



# 2023 Independent Evaluation of Glendale Water and Power's 2023 Wildfire Mitigation Plan

**Prepared for:**

**Glendale Water & Power**

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## Executive Summary

Glendale Water & Power (GWP) contracted with Guidehouse Inc. (Guidehouse) to engage in an independent evaluation of its Wildfire Mitigation Plan (WMP). This independent evaluation report (Report) describes the technical review and evaluation provided by Guidehouse. Guidehouse performed this evaluation in May 2023 and finalized the Report on May 17, 2023. Guidehouse's project team reviewed detailed information related to the Plan and assessed GWP's procedures related to the Plan.

The Plan was prepared as a response to Senate Bill (SB) 901. SB 901 and included a number of provisions and directives, among which includes the requirement for electric utilities to prepare and adopt WMPs and revise and update the Plan annually thereafter. These requirements are codified in the California Public Utilities Code (PUC) Section 8387 for publicly owned utilities (POUs).

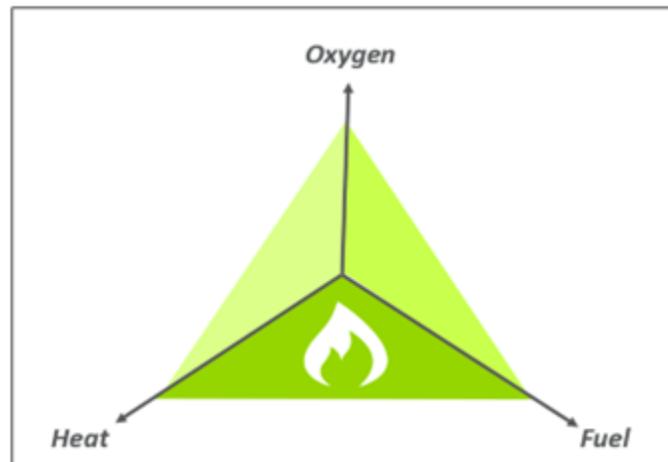
Guidehouse evaluated the Plan based on the statutory requirements of PUC Section 8387 as it relates to POUs. This PUC Section was amended in 2019 with the signing of California's Assembly Bill (AB) 1054 into law. The POUs are now subject to the guidance provided by the California Wildfire Safety Advisory Board and mandatory cyclical reviews, including a comprehensive update every three years. The required elements for a WMP have not been modified by this new legislation. This Report meets GWP's requirements under PUC Section 8387(c), which mandates an independent evaluation of GWP's WMP. The Report was also developed to satisfy the statutory requirement for public review. This Report underlies the required presentation at a public meeting of the Glendale City Council scheduled for May 23, 2023. GWP will also present this information to the GWP Board on May 4, 2023, for advice and comments before presentation to the City Council. The Report includes the following:

- Background of the legislative history requiring WMPs and their independent evaluations
- Approach and methodology evaluating the WMP's comprehensiveness
- GWP's WMP elements and their compliance with SB 901 and PUC Section 8387 WMP elements and directives
- An evaluation of the WMP's presented metrics to assess the effectiveness of the overall WMP
- Determinations and results

Based on relevant experience in grid hardening and resiliency, natural disaster response, prior experience in WMP development, and active tracking of wildfire legislative and regulatory proceedings Guidehouse has concluded that GWP's WMP is comprehensive in accordance with PUC section 8387.

# 1. Background

In recent years, California has seen numerous utility equipment-involved, catastrophic wildfires. The unique geographic profile of California and the impacts of climate change, including prolonged drought, high winds, and elevated temperatures, have led to elongated fire seasons. The state also has historically high levels of past fire suppression efforts. This increasingly abundant dry vegetation is the leading driver of wildfires. These fuel-rich environments, coupled with intensified climatological conditions with high wind gusts and inherent electrical infrastructure risks, produce the conditions conducive to potential wildfire ignition. The three attributes that provide optimal conditions for a fire ignition are illustrated through the graphic in Figure 1-1.



**Figure 1-1 – Fire Triangle**

Disastrous wildfire threat is a well-known and shared priority among electric utilities in California. Disastrous utility-involved wildfire incidents and the significant financial and livelihood impacts associated with them led California legislators and regulators to formalize requirements to ensure safe operations of electric utility equipment and greater investment in wildfire mitigation efforts. Specifically, the state has approved legislation that strengthens governmental and regulatory oversight of wildfire prevention implementation activities, utility wildfire mitigation plans, and proper dispersal of state funds to wildfire victims. In an effort to minimize future devastating occurrences through risk-driven wildfire prevention, electric utilities, including cooperatives, were mandated, by SB 901 (Senator Bill Dodd, 2018), to prepare and annually adopt a wildfire mitigation plan. This effort is foundational to the state's prioritized goal of minimizing the potential of devastating fires in future years.

## 1.1 Wildfire Mitigation Plans

### 1.1.1 SB 901

In an effort to minimize future devastating occurrences through risk-driven wildfire prevention, electric utilities, including publicly owned utilities (POUs), were mandated, by Senate Bill (SB) 901 to prepare and annually adopt a WMP. The WMPs must include several mitigation and response elements in each utility's strategies, protocols, and programs. The requirements for POUs are codified in Public Utilities Code (PUC) Section 8387. Details relating to POU requirements are discussed in Section 2 of this WMP Report.

### 1.1.2 AB 1054 Statutory Modifications

In 2019, Assembly Bill (AB) 1054 was signed into law, modifying the requirements for POU WMPs. AB 1054 aims to mitigate the intensity of wildfire impacts through several initiatives separate from those actions required of electric utilities. AB 1054 includes directives to establish the Wildfire Safety Division<sup>1</sup> at the California Public Utilities Commission and the state's Wildfire Safety Advisory Board (WSAB). AB 1054 requires POUs submit their WMPs by July 1 of each year for review by and recommendations from WSAB and requires POUs to comprehensively update their WMPs at least every three years. The most recent *Guidance Advisory Opinion for 2022 POU WMPs* was published on March 2, 2022.

