**WMP Clarification Document**

The following guidance is issued to clarify requirements and submission instructions for the WMP process, focusing on the WMP Guidelines issued in a Ruling on December 16, 2019.

This clarification document was created as a response to a number of detailed questions from utilities, including several that focus on the requirements for GIS. As such, much of this document is focused on providing additional clarity to assist utilities in fulfilling their requirements to complete section 6 of the WMP Guidelines.

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## I. General clarifications

In the event of inconsistency between the WMP Guidelines and the separate "Progress and outcome metrics" document (or the Supplemental Data Request), utilities shall follow the guidance in the WMP Guidelines and the WMP Guidelines Clarification Guidance document in the preparation of their WMPs. Utilities shall cite sources for data, evidence, and other information needed to support their WMP.

## II. Clarifications to the Utility Survey

The electronic version of utility wildfire mitigation maturity survey will have additional clarification and guidance for completing survey responses. In a few cases, questions may be repeated if they are relevant to more than one of the 52 capabilities being assessed such that each capability can be addressed independently. The WSD will also share a redlined copy of the Utility Survey to show where clarification or edits have been made.

The evaluation of the survey will use binary scoring to determine the level of maturity of each capability. That means, in order to achieve a given maturity score for the capability overall, the utility must meet all elements identified at that level in the scoring rubric for all questions associated with that capability. If any element is not met, the corresponding lower score will be applied for the capability. This is true for each of the 52 capabilities, since their scores are calculated separately.

More generally, as indicated in the December 16, 2019 WMP Ruling, the electronic version of the survey will be accompanied by additional instructions and clarifications where needed.

## III. Clarification of map file submission requirements

The following guidance is issued to clarify submission instructions for the requirements of the WMP Guidelines per:

- **Table 8:** *Map file requirements for recent and modelled conditions of utility service territory, last 5 years*

- **Table 9:** *Map file requirements for baseline condition of utility service territory projected for 2020*

The WSD is providing additional clarity on the shapefiles required. Tables listing the data that shall be included in the shapefile and the relevant units, and other detail are provided below, as needed. Utilities shall provide GIS data with each of the attributes laid out in the tables.

Based on questions raised by the utilities in the January 9 utility WMP Q&A session, the WSD is providing an optional square-mile resolution grid that utilities can choose to use when building GIS files. For higher resolutions, please subdivide each of the grid elements provided. For example, if submitting GIS files in quarter mile grid resolution, please subdivide each square mile grid element into 16 equal sized smaller elements. Utilities may submit higher resolution GIS files that are fractions of the specified resolution (e.g. half-mile resolution where 1-mile resolution is specified and 1/8th mile resolution where quarter mile resolution is specified).

Lines that exceed a quarter mile and share all properties requested may be submitted at a lower resolution if all attributes are equal across the entire line. GIS files shall be shapefiles that include a corresponding data file (.dbf or other table that can correspond to a spatial file), a .shp file or other spatial file corresponding to the database, a .prj or other projection file, and a .shx or any other auxiliary spatial files.

The types of data included in these shapefiles are defined as follows:

1. **Numeric**: Data represented as a number. If only a range is known, input the number in the middle of the range. For latitude and longitude, the numeric data is to be reported to the sixth decimal point (e.g., "40.123456, -120.123456"). For percentages, the numeric data is to be reported in decimals between 0.00 and 1.00 (e.g., fifty percent represented as "0.50").

2. **String**: Alphanumeric text. For example, a given model number shall be represented the same way throughout all utility WMP submissions, such that each reporting of that model number is consistent and easily identifiable (e.g., reporting a model number as "KP-TIM4350" in some cells but as "KP TIM4350" in others would be unacceptable).

3. **Date**. Dates shall be reported in MM/DD/YYYY format.

4. **Label**. For columns that require one entry from a finite list of options, that list of options is provided along with a corresponding label for each option. The label shall be input into the cell (e.g., as the label for "Non-WUI" is "0" and the "WUI" is "1", the cell shall read either "0" or "1" according to which correctly corresponds to that row). The description shall also be provided <u>exactly</u> the characters outlined from the list of options provided. E.g. "Non-WUI" shall be entered exactly, and not as "non-wui", "Non WUI", or any other variation.

No row shall have blank cells. If a column does not apply for that row, the cell in the corresponding column of that row should read "NA" (e.g., if a new piece of equipment has not been inspected or maintained since installation, then the cells in that row for the "Date of last inspection" and "Date of last maintenance" columns should read "NA"). If the information is not known, the cell should read "UNKNOWN".

## 1.1 Appendix 6.1 & 6.3: Recent weather patterns and use of PSPS

The data requested for attachments 6.1 and 6.3 may be combined when completing the requirements of Table 8 in the WMP Guidelines.

"Average annual number of Red Flag Warning circuit mile days" is a measure of the geographic scope and duration of Red Flag Warnings (RFW), calculated by multiplying the duration of Red Flag Warnings that year (measured in days) by the sum of circuit miles of the utility grid subject to those warnings (meaning within the geographic boundaries of the RFW) for that duration of time. Based on the readings of the relevant weather stations, the "Circuit mile days over the average 95th percentile wind speed" and "Circuit mile days over the average 99th percentile wind speed" columns shall track the geographic scope and duration of those extreme wind conditions based on the number of circuit miles experiencing those conditions for the duration of those conditions (measured in days).

Use square mile resolution or better to address the requirements for attachment 6.1. To address questions raised in the utility Q&A session of January 9, 2020, utilities should use the boundaries of the census tract to complete attachment 6.3 of Table 8. Utilities are encouraged to use census tract data available at census.gov (https://www.census.gov/geographies/mapping-files/time-series/geo/tiger-line-file.html); this and any other sources used should be cited. The "average 95th percentile wind speed" and "average 99th percentile wind speed" standards shall be determined based on the 2005-2014 historical period to align with the summary data reported in WMP Section 3.1 Table 10.

 "Customer hours of PSPS per year" for a given census tract shall be calculated by multiplying the number of customers de-energized during a PSPS event by the number of hours during which their power was shut off. For example, if there were two PSPS events affecting people in a given census tract, the first of which shut off power for 80 people for 1 hour and 10 additional people for 2 hours, and the second of which shut off power for 1 person for 1 hour, then the total customer hours of PSPS for that census tract that year would be (80*1) + (10*2) + (1*1) = 101 customer hours.

*Table 1: Recent weather patterns and recent use of PSPS*

| Group name | Recent weather patterns | | | | | | | | | | | | | | | PSPS | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Data type | Numeric | | | | | Numeric | | | | | Numeric | | | | | Numeric | | | | |
| Column name | Average annual number of Red Flag Warning circuit mile days | | | | | Circuit mile days over the average 95th percentile wind speed | | | | | Circuit mile days over the average 99th percentile wind speed | | | | | Customer hours of PSPS | | | | |
| *Year* | 2015 | 2016 | 2017 | 2018 | 2019 | 2015 | 2016 | 2017 | 2018 | 2019 | 2015 | 2016 | 2017 | 2018 | 2019 | 2015 | 2016 | 2017 | 2018 | 2019 |

## 1.2 Appendix 6.2: Recent drivers of ignition probability

For appendix 6.2 per Table 8, provide a GIS file and input the following data for recent ignitions by date, and ignition probability driver. To address questions raised in the utility Q&A session of January 9, 2020, utilities shall provide data from each of the columns in Table 2, below. Table 2 is represented in two pieces due to space constraints.

*Table 2: Recent drivers of ignition probability*

| Group name | Date | Ignition probability drivers (I/II) | | | | |
|---|---|---|---|---|---|---|
| Data type | Date | Label | | | Label | |
| Column name | Date | Suspected initiating event | | | Equipment /facility failure | |
| *Label guide* | *NA* | *Label response options* | *Corresponding type of suspected initiating event* | | *Label response options* | *Corresponding type of equipment /facility* |
| | | 0 | Contact between third party facility on pole and supply lines | | 0 | Capacitor bank |
| | | 1 | Contact from object | | 1 | Crossarm |
| | | 2 | Contamination | | 2 | Fuse |
| | | 3 | Equipment/facility failure | | 3 | Guy/span wire |
| | | 4 | Normal operation | | 4 | Insulator |
| | | 5 | Other | | 5 | Lightning arrestor |
| | | 6 | Unknown | | 6 | Other |
| | | 7 | Vandalism/theft | | 7 | Pole |
| | | 8 | Wire-wire contact | | 8 | Protective relay |
| | | | | | 9 | Recloser |
| | | | | | 10 | Sectionalizer |
| | | | | | 11 | Splice/clamp/connector |
| | | | | | 12 | Switch |
| | | | | | 13 | Transformer |
| | | | | | 14 | Voltage regulator |
| | | | | | 15 | Capacitor bank |
| | | | | | 16 | Conductor |

Continued below

| | Group name | Ignition probability drivers (II/II) | | | | | |
|---|---|---|---|---|---|---|---|
| Continued from above | Data type | Label | | Label | | Label | |
| | Column name | Contact from object | | Facility contacted | | Contributing factor | |
| | *Label guide* | *Label response options* | *Corresponding type of object* | *Label response options* | *Corresponding type of facility* | *Label response options* | *Corresponding type of contributing factor* |
| | | 0 | Animal | 0 | Communication facility | 0 | Weather |
| | | 1 | Balloons | 1 | Electric facility | 1 | Human error |
| | | 2 | Other | 2 | Pole | 2 | Unknown |
| | | 3 | Vegetation | | | 3 | Outside force |
| | | 4 | Vehicle | | | 4 | Other |
| | | 5 | Unknown | | | | |

## 1.3 Appendix 6.4: Current baseline state of service territory

Provide a GIS file and input the data outlined in Table 3 below. To address questions raised in the utility Q&A session of January 9, 2020, utilities shall use the boundaries of the census tract to complete attachment 6.4 of Table 8. Utilities are encouraged to use census tract data available at census.gov (https://www.census.gov/geographies/mapping-files/time-series/geo/tiger-line-file.html); this and any other sources used should be cited. For the WUI status of a given census tract, cite the source that the utility uses (e.g., CAL FIRE, USGS, USFS, or University of Wisconsin). For each of the columns below, input numbers according to the units specified and percentage share between 0 and 100.

*Table 3: Current baseline state of service territory*

| Group name | Population | HFTD status of census tract by percentage share | | | | WUI status of census tract by percentage share | |
|---|---|---|---|---|---|---|---|
| Data type | Numeric | Numeric | | | | Numeric | |
| Column name | Number of people per square mile | Non-HFTD | Zone 1 | Tier 2 | Tier 3 | Non-WUI | WUI |

## 1.4 Appendix 6.5: Electrical lines and associated line data: Current baseline state, planned additions/removal, and WMP initiative activity

Provide a GIS file and input the following line data for electrical lines and initiatives within the service territory, with one row for each quarter-mile segment of electrical line. The objective is to understand the condition and plan for each quarter-mile line segment, or shorter segments where possible (such as span-level segments). For the "2020 WMP activity", if multiple activities are planned to take place on that line segment, input each of the corresponding label response options into the GIS file. If the initiative activity is not listed, utilize the "other" option, with label 100. If more than of 1% of the length of the grid uses a given unlabeled initiative, 1) specify the new initiative name and label starting at 101; and 2) describe each initiative and

why it does not qualify as any in the provided list of options provided in WMP Guidelines sections 5.3.1 through 5.3.10, as applicable. Names, labels, and descriptions of additional initiatives should be submitted as part of the utility WMP, i.e., in utility responses to the requirements specified for additional in sections 5.3.1 through 5.3.10, as applicable.

The following table is represented below in three pieces due to space constraints.

*Table 4: Electrical lines and associated line data*

| Group name | Asset type and status | | | | | | |
|---|---|---|---|---|---|---|---|
| Data type | Label | | Label | | Label | | Label | Numeric | String |
| Column name | Line type | | Undergrounding | | Construction status | | 2020 WMP activity | Number of assets | Model code |
| *Label guide* | *Label response options* | *Corre-sponding line type* | *Label response options* | *Corre-sponding under-grounding status* | *Label response options* | *Corre-sponding construction status* | *Label response options* | *Corre-sponding WMP activity* | | |
| | 0 | Trans-mission line | 0 | Overhead | 0 | Existing | 0 | Planned removal by 2020 | | |
| | 1 | Distribution line | 1 | Under-ground | 1 | Planned addition by 2020 | 1-86 | See initiative list in Appendix 2 | | |
| | | | | | | | 100 | Other | | |

*(Continued below)*

| Continued from above | Group name | Specification | | Condition | | | | Continued below |
|---|---|---|---|---|---|---|---|---|
| | Data type | Numeric | String | Numeric | Date | Label | | Date |
| | Column name | Voltage (in Volts) | Other | Age (in years) | Date of last inspection | Level finding at last inspection | | Date of last maintenance |
| | *Label guide* | | | | | *Label response options* | *Corresponding finding type* | |
| | | | | | | 0 | No finding | |
| | | | | | | 1 | Level 1 finding | |
| | | | | | | 2 | Level 2 finding | |
| | | | | | | 3 | Level 3 finding | |

| Continued from above | Group name | Location characteristics | | | |
|---|---|---|---|---|---|
| | Data type | Label | | Label | |
| | Column name | HFTD status of location | | WUI status of location | |
| | *Label guide* | *Label response options* | *Corresponding HFTD status* | *Label response options* | *Corresponding WUI status* |
| | | 0 | Non-HFTD | 0 | Non-WUI |
| | | 1 | Zone 1 | 1 | WUI |
| | | 2 | Tier 2 | | |
| | | 3 | Tier 3 | | |

### 1.5 Appendix 6.6: Other utility equipment and associated data: Current baseline state, planned additions/removal of other utility equipment, and WMP initiative activity

Input the data below in Table 5 into a GIS file for other utility equipment and initiatives that can be expressed as a single point (i.e., not electrical lines or such other equipment and/or initiatives that must be expressed in line data) within the service territory. If multiple activities are planned to take place on that line segment, input the corresponding label response options for each activity. If the initiative activity is not listed, utilize the "other" option, with label 100. If more than of 1% of the rows utilize the "other" option and fall into the same category, specify the new initiative name and label starting at 101. Then, attach a document describing this category and why it is does not qualify as any in provided list of options. For the "Average 95th percentile wind speed in mph" and "Average 99th percentile wind speed in mph" columns, report speeds over the 2005-2014 historical period to align with the summary data reported in WMP Section 3.1 Table 10.

*Table 5: Other utility equipment*

| Group name | Asset type and status | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Data type | Label | | Label | | Label | | Label | | Numeric | String |
| Column name | Asset type | | Undergrounding | | Construction status | | 2020 WMP activity | | Number of assets | Model code |
| *Label guide* | *Label response options* | *Corresponding asset type* | *Label response options* | *Corresponding undergrounding status* | *Label response options* | *Corresponding construction status* | *Label response options* | *Corresponding WMP activity* | | |
| | 0 | Capacitor bank | 0 | Overhead | 0 | Existing | 0 | Planned removal by 2020 | | |
| | 1 | Crossarm | 1 | Underground | 1 | Planned addition by 2020 | 1-86 | See initiative list in Appendix 2 | | |
| | 2 | Fuse | | | | | 100 | Other | | |
| | 3 | Guy/span wire | | | | | | | | |
| | 4 | Insulator | | | | | | | | |
| | 5 | Lightning arrestor | | | | | | | | |
| | 6 | Other | | | | | | | | |
| | 7 | Pole | | | | | | | | |
| | 8 | Protective relay | | | | | | | | |
| | 9 | Recloser | | | | | | | | |
| | 10 | Sectionalizer | | | | | | | | |
| | 11 | Splice/clamp/connector | | | | | | | | |
| | 12 | Switch | | | | | | | | |
| | 13 | Transformer | | | | | | | | |

Continued below

8

| Group name | Asset type and status | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Data type | Label | | Label | | Label | | Label | | Numeric | String |
| Column name | Asset type | | Undergrounding | | Construction status | | 2020 WMP activity | | Number of assets | Model code |
| Label guide | *Label response options* | *Corresponding asset type* | *Label response options* | *Corresponding undergrounding status* | *Label response options* | *Corresponding construction status* | *Label response options* | *Corresponding WMP activity* | | |
| | 14 | Voltage regulator | | | | | | | | |
| | 15 | Substation | | | | | | | | |
| | 16 | Weather station | | | | | | | | |

| | Group name | Specification | | Condition | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| *Continued from above* | Data type | Numeric | String | Numeric | Date | Label | Label | Date | *Continued below* |
| | Column name | **Voltage (in Volts)** | **Other** | **Age (in years)** | **Date of last inspection** | **Level finding at last inspection** | | **Date of last maintenance** | |
| | *Label guide* | | | | | *Label response options* | *Corresponding finding type* | | |
| | | | | | | 0 | No finding | | |
| | | | | | | 1 | Level 1 finding | | |
| | | | | | | 2 | Level 2 finding | | |
| | | | | | | 3 | Level 3 finding | | |

| | Group name | Location characteristics | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Data type | Label | | Label | | Numeric | Label | | Numeric | Label |
| | Column name | HFTD status of location | | WUI status of location | | Average 95th percentile wind speed in mph | Prevailing direction of 95th percentile wind | | Average 99th percentile wind speed in mph | Prevailing direction of 99th percentile wind |
| Continued from above | Label guide | Label response options | Corresponding HFTD status | Label response options | Corresponding WUI status | | Label response options | Corresponding direction | | Label response options | Corresponding direction |
| | | 0 | Non-HFTD | 0 | Non-WUI | | 0 | N | | 0 | N |
| | | 1 | Zone 1 | 1 | WUI | | 1 | NNE | | 1 | NNE |
| | | 2 | Tier 2 | | | | 2 | NE | | 2 | NE |
| | | 3 | Tier 3 | | | | 3 | ENE | | 3 | ENE |
| | | | | | | | 4 | E | | 4 | E |
| | | | | | | | 5 | ESE | | 5 | ESE |
| | | | | | | | 6 | SE | | 6 | SE |
| | | | | | | | 7 | SSE | | 7 | SSE |
| | | | | | | | 8 | S | | 8 | S |
| | | | | | | | 9 | SSW | | 9 | SSW |
| | | | | | | | 10 | WSW | | 10 | WSW |
| | | | | | | | 11 | SW | | 11 | SW |
| | | | | | | | 12 | W | | 12 | W |
| | | | | | | | 13 | WNW | | 13 | WNW |
| | | | | | | | 14 | NW | | 14 | NW |
| | | | | | | | 15 | NNW | | 15 | NNW |

## IV. Clarification of WMP guideline requirements by section

Further clarification for the following subsections is included below.

**0** Glossary

The following additional terms and clarifications are provided to the glossary.

| Term | Definition |
|---|---|
| **Risk map** | A collection of data sufficient to represent the spatial distribution (e.g., across a geography) of a given type of risk (i.e., the probability of an event and its consequence) and the spatial representation thereof. Data inputs shall include the variables and conditions used to calculate risk for a given point, line, or polygon. |
| **Risk mapping algorithm** | A risk mapping algorithm is a methodology for calculating risk levels from data inputs across a spatial display (i.e., map of geography). |
| **RFW Circuit Mile Day** | Sum of miles of utility grid subject to Red Flag Warning each day. For example, if 100 circuit miles were under a RFW for 1 day, and 10 of those miles were under RFW for an additional day, then the total RFW circuit mile days would be 110. To calculate a Red Flag Warning (RFW) day, hours of a RFW shall be converted to fractions of a day by dividing by 24. For example, if a period of 12 days saw 1 hour of RFW each day, then the number of RFW days would be 12 * 1 hour / 24 hours = 0.5 RFW days. The reporting unit RFW circuit mile days takes into account the geographic scope of the RFW by multiplying its duration by the number of circuit miles within the scope of the RFW during the given time. |

**2** Metrics and underlying data

For the purposes of the WMP submission this February, metrics should be reported as outlined without regard to the reporting frequency. In the WMP, report the current and historical metrics as outlined in the tables.

**2.2** Recent performance on progress metrics, last 5 years

For Table 1: *Recent performance on progress metrics, last 5 years,* the utility may calculate the "Percent of data requested in SDR and WMP collected in initial submission" by dividing the total number of cells where the utility provides data in the SDR and the WMP by the total number of cells of data requested in both documents. If any narrative requirements are unmet (e.g., for a list and description), this shall be noted in the adjacent comments.

**2.3** Recent performance on outcome metrics, annual and normalized for weather, last 5 years

For Table 2: *Recent performance on outcome metrics, last 5 years,* Metric 7 "Value of assets destroyed by utility-ignited wildfire, listed by asset type" is intended to capture the dollar value of destruction caused by utility-ignited wildfire in its territory, including both 3rd party assets (including structures) and utility infrastructure. Include the total value of damage to all these assets and explain the sources of the information used in the comments. The WSD recognizes that this will be an estimate. Each utility is expected to use the best available data in its possession, or accessible via third parties, for its utility-ignited wildfires. Sources and methods shall be cited such that the WSD can understand how the utility determined these summary figures.

For Table 2 Metric 8, "Number of structures destroyed by utility-ignited wildfire," include utility and non-utility (meaning belonging to a third party) structures. The term "structures" is one of the metrics that CAL FIRE already uses to report wildfire damage and refers to buildings (e.g., a dwelling, a place of business, etc.). These numbers shall be provided individually for utility and non-utility structures.

**2.5**   Description of program targets

For Table 4: *List and description of program targets, last 5 years*, data should be only for 2019. Program Targets are targets for utility wildfire mitigation as expressed in the 2019 WMPs. Given that WMPs were new in 2019, this is only relevant over the past year. The 5-year horizon applies to the progress and outcome metrics.

**2.7**   Mapping recent, modelled, and baseline conditions

Table 9, Part 3 "Planned 2020 WMP initiative activity per year," when there is an estimate where a percentage of some asset type is assumed to need replacement (as part of a planned 2020 WMP activity), the planned replacement shall be included in the GIS file for Appendices 6.5 or 6.6, depending upon whether the asset is represented as a line or a point, for each quarter-mile segment of linear data or for each point location of that asset.

**3.2**   Recent drivers of ignition probability, last 5 years

Table 11: *Key recent drivers of ignition probability, last 5 years*, shall be completed for transmission lines and distribution lines separately, submitted as Table 11a and Table 11b, respectively.

With respect to identification of "ignition probability drivers," the rows within Table 11 are illustrative and, as explained in the introductory text, utilities are expected to include all ignition drivers that they track. At a minimum, "ignition probability drivers" shall include all permutations of the "Suspected Initiating Event," including two subsequent columns "Equipment/Facility Failure" and "Contact From Object" columns provided in the fire ignition data template provided on page C-8 of D.14-02-015 and reported annually on April 1. The baseline list of ignition probability drivers shall include all types of equipment, facilities, and objects. This page shall be referenced in lieu of the cited SDR Table 24, which does not exist.

> **3.4.3**   Status quo ignition probability drivers by service territory
>
> Table 11: *Key drivers of ignition probability*, should be completed for transmission lines and distribution lines separately, submitted as Table 18a and Table 18b, respectively.
>
> **4.2.1**   Service territory fire-threat evaluation and ignition risk trends
>
> For Table 19, rows 4-6, the intent is to understand the utility's perspective on how changes in the characteristics and distribution of population that could be impacted by utility ignition will increase or decrease risk, in terms of ignition probability and estimated wildfire consequence given the long-lasting investments in utility infrastructure. This shall be based on the utility's projection for how its service territory will evolve over time. For example, if the utility expects the population in the WUI areas of its service territory (as reported in the appendices) to increase substantially, the consequences of potential wildfires in those areas would increase in terms of community impact.

**5.3**   Detailed wildfire mitigation programs

In the narrative required for 5.3.1 through 5.3.10, the utility's rationale behind each of the elements of the program shall include a list of alternatives considered and the utility's rationale for choosing only the initiatives outlined in the plan and not the alternatives.

For Tables 21-30, provide the total spend in the cells corresponding to the "Total per-initiative spend" and "Spend/treated line mile," and, if available, provide the disaggregated O&M and Capital costs for each in the comments column.

**Appendix 1: Questions and answers from utility Q&A session of January 9, 2020**

### 1.1 PacifiCorp

**1.1.1**   Q: Can staff please explain why the resolution for certain data is a quarter mile for some records but one mile for others (see, e.g., Table 9 of the WMP Guidelines)? The company is concerned that different resolutions could result in confusion and subject to any discussions tomorrow would recommend using a one-mile resolution consistently.

*A: Per Section 2.7, a maximum quarter-mile resolution is required for line data in order to accurately plot data such as the geographic location of distribution lines. If the two points provided to describe a line were up to one mile apart, valuable detail would be lost, as distribution lines, particularly across different terrain, may not be straight lines between two points.*

**1.1.2**   Q: Would it be acceptable to reconcile data, consistent with Table 9, to the Public land survey (i.e., to the square mile)?

*A: Per Section 2.7, to address this concern, the WSD will provide template shapefiles that include the census tracts for which utilities are required in input characteristic information, based on the units specified.*

**1.1.3**   Q: PacifiCorp would like clarity on how "red flag warning" should interact with the definition of a day when a red flag warning could last for a few hours or dozens of hours.

*A: Per Section 2.7, for a Red Flag Warning (RFW) day, hours shall be converted to fractions of a day by dividing by 24. For example, if a period of 12 days saw 1 hour of RFW each day, then the number of RFW days would be 12 * 1 hour / 24 hours = 0.5 RFW days. More often, the reporting unit is RFW circuit mile days, which would take into account the geographic scope of the RFW by multiplying its duration by the number of circuit miles within the scope of the RFW during the given time.*

**1.1.4**   Q: PacifiCorp would like clarity on how to present GIS data where a feature might only require 20% replacement but is being requested to be presented as a GIS dataset. Example situation: If the red area in the "map" below is the high fire threat district and each square represents a square mile, how should the replacement of insulated cable within each of the squares along the line drawn over the red area be represented (i.e., how would this data be reported in the tables provided)?
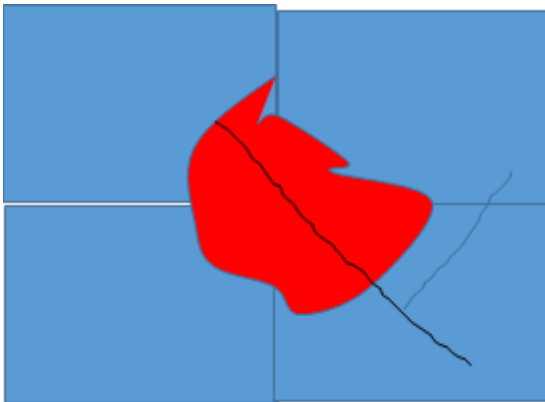


*A: Per Section 2.7, when there is an estimate where a percentage of some asset type is assumed to need replacement (as part of a planned 2020 WMP activity), the planned replacement should be provided in the GIS files for Appendices 6.5 or 6.6, depending upon whether the asset is represented as a line or a point, respectively, for each quarter-mile segment of linear data or for each point location of that asset, by GPS coordinates. If any portion of the quarter mile resolution line segment is within the HFTD, that entire segment may be considered as within the HFTD for the purpose of the GIS file.*

*Utilities have the option of reporting data in a higher resolution. Utilities may submit higher resolution GIS files that are fractions of the specified resolution (e.g. half-mile resolution where 1-mile resolution is specified and 1/8th mile resolution where quarter mile resolution is specified).*

*For this example, the utility would report information for each quarter-mile segment of the line in the example image, in the GIS file submitted for Appendix 6.5, including the HFTD zone (i.e., Tier 3, Tier 2, etc.) of each segment and the WMP initiatives (replacement of insulated cable, etc.) planned for each segment).*

**1.1.5** Q: The company would like clarity on the application of the definitions of urban, rural and highly rural. Specifically, the definition of highly rural set forth in 38 CFR 17.071 refers to counties but the WMP Guidelines refer to square miles.

A: *Per Section 2.7, rather than requiring utilities to design a map of their service territory with square mile granularity, the WSD is providing shapefiles with census tract names and shapes. Rather than coding the population per square mile for any census tract within the utility's service territory as "urban", "rural," or "highly rural," the utility shall simply report the numeric value for the population per square mile for any census tract.*

## 1.2 SDG&E

**1.2.1** Q: How will the survey be used to develop scores for each capability? For instance, if a capability has 4 questions and we score at a higher level in one question and lower on others, will they take the average or the lowest score to come up with the aggregate score for the capability? Walking through an example would be very helpful.

A: *Per Section I of this document, binary scoring will be used. That means, in order to achieve a given maturity score for the capability overall, the utility must meet all elements identified at that level in the scoring rubric for all questions associated with that capability. If any element is not met, the corresponding lower score will be applied for the capability. This is true for each of the 52 capabilities, since their scores are calculated separately.*

*More generally, as indicated in the WMP decision, the electronic version of the survey will be accompanied by additional instructions and clarifications as needed. The vendor used for this survey is providing functionality to enable utilities to navigate through the survey questions and to save progress.*

**1.2.2** Q: How do you define risk mapping and what's an example of a risk mapping algorithm?

A: *Per Section 0, a risk map is a collection of data sufficient to represent the spatial distribution (e.g., across a geography) of a given type of risk (i.e., the probability of an event and its consequence) and the spatial representation thereof. Data inputs should include the variables and conditions used to calculate risk for a given point, line, or polygon. The risk mapping algorithm is a methodology for interpreting a risk calculation from these data inputs.*

*For example, the work that Technosylva is doing to develop geographic maps of wildfire risk given an ignition is an example of such a risk map.*

**1.2.3** Q: On the survey question A.I.a, what's the difference between determining wildfire risk and categorizing level of risk?

A: *Per Section I, additional clarification and guidance for completing survey responses will be included in the electronic version of utility wildfire mitigation maturity survey. Categorizing level of risk requires a set of calculations and judgements to group areas by wildfire risk is present (e.g., as a function of ignition probability, propagation, and communities located in the propagation path). Determining wildfire risk refers*

*to estimating a quantitative level of wildfire risk (also as a function of e.g., ignition probability, propagation, and communities located in the propagation path).*

**1.2.4** Q: On survey question A.IV.a, what's the difference between answers ii, iii, iv and v?

A: *Per Section I, additional clarification and guidance for completing survey responses will be included in the electronic version of utility wildfire mitigation maturity survey.*

**1.2.5** Q: On survey question B.I.b, options i and iv are exactly the same and could translate to completely different scores. How do we choose one?

A: *Per Section I, additional clarification and guidance for completing survey responses will be included in the electronic version of utility wildfire mitigation maturity survey.*

Q: On survey question F.V.b, what's the difference between partially, mostly and primarily automated?

A: *Per Section I, additional clarification and guidance for completing survey responses will be included in the electronic version of utility wildfire mitigation maturity survey.*

**1.2.6** Q: On survey question F.VI.c, are you asking for major injuries or fatalities of workers or the public and are you asking for historical records of major injuries or fatalities as well as a predicted value for 2023?

A: *Per Section I, additional clarification and guidance for completing survey responses will be included in the electronic version of utility wildfire mitigation maturity survey.*

**1.2.7** Q: On survey question H.II.d, how is overall risk reduction different from estimates of impact on reliability factors?

A: *Per Section I, additional clarification and guidance for completing survey responses will be included in the electronic version of utility wildfire mitigation maturity survey.*

**1.2.8** Q: On survey question H.IV.e, please clarify what the question is asking and what is meant by "utility uses total cost of ownership"

A: *Per Section I, additional clarification and guidance for completing survey responses will be included in the electronic version of utility wildfire mitigation maturity survey.*

**1.2.9** Q: How are questions H.V.a and H.VI.b different?

A: *Per Section I, additional clarification and guidance for completing survey responses will be included in the electronic version of utility wildfire mitigation maturity survey.*

**1.2.10** Q: How are questions H.V.c and HVI.d different?

A: *Per Section I, additional clarification and guidance for completing survey responses will be included in the electronic version of utility wildfire mitigation maturity survey.*

**1.2.11** Q: How are questions H.V.d and H.VI.e different?

A: *Per Section I, additional clarification and guidance for completing survey responses will be included in the electronic version of utility wildfire mitigation maturity survey.*

**1.2.12** Q: On survey question I.I.a, what's the difference between ii and iii (component of the plan vs integrated component of the plan)?

A: *Per Section I, additional clarification and guidance for completing survey responses will be included in the electronic version of utility wildfire mitigation maturity survey.*

**1.2.13** Q: On survey question A.I.b (and other ones such as A.III.f), hypothetically - if we do support our scenarios assessment by historical data of incidents and near misses and conduct internal assessments, but don't have

an independent expert assessment, where would it fit? (It seems to not give any credit to the use of historical data and internal assessments)

A: *Per Section I, additional clarification and guidance for completing survey responses will be included in the electronic version of utility wildfire mitigation maturity survey.*

**1.3 SCE**

**1.3.1**    Q: What is meant by "area of the grid affected in customer hours per year" in terms of having it on a GIS shapefile and over past 5 years? [Per Guidelines; 2.7 Row 3]

A: *Per Section II, 2.1 Appendix 6.1: Recent weather patterns and use of PSPS, for each census tract within the utility service territory, report annual figures (numbers) for the duration of PSPS events within that census tract as measured in customer hours per year. "Customer hours of PSPS per year" for a given census tract shall be calculated by multiplying the number of people de-energized during a PSPS event by the number of hours during which their power was shut off. For example, if there were two PSPS events affecting people in a given census tract, the first of which shut off power for 80 people for 1 hour and 10 additional people for 2 hours, and the second of which shut off power for 1 person for 1 hour, then the total customer hours of PSPS for that census tract that year would be (80\*1) + (10\*2) + (1\*1) = 101 customer hours.*

**1.3.2**    Q: Table 4 – Metrics (Program targets) table only requests 2019 performance, but title of section says include the last 5 years? [Guidelines; 2.5/ Table 4]

A: *For 'Program Targets' specifically, data should be only for 2019 and not for the past 5 years. Program Targets are targets for utility wildfire mitigation as expressed in the 2019 WMPs. Given that WMPs were new in 2019, this is only relevant over the past year. The 5-year horizon applies to the progress and outcome metrics.*

**1.3.3**    Q: Part 7 asks for "Value of assets destroyed by utility-ignited wildfire, listed by asset type". What is meant by "assets"? Are these utility assets only or do they include 3rd party assets? [Guidelines; Table 2]

A: *Part 7 of Table 2 is intended to capture the dollar value of destruction caused by utility-ignited wildfire in its territory, including both 3rd party assets (including structures) and utility infrastructure. Include the total value of damage to all these assets and explain the sources of the information used in the comments. The WSD recognizes that this will be an estimate. Each utility is expected to use the best available data in its possession, or accessible via third parties, for its utility-ignited wildfires. Sources and methods shall be cited such that the WSD can understand how the utility determined these summary figures.*

**1.3.4**    Q: Part 8 asks for "Number of structures destroyed by utility-ignited wildfire". What is meant by "structures"? Are these utility structures only or do they include 3rd party structures too? [Guidelines; Table 2]

A: *The intent is to account for both utility and non-utility (meaning belonging to a third party) structures. The term "structures" is one of the metrics that CAL FIRE already uses to report wildfire damage and refers to buildings (e.g., a dwelling, a place of business, etc.). These numbers should be provided individually for utility and non-utility structures.*

**1.3.5**    Q: Our assumption for table 1, row 4 (2019) is to take the [total number of cells where SCE provides data in WMP] / [total number of cell of data requested in WMP]. Is this acceptable approach or does WSD know of or recommend a different interpretation? [Guidelines; Table 1]

A: *This is an acceptable approach, if the total number of cells is counted for both the SDR and the WMP. If any narrative requirements are unmet (e.g., for a list and description), this shall be noted in the adjacent comments.*

**1.3.6**   Q: Row 4-6 ask us to rank how population changes in various locations (e.g., WUI, highly rural areas) could be impacted by utility ignition. Could WSD clarify how to define these boundaries areas to ensure consistency with other utilities? [Guidelines; Table 19]

A: *For rows 4-6, the intent is to understand the utility's perspective on how changes in the characteristics and distribution of population that could be impacted by utility ignition will increase or decrease risk, in terms of ignition probability and estimated wildfire consequence. This should be based on the utility's projection for how its service territory will evolve over time. For example, if the utility expects the population in the WUI areas of its service territory (as reported in the appendices) to increase substantially, the consequences of potential wildfires in those areas would increase in terms of community impact.*

**1.3.7**   Q: Row 8 ask us to rank how utility infrastructure location in urban, rural, and highly rural areas could impact ignition probability and estimated wildlife consequence. Could WSD clarify how to define these boundaries areas to ensure consistency with other utilities? [Guidelines; Table 19]

A: *Rather than coding the population per square mile for any census tract within the utility's service territory as "urban", "rural," or "highly rural," the utility shall simply report the numeric value for the population per square mile for any census tract. The WSD is providing shapefiles with census tract names and shapes.*

**1.3.8**   Q: Several of the table require total per-initiative spend and only include one column. SCE presumes the WSD wants utilities to combine O&M and Capital costs into this one column. Is this correct? [Guidelines; Table 21-30]

A: *Provide the total spend in the cell, and, if available, provide the O&M and Capital costs in the comments column.*

**1.3.9**   Q: Metrics: SCE assumes collection frequency is not synonymous with reporting frequency. What is the reporting frequency? / [Metrics]

A: *For the purposes of the WMP submission this February, metrics should be reported as outlined without regard to the reporting frequency. In the WMP, report the current and historical metrics as outlined in the tables.*

*Beyond the WMP submissions for this year, the WSD will request updated information on metrics performance in the annual update. In the future, the WSD may also require utilities to provide more frequent updates of certain metrics. For example, the WSD may ask for quarterly updates of certain metrics.*

**1.3.10**   Q: Could you explain the difference between "all WMP programs" and "wildfire-only WMP programs?" [Outcome Metrics; Table 2]

A: *According to the definition for the term "wildfire-only WMP programs" in the WMP Guidelines Section 0, the "wildfire-only" designation is intended to capture programs that are implemented explicitly to reduce the probability of utility ignition or the consequences of such an ignition. These therefore do not include programs that are implemented in response to existing regulation or other priorities that may have an ancillary correlation to reduction of utility ignition risk. For example, the level of maintenance that would be required to meet minimum safety requirements in an area where there is no risk of wildfire (for example, the right-of-way and surrounding land has no fuel, e.g., all stone or pavement) cannot be designated as a "wildfire-only WMP program," even when that level of maintenance is implemented in a wildfire-prone area. Only the incremental or distinct maintenance activities implemented to specifically mitigate the present wildfire risk shall be included in "wildfire-only WMP programs."*

**1.3.11**   Q: What does "stress test conditions" means in the context of customer hours of PSPS? [Outcome Metrics; Table 2]

A: *Stress test results should be reported according to the requirements detailed in the Supplemental Data Request. For the summary data required Table 2: Recent performance on outcome metrics, last 5 years, on*

*outcome metric 2a ("Percent of customers experiencing PSPS given 95th percentile fire weather conditions along entire grid using utility PSPS decision protocols") and 2b ("Percent of customers experiencing PSPS given 99th percentile fire weather conditions along entire grid using utility PSPS decision protocols"), report results of modelled PSPS using the percentage of all customers affected rather than a measure of customer hours. Customer hours modelled in stress testing shall be reported in Appendix 3.6 per the requirements of Table 8, Table 11, and Table 13.*

*According to Supplemental Data Request Section 2, stress test conditions are defined as weather conditions reported for each circuit in the service territory that year that repeat the 5-year historical average of the 95th and 99th percentile wind conditions for that circuit over 2015-2019, including an assumption that a state-wide RFW was in effect each day. Use existing PSPS protocols to determine use of PSPS necessary under such stress test weather conditions.*

**1.3.12** Q: Does "experiencing" PSPS mean actual de-energizations or something else?
[Outcome Metrics; Table 2]

A: *"Experiencing PSPS" in this context means having their power pre-emptively shut-off given the conditions described (i.e. 95th or 99th percentile). All people to whom the utility supplies power (be it to their residence or otherwise) within the geographic scope of the de-energization shall be counting as people "experiencing" PSPS, regardless of whether 1) they have personal alternative sources of power that they may or may not be able to use at the time of the PSPS event or 2) they utilize community resource centers for some hours during a PSPS event. Additional information related to these aspects may be included in comments or supplemental information.*

**1.4 PG&E**

**1.4.1** Q: On page 50 of the WMP Guidelines (Attachment 1), #4 in the middle of the page states that we should reference SDR Table 24 for the "list of ignition probability drivers". However, it does not appear that Table 24 exists in the SDR (attachment 5), and multiple tables in the WMP Guidelines (Attachment 1) ask to provide the list of ignition probability drivers, namely Table 11 on pages 29-30, Table 18 on pages 41-42 and Table 31 on pages 83-84. Therefore, we plan to use the rows within the Table 11 on pages 29-30 of the WMP Guidelines as the "ignition probability drivers" for the tables in section 5.3 (tables 21-30).

Please let us know if it seems that we are not on the right track with using the list from Table 11 of the WMP Guidelines in this case.

A: *With respect to identification of "ignition probability drivers," the rows within Table 11 are illustrative and, as explained in the introductory text, utilities are expected to include all ignition drivers that they track. At a minimum, "ignition probability drivers" shall include all permutations of the "Suspected Initiating Event," including two subsequent columns "Equipment/Facility Failure" and "Contact From Object" columns provided in the fire ignition data template provided on page C-8 of D.14-02-015 and reported annually on April 1. The baseline list of ignition probability drivers shall include all types of equipment, facilities, and objