ACWA JPIA

Commitment to Excellence Program (C2E) Best Practices

Loss Reduction Focus Menus and Explanations

Revised March 2025

ACWA
JPIA

JPIA'S COMMITMENT TO EXCELLENCE
BEST PRACTICES GUIDE

This guide includes the "***loss reduction focus***" areas for each of the C2E loss categories:

- **Vehicle Operations**
- **Construction**
- **Infrastructure**
- **Employment Practices**
- **Ergonomics/Falls**
- **Wildfire Prevention**

A "***menu***" indicating the best practices for each focus area is included and an explanation for each best practice. JPIA members are encouraged to select from the menu the best practices they wish to add to or use to enhance their existing loss reduction programs.

JPIA Risk Management visits will concentrate on supporting an agency in its implementation of the C2E best practices. While adopting specific best practices may be recommended during these visits, the JPIA encourages members to review the C2E best practices, reinforce the practices they have already incorporated, and adopt as many of the other practices as practical. The JPIA can provide resources, assist with a C2E Opportunity Review, and training to help members in this process.

Questions concerning the C2E Best Practices Guide should be addressed to the member's JPIA Risk Control Advisor. Additional assistance may be obtained by contacting the Risk Management staff at (800) 231-5742.

ACWA JPIA

Commitment to Excellence Program (C2E) Best Practices

Vehicle Program

VEHICLE PROGRAM BEST PRACTICES

Loss Reduction Focus	Best Practices Menu
Driver Review/Qualification	☐ Applicable for all positions ☐ Copy of DMV Report (pre-hire) ☐ Driver record point standard ☐ Pull Notice Program used ☐ Ride-along (test, re-test, post-accident/incident)
Defensive Driver Training	☐ Required for all ☐ Before driving the assigned vehicle ☐ Within 60 days of hire and every two years ☐ Post-accident/incident tailgate/briefings
Accident/Incident Investigation Reporting	☐ Formal Accident/Incident Investigation and Report ☐ Corrective action is taken and documented ☐ Formal management review (by General Manager) ☐ Investigation Report sent to JPIA ☐ Personnel action was taken for at-fault incidents
Backing Accident/incident Avoidance	☐ Formal written policy ☐ Employees acknowledge policy ☐ Non-compliance/at-fault discipline ☐ Periodic Program Review
Cell/Texting/Electronic Devices	☐ Policy acknowledged by drivers ☐ Cell/Texting/Electronic Prohibition Policy exceeds state standards ☐ Disciplinary action for policy violation ☐ “E-Device” use reviewed following accident/incidents
Safe Driver Award/Recognition	☐ Based on local milestones, improvements, achievements ☐ Annual award recognition by the board ☐ Award pin, certificate, plaque, etc.

VEHICLE PROGRAM BEST PRACTICES

DRIVER REVIEW/QUALIFICATION PROGRAM

- **Applicable for All Positions**
  Explanation: Includes all employees, volunteers, and directors who drive agency vehicles or personal vehicles for agency business.

- **Pull Notice Program Used**
  Explanation: This is the Department of Motor Vehicles (DMV) Employer Pull Notice Program. It is a free service for public entities. Driver record information reports are generated every six months or immediately in the event of new activity (moving violation, accident/incident, address change, etc.). There must be an employer/employee relationship and employees should drive regularly for the agency. Directors are encouraged to provide their license information but cannot be forced to under state law.

- **Ride-Along (Test, Re-Test, Post-Accident/Incident)**
  Explanation: Conducted by a supervisor/manager for all new employees who will be driving regularly for agency business. Re-tests will be conducted based on need and after an accident/incident.

- **Driver Record Point Standard Greater Than DMV**
  Explanation: Uses or exceeds the JPIA's Model Driver Record Review Program to evaluate prospective and current drivers.

- **Copy of DMV Report (Pre-Hire)**
  Explanation: All new hires who drive on agency business are required to provide a copy of their DMV Report Post Offer, with hiring based on or exceeding the JPIA's Model Driver Record Review Program.

DEFENSIVE DRIVER TRAINING

- **Defensive Driver Training Required for all Employees**
  Explanation: The agency promulgates a policy requiring all employees from the General Manager and below to attend Defensive Driver training. Training may be conducted in-house or through external providers (e.g., JPIA, VectorSolutions, etc.).

- **Defensive Driver Training Conducted Within 60 Days of Hire and Every Two Years**
  Explanation: Driver training is conducted within 60 days of employment and refresher training is required at least every two years.

- **Driver Training Conducted Prior to Driving Assigned Vehicle**
  Explanation: Employees receive training on operating specific assigned vehicle types prior to being released in unsupervised capacities. Training includes, but is not limited to, identification of blind spots, backing procedures, stopping distances, and trailer use, as applicable to the individual vehicle.

DEFENSIVE DRIVER TRAINING

- **Post-Accident/Incident/Incident Briefings Conducted for all Employees**
  Explanation: All employees attend post-accident/incident/incident briefings wherein the causes and corrective actions are identified and discussed to prevent future similar occurrences.

ACCIDENT/INCIDENT/INCIDENT INVESTIGATION REPORTING

- **Formal Accident/Incident/Incident Investigation and Report**
  Explanation: An accident/incident investigation is conducted to determine the root cause(s) of the vehicle mishap and a written report documents the investigation's findings and suggested corrective actions. This is accomplished for all vehicle mishaps.

- **Formal Management Review (by the General Manager)**
  Explanation: **The findings and proposed corrective actions are reviewed by the** General Manager (GM), who validates and approves the corrective actions. The GM's review is documented.

- **Corrective Actions Taken and Documented**
  Explanation: *Immediate actions* to prevent similar accident/incidents are taken. The completion of *long-term actions* are monitored through an established corrective action process. Corrective actions follow-up continues until actions have been completed. Corrective actions are documented.

- **Personnel Corrective Action Taken for At-fault Incidents**
  Explanation: Employees determined to be "at fault" in an accident/incident are held accountable through internal personnel actions.

- **Investigation Report Sent to the JPIA**
  Explanation: A copy of a Vehicle Accident/incident Investigation Report is sent to the JPIA so the findings and corrective actions can be reviewed.

BACKING ACCIDENT/INCIDENT AVOIDANCE POLICY

- **Formal Written Policy**
  Explanation: A formal written Backing Accident/Incident Avoidance policy is established to outline procedures and reduce the possibility of backing accidents/incidents. The policy must outline specific safe practices such as placing cones to create a "circle of safety" when vehicles are parked.

- **Employees Acknowledge Policy**
  Explanation: The policy has GM approval and is endorsed by senior management. Employee will acknowledge policy in writing. New hire orientation and Defensive Driving training will include backing hazards.

- **Periodic Program Review**
  Explanation: Included in the formal policy is a periodic review of backing accident/incidents conducted by senior management. The review covers (as a minimum) the frequency of events, the results of backing accident/incident investigations, corrective actions taken, and how "lessons learned" are communicated to agency personnel.

- **Non-Compliance/At-Fault Discipline**
  Explanation: The majority of backing accident/incidents are at-fault. When an individual is determined by investigation to be at-fault, disciplinary action should be taken. The action to be taken will be reviewed by management and supervisor(s).

CELLULAR PHONE/TEXTING/ELECTRONIC PROHIBITION POLICY

- **Cell/Texting/Electronic Policy Exceeds State Standards**
  Explanation: A prohibition on the use of electronic communications and data devices goes beyond the state prohibition of hands-off cell use and texting.

    - This prohibition applies to hands-free or hand-held phones, radios, tablets, computers, or other electronic devices.

- **Disciplinary Action Points For Policy Violations**
  Explanation: Violations will result in points being assigned per the agency's driver record review best practices and discipline policies.

- **Policy Acknowledged by Drivers**
  Explanation: A policy acknowledgment from all personnel who drive on agency business is signed and kept on file.

- **"Use" Review Following Accident/Incidents**
  Explanation: All vehicle accident/incident and near-miss investigations will determine if the use of cell phones, radios, texting, or other electronic devices was a component of the event.

SAFE DRIVER AWARD/RECOGNITION

- **Annual Award Recognition by the Board**
  Explanation: The agency's board of directors and senior management demonstrate their interest in, and support for, safe vehicle operations through an annual recognition program.

- **Awards Based on Local Milestones, Improvements, Achievements**
  Explanation: The General Manager, Human Resources, and Department Managers develop, and award best practices based on local vehicle operations. Recognition is given based on the achievement of established milestones, and on actions taken to improve safe vehicle operations. Eligibility best practices are communicated to employees.

- **Awards**
  Explanation: Tangible safe drive awards (i.e., pins, certificates, plaques, etc.) are provided as appropriate.

ACWA JPIA

Commitment to Excellence Program (C2E) Best Practices

Construction Program

CONSTRUCTION PROGRAM BEST PRACTICES

Loss Reduction Focus	Best Practices Menu
USA/Line Location	☐ Marking Documentation ☐ Locator Qualification/Training ☐ Excavator Qualification Training ☐ Line GPS/Maps/Tracer Wire ☐ Underground Safety Board Damage Notification ☐ Using Damage Incident Reporting Tool (DIRT) Form ☐ USA Ticket Verification
Risk Transfer	☐ Risk Transfer Program ☐ Responsible Person and Backup ☐ Insurance Coverage Equals Risk ☐ Pre-Qualification Packet (Process) ☐ Contracts ☐ Emergency Response Risk Transfer ☐ Tracking Risk Transfer Requirements ☐ Permit Coordination ☐ Document Retention
Contractor Qualification	☐ Pre-Qualification Packet/Program ☐ Insurance Requirements ☐ Reference Check ☐ Post-Project Evaluation ☐ Bid Writing/Loss Prevention Coordination ☐ Pre-Job Review
Third-Party Exposures	☐ Acceptance of Project ☐ Site Control ☐ Site Documentation, Site Inspection (Pre/Post Construction Inspection) ☐ Contract Language/Responsible Party ☐ Multi-Employer Exposures ☐ Lighting, Warnings ☐ Asset Inspection ☐ Third-Party Exposure Inspection
Traffic Control	☐ Template/Formal ☐ Encroachment Permit ☐ Controlling Agency Coordination ☐ Inspection Program ☐ Trained Personnel (Qualified Person) ☐ Equipment Storage

CONSTRUCTION PROGRAM BEST PRACTICES

USA/UNDERGROUND LINE LOCATION

- **Marking Documentation**

  Explanation: As an excavator, you must contact Underground Service Alert (a.k.a. DigAlert/USA North/811) at least (2) working days prior to beginning any digging or excavation work unless all utilities have fulfilled their response obligations. The One Call Notification Centers that support all of California can be reached online or by phone (dial 8-1-1).

  Whether public, private, or commercial property, the law is clear that it is the excavator's responsibility to contact 811 before beginning work. It is critical that you accurately outline your excavation area.

  Please follow the delineation guidelines to ensure proper markings (color-coded paint, stakes, or flags) from the member utilities.

  Utilities have two (2) full working days to mark their lines. You may not perform any excavation during that time. It is a good practice, although not required, to have a record of your request (e.g., ticket number) at the job site. If you discover unmarked utility lines or accidentally damage one, your ticket number allows them to reference your location quickly and easily. In addition, it provides proof of compliance should a law officer or utility visit the job site.

