

# PORT OF STOCKTON UTILITY WILDFIRE MITIGATION PLAN

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VERSION 1.0

*October 25, 2019*

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## I. OVERVIEW

### A. POLICY STATEMENT

The Port of Stockton's (Port) overarching goal is to provide safe, reliable, and economic electric service to its local community. In order to meet this goal, the Port constructs, maintains, and operates its electrical lines and equipment in a manner that minimizes the risk of catastrophic wildfire posed by its electrical lines and equipment.

### B. PURPOSE OF THE UTILITY WILDFIRE MITIGATION PLAN

The Port is located in a region of the state with a very low wildfire risk. No part of the Port's service territory is located in or near the High Fire Threat District designed in the California Public Utilities Commission's (CPUC) Fire Threat Map and all of the Port's service territory is designated as "non-fuel" or "moderate" in the California Department of Forestry and Fire Protection's (CALFIRE) Fire and Resource Assessment Program (FRAP) Fire Threat Map. Based on a review of local conditions and historical fires, the Port has determined that its electrical lines and equipment do not pose a significant risk of catastrophic wildfire.

Despite this low risk, the Port takes appropriate actions to help its region prevent and respond to the increasing risk of wildfires. In its role as a public agency, the Port closely coordinates with other local safety and emergency officials to help protect against fires and respond to emergencies. In its role as a utility, the Port follows all applicable design, construction, operation, and maintenance requirements that reduce safety risks associated with its system. This Utility Wildfire Mitigation Plan describes the safety-related measures that the Port follows to reduce its risk of causing wildfires.

### C. ORGANIZATION OF THE UTILITY WILDFIRE MITIGATION PLAN

This Utility Wildfire Mitigation Plan included the following elements:

- Objectives of the plan;
- Roles and responsibilities for carrying out the plan;
- Identification of key wildfire risks and risk drivers;
- Description of wildfire prevention, mitigation, and response strategies and programs;
- Metrics for evaluating the performance of the plan and identifying areas for improvement;
- Review and validation of the plan; and
- Timelines.

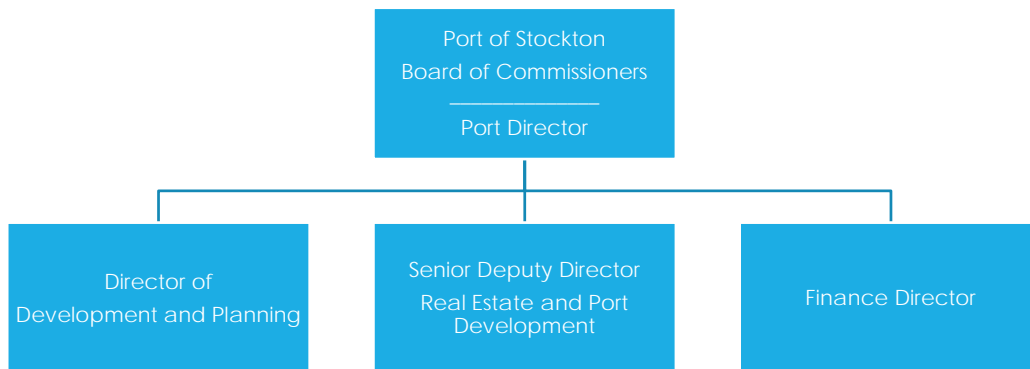
## II. OBJECTIVES OF THE UTILITY WILDFIRE MITIGATION PLAN

The primary goal of this Utility Wildfire Mitigation Plan is to describe the Port's existing programs, practices, and measures that effectively reduce the probability that the Port's electric supply system could be the origin or contributing source for the ignition of a wildfire. To support this goal, the Port regularly evaluates the prudent and cost-effective improvements to its physical assets, operations, and training that can help reduce the risk of equipment-related fires.

The secondary goal of this Utility Wildfire Mitigation Plan is to improve the resiliency of the electric grid. As part of the development of this plan, the Port assesses new industry practices and technologies that will reduce the likelihood of an interruption (frequency) in service and improve the restoration (duration) of service.

## III. ROLES AND RESPONSIBILITIES

### A. UTILITY GOVERNANCE STRUCTURE



POU / Municipal Governance Structure:

The Stockton Port District (Port) is a public corporation created for municipal purposes pursuant to Section 6290 of the California Harbors and Navigation Code. The Board of Port Commissioners is the Publicly Owned Utility governing body and the Port Director is the Publicly Owned Utility Chief Executive Officer.