## 1.2 Glendale Water and Power Plan Preparation

Glendale Water and Power (GWP) is a municipal utility that serves the citizens and community of Glendale, California including over 34,000 water and 89,000 electric customers that has served Glendale's electrical needs for over 100 years. GWP is owned and operated by the City of Glendale and is governed by the Glendale City Council. GWP generates, transmits, and distributes power to Glendale residential and commercial customers.

GWP prepared its first WMP in 2019, pursuant to SB 901. Throughout its history, the City of Glendale has experienced wildfires within its service territory which stemmed from dry vegetation contacting GWP electrical assets. The GWP WMP describes the various programs, policies, procedures, and activities GWP is engaging in to mitigate the threat of power-line ignited wildfires. Additionally, the GWP WMP is reviewed and updated annually in accordance with PUC Section 8387

### 1.2.1 Independent Evaluation Services

PUC Section 8387(c) directs POUs to procure an independent evaluation (IE) of the comprehensiveness of the WMP. The provisions of PUC Section 8387 state that the "qualified independent evaluator" shall be experienced in "assessing the safe operation of electrical infrastructure" and will perform an assessment to determine the comprehensiveness of the WMP.

Accordingly, GWP sought IE services to assess the comprehensiveness of its WMP pursuant to PUC Section 8387(c). GWP selected Guidehouse to perform this assessment based on Guidehouse's prior experience with assessing the safe operation of electrical infrastructure, including grid-hardening and WMPs, with an emphasis on electrical equipment, public, and personnel safety. Guidehouse has conducted over 12 independent evaluations of POUs across California and is a California Office of Energy Infrastructure Safety ("Energy Safety") designated qualified independent evaluator for the last two years, and as such has conducted six independent evaluations of three CA IOUs.

This Report presents the results of Guidehouse's WMP IE.

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<sup>1</sup> Oversight and responsibility for the Wildfire Safety Division was transferred from the California Public Utilities Commission to the California Natural Resources Agency on July 1, 2021 and is now known as the Office of Energy Infrastructure Safety.

## 2. Evaluation Scope and Approach

Guidehouse completed this evaluation based on industry standard practices, our experience performing independent evaluations of WMPs, our active tracking of wildfire regulatory proceedings, WSAB guidance, and, most importantly, a comparison of the specific criteria in PUC Section 8387(b)(2) to the specific wildfire-related plans outlined in GWP's WMP.

### 2.1 Evaluation Parameters

#### 2.1.1 WMP Requirements

Table 2-1 lists the requirements for the statutory requirements for POUs to address in their WMPs.

**Table 2-1 – POU Requirements**

PUC Section 8387
(a) Each local publicly owned electric utility and electrical cooperative shall construct, maintain, and operate its electrical lines and equipment in a manner that will minimize the risk of wildfire posed by those electrical lines and equipment.
(b) (1) The local publicly owned electric utility or electrical cooperative shall, before January 1, 2020, prepare a wildfire mitigation plan. After January 1, 2020, a local publicly owned electric utility or electrical cooperative shall prepare a wildfire mitigation plan annually and shall submit the plan to the California Wildfire Safety Advisory Board on or before July 1 of that calendar year. Each local publicly owned electric utility and electrical cooperative shall update its plan annually and submit the update to the California Wildfire Safety Advisory Board by July 1 of each year. At least once every three years, the submission shall be a comprehensive revision of the plan.
(2) The wildfire mitigation plan shall consider as necessary, at minimum, all of the following:
(A) An accounting of the responsibilities of persons responsible for executing the plan.
(B) The objectives of the wildfire mitigation plan.
(C) A description of the preventive strategies and programs to be adopted by the local publicly owned electric utility or electrical cooperative to minimize the risk of its electrical lines and equipment causing catastrophic wildfires, including consideration of dynamic climate change risks.
(D) A description of the metrics the local publicly owned electric utility or electrical cooperative plans to use to evaluate the wildfire mitigation plan's performance and the assumptions that underlie the use of those metrics.
(E) A discussion of how the application of previously identified metrics to previous wildfire mitigation plan performances has informed the wildfire mitigation plan.
(F) Protocols for disabling reclosers and deenergizing portions of the electrical distribution system that consider the associated impacts on public safety, as well as protocols related to mitigating the public safety impacts of those protocols, including impacts on critical first responders and on health and communication infrastructure.
(G) Appropriate and feasible procedures for notifying a customer who may be impacted by the deenergizing of electrical lines. The procedures shall consider the need to notify, as a priority, critical first responders, health care facilities, and operators of telecommunications infrastructure.
(H) Plans for vegetation management.
(I) Plans for inspections of the local publicly owned electric utility's or electrical cooperative's electrical infrastructure.

(J) A list that identifies, describes, and prioritizes all wildfire risks, and drivers for those risks, throughout the local publicly owned electric utility's or electrical cooperative's service territory. The list shall include, but not be limited to, both of the following:

(i) Risks and risk drivers associated with design, construction, operation, and maintenance of the local publicly owned electric utility's or electrical cooperative's equipment and facilities.

(ii) Particular risks and risk drivers associated with topographic and climatological risk factors throughout the different parts of the local publicly owned electric utility's or electrical cooperative's service territory.

(K) Identification of any geographic area in the local publicly owned electric utility's or electrical cooperative's service territory that is a higher wildfire threat than is identified in a commission fire threat map, and identification of where the commission should expand a high fire-threat district based on new information or changes to the environment.

(L) A methodology for identifying and presenting enterprise wide safety risk and wildfire-related risk.

(M) A statement of how the local publicly owned electric utility or electrical cooperative will restore service after a wildfire.

(N) A description of the processes and procedures the local publicly owned electric utility or electrical cooperative shall use to do all of the following:

(i) Monitor and audit the implementation of the wildfire mitigation plan.

(ii) Identify any deficiencies in the wildfire mitigation plan or its implementation, and correct those deficiencies.

