LOS ANGELES DEPARTMENT OF WATER AND POWER WILDFIRE MITIGATION PLAN

2021 INFORMATIONAL RESPONSE

RESPONSES TO WILDFIRE SAFETY ADVISORY BOARD'S 2021 GUIDANCE ADVISORY OPINION

May 2021

I. PURPOSE OF THIS 2021 INFORMATIONAL RESPONSE

The California Wildfire Safety Advisory Board (WSAB) issued its *Guidance Advisory Opinion for the 2021 Wildfire Mitigation Plans of Electric Publicly Owned Utilities and Cooperatives* ("2021 WSAB Guidance Advisory Opinion") on December 15, 2020. The Los Angeles Department of Water and Power (LADWP) provides this document to the WSAB in order to respond to each of the recommendations included in the 2021 WSAB Guidance Advisory Opinion. LADWP has included a narrative response and/or a cross reference to the location in its Wildfire Mitigation Plan (WMP) where the recommendation is addressed. Where the recommendation is not applicable to LADWP, the response has included a brief description supporting this conclusion.

II. CONTEXT SETTING INFORMATION

WSAB requested that Publicly Owned Utilities (POUs) provide an informational table to assist the WSAB staff and Board members in understanding the unique characteristics of each POU.

Table 1: Context-Setting Information

Utility Name	**Los Angeles Department of Water and Power**	
Service Territory Size	City of Los Angeles: 478 square miles Owens Valley: 1,839 square miles	
Owned Assets	☒ Transmission ☒ Distribution ☒ Generation	
Number of Customers Served	Approx. 1.5 million customer accounts	
Population Within Service Territory	Approx. 4 million people	
Customer Class Makeup	*Number of Accounts*	*Share of Total Load (MWh)*
	90% Residential; 1% Government; 0% Agricultural; 8% Small/Medium Business; 1% Commercial/Industrial	41% Residential; 10% Government; 0% Agricultural; 10% Small/Medium Business; 39% Commercial/Industrial
Service Territory Location/Topography[1]	The City of Los Angeles covers 478 square miles consisting mostly of urban environment with parcels of shrub environment near the Santa Monica Mountains, a portion of the Verdugo Mountains, and small areas located on the outer edges of the City. The Owens Valley covers 1,839 square miles consisting of mostly desert environment with parcels of conifer forest, conifer woodland, herbaceous,	

[1] This data shall be based on the California Department of Forestry and Fire Protection, California Multi-Source Vegetation Layer Map, depicting WHR13 Types (Wildlife Habitat Relationship classes grouped into 13 major land cover types) *available at*: https://www.arcgis.com/home/item.html?id=b7ec5d68d8114b1fb2bfbf4665989eb3.

	and shrub environments on the west between the Sierra Nevada Mountains and U.S. Route 395 and parcels of conifer forest, conifer woodland, and shrub environment on the east near the White Mountains. Further detail on topography within LADWP's service territory can been seen in the maps included in Section V of this Informational Response.
Service Territory Wildland Urban Interface[2] (based on total area)	3.03% Wildland Urban Interface; 1.26% Wildland Urban Intermix;
Percent of Service Territory in CPUC High Fire Threat Districts (based on total area)	☒ Includes maps (see WMP) Tier 2: 20% Tier 3: 1%
Prevailing Wind Directions & Speeds by Season	☒ Includes maps (see WMP) The City of Los Angeles is most commonly affected by the Santa Ana Winds which are most prevalent during the cooler months of the year, occurring from September through May. The National Weather Service defines the Santa Ana Winds as "strong down slope winds that blow through mountain passes in Southern California". The Santa Ana Winds may increase wildfire risk due to the dryness of the winds and the speed at which they can spread a flame across the landscape. These high, dry, and warm winds may also present a potential risk to LADWP's overhead electric power lines as palm fronds, branches, and other tree limbs can disrupt power if blown into the lines. Areas most affected by these high winds have been designated as High Wind Zones by the City of Los Angeles, which LADWP has reflected in its Fire Threat Map, and treats the same as Tier 2 High Fire Threat Districts (HTFDs). LADWP has also developed construction standards for these High Wind Zones to address these risks. Additionally, LADWP primarily uses the Santa Ana Winds Threat Index and weather information from National Oceanic and Atmospheric Administration and the City of Los Angeles Fire Department to monitor current and forecasted weather data.
Miles of Owned Lines Underground and/or Overhead	Overhead Dist.: 7,268 miles Overhead Trans.: 4,050 miles Underground Dist.: 3,764 miles Underground Trans.: 128 miles
	Explanatory Note 1 - *Methodology for Measuring "Miles":* The mileage listed above refers to LADWP circuit miles.
	Explanatory Note 2 – *Description of Unique Ownership Circumstances:* LADWP solely or jointly owns 4,050 miles of overhead transmission lines and 128 miles of underground transmission cable located within and outside of its service territory.
	Overhead Distribution Lines as % of Total Distribution System (Inside and Outside Service Territory)

[2] This data shall be based on the definitions and maps maintained by the United States Department of Agriculture, as most recently assembled in *The 2010 Wildland-Urban Interface of the Conterminous United States*, *available at* https://www.fs.fed.us/nrs/pubs/rmap/rmap_nrs8.pdf.

