section	
Logistics Section Coordinator	The Logistics Section Coordinator (LSC) is responsible for meeting all the logistical needs of the emergency operation, including providing facilities, services, equipment, personnel, and materials in support of the incident. • Manage the positions and functions within the Logistics Section. • Ensure the Section is appropriately staffed and resourced.

EOT Member	Roles and Responsibilities
	• Facilitate communications/coordination across Sections by engaging with other Section Coordinators. • Monitor Section performance and implement corrective actions as appropriate. • Report to the EOC Director. • Develop Section-specific objectives, tasks, and actions as part of the EOC Action Planing process.
Fleet Services Unit	The Fleet position is responsible for providing transportation resources and services for the response to the emergency. • Receive and coordinate all transportation during the incident. • Acquire or maintain resources to ensure the continuity of transportation capabilities (e.g., fuel, maintenance, operators, licenses, insurance). • Provide IRWD two-way radio resources. • Monitor location of fleet resources in the field through GPS systems. • Provide fleet status information to the Planning Section. • Maintain mobile equipment and fleet resources to support emergency operations.
Facilities Unit	The Facilities position is responsible for providing facility resources and services for the emergency response. • Ensure that adequate essential facilities are provided for the response effort, including securing access to facilities, and providing facility staff (e.g., custodial, maintenance, security), furniture, supplies, and materials necessary to configure the facilities in a manner adequate to accomplish the mission. • Oversee the EOC Activation Team—an advance team responsible for making sure the EOC is equipped, set up, and operational in preparation for the arrival of EOT members. Ensure the Activation Team is properly staffed and resourced. • Work with Engineering to assess the safety of the facilities used in the emergency response. • Provide facilities status information to the Planning Section.
Purchasing Unit	The Purchasing position is responsible for acquiring resources and services needed for the incident, but not in the possession of IRWD: • Coordinate the request, acquisition, receiving, and staging of resources and services as directed. • Provide necessary support resources for the Incident Response Team members (e.g., food, lodging, crisis counseling, etc.) • Satisfy requests for resources within the EOC. • Provide purchasing and resource status information to the Planning Section.
Human Resources/Risk Management Unit	The Human Resources position is responsible for addressing personnel matters during an emergency and for locating/mobilizing personnel needed to respond. • Provide updates on human resource issues including a list of injured, missing, or deceased employees.

EOT Member	Roles and Responsibilities
	• Advise on personnel policies (e.g., leave, benefits, pay, collective bargaining agreements). • Notify IRWD staff or next-of-kin affected by the emergency and provide assistance as necessary. • Coordinate requests for personnel in response and recovery efforts. • Provide communications/updates to IRWD staff in coordination with the PIO. • Process Worker's Compensation claims. • Provide HR status information to the Planning Section.
Operations Section	
Operations Section Coordinator	The Operations Section Coordinator (OSC) is responsible for managing the Operations Section, reporting to the EOC Director, and carrying out the incident response support functions required by the IRTs. • Manage the positions and functions within the Operations Section. • Ensure the Section is appropriately staffed and resourced. • Develop Section-specific objectives, tasks, and actions as part of the EOC Action Planing process. • Coordinate and approve the tactical strategies for achieving the EOC objectives and addressing the threat/hazard or impacts to operations. • Mobilize IRTs and resources to achieve the tactical strateies. • Facilitate communications/coordination across Sections by engaging with other Section Coordinators. • Monitor Section and tactical performance and implement corrective actions as appropriate. • Report to the EOC Director.
Potable Water Operations Branch	The Potable Water Operations Branch is responsible for managing the response and recovery of potable water operations during an emergency. • Provide information updates on the status of potable water systems. • Communicate with water operations IRT members in the field. • Coordinate water operations response and recovery activities. • Coordinate additional support resources to IRT water operations staff. • Work with Water Quality to coordinate water testing. • Coordinate the efforts of the Construction Services and Field Services Units to achieve the tactical objectives of the Branch. • Provide status updates to the Planning Section.
Construction Services Group	The Construction Services Group is responsible for managing the repair of the District's linear assets (e.g., pipelines) within the IRWD water and sewer systems.

EOT Member	Roles and Responsibilities
	• Provide information updates on construction and field operations. • Communicate and coordinate with IRT construction services staff in the field. • Coordinate equipment and maintenance support as required. • Work closely with Water Operations to coordinate water operations response. • Ensure a safe working environment is established and maintained for all field staff. • Provide status updates to the Planning Section. From a Risk Management perspective, the Unit is responsible for reporting on risk, insurance, and third-party life/safety activities during an emergency. • Conduct risk response activities to safeguard the organization, its customers, reputation, and assets. • Manage third-party safety. • Provide ongoing updates on risk, insurance, and third-party life/safety. • Coordinate directly with the PIO, Safety & Security Officer, Logistics and Operations Sections on response and recovery activities. • Submit damage costs to insurance companies.
Field Services Group	The Field Services Group is responsible for managing the preventative maintenance, retail metering, and leak detection of linear assets (e.g., pipelines) within the IRWD water and sewer systems. • Communicate and coordinate with IRT field services staff in the field. • Coordinate equipment and maintenance support as required. • Work closely with Water Operations to coordinate water operations response. • Ensure a safe working environment is established and maintained for all field staff. • Provide status updates to the Planning Section.
Recycling Operations Branch	The Recycling Operations Branch is responsible for coordinating the response and recovery of recycling operations during an emergency. • Provide information updates on the status of recycling systems and facilities. • Monitor the conditions and coordinate needed repairs of the Michelson and Los Alisos Recycling plants, and Natural Treatment Systems. • Manage and coordinate response and recovery activities of recycling systems. • Advise on impacts of activities on recycling operations. • Provide status updates to the Planning Section.
Automation (SCADA) Group	The Automation (SCADA) Group is responsible for providing information on the Supervisory Control and Data Acquisition (SCADA) systems monitoring and controlling IRWD operations.

EOT Member	Roles and Responsibilities
	• Provide SCADA information to the EOT and advise on actions. • Operate the SCADA system within the EOC. • Coordinate with the Operations Section for response and recovery activities. • Provide status updates to the Planning Section.
Collections Group	The Collections Group is responsible for coordinating the response and recovery of wastewater collection systems during an emergency. • Provide information updates on the status of collection systems. • Communicate with collection operations staff in the field. • Coordinate collection operations response and recovery activities. • Coordinate additional support resources to IRT collection operations staff. • Provide status updates to the Planning Section.
Maintenance Operations Branch	The Maintenance Operations Branch is responsible for coordinating the response and recovery of maintenance operations during an emergency. • Provide information updates on the status of maintenance operations, systems, and facilities. • Customize maintenance operations to address the impacts of the emergency and the needs of the response operation. • Manage and coordinate the response and recovery activities of maintenance operations. • Provide status updates to the Planning Section.
Electrical Group	The Electrical Group assists with creating a common operating picture based on information from staff in the field, directs staff in the field, establishes tactical strategies for addressing electrical system problems, helps to prioritize projects in partnership with mechanical and other operations departments, and may request mutual assistance support to ensure adequate staffing for repair projects.
Mechanical Group	The Mechanical Group assists with creating a common operating picture based on information from staff in the field, directs staff in the field, establishes tactical strategies for addressing mechanical system problems, helps to prioritize projects in partnership with mechanical and other operations departments, and may request mutual assistance support to ensure adequate staffing for repair projects.
Engineering Branch	The Engineering Branch is responsible for providing engineering support and services in response to emergencies. • Collect initial damage/safety assessment information. • Initiate inspection of structures and/or facilities, including dams. • Provide detailed damage/safety assessment information to the Planning Section, with associated loss damage estimates. • Maintain detailed records on damaged areas and structures. • Provide GIS mapping and engineering computer modeling services as required by the EOT. • Provide status updates to the Planning Section.

EOT Member	Roles and Responsibilities
Dam Safety Group	The Dam Safety Group is responsible for providing engineering support in response to dam-related emergencies utilizing the Dam Safety Program Guidelines & Governance document. • Evaluate, assess, and implement risk reduction measures. • Coordinate with the Operations Section for response and recovery activities. • Provide status updates to the Planning Section.
Water Quality Branch	The Water Quality Branch is responsible for monitoring and reporting on water quality during emergencies. • Monitor and report on the status of water quality sampling, flushing, disinfection, implementation of the District Emergency Disinfection Plan, and de-chlorination of discharge water. • Monitor and report on levels of constituents and compliance with Federal and State regulations. • Maintain regular communication with local, state, regional and national water quality regulatory bodies and serve as a liaison with those bodies. • Coordinate with the PIO to distribute appropriate warnings and notifications to customers. • Provide status updates to the Planning Section.
Finance & Administration Section	
Finance & Administration Section Coordinator	The Finance & Administration Section Coordinator (FSC) is responsible for all financial, administrative, and cost analysis aspects of an incident. • Manage the positions and functions within the Finance Section. • Ensure the Section is appropriately staffed and resourced. • Develop Section-specific objectives, tasks, and actions as part of the EOC Action Planning process. • Advise the EOC Director on financial and administrative matters. • Coordinate cost recovery efforts at the local government level. •
Cost Unit	The Cost position is responsible for ensuring all financial information is maintained throughout the disaster. • Manage recording on-duty time for all emergency response personnel. • Collect all on-duty time sheets from Field Supervisors/IRT Leaders or Incident Commanders and their staff. • Maintain a payroll process for all employees responding to incidents. • Process travel and expense claims within a reasonable time, given the nature of the situation. • Ensure that all recovery documentation is accurately maintained during the response and submitted on the appropriate forms to FEMA and/or CalOES.

EOT Member	Roles and Responsibilities
Information Technology (IT) Support Unit	The Information Technology (IT) position acts as a liaison with IS staff responding to emergencies. • Provide information updates on the status of enterprise technology systems and infrastructure. • Provide guidance in response and recovery activities with respect to IS requirements. • Set priorities and recovery strategies for IT systems and infrastructure. • Invoke IS recovery plans as required. • Ensure technology resources for the EOT and EOC. • Assist EOT/EOC positions in determining appropriate types and numbers of computers and computer applications required to facilitate operations. • Ensure communication systems are accessible to the EOT/EOC, IRTs, and Policy Group. • Provide status updates to the Planning Section.

2. Chain of Command

The first IRWD staff member to arrive at the EOC will start making the EOC operational. In accordance with ICS, the most qualified EOC management staff member to arrive will exercise overall EOC management responsibility until relieved by the next qualified management staff member. This will be done in the following order:

1. EOC Director
2. Safety & Security Officer
3. Operations Section Coordinator
4. Planning Section Coordinator
5. Finance & Administration Section Coordinator

D. INCIDENT RESPONSE TEAM (FIELD)

Incident Response Teams (IRTs) are comprised of staff responsible for tactically and directly mitigating, responding to, or recovering from incidents in the field or from another location (e.g., IS office in the event of a cyber-incident). There may be more than one IRT if the emergency results in incidents at multiple locations or involving multiply specialties or departments. IRTs will be created, organized, and directed by the EOT Operations Section. IRTs may vary in composition and capability depending on the needs of the emergency and the resources available at the time. Each IRT will be led by an IRT Leader who will communicate with and report to an appropriate supervisory position in the EOT Operations Section (Section, Branch or Unit).

The IRT Leader may be designated an Incident Commander (IC) in the following situations:

- If the IRT is integrated into a larger multi-agency or multi-jurisdiction Incident Command Post (ICP), then the IRT Leader may be designated as the IRWD Incident Commander to represent and coordinate the interests of IRWD at the ICP.

- In the event the EOT/EOC is not activated and the IRT is the only response organization activated by IRWD, then the IRT Leader may be designated as the IRWD Incident Commander to indicate that all incident decision-making lays with the IC.

Note: During a Hazardous Materials (HazMat) response, California Code of Regulations Title 22 §66265.56 requires the IRT (HazMat) Leader to be designated as an "Emergency Coordinator." For all intents and purposes, there is no difference between an IRWD Incident Commander and an Emergency Coordinator.

1. Incident Response Team Members

The Incident Response Team is composed of those members necessary to the incident:

IRT Member	Roles and Responsibilities
Command	
IRT Leader or Incident Commander	The IRT Leader or Incident Commander is the individual responsible for all incident activities being performed by the IRT, including the development of tactical strategies to address the incident, the organization, communications, and functioning of the IRT, the ordering of resources to achieve the tactical objectives of the IRT (via the EOT), and the release of resources and personnel from the IRT, as appropriate. The IRT Leader or Incident Commander has overall authority and responsibility for conducting incident operations as assigned by the EOT. • Set tactical priorities and determine tactical strategies for addressing the incident. Implement relevant objectives of the EOC Action Plan. • Coordinate IRT team member activities and monitor performance and safety. • Ensure that safety and health of IRT members. • Conduct incident assessments. • Provide situation status updates to the EOT Operations Section. • Request resources needed by the IRT from the EOT. • Receive directions and updates from the EOT. • Communicate and coordinate with the EOT on a regular basis. • Address the hazard, threat, or damages as directed.

2. Relationship between EOT and Incident Response Team

A significant role of the EOT is to support each IRTs. IRT Leaders or Incident Commanders (ICs) have several critical needs which the EOT is designed to meet:

- Providing the "big picture" view of the incident (situational awareness)
- Establishing priorities across IRTs/incidents
- Enacting policy or resolving conflicting policies
- Arranging for food, lodging, transportation, and other needs for on-site staff
- Providing communications and messaging support
- Managing public information issues and media requests
- Providing and prioritizing needed resources
- Authorizing emergency expenditures, when appropriate, and tracking incident costs

SECTION FOUR:

ACTIVATION

4

Irvine Ranch Water District

SECTION FOUR: ACTIVATION

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Irvine Ranch Water District

SECTION FOUR: ACTIVATION

Activation of this EOP is determined by following the Emergency Operations Process. The Activation Phase is comprised of the first four steps of this process as follows:

1. **Event Identification**
2. **Event Notification**
3. **Initial Assessment**
4. **Activation**
5. Response
6. Recovery
7. Deactivation
8. Post-Event Assessment
9. Maintenance & Training Updates

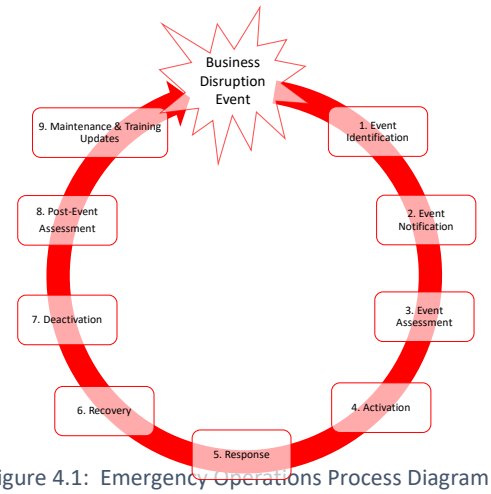


Figure 4.1: Emergency Operations Process Diagram

The need to activate this plan and the EOC will be guided by the criteria presented below:

- Requested by a department head in response to an incident that may be beyond the department's resources/capabilities.
- Three or more departments have been impacted by, or are responding to, an emergency (as defined in Section A below).
- The resources or capabilities of two or more departments have been, or are expected to be, exceeded.
- An incident has significant community implications beyond IRWD (e.g., customer impacts, dam failure)
- The incident requires the involvement of public safety agencies.
- Receipt of a forecasted hazard or credible threat that has the potential to damage IRWD infrastructure or impact IRWD operations or water quality.
- A City serviced by IRWD has Proclaimed an Emergency affecting IRWD infrastructure or personnel, or the Governor or President have Proclaimed or Declared a State of Emergency/Major Disaster for an area that includes IRWD operations.
- At the discretion of the General Manager, Executive Management Team, or Director of Safety and Security as deemed appropriate to address a threat, hazard, or incident.

A. EVENT IDENTIFICATION

For the purposes of this EOP, an emergency is defined as:

> "An urgent, unexpected, and/or unusually dangerous situation that poses an immediate risk to health, life, property, business operations, or the environment or has a high probability of escalating to cause immediate danger to health, life, property, business operations or the environment, and requires immediate action to mitigate the threat/hazard, prevent escalation or worsening of the situation, or to address the immediate and anticipated consequences if the threat/hazard cannot be mitigated."

An emergency can be physical such as a fire, power failure, an act of terrorism or a destructive act of nature such as floods, earthquakes, or pandemic events. In all cases, emergencies can be designated as such by IRWD staff when events impact personal safety, operations or IRWD's brand image. Any event

can be an unforeseen incident, act of nature, or a willful act of aggression. An emergency can be declared even if the event has not yet occurred. The threat of an event can trigger actions in advance to avoid or mitigate the potential impacts.

Identification of a potential threat or event that impacts or threatens IRWD may come from any of several sources, depending upon the nature and time of day of the event. These include:

INTERNAL SOURCES	EXTERNAL SOURCES
• Safety & Security staff • Operations staff • An employee • Customer Service call center • An activated alarm including door alarms • CCTV camera monitoring • SCADA system alerts/alarms	• WEROC • Contracted security • A local, state, or federal emergency agency • News media/social media • A customer or visitor • A vendor/contractor/partner • AlertOC

B. EVENT NOTIFICATION

In the event of an incident, staff should ensure the safety of themselves, their loved ones, and property, and then determine next steps based on job position and training for staffing the EOC.

If it is a life/safety emergency, CALL 9-1-1.

Notification of an impending threat or occurring event will occur in accordance with IRWD's Incident Notification Standard Operating Procedures (SOP).

In all cases, Safety & Security must be notified of the event.

Once Safety & Security is notified of the event, staff will:

1. Log the event.
2. Notify other stakeholders as necessary (cell, email, text).
3. Open a bridge conference line if there are more than two participants.

C. INITIAL ASSESSMENT

At the time of the initial incident, facts are typically scarce. All teams will be requested to assess events or threats in order to determine the actual or potential impact on IRWD employees, operations, or reputation.

Depending on the type of event, the assessment can either be led by Operations or Planning Section staff, Information Services (IS) staff or Safety & Security staff.

SECTION FOUR: ACTIVATION

1. Event Assessment Criteria

Use the following criteria for assessing the severity of the incident:

1. Life, Health & Safety
   - Fatalities/missing persons
   - Injuries
   - Improperly functioning safety equipment or safety measures
2. Operations
   - Water supply
   - Collections
   - Recycling
   - Enterprise networks
3. Brand Image and Reputational Risk
4. Facilities
   - Property damage
   - Utilities
5. Information
   - Data breaches
   - Loss of data/data validation
   - Vital records
6. Technology
   - SCADA
   - Enterprise technology
   - Network infrastructure
   - Communications
7. Financial Impacts
8. Regulatory Risk

2. IRWD Emergency Activation

Based on the assessment of IRWD staff, the IRWD General Manager will decide if the threat or incident is an emergency. If the GM is not available, then any member of the Executive Management Team or the Director of Safety and Security may activate the emergency operations plan and the Emergency Operations Center.

IRWD Emergency Notification

- An emergency activation can only be made after an incident assessment and briefing of the General Manager, Executive Management Team, and/or Director of Safety and Security.
- If a notification of emergency is made, the General Manager or a member of the Executive Management Team will notify the Board of Directors when appropriate.

No IRWD Emergency

- If the General Manager, Executive Management Team, or Director of Safety and Security concludes that the incident or threat is not currently an emergency, the incident will be managed as an Activation Level 0, in which designated IRWD staff will monitor the event.

3. Activation Level Determination

The General Manager, Executive Management Team, or Director of Safety and Security, on advice from IRWD staff, will establish the Activation Level for the incident based on the assessment of the aforementioned criteria. Establishing the Activation Level will help determine which team(s) will be activated.

ACTIVATION LEVEL	DESCRIPTION	EXAMPLES	ACTION	TEAMS ACTIVATED
1	A major event that has the potential to do severe harm to the organization and/or its customers. Incident may exceed IRWD resources or capabilities.	Major earthquake (>6.5) Major extended power outage Major Dam Reservoir Break	Full EOC activation. EOT and Policy Group are activated. IRT(s) will respond.	**Policy Group** **EOT** **IRT(s)**
2	A serious threat is imminent or exists. Possibility of escalation could exceed IRWD resources or capabilities.	Significant earthquake (5.0 – 6.5) Active shooter Wildfire affecting Operations	Partial EOC activation. Select EOT members are activated. IRT(s) will respond.	**EOT** **IRT(s)**
3	An event has occurred with limited effect.	Minor earthquake (<5.0) Limited power outage	Minimum to no EOC activation. Safety and Security will staff EOC if approrpriate. IRT will respond as appropriate.	**IRT**
0	A potential threat or small-scale event has occurred with the possibility of escalating.	Red flag/high wind warning Storm forecast Bomb threat	IRWD staff will monitor the threat or event.	**NONE**

Figure 4.2: Activation Levels

Once the Activation Level is determined, Safety & Security staff will:

1. Contact relevant emergency operations responders
2. Notify appropriate stakeholders
3. Prepare to activate the Emergency Operations Center

D. ACTIVATION

After the Activation Level is established, the appropriate teams and resources will be activated and mobilized.

1. Activation Level 3 Activation

In an Activation Level 3 activation for an emergency with limited effect, the following actions will be taken:

1. Incident Response Team members will be notified and dispatched by the EOT, an operations manager or director, an IS manager or director, or the Safety & Security staff depending on the type of emergency.
2. Safety & Security staff will open a conference bridge line, if necessary.
3. The EOC may be activated with a small number of positions if required.

2. Activation Level 2 Activation

In an Activation Level 2 activation for an emergency that seriously threatens IRWD, the following actions will be taken:

1. Incident Response Team members will be notified and dispatched by the EOT, an operations manager or director, an IS manager or director, or the Safety & Security staff depending on the type of emergency.
2. Safety & Security staff will open a conference bridge line.
3. The Senior Executive-In-Charge in consultation with the assigned EOC Director will determine which EOC team members to activate. Safety & Security staff will notify and activate selected EOC personnel.
4. The EOC will be activated with a select number of positions.

In the initial stage of incident response, the EOC staff may be limited to the EOC Director, Safety & Security staff and IS support. This initial team will decide to expand the EOC team and at that time will begin notifying additional team members.

At Activation Level 2, the Emergency Operations Center (EOC) will be activated. The EOC may be established at an available facility or operated virtually. Once the EOC is established, the EOC Director will assume responsibility for engaging additional appropriate EOC team members to operate the EOC. The EOC Director will also be the point of contact through which communications to senior executives will flow.

3. Activation Level 1 Activation

At Activation Level 1, the Emergency Operations Center (EOC) will be fully activated.

1. The EOC will be established at the primary EOC located at the Multipurpose Room, Michelson Operations Center, 3512 Michelson Drive, Irvine, California 92612.
2. If the primary EOC is not accessible, at the alternate EOC located at the Sand Canyon and Board Room, IRWD Sand Canyon Headquarters, 15600 Sand Canyon Avenue, Irvine, CA 92618.
3. If neither EOC is accessible, the EOC will operate virtually and/or another location as designated.

Once the EOC is fully activated, the EOC Director will assume responsibility for the EOC. The EOC Director will also be the point of contact through which communications to the Policy Group will flow.

SECTION FOUR: ACTIVATION

E. ESCALATION

Incidents can be difficult to accurately diagnose with a limited amount of information initially available. What may appear to be a transient event may turn out to be, or expand, to a more significant and long-lasting emergency.

If the initial event grows in scope and impact, the Activation Level may be escalated to a higher level of response and additional resources may be brought to bear. At Activation Level 1, the activated Policy Group declares a major emergency and notifies the Board.

The following diagram illustrates the escalation process:

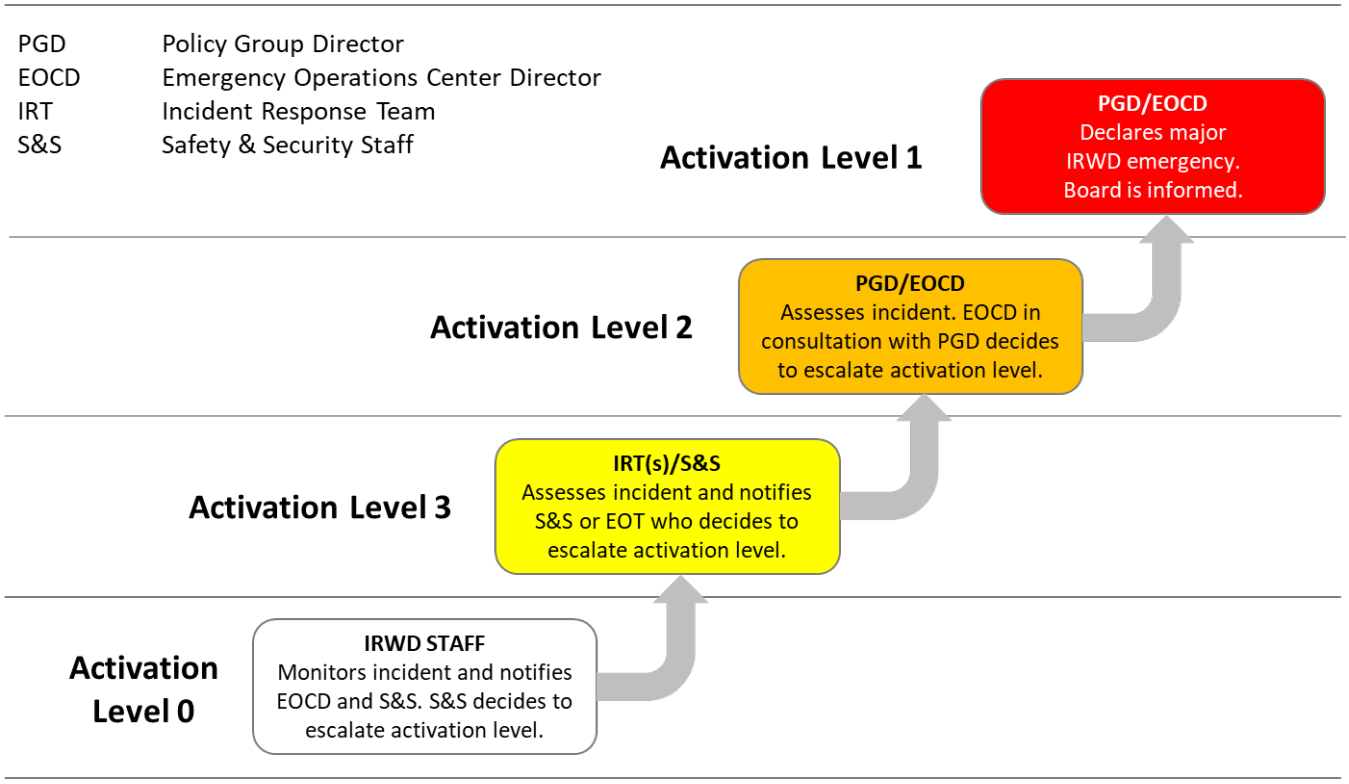


Figure 4.3: Escalation Process Diagram

F. EMERGENCY PROCLAMATIONS

The California Emergency Services Act (Chapter 7 of Division 1 of Title 2 of the Government Code), hereafter referred to as the Act, provides the basic authorities for conducting emergency operations following a proclamation of Local Emergency, State of Emergency or State of War Emergency by the Governor and/or appropriate local authorities in the State of California. Although the Act refers to cities and counties proclaiming emergencies, it does not exclude districts from the practice. It is a necessary and crucial step for special districts to proclaim a local disaster for both the purposes of financial

Irvine Ranch Water District

purchasing power (California Code, Public Utilities Code 12753)[1], as well as for the use of some mutual aid agreements.

WEROC Member Agency Emergency Declaration

Each WEROC member agency should have emergency declaration procedures that are activated during emergencies that activate procedures outside of normal operations. When deciding whether to declare an emergency, the agency can use the following local emergency procedures as guidance. A member agency should declare an emergency when:

- Impacts to public health exist or are possible
- Long-term water or wastewater system outages occur or are expected
- Activating the EOC and/or running an ICP
- Impacts to water systems affecting hospitals or schools exist or are possible
- Need for resources or support beyond those available to the District

Local Emergency (California Emergency Services Act)

In accordance with California Emergency Services Act, if a local government determines the effects of an emergency are beyond the capability of local resources to mitigate effectively, the local government must proclaim a local emergency.

A local emergency proclamation can only be issued by a governing body (city, county, or city and county) or an official designated by local ordinance. The proclamation should be issued within 10 days of the event and ratified by the governing body within 7 days. Renewal of the resolution should occur every 30 days until terminated.

IRWD **cannot proclaim a local emergency** under the Act. Instead IRWD **can request a local city or county** such as the City of Irvine or the County of Orange to proclaim the local emergency. WEROC can assist the District in making this request.

The proclamation of a Local Emergency provides the governing body with the legal authority to:

- If necessary, request that the Governor proclaim a State of Emergency.
- Promulgate or suspend orders and regulations necessary to provide for the protection of life and property, including issuing orders or regulations imposing a curfew within designated boundaries.
- Exercise full power to provide mutual aid/assistance to any affected area in accordance with local ordinances, resolutions, emergency plans, or agreements.
- Request that state agencies and other jurisdictions provide mutual aid/assistance.
- Require any local official or employee to provide emergency services support.
- Requisition necessary personnel and materials from any local department or agency.
- Obtain vital supplies and equipment and, if required, immediately commandeer the same for public use.
- Impose penalties for violation of lawful orders.

[1] 12753. In case of any great emergency, the Board may, by resolution passed by a four-fifths vote of all the members of a five-ward district, or by a five-sevenths vote of all the members of a seven-ward district, declare, and determine that such emergency exists, and thereupon proceed to expend sums or enter into contracts involving the expenditure of any sums needed in such emergency without observance of the provisions requiring contracts, bids, or notice.

- Conduct emergency operations without incurring legal liability for performance, or failure of performance. (Note: Article 17 of the Emergency Services Act provides for certain privileges and immunities.)

Note: A local emergency proclamation and/or Governor's Proclamation is not a prerequisite for mutual aid/assistance, Red Cross assistance, a Fire Management Assistance Grant (FMAG), or certain disaster loan programs.

Internal Emergency

A special district such as IRWD may need to proclaim an internal emergency for the purposes of triggering its own internal emergency procurement procedures. The emergency proclamation helps support IRWD's purchasing ordinance policy to make purchases and contract in accordance with state and federal regulations during an emergency. IRWD should notify WEROC and the OA of an internal emergency as soon as a significant problem arises. Additional notifications should be made to the appropriate regulatory agency.

State Emergency Services Act

A State of Emergency may be proclaimed by the Governor when:

- Conditions of disaster or extreme peril exist which threaten the safety of persons and property within the state caused by natural or man-made incidents.
- The Governor is requested to do so by local authorities.
- The Governor finds that local authorities are inadequate to cope with the emergency.

When the Governor proclaims a State of Emergency, the following conditions apply:

- Mutual aid/assistance shall be rendered in accordance with approved emergency plans when the need arises in any county, or city and county for outside assistance.
- The Governor shall, to the extent deemed necessary, have the right to exercise all police power vested in the state by the Constitution and the laws of the State of California within the designated area.
- Jurisdictions may command the aid of citizens as deemed necessary to cope with an emergency.
- The Governor may suspend the provisions of orders, rules, or regulations of any state agency and any regulatory statute or statute prescribing the procedure for conducting state business.
- The Governor may commandeer or make use of any private property or personnel (other than the media) in carrying out the responsibilities of their offices.
- The Governor may promulgate, issue, and enforce orders and regulations deemed necessary.

Presidential Declaration of a Major Disaster or an Emergency

Definitions

1. **Major disaster**: A major disaster is defined as "any natural catastrophe (including any hurricane, tornado, storm, high water, wind driven water, tidal wave, tsunami, earthquake, volcanic eruption, landslide, mudslide, snowstorm, or drought), or, regardless of cause, any fire, flood, or explosion, in any part of the U.S. which in the determination of the President causes damage of sufficient severity and magnitude to warrant major disaster assistance under this Act to supplement the efforts and available resources of States, local governments, and disaster relief organizations in alleviating the damage, loss, hardship, or suffering caused thereby."

2. **Emergency**: An emergency is defined as "any occasion or instance for which, in the determination of the President, Federal assistance is needed to supplement state and local

efforts and capabilities to save lives and to protect property and public health and safety, or to lessen or avert the threat of a catastrophe in any part of the U.S."

Process

In order for the President to declare a federal major disaster or emergency, the Governor of California must submit the following:

- Local Jurisdiction Emergency Declaration (City or County on behalf of IRWD)
- The California State of Emergency Proclamation

The Governor's written request for federal assistance must also include:

1. Certification of implementation of the State Emergency Plan
2. Description of how the disaster caused needs beyond state/local capabilities
3. A description of state/local resources already committed
4. Preliminary estimates of supplementary federal assistance needed
5. Certification of compliance with cost-sharing requirements of the Stafford Act

Basis for Request

The Stafford Disaster Relief and Emergency Assistance Act (Stafford Act) (Public Law 100-707) is a United States federal law designed to bring an orderly and systemic means of federal natural disaster assistance for state and local governments in carrying out their responsibilities to aid citizens. The situation should be of such severity and magnitude that effective response is beyond the capabilities of the state and affected local governments (including special districts), and federal assistance under the Stafford Act is necessary to supplement the efforts and available resources of the state, affected local governments, and disaster relief organizations.

(For more information on the Stafford Disaster Relief and Emergency Assistance Act visit www.fema.gov/library/stafact)

SECTION FOUR: ACTIVATION

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Irvine Ranch Water District

SECTION FIVE:

EOC OPERATIONS

5

Irvine Ranch Water District

SECTION FIVE: EOC OPERATIONS

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Irvine Ranch Water District

SECTION FIVE: EOC OPERATIONS

The EOC Operations Phase is comprised of the last five steps of the Emergency Operations Process as follows:

1. Event Identification
2. Event Notification
3. Initial Assessment
4. Activation
5. **Response**
6. **Recovery**
7. **Deactivation**
8. **Post-Event Assessment**
9. **Maintenance & Training Updates**

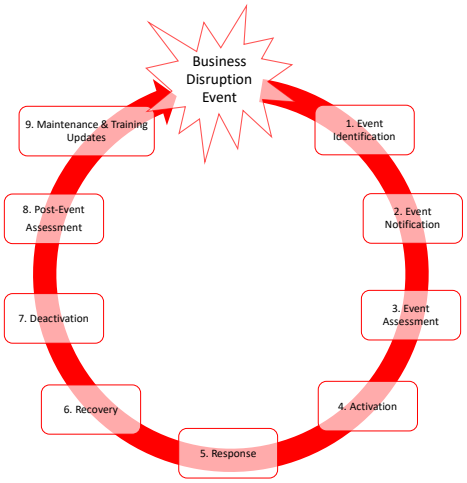


Figure 5.1: Emergency Operations Process Diagram

A. PURPOSE OF THE EMERGENCY OPERATIONS CENTER (EOC)

Once this EOP is activated, the Emergency Operations Center may be activated.

The purpose of the EOC is to provide a centralized location for the EOT and Policy Group to meet in response to an emergency. The intent of the EOC is to serve as a hub for:

1. Information collection, analysis, and organization (Common Operating Picture) for the incident.
2. Information flow between the IRTs, EOT, and PG.
3. Communication with internal and external stakeholders.
4. Coordination and overall management of response and recovery activities.
5. Support for response teams operating in the field.
6. Facilitation of policy directives and incident priorities.
7. Management and provision of resources to support incident response objectives.
8. Documentation of incident activities and management of incident records for legal and historical purposes.

1. EOC Locations

The designated physical EOC locations and virtual EOC are as follows. Safety & Security, in consultation with Senior Staff, will determine which EOC option will be activated based on incident circumstance.

EOC	LOCATION
Primary EOC	Multipurpose Room, Michelson Operations Center 3512 Michelson Drive, Irvine, California 92612
Alternate EOC	Sand Canyon and Board Room, IRWD Sand Canyon Headquarters 15600 Sand Canyon Avenue, Irvine, CA 92618
Virtual EOC	Information Services will set up necessary technologies to facilitate virtual operation.

Irvine Ranch Water District

SECTION FIVE: EOC OPERATIONS

B. RESPONSE

In the response to an emergency, IRWD emergency response teams are responsible for:

1. Setting goals, priorities, and strategies
2. Gathering information and providing reports of the situation
3. Communicating alerts, warnings, and information to stakeholders
4. Providing direction, control, and coordination
5. Supporting mutual aid efforts in coordination with other public agencies, private companies and WEROC

EOC Action Planning Cycle

IRWD response teams will use the EOC Action Planning Cycle to guide the response phase of the emergency. The Action Planning Cycle is a simplified version of the Incident Command System's "Planning P" intended to streamline the response process for non-first responders.

The following steps comprise the EOC Action Planning Cycle:

Initial Phase Actions:

1. Establish Communications
2. Document Activities
3. Implement Standing Objectives
4. Assess the Situation

Managed Phase Actions:

1. Conduct Strategy and Tactics Meeting
2. Implement EOC Action Plan
3. Conduct Status Meetings and Briefings
4. Validate or Adjust Current Objectives and Tactics
5. Prepare for Next Operational Period

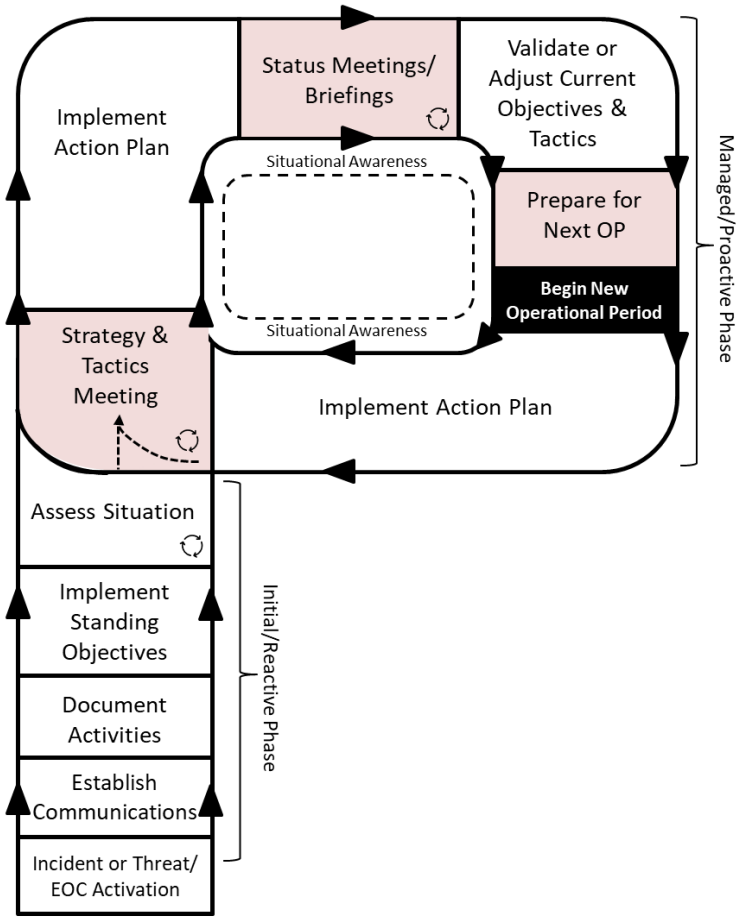


Figure 5.2: IRWD Action Planning "P" Process

Irvine Ranch Water District

SECTION FIVE: EOC OPERATIONS

Initial Phase Actions

The Initial Phase actions are taken during the initial response to the emergency once the incident occurs and the EOC is activated.

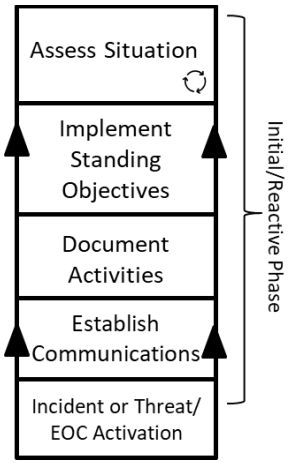


Figure 2.3: Initial Phase Actions

1. Establish Communications

Establishing communication channels is the first critical step for EOC operations. Each of the IRWD EOCs has multiple communication mechanisms for use in an emergency.

The following steps will be taken to ensure critical communications are available:

1. **Open up a conference bridge line.**
2. **Check and establish communication channels.**
    a. Landlines (POTS) with Government Emergency Telecommunications Service (GETS)
    b. Voice Over IP (VOIP) phones
    c. Cell phone service with Wireless Priority Service for Policy Group team members, EOT, and certain IRT members and other key stakeholders
    d. Text messaging via cell phones and internet connection
    e. Radio
        i. IRWD radio system – radio communication for IRWD staff
        ii. WEROC radio system – provides emergency radio communication for all WEROC member agencies
    f. Internal network including email and other enterprise systems
    g. SCADA
    h. Internet access
    i. CodeRed customer service communication system
3. **Use backup communication channels if primary channels are not available.**
    a. Satellite phone (if available)
    b. Amateur radio (enlist HAM Radio Operators)
4. **Confirm connection with AlertOC**.
   AlertOC is the mass notification system used by Orange County officials to keep residents and businesses in the county informed of emergencies and certain community events.
5. **Connect with the Orange County Operational Area as required.**
   WebEOC is a web-based software platform used by the Orange County OA to manage and share critical information with responders during a crisis. It requires an internet connection, web browser and login credentials to access. Log-in instructions are available in the WebEOC Manual.
6. **Identify Other Stakeholders with Whom IRWD Needs to Communicate.**
   Led by the Planning Section Coordinator, the EOT will collectively identify all the stakeholders with whom it needs to establish communications. The responsibility to communicate with said stakeholders will then be assigned to a member of the EOT to establish a single point of contact with the organization; thereby avoiding duplications or conflicts.

Irvine Ranch Water District

SECTION FIVE: EOC OPERATIONS

2. Document Activities

It is important to collect and maintain adequate documentation on disaster-related activities, decisions, costs, etc. to effectively manage the operation and support maximum reimbursement from insurance claims and government agencies, if offered. As long as records conform to standards set by insurance carriers and government agencies, they may be derived from District systems as reports, or compiled from insurance carrier or government forms. Please refer to the following documents, Resolution 2014-45 and 2016-2017 Records Retention Schedule, for document retention guidance. Following are general types of information to track starting from activation of the Emergency Operations Plan throughout the response and into the recovery period:

Following are a list of information to be recorded:

DOCUMENT	DESCRIPTION
Sample forms are located in Attachment J of this document	
1. Memorandum of Understanding with Vendors	Sample Memorandum of Understanding to facilitate resource acquisition.
2. EOC Sign-In Sheet	EOC Check-in/Check-out form
3. Event Log	A document to capture a timeline of events
4. Message Form	Messages to be recorded during communication
5. Situation Status Report	A template for reporting the current status
6. EOC Action Plan Template	A template for developing an EOC Action Plan
7. EOC Organization Chart	Names and positions of staff in the EOC
8. IRWD Photo Inspection Form	A form to record essential information about phots taken during the emergency response
9. Orange County Operational Area Damage Assessment Form	An assessment form for reporting damage to the Orange County Operational Area through WebEOC
10. After-Action Report Template	A template After-Action Report based on CalOES' reporting requirements
11. Sample Delegation of Authority	A template for authorizing delegations of authority from principals to successors or designees
12. IRWD Damage Assessment Checklist	A checklist for damage assessment to IRWD's systems, facilities, and equipment

Personnel Tracking

Document labor costs. Maintain detailed timesheets of labor costs that distinguish emergency from permanent work and regular time from overtime. This information can be compiled into reports from time tracking systems or recorded in ICS Form 211. Describe compensation in your personnel policy, including overtime during disasters to help inform personnel and ensure timely cost recovery.

Task Tracking

Messages recorded during face-to-face conversations, phone, or radio calls, and transcribed from phone texts. This can be recorded in an incident management software program or application, within another system, or in an Activity/Unit Log (based on the ICS 214 form.)

Cost Tracking

Establish disaster-related accounting codes to capture, track, and report all disaster-related costs. Document material purchases. Track in-stock supplies and caches used, as well as the cost to replace them.

Document equipment usage time. Maintain detailed logs that separate emergency work from permanent work. Remember to account for equipment damage/extraordinary use and small fixed asset machines (e.g., compressors or welders). These can be reported using District systems and forms including the Truck/Equipment Inspection form or using the Resource Status Change (based on ICS Form 210.)

Maintenance/Repair Tracking

Maintain thorough pre-disaster maintenance records for permanent facilities, and an inventory of facility contents and emergency supplies.

Document emergency work before a federal declaration of disaster. Changing circumstances as an incident unfolds may dictate that FEMA decides to issue a declaration of disaster. If this happens, emergency work completed before the declaration of disaster may become eligible for reimbursement.

For more information, documents like the United States Environmental Protection Agency's *Reimbursement Tips for Water Sector Emergency Response and Recovery* can help.

3. Implement Standing Objectives

During the initial phase of the operation, the EOT will use the following standing objectives to guide its actions:

1. **Establish Priorities and Implement Tactical Actions**
    a. Protect life, health, and safety
    b. Minimize impacts to essential business functions
    c. Protect property/assets
    d. Identify regulatory risks
    e. Protect brand image and reputation

2. **Develop Situational Awareness**
    a. Collect incident information
    b. Gather information from other sources
    c. Analyze information
3. **Identify, Acquire and Allocate Critical Resources**
    a. Acquire and/or allocate critical resources locally
    b. Provide support to teams in the field
    c. If the incident expands, request additional resources through WEROC
4. **Manage Information**
    a. Monitor actions taken by local organizations and agencies related to the incident
    b. Monitor traditional and social media agencies' actions about the incident
    c. Identify IRWD direct communication channels to the public with the PIO
    d. Keep public informed of decisions and actions as appropriate or required
5. **Coordinate with Other Utility Providers and Government Agencies**
    a. Keep local, Operational Area, state, and federal officials informed of decisions and actions as required
    b. Inform WEROC of the emergency and coordinate with other water utilities through WEROC
6. **Coordinate with Other Private and Non-Governmental Organizations**
    a. Coordinate with other critical infrastructure service providers including Southern California Edison (SCE), The Gas Company (SoCal Gas), and telecommunication providers
    b. Coordinate with third-party contractors and service providers

4. Assess the Situation

EOT members will work with IRTs and all other sources of information to obtain information on the incident(s) taking place and their effects:

1. The health, safety, and welfare of IRWD staff, other personnel, vendors, and customers
2. Damage to the water, collections and recycled water systems, facilities including security, site and building infrastructure, equipment, and customer facilities
3. Information provided by local public safety agencies responding to the event
4. Interruption to business functions
5. Questions from local media

The EOT will collect this information along with information from other sources to develop an initial assessment of the situation. The EOT will provide information updates to the Policy Group and the IRTs.

Maintaining situational awareness is essential to EOT operations throughout the lifecycle of an emergency. These activities will continue through both the Initial and Management Phases of the Action Planning Cycle.

Managed Phase Actions

Effective planning and implementation are the foundation for a successful response to, and recovery from, incidents. The actions in the EOC Action Planning Cycle are repeated across Operational Periods as

required for the duration of the emergency.

1. Conduct Strategy & Tactics Meeting

The Planning Section Coordinator (PSC) will facilitate Strategy and Tactics meetings. A scribe will be appointed and an Activity Log will be initiated to capture critical decisions, assignments, and expected timeline of events.

Following is a sample agenda for the meeting:

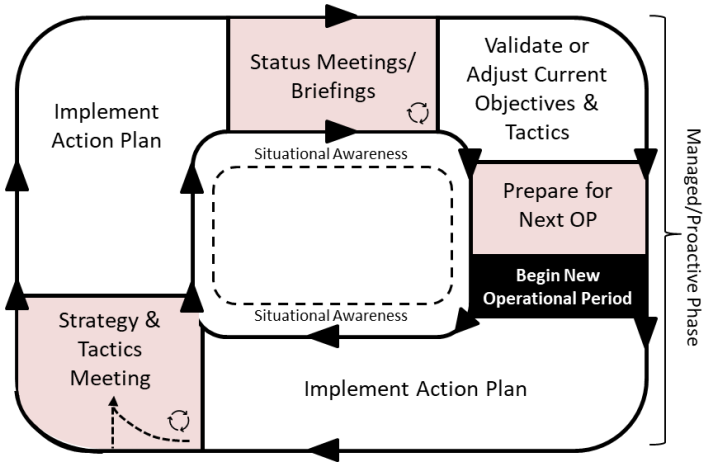


Figure 5.4: Managed Phase Actions

1. Hold roll call
2. Conduct initial briefing of and review situational assessment
3. Assess current impacts
4. Beginning with Standing Objectives, revise, create, or remove objectives (customize objectives to be specific to the incident)
5. Determine what tactics will be used to achieve the objectives, including contingencies
6. Identify current available resources and needed resources
7. Define best and worst probable outcomes
8. Identify, prioritize, and document initial issues
9. Develop an EOC Action Plan based on the chosen strategy
10. Confirm appropriate team(s) and team members available for response or escalate
11. Assign action items
12. Identify any known request for information from local media organizations
13. Summarize issues and actions
14. Schedule next meeting time(s)

This meeting should be informed by the current Situation Assessment and verified facts , be brief, and result in specific action items and identify individual responsibilities for follow-up on the action items. Strategy and Tactics Meetings may be conducted more than once during an Operational Period as the incident evolves.

2. Implement EOC Action Plan

In between meetings, EOT members are expected to be managing the incident in accordance with the Action Plan. This may involve communicating and coordinating issues, decisions, and action items with their respective departmental staff and response team members.

Following is a list of recommended tasks for EOT members:

1. Perform assigned action items from the EOC Action Plan
2. Provide information updates to the Planning Section

3. Communicate and coordinate with other team members
4. Communicate and coordinate with department staff
5. Research and gather information
6. Reassess and refine tactical plans and assign tasks
7. Identify, acquire, and allocate needed resources

3. Conduct Follow-up Meeting(s) and Briefing(s)

Subsequent team meetings conducted by the EOT Director, Planning Section Coordinator, or alternate are held to, periodically and systematically, review the current situation, provide information updates, and adjust the EOC Action Plan as required. A sample agenda for a follow-up meeting is included below:

1. Provide briefing on the current situation
2. Facilitate updates by EOT Sections and Management Section staff (limited to 2-3 minutes per Section Coordinator or Officer)
3. Assess/update objectives
4. Review/update best and worst possible outcomes
5. Re-evaluate plan and revise as necessary
6. Evaluate resource requirements
7. Update status of outstanding issues
8. Identify request for information from media organizations
9. Assign action items
10. Set next meeting

Follow-up Meetings and Briefings may be conducted more than once during an Operational Period as the incident evolves. They should be very brief (a few minutes).

4. Implement EOC Action Plan

Following regularly held meetings and briefings, the EOC Action Plan will be updated as appropriate. Just as following the Strategy and Tactics Meeting, EOT members are expected to manage the incident in accordance with the Action Plan.

5. Prepare for Next Operational Period

If an event extends for a prolonged period of time, the EOC Director will decide when the current EOT members will be relieved by a replacement team. At the time of replacement, the current Operational Period will end, and a new Operational Period will begin. The current EOT will prepare for the hand-over by designating and contacting replacement staff and briefing them on the current situation and status of their action items. A current EOC Action Plan will be provided to the incoming staff to guide their efforts as they begin the next Operational Period. The contents of the Action Plan will be communicated to incoming staff during a transition briefing (a.k.a. Operational Period Briefing).

Generally, EOT members will be expected to be on duty for an 8 - 12-hour operational period, and be available for an indeterminate number of days, depending upon the nature and scope of the event. This will require that they work with their day-to-day supervisors to identify individuals to whom they can delegate their day-to-day activities in their respective departments during their absence so they can concentrate on the emergency tasks at hand.

6. Transfer of Command

Transfer of Command is the process of moving the responsibility for incident command from one EOC Director or Incident Commander to another. Transfer of Command may take place for several reasons, including: an organization is legally required to take command; change of command is necessary for effectiveness or efficiency; incident complexity changes; there is a need to relieve personnel on incidents of extended duration; and personal emergencies arise. The Transfer of Command should take place face-to-face and include a complete briefing that captures essential information for continuing safe and effective operations. The time and date of transfer should be communicated to all personnel involved in the incident; from that point forward, the chain of command changes and should be followed.