(iii) Monitor and audit the effectiveness of electrical line and equipment inspections, including inspections performed by contractors, that are carried out under the plan, other applicable statutes, or commission rules.

(3) The local publicly owned electric utility or electrical cooperative shall, on or before January 1, 2020, and not less than annually thereafter, present its wildfire mitigation plan in an appropriately noticed public meeting. The local publicly owned electric utility or electrical cooperative shall accept comments on its wildfire mitigation plan from the public, other local and state agencies, and interested parties, and shall verify that the wildfire mitigation plan complies with all applicable rules, regulations, and standards, as appropriate.

(c) The local publicly owned electric utility or electrical cooperative shall contract with a qualified independent evaluator with experience in assessing the safe operation of electrical infrastructure to review and assess the comprehensiveness of its wildfire mitigation plan. The independent evaluator shall issue a report that shall be made available on the internet website of the local publicly owned electric utility or electrical cooperative, and shall present the report at a public meeting of the local publicly owned electric utility's or electrical cooperative's governing board.

## 2.1.2 Industry Knowledge and Regulatory Proceedings

The state's priority towards abating future catastrophic wildfire events is demonstrated through aggressive measures, directing utilities to enhance their protocols for fire prevention, public communications, and response. That collection of information is presented in a comprehensive WMP. Guidehouse tracks state proceedings and routinely advises, assesses, and guides utility wildfire mitigation efforts. Accordingly, we reviewed GWP's WMP against the provisions in PUC § 8387 and relative to its risk profile which includes, but is not limited to, its topography, climate, assets, and structure.

## 2.2 Evaluation Approach

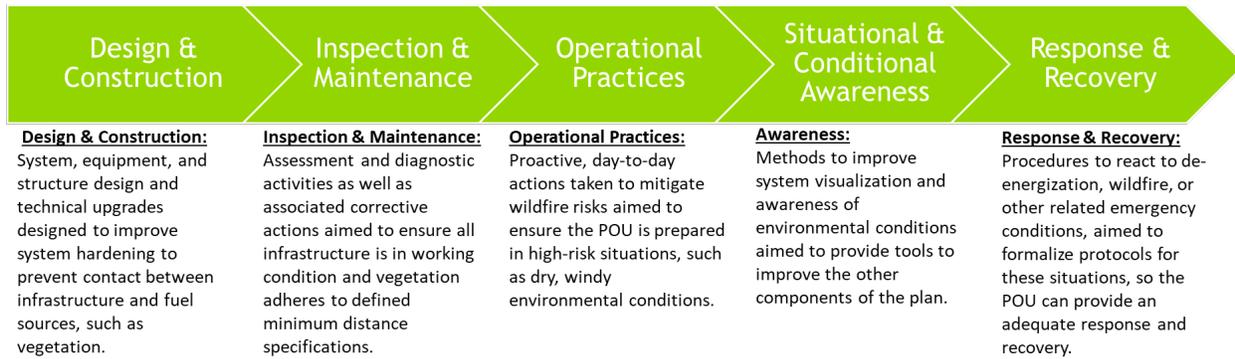
Guidehouse assessed the comprehensiveness of the plan against the applicable regulations to determine whether GWP meets the standard set forth in PUC § 8387(c).

### 2.2.1 Statutory Compliance

Guidehouse sought to determine compliance with the provisional requirements laid out in SB901 as codified in PUC Section 8387. The WMP's alignment with the statutory requirement is presented in Appendix A. GWP's mitigation measures are not required to exceed the statutory requirements.

### 2.2.2 Industry Wildfire Mitigation Practices Comparison

Guidehouse's understanding of an effective WMP draws on comparisons from existing WMPs and industry practices, WSAB guidance, risk profile, and mitigation strategy. This mitigation strategy analysis is visually summarized in Figure 2-1.



**Figure 2-1 – Mitigation Strategy Overview**

These critical elements are evaluated as part of Guidehouse's review of the comprehensiveness of GWP's WMP. This evaluation includes a consideration that not all of these strategies are necessarily present in or applicable to GWP's WMP, due to GWP's inherent risk, size, location, and operational characteristics.

### 3. GWP WMP Elements

Guidehouse reviewed the WMP elements and determined whether the activities achieve the objective of WMP “comprehensiveness” of PUC Section 8387. This determination incorporates individual elements as well as underlying data sources that further describe data collection methodologies and implementation procedures to ensure measures are carried out and also tracked.

Guidehouse determined GWP’s WMP meets the requirement of comprehensiveness PUC Section 8387. In this section, we review the WMP’s elements and their purpose relative to the development and successful execution of the WMP. A table comparing each subsection of PUC Section 8387 to the significant sections of the WMP can be found in Appendix A.

#### 3.1 Stakeholders Responsible for Executing the Plan<sup>2</sup>

The WMP is subject to direct oversight by the City of Glendale City Council. The actions of the WMP are prioritized at the direction of the General Manager, and it is maintained, updated, and implemented by GWP personnel. Glendale’s elected, 5-member City Council approves funding and directs the City Manager to implement the key elements of this Plan. The City Manager delegates oversight and tactical implementation of this Plan to the General Manager of GWP. GWP’s General Manager has overall responsibility for the execution of GWP’s WMP with the approval of the City Council. Section 7 of the WMP, states, “the GWP General Manager maintains responsibility for, and provides management commitment to, the execution of th[e] Plan, including coordination with other department heads, with tactical and day-to-day implementation responsibilities delegated to responsible stakeholders.” Other members of the management team are responsible for executing the various components of the WMP. Responsibilities such as coordination of engineering, construction, vegetation management and operation departments, periodic reviews and maintenance of the WMP, as well as communication and coordination with local, state and federal stakeholders which includes education, alerting and community outreach fall to the Chief Assistant General Manager, Electrical Services Administrator, Electrical Superintendent, Assistant General Manager – Power Management, and other staff. Section 7 details the accountability, roles, and responsibility for GWP’s WMP.