Percent of Owned Lines in CPUC High Fire Threat Districts	Tier 2: 13.8% Tier 3: 0.5%
	Overhead Transmission Lines as % of Total Transmission System (Inside and Outside Service Territory)
	Tier 2: 6.3% Tier 3: 8.6%
	Explanatory Note 4 – *Additional Relevant Context:* LADWP has calculated these percentages by utilizing the total circuit mileage that falls within Tier 2 or Tier 3 HFTDs as the numerator and the total circuit mileage of LADWP's Overhead Distribution and Transmission Lines, respectively, as the denominator.
Customers have ever lost service due to an IOU PSPS event?	☒ Yes ☐ No
Customers have ever been notified of a potential loss of service to due to a forecasted IOU PSPS event?	☐ Yes ☒ No Disclaimer: LADWP is not aware of any notifications of customers affected by IOU Public Safety Power Shutoff (PSPS) Events.
Has developed protocols to pre-emptively shut off electricity in response to elevated wildfire risks?	☐ Yes ☒ No
Has previously pre-emptively shut off electricity in response to elevated wildfire risk?	☐ Yes ☒ No If yes, then provide the following data for calendar year 2020: *Number of shut-off events*: [____] *Customer Accounts that lost service for >10 minutes:* [____] *For prior response, average duration before service restored:* [____]

III. CROSS REFERENCE TO STATUTORY REQUIREMENTS

WSAB requested that POUs provide a clear roadmap as to where each statutory requirement is addressed within the POU WMP.

Table 2: Cross References to Statutory Requirements

Requirement	Statutory Language	Location in WMP
Persons Responsible	**PUC § 8387(b)(2)(A):** An accounting of the **responsibilities of persons** responsible for executing the plan.	Section 2
Objectives of the Plan	**PUC § 8387(b)(2)(B):** The **objectives** of the wildfire mitigation plan.	Section 1
Preventive Strategies	**PUC § 8387(b)(2)(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.	Section 4
Evaluation Metrics	**PUC § 8387(b)(2)(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.	Sections 4.5 and 7.1
Impact of Metrics	**PUC § 8387(b)(2)(E):** A discussion of how the **application of previously identified metrics** to previous wildfire mitigation plan performances has informed the wildfire mitigation plan.	Sections 4.5 and 7.2
Deenergization Protocols	**PUC § 8387(b)(2)(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.	Section 4.7
Customer Notification Procedures	**PUC § 8387(b)(2)(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 4.7
Vegetation Management	**PUC § 8387(b)(2)(H):** Plans for vegetation management.	Section 2.5, 2.7, 2.8, and 4.3
Inspections	**PUC § 8387(b)(2)(I): Plans for inspections** of the local publicly owned electric utility's or electrical cooperative's electrical infrastructure.	Section 4.4

Prioritization of Wildfire Risks	**PUC § 8387(b)(2)(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.	Sections 3, 4.1, and Appendix A
CPUC Fire Threat Map Adjustments	**PUC § 8387(b)(2)(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.	Section 3.2 and Appendix A
Enterprisewide Risks	**PUC § 8387(b)(2)(L):** A methodology for identifying and presenting **enterprisewide** safety risk and wildfire-related risk.	Section 3
Restoration of Service	**PUC § 8387(b)(2)(M):** A statement of how the local publicly owned electric utility or electrical cooperative will **restore service after a wildfire**.	Section 5
Monitor and Audit	**PUC § 8387(b)(2)(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.	Section 7.3 and 7.4

Qualified Independent Evaluator	**PUC § 8387(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 Web site 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.	Section 8

IV. WSAB GUIDANCE ADVISORY OPINION RECOMMENDATIONS

The 2021 WSAB Guidance Advisory Opinion identifies 14 specific recommendations that POUs are requested to address in their 2021 WMPs. As specified in Public Utilities Code § 8387(b)(1), each POU is required to perform a comprehensive revision to the POU's WMP at least once every three years. Pursuant to this guidance, the POUs will be updating their WMPs based on the direction of their local governing boards within this 3-year cycle. Because the WSAB's recommendations have been provided after the initial WMP submission, the POUs will have varying capacities to fully address each recommendation in their 2021 WMP. This Section IV restates each of the WSAB recommendations and provides an opportunity for each POU to do one or more of the following: (1) provide a narrative response to the recommendation; (2) provide a cross refence to where in the POU's WMP this topic is addressed; (3) describe why the recommendation is not applicable to the POU; or (4) inform the WSAB of the POU's intent to address the recommendation at the point of the POU's next comprehensive revision, occurring in either the 2022 or 2023 WMP.

A. Plan Structure

WSAB Recommendation #1: Provide context-setting information about the POU and provide a simple guide to where the statutory requirements are addressed within the WMP.

POU Response: See Sections II and III above.

WSAB Recommendation #2: Provide a short description of the POU's public review and approval (if required) for the WMP. This description may also include a brief explanation of the funding mechanisms for wildfire mitigation efforts.

POU Response: LADWP presents its WMP to its Board of Water and Power Commissioners (Board) annually, but the Board does not take any action on the WMP.

The annual LADWP Board Presentation allows for public engagement, opportunity for public commenting, solicitation of feedback from the LADWP Board, and sharing of any pertinent public service announcements. LADWP's WMP is available for public review and download at the following link: https://www.ladwp.com/wildfireplan. LADWP also accepts comments from the public via the e-mail link: wmp@ladwp.com.

WSAB Recommendation #3: Identify where the POU has posted the most recent Independent Evaluator (IE) Report and if your POU plans to enhance future IE reports, please summarize in what ways.

POU Response: LADWP has posted the most recent Independent Evaluator Report on its website at the following link: https://www.ladwp.com/wildfireplan. Pursuant to PUC 8387, LADWP is required to perform a comprehensive revision of its WMP every three years, with the next such revision occurring in 2022. For each comprehensive revision, LADWP will contract with a qualified independent evaluator with experience in assessing the safe operation of electrical infrastructure to review and assess the comprehensiveness of its WMP.

WSAB Recommendation #4: Develop, in collaboration with POU industry associations, WMP guidelines for future WMPs, understanding that it may take multiple cycles for POUs to integrate these recommendations into the WMPs.

POU Response: This document is intended to include, as appropriate, responses to the recommendations in the 2021 WSAB Guidance Advisory Opinion. This document also represents the combined effort of the POU industry associations to further the development of a template to respond to the WSAB's Guidance Advisory Opinion in future WMP reporting cycles.