  If you accidentally hit a line, 9-1-1 shall be called immediately upon discovering or causing damage to one of the following:

  - A gas or hazardous liquid pipeline subsurface installation, which the damage results in the escape of flammable, toxic, or corrosive gas or liquid.
  - A high priority subsurface installation of any kind, except if the excavator is the operator of the high propriety line, damage was discovered by then operator during operations and maintenance activities.

  Specific responsibilities for both excavators and underground line owners are established and enforced under Government Code 4216-4216.9. These responsibilities for excavators include:

  - Contact 8-1-1 and give at least two (2) full working days' notice prior to excavating.
  - Delineate (outline) their job in white paint
  - Hand expose to the point of no conflict within the tolerance zone/approximate location.

  The responsibilities for utilities (owners of underground lines) include:

  - Mark or locate their lines within two (2) full working days of the start of construction
  - Use the APWA Color Code to mark their facilities
  - Be accurate within 24-inches to either side of the buried facility (tolerance zone)

- **Locator Qualification Training**

  Explanation: Public agencies shall establish Utility Locator Qualification Requirements per California Government Code 4216 and Cal/OSHA Section 1541.

  4216.3(a)(2) Only a qualified person shall perform subsurface installation locating activities.

  4216.3(a)((3) A qualified person performing subsurface installation locating activities on behalf of a sub-surface installation operator shall use a minimum of a single-frequency utility

"Qualified Person" as defined in California Government Code 4216 definition (i)

(i) "Qualified person" means a person who completes a training program in accordance with the requirements of Title 8, California Code of Regulations, Section 1509, Injury Prevention Program, which meets the minimum training guidelines and practices of Common Ground Alliance current best practices (see below).

Cal/OSHA Title 8 Construction Safety Orders - Chapter 4, Subchapter 4, Article 6, Section 1541

§1541. General Requirements. (C) Only qualified persons shall perform subsurface installation locating activities, and all such activities shall be performed in accordance with this section and Government Code Sections 4216 through 4216.9. Persons who complete a training program in accordance with the requirements of Section 1509, Injury and Illness Prevention Program (IIPP), that meets the minimum training guidelines and practices of the Common Ground Alliance (CGA) Best Practices, Version 3.0, published March 2006, or the standards of the National Utility Locating Contractors Association (NULCA), Standard 101: Professional Competence Standards for Locating Technicians, 2001, First Edition, which is incorporated by reference, shall be deemed qualified for the purpose of this section.

Note: The NULCA Standard 101 and CGA best practices 4-5 minimum training standards for line locators are the exact same standard. The Common Ground Alliance (CGA) adopted the NULCA standard as a best practice.

- **Excavator Qualification Training**

  Explanation: Public water agencies need to take special precautions by following best practices and prepare defensive documentation that will help the machine operators and job-site supervisors plan and execute an accident-free excavation. Those involved in and performing excavation activities to be trained per:

  §1541. General Requirements. (D) Employees who are involved in the excavation operation and exposed to excavation operation hazards shall be trained in the excavator notification and excavation practices required by this section and Government Code Sections 4216 through 4216.9.

Best practices should include:

1. The district will communicate with the local One-Call Service Center **AND** utility owners who are not members of the one-call center. This communication must take place two working days, but not more than 14 days (per state regulations) prior to the start of the excavation.

2. The route of the excavation will be white lined (with white spray paint), flagged, staked, or a combination of these to mark the dig site before the locator arrives on the job.

3. The contractor's hand digs within 24 inches (per state regulations) horizontally on either side of the marked facility, adding the diameter of the utility if provided.

4. The district will request new locates (refresh marks) to again identify the underground facilities on all excavations incurring extended time requirements of 14 days or more and following inclement weather.

5. Photographs or videos are taken after the utility has been marked and before the excavation begins.

In addition to the five best practices defined above, the following three best practices also apply to high-priority underground facilities:

1. The district must request a pre-excavation meeting on-site with the facility owner and prime contractor (if any).
2. The district will pothole, hand dig, or use air knives or vacuum excavation techniques to verify utility locates or mark-outs.
3. The district will record and map the coordinates of the locates in relation to a stationary object(s), such as a tree, fence, building, etc.

- **Underground Utilities Identified (GPS/Maps/Tracer Wire)**
  Explanation: A written specification should be established to locate all district-owned buried lines. Tracer wire/warning/identification tape should be installed to identify the location of underground utilities and to function as a warning against accidental excavation of buried utilities. Warning/identification tape shall be used on all underground water and recycled water mains, potable and recycled water irrigation systems, sewer mains, and all related appurtenances. Warning/identification tape shall also be used on cathodic protection wiring systems and tracer wires brought into and out of access ports.

- **Underground Safety Board Damage Notification**
  Explanation: Report within two hours if the utility damage was:

  - To underground natural gas or hazardous liquid utility infrastructure.
  - To high priority underground utility infrastructure.*
  - Caused an injury that requires treatment at a medical facility.
  - Caused a fatality.

- **"Damage Incident Reporting Tool" (DIRT) Usage**
  Explanation: The DIRT form allows users to submit damage and near-miss reports to ACWA JPIA. The primary purpose of collecting underground facility damage data is to analyze data, to learn why events occur, and how corrective actions by utilities and excavators can prevent them in the future; thereby, ensuring the safety and protection of people and the infrastructure. Data collection will allow the ACWA JPIA to identify root causes, perform trend analysis, and help educate all members so that damages can be reduced through effective best practices and safe work procedures.

- **USA Ticket Verification**
  Explanation: Any excavators doing any type of digging, excluding emergency work and homeowners working on their private property without the need for a permit or power equipment, need to contact 811 two working days before starting work. A district must contact DigAlert before starting excavation. A District (excavator) can obtain a USA ticket by either utilizing online services or by calling 811 to start a USA Ticket. Best practices include:

  Wait the Required Time: Legally, a district must wait for two (2) full working days for utilities to mark their underground facilities. They will mark the lines they own or maintain with stakes, flags, or paint in the appropriate color codes, and/or advise the excavator of no conflict.

  Respect the Marks: Please work to preserve facility marks for the duration of the job. If any of the markings become difficult to see, you must contact 811 and reference your ticket number to request re-marking by the affected member utilities. Your excavation site must be outlined in white so your request can be properly addressed. Your ticket is valid for twenty-eight (28) calendar days from the date of its issuance--not when you first break ground. You must have an active ticket for the duration of your excavation.

Dig With Care: If you are digging within 24-inches of the outside diameter of the utility, you are required to utilize hand tools only. Any underground facilities that conflict with your excavation must be located with hand tools and protected before power equipment is used. If there is any damage, even a simple nick or cut to the facility, you must notify the affected utility of the damage, and you may contact 811 to report it as well as get contact numbers for the utility.

RISK TRANSFER

- **Risk Transfer Program**
  Explanation: Verify that the contractor has a commercial general liability insurance policy with a policy limit of at least $2,000,000 per occurrence and $4,000,000 aggregate. Verify that the contractor has a current workers' compensation insurance policy as required by the Labor Code or is legally self-insured pursuant to Labor Code section 3700 et. seq.

- **Responsible Person and Backup Designated**
  Explanation: Personnel has been identified and trained to facilitate an agency's Risk Transfer Program in the absence of those designated with the primary responsibility.

- **Contracts for Routine Services**
  Explanation: An agency has assessed the liability risks potentially associated with their routine vendors, contractors, and service providers, and has established contractual risk transfer agreements with those providers considered to have a loss risk potential warranting risk transfer.

- **Contracts for Emergency Services**
  Explanation: Following an assessment of an agency's critical systems, "service-as-required" risk transfer contracts have been established with the service providers needed to repair, supplement, or replace a critical system during an emergency system loss. Established "service-as-required" risk transfer contracts must have a definite termination date.

- **Tracking Process for Risk Transfer Requirements**
  Explanation: Procedures have been established and personnel identified to ensure risk transfer contracts, proof of insurance, and additional insured endorsements are correct and current.

- **Permit Coordination**
  Explanation: To ensure the liability risk associated with a service provider's work rest with the provider and not the agency, obtaining work permits is the sole responsibility of the service provider.

- **Risk Transfer Document Retention**
  Explanation: To facilitate legal defenses during any future litigation, risk transfer contracts, proofs of insurance, and additional insured endorsements are retained for at least ten years or in accordance with the agency's record retention policies.

CONTRACTOR QUALIFICATION

- **Pre-Qualification Packet/Program**
  Explanation: Utilize the Model Pre-Qualification Questionnaire to evaluate prospective contractors developed by the Department of Industrial Relations.

- **Insurance Requirements**
  Explanation: Verify the contractor has a commercial general liability insurance policy with a policy limit of at least $2,000,000 per occurrence and $4,000,000 aggregate. Verify that the contractor has a current workers' compensation insurance policy as required by the Labor Code or is legally self-insured pursuant to Labor Code section 3700 et. seq.

- **Reference Check**
  Explanation: Contact the contractor's references for the six most recently completed public works projects, and the three largest completed private projects within the last three years.

- **Bid Writing/Loss Prevention Coordination**
  Explanation: Include the requirement that the contractor will provide a copy of their Injury and Illness Prevention Program. As applicable, request copies of the contractor's Trench and Shore Program, Traffic Control Program, Confined Space Program including a rescue plan, Electrical Safety Program including lockout/tagout, Asbestos Cement Pipe Program, and Hot Work Program. In addition, request documentation for employee certifications/licensing, i.e., OSHA 10, OSHA 30, Competent Person, welding, crane and crane operators, etc. Also, request copies of permits the contractor is required to obtain.

- **Pre-Job Review**
  Explanation: Review documentation for employee certifications/licensing and equipment certifications. Provide a pre-job review with the contractor to identify any hazards the contractor may encounter at your facility or installation. This would include confined space exposures, electrical exposures, work to be done by other contractors, etc.

- **Post-Project Evaluation**
  Explanation: After the conclusion of the project have a debriefing with the contractor to discuss:

    - What went well?
    - What did not go well?
    - Why did things happen?
    - What will they do differently and better next time?
    - How this information can be used?

THIRD-PARTY EXPOSURES - TRAFFIC CONTROL

- **Formal Templates Developed**
  Explanation: Layouts based on best practices as found in the CA-MUTCD and actual conditions.

- **Encroachment Permits Obtained**
  Explanation: The developer and/or contractor obtain encroachment permits from the controlling authority before the start of work.

- **Controlling Agency Coordination**
  Explanation: Traffic control activities are coordinated with the controlling authority to avoid overlapping or redundant activities.

- **Inspection Program**
  Explanation: During the duration of the work, the site will be subject to daily inspections to ensure that the traffic control is being implemented according to the traffic control plan. Daily inspections shall be conducted and documented to ensure compliance with safety standards (e.g., CA-MUTCD) and best practices.

    - Pre-work
    - Post break
    - Post lunch
    - As conditions warrant
    - Inspections and hazard corrections are documented

- **Trained Personnel and Qualified Person**
  Explanation: Flaggers shall be trained and qualified by the employer in the proper fundamentals of flagging before being assigned. The training shall be based on the CA-MUTCD and worksite conditions.