The Port owns and maintains the utility system infrastructure, including power lines and poles, located on Rough & Ready Island, which is also known as the West Complex. Pacific Gas and Electric Company (PG&E) provides electricity to the West Complex pursuant to an industrial tariff.

Through a recently amended/extended Interconnection Agreement, PG&E provides the Port with wholesale electric transmission service from the California Independent System Operator's (CAISO) electric grid. The point of interconnection between the two electric systems is the high voltage (60kV) side of the Port's Rough and Ready substation. The Port provides low voltage (12kV) retail electric distribution service to its tenants within the West Complex.

## B. WILDFIRE PREVENTION

This section provides a description of Port Staff roles and responsibilities relating to: (1) electric facility design, maintenance, and inspection; and (2) vegetation management.

### **Director of Development and Planning:**

The Director of Development and Planning is responsible for the day to day operation of the Port of Stockton's Electric Utility. The Director of Development and Planning will prepare reports and advise the Senior Deputy Port Director of operational circumstances and items that may impact the Port relative to wildfire prevention and implement the following best management practices:

- Operate system in a manner that will minimize potential wildfire risks.
- Take all reasonable and practicable actions to minimize the risk of a catastrophic wildfire caused by Port electric facilities.
- Coordinate with federal, state, and local fire management personnel as necessary or appropriate to implement Port Utility Wildfire Mitigation Plan.
- Immediately report fires, pursuant to the Port's Emergency Operations Plan and the requirements of this Utility Wildfire Mitigation Plan.
- Take corrective action when the staff witnesses or is notified that fire protection measures have not been properly installed or maintained.
- Comply with relevant federal, state, and industry standard requirements, including the industry standards established by the California Public Utilities Commission.

### **Senior Deputy Port Director, Real Estate, and Port Development:**

The Senior Deputy Port Director, Real Estate, and Port Development has the overall responsibility for executing and ensuring compliance with the Utility Wildfire Mitigation Plan. The Senior Deputy Port Director, Real Estate and Port Development reports to the Port Director regarding wildfire risk management activities and will advise him and/or the Board of Port Commissioners of the status of the program on an annual basis.

## C. WILDFIRE RESPONSE AND RECOVERY

During any emergency (including a fire) that occurs at or near the Port, certain Port staff are designated as points of contact with relevant local governmental and emergency officials:

- **Ricardo Navarro:** Primary Contact
- **Bob Wilson:** Secondary Contact, and first on site during an emergency. Bob Wilson would be the contact for Tesla and Grid Operations for outage and load restoration.
- **Richard Smith:** response and investigation.

After an emergency has occurred, the Port Administration oversees any necessary response and recovery efforts of the Port of Stockton Electrical Utilities. The following Port Administration Staff the following oversight roles:

- **Steve Escobar:** Administrator and Contracts, Rate Schedules
- **Juan G. Villanueva:** Project Administration and Construction Project Manager
- **Ricardo Navarro:** Electrical Utilities operations
- **Richard Smith, PE:** electrical engineering consultant from HCS Engineering
- **Bob Wilson:** troubleman for substation and Rough and Ready Island power outages; outside contractor with Bockmon and Woody Electric.

## D. STANDARDIZED EMERGENCY MANAGEMENT SYSTEM

As a local governmental agency,<sup>1</sup> the Port has planning, communication, and coordination obligations pursuant to the California Office of Emergency Services' Standardized Emergency Management System ("SEMS") Regulations,<sup>2</sup> adopted in accordance with Government Code section 8607. The SEMS Regulations specify roles, responsibilities, and structures of communications at five different levels: field response, local government, operational area, regional, and state.<sup>3</sup> Pursuant to this structure, the Port annually coordinates and communicates with the relevant safety agencies as well as other relevant local and state agencies. [Describe Port's role within the local and operational level].