#### 3.2 Objectives of the Plan<sup>3</sup>

According to Section 8 of the WMP, “The primary objective of GWP’s WMP is to reduce and eliminate the probability of GWP’s Electric infrastructure as a contributing factor for the ignition of wildfire(s).” GWP, continues that the goal of this WMP includes establishing a framework, is to, “Engineer, construct, maintain, and operate the GWP electric transmission and distribution system in a manner intended to minimize the risk of catastrophic wildfire caused by electrical lines and equipment.”

GWP also set forth secondary objectives for the WMP including:

1. Improving the resiliency of GWP’s energy delivery infrastructure.

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<sup>2</sup> PUC Section 8387(2)(A)

<sup>3</sup> PUC Section 8387(2)(B)

2. Replace equipment with overloaded risk due to climate related increase in temperature results in higher peak power consumption.
3. Improving the resiliency of GWP's energy infrastructure
4. Improve situational awareness
5. Measuring the effectiveness of the mitigating measures
6. Complying with all local, state, and federal regulations related to wildfire mitigation.

### 3.3 Wildfire Prevention Strategies<sup>4</sup>

Section 9 "Preventative Strategies and Programs" provides an overview of GWP's preventative strategies and programs for preventing wildfire. These strategies and programs actions are further elaborated in Sections 21 and 22 which detail the accomplishments and elements of those strategies and programs implemented in the 2021 and 2022 calendar years. GWP also includes budget numbers which helps understand GWP funding of programs for the 2021-2022, 2022-2023, and 2023-2024 budget cycles.

GWP breaks down its efforts in three categories:

1. **Capital investments** in system hardening;
2. **Operations and maintenance (O&M)** expenditures on vegetation management, system inspections, and equipment maintenance; and
3. **Operational practices** on disabling reclosers, proactive de-energization, and public outreach, as well as leveraging City programs that are consistent with this Plan (e.g., Vegetation Management Program (VMP)).

### 3.4 Metrics<sup>5</sup>

GWP describes the metrics it tracks and how metrics are evaluated for effectiveness of mitigation measures in section 10 of the WMP. GWP monitors and tracks verifiable metrics, establishes a baseline through the inspection of transmission and distribution asset conditions, and incorporate lessons learned and institutional knowledge during an annual review as feedback for revising the WMP.

The list of metrics measures GWP performance and intends to measure the effectiveness of GWP's wildfire mitigation by tracking the following:

- After any relay event, where GWP's protective relays automatically de-energize a feeder or transmission line:
  1. Did the outage ignite a fire? (yes/no)
  2. If the outage ignited a fire, were first responders notified? (yes/no)
  3. If the outage ignited a fire, how large was the fire? < 1 acre, 1-50 acres, 50-300 acres, or > 300 acres
  4. If the outage ignited a fire, how many structures were impacted? 1, 2-10, 10-50, or > 50
- Number of trees trimmed by GWP.
- Number of poles replaced in Tier 2/3.
- Number of transformers replaced in Tier 2/3.

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<sup>4</sup> PUC Section 8387(2)(C)

<sup>5</sup> PUC Section 8387(2)(D) and PUC Section 8387(2)(E)

- Feet/miles of transmission/distribution lines moved underground in Tier 2/3.
- Feet/miles of tree wire installed in Tier 2/3.
- Number of standard (expulsive) fuses replaced by non-expulsive fuses.
- Glendale Fire Department average time to respond to fire incidents.

### 3.5 Disabling Reclosers<sup>6</sup>

GWP states, in Section 12 of the WMP, “As part of Operational practices, GWP preemptively deenergizes overhead transmission and distribution lines and to disable automatic reclosers in its Tier 2 and Tier 3 zones during periods of extreme wildfire danger.” To minimize potential wildfire ignition, GWP uses operational consideration of reclosers that identify circuits. Additionally, the WMP states that GWP will continue to install reclosers as part of their objectives in the wildfire mitigation framework. Finally, GWP maintains a list of reclosers that are disabled in events such as Red Flag Warnings and re-enables them to perform normally as part of system restoration. GWP also patrols any de-energized line tripped off by a recloser during periods of extreme wildfire danger to identify and clear the cause of the fault before re-energization is allowed.

### 3.6 De-Energizing Protocols<sup>7</sup>

Glendale proactively de-energizes the 34.5 kV Bel Aire-Montrose transmission line during red flag warnings in accordance with its SOP-021. De-energizing this line does not impact customers due to the networked system. This overhead line traverses high wildfire risk terrain (Tier 3 and Tier 2 HFTDs). GWP has de-energized this line multiple times as described in the table on page 4 of the WMP, with none of the de-energizations resulting in a loss of customer power. The de-energization procedure is addressed in Section 12 of the WMP. GWP power system operators may also de-energize service to customers if conditions warrant such an approach.

Section 13, Customer Outreach, includes a sub section for handling de-energization or public safety shutoff events. GWP details how the use a targeted communications strategy with the goal of providing advanced notice. See Event communication below for more details. GWP uses PSPS protocols as a safety of last resort to reduce impact of PSPS events. The installation of sectionalization devices or reclosers to harden the system mitigates against PSPS impacts by targeting specific circuits near what they state are “designated meteorology shutoff polygons”.

#### *Timing of notifications*

When GWP determines a preemptive de-energization is required, either because another entity's actions suddenly limit GWP's energy supply (e.g., Southern California Edison initiates a Public Safety Power Shutoff – PSPS – on a transmission line that impacts GWP's incoming transmission capacity) or due to the PSO's system assessment, GWP will provide advance notifications in three phases:

1. Advanced notification (when possible)
  - 48 hours before electricity is turned off
  - 24 hours before electricity is turned off

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<sup>6</sup> PUC Section 8387(2)(F)

<sup>7</sup> PUC Section 8387(2)(F)

2. Shutoff notification just before electricity is turned off
3. Notifications during the event

Post event notifications will be provided to notify customers that power has been restored.

### 3.7 Event Communication<sup>8</sup>

Section 13 describes how GWP uses communication to notify customers that may be impacted by the de-energizing of electrical lines during an emergency via multiple platforms and types of communication methods described below.