    - All workers are trained on how to work next to motor vehicle traffic in a way that minimizes their vulnerability. Workers having specific responsibilities should be trained in proper techniques, device usage, and placement.

    - A competent person, designated by the employer and knowledgeable in traffic control principles, conducts a hazard assessment for the worksite and job classifications in the activity area; ensures proper setup, tear down, and repositioning of the work zone; and makes the selection of the appropriate class of high-visibility garments and devices.

- **Equipment Storage**
  Explanation: Traffic control devices are serviceable and stored neatly. Devices are inspected before setup and after work is completed. Inspections are documented and deficiencies corrected. Substandard equipment is removed from service, tagged, and repaired or properly disposed of.

ACWA JPIA

Commitment to Excellence Program (C2E) Best Practices

Infrastructure Program

INFRASTRUCTURE PROGRAM BEST PRACTICES

Loss Reduction Focus	Best Practices Menu
WATERLINE FAILURE	☐ Asset Identification ☐ Valve Exercising/Flushing ☐ Preventive Maintenance ☐ H_2O Loss Monitoring ☐ Emergency Response
SEWER BACKUP	☐ Inspection – Lift station/Pipe ☐ Inspections – Lift station ☐ Inspections – Entire Sewer System ☐ Lateral Responsibility ☐ Preventive Maintenance ☐ Asset Identification ☐ Emergency Response
CANAL FAILURE/FLOODING	☐ Rodent Control ☐ Operations ☐ Inspection/Maintenance ☐ Construction/Design ☐ Vegetation/Weed Control
THEFT/VANDALISM	☐ Security/Alarms/Cameras ☐ Equipment ID ☐ Fencing/Enclosures
FIRE	☐ Hot Work ☐ Controlled Burns ☐ Defensible Space
EQUIPMENT FAILURE	☐ Electric Surge ☐ Preventive Maintenance ☐ Animals/Insects/Bugs ☐ Lightning ☐ Backup Equipment ☐ Emergency Response
UNMANNED AERIAL DEVICES (DRONES)	☐ Planning and Coordination ☐ Certified Operators ☐ Drone Coverages

INFRASTRUCTURE PROGRAM BEST PRACTICES

WATERLINE FAILURE

- **Asset Identification**
  Explanation: To effectively maintain, provide emergency response, and mark for underground locations, agency assets must be adequately located and identified. Methods of identification could include current and correct maps, signage, GPS coordinates, or computer-generated locations.

- **Valve Exercising/Flushing**
  Explanation: To ensure proper water delivery and valve operation during normal and emergency operations, a valve exercising and line flushing program should be established. AWWA recommends a frequency of annual flushing and valve actuation.

- **Preventive Maintenance**
  Explanation: A preventive maintenance and/or repair and replacement program should be established for agency distribution pipelines, pumps, valves, etc. Documentation should be maintained providing records for potential warranty and third-party claims.

- **H_2O Loss Monitoring**
  Explanation: A process should be established to monitor and identify distribution system water loss. Documentation should be maintained providing records for potential third-party claims (landslide, subsidence, water intrusion, etc.).

- **Emergency Response**
  Explanation: Response procedures should provide the most rapid and effective response to infrastructure failures as possible, thereby protecting assets and reducing the value of potential claims.

SEWER BACKUP

- **Inspections – Lift-Stations**
  Explanation: The following would be considered when reviewing this element of the Infrastructure Program Best Practices:

  - Inspect lift stations at least weekly.
  - Pump out and clean wet wells semi-annually.
  - Check valves semi-annually.
  - Inspect floats quarterly.
  - Inspect warning lights and alarm systems weekly.
  - Install hour meters on each motor.
  - Maintain motor hours, dates, and maintenance performed in a logbook.
  - Take amp and vibration readings monthly for each motor.
  - Inspect electrical motor control equipment annually.
  - Visually check fuel level, battery, and general conditions of the emergency generator weekly.
  - Run the backup generator unload quarterly.
  - Monitor the lift stations 24/7 via remote notification system such as a modem dialer, telemetry, or SCADA system.

- **Inspections – Entire Sewer System**

  Explanation: The following would be considered when reviewing this element of the Infrastructure Program Best Practices:

  - Inspect the sewer system at least every 18 to 36 months.
  - Establish a FOG Program with all food service establishments (FSEs) including approval of grease control equipment (including location and size), establishing maintenance procedures for inspection and maintenance of FOG equipment, contracting with licensed and permitted grease handlers (including voucher program to track grease disposal methods), guaranteed "Right-to-Enter" for municipal agency inspectors, and accountability of FSEs for compliance through fines and fees for non-compliance with ordinance provisions.
  - Characterize "hot spots" by the cause of the operational problems (e.g., roots, FOG, structural issues).
  - Inspect "hot spots" more frequently based on customer service complaints, history of spills, or consulting engineering studies.
  - Establish a process for monitoring, documenting, and gauging inflows so lift stations and facilities have adequate staffing and monitoring during periods of heavy flow.
  - Visually monitor lines with TV cameras at least every 18 to 36 months.
  - Test sewer line connections during inspections and repair, as necessary.
  - Clean sewer lines when there is evidence of impeded flow.
  - Establish procedures to avoid an excess surge in downstream lines when line flushing or removing blockages.
  - Maintain a log, documenting when each line and manhole was inspected or repaired.
  - Review existing provisions related to backflow devices or other cross-connections. As a practice, an agency should revise "resolutions" or "policies" related to backflow devices or other cross connections to "ordinance" or "regulation."

- **Laterals Responsibility**

  Explanation: The following would be considered when reviewing this element of the Infrastructure Program Best Practices:

  - Develop specifications for lateral installation.
  - Inspect laterals at the same time as mainline inspections.
  - Establish responsibility for inspection and maintenance of customers' lateral from the building to the customer's property line.

- **Asset Identification**

  Explanation: The following would be considered when reviewing this element of the Infrastructure Program Best Practices:

  - Establish a GIS Mapping System for sewer system infrastructure, including X-Y coordinates and depth and elevation.
  - Identify the type of pipe and age.
  - Establish Capital Improvement Program to repair or replace aging system components.

- **Emergency Response**

  Explanation: The following would be considered when reviewing this element of the Infrastructure Program Best Practices:

  - Establish Sanitary Sewer Reference and Emergency Contact List.
  - Identify and list all emergency cleanup or pumping equipment and where it is stored.
  - Establish storm system alert to assure flow can be managed.
  - Identify rapid response team for all sewer backups or sewer system breaches.
  - Identify Cleanup Contractors.

CANAL FAILURE/FLOODING

- **Rodent Control**

  Explanation: The following would be considered when reviewing this element of the Infrastructure Program Best Practices:

  Canal and levee breaches, overflows, and blockage result in flooding and property damage, resulting in major liability, water, and property losses. Rodent activity is the major cause. Control efforts may include:

  - Multi-method rodent mitigation plan or Standard Operating Guide (Fumigation, bait boxes, trapping, habitat modification, burrow modification).
  - Basic rodent mitigation training for staff.
  - Trapping (with permits) of beavers or other large rodents.
  - Regular reforming of canals/levees.
  - Frequent inspections for rodent activity and canal/levee damage.

- **Operations**

  Explanation: The following would be considered when reviewing this element of the Infrastructure Program Best Practices:

  - Certain adjustments in operations can reduce the risk of canal breaks or overflows and minimize losses when they do occur.
  - Maintain lower water levels in canals to keep water away from upper part of canal where there is more rodent activity and reduce losses when washouts do occur.
  - Maintain consistent levels in canals to prevent rodent activity in the upper portion of canal bank.
  - Improve communication and scheduling with landowners to prevent overflows.
  - Lock gates and turnouts to prevent tampering or unauthorized use.
  - Keep emergency response personnel and equipment available to respond in a timely manner.
  - Develop procedures and maintain equipment for road closure due to washouts.

- **Inspection Maintenance**

  Explanation: The following would be considered when reviewing this element of the Infrastructure Program Best Practices:

  - Regular and frequent inspections can identify problems and canal sections needing work during the next maintenance season.
  - Perform and document inspections to discover problems before damage or loss occurs.
  - Perform inspections at the end of the water season to indicate problems and set priority for maintenance.

- **Construction/Design**

  Explanation: The following would be considered when reviewing this element of the Infrastructure Program Best Practices:

  - Canal and levee design and construction can reduce the risks of canal breaks
  - and overflow:
  - Use automated gates to maintain levels and reduce operator errors.
  - Use SCADA to monitor and control flow more effectively and detect blockages or washouts.
  - Use wide gradual sloped berms to reduce the effect of rodents, stabilize banks, and reduce damage by recreational activity.
  - Line earthen canals, especially problem areas to reduce washouts from erosion.
  - Reinforce berms/banks with heavy clay soil and sides of banks with rip rap.
  - Design to allow easy all-weather access to canals or other critical areas.
  - Raise the sides of banks to reduce the possibility of overflow.
  - Use long crested weirs to stabilize fluctuations in water heights.

- **Vegetation/Weed Control**

  Explanation: The following would be considered when reviewing this element of the Infrastructure Program Best Practices:

  Controlling weeds can reduce blockage and maintain water delivery as follows:

  - Control aquatic weeds to prevent waterway blockage or pump damage/plugging.
  - Use chains, draglines, or other automated means of weed removal.
  - Eliminate weeds on banks/levees that obscure visible damage to make problems more visible during inspections.
  - Eliminate weeds to reduce cover or food to lower the populations of burrowing rodents.

THEFT/VANDALISM

Applies to physical security and protection of critical infrastructure for water distribution, wastewater collection, treatment systems, and canal systems. To effectively draft guidelines, a utility should first complete a Vulnerability Assessment (VA) of its system. This VA should be completed in accordance with a generally accepted methodology such as the Risk Assessment Methodology for Water (RAMWTM), the Vulnerability Self-Assessment Tool (VSAT TM), or other acceptable methods.

- **Security/Alarms/Cameras**

  Explanation: Security systems should be established to deter a threat or detect and delay the threat until the appropriate response force arrives. Security measures established should alert staff and protect the following:

  - System Structures and Critical Equipment
  - Water Quality Monitoring
  - Power and Wiring Systems

  Security decisions should be site and utility specific, and the measures implemented may include one or more of the following:

  - Physical Security (gates and fencing)
  - Alarms Systems (local and monitored)
  - Closed Circuit Television (fixed cameras)
  - Supervisory Control and Data Acquisition (SCADA)

- **Equipment ID**

  Explanation: Marking leads to the recovery of stolen property. Maintaining an up-to-date property schedule, recording equipment descriptions/serial numbers, marking equipment so that if stolen, it can be traced back to the owner. If thieves know it can be traced, the equipment often becomes a less desirable target. The primary objective is to make accurate information on insured equipment accessible to law enforcement to significantly increase the recovery rate of stolen equipment.

  - In San Diego County, OAN numbers can be obtained from the Crime Prevention Unit, at the Vista Sheriff's Station at (760) 940-4564. They are coded by state and county and kept on file by law enforcement agencies throughout the county.
  - Businesses in Ventura County can apply for an Owner Applied Number by calling the Ventura County Sheriff's Department, Rural Crime Unit, at 805-477-7029 or 805-477- 7000.

