ACWA JPIA 2020/2021
Risk Control Grant Program Recipients

Members agree to update ACWA JPIA to review project progress and results, and share lessons learned and observations about the implementation and outcomes. Upon completion of the project, members shall provide a report to the Risk Management Committee and Executive Committee, summarizing the project goals and results achieved.

Beaumont-Cherry Valley Water District (BCVWD) – Handheld Radio Communication

In 2020, BCVWD discovered during the El Dorado and Apple fires that vehicle two-way radio communication and reliance on cell phones were inadequate.

Although the staff was never in immediate danger during these fires, staff routinely work away from their vehicles, operating heavy equipment not equipped with radios, and in poor cellular coverage areas. BCVWD plans to provide staff with handheld Motorola Digital Licensed Frequency Radios to provide improved communication. The grant will aid this **administrative control** by providing funds to purchase a digital repeater that will deliver the frequency and range capabilities for the handheld radios. In addition to providing improved communication during emergencies, the handheld radios will improve the safety of staff working remotely and away from District vehicles.

Procedures and equipment that provide the most rapid and effective response to infrastructure failures and protect assets, is a *C2E Infrastructure Emergency Response* best practice. In addition to deploying handheld radios, BCVWD plans to track and report the impact of this equipment and its effects on staff communication during emergency events, remote work, and responses to potential mud/debris flow resulting from the past fires.

Centerville Community Services District (CCSD) – Zone A1 Tank Emergency Generator

After multiple Public Safety Power Shutoff (PSPS) events and the Zogg Fire, CCSD identified the need to have reliable automatic backup power for its critical communication infrastructure located at its Zone A1 tank. This grant will help fund a MAPPS Solar Power System that will **eliminate** the need for staff to transport fuel or travel to the tank to operate equipment manually. The automatic backup power generator would ensure that critical systems function and provide operators with data and operational control. It would also **eliminate** the need to transport a mobile gas generator to the site.

Determining and implementing a backup generator to ensure reliable service during outages due to wildfire or PSPS events, is a *C2E Wildfire Facility Protection and Readiness* best practice. Having this generator will aid in CCSD's ability to provide a safe and reliable water supply for public health and safety to ~4,100 people living in a high wildfire risk area. The automatic backup generator will also reduce the risk of improper equipment shutdown that could lead to hardware damage and data corruption.

Desert Water Agency (DWA) – Valve Turning Equipment

Over the past ten years, DWA has recorded six strain/sprain injuries resulting from excessive manipulation of manual valves. DWA's Safety Officer and Construction Department Superintendents were tasked with finding a viable solution to eliminate or reduce the hazard inherent with manual valve turning. The Agency conducted a pilot test of Hurco hydro-mechanical valve turning equipment in 2019. When substituting the manual valve turning equipment with valve turning equipment, they found it simplified the process and greatly reduced the strains placed on the body when turning a valve. DWA will use this grant to purchase four Hurco Spin Doctor SD400 valve turners and power packs. The equipment will be mounted to four vacuum equipment trailers to increase the equipment's availability in the field.

Controlling ergonomic stress through **engineering controls** is a *C2E Ergonomic Operation Equipment* best practice. The Agency saw a 100 percent reduction in injuries commonly associated with manual valve turning in its pilot test. To demonstrate the effectiveness of the equipment, DWA plans to present an annual tabulation of valves exercised and related injuries that occurred to the board. DWA expects to see an increase in the number of valves exercised and maintained, with a significant decrease in injury and severity losses.

Helix Water District (HWD) – Backsafe Field Ergonomic Training

In early 2020, HWD contracted with Dr. James Clapper, Future Industrial Technologies, to present their Backsafe Training. Before conducting the training, Dr. Clapper went into the field with the construction and valve crew members to observe them perform various tasks. From this observation, Dr. Clapper developed a classroom/ hands-on training that included an obstacle course. This obstacle course utilizes the equipment and tools regularly used in the field by the HWD staff. The feedback from staff that completed this training was overwhelmingly positive.