GWP describes the tools and procedures it will use to notify customers and first responders impacted by de-energization, including:

- Customer notification through email, phone, text, push notifications, social media platforms, media alerts, work with the City's Fire and Police PIO offices and websites, and rolling messages on local television (GTV6) and on the City's and GWP's websites.
- Pre-recorded IVR (Interactive Voice Response) messages with real-time recorded information informing customers that may be impacted.
- Post messages on its website and through its Mobile App and In-Home Digital Display program for targeted push messaging.
- Notifications to first responders' PIO offices, health care facilities' communication offices, and the offices of the building engineers, the Chief Executive Officer (CEO), and operators of telecommunications infrastructure.
- Contact Life Support customers through two phone attempts and an email. If no response is received, GWP will dispatch a field crew to contact the Life Support customer.
- An Outage Management system (OMS) that allows notification to customer of impending power outages for events such as PSPS.

### 3.8 Vegetation Management<sup>9</sup>

Section 14 of GWP's WMP details how GWP's Vegetation Management Program "is consistent with General Order (GO) 95– Rules for Overhead Electric Line Construction, including the clearance requirements described in Section III – Requirements for All Lines, Rule 35 Vegetation Management."

GWP's Electrical Superintendent oversees a contracted certified arborist who ensures GWP's Vegetation Management Program is implemented. GWP Line Clearance Forestry Supervisors work in the field, "overseeing the arborist and monitoring vegetation under" GWP T&D lines. The supervisors are typically certified arborists who direct the contractor to specific trees/vegetation requiring trimming and ensures the trimming is completed within GWP's standards.

Additionally, GWP leverages the City of Glendale Fire Department's (GFD) Hazardous Vegetation Management Program (VMP) to assist in ensuring adequate defensible space around buildings in the wildland-urban interface is maintained. Per the GFD VMP, activities include annual inspections and review of landscape and fuel modification plans for properties in

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<sup>8</sup> PUC Section 8387(2)(G)

<sup>9</sup> PUC Section 8387(2)(H)

the high wildfire hazard area. This program also requires property owners to maintain a 100-foot radius of defensible space around all property structures, which happens to be where the majority of GWP electrical assets reside. Therefore, GWP prioritizes its resources on mitigating electrical assets outside of the zones covered by the GFD VMP.

GWP maintains a database that tracks vegetation maintenance activities on an inventory of trees. The inventory captures trees that could encroach minimum clearance or impact electrical facilities with a two-year inspection cycle. Additionally, vegetation management is performed by the same line mechanics that install and maintenance the power lines and other equipment.

### **3.9 Infrastructure Inspections<sup>10</sup>**

GWP describes its annual system-wide inspection of its poles, streetlights, vaults and other equipment and assets connected or contained with these assets in Section 15 of the WMP. GWP's states the inspection program is consistent with the requirements and inspection cycles of GO 95 and 165. GWP's WMP further notes it has staff dedicated to preventative and routine inspections of the construction, installation, and maintenance of T&D assets. During these inspections, problems are identified, prioritized, and corrected.

### **3.10 Risk Assessment and Drivers<sup>11</sup>**

Section 16 details the City of Glendale's wildfire risks and associated drivers. GWP's service territory consists of highly developed urban land and adjacent mountainous open regions with dry vegetation. The diversity in topography and landscapes within GWP's service territory presents unique risks that GWP claims "requires a surgical approach to mitigation efforts in each area of the city." GWP risk drivers and subsequent preventative strategies are tailored specifically to mitigate the potential of a wildfire and limit wildfire spread within its service territory.

Additionally, GWP adopted a risk-based approach designed to prioritize capital improvements, Operations and Maintenance (O&M) work, and operating procedures pertaining to asset hardening, situational awareness and forecasting, vegetation management, asset inspections, and risk assessment and mapping initiatives. The prioritization leverages historical data from the state of California Wildfire Redbooks and provides details of statistics from 2012 through 2016 for the 2023 WMP. The data includes vegetation contacts, hardware installed, lines down, animal contacts, and line slap events.

Furthermore, GWP has identified overhead feeder and transmission lines sections as the highest risk for igniting wildfires and analyses these sections on a case-by-case basis for an appropriate mitigation approach.

### **3.11 Asset Overview and Service Territory<sup>12</sup>**

GWP leverages the CPUC's and CALFire's tiered fire maps as well as GFD's fire maps to identify wildfire risk across the Glendale service territory. The image below is included on page 48 of the WMP displays the presence of the CPUC HFTDs and includes the of GWP equipment