- **Fencing/Enclosures**

  Explanation: Site security, in conjunction with facility planning, design, and construction, is intended, should be installed, and maintained to do the following:

  - Prevent unauthorized entry or exit by employees or others.
  - Provide easy observation of any individual(s) entering or leaving the site.

  Methods for placement may include one or more of the following measures:

  - Perimeter fencing
  - Secured entrances and gates
  - Restricted access areas
  - Access Control Systems
  - Visitor Control/Escort Policies

FIRE

- **Hot Work**

  Explanation: Advanced planning and safe work procedures help prevent workplace fires caused by hot work operations (e.g., welding, cutting, grinding, etc.). Whenever practicable, hot work operations should be performed in areas that are isolated and designated for such uses. Procedures should be implemented to protect life, health, and property from fire and the products of combustion, which might result from the use of welding and cutting equipment, open flames, and ignition sources. Following the procedures outlined in a Hot Work Permit system is of even greater importance when performing such work in areas not designed for open flames and sparks. These procedures should apply to Member agencies and contractors.

- **Controlled Burns**

  Explanation: Member agencies should consider and use a “best management practice” for controlling weeds along ditch banks and canals, which is an alternative practice to open burning. Such practices may include the approved use of pesticides, mowing, or another open burn alternative. An agricultural burn permit may be issued by the local Air Pollution Control Agency after a determination is made that the alternative practices to open burning are infeasible for the site. Burning may be performed either by broadcast (in-situ) burning or by removing weeds from and piling adjacent to the bank if the materials are dry and stacked in a manner that promotes combustion. Before burning, weather conditions, smoke drift and density, traffic control, and fire control procedures should be considered and integrated into the burn planning process.

- **Controlling Agency Coordination**

  Explanation: Water utilities that have an urban-wildland fire threat should develop a water utility-specific emergency response coordination plan. The plan should be developed with the involvement and contribution of outside emergency response coordination partners including, but not limited to, local fire departments, cities/counties served, and local law enforcement. Once an agency-specific plan has been developed, it should be shared with those coordination partners involved in the process.

- **Defensible Space**

  Explanation: Water utility infrastructure should be maintained with a “defensible space” to reduce the risk that fire will spread from the surroundings to the structures and provide firefighters access and a safer area to defend facilities. A primary goal is fuel elimination extending for at least 100 feet in all directions. A second concept of creating defensible space is "fuel reduction,” whereby plants are selectively thinned and pruned to reduce the combustible fuel mass of the remaining plants to break up the more continuous and denser uninterrupted layer of vegetation. The third concept of defensible space is “fuel ladder” management, where a typical separation is created of three times the height of the lower fuel to the next fuel ladder. Since wildfires burn faster uphill than on flat land, fuel ladder spacing may need to be greater for slopes.

EQUIPMENT FAILURE

- **Electric Surge**
  Explanation: Surge protective devices (SPD) protect electrical equipment against over-voltages caused by lightning. In addition to lightning, several other disturbances can come in on the AC power lines and damage equipment.

- **Preventive Maintenance**
  Explanation: A preventive maintenance and/or repair and replacement program should be established for agency electrical transmission and distribution systems, main switchgear, sub-panels, pumps, and all electrical equipment. Documentation should be maintained providing records for potential warranty and insurance claims.

- **Animals/Insects/Bugs**
  Explanation: Agency employees are exposed to numerous unexpected dangers daily from animals, insects, and rodents. Different hazards are faced by those in specific regions and even different climates. Risks can range from an allergic reaction, bee sting, or rattlesnake bite.

- **Lightning**
  Explanation: The National Electrical Code (NEC) and CEC require certain grounding, bonding, and protection features that are intended to protect buildings and equipment against lightning damage.

- **Backup Equipment**
  Explanation: Establish an electrical emergency list to identify all required equipment with location sites and a rapid response team.

- **Emergency Response**
  Explanation: Emergency response procedures should be established that provide the most rapid and effective response to electrical infrastructure failures as possible, thereby protecting assets and reducing the value of potential claims.

UNMANNED AERIAL DEVICES (DRONES)

- **Planning and Coordination**
  Explanation: The operation of any UAS on and over property owned and operated by the district shall follow all local, state, and federal regulations. When a drone weighs over 55 pounds, it shall be registered with the FAA and the district must obtain a Certificate of Authorization (COA) before use. The district should also ensure it identifies what the drone will be for.
    - Develop operating procedures for the use of unmanned aerial systems (UAS)/drone-over areas owned and/or operated by the district.

- **Create a List of Prohibited Zones**
  Explanation: Ensure all airspace restrictions within the drone operation area(s) have been identified. This includes areas of emergency and rescue operations. Establish a process for obtaining permission to fly a drone over private property.
    - This should include district-restricted areas and locations where a drone (district-owned or others) is not allowed to fly.

- **Develop and Maintain a Maintenance and Inspection Program for a Drone**
  Explanation: Create a procedure for periodic maintenance and inspection of a district's drone.
    - Develop a tracking process to record all inspections, mechanical or technical issues, routine maintenance, and documentation of battery cycles and propeller changes.

- **Create a Flight Log to Document Drone Operations**
  Explanation: Each authorized UAS operator in your district should maintain a flight log.
    - Operators will log the date, flight time, and locations of all UAS deployments. An operator will also note case number, incident type, automated flight, or manual flight, and whether photo images or videos were captured during the flight. Ensure photos and/or video taken is cataloged and maintained for future reference.

- **Certified Operator**
  Explanation: Government agencies have two options for operating drones under 55 pounds. Fly under 14 CFR part 107, the small UAS rule. Part 107 allows the operation of drones or unmanned aircraft systems (UAS) under 55 pounds, at or below 400 feet above ground level (AGL), for visual line-of-sight operations only. Fly under the statutory requirements for public aircraft (49 U.S.C. §40102(a) and § 40125). Operate with a Certificate of Waiver or Authorization (COA) to be able to self-certify UAS and operators for flights performing governmental functions. Ensure drone(s) are registered with the FAA.

- **Ensure that Only a Licensed Drone Pilot Operates a Drone**
  Explanation: To fly a district's drone under the FAA's Small UAS Rule (Part 107), the District must obtain a Remote Pilot Certificate from the FAA. This certificate demonstrates that the district's drone operator understands the regulations, operating requirements, and procedures for flying drones safely.
    - Certificate holders must pass a recurrent knowledge test every two years.

- **Develop a Pre-Flight Checklist to Use Before Each Flight**

  Explanation: A drone operator uses A preflight checklist to ensure safe and legal drone operations. Drone preflight checklists help fulfill compliance with drone regulations, such as those by the US Federal Aviation Administration (FAA).

- **Drone Coverages**

  Explanation: Information needed to procure property and general liability coverage including:

  - UAV/Drone Data: model/year built
  - Manufacturer
  - Value
  - UAV launch method, e.g., airport runway, catapult, roads, field, vertical takeoff, etc.
  - How is aircraft controlled, e.g., no pilot, ground-based pilot, etc.
  - Proposed use of aircraft
  - Area of proposed operations
  - Maintain the appropriate drone coverage to reduce liability and/or property loss exposure(s). Contact the JPIA's Member Services Department for assistance.

- **Third Party Drone Services**

  Explanation: A drone vendor should provide proper coverage, exemptions, and certified pilots to fly a drone at any of your properties. Vendors should have a flight operation manual available for your review and provide a pre-flight job hazard analysis before any flight. Any data obtained during a flight should be downloaded and given to your district.

  - When using a third-party vendor for drone services, ensure the appropriate risk transfer is in place.

ACWA JPIA

Commitment to Excellence Program (C2E) Best Practices

Employment Practices Program

EMPLOYMENT PRACTICES BEST PRACTICES

Loss Reduction Focus	Best Practices Menu
Appropriate Documentation	☐ Up-to-date handbook/MOU ☐ Up-to-date job descriptions ☐ Regular performance appraisals are given ☐ Management procedures and policies are in place
Effective Hiring	☐ Uniform hiring process ☐ Pre-employment physicals on all hires ☐ Post-hiring process followed for all new staff ☐ Background checks on all new hires
Promoting Staff Development	☐ Agency supports Leadership Training ☐ Supervisor specific training ☐ Regular performance feedback ☐ Agency conducts Succession Planning
Utilizing Professional Resources	☐ Designated and trained Human Resources staff ☐ Labor-specific counsel utilized ☐ Involvement in HR professional organization(s) ☐ JPIA resources utilized
Effective Communication	☐ Regular staff communication ☐ Routine management meetings ☐ Open door policy ☐ Internal complaint procedure ☐ Collaborative problem solving

EMPLOYMENT PRACTICES BEST PRACTICES

APPROPRIATE DOCUMENTATION

- **Up-To-Date Handbook**
  Explanation: The handbook contains information about agency policies and procedures. It should be developed and updated annually with the help of labor counsel. The key elements of a handbook are mission statement(s), introduction to employment, payroll administration, employee benefits, employee relations, safety, discrimination and harassment prevention, reporting, professional conduct, expense guidelines, office protocols, separation of employment, memorandum of understanding, and at-will language (if appropriate). The handbook is the final "say" when questions arise in the workplace. The handbook should be reviewed with employees on an annual basis and a signature page should be collected from each employee following the review.

- **Up-To-Date Job Descriptions**
  Explanation: A job description is developed for each position within the organization with input from employees. The purpose of the job description is to advise current and prospective employees as to what is expected in each job and to serve as a guideline for the delivery of quality service. It is also the foundational document to determine pre-employment requirements and is used as the basis for interactive discussions regarding job accommodation. The key elements of the job description are a definition/summary of the position, essential job functions, other duties, job standards/specifications, typical physical duties, environmental factors, desirable qualifications, license and/or certificate requirements, and a signature line. The job descriptions should be reviewed with employees and revised annually to reflect current job specifications.

- **Regular Performance Appraisals are Given**
  Explanation: Performance appraisals developed in alignment with job descriptions for all positions. When an employee is new to the position, the initial appraisal sets goals for the next 30, 60, and 90 days. The annual appraisal sets goals for the next year and reviews the progress in the achievement of goals and objectives for the past year. The mid-term appraisal is six months after the annual appraisal and is used to check the progress of achievement of goals and objectives, provide additional resources, and make course corrections. The feedback given is candid, honest, and with a true interest in the individual's success. The appraisal process includes the employee's acknowledgment on a signature page.

- **Management Procedures and Policies in Place**
  Explanation: The purpose of human resource procedures and policies are to serve the organization, protect employees, and develop trustworthy relationships between management and staff. Some key elements of human resource procedures and policies are employee orientation to the organization, drug and alcohol policy, outside relations/media policy, injury and illness prevention program, return to work program, electronic equipment usage and communication policy, sexual harassment prevention policy, procedures, and training, workplace violence policy, and interactive process/ADA policy.

Models of a handbook, various policies, procedures, sample job descriptions, and forms can be found on the ACWA JPIA's website https://www.acwajpia.com/human- resources/.