Under the SEMS structure, a significant amount of preparation is done through advanced planning at the county level, including the coordination of effort of public, private, and nonprofit organizations. San Joaquin County serves as the Operational Area and is guided by the San Joaquin County Office of Emergency Services. The Operational Area includes local and regional organizations that bring relevant expertise to the wildfire prevention and recovery planning process. San Joaquin County is charged with taking the lead coordination role within the OA and with being the primary point of contact for the region and state. In an OA lead entity, the County manages and/or coordinates information, resources, and priorities among local governments and serves as the link between the local government and the regional level. At this level, the governing bodies are required in SEMS to reach a consensus on how resources will be allocated in a major crisis affecting multiple jurisdictions or agencies. Pursuant to the SEMS structure, the Port participates in annual training exercises. The Port includes the Stockton Fire Department, Stockton Police Department, San Joaquin County Sheriff's Office, California

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<sup>1</sup> As defined in Cal. Gov. Code § 8680.2.

<sup>2</sup> 19 CCR § 2407.

<sup>3</sup> Cal. Gov. Code § 2403(b):

- (1) "Field response level" commands emergency response personnel and resources to carry out tactical decisions and activities in direct response to an incident or threat.
- (2) "Local government level" manages and coordinates the overall emergency response and recovery activities within their jurisdiction.
- (3) "Operational area level" manages and/or coordinates information, resources, and priorities among local governments within the operational area and serves as the coordination and communication link between the local government level and the regional level.
- (4) "Regional level" manages and coordinates information and resources among operational areas within the mutual aid region designated pursuant to Government Code §8600 and between the operational areas and the state level. This level along with the state level coordinates overall state agency support for emergency response activities.
- (5) "State level" manages state resources in response to the emergency needs of the other levels, manages and coordinates mutual aid among the mutual aid regions and between the regional level and state level, and serves as the coordination and communication link with the federal disaster response system.

Highway Patrol, San Joaquin County OES, and several other local and federal partners in annual exercises testing SEMS.

The Port is a member of the California Utility Emergency Association, which plays a key role in ensuring communications between utilities during emergencies. The Port also participate in the Western Energy Institute's Western Region Mutual Assistance Agreement, which is a mutual assistance agreement covering utilities across a number of western states.

#### IV. WILDFIRE RISKS AND DRIVERS ASSOCIATED WITH DESIGN, CONSTRUCTION, OPERATION, AND MAINTENANCE

##### A. PARTICULAR RISKS AND RISK DRIVERS ASSOCIATED WITH TOPOGRAPHIC AND CLIMATOLOGICAL RISK FACTORS

Within the Port's service territory and the surrounding areas, the primary risk drivers for wildfire are the following:

- Extended drought;
- Vegetation type;
- Vegetation Density;
- Weather;
- High winds;
- Terrain;
- Changing Weather Patterns (Climate Change);
- Communities at Risk;
- Fire History.

##### B. ENTERPRISEWIDE SAFETY RISKS

A number of known threats and hazards affect the State of California, the County of San Joaquin, the City of Stockton, and the Port of Stockton. The following threats and hazards are specific to the San Joaquin Operational Area:

- Hazardous materials release – aboard a product carrier or at a facility
- Fire or explosion – aboard a product carrier or at a facility
- Flood or levee break – impending or actual
- Severe storm – impending or actual
- Earthquake – impending or actual
- Threat, incident, or attack – terrorist or other
- Civil unrest

The following threats and hazards are of specific concern within the Port of Stockton:

- Anhydrous ammonia release – aboard a product carrier or at a facility



- Fire – building, grass, or petroleum
- Chemical, biological, radiological, nuclear, explosive (CBRNE) incident involving cargo (aboard a product carrier or at a facility)
- CBRNE incident at a major public event – waterside
- Cyber attacks

## V. WILDFIRE PREVENTATIVE STRATEGIES

### A. HIGH FIRE THREAT DISTRICT

The Port participated in the development of the CPUC’s Fire-Threat Map,<sup>4</sup> which designates a High-Fire Threat District. In the map development process, the Port reviewed the proposed boundaries of the High Fire Threat District and confirmed that, based on local conditions and historical fire data, the entirety of the Port’s service territory was properly excluded. While no part of the Port’s service territory is located within the High Fire Threat District, the Port has incorporated the High Fire Threat District into its construction, inspection, maintenance, repair, and clearance practices. The Port will continue to evaluate its service territory and will determine if, based on changed environmental circumstances, any of the increased construction, inspection, maintenance, repair, and clearance requirements applicable in the High Fire Threat District should apply to any of the Port’s facilities.