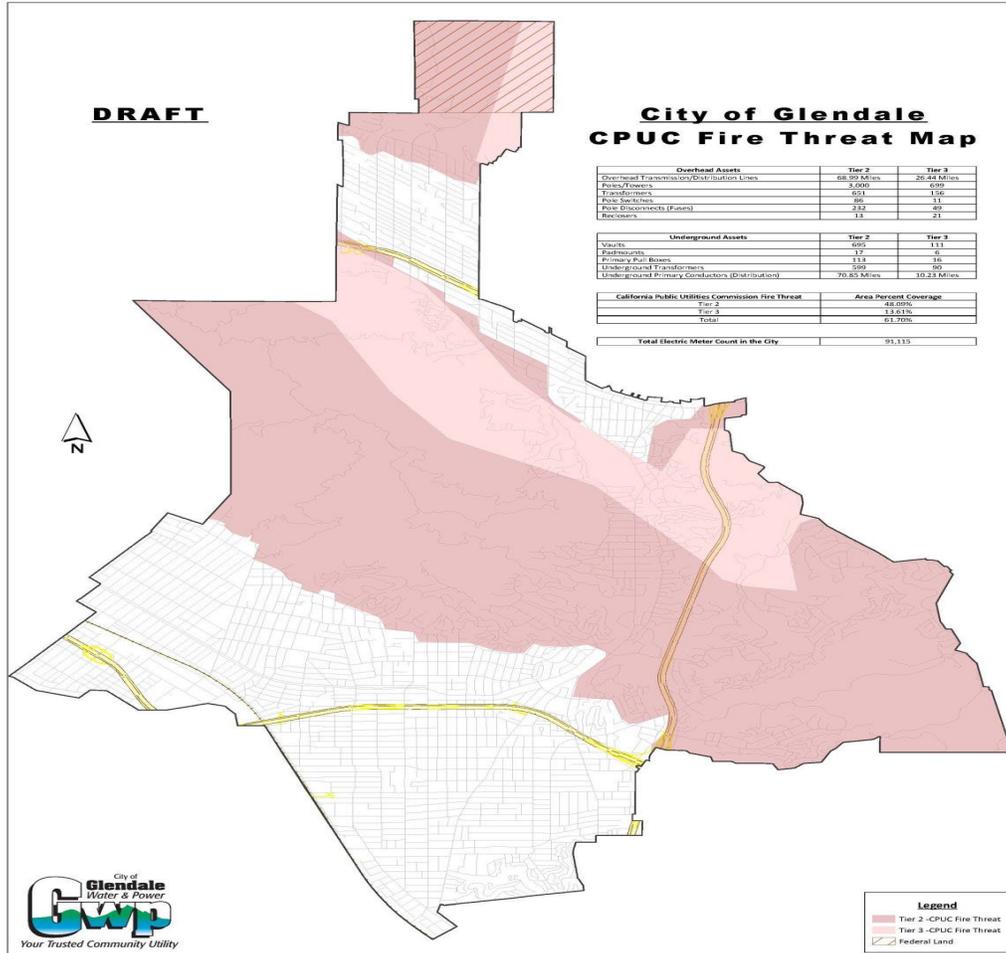
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<sup>10</sup> PUC Section 8387(2)(I)

<sup>11</sup> PUC Section 8387(2)(J)(i); PUC Section 8387(2)(J)(ii); PUC Section 8387(2)(L)

<sup>12</sup> PUC Section 8387(2)(K)

in those areas. GWP has also identified areas within HFTD Tier 2 and 3 as areas “requiring additional mitigation.” This area excludes the areas maintained by GFD as part of their areas of responsibility and the defensible space program. GWP also identifies the equipment present in these areas of heightened risk and prioritizes mitigation work there.



**Figure 3-1 – GWP HFTD Map**

As shown in Table 3-1, approximately 21% of GWP’s total 282.4 miles of overhead T&D lines are located within the Tier 2 HFTD area. Approximately 5% of total overhead T&D lines are within the Tier 3 HFTD area. The remaining ~74% of total overhead T&D lines are in the Tier 1 HFTD. Section 17 “Wildfire Zones” included the table below as Figure 3 in the WMP. This table helps GWP catalog its riskiest equipment to plan for future mitigations.

**Table 3-1 – Breakdown of GWP’s 2022 Service Territory Electrical Assets**

	Total Assets			
	Tier 1	Tier 2	Tier 3	City Wide
Overhead T+D Lines (miles)	206.2	60.6	15.6	282.4
Poles / Towers	11,303	2,899	703	14,905
Transformers	3,528	673	165	4,366
Pole Switches	523	108	16	647
Pole Disconnects / Fuses	1,098	232	49	1379
Reclosers	28	12	3	43.0
Area Coverage	38%	48%	14%	100%
Electric Meters	77,524	10,889	1,945	90,358
Structures / Buildings	44,469	11,622	2,248	58,339

### 3.12 Restoration<sup>13</sup>

Section 19 describes how GWP restores power following a wildfire or pre-emptive de-energization.

GWP’s WMP states that as a proactive reaction to a Red Flag warning, GWP de-energizes, “Glendale’s 34.5 kV “Bel Aire-Montrose” which runs through uninhabited hilly terrain that is covered with brush and has limited access and is considered an area of elevated fire risk. Prior to re-energization, GWP’s lineman patrols confirm that the line is intact, and no debris is lodged across the line.”

Additionally, GWP maintains a list of reclosers which are disabled following the orders of the PSO or in the event of a red flag warning to minimize the likelihood of inadvertently sparking a fire. GWP manually patrols de-energize lines, whether from a tripped recloser or proactive de-energization, prior to re-energization. GWP personnel ensures infrastructure and equipment are not damaged during patrols and notifies system dispatch of restoration readiness.

If equipment or assets are found to be damage or in “suboptimal condition”, GWP coordinates the repair of the equipment and restoration. GWP maintains an inventory of spare equipment including, transformers, conduit, cables, conductors, and other equipment in their warehouse. Equipment is automatically re-ordered from a predetermined number of units to be ready for future emergencies. GWP also works with neighboring utilities that assist with personnel, equipment, and parts to quickly restore service to customers as needed.

<sup>13</sup> PUC Section 8387(2)(M)

### 3.13 Monitoring and Auditing the Plan<sup>14</sup>

Section 20 describes how the GWP WMP is monitored and audited. Specifically, the WMP states that GWP will review the WMP annually to monitor the effectiveness of the objectives of the WMP. The review includes quarterly assessments, and comparisons of metrics and GWP operational performance and requires City of Glendale management and City Council to review and approve any problems identified for correction and updates to the maintenance and inspection plan. After completion of the annual internal review, the WMP is updated accordingly. A condition baseline is established after changes to the plan to ensure proper monitoring and inspection continues on system assets on a regular basis.

### 3.14 Annual Review<sup>15</sup>

Section 6 includes a “Compliance” sub-section, that states, “the GWP General Manager or his delegate shall support and administer this Plan to include monitoring and auditing the implementation of the Plan. The Plan shall be updated, reviewed, and approved by the General Manager of GWP on an annual basis, or as required by law. This periodic review shall ensure that the Plan is updated to comply with all state regulations and City regulations and requirements.” Additionally, GWP will present the plan annually to the City Council or the GWP Commission for approval.