EFFECTIVE HIRING

- **Uniform Hiring Process**

  Explanation: As an "employer of choice" (a desirable place to work), a plan and budget must be set to attract the best-qualified applicants with the understanding that the process will take an investment of time. The beginning of the plan is updating or developing an ADA-compliant job description outlining the candidate to be hired. The JPIA's Job Description Manual has complete details on the process including models for over 70 water agency positions. An enticing, non-discriminatory ad is placed on appropriate websites to attract a diversity of candidates. Resume review criteria are set for evaluators, ADA-compliant applications required, and job-related testing for all positions conducted. The structured interview process and questions are developed based on the job description including situational and behavioral questions. Rating criteria are set in advance and reviewed to determine appropriate selections. A willingness exists to start over if the right candidate is not found.

- **Pre-Employment Physicals on All Hires**

  Explanation: Background checks are conducted for the selected candidate. Use of outside vendors for DMV, criminal, social security match, credit (when appropriate), etc. In-house staff (HR) or vendor contacts previous supervisors/employers (not references supplied) to obtain previous job history and performance. A consistent form or checklist is used. Pre-employment physicals are conducted on all candidates offered a position; only safety-sensitive positions require drug testing.

- **Post-Hiring Process Followed for All New Staff**

  Explanation: Upon hire, a formal onboarding process is conducted to welcome new employees. Including reviewing policies, procedures, and safety information, introduction to staff, explanation of necessary paperwork, and the new employee is allowed to ask questions. Managers determine training schedules and goals for 30, 60, and 90 days forward. Appointments are made to meet department managers and key staff to provide an overview of the organization. A hiring checklist is utilized to comply with the necessary requirements (I-9, DE-34, W-4, etc.). The Manager checks in weekly with new staff, formal follow-up discussions every 30 days.

Models of hiring procedures and checklists, along with sample job descriptions and forms can be found on the ACWA JPIA's website https://www.acwajpia.com/human- resources/

PROMOTING STAFF DEVELOPMENT

- **Organization Aligned to Support Staff Development**

  Explanation: Senior management supports staff development as evident in allowing time to attend classes, conferences, webinars, etc.; senior management is role model by pursuing professional development themselves; staff development is stressed and permeates the culture of the organization which results in staff feeling valued and leads to better overall relationships, attitude, and engagement. Further training and additional alternatives are considered before a decision to terminate an employee based on performance.

- **Agency Supports Leadership Training**

  Explanation: Senior management supports staff development as evident in allowing time to attend classes, conferences, webinars, etc., senior management is the role model by pursuing professional development themselves, staff development is stressed and permeates the culture of the organization which results in staff feeling valued and leads to better overall relationships, attitude, and engagement. Further training and additional alternatives are considered before a decision to terminate an employee based on performance.

- **Supervisor Specific Training**

  Explanation: Critical supervisor skills are present in all supervisors hired (communication, feedback, objectivity, invested in goals of the organization); supervisors not promoted from line staff position just because that job is well done; recognition that role of a supervisor requires additional/different skills for which specific training is provided.

  - New supervisors are given basic training (laws, agency policies, dealing with staff, giving feedback).
  - Annual training to update all supervisors on laws, techniques, etc.
  - Supervisors trained on coaching and giving feedback (experienced managers train others).
  - Enrollment/completion in the JPIA's Professional Development Program – Supervisor Basics.
  - Utilize JPIA Lending Library to provide specific training needs.
  - Supervisors are required to discuss performance issues/actions with manager and HR prior to and following a conversation with the employee.

- **Regular Performance Feedback**

  Explanation:

  - Annual performance appraisals (with quarterly check-in).
  - Supervisors are confident in addressing performance issues, support with regular role plays, practice, coaching.
  - Supervisors provide regular positive feedback to all staff.
  - Supervisors are held accountable to meet with each staff person at least bi-monthly for check-in.
  - Supervisors are held accountable to solve employee performance issues.
  - Regular staff meetings are held to acknowledge team performance and share challenges.

Models of a handbook, various policies, procedures, sample performance appraisals, and forms can be found on the ACWA JPIA's website https://www.acwajpia.com/human- resources/. Also, information on JPIA Professional Certifications is available at https://www.acwajpia.com/training-2/.

UTILIZING PROFESSIONAL RESOURCES

- **Designated and Trained Human Resources Staff**
  Explanation: There is a designated employee who is responsible for all Human Resource (HR) related tasks and identified as such throughout the organization. The HR designee has a professional certification through a national organization or local college. Examples are SHRM (Society for Human Resource Management): PHR (Professional in Human Resources), SPHR (Senior Professional in Human Resources), and CA (California specific). IPMA (International Public Management Association, all public entity): IPMA-HR (certified professional). HR specific training is current and ongoing.

- **Labor Specific Counsel Utilized**
  Explanation: Member has contact information and utilizes the services of an attorney or law firm that has a practice focused on Labor and Employment Law. It is recommended that the attorney or firm be a member of the California State Bar Labor and Employment Section.

- **Involvement in Professional Human Resources Organization(s)**
  Explanation: Human Resource designee has or is in the process of obtaining the ACWA JPIA Human Resource Certification, which is specific to water agencies. In addition, the HR responsible employee belongs to professional and/or local organizations dedicated to providing ongoing HR training and updates and subscribes to HR-specific publications that provide regular guidance and updates.

- **JPIA Resources Utilized**
  Explanation: The designee is familiar with the JPIA Employment Hotline. The designee participates in local HR training provided by the JPIA or other organizations.

Information on JPIA Professional Certifications is available at www.acwajpia.com/Training.aspx.

EFFECTIVE COMMUNICATION

- **Regular Staff Communication**
  Explanation: Communication with staff at all levels is imperative to accomplishment of the organization's goals and objectives. A few examples of effective communication mechanisms are tailgate meetings, major project kickoff meetings, luncheon briefings on current topic or issue, monthly all staff question and answer meeting, employee newsletter and virtual briefings as needed.

- **Routine Management Meetings**
  Explanation: Routine management meetings with staff are used to determine the status of projects, whether additional resources are needed to complete the project, providing feedback to project members, administering course correction, and obtaining information to report to senior management.

- **Open Door Policy**
  Explanation: Regular practice of communication policy in which management leaves their door "open" to encourage openness and transparency with employees of the agency. The key components of an open-door policy are that it fosters discussion between employees of all levels, encourages employees to ask questions and make suggestions for development, and addresses problems or concerns. It is included in the handbook, stressed at all levels through meetings and one-on-one, understood and modeled by all managers/supervisors, and is an expectation of all supervisors.

- **Internal Complaint Procedure**
  Explanation: The development of an internal complaint procedure is necessary to resolve issues between members of an organization. It can be a formal and/or informal procedure that includes a method to report issues, documentation requirements, consideration of evidence, and possible outcomes – counseling, formal apology, dismissal, etc.

- **Collaborative Problem Solving**
  Explanation: The process requires sharing perspectives, defining issues, identifying interests, and generating options, develop a fair standard or objective criteria to decide a win-win, an expectation of all employees is listed in the handbook, tools are provided, training to encourage problem solving for staff, supervisors are trained on facilitating the problem-solving process between two employees.

ACWA JPIA

Commitment to Excellence Program (C2E) Best Practices

Ergonomics and Falls Program

ERGONOMICS/FALLS PROGRAM BEST PRACTICES
(Ergonomics)

Loss Reduction Focus	Best Practices Menu
Ergonomic Program	☐ Written program with periodic review ☐ Included in new employee orientation (NEO) ☐ Office/field evaluations ☐ Evaluations performed internally ☐ Responsible person identified
Ergonomic Training	☐ Provided to all employees and on-going ☐ Provided during new employee orientation (NEO) ☐ Provided to temporary workers ☐ In-house trainer(s) ☐ VectorSolutions usage
Ergonomic Operations Equipment*	☐ Tools, equipment, and resources obtained ☐ Quantity and availability ☐ Mechanical assistance ☐ Workstations ☐ Personal protective equipment (PPE) ☐ H.R. LaBounty Safety Award participation

ERGONOMICS/FALLS PROGRAM BEST PRACTICES
(Ergonomics)

ERGONOMIC PROGRAM

- **Written Ergonomic Program**

  Explanation: A written Ergonomic Program should be established addressing the goals of ergonomic risk reduction and the responsibilities of management and employees. Ergonomic Program elements could include the following guidance:

  The purpose of an ergonomics program is to apply ergonomic principles to the workplace; to reduce the number and severity of musculoskeletal disorders (MSDs), decrease workers' compensation claims, and where possible, increase productivity, quality, and efficiency. An ergonomically sound work environment maximizes employee comfort while minimizing the risk of undue physical stress.

  MSDs are also known by several other names including:

  - CTDs (cumulative trauma disorders)
  - RSIs (repetitive stress or repetitive strain injuries)
  - RMIs (repetitive motion injuries)
  - Overuse syndrome

  A proactive approach focuses on making changes when risks have already been identified, as well as incorporating ergonomics into the design phase of a new facility or process, purchasing new equipment or tools, and contemplation of scheduling changes. Every employer should implement a program that includes the following components:

  Management Leadership - Management is committed to the ergonomics process. Management supports the efforts of the Ergonomics Program Coordinator and the Ergonomics Committee, by pledging financial and philosophical support for the identification and control of ergonomic risk factors. Management will support an effective MSD reporting system and will respond promptly to reports. Management will regularly communicate with employees about the program.

  Employee Participation - Employees will be solicited for their input and assistance with identifying ergonomic risk factors, worksite evaluations, development, implementation of controls, and training.

  Identification of Problem Jobs - Collecting data that identify injury and illness trends is called surveillance. Surveillance can be either passive or active. Conducting a records review is an example of passive surveillance, which looks at existing data such as Cal/OSHA logs, workers' compensation claims, trips to the medical facility, and absentee records. Active surveillance uses observations, interviews, surveys, questionnaires, checklists, and formal worksite evaluation tools, to identify specific high-risk activities. An employer should use both passive and active surveillance to identify problem jobs.

- **Included in New Employee Orientation (NEO)**

  Explanation: A written Ergonomic Program should be reviewed with new hires during the NEO.

- **Office/Field Evaluations**
  Explanation: Both office and field activities should be evaluated to determine ways the factors that contribute to musculoskeletal pain and injuries (awkward posture, forceful exertion, pressure points, repetitive motion, and falls) can be reduced or eliminated. Actions should be taken or planned that address problematic conditions and actions discovered during evaluations.

- **Evaluations Performed Internally**
  Explanation: Since work conditions may change at any time based on job requirements or changing physical conditions of the workplace or personnel, basic ergonomic evaluations of office and field activities should be accomplished primarily by agency supervisory staff as required by the Ergonomic Program. Reliance on outside sources for ergonomic evaluations should be secondary to the day-to-day supervisory responsibility of overseeing that element of personnel actions and ensuring the existence of a safe work environment.

- **Responsible Person Identified**
  Explanation: Senior management should authorize a "responsible person" to ensure the agency's Ergonomic Program is understood by all personnel and implemented.

ERGONOMIC TRAINING

- **Provided To All Employees and Is On-Going**
  Explanation: All agency employees should be trained on the purpose of the Ergonomic Program and should understand the factors contributing to ergonomic injuries and the actions that can mitigate or eliminate those factors. Ergonomic training should occur periodically. At least every three years is suggested.