C. RESOURCE MANAGEMENT

IRWD employs the resource management principles of the National Incident Management System (NIMS) in times of crisis and is compliant with California's Standardized Emergency Management System (SEMS). The NIMS strategy consists of seven (7) steps/activities (as shown in Figure 5.5) along a cycle that begins with preparedness, facilitates response and recovery, and concludes with IRWD positioned with resources to respond to the next incident.

The first phase (Inventory and Credential) occurs as a preparedness activity before an incident occurs—positioning IRWD to successfully manage resources by having a complete understanding of its current resources; and thereby an understanding of where shortfalls may exist as well. The other six (6) phases (Identify Requirements, Order and Acquire, Mobilize, Track and Report, Recover/Demobilize, and Reimburse) occur in support of an incident response or recovery effort.

The process applies to all categories of resources, including, but not limited to: equipment, supplies, services, facilities, transportation, and personnel. These resource management steps are applicable in all activations regardless of magnitude and across all IRWD departments. Each of the post-incident steps/activities is unique to a resource, not to a period of time. As a result, IRWD may be performing multiple phases of this cycle simultaneously for individual resources. For example, it may be tracking and reporting on one resource while ordering and acquiring others.

The resource management cycle is applied to all emergency activations, because:

- The incident may be beyond IRWD's control, capabilities, expertise, or resources.
- A city, County, or State Proclamation or Federal Declaration may be in place or in process triggering SEMS requirements for resource management.
- Multiple IRWD departments or external agencies/organizations may be competing for the same limited resources.
- The incident may present unwanted opportunities for duplications, errors, and omissions.
- Information may be incomplete or inaccurate.
- Time may be of the essence.

An effective and holistic resource management strategy will ensure the timely access to, and allocation of, critical resources for the mitigation of the threat or hazard, preservation of property/systems/infrastructure, environmental remediation, business continuity, and recovery/reconstruction missions. It will also ensure limited resources are prioritized for the greatest good. It is the responsibility of the EOT to facilitate the resource management process.

For more information, see IRWD's Resource Management Standard Operating Procedure (SOP).



Figure 5.5: NIMS Resource Management Lifecycle

D. RECOVERY

The goal of the recovery phase of an emergency is to restore Irvine Ranch Water District to its pre-disaster condition or to a new and improved steady state. IRWD can help the individuals, families, and communities it serves to recover by restoring water service as soon as possible. Please refer to Appendix F for guidance on developing a recovery plan.

1. Start of the Recovery Phase

While immediate life/safety and response activities are occurring, the EOT will simultaneously assess how soon the recovery phase can begin. The recovery phase will begin concurrently with, or shortly after, the start of the response phase of the emergency. IRWD may need to assign additional or new staff to manage recovery operations while EOT members remain focused on the response.

Recovery occurs in two phases, short-term and long-term recovery. The goal of short-term recovery is to restore IRWD services to a minimal capacity. The goal of long-term recovery is to restore operations to pre-disaster conditions or a new, improved steady state.

2. Short-Term Recovery

Short-term recovery will begin concurrently with, or shortly after, the start of the response phase of the emergency. Although it is referred to as "short-term," these activities may last for weeks.

The key objectives for short-term recovery are:

- Debris removal and clean-up
- An orderly and coordinated restoration of water and wastewater systems (may include temporary workarounds)
- Restoration of critical IS network and enterprise systems

3. Long-Term

As the emergency deescalates, activities will transition from response and short-term recovery to long-term recovery. Long-term recovery continues the short-term recovery actions but focuses on restoring IRWD operations to pre-disaster conditions or a new, improved steady state. Long-term recovery may continue for a number of months or years depending on the severity and extent of the damage sustained.

The key objectives for long-term recovery are:

- Full restoration of potable water, collections, and recycling operations
- Full recovery of IS network and enterprise systems
- Repair and/or reconstruction of IRWD facilities
- Recovery of disaster response costs
- Integration of mitigation strategies into the recovery efforts

E. DEACTIVATION

As the emergency deescalates, the EOC Director will determine which team members are able to demobilize and when the EOC can be deactivated. The EOT and IRTs will demobilize when:

1. The incident no longer requires inter-department or inter-agency coordination
2. Team leaders determine that sufficient resources and assistance are in place for recovery
3. All incident issues are addressed
4. All incident actions have been assigned and completed
5. Key information has been passed to recovery personnel
6. A Recovery Team has been established

Deactivation can occur in phases to match the pace of a deescalating incident so that as less coordination is required, the EOT, IRT, and PG staffing is reduced to match the demand. The EOC Director will make the recommendation to deactivate the EOC to the Policy Group. The Policy Group and the EOC Director should approve this decision before deactivation begins. In some cases, specific EOT members may remain to support staff responsible for executing long-term recovery activities. The EOC Director will create a Demobilization Plan that ensures a smooth transition to deactivation.

Once the decision to deactivate is made, the EOC Director will brief all EOC staff. The briefing should include, but is not limited to:

- Closing information regarding the event
- The Demobilization Plan
- Any duties and assignments that follow deactivation
- The sequence in which staff will be released and proper checkout, debriefing, document collection, and evaluation procedures

SECTION FIVE: EOC OPERATIONS

The EOC Coordinator will assist the EOC Director and Section Coordinators in the deactivation process . Each staff member should refer to their function checklists as a guide as well as any specific actions that the EOC Director has assigned.

The Safety & Security Staff or EOC Activation Team is responsible for restoring the facility to its pre-activation condition and securing the facility and its equipment.

F. POST-EVENT ASSESSMENT

The Post-Event Assessment focuses on activities that went well and those that can be improved for future emergencies. Following the deactivation of the emergency operation, the members of the EOT and IRTs who participated in the management of the emergency are to conduct an assessment within 30 business days of the emergency being declared over.

Performing this assessment is not an optional activity; it is a vital component of SEMS and NIMS. The EOC Director will require members of the Policy Group, EOT and IRTs to participate. The assessment may also engage third-parties and other government agency emergency response personnel.

The Post-Event Assessment is comprised of two parts:

1. After Action Report
2. Corrective Action Plan

Both parts must be completed to assure continuous improvement!

1. After-Action Report

The After-Action Report includes the following concepts:

- Executive summary
- Description of the incident
- Discussion of response including a summary chronology of significant events
- Agencies involved in the response
- Mutual assistance requested and provided (if applicable)
- Recovery activities to date
- Things went well/strengths
- Recommendations for improvement
- Conclusion

An After-Action Report Form based on CalOES' sample is included in the Attachment J.

2. Corrective Action Plan

Based on the After-Action Report, the Corrective Action Plan takes the lessons learned and recommendations for improvement and presents corrective actions that IRWD is committed to taking that will improve its preparedness for future emergencies. Corrective actions may be related to planning, organizing/staffing, equipping, training, or exercising.

SECTION FIVE: EOC OPERATIONS

The Corrective Action Plan will assign a position/department to be responsible for each action and designate a time frame for implementing the improvement.

G. MAINTENANCE AND TRAINING UPDATES

Lessons learned and recommendations for improvement will be incorporated into this EOP, as appropriate, and into future emergency preparedness training. This EOP will be reviewed and updated after every activation event, exercise, or, at a minimum, annually.

Safety & Security Staff will be responsible for plan updates and publish them on an annual basis. All notes, changes, or updates will be documented in the "Record of Changes" table at the beginning of this plan.

Safety & Security Staff will also make the necessary changes to training plans and documentation.

IRVINE RANCH WATER DISTRICT

EMERGENCY OPERATIONS PLAN

APPENDICES, ATTACHMENTS, and ANNEXES

September 2025

Irvine Ranch Water District

WARNING: FOR OFFICIAL USE ONLY

Information contained in this document is exempt from FOIA (Exemption 2) and the California Public Records Act, in Government Code Sections 6254(k) and 6255.

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APPENDICES

APPENDICES

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APPENDICES

A. GLOSSARY OF TERMS

The glossary contains definitions of terms commonly used in the Standardized Emergency Management System (SEMS) and the National Incident Management System (NIMS). Becoming familiar with these terms will assist IRWD emergency teams in performing their specific function throughout the disaster operational period.

Activation	The necessary action(s) taken by the IRWD to activate the Emergency Operations Plan and the EOC in response to an emergency.
After-Action Report	A report covering EOC activities / response actions, application of SEMS, modifications to plans and procedures, training needs, and recovery operations. For IRWD, this report is prepared by the Emergency Coordinator with assistance from the EOT and IRT.
American Red Cross	A federally chartered volunteer agency that provides disaster relief to individuals and families. Major responsibilities include providing lodging, food, clothing, and registration and inquiry service.
Area Command	Area Command is an organization established (1) to oversee the management of multiple incidents that are being handled by an Incident Command System (ICS) organization or (2) to oversee the management of large or multiple incidents to which several Incident Management Teams have been assigned. Area Command has the responsibility to set overall strategies and priorities, allocate critical resources according to priorities, ensure that incidents are properly managed, and ensure that objectives are met, and strategies followed. Area Command becomes Unified Area Command when incidents are multi-jurisdictional Area Command may be established at an emergency operations center facility or at some location other than an incident command post.
California Emergency Council	The official advisory body to the Governor on all matters pertaining to statewide emergency preparedness.
California Emergency Organization	Civil government organized and augmented or reinforced during an emergency by auxiliaries, volunteers, persons pressed into service, the private sector, and community-based organizations.
Chain of Command	A series of management positions in order of authority.
Check-in	The process whereby pre-assigned EOT Staff “officially report in” to their EOC location for briefing and to assume a specific function following activation of the EOC.
Checklist	A list of actions taken by an element of the emergency organization in response to a particular event or situation.
Concept of Operations	A general notion of the methods agencies use to organize their response to disasters (such as mutual aid and the Standardized Emergency Management System). Disasters typically progress through identifiable phases and certain responses are appropriate during each of these phases.

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Contamination	Deposits of radioactive or other toxic materials that occur on the surfaces of structures, area, objects, people's bodies, flora, and fauna.
Contingency Plan	A sub or supporting plan which deals with one specific type of emergency, its probable effect on the jurisdiction, and the actions necessary to offset these effects.
Coordination	This can be intra-agency, interagency and/or Multi-agency. This process is found at all SEMS levels and is the most efficient and cost-effective way to meet specific objectives in support of the disaster response.
Damage Survey Report	Under 206.202 of CFR 44, a Damage Survey Report is prepared by an inspection team. The team is accompanied by an authorized local representative who is responsible for representing the applicant and ensuring that all eligible work and costs are identified. A Damage Survey Report Data Sheet (FEMA Form 90-91) is prepared for each site with damage over a specified amount established by regulation.
Deactivation	The process of closing down EOC operations. This may be accomplished as one action or a series of actions i.e., section by section within the EOC by authority of the EOC Director. Deactivation will be initiated based upon the status of the disaster operation and water agency support needs.
Disabilities and Access and Functional Needs (DAFN)	The State of California describes people with disabilities and access and functional needs as: Access and functional needs (AFN) refers to individuals who are or have: • Physical, developmental or intellectual disabilities • Chronic conditions or injuries • Limited English proficiency • Older adults • Children • Low income, homeless and/or transportation disadvantaged (i.e., dependent on public transit) • Pregnant women
Disaster	A sudden calamitous emergency event bringing great damage loss or destruction over a wide area affecting the entire population of one or more counties.
Disaster Field Office (DFO)	A central facility established by the Federal Coordinating Officer within or adjacent to an affected area. DFOs are used to coordinate and control State and Federal efforts which support disaster relief and recovery operations.
Disaster Service Worker (DSW)	Any persons registered with a disaster council or State OES to provide disaster service without pay. Disaster service workers include public employees, registered volunteers, and person pressed into service during an emergency by persons authorized to command such services. As a government agency, all IRWD employees are considered DSWs.
Disaster Support Area	A special facility where disaster relief resources can be received, stockpiled, allocated, and dispatched. A separate portion of the area may be used to receive and provide emergency treatment to casualties and for their transfer to adequate medical care facilities.

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Documentation Unit	An ICS functional unit within the Emergency Response Planning Section of the EOC responsible for collecting, recording and safeguarding all documents relevant to the EOC operational period.
Emergency	A condition of extreme peril to the safety of persons and/or property caused by such conditions as fire, flood, hazardous material incident, sudden and severe energy shortage, etc. This condition may affect one or more water agencies but would not be considered on the level of a disaster.
Emergency Operations Center (EOC)	A location from which centralized emergency management can be performed. EOC facilities are established by an agency or jurisdiction to coordinate the overall agency or jurisdictional response and support to an emergency or disaster.
Emergency Management	The provision of overall operational control or coordination of emergency operations at each level of the California Emergency Organization, whether by the actual direction of field forces or by the coordination of joint efforts of governmental and private agencies.
Emergency Operations	The actions taken during the emergency period to protect life and property, care for the people affected, and temporarily restore essential community services.
Emergency Operations Plan	The Plan that each agency or jurisdiction has developed and maintains for responding to appropriate hazards.
Emergency Response Agency	Any organization responding to an emergency, or providing mutual aid support to such an organization, whether in the field, at the scene of an incident, or to an emergency operations center.
Emergency Response Personnel	Personnel involved with an agency's response to an emergency.
Emergency Coordinator	The individual within each jurisdiction that is delegated the day-to-day responsibility for the development and maintenance of all emergency management coordination efforts.
EOC Director	The individual responsible for all response activities within the assigned EOC throughout the operational period.
Federal Agency (Federal definition)	Any department, independent establishment, government corporation, or other agency of the Executive Branch of the Federal Government, including the United States Postal Service, but not the American Red Cross.
Federal Assistance (Federal definition)	Aid to disaster victims or State or local governments by federal agencies under the provisions of the Federal Disaster Relief Act (P.L. 93-288), the Stafford Act and other statutory authorities of federal agencies. The Federal Disaster Relief Act, PL 93-288, was amended by the Stafford Act which was signed into law November 23, 1988.
Federal Disaster Relief Act	See Stafford Act.

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Federal-State Agreement	A legal document entered into between the State and the federal government following a Presidential Declaration of an Emergency or Major Disaster. Executed by the Governor, acting for the State, and the Federal Emergency Management Agency (FEMA) Regional Director, acting for the Federal Government, the agreement shall contain the necessary terms and conditions consistent with the provisions of applicable laws, executive orders and regulations, as required and set forth by the type and extent of federal assistance to be provided.
Finance /Administration Section	One of the five primary functions found at all SEMS levels which is responsible for all costs and financial considerations associated with an agency's disaster operation.
Function	Describes the activity involved, e.g., "the Operations function" for the five major EOC levels (Management, Operations, Incident Response Planning, Logistics, and Finance/Administration) used in the Incident Command System (ICS).
Hazard	Any source of danger or element of risk to people or property.
Hazardous Material	A substance or combination of substances which, because of quantity, concentration, physical, chemical, radiological, explosive, or infectious characteristics, poses a substantial present or potential danger to humans or the environment. Generally, such materials are classed as explosives and blasting agents, flammable and nonflammable gases, combustible liquids, flammable liquids and solids, oxidizers, poisons, disease-causing agents, radioactive materials, corrosive materials, and other materials including hazardous wastes.
Hazardous Material Incident	Any release of a material (during its manufacture, use, storage, or transportation) which is capable of posing a risk to health, safety, and property. Areas at risk include facilities that produce, process, transport, or store hazardous material, as well as all sites that treat, store, and dispose of hazardous material.
Homeland Security Presidential Directive/ HSPD-5	Establishes a single, comprehensive national incident management system (later to become NIMS).
EOC Action Plan (IAP)	An oral or written plan containing general objectives reflecting the overall strategy for managing an incident. It may include the identification of operational resources and assignments. It may also include attachments that provide direction and important information for management of the incident during one or more operational periods. As referenced in the IRWD Emergency Plan, the EOC Action Plan refers to the plan developed at the Emergency Operations Team.
Incident Commander (IC)	The individual responsible for the command of all functions at the field response level.
Incident Command Post (ICP)	The location at which the primary command functions are executed. The ICP may be collocated with the incident base i.e., water district admin. headquarters or other incident base or other incident facilities.
Incident Command System (ICS)	The nationally used standardized on-scene emergency management concept specifically designed to respond to single or multiple incidents without being hindered by jurisdictional boundaries. This system allows for facilities, equipment, personnel,

	procedures and communications to operate within a common organizational structure which is understood by all participants, in managing the incident.
Incident Objectives	Statements of guidance and direction for planning appropriate actions to be taken in response to the disaster situation(s). They are based on realistic expectations of what can be accomplished when all allocated resources have been effectively deployed. The EOC Action Plan utilizes incident objectives in formulating strategies and the movement of resources.
Joint Information Center (JIC)	A facility established to coordinate all incident-related public information activities. It is the central point of contact for all news media at the scene of the incident. Public information officials from all participating agencies should collocate at the JIC.
Joint Information System (JIS)	Integrates incident information and public affairs into a cohesive organization designed to provide consistent, coordinated, timely information during crisis or incident operations. The mission of the JIS is to provide a structure and system for developing and delivering coordinated interagency messages; developing, recommending, and executing public information plans and strategies on behalf of the incident commander (IC); advising the IC concerning public affairs issues that could affect a response effort; and controlling rumors and inaccurate information that could undermine public confidence in the emergency response effort.
Jurisdiction	The range or sphere of authority. Public agencies have jurisdiction at an incident related to their legal responsibilities and authority for incident mitigation. Jurisdictional authority at an incident can be political / geographical (e.g., special district, city, county, state or federal boundary lines), or functional (e.g., police department, health department, etc.)
Jurisdictional Agency	The agency having jurisdiction and responsibility for a specific geographical area, or a mandated function.
Liaison	A member of the EOC Management Staff responsible for coordinating with representatives from cooperating and assisting agencies.
Local Emergency (State definition)	The duly proclaimed existence of conditions of disaster or of extreme peril to the safety of persons and property within the territorial limits of a county, city and county, or city, caused by such conditions as air pollution, fire, flood, storm, epidemic, riot, earthquake, or other conditions which are, or are likely to be, beyond the control of the services, personnel, equipment, and facilities of a political subdivision and require the combined forces of other political subdivision to combat.
Local Government (Federal definition)	Any county, city, village, town, district, or other political subdivision of any state, any Indian tribe or authorized tribal organization, or Alaskan native village or organization that includes any rural community or incorporated town or village or any other public entity for which an application for assistance is made by a state or political subdivision thereof.
Local Government Emergency Planning Guidance	A document which lays a foundation for emergency response planning for counties, cities, as well as other political subdivisions.

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Logistics Section	One of the five primary functions found at all SEMS levels responsible for identifying and providing services and materials needed in support of the operation.
Major Disaster (Federal)—see also Emergency	Any hurricane, tornado, storm, flood, high water, wind-driven water, tidal wave, tsunami, earthquake, volcanic eruption, landslide, mudslide, snowstorm, drought, fire, explosion, or other catastrophe which in the determination of the President, causes damage of sufficient severity and magnitude to warrant major disaster assistance under the Federal Disaster Relief Act.
Master Mutual Aid Agreement	The California Disaster and Civil Defense Master Mutual Aid Agreement made and entered into by and among the State of California, its various departments and agencies, and the various political subdivisions of the State. The agreement provides for support of one jurisdiction by another.
Media	All means of providing information and instructions to the public, including radio, television, newspapers, websites and social media.
Mitigation	Pre-event planning and other actions which lessen the effects of potential disasters. (See also Comprehensive Emergency Management).
Mutual Aid	Mutual Aid occurs when two or more parties (or agencies) agree to furnish resources, services, personnel, facilities, etc., to each other in support of the emergency or disaster response. Mutual Aid among agencies is best carried out when pre-disaster Mutual Aid Agreements are prepared, specifying what resources are on hand, how they will be made available to the requesting agency, reimbursement costs involved, etc.
Mutual Aid Agreement	An agreement authorized under the Emergency Services Act, in which two or more parties agree to furnish resources and facilities and to render services to each and every other party of the agreement to prevent and respond to any type of disaster or emergency.
Mutual Aid Region	A subdivision of the State emergency services organization established to coordinate mutual aid and other emergency operations.
Multi-Agency or Inter-Agency Coordination (MAC)	The participation of agencies and disciplines involved at any level of the SEMS organization working together in a coordinated effort to facilitate decisions for overall emergency response activities.
National Incident Management System (NIMS)	A system mandated by HSPD 5 that provides a consistent nationwide approach for Federal, State, local, and tribal governments; the private-sector, and nongovernmental organizations to work effectively and efficiently together to prepare for, respond to, and recover from domestic incidents, regardless of cause, size, or complexity. To provide for interoperability and compatibility among Federal, State, local, and tribal capabilities, the NIMS includes a core set of concepts, principles, and terminology. HSPD 5 identifies these as the ICS; multiagency coordination systems; training; identification and management of resources (including systems for classifying types of resources); qualification and certification; and the collection, tracking, and reporting of incident information and incident resources.

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National Response Plan (NRP)	The National Response Plan is an all-discipline, all-hazards plan that establishes a single, comprehensive framework for the management of domestic incidents. It provides the structure and mechanisms for the coordination of Federal support to State, local and tribal incident managers and for exercising direct Federal authorities and responsibilities.
National Warning System (NWS)	The federal portion of the civil defense warning system, used to disseminate warning and other emergency information from the warning centers or regions to warning points in each state.
Office of Emergency Services (OES)	Part of the Governor's office, the primary State agency responsible for the coordination and administration of statewide operations to support emergency mitigation, preparedness, response, and recovery activities within California.
Operational Area (OA)	An intermediate level of the state emergency organization, consisting of a county and all political subdivisions within the county area.
Operational Duties	Pre-assigned tasks (usually in checklist form) to be performed by a specific function / unit at the incident or in the EOC, in response to the emergency or disaster.
Operational Period	The period of time scheduled for execution of a given set of operation actions as specified in the EOC Action Plan. Operational Periods can be of various lengths, although usually not over 24 hours. IRWD has set the Operational Period to be 12 hours.
Operations Section	One of the five primary functions found at all SEMS levels. This Section is responsible for all tactical operations at the incident or for the coordination of operational activities at an EOC. It may be supported by branches or units with specific technical expertise as needed in response to the emergency situation.
Plan	As used by OES, an emergency management document which describes the broad, overall jurisdictional response to potential extraordinary emergencies or disasters.
Emergency Response Planning Section	One of the five primary functions found at all SEMS levels. Responsible for the collection, evaluation, and dissemination of information related to the emergency or disaster, and for the preparation and documentation of EOC Action Plans. This Section may include Situation Status i.e., Runners & Plotters, Communications, and Documentation units.
Policy Group	Members of the IRWD Executive Management Team which may include policy level advisors such as outside counsel.
Political Subdivision (California Emergency Services Act definition)	Any city, city and county, county, district, or other local government agency or public agency authorized by law.
Public Information Officer (PIO)	The function at field or EOC level that is responsible for preparing public information releases and interacting with the media throughout the operational period.

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Regional Emergency Operations Center	The Regional Emergency Operations Center is the first level facility of the Office of Emergency Services to manage a disaster. It provides a single consistent emergency support staff operating from a fixed facility, whose staff are responsible to the needs of the operational areas and coordinates with the State Operations Center.
Safety & Security Officer	The function at the field or EOC level responsible for monitoring and assessing safety hazards or unsafe conditions, and for developing measures for ensuring personnel safety. At the EOC level, this function reports directly to the EOC Director but may coordinate duties with other functions. This function may have additional staff assigned to it.
Search	Systematic investigation of an area or premises to locate persons trapped, injured, immobilized, or missing.
Security Officer	The function at the field or EOC level responsible for maintaining a security perimeter, handling EOC staff check-in/check-out procedures and other related duties as assigned by the Incident Commander or EOC Director during the operational period. If necessary and practical, this function may be combined with the Safety & SecurityOfficer function. It may also have additional staff assigned to it.
Section	The organization level responsible for a major functional area within the EOC, i.e., Operations, Incident Response Planning, Logistics, Finance/Administration.
Special Districts	A unit of local government i.e., Water, School, Sanitation, Cemetery Districts, etc. These districts are part of the State Emergency Organization and as such, coordinate with the Orange County Operational Area (O.A.) and all political subdivisions i.e., incorporated Cities, in supporting disaster preparedness and response activities.
Stafford Act	Robert T. Stafford Disaster Relief and Emergency Assistance Act, PL 100-707, signed into law November 23, 1988; amended the Disaster Relief Act of 1974, PL 93-288. This Act constitutes the statutory authority for most Federal disaster response activities especially as they pertain to FEMA and FEMA programs.
Standard Operating Procedures	A set of instructions having the force of a directive, covering those features of operations which lend themselves to a definite or standardized procedure. Standard operating procedures support the EOP and annexes by indicating in detail how a particular task will be carried out.
Standardized Emergency Management System (SEMS)	A system required by California Government Code for managing response to multi-agency and multi-jurisdictional emergencies in California. SEMS consists of five organizational levels which are activated as necessary: Field Response, Local Government, Operational Area, Region, and State.
Start-up Actions	These can be either general, or specific to a particular function at the incident or in the EOC. General Start-up Actions are those taken by the first personnel to arrive. Specific Start-up Actions are those related to a particular function.
State Agency (State definition)	Any department, division, independent establishment, or agency of the executive branch of the State government.

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State Coordinating Officer	The person appointed by the Governor to coordinate and work with the federal coordinating officer.
State Emergency Plan	The State of California Emergency Plan, as approved by the Governor, which serves as the basis for statewide emergency planning and response.
Unified Command (UC)	An application of ICS used when there is more than one agency with incident jurisdiction or when incidents cross political jurisdictions. Agencies work together through the designated members of the Unified Command to establish a common set of objectives and strategies and a single Incident Action Plan.
Unit	An organizational element under ICS having functional responsibility at the incident or in the EOC. Units operate under the direction of a Section Chief.

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B. AUTHORITIES & REFERENCES

The California Emergency Plan, promulgated in accordance with provisions of the California Emergency Services Act (Act), provides statewide authorities and responsibilities and describes the functions and operations of government at all levels during extraordinary emergencies, including war. Section 8568 of the Act states in part that "the State Emergency Plan shall be in effect in each political subdivision of the state, and the governing body of each political subdivision shall take such action as may be necessary to carry out the provisions thereof." The IRWD Emergency Plan is, therefore, considered to be an extension of the State Emergency Plan.

A. AUTHORITIES

The following provide emergency authorities for conducting and/or supporting emergency operations. When dictated by the situation, additional ordinances or other emergency regulations will be enacted by the IRWD Board of Directors.

State

- California Emergency Services Act (Chapter 7 of Division 1 of Title 2 of the Government Code)
- Government Code 8607(a), and California Code of Regulations, Title 19, Division 2, Chapter 5, NDAA, Section 2900(y) Special Districts, and Sections 2400-2450 (Standardized Emergency Management System - SEMS)
- Water Code, Division 1, Chapter 2, Article I, Section 128 (California Department of Water Resources Flood Fighting)

B. REFERENCES

Local

- County of Orange Resolution, November 28, 1950, adopting the California Master Mutual Aid Agreement
- Orange County Volunteer Emergency Management Organization (VEPO) Indemnification Agreement, December 19, 1994 by and between Municipal Water District of Orange County (MWDOC)
- Coastal Municipal Water District (Coastal), Orange County Water District (OCWD) and the WEROC Member Agencies
- Operational Area Agreement of the County of Orange and Political Subdivisions (to include Special Districts) October 3, 1995
- A Resolution of the Irvine Ranch Water District adopting the IRWD Emergency Plan.

State

- California State Emergency Plan
- California Master Mutual Aid Agreement
- Government Code, Title I, Division 4, Chapter 8, Sections 3100-3109:
    1. Declares all public employees to be disaster service workers
    2. Defines disaster service worker
    3. Defines public employees (excludes aliens)
    4. Describes Loyalty Oath requirements

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Federal

- Homeland Security Act of 2002.
- Homeland Security Presidential Directive/HSPD 5*, Management of Domestic Incidents.*
- Homeland Security Presidential Directive/HSPD 8, *National Preparedness.*
- United States Department of Homeland Security (USDHS), *National incident Management System (NIMS).*
- United States Department of Homeland Security (USDHS),*National Response Plan (NRP).*

APPENDICES

C. FACILITIES

1. EOT Staff Reporting Instructions

1. IRWD staff are Disaster Service Workers and are expected to remain at work in an emergency during normal, business hours. If an emergency occurs outside working hours, staff may be called back to work.
2. If at work, make sure you are in a safe location.
3. If at home, make sure you and your family are safe.
4. Call your supervisor for instructions.
5. If you are needed at the EOC, your manager or Safety & Security staff will contact you (email, phone call, text) to report to a specified EOC.
6. DO NOT SELF-REPORT TO THE EOC!
7. Travel safely to the designated EOC.
8. Expect shifts to last as long as 12 hours during an emergency. Be prepared to stay for this period of time.
9. Check in at the EOC.

APPENDICES

Follow these steps to activate the primary or alternate EOCs.

2. EOC Activation and Deactivation Procedures	
OUTSIDE EOC/BUILDING	
☐	Visually inspect outside of the building to ensure it is safe to enter.
☐	Check for structural damage (i.e., cracks, broken glass, roof damage, building damage).
☐	Check for natural gas leak.
INSIDE EOC/BUILDING	
☐	Visually check for unsafe conditions (e.g., structural damage, overturned equipment, ceiling tiles / ducting debris on floors, etc.).
☐	Check for natural gas leak.
☐	Check if electricity is working (e.g., lights, electrical outlets).
☐	Check if water is working.
☐	**IF THE EOC IS UNSAFE FOR OCCUPANCY DUE TO EXISTING DAMAGE:** **1) EXIT THE BUILDING** **2)** Notify Manager or Supervisor **3)** Await further directions
IF EOC IS DEEMED SAFE TO CONDUCT OPERATIONS:	
☐	Set up EOC (tables, chairs, whiteboards, telephones). Refer to primary and alternate EOC setup.
☐	Retrieve and setup EOC materials and supplies from storage closet (e.g., vests, EOC manuals, etc.).
☐	Verify radios are working and confirm “Operational Status” (IRWD and WEROC).
☐	Verify telephones are operating – dial out on land line, VOIP and cell line.
☐	Verify Local Area Network, Wi-Fi and Internet are working – check email and IRWD website.
☐	Verify wall monitor/projection screen system is operational.

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2. EOC Activation and Deactivation Procedures	
☐	Set up Check-In/Check-Out location and start EOC Check-In Sheet.
☐	Report all damage or unsafe conditions to EOC Director upon arrival.
AS ADDITIONAL STAFF ARRIVE	
☐	Have staff sign Check-In sheet.
☐	Assign a person to establish communication with WebEOC.
☐	Notify IRWD staff to report to the EOC.
☐	Notify WEROC of EOC activation.
☐	Establish security and safety measures as necessary.
DURING ACTIVATION	
☐	Support Policy Group and EOT in logistical needs during activation.
☐	Provide food and beverages as necessary for Policy Group and EOT.
☐	Ensure that EOC responders relieved from duty are able to return home safely.
EOC DEACTIVATON	
☐	Support EOC Director in implementing EOC Deactivation Plan.
☐	Restore EOC to its pre-activation condition and secure the facility and equipment.

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3. EOC Locations

The designated physical EOC locations are as follows. Safety & Security along with Operations & Maintenance will determine which EOC will be activated.

EOC	LOCATION
Primary EOC	Multipurpose Room, Michelson Operations Center 3512 Michelson Drive, Irvine, CA 92612
Alternate EOC	Sand Canyon & Board Room, IRWD Sand Canyon Headquarters 15600 Sand Canyon Avenue, Irvine, CA 92618

Primary EOC Location, Michelson Operations Center, 3512 Michelson Drive, Irvine, CA

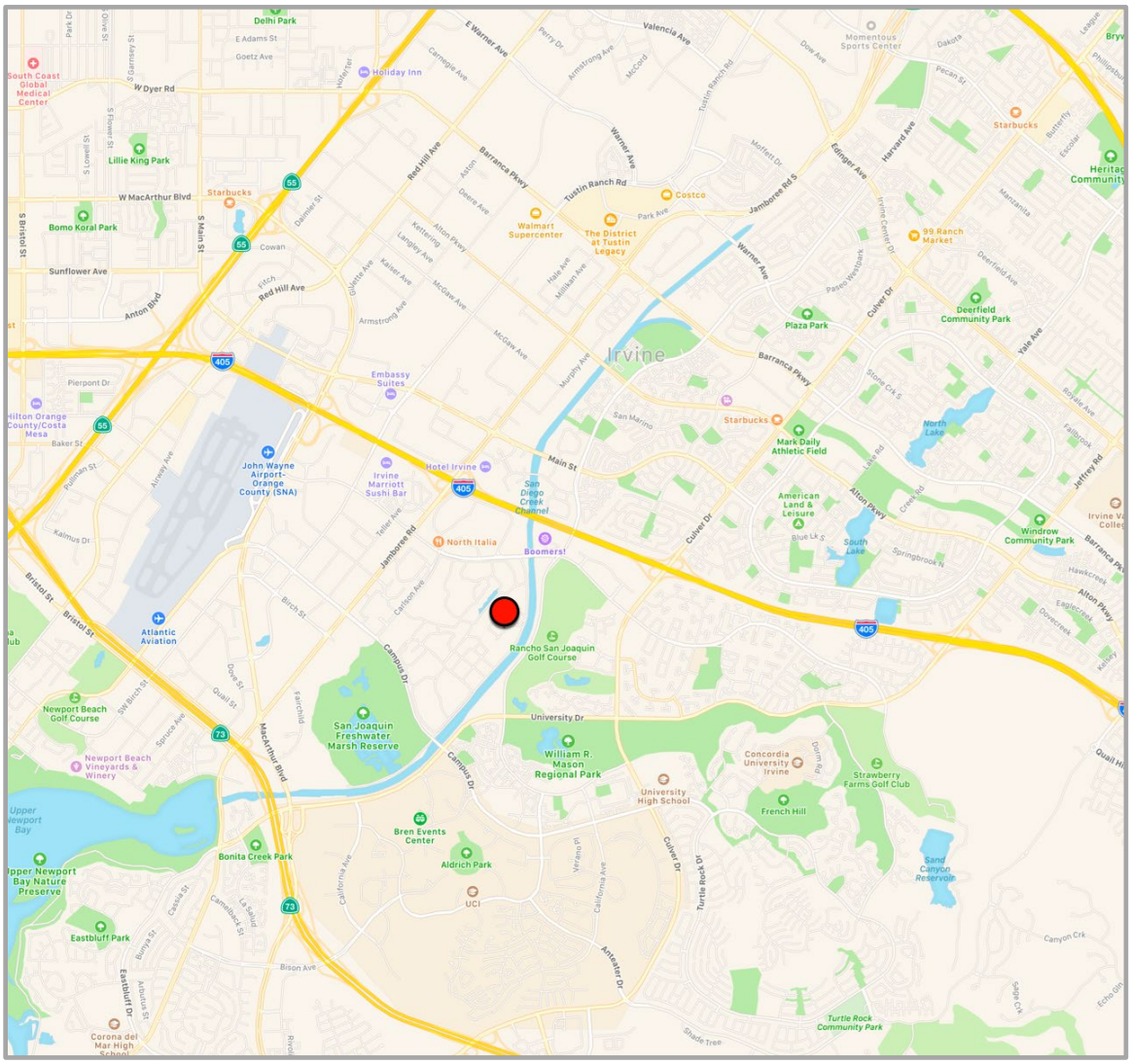


Figure 1: Primary EOC Location (Source: Apple Maps)

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Alternate EOC Location, Sand Canyon HQ, 15600 Sand Canyon Avenue, Irvine, CA 92618

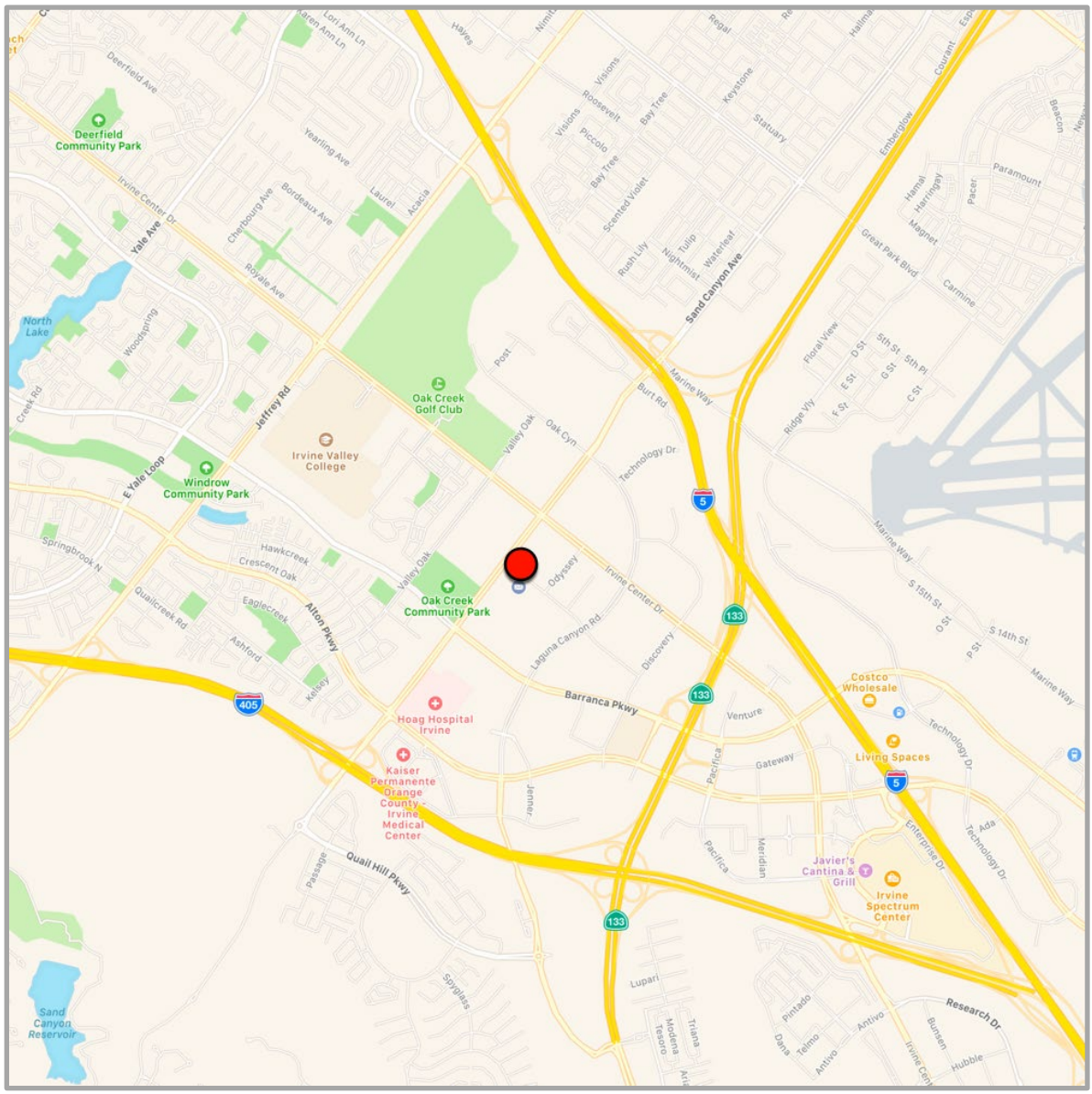
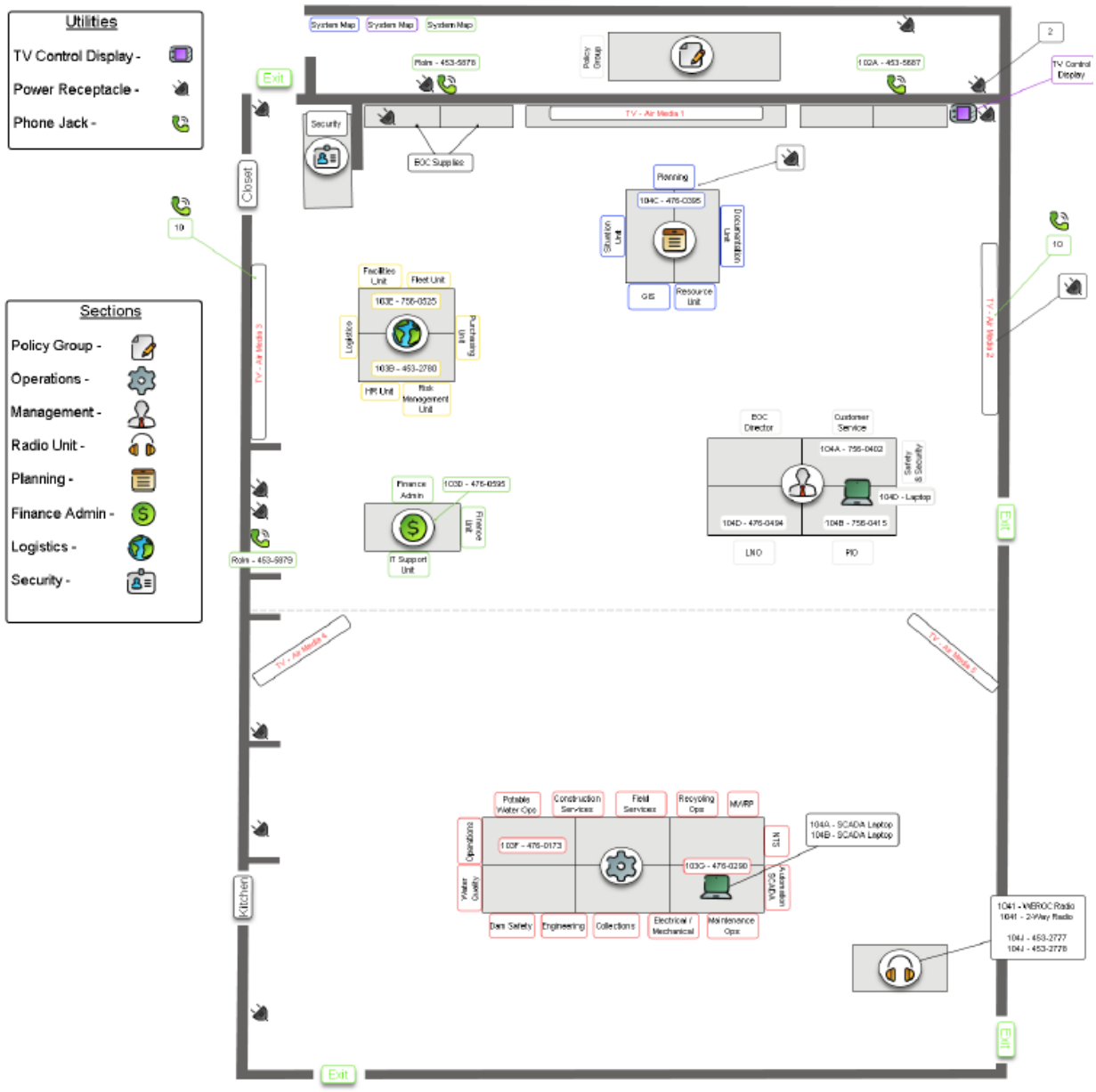


Figure 2: Alternate EOC Location (Source: Apple Maps)

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4. Primary EOC Setup for Full Activation

Figure 3: Primary EOC Floor Plan



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Following are the instructions for setting up the Primary IRWD EOC:

1. Set up tables according to the floor plan for Primary EOC.
2. Place excess tables and chairs in storage room.
3. Place boxes for each Section (i.e., Operations, Planning, Logistics, etc.) on appropriate tables.
4. Place vests over backs of chairs in the appropriate locations.
5. If necessary, access keys from the emergency key box.
6. Set up phones (located in corresponding labeled box); phone set-up instructions are posted on the inside of the EOC cabinet and are also inside the Communications box. These numbers are marked in bold on the EOC floor plan.
7. Set up District Maps.
8. Set up easels.
9. Set up Desk Signs.
10. Set up Equipment Bins.
11. Request computer systems setup from IT Department as necessary.

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5. Alternate EOC Set Up (Pending Update)

Figure 4: Alternate EOC Floor Plan

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Following are the instructions for setting up the Alternate IRWD EOC:

1. Set up tables according to the floor plan for the Alternate EOC.
2. Place excess tables and chairs in storage room.
3. Place boxes for each Section (i.e., Operations, Planning, Logistics, etc.) on appropriate tables.
4. Place vests over backs of chairs in the appropriate locations. Boxes are stored in the locked cabinet inside the Board Room Closet.
5. Set up phones (located in corresponding labeled box); phone set-up instructions are posted on the inside of the EOC cabinet and are also inside the Communications box. These numbers are marked in bold on the EOC floor plan.
6. Set up District Maps.
7. Set up easels.
8. Set up Desk Signs.
9. Set up Equipment Bins.
10. Request computer systems setup from IT Department.

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6. Radio Setup

DISTRICT 2-WAY RADIO

1. All of the necessary materials will be located in the Radio Unit Box.
2. Plug white cord into wall jack unit D60104J in the space labelled 2-Way. Out of the six jacks on this unit, the 2-Way is located at the bottom right.
3. Plug extension cord into wall outlet under cabinets.
4. Plug black cord with transformer unit into extension cord outlet.
5. Place deskset on radio correspondence desk.
6. The remaining cord is for the HEADSET CONNECTION (See diagram on the following page).

WEROC RADIO

1. If radio is unplugged, it will be located in the Liaison Box.
2. Plug white cord into wall jack unit D601041 in the space labelled WEROC. Out of the six jacks on this unit, the 2-Way is located at the middle right.
3. Plug extension cord into wall outlet under cabinets.
4. Plug black cord with transformer unit into extension cord outlet.
5. Place deskset on Liaison Desk.
6. The remaining cord is for the HEADSET CONNECTION (See diagram on the following page).
7. WEROC transmits on WNHB 735.

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7. Headset Connection

The Headset (set-up optional) allows for hands-free communications.

1. Make sure that the spiral black cord is plugged in to the headset black cord. These should also be plugged into the black box. (They should already be assembled this way in the box).
2. Take the last of the three cords from the deskset radio and plug the free end into the black box in the spot marked “Deskset”.
3. Unplug the beige spiral cord from the area on the hand receiver/transmitter marked (A).
4. Make sure that on the black box the button next to the label “IN” is in and button next to the label “OUT” is out.
5. The foot pedal is now the transmit key and it should be placed on the floor. You can also transmit using the “PTT” button on the black box if it is more comfortable or convenient.

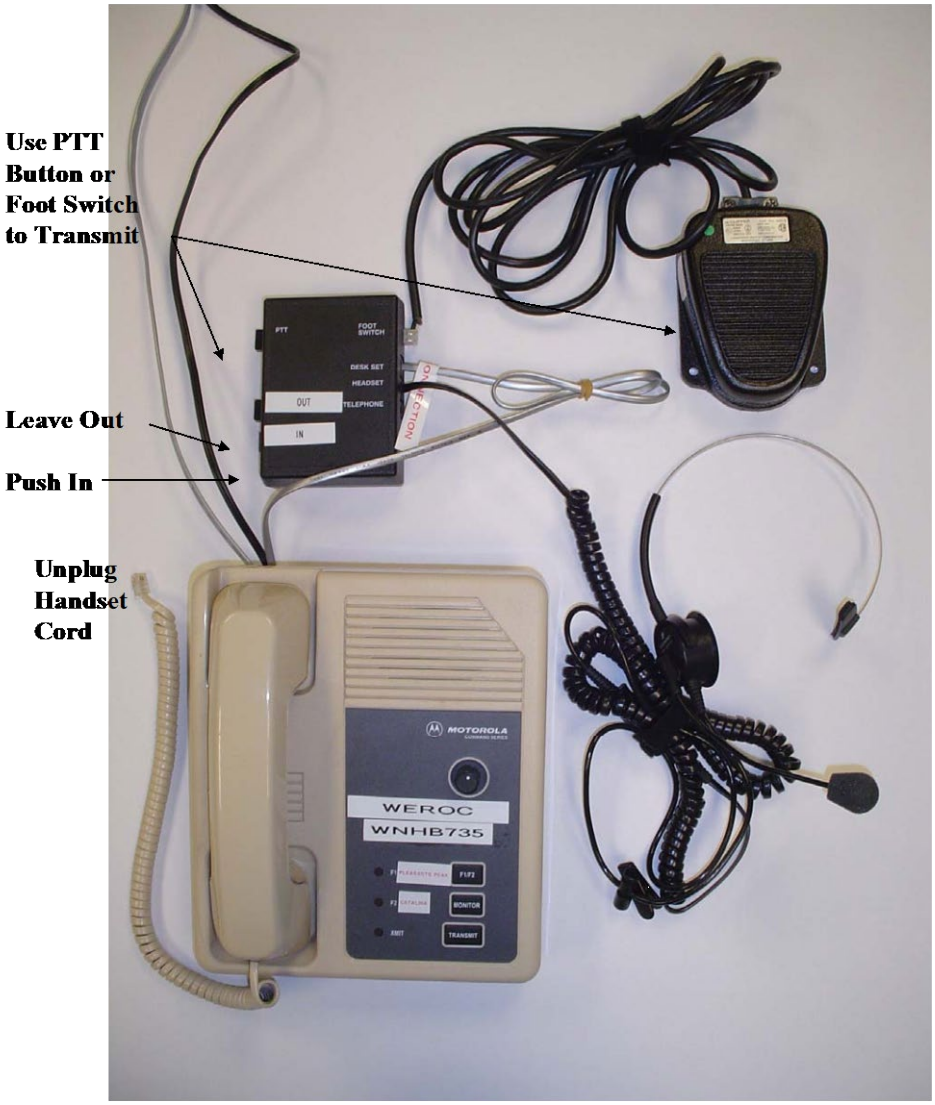


Figure 5: Headset Radio Setup

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D. FUNCTIONAL CHECKLISTS

1. Policy Group

Policy Group Director	
Response/Recovery	
☐	Call meeting of the Policy Group when required
☐	Lead, manage and coordinate the Policy Group
☐	Provide strategic oversight for the response to the emergency
☐	Approve the strategic objectives for response and recovery operations as presented by the EOT
☐	Communicate and coordinate with the EOC Director
☐	Monitor overall risk to Irvine Ranch's reputation
☐	Make policy and strategy decisions on plans and actions proposed by the EOC Director
☐	Communicate with the Board of Directors as appropriate
☐	Approve crisis communication messaging with Public Information Officer to internal and external stakeholders
☐	As requested by the Emergency Operations Team, respond to media requests for comments, press conferences and other communications
☐	Approve recommendations and action plans recommended by the EOC Director
☐	Approve decision to begin the recovery process
☐	Approve deactivation of the Emergency Operations Center and demobilization of the EOT as recommended by the EOC Director
☐	Approve release of IRWD resources
Post-Event	
☐	Represent or appoint Policy Group representative for After Action Report meeting
☐	Review and approve Corrective Action Plan

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Other Policy Group Members	
Response/Recovery	
☐	Advise the Policy Group Director on decisions and policies related to the response to and recovery from the emergency
☐	Maintain communications with department staff to ensure their safety and wellbeing
☐	Assist Policy Group Director to approve or set objectives for response and recovery
☐	Make recommendation to approve EOC Action Plan
☐	Make recommendations to Policy Group Director on IRWD request for mutual assistance and other resources
☐	Communicate with senior leadership at other water agencies as requested by the EOT and Policy Group Director
☐	Coordinate with PIO on developing messaging
☐	Interface with legal department on all issues involving potential liability
☐	Determine the need to suspend compliance to regulatory requirements during an emergency
☐	Review and coordinate approval for emergency funding
☐	Extend funding for the response and recovery effort
☐	Identify and approve requests for personnel (e.g., DSWs) and delegations of authority, if appropriate
☐	Develop and approve emergency personnel policies and practices that diverge from standard IRWD practices
☐	Work with Emergency Operations Team and HR staff to verify status of employees and contractors
☐	Notify IRWD staff or next-of-kin of employees affected by the emergency
☐	Interface with local, county, state and federal officials as appropriate
☐	Monitor local, state and federal emergency declarations and advise on the impacts and availability of resources

☐	Communicate with government officials as requested by the EOC Director or Policy Group Director
☐	Assess legal impacts of the incident
☐	Provide legal perspective on policy-setting
Post-Event	
☐	Participate in the Post-Event Assessment if requested
☐	Oversee implementing operational improvements to increase resiliency and response based on lessons learned
☐	Report on results of operational changes from the Post-Event Assessment

APPENDICES

2. Emergency Operations Team

EOT Common Actions Checklist	
Response: Startup Actions	
☐	Check in when arriving at the EOC
☐	Report to your EOT Supervisor (e.g., Branch Director, Section Coordinator, or EOC Director as appropriate)
☐	Obtain briefing from EOT Supervisor
☐	Set-up your workstation and review your position responsibilities
☐	Establish and maintain a log that chronologically describes significant actions, decisions, strategies, or coordination during your shift
☐	Determine your resource needs, such as a computer, phone, plan copies, and other reference documents
☐	Implement standing objectives
Response: Shift Change	
☐	Fully brief your relief (5 – 10 minutes) on events and status of actions being taken including in-progress and follow-up activities
☐	Turn in your logs, situation reports, records, and documentation to your replacement or the Planning Section/Documentation Unit, per instructions
Demobilization	
☐	Ensure all required forms and reports are completed (logs, reports, documents) and submitted to the Planning Section and time sheets to the Finance Section
☐	Ensure open action items are completed at deactivation
Post-Event Assessment	
☐	Participate in After-Action Report meetings as requested by the EOC Director
☐	Participate in Corrective Action Planning meetings as requested by the EOC Director

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APPENDICES

EOC Director	
Response: Startup Actions	
☐	Review EOT common actions checklist
☐	Setup Check-in procedures
☐	Obtain any Situation Status Reports or Situation Briefing
☐	Ensure EOC is set up and communications channels are established
☐	Provide incoming staff with initial objectives/directions and assignments
☐	Establish communication with the Policy Group
Response: Continuing Actions	
☐	Lead, manage and coordinate the Emergency Operations Team
☐	Establish appropriate EOC staffing level and monitor organizational effectiveness
☐	Coordinate with the Planning Section Coordinator to ensure development of the EOC Action Plan
☐	Provide leadership, guidance, and decisions during strategy, tactics, and other planning meetings and regularly initiate follow-up meetings and EOT briefings
☐	Set priorities for response efforts
☐	Request emergency authorities from Policy Group
☐	Request policy decisions/elevate policy matters to the Policy Group (See *EOP Section 3.B: Policy Group* for emergency-related topics and issues that warrant Policy Group involvement, consideration, and/or approval)
☐	Ensure that inter-agency and cross-section coordination is accomplished effectively
☐	Communicate and coordinate with Policy Group Director
☐	Coordinate crisis communication messaging with Public Information Officer to internal and external stakeholders. Review and approve the Public Information Plan.
☐	Develop recommendations and action plans for Policy Group approval

APPENDICES

EOC Director	
☐	Recommend when to begin the recovery process and deactivate the response effort to the Policy Group
☐	Consult with Management and General Staff positions to evaluate need for escalation.
Response: Shift Change	
☐	Transfer your logs, situation reports and records to your relief
☐	Announce a formal transition of command to a new EOC Director and leave to avoid confusion
Response: Deactivation	
☐	Recommend deactivation of the EOC and demobilization of the EOT to Policy Group
☐	Develop a demobilization plan with Section Coordinators
☐	Communicate IRWD EOC deactivation and EOT demobilization with all necessary stakeholders
☐	Ensure all action items and all forms are completed
☐	Authorize deactivation
☐	Coordinate a debriefing session (hot wash)
Post-Event	
☐	Appoint representatives for After-Action Report meeting
☐	Coordinate development of the After-Action Report
☐	Recommend Corrective Action Plan

APPENDICES

Public Information Officer	
Response: Startup Actions	
☐	Review EOT common actions checklist
☐	Organize, assign and brief assistant PIOs
☐	Ensure that the public within the affected area receives critical information that is as complete, accurate and consistent as possible about the emergency
☐	Establish contact with local and national media representatives as appropriate
☐	Develop schedule for news briefings
☐	Establish monitoring of social media
☐	Release as soon as possible pre-approved or edited media statements to the public
☐	Coordinate statement with Customer Service to customers
Response: Continuing Actions	
☐	Serve as central coordination point for media releases and inquiries
☐	Develop Public Information Plan (refer to Appendix D)
☐	Conduct press conferences, in conjunction with the Policy Group Director, members of the Policy Group and/or the EOC Director
☐	Develop messaging with Government Relations and Human Resources to internal and external stakeholders
☐	Obtain EOC Director approval for information releases
☐	Confirm release of information concerning incident-related injuries and fatalities with Human Resources and EOC Director
☐	Collect news media information important for incident planning
☐	Provide information updates to assistant PIOs
☐	Coordinate emergency public information and warnings (IRWD Alert, media releases, social media)

APPENDICES

Public Information Officer	
Post-Event	
☐	Participate in the Hot Wash and other deactivation meetings as necessary
☐	Assist in development of After-Action Report
☐	Assist in development of Corrective Action Plan

For additional detailed information on PIO procedures, please refer to IRWD's Crisis Communications Plan.