With the onset of COVID-19 and the ensuing shutdown, additional classes could not be performed in person. Using this grant, HWD worked with Dr. Clapper to develop a "One Point Lesson" that includes interactive/participatory stretches and biomechanics specific to the District’s construction and valve team tasks. This **administrative**

control was combined with Dr. Clapper's two-hour Backsafe Training that 45 people completed and reinforced with a Backsafe stretching card. HWD's ability to adapt its Ergonomic Training program highlights how a member can provide an understanding to its staff of the factors contributing to ergonomic injuries and actions to mitigate those factors. This action is a *C2E Ergonomic Training* best practice.

Majestic Pines Community Services District (MPCSD) – Security Upgrades at Remote Sites

After suffering a theft of a large generator at one of their well/filtration sites, MPCSD evaluated the controls that could be implemented to prevent future theft or aid with identifying perpetrators. MPCSD identified a combination of **engineering** and **administrative controls** consisting of a camera system that will alert staff when activated and provide additional lighting and signage. This grant will be used to acquire four Lorex LX1082-88 CCTV Security Cameras, 18 LePower Security Lights, and a 3G Cellular Trail camera that have been deployed across MPCSD sites.

Implementing cameras, lighting, and other controls to deter a threat or detect and delay a threat of theft is a *C2E Infrastructure - Theft/Vandalism* best practice. MPCSD expects these enhancements to make their sites a less attractive target, thereby reducing or eliminating unauthorized access to District facilities and reducing liability. MPCSD also purchased three 4G LTE GPS trackers placed on two vehicles and the emergency generator. They will aid in tracking down each asset in the event of future theft.

Oakdale Irrigation District (OID) – Ground Penetrating Radar

OID currently operates and maintains over 330 miles of irrigation water distribution laterals, pipelines, and tunnels. It takes, on average, over 1,520 hours to annually inspect, repair, and maintain the distribution system. Additionally, it takes a team of five up to six days to pump out, inspect, document, excavate, and repair a complete line. When staff conducts these tasks, they are exposed to atmospheric, engulfment, temperature, and ergonomic hazards. OID will use this grant to purchase a ground-penetrating radar setup to reduce staff hazard exposure and improve the efficiency of conducting the inspections.

This **engineering control** will eliminate the hazards staff are exposed to when conducting inspections or identifying areas needing repair. Additionally, the ground-penetrating radar will improve the efficiency and quality of the inspection process. The setup requires one operator to deploy, rapidly locate metallic and non-metallic utility lines, and effectively produce reports. OID is improving its underground utility identification process with the ground-penetrating radar, an improvement that is a *C2E Construction Program* best practice.

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Rancho California Water District (RCWD) – Mobile Generator Telemetry Project

As identified in the Woolsey Fire and Camp Fire After Action Reports, a recurring threat to water utilities is a lack of reliable backup power to water utility assets. In the wake of the 2018 Holy Fire and 2019 Tenaja Fire that threatened the services of the District, a need was identified to mitigate gaps in its current backup power strategy. RCWD uses a combination of stationary and mobile generators to power critical assets in the event of a PSPS or wildfire. When the mobile generator is placed into service, operators rely on the manufacture's fuel consumption estimates and periodic onsite checks to verify fuel and run status. The need to conduct onsite generator checks presents a risk to both the operators traveling into wildfire conditions and to the water service reliability.

RCWD used this grant to install SCADA telemetry on all eight mobile generators to mitigate this gap. The SCADA telemetry will provide remote access to the run and fuel status of each mobile generator. This **engineering control** is consistent with the 2019 EPA Power Resilience Guide for Water and Wastewater Utilities. This guide recommends utilities connect generators to existing SCADA systems to increase utility resilience to power outages. Checking that generators are in working order is a *C2E Wildfire Prevention* best practice. This data will enhance communications regarding the resources needed and water suppression capabilities between the District and Riverside County EOC.

San Dieguito Water District (SDWD) – Water Leak Detection Equipment

SDWD will use the 2020/21 grant to help aid in the acquisition and training on a Metrotech Water Leak Correlator C-3 Pro with eight correlating loggers. This equipment will enhance the SDWD leak detection program in two discrete ways. First, it will aid in pinpointing the exact location of a suspected leak and reduce the need to excavate a more extensive section of the system. Second, it will identify small leaks by way of the eight correlating loggers. The correlators are placed on select valves and left overnight during low flow water usage and less ambient noise.

SDWD will be improving its H2O loss monitoring, a *C2E Infrastructure* best practice, by implementing this leak detection equipment, thereby enhancing this **administrative control**. Through the early detection of leaks on water mains and services, the District will be able to detect small leaks and prevent them from escalating and resulting in flooding, property damage, and lengthy service interruptions. With this equipment, SDWD will move leak repairs from the emergency (reactionary) to the planned (proactive) activities. These planned repairs allow staff to notify customers in advance of water outages, install proper traffic control, and have the necessary parts and equipment on hand.

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Scotts Valley Water District (SVWD) – Hydro Excavator

Starting in 2017, SVWD staff began looking into various types of hydro-excavating equipment to help reduce the potential hazards when excavating underground infra-structures. After considering its service area with narrow roads and hilly topography, a truck-mounted unity was identified. However, many truck-mounted units are large and require a commercial driver's license to drive, limiting who can operate the truck. With additional searching, a solution was identified. SVWD purchased a Ford F650 chassis and installed a Ring O Matic 550 hydro excavator on it.

The hydro excavator will **substitute** the need for a backhoe/excavator at every excavation, **eliminate** damage to other underground infrastructures, and reduce strain/sprain injuries by reducing physical exertion and shoveling. The reduction of ergonomic stress through engineering controls and equipment is a *C2E Ergonomic Operation Equipment* best practice. SVWD foresees that this equipment will aid in the efficiency of potholing and locating underground infrastructure and reduce backfill and asphalt costs.

Vallecitos Water District (VWD) – Installing Grates on Hatches at MRF

VWD Meadowlark Reclamation Facility has approximately 30 floor hatches through-out the facility. Staff must open various hatches daily to check process conditions, measure sludge levels, and perform skimming operations. Each time a hatch is opened, it poses a fall hazard to staff. VWD will use the grant to install grating that will create a walking surface and allow work operation to continue when the hatches are open.

With this grant, VWD is installing a Fibergrate molded grate that will provide fall protection and is known for its corrosion resistance in harsh environments like that found at the reclamation facility. This fall prevention **engineering control** also provides slip-resistant and comes in at half the weight of a similarly sized steel grate. The nature of these grates allows an operator to observe the process and hose the area if necessary. Implementing guardrails and walkway protection is a *C2E Ergonomic/Fall Program* best practice.

West Stanislaus Irrigation District (WSID) – Scissor Lift

To access, inspect, and maintain various equipment at heights ranging from 14 to over 20 feet, WSID relied on 15-foot A-frame ladders, 20-foot extension ladders, and a man basket connected to a forklift. A-frame ladders are used to check and change pump and motor oils weekly. Extension ladders and the man basket are used to inspect and maintain cranes, lights, and drainage at least quarterly. Due to the

orientation of the equipment and the height needed to access them, some lights are left unchanged. The wide use of ladders and communication required when using the man basket poses various safety risks, including falls, to WSID staff.

WSID collaborated with PAPA Material Handling to specify a corrective piece of machinery to **eliminate** fall hazards associated with these tasks, reduce safety concerns, and quickly deploy at WSID sites. Together they identified a Genie GS-2032 electric self-propelled scissor lift. This **engineering control** will provide a stable work platform for staff when performing inspections and repairs not provided by existing options. Additionally, the lift can support two WSID staff when needed for a motor repair. Providing mechanical assistance through lifting devices to eliminate injuries from strains and overexertion is a *C2E Ergonomic Operation Equipment* best practice.