- **Provided During New Employee Orientation (NEO)**
  Explanation: New employees should be trained on the purpose of the Ergonomic Program and should understand the factors contributing to ergonomic injuries and the actions that can mitigate or eliminate those factors. Training should occur within the first 2-3 weeks of employment. Classroom or online training can be employed. The goal should be to, at the beginning of employment, impress upon the new employee the agency's commitment to preventing ergonomic-related injuries.

- **Provided to Temporary Workers and Volunteers**
  Explanation: Temporary workers and volunteers should be trained on the purpose of the agency's Ergonomic Program and should understand the factors contributing to ergonomic injuries and the actions that can mitigate or eliminate those factors. Training should occur within the first 2-3 weeks of employment. Classroom or online training can be employed. The goal should be to, at the beginning of employment, impress upon the new employee the agency's commitment to preventing ergonomic-related injuries.

- **In-House Trainers(s)**
  Explanation: Since the makeup of the workforce may change at any time based on job requirements or changing physical conditions of the workplace or personnel, basic ergonomic evaluations of office and field activities should be accomplished primarily by agency supervisory staff as required by the Ergonomic Program. Reliance on outside sources for ergonomic evaluations should be secondary to the day-to-day supervisory responsibility of overseeing that element of personnel actions and ensuring the existence of a safe work environment.

- **VectorSolutions Usage**
  Explanation: The online ergonomic training provided by VectorSolutions provides an opportunity for agency personnel to learn about and review ways to reduce or eliminate the musculoskeletal pain associated with the job tasks they perform. The advantage of this form of training is that educational opportunities can match the availability of agency personnel.

ERGONOMIC OPERATIONS EQUIPMENT

- **Tools, Equipment, and Resources Obtained**
  Explanation: Engineering controls are the preferred method of controlling ergonomic stresses since the primary focus of ergonomic hazard abatement is to make the job fit the person, not force the person to fit the job.

  - Tasks performed by the employee in the performance of his/her responsibilities shall be designed to prevent extreme postures, repetitive motion, excessive force, and static work.
  - Tools used in the performance of assigned tasks shall be designed to prevent or reduce chronic muscle contraction, awkward finger, hand, and arm positions, repetitive forceful motions, vibration, and excessive gripping, pinching, or pressing with the hand and fingers.

- **Quantity and Availability**
  Explanation: A suitable quantity of serviceable ergonomic tools and equipment is available to ensure worker exposure to potential ergonomic injury is not increased. Workers are afforded time to bring the equipment to job sites and not perform operations if agency-owned/leased equipment is being utilized elsewhere. Whenever possible, ergonomic equipment availability is a consideration for scheduling operations and maintenance jobs.

- **Mechanical Assistance**
  Explanation: Mechanical lifting devices (e.g., cranes, lifts, hoists, etc.) are provided where practical to eliminate injuries from strains and overexertion. Portable equipment is installed with casters and lift points to ease movement.

- **Workstations**

  Explanation: A workstation outfitted with the proper furniture and equipment can lead to a more comfortable and safer work environment. Ergonomic injuries occur at workstations due to reaching, bending, awkward postures, and applying pressure or force. If workstations are designed properly, most ergonomic hazards can be reduced if not eliminated.

  - Workstations are designed to accommodate the person who works at a given station and not for an average or typical employee.
  - Workstations are designed so the station can be adjusted easily to accommodate the employee assigned to the station, and the equipment used at the station shall be designed for that purpose.
  - The workstation is sized to allow for the full range of movements required to perform assigned tasks.

- **Personal Protective Equipment (PPE)**

  Explanation: PPE should be used as the principal means of control only as a last resort when neither engineering nor administrative controls are possible, or in the event of emergencies. It is considered the least effective form of control. PPE does not eliminate the hazard or reduce the time of exposure. PPE simply reduces the amount of hazardous exposure by placing a barrier between the hazard and the worker. PPE should be selected with ergonomic stressors in mind. It should not contribute to extreme postures and excessive forces. PPE such as vibration attenuating gloves, knee pads, floor padding, clothing, or equipment designed for the intended purpose should be provided, as warranted. Employees using PPE should be first trained in the equipment's use and care. *Note:* Braces, splints, and back belts are not considered personal protective equipment and when used, shall be at the direction and under the supervision of the employee's treating physician.

ERGONOMICS/FALLS PROGRAM BEST PRACTICES
(Falls)

Loss Reduction Focus	Best Practices Menu
Work Environment	☐ Housekeeping ☐ Work area debris management ☐ Worksite access ☐ Lighting
Fall Protection Personal Protective Equipment (PPE)	☐ Footwear/boots ☐ Guardrails/walkways ☐ Fall prevention/arrest systems ☐ Ladders/stairs/ramps ☐ Climbing systems ☐ Maintenance and storage
Fall Protection Training	☐ Training for all personnel ☐ PPE maintenance and inspection training ☐ VectorSolutions usage

ERGONOMICS/FALLS PROGRAM BEST PRACTICES
(Falls)

WORK ENVIRONMENT

- **Housekeeping**

  Explanation: One finds that many of the tasks are repetitive such as buffing, vacuuming, emptying garbage, tidying, dusting, and sweeping floors. People carry or move trash and debris every day. It is easy to see that many of the injury types are directly related to the tasks performed in housekeeping operations.

  Ergonomics is the practice of designing equipment and work tasks to conform to the capability of the worker. It provides a means for adjusting the work environment and work practices to prevent injuries before they occur. The goal of ergonomics is to fit the work to the worker.

  Effective ergonomic design provides workstations, tools, and equipment that is comfortable and efficient for the worker to use. It also creates healthy work environments, and it reorganizes the work process to control or eliminate hazards.

- **Work Area Debris Management**

  Explanation: The primary goal of the worksite evaluation is to ensure a safe and healthy work environment by identifying and evaluating potential hazards. Routine site safety and health inspections are designed to catch missed debris hazards. Inspections should be done at regular intervals, every week. In addition, procedures should be established that provides a daily inspection of the work area.

- **Worksite Access**

  Explanation: Site access inspections should be used to improve hazard prevention as follows:

  - Inspections should cover every part of the worksite
  - They should be done at regular intervals
  - In-house inspectors should be trained to recognize and control hazards
  - Identified hazards should be tracked for correction

  You can use checklists already developed or make your own based on the following:

  - Past problems
  - Standards that apply to your industry
  - Input from everyone involved
  - Agency safety practices or rules

- **Lighting**

  Explanation: Common office lighting can often create a great deal of eyestrain by making your computer monitor difficult to see. Adjust your shades or lights as much as you can to reduce glare and position your monitor at such an angle that reflection is reduced. It can be helpful to keep overhead lights dimmed and use a desk lamp for close work.

FALL PROTECTION PERSONAL PROTECTIVE EQUIPMENT (PPE)

- **Footwear/Boots**
  Explanation:
  - Only approved footwear shall be worn. (CCR 8: Section 3285)
  - Footwear should be maintained in good condition and replaced as needed.
  - Footwear should be slip-resistant and oil resistant.
  - Footwear should have steel or composite toes when working near equipment or heavy loads to prevent crushing.
  - A boot replacement program should be in place to assist employees in purchasing costs.

- **Guardrails/Walkways**
  Explanation:
  - Open elevated platforms above 30 inches shall be protected by guardrails on all sides. (CCR 8: 3210)
  - Temporary and permanent guardrails construction shall meet Cal/OSHA standards. (CCR 8: Sections 1620,1621 3209, and 3210)

- **Fall Protection/Arrest systems**
  Explanation:
  - When guardrails are not present, fall restraints or arrest systems shall be used to prevent falls when working above 7 1/2-foot elevations. (CCR 8: Section 1670)
  - Equipment shall be inspected before use and by a competent person at least annually, and at other periods recommended by the manufacturer and documented. Damaged equipment shall be removed from service.
  - Employees shall be trained in the use, maintenance, and inspection of the equipment.
  - Body belts may not be used except as a positioning device.
  - A fall rescue plan should be in place.

- **Ladders/Stairs/Ramps**
  Explanation:
  - Portable ladders shall meet Cal/OSHA standards. (CCR 8: Section 3276)
    Fixed ladders, cages, and platforms shall meet Cal/OSHA standards.
    (CCR 8: Section 3277)
  - Ladders should be inspected daily by a competent person and documented.
  - Ladders shall be used in an approved manner. (CCR 8: Sections 3276 (e) (15), and 3278)
  - Damaged/unsafe ladders should be repaired or removed from service.
  - Only appropriate ladders shall be used for the job.
  - Training shall be provided in ladder use and safety and documented.
  - Ramps should meet specifications set forth in Cal/OSHA standards. (CCR 8: Sections 3232 and 3233)
  - Stairs should meet specifications set forth in Cal/OSHA standards. (CCR 8: Section 3234)
  - Stair rails should meet specifications set forth in Cal/OSHA standards. (CCR 8: Section 3214)

- **Climbing Systems**
  Explanation:
  - Ladder Safety Systems(fall protection) may be used on tower, water tank, and chimney ladders over 20 feet in unbroken length in lieu of cage protection. No landing platform shall be required.
  - All ladder safety systems shall meet the design requirements of the ladders which they serve. (CCR 8: Subsection c)
  - Training shall be provided in use and safety of such devices and documented.

- **Maintenance and Storage**
  Explanation:
  - Equipment shall be maintained in a safe condition and stored per manufacturer recommendations and readily accessible by authorized persons.
  - Equipment shall be stored so it will be protected from sunlight and other damage.

FALL PROTECTION TRAINING

- **Training For All Personnel**
  Explanation: Falls can be prevented when employees understand the proper setup and safe use of equipment. Employers must train workers in hazard recognition and the care and safe use of equipment such as ladders, scaffolds, and fall protection systems.

- **Ladder Safety:** Employees must be trained to properly use a ladder including the following safety measures:
  - Maintain three points of contact
  - Place the ladder on level footing
  - Always face the ladder
  - Secure the ladder by locking the metal braces at the center of the ladder
  - Do not overreach
  - Do not walk the ladder

- **Scaffold Safety:** Employees must be trained to safely set up and use scaffolds:
  - During setup: fully plank scaffolds, complete all guardrails, ensure stable footing, and plumb and level
  - Ensure proper access to scaffolds
  - A competent person must inspect the scaffold before use
  - Do not climb over cross braces
  - Do not stand on guardrails
  - Do not use a ladder on a scaffold

- **Roof Safety:** Employees must be trained to avoid fall hazards on a roof and properly use fall protection equipment:

    - Make sure your harness fits and is not defective when using PFAS
    - Always stay connected/tie off
    - Ensure that all anchor points are safe
    - Protect all holes, openings, and skylights
    - Do not sit or walk on skylights or other opening

- **PPE Maintenance and Inspection Training**

    Explanation: Worker trauma from falls from elevated work surfaces can be minimized by the proper selection and use of personal fall protection systems. To provide effective protection, these systems must be properly maintained and inspected.

    Maintenance of Fall Equipment: Basic care of all safety equipment will prolong the durable life of the unit and will contribute toward the performance of its vital safety function. Proper storage and maintenance after use are as important as cleaning the equipment of dirt, corrosives, or contaminants. Storage areas should be clean, dry, and free of exposure to fumes or corrosive elements.