APPENDICES

Safety and Security Officer	
Response: Startup Actions	
☐	Review EOT common actions checklist
☐	Consider adding Assistant On-site Safety Officers at response/recovery facilities
☐	Ensure buildings and other facilities used in support of the EOC are in safe operating condition and appropriately secured and monitored
Response: Continuing Actions	
☐	Monitor procedures to ensure they are conducted in a safe and secure manner
☐	Assess and communicate hazardous and unsafe situations. Escalate all life/safety issues to the EOC Director
☐	Stop or correct unsafe operations
☐	Monitor security procedures to ensure that security policies and procedures are followed
☐	Maintain security around the perimeter of the incident
☐	Coordinate security tasks with contracted security officers
☐	Prepare or review, approve, and submit all safety and security plans
☐	Recommend corrective actions to the EOC Director and IRT Leaders/Incident Commanders
☐	Provide information updates to Assistant Safety Officers
☐	Develop or approve safety and security messages, including those messages needed for inclusion in the EOC Action Plan
☐	Ensure work/rest guidelines are adhered to
☐	Coordinate investigations of accidents or security breaches occurring in incident areas with Risk Manager
☐	Work with HR to ensure reasonable, safe accommodation for IRWD staff with disabilities and access and functional needs

APPENDICES

Safety and Security Officer	
Response: Deactivation	
☐	Deactivate the EOC and restore to pre-activation condition
Post-Event	
☐	Participate in the Hot Wash and other deactivation meetings as necessary
☐	Coordinate with EOC Director to schedule After-Action Report meeting
☐	Coordinate development of the After-Action Report (see Section Five Step 8 for suggested report sections)
☐	With EOC director, develop the Corrective Action Plan
☐	Complete ERP updates and publish annually
☐	Make necessary changes to training documentation

APPENDICES

Liaison Officer	
Response: Startup Actions	
☐	Review EOT common actions checklist
☐	Determine which organizations are involved in the incident
☐	Obtain information on organizations involved including contact information, resources and equipment offered and constraints/limitations
☐	Ensure communications with external agencies are not being duplicated elsewhere in the IRWD emergency organizational structure. Confirm communications assignments with EOT members
☐	Ensure that agency reps are provided with the necessary workspace, communications, and information to perform their responsibilities
☐	Provide position specific guidelines, policy directives, situation reports, and a copy of the EOC Action Plan to Agency Representatives upon check-in
☐	Provide information update to the EOC Director on information from the agency reps
☐	Dispatch IRWD Agency Reps to other EOCs, ICPs, or multi-agency coordination groups as appropriate and approved by the EOC Director
☐	Provide information update to IRWD Agency Reps and gather information from IRWD Agency Reps
☐	Contact and brief supporting agency representatives and WEROC
Response: Continuing Actions	
☐	Continue to provide information update to the EOC Director on information from the agency reps
☐	Maintain communication with IRWD agency representatives at other EOCs
☐	Keep supporting agencies aware of incident status
☐	Monitor incident operations to identify any inter-organizational issues that arise and inform EOC Director
☐	Work with PIO to coordinate media releases associated with inter-governmental cooperation issues

APPENDICES

☐	Review available resources, capabilities and restrictions with agency representatives and provide this information in planning meetings.

APPENDICES

Customer Service	
Response: Startup Actions	
☐	Review EOT common actions checklist
☐	Provide customer-related information to the EOT
☐	Determine if additional customer service staff is needed
☐	Determine if answering service needs a script to answer with overflow calls
☐	Check call center phone lines and IRWD Alert are working
Response: Continuing Actions	
☐	Continue to provide customer-related information to the EOT
☐	Coordinate with Liaison Officer and PIO for messaging to customers through call center, alert system and answering service
☐	Coordinate customer alert (IRWD Alert) and communications systems as requested
☐	Maintain communication with call center(s) to ensure two-way information flow
☐	Provide situation status reports to the Planning Section
☐	Monitor call volumes to determine whether regular call center resources (regular operators + extra desks & lines staffed with temporary operators) is sufficient
☐	Maintain communication with answering service to ensure high quality customer support and updated scripts and information

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APPENDICES

Planning Section Coordinator	
Response: Startup Actions	
☐	Review EOT common actions checklist
☐	Obtain a complete status of the incident(s), or support the development of a Situation Report
☐	Obtain updates on resources assigned to the incident and those needed
☐	Develop an Incident Status Summary (brief snapshot in time of incident status)
☐	Develop an Incident Briefing for EOC leadership (basic information regarding the incident situation and the resources allocated to the incident, including EOC org chart and maps)
☐	Display initial situation information in the EOC
☐	Collect, analyze, and display initial situation information
☐	Determine available resources
☐	Coordinate with EOC Director to set initial strategy, tactics, or planning meeting and follow-up EOT briefings
Response: Continuing Actions	
☐	Oversee the Planning Section (coordinate and monitor assignments, ensure communications within and among Sections, monitor adherence to procedures/ policies/priorities, maintain situational awareness, reassign personnel and responsibilities as necessary, ensure all necessary resources are being provided to Section staff, conduct load balancing, and ensure continuity of leadership in your absence)
☐	Proactively establish Section objectives
☐	Identify shortfalls and areas of concern
☐	Continue to collect, analyze, and display situation information
☐	Suggest use of emergency authorities from Policy Group through EOC Director as necessary
☐	Request policy decisions/elevate policy matters to Policy Group through EOC Director as necessary (See *EOP Section 3.B: Policy Group* for emergency-related topics and issues that warrant Policy Group involvement, consideration, and/or approval)

APPENDICES

Planning Section Coordinator	
☐	Prepare periodic Situation Reports
☐	Prepare and distribute the EOC Action Plan and facilitate the strategy/tactics and planning meetings. Use IRWD EOC Action Plan Template in Forms Appendix G.
☐	Document and maintain files on significant EOT activities
☐	Provide planning, situational awareness, and advanced planning support services to the various EOT sections
☐	Track available resources
☐	Periodically evaluate the incident and its potential for getting worse
☐	Monitor the weather conditions as necessary
☐	Maintain situational awareness of news information sources (TV, radio, internet) via the PIO
☐	Identify need for specialized resources and communicate to EOC Director
Response: Deactivation	
☐	Work with EOC Director on demobilization plan as appropriate
Post-Event	
☐	Oversee demobilization of the section
☐	Assist EOC Director in facilitating the Hot Wash and other deactivation meetings
☐	Manage demobilization of the section
☐	Assist in development of After-Action Report
☐	Assist in transition to Recovery

APPENDICES

Documentation Unit	
Response: Startup Actions	
☐	Review EOT common actions checklist
☐	Work with Planning Coordinator to develop needed logs, records and plans/briefs
☐	Collect, organize and validate documentation as it becomes available
Response: Continuing Actions	
☐	Initiate and maintain a roster of all activated EOC positions to ensure that position logs are accounted for and submitted to HR at the end of each shift
☐	Reproduce and distribute the Situation Reports and EOC Action Plan. Ensure distribution is made to the WEROC EOC
☐	Assist the Planning Section Coordinator in developing materials for Action Planning meetings and populating the EOC Action Plan
☐	Collect, organize and file all completed emergency related documentation just prior to the end of each operational period
☐	Maintain a permanent electronic archive of all situation reports and Action Plans associated with the emergency
☐	Serve as scribe when requested, taking notes or documenting meetings and information
Post-Event	
☐	Participate in the Post-Event Assessment if requested
☐	Assist in the preparation and distribution of the After-Action Report

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Situation Unit/Geographic Information Systems (GIS)	
Response: Startup Actions	
☐	Review EOT common actions checklist
☐	Work with Planning Section Coordinator to develop Situation Reports/Summaries/Briefings and GIS information needed
☐	Collect or develop and display map(s) of the incident and incident area(s)
☐	Collect, organize and validate all known situational information and maps as it becomes available
Response: Continuing Actions	
☐	Determine the need for a GIS team, Display Processors, and Field Observers. Assume their duties if they are not activated.
☐	Collect, analyze, consolidate, and communicate incident data as soon as possible
☐	Prepare periodic predictions, or as requested by the Planning Section Coordinator
☐	Develop information overlays on maps of the affected area (e.g., weather, traffic, damage, etc.)
☐	Coordinate with Section Coordinator to show information and maps on overhead displays
☐	Analyze GIS information as required
☐	Provide situation updates at meetings and briefings or as required by the PSC
Post-Event	
☐	Participate in the Post-Event Assessment if requested
☐	Assist in the preparation and distribution of the After-Action Report

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Resource Unit	
Response: Startup Actions	
☐	Review EOT common actions checklist
☐	Determine the need for a Check-In/Status Recorder. Assume this duty if not activated
☐	Establish or coordinate the check-in function at incident locations
☐	Collect or develop and display information related to the availability, assignment, and need for resources
☐	Collect, organize and validate all known resource information as it becomes available
Response: Continuing Actions	
☐	Review resource requests and obtain status updates from the Logistics Section to foresee resource needs and shortfalls
☐	Collect, analyze, consolidate, and communicate resource data as soon as possible
☐	Prepare periodic predictions on resource needs, or as requested by the Planning Section Coordinator
☐	Maintain a master roster of all resources checked in at the incident or at other locations as appropriate
☐	Determine incident requirements for equipment time recording. Ensure that daily equipment time recording documents are prepared and are in compliance with policy (maintain separate logs for different categories of equipment [e.g., IRWD-owned, rented/leased, mutual assistance]). Assist Units in establishing a system for collecting equipment time data.
☐	Coordinate with Section Coordinator to show resource information on overhead displays
☐	Provide updates on resource availability or needs at briefings and meetings or as required by the PSC
Post-Event	
☐	Participate in the Post-Event Assessment if requested
☐	Assist in the preparation and distribution of the After-Action Report

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Logistics Section Coordinator	
Response: Startup Actions	
☐	Review EOT common actions checklist
☐	Manage all logistics to meet incident response and recovery needs
☐	Provide logistical input to the Planning Section Coordinator and EOC Director in preparing the EOC Action Plan
☐	Review and provide input to the Communications Plan
Response: Continuing Actions	
☐	Oversee the Logistics Section (coordinate and monitor assignments, ensure communications within and among Sections, monitor adherence to procedures/ policies/priorities, maintain situational awareness, reassign personnel and responsibilities as necessary, ensure all necessary resources are being provided to Section staff, conduct load balancing, and ensure continuity of leadership in your absence)
☐	Proactively establish Section objectives
☐	Identify shortfalls and areas of concern
☐	Identify anticipated and known incident service and support requirements.
☐	Brief EOC Director and other Section Coordinators as needed
☐	Suggest emergency authorities from Policy Group through EOC Director as necessary
☐	Request policy decisions/elevate policy matters to Policy Group through EOC Director as necessary (See *EOP Section 3.B: Policy Group* for emergency-related topics and issues that warrant Policy Group involvement, consideration, and/or approval)
☐	Work with the Planning Section/Resource Unit to maintain lists of available resources and track resources committed
☐	Supervise and satisfy requests for additional resources
Post-Event	
☐	Oversee demobilization of Logistics Section
☐	Attend Hot Wash and other deactivation meetings as necessary

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☐	Assist in development of After-Action Report
☐	Assist in transition to Recovery

APPENDICES

Purchasing Unit	
Response: Startup Actions	
☐	Review EOT common actions checklist
☐	Check in with the Logistics Section Coordinator regarding resources needed in the field
☐	Develop a plan and implement for procuring resources
Response: Continuing Actions	
☐	Coordinate the request, acquisition, receiving and staging resources and services
☐	Provide purchasing situation updates to the Planning Section
☐	Oversee the request for resources within the EOC
☐	Provide necessary support resources for the Incident Response Team members (e.g., food, shelter, etc.)
☐	Track resource requests, including priority and status, and regularly follow up with requestors and potential fulfillers to keep tracking system updated
☐	Prepare and sign contracts (purchase, rental, service) and agreements as necessary
☐	Collaborate with Legal to draft Memorandums of Understanding as needed
☐	Establish contact with supply vendors as needed
☐	Oversee contractor time accounting
☐	Maintain all final documents for goods and services

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Human Resources/Risk Management Unit	
Response: Startup Actions	
☐	Review EOT common actions checklist
☐	Ensure enterprise HR systems are available and accessible
☐	Communicate with Risk Management staff located at the incident site
☐	Determine availability of staff to be activated to EOT/EOC (vacations, out sick) and provide list of names matching EOC positions requested by leadership
☐	Participate in initial assessment of the incident to understand risk exposure for IRWD
☐	Coordinate with the Liaison Officer to ensure access, badging or identification, and proper direction for responding personnel upon arrival at the EOC or other incident locations
☐	Contact insurance broker to notify of emerging crisis and potential next steps
Response: Continuing Actions	
☐	Notify Logistics Section Coordinator immediately of all injuries and/or fatalities
☐	Provide information updates to EOT on human resources issues including list of injured or missing employees and/or fatalities
☐	Conduct risk response activities to safeguard the organization, its customers, reputation and assets
☐	Consult with legal on any matters of liability, fatalities, or serious personnel exposure
☐	Manage third-party safety at the incident site
☐	Develop and approve emergency personnel policies and practices that diverge from standard IRWD practices
☐	Support the EOC Director or Policy Group with HR Policy interpretation
☐	Work with Emergency Operations Team and HR staff to verify status of employees and contractors
☐	Notify IRWD next-of-kin of employees affected by the emergency

APPENDICES

Human Resources/Risk Management Unit	
☐	Arrange for assistance for employees and their families including childcare, financial support and consultation services for stress, trauma or grief counseling, as appropriate
☐	Provide ongoing updates on risk, insurance, and third-party life safety
☐	Notify insurance carrier of any potential claims
☐	Work with Safety and Security Officer to ensure safety and security requirements are met for the emergency
☐	Coordinate with Legal on insurance and legal issues during the emergency
☐	With the PIO, establish clear communications with employees during the emergency
☐	Coordinate with Emergency Operations Team and IRWD departments for requests for additional human resources
☐	Coordinate, procure, and/or acquire needed human resources to support the response/recovery effort
☐	Process all incoming requests for personnel support. Identify the number of personnel, special qualifications or training, where they are needed and the person or unit they should report to upon arrival. Determine the estimated time of arrival of responding personnel and advise the requesting parties accordingly.
☐	Work with PIO to develop emergency announcements to employees and approve release of messaging
☐	Provide employee information as required during the emergency
☐	Maintain a status board or other reference to keep track of incoming personnel resources
☐	Collect all on-duty time sheets from the Emergency Operations Team, IRT Leaders, Field Supervisors or Incident Commanders and their staffs
☐	Work with PIO to develop communications for internal stakeholders
☐	Work with Safety and Security Officer to ensure reasonable, safe accommodation for IRWD staff with disabilities and access and functional needs
☐	Provide access to Employee Assistance Program and other resources as required by staff, including bereavement time and other family support
☐	Provide ongoing risk assessments to EOT and recommend risk reduction activities

Human Resources/Risk Management Unit	
☐	Initiate and maintain documentation for reimbursement on injury and property damage and ensure completeness
☐	Work with IRTs to preserve evidence and document information for insurance or potential litigation. Mark relevant materials “attorney-client privilege” as appropriate
Post-Event	
☐	Participate in the Post-Event Assessment if requested
☐	Provide post-event support to employees and their families if they require it
☐	Process Worker’s Compensation claims
☐	Work with Legal to investigate incident, document and collect evidence for insurance claims or potential litigation
☐	Identify areas to reduce risk and make recommendations to senior management
☐	Coordinate with insurance broker and insurer to process claims
☐	Submit damage costs to insurance

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Fleet Unit	
Response: Startup Actions	
☐	Review EOT common actions checklist
☐	Confirm communications setup with the IRT Leaders or Incident Commanders
☐	Get a map of accessible roads to the incident area and emergency facilities
☐	Develop a plan to meet fleet and transportation needs
Response: Continuing Actions	
☐	Receive and coordinate all transportation requests during the event, including ancillary services such as fuel and maintenance
☐	Implement fleet and transportation plan
☐	Monitor location of fleet resources in the field through GPS systems, using a distinct emergency code to separate emergency resources from day-to-day resources
☐	Provide fleet resource situation updates to the Planning Section, including dependencies, and any contingencies
☐	Consider IRWD pool vehicles or rental vehicles to supplement transportation resources
☐	Arrange for fueling, towing, maintenance, and repair services for vehicles
☐	Provide IRWD two-way radio equipment as required
☐	Coordinate and maintain radio service through supplementary equipment and services
☐	Provide satellite phones to key staff if necessary

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Facilities Unit	
Response: Startup Actions	
☐	Review EOT common actions checklist
☐	Provide Facility site maps and floor plans as required
☐	Work with Engineering to assess the safety of the facilities used in the emergency response
☐	Determine site and facility requirements for the incident (space, sanitation, sleeping accommodations, furniture, lighting, security, parking, access)
☐	Plan and implement facility needs based on the requirements
☐	Consider adding facility support staff at the incident site(s)
☐	Work with Engineering, Operations, Risk Management and other public agencies to assess damage to IRWD facilities
☐	Determine if IRWD facilities are safe for occupancy or use
Response: Continuing Actions	
☐	Ensure that adequate essential facilities are provided for the response effort
☐	Provide regular situation updates to Planning Section, including an outlook for 48 and 72 hours and all pending challenges
☐	Coordinate with IRT Leaders or Incident Commanders to ensure IRT members are fed, provided sanitary resources and sleeping accommodations as necessary
☐	Arrange for additional rental office or storage space as necessary
☐	Provide facility maintenance services for facilities occupied by response teams

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Operations Section Coordinator	
Response: Startup Actions	
☐	Review EOT common actions checklist
☐	Assist in development of the operations portion of the EOC Action Plan
☐	Attend briefings and provide information during briefings as necessary
Response: Continuing Actions	
☐	Oversee the Operations Section (coordinate and monitor assignments, ensure communications within and among Sections, monitor adherence to procedures/ policies/priorities, maintain situational awareness, reassign personnel and responsibilities as necessary, ensure all necessary resources are being provided to Section staff, conduct load balancing, and ensure continuity of leadership in your absence)
☐	Proactively establish Section objectives
☐	Identify shortfalls and areas of concern
☐	Report to the EOC Director for the Operations Section
☐	Supervise the execution of the EOC Action Plan for Operations
☐	Suggest emergency authorities from Policy Group through EOC Director as necessary
☐	Request policy decisions/elevate policy matters to Policy Group through EOC Director as necessary (See *EOP Section 3.B: Policy Group* for emergency-related topics and issues that warrant Policy Group involvement, consideration, and/or approval)
☐	Request additional resources to support tactical operations
☐	Approve release of resources from assigned status (not release from the incident)
☐	Make or approve expedient changes to the EOC Action Plan during the Operational Period as necessary
☐	Ensure communications are maintained with IRT Leaders or Incident Commanders
☐	Attend briefings and provide information during briefings as necessary

APPENDICES

Operations Section Coordinator	
Response: Deactivation	
☐	Oversee demobilization of Operations Section
☐	Attend Hot Wash and other deactivation meetings as necessary
☐	Assist in development of After-Action Report
☐	Assist in transition to Recovery
Post-Event	
☐	Oversee demobilization of Operations Section
☐	Attend Hot Wash and other deactivation meetings as necessary
☐	Manage demobilization of the Operations Section
☐	Assist in development of After-Action Report
☐	Assist in development of Corrective Action Plan

APPENDICES

Potable Water Operations Branch	
Response: Startup Actions	
☐	Review EOT common actions checklist
☐	Initiate damage assessment to potable water systems
☐	Provide information updates on the status of potable water systems to EOT
☐	Assess water operations staffing and determine if additional staff is required
☐	Work with the Human Resources on bringing in additional staff
Response: Continuing Actions	
☐	Oversee the Potable Water Operations Branch (coordinate and monitor assignments, ensure communications within and among Sections, monitor adherence to procedures/ policies/priorities, maintain situational awareness, reassign personnel and responsibilities as necessary, ensure all necessary resources are being provided to Section staff, conduct load balancing, and ensure continuity of leadership in your absence)
☐	Proactively establish Branch objectives
☐	Identify shortfalls and areas of concern
☐	Coordinate Water Operations response and recovery activities
☐	Lead the development of a priority list for Water Operations response and recovery efforts
☐	Provide information updates on the status of potable water systems
☐	Maintain communication with Water Operations staff/IRTs in the field
☐	Work with Water Quality to coordinate water testing
☐	Coordinate with Water Quality on recommendations to EOC Director and Policy Group for Boil Water Order
☐	Provide regular situation status reports to the Planning Section
☐	Monitor resource requirements for Water Operations and request additional resources as necessary

APPENDICES

☐	Recommend strategies for restoring water operations

APPENDICES

Construction Services Group	
Response: Startup Actions	
☐	Review EOT common actions checklist
☐	Initiate damage assessment to water, recycling and collections systems in coordination with Potable Water Operations Branch, Recycling Operations Branch and Collections Group
☐	Provide information updates on the status of construction projects to EOT
☐	Establish a safe working environment for all staff in the field
☐	Assess construction staffing and determine if additional staff is required
☐	Work with Human Resources on bringing in additional staff
Response: Continuing Actions	
☐	Coordinate construction projects to repair systems
☐	Assist Potable Water Operations Branch in the development of a priority list for Water Operations response and recovery efforts
☐	Provide information updates on the status of the systems
☐	Maintain communication with Construction staff in the field
☐	Provide regular situation status reports to the Planning Section
☐	Monitor resource requirements for Construction activities and request additional resources as necessary
☐	Recommend strategies for restoring operations
☐	Maintain a safe working environment for all staff in the field

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Field Services Group	
Response: Startup Actions	
☐	Review EOT common actions checklist
☐	Initiate damage assessment to water, recycling and collections systems in coordination with Potable Water Operations Branch, Recycling Operations Branch, and Collections Group
☐	Provide information updates on the status of maintenance and repair of the systems to EOT
☐	Establish a safe working environment for all staff in the field
☐	Assess field services staffing and determine if additional staff is required
☐	Work with the Human Resources on bringing in additional staff
Response: Continuing Actions	
☐	Coordinate maintenance and repair of systems
☐	Assist Potable Water Operations Branch in the development of a priority list for Water Operations response and recovery efforts
☐	Provide information updates on the status of the systems
☐	Maintain communication with Field Services staff in the field
☐	Provide regular situation status reports to the Planning Section
☐	Monitor resource requirements for Field Services activities and request additional resources as necessary
☐	Recommend strategies for restoring operations
☐	Provide equipment and maintenance support as required
☐	Maintain a safe working environment for all staff in the field

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Engineering Branch	
Response: Startup Actions	
☐	Review EOT common actions checklist
☐	Coordinate initial damage/safety assessment information with Facilities Unit and Operations Coordinator
☐	Initiate inspection of structures and/or facilities
☐	Provide detailed damage/safety assessment information to the Planning Section with associated loss damage estimates
Response: Continuing Actions	
☐	Oversee the Engineering Branch (coordinate and monitor assignments, ensure communications within and among Sections, monitor adherence to procedures/ policies/priorities, maintain situational awareness, reassign personnel and responsibilities as necessary, ensure all necessary resources are being provided to Section staff, conduct load balancing, and ensure continuity of leadership in your absence)
☐	Proactively establish Branch objectives
☐	Identify shortfalls and areas of concern
☐	Maintain detailed records on damaged areas and structures
☐	Work with Facilities Unit to determine if IRWD facilities are occupiable or usable
☐	Support GIS mapping as required by the EOT
☐	Maintain current status on all emergency construction/engineering activities being conducted within the incident area.
☐	Coordinate debris removal services as required.
☐	Provide regular situation status reports to the Planning Section
☐	Recommend strategies for restoring operations
☐	Confer with Operations on issues as needed
☐	Liaison with contractors and provide project management oversight

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☐	Support Operations on design processes in the field

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Water Quality Branch	
Response: Startup Actions	
☐	Review EOT common actions checklist
☐	Develop capability for water testing for the area affected by the incident
☐	Monitor and report on status of water quality sampling, flushing, disinfection, implementation of the District Emergency Disinfection Plan, and de-chlorination of discharge water
☐	Monitor and report on levels of constituents and compliance with Federal and State regulations
Response: Continuing Actions	
☐	Oversee the Water Quality Branch (coordinate and monitor assignments, ensure communications within and among Sections, monitor adherence to procedures/ policies/priorities, maintain situational awareness, reassign personnel and responsibilities as necessary, ensure all necessary resources are being provided to Section staff, conduct load balancing, and ensure continuity of leadership in your absence)
☐	Proactively establish Branch objectives
☐	Identify shortfalls and areas of concern
☐	Continue to monitor and report water quality
☐	Maintain regular communication with local, state, regional and national water quality regulatory bodies and serve as liaison between those bodies and IRWD
☐	Make recommendation to Operations Section Coordinator and EOC Director for Boil Water Order
☐	Coordinate with PIO and Customer Service to distribute appropriate warnings and notifications to customers
☐	Provide situation status reports to the Planning Section
☐	Maintain regular communication with local health department, and act as liaison between that health department and PIO
☐	Serve as information resource on the District's Water Quality Monitoring Plan

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Recycling Water Operations Branch	
Response: Startup Actions	
☐	Review EOT common actions checklist
☐	Provide information updates on the status of recycling systems and facilities
☐	Initiate damage assessment to recycling systems and report as indicated
☐	Assess recycling operations staffing and determine if additional staff is required
☐	Work with the Human Resources on bringing in additional staff
Response: Continuing Actions	
☐	Oversee the Recycling Water Operations Branch (coordinate and monitor assignments, ensure communications within and among Sections, monitor adherence to procedures/ policies/priorities, maintain situational awareness, reassign personnel and responsibilities as necessary, ensure all necessary resources are being provided to Section staff, conduct load balancing, and ensure continuity of leadership in your absence)
☐	Proactively establish Branch objectives
☐	Identify shortfalls and areas of concern
☐	Continue to provide information updates on the status of recycling systems and facilities
☐	Monitor the conditions of the Michelson and Los Alisos Recycling plants
☐	Communicate with recycling operations staff
☐	Manage and coordinate response and recovery activities of recycling systems
☐	Advise on impacts of activities on recycling operations
☐	Provide regular situation status reports to the Planning Section
☐	Recommend strategies for restoring recycling operations
☐	Provide updates to all stakeholders

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Michelson Water Reclamation Plant (MWRP) Group	
Response: Startup Actions	
☐	Review EOT common actions checklist
☐	Provide information updates on the status of MWRP plants and systems
☐	Initiate damage assessment to MWRP plants and systems
☐	Assess MWRP operations staffing and determine if additional staff is required
☐	Work with the Human Resources on bringing in additional staff
Response: Continuing Actions	
☐	Proactively establish Group objectives
☐	Identify shortfalls and areas of concern
☐	Monitor the conditions of the Michelson and Los Alisos Recycling plants
☐	Provide information updates on the status of MWRP plants and systems
☐	Communicate with MWRP operations staff/IRTs in the field
☐	Coordinate MWRP operations response and recovery activities
☐	Engage contractors for support as necessary
☐	Coordinate for additional support resources for MWRP IRT operations staff
☐	Provide situation status reports to the Planning Section
☐	Advise on impacts of activities on MWRP operations
☐	Recommend strategies for restoring MWRP plants and systems

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Natural Treatment Systems (NTS) Group	
Response: Startup Actions	
☐	Review EOT common actions checklist
☐	Provide information updates on the status of NTS systems
☐	Initiate damage assessment to NTS systems
☐	Assess NTS operations staffing and determine if additional staff is required
☐	Work with the Human Resources on bringing in additional staff
Response: Continuing Actions	
☐	Proactively establish Group objectives
☐	Identify shortfalls and areas of concern
☐	Monitor the conditions of NTS systems
☐	Provide information updates on the status of NTS systems
☐	Communicate with NTS operations staff/IRTs in the field
☐	Coordinate NTS operations response and recovery activities
☐	Engage contractors for support as necessary
☐	Coordinate for additional support resources for NTS IRT operations staff
☐	Provide situation status reports to the Planning Section
☐	Advise on impacts of activities on NTS operations
☐	Recommend strategies for restoring NTS systems

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Collections Group	
Response: Startup Actions	
☐	Review EOT common actions checklist
☐	Provide information updates on the status of collection systems
☐	Initiate damage assessment to collection systems
☐	Assess collection operations staffing and determine if additional staff is required
☐	Work with the Human Resources on bringing in additional staff
Response: Continuing Actions	
☐	Proactively establish Group objectives
☐	Identify shortfalls and areas of concern
☐	Provide information updates on the status of collection systems
☐	Communicate with collection operations staff in the field
☐	Coordinate collection operations response and recovery activities
☐	Coordinate with city agencies in response to incident as required
☐	Engage contractors for support as necessary
☐	Coordinate for additional support resources to IRT collection operations staff
☐	Provide situation status reports to the Planning Section
☐	Advise on impacts of activities on collection operations
☐	Recommend strategies for restoring collection systems

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Automation/SCADA Branch	
Response: Startup Actions	
☐	Review EOT common actions checklist
☐	Check that the SCADA system is accessible at the EOC
☐	Review SCADA system status
☐	Provide SCADA information updates to the Recycling Operations Branch
☐	If SCADA systems are down, enact SCADA Recovery Plan
Response: Continuing Actions	
☐	Maintain the SCADA system and accessibility to the EOT
☐	Coordinate with other Branches for response and recovery activities
☐	Provide SCADA information (system status, trend information, problem areas) to the EOT and advise on actions
☐	Work with Potable Water Operations and Recycling Operation Branches to make requested changes to the SCADA system
☐	Provide situation status reports to the Planning Section

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Maintenance Operations Branch	
Response: Startup Actions	
☐	Review EOT common actions checklist
☐	Provide information updates on the status of maintenance operations
☐	Provide support for damage assessment of the collection, recycling, domestic and raw water systems
☐	Provide information updates on the status of repairs to EOT
☐	Assess maintenance operations staffing and determine if additional staff is required
☐	Work with the Human Resources on bringing in additional staff
Response: Continuing Actions	
☐	Oversee the Maintenance Operations Branch (coordinate and monitor assignments, ensure communications within and among Sections, monitor adherence to procedures/ policies/priorities, maintain situational awareness, reassign personnel and responsibilities as necessary, ensure all necessary resources are being provided to Section staff, conduct load balancing, and ensure continuity of leadership in your absence)
☐	Proactively establish Branch objectives
☐	Identify shortfalls and areas of concern
☐	Develop an adjusted priority list for repairs
☐	Coordinate electrical and mechanical response and recovery activities
☐	Provide information updates on the status of electrical and mechanical issues and other repairs
☐	Advise on impacts of activities on repair operations
☐	Provide regular situation status reports to the Planning Section
☐	Recommend strategies for restoring operations

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Electrical Group	
Response: Startup Actions	
☐	Review EOT common actions checklist
☐	Provide support for damage assessment of the collection, recycling, domestic and raw water systems
☐	Provide information updates on the status of repairs to EOT
☐	Assess staffing and determine if additional staff is required
☐	Work with Human Resources on bringing in additional staff
Response: Continuing Actions	
☐	Coordinate electrical response and recovery activities
☐	Follow the adjusted priority list for repairs
☐	Provide information updates on the status of electrical issues
☐	Maintain communication with electrical staff/IRTs in the field
☐	Monitor resource requirements for electrical projects and request additional resources as necessary (human and material)
☐	Support developing strategies for restoring operations

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Mechanical Group	
Response: Startup Actions	
☐	Review EOT common actions checklist
☐	Provide support for damage assessment of the collection, recycling, domestic and raw water systems
☐	Provide information updates on the status of repairs to EOT
☐	Assess staffing and determine if additional staff is required
☐	Work with Human Resources on bringing in additional staff
Response: Continuing Actions	
☐	Coordinate mechanical response and recovery activities
☐	Follow the adjusted priority list for repairs
☐	Provide information updates on the status of mechanical issues
☐	Maintain communication with mechanical staff/IRTs in the field
☐	Monitor resource requirements for mechanical projects and request additional resources as necessary (human and material)
☐	Support developing strategies for restoring operations

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Finance & Administration Section Coordinator	
Response: Startup Actions	
☐	Review EOT common actions checklist
☐	Assist in development of the Finance & Administration portion of the EOC Action Plan
☐	Attend briefings and provide information during briefings as necessary
Response: Continuing Actions	
☐	Oversee the Finance and Administration Section (coordinate and monitor assignments, ensure communications within and among Sections, monitor adherence to procedures/ policies/priorities, maintain situational awareness, reassign personnel and responsibilities as necessary, ensure all necessary resources are being provided to Section staff, conduct load balancing, and ensure continuity of leadership in your absence)
☐	Proactively establish Section objectives
☐	Identify shortfalls and areas of concern
☐	Report to the EOC Director for the Finance & Administration Section
☐	Brief EOC Director and other Section Coordinators as needed
☐	Suggest emergency authorities from Policy Group through EOC Director as necessary
☐	Request policy decisions/elevate policy matters to Policy Group through EOC Director as necessary (See *EOP Section 3.B: Policy Group* for emergency-related topics and issues that warrant Policy Group involvement, consideration, and/or approval)
☐	Supervise the execution of the EOC Action Plan for the Finance & Administration Section
☐	Assist Logistics Section members on resource procurement
Response: Deactivation	
☐	Oversee demobilization of Finance & Administration Section
Post-Event	
☐	Oversee demobilization of the section
☐	Attend Hot Wash and other deactivation meetings as necessary

☐	Manage demobilization of the Operations Section
☐	Assist in transition to Recovery
☐	Assist in development of After-Action Report
☐	Assist in development of Corrective Action Plan

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Finance Unit	
Response: Startup Actions	
☐	Review EOT common actions checklist
☐	Check enterprise financial systems are available and accessible
☐	Implement and maintain financial and resource tracking systems for all emergency related costs
☐	Identify personnel with spending authority with Finance and Administration Section Coordinator
Response: Continuing Actions	
☐	Provide financial reports and cost analysis information to the EOT, including potential financial shortfalls
☐	Manage recording on-duty time for all emergency response personnel
☐	Ensure that all time tracking and financial documentation is accurately maintained during the response. Use or establish accounting codes for tracking.
☐	Initiate and maintain documentation on claims for emergency funds and ensure completeness
☐	Process travel and expense claims within a reasonable time, given the nature of the situation
☐	Collect all on-duty time sheets from the Policy Group, the Emergency Operations Team, Incident Response Team members, Field Supervisors or Incident Commanders and their staffs
☐	Continue the payroll process for all employees responding to the event or disaster
☐	Submit response documentation on the appropriate forms to the County, Federal Emergency Management Agency (FEMA), and/or the Governor's Office of Emergency Services
☐	Coordinate with Risk Management with regards to insurance coverage

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Information Technology (IT) Support Unit	
Response: Startup Actions	
☐	Review EOT common actions checklist
☐	Assist Finance Section Coordinator and Logistics Section in determining appropriate types and numbers of computers and computer applications required to facilitate operations
☐	Set up, activate and install technology equipment, software and network for the EOC
☐	Ensure communication systems are accessible at the EOC
☐	Provide data communications support including email, internet, intranet, and support systems
☐	Assess impacts to technology systems, equipment and infrastructure
☐	Assess impacts to digital communication systems
☐	Address technology requirements for IRTs in the field
Response: Continuing Actions	
☐	Provide guidance in response and recovery activities with respect to IT requirements
☐	Provide information updates on the status of enterprise technology systems and infrastructure
☐	Set priorities for recovery strategies for IS systems and infrastructure as needed
☐	Invoke IT Disaster Recovery Plans as required
☐	Manage immediate response priorities to restore critical systems
☐	Activate and coordinate with key supply vendors to restore critical systems based on priority
☐	Escalate IT issues to EOC Director as needed to ensure timely response and resolution
☐	Maintain information systems for the EOC
☐	Troubleshoot hardware, software or network issues for EOT members
☐	Provide access to enterprise systems at the EOC as necessary

☐	Coordinate with Information Services to check on status of systems available at the EOC
☐	Document any technology issues during the EOC activation
☐	Set up any additional technology equipment or software approved by the EOC Director
Post-Event	
☐	Assist in returning the technology equipment in the storage areas and restoring the rooms used during the activation to its regular condition
☐	Follow up on fixing any technology issues at the EOC
☐	Address IT issues in the After-Action Report
☐	Review and update IT Disaster Recovery Plans

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E. RECOVERY STRATEGY

1. Recovery Organization

For a large-scale recovery operation, IRWD's emergency organization may not change. The EOT, PG, and IRTs may remain activated with a focus that has transitioned from response to long-term recovery. Although activated, the EOT, PG, and IRTs may operate from normal work locations or other temporary facilities, including work-from-home, and may convene virtually or in-person at appropriate intervals to ensure the coordination and effectiveness of recovery operations.

For smaller-scale recovery operations, the EOT, PG, and IRTs may be deactivated and responsibilities for recovery operations would then be assigned to appropriate positions within IRWD as an addition to their normal responsibilities.

Local communication and coordination will continue with regular partners such as the City of Irvine, WEROC, and Orange County Operational Area. IRWD operates within the Infrastructure Systems Recovery Support Function (RSF) at the Operational Area level, if needed.

2. Plan of Action

a. Incident Assessment and Investigation

1. Determine the extent of damage to equipment/facility/site.
2. Work with utility staff, local emergency responders and regulatory agencies to determine the root cause of the event.

b. Recovery Planning and Scheduling

1. Collect vital records that are needed to determine if the status/condition of degraded facilities/areas can be maintained (i.e., inaccessibility of assembly areas, inoperative emergency or safety equipment). Please refer to the following documents, *Resolution 2014-45 and 2016-2017 Records Retention Schedule*, for vital records guidance.
2. Assign one or more members of the recovery team to monitor all assigned tasks including developing work packages, scheduling activities, and estimating costs for repair and recovery.
3. Restrict work activities at the affected facilities until the facility/area has been examined and sufficient controls have been established to prevent further harm to personnel or equipment.
4. Based on the assessment, define specific repair and restoration work required.
5. Address planning needs for handling and disposing of hazardous waste generated during recovery activities.
6. Protect workers and the public from excessive hazardous exposures.
7. Install temporary warning signs, barriers, and shielding, as appropriate.
8. Determine environmental or historic impacts and include them in any projects or work packages to ensure compliance with conservation requirements.
9. Coordinate with the Emergency Operations Team (EOT) or other staff member coordinating disaster cost recovery efforts to ensure continuity of documentation.

c. Facility, Site and Environmental Restoration

1. Assign one or more members of the recovery team to monitor all assigned tasks including developing work packages, scheduling activities, and estimating costs associated with restoration.
2. Establish provisions to recover and dispose of hazardous materials.
3. Control discharges as a result of recovery activities within regulatory and environmental compliance limits.
4. Establish methods of decontamination to be used for frequently traveled routes and areas.
5. Determine how emergency equipment and consumable materials should be replenished, decontaminated, repaired or replaced.

3. Completion of Recovery

a. Resumption of Normal Operations

1. Determine what inspections, certifications, and requirements are necessary to return a facility/area to normal operations including:

    - Technical specifications, safety requirements, health and safety regulations, environmental regulations, and compliance documents required.
    - Federal, state and local organizations to be consulted prior to terminating recovery operations.

2. Identify changes occurring as a result of repair, restoration, and accident investigation requiring training and to whom.
3. Determine vital records that need to be collected and processed for long-term and permanent storage. Please refer to the following documents, *Resolution 2014-45 and 2016-2017 Records Retention Schedule*, for vital records guidance.

b. After Action Evaluation and Analysis

1. Conduct a Hot Wash or other method to collect information for an After-Action Report (AAR) on the recovery process. Consider including members of the EOT or other staff who supported recovery efforts.
2. Develop an AAR and Improvement Plan with task owners and projected timelines. Use results of the AAR to inform future planning including the Multi-Year Training and Exercise Plan (MYTEP).

c. Records Preservation

Important paper and electronic records should be kept in a carefully selected location to facilitate prompt retrieval and ensure security. It is recommended that all operating records be kept in a minimum of two locations, including an off-site facility. Computer back-up systems should be kept up-to-date and reflect the information necessary to continue and track the provision of services. Preserve recovery documents from regular records destruction schedules.

d. Training & Exercise

Recovery functions should be included in the annual MYTEP review and update to ensure success of IRWD recovery efforts after an actual incident. Classroom learning, whether presented internally or offered by partners, provides an important foundation to individuals supporting recovery efforts. Elements of recovery can be incorporated into exercises at every level and should be provided as an opportunity for staff to rehearse.

4. Disaster Reimbursement Process

a. Cost Recovery

IRWD will attempt to recover disaster-related costs through insurance claims or federal or state funding, where applicable. This effort may be coordinated with the Purchasing Agent, as appropriate. Should grant-specific requirements be presented by the state or federal governments, then IRWD will coordinate internally to compile documentation to secure the funding.

Typical funding sources (outside of insurance claims) include:

- California Disaster Assistance Act (CDAA): https://www.caloes.ca.gov/cal-oes-divisions/recovery/public-assistance/california-disaster-assistance-act
- FEMA Public Assistance Program: https://www.fema.gov/assistance/public
- Other state and federal incident-specific programs(e.g., Community Development Block Grant [CDBG] https://www.hudexchange.info/programs/cdbg-dr/).

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A. INCIDENT NOTIFICATIONS STANDARD OPERATING PROCEDURE (SOP)

Irvine Ranch Water District	Approved By: Paul Cook, General Manager	Standard Operating Procedure (SOP) TITLE: Incident Notifications DATE: June 2023 | REVISED: New

PURPOSE

The purpose of this Standard Operating Procedure (SOP) is to provide guidance for the use and administration of IRWD Alert (also known as Everbridge), Irvine Ranch Water District's mass notification system, and other incident notifications to Irvine Ranch Water District (IRWD) employees, customers, and the Executive Management Team (EMT) during an incident or emergency affecting customers or employees.

Notifications resulting from an Emergency Operations Plan (EOP) activation will follow the notification protocols as outlined in this SOP.

DEFINITIONS

Bulletin: An Outlook distribution group used by Operations Managers to send emails when an unexpected issue arises in the field that could significantly affect customers, traffic, or the environment.

Disaster Service Worker (DSW): The State of California Disaster Service Worker (DSW) Program includes all public employees impressed into service by a person having authority to command the aid of citizens in the execution of his or her duties during a state of war, a state of emergency, or a local emergency.

District Incident Notification Group (DING): A DING is a distribution group consisting of the Executive Management Team, Communications, Risk Management, and Safety & Security.

Emergency: An urgent, sudden, and serious event or an unforeseen change in circumstances that necessitates immediate action to remedy harm or avert imminent danger to life, health, or property.

Emergency Operations Plan (EOP): The EOP is part of a larger program to help IRWD better prepare for, mitigate, respond to, and recover from a major disaster.

IRWD Alert: A mass notification system, Software as a Service (SaaS), capable of quickly reaching many people across multiple means of communications such as email, text, phone, etc.). It allows IRWD to communicate important information with employees and customers in real time to help them make informed decisions.

USE OF IRWD ALERT

Safety & Security will administer IRWD Alert and send Emergency notifications to IRWD employees in the event of an Emergency Action Plan (EAP) or Emergency Operations

Plan (EOP) activation. Communications will use IRWD Alert to send Emergency and non-Emergency information to customers, as well as community members who opt in to receive messages through the web-based portal.

The primary intent of IRWD Alert is to disseminate early warning and time-sensitive information to employees and customers during an incident or emergency event. IRWD Alert is only one component of IRWD's notification methods and will be used in conjunction with other communication methods including, but not limited to, facility alarms, IRWD Evacuation Team Members, internet postings, email, and social media.

IRWD Alert has been pre-loaded with employee and customer contact information. Employees may update their information in Oracle EBS under "IRWD Self Service", and customers, as well as community members who opt in, have the option to provide additional contact information via a self-registration portal. IRWD Alert will be used to send a message describing the situation, affected area(s), and recommended actions employees and/or customers should take via telephone, e-mail, text, and/or desktop alert (employees only).

While IRWD's intent for implementing and maintaining IRWD Alert is for Emergency use, it may also be used to disseminate IRWD-related non-emergency notifications to customers and/or the community within the District.

Emergency Use

Use of IRWD Alert for emergencies entails the need to disseminate critical information to individuals regarding emergency events occurring in real time, and follow-up information regarding the event and termination of the emergency event.

Generally, IRWD Alert is to be used when employees and/or customers are being asked to take some action (e.g., evacuate, prepare to evacuate, shelter in place, boil water before drinking, etc.) or termination of the emergency because the danger has passed.

The following questions should be considered to assist with determining the need to issue an alert:

1. Severity: Is there a significant threat to life and safety?
2. Protection: Is there a need to take protective action to reduce loss of life or substantial loss of property?
3. Warning: Will providing warning information assist in making the decision to take proper and prudent action?
4. Timing: Does the situation require immediate public knowledge to avoid adverse impact?
5. Geographical area: Is the situation limited to a defined geographical area and will that area allow for an effective use of IRWD Alert?
6. Are other means of disseminating the information inadequate to ensure proper and timely delivery of the information?

7. Is the message being sent as a follow-up to an Emergency in progress?

If the answer to any of these questions is "Yes", then an activation of IRWD Alert for emergency purposes may be warranted.

IRWD Emergency Operations Team (EOT), Incident Response Teams (IRTs), and Disaster Service Worker (DSW) notifications are limited to:

1. Contacting to advise of an Emergency
2. Contacting to report for duty due to an Emergency
3. Contacting key staff regarding an Emergency or crisis
4. Contacting employees/DSWs to report at a different time or location (or provide an update) due to an Emergency
5. Exercises/drills

Emergency Notification Considerations:

1. Notification shall clearly state situation is an Emergency
2. Notifications for exercises/drills should clearly state "THIS IS A DRILL"
3. Message length should not exceed 60 seconds
4. It is recommended that messages be recorded using a real voice and not the computer transcriber
5. Message shall include a call-back number or email address
6. Provide a phone number or website where the public can obtain additional or updated information
7. An all-clear notification should be sent when applicable

If an emergency notification is unable to be sent using IRWD Alert for any reason, or if the notification needs to be expanded beyond employees, community members who have opted in to IRWD Alert, and customers, the Water Emergency Response Organization of Orange County (WEROC) should be contacted by Communications or Safety & Security to help facilitate sending the message via the County of Orange. In addition, WEROC and the impacted City's Emergency Manager should be notified prior to sending Emergency mass notifications to customers due to overlapping jurisdictional boundaries.

Non-Emergency Use

In the event an Emergency is actively occurring, non-emergency notices should be delayed to increase emergency message success issued by the County or other public agencies. The primary point-of-failure concern in this situation is not IRWD Alert, but the telephone port capacity of local phone providers responsible for delivering calls to residents.

Non-emergency notification use is prohibited for any of the following purposes:

1. Any message of commercial nature

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2. Any message of a political nature
3. Any non-official business (e.g., articles, retirement announcements, etc.)

DISTRICT INCIDENT NOTIFICATIONS

A District Incident Notification Group (DING) is set up within IRWD Alert to quickly notify the EMT, Safety & Security, Communications, and Risk Management for incidents at or near IRWD facilities. Safety & Security and Communications will coordinate to use IRWD Alert to send notifications informing the group of evolving situations that may arise and affect IRWD. The Director of Strategic Communications & Advocacy/Deputy General Counsel, or their designee, shall be consulted prior to expanding notifications to other IRWD staff.