B. Customer Impacts

WSAB Recommendation #5: Describe the potential impact investor-owned utilities (IOU) PSPS events could have on POU customers and how the POU manages these impacts. For POUs that are also balancing authorities, describe the criteria for wildfire related de-energizations. Responses shall only provide aggregated information that does not provide customer-specific information or other potentially sensitive data.

POU Response: LADWP's customers may be impacted by the PSPS events ordered by Southern California Edison (SCE). The following provides responses to specific questions included in the 2021 WSAB Guidance Advisory Opinion:

- What is the relationship between the IOU and the POU during PSPS events?

POU Response: LADWP's service territory covers portions of the Owens Valley with the borders often directly adjacent to SCE's service territory. A small number of LADWP customers are be supplied by SCE due to the limited reach of LADWP infrastructure in these fringe areas. These customers may be affected by SCE's PSPS events. During IOU PSPS Events, LADWP will maintain communication with SCE operations office.

Does the POU receive advance notification?

POU Response: LADWP is not aware of any notifications by IOUs to its customers affected by IOU PSPS Events.

- Is the POU affected at the transmission or distribution level?

POU Response: A small percentage of LADWP's customers may be affected at the distribution level in the Owens Valley where SCE's PSPS events occur.

- Is the POU implementing a mitigation strategy for IOU PSPS?

POU Response: Yes. In the event where SCE notifies LADWP of an impending SCE PSPS Events affecting areas in Owens Valley where a small percentage of LADWP's customers are located. LADWP takes proactive actions including dispatching personnel to patrol LADWP's impacted lines and areas prior to the declared power shutoff and conduct another patrol of its impacted lines and areas prior to re-energization of the electric lines to fully assess and monitor safety issues that may affect its customers. During such operations, LADWP will maintain communication with SCE's operations office.

- Does the POU deenergize their own lines when a wildfire threat looms, even if it is not labelled a PSPS?

POU Response: LADWP does not preemptively de-energize its lines. However, LADWP executes its de-energization protocols on a per incident basis. As a result, LADWP may block reclosers or de-energize its lines in the event of a disaster such as a wildfire, or specific threat identified by LADWP personnel if it is deemed necessary based on safety and reliability issues.

- In the above instance, what customer communication takes place?

POU Response: Information for affected customers may be found on LADWP's Outage Management Website linked here: https://www.ladwp.com/ladwp/faces/header/outageinformation. This site can also be accessed by going to ladwp.com and clicking on the top right corner "Power Outages".

LADWP also notifies affected customers of community outages within its service territory via text message and e-mail notifications in English and Spanish. In order

to receive these notifications, customers must register for LADWP's Outage Alerts via its Outage Management Website.

- Is the POU a Balancing Authority Area? If yes, describe any applicable criteria for wildfire related de-energization.

POU Response: Yes, LADWP is a Balancing Authority. In order to maintain public safety, LADWP executes its de-energization protocols on a per incident basis. As a result, LADWP may block reclosers or de-energize its lines in the event of a disaster such as a wildfire, or specific threat identified by LADWP personnel if it is deemed necessary based on safety and reliability issues.

WSAB Recommendation #6: Describe the utility customer communication plans with respect to wildfires and PSPS, and in particular describe the methods, content and timing used to communicate with the most vulnerable customers, such as Access and Functional Needs (AFN) customers, medical baseline customers, non-English speakers, and those at risk of losing water or telecommunications service.

POU Response:

In the City of Los Angeles, LADWP considers impacts to public safety and has developed protocols in the event of any unplanned outages. When an outage occurs, LADWP Electric Trouble Section notifies Los Angeles Police Department (LAPD), Los Angeles Fire Department (LAFD), and the City Council District for the area affected. The information given includes the area affected by the outage, the estimated time of restoration, and any updates throughout the outage period including time of actual restoration. LAPD and LAFD are also notified of any Life Support Equipment recipients that are affected. Customer Call Center will notify these recipients and provide them with the same information and updates.

Information for affected customers may be found on LADWP's Outage Management Website linked here: https://www.ladwp.com/ladwp/faces/header/outageinformation. This site can also be accessed by going to ladwp.com and clicking on the top right corner "Power Outages".

LADWP also notifies affected customers of community outages within its service territory via text message and e-mail notifications in English and Spanish. In order to receive these notifications, customers must register for LADWP's Outage Alerts via its Outage Management Website.

C. The Grid

WSAB Recommendation #7: Provide details on each POU's system hardening and grid design programs, including: (1) the goals of the programs and the risk any particular program is designed to mitigate; (2) approach to PSPS mitigation and prevention; and (3) identify any resource shortages.

POU Response: LADWP's approach to grid hardening is discussed in Section 4.2 and 4.5 of LADWP 's WMP. LADWP is investing heavily in its Power System Reliability Program (PSRP) in order to maintain a robust, reliable, and safe Power System through the replacement of aging infrastructure assets related to its transmission and distribution system.

The PSRP is a comprehensive, long-term power reliability program with the following goals: (a) mitigate problem circuits and stations based on the types of outages and equipment failures specific to the facility, (b) expedite restoring temporary repairs of equipment failures and target circuits that contribute heavily to LADWP's reliability indices, (c) commit to proactive maintenance and effective capital improvements, and (d) achieve replacement cycles that align with the assets' respective life cycles, including replacement of overloaded distribution transformers, worn underground cables, deteriorated overhead poles, and fatigued substation equipment.

As a part these goals, LADWP has placed an emphasis on the assets located in the various High Fire Threat Districts (HFTDs) due to inspection priorities of CPUC's General Order (GO) 95 Rule 18. A minimal amount of LADWP's distribution assets are located within HFTDs. LADWP continues to inspect and replace assets in these HFTDs to harden its infrastructure and mitigate wildfire risks.