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<sup>14</sup> PUC Section 8387(2)(N)(i) and PUC Section 8387(2)(N)(ii)

<sup>15</sup> PUC Section 8387(2)(N)(iii)

## 4. Results and Discussion

Guidehouse finalized this assessment on May 17, 2023. Over the course of reviewing GWP's WMP, discussions with GWP staff, and review of supporting documentation, Guidehouse captured takeaways and findings that align the WMP with state laws and effective wildfire measure demonstration for a utility of GWP's size and low-risk profile. GWP's WMP appropriately responds to each of the required elements of PUC Section 8387, which is detailed in Appendix A. The following describes the assessment and resulting findings of the WMP's proposed and established mitigation measures as it applies to safe, reliable operation of all electric infrastructure and wildfire prevention and response.

### Report Conclusions

After internal review of the latest version of the WMP and associated data collection products, Guidehouse concludes this Report with the following:

- GWP's WMP aligns appropriately with PUC Section 8387 and includes all required elements.<sup>16</sup>
- GWP's WMP is comprehensive as described through this Report in accordance with PUC Section 8387.

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<sup>16</sup> Following acceptance of this Report, GWP will post the Report and results online for public view. The Report is scheduled for presentation to the City Council at a public meeting in June 2023. Accomplishing these follow-up tasks will meet all required statutory provisions up until presenting the final WMP to the City Council.

## Appendix A. Statutory Compliance Matrix

Required Statutory Element	Plan Section Reference(s)	GWP Plan Elements (Summarized)	Meets Section Elements (Determination)
(a) Each local publicly owned electric utility and electrical cooperative shall construct, maintain, and operate its electrical lines and equipment in a manner that will minimize the risk of wildfire posed by those electrical lines and equipment.			
(b) (1) The local publicly owned electric utility or electrical cooperative shall, before January 1, 2020, prepare a wildfire mitigation plan. After January 1, 2020, a local publicly owned electric utility or electrical cooperative shall prepare a wildfire mitigation plan annually and shall submit the plan to the California Wildfire Safety Advisory Board on or before July 1 of that calendar year. Each local publicly owned electric utility and electrical cooperative shall update its plan annually and submit the update to the California Wildfire Safety Advisory Board by July 1 of each year. At least once every three years, the submission shall be a comprehensive revision of the plan.			
(2) The wildfire mitigation plan shall consider as necessary, at minimum, all of the following:			
(A) An accounting of the responsibilities of persons responsible for executing the plan.	Section 7 Pg.12-16	The "Stakeholders" section in GWP's plan describes the roles of the General Manager, Chief Assistant General Manager, Electrical Services Administrator, Electrical Superintendent, Power Management Assistant General Manager, GWP Legislative Analyst, the Public Benefits Charge Marketing Manager, City Council, and City Manager. Additional roles and responsibilities are delegated to GWP staff.	Yes

<p><b>(B)</b> The objectives of the wildfire mitigation plan.</p>	<p><b>Section 8; pg. 17-18</b></p>	<p>GWP states the primary objective of its plan is to reduce and eliminate the probability of GWP's Electric infrastructure as a contributing factor for the ignition of wildfire(s). GWP goes on to state additional secondary objectives.</p>	<p><b>Yes</b></p>
<p><b>(C)</b> A description of the preventive strategies and programs to be adopted by the local publicly owned electric utility or electrical cooperative to minimize the risk of its electrical lines and equipment causing catastrophic wildfires, including consideration of dynamic climate change risks.</p>	<p><b>Section 9; pg. 19-23</b></p>	<p>Section 9 provides detailed preventative strategies and programs identified by GWP to reduce wildfire risk. GWP has elected to break these strategies and programs down into four sections (Capital Investments, Operations and Maintenance, Wildfire Mitigation Budget Measures, and Operational Practices). GWP also acknowledges the impact of dynamic climate change in California has on these strategies.</p>	<p><b>Yes</b></p>
<p><b>(D)</b> A description of the metrics the local publicly owned electric utility or electrical cooperative plans to use to evaluate the wildfire mitigation plan's performance and the assumptions that underlie the use of those metrics.</p>	<p><b>Section 10; pg. 24-26</b></p>	<p>GWP provides a list of metrics it uses to demonstrate results and measure the effectiveness of its wildfire mitigation. The metrics include, but are not limited to, trees trimmed, poles replaced, transformers replaced, undergrounding, and post event evaluation.</p>	<p><b>Yes</b></p>
<p><b>(E)</b> A discussion of how the application of previously identified metrics to previous wildfire mitigation plan performances has informed the wildfire mitigation plan.</p>	<p><b>Section 11; pg. 27</b></p>	<p>GWP discusses how the application of previously identified metrics to previous wildfire mitigation plan performances has informed the wildfire mitigation plan. GWP uses four categories with specific questions to guide the review and how GWP should evaluate and respond to the data in the metric. The categories include: metric not met, metric significantly exceeded, new or obsolete metric, and adjustments based upon metric.</p>	<p><b>Yes</b></p>
<p><b>(F)</b> Protocols for disabling reclosers and deenergizing portions of the electrical distribution system that consider the associated impacts on public safety, as well as protocols related to mitigating the public safety impacts of those protocols, including impacts on critical first responders and on health and communication infrastructure.</p>	<p><b>Section 12; pg. 28-30</b></p>	<p>GWP discusses its plan to de-energize certain electrical lines and equipment. This includes GWP's practice to de-energize the Bel Aire-Montrose line during RFW conditions, which does not interrupt service to any customers. This section references SOP-021 which provides more detail to how the process is handled. GWP also identifies the considerations (Hospital, Elderly Care, First Responder Facilities, etc..) prior to a de-energization. GWP states that de-energization is a last resort, and Tier 2 and Tier 3 zones are the primary focus areas in times of extreme fire danger.</p>	<p><b>Yes</b></p>