### B. DESIGN AND CONSTRUCTION STANDARDS

The Port’s electric facilities are designed and constructed to meet or exceed the relevant federal, state, or industry standard. The Port treats CPUC General Orders (GO) 95 and 128 as key industry standards for design and construction of overhead and underground electrical facilities. The Port meets or exceeds all standards in GO 95 and GO 128. Additionally, the Port monitors and follows, as appropriate, the National Electric Safety Code.

### C. VEGETATION MANAGEMENT

The Port meets or exceeds the minimum industry standard vegetation management practices. For transmission-level facilities, the Port complies with NERC FAC-003-4, where applicable. For both transmission and distribution level facilities, the Port meets: (1) Public Resources Code section 4292; (2) Public Resources Code section 4293; (3) GO 95 Rule 35; and (4) the GO 95 Appendix E Guidelines to Rule 35. These standards require significantly increased clearances in the High Fire Threat District. The recommended time-of-trim guidelines do not establish a mandatory standard, but instead provide useful guidance to utilities. The Port will use specific knowledge of growing conditions and tree species to determine the appropriate time of trim clearance in each circumstance.

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<sup>4</sup> Adopted by CPUC Decision 17-12-024.

**GO 95, Rule 35, Table 1**

Case	Type of Clearance	Trolley Contact, Feeder and Span Wires, 0-5kv	Supply Conductors and Supply Cables, 750 - 22,500 Volts	Supply Conductors and Supply Cables, 22.5 - 300 kV	Supply Conductors and Supply Cables, 300 - 550 kV (mm)
13	Radial clearance of bare line conductors from tree branches or foliage	18 inches	18 inches	¼ Pin Spacing	½ Pin Spacing
14	Radial clearance of bare line conductors from vegetation in the Fire-Threat District	18 inches	48 inches	48 inches	120 inches

**Appendix E  
Guidelines to Rule 35**

The radial clearances shown below are recommended minimum clearances that should be established, at time of trimming, between the vegetation and the energized conductors and associated live parts where practicable. Reasonable vegetation management practices may make it advantageous for the purposes of public safety or service reliability to obtain greater clearances than those listed below to ensure compliance until the next scheduled maintenance. Each utility may determine and apply additional appropriate clearances beyond clearances listed below, which take into consideration various factors, including: line operating voltage, length of span, line sag, planned maintenance cycles, location of vegetation within the span, species type, experience with particular species, vegetation growth rate and characteristics, vegetation management standards and best practices, local climate, elevation, fire risk, and vegetation trimming requirements that are applicable to State Responsibility Area lands pursuant to Public Resource Code Sections 4102 and 4293.

Voltage of Lines	Case 13	Case 14
Radial clearances for any conductor of a line operating at 2,400 or more volts, but less than 72,000 volts	4 feet	12 feet
Radial clearances for any conductor of a line operating at 72,000 or more volts, but less than 110,000 volts	6 feet	20 feet
Radial clearances for any conductor of a line operating at 110,000 or more volts, but less than 300,000 volts	10 feet	30 feet
Radial clearances for any conductor of a line operating at 300,000 or more volts	15 feet	30 feet

## D. INSPECTIONS

The Port meets or exceeds the minimum inspection requirements provided in CPUC GO 165 and CPUC GO 95, Rule 18. Pursuant to these rules, utilities inspect electric facilities in the High Fire Threat District more frequently than the other areas of its service territory. As described above, the Port currently does not have any overhead powerlines located within or near the High-Fire Threat District within the CPUC's Fire Threat Map. However, the Port staff uses their knowledge of the specific environmental and geographical conditions of the Port's service territory to determine if any particular areas require more frequent inspections.

If the Port staff discovers a facility in need of repair that is owned by an entity other than the Port, the Port will issue a notice to repair to the facility owner and work to ensure that necessary repairs are completed promptly.

## E. RECLOSING POLICY

When an outage occurs, the first step is the Troubleman is dispatched to the site to determine a source of the outage.

For on-site related outages (as indicated by the protective relay system), the Troubleman visually inspects the system. The Port Troubleman visually inspects the power the distribution system for issues, and then manually recloses the onsite circuits. Then Operations bring Port load back online. The Port has not implemented automatic reclosures.