The following responses are provided to address the specific questions included in the 2021 WSAB Guidance Advisory Opinion:

- Does the POU perform a circuit-by-circuit analysis to identify essential facilities (and whether they have backup power) like hospitals, communication centers, and community resource centers?

POU Response: On the distribution level, LADWP has initiated its system hardening measures through its Power System Reliability Program (PSRP) to ensure the safety of its customers and communities across its service territory. LADWP's PSRP helps in prioritizing asset maintenance and capital work for each major section of the Power System.

Additionally, In the City of Los Angeles, LADWP considers impacts to public safety and has developed protocols in the event of any unplanned outages. When an outage occurs, LADWP Electric Trouble Section notifies LAPD, LAFD, and the City

Council District for the area affected. The information given includes the area affected by the outage, the estimated time of restoration, and any updates throughout the outage period including time of actual restoration. LAPD and LAFD are also notified of any Life Support Equipment recipients that are affected. Customer Call Center will notify these recipients and provide them with the same information and updates.

LADWP's Key Accounts Representative will take this information and determine if there are any schools, hospitals, and other emergency services affected by the outage and provide them with notifications and updates.

Within LADWP's service territory in Owens Valley, LADWP, in coordination with the Inyo County Sherriff's Office, Cal Fire, Inyo National Forest, and Local Volunteer Fire Departments, will patrol the Elevated Fire Threat Areas to determine the appropriate action such as notifying the affected stakeholders and communities.

In addition, consistent with the California Public Utilities Commission Physical Security Decision, D.19-01-018, LADWP gathers information on the essential facilities within its service territory in order to asses and improve where feasible the resiliency and redundancy of their power supply.

- Does the POU assess system hardening measures that could be installed to prevent PSPS for those facilities?

POU Response: LADWP does not pre-emptively de-energize (PSPS) its lines. However, LADWP is determining the feasibility of installing covered conductor or undergrounding overhead lines in select areas. Additionally, LADWP is investing heavily in its Power System Reliability Program (PSRP) in order to maintain a robust, reliable, and safe Power System through the replacement of aging infrastructure assets related to its transmission and distribution system.

- For POUs that power water utilities or supply water themselves, if that water is used for drinking and firefighting, are certain projects being undertaken to harden the system for water delivery purposes?

POU Response: In High Fire Threat Districts where water pumping support is required, LADWP's Water Operations has generators and internal combustion engines that auto-start during power outages to ensure pressure to hydrants. Water Operations is aware of the location of generators that auto-start and are able to obtain or access near real-time statuses of these generators. The Water System's Transmissions Operations section is responsible for these pump station generators and internal combustion engines. LADWP's Water System has water storage tanks and reservoirs that are available for use during wildfire events. Should the need arise, LADWP's crews are available to provide support in water distribution system operations related to firefighting efforts. There are formal

agreements with LAFD and Los Angeles County Fire Department on the use of LADWP's tanks, reservoirs, and helipads within the Los Angeles Metro and Aqueduct areas as well as of over 60,000 fire hydrants citywide that are available to support firefighting efforts.

Additionally, LADWP has an on-going Capital Improvement Program which revolves around LADWP's Water System infrastructure resiliency and reliability. LADWP is currently planning, designing, and constructing various Capital Improvement Program projects to harden its water system.

- Are pump stations self-contained or have some level of fire protection? Is the supply to sewage treatment plants hardened?

POU Response: Most of LADWP's pump stations have fire detection with 24-hour monitoring. Sewage treatment plants typically have redundant supplies to ensure resiliency and reliability. Additionally, LADWP has programs in place to further harden the supply to critical facilities including pump stations and sewage treatment plants. LADWP's PSRP is in place to maintain a robust, reliable, and safe Power System through the replacement of aging infrastructure assets related to its transmission and distribution system, including distribution assets which supply power to sewage treatment plants. LADWP has placed an emphasis on the assets located in various HFTDs due to inspection priorities of CPUC's GO 95 Rule 18. LADWP continues to inspect and replace assets in these HFTDs to harden its infrastructure and mitigate wildfire risks.

- Can the utility sectionalize in a localized fashion?

POU Response: LADWP does have equipment that allows it to sectionalize certain parts of a circuit, but they are not specific to the High Fire Threat Districts. Additionally, LADWP does not typically use sectionalizing equipment to pre-emptively de-energize portions of a circuit, however this equipment may provide additional flexibility in restoration following a loss of service.

LADWP coordinates internally to perform any sectionalizing operations it deems necessary for public safety.

WSAB Recommendation #8: Describe annual visual patrols on potentially impacted circuits and the risks the POU is inspecting for. Describe whether and how system inspections lead to system improvements. Describe line patrols before, during, and/or after a critical fire weather event, such as a Red Flag Warning with strong winds, or following a fire that burned in areas where electric facilities are or could have been impacted.

POU Response: LADWP meets or exceeds the minimum inspection requirements provided in CPUC GO 165 and CPUC GO 95, Rule 18. At a minimum, LADWP patrols its power distribution system once a year. In designated wildfire risk areas, patrols usually take place between March and April, which helps to identify and address concerns for the upcoming fire season. LADWP performs detailed inspection every five years, and intrusively inspects wood poles after 20 years of service. If a pole passes intrusive inspection, it will be scheduled for another intrusive inspection every 10 years thereafter. LADWP staff uses knowledge of the specific environmental and geographical conditions to determine when areas inside of the HFTD require more frequent inspections.

Repair and maintenance work identified during inspections is prioritized based on the level of risk they pose and the location of the asset. Work associated with immediate safety and/or reliability risks as wells as tasks or assignments within the Tier 3 and Tier 2 HFTDs are given the highest priority.