    Inspection of Fall Equipment. All fall protection and work positioning equipment must be inspected before use each day and cannot be used if any defects are present. The best practice is to inspect the equipment before each use, rather than only once daily. Inspections include visual examination of harnesses, lifelines and lanyards, snap hooks and D-rings, and rescue equipment. Deficient equipment should be tagged, removed from service, and replaced or properly destroyed to prevent further use.

- **VectorSolutions Usage**

    Explanation: VectorSolutions is an online resource offered to JPIA member agencies as part of their coverage. This resource offers a means to provide a wide variety of training courses to accommodate new employees, staff that cannot attend classroom training, and on-demand refresher training. The following modules are suggested for addressing fall protection awareness.

    - Water Industry Slips, Trips, and Falls Prevention
    - Water Industry Fall Protection

ERGONOMICS/FALLS/CLAIMS PROGRAM BEST PRACTICES

(Claims)

Loss Reduction Focus	Best Practices Menu
Claims Reporting	☐ Written procedures ☐ Primary and backup responsible persons ☐ Timely reporting to JPIA ☐ Staff, NEO, training
Job Descriptions	☐ Physical requirements are identified and updated periodically. ☐ Pre-employment post-offer physicals ☐ Considered in Return-To-Work Program
Return To Work Program (RTWP)	☐ Formal program with periodic review ☐ Return-to-work team ☐ Fit-for-duty exams (not for WC claims) ☐ Temporary duty focus

ERGONOMICS/FALLS PROGRAM BEST PRACTICES
(Claims)

CLAIMS REPORTING

- **Written Procedures**
  Explanation: To ensure loss claims are reported in a manner that facilitates prompt and accurate claims management and injury/illness care, written procedures should be developed and made available describing how to report claims to the JPIA or other claims administrators. At a minimum, the following should be identified in the reporting procedures:
    - Who is authorized to report a claim to the JPIA or other claims administrator
    - Who is responsible for identifying a claim to the agency's authorized claims reporter
    - The contact information for the administrating agency (name, phone number, email, etc.)
    - The forms to be used to document and report a claim
    - The primary and secondary methods of reporting (telephonic, fax, email, etc.)
    - Time requirements for reporting claims

- **Primary and Back-Up Responsible Persons**
  Explanation: To avoid late claims reporting, primary and secondary (backup) personnel should be trained in reporting requirements and assigned the duties of reporting claims for the agency. At least one of the assigned reporting personnel should be present at the agency during business hours to report claims. After-hour duty reporting procedures should also be established.

- **Timely Reporting to JPIA**
  Explanation: To ensure claims can be acted upon as quickly as possible, and within the reporting timeframe established by law or regulation, reporting timeframes must be identified and understood by authorized claims reporters and supervisors.

- **Staff and NEO Training**
  Explanation: For the agency's claims reporting to be effective; claims reporting personnel, supervisors, and employees must be trained in the reporting procedures and the responsibilities each has according to those procedures. Claims reporting procedures training should be included in new employee orientation (NEO).

JOB DESCRIPTIONS

- **Physical Requirements Identified and Updated Periodically**
  Explanation: The physical requirements of the job including carrying or lifting requirements should be included in the job description. A best practice is carrying or lifting up to 50 pounds. Job descriptions should be reviewed periodically to ensure job functions and physical requirements are up to date. Job descriptions that include the physical requirements provide physicians the information needed when conducting pre-employment physical and fit-for-duty examinations.

- **Pre-Employment Post-Offer Physicals**
  Explanation: Pre-employment post-offer physicals should be conducted for all potential employees using job descriptions indicating the functional and physical requirements of the job.

- **Considered in RTWP**
  Explanation: Job descriptions indicating the functional and physical requirements should be considered in a Return-To-Work Program (RTWP) when determining the availability of transitional duty jobs for personnel with temporary performance-limiting injuries or illnesses.

RETURN TO WORK PROGRAM (RTWP)

- **Formal Program with Periodic Review**
  Explanation: A formal RTWP should be established to provide, whenever possible, employees with performance-limiting injuries or illnesses the opportunity to be productive and heal faster. A RTWP accommodates temporary work restrictions and should typically not exceed 90 calendar days. If an injured worker will not reach full duty within 90 days, an agency's Human Resources staff should contact the JPIA's Workers' Compensation Claims Examiner to discuss an alternative plan of action or other worker accommodations. The agency's RTWP should be explained to all personnel. The structure and procedures of the RTWP should be reviewed periodically. The purpose and value of the RTWP to employees and the agency should be reviewed with all personnel periodically.

    - *A Supervisor's Guide to Managing Ill and Injured Employees in the Workplace* (online training) should be mandatory reading for all managers and supervisors.

- **Return-To-Work Team**
  Explanation: As part of the RTWP, a Return-to-Work Team should be established to consider developing and offering a transitional duty (limited duty) position to personnel with temporary performance-limiting injuries or illnesses. The team should consist of supervisory staff knowledgeable of agency job descriptions and RTWP procedures and authorized to offer transitional duty to personnel with temporary performance-limiting injuries or illnesses when deemed practical.

- **Fit-For-Duty Exams (Not for WC Claims)**
  Explanation: Fit-for-duty exams should not be provided for personnel having work limitations resulting from work-related injuries or illnesses since the Workers' Compensation Program will evaluate the capability of such individuals. Fit-for-duty can, however, be used at the discretion of the agency to determine the potential for transitional duty to be offered to an employee with temporary non-work related and injury or illness limitations.

- **Temporary Duty Focus**
  Explanation: The focus of the RTWP should be on offering ***temporary transitional duty*** to personnel with temporary (not permanent) physical work limitations. Transitional duty should not become a long-term accommodation for a physical limitation. Transitional duty job descriptions should be reviewed and modified as the injured/ill employee's condition improves.

ACWA JPIA

Commitment to Excellence Program (C2E) Best Practices

Wildfire Prevention

WILDFIRE PREVENTION BEST PRACTICES

Loss Reduction Focus	Best Practices Menu
Planning, Coordination, and Communication	☐ Develop an emergency Wildfire Emergency Response Plan (ERP). ☐ Per SB 901 definition, establish and maintain current Wildfire Mitigation Plans, if required. ☐ Identify major water connections, interties, and priority water customers to minimize loss of water supply, quality, and/or system pressure. ☐ Maintain emergency preparedness/response equipment, communications, and supplies including shelter-in-place is available for employees. ☐ Participate in Mutual Aid groups such as the state's Water/Wastewater Agency Response Network (WARN) or local/regional agency response network. ☐ Identify essential personnel and emergency response team members who are provided with ID/access credentials. ☐ Practice Incident Command System (ICS) activation of utility Emergency Operations Center (EOC). ☐ Ensure a representative of the utility to the local/region Incident Command Post or EOC. ☐ Periodically test emergency communications plans and equipment.
Staff Training	☐ Conduct training, briefing, and exercises for wildfire preparedness, response, and recovery procedures, including SEMS/NIMS training. ☐ Ensure essential personnel and emergency response team members are trained to perform critical duties and complete the appropriate SEMS/NIMS courses. ☐ Maintain copies of staff SEM/NIMS training records.

WILDFIRE PREVENTION BEST PRACTICES

Facility Protection and Readiness	☐ Create a zone of defensible space around sites, wellheads, structures, etc. ☐ Determine if emergency generators are needed to power facilities. Confirm and document generator connection type, capacity load, and fuel consumption. ☐ Ensure generators, backup equipment, and facility systems are in working order. ☐ Be aware of Public Safety Power Shutoff (PSPS) guidelines for a planned or emergency power outage for a long duration and a wide expanse. Establish procedures to be notified and have contact with the electric provider for power outage duration estimates.
Response and Recovery	☐ Maintain and inventory extra equipment and supplies to shelter-in-place. Ensure proper safety gear is available for field employees. ☐ Activate communication procedures with essential and non-essential personnel and ratepayer/public as to work, operational status, and water quality. ☐ Once the wildfire is contained, inspect the system for damage and operational status. Document all damage assessments to start an insurance claim and/or FEMA reimbursement process. ☐ Develop an after-action/corrective action report. Adjust the budget or set aside funding for future emergencies.

WILDFIRE PREVENTION BEST PRACTICES

- **Planning, Coordination, and Communication**
  Review and update members' emergency Wildfire Emergency Response Plan (ERP), including contingency plans for maintaining system operations.

  Explanation: Disasters/emergencies that are likely to occur in the water system's service area should be addressed, including but not limited to wildfires, earthquakes, water outages due to loss of power, localized flooding, water contamination, and acts of sabotage. A wildfire is any instance of uncontrolled burning in grasslands, brush, woodlands, or urban interface. Wildfires can be caused by lightning, human carelessness, or arson. Wildfires often begin unnoticed, spread quickly, and present a direct risk to property and infrastructure, in addition to potential degradation of the water supply. Specific impacts to drinking water and wastewater utilities may include infrastructure damage to the facility or distribution system due to proximity to the fire or firefighting activities.

- **For agencies that meet the SB 901 definition, establish, and maintain current Wildfire Mitigation Plans assessing their level of wildfire risk and providing plans for wildfire risk reduction.**

  Explanation: With SB 901, California has taken a comprehensive approach to mitigate and create greater resilience against wildfire risks. A key element of SB 901 is in the provisions of the California Public Utilities Code (PUC) Section 8386, which requires electric utilities to develop annual wildfire mitigation plans (WMPs) to prevent, combat, and respond to wildfires within their service territories. Under PUC 8386(c), utilities must include in their WMPs statutorily prescribed content addressing a list of specific issues.

- **Identify major water connections, interties, and priority water customers to minimize loss of water supply, quality, and/or system pressure, especially related to fire protection and firefighting efforts.**

  Explanation: Identify priority water customers (e.g., hospitals), obtain their emergency contact information, map their locations, and develop a plan to restore those customers first, in case of water service disruptions. Staff will, as quickly and safely as possible, determine the status of operations, assess damage to water system facilities, provide logistics for emergency repairs, and monitor the progress of repairs and restoration efforts. Prepare the customer service personnel to receive incoming calls from customers during an emergency to have information readily available to provide helpful guidance.

  Consider how or where to move water with no power. Prioritize facilities. Locate and exercise valves so they may be used when called upon. Locate single points of failure and determine how to mitigate such vulnerabilities.

  Prioritize sources, treatment, facilities, resources, and essential functions under the conditions of extended power outages and wildfires. Establish critical personnel shift schedules so they can be implemented when needed.

- **Maintain emergency preparedness/response equipment, communications and supplies including shelter-in-place is available for employees.**

  Explanation: Necessary supplies and safety gear should be stocked before an emergency event. These supplies will allow staff to focus on necessary tasks to maintain and operate critical assets. It may be necessary in an emergency that staff shelter in place. After an event, it will be difficult to get necessary supplies, stocking these supplies allows time for an EOC to be activated and respond to operational needs. It should be determined in an emergency response plan what supplies will be needed for critical activities. Some supplies may have an expiration date and need to be replaced at appropriate times. It is important to establish an inspection procedure to ensure that no supplies reach their expiration date. Common supplies are water, food, battery-powered NOAA Weather Radio, batteries, flashlights, first aid kit, and N95 respirators.