In most cases, a DING notification should be initiated within 15 minutes, or as soon as reasonably possible, following knowledge of the event. If significant changes occur during the event, updated notifications should be sent until the conclusion of the incident. A final notification with the disposition should be sent within 15 minutes of the conclusion of the event or as soon as reasonably possible.

Every DING alert should attempt to address the following: Who, What, When, Where, Why, and How.

DING Incident Types – The following list is not intended to be all-inclusive, but used as a guideline:

- Fatality or serious injury suffered by an IRWD employee
- Suspicious activity (people, boats, vehicles, photography etc.) with a potential to escalate
- Crime (post or in progress)
- HazMat incident with a potential to spread
- Police or Fire Department response at any IRWD facility
- Demonstrations or civil unrest
- Significant damage or the potential for significant damage to IRWD property or infrastructure

Note: If media are present, Communications should be informed per IRWD's Media Policy.

OUTLOOK BULLETIN

A Bulletin distribution group is set up in Outlook to send emails when an unexpected issue arises in the field that could significantly affect customers, traffic, or the environment at the discretion of the responding Operations Manager. The manager of the responding

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Operations department should send an email within 60 minutes, or as soon as reasonably possible, to Bulletin@irwd.com.

The Bulletin distribution list includes:

- General Manager, Executive Directors, and Directors
- All Managers
- All Supervisors
- Standby Operators 1 & 2
- Safety & Security Department
- Communications Department
- Customer Service Department
- Senior Engineers
- Senior Human Resources Analysts

Examples of incidents that may warrant an email notice include a water line break that creates a service interruption or traffic impact, or a sewage collection system incident that results in a release of sewage.

The Bulletin can be brief — usually 2 or 3 sentences — but should contain as many key details as immediately available. The email should contain, at a minimum, the following information:

- Location
- Nature of incident
- Extent of the issue
- Potential impacts (e.g., water quality impacts, number of customers impacted, traffic, environmental risk, damage)
- Any media presence

Updated emails should be sent if the situation changes significantly and when there is a resolution to the incident.

Note: To expedite potential outreach to the community, Operations should give Communications an early, brief heads-up on incidents that are likely to significantly affect customers or draw media interest.

ROUTINE TESTING

Safety & Security will test IRWD Alert quarterly, which will be geared toward IRWD employees to test operational readiness, activation procedures and system effectiveness, as well as validating data and system processes.

IRWD Alert will also be tested annually for facility EAP drills.

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SUMMARY TABLE

Notification Type	Responsibility	Purpose
IRWD Alert	Safety & Security or Communications	For Emergency and non-Emergency notifications to employees, customers, as well as community members.
District Incident Notification Group (DING)	Safety & Security or Communications	To quickly notify the EMT, Safety & Security, Communications, and Risk Management for incidents at or near IRWD facilities using IRWD Alert.
Outlook Bulletin	Operations Managers	To send emails when an unexpected issue arises in the field that could significantly affect customers, traffic, or the environment.

REFERENCES

Policy No. 51 – Media Policy

IRWD Emergency Operations Plan (EOP)

Crisis Communications Plan

Emergency Action Plans (EAPs) for Facilities & Dams

REVISION HISTORY

Date	Noteworthy Changes to Document
2023 June	Initial Release

ATTACHMENTS

B. KEY CONTACTS LIST

ORGANIZATION	NAME/TITLE	CONTACT INFORMATION
WEROC • Orange County water and wastewater mutual assistance coordination	WEROC Emergency Services Manager	O: (714) 593-5010
	WEROC Emergency Services Coordinator	O: (714) 593-5032
	Asst. General Manager, MWDOC	O: (714) 593-5024
	General Manager, MWDOC	O: (714) 593-5026
	South EOC	O: (949) 455-4493
	North EOC	O: (714) 288-8200
	Alternate EOC	O: (714) 593-5010
City of Irvine, Office of Emergency Management, Irvine Police Department • City of Irvine emergency management	Emergency Management Administrator	O: (949) 724-7235
Irvine Police Department • City of Irvine law enforcement response	Non-emergency number	O: (949) 724-7000
	Traffic Management	O: (949) 724-8200
Newport Police Department • City of Newport Beach law enforcement response	Non-emergency number	O: (949) 644-3681
Costa Mesa Police Department • City of Costa Mesa law enforcement response	Non-emergency number	O: (714) 754-5280
OC Sheriff • Orange County law enforcement response	Non-emergency number	O: (714) 647-7000
FBI Field Office	Primary number	O: (310) 477-6565

ATTACHMENTS

ORGANIZATION	NAME/TITLE	CONTACT INFORMATION
• Federal law enforcement investigations		
Orange County Fire Authority (OCFA) • Orange County fire and hazard mitigation response	OCFA Fire Dispatch Supervisor	O: (714) 573-6522
Costa Mesa FD • City of Costa Mesa fire response	Costa Mesa Fire Dispatch Supervisor	O: (714) 754-5260
Laguna Area Fire • Laguna Area fire response	Call OCFA Dispatch first, then Laguna Fire Dispatch Supervisor	O: (949) 497-0717
Metro Cities Fire Authority • Metro Cities fire response	Metro Cities Fire Dispatch	O: (714)765-4078
Orange County Operational Area • Emergency coordination for Orange County Operational Area	Main Line (Admin. Desk)	O: (714) 628-7054
	Staff Directory	O: (714) 628-7055
	24 Hrs. Emergency Line	O: (714) 628-7008
	EOC - During Activation	O: (714) 628-7060
	Fax (Special Districts)	O: (714) 628-7154
	EOC Public Works Branch	O: (714) 628-7128 E: EOCPublicWorksOps@ocsd.org
Orange County Public Health • Water-related public health emergency coordination	Main Line	O: (714) 834-3155
Collaborating Organizations Active in Disaster - Orange County (COAD-OC) • Orange County organization for Voluntary Organizations Active in Disaster	Main Line	O: (714) 953-5757 E: coad.orangecounty@gmail.com
Metropolitan Water District of Southern California	Diemer Filtration Plant	O: (714) 528-7237 Alt: (714) 528-7261
	MET EOC Eagle Rock (24/7)	O: (800) 555-5911

ATTACHMENTS

ORGANIZATION	NAME/TITLE	CONTACT INFORMATION
• Wholesale distributor of potable water for Southern California	MET Control Center	O: (323) 681-4010
	MET Water Quality Hotline	O: (800) 354-4420
State Water Resource Control Board District Office • Local contact for emergency communication and coordination affecting SWRCB regulations	Orange County District Main Line	O: (714) 558-4410

ATTACHMENTS

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ATTACHMENTS

C. CRITICAL CUSTOMER CONTACT LIST

ORGANIZATION OR DEPARTMENT	POINT PERSON NAME OR POSITION	PHONE	EMAIL OR WEBSITE
Avalon Bay Communities	Main Number	(949) 955-6200	https://www.avaloncommunities.com
Back Bay High School	Main Number Emergency Number	(714) 424-5000 (714) 424-7520	http://backbay.nmusd.us
Caltrans District 12	Main Number Emergency Number	(949) 936-3600 (949) 936-1818	https://dot.ca.gov/caltrans-near-me/district-12
City of Costa Mesa	Main Number	(714) 754-5216	https://www.costamesaca.gov
City of Irvine – Hoeptner Park	Main Number	(949) 724-7600	https://www.cityofirvine.org
City of Irvine – Chaparral Park	Main Number	(949) 724-7600	https://www.cityofirvine.org
City of Laguna Hills	Main Number Emergency Number	(949) 707-2652 (949) 454-6900	https://www.ci.laguna-hills.ca.us
City of Lake Forest	Main Number Emergency Number	(949) 461-3485 (949) 588-9692	https://www.lakeforestca.gov
City of Newport Beach	Main Number	(949) 706-9380	https://www.newportbeachca.gov
City of Tustin	Main Number	(714) 573-3350	https://www.tustinca.org
City of Tustin Field Services	Main Number	(714) 573-3350	https://www.tustinca.org
Concordia University	Main Number Emergency Number	(949) 854-8002 (949) 733-8356	https://www.cui.edu/en-us
County of Orange	Main Number Emergency Number	(714) 667-1628 (949) 923-2231	https://www.ocgov.com
Davita, Inc (Dialysis) – Newport Beach	Main Number Emergency Number	(253) 272-1916 (949) 302-2049	https://www.davita.com/locations/ca/newport-beach/4300-von-karman-ave--5383
Edwards Life Sciences	Main Number Emergency Number	(949) 250-3562 (949) 250-3411	https://www.edwards.com
El Toro Memorial Park	Main Number	(949) 951-8244	https://www.occemeterydistrict.com/article.cfm?id=14
Equity Residential	Main Number	(949) 290-9377	https://www.equityapartments.com
Federal Bureau of Investigation - Irvine	Main Number	(703) 632-3787	https://www.fbi.gov/contact-us/field-offices/losangeles
Fresenius Dialysis	Florelvin Fernando Main Number	949-337-8732 949-727-4495	https://www.freseniuskidneycare.com/dialysis-centers/california/7179
Garden Communities	Main Number	(858) 200-2236	https://www.gardencommunitiesca.com

ATTACHMENTS

ORGANIZATION OR DEPARTMENT	POINT PERSON NAME OR POSITION	PHONE	EMAIL OR WEBSITE
Golden Canyon LLC	Main Number	(949) 517-2668	
Hoag Hospital Irvine	Main Number	949-764-4624	https://www.hoag.org/locations/hoag-hospital-irvine/
Hoag Hospital Newport Beach	Main Number	949-764-4624	https://www.hoag.org/locations/hoag-hospital-newport-beach/
Hoag Memorial Hospital Presbyterian	Main Number	(949) 299-0313	https://www.hoag.org
Irvine Child Development Center	Main Number	(949) 724-6700	https://www.icdcoc.com
Irvine Unified School District	Main Number Emergency Number	(949) 936-5344 (949) 936-5303	https://iusd.org
John Wayne Airport	Main Number Emergency Number	(949) 252-5281 (949) 252-5000	https://www.ocair.com/default
Kaiser Permanente	Main Number Emergency Number	(972) 383-5300 (972) 616-2503	https://thrive.kaiserpermanente.org
New Horizon School	Main Number	(949) 552-5411	http://newhorizonirvine.org
New Irvine Ranch Conservancy	Main Number	(714) 508-4727	http://www.irconservancy.org
Newport Beach Fire Station 8	Main Number	(949) 644-3106	https://www.newportbeachca.gov/government/departments/fire-department
Newport Mesa Unified School	Main Number Emergency Number	(949) 515-6975 (714) 424-5000	http://web.nmusd.us
O.C. Dept. Of Education	Main Number	(714) 966-4160	https://ocde.us/Pages/Home.aspx
OCTA	Main Number Emergency Number	(714) 560-5771 (714) 560-5771	https://www.octa.net
Orange Coast District	Main Number	(949) 366-8591	https://www.parks.ca.gov/?page_id=21288
Orange Coast District (State Parks)	Main Number	(949) 366-8591	https://www.parks.ca.gov/?page_id=21288
Orange County Fire Authority	Main Number Emergency Number	(949) 451-0020 (714) 573-6500	https://www.ocfa.org
Orange County Public Library	Main Number Emergency Number	(714) 832-2794 (714) 667-4976	https://www.ocpl.org
Orange County Sanitation District – Newport Beach	Main Number	(714) 785-0675	https://www.ocsd.com
Orange County Sanitation District – Irvine	Main Number	(714) 962-2411	https://www.ocsd.com

ATTACHMENTS

ORGANIZATION OR DEPARTMENT	POINT PERSON NAME OR POSITION	PHONE	EMAIL OR WEBSITE
Park Place Michelson LLC	Main Number	(949) 720-5600	https://www.irvinecompanyapartments.com/locations/orange-county/irvine/park-place.html
Rancho Santiago Comm College	Main Number Emergency Number	(714) 480-7359 (714) 287-8831	https://www.rsccd.edu/Pages/default.aspx
Saddleback Comm College District	Main Number	(949) 582-4670	https://www.saddleback.edu
Saddleback Valley USD	Main Number Emergency Number	(949) 586-1234 (949) 533-9450	https://www.svusd.org
Sage Hill School	Main Number	(949) 729-3293	https://www.sagehillschool.org
Saint Jude Medical	Main Number	(949) 769-5000	https://www.providence.org/locations/st-jude-medical-center
Sil-Mod Recreation & Parks	Main Number Emergency Number	(714) 649-9049 (949) 954-2089	http://smrpd.org
State Of California	Main Number Emergency Number	(949) 494-2985 (949) 366-8513	https://www.ca.gov
State Of California AOC	Main Number Emergency Number	(916) 263-8735 (916) 263-8735	https://www.ca.gov
State Of California D12	Main Number	(916) 227-9286	https://www.ca.gov
TIC -Office Properties	Main Number Emergency Number	(949) 748-8300 (949) 833-7764	https://www.irvinecompany.com
TIC -Retail Properties	Main Number Emergency Number	(949) 720-5600 (800) 588-6443	https://www.irvinecompany.com
TIC-Agricultural Division	Main Number		https://www.irvinecompany.com
Transportation Corridor Agency	Main Number	(949) 854-8066	https://thetollroads.com
Turtle Rock Preschool Center	Main Number	(949) 854-7611	https://turtlerockpreschool.com
Tustin Unified School District	Main Number Emergency Number	(714) 730-7301 (714) 412-3050	https://www.tustin.k12.ca.us
UDR, Inc	Main Number	(949) 945-8506	https://www.udr.com
United States Postal Service	Main Number	(949) 453-4916	https://tools.usps.com/find-location.htm?location=1368057
University of California Irvine	Main Number Emergency Number	(949) 824-2570 (949) 244-5246	https://uci.edu
University Of California Irvine Medical Center	Main Number	714-456-7890	https://www.ucihealth.org/locations/orange/uci-medical-center

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D. EMERGENCY PUBLIC INFORMATION

For an emergency requiring prompt, accurate, and effective communications with customers, the general public, or partner organizations, please refer to the IRWD Crisis Communications Plan.

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E. PRIMARY UTILITY COMPONENTS

1. Wells

WELL NAME	LOCATION	DEPTH (FT)	AVAILABLE YIELD (MGD)	TREATMENT REQUIREMENTS/ ASSOCIATED TREATMENT PLANT
Dyer Road Well 1	1801 West Segerstrom, Santa Ana	270	2.8	Chloramination/ IDF & PDF
Dyer Road Well 2	500 West Alton, Santa Ana	307	3.4	Chloramination/ IDF & PDF
Dyer Road Well 3	633 Emmett St, Santa Ana	200	3.1	Chloramination/ IDF & PDF
Dyer Road Well 4	1000 West Hemlock, Santa Ana	216	3.5	Chloramination/ IDF & PDF
Dyer Road Well 5	2619 South Cypress Ave, Santa Ana 92704	331	3.1	Chloramination/ IDF & PDF
Dyer Road Well 6	2500 1/2 Garnsey, Santa Ana 92701	250	5.2	Chloramination/ IDF & PDF
Dyer Road Well 7	3232 1/2 West Greenville St, Santa Ana 92704	281	2.6	Chloramination/ IDF & PDF
Dyer Road Well 10	3302 West Warner, Santa Ana 92704	250	3.3	Chloramination/ IDF & PDF
Dyer Road Well 11	2300 West Segerstrom, Santa Ana	312	3.5	Chloramination/ IDF & PDF
Dyer Road Well 12	3000 West Harvard, Santa Ana	310	3	Chloramination/ IDF & PDF
Dyer Road Well 13	2830 South Fairview, Santa Ana	308	3.4	Chloramination/ IDF & PDF
Dyer Road Well 14	2922 West Warner, Santa Ana	311	5	Chloramination/ IDF & PDF
Dyer Road Well 15	2512 West Warner, Santa Ana	308	3.9	Chloramination/ IDF & PDF
Dyer Road Well 16	2520 Susan, Santa Ana 92704	280	2.5	Chloramination/ IDF & PDF

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WELL NAME	LOCATION	DEPTH (FT)	AVAILABLE YIELD (MGD)	TREATMENT REQUIREMENTS/ ASSOCIATED TREATMENT PLANT
Dyer Road Well 17	2114 South Anne, Santa Ana 92704	268	3	Chloramination/ IDF & PDF
Dyer Road Well 18	2302 South Raitt, Santa Ana	308	2.8	Chloramination/ IDF & PDF
Dyer Road Well C8	1704 West Segerstrom, Santa Ana 92704	305	4.5	Nanofiltration/ DAT, IDF & PDF
Dyer Road Well C9	1704 West Segerstrom, Santa Ana 92704	305	3.4	Nanofiltration/ DAT, IDF & PDF

2. Intakes

INTAKE NAME	DEPTH/LOCATION	CAPACITY	TREATMENT REQUIREMENTS/ ASSOCIATED TREATMENT PLANT
Irvine Lake	75 feet/ 4621 E. Santiago Canyon Road, Silverado, CA 92676	25,000 acre-feet	Microfiltration/ Baker Treatment Plant

3. Treatment Plants

PLANT NAME	LOCATION	CAPACITY	TREATMENT TRAIN
Dyer Rd Initial Disinfection Facility (IDF)	2520 Susan, Santa Ana 92704	65 mgd	No filtration, chemical injection to the DRWF, has the capacity to add disinfecting chemicals
Dyer Rd Primary Disinfection Facility (PDF)	2915 South Halladay, Santa Ana 92705	65 mgd	no filtration, chemical injection to the DRWF, has the capacity to add disinfecting chemicals
Lake Forest Baker Filtration	21082 Wisteria, Lake Forest, CA 92630	28.1 mgd	microfiltration, 14 bracts
Howiler Water Treatment Plant	5454 E. Taft Ave., Orange, CA 92867	4 mgd	Direct filtration plant

4. Storage and Distribution System – Reservoirs, Primary Mains and Pumping Stations

ASSET TYPE	ASSET NAME	LOCATION	AREA SERVED
Pump Station	Cabinland Booster Pump Station	28396 Silverado Canyon Road	Cabinland
Pump Station	Coastal OC 63-Zn.4 Pump Station	4925 1/2 Bonita Canyon Dr, Irvine 92603	Coastal Zone

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ASSET TYPE	ASSET NAME	LOCATION	AREA SERVED
Pump Station	Coastal Zn 1-2 Pump Station	23074 Newport Coast Dr, Newport Coast 92657	Coastal Zone
Pump Station	Coastal Zn 2-4 Pump Station	22433 Newport Coast Dr, Newport 92657	Coastal Zone
Pump Station	Coastal Zn 6-7 Pump Station	20783 Vista Ridge Rd, Newport Beach 92657	Coastal Zone
Pump Station	Coastal Zn. 4-6 Pump Station	21474 Vista Ridge Rd, Newport Coast 92657	Coastal Zone
Pump Station	Coastal Zn. 7 Pump Station & H	20783 Vista Ridge Rd, Newport Coast 92657	Coastal Zone
Pump Station	East Irvine Zn 3-4 Pump Station	13497 Alton PKWY, Irvine 92618	East Irvine
Pump Station	East Irvine Zn. 1-3 Pump Station	13826 Sand Canyon Ave, Irvine 92620	East Irvine
Pump Station	Fleming Pump Station	7431 Silverado Canyon Road	Williams Canyon, Shaw Reservoir
Pump Station	Foothill Zn 4-6 Pump Station	21515 Magazine Rd, Irvine 92618/12848 1/2 Alton	Foothill Zone
Pump Station	Foothill Zn 6-6A Pump Station	2 Touraine Pl, Foothill Ranch 92610	Foothill Zone
Pump Station	Lake Forest Zn 1-2 West Pump Station	25409 Wisteria, Lake Forest 92630	Lake Forest
Pump Station	Manning Pump Station	29265 Modjeska Canyon Road	Modjeska Reservoir and Canyon
Pump Station	Portola Hills Zn 6-8	27841 Glenn Ranch Rd, Portola hills 92610	Portola Hills
Pump Station	Portola Hills Zn 8-9 Pump Station	18967 Saddleback, Trabuco 92679	Portola Hills
Pump Station	Quail Hill Zn 3-4 Pump Station	17500 1/2 Pine Needles, Irvine 92603	Zone 3-4
Pump Station	Read Pump Station	30500 Silverado Canyon Road	Chapman Reservoir
Pump Station	Santiago Hills Zn 5-6	1802 Santiago Canyon Road, Orange	Fleming Reservoir
Pump Station	Shaw Pump Station	28934 Silverado Canyon Road	Read Reservoir
Pump Station	Turtle Rock Zn 1-3 Pump Station	5380 1/2 University Dr, Irvine 92612	Zone 1-3
Pump Station	Turtle Rock Zn 3-4 Pump Station	13 1/2 Minaret, Irvine 92612	Zone 3-4
Pump Station	Williams Canyon Pump Station (Benner)	27600 Williams Canyon Road	Benner Reservoir
Reservoir	Benner Reservoir	28741 Williams Canyon Rd	Williams Canyon
Reservoir	Central Irvine Zn 1 Reservoir	13826 Sand Canyon Ave, Irvine 92620	Zone 1
Reservoir	Chapman Reservoir	14909 Mill Rd	Chapman Zone
Reservoir	Coastal Zn 2 Reservoir	22433 Newport Coast Dr, Newport 92657	Zone 2
Reservoir	Coastal Zn 4 Reservoir	21474 Vista Ridge, Newport Beach 92657	Zone 4
Reservoir	Coastal Zn 6 Reservoir	20783 Vista Ridge Rd, Newport Beach 92657	Zone 6
Reservoir	East Irvine Zn 3 #1	13497 Alton PKWY, Irvine 92618	Zone 3
Reservoir	East Irvine Zn 3 #2	13497 Alton PKWY, Irvine 92618	Zone 3
Reservoir	East Irvine Zn 4	21515 Magazine Rd, Irvine 92618/12848 1/2 Alton	Zone 4

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ASSET TYPE	ASSET NAME	LOCATION	AREA SERVED
Reservoir	Fleming Reservoir	7431 Silverado Canyon Road	Lower Silverado Canyon
Reservoir	Foothill Zn 6 Reservoir	2 Touraine Pl, Foothill Ranch 92610	Zone 6
Reservoir	Foothill Zn 6A Reservoir	71 Tessara Ave, Foothill Ranch 92610	Zone 6A
Reservoir	Lake Forest Zn 4 Tank 1 & Tank 2	21082 Wisteria, Lake Forest 92630	Zone 4
Reservoir	Modjeska Reservoir	29265 Modjeska Canyon Rd	Modjeska Canyon
Reservoir	Orchard Zn 5 Reservoir	10703 Culver Dr, Irvine, CA 92602	Orchard Hills
Reservoir	Portola Hills Zn 8 Reservoir	18967 Saddleback Ranch RD, Lake Forest 92679	Zone 8
Reservoir	Portola Hills Zn 9 Reservoir	18181 Santiago Canyon, Trabuco 92679	Zone 9
Reservoir	Portola Springs Zn 6 Reservoir – Rattle Snake Canyon Dam Res	8631 Portola Parkway, Irvine	Zone 6
Reservoir	Quail Hill Zn 3 Reservoir	17500 1/2 Pine Needles, Irvine 92603	Zone 3
Reservoir	Quail Hill Zn 4 Reservoir	108 1/2 Luminous, Irvine	Zone 4
Reservoir	Read Reservoir	30500 Silverado Canyon Rd	Upper/Middle Silverado Cyn
Reservoir	Santiago Canyon Zn 5	1802 East Santiago Canyon Rd, Orange 92862	Zone 5
Reservoir	Shaw Reservoir	28914 Olive Drive	Middle Silverado Cyn
Reservoir	Turtle Rock Zn 3	13.5 Minaret, Irvine, CA	Zone 3
Reservoir	Williams Canyon Reservoir	27600 Williams Canyon Rd	Williams Cyn
Transmission Main	Foothill 6	Foothill 4-6 to Foothill 6 Reservoir	Foothill Ranch Zone 6, Portola Hills
Transmission Main	Dyer Road Well Field	Segerstrom/Dyer/Barranca	district-wide
Transmission Main	OC 63	OC 63 PS to Coastal Zone 4 Reservoir	Newport Coast

5. Other Key Facilities

ASSET NAME	FUNCTION	LOCATION
Headquarters Building	Administrative offices	15600 Sand Canyon Ave, Irvine, CA 92618
Michelson Operations Center	Operations staff offices	3512 Michelson Drive, Irvine, CA 92612
LAWRP Fuel Facility	Water treatment plant fuel	22312 Muirlands Boulevard, Lake Forest, CA 92618
Michelson Ops Complex	Recycled water and biosolids treatment	3512 Michelson Drive, Irvine, CA 92612

ATTACHMENTS

F. ALTERNATE WATER SUPPLY STRATEGY

1. Options

OUTAGE TYPE: EXTENDED MWD IMPORTED WATER OUTAGE
If MWD imported water is not available for an extended period of time, IRWD will be able to meet demand by: • Increasing production from its groundwater wells • Reallocating water distribution from the Baker Treatment Plant • Implementing conservation measures
OUTAGE TYPE: WELL WATER INTERRUPTION
If groundwater is not available for an extended period of time from IRWD wells, IRWD will be able to meet demand by: • Requesting increased imported water supply from MWD • Reallocating water distribution from the Baker Treatment Plant • Implementing conservation measures

2. Short-Term Water Supply

See the "Emergency Water Distribution Plan," which includes:

TYPE	LOCATION	COMMENTS
Water Buffaloes	Michelson Operations Center 3512 Michelson Drive, Irvine, CA 92612	Grant Funded
Flatbed Trucks for Bottled Water and Large Water Container Transport	Michelson Operations Center 3512 Michelson Drive, Irvine, CA 92612	Purchased bottled water and large water containers delivered by flatbed truck to distribution location.

3. Interconnected Utilities

Other water utilities with interconnections with IRWD are not able to supply water to IRWD during an emergency.

For additional reference information on alternate water supply strategies, please refer to the IRWD 2020 Urban Water Management Plan, June 2021.

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G. WATER SAMPLING AND ANALYSIS REFERENCES

IRWD has a set of standard operating procedures for water sampling and analysis. These SOPs are found on the IRWD internal network in this location: S:Laboratory/All Reformatted SOPs and Worksheets.

Following is a list of Water Quality SOPs:

Water Quality SOP Master List by File Name	Revision Effective Date	Revision #	Reference Method	Analytes Tested
OC-1, 4 Dioxane - EPA 522	4/17/25	6	EPA 522	1,4 Dioxane
OC-1,4 Dioxane-EPA 8260B	9/30/24	3	EPA 8260B	1,4 Dioxane
OC-AnionsbyIC- EPA 300.0	8/12/25	19	EPA 300.0	Anions
OC-DRO_ORO-EPA 8015C	4/9/25	3	EPA 8015C	Diesel & Oil Range Organics
OC-EPA 3C	4/15/25	4	EPA 3C	Fixed Gases and Hydrogen Sulfide by GC
OC-GRO-EPA 8260Bmod	3/10/25	3	EPA 8260B	Gasoline Range Organics
OC-HAA-EPA 552.2	9/9/24	19	EPA 552.2	Haloacetic Acids
OC-HexChromIC(DW)- EPA 218.7	7/9/25	6	EPA 218.7	Chromium VI
OC-HexChromIC(WW)- EPA 218.6	1/23/25	14.1	EPA 218.6	Chromium VI
OC-Odor-SM2150B	3/17/25	16.1	SM2150B	Odor
OC-OP Pesticides- EPA 625.1	5/19/25	3.1	EPA 625.1	OP Pesticides
OC-EPA 525.2mod	10/1/24	18	EPA 525.2	Butyl Benzyl phthalate ? Di-n-octyl phthalate ? Bis(2-ethylhexyl) phthalate (This one I know we have FOA)
OC-Oxyhalides by IC- EPA 300.1	7/10/25	14	EPA 300.1	Oxyhalides
OC-Particle Size Distribution/Dry Sieve-ASTM C136/C136M	9/24/24	3	ASTM C136/C136M-19	Particle Size Distribution/Dry Sieve
OC-Perchlorate- EPA 314.0	2/26/25	20	EPA 314.0	Perchlorate
OC-EPA 331.0	4/9/25	1	EPA 331.0	Perchlorate in Drinking Water
OC-EPA 533	5/22/25	2	EPA 533	PFAS in Drinking Water
OC-PFAS	12/26/24	0	EPA 1633	Per- and Polyflouroalkyl substances by LC-MS/MS
OC-pH-SM4500H+B	5/7/25	19	SM4500H+ B	pH
OC-TS/VS-SM2540B,E	2/17/25	16	SM2540B,E	Residue in Water, Total and Volatile
OC-TS/VS-SM2540G	12/30/24	14	SM2540G	Residue in Solids and Semisolids, Total and Volatile
OC- UVT254SPEC HACH Method 10243	11/5/24	20	HACH 10243	UVT 254?? Ask Claire
OC-VOCs EPA 8260B	7/10/25	4	EPA 8260B	VOCs in Aqueous Samples
OC-EPA 524.2	7/14/25	28	EPA 524.2, rev 4.1	VOCs in Water
OC-EPA 624.1	10/31/24	5	EPA 624.1	VOCs in Wastewater
OC-HACHTNTplus872_Volatile Acids	8/14/25	6	HACHTNT872	Volatile Acids
OC-VFA by GC-SM5560D	8/25/25	7	SM5560D	Volatile Fatty Acids, Speciated

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Water Quality SOP Master List by File Name	Revision Effective Date	Revision #	Reference Method	Analytes Tested
IC-AlkalinitySeal EPA 310.2	8/26/25	17	EPA 310.2	Alkalinity
IC-AlkalinityTitration-SM2320B	5/13/24	16	SM2320B-2011	Alkalinity
IC-Ammonia/NitrogenSeal-EPA 350.1	8/21/25	22	EPA 350.1	Ammonia (as N)
IC-AmmoniaISE-SM4500NH3-E	11/20/24	22	SM4500-NH3 E-2011	Ammonia (as N)
IC-COD-SM5220D	7/30/25	20	SM5520D	Chemical Oxygen Demand
IC-Color(Spec)-SM2120C	12/23/24	16	SM2120C	Color, Spectrophotometric
IC-Color(Vis)-SM2120B	12/23/24	17	SM2120B	Color, Visual
IC-HEM-EPA1664B	12/3/24	19	EPA 1664B	Oil & Grease Total
IC-Free Cyanide-ASTM D7237-10	9/4/24	8	ASTM D7237-10	Cyanide, Free
IC-HACHTNT830_NH3	12/23/24	7	HACHTNT830	Ammonia
IC-HACHTNT835_NO3	12/3/24	6	HACHTNT835	Nitrate
IC-HACHTNT839_NO2	12/3/24	6	HACHTNT839	Nitrite
IC-HACHTNT844_o-PO4&TP	3/10/25	6	HACHTNT844	Phosphate, ortho and Phosphorus, total
IC-EPA 200.7	8/21/25	8	EPA 200.7	Trace Elements
IC-EPA 200.8	8/21/25	22	EPA 200.8	Trace Elements
IC-Mercury-EPA245.7	8/21/25	16	EPA 245.7	Mercury
IC-Nitrite/Nitrogen & Nitrate/Nitrite Seal EPA 353.2	12/23/24	0	EPA 353.2	Nitrite & Nitrate Nitrite
IC-o-PhosphateSeal-SM4500P-F	2/8/25	18	SM4500P F-1999DW/2011WW	o-phosphate
IC-Se Speciation by HPLC/ICPMS	6/27/24	13	EPA 200.8	Selenium
IC-SetSol-SM2540F	2/15/25	19	SM2540F-2011	Residue, Settleable
IC-SIEVE-GE Method	3/10/25	8	GE Method	Sieve, Solids
IC-Specific Conductance-SM2510B	5/27/25	20	SM2510B-1997(DW),2011(WW)	Specific Conductance aka Electrical Conductivity
IC-Sulfide-SM4500S2-D	4/9/25	18	SM4500-S2 D-2011	Sulfide (as S)
IC-TDS-SM2540C	7/2/24	17	SM2540C-2011	Residue, Filterable TDS
IC-TOC_DOC-SM5310C	9/30/24	21	SM5310C-2000(DW), 2011(WW)	Organic Carbon, Total and Dissolved
IC-TotalKjeldahlNitrogenSeal-EPA 351.2	4/9/25	17	EPA 351.2	Kjeldahl Nitrogen, Total (as N)
IC-TotalPhosphorusSeal SM4500P-F	4/9/25	17	SM4500P F-2011	Phosphorus, Total
IC-TSS/VSS-SM2540D,E	4/30/24	22	SM2540D,E-2011	Residue, Non-filterable and volatile non-filterable
IC-Turb-SM2130B	8/21/25	19	SM2130B-2001	Turbidity
M-Autoclave	2/10/25	17	-	-
M-BACT ID	4/30/25	20	-	-
M-BOD/Seal-SM5210B	8/20/25	4	SM5210B-2011	Biochemical Oxygen Demand, carbonaceous BOD
M-BTSure	2/28/25	18	-	-
M-Chlorophyll-SM10200H	10/25/24	16.1	SM10200H	Chlorophyll

ATTACHMENTS

Water Quality SOP Master List by File Name	Revision Effective Date	Revision #	Reference Method	Analytes Tested
M-Coliform/Colilert(P/A)-SM9223B	8/21/25	25	SM9223B	Total Coliform, E.coli
M-Coliform/MTF (MPN)-SM9221	8/21/25	20	SM9221B,C,E,F	Total Coliform, E.coli, Fecal Coliform
M-Enterococcus-Enterolert	8/20/25	20	Enterolert	Enterococci
M-Glassware Washing	12/10/24	20	-	-
M-Gram Stain	9/2/24	17.6	-	-
M-HPC-SM9215B	10/29/24	18.1	SM9215B	Heterotrophic Bacteria, Pour Plate (CFU)
M-Inhibitory Residue	10/29/24	18.1	-	-
M-Media Prep	10/29/24	18.1	-	-
M-Micro Exam	11/25/24	20.1	-	-
M-pH and EC Meter	9/5/24	16	-	-
M-Quagga/Zebra Microscopy	3/25/25	16	-	-
M-Quagga/Zebra PCR (NOT IN USE)	4/29/24	13	-	-
M-SimPlate	10/31/24	17	Simplate	Heterotrophic Bacteria, MPN
M-SterilAmp II	12/24/24	16	-	-

SOP Owner Group

Organic Chemistry formerly Chemistry_Chromatography
Inorganic Chemistry formerly Chemistry_Elemental
Microbiology

Key contact information of local contract, state and federal water sample analysis laboratories are included in the IRWD regulatory compliance documentation.

Further guidance on water sampling and analysis can be found in the State Water Resources Control Board Division of Drinking Water Emergency Response Plan Guidance (February 2015), Section 6.6.

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H. LIST OF KEY LOCAL SERVICES

1. Sand Canyon Headquarters

FACILITY	DESCRIPTION/LOCATION
Hospital	Hoag Hospital Irvine, 16200 Sand Canyon Ave., Irvine, CA 92618
Gas Station	76 Gas Station, 14886 Sand Canyon Ave., Irvine, CA 92618
Pharmacy	Value RX Pharmacy, 22 Odyssey, Unit 135, Irvine, CA 92618
ATM	Bank of America, 16200 Sand Canyon Ave. Irvine, CA 92618
Grocery Store	Albertson's 6601 Quail Hill Pkwy., Irvine, CA 92603 Gelson's Markets, 5521 Alton Pkwy., Irvine, CA 92618
Lodging	Candlewood Suites Orange County/Irvine Spectrum, 16150 Sand Canyon Ave., Irvine, CA 92618

2. Michelson Water Recycling Plant and Operations Center

FACILITY	DESCRIPTION/LOCATION
Hospital	Hoag Hospital Irvine, 16200 Sand Canyon Ave, Irvine, CA 92618
Gas Station	Chevron Gas Station, 18002 Culver Dr., Irvine, CA 92612
Pharmacy	CVS Pharmacy, 17625 Harvard Ave., Irvine, CA 92614
ATM	Wells Fargo, 18044 Culver Dr., Irvine, CA 92612
Grocery Store	Ralphs Supermarket, 17605 Harvard Ave., Irvine, CA 92614
Lodging	Irvine Marriott, 18000 Von Karman Ave., Irvine, CA 92612

3. Los Alisos Water Recycling Plant

FACILITY	DESCRIPTION/LOCATION
Hospital	Hoag Hospital Irvine, 16200 Sand Canyon Ave, Irvine, CA 92618
Gas Station	Shell Gas Station, 23652 Rockfield Blvd., Lake Forest, CA 92630
Pharmacy	CVS Pharmacy, 24271 Muirlands Blvd., Lake Forest, CA 92630
ATM	Bank of America, 24251 Muirlands Blvd., Lake Forest, CA 92630
Grocery Store	Albertson's Supermarket, 24251 Muirlands Blvd., Lake Forest, CA 92630
Lodging	Hilton Garden Inn Irvine Spectrum Lake Forest, 23131 Lake Center Dr., Lake Forest, CA 92630

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4. Baker Water Treatment Plant

FACILITY	DESCRIPTION/LOCATION
Hospital	Hoag Hospital Irvine, 16200 Sand Canyon Ave, Irvine, CA 92618
Gas Station	Chevron Gas Station, 20731 Lake Forest Dr., Lake Forest, CA 92630
Pharmacy	CVS Pharmacy, 21761 Lake Forest Dr., Lake Forest, CA 92630
ATM	Chase Bank, 21731 Lake Forest Dr., Unit 103, Lake Forest, CA 92630
Grocery Store	Ralphs Supermarket, 21751 Lake Forest Dr., Lake Forest, CA 92630
Lodging	Candlewood Suites Orange County/Irvine East, 3 South Pointe, Lake Forest, CA 92630

ATTACHMENTS

I. FORMS

1. Memorandum of Understanding with Vendors for Emergency Services & Supplies

Date
Contact name
Supplier
Address
City, State, Zip Code

Memorandum of Understanding for Emergency Support Services & Products

Dear <<Contact Name>>,

Thank you for offering to assist in the Irvine Ranch Water District's efforts to enhance our emergency services by volunteering to serve the Irvine Ranch Water District during a declared emergency.

This letter shall be our Mutual Understanding regarding your participation in the Emergency Preparedness Plan for the Irvine Ranch Water District. In the event of an emergency, the District will be able to call specified businesses into action and/or purchase supplies that are needed from the specified suppliers.

You have agreed to participate and provide the following forms of assistance (not all are applicable to each Supplier):

- After-hours access to the Supplier's facility for material pick-up.
- Staff time (i.e., delivering and/or dispersing equipment and supplies to the Operation plant located at 3512 Michelson Drive)
- Allowing the Water District to purchase needed materials from your inventory at the same cost as the materials were sold for at least seven (7) days preceding the date of the emergency incident.
- Maintain current records and status with the Irvine Ranch Water District ensuring that the District has an accurate and updated directory. The terms "records and status" refer to updated services and current contact information.

The District agrees to provide the following benefits to participating suppliers:

- Suppliers will be publicly recognized for their participation and dedication.
- Suppliers will receive expedited payment via credit card or Net [0, 7, 14] day Terms on invoices.
- The District favors doing business during an emergency with participating suppliers and will encourage others to do the same.

The District's point of contact shall be Norman Bush, Purchasing Manager (404-455-1677). On behalf of the Irvine Ranch Water District, we want to thank you for your participation. We look forward to utilizing your services, having access to your goods and continuing the development of our relationship with your business.

Submitted by:

_____
Norman Bush
Purchasing Manager

_____
Date

_____
Steve Choi
Dir, Safety & Security

_____
Date

Accepted by:

_____
Contact Name

_____
Date

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ATTACHMENTS

2. EOC Sign-in Sheet

Incident Name:		**Operational Period:** Date From: Date To: Time From: Time To:		
EOC Personnel Information:				
Name	**Section**	**Position**	**Check-In Time**	**Check-Out Time**

ATTACHMENTS

Incident Name:		**Operational Period:** Date From: Date To: Time From: Time To:		
EOC Personnel Information:				
Name	**Section**	**Position**	**Check-In Time**	**Check-Out Time**
4. Prepared by: Name: _____ Position/Title: _____ Signature: _____				
EOC SIGN-IN SHEET	Date/Time: _____			

Source: FEMA ICS 204 Form

ATTACHMENTS

3. Event Log

Incident Name:	**Operational Period:** Date: Time:
Name:	Position:

Activity Log

Date/Time	Notable Activities

ATTACHMENTS

Incident Name:	**Operational Period:** Date: Time:
Name:	Position:

Activity Log

Date/Time	Notable Activities

Source: FEMA ICS 214 Form

ATTACHMENTS

4. Message Form

Incident Name:		
To (Name and Position):		
From: (Name, Position, Agency):		
Subject:	**Date:**	**Time:**
Message:		
Approved by: Name:	Signature:	Position/Title:
Reply:		
Replied by: Name	Signature:	Position/Title:
Date/Time:		

Source: FEMA ICS 213 Form

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5. Situational Status Report

Incident Name:	Operational Period (Date/Time)	Date Prepared	Report No.
Type of Incident			
Location/Map of Incident			

Source: FEMA ICS 209a Form

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Current Situation	
Fatalities/Casualties	
Extent of Damage	
Areas Affected	
Facilities Damaged or Destroyed	
Power Outages	
Evacuation Status	
Significant Impact of Weather in the past Operational Period	
Threats to Human Life	
Threats to Facilities and Systems (Potable Water, Recycling and Collections)	
Threats to Infrastructure (Power, network, communication, HVAC)	
Critical Resource Needs	
Operations Status	
Logistics	
Emergency Response Planning	
Finance & Administration	
Safety	
Security	
Prepared by:	Reviewed by:

ATTACHMENTS

6. IRWD EOC Action Plan Template

Incident Name:		
CURRENT OPERATIONAL PERIOD Date (from)_____ Date (to)_____ Time (from)_____ Time (to)_____	REVIEWED AND APPROVED BY Planning Chief _____ EOC Director _____	
MAJOR INCIDENTS/EVENTS IN PROGRESS: Situation:	Location:	EOC Support Requested? (Y / N)
1.		
2.		
3.		
4.		
5.		
6.		
7.		
Objectives: 1.		
2.		
3.		
4.		
5.		

ATTACHMENTS

EOC Operational Period Objectives

Management Objectives/Strategy:
Operations Objectives/Strategy:
Planning Objectives/Strategy:
Logistics Objectives/Strategy:
Finance Objectives/Strategy:

ATTACHMENTS

7. EOC Organizational Chart (Complete only the positions being staffed for the incident)

Command Staff			
EOC Director		Liaison Officer (LNO)	
Public Information Officer (PIO)		Customer Service	
Safety and Security Officer		WEROC Agency Rep	
General Staff			
Logistics			
Logistics Section Coordinator		Facilities	
Purchasing		Fleet Services	
Human Resources/Risk Management			
Planning			
Planning Section Coordinator		Situation/GIS	
Documentation		Resource	
Operations			
Operations Section Coordinator		Potable Water Operations Branch	
Construction Services		Field Services	
Engineering Branch		Recycling Operations Branch	
Dam Safety		Natural Treatment Systems	
Collections		Automation/SCADA	
Water Quality Branch		Michelson Water Reclamation Plant	
Maintenance Branch		Mechanical	
Electrical			

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Finance & Administration			
Finance & Administration Section Coordinator		Information Technology (IT) Support	
Finance Unit			

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8. IRWD Photo Inspection Form

Use this form to record important information about photographs taken during an emergency response situation. The photos and forms will be important in documenting damage to District facilities or equipment.

Photo taken by:

_____

Describe event or facility as shown in photo:

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

Photo was taken:

Date: _____ Time: _____

Where: _____

Other Comments:

_____

_____

ATTACHMENTS

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ATTACHMENTS

9. Orange County Operational Area Initial Damage Estimate:

Log into the OC OA WebEOC to enter the information into J-4 Initial Damage Estimate.

J-4 Initial Damage Estimate

THIS IS AN: ☐ **EMERGENCY** ☐ **EXERCISE (Check One)**

1. Jurisdiction:	**Tracking Number:** (identifier is the same three letter identifier used in WebEOC)
2. Event Name:	Month Day Year Hour Min. Number - Identifier
3. Contact:	**4. Title:**
5. Phone:	**6. Fax:** **7. Alt No:**

Individual Assistance (IA) Damages (buildings)	a. Destroyed 75-100%	b. Major Damage 40-75%	c. Minor Damage less than 40%	d. Affected (no physical damage)	e. Estimated Loss in $Dollars	Estimated % Covered by Insurance
8. Primary Residence:						%
9. Business:						%
10. Other:						%
11. Totals 10-12:						%

Agricultural Damage	**Acres Impacted**	**Number Impacted**	**Estimated Loss**
12. Crops/Grazing Land:		XXXXXXXXXXX	
13. Farm Build & Machinery:	XXXXXXXXXXXXXX		
14. Livestock:	XXXXXXXXXXXXXX		
15. Totals 14-16:	XXXXXXXXXXXXXX	XXXXXXXXXXX	$

Public Assistance (PA) Damages (Note: Categories A & B Exclude Normal Operating Costs)	Number of Sites	Estimated Costs in $ Dollars
16. CAT A: Debris Removal and Disposal		
17. CAT B: Emergency Protective Measures		
18. CAT C: Road and Bridge System (non-federal)		
19. CAT D: Water Control Facilities (levees, dams & channels)		
20. CAT E: Public Buildings & Equipment		
21. CAT F: Public Utilities (water and power)		
22. CAT G: Park/Recreational/Other		
23. Totals 16-23:		$

Federal Program Damage	Estimated Costs in $ Dollars
24. Federal Highways (Title 23 Program): (for damages to federal highway systems)	
25. U.S. Army Corps of Engineers (PL 99): (emergency flood control projects)	
26. Soil Conservation Service: (for emergency watershed rehabilitation)	
27. Other (describe):	
28. Totals 24-27:	$
31. Grand Total: (add lines 11, 15, and 28)	$

Additional Information or Comments: ☐ Yes, see attached.

FAX IMMEDIATELY TO THE OA EOC AT
(714) 628-7115
OR EMAIL IMMEDIATELY TO THE OA EOC AT:
EOCSitSupvr@ocsd.org
General OA EOC Phone: (714) 628-7055
CONTROL ONE SUPERVISOR/24 Hour Contact: (714) 628-7008
Monitor Your OA Radio

Sit Stat. Recorded ____ Sit. Stat. Plotted ____ Sit. Stat. Mapped ____ Sit. Stat. Filed ____ CC: Logistics____
Orange County Sheriff Department/Emergency Management Last Updated: 10/2008

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10. After-Action Report Template

A. Incident Name: _____

B. Incident Duration (dates): _____

C. Incident Scope (miles of pipe damaged, gallons contaminated, customers affected, etc.): _____

_____

_____

D. Mission Areas Involved:

1. Prevention
2. Protection
3. Mitigation
4. Response
5. Recovery

E. Core Capabilities Involved:

(for more information: https://www.fema.gov/media-library-data/1518527341815-eefc93f955d6645056e699a6c1be51eb/Combined_v5.pdf)

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After-Action Plan Improvement Matrix

Challenge	Recommendation	Responsible Staff/Department	Supporting Staff/Department	Target Date for Completion

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11. Sample Delegation of Authority

(May be used for Incident Command (field) or EOC Command)

_____ is assigned as Incident Commander on the _____ incident.

You have full authority and responsibility for managing the incident activities within the framework of agency policy and direction. Your primary responsibility is to organize and direct your assigned and ordered resources for efficient and effective control of the incident.

You are accountable to _____ or his/her designated representative listed below.

Financial limitations will be consistent with the best approach to the values at risk. Specific direction for this incident covering management and other concerns are:

_____ will represent me on any occasion that I am not immediately available.

This authority is effective: _____.

_____
Agency Administrator

_____
Incident Commander

_____
Date and Time

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12. IRWD Damage Assessment Checklist

TO BE UPDATED

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ANNEXES

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ANNEXES

List of Hazard-Specific Response Plans

A. Earthquake

B. Active Shooter

C. Power Outage

D. Water Interruption

E. Wildfire

F. Sewer Overflow

G. Flood – General

H. Flood – MWRP

I. Water Contamination

J. Explosive Device

K. Hazardous Materials

L. SCADA Cyberattack

ANNEXES

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HAZARD-SPECIFIC RESPONSE PLAN: **EARTHQUAKE**

A. EARTHQUAKE HAZARD-SPECIFIC RESPONSE PLAN ANNEX

INTRODUCTION

The Earthquake Hazard-Specific Response Plan, an annex to the Irvine Ranch Water District's Emergency Operations Plan (EOP), serves as a critical framework for preparing, responding to, and recovering from the impacts of seismic events. This annex complements the overarching EOP by providing specific strategies, protocols, and resources tailored to address the unique challenges posed by earthquakes.

IRWD operates in a region characterized by significant seismic activity due to its proximity to major fault lines, including the San Andreas, Newport-Inglewood, and Elsinore fault systems. These faults, among others, pose a continual risk of moderate to severe earthquakes, making preparedness a critical priority. Earthquake hazards in the IRWD service area may encompass ground shaking, surface rupture, soil liquefaction, landslides, and secondary hazards such as fires and infrastructure failures.

Potential Impacts on IRWD:

- People: Earthquakes pose risks to the safety of IRWD employees, contractors, and first responders. Injuries or casualties, as well as challenges in mobilizing staff due to personal impacts or transportation disruptions, may delay operational response.

- Resources: Key operational resources, including vehicles, heavy equipment, and specialized tools, may be damaged or inaccessible. Additionally, supply chain interruptions could impede the timely acquisition of repair materials and fuel.

- Customers: Prolonged water service disruptions could affect residential, commercial, and industrial customers, posing significant public health risks, particularly during emergencies requiring access to potable water.

- Infrastructure: Damage to treatment facilities, pipelines, storage tanks, and pump/lift stations can result in service interruptions, water quality degradation, and prolonged outages. Potential cascading failures, such as damage to regional power infrastructure, may further challenge IRWD's operations.

ACTIVATION CRITERIA

IRWD may need to activate this annex and its Emergency Operations Team (EOT) and/or Emergency Operations Center (EOC) when any of the following criteria are met:

1. Seismic Event Occurrence

- U.S. Geological Survey (USGS) ShakeCast notification indicating specific dam and facility inspections are required per the following:

FACILITY INSPECTION		
Level	Inspection Priority	Peak Ground Acceleration (PGA)[1]
Below Threshold	No Potential Impact	0.3 to <6.2

[1] Peak Ground Acceleration (PGA) refers to the maximum level of ground acceleration experienced during an earthquake, which indicates the highest rate of change in velocity of the Earth's surface as seismic waves pass through it. It is a key parameter used by engineers and seismologists to assess the potential intensity and damaging effects of an earthquake on structures and soil.

HAZARD-SPECIFIC RESPONSE PLAN: **EARTHQUAKE**

FACILITY INSPECTION		
Level	Inspection Priority	Peak Ground Acceleration (PGA)[1]
Low	**Inspect as Needed**	**6.2 to <11.5**
Medium	**Inspect Within 2 Hours**	**11.5 to <21.5**
High	**Inspect Immediately**	**21.5 or higher**

DAM INSPECTION		
Level	Inspection Priority	Peak Ground Acceleration (PGA)
Below Threshold	No Potential Impact	0.01 to < 0.3
Low	**Inspect as Needed**	**0.3 to < 2.76**
Medium	**Inspect Within 2 Hours**	**2.76 to < 11.5**
High	**Inspect Immediately**	**11.5 or higher**

NOTE: Refer to the Dam Safety Program for additional information on dam safety inspections.

- Any earthquake resulting in observable damage to IRWD infrastructure, including pipelines, treatment plants, or reservoirs.
- Reports of ground shaking, surface rupture, liquefaction, or landslides affecting IRWD facilities or nearby areas are confirmed.

2. Service Disruption

- A disruption or loss of water delivery service occurs that impacts customers within the IRWD service area.
- Any water quality issues are detected, such as contamination due to infrastructure damage.
- Wastewater services are disrupted due to damage to conveyance systems or treatment facilities.

3. Infrastructure Damage

- Significant structural damage to critical facilities, including treatment plants, pump/lift stations, reservoirs, or administrative buildings.
- Damage to regional or neighboring utilities (e.g., power outages, road closures) that indirectly affects IRWD operations.