LADWP performs aerial patrols of its transmission lines biannually (at least once during the first half of the year and at least once during the second half of the year, with at least 3 months between intervals). These aerial patrols are conducted in order to identify and quantify right of way encroachments, construction, conductor damage, insulator breakage, earth movement, or any other condition which may impact transmission system right of way property or facilities. These patrols include a visual inspection of towers, fixtures, conductors and related hardware, insulators, and overhead ground wires. Attention is also given to right of way conditions, encroachments, and vegetation issues.

Within the City of Los Angeles, LADWP operates a 24-hour 7 day a week Electric Trouble Section that responds to power outage related concerns in the distribution system. If LADWP receives a notification regarding a possible hazard, LADWP will send an Electric Trouble Patrol Crew to the hazard to determine the appropriate action. If that crew determines that there as an imminent public safety hazard, they have the authority to call an Electric Trouble Dispatcher and de-energize the power line. LADWP's Electric Trouble Section has direct phone contacts with LAFD and LAPD for any and all emergencies. When LADWP receives a notice of a possible hazard from any of these agencies, LADWP responds immediately without any delay. Within its HFTDs, LADWP's patrol crews patrol the entirety of the de-energized circuit prior to re-energization. The patrol crew, in conjunction with Electric Trouble, then determines what is needed to either: make any necessary repairs and to re-energize the line or isolate the hazard

through switching and re-energize the line from another source. Typically, the average length of outage in LADWP service territory is under 2.5 hours.

Within LADWP's Owens Valley service territory, LADWP, in coordination with the Inyo County Sheriff's Office, Cal Fire, Inyo National Forest and Local Volunteer Fire Departments, patrol the HFTDs to determine the appropriate action such as de-energizing the circuit. Within its HFTDs, LADWP's patrol crews patrol the entire de-energized circuit prior to re-energization.

WSAB Recommendation #9: Describe options considered by POU (including through the joint efforts of the POU associations) to identify previously unidentified risks that could lead to catastrophic wildfires.

POU Response: LADWP continues to be involved in various joint agency wildfire working groups and collaborates with other entities to stay informed, understand industry best practices, and identify previously unidentified risks that could lead to catastrophic wildfires. In addition, LADWP personnel participate in various industry workshops and other events to gather and consider potential solutions and lessons learned.

D. Risk Assessment

WSAB Recommendation #10: Describe the particular wildfire risks associated with system design and construction such as topography and location near the HFTD areas of another utility's service territory. Describe any G.O. 95 exempt assets and possible updates to G.O. 95 that could facilitate more resilient utility transmission and distribution assets.

POU Response: The City of Los Angeles covers 478 square miles consisting mostly of urban environment. The high fire threat areas in the City are the eastern end of the Santa Monica Mountains, a portion of the Verdugo Mountains, and small areas located on the outer edges of the City. The Owens Valley service territory is located in east-central California, between the Sierra Nevada Mountains on the west and the White Mountains on the east, and totals 1,839 square miles. The high fire threat areas in the Owens Valley include sections between the Sierra Nevada Mountains and U.S. Route 395. LADWP's assessment of wildfire risks is discussed in detail in Section 3, 4.1, and Appendix A of LADWP's WMP.

LADWP considered wildfire risks and their respective drivers during the development of its WMP to ensure that its WMP's objectives can be met. LADWP understands and effectively manages the level of exposure to these risks which could impact the WMP's objectives of minimizing sources of ignition, improving the resiliency of the electric grid,

and maximizing efficiency and improving programs and protocols. Various policies, programs, standards, and procedures have been implemented to ensure the mitigation of wildfire risks and their associated drivers. LADWP has historically implemented efforts to minimize risks and prevent wildfires and LADWP's WMP will leverage on such historical efforts as well as ongoing, new, and future improvements or considerations. The following responses are provided to address specific questions included in the 2021 WSAB Guidance Advisory Opinion:

- Are there design or construction issues related to the utility's specific topography or geographic location that the Board should be aware of? How will the utility address risks associated with facilities requiring power that abut a Tier 2 or Tier 3 HFTD? How does the utility assess its risks associated with system design and construction? What design and construction standards has the POU implemented that go beyond G.O. 95 or other General Order standards related to design and construction?

POU Response: LADWP's electrical equipment and facilities are designed and constructed to meet or exceed applicable federal, state, or industry standards. LADWP treats CPUC GO 95 as a key industry standard for design and construction standards for overhead electrical facilities. LADWP meets or exceeds all applicable requirements in GO 95. Additionally, LADWP monitors and follows as appropriate the National Electric Safety Code. LADWP is constantly looking to improve and harden its infrastructure by continuously evaluating and updating its policies, processes, methodologies, and Construction Standards as new technologies emerge.

In 2008, LADWP increased its power line construction standards to reduce risks associated with overhead equipment in the designated fire hazard areas identified by the CPUC and City of Los Angeles, including high wind areas not identified by the CPUC HFTD Map. These standards were updated again in 2018 and meet and/or exceed established guidelines set by the CPUC General Orders for power lines. LADWP's standards are periodically evaluated and updated as necessary.

LADWP's Fire Threat Map includes CPUC Tier 2 and Tier 3 High Fire Threat District maps as well as the City of Los Angeles Very High Fire Hazard Severity Zone (LAFD Fire Zone). The addition of the LAFD Fire Zones provides LADWP with an intermediary zone around the Tier 2 Elevated Fire Threat Districts. LADWP treats the LAFD Fire Zones the same as Tier 2 areas and applies the same Wildfire Prevention Strategies, including increased design and construction standards, to further mitigate wildfire risks.

LADWP regularly surveys its service territory during its vegetation management and inspection and maintenance activities to determine its wildfire risks and associated

risk drivers. LADWP has identified risk drivers and their respective mitigation measures and programs within its WMP.

E. SITUATIONAL AWARENESS TECHNOLOGY

WSAB Recommendation #11: Provide context-setting information about the prevailing wind directions and speeds, differentiated by season, along with average weather conditions by season. Describe how and why situational awareness technology is installed, and where on the system. Describe the decision-making process regarding the installation of situational awareness technology, including constraints such as budgets, availability of equipment, knowledge to effectively deploy, or qualified personnel to install and monitor effectively. Identify any other agencies, utilities, or fire professionals that the data from these devices is shared with.