		This section also describes how GWP will disable reclosers in Tiers 2 and 3 HFTD during periods of extreme wildfire danger.	
(G) Appropriate and feasible procedures for notifying a customer who may be impacted by the deenergizing of electrical lines. The procedures shall consider the need to notify, as a priority, critical first responders, health care facilities, and operators of telecommunications infrastructure.	Section 13; pg. 32-33	GWP's customer outreach protocols during PSPS events are detailed in the WMP. GWP alerts customers through social media, GFD and GPD website notifications, and post rolling messages on local television networks.	Yes
(H) Plans for vegetation management.	Section 14; pg. 34	GWP details its vegetation management program in its WMP including details regarding the oversight of a contracted arborists that implements their program. GWP states it is consistent with GO 95. GWP also relies upon GFD's efforts to maintain defensible spaces around private residences.	Yes
(I) Plans for inspections of the local publicly owned electric utility's or electrical cooperative's electrical infrastructure.	Section 15; pg. 35	GWP's WMP states that it consistent with the inspection cycles and requirements provided in GO 95 and 165.	Yes
(J) A list that identifies, describes, and prioritizes all wildfire risks, and drivers for those risks, throughout the local publicly owned electric utility's or electrical cooperative's service territory. The list shall include, but not be limited to, both of the following:	Section 16; pg. 36	GWP's assessment of risk and risk drivers include capital improvements, O&M work, and operating procedures.	Yes
(i) Risks and risk drivers associated with design, construction, operation, and maintenance of the local publicly owned electric utility's or electrical cooperative's equipment and facilities.	Section 16; pg. 36	GWP identified risks and risk drivers associated with its equipment and, accordingly, adopted a risk-based approach to prioritize capital improvements, O&M work, and operating procedures within asset hardening, situational forecasting, vegetation management, and risk assessment and mapping initiatives.	Yes
(ii) Particular risks and risk drivers associated with topographic and climatological risk factors throughout the different parts of the local publicly owned electric utility's or electrical cooperative's service territory.	Section 16; pg. 36	GWP discusses the risks and risk drivers associated with its topographic and climatological factors within its service territory.	Yes

<p><b>(K)</b> Identification of any geographic area in the local publicly owned electric utility's or electrical cooperative's service territory that is a higher wildfire threat than is identified in a commission fire threat map, and identification of where the commission should expand a high fire-threat district based on new information or changes to the environment.</p>	<p><b>Section 17; pg. 39</b></p>	<p>GWP utilizes the CPUC HFTD methodology for classifying each area of its service territory as Tier 1 (low risk), Tier 2, (elevated risk), and Tier 3 (extreme risk). This is further refined by reviewing the CPUC designations against those of CALFire's fire hazard severity zone's and the GFD's own Fire Threat Map. GWP then further identified the areas within the Tier 2 &amp; 3 HFTD's that require additional mitigation.</p> <p>GWP did not request an expansion of any HFTD.</p>	<p><b>Yes</b></p>
<p><b>(L)</b> A methodology for identifying and presenting enterprise-wide safety risk and wildfire-related risk.</p>	<p><b>Section 18; pg. 42-44</b></p>	<p>GWP's methodology for identifying and presenting enterprise-wide safety risk and wildfire-related risk consists of prioritizing first, second, and third order impacts within its service territory</p>	<p><b>Yes</b></p>
<p><b>(M)</b> A statement of how the local publicly owned electric utility or electrical cooperative will restore service after a wildfire.</p>	<p><b>Section 19; pg. 46</b></p>	<p>GWP's WMP provides a statement of how it plans to restore service after a wildfire, including a discussion on lineman patrols which take place prior to restoring service.</p>	<p><b>Yes</b></p>
<p><b>(N)</b> A description of the processes and procedures the local publicly owned electric utility or electrical cooperative shall use to do all of the following:</p>	<p style="background-color: #cccccc;"> </p>	<p style="background-color: #cccccc;"> </p>	<p style="background-color: #cccccc;"> </p>
<p><b>(i)</b> Monitor and audit the implementation of the wildfire mitigation plan.</p>	<p><b>Section 20; pg. 47</b></p>	<p>GWP performs annual WMP reviews which are circulated through GWP management and presented to the City of Glendale's City Council or GWP's Commission for approval.</p>	<p><b>Yes</b></p>
<p><b>(ii)</b> Identify any deficiencies in the wildfire mitigation plan or its implementation and correct those deficiencies.</p>	<p><b>Section 20; pg. 47</b></p>	<p>GWP performs annual reviews where plan deficiencies are identified and corrected.</p>	<p><b>Yes</b></p>
<p><b>(iii)</b> Monitor and audit the effectiveness of electrical line and equipment inspections, including inspections performed by contractors, that are carried out under the plan, other applicable statutes, or commission rules.</p>	<p><b>Section 20; pg. 47</b></p>	<p>GWP staffs qualified personnel to monitor and audit asset and equipment inspections.</p>	<p><b>Yes</b></p>

<p>(3) The local publicly owned electric utility or electrical cooperative shall, on or before January 1, 2020, and not less than annually thereafter, present its wildfire mitigation plan in an appropriately noticed public meeting. The local publicly owned electric utility or electrical cooperative shall accept comments on its wildfire mitigation plan from the public, other local and state agencies, and interested parties, and shall verify that the wildfire mitigation plan complies with all applicable rules, regulations, and standards, as appropriate.</p>	<p><b>Section 4; pg. 5</b></p>	<p>GWP presents its WMP to the City Council at annual public meetings</p>	<p><b>Yes</b></p>
<p>(c) The local publicly owned electric utility or electrical cooperative shall contract with a qualified independent evaluator with experience in assessing the safe operation of electrical infrastructure to review and assess the comprehensiveness of its wildfire mitigation plan. The independent evaluator shall issue a report that shall be made available on the internet website of the local publicly owned electric utility or electrical cooperative, and shall present the report at a public meeting of the local publicly owned electric utility's or electrical cooperative's governing board.</p>	<p><b>Section 7; pg. 14</b></p>	<p>GWP contracts with third-party independent evaluators to perform independent evaluations of its WMP. GWP contracted Guidehouse Inc. to perform an independent evaluation of their WMP in 2023. Qualifications are described in Section 1.</p>	<p><b>Yes</b></p>