4. Personnel or Safety Concerns

- IRWD personnel are injured or unable to perform their duties due to the earthquake's impact.
- Safety hazards such as chemical spills, fires, or damaged infrastructure create immediate risks for employees or the public.
- Access to critical facilities is impeded by transportation disruptions, landslides, or other earthquake-related effects.

5. Resource Needs

- Emergency repairs or response require mobilization of specialized teams, equipment, or mutual aid resources.
- Requests for assistance are received from local government agencies, neighboring water districts, or mutual aid networks.

6. Community Impact

- Reports indicate significant damage to community infrastructure, including roads, bridges, or buildings that may hinder IRWD operations or increase demand for services.

- Public health concerns arise, such as a lack of potable water or proper sanitation, requiring immediate intervention by IRWD.

7. Emergency Declarations

- Local, county, or state emergency declarations include areas within IRWD's service jurisdiction.
- Coordination is required with other agencies under the Orange County Operational Area or other regional response systems.

8. Internal or External Notifications

- IRWD receives credible reports of infrastructure vulnerabilities from internal assessments, monitoring systems, or customer complaints.
- External agencies, such as the California Office of Emergency Services (Cal OES) or U.S. Geological Survey (USGS), notify IRWD of earthquake impacts that may affect operations.

HAZARD-SPECIFIC RESPONSE PLAN: **EARTHQUAKE**

PLANNING ASSUMPTIONS & ESSENTIAL ELEMENTS OF INFORMATION (EEI)

Planning assumptions provide a realistic basis for emergency response and recovery strategies. These assumptions reflect an informed understanding of potential earthquake impacts on IRWD's operations, infrastructure, and community.

By collecting and analyzing essential elements of information (EEI), IRWD can enhance situational awareness and ensure informed decision-making during earthquake response and recovery operations.

Category	Planning Assumptions	Essential Element of Information (EEI)	Possible Source(s)
Seismic Activity and Impacts	• Earthquakes with a magnitude of 5.0 or greater have a high probability of occurring in the Southern California region within the next 30 years, with potential significant impacts on IRWD infrastructure. • Ground shaking intensity will vary depending on proximity to fault lines, depth of the earthquake, and local soil conditions, with liquefaction likely in areas of loose, saturated soils. • Secondary hazards, such as fires, chemical spills, and landslides, may compound the direct impacts of seismic activity.	Magnitude Location (epicenter) Depth Time of occurrence Duration Aftershocks (same information above for each aftershock) Extent of Impact Area (e.g., neighboring jurisdictions) Impediments to IRWD staff arriving on-site	• U.S. Geological Survey (USGS) Earthquake Notification Service (ENS)/ShakeCast • Caltech Seismological Laboratory • ShakeAlert Earthquake Early Warning System • Media coverage • Incident Command Posts (ICPs)/Jurisdiction Emergency Operations Centers (EOCs)
Infrastructure Vulnerability	• Older or unreinforced infrastructure is at higher risk of damage during significant seismic events. • Critical facilities, including water treatment plants, reservoirs, and pipelines, are vulnerable to structural damage and operational disruptions. • Power outages caused by seismic activity may disrupt the functionality of pumps, treatment facilities, and communications systems.	Status of water treatment plants, reservoirs, and pump stations. Integrity of pipelines and conveyance systems. Power availability at critical facilities.	• SCADA system reports. • On-site damage assessments by Incident Response Teams (IRTs) or IRWD field crews. • Reports from mutual aid partners or contractors. • Geographic Information Systems (GIS) • Criticality Map for Pipelines and Facilities

HAZARD-SPECIFIC RESPONSE PLAN: **EARTHQUAKE**

Category	Planning Assumptions	Essential Element of Information (EEI)	Possible Source(s)
	• Significant earthquakes may cause service interruptions, including water supply and wastewater services, for a duration ranging from hours to several days. • Damage to pipelines may result in water loss, contamination, and reduced pressure, impacting customers and firefighting capabilities. • Transportation disruptions (e.g., damaged roads, bridges, and traffic congestion) may impede access to facilities and delay response and repair efforts.	Areas experiencing water service outages. Estimated restoration times for disrupted services. Water quality issues, including contamination risks.	• Customer service reports and complaints. • Real-time monitoring data from distribution systems. • Laboratory water quality testing results.
Resource & Personnel Availability	• Access to repair materials, equipment, and skilled labor may be limited immediately following a seismic event due to high regional demand. • Mutual aid and external support will likely be required but may be delayed if the earthquake impacts a wide area. • IRWD staff may be directly impacted by the earthquake, reducing available personnel due to injury, transportation challenges, or personal obligations. • Emergency response operations must prioritize the safety of IRWD employees and contractors working in hazardous conditions.	Injuries or casualties among IRWD personnel. Availability and status of field crews and operational staff. Skillsets of available employees. Safety hazards at work sites, such as gas leaks or structural damage (i.e., are IRWD facilities accessible?). Location and status of emergency stockpiles (e.g., spare parts, potable water, fuel).	• Employee check-ins and roll call. • Safety reports from supervisors or safety officers. • Incident reports from on-site teams. • Maintenance and Operations Resource Reports. • Reports from IRWD hubs, warehouses, supply sources.
Customer & Community Impact	• A significant percentage of customers may experience temporary water service loss or degraded water quality. • Increased public demand for information and updates will require robust communication channels and resources.	Population centers affected by service disruptions. Critical customers impacted, such as hospitals, schools, and elder care facilities.	• Local government Emergency Operations Centers (EOCs). • Community hotline or public inquiry systems.

HAZARD-SPECIFIC RESPONSE PLAN: **EARTHQUAKE**

Category	Planning Assumptions	Essential Element of Information (EEI)	Possible Source(s)
	• Vulnerable populations, including those in hospitals, schools, and elder care facilities, will have an urgent need for potable water and sanitation services.	Public demand for alternative water sources.	• Feedback from local organizations and partners. • Significant events posted on the County's WebEOC. • Social media.
Transportation Impacts	• Key access roads, highways, and bridges within and surrounding the IRWD service area may be damaged, blocked, or closed due to structural failure, debris, landslides, or collapsed infrastructure. • Damage to freeway interchanges or surface streets may isolate critical facilities or prevent timely deployment of response crews and delivery vehicles. • Delays in reaching operational sites may prolong service disruptions and complicate rapid infrastructure assessments and repairs. • Deliveries of materials, emergency water supplies, heavy equipment, or contracted services may be delayed due to blocked routes or logistical constraints.	Status of major roads and bridges needed to access facilities. Alternate routes for emergency response teams. Blockages due to debris, landslides, or other hazards.	• California Department of Transportation (Caltrans). • Local law enforcement and public works departments. • Reports from IRWD logistics teams and field staff. • Significant events posted on the County's WebEOC. • Waze Community Programs • Google/Apple Maps • Neighborhood App
External Dependencies	• Regional interdependencies (e.g., shared water sources, power grids) mean that disruptions to external systems may impact IRWD operations. • Coordination with local, county, and state agencies will be essential for an effective response and resource allocation.	Status and availability of mutual aid agreements. Requests for resources from neighboring agencies or jurisdictions. Status of regional utilities (e.g., electricity, gas).	• Orange County Operational Area EOC. • Southern California Edison (SCE) and SoCalGas updates. • Reports from mutual aid network coordination centers.

HAZARD-SPECIFIC RESPONSE PLAN: **EARTHQUAKE**

Category	Planning Assumptions	Essential Element of Information (EEI)	Possible Source(s)
Technology & Comms	• Monitoring systems (e.g., SCADA, seismic sensors) will provide critical data for assessing damage and prioritizing response actions but may experience outages. • Redundant and alternative communication systems will be essential to maintain situational awareness and coordinate response efforts.	Functionality of communication systems, including phones (Cell & Satellite), radios, internet, and GETS. Status of monitoring systems (e.g., SCADA, seismic sensors). Effectiveness of public communication platforms (e.g., website, social media).	• IT, Automation, and Communications Departments. • Vendor support for communication and monitoring equipment. • Customer feedback and social media monitoring. • Government Emergency Telecommunications System (GETS) status reports.
Weather & Other Factors	• Customer demand for water may spike following a disruption during hot weather, placing additional strain on limited or damaged supply systems. • Storm-related debris or flooding may block access roads, delaying repair crews or the delivery of equipment and materials. • Flooding or runoff from damaged infrastructure may carry sediment, pathogens, or pollutants into the water system. • High winds or storms may damage temporary pipelines, storage tanks, or portable water treatment systems deployed during the response phase.	Weather conditions that may impact response efforts (e.g., rain, extreme heat). Environmental risks such as flooding or hazardous material releases.	• National Oceanic and Atmospheric Administration (NOAA). • National Weather Service (NWS). • Local environmental monitoring agencies. • On-site observations from field crews.
Recovery & Funding	• Local, state, or federal emergency declarations may expedite access to resources and funding but require timely and accurate reporting of damages and needs. • Recovery efforts will depend on the availability of disaster recovery funding and the district's ability to document and justify expenses.	Estimated costs of damages and emergency response. Availability of financial resources, including disaster recovery funds.	• Finance department reports. • Inventory management systems. • FEMA and Cal OES updates on disaster funding programs.

HAZARD-SPECIFIC RESPONSE PLAN: **EARTHQUAKE**

Category	Planning Assumptions	Essential Element of Information (EEI)	Possible Source(s)
	• Infrastructure repairs and replacements will likely extend beyond the immediate response phase, requiring sustained funding, planning, and community engagement. • Post-earthquake assessments will need to inform updates to seismic retrofitting priorities and emergency response plans.		

HAZARD-SPECIFIC RESPONSE PLAN: **EARTHQUAKE**

OBJECTIVES, COURSES OF ACTION, AND RESOURCES

This annex outlines a structured approach to mitigating and responding to the impacts of seismic events on IRWD's operations, infrastructure, and stakeholders. It provides a clear framework for achieving critical objectives through well-defined courses of action, assigning responsibilities to appropriate parties, and ensuring access to necessary resources. The document categorizes the response framework into the following components:

- **Objectives:** Clear, measurable goals that address the critical needs arising from an earthquake.
- **Courses of Action:** Specific steps or procedures to achieve each objective efficiently and effectively.
- **Responsible Parties:** Departments or teams designated to carry out each action, leveraging their expertise and resources.
- **Resources:** Equipment, tools, systems, and agreements necessary to implement the actions successfully.

(***Note:*** The objectives and courses of action presented below are not in order of priority or sequence. All should be considered following an Earthquake. The EOT/EOC should then prioritize objectives [including considering competing objectives, limited resources, and limited information], add objectives if necessary, and select courses of action appropriate for the specific situation per the Action Planning Cycle described in the EOP §5: EOC Operations/B. Action Planning Cycle).

Summary of Potential Objectives:

1. **Ensure the Safety of IRWD Personnel and the Public**
2. **Assess and Stabilize Critical Infrastructure**
3. **Restore Water and Wastewater Services**
4. **Protect Water Quality and Public Health**
5. **Maintain Effective Communication**
6. **Coordinate with External Agencies**
7. **Ensure Continuity of Operations**

<table>
<tr><th colspan="2">Potential Objective 1: Ensure the Safety of IRWD Personnel and the Public</th></tr>
<tr><th>Potential Course(s) of Action</th><th>Responsible Party(ies)</th></tr>
<tr><td>A. Disseminate safety instructions to staff. (Target: 90% or higher of staff within 1 hour of actionable earthquake)</td><td rowspan="5">• Human Resources: Staff accountability and communication.
• Operations and Maintenance: Hazard mitigation at work sites.
• Safety and Evacuation Team Members: Oversee safety protocols and first aid.
• Communications and Customer Service: Public/customer information or instructions.</td></tr>
<tr><td>B. Disseminate instructions or information to the public/customers, as appropriate.</td></tr>
<tr><td>C. Expect and prepare staff for earthquake aftershocks.</td></tr>
<tr><td>D. Conduct immediate personnel accountability checks. (Target: within 2 hours of the earthquake)</td></tr>
<tr><td>E. Provide first aid and medical assistance to injured employees or contractors. (Target: 100% within 2 hours of earthquake)</td></tr>
</table>

Potential Objective 1: Ensure the Safety of IRWD Personnel and the Public	
F. Determine if the emergency evacuation plan should be implemented and identify the safest exit(s) and evacuation distance from the building depending on the situation. Consider secondary and external risks (e.g., gas leaks, utility outages, downed or exposed wires).	
G. Determine resources needs for evacuated staff (e.g., food, shelter, sanitation, medical, transportation, trauma management).	
H. Secure hazardous areas to prevent injuries (e.g., cordon off damaged facilities). **(Target: within 4 hours of identification)**	
Resources:	
• Personal Protective Equipment (PPE) such as hard hats, gloves, safety goggles, and reflective vests • First aid kits and Automated External Defibrillators (AEDs) • Barriers and caution tape to secure hazardous areas • Facility Emergency Action Plan protocols • Emergency communication tools (e.g., two-way radios, satellite phones, IRWD Alert) • Safety and Security Team • Evacuation Team	

Potential Objective 2: Assess and Stabilize Critical Infrastructure	
Potential Course(s) of Action	**Responsible Party(ies)**
A. Perform rapid damage assessments of treatment plants, pipelines, reservoirs, and communications/technology systems. **(Target: within 8 hours of the earthquake)**	• Operations and Maintenance: Infrastructure assessments and repairs (Incident Response Teams [IRTs]). • Engineering: Structural evaluations and technical guidance. • Automation: Monitoring system diagnostics and alerts.
B. Check for obvious structural damage and any resulting hazards such as fires, gas leaks, exposed electrical components, broken or leaking pipes, dangling fixtures/furnishings/ equipment. Leave switches as found unless a hazard exists. **(Target: within 4 hours of the earthquake)**	
C. Conduct windshield surveys and collect reports of any visible damage to IRWD equipment or facilities. **(Target: within 4 hours of the earthquake)**	
D. Document locations of damaged or collapsed structures and systems.	
E. Provide emergency shoring of facilities if required.	

Potential Objective 2: Assess and Stabilize Critical Infrastructure	
F. Shut down compromised systems to prevent further damage or contamination.	
G. Consider shutting off main power to all heavily-damaged or evacuated buildings.	
H. Monitor backup power supply to check if battery levels are adequate and backup generators are functional.	
I. Deploy temporary repair teams to stabilize critical infrastructure. **(Target: 80% or higher within 12 hours)**	

Resources:

- Logistics Staging Areas (LSAs)
- Inspection tools: drones and CCTV cameras
- Repair kits, including epoxy, clamps, and pipe repair bands
- GIS mapping and infrastructure data
- Inspection and reporting tool software
- Pre-established contractor agreements for specialized repairs
- Incident Response Teams
- Engineering Support Teams
- Emergency Repair Crews
- Portable generators and temporary power systems:
  - Sand Canyon Headquarters
  - MWRP
  - LAWRP
  - BWTP
  - Pump & Lift Station - Emergency Generators
  - Portable Emergency Generators
- Backup Computer UPS and Servers:
  - Enterprise
  - SCADA
- Fueling Trucks

Potential Objective 3: Restore Water and Wastewater Services	
Potential Course(s) of Action	**Responsible Party(ies)**
A. Prioritize short- and long-term repairs based on service disruptions and customer impact. **(Target: restore water service to critical customers [e.g., hospitals, dialysis centers, public safety buildings] within 24 hours)**	• Operations and Maintenance: Repair and restoration of services. • Customer Service: Communication with affected customers.
B. Repair or replace damaged equipment. Disconnect and return all unneeded equipment	

Potential Objective 3: Restore Water and Wastewater Services	
to their pre-response locations or for maintenance as needed. **(Target: 75% or more of service area restored within 48 hours)**	• Water Operations: Monitor and manage water supply levels.
C. Set up temporary water distribution sites in coordination with WEROC and City Emergency Mangers for affected customers. **(Target: 100% of identified needs addressed by temporary water distribution sites within 12 hours)**	
D. Implement water conservation measures if supply is limited.	
Resources:	
• Logistics Staging Areas (LSAs) • Portable water treatment units • Emergency pumps and backup power generators • Trucks and tankers for water transportation • Water Buffaloes • Spare parts inventory for pipes, valves, and fittings • Mutual aid agreements for additional resources • Operations and Maintenance Crews (Incident Response Teams [IRTs]) • Logistics and Distribution Teams	

Potential Objective 4: Protect Water Quality and Public Health	
Potential Course(s) of Action	**Responsible Party(ies)**
A. Test water quality at key points to detect contamination. **(Target: test water quality at key points within 6 hours)** **(Target: 100% of water quality tests completed with actionable results within 12 hours)**	• Water Quality: Sampling and analysis of water quality. • Communications: Public information campaigns and advisories. • Operations and Maintenance: Isolation and treatment efforts.
B. Isolate and treat contaminated areas within the distribution system.	
C. Communicate boil water advisories or other health precautions to the public as needed. **(Target: within 1 hour of confirmed contamination)**	
D. Conduct disinfection, flushing, and bacteriological sampling after equipment repair.	

Potential Objective 4: Protect Water Quality and Public Health
Resources:
• Water quality testing kits and laboratory equipment • Decontamination supplies for addressing contamination • Portable storage tanks for safe water distribution • Public advisory templates for rapid dissemination • Coordination with public health agencies • Water Quality Testing Teams

Potential Objective 5: Maintain Effective Communication	
Potential Course(s) of Action	**Responsible Party(ies)**
A. Establish redundant communication channels (e.g., radios, satellite phones). **(Target: within 2 hours of earthquake)**	• Communications: Public and stakeholder communication. • IT Services: Ensure functionality of communication systems. • Safety and Security: Liaison with external agencies.
B. Provide regular updates to employees, customers, and external stakeholders. **(Target: 90% of affected customers reached within 6 hours)** **(Target: communicate with employees and partners every 4 hours during response operations)**	
C. Coordinate with local emergency management agencies.	
Resources:	
• Satellite phones, two-way radios, or other mobile communication systems • Redundant internet connections and servers (e.g., Starlink) • Digital display boards for public updates • Social media management platforms • Customer Service support staff • IT and Communications Teams • Public Information Officers (PIOs)	

Potential Objective 6: Coordinate with External Agencies	
Potential Course(s) of Action	**Responsible Party(ies)**
A. Activate mutual aid agreements with neighboring utilities (CalWARN, WEROC). **(Target: within 4 hours)**	• Safety and Security: Facilitate agency coordination and mutual aid. • Finance: Document and request financial support.
B. Work with local, state, and federal agencies for resource and funding assistance. **(Target: 100% participation in meetings)**	

Potential Objective 6: Coordinate with External Agencies	
C. Participate in regional coordination efforts through the Orange County Operational Area EOC and WEROC. **(Target: response time from external partners within 12 hours of submission)**	• Operations and Maintenance: Provide data for coordination and resource needs.
Resources:	
• Secure communication tools for interagency coordination • Contact lists for local, state, and federal partners • Access to mutual aid platforms (e.g., CalWARN) • Liaison Officers	

Potential Objective 7: Ensure Continuity of Operations	
Potential Course(s) of Action	**Responsible Party(ies)**
A. Check if the primary EOC or alternate EOC are safe to occupy. If not, activate a virtual EOC. **(Target: within 1 hour of earthquake)**	• Safety and Security: EOC activation and oversight. • Human Resources: Staff allocation and support. • Finance: Continuity of financial operations. • IT: Access to software, data, and connectivity capabilities.
B. Activate IRWD's Emergency Operations Center (EOC) to oversee response. **(Target: within 1 hour of the earthquake)**	
C. Implement pre-established business continuity plans. **(Target: continuity plans implemented within 4 hours of earthquake)** **(Target: 95% of critical operations sustained without interruption)**	
D. Monitor and manage employee availability to maintain staffing levels.	
Resources:	
• Logistics Staging Areas (LSAs) • Backup servers and redundant data storage systems • Mobile workstations for remote operations • Fuel reserves for generators and vehicles • Business continuity plans • Employee contact rosters and alternate work schedules • Business Continuity Teams	

HAZARD-SPECIFIC RESPONSE PLAN: **EARTHQUAKE**

PREPAREDNESS TASKS

By engaging in preparedness activities across planning, organizing, equipping, training, and exercises, IRWD can enhance its preparedness, reduce vulnerabilities, and strengthen its ability to respond to and recover from earthquake-related emergencies.

Planning

- Develop and regularly update this Earthquake Hazard-Specific Response Plan Annex to the EOP to reflect current risk assessments and best practices.
- Conduct a comprehensive seismic risk assessment for all IRWD infrastructure, identifying vulnerabilities and prioritizing mitigation efforts.
- Establish continuity plans for critical operations, including water treatment, distribution, and wastewater management, in the event of seismic disruptions.
- Maintain mutual aid agreements with neighboring water districts, local governments, and private-sector partners for resource sharing during emergencies.
- Plan for alternative water supply methods, including portable water treatment units and emergency water distribution points, to serve customers during service disruptions.

Organizing

- Assign roles and responsibilities for staff in pre- and post-earthquake scenarios, ensuring clarity and efficiency during an emergency.
- Collaborate with local agencies, including the Orange County Operational Area and Water Emergency Response of Orange County (WEROC), to integrate IRWD plans into broader regional response efforts.
- Establish a communication plan that includes redundancies for maintaining internal and external communications during disruptions.

Equipping

- Retrofit critical infrastructure, including reservoirs, pipelines, and treatment facilities, to withstand seismic forces.
- Implement low-cost, easy to implement, earthquake mitigation measures in facilities (e.g., bracing items to walls, anchoring equipment to the slab, installing earthquake-activated shut-off valves, providing flexible connections to piping or conduit).
- Consider implementing backup communication systems such as satellite phones and amateur radio.
- Consider moving backup servers to locations that are not on the same earthquake fault lines as the primary servers or to cloud-based services.
- Procure and maintain emergency repair kits, including materials for pipeline repairs, portable pumps, and backup generators.
- Ensure facilities are equipped with seismic monitoring and early warning systems to provide real-time data and improve situational awareness.
- Stockpile essential supplies such as potable water, fuel, spare parts, and personal protective equipment (PPE) for employees.
- Equip staff with emergency communication devices, such as satellite phones and two-way radios, to ensure connectivity during outages.

Training

- Conduct regular training sessions for all IRWD personnel on earthquake response protocols, safety procedures, and use of emergency equipment.

- Train field crews in rapid damage assessment techniques to expedite infrastructure evaluations following an earthquake.
- Provide specialized training on coordinating with external agencies, including FEMA, Cal OES, and local emergency management offices.
- Offer first aid, CPR, and disaster medical training to employees to enhance immediate response capabilities.

Exercises

- Conduct exercises to simulate earthquake scenarios and test decision-making processes within the EOC.
- Perform monthly checks on permanent, and portable backup generators. Check fuel supply.
- Implement full-scale field exercises to practice infrastructure damage assessments, repair operations, and water distribution under realistic conditions.
- Participate in regional earthquake preparedness drills, such as the Great California ShakeOut, to align IRWD's response with local and state agencies.
- Evaluate exercises through after-action reviews to identify gaps and incorporate lessons learned into plans and procedures.
- Test emergency communication systems and redundancies during exercises to ensure operational readiness.

HAZARD-SPECIFIC RESPONSE PLAN: **EARTHQUAKE**

EARTHQUAKE HSRP ATTACHMENT 1 – EARTHQUAKE SAFETY ACTIONS

During an Earthquake

1. **Drop, Cover and Hold On!** Find cover and protect your head and neck. Good places are underneath a sturdy piece of furniture or up against a wall. For people using wheelchairs, lock your wheels and cover your head and neck.
2. Wait for aftershocks, which may be as large or larger than the original earthquake.
3. If you are outside during an earthquake, stay outside. Move away from buildings, trees, streetlights and overhead lines. Crouch down and cover your head.



After an Earthquake

1. Wait until the shaking stops, then check to see if you are hurt before you check the people around you for injuries. Be especially careful to look above and all around you for fallen or dangling items and move slowly and carefully.
2. If emergency assistance is necessary, call 9-1-1**.** First responder resources will be quickly overwhelmed after an earthquake; render first aid as needed.
3. Be on the lookout for fires. Warn everyone around you if you see a fire and do not try to extinguish it yourself unless it is small, about the size of a frying pan.
4. When you leave the building after the shaking stops, use the stairs. **DO NOT USE THE ELEVATORS**.
5. Help others exit the building safely using the established evacuation routes.
6. As you leave and once you are outside, look for dangling or falling debris.
7. Gather in the established assembly areas for a headcount and to evaluate injuries.
8. Do not block driveways or roads; stay away from emergency vehicles.

EARTHQUAKE HSRP ATTACHMENT 2 – EARTHQUAKE MEASUREMENT SCALES

Modified Mercalli Scale (MMS)		Moment Magnitude Scale (M_W)
I	Detected only by sensitive instruments	Up to about 1.6
II	Felt by few persons at rest, especially on upper floors; delicately suspended objects may swing	≈1.6–2.25
III	Felt noticeably indoors, but not always recognized as earthquake; standing autos rock slightly, vibration like passing truck	≈2.25–2.8
IV	Felt indoors by many, outdoors by few, at night some may awaken; dishes, windows, doors disturbed; motor cars rock noticeably	≈2.8–3.5
V	Felt by most people; some breakage of dishes, windows, and plaster; disturbance of tall objects	≈3.5–4.1
VI	Felt by all; falling plaster and chimneys, damage small	≈4.1–4.6
VII	Damage to buildings varies depending on quality of construction; noticed by drivers of automobiles	≈4.6–5.3
VIII	Panel walls thrown out of frames; fall of walls, monuments, chimneys; sand and mud ejected; drivers of autos disturbed	≈5.3–6
IX	Buildings shifted off foundations, cracked, thrown out of plumb; ground cracked; underground pipes broken	≈6–6.5
X	Most masonry and frame structures destroyed; ground cracked, rails bent, landslides	≈6.5–7.1
XI	Few structures remain standing; bridges destroyed, fissures in ground, pipes broken, landslides, rails bent	≈7.1–7.7
XII	Damage total; waves seen on ground surface, lines of sight and level distorted, objects thrown up into air	≈7.7–9+

EARTHQUAKE HSRP ATTACHMENT 3 – SHAKECAST STRATEGY

HAZARD-SPECIFIC RESPONSE PLAN: **ACTIVE SHOOTER**

B. ACTIVE SHOOTER HAZARD-SPECIFIC RESPONSE PLAN

DESCRIPTION

Active shooter incidents, in which an armed Intruder gains access to the workplace, often begin suddenly and can evolve unexpectedly. Anyone can take actions that may significantly mitigate the effects of an armed intruder in a workplace, and this plan provides best practice recommendations from Orange County Sheriff's Department (OC Sheriff) and the FBI for dealing with this type of incident.

For further guidance, refer to the following resources:

OCSD 2016: https://behindthebadge.com/run-hide-fight-active-shooter-situation/
OCSD 2018: https://www.youtube.com/watch?v=S6aucU4sUH4&feature=youtu.be
FBI: https://www.dhs.gov/sites/default/files/publications/active-shooter-how-to-respond-2017-508.pdf

ACTIVE SHOOTER SAFETY ACTIONS

1. **Run**: Evacuate if able to safely leave the area.
2. **Hide**: Shelter in place if unable to evacuate.
3. **Fight**: As a last resort, and only when your life is in imminent danger, attempt to disrupt and/or incapacitate the active shooter by:
   - Acting as aggressively as possible against him/her
   - Throwing items and improvising weapons
   - Yelling
   - Committing to your actions

DEPARTMENTS INVOLVED

- Any department physically near the incident
- Safety & Security
- Public Affairs
- Human Resources
- Maintenance
- Facilities

TRIGGERS

- Armed intruder seeking to gain access to IRWD property
- Armed intruder already on IRWD property

KEY CONTACTS

- Emergency Number: 9-1-1
- Irvine Police Department
  - Non-Emergency: (949) 724-7000
- Orange County Sheriff's Department:
  - Non-Emergency: (714) 647-7000
- Local FBI Field Office
  - Primary number: (310) 477-6565
- Hoag Hospital Irvine
  - Primary number: (949) 764-4624
- Hoag Hospital Newport Beach
  - Primary number: (949) 764-4624
- UC Irvine Medical Center
  - Primary Number: (714) 456-8008
- Kaiser Permanente – Orange County
  - (949) 932-5000

PHASE	SUB-PHASE	ACTION	POSITION RESPONSIBLE
Prepare	**Ready**	1. Be aware and recognize indicators of potentially violent behavior and report to Safety & Security.	**All Staff** **Safety & Security**

HAZARD-SPECIFIC RESPONSE PLAN: **ACTIVE SHOOTER**

PHASE	SUB-PHASE	ACTION	POSITION RESPONSIBLE
		2. Monitor security systems including alarms, CCTV cameras and unauthorized card access for intruders. 3. Report suspicious behavior or activity ("See Something, Say Something") to Safety & Security or 9-1-1 of the situation. 4. Be familiar with evacuation routes in buildings frequented.	
	Notify and Monitor	1. Notified of an armed person trying to gain access to or is located on an IRWD property. 2. Take actions to protect yourself. 3. Notify Safety & Security or 9-1-1 of the situation. 4. If possible, identify number and location of intruder(s), physical description, number and types of weapons, and direction of movement. 5. Use security systems to monitor location and movement of intruder if possible. 6. Provide information on any potential victims at location. 7. Alert staff onsite to stay away from the area. 8. Direct law enforcement officers to identified location.	**All Staff onsite** **Safety & Security**
		9. Notify other stakeholders as appropriate including Senior Executives, HR and Public Affairs.	**Safety & Security**
Respond	**Activate**	1. Activate an EOC or Recovery Support Center. 2. Determine Activation Level of EOC or Recovery Support Center. 3. Decide Virtual or Physical Activation. 4. Request representatives report to EOC. 5. Notify other stakeholders of EOC Activation	**GM and/or EMT** **Safety & Security**
	Manage **Communicate** **Coordinate** **Plan**	1. Assign an EOC Director. 2. Inform all stakeholders of current situation. 3. Develop and implement EOC Action Plan. 4. Monitor and report on external sources of information including news reports, social media.	**EOC Director and Emergency Operations Team**
		5. Run a report of employees who clocked in for the day or request a list of working staff from each affected department head/manager.	**Human Resources**
		6. Cooperate with law enforcement and other emergency responders working onsite. 7. When safe to do so, evacuate all buildings. 8. Conduct a headcount to ensure the status and location of all employees is known.	**Incident Response Team** **All staff onsite**
		9. Coordinate with first responders to provide information to the media.	**Public Affairs/PIO** **Human Resources**

HAZARD-SPECIFIC RESPONSE PLAN: **ACTIVE SHOOTER**

PHASE	SUB-PHASE	ACTION	POSITION RESPONSIBLE
		10. Provide employee and contractor family members with timely, accurate and relevant information. 11. Provide employees not in the affected area information on the incident.	
		12. Locate employees who are offsite and began the day onsite, to ensure a complete accounting of all working employees for the affected site. 13. Have staff to notify their families of their status and location; follow law enforcement directives regarding sending people home, allowing family members onsite to collect staffers, etc. 14. Have third-party vendors onsite to notify their company and their families of their status and location. 15. Follow law enforcement directives regarding allowing people to leave the site, allowing access to the site to collect vendors, etc. 16. Notify family members/ next of kin/ vendor companies as appropriate and advised by law enforcement for those who are injured or killed.	**EOC Director and Emergency Response Team**
Recover	**Short-Term**	1. Coordinate with professional responders or engage privately-contracted mental health professionals to support affected staffers. 2. Cooperate with local and federal law enforcement during investigations. 3. When facilities are released by law enforcement, conduct damage assessments. 4. Contract a professional cleanup crew if necessary. 5. Record and quantify damaged equipment and facilities. 6. Prioritize short-term and long-term recovery tasks for repairs/replacements. 7. Repair or replace damaged equipment and facility materials.	**All affected IRWD groups**
	Long-Term	1. Continue mental health support activities. 2. Develop a long-term recovery plan to return to normal operations. 3. Implement and complete long-term recovery projects. 4. Identify and fill any critical personnel or operational gaps.	**All affected IRWD groups**
Prevent/ Mitigate	**Debrief/Hot Wash AAR/Lessons Learned**	1. Conduct debrief/Hot Wash prior to deactivating EOC and demobilizing Emergency Operations Team.	**All Groups involved in Activation**

HAZARD-SPECIFIC RESPONSE PLAN: **ACTIVE SHOOTER**

PHASE	SUB-PHASE	ACTION	POSITION RESPONSIBLE
		2. Hold Post-Event Assessment meeting within two weeks after EOC deactivation and develop After-Action Report 3. Develop and implement Corrective Action Plan. 4. Review and revise annex as necessary. 5. Implement agreed upon changes to procedures.	
	Mitigation/ Prevention	1. Train staff on "Run, Hide, Fight" principles and evacuation procedures from all facilities. 2. Post signs with "See Something, Say Something" message with Safety & Security or 9-1-1 call information. 3. Conduct Active Shooter drills on a regular basis.	**All staff** **Safety & Security**
		4. Post evacuation routes in conspicuous locations. 5. Place removeable floor plans near entrances and exits for emergency responders. 6. Ensure exit doors and stairwells are always clear of blockages and unlocked during working hours. 7. Maintain all elevators in good working order. 8. Ensure the ability to evacuate people with disabilities or access & functional needs from upper floors without elevators.	**Maintenance** **Facilities** **Safety & Security**
		9. Perform alarm checks on a monthly basis. 10. Consider active monitoring of CCTV cameras and alarms from a centralized location. Consider centralizing this function in an operations center. 11. Review recommendations from most recent security assessment and implement them as appropriate. 12. Maintain and upgrade security equipment as necessary in all facilities.	**Safety & Security**
		13. Contact OC Sheriff and City PDs to ensure they have the most current IRWD contact information. 14. Update contact information as required.	**Safety & Security**

HAZARD-SPECIFIC RESPONSE PLAN: POWER OUTAGE

C. POWER OUTAGE HAZARD-SPECIFIC RESPONSE PLAN

DESCRIPTION

Power outages are occurring more frequently in IRWD's service area. There are two types of outages: unplanned and planned outages. Unplanned outages are caused by damage from earthquakes, storms, fires, accidents or acts of terrorism to distribution or transmission lines or substations. A new type of unplanned outage is a utility-initiated shutdown to mitigate the risk of starting a wildfire. Planned outages are initiated by system operators for maintenance and to reduce demand during peak use periods (rotating outages). Historically, the leading causes of power outages in Orange County are from Santa Ana winds and high-power demand, which usually occurs during hot summer months. IRWD should continue to plan for these types of outages and for the greater frequency of power outages from wildfires. Additionally, the threat of terrorist organizations targeting power utilities has increased the risk of wide-spread, extended power outages.

Refer to the **Wildfire Hazard-Specific Response Plan** for wildfire-related power outages.

DEPARTMENTS INVOLVED

- Electrical
- Mechanical
- Facilities & Fleet Services
- Water Operations
- Recycling
- Collections
- Construction/Asset Systems Management
- Information Services
- SCADA
- Water Quality/Lab
- Engineering
- Safety & Security
- Public Affairs
- Customer Service

TRIGGERS

- SCE Public Safety Power Shutdown (PSPS)
- SCE Extended Maintenance Shutdown
- SCE rotating outages and flex alerts
- Red Flag warning in the wild land interface areas
- Approach of wildfires to the wild land interface areas
- Report of wildfire in the wild land interface areas

KEY CONTACTS

- SCE Contacts:
  - Primary number: (714) 973-5759

EQUIPMENT

Building Backup Generators:

- Sand Canyon HQ
- Michelson
- Baker
- LAWRP

Backup Computer UPS and Servers:

- Enterprise
- SCADA

Vehicles:

- Water Buffaloes
- Fueling Buffaloes

Site Emergency Generators:

- Shaw Pump Station 175 kw unit 9021
- Williams Reservoir 600 kw unit 9014
- Manning Pump Station 200 kw unit 9019
- LF Zone 2 Pump Station 150 kw unit 9003
- Portola PS Zone 8-9 600 kw unit 9013
- Flemming Reservoir 230 kw unit 9020
- Ops Center 600kw unit 9001
- Cabinland Pumpstation 15 kw portable unit
- Read Pump Station 150 kw (rental unit)

On hand Fleet services:

- 150 kw unit 9007
- 600 kw unit 9015

		Flemming: • Additional radios	
PHASE	SUB-PHASE	ACTION	POSITION RESPONSIBLE
Prepare	**Ready**	1. Notified of a planned outage (SCE maintenance or rotating outage). 2. If water is required for an emergency (i.e., firefighting), a temporary exemption may be requested by calling Southern California Edison (SCE) at (800) 286-1723. a. The following information must be provided: b. The SCE account number for the facility requiring restoration. c. The address for the facility requiring restoration. d. Your name and title e. Your contact information f. The emergency that forms the basis for the restoration request. 3. If exemption is not granted, continue to Step 2 of Notify and Monitor phase.	**Engineering Energy Analyst** **Electrical/Mechanical Water Operations**
	Notify and Monitor	1. Notified of an unplanned power outage. 2. Notify other stakeholders depending on affected areas. These can include: • Water Operations Systems Operator • Engineering Energy Analyst • Collections • Recycling • SCADA • Facilities & Fleet Services • Customer Service • Information Services • Safety & Security • Lab 3. Collect information and continuing monitoring the outage	**Electrical/Mechanical Water Operations** **Facilities & Fleet Services** **Customer Service**
		4. Contact SCE at (800) 286-1723 to determine outage type, outage areas and projected outage length. Be prepared to provide the following information: a. Company name b. Name and title c. Contact information d. SCE Account number for the affected facility(s)	**Electrical**
		5. Check on availability of communication channels (i.e., cell phone, radio, internet, satellite, text, email) and establish communications on available channels.	**All affected IRWD groups**

HAZARD-SPECIFIC RESPONSE PLAN: POWER OUTAGE

PHASE	SUB-PHASE	ACTION	POSITION RESPONSIBLE
		6. Notify affected Critical Care Customers and Large Water Users	**Customer Service** **Public Affairs**
		7. Notify standby Systems Operator	**Water Operations**
		8. Contact diesel fuel supplier if necessary.	**Facilities & Fleet**
		9. Turn off unnecessary electrical equipment. 10. Start backup generators as necessary for key components. Note: Uninterruptible Power Supplies (UPSs) for servers and other computers may only supply power for a few hours. 11. Prioritize and deploy portable backup generators. 12. Remind field staff to take water, food, extra clothing in case of need into the field.	**All affected IRWD groups**
		13. Deploy staff to locations using backup power to monitor fuel levels. 14. Coordinate with Edison to determine cause of power outage and estimated time of restoration. 15. Provide an electrician and mechanic in case standby generator(s) fail.	**Mechanical/Electrical**
		16. Notify other stakeholders as appropriate including Senior Executives, HR, Safety & Security, Public Affairs and WEROC. 17. Monitor and report on external sources of information including news reports, social media, first responder agencies, weather forecasts, WEROC and Orange County Operational Area.	**Safety & Security**
	Assess	1. Assess ability to supply fuel for the period of outage and longer. 2. Assess ability for HVAC or alternate to control temperatures for SCADA, computer servers and control systems. 3. Estimate potable water requirements under emergency conditions and determine if IRWD can meet these requirements. 4. Determine if SCADA systems and SCADA communications are operable for Water Operations, Recycling Operations and Collections. 5. Use information gathered and assessment criteria from the Red Book to determine all potential impacts. 6. Determine if loss of power affects access gates/doors, CCTV, intrusion alarms and other remote monitoring capabilities. Be alert of a power loss as a diversionary tactic for a terrorist attack. 7. Decide if the incident warrants an EOC activation.	**GM and/or EMT** **All affected IRWD groups**

HAZARD-SPECIFIC RESPONSE PLAN: POWER OUTAGE

PHASE	SUB-PHASE	ACTION	POSITION RESPONSIBLE
	Activate	1. Determine Activation Level of EOC. 2. Decide Virtual or Physical Activation. 3. Request representatives report to EOC. 4. Notify other stakeholders of EOC Activation.	**GM and/or EMT** **All affected IRWD groups**
		5. Notify EOC representatives to call into EOC bridge line and/or report to EOC. 6. Prepare EOC for activation.	**Safety & Security**
Respond	**Manage** **Communicate** **Coordinate** **Plan**	1. Assign Director of Maintenance as the EOC Director. 2. Inform all stakeholders of current situation. 3. Develop and implement EOC Action Plan to respond to prioritized areas. 4. Prioritize allocation of portable generators. 5. Request mutual aid or mutual assistance if necessary.	**EOC Director and Emergency Operations Team**
		6. Develop and inform customers of current status.	**Public Affairs** **Customer Service**
		7. Increase disinfectant residual as a precaution to potential contamination. 8. If IRWD is not able to meet community requirements for water, then arrange for water to be supplied by another source. 9. Notify users of interruption of service if backup pump(s) is/are not capable of maintaining supply. 10. Deploy water buffaloes as required.	**Water Operations**
		11. Coordinate "Boil Water", "Do not Drink", or "Do not Use" orders and Press Releases with the Director of Water Quality and the Director of Public Affairs. Refer to Crisis Communications Plan for procedures. 12. Report contamination to Department of Public Health Services and WEROC.	**Water Operations** **Water Quality** **Public Affairs** **Safety & Security**
		13. Monitor and report on all lift stations.	**Collections**
		14. Monitor and report on processing capability of plant and effluent storage capacity. 15. Request portable backup generators as required. 16. Advise OCSD of situational status.	**Recycling Operations**
		17. Monitor backup power supply to check if battery levels are adequate and backup generators are functional.	**Mechanical/Electrical** **Facilities & Fleet** **Information Services** **SCADA**
		18. Initiate Disaster Recovery Plans (DRPs) as required for access to critical systems, applications and data.	**Information Services** **SCADA**
		19. Assist in documentation of emergency work orders, contracting costs, timekeeping, materials, etc.	**Asset Management**

HAZARD-SPECIFIC RESPONSE PLAN: POWER OUTAGE

PHASE	SUB-PHASE	ACTION	POSITION RESPONSIBLE
		20. Request field staff numbers and locations as necessary. 21. Ensure adequate food, water, and toileting/hand wash resources are provided to field staff.	**Safety & Security**
Recover	**Short-Term**	1. Conduct damage assessments. 2. Record and quantify damaged equipment (Asset Systems Management to assist). 3. Prioritize short-term and long-term recovery tasks for repairs/replacements. 4. Repair or replace damaged equipment. 5. Unhook and return all unneeded equipment to their pre-response locations or deliver to Fleet Services for maintenance as needed.	**All affected IRWD groups**
		6. Conduct disinfection, flushing, and bacteriological sampling after equipment repair. 7. Coordinate notification of public/customers when it is safe to use potable water.	**Water Operations** **Water Quality**
	Long-Term	1. Develop a long-term recovery plan to return to normal operations. 2. Implement and complete long-term recovery projects.	**All affected IRWD groups**
Prevent/ Mitigate	**Debrief/Hot Wash AAR/Lessons Learned**	1. Conduct debrief/Hot Wash prior to deactivating EOC and demobilizing Emergency Operations Team. 2. Hold Post-Event Assessment meeting within two weeks after EOC deactivation and develop After-Action Report 3. Develop and implement Corrective Action Plan. 4. Review and revise HSRP as necessary. 5. Implement agreed upon changes to procedures.	**All Groups involved in Activation**
	Mitigation/ Prevention	1. Perform monthly checks on permanent, staged and portable backup generators. 2. Check fuel supply.	**Facilities & Fleet Services**
		3. Contact SCE to ensure they have the most current IRWD contact information. 4. Update contact information as required.	**Energy Analyst**

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HAZARD-SPECIFIC RESPONSE PLAN: WATER INTERRUPTION

D. WATER INTERRUPTION HAZARD-SPECIFIC RESPONSE PLAN

DESCRIPTION

Water interruption events will vary in scale from compromised incremental supply volumes to complete, catastrophic loss of water supply. There are two types of water interruptions: planned and unplanned. Planned outages occur when maintenance and/or testing is performed on major treatment facilities, pumps or pipelines. Advance notice is given to IRWD and preparations can be made beforehand.

For unplanned water interruptions, these consist of:

1. **Water Alert**: 5 – 15% reduction of water usage
2. **Water Warning**: 15 – 30% reduction of water usage
3. **Water Crisis**: 30 – 50% reduction of water usage
4. **Water Emergency**: 50% or greater reduction of water usage

Causes for the outage may be an extended water interruption by MET, a major line break, multiple, simultaneous line breaks, or a major interruption of the well field supply.

DEPARTMENTS INVOLVED

- Water Operations
- Engineering
- Mechanical/Electrical
- Facilities & Fleet Services
- Recycling
- Construction/Asset Systems Management
- Purchasing
- Water Resources
- Water Quality/Lab
- Safety & Security
- Public Affairs
- Customer Service

TRIGGERS

- Planned or unplanned water interruption by MET
- Multiple or major line breaks
- Major interruption of well field supply

EQUIPMENT

Staged parts and equipment — Water Buffaloes

PHASE	SUB-PHASE	ACTION	POSITION RESPONSIBLE
Prepare	**Ready**	Notified of planned interruption of MET water affecting IRWD water supply. Develop strategies for providing alternate water supply and/or for reducing water usage.	**Water Operations** **Engineering** **Public Affairs**
	Notify and Monitor	1. Notified of an unplanned interruption of water supply. 2. Notify other stakeholders affected by the interruption. These include: a. Water Operations Systems Operator b. Engineering c. Mechanical/Electrical d. Customer Service e. Facilities & Fleet f. Water Resources g. Risk Management h. Safety & Security i. Public Affairs j. Water Quality	**Water Operations** **Customer Service**

HAZARD-SPECIFIC RESPONSE PLAN: WATER INTERRUPTION

PHASE	SUB-PHASE	ACTION	POSITION RESPONSIBLE
		3. Collect information and continue to monitor the interruption. 4. Coordinate with local police department, public works and contractors to control traffic and barricade area around a line break. 5. Check on availability of parts and equipment.	
		6. Notify other stakeholders as appropriate including Directors, Senior Executives, HR and WEROC. 7. Monitor and report on external sources of information including news reports, social media, first responder agencies, weather forecasts, WEROC and Orange County Operational Area.	**Safety & Security**
	Assess	1. Establish lines of communication. 2. Use information gathered and assessment criteria (from the Red Book) to determine all potential impacts. 3. Determine the severity of the water interruption. 4. **Water Alert**: A 5 – 15% reduction in water use is required. a. Encourage voluntary conservation b. Establish and maintain public information campaign through Public Affairs 5. **Water Warning**: A 15 – 30% reduction of water use is required. a. Request customers to reduce water by 15% or greater (voluntary or mandatory) b. Establish and maintain public information campaign through Public Affairs c. Consider restricting landscape irrigation d. Consider asking restaurants not to serve water unless requested 6. **Water Crisis:** A 30 – 50% reduction of water use is required. a. Require customers to reduce water use by 30% or more. b. Establish and maintain public information campaign through Public Affairs c. Establish restrictions for landscape irrigation d. Restrict use of potable water for filling swimming pools, artificial lakes, ponds and streams	**GM and/or EMT** **All affected IRWD groups**

HAZARD-SPECIFIC RESPONSE PLAN: WATER INTERRUPTION

PHASE	SUB-PHASE	ACTION	POSITION RESPONSIBLE
		e. Prohibit water use for ornamental ponds and fountains f. Restrict washing automobiles and equipment g. Restrict sewer and fire hydrant flushing to emergency and essential operations h. Add permanent water meter and/or flow restrictors for violators 7. **Water Emergency:** A 50% or greater reduction of water is required. In addition to the restrictions implemented for a water crisis: a. Disallow all landscape irrigation b. Disallow potable water use for construction purposes c. Reduce or cease all water use for large industrial users (canneries, food manufacturers) 8. Decide if the incident warrants an EOC activation.	
	Activate	1. Determine Activation Level of EOC. 2. Decide Virtual or Physical Activation. 3. Request representatives report to EOC. 4. Notify other stakeholders of EOC Activation.	**GM and/or EMT** **All affected IRWD groups**
		5. Notify EOC representatives to call into EOC bridge line and/or report to EOC. 6. Prepare EOC for activation.	**Safety & Security**
Respond	**Manage** **Communicate** **Coordinate** **Plan**	1. Assign Director of Water Operations as the EOC Director. 2. Inform all stakeholders of current situation. 3. Develop and implement EOC Action Plan to respond to prioritized areas. 4. Request mutual aid or mutual assistance if necessary.	**EOC Director and Emergency Operations Team**
		5. Use IRWD Alert to identify affected areas. 6. Report to customers and other stakeholders (City Public Works, PD) of current status. d. Communicate directly with high-priority customers	**Public Affairs** **Customer Service**
		7. For lines with no pressure or negative pressure, coordinate precautionary “Boil Water” order and Press Releases with the Director of Water Quality and the Director of Public Affairs. Refer to Crisis Communications Plan for procedures. 8. Increase chlorine residuals temporarily 9. Report contamination to Department of Public Health Services and WEROC.	**Water Operations** **Water Quality** **Public Affairs** **Customer Service** **Safety & Security**
		10. Assist in lockout/tag out of equipment during shutdown and repair	**Mechanical**

HAZARD-SPECIFIC RESPONSE PLAN: WATER INTERRUPTION

PHASE	SUB-PHASE	ACTION	POSITION RESPONSIBLE
		11. Assist in documentation of emergency work orders, contracting costs, timekeeping, materials, etc.	**Asset Management**
		12. Request field staff numbers and locations as necessary. 13. Ensure adequate food, water, and toileting/hand wash resources are provided to field staff. 14. Maintain communication and coordinate with WEROC as necessary.	**Safety & Security**
Recover	**Short-Term**	1. Conduct damage assessments. 2. Record and quantify damaged equipment (Asset Systems Management to assist). 3. Prioritize short-term and long-term recovery tasks for repairs/replacements. 4. Repair or replace damaged equipment. 5. Unhook and return all unneeded equipment to their pre-response locations or deliver to Fleet Services for maintenance as needed.	**All affected IRWD groups**
		6. Valve off portions of the distribution system until above ground storage tanks are refilled. 7. Issue precautionary "Boil Water" order. 8. Increase chlorine residual temporarily. 9. Conduct disinfection, flushing, and bacteriological sampling after equipment repair. 10. Coordinate notification of public/customers when it is safe to use potable water. 11. Repressurize system to avoid potential damage to lines. 12. Bleed air from lines during refill.	**Water Operations** **Water Quality**
	Long-Term	1. Develop a long-term recovery plan to return equipment and distribution system to normal operations. 2. Implement and complete long-term recovery projects.	**All affected IRWD groups**
Prevent/ Mitigate	**Debrief/Hot Wash AAR/Lessons Learned**	1. Conduct debrief/Hot Wash prior to deactivating EOC and demobilizing Emergency Operations Team. 2. Hold Post-Event Assessment meeting within two weeks after EOC deactivation and develop After-Action Report, 3. Develop and implement Corrective Action Plan. 4. Review and revise HSRP as necessary. 5. Implement agreed upon changes to procedures.	**All Groups Involved in Activation**
	Mitigation/ Prevention	6. Designate alternate area(s) for dumping residual dirt apart from Michelson yard.	**Construction Services**

HAZARD-SPECIFIC RESPONSE PLAN: WILDFIRE

E. WILDFIRE HAZARD-SPECIFIC RESPONSE PLAN ANNEX

INTRODUCTION

The Wildfire Hazard-Specific Response Plan Annex to the IRWD Emergency Operations Plan (EOP) outlines the strategies, responsibilities, and resources required to prepare for, respond to, and recover from wildfire incidents. It provides a comprehensive approach to mitigating risks, maintaining service continuity, and ensuring the safety of IRWD employees and customers. This document serves as a critical tool to strengthen the IRWD's resilience against wildfires and ensure its readiness to meet the challenges posed by these destructive events.

Wildfires are a persistent and severe hazard within the Irvine Ranch Water District (IRWD) service area. The district's geographic location in Southern California makes it particularly susceptible to wildfires due to a combination of factors, including prolonged drought conditions, high temperatures, low humidity, and strong Santa Ana winds. These conditions, along with the region's natural topography and dense vegetation, create an environment where wildfires can ignite and spread rapidly, posing significant risks to IRWD operations and the surrounding community.