POU Response: LADWP primarily uses the Santa Ana Winds Threat Index and weather information from National Oceanic and Atmospheric Administration (NOAA), City of Los Angeles Fire Department (LAFD) to monitor current and forecasted weather data. LADWP's Office of Emergency Management (OEM) receives and sends email notifications from NOAA's National Weather Service (NWS), alerting key LADWP personnel of NWS Red Flag Warnings. LAFD also notifies LADWP's ECC, PTD, and OEM sections of LAFD Red Flag Alerts.

Additionally, ALERTWildfire is available to support situational awareness within LADWP's service territory and provide aid to first responders and firefighters in the event of a wildfire. LADWP is also exploring new technologies and methods, including the use of cameras and weather stations, to increase situational awareness. LADWP intends to share relevant and useable information, where feasible, with LAFD and local fire departments within the Owens Valley to provide the ability to monitor potential wildfire risks around LADWP facilities and improve operational response to wildfire threats from LADWP, LAFD, and local fire departments within the Owens Valley.

Additionally, LADWP's ECC has centralized control over LADWP's power system, including generating, receiving, and distributing stations and the transmission and subtransmission systems. Load Dispatchers at the ECC use the Supervisory Control and Data Acquisition (SCADA) system to monitor and control the operation of the electrical system during normal and emergency conditions including the energizing and de-

energizing of individual circuits and blocking or enabling of automatic reclosers. Load Dispatchers at the ECC also follow the Instructions to Load Dispatchers 35 (ILD-35) which describes the operational process for transmission lines during Fire Weather conditions as described by the NWS, including actual fires. ILD-35 includes details how to respond to requests from Transmission Patrol and fire agency representatives.

LADWP, as a POU, differs from its IOU counterparts as LADWP's wildfire mitigation activities are constrained by budget, personnel and resource limitations. However, LADWP continues to provide its customers and the communities it serves safe, reliable and cost-effective water and power in a customer-focused and environmentally responsible manner while meeting the objectives of its WMP.

F. VEGETATION MANAGEMENT

WSAB Recommendation #12: Describe treatment plans for all types of vegetation associated with utility infrastructure, from the ground to the sky, which includes vegetation above and below electrical lines.

POU Response: LADWP's vegetation management program is discussed in detail in Section 4.3 of LADWP's WMP. LADWP's vegetation management program meets or exceeds the minimum industry standard vegetation management practices. The following responses are provided to address specific questions included in the 2021 WSAB Guidance Advisory Opinion:

- Describe the reasoning behind each treatment plan and the ecological impact of the treatment options chosen.

  POU Response: LADWP chooses "hands on" mechanical line clearance tree trimming, branch removal, tree removal, and brush clearing practices; the amount of trimming will depend on the conductor voltage, construction, tree location, species, and rate of tree growth with the emphasis on compliance.

  LADWP does not use herbicides or growth regulators as part of its vegetation management plan due to the potential impact on water contamination, biodiversity, and human health. In order to reduce ecological impacts, LADWP's vegetation management group coordinates as necessary with the LADWP Environmental Affairs Office to reduce any ecological impacts discovered during vegetation management activities.

  To further eliminate the threat and spread of wildfires, LADWP's vegetation management group prescribed work practices call for removal and recycling of the biomass resulting from vegetation management maintenance activities. In certain

cases where there is no threat to public or employee safety, logs or trees on LADWP rural properties may be left behind in order to foster wildlife habitat.

- Describe how vegetation management in the HFTD or Fire Threat Zones differs from other areas, including within private property and urban landscaping.

POU Response: LADWP patrols the clearances between conductors and vegetation of 100% of its transmission and distribution lines at least once per calendar year to ensure no vegetation encroachments occur within the conductor's respective clearance distance.

LADWP strives to continue a pruning cycle of approximately 12 months. Crews visit each neighborhood within the City of Los Angeles and its service areas during the cycle. Trees projected to be within 18 inches, or 48 inches in HFTDs, of the high-voltage lines during the 12 months are pruned. Additionally, vegetation within HFTDs are patrolled using the "mid-cycle" approach to ensure compliance and eliminate encroachments into the minimum vegetation radial clearance distances. LADWP's conductors, mostly in an urban setting, traverse many private properties.. LADWP coordinates with owners of these private properties to ensure the appropriate clearance distances between vegetation and conductors are met. These conductor and vegetation patrols are performed on foot, by car, or by air.

- Describe any enhanced vegetation management that goes beyond the minimum G.O. 95 standard.

POU Response: LADWP meets or exceeds the minimum industry standard vegetation management practices. LADWP complies with North American Reliability Corporation (NERC) standards and requirements including NERC FAC-003-4, where applicable. For both transmission and distribution facilities, LADWP meets or exceeds: (1) GO 95 Rule 35; and (2) the GO 95 Appendix E Guidelines to Rule 35; (3) Public Resources Code (PRC) section 4292; and (4) PRC section 4293. These standards require significantly increased clearances in the HFTDs.

- A list of native and non-native species in the POU's Service Territory and describe how treatment methods vary.

POU Response: LADWP monitors approximately 350,000 trees and maintains a tree type index comprised of 85 tree types. LADWP performs line clearance tree trimming on approximately 185,000 trees per year. Tree growth is variable throughout LADWP's service territory due to differences in micro climates and topography. Vegetation management prescriptions are based on real time observations by qualified inspection staff. Patrols are driven by the need to ensure power system reliability and integrity while considering applicable compliance requirements.

- Describe how the POU tracks new vegetation growth that occurs in areas that has previously been cleared or treated.