  Communication with key staff will be critical. It is important to consider if cell phones will be operational during an emergency. The system could be overloaded, or a cell tower could burn down, making it impossible to contact staff. It is recommended to contact your County Office of Emergency Services (OES) to discuss the Agency's communication options during emergencies.

- **Participate in mutual aid groups such as the State's Water/Wastewater Agency Response Network (WARN) or local/regional agency response network.**

  Explanation: The mission of the California Water/Wastewater Agency Response Network (CalWARN) is to support and promote statewide emergency preparedness, disaster response, and mutual assistance processes for public and private water and wastewater utilities. CalWARN's mutual assistance program is consistent with other statewide mutual aid programs, the Standardized Emergency Management System (SEMS), and the National Incident Management System (NIMS).

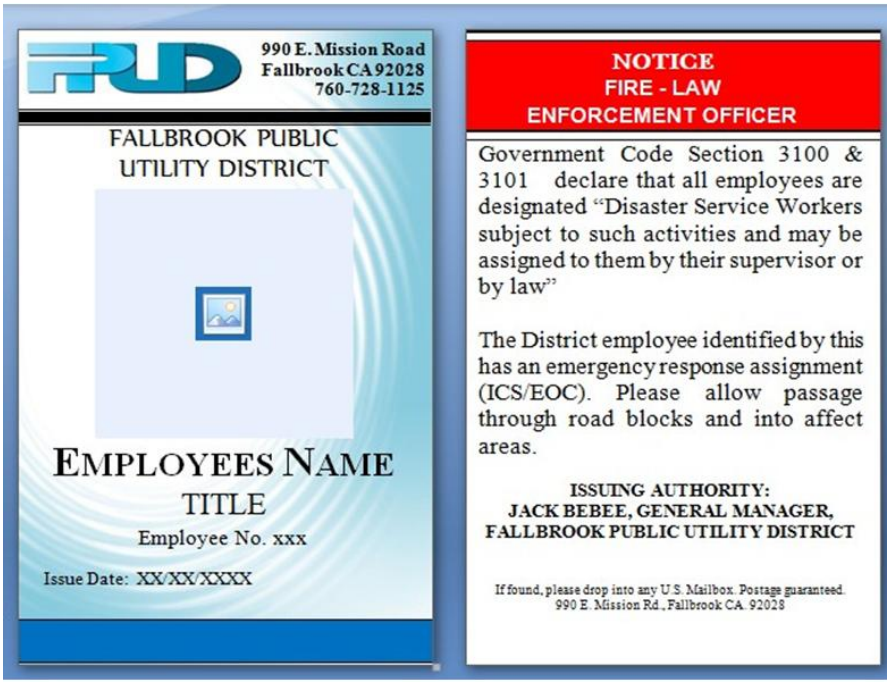
  Each county has an Office of Emergency Services (OES). Each County OES coordinates the overall Sacramento Countywide response to large scale incidents and disasters. Each County OES is responsible for alerting and notifying appropriate agencies when disaster strikes, coordinating all agencies that respond, ensuring resources are available and mobilized in times of disaster, developing plans and procedures in response to and recovery from disasters, and developing and providing preparedness materials for the public.

- **Identify essential personnel and emergency response team members are provided with ID/access credentials.**

  Explanation: It is vital to pre-identify essential personnel before an emergency, but also cross-train personal on critical duties. During an emergency, some staff may not be available during an event. For this reason, it is helpful to have step-by- step checklists for critical positions and operations during emergency response. These checklists should be reviewed by essential personnel and part of an annual incident response training exercise. Pre-identified personnel and checklists should be included in the agency's written Emergency Operations Plan.

Essential personnel should be issued ID that identifies them as essential workers. This notifies emergency services personnel that the agency has critical assets in the area, and they should be allowed access to restricted areas. A contact number should be included on the ID for verification.

Example ID Badge



- **Practice Incident Command System (ICS) activation of utility Emergency Operations Center (EOC).**

  Explanation: An EOC is not an on-scene incident command post (ICP) where the focus is on tactics to deal with the immediate situation. An EOC supports the on-scene activities through the prioritization of tasks and the allocation of available resources. A major function within the EOC is communications between the emergency response operations team, finance team, communications team, and agency management. A utility's Emergency Operations Center (EOC) should be activated whenever there is a major incident that causes significant property damage, potential or actual business disruption, or has the potential to cause a significant impact on the business. Chain of command and lines of authority should be predesignated identifying whom and when an EOC can and should be activated.

- **Ensure a representative of the utility to the local/regional Incident Command Post or EOC.**

  Explanation: A member agency shall identify qualified staff to represent the member in local or county OES. This interface is vital to receive and give up-to-date information related to the emergency. This is the most effective way for members to stay informed and understand how an emergency may affect the agency. It is strongly advised that agencies develop these relationships before an emergency.

Periodically test emergency communications plans and equipment.

Explanation: During non-emergencies, a communication plan and equipment should be in a constant state of readiness. This is achieved through regular testing and evaluation. To ensure the equipment will operate during a drill or emergency a schedule of communication equipment with inspection timeframes and frequency testing should be maintained.

STAFF TRAINING

- **Conduct training, briefing, and exercises for wildfire preparedness, response, and recovery procedures. Emergency response staff will complete SEMS G-606, appropriate NIMS courses, and maintain training records.**

  Explanation: Training staff on how to prepare, respond, and recover from wildfires are critical when managing fire emergencies. These actions are collectively known as Emergency/Incident Management. In 1993, the State of California created the Standardized Emergency Management System (SEMS) to respond to emergencies within the state of California. In 2004, the federal government established the National Incident Management System (NIMS) to address nationwide emergencies.

  Both systems utilize the Incident Command System (ICS), and Emergency Operations Center (EOC) to respond to incidents. The ICS has staff position titles and corresponding duties. Understanding and applying the ICS organizational structure and procedures enables an agency's emergency response personnel to work safely together to take control of a critical incident. It can also assist organizations to manage the aftermath of a critical incident effectively and efficiently.

  Training in both models is necessary to understand how they work together and are required to be eligible for reimbursement of response-related costs.

  Cal OES provides no-cost training for SEMS, while FEMA provides no-cost training on NIMS. It is recommended that all employees attend a SEMS Introduction (SEMS G606) Online Course, and management and supervisory staff attend FEMA's ICS-100: Introduction to the Incident Command System, and IS-700: National Incident Management System, An Introduction.

  As part of the SEMS/NIMS training, agencies shall conduct an annual tabletop exercise on incident response to familiarize themselves with the functions of the ICS and EOC in preparation for future events.

  Agencies are also required by Cal/OSHA standard 5141.1 Protection from Wildfire Smoke to train staff on the harmful effects and mitigation of wildfire smoke.

FACILITIES PROTECTION AND READINESS

- **Create a zone of defensible space around sites, wellheads, structures, etc.**

  Explanation: Defensible space refers to the area surrounding a building that is mitigated to protect it from wildfires. Along with the quality of a building's roofing material, adequate defensible space is one of the most important factors in determining a building's ability to survive a wildfire. The defensible space is made up of two zones totaling at least 100 feet from the building. The creation and maintenance of defensible space, when possible, can greatly reduce the fire risk to a facility.

  Members are encouraged to check with their city and/or country specifics on defensible space.

- **Determine if emergency generators are needed to power facilities. Confirm and document generator connection type, capacity load, and fuel consumption.**

  Explanation: The loss of electric power can have profound impacts on drinking water and wastewater utilities. With increased attention on wildfire and the adoption of Public Safety Power Shutoff (PSPS), the loss of electrical power is more likely than ever. The impacts of these power outages can incur pressure losses, boil water advisories, a reduction or cessation of water treatment, sewage back up, or the discharge of untreated sewage into the public right of ways, rivers, and streams. There are many steps drinking water and wastewater utilities can take to obtain backup power and ensure that their lifeline services continue as long as possible during grid power outages.

  Efforts should be made around developing an emergency power backup plan. One that provides backup power to critical infrastructure, either through permanent or mobile generators, or solar and batteries.

- **Ensure emergency generators, back-up equipment, and facility systems are in working order.**

  Explanation: Emergency generator sets used for either prime or backup (emergency) power must be regularly maintained to ensure they provide quality power throughout their service life. The best generator inspection and maintenance practice are the National Electrical Code (NEC) 700. The Code's main goal is to keep the emergency generator from breaking down and operating as reliably as possible. Members should check their generator's manufactures operator's manual for preventative maintenance and self-inspection checklists.

- **Be aware of Public Safety Power Shutoff (PSPS) guidelines for planned or emergency power outage for a long duration and a wide expanse. Establish procedures to be notified and have contacts with the electric provider for power outage duration estimates.**

  Explanation: Given the continued and growing threat of extreme weather and wildfires, additional precautionary measures have been adopted to enhance community wildfire safety. A PSPS can be implemented in a geographical area when there are gusty winds and dry conditions, combined with heightened fire risk, or threaten a portion of the electric system. Therefore, members are encouraged to establish procedures within their emergency response plan to prepare and respond to a PSPS.

RESPONSE AND RECOVERY

- **Maintain and inventory extra equipment and supplies to shelter-in-place. Ensure proper safety gear is available for field employees.**

  Explanation: Ensure all necessary equipment and supplies are prepared as part of the agency's emergency planning. Designate locations throughout the agency where supplies can be properly stored and used in the event of a shelter-in- place event. Ensure a sustainable supply chain to guarantee that all vital equipment and supplies are replenished when needed. When evacuation is not possible, maintain enough supplies (i.e., food, water, personal items) for a minimum of three days. Develop a process to check all emergency supplies at least once a year and replace anything that could be expired or non-functioning.

- **Activate communication procedures with essential, non-essential personnel, and ratepayer/public as to work, operational status, and water quality.**

  Explanation: Develop a communication plan to communicate promptly and accurately with employees, the public, and local city/county governments. Identify key leadership and liaison positions that can initiate the plan when a disaster strikes. Implement a notification system that quickly reaches out to employees and ratepayers. A mass communication system should be used for quickly pushing out information to employees and the public. Ensure contact information is accurate and accessible during an incident. Develop a process to check that contact information is up to date. Ensure that methods selected for communicating would be reliable during times of an emergency. Lines of communication should be checked during yearly emergency preparedness exercises.

- **Once the wildfire is contained, inspect the system for damage and operational status. Document all damage assessments to start an insurance claim and/or FEMA reimbursement process.**

  Explanation: Document information about the operational status of locations and assets and the extent of damages. Develop an itemized list of losses and potential losses with an estimate of debris removal, repair, or replacement cost of each item/location, and emergency work. Document staff time during preparation and response during a fire. Ensure, based on position(s) held, all personnel have completed the applicable National Incident Management System (NIMS) and Standardized Emergency Management System (SEMS) training. Conduct risk assessments for the development of a Hazard Mitigation Plan.

- **Develop an After Action-Corrective Action Report. Adjust budget or set aside funding for future emergencies.**

  Explanation: Lessons learned can provide a roadmap to recovery. It should be tailored to specific operations affected by a wildfire. Develop a mitigation plan to reduce or eliminate disaster-related damage from recurring. The use of checklists and/or online toolkits can be very effective in developing a recovery plan. The following should be considered when adjusting budgets or creating future emergency funds:

  - Staff training
  - Property protection
  - Viable supply chain
  - Equipment/IT service