As stated by the Orange County Fire Authority, “Fire Danger is a Year-Round Occurrence.” The areas of Orange County most at risk of wildfires are the wildland interface areas such as Irvine Industrial Complex East, Foothill Ranch, Modjeska, Portola Ranch, Silverado, and Williams Canyon.

Potential Impacts on IRWD

Wildfires can have far-reaching effects on IRWD’s infrastructure and operations, including:

- **Infrastructure Damage**: Wildfires can damage or destroy water treatment facilities, pipelines, reservoirs, and power supplies critical to water delivery and wastewater management.
- **Service Disruptions**: Smoke, ash, and fire damage can compromise water quality; requiring extensive treatment efforts. Additionally, power outages may hinder water distribution systems.
- **Operational Strain**: Firefighting efforts may require substantial water resources; straining supply systems and impacting IRWD’s ability to serve customers.
- **Safety Risks**: Wildfires may place IRWD personnel and emergency responders in hazardous conditions; requiring additional protective measures.
- **Environmental and Economic Impacts**: Fire damage to ecosystems may affect water sources, and infrastructure repairs can result in significant financial burdens.

ACTIVATION CRITERIA

IRWD may need to activate this annex and its Emergency Operations Team (EOT) and/or Emergency Operations Center (EOC) when any of the following criteria are met:

1. **Wildfire Proximity and Threat Level**
   - A wildfire is reported within or near the IRWD service area that poses a potential or imminent threat to critical infrastructure or operational continuity.

- Local or regional fire agencies issue warnings of high fire danger, including Red Flag Warnings[2] or Extreme Fire Weather Conditions.

2. Impact on IRWD Operations

- IRWD facilities are in the projected path of a wildfire or are under evacuation orders.
- Firefighting activities require significant water resources from IRWD systems, potentially straining supply or distribution capacities.
- Power outages or other wildfire-related disruptions impact the functionality of IRWD infrastructure, such as water treatment plants, pump/lift stations, or reservoirs.

3. Mandatory Orders or Regulatory Triggers

- Local or state authorities issue evacuation orders or emergency declarations that include areas served by IRWD.
- Regulatory agencies mandate specific actions related to wildfire risk mitigation or response.

4. Community Impacts

- Significant portions of the IRWD customer base are affected by the wildfire, necessitating increased demand for water, sanitation, or emergency support services.
- Smoke or ash from nearby wildfires has the potential to impair water quality or pose health risks to employees and customers.

5. Interagency Coordination Needs

- IRWD is requested to support firefighting operations, emergency response, or mutual aid efforts.
- Orange County Operational Area or Regional Emergency Operations Centers (EOCs) or fire incident command teams activate, requiring IRWD coordination and representation.

6. Resource Requirements

- Emergency personnel, equipment, or financial resources need to be mobilized to protect or restore IRWD infrastructure.
- Backup systems, such as generators or alternative water sources, must be deployed to maintain critical operations.

7. Anticipation of Extended Response or Recovery Efforts

- Wildfire conditions are projected to persist, requiring sustained IRWD involvement in response and recovery operations.
- Prolonged water quality impacts or infrastructure damage necessitates immediate action to mitigate risks and restore service.

8. Preparedness for Escalating Scenarios

- Wildfire conditions worsen, increasing the likelihood of cascading effects such as landslides, flooding, or additional infrastructure damage.
- Initial response efforts indicate a potential need for broader activation of emergency plans and resources.

[2] The National Weather Service (NWS) will issue a Red Flag Warning whenever a geographical area has been in a dry spell, the National Fire Danger Rating System (NFDRS) is high to extreme, and/or the following weather parameters are forecasted: a) sustained wind average of 25 mph or greater; b) relative humidity less than or equal to 15%, and c) a temperature greater than 75°F.

HAZARD-SPECIFIC RESPONSE PLAN: WILDFIRE

PLANNING ASSUMPTIONS & ESSENTIAL ELEMENTS OF INFORMATION (EEI)

Planning assumptions provide a realistic basis for emergency response and recovery strategies. These assumptions reflect an informed understanding of potential wildfire impacts on IRWD's operations, infrastructure, and community.

By collecting and analyzing these essential elements of information, IRWD can enhance situational awareness and ensure informed decision-making during wildfire response and recovery operations.

Category	Planning Assumptions	Essential Element of Information (EEI)	Possible Source(s)
Fire Spread & Behavior	• Wildfires are most likely to occur between May and November, with peak risk during late summer and early fall due to heightened Santa Ana wind activity. • Historical data indicates an increasing frequency of wildfire incidents in Southern California due to climate change and prolonged drought conditions. • Fires in the IRWD service area can spread rapidly due to strong winds, steep terrain, and highly combustible vegetation. • Embers can travel up to one mile ahead of the main fire front, creating spot fires and exacerbating containment challenges.	Current location and boundaries of the wildfire	• Local fire agencies (e.g., Orange County Fire Authority) • WEROC • Incident Command reports • CAL FIRE updates and maps • Predictive modeling software/reports • Remote sensing tools (e.g., satellite imagery, drones) • National Interagency Fire Center (NIFC) • Overlays with IRWD infrastructure • Publicly available wildfire Apps (e.g., Watch Duty)
		Locations of firefighting efforts	
		Rate of spread, direction, and projected growth	
		Type of wildfire (surface fire, crown fire, etc.)	
		Currently damaged and threatened property and infrastructure	
		Wind speed and direction	• National Weather Service (NWS) • Local meteorological reports • Operational Area or Regional EOC weather briefings
		Temperature, humidity, and precipitation forecasts	
		Red Flag Warnings or Extreme Fire Weather Conditions	
Infrastructure Vulnerability	• Critical IRWD infrastructure such as pipelines, pump stations, reservoirs, and treatment plants are susceptible to damage from direct fire exposure, heat, and smoke.	Status of water treatment plants, pipelines, reservoirs, and pump stations	• IRWD operations and maintenance teams • Field inspection reports • SCADA systems
		Damage assessments for impacted facilities	

HAZARD-SPECIFIC RESPONSE PLAN: WILDFIRE

Category	Planning Assumptions	Essential Element of Information (EEI)	Possible Source(s)
	• Prolonged power outages caused by wildfire-related damage to electrical grids can disrupt IRWD operations.	Availability of backup systems or redundancy options (e.g., generators and fuel)	• Map of backup systems (including capacity hours)
		Burned area assessments and potential impacts (including extreme heat) on water systems (e.g., erosion, debris flow, melting, evaporating)	• Burned Area Emergency Response (BAER) teams (U.S. Forest Service) • Hydrology and soil specialists • IRWD engineering and recovery planning teams
Technology & Comms	• Monitoring systems (e.g., SCADA) will provide critical data for assessing damage and prioritizing response actions but may experience outages. • Redundant and alternative communication systems will be essential to maintain situational awareness and coordinate response efforts.	Functionality of communication systems, including phones, two-way radios, internet, and GETS.	• IT, Automation, and Communications Departments. • Vendor support for communication and monitoring equipment. • Customer feedback and social media monitoring. • Government Emergency Telecommunications System (GETS) status reports.
		Status of monitoring systems (e.g., SCADA, air and water quality).	
		Effectiveness of public communication platforms (e.g., website, social media).	
Water Demand for Firefighting	• Significant water resources will be required to support firefighting operations, potentially straining water delivery systems and impacting regular customer service. • Firefighting demands may necessitate the activation of backup water supplies and pressure management protocols.	Current tank and open reservoir supply levels and reserve capacity	• IRWD water operations teams (e.g., Incident Response Teams [IRTs]) • Fire agencies or incident command resource requests • Water quality monitoring systems • SCADA systems • Geographic Information Systems (GIS)
		Estimate the increased demand for firefighting or emergency response	
		Estimated fire flow availability at all IRWD hydrants and open reservoirs	

HAZARD-SPECIFIC RESPONSE PLAN: WILDFIRE

Category	Planning Assumptions	Essential Element of Information (EEI)	Possible Source(s)
Operational Impact of Air Quality	• Heavy smoke and ash from nearby fires can impair water quality, requiring additional filtration and treatment processes to maintain potable water standards. • Poor air quality may restrict outdoor operations and require additional protective equipment for IRWD personnel.	Impacts on water quality due to smoke, ash, or runoff Levels of smoke, particulate matter, and ash in the air	• South Coast Air Quality Management District (SCAQMD) • Environmental Protection Agency (EPA) • California Environmental Protection Agency (Cal EPA) • Remote air quality sensors
Evacuation & Access Challenges	• Wildfires can disrupt transportation routes, potentially delaying the deployment of emergency personnel and equipment to affected areas. • Evacuation orders for communities near IRWD facilities may increase customer reliance on water and sanitation services during emergencies.	Areas under evacuation orders or at risk Transportation impacts Access routes for emergency personnel and equipment	• Incident Command or Unified Command briefings • Fire agency situation reports • Operational Area or Regional EOCs
Community Impacts	• Wildfires are likely to result in increased community reliance on IRWD for information, water supply, and recovery assistance. • Vulnerable populations, such as elderly residents or those with mobility challenges, may require additional support during wildfire incidents.	Population affected by service interruptions Needs of vulnerable populations (e.g., elderly, medically dependent) Timeline for restoration of services	• Incident Command or Unified Command briefings • WEROC and Local emergency management agencies • Public safety alerts (e.g., Reverse 911, Wireless Emergency Alerts) • Community outreach or customer service reports. • County WebEOC.

HAZARD-SPECIFIC RESPONSE PLAN: WILDFIRE

Category	Planning Assumptions	Essential Element of Information (EEI)	Possible Source(s)
Regulatory Compliance	• All wildfire response actions must comply with federal, state, and local regulations, including environmental protection laws and water quality standards. • IRWD may need to report wildfire-related impacts to regulatory agencies and coordinate on recovery strategies.	Environmental impacts on water sources or habitats Regulatory guidance affecting IRWD operations during wildfires	• South Coast Air Quality Management District (SCAQMD) • Environmental Protection Agency (EPA) • California Environmental Protection Agency (Cal EPA)
Financial & Resource Constraints	• Wildfire response and recovery efforts will require significant financial resources, including funds for infrastructure repairs, additional staffing, and emergency supplies. • Limited availability of specialized equipment or contractors during widespread wildfire events may delay recovery timelines. • Wildfire response will involve collaboration with local fire departments, emergency management agencies, and utility companies. • Mutual aid agreements and pre-established communication protocols will be essential for effective response efforts.	Status of local, state, or federal emergency declarations, including Fire Management Assistance Grants (FMAGs) Status and location of IRWD personnel, equipment, and supplies Mutual aid requests or availability	• Local government proclamations • California Office of Emergency Services (Cal OES) • Federal Emergency Management Agency (FEMA) • Internal IRWD resource management systems • Mutual aid agreements or partner agency updates • Logistics Sections of EOC/EOT

HAZARD-SPECIFIC RESPONSE PLAN: WILDFIRE

OBJECTIVES, COURSES OF ACTION, AND RESOURCES

This annex outlines a structured approach to mitigating and responding to the impacts of wildfires on IRWD's operations, infrastructure, and stakeholders. It provides a clear framework for achieving critical objectives through well-defined courses of action, assigning responsibilities to appropriate parties, and ensuring access to necessary resources. The document categorizes the response framework into the following components:

- **Objectives:** Clear, measurable goals that address the critical needs arising from a wildfire.
- **Courses of Action:** Specific steps or procedures to achieve each objective efficiently and effectively.
- **Responsible Parties:** Departments or teams designated to carry out each action, leveraging their expertise and resources.
- **Resources:** Equipment, tools, systems, and agreements necessary to implement the actions successfully.

(***Note:*** The objectives and courses of action presented below are not in order of priority or sequence. All should be considered in the event of a Wildfire. The EOT/EOC should then prioritize objectives [including considering competing objectives, limited resources, and limited information], add objectives if necessary, and select courses of action appropriate for the specific situation per the Action Planning Cycle described in the EOP §5: EOC Operations/B. Action Planning Cycle).

Summary of Potential Objectives:

1. **Ensure Employee Safety**
2. **Ensure Continuity of Water Supply for Firefighting Purposes**
3. **Support Firefighting and Emergency Response Efforts**
4. **Protect IRWD Infrastructure**
5. **Prevent Contamination and Maintain Water Quality Standards**
6. **Maintain Effective Communication**
7. **Ensure Continuity of Operations**

Potential Objective 1: Ensure Employee Safety	
Potential Course(s) of Action	**Responsible Party(ies)**
A. Monitor air quality and fire and wind conditions for Fire Weather Watches and Red Flag Warnings issued by the National Weather Service: http://www.weather.gov/alerts/ca.html	• Standby Systems Operator • Safety & Security
B. Consider ceasing fire-sensitive construction and field activities during a Red Flag Warning.	• Operations and Maintenance • Construction Services • Field Services • Engineering
C. Provide employees with personal protective equipment (PPE) for working in wildfire conditions.	• Safety & Security • Human Resources/Risk Management

Potential Objective 1: Ensure Employee Safety	
(Target: 100% of employees are properly equipped within 3 hours).	• Operations and Maintenance
D. Remind field staff to take water, food, extra clothing in case of need into the field.	
E. Account for staff to ensure they are not in a threatened or evacuated area. Relocate or recall staff, as necessary.	
F. Coordinate with public safety agencies on evacuation protocols if IRWD facilities or personnel are threatened. **(Target: ≤ 2 hours as facilities are threatened).**	
G. Restrict access to hazardous areas and issue advisories as needed. **(Target: within 1 hour of confirmed contamination/hazard).**	
Resources:	
• Personal Protective Equipment (PPE) for wildfire conditions (e.g., respirators). • First aid kits and medical supplies • Air quality monitors for hazardous conditions: AirNow. • Barriers and caution tape to secure hazardous areas • Safety and risk management protocols • Emergency communication tools (e.g., mobile radios, satellite phones) • Safety and Risk Management Team • Emergency Medical Response Team	

Potential Objective 2: Ensure Continuity of Water Supply for Firefighting Purposes	
Potential Course(s) of Action	**Responsible Party(ies)**
A. Activate backup power systems to maintain water treatment and distribution operations. **(Target: 90% or higher within 2 hours)**	• Operations & Maintenance • Water Quality • Emergency Operations Team (EOT)
B. Increase water storage levels at reservoirs in high-risk areas to 100% and maintain those levels.	
C. Coordinate with firefighting agencies to allocate water resources for fire suppression without compromising community needs.	
D. Implement water conservation measures if supply is limited.	
Resources:	
• Logistics Staging Areas (LSAs) • Backup power generators	

Potential Objective 2: Ensure Continuity of Water Supply for Firefighting Purposes
• Portable water pumps • High-capacity water storage tanks

Potential Objective 3: Support Firefighting and Emergency Response Efforts	
Potential Course(s) of Action	**Responsible Party(ies)**
A. Participate in Unified Command and city, Operational Area, or Regional Emergency Operations Centers (EOCs). **(Target: within 30 minutes of activation).** Assign an IRWD Incident Commander (IC) as an Agency Representative, preferably the Water Operations Manager or Supervisor, to the Incident Command Post (ICP) and set-up a situation monitoring/ notification protocol with the ICP.	• Emergency Operations Team (EOT) • Operations and Maintenance • GIS/Mapping
B. Maintain contact with Orange County Fire Authority (OCFA) Emergency Command Center (ECC) and Fire Safe Council.	
C. Determine expected water demand based on current and proposed firefighting tactics.	
D. Update the ICP and EOCs on the status of water systems, storage levels, pumping capability and any deficiencies due to pump loss or other damages. **(Target: regularly or at minimum ≥ 2 updates/day).**	
E. Determine whether to maintain service to partner agencies (i.e., interties) or direct water supplies to emergency response.	
F. Identify water facilities critical to firefighting operations.	
G. Hookup a backup generator or fire flow pump at each pump station identified as critical to firefighting operations.	
H. Coordinate with fire agencies to provide water access at hydrants or reservoirs. Take necessary actions to deliver required fire flow to appropriate hydraulic Zones. **(Target: ≤ 1 hour)** **(Target: ≥ 95% of requests from firefighting agencies fulfilled).**	

Potential Objective 3: Support Firefighting and Emergency Response Efforts	
I. Share maps and data on IRWD infrastructure to aid in firefighting efforts.	
J. Deploy IRWD field crews to assist in repairing or restoring critical infrastructure if safe and practical. **(Target: 80% of hydrants and reservoirs maintained operational).**	
K. Request mutual aid resources as needed.	
L. Share situational updates with local, state, and federal partners.	
Resources:	
• Logistics Staging Areas (LSAs) • Secure communication tools for interagency coordination • Contact lists for local, state, and federal partners • Access to mutual aid platforms (e.g., CalWARN) • Liaison Officers • Hydrant connectors and adapters for firefighting equipment • Detailed GIS maps of water infrastructure	

Potential Objective 4: Protect IRWD Infrastructure	
Potential Course(s) of Action	**Responsible Party(ies)**
A. Patrol high-risk areas frequently. **(Target: at minimum once/day)**	• Operations and Maintenance • Engineering • Facilities • Regulatory Compliance • Asset Systems
B. Deploy field crews to assess and reinforce fire-prone facilities (e.g., reservoirs, pipelines). **(Target: ≤ 12 hours)**	
C. Establish or assess defensible space and weed abatement needs around facilities using vegetation management techniques (particularly canyon facilities). **(Target: 100% of facilities with defensible space created before wildfire season).**	
D. Consider ceasing fire-sensitive construction and field activities during a Red Flag Warning.	• Operations and Maintenance • Construction Services • Field Services • Engineering
E. Implement plans to check, maintain, or supply generators, including:	• Operations and Maintenance

Potential Objective 4: Protect IRWD Infrastructure

• Pre-stage mobile generators and pumps at vulnerable sites where needed. • Ensure permanent generators are operational including all necessary fittings. • Ensure generator and fire flow pump hookups are operational at all canyon pump station facilities. • Check all generators in potential fire area for operability and fuel. • Ensure plans are in place for startup/shutdown, extended operation and refueling of each backup generator or fire flow pump hooked up to a facility. • Ensure an electrician and mechanic are nearby in case standby generator(s) fail.	• Engineering • Facilities • Regulatory Compliance • Asset Systems
F. If Southern California Edison (SCE) implements a Public Safety Power Shutdown (PSPS), monitor the status of interface stations for nonscheduled outages and schedule standby staff. Electrical is the point of contact with SCE.	
G. Check the backup equipment in potentially affected area stations such as pumps, etc.	
H. Discuss the need for prestaging additional equipment and personnel.	
I. Conduct damage assessments of affected facilities and infrastructure. **(Target: ≤ 48 hours)**	
J. Prioritize and execute short-term and long-term repairs or replacements of damaged assets. **(Target: 90% restored in 14 days; 100% in 30 days).**	
K. Conduct debris removal and cleanup.	
L. Monitor for secondary impacts such as erosion or landslides affecting water systems.	

Resources:

- Logistics Staging Areas (LSAs)
- Fire-resistant materials for facility retrofits
- Vegetation management tools (e.g., chainsaws, mowers)
- Portable barricades
- Construction vehicles (e.g., excavators, loaders)
- Erosion control materials (e.g., silt fences, hydro-mulch)
- Emergency pumps and backup power generators (See Attachment 2 for generator list)

Potential Objective 4: Protect IRWD Infrastructure
• Trucks and tankers for water transportation • Inspection tools: drones and CCTV • Repair kits, including epoxy, clamps, and pipe repair bands • GIS mapping and infrastructure data • Pre-established contractor agreements for specialized repairs • Spare parts inventory for pipes, valves, and fittings • Mutual aid agreements for additional resources • Operations and Maintenance Crews • Logistics and Distribution Teams • Facilities Management Team • Vegetation Management Crews • Field Inspection Teams • Engineering Support Teams • Emergency Repair Crews • Water Buffaloes • Fueling Buffaloes

Potential Objective 5: Prevent Contamination and Maintain Water Quality Standards	
Potential Course(s) of Action	**Responsible Party(ies)**
A. Increase monitoring for contaminants such as ash, debris, or firefighting chemicals. **(Target: regularly or at minimum ≥ 3 tests/day per facility)**	• Regulatory Compliance and Water Quality • Operations and Maintenance
B. Implement additional water treatment protocols if contamination is detected. **(Target: ≤ 4 hours after detection)**	
C. Coordinate with regulatory agencies to ensure compliance with water quality standards. **(Target 100% compliance during and post fire)**	
Resources:	
• Logistics Staging Areas (LSAs) • Water quality testing kits and laboratory equipment • Monitoring equipment for detecting ash and contaminants. • Decontamination supplies for addressing contamination • Portable filtration and treatment systems • Portable storage tanks for safe water distribution • Public advisory templates for rapid dissemination • Coordination with public health agencies • Water Quality Testing Teams • Portable water treatment units	

Potential Objective 6: Maintain Effective Communication	
Potential Course(s) of Action	**Responsible Party(ies)**
A. Issue real-time updates to customers about service disruptions, water quality advisories, or resource conservation requests. **(Target: ≤ 1 hour after wildfire impacts are identified).** **(Target: 90% of affected customers reached within 6 hours).**	• Customer Service • Communications/Community Relations • IT Services • Safety & Security • Emergency Operations Team (EOT)
B. Establish a public information hotline for wildfire-related inquiries in coordination with Orange County and cities. **(Target: within 4 hours)**	
C. Establish redundant communication channels (e.g., radios, satellite phones). **(Target: within 2 hours of activation)**	
D. Provide regular updates to employees and external stakeholders. **(Target: communicate with employees and partners every 4 hours during response operations).**	
E. Coordinate with WEROC and local emergency management agencies.	
Resources:	
• Satellite phones, two-way radios, or other mobile communication systems • Redundant internet connections and servers (e.g., Starlink) • Mass notification systems (IRWD Alert) • Digital display boards for public updates • Social media management platforms • Call center support staff • IT and Communications Teams • Public Information Officers (PIOs)	

Potential Objective 7: Ensure Continuity of Operations	
Potential Course(s) of Action	**Responsible Party(ies)**
A. Check if the primary EOC or alternate EOC are safe to occupy. If not, activate a virtual EOC. **(Target: within 1 hour of wildfire)**	• Safety & Security • IT • Facilities • Operations and Maintenance
B. Implement pre-established business continuity plans. **(Target: continuity plans implemented within 4 hours of disruption)**	

Potential Objective 7: Ensure Continuity of Operations	
(Target: 95% of critical operations sustained without interruption)	• Human Resources • Finance
C. Monitor and manage employee availability to maintain staffing levels.	
Resources:	
• Logistics Staging Areas (LSAs) • Backup servers and redundant data storage systems • Mobile workstations for remote operations • Fuel reserves for generators and vehicles • Business continuity plans • Employee contact rosters and alternate work schedules • Business Continuity Teams	

PREPAREDNESS TASKS

By engaging in preparedness activities across planning, organizing, equipping, training, and exercises, IRWD can enhance its preparedness, reduce vulnerabilities, and strengthen its ability to respond to and recover from wildfire emergencies.

Planning

- Develop and regularly update this Wildfire Hazard-Specific Response Plan Annex, ensuring alignment with regional and state plans.
- Conduct risk assessments to identify high-risk areas and infrastructure vulnerable to wildfire damage.
- Establish pre-fire season action plans, including vegetation management and infrastructure inspections.
- Develop water contingency plans to maintain supply and quality during wildfire incidents, including strategies for high-demand firefighting needs.
- Pre-plan emergency communication strategies for customers, employees, and stakeholders, including templates for alerts and public information campaigns.
- Coordinate with local emergency management agencies to integrate IRWD's plans with city and Orange County Operational Area response efforts.

Organizing

- Identify critical roles and responsibilities within IRWD for wildfire response and recovery operations.
- Build relationships with city, Operational Area, and Regional EOCs for coordinated response efforts.

Equipping

- Designate staging areas for emergency response personnel, equipment, and resources.
- Maintain an inventory of critical assets, including backup generators, pumps, and water quality testing kits.
- Acquire and maintain backup power generators for all critical facilities, including water treatment plants and pump stations.

- Stockpile emergency supplies such as spare parts for infrastructure repair, personal protective equipment (PPE), and firefighting water connectors.
- Install fire-resistant materials and create defensible space around IRWD facilities.
- Enhance remote monitoring and control capabilities through SCADA systems for real-time infrastructure management.
- Ensure availability of mobile water treatment units and water tankers for emergency deployment.

Training

- Provide regular training to IRWD staff on wildfire response protocols and safety measures, including evacuation procedures.
- Train employees in the use of emergency equipment, such as generators, water pumps, and firefighting connections.
- Conduct training on interoperable communication tools to enhance coordination with external agencies.
- Offer first aid, CPR, and wildfire hazard awareness training to field staff and emergency responders.

Exercises

- Conduct exercises to simulate wildfire scenarios and test decision-making processes within the EOC.
- Perform monthly checks on permanent, and portable backup generators. Check fuel supply.
- Organize exercises with fire agencies, testing water supply capabilities for firefighting.
- Participate in regional multi-agency drills to practice interoperability and mutual aid response.
- Test infrastructure resilience through simulations of power outages, water supply disruptions, and infrastructure damage.
- Evaluate exercises through after-action reviews to identify gaps and incorporate lessons learned into plans and procedures.
- Test emergency communication systems and redundancies during exercises to ensure operational readiness.

WILDFIRE HSRP ATTACHMENT 1 – CONTACTS

- Orange County Fire Authority:
  - Emergency: (714) 538-2501
  - Non-emergency: (714) 573-6521

- Fire Safe Council:
  - Mary Schreiber
    - Mobile: (714) 323-9181
    - Office: (714) 368-4006
    - Home: (714) 649-2361

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HAZARD-SPECIFIC RESPONSE PLAN: MAJOR SEWER OVERFLOW

F. MAJOR SEWER OVERFLOW HAZARD-SPECIFIC RESPONSE PLAN

DESCRIPTION

Major sanitary sewer overflows (SSOs) have occurred rarely in the IRWD service area. However, sewer overflows such as a large force main break or a sewer overflow near surface water will trigger an emergency. Cascading effects from a major earthquake may cause multiple sewer line breaks and overflows. For these types of events, resource requirements may exceed the capacity of the IRWD Collections group and require the activation of the IRWD Emergency Operations Plan and this Hazard-Specific Response Plan.

This HSRP is intended to complement and integrate with the Overflow Emergency Response Plan in the IRWD Sewer System Management Plan.

Sanitary sewer overflows are classified by the California State Water Resources Control Board (SWRCB) into the following categories:

1. **Category 1**: Discharges of untreated or partially treated wastewater of any volume resulting from a sanitary sewer system failure or flow condition that:
    a. Reach surface water and/or reach a drainage channel tributary to a surface water; or
    b. Reach a Municipal Separate Storm System (MS4) and are not fully captured and returned to the sanitary sewer system or not otherwise captured and disposed of properly. Any volume of wastewater not recovered from the MS4 is considered to have reached surface water unless the storm drain system discharges to a dedicated water or groundwater infiltration basin.
2. **Category 2**: Discharges of untreated or partially treated wastewater of 1,000 gallons or greater resulting from a sanitary sewer system failure or flow condition that do not reach surface water, a drainage channel, or a MS4 unless the entire SSO discharged to the storm drain system is fully recovered and disposed of properly.
3. **Category 3**: All other discharges of untreated or partially treated wastewater resulting from a sanitary sewer system failure or flow condition.
4. **Private Lateral Sewage Discharges (PLSD):** Discharges of untreated or partially treated wastewater resulting from blockages or other problems within a privately-owned sewer lateral connected to the sanitary sewer system or from private sewer assets.

DEPARTMENTS INVOLVED

- Collections
- Recycling
- Regulatory Compliance
- Engineering
- Mechanical/Electrical
- Facilities & Fleet Services
- Water Quality/Lab
- Safety & Security
- Risk Management
- Public Affairs
- Customer Service

TRIGGERS

- Proximity of overflow to surface water
- Multiple or major sewer line breaks
- Major power outage (refer to Power Outage HSRP)
- Heavy rains, saturated soils and flooding
- Proximity to critical customers

HAZARD-SPECIFIC RESPONSE PLAN: MAJOR SEWER OVERFLOW

KEY CONTACTS

- State of California Office of Emergency Services (CalOES)
  - Primary Number: (916) 845-8510
- Orange County Health Care Agency
  - Primary Number: (714) 433-3500
- Regional Water Board
  - Primary Number: (951) 782-4130
- Orange County Sanitation District:
  - Primary number: (714) 962-2411
- South Orange County Wastewater Authority
  - Primary Number: (949) 234-5400
- Orange County Public Works
  - Primary Number: (714) 667-8800

EQUIPMENT

Parts and equipment

- Portable pumps
- Piping and hoses
- Digital or disposable cameras

Vehicles:

- Closed Circuit Television Inspection Unit
- Combination Sewer Cleaning Truck
- Emergency Response Trailer

Backup Generators

- Permanent generators located at lift stations
- Portable generators

PHASE	SUB-PHASE	ACTION	POSITION RESPONSIBLE
Prepare	**Ready**	1. Notified of heavy rains, saturated soils and potential flooding in IRWD Collections service area(s). 2. Plug manhole covers before heavy storm or flood alert.	**Collections**
		3. Monitor weather reports, forecasts and local conditions via local observation, NWS & OCFCD Bulletins, NWS website, OCOA EOC, public media, etc.	**Collections** **Safety & Security**
	Notify and Monitor	1. Notified of a potential sanitary sewer overflow. 2. Continue monitoring situation and collecting information.	**Collections** **Customer Service**
	Assess	1. Dispatch field crew to assess SSO. 2. Notify Director of Recycling Operations as necessary.	**Collections Supervisor, Manager or District Primary Responder**
		3. Assess and categorize the SSO. 4. **Category 1**: Discharges of untreated or partially treated wastewater of any volume resulting from a sanitary sewer system failure or flow condition that: a. Reach surface water and/or reach a drainage channel tributary to a surface water; or b. Reach a Municipal Separate Storm System (MS4) and are not fully captured and returned to the sanitary sewer system or not otherwise captured and disposed of properly. Any volume of wastewater not recovered from the MS4 is considered to have reached	**Collections**

PHASE	SUB-PHASE	ACTION	POSITION RESPONSIBLE
		surface water unless the storm drain system discharges to a dedicated water or groundwater infiltration basin. 5. **Category 2**: Discharges of untreated or partially treated wastewater of 1,000 gallons or greater resulting from a sanitary sewer system failure or flow condition that do not reach surface water, a drainage channel, or a MS4 unless the entire SSO discharged to the storm drain system is fully recovered and disposed of properly. 6. **Category 3**: All other discharges of untreated or partially treated wastewater resulting from a sanitary sewer system failure or flow condition. 7. **Private Lateral Sewage Discharges (PLSD)**: Discharges of untreated or partially treated wastewater resulting from blockages or other problems within a privately-owned sewer lateral connected to the sanitary sewer system or from private sewer assets.	
		8. For a **Category 1 SSO**, notify Regulatory Compliance of SSO. 9. Notify other IRWD stakeholders depending on category and severity. These can include: • Director of Recycling Operations • Customer Service • Regulatory Compliance • Safety & Security • Electrical/Mechanical • Water Quality • Public Affairs • Engineering • Risk Management 10. Contact and coordinate with local agencies and private contractors to respond to the SSO. These may include: • Local City and County Law Enforcement and Fire • Local City Public Works/Orange County Public Works • Private contractors for barriers and spill containment • Orange County Sanitation District	**Collections**
		11. Collect a water quality sample.	**Regulatory Compliance Water Quality Standby Staff (after hours)**
		12. Provide necessary SSO information to Regulatory Compliance	**Collections**

HAZARD-SPECIFIC RESPONSE PLAN: MAJOR SEWER OVERFLOW

PHASE	SUB-PHASE	ACTION	POSITION RESPONSIBLE
		13. Notify outside stakeholders as required. These can include: • Orange County Public Works • South Orange County Wastewater Authority • CalOES • Orange County Health Care Agency • Regional Water Board • WEROC	**Collections** **Regulatory Compliance** **Safety**
		14. Use information gathered and assessment criteria (from the Red Book) to determine all potential impacts. 15. Determine the severity of the water interruption. 16. Decide if the incident warrants an EOC activation.	**Collections** **GM and/or EMT** **All affected IRWD groups**
	Activate	1. Determine Activation Level of EOC. 2. Decide Virtual or Physical Activation. 3. Request representatives report to EOC. 4. Notify other stakeholders of EOC Activation.	**GM and/or EMT** **All affected IRWD groups**
		5. Notify EOC representatives to call into EOC bridge line and/or report to EOC. 6. Prepare EOC for activation.	**Safety & Security**
Respond	**Manage** **Communicate** **Coordinate** **Plan**	1. Assign Director of Recycling Operations as the EOC Director. 2. Inform all stakeholders of current situation. 3. Develop and implement EOC Action Plan to respond to prioritized areas. 4. Provide support to Collections field team(s). 5. Request mutual aid or mutual assistance if necessary.	**EOC Director and Emergency Operations Team** **Collections**
		6. Collect information and continue communicating with regulatory agencies as necessary.	**Regulatory Compliance**
		7. Provide support if SSO affects private property.	**Risk Management**
		8. Use IRWD Alert to identify affected areas. 9. Notify customers and other stakeholders (Local Public Works, Law Enforcement, Fire) of current status. e. Communicate directly with affected, high-priority customers	**Public Affairs** **Customer Service**
		10. Assist in documentation of emergency work orders, contracting costs, timekeeping, materials, etc.	**Asset Management**
		11. Request field staff numbers and locations as necessary. 12. Ensure adequate food, water, dry clothes and toileting/hand wash resources are provided to field staff.	**Safety & Security**

HAZARD-SPECIFIC RESPONSE PLAN: MAJOR SEWER OVERFLOW

PHASE	SUB-PHASE	ACTION	POSITION RESPONSIBLE
		13. Maintain communication and coordinate with WEROC as necessary.	
Recover	**Short-Term**	1. Conduct damage assessments as required. 2. Record and quantify damaged equipment (Asset Systems Management to assist). 3. Prioritize short-term and long-term recovery tasks for repairs/replacements.	**All affected IRWD groups**
		4. Estimate volume of spilled sewage. 5. Recover spilled sewage and any water used to flush the area. 6. Cleanup and disinfect affected area. 7. Perform any follow up activities. 8. Repair or replace damaged equipment. 9. Unhook and return all unneeded equipment to their pre-response locations.	**Collections**
		10. Coordinate any public notifications as necessary.	**Collections** **PIO**
		11. Complete all internal and external SSO documentation and reporting.	**Collections** **Regulatory Compliance**
	Long-Term	1. Develop a long-term recovery plan to return equipment and collection system to normal operations. 2. Implement and complete long-term recovery projects.	**All affected IRWD groups**
Prevent/ Mitigate	**Debrief/Hot Wash AAR/Lessons Learned**	1. Conduct debrief/Hot Wash prior to deactivating EOC and demobilizing Emergency Operations Team. 2. Hold Post-Event Assessment meeting within two weeks after EOC deactivation and develop After-Action Report. 3. Perform SSO Event Investigation. 4. Develop and implement Corrective Action Plan. 5. Review and revise HSRP as necessary. 6. Implement agreed upon changes to procedures.	**All Groups Involved in Activation**
	Mitigation/ Prevention	1. Inspect, clean and repair sewer pipe system on two-year cycle. 2. Inspect and maintain life stations on a regular basis.	**Collections**
		3. Inspect, test and maintain backup generators.	**Mechanical/Electrical**
		4. Evaluate and update parts for emergency use.	**Purchasing**
		5. Update contact information on a regular basis.	**Safety & Security**

HAZARD-SPECIFIC RESPONSE PLAN: MAJOR SEWER OVERFLOW

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HAZARD-SPECIFIC RESPONSE PLAN: FLOOD - GENERAL

G. FLOOD – GENERAL HAZARD-SPECIFIC RESPONSE PLAN

DESCRIPTION

This Hazard-Specific Response Plan (HSRP) applies to flooding events in the IRWD service territory and other District-owned sites and facilities. In general, flood events occur with reasonable lead times, and it is possible to take preparatory measures, as outlined below. However, while major floods can take several hours to days to develop, flash floods can develop over a few minutes to a few hours.

Response and recovery can be time consuming during flood events, as they can involve loss of electrical power supply, damage of structures and equipment, disruptions of service, and injuries to utility personnel.

SAFETY OF PERSONNEL AND THE PUBLIC IS THE TOP PRIORITY

At IRWD, safety is the number one priority! During an emergency, the primary consideration is the safety of IRWD staff, tenants and visitors. The secondary consideration is the security and protection of District facilities and equipment.

Be aware that if water is moving swiftly, even six-inch-deep water can knock an individual off their feet. Many people are swept away wading through floodwaters, resulting in injury or death. Staff may not be able to see on the surface how fast floodwater is moving or see holes and submerged debris.

- Avoid floodwaters whenever possible.
- Do not attempt to cross rapid flood waters with vehicles. Vehicles can be swept away in two feet of water.
- If a vehicle stalls in rapidly rising waters, abandon it immediately and climb to higher ground.
- Stay out of any building if floodwaters remain around the building.
- Wear sturdy shoes. The most common injury following a disaster is cut feet.
- Stay out of any building if floodwaters remain around the building.
- Avoid smoking inside buildings. Smoking in confined areas can cause fires.
- Wear sturdy shoes. The most common injury following a disaster is cut feet.
- Look out for fire hazards such as broken or leaking gas lines, flooded electrical circuits. Fire is the most frequent hazard following floods.
- Use battery-powered lanterns or flashlights when examining buildings to minimize fire hazard.

DEPARTMENTS INVOLVED

- Water Operations
- Collections
- Recycling Operations
- Electrical/Mechanical
- Facilities & Fleet Services
- Construction/Asset Systems Management
- Purchasing
- Field Services
- SCADA
- Water Quality/Lab
- Safety & Security

TRIGGERS

- Forecast of extremely heavy rain, severe flooding or flash flooding
- Severe flooding or flash flooding affecting IRWD

KEY CONTACTS

- National Weather Service:
  - Local Contact Number (San Diego Office): (858)-675-8700
- Orange County Flood Control District:

- Primary number: 714-647-3999

- Orange County Operational Area EOC
  - (714) 628-7008
- WEROC
  - Office: (714) 593-5010
  - Mobile: (714) 715-0283

EQUIPMENT

Vehicles:

- Front Loader
- Trucks and trailers
- Water Buffaloes
- Fuel Trucks

Equipment:

- Emergency lighting
- Shoring equipment
- Sandbags
- Auxiliary pumps
- Portable generators

PHASE	SUB-PHASE	ACTION	POSITION RESPONSIBLE
Prepare	**Ready**	The following preliminary actions will be taken at the beginning of each rainy season (September 15th – October 15th) to minimize the potential loss of District facilities and equipment.	
		1. Replenish flood-proofing materials (e.g., sandbags). 2. Check and maintain portable generators and auxiliary pumps.	**Water Operations** **Collections** **Mechanical/Electrical Facilities and Fleet Services**
		3. Monitor weather reports, forecasts and local conditions to assess the probability and severity of all rain events. The National Weather Service (NWS), Orange County Flood Control District (OCFCD) and Orange County Operational Area Emergency Operations Center (OCOA EOC) provide notifications of possible severe rain events up to 7 days in advance through Special Weather Statements. 4. Maintain communications with WEROC to receive updates on potential areas affected by flooding.	**Safety & Security**
	Notify and Monitor	1. Notified of a Flood Watch, Flood Warning or flooding affecting IRWD. 2. Flood Watch Stages from OC Flood Control Division: a. **Stage 1**: Light to moderate rain b. **Stage 2**: Moderate to heavy rain c. **Stage 3**: Continuation of heavy rain – High threat of damage d. **Stage 4**: Public Works & Local Agency Emergency Operations – Threat to private property (Local Emergency **may** be declared).	**Safety & Security** **Public Affairs** **Customer Service** **Water Operations**

HAZARD-SPECIFIC RESPONSE PLAN: **FLOOD - GENERAL**

PHASE	SUB-PHASE	ACTION	POSITION RESPONSIBLE
		e. **Stage 5**: Heavy damage potential – Beyond Public Works resources (Local Emergency Declared). f. **Stage 6**: Damage beyond Operational Area Resources (State of Emergency Declared). g. **Stage 7**: Damage beyond state resources (Presidential Declaration). 3. Notify other stakeholders depending on affected areas. These can include: • Water Operations Systems Operator • Collections • Recycling • Customer Service • Public Affairs • Mechanical/Electrical • Facilities & Fleet Services • Safety & Security	
		4. Contact local representative of NWS for additional information on exact location and probable extent (stage) of flooding, relative to utility facilities.	**Safety & Security**
		5. Use site maps or other available information to assess location of all facilities in flood area. 6. Prioritize pre-flooding activities on basis of flooding potential. 7. Elevate in-place or remove water-sensitive equipment within structures to prevent flood damage. 8. Anchor fuel tanks. 9. Elevate electrical system components. 10. Take appropriate flood-proofing steps (e.g., sandbags). 11. Flood-proof or elevate heating, cooling and ventilating (HVAC) equipment. 12. Turn off unnecessary electrical equipment in the potential flood area. 13. Prioritize and deploy portable backup generators and auxiliary pumps. 14. Consider shutting down specific faculties if flooding appears imminent. 15. Remind field staff to take water, food, extra clothing in case of need into the field.	**All affected IRWD groups**
		16. Install sewer backflow valves. 17. Plug sanitary sewer manhole covers as necessary.	**Collections**
		18. Monitor water levels of San Diego Creek and evaluate any impacts of Flood Watch or Flood Warning.	**Recycling Operations (MWRP Operations)**

HAZARD-SPECIFIC RESPONSE PLAN: FLOOD - GENERAL

PHASE	SUB-PHASE	ACTION	POSITION RESPONSIBLE
		19. Contact diesel fuel supplier if necessary.	**Facilities & Fleet**
		20. Notify other stakeholders as appropriate including Senior Executives, HR, Safety & Security, Public Affairs and WEROC. 21. Monitor and report on external sources of information including news reports, social media, first responder agencies, weather forecasts, WEROC and Orange County Operational Area.	**Safety & Security**
	Assess	If flooding has occurred: 1. Deploy team(s) to IRWD location(s) affected by flood. 2. Conduct site assessment from nearest safe location. 3. Based on peak flood stage, predict equipment affected by the flood. 4. Build inventory of equipment needed to restore service after flood waters recede. 5. Decide if the incident warrants an EOC activation.	**GM and/or EMT** **All affected IRWD groups**
		6. Notify neighboring utilities and other sources of emergency response support (e.g., WEROC) if additional manpower or equipment is needed.	**Water Operations** **Collections** **Safety & Security**
		7. Notify affected Critical Care Customers and Large Water Users affected by flood waters.	**Customer Service** **Public Affairs**
	Activate	1. Determine Activation Level of EOC. 2. Decide Virtual or Physical Activation. 3. Request representatives report to EOC. 4. Notify other stakeholders of EOC Activation.	**GM and/or EMT** **All affected IRWD groups**
		5. Notify EOC representatives to call into EOC bridge line and/or report to EOC. 6. Prepare EOC for activation.	**Safety & Security**
Respond	**Manage** **Communicate** **Coordinate** **Plan**	1. Assign director most affected by the flood as the EOC Director. 2. Inform all stakeholders of current situation. 3. Develop and implement EOC Action Plan to respond to prioritized areas. 4. Prioritize allocation of portable generators and auxiliary pumps. 5. Request mutual aid or mutual assistance if necessary.	**EOC Director and Emergency Operations Team**
		6. Develop information and inform customers of current status.	**Public Affairs** **Customer Service**
		7. Coordinate with Department of Health Services and Orange County Public Health as necessary.	**Water Quality** **Water Operations** **Safety & Security**
		8. Monitor and report on excess effluent flow.	**Collections**
		9. Monitor and report on processing capacity of plants and effluent storage capacity. 10. Advise OCSD of situational status.	**Recycling Operations**

HAZARD-SPECIFIC RESPONSE PLAN: **FLOOD - GENERAL**

PHASE	SUB-PHASE	ACTION	POSITION RESPONSIBLE
		11. Monitor portable generators for operability and fuel levels.	**Mechanical/Electrical Facilities & Fleet**
		12. Assist in documentation of emergency work orders, contracting costs, timekeeping, materials, etc.	**Asset Management**
		13. Request field staff numbers and locations as necessary. 14. Ensure adequate food, water, and toileting/hand wash resources are provided to field staff.	**Safety & Security**
Recover	**Short-Term**	1. Conduct damage assessments. 2. Inspect foundations for cracks or other damage to determine if facilities can be reoccupied. 3. Check power lines for damage. 4. Arrange for alternate sources of electrical power following flood. 5. Discard any food that has come in contact with floodwaters. 6. Inspect, clean, repair or replace any affected equipment. 7. Record and quantify damaged equipment (Asset Systems Management to assist). 8. Contact state and local authorities to determine regulations on disposal of materials and debris from the flooded site or if a temporary permit is required for the water pumped from tanks or other flooded structures. 9. Prioritize short-term and long-term recovery tasks for repairs/replacements. 10. Unhook and return all unneeded equipment to their pre-response locations or deliver to Fleet Services for maintenance as needed.	**All affected IRWD groups**
		11. Check insurance policies for procedures to recover losses, including the National Flood Insurance Program	**Risk Management**
		12. Conduct disinfection, flushing, and bacteriological sampling after equipment repair. 13. Coordinate notification of public/customers when it is safe to use potable water.	**Water Operations Water Quality**
	Long-Term	1. Develop a long-term recovery plan to return to normal operations. 2. Implement and complete long-term recovery projects.	**All affected IRWD groups**
Prevent/ Mitigate	**Debrief/Hot Wash AAR/Lessons Learned**	1. Conduct debrief/Hot Wash prior to deactivating EOC and demobilizing Emergency Operations Team.	**All Groups involved in Activation**

HAZARD-SPECIFIC RESPONSE PLAN: **FLOOD - GENERAL**

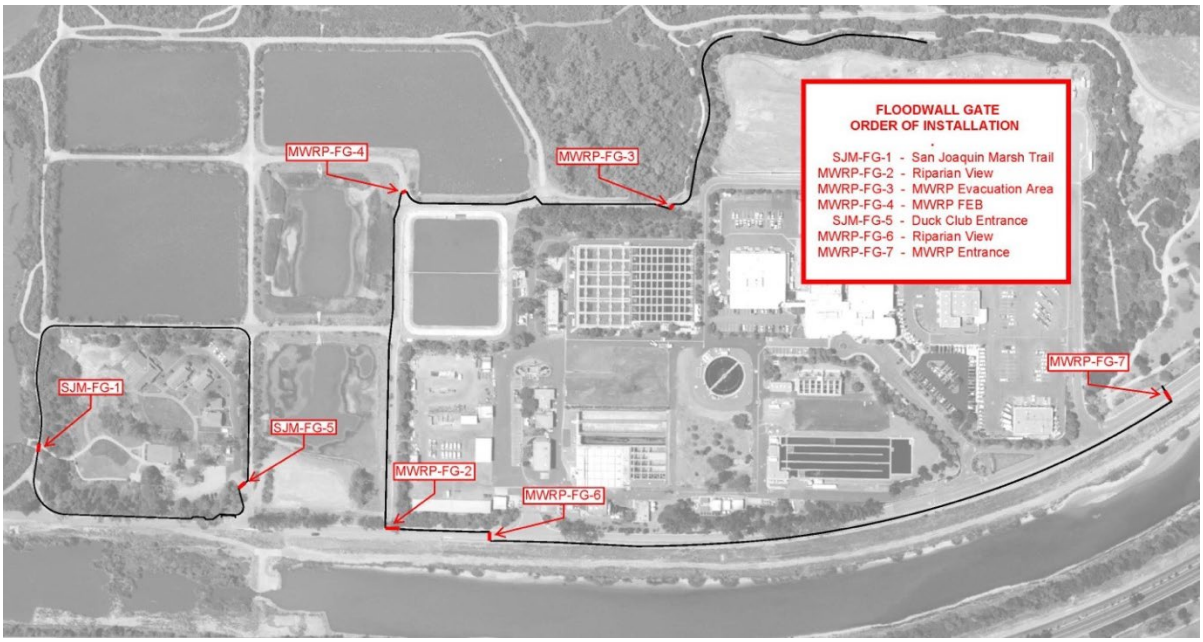
PHASE	SUB-PHASE	ACTION	POSITION RESPONSIBLE
		2. Hold Post-Event Assessment meeting within two weeks after EOC deactivation and develop After-Action Report 3. Develop and implement Corrective Action Plan. 4. Review and revise HSRP as necessary. 5. Implement agreed upon changes to procedures.	
	Mitigation/ Prevention	1. Assess permanently raising elevating water-sensitive equipment and anchoring fuel tanks in flood-prone locations. 2. Consider installing permanent flood protection measures (e.g., flood walls) in areas of high flood risk. 3. Perform checks on portable generators and auxiliary pumps. 4. Check fuel supply.	**Water Operations** **Collections** **Facilities & Fleet Services**
		5. Update contact information as required.	**Safety & Security**

HAZARD-SPECIFIC RESPONSE PLAN: FLOOD – MWRP

H. FLOOD – MWRP HAZARD-SPECIFIC RESPONSE PLAN

DESCRIPTION

The Michelson Wastewater Reclamation Plant (MWRP), located at 3512 Michelson Drive in Irvine, California, is situated adjacent to the San Diego Creek and is subject to flooding if the creek overflows its banks. IRWD has constructed permanent floodwalls to protect the plant and the San Joaquin Marsh campus. There are seven removable floodwall gates that, when not installed, allow for access to the MWRP and the San Joaquin Marsh campus. When the floodwall gates are installed, they and the permanent floodwalls provide flood protection for the plant and the campus.



This Hazard-Specific Response Plan is intended to communicate the roles and responsibilities of IRWD staff and outline the process in response to the event of an anticipated or actual San Diego Creek overflow. Before an overflow occurs, early response and activation of this Hazard-Specific Response Plan is critical. Historical data and preliminary calculations indicate that during a major rain event, the water level of San Diego Creek can rise very quickly.

SAFETY OF PERSONNEL AND THE PUBLIC IS THE TOP PRIORITY

At IRWD, safety is the number one priority! During an emergency, the primary consideration is the safety of IRWD staff, tenants and visitors. The secondary consideration is the security and protection of District facilities and equipment.

DEPARTMENTS INVOLVED

- Recycling (MWRP Operations)
- Electrical
- Mechanical
- Facilities & Fleet Services
- Water Operations
- Collections
- Construction/Asset Systems Management
- Purchasing
- Field Services
- SCADA
- Water Quality/Lab
- Safety & Security

HAZARD-SPECIFIC RESPONSE PLAN: FLOOD – MWRP

TRIGGERS

- Forecast of extremely heavy rain or severe flooding
- **Flood Stage 1**: San Diego Creek water level at **8'** (1st SCADA Alarm)
- **Flood Stage 2**: San Diego Creek water level at **11.5'** (2nd SCADA Alarm)
- **Flood Stage 3**: San Diego Creek water level at **13'** (3rd SCADA Alarm)
- **Flood Stage 4**: San Diego Creek water level at **16'** or **2' from overflowing its banks** (4th SCADA Alarm)
- **Flood Stage 5: San Diego Creek overflows Its banks and the MWRP property floods**

KEY CONTACTS

- Orange County Sanitation District:
  - Primary number: (714) 962-2411
- Orange County Flood Control District:
  - Primary number: (714) 647-3910
- Orange County Operational Area EOC
  - (714) 955-0200
- Hazardous Waste Removal Vendors:
  - Ocean Blue Environmental
    - Phone number: (562) 624-4120
  - Consolidated Waste Management
    - Phone number: (562) 347-4000
  - Pacific Resource Recovery
    - Phone number: (323) 261-7145

EQUIPMENT

Emergency Equipment:

- Backhoe/Loader Unit
- Wheel Loader
- Maintenance Utility Truck
- Barricades/Emergency Signs (located in Facility Services)
- Floodwall Gate Trailers (located at the MWRP Storage Building #120)
- Sandbags (located at Fleet Services)
- Sump pumps

Backup Generators:

- MWRP

Backup Computer UPS and Servers:

- Enterprise
- SCADA

PHASE	SUB-PHASE	ACTION	POSITION RESPONSIBLE
Prepare	**Ready**	The following preliminary actions will be taken at the beginning of each rainy season (September 15th – October 15th) to minimize the potential loss of District facilities and equipment and to minimize the overall scope of activities when the HSRP is activated:	
		1. Check and maintain radar flood level gauge with SCADA alarm installed in the San Diego Creek to monitor rising flood waters and to provide early notification	**Electrical (Instrumentation)**
		2. Relocate all equipment not essential for day-to-day District operations from the MWRP to other District sites.	**Collections** **Construction** **Fleet Services** **Field Services**
		3. Schedule immediate pickup of hazardous waste materials stored at the Hazardous Waste Collection, Laboratory Waste Storage, Fleet Services Waste Storage and Mechanical Services Oil Storage. Subsequent additions will be kept at minimum levels by scheduling more frequent pickups. The	**Facilities and Fleet Services** **Water Quality** **Regulatory Compliance** **Mechanical**

PHASE	SUB-PHASE	ACTION	POSITION RESPONSIBLE
		frequency of pickups will be determined by the quantity of waste generated. **Note**: IRWD has open Purchase Orders with three hazardous waste removal vendors who can respond in an emergency situation to remove hazardous waste: 1. Ocean Blue Environmental 2. Consolidated Waste Management 3. Pacific Resource Recovery	
		4. Stock Colilert reagent and bottles at the LAWRP to allow for continued basic coliform testing in order to ensure the reliability of the IRWD drinking water system during emergency situations.	**Water Quality**
		5. Store emergency supplies including life jackets, rain gear, flashlights, etc., in the EOC Supply Room located in the MWRP Ops Center in Building 60 for use by assigned emergency personnel as part of this HSRP. **Note**: Break glass of the red key box located on the wall next to the EOC Supply Room on the first floor of the MWRP Ops Center in Building 60 to obtain keys.	**Safety & Security**
		6. Monitor weather reports, forecasts and local conditions to assess the probability and severity of all rain events. The National Weather Service (NWS), Orange County Flood Control District (OCFCD) and Orange County Operational Area Emergency Operations Center (OCOA EOC) provide notifications of possible severe rain events up to 7 days in advance through Special Weather Statements.	**MWRP Operations** **Safety & Security**
		7. Monitor San Diego Creek levels during heavy rain events and the rate of rising water. Level detection transmitters have been installed in the San Diego Creek at the Michelson Bridge for this purpose.	**MWRP Operations**
		8. Ensure all emergency equipment (listed above in the Equipment section) are permanently assigned to the MWRP Operations Center and are immediately available for deployment.	**Facilities and Fleet Services**
		9. Relocate all emergency equipment not assigned to the MWRP Operations Center and deemed necessary for emergency response away from the flood Zone.	**All Affected Departments**

HAZARD-SPECIFIC RESPONSE PLAN: **FLOOD – MWRP**

PHASE	SUB-PHASE	ACTION	POSITION RESPONSIBLE
	Notify and Monitor	**FLOOD STAGE 1**	
		Initialize Flood Stage 1 based on any one of the following criteria: ✓ Meteorological forecasts indicate that predicted rainfall intensity and duration **may** be sufficient to cause the San Diego Creek to reach flood levels of **8'.** or ✓ It is estimated by MWRP Operations personnel that the San Diego Creek **may** overflow its bank based on creek level and rate of rising water. or ✓ It is declared by the General Manager or Executive Director of Operations.	
		1. Notify senior staff that Flood Stage 1 criteria have been met and have been confirmed by meteorological forecasts and SCADA alarm data and recommends that the senior staff authorize installation of Floodwall Gate 1 (SMJ-FG-1), Floodwall Gate 2 (MWRP-FG-2), Floodwall Gate 3 (MWRP-FG-3), and Floodwall Gate 4 (MWRP-FG-4).	**MWRP Operations Manager**
		2. Upon authorization, install Floodwall Gate 1, Floodwall Gate 2, Floodwall Gate 3, and Floodwall Gate 4 (see Exhibit A & B).	**MWRP Operations**
		3. Notify senior staff and Safety & Security that Floodwall Gate 1, Floodwall Gate 2, Floodwall Gate 3, and Floodwall Gate 4 have been closed.	**MWRP Operations Manager**
		4. Notify other stakeholders of Flood Stage 1 implementation including Public Affairs and Customer Service (see HSRP Flood – MWRP Attachment 1 for contact information). 5. Advise the Audubon House and San Joaquin Marsh Campus Caretaker tenants to be prepared to evacuate the area, within a 24-hour notice, due to potential flooding.	**Safety & Security**
		6. Advise all San Joaquin Marsh Campus and Duck Club visitors to prepare to evacuate the area, within a 24-hour notice, due to potential flooding.	**Public Affairs Customer Service**
		7. Continue monitoring weather reports, forecasts and local conditions via local observation, NWS & OCFCD Bulletins, NWS website, OCOA/EOC, public media, etc. **EOC Activation Level is set to 0.**	**MWRP Operations Safety & Security**

HAZARD-SPECIFIC RESPONSE PLAN: **FLOOD – MWRP**

PHASE	SUB-PHASE	ACTION	POSITION RESPONSIBLE
		FLOOD STAGE 2	
		Initialize Flood Stage 2 based on any one of the following criteria: ✓ Meteorological forecasts *continue* to indicate that rainfall intensity and duration **most likely** will cause the San Diego Creek to reach flood levels of **11.5'**. or ✓ Flood threat information provided by the Orange County Flood Control District EOC and/or OCOA EOC, indicates that there is a high potential for San Diego Creek flooding. or ✓ It is estimated by MWRP Operations personnel that the San Diego Creek will overflow its banks based on creek level and the rate of rising water. or ✓ It is declared by the General Manager.	
		1. Notify the senior staff that Flood Stage 2 criteria have been met and have been confirmed by meteorological forecasts and SCADA alarm data. Recommend that the GM or EMT authorize activating the EOC to Level 1 and evacuation of the Audubon House, Duck Club and San Joaquin Marsh Campus Caretaker tenants and installation of Floodwall Gate 5 (SMJ-FG-5).	**MWRP Operations Manager**
	Activate	1. Activate the EOC to Level 1. 2. Request representatives report to EOC. 3. Notify other stakeholders of EOC Activation.	**GM and/or EMT** **MWRP Operations Manager** **Safety & Security**
		4. Notify EOC representatives to call into EOC bridge line and/or report to EOC. 5. Setup EOC for activation.	**Safety & Security**
Respond	**Manage** **Communicate** **Coordinate** **Plan**	1. Assign Director of Recycling or designee as the EOC Director. 2. Inform stakeholders of current situation.	**EOC Director and Emergency Operations Team**
		3. Begin documentation for state and federal reimbursement at the field response level and at the EOC. Damage documentation, including photographs, will be critical in establishing the basis for eligibility for the disaster assistance program.	**All Responders**
		4. Assess the following critical items: • Current storm and flood updates and duration for severe weather to continue.	**EOC Director** **Emergency Operations Team**

PHASE	SUB-PHASE	ACTION	POSITION RESPONSIBLE
		• Personnel and equipment available to allocate to flood protection efforts. • Length of time emergency personnel have been on duty and establish rotation schedule, if necessary. • Other District wide activities/emergencies currently in progress that may require additional resources to maintain wastewater/water system operation. • Timing to evacuate the Audubon House, Duck Club, San Joaquin Marsh Campus, and MWRP/Operations Center. • Needs for supplier support or mutual aid.	
		5. Notify the following that the Audubon House, Duck Club and San Joaquin Marsh Campus Caretaker tenants will be evacuated, and the facilities will remain closed until further notice. See Evacuation Notification for list of phone numbers for location below (see HSRP Flood – MWRP Attachment 1 for contact information). 6. Audubon House 7. San Joaquin Marsh Campus Caretaker Tenants 8. Executive Director of Water Operations 9. Assistant Director of Wastewater Operations 10. Public Affairs and Customer Service 11. District Safety and Security Manager 12. Fleet Services Manager 13. SECURTEC Patrol Services	**MWRP Operations** **Safety & Security**
		14. Evacuate the San Joaquin Marsh Campus Caretaker tenants (refer to HSRP Flood – MWRP Attachment 1).	**Safety & Security**
		15. Evacuate all visitors from the MWRP facilities (refer to HSRP Flood - MWRP Attachment 1). 16. Cancel all reservations to the Audubon House, Duck club and San Joaquin Marsh Campus.	**Safety & Security** **Facilities** **Public Affairs**
		17. Post signs to prevent further visitors to the MWRP facilities. 18. Post signs and barricades on Riparian View (near gate 13 and off Campus Drive) alerting visitors that the Duck Club and San Joaquin Marsh facilities are closed until further notice.	**Facilities**
		19. Make rounds and sweep the campus to evacuate all visitors including Audubon Homes, Duck Club and San Joaquin Marsh facilities.	**Safety & Security** **Security Contractor**

PHASE	SUB-PHASE	ACTION	POSITION RESPONSIBLE
		20. Evacuate the trail system in Tree Hill, Carlson March and the San Joaquin Marsh by a drive-through the entire system. This process will be difficult given the extensive system. 21. Post evacuations signs at the entrance of each trail.	**Safety & Security** **Security Contractor**
		22. Install Floodwall Gate No. 5 (see Exhibits A & B).	**MWRP Operations**
		23. Continue monitoring weather reports, forecasts and local conditions via local observation, NWS & OCFCD Bulletins, NWS website, OCOA EOC, public media, etc.	**MWRP Operations** **Safety & Security** **Public Affairs**
		FLOOD STAGE 3	
		Initialize Flood Stage 3 based on either of the following criteria: ✓ MWRP Operations observations and/ or SCADA alarm indicate that the San Diego Creek level has reached **13'** and is continuing to rise. or ✓ It is designated by the EOC Director.	
		1. Notify EOC Director that Flood Stage 3 criteria have been met and have been confirmed by SCADA alarm data. Recommend that the GM or EMT authorize evacuation of all MWRP and Operations Center non-emergency personnel and installation of Floodwall Gate 6 (MWRP-FG-6) and Floodwall Gate 7 (MWRP-FG-7).	**MWRP Operations Manager**
		2. Recommend to the GM and/or EMT to escalate the EOC to Level 2.	**EOC Director**
		3. Once authorized, escalate EOC to Level 2.	**EOC Director**
		4. Deactivate the primary EOC at the MWRP and activate the alternate EOC at the Sand Canyon Multi-Purpose room.	**EOC Director** **EOC Responders** **Safety & Security**
		5. Upon authorization, evacuate all MWRP and Operations Center non-emergency personnel and equipment and relocate to either the Sand Canyon Headquarters, Baker Plant Facility, LAWRP, or send personnel home.	**EOC Director** **MWRP Operations** **Facilities**
		6. Assign minimal staff to remain at the MWRP to perform operational duties and emergency operations. Staff will include: • MWRP Operations Manager • MWRP Operations Supervisor • 4 – MWRP Operators • 1 – Maintenance Mech. • 1 – Safety & Security	**MWRP Operations Manager**

PHASE	SUB-PHASE	ACTION	POSITION RESPONSIBLE
		• 1 – Electrical/Instrumentation Tech.	
		7. Outsource most laboratory analyses to a contract lab. Move basic equipment (e.g., incubators, sample bottles, ice chests, and Colilert Media) to the old lab at the LAWRP to allow for continued basic coliform testing, ensuring the reliability of the District's drinking water system.	**Water Quality Manager**
		8. Install Floodwall Gate 6 and Floodwall Gate 7 (see Exhibits A & B).	**MWRP Operations**
		9. Notify the EOC Director that Floodwall Gate 6 and Floodwall Gate 7 have been closed.	**MWRP Operations Manager**
		10. Notify the GM or EMT that the MWRP and Operations Center has been isolated and that all Operations Center non-emergency personnel have been safely relocated.	**EOC Director**
		11. Monitor current emergency conditions and remain in close communication with remaining emergency staff assigned to the MWRP to perform emergency operations.	**MWRP Operations**
		12. Direct emergency staff to begin floodwall and floodwall gate inspection and monitoring activities (see Exhibit C).	**MWRP Operations Manager**
		13. Continue monitoring weather reports, forecasts and local conditions via local observation, NWS & OCFCD Bulletins, NWS website, OCOA EOC, public media, etc.	**MWRP Operations Safety & Security Public Affairs**
		Important MWRP Access Information Once Floodwall Gate #7 is installed the MWRP and Operations Center will be completely closed and isolated. The only emergency access to and from the MWRP/Ops Center will be through the upper walking trail at the Tree Hill. This access will allow for ingress/egress of emergency vehicles, personnel and supplies.	

HAZARD-SPECIFIC RESPONSE PLAN: **FLOOD – MWRP**

PHASE	SUB-PHASE	ACTION	POSITION RESPONSIBLE
			
		FLOOD STAGE 4	
		Initialize Flood Stage 4 based on either of the following criteria: ✓ MWRP Operations observations and/ or SCADA alarm indicate that the San Diego Creek level has reached **16' or 2' from overflow** and is continuing to rise. or ✓ It is designated by the EOC Director.	
		1. Continue supporting operations and staff at the MWRP site.	**EOC Director** **EOC responders**
		2. Continue to monitor current emergency conditions and remain in close communication with remaining emergency staff assigned to the MWRP to perform emergency operations. Only emergency personnel assigned to perform plant operational duties and emergency operations will remain at the MWRP and Ops Center.	**MWRP Operations**
		3. Check that all seven (7) Floodwall Gates remain closed and the MWRP, Operations Center and San Joaquin Marsh facilities remain isolated.	**MWRP Operations** **Safety & Security**
		4. Continue monitoring weather reports, forecasts and local conditions via local observation, NWS & OCFCD Bulletins, NWS website, OCOA EOC, public media, etc.	**MWRP Operations** **Safety & Security** **Public Affairs**

HAZARD-SPECIFIC RESPONSE PLAN: **FLOOD – MWRP**

PHASE	SUB-PHASE	ACTION	POSITION RESPONSIBLE
		FLOOD STAGE 5	
		Initialize Flood Stage 5 based on either of the following criteria: ✓ MWRP Operations observations and/ or SCADA alarm indicate that the San Diego Creek level has overflowed its banks and water is now flooding the MWRP facility or ✓ It is designated by the EOC Director.	
		1. Initiate evacuation plan for all personnel at the MWRP site. 2. Notify the GM and/or EMT of the evacuation.	**EOC Director** **EOC responders** **MWRP Operations**
		3. Continue to monitor current emergency conditions and determine the status and location of all personnel at the MWRP site. 4. Remain in close communication with emergency staff assigned to facilitate evacuation procedures.	**MWRP Operations**
		5. Keep all seven (7) Floodwall Gates closed while evacuating the facility.	**MWRP Operations** **Safety & Security**
		6. Evacuate and gather all MWRP personnel at high ground point in adjacent parkland. 7. Update EOC Director on the status of all evacuated personnel. 8. Contact 911 to request emergency evacuation support if needed for life / safety reasons.	**MWRP Operations**
		9. Provide updates to all IRWD stakeholders on status of evacuation.	**EOC Director** **EOC responders**
		10. Continue monitoring weather reports, forecasts and local conditions via local observation, NWS & OCFCD Bulletins, OCOA EOC, public media, etc.	**Safety & Security** **Public Affairs**
Recover	**Short-Term** **24-Hour Clear Weather**	1. After receiving a 24-hour clear weather forecast and the level in the San Diego Creek has receded to a minimum of 8 feet and is determined to no longer be a threat, notify the GM and/or EMT to request authorization to open Floodwall Gate 7, Floodwall Gate 6 and Floodwall Gate 5. 2. Begin repopulating the MWRP facility provided it is safe to do so and local authorities have been notified.	**EOC Director**
		3. Upon authorization, remove Floodwall Gate 7, Floodwall Gate 6 and Floodwall Gate 5.	**MWRP Operations**
		4. Notify the EOC Director that Floodwall Gate 7, Floodwall Gate 6 and Floodwall Gate 5 are open. **Note**: Once Floodwall Gate #7, Floodwall	**MWRP Operations Manager**

PHASE	SUB-PHASE	ACTION	POSITION RESPONSIBLE
		Gate #6 and Floodwall Gate #5 are open, all normal activities at the MWRP, Ops Center and San Joaquin Marsh Campus can be resumed. **Note**: Floodwall Gate #1, #2, #3 and #4 will remain closed in place at this time.	
		5. Notify the GM and/or EMT that Floodwall Gate 7, Floodwall Gate 6 and Floodwall Gate 5 are open and that normal activities at the MWRP, Operations Center and the San Joaquin Marsh Campus can be resumed.	**EOC Director**
		6. Notify stakeholders that the MWRP, Operations Center, Audubon House, Duck Club and San Joaquin Marsh are open and can be safely reoccupied (Refer to HSRP Flood - MWRP Attachment 1 for contact information): • Audubon House • San Joaquin Marsh Campus Caretaker Tenant • Executive Director of Operations • Director of Wastewater Operations • Public Affairs • District Safety/Security Manager • Fleet Services Manager • SECURTEC Patrol Services	**Emergency Operations Team**
		7. Request deactivation and demobilization of EOC from the GM and/or EMT. Deactivate and demobilize once authorization is received.	**EOC Director**
		8. Remove signs and barricades on Riparian View (near gate 13 and off Campus Drive) and evacuation signs at the entrance of each trail leading into the trail system.	**Facilities**
		9. Conduct damage assessments of the facilities and the site. 10. Record and quantify damaged equipment (Asset Systems Management to assist). 11. Prioritize short-term and long-term recovery tasks for repairs/replacements. 12. Repair or replace damaged equipment.	**All affected IRWD groups**
	5-Day Clear Weather	1. After receiving a 5-day clear weather forecast, notify the GM and/or EMT and Executive Director of Operations to request authorization to open Floodwall Gate 1, Floodwall Gate 2, Floodwall Gate 3, and Floodwall Gate 4	**MWRP Operations Manager**
		2. Upon authorization, remove Floodwall Gate 1, Floodwall Gate 2, Floodwall Gate 3, and Floodwall Gate 4.	**MWRP Operations**

HAZARD-SPECIFIC RESPONSE PLAN: **FLOOD – MWRP**

PHASE	SUB-PHASE	ACTION	POSITION RESPONSIBLE
		3. Notify the GM and/or EMT and the Executive Director of Operations that Floodwall Gate 1, Floodwall Gate 2, Floodwall Gate 3, and Floodwall Gate 4 are open.	**MWRP Operations Manager**
		4. Submit all documentation to Safety & Security.	**All response personnel**
	Long-Term	1. Develop a long-term recovery plan as necessary to return to normal operations. 2. Implement and complete long-term recovery projects as necessary.	**All affected IRWD groups**
Prevent/ Mitigate	**Debrief/Hot Wash AAR/Lessons Learned**	1. Conduct debrief/Hot Wash prior to deactivating EOC and demobilizing Emergency Operations Team. 2. Hold Post-Event Assessment meeting within two weeks after EOC deactivation and develop After-Action Report 3. Develop and implement Corrective Action Plan. 4. Review and revise HSRP as necessary. 5. Implement agreed upon changes to procedures.	**All Groups involved in Activation**
	Mitigation/ Prevention	1. Check and maintain radar flood level gauges located in San Diego Creek.	**Electrical (Instrumentation)**
		2. Perform monthly checks on permanent backup generators. 3. Check fuel supply.	**Facilities & Fleet Services**
		4. Check and update contact information on a regular basis.	**Safety & Security**

HAZARD-SPECIFIC RESPONSE PLAN: **FLOOD – MWRP**

ATTACHMENT 1: EVACUATION

Evacuation will be initiated at Flood Evacuation Stage 2 and Flood Evacuation Stage 3.
During evacuation, the preservation of lives is the number one priority. Protection of property and equipment is always secondary.

The actual time of day that this Hazard-Specific Response Plan is activated, and evacuations are initiated will dictate both the number of employees/visitors present at the facility and the scope of the evacuations.

- Evacuation **during** normal working hours - An evacuation during normal working hours will involve the largest number of evacuees and will require a coordinated effort to assure that all employees/visitors and their vehicles are relocated to a safe location in a timely manner.
- Evacuation **after** normal working hours – An evacuation after normal working hours will involve the least number of evacuees and the least number of personnel assigned to perform the emergency procedures spelled out in this Emergency Operation Plan.

Evacuation Notification Section A	At Flood Evacuation Stage 2 (upon authorization from the GM and/or EMT) the Audubon House, Duck Club and San Joaquin Marsh Campus will be evacuated, and Flood Gate 5 will be closed. The Incident Command will notify the following:	
	Audubon House	(949) 261-7963 (949) 261-7964
	San Joaquin Marsh Campus Caretaker Tenant	(949) 878-8243 (cell) (949) 412-2331 (hm)
	Executive Director of Operations	(949) 453-5720 (office) (714) 253-2169 (cell)
	Director of Recycling Operations	(949) 453-5572 (office) (626) 755-6823 (cell)
	Public Affairs Director of Public Affairs Manager of Public Affairs	(949) 374-6318 (after hours) (949) 453-5320 (office) (949) 374-6318 (cell) (949) 453-5321 (office) (559) 643-7496 (cell)
	Safety Manager Safety Specialist	(949) 453-5785 (office) (714) 928-7226 (cell) (949) 453-5526 (office) (949) 330-3128 (cell)
	Fleet Services Manager	(949) 453-5725 (office) (949) 892-8738 (cell) (714) 730-7951 (hm)
	Risk & Security Manager	(949) 453-5344
	SECURTEC Patrol Services	(714) 240-9000
Section B	At Flood Evacuation Stage 3 (upon authorization from the GM and/or EMT), all MWRP and Operations Center non-emergency personnel and equipment (not essential to the implementation of this Emergency Action Plan) will be evacuated and relocated to either the Sand Canyon Headquarters, Baker Plant Facility, LAWRP, or will be sent home.	

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HAZARD-SPECIFIC RESPONSE PLAN: WATER CONTAMINATION

I. WATER CONTAMINATION HAZARD-SPECIFIC RESPONSE PLAN

DESCRIPTION

Water contamination may occur from an unintentional or intentional introduction of a contaminant into the water system. The contaminant can be introduced at any point in the water system, including raw water, treatment facilities, distribution system including distribution pipes, finished water storage, or pump stations.

In an intentional act, a perpetrator may issue a threat or perform an act of contamination. In either instance, the Hazard-Specific Response Plan will be activated. The perpetrator may or may not give notice of the act or provide a location.

DEPARTMENTS INVOLVED

- Water Operations
- Water Quality/Lab
- Safety & Security
- Public Affairs
- Customer Service

TRIGGERS

- Security breach of the water system (e.g., unsecured doors, open hatches, unlocked/forced gates and/or alarm activations
- Observed activity including suspicious behavior, trespassing, breaking and entering and/or tampering with equipment or property
- Verbal or written threat
- Notification by law enforcement
- Notification by news media
- Unusual water quality parameters (e.g., change in pH, chlorine residual or turpidity, unexpected testing results, unusual odor, color or appearance)
- Customer complaints of water quality (e.g., odor, color, appearance, taste)
- Public Health notification

KEY CONTACTS

- **Division of Drinking Water (provides the Emergency Water Quality Sample Kits (EWQSK))**
  - **Phone: 714-558-4410**
  - HAZMAT Team (responsible for water sampling)
  - Local Law Enforcement (responsible for transferring samples)
- **Richmond Laboratory (responsible for water testing)**
  - Phone: (510) 620-3155
  - Fax: (510) 620-3165
- **Orange County Health Care Agency**
  - Phone: 714-433-6403
- **California Department of Public Health**
  - Phone: (916) 328-3605
- **Orange County Fire Association**
  - Fire Dispatch Supervisor: (714) 573-6522

EQUIPMENT

Water Sampling and Testing Equipment

Water Buffaloes

HAZARD-SPECIFIC RESPONSE PLAN: WATER CONTAMINATION

PHASE	SUB-PHASE	ACTION	POSITION RESPONSIBLE
Prepare	**Ready**	1. Be aware and recognize indicators of contamination of the water system and report to Safety & Security. 2. Monitor security systems including alarms, CCTV cameras and unauthorized card access for intruders. 3. Use SCADA system to detect unusual activity. 4. Report suspicious behavior or activity ("See Something, Say Something") to Safety & Security of the situation.	**All Staff** **Water Operations** **Safety & Security**
	Notify and Monitor	1. Notified of a threat or a possible contamination of the water system. 2. Notify other stakeholders affected by the threat or possible contamination. These include: a. Water Operations b. Water Quality c. Safety & Security 3. Collect information and continue to monitor the situation with security systems, SCADA and security personnel.	**All Staff Onsite** **Water Operations** **Water Quality** **Safety & Security** **Customer Service**
		4. Notify other stakeholders as appropriate including Directors, Senior Executives, Public Affairs and WEROC. 5. Monitor and report on external sources of information including news reports, social media, first responder agencies, WEROC and Orange County Operational Area.	**Safety & Security**
	Assess	1. Use information gathered and the threat evaluation worksheet to determine credibility of the threat or the possibility of water contamination. 2. To limit exposure of customers to potentially contaminated water, notify: a. Local law enforcement b. Orange County Health Care Agency c. State Department of Health Services 3. If it is safe to do so, send an investigation team to perform an assessment of the site. If there is evidence of a hazard upon approach, immediately withdraw and notify the GM and/or EMT. Site activities may include: a. Identify potential hazards b. Look for physical evidence but do not disturb evidence c. Review CCTV camera recordings d. Look for environmental indicators (e.g., dead animals, dead vegetation, unusual odors or residues)	**GM and/or EMT** **Water Operations** **Water Quality** **Safety & Security**

HAZARD-SPECIFIC RESPONSE PLAN: WATER CONTAMINATION

PHASE	SUB-PHASE	ACTION	POSITION RESPONSIBLE
		e. Perform rapid testing f. Collect water samples 4. Notify HAZMAT team if there is evidence of hazards at the site. 5. Evaluate consequences of potentially contaminated water (e.g., spread, impact to public health). 6. Decide on credibility of the threat or possible contamination. 7. If the threat or possible contamination is credible, then determine if the incident warrants an EOC activation.	
	Activate	1. Determine Activation Level of EOC. 2. Decide Virtual or Physical Activation. 3. Request representatives report to EOC. 4. Notify other stakeholders of EOC Activation.	**GM and/or EMT** **All affected IRWD groups**
		5. Notify EOC representatives to call into EOC bridge line and/or report to EOC. 6. Prepare EOC for activation.	**Safety & Security**
Respond	**Manage** **Communicate** **Coordinate** **Plan**	1. Assign Director of Water Operations as the EOC Director. 2. Call Division of Drinking Water for Emergency Water Quality Sample Kits. 3. Call HAZMAT team to take samples from contaminated water sources. 4. Contact local law enforcement to transfer samples to Richmond Laboratory. 5. If not done so already, notify: 6. Orange County Health Care Agency 7. State Department of Health Services 8. Orange County Fire Association 9. WEROC 10. Inform all other stakeholders of current situation. 11. Develop and implement EOC Action Plan to respond to prioritized areas.	**EOC Director and Emergency Operations Team**
		12. Evaluate the likely direction and extent of future movement of the contaminant in the water system. 13. Take actions to isolate portions of the system containing suspect water. 14. Shut down the system if obvious or confirmed contamination warrants. 15. Provide alternate water supply for customers and fire protection as necessary.	**Water Operations** **Engineering** **SCADA**
		16. Use IRWD Alert to identify affected areas. 17. Coordinate “Boil Water”, “Do not Drink” or “Do not Use” orders with Water Quality, Public Affairs, the EOC Director and the Policy Group. Refer to Attachment D for the Crisis Communications Plan for procedures.	**EOC Director** **Water Quality** **Public Affairs/PIO** **Customer Service**

PHASE	SUB-PHASE	ACTION	POSITION RESPONSIBLE
		18. Notify customers and other stakeholders (City Public Works, PD) of possible water contamination and recommended actions. 19. Issue press releases on approval and authorization of the Policy Group and EOC Director. 20. Update public health response measures and public notifications as necessary.	
		21. Assist in documentation of emergency work orders, contracting costs, timekeeping, materials, etc.	**Asset Management**
		22. Request field staff numbers and locations as necessary. 23. Ensure adequate food, water, and toileting/hand wash resources are provided to field staff. 24. Maintain communication and coordinate with WEROC as necessary.	**Safety & Security**
		25. Assist law enforcement in securing the site and provide support as necessary.	**Safety & Security**
		26. Review Richmond Laboratory report and take additional actions as necessary.	**Emergency Operations Team**
Recover	**Short-Term**	1. Consult with Orange County Health Care Agency, State Department of Health Services local law enforcement and local city officials to develop a Remediation and Recovery Plan. The plan can include: a. Treatment of contaminated water b. Rehabilitation of system components c. Disposal of contaminated residuals d. Sampling and analysis plan to verify remediation e. Communications and public relations plan 2. Implement Remediation and Recovery Plan. 3. Verify water is safe by performing additional sampling and analysis. 4. Valve off portions of the distribution system until above ground storage tanks are refilled. 5. Increase chlorine residual temporarily. 6. Conduct disinfection, flushing, and bacteriological sampling. 7. Coordinate notification of public/customers when it is safe to use potable water. 8. Notify the State department of Health Services and other agencies that the water is safe. 9. Repressurize system to avoid potential damage to lines. 10. Bleed air from lines during refill.	**Water Operations** **Water Quality** **Safety & Security**

HAZARD-SPECIFIC RESPONSE PLAN: WATER CONTAMINATION

PHASE	SUB-PHASE	ACTION	POSITION RESPONSIBLE
		11. Conduct damage assessments. 12. Record and quantify damaged equipment (Asset Systems Management to assist). 13. Prioritize short-term and long-term recovery tasks for repairs/replacements. 14. Repair or replace damaged equipment. 15. Unhook and return all unneeded equipment to their pre-response locations or deliver to Fleet Services for maintenance as needed.	
	Long-Term	1. Develop a long-term recovery plan to return equipment and water system to normal operations. 2. Implement and complete long-term recovery projects.	**All affected IRWD groups**
Prevent/ Mitigate	**Debrief/Hot Wash AAR/Lessons Learned**	1. Conduct debrief/Hot Wash prior to deactivating EOC and demobilizing Emergency Operations Team. 2. Hold Post-Event Assessment meeting within two weeks after EOC deactivation and develop After-Action Report, 3. Develop and implement Corrective Action Plan. 4. Review and revise HSRP as necessary. 5. Implement agreed upon changes to procedures.	**All Groups Involved in Activation**
	Mitigation/ Prevention	1. Train staff on reporting suspicious activity and possible signs of contamination. 2. Post signs with “See Something, Say Something” message.	**All staff** **Safety & Security** **Water Operations**
		3. Check, maintain and upgrade security equipment as necessary in all facilities. 4. Conduct vulnerability assessments every five years and implement security mitigation measures.	**Safety & Security**
		5. Update contact information as required.	**Safety & Security**

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HAZARD-SPECIFIC RESPONSE PLAN: EXPLOSIVE DEVICE

J. EXPLOSIVE DEVICE HAZARD-SPECIFIC RESPONSE PLAN

DESCRIPTION

This Hazard-Specific Response Plan applies to a bomb threat or an explosive device that is intentionally detonated on IRWD property. The intent of this type of attack may be to cause physical harm to IRWD staff, disrupt IRWD operations and/or incite terror. The targets can include IRWD personnel, critical equipment, administrative offices, operations facilities, raw water sources, treatment plants, finished water storage and the distribution network.

Explosive attacks of this type include manufactured or weaponized explosive devices and improvised explosive devices (IEDs). These devices may be person-borne or vehicle-borne. The impact of an explosive device is dependent on the size and type of device and the environment in which it is released.

EXPLOSIVE DEVICE SAFETY ACTIONS

- Do not approach or handle a suspicious object or potential bomb.
- Call 9-1-1.
- Notify your Supervisor or Safety & Security.
- If instructed to evacuate, move a safe distance from the device (a minimum of 100 yards).
- Survey the evacuation area for possible secondary devices, suspicious objects, suspicious persons or suspicious activities.
- Do not return to the area around the device unless cleared by law enforcement and instructed by your Supervisor or Safety & Security.

DEPARTMENTS INVOLVED

- Any department physically near the incident
- Safety & Security
- Public Affairs
- Human Resources
- Maintenance
- Facilities

TRIGGERS

- A credible threat or warning of an explosive attack
- Discovery of an explosive device on IRWD property
- An intentionally-caused explosion on IRWD property

KEY CONTACTS

- Emergency Number: 9-1-1
- Irvine Police Department
  - Non-Emergency: (949) 724-7000
- Orange County Sheriff's Department:
  - Non-Emergency: (714) 647-7000
- Local FBI Field Office
  - Primary number: (310) 477-6565
- Hoag Hospital Irvine
  - Primary number: (949) 764-4624
- Hoag Hospital Newport Beach
  - Primary number: (949) 764-4624

EQUIPMENT

Water Sampling and Testing Equipment

Water Buffaloes

PHASE	SUB-PHASE	ACTION	POSITION RESPONSIBLE
Prepare	**Ready**	1. Report suspicious device or activity ("See Something, Say Something") to Safety & Security or 9-1-1 of the situation.	**All Staff** **Safety & Security**

HAZARD-SPECIFIC RESPONSE PLAN: EXPLOSIVE DEVICE

PHASE	SUB-PHASE	ACTION	POSITION RESPONSIBLE
		2. Monitor security systems including alarms, CCTV cameras and unauthorized card access for intruders. 3. Be familiar with evacuation routes in buildings frequented.	
	Notify and Monitor	1. Notified of a bomb threat, suspicious activity, a suspicious device or an explosion. 2. Take actions to protect yourself. 3. For a bomb threat, notify your Supervisor and Safety & Security. 4. For suspicious activity, a suspicious device, or an explosion, call 9-1-1 and then notify your Supervisor, Safety & Security. 5. Provide information on any potential victims at location. 6. Provide additional details of the situation if available. 7. Evacuate the area if instructed. 8. Alert staff onsite to stay away from the area. 9. Direct law enforcement officers and the fire department to the identified location. 10. Continue to monitor security systems including alarms, CCTV cameras and unauthorized card access for intruders.	**All Staff onsite** **Safety & Security**
		11. Notify other stakeholders as appropriate including: a. Senior Executives b. HR c. Public Affairs d. Local law enforcement (if not done so already) e. Local fire department (if not done so already) f. FBI	**Safety & Security**
		12. Coordinate security staff to secure the area. 13. Provide support to law enforcement as necessary.	**Safety & Security**
	Assess	1. Account for IRWD staff, visitors and contractors onsite. 2. Instruct staff to evacuate the location as necessary. Secure the location as required. 3. Provide available information to law enforcement. 4. For an explosion, determine if there are any injuries or fatalities. 5. Arrange for escorts for first responders onsite. 6. Activate the EOC if: a. The bomb threat or warning is deemed credible	**GM and/or EMT** **Safety & Security** **All affected IRWD groups**

HAZARD-SPECIFIC RESPONSE PLAN: **EXPLOSIVE DEVICE**

PHASE	SUB-PHASE	ACTION	POSITION RESPONSIBLE
		b. An explosive device is discovered on IRWD property c. A significant explosion occurs on IRWD property.	
	Activate	1. Determine Activation Level of the EOC. 2. Activate a Recovery Support Center if there are injuries or fatalities. 3. Decide Virtual or Physical Activation. 4. Request representatives report to EOC. 5. Notify other stakeholders of EOC Activation	**GM and/or EMT** **Safety & Security**
Respond	**Manage** **Communicate** **Coordinate** **Plan**	1. Assign an EOC Director. 2. Inform all stakeholders of current situation. 3. Develop and implement EOC Action Plan. 4. Monitor and report on external sources of information including news reports, social media.	**EOC Director and Emergency Operations Team**
		5. Run a report of employees who clocked in for the day or request a list of working staff from each affected department head/manager.	**Human Resources**
		6. Cooperate with law enforcement and other emergency responders working onsite. 7. If necessary, evacuate all buildings within 100 yards of the device or explosion. 8. Be aware of possible secondary devices located onsite. 9. Conduct a headcount to ensure the status and location of all employees are known.	**Incident Response Team** **All staff onsite**
		10. Develop and implement a security plan with law enforcement for all other facilities and sites. 11. Provide continued support to law enforcement as necessary.	**Safety & Security**
		12. Coordinate evacuation of facilities as required. 13. Request field staff numbers and locations as necessary. 14. Ensure adequate food, water, and toileting/hand wash resources are provided to field staff. 15. Request assistance from other water utilities through WEROC if needed.	**Safety & Security**
		16. Inform law enforcement and other responders of potentially hazardous material at the location. 17. Check and monitor that other system functions and facilities are operating normally. 18. Isolate damaged site from the rest of system and take measures to bypass the damaged area if possible.	**Water Operations** **Recycling Operations** **Collections**

PHASE	SUB-PHASE	ACTION	POSITION RESPONSIBLE
		19. Provide alternate water supply for customers and fire protection as necessary. 20. Based on extent of damage, consider alternate treatment schemes on a temporary basis.	
		21. Coordinate with first responders to provide information to the media. 22. Provide employee and contractor family members with timely, accurate and relevant information. 23. Provide employees not in the affected area information on the incident.	**Public Affairs/PIO** **Human Resources**
		24. Locate employees who are offsite and began the day onsite, to ensure a complete accounting of all working employees for the affected site. 25. Have staff to notify their families of their status and location; follow law enforcement directives regarding sending people home, allowing family members onsite to collect staffers, etc. 26. Have third-party vendors onsite to notify their company and their families of their status and location. 27. Follow law enforcement directives regarding allowing people to leave the site, allowing access to the site to collect vendors, etc. 28. Notify family members/ next of kin/ vendor companies as appropriate and advised by law enforcement for those who are injured or killed.	**EOC Director and Emergency Response Team**
		29. If safe to do so, perform sampling, monitoring and analysis activities to determine if the water supply is safe to drink for customers. 30. Coordinate “Boil Water”, “Do not Drink” or “Do not Use” orders with Water Quality, Public Affairs, the EOC Director and the Policy Group. 31. Notify customers and other stakeholders (City Public Works, PD) of possible water quality issues and recommended actions. 32. Issue press releases on approval and authorization of the Policy Group and EOC Director. 33. Update public health response measures and public notifications as necessary.	**Water Quality** **Water Operations** **Public Affairs/PIO** **Customer Service**
Recover	**Short-Term**	1. Coordinate with professional responders or engage privately contracted mental health professionals to support affected staffers.	**All affected IRWD groups**

HAZARD-SPECIFIC RESPONSE PLAN: EXPLOSIVE DEVICE

PHASE	SUB-PHASE	ACTION	POSITION RESPONSIBLE
		2. Cooperate with local and federal law enforcement during investigations. 3. When facilities are released by law enforcement, conduct damage assessments. 4. Contract a professional cleanup crew if necessary. 5. Record and quantify damaged equipment and facilities. 6. Prioritize short-term and long-term recovery tasks for repairs/replacements. 7. Repair or replace damaged equipment and facility materials.	
		8. Valve off portions of the distribution system until above ground storage tanks are refilled. 9. Increase chlorine residual temporarily. 10. Conduct disinfection, flushing, and bacteriological sampling. 11. Repressurize system to avoid potential damage to lines.	**Water Operations** **Water Quality**
		12. Evaluate need for continued heightened security and additional security measures.	**Safety & Security**
	Long-Term	1. Continue mental health support activities as required. 2. Develop a long-term recovery plan to return to normal operations. 3. Implement and complete long-term recovery projects. 4. Identify and fill any critical personnel or operational gaps.	**All affected IRWD groups**
Prevent/ Mitigate	**Debrief/Hot Wash AAR/Lessons Learned**	1. Conduct debrief/Hot Wash prior to deactivating EOC and demobilizing Emergency Operations Team. 2. Hold Post-Event Assessment meeting within two weeks after EOC deactivation and develop After-Action Report 3. Develop and implement Corrective Action Plan. 4. Review and revise annex as necessary. 5. Implement agreed upon changes to procedures.	**All Groups involved in Activation**
	Mitigation/ Prevention	1. Train staff on spotting suspicious behavior/devices and evacuation procedures from all facilities. 2. Promote “See Something, Say Something” message with Safety & Security or 9-1-1 call information.	**All staff** **Safety & Security**
		3. Post evacuation routes in conspicuous locations. 4. Place removeable floor plans near entrances and exits for emergency responders.	**Maintenance** **Facilities** **Safety & Security**

HAZARD-SPECIFIC RESPONSE PLAN: **EXPLOSIVE DEVICE**

PHASE	SUB-PHASE	ACTION	POSITION RESPONSIBLE
		5. Ensure exit doors and stairwells are always clear of blockages and unlocked during working hours. 6. Maintain all elevators in good working order. 7. Ensure the ability to evacuate people with disabilities or access & functional needs from upper floors without elevators.	
		8. Maintain and upgrade security equipment as necessary in all facilities. 9. Conduct vulnerability assessments every five years and implement security mitigation measures.	**Safety & Security**
		10. Contact OC Sheriff and City PDs to ensure they have the most current IRWD contact information. 11. Update contact information as required.	**Safety & Security**

HAZARD-SPECIFIC RESPONSE PLAN: **HAZMAT**

K. HAZARDOUS MATERIALS HAZARD-SPECIFIC RESPONSE PLAN

For a hazardous materials emergency, please refer to the IRWD Hazardous Material Emergency Response Plan (HMERP).

Additional information is available in the California Environmental Reporting System, CERS: https://cers.calepa.ca.gov

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L. SCADA CYBERATTACK HAZARD-SPECIFIC RESPONSE PLAN

HAZARD-SPECIFIC RESPONSE PLAN

SCADA CYBERATTACK

July 2024

Irvine Ranch Water District

WARNING: FOR OFFICIAL USE ONLY

Information contained in this document is exempt from FOIA (Exemption 2) and the California Public Records Act, in Government Code Sections 6254(k) and 6255.

HAZARD-SPECIFIC RESPONSE PLAN: **SCADA CYBERATTACK**

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HAZARD-SPECIFIC RESPONSE PLAN: **SCADA CYBERATTACK**

L. SCADA CYBERATTACK

DESCRIPTION

A cyberattack is a malicious attempt to disrupt, damage, manipulate, or gain unauthorized access to the Supervisory Control and Data Acquisition (SCADA) system and Automation networks. Its impact on the environment, safety, and quality of the water supply can be significant, potentially resulting in water that is unsafe for consumption or environmental damage. Furthermore, a cyberattack can affect the functionality, reliability, and availability of the treatment, distribution, and collection system. Apart from the immediate repercussions, it can also result in long-term consequences such as damage to reputation, financial losses, and legal liabilities.

ACRONYMS, TERMS, AND DEFINITIONS

- **IOC** - indicator of compromise
- **OT** – Operational Technology
- **PLC** - Programable Logic Controller
- **SCADA** - Supervisory Control and Data Acquisition Systems
- **SCIRT** - SCADA Cybersecurity Incident Response Team
- **Event –** A change or observable occurrence that may impact the SCADA system
- **Incident -** An occurrence that actually or potentially jeopardizes the confidentiality, integrity, availability of SCADA system or imminent threat of violation of security policies, security procedures, or acceptable use policies

DEPARTMENTS INVOLVED

- Automation Services
- Information Technology
- Water Operations
- MWRP Operations
- NTS Operations
- Collection Systems
- Biosolids Handling
- Facilities Services
- Dams & Storage Improvement
- Cybersecurity Consultant (External)
- Water Quality
- Water Resources
- Environmental Compliance
- Regulatory Compliance
- Safety & Security
- Risk Management
- Communications
- Community Relations
- Customer Service

EQUIPMENT

- SCADA Laptops
- Incident Response Kits

SCADA CYBERSECURITY INCIDENT RESPONSE PROCESS

The SCADA Cybersecurity Incident Response Team (SCIRT) oversees proactive preparation, detection, and prevention of cybersecurity incidents in the SCADA system. SCIRT utilizes advanced monitoring tools for threat identification, acquires evidence for potential legal action, and analyzes severity for appropriate notifications. Duties further include containment and eradication of threats, recovery of the system to normal operation, reviewing incidents for lessons learned, and information sharing for collective resilience against future cyber threats.

HAZARD-SPECIFIC RESPONSE PLAN: **SCADA CYBERATTACK**

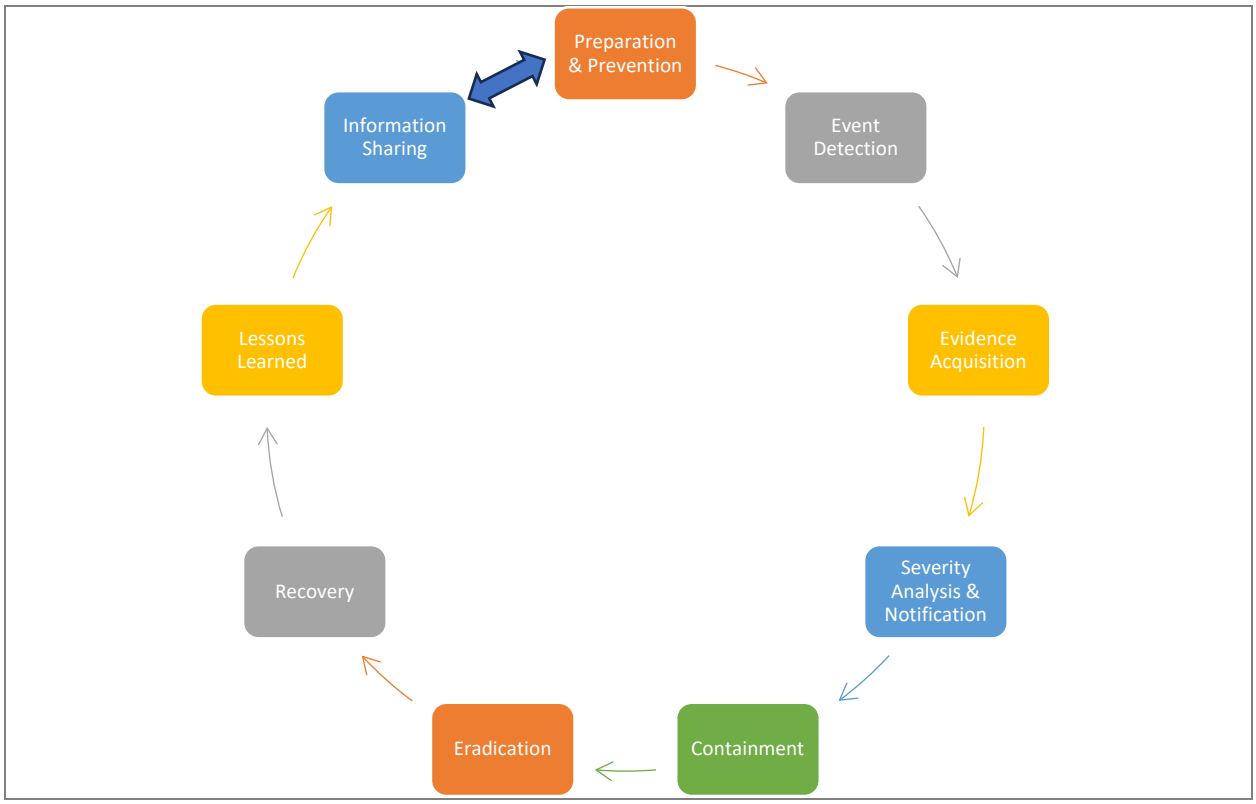


Figure 1: Incident Response Life Cycle

STEP	Description
Preparation & Prevention	The SCIRT's primary responsibility is to proactively prepare and prevent potential cybersecurity incidents within the SCADA system. The SCIRT develops robust security protocols, conducts risk assessments, implements best practices from vendors, cybersecurity framework and information sharing groups, and establishes incident response plans to minimize vulnerabilities and enhance the overall security posture of the SCADA infrastructure.
Event Detection	The incident handling process begins with event detection, which could be reported by an employee, or an external entity such as a vendor or contractor. Normally, an incident is detected by the Automation Team and Operation Team as part of routine system monitoring and responding to alerts originating from various security tools such as the Intrusion Detection and Prevention System (IDPS), Firewalls, Security Information and Event Management (SIEM) system, Antivirus Software, Endpoint Detection and Response (EDR), File Integrity Checking Software, SCADA alerts, and network monitoring tools. Once the scope of the incident has been determined to be in the SCADA system, it is crucial to alert the SCADA supervisor/manger and the affected department's staff or standby staff immediately. The operational staff should then begin devising workarounds and attempt to contain the issue from both a process and equipment perspective.
Evidence Acquisition	The Incident Response Form is used for handling, tracking, and recording incident response activities. Key fields include contact information for the person reporting the incident, location and description of the incident, assets and processes affected. As more information is gathered in subsequent steps, other fields are updated and include incident criticality, summary of resolution, lessons learned.

	Additional evidence gathered includes server and firewall event logs, memory dumps, virtual images of affected systems. These are stored in a central repository and shared as may be required with third parties for forensic analysis. Throughout the process, chain of custody shall be maintained.
Severity Assessment & Notification	After identifying and validating the incident, the response team assesses its severity and potential consequences on SCADA operations, and promptly notifies relevant stakeholders, such as upper management and Operation. The Executive-in-Charge will evaluate the severity based on pre-defined criteria, and establish communications channels with IT, Risk Management, and senior staff.
Activation	SCIRT, Operation, Safety & Security and Risk Management will provide updates to Senior Staff. Based on the severity assessment, the Senior Executive-In-Charge will decide if the threat or incident is an emergency. The Senior Executive-in-Charge is the IRWD General Manager or if the GM is not available, the designated senior executive who is authorized to activate the Emergency Operations Center based on the Emergency Operations Plan. (Refer to Section 4 of EOP)
Containment	Containing the incident is a critical two-part phase, where the response team works to prevent the threat from spreading further within the SCADA system and minimizing its impact on essential functions. In the first phase, short-term containment aims to isolate affected systems by disconnecting compromised devices and implementing access controls to limit unauthorized access. In the second phase, long-term containment aims to continue operational services while further recovering from the effects of the cyber incident, including undoing any short-term actions beyond what is required for the containment of the incident. It is also important to prioritize safety to ensure the efforts of containing the threat do not create greater safety and compliance issues.
Eradication	With the threat contained, the team proceeds to eradicate the root cause of the incident from the SCADA infrastructure. The Team conducts thorough system scans, removes malicious software, and eliminates any potential backdoors or persistent threats that might allow the attacker to regain access. The process may include disabling any breached accounts, restoring assets from a clean backup, restoration from known clean source media or removing rogue devices.
Recovery	The focus of recovery is the safe restoration of normal SCADA system operations. The response team implements recovery plans, validates data integrity, and confirms that all affected components are operational and secured and that no symptoms remain. The recovery verification is conducted by all system owners to validate normal behavior. Based on the recommendations of the EOC Director and the approval of the Policy Group, the EOC and/or EOT will be deactivated and the IRWD emergency teams will be demobilized. (Refer to Section 5 of EOP)
Lessons Learned	Within 30 days of the conclusion of the incident, members of the EOT and IRT will participate in a post-incident assessment. The SCIRT will conduct a comprehensive review of the incident, examining the response process, actions taken, and outcomes. They analyze strengths and weaknesses to identify areas of improvement and develop strategies to enhance future incident response capabilities. (Refer to Section 5 of EOP)

	The SCADA & Safety group will update the EOP following an emergency, as appropriate, to reflect lessons learned, and will coordinate other corrective actions as appropriate. (Refer to Section 5 of EOP)
Information Sharing	With permission of upper management, SCIRT will collaborate with relevant stakeholders, industry peers, and cybersecurity authorities to share insights and findings. By sharing information about the incident, attack trends, and effective defense strategies, they contribute to the collective resilience against cyber threats.

HAZARD-SPECIFIC RESPONSE PLAN: **SCADA CYBERATTACK**

SCADA CYBERSECURITY INCIDENT RESPONSE TEAM'S ROLES AND RESPONSIBILITIES

The SCIRT is a highly skilled and specialized group responsible for safeguarding critical SCADA systems against cybersecurity threats. Comprised of various experts, this team's responsibility is to handle the entire incident response lifecycle. Each team member plays a crucial role in ensuring the security, integrity, and resiliency of the SCADA infrastructure.

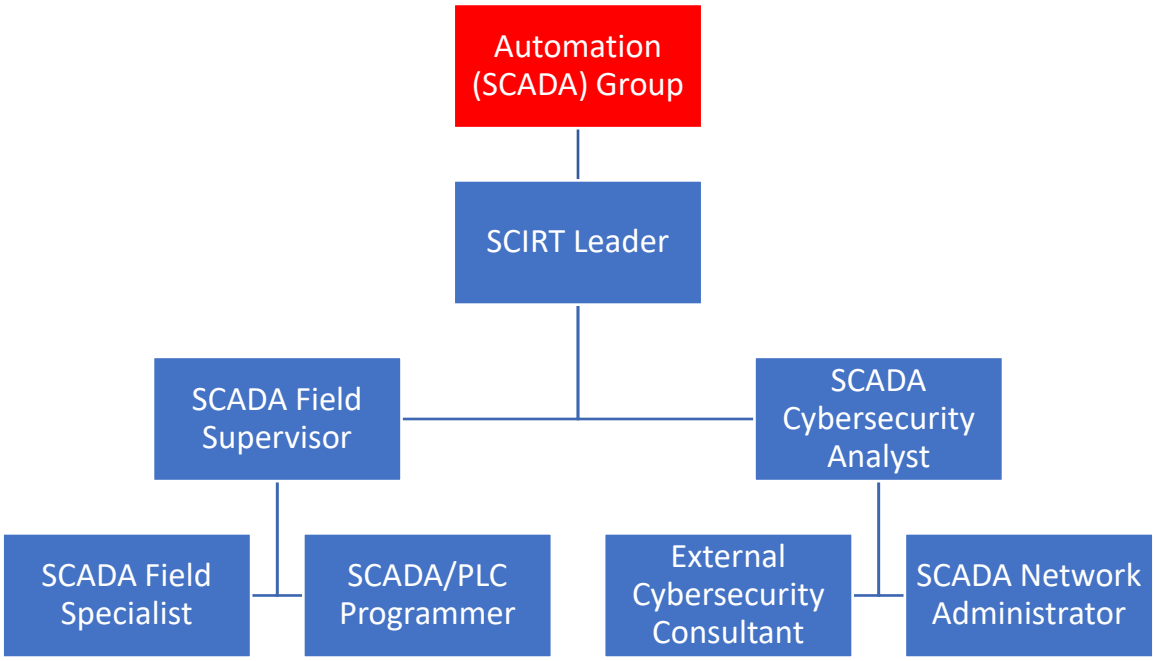


Figure 2: SCADA Cybersecurity Incident Team's Response Roles & Responsibilities

Role	Responsibilities
Automation (SCADA) Group	As per the Emergency Operations Plan, the Automation (SCADA) Group is responsible for providing information on the Supervisory Control and Data Acquisition (SCADA) systems monitoring and controlling IRWD operations. Responsibilities: • Provide SCADA information to the EOT and advise on actions. • Operate the SCADA system within the EOC. • Coordinate with the Operations Section for response and recovery activities. • Provide status updates to the Planning Section. It is important to note that Automation (SCADA) Group within the EOT" is only required if EOC is activated with "Activation Level 2 or higher."
SCIRT Leader	The IRT Leader or Incident Commander is the individual responsible for all incident activities being performed by the IRT, including the development of tactical strategies to address the incident, the organization, communications, and

Role	Responsibilities
	functioning of the IRT, the ordering of resources to achieve the tactical objectives of the IRT (via the EOT), and the release of resources and personnel from the IRT, as appropriate. The IRT Leader or Incident Commander has overall authority and responsibility for conducting incident operations as assigned by the EOT. Responsibilities: • Assess damage to the SCADA systems and develop tactics for recovery. • Work with Operation IRT Leader to assess the severity, impact, workaround plan and time required to restore to stable and normal operation. • Set tactical priorities and enact SCADA Cybersecurity Incident Handling Plan and Disaster Recovery Plan as directed. • Implement relevant objectives of the EOC Action Plan. • Coordinate IRT team member activities and monitor performance, health & safety. • Provide situation status updates to the EOT Operations Section. • Request resources needed by the IRT from the EOT. It is important to note that "SCIRT Leader" is only required if EOC is activated with "Activation Level 3 or higher".
SCADA Cybersecurity Analyst	The SCADA Cybersecurity Analyst takes the lead in the Event Detection phase, utilizing their expertise in threat intelligence and data forensics. They analyze system logs, conduct network traffic analysis, and identify the nature and extent of the SCADA incident. The Analyst's insights are crucial in understanding the attack vectors and assessing the impact on the SCADA infrastructure. Additionally, they take the lead in assisting external incident response teams when required, fostering a collaborative approach to incident resolution. Responsibilities: • Lead the Detection & Identification phase of the incident response. • Utilize expertise in threat intelligence and data forensics. • Analyze system logs. • Conduct network traffic analysis. • Identify the nature and extent of the SCADA incident. • Provide insights into attack vectors and impact assessment. • Assist external incident response teams when required. • Foster a collaborative approach to incident resolution.
SCADA Network Administrator	The SCADA Network Administrator plays a key role throughout the incident response process. They manage the SCADA network and server infrastructure, implementing security measures, configuring firewalls, enforcing Active Directory group policy, and conducting vulnerability assessments during Preparation & Prevention. During an incident, the Network Administrator collaborates with the Cybersecurity Analyst to detect and block malicious network traffic, limiting the attacker's movements within the network, eliminate the threat and restore normal operations.

HAZARD-SPECIFIC RESPONSE PLAN: **SCADA CYBERATTACK**

Role	Responsibilities
Cybersecurity Consultant (External)	As a specialized expert, the External Consultant brings an independent and objective perspective to the team. They offer insights into cutting-edge cyber threats and advanced mitigation strategies, supplementing the team's knowledge. The Consultant provides invaluable support in gathering evidence acquisition for forensic analysist, incident containment, eradication, recovery efforts, and the development of essential lessons learned. Their expertise strengthens complement SCIRT's capabilities and response effectiveness.
PLC/SCADA Programmer	The PLC/SCADA Programmer is responsible for maintaining and developing the PLC/SCADA equipment, software, and applications. They are well-versed in the intricacies of system components and products supported by the PLC/SCADA system. They provide crucial insights into normal and abnormal equipment functions and the potential impacts of removing any component, their expertise greatly aids SCADA Network Administrator and Cybersecurity Analyst in effective incident analysis, temporary workaround solution, patching, update, eradication and permeant recovery and restoration of the SCADA system.
SCADA Field Specialist	During the containment and recovery phase, the SCADA Field Specialist assumes crucial responsibilities to secure the radio networks, oversee field activities, and conduct physical inspections of SCADA equipment. Collaborating closely with the SCADA Network Administrator and Cybersecurity Analyst, their primary objective is to assist in evaluating network traffic, identify the source of a cybersecurity attack, implement containment measures, eliminate the threat, and restore normal operations. Furthermore, they actively engage in troubleshooting issues alongside the PLC/SCADA Programmer and take charge of properly isolating, eradicating, patching, updating, and restoring field equipment. Additionally, they may offer assistance in evidence collection and preservation, working in conjunction with the Cybersecurity Analyst and External Consultant.

HAZARD-SPECIFIC RESPONSE PLAN: **SCADA CYBERATTACK**

TRIGGERS (Detection & Identification)

Detection Input

Effective incident response requires reliable alert sources to detect potential threats in a timely manner. These sources vary from automated systems and software solutions to manual reports made by human operators. Each source offers unique advantages and together they provide comprehensive coverage, ensuring that any anomaly or intrusion does not go unnoticed.

Alerts	Description
Intrusion Detection and Prevention System (IDPS)	IDPS products monitor network traffic for suspicious activity and log key data, identifying attack types, source, and destination addresses, and more.
Firewalls	Firewalls monitor and control incoming and outgoing network traffic based on predetermined security rules. They serve as a barrier between trusted and untrusted networks, triggering alerts when suspicious activity is detected.
Security Information and Event Management (SIEM)	SIEM products scrutinize log files for significant information, with configurations in place to detect specific behaviors and raise relevant alerts such as service failures.
Antivirus Software & Endpoint Detection and Response (EDR)	Antivirus software scans various file types to identify malware, preventing it from infecting endpoints and raising alerts. EDR platforms continuously monitor and gather data from endpoint devices, looking for threat patterns or suspicious activities. If a threat is detected, an alert is generated.
File Integrity Checking Software	This software monitors crucial files for any changes, with any unexpected or unplanned changes potentially indicating an attack or a violation of change management procedures.
SCADA Alerts	SCADA systems often have built-in alerts to detect irregularities within the control processes, such as sudden changes in system values, signaling potential cyberattacks.
Network Monitoring	Network monitoring tools oversee the network for any slow or failing systems and notify network administrators when outages occur or performance thresholds are breached.
Human Reporting	Users and operators can report anomalies, suspicious activities, or breaches they notice in the system. Their involvement is crucial as they often interact directly with the system and can spot issues software may miss.

HAZARD-SPECIFIC RESPONSE PLAN: **SCADA CYBERATTACK**

Potential Indicator of Compromise & Impacts

This list of potential indicators of compromise (See Appendix 1) and potential impacts (See Appendix 2) serves as a guide for incident response teams to timely prioritize and address potential cybersecurity threats. Each trigger is aligned with specific techniques from the widely acknowledged MITRE ATT&CK framework, offering insights into potential attack path, technique, and tactics that adversaries might use in a SCADA environment. The framework also provides detection and mitigation methods that are available for reference on the web with the technique ID given below. Nonetheless, while it outlines common triggers, it doesn't cover every possible SCADA cybersecurity incident. Therefore, maintaining continuous vigilance, implementing proactive strategies, and staying adaptive are crucial for efficient SCADA security and defense.

HAZARD-SPECIFIC RESPONSE PLAN: **SCADA CYBERATTACK**

SEVERITY DESIGNATION

		Severity				
		(Single & Isolated) with No effect to the ability to provide services to operation.	(Single & Isolated) SCADA System can still provide all critical services to all users but has lost efficiency	(Widespread) SCADA System can still provide all critical services to all users but has lost efficiency	(Single & Isolated) SCADA System has lost the ability to provide a critical service to a subset of system users	(Widespread) SCADA System has lost the ability to provide a critical service to a subset of system users. Any Manipulation of Control, View & Alarms on the SCADA system High suspect of state sponsored attacks
Time to Recover	REGULAR - Time to recovery is predictable with existing resources. (Less than 1 Day)	None	Low	Low	Medium	High
	SUPPLEMENTED - Time to recovery is predictable with additional resources. (1 to 7 Days)	None	Low	Low	High	Critical
	EXTENDED - Time to recovery is unpredictable; additional resources and outside support are needed. (8 to 13 Days)	None	Low	Medium	High	Critical
	NOT RECOVERABLE – Recovery from the incident is not possible (e.g., permanently deleted); launch investigation & total rebuild of the impacted SCADA sub-system. (More than 14 Days)	None	Low	Medium	High	Critical

Any Safety, environmental, water quality or physical damage is automatically classified as high or critical and will be evaluated case by case.

HAZARD-SPECIFIC RESPONSE PLAN: **SCADA CYBERATTACK**

KEY CONTACTS

See “Key Contacts - IRWD Staff and Vendors” List

See IRWD “Standby Roster”

Irvine Ranch WATER DISTRICT

HAZARD-SPECIFIC RESPONSE PLAN: **SCADA CYBERATTACK**

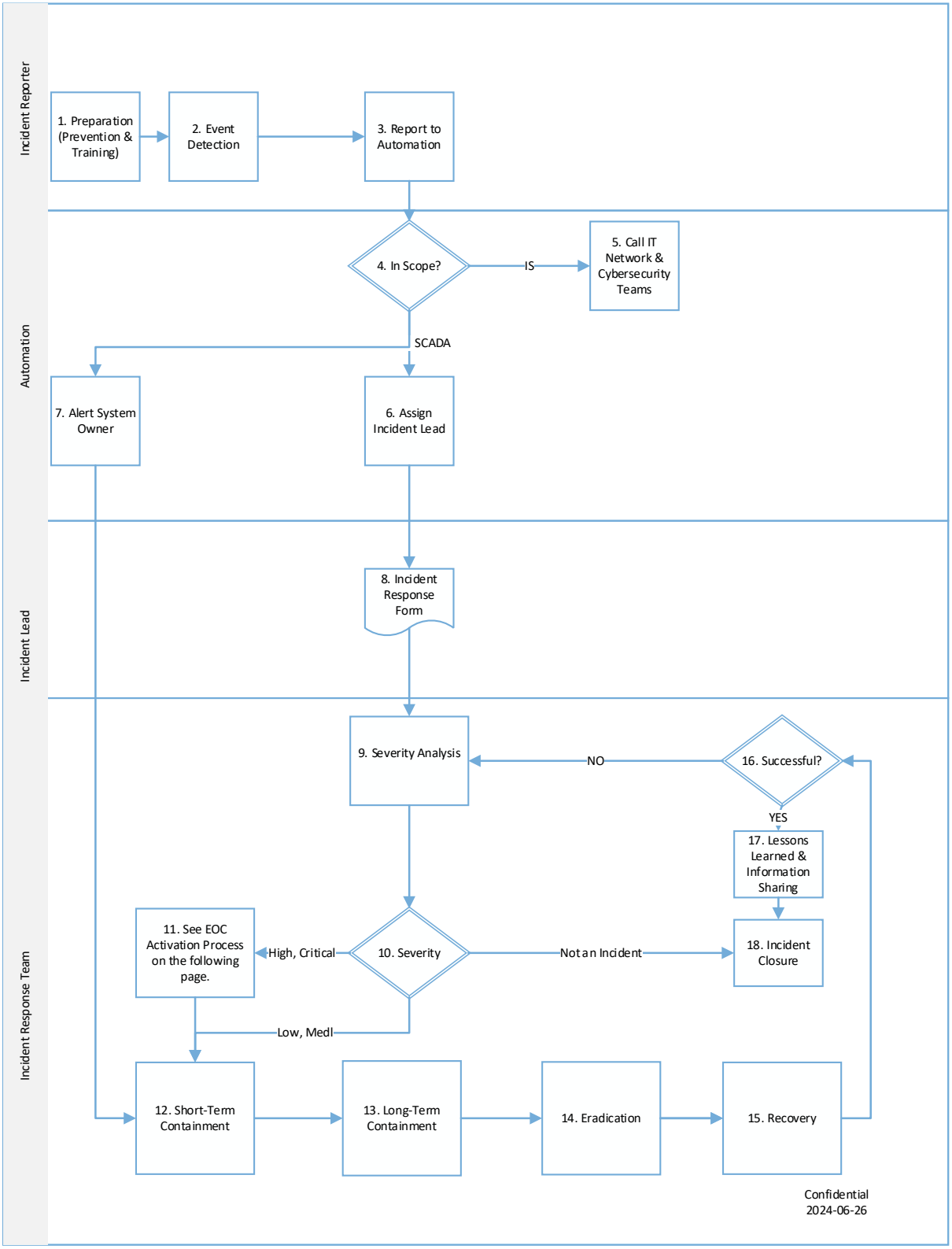


Figure 3. SCADA CYBERSECURITY INCIDENT HANDLING PROCESS FLOW

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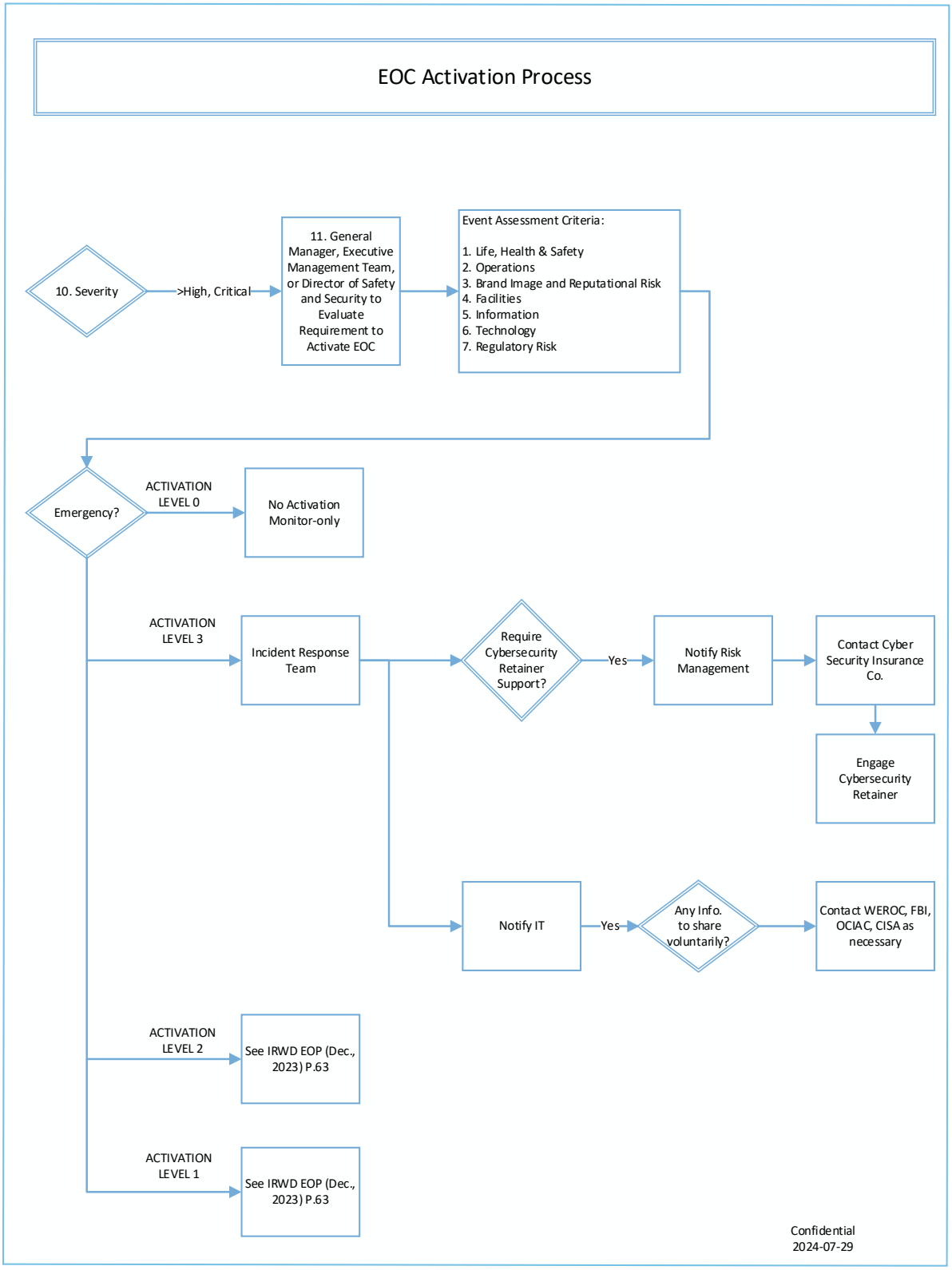


Figure 4: EOC Activation Process

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Please note: The Action step numbers below correspond to each step of the SCADA Cybersecurity Incident Handling Process Flow Diagram.

PHASE	SUB-PHASE	ACTION	POSITION RESPONSIBLE
Prepare	**Preparation & Prevention**	**Start** 1.1 Be aware and recognize indicators of compromise, and report to Automation. 1.2 Monitor SCADA alerts. 1.3 Monitor firewall threat and system logs. 1.4 Monitor scanner alert logs. 1.5 Monitor authorization logs for failures. 1.6 Establish baseline network activity and look for anomalies. 1.7 Establish baseline for each SCADA system behavior and look for anomalies. 1.8 Establish time synchronization among all network devices. 1.9 Maintain current network diagrams. 1.10 Maintain current asset list. 1.11 Establish a secure baseline. configuration for each system device (router, switch, firewall, server, workstation, etc.) 1.12 Maintain regular configuration backups of system devices. 1.13 Maintain off-network “clean” images of servers and laptops and other core components. 1.14 Incorporate redundancy into system design and network architecture. 1.15 Maintain separate user accounts for elevated privileges. 1.16 Use long passwords and MFA. 1.17 Segment SCADA network such that each can be isolated while allowing others to function normally. 1.18 Perform anti-virus inspection on firewall network segments, and on host machines. 1.19 Whitelist applications that may run on host machines; block the rest. 1.20 Whitelist applications that may traverse the network; block the rest. 1.21 Enable host firewall on Windows machines. 1.22 IR Tabletop exercises.	**Automation Team**
	Event Detection	2.1 Notify (phone, email, text, in-person) Automation of any: • Unauthorized access. • Multiple failed login attempts. • Unusually high network traffic. • Loss of SCADA visibility. • Loss of SCADA control. • Threat alerts.	**All IRWD Staff** **External Partners (WEROC, NIST, CIRT, etc.)**

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PHASE	SUB-PHASE	ACTION	POSITION RESPONSIBLE
		• See Indicators of Compromise & Impacts (Appendix 1 & 2).	
	Event Notification	**Report findings to Automation** 3.1 Notify (phone, in-person, text, email,) Automation of any: • Unauthorized access. • Multiple failed login attempts. • Unusually high network traffic. • Loss of SCADA visibility. • Loss of SCADA control. • Threat alerts. • See Indicators of Compromise (IOC).	**Safety** **Operations** **Automation Team**
	Communication	**Assess Network Scope** 4.1 Determine scope (IT or Automation) 5.1 If IT, report to IT CIRT. 6.1 If Automation, assign Incident Lead. 7.1 Alert System Owner. 7.2 Notify Site Operator of possible incident.	**Automation Team**
	Evidence Acquisition	**Incident Response Form (See Appendix 3)** 8.1 Collect information about affected systems: • Caller (name, email, phone number) • Location • Hostname, make and model. • IP address • Start time. • Duration of event • Logs (traffic, threat, event, alerts, etc.) • Screenshots • Photo images • Any other means of capturing the state of the event. 8.2 Report findings to: • Automation Supervisor • Automation Manager	**Incident Lead**
	Incident Analysis	**Analyze Incident** 9.1 Validate incident. 9.2 Rule out false-positive. 9.3 Assess damage to equipment, and disruptions to operations, loss of view, loss of control, loss of safety. 9.4 Root-cause analysis. 9.5 Document findings. 9.6 If the scope of work appears to take beyond an hour to resolve, contact additional Automation staff for support.	**Automation Team**

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PHASE	SUB-PHASE	ACTION	POSITION RESPONSIBLE
		9.7 If Supervisor or Manager are not available, escalate reporting up to Executive-in-Charge: • Director of Recycling Operations	
	Severity Analysis	**Analyze Incident Severity** 10.1 Event Assessment Criteria (see SCADA Cybersecurity Incident Assessment Process Flowchart): • Life, Health & Safety • Regulatory Risk • Operations • Facilities • Brand Image and Reputational Risk • Information Technology 10.2 Expected duration of outage 10.3 Expected time to recovery	**Automation Manager, Operation Manager, Director of Recycling, Executive Director of Operations**
		Determine Severity 10.4 Critical and High – Notify Executive-in-Charge to evaluate EOC activation requirement. 10.5 Low and Medium – See Short-Term Containment 10.6 Notify IT if it is an incident	**Automation Manager, Operation Manager, Director of Recycling, Executive Director of Operations, Information Technology**
		Determine Emergency Level 11.1 ACTIVATION LEVEL 0 – No Activation. • Monitor-only • Management may use bulletin notification	**General Manager, Executive Team, or Director of Safety & Security**
Activate	**Alert**	11.2 ACTIVATION LEVEL 3 – Activate IRT (This is the lowest level of Emergency Operations and primarily involves the Automation Team. Should there be a request to tap into the Cybersecurity retainer for assistance, then Risk Management should be notified so they can contact the Cyber Insurance Co.)	**General Manager or Executive Team and/or Director of Safety & Security**
		11.3 Notify IRWD Board of Directors	**General Manager or Executive Team**
		11.4 For ACTIVATION LEVELS 1-3: • Notify Risk Management if assistance is required from Cybersecurity vendor on retainer • Notify IT • Management may use DING notification	**General Manager or Executive Team and/or Director of Safety & Security**
		11.5 Risk Management to contact Cyber Insurance Co. if assistance is required from vendor on retainer	**Risk Management**

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PHASE	SUB-PHASE	ACTION	POSITION RESPONSIBLE
		11.6 Contact WEROC, FBI, OCIAC, CISA as necessary, or if there is any information to share voluntarily	**IT Director or IT Cybersecurity Manager**
		11.7 Contact Cybersecurity vendor on retainer, as necessary	**Automation**
		11.8 ACTIVATION LEVEL 2 – Activate IRT and EOT	**General Manager or Executive Team or Director of Safety & Security**
		11.9 ACTIVATION LEVEL 1 – Activate IRT, EOT, and Policy Group	**General Manager or Executive Team or Director of Safety & Security**
Containment	**Short-Term Containment**	**Low Severity (Full functionality still available):** 12.1 Allow asset to operate normally with increased oversight.	**Operations**
		Medium or higher severity (Large number of systems affected): 12.2 Site operator to begin short-term containment (manual bypass)	**Operations**
		Parts of the SCADA system compromised: 12.3 Isolate compromised system from the rest of the SCADA network. 12.4 Limit impact and stop the spread. 12.5 Disable functions that affect other assets. 12.6 Disable remote access to affected system.	**Automation**
		Assess isolation effectiveness: 12.7 Verify functionality and safety of isolated systems. 12.8 Verify incident has been contained.	**Automation Operations**
	Long-Term Containment	**SCADA servers inoperable, and successfully isolated:** 13.1 Inform Operation the estimated duration and impact of the Long-Term Containment. 13.2 Verify that symptoms have stopped occurring. 13.3 Determine minimum change to stop incident.	**Automation Operations**
Eradication		**Eliminate components of the incident** 14.1 Determine root-cause of the incident. 14.2 Determine the scope of the incident. 14.3 Document steps taken during eradication, including any changes to systems. 14.4 Disable any compromised accounts.	**Automation**

PHASE	SUB-PHASE	ACTION	POSITION RESPONSIBLE
		14.5 Remove any malicious software or hardware. 14.6 Restore asset from clean backup. 14.7 Rebuild asset from source media. 14.8 Confirm no reinfection.	
Recovery		15.1 Confirm all approved applications, OS versions, patch levels, malware protection, Group Policies, match requirements. 15.2 Confirm scanners, asset management, and SIEM are functional and can access the recovered network. 15.3 Initiate backup routine, data synch, and other scheduled tasks. 15.4 Return assets to normal operations in coordination with Operations. 15.5 Asset Owners verify normal operations, and no additional incident symptoms. 15.6 Continue to monitor closely for 30 days.	**Operations, Automation**
	Reassess	16.1 Was Recovery Successful? 16.2 If not, return to step 9 Severity Analysis.	**Automation Operations**
Lessons Learned		**Identify Incident Response process improvements:** 17.1 Could the incident detection have been any faster? 17.2 Did the Incident Handling Process flowchart accurately map the steps involved? 17.3 Did the SCADA Cybersecurity Incident Handling Process flowchart correctly map the steps involved? 17.4 Was the severity criteria for incident escalation adequate? 17.5 Which corrective actions can prevent similar incidents? 17.6 What additional tools or resources are needed to detect, analyze, and mitigate future incidents of this kind? 17.7 Were adequate documented procedures available, and were they followed? 17.8 What worked well? 17.9 What didn't?	**All Groups involved in Activation**
Information Sharing		17.10 If permissible by management, share findings with external partners.	**Automation**

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APPENDIX 1: Potential Indicator of Compromise

Potential IOC	MITRE ATT&CK Technique
Unusual or high volume of DNS requests, especially to domains with poor or no reputation. Notice of unrecognized or unusual equipment plugged into SCADA network. Compromised dual-homed device. Enterprise laptops plugged into the SCADA network. Enterprise network is plugged into SCADA network. Physical Access – Non authorized USB devices plugged into workstations.	Typical SCADA devices are static IP and rarely rely on DNS protocol. **T0883 Internet Accessible Device** Adversaries may gain access into industrial environments through systems exposed directly to the internet for remote access rather than through External Remote Services. Internet Accessible Devices are exposed to the internet unintentionally or intentionally without adequate protections. This may allow adversaries to move directly into the control system network. Access onto these devices is accomplished without the use of exploits, these would be represented within the Exploit Public-Facing Application technique. **T0848 Rogue Master** Adversaries may setup a rogue master to leverage control server functions to communicate with outstations. A rogue master can be used to send legitimate control messages to other control system devices, affecting processes in unintended ways. It may also be used to disrupt network communications by capturing and receiving the network traffic meant for the actual master. Impersonating a master may also allow an adversary to avoid detection. **T1200 Hardware Additions** Adversaries may introduce computer accessories, networking hardware, or other computing devices into a system or network that can be used as a vector to gain access. Rather than just connecting and distributing payloads via removable storage (i.e. Replication Through Removable Media), more robust hardware additions can be used to introduce new functionalities and/or features into a system that can then be abused.
The appearance of remote access sessions to SCADA systems from unusual or unknown IP addresses or locations	**T0886 Remote Services** Adversaries may leverage remote services to move between assets and network segments. These services are often used to allow operators to interact with systems remotely within the network, some examples are RDP, SMB, SSH, and other similar mechanisms. Remote services could be used to support remote access, data transmission, authentication, name resolution, and other remote functions. Further, remote services may be necessary to allow operators and administrators to configure systems within the network from their engineering or management workstations. An adversary may use this technique to access devices which may be dual-homed to multiple network segments, and can be used for Program Download or to execute attacks on control devices directly through Valid Accounts. Specific remote services (RDP & VNC) may be a precursor to enable Graphical User Interface execution on devices such as HMIs or engineering workstation software. **T0866 Exploitation of Remote Services** Adversaries may exploit a software vulnerability to take advantage of a programming error in a program, service, or within the operating system software or kernel itself to enable remote service abuse. A common goal for post-compromise exploitation of remote services is for initial access into and lateral movement throughout the ICS environment to enable access to targeted systems.

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Potential IOC	MITRE ATT&CK Technique
Abnormal Data Traffic Patterns, unusually high network traffic or number of connections Unusual Outbound Network Traffic (Through the DMZ or Across the SCADA network) Unusual Communication Protocol	**T0840 Network Connection Enumeration** Adversaries may perform network connection enumeration to discover information about device communication patterns. If an adversary can inspect the state of a network connection with tools, such as Netstat, in conjunction with System Firmware, then they can determine the role of certain devices on the network. The adversary can also use Network Sniffing to watch network traffic for details about the source, destination, protocol, and content. **T0888 Remote System Information Discovery** An adversary may attempt to get detailed information about remote systems and their peripherals, such as make/model, role, and configuration. Adversaries may use information from Remote System Information Discovery to aid in targeting and shaping follow-on behaviors. For example, the system's operational role and model information can dictate whether it is a relevant target for the adversary's operational objectives. In addition, the system's configuration may be used to scope subsequent technique usage. Requests for system information are typically implemented using automation and management protocols and are often automatically requested by vendor software during normal operation. This information may be used to tailor management actions, such as program download and system or module firmware. An adversary may leverage this same information by issuing calls directly to the system's API. **T0802 Automated Collection** Adversaries may automate collection of industrial environment information using tools or scripts. This automated collection may leverage native control protocols and tools available in the control systems environment. For example, the OPC protocol may be used to enumerate and gather information. Access to a system or interface with these native protocols may allow collection and enumeration of other attached, communicating servers and devices. **T0869 Standard Application Layer Protocol** Adversaries may establish command and control capabilities over commonly used application layer protocols such as HTTP(S), OPC, RDP, telnet, DNP3, and modbus. These protocols may be used to disguise adversary actions as benign network traffic. Standard protocols may be seen on their associated port or in some cases over a non-standard port. Adversaries may use these protocols to reach out of the network for command and control, or in some cases to other infected devices within the network.
Login attempts at odd hours Multiple failed login attempts Unauthorized access attempts to critical resources	**T1110 Brute Force** Adversaries may use brute force techniques to gain access to accounts when passwords are unknown or when password hashes are obtained. Without knowledge of the password for an account or set of accounts, an adversary may systematically guess the password using a repetitive or iterative mechanism. Brute forcing passwords can take place via interaction with a service that will check the validity of those credentials or offline against previously acquired credential data, such as password hashes. Brute forcing credentials may take place at various points during a breach. For example, adversaries may attempt to brute force access to Valid Accounts

Potential IOC	MITRE ATT&CK Technique
	within a victim environment leveraging knowledge gathered from other post-compromise behaviors such as OS Credential Dumping, Account Discovery, or Password Policy Discovery. Adversaries may also combine brute forcing activity with behaviors such as External Remote Services as part of Initial Access. Sub Technique: Password guessing, cracking, spraying, and stuffing. **T1187 Forced Authentication** Adversaries may gather credential material by invoking or forcing a user to automatically provide authentication information through a mechanism in which they can intercept. **T1555 Credentials from Password Stores** Adversaries may search for common password storage locations to obtain user credentials. Passwords are stored in several places on a system, depending on the operating system or application holding the credentials. There are also specific applications that store passwords to make it easier for users to manage and maintain. Once credentials are obtained, they can be used to perform lateral movement and access restricted information.
Unable to change setpoint, start, stop equipment. Unable to download or upload PLC code. Altered Configuration Files or PLC project. Unauthorized modification to the SCADA software. Setpoint parameters changed to abnormal values. Unplanned or device configuration changes without explanation. Equipment randomly starting and stopping. Undocumented Setpoint Changes. Unauthorized & unexplained start and stop of equipment. Abnormal operating behavior (Running pumps with valve closed). Excessive/Insufficient usage of chemical. Critical Alarm failed to notify.	**T0813 Denial of Control** Adversaries may cause a denial of control to temporarily prevent operators and engineers from interacting with process controls. An adversary may attempt to deny process control access to cause a temporary loss of communication with the control device or to prevent operator adjustment of process controls. An affected process may still be operating during the period of control loss, but not necessarily in a desired state. **T0873 Project File Infection** Adversaries may attempt to infect project files with malicious code. These project files may consist of objects, program organization units, variables such as tags, documentation, and other configurations needed for PLC programs to function. Using built in functions of the engineering software, adversaries may be able to download an infected program to a PLC in the operating environment enabling further Execution and Persistence techniques. **T0878 Alarm Suppression** Adversaries may target protection function alarms to prevent them from notifying operators of critical conditions. Alarm messages may be a part of an overall reporting system and of particular interest to adversaries. Disruption of the alarm system does not imply the disruption of the reporting system as a whole. In ICS environments, the adversary may have to suppress or contend with multiple alarms and/or alarm propagation to achieve a specific goal to evade detection or prevent intended responses from occurring. Methods of suppression may involve tampering or altering device displays, alarm delay setpoint and logs, modifying in memory code to fixed values, or even tampering with assembly level instruction code. **T0845 Program Upload** Adversaries may attempt to upload a program from a PLC to gather information about an industrial process. Uploading a program may allow them to acquire and study the underlying logic. Methods of program upload include vendor software, which enables the user to upload and read a program running on a

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Potential IOC	MITRE ATT&CK Technique
Alarm setpoint adjusted without records. Unauthorized manipulation of SCADA/HMI graphic	PLC. This software can be used to upload the target program to a workstation, jump box, or an interfacing device. **T0843 Program Download** Adversaries may perform a program download to transfer a user program to a controller. Variations of program download, such as online edit and program append, allow a controller to continue running during the transfer and reconfiguration process without interruption to process control. However, before starting a full program download (i.e., download all) a controller may need to go into a stop state. This can have negative consequences on the physical process, especially if the controller is not able to fulfill a time-sensitive action. Adversaries may choose to avoid a download all in favor of an online edit or program append to avoid disrupting the physical process. An adversary may need to use the technique Detect Operating Mode or Change Operating Mode to make sure the controller is in the proper mode to accept a program download. **T0821 Modify Controller Tasking** Adversaries may modify the tasking of a controller to allow for the execution of their own programs. This can allow an adversary to manipulate the execution flow and behavior of a controller. **T0889 Modify Program** Adversaries may modify or add a program on a controller to affect how it interacts with the physical process, peripheral devices, and other hosts on the network. Modification to controller programs can be accomplished using a Program Download in addition to other types of program modification such as online edit and program append. **T0835 Manipulate I/O Image** Adversaries may manipulate the I/O image of PLCs through various means to prevent them from functioning as expected. Methods of I/O image manipulation may include overriding the I/O table via direct memory manipulation or using the override function used for testing PLC programs. During the scan cycle, a PLC reads the status of all inputs and stores them in an image table. The image table is the PLCs internal storage location where values of inputs/outputs for one scan are stored while it executes the user program. After the PLC has solved the entire logic program, it updates the output image table. The contents of this output image table are written to the corresponding output points in I/O Modules. **T0806 Brute Force I/O** Adversaries may repetitively or successively change I/O point values to perform an action. Brute Force I/O may be achieved by changing either a range of I/O point values or a single point value repeatedly to manipulate a process function. The adversary's goal and the information they have about the target environment will influence which of the options they choose. In the case of brute forcing a range of point values, the adversary may be able to achieve an impact without targeting a specific point. In the case where a single point is targeted, the adversary may be able to generate instability on the process function associated with that particular point. Adversaries may use Brute Force I/O to cause failures within various industrial processes. These failures could be the result of wear on equipment or damage to downstream equipment.

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Potential IOC	MITRE ATT&CK Technique
	T0831 Manipulation of Control Adversaries may manipulate physical process control within the industrial environment. Methods of manipulating control can include changes to set point values, tags, or other parameters. Adversaries may manipulate control systems devices or possibly leverage their own, to communicate with and command physical control processes. The duration of manipulation may be temporary or longer sustained, depending on operator detection. **T0832 Manipulation of View** Adversaries may attempt to manipulate the information reported back to operators or controllers. This manipulation may be short term or sustained. During this time the process itself could be in a much different state than what is reported. Operators may be fooled into doing something that is harmful to the system in a loss of view situation. With a manipulated view into the systems, operators may issue inappropriate control sequences that introduce faults or catastrophic failures into the system. Business analysis systems can also be provided with inaccurate data leading to bad management decisions.
Multiple legit users are unable to login.	Adversaries may modify system time to prevent time-based authentication. **T1124 System Time Discovery** An adversary may gather the system time and/or time zone from a local or remote system. The system time is set and stored by the Windows Time Service within a domain to maintain time synchronization between systems and services in an enterprise network. **T1531 Account Access Removal** Adversaries may interrupt availability of system and network resources by inhibiting access to accounts utilized by legitimate users. Accounts may be deleted, locked, or manipulated (ex: changed credentials) to remove access to accounts. Adversaries may also subsequently log off and/or perform a System Shutdown/Reboot to set malicious changes into place. In Windows, Net utility, Set-LocalUser and Set-ADAccountPassword PowerShell cmdlets may be used by adversaries to modify user accounts. In Linux, the passwd utility may be used to change passwords. Accounts could also be disabled by Group Policy.
Unusual user behavior, such as accessing sensitive SCADA data or critical control functions from atypical locations or outside of normal working hours.	**T1078 Valid Accounts** Adversaries may obtain and abuse credentials of existing accounts as a means of gaining Initial Access, Persistence, Privilege Escalation, or Defense Evasion. Compromised credentials may be used to bypass access controls placed on various resources on systems within the network and may even be used for persistent access to remote systems and externally available services, such as VPNs, SCADA, network devices, and remote desktop. Compromised credentials may also grant an adversary increased privilege to specific systems or access to restricted areas of the network. Adversaries may choose not to use malware or tools in conjunction with the legitimate access those credentials provide to make it harder to detect their presence. In some cases, adversaries may abuse inactive accounts: for example, those belonging to individuals who are no longer part of an organization. Using these accounts may allow the adversary to evade detection, as the original account

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Potential IOC	MITRE ATT&CK Technique
	user will not be present to identify any anomalous activity taking place on their account. The overlap of permissions for local, domain, and cloud accounts across a network of systems is of concern because the adversary may be able to pivot across accounts and systems to reach a high level of access (i.e., domain or enterprise administrator) to bypass access controls set within the enterprise.
Sustained SCADA Outage (Persistent loss of visibility even after system reboot). Unexplained System Errors (with no recent update or changes).	**T0829 Loss of View** Adversaries may cause a sustained or permanent loss of view where the ICS equipment will require local, hands-on operator intervention; for instance, a restart or manual operation. By causing a sustained reporting or visibility loss, the adversary can effectively hide the present state of operations. This loss of view can occur without affecting the physical processes themselves. **T0826 Loss of Availability** Adversaries may attempt to disrupt essential components or systems to prevent the owner and operator from delivering products or services. Adversaries may leverage malware to delete or encrypt critical data on HMIs, workstations, or databases. In the 2021 Colonial Pipeline ransomware incident, pipeline operations were temporally halted on May 7th and were not fully restarted until May 12th **T0827 Loss of Control** Adversaries may seek to achieve a sustained loss of control or a runaway condition in which operators cannot issue any commands even if the malicious interference has subsided. The German Federal Office for Information Security (BSI) reported a targeted attack on a steel mill in its 2014 IT Security Report. These targeted attacks affected industrial operations and resulted in breakdowns of control system components and even entire installations. As a result of these breakdowns, massive impact resulted in damage and unsafe conditions from the uncontrolled shutdown of a blast furnace. **T1489 Service Stop** Adversaries may stop or disable services on a system to render those services unavailable to legitimate users. Stopping critical services or processes can inhibit or stop response to an incident or aid in the adversary's overall objectives to cause damage to the environment.
SCADA application failures (widespread)	**T1489 Service Stop** Adversaries may stop or disable services on a system to render those services unavailable to legitimate users. Stopping critical services or processes can inhibit or stop response to an incident or aid in the adversary's overall objectives to cause damage to the environment. **T0816 Device Restart/Shutdown** Adversaries may forcibly restart or shutdown a device in an ICS environment to disrupt and potentially negatively impact physical processes. Methods of device restart and shutdown exist in some devices as built-in, standard functionalities. These functionalities can be executed using interactive device web interfaces, CLIs, and network protocol commands. Unexpected restart or shutdown of control system devices may prevent expected response functions happening during critical states.

Potential IOC	MITRE ATT&CK Technique
	A device restart can also be a sign of malicious device modifications, as many updates require a shutdown to take effect. **T1529 System Shutdown/Reboot** Adversaries may shutdown/reboot systems to interrupt access to, or aid in the destruction of, those systems. Operating systems may contain commands to initiate a shutdown/reboot of a machine or network device. In some cases, these commands may also be used to initiate a shutdown/reboot of a remote computer or network device via Network Device CLI (e.g., reload). Shutting down or rebooting systems may disrupt access to computer resources for legitimate users while also impeding incident response/recovery. Adversaries may attempt to shutdown/reboot a system after impacting it in other ways, such as Disk Structure Wipe or Inhibit System Recovery, to hasten the intended effects on system availability.
Network system failures (widespread)	**T1498 Network Denial of Service** Adversaries may perform Network Denial of Service (DoS) attacks to degrade or block the availability of targeted resources to users. Network DoS can be performed by exhausting the network bandwidth services rely on. **T1562 Impair Defenses** Adversaries may maliciously modify components of a victim's environment in order to hinder or disable defensive mechanisms. This not only involves impairing preventative defenses, such as firewalls and anti-virus, but also detection capabilities that defenders can use to audit activity and identify malicious behavior. This may also span both native defenses as well as supplemental capabilities installed by users and administrators. Adversaries may also impair routine operations that contribute to defensive hygiene, such as blocking users from logging out of a computer or stopping it from being shut down. These restrictions can further enable malicious operations as well as the continued propagation of incidents.
Ransomware note from a threat actor Missing files or backup Large volume of corrupted files	**T1486 Data Encrypted for Impact** Adversaries may encrypt data on target systems or on large numbers of systems in a network to interrupt availability to system and network resources. They can attempt to render stored data inaccessible by encrypting files or data on local and remote drives and withholding access to a decryption key. This may be done to extract monetary compensation from a victim in exchange for decryption or a decryption key (ransomware) or to render data permanently inaccessible in cases where the key is not saved or transmitted. **T1485 Data Destruction** Adversaries may destroy data and files on specific systems or in large numbers on a network to interrupt availability to systems, services, and network resources. Data destruction is likely to render stored data irrecoverable by forensic techniques through overwriting files or data on local and remote drives. Common operating system file deletion commands such as del and rm often only remove pointers to files without wiping the contents of the files themselves, making the files recoverable by proper forensic methodology. This behavior is distinct from Disk Content Wipe and Disk Structure Wipe because individual files are destroyed rather than sections of a storage disk or the disk's logical structure.

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APPENDIX 2: Potential Impacts

(Ref. "Consider the Consequences: A powerful approach for reducing ICS cyber risk," Richard Wyman 2017. https://www.henrystewartpublications.com/sites/default/files/Wyman%20%285%29.pdf

Cyber Impacts	Potential Event	Impact Analysis
Loss of integrity	Attacker executes a Man-in-the-Middle (MitM) attack between a polling host and pumping plant PLC.	What is the likelihood of executing a MitM attack? What are the mitigations in place to prevent a MitM attack? What are some of the other measures an attacker could take to compromise system integrity to issue cycling commands to the PLC? Can an attacker impact multiple pumps at the same time?

Cyber/Physical Impacts	Potential Event	Impact Analysis
Unauthorized modification of set points	Attacker issues commands to cycle the PLC output for controlling a pump motor.	What are the measures in place to prevent and/or mitigate cycling commands? Protection logic in the PLC (for example, time-outs between pump stops and starts)? Can an attacker bypass the protection logic? Does the PLC protect the interlocks and protection logic from unauthorized modifications?
Unauthorized modification of set points	Upon gaining access to a water treatment plant's SCADA system, an attacker can alter the parameters set by the plant operator that trigger alarms when reservoir or tank water levels deviate from specified thresholds. If the plant operator is unaware of these changes or disregards the modifications made by the attacker, it could initiate a chain of catastrophic events. Water and wastewater treatment facilities utilize various chemicals, such as pH neutralizers, anti-foaming agents, coagulants, and flocculants. If a malicious actor gains access to the SCADA systems of a water treatment plant, they can manipulate the chemical levels configured by the operator, potentially compromising the water quality and rendering it unsuitable for household, industrial, or agricultural use. An attacker's manipulation of control operations within the treatment plant can result in the collapse of the water tank as they are designed to withstand a small amount of internal pressure and no external vacuum pressure.	What measures are in place to prevent and/or mitigate unauthorized modification of set points at the SCADA or PLC level? Is the chemical pump correctly sized so that its capacity does not excessively exceed the process requirements? By ensuring the pump is appropriately sized to meet process needs, it can help prevent hackers from injecting excess, unneeded chemicals. Does the SCADA/PLC protect the interlocks and protection logic from unauthorized modifications? Does PLC and SCADA have upper and lower hardcoded input limit? Is there an independent chemical analyzer that is not part of the SCADA system that can alert Operations? Changing the scaling of the flow meter can mislead the PID loop to deliver incorrect amount of water. Is the overflow correctly sized such that the combined inlet pumping, or flow capacity does not exceed the overflow capacity for the tank.

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Physical Impacts	Potential Event	Impact Analysis
Abnormal control (cycling)	The PLC issues a cycling discrete signal to the pump motor by energizing the control circuit.	Are there physical controls to prevent or disrupt cycling of energizing and de-energizing the control signal?
Process excursions (pressure fluctuations)	Cycling the pump to start/stop and opening/closing valves can create pressure fluctuations in the pipe, such as fluid hammer	Can starting and stopping pumps or opening or closing valves cause a water hammer? At what point does it cause operational impacts? What are these operational impacts? Can they impact customers? Create noise? Break pipes?
Electrical damage (motor windings)	The cycling inrush current heats motor windings.	Are there physical protections such as breakers or thermal overloads to prevent overheating the windings> What is the tolerance of the pump windings to resist shorts and/or break down of the insulation? Are there other motors more resilient to cycling commands? How long will it take to fix or replace a damaged motor?
Structural damage (pipes)	The cycling creates water hammers, which breaks the pipes.	At what point do the pipes break? Where do they break? Are there physical devices such as surge tanks, dampers, or relief valves to prevent breaks from pressure surges? How long will it take to repair the pipe?
Membrane fouling	Manipulation on recirculation rate, chemical cleaning dose or duration may lead temporary or permanent fouling of membrane	Are correlations being used to detect abnormalities, such as pump curves (flow, pressure, or transmembrane pressure vs. power)? What is the lead time for ordering new membranes? Is there sufficient benefit from occasionally monitoring local pressure gauges compared to pressure transmitters? Is instrumentation calibration periodically performed to balance risk versus benefit? Are there methods to address long-term outages, alternative sources, or flow diversion?
Process treatment upset	Manipulation of temperature, dissolved oxygen, pH, dosing setpoint and other critical parameters leads to settleability issues, anaerobic/aerobic process upset.	Are there methods in place to address long-term or short-term process upsets? Are there systems in place to detect unauthorized modifications to PLC code. Are critical operation setpoint periodically reviewed?
Electricity (arcing, thermal)	The cycling inrush currents cause arcing and elevated temperatures.	What are the protective measures in place to contain arcs? Can the thermal increases cause fire? If so, what measures are in place to prevent, detect, or mitigate fires?
Collapse of water tank Loss of Containment or Floods	Collapse of water tank, Broken pipe causes flooding.	Is the overflow correctly sized such that the inlet pumping capacity does not exceed the overflow capacity for the tank. What structural or environmental damage can a flood cause? What about homes or roads in the surrounding area? Can the floodwaters be safely diverted?
Loss of production	Damaged pump and pipe prevent delivery of water to customers.	Are there other pumps and/or pumping plants to continue water distribution? Are there alternative pipe routes to deliver water? How long will it take to restore service? Are portable pumps a viable option for maintaining water deliveries?

HAZARD-SPECIFIC RESPONSE PLAN: **SCADA CYBERATTACK**

Physical Impacts	Potential Event	Impact Analysis
Contamination	Broken pipe exposes potable water to contaminants.	Is water infiltration from ground water a possible source of water contamination? How are contaminants detected? How are they mitigated? How is the public notified of possible contamination?

Safety Impacts	Potential Event	Impact Analysis
Health, Safety, Environmental (HSE) Impacts	Arcing, fire, floods, and water contamination are potential impacts that could affect HSE.	What is the likelihood of HSE impacts due to other impacts? What are these potential HSW impacts? Can they be eliminated or mitigated? Are staff trained to mitigate HSE impacts? How does the organization interface with emergency services?

Business Impacts	Potential Event	Impact Analysis
Reputation (loss of brand image, loss of confidence)	Customers and government regulators are understandably concerned about the organization's ability to deliver water when needed.	What information should the organization release on the incident? How will they notify interested stakeholders on repair status? How does the organization interface with law enforcement and other federal government agencies that coordinate a cyber response? How will they rebuild trust?
Revenue (loss of sales, litigation, cleanup costs, restoration costs)	The organization incurs substantial costs to recover from a cyberattack.	Does the organization have sufficient cash reserves to recover from a cyber event? Is financial risk transfer (insurance) an option? How are costs tracked and managed during an emergency? What are the potential losses due to decreased revenue during an outage?

Community Impacts	Potential Event	Impact Analysis
Community HSE	Damage to utility infrastructure incurs HSE impacts.	Can damage to physical infrastructure caused by a cyberattack create HSE impacts? If so, how? Fire? Flood? Contamination? How substantial are these impacts?
Loss of essential services	Loss of water deliveries impacts other sectors.	What are the potential impacts to the utility's customers on loss of service? How long can businesses sustain a loss of water before incurring significant impacts? What mitigations can the utility provide to lessen the impact on its customers? How will firefighting be impacted?

HAZARD-SPECIFIC RESPONSE PLAN: **SCADA CYBERATTACK**

APPENDIX 3: Incident Response Form

Incident Response Form (Reference: IRWD Cybersecurity Standards located on the Intranet, Information Technology\Standards, Guidelines and Procedures\Cybersecurity Standards)

Security Incident Report			
Date of Security Incident:		**Priority Classification:**	
Date Reported:		**Reported By:**	
Alert Method:		**Incident Ticket #:**	
Overview of Security Incident			

Diary of Security Incident Response	
Date/Time	**Observation/Action**

Irvine Ranch WATER DISTRICT