POU Response: LADWP monitors a database of approximately 350,000 trees and maintains a tree type index comprised of 85 tree types. LADWP performs line clearance tree trimming on approximately 185,000 trees per year. Tree growth is variable throughout LADWP's service territory due to differences in micro climates and topography. Vegetation management prescriptions are based on real time observations by qualified inspection staff. Patrols are driven by the need to ensure power system reliability and integrity while considering applicable compliance requirements.

LADWP patrols the clearances between conductors and vegetation of 100% of its transmission and distribution lines at least once per calendar year, with mid-cycle patrols performed in the HFTDs, to ensure no vegetation encroachments occur within the conductor's respective clearance distance.

WSAB Recommendation #13: List the qualifications of any experts relied upon, such as scientific experts in ecology, fire ecology, fire behavior, geology, and meteorology. Specify the level of expertise of the POU staff that manages the contractors performing vegetation management. Describe measures each POU takes to ensure that POU staff and contractors comply with or verify compliance with Cal/OSHA standards on Minimum Approach Distances (MAD).

POU Response: LADWP personnel performing line-clearance tree trimming are qualified line-clearance tree trimmers and/or qualified electrical workers.

LADWP's vegetation management program personnel are promoted from within; this ensures a higher level of quality and compliance. Hired on as Qualified Line Clearance Tree Trimmer Trainees or Qualified Line Clearance Tree Trimmers, vegetation management personnel have the ability to promote to Tree Surgeon Supervisors-C, B, A, and Superintendents. LADWP's vegetation management employees are subject matter experts in the utility line clearance industry and these employees have earned the following designations:

- Qualified Line Clearance Tree Trimmers Trainees, as defined in California Code of Regulations, Title 8, Section 2300
- Qualified Line Clearance Tree Trimmers, as defined in California Code of Regulations, Title 8, Section 2300
- Qualified Tree Worker, as defined in California Code of Regulations, Title 8, Section 2300
- Arborist, as defined in ANSI Z133, 1.2

LADWP encourages and promotes professional certifications. Some of our vegetation program personnel have achieved the following professional designations:

- International Society of Arboriculture - Certified Arborist
- International Society of Arboriculture - Utility Specialist
- International Society of Arboriculture - Certified Tree Worker

To stay apprised of industry practices and network with other industry experts, LADWP participates in the following memberships:

- International Society of Arboriculture
- International Society of Arboriculture-Western Chapter
- Utility Arborist Association

LADWP's vegetation contract manager ensures contract compliance and personnel qualifications for contractors supplementing LADWP's vegetation management program. These personnel must meet the same qualifications as outlined in the California Code of Regulations:

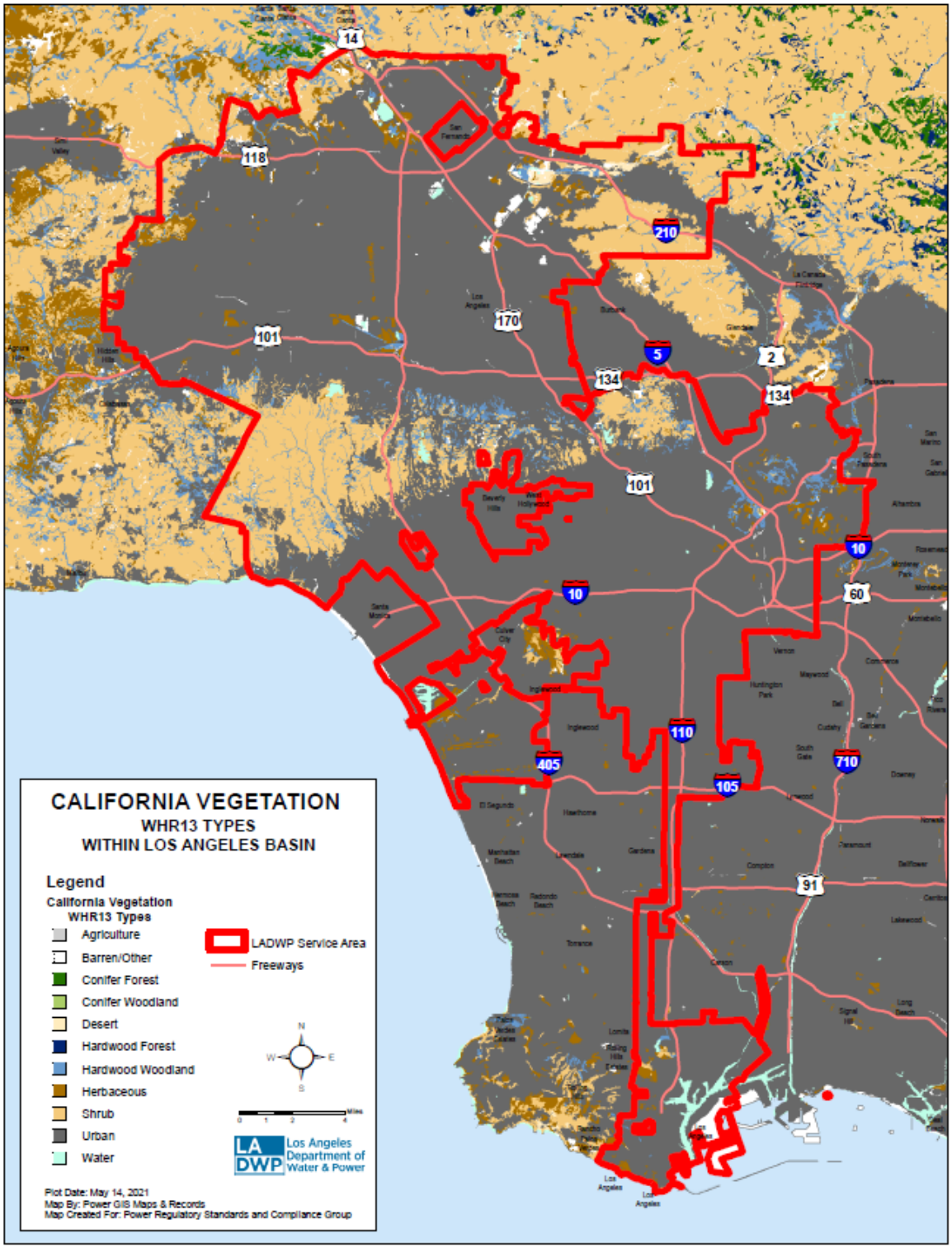
- Qualified Line Clearance Tree Trimmers Trainees
- Qualified Line Clearance Tree Trimmers
- Qualified Tree Worker

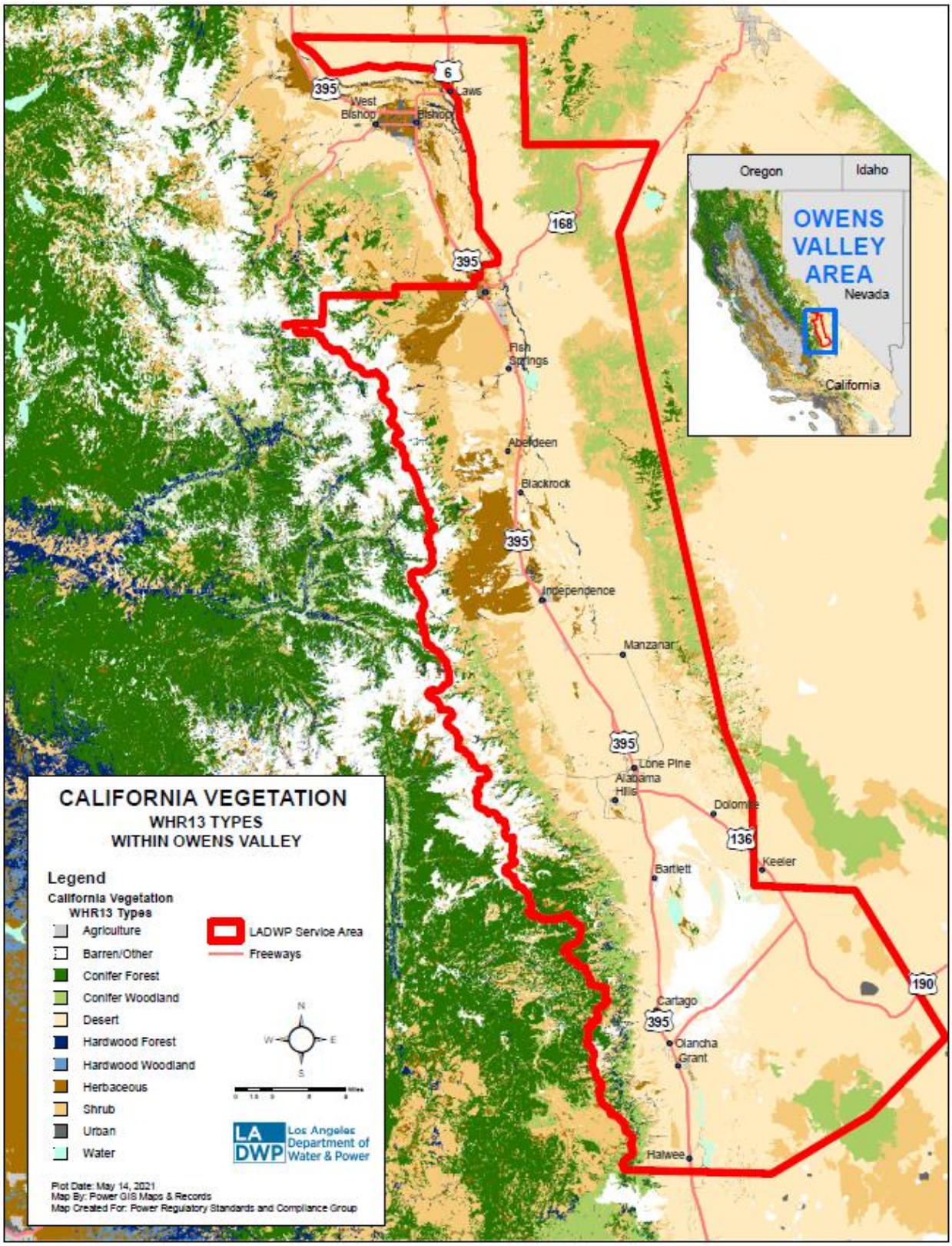
Certificates are provided to the contract administrator prior the start of any vegetation contractor working on behalf of LADWP to ensure these qualifications are met.

WSAB Recommendation #14: Describe whether the POU has considered innovative and alternative approaches to vegetation management.

POU Response: LADWP continues to evaluate the use of emerging and advanced technologies to better assess and track vegetation-associated wildfire risk.

V. CALIFORNIA VEGETATION – WHR13 TYPES WITHIN CITY OF LOS ANGELES AND OWENS VALLEY




CALIFORNIA VEGETATION
WHR13 TYPES
WITHIN OWENS VALLEY
Legend
California Vegetation
WHR13 Types
Agriculture
Barren/Other
Conifer Forest
Conifer Woodland
Desert
Hardwood Forest
Hardwood Woodland
Herbaceous
Shrub
Urban
Water
LADWP Service Area
Freeways
Los Angeles Department of Water & Power
Plot Date: May 14, 2021
Map By: Power GIS Maps & Records
Map Created For: Power Regulatory Standards and Compliance Group
OWENS VALLEY AREA
Oregon
Idaho
Nevada
California
West Bishop
Bishop
Laws
Fish Springs
Aberdeen
Blackrock
Independence
Manzanar
Lone Pine
Alabama Hills
Dolomite
Keeler
Bartlett
Cartago
Olancha
Grant
Haiwee
395
6
168
136
190