For off-site related outages, the Troubleman shuts down the individual circuits of Distribution system within the Port. Then electrical operations calls Tesla and coordinate re-instating loads with the network operations centers. After power is restored to the substation, the Troubleman re-energizes up the Port distribution system circuits one at a time. The Port does not have a policy to change relay settings during emergency conditions.

## F. DEENERGIZATION

The Port has the authority to preemptively shut off power due to fire-threat conditions; however, this option will only be used in extraordinary circumstances. Due to the minimal risk of the Port's electrical supply facilities causing a power-line ignited wildfire, the Port is not adopting specific protocols for de-energizing any portions of its electric distribution system. The Port will reevaluate this determination in future updates to this Utility Wildfire Mitigation Plan.

## VI. RESTORATION OF SERVICE

See Reclosing Policy Above.

## VII. EVALUATING OF THE PLAN

### A. METRICS AND ASSUMPTIONS FOR MEASURING PLAN PERFORMANCE

The Port will track two metrics to measure the performance of this Utility Wildfire Mitigation Plan: (1) number of fire ignitions; and (2) wires down within the service territory.

#### METRIC 1: FIRE IGNITIONS

For purposes of this metric, a fire ignition is defined as follows:

- The Port facility was associated with the fire;
- The fire was self-propagating and of a material other than electrical and/or communication facilities;
- The resulting fire traveled greater than one linear meter from the ignition point; and
- The Port has knowledge that the fire occurred.

In future Utility Wildfire Mitigation Plans, the Port will provide the number of fires that occurred that were less than 10 acres in size. Any fires greater than 10 acres will be individually described.

#### METRIC 2: WIRES DOWN

The second metric is the number of distribution and transmission wires downed within the Port's service territory. For purposes of this metric, a wires down event includes any instance where an electric transmission or primary distribution conductor falls to the ground or on to a foreign object. The Port will divide the wires down metric between wires down inside and outside of the High Fire Threat District.

The Port will not normalize this metric by excluding unusual events, such as severe storms. Instead, the Port will supplement this metric with a qualitative description of any such unusual events.

### B. IMPACT OF METRICS ON PLAN

In the initial years, the Port anticipates that there will be relatively limited data gathered through these metrics. However, as the data collection history becomes more robust, the Port will be able to identify areas of its operations and service territory that are disproportionately impacted. The Port will then evaluate potential improvements to the plan.

### C. MONITORING AND AUDITING THE PLAN

This Utility Wildfire Mitigation Plan will be presented to the Port Board of Port Commissioners and will present updates to this plan to its Board of Port Commissioners on an annual basis.

Additionally, a qualified independent evaluator will prepare an annual compliance report on this plan to be presented to the Board of Port Commissioners.

#### D. IDENTIFYING AND CORRECTING DEFICIENCIES IN THE PLAN

Based on the recommendations of its Board of Commissioners, the Port will correct any identified deficiencies.

#### E. MONITORING THE EFFECTIVENESS OF INSPECTIONS

The Port has implemented a tiered approach to inspections and verifications for projects, outages and connections. Electrical plans are created by the Port's Electrical Engineer and constructed by the Port's electrical construction contractor. Construction issues are brought to the attention of the Engineer and issues are resolved.

Biannually, the Port protective relay system is tested by a third party testing agency to ensure relays and the distribution system is operating within specifications and safety.

### VIII. INDEPENDENT AUDITOR

Public Utilities Code section 8387(c) requires the Port to contract with a qualified independent evaluator with experience in assessing the safe operation of electrical infrastructure to review and assess the comprehensiveness of this Utility Wildfire Mitigation Plan. The independent evaluator must issue a report that is posted to the Port's website. This report must also be presented to the Port's Board of Commissioners at a public meeting.

The Port's Fire Marshal (also serving as the City of Stockton's Assistant Fire Marshal) will serve as the independent auditor for the Utility Wildfire Mitigation Plan. As the Port's Fire Marshal, this individual has specific knowledge of Port operations and is active in patrolling the Port providing inspections and safety recommendations to tenants. The physical presence of this individual allows for the constant monitoring of the necessary wildfire mitigation measures to ensure continuing compliance.

The Port Fire Marshal shall prepare this report in the next 60 days. This report shall then be prepared for the review, consideration, and potential adoption by the Board of Port Commissioners at a noticed public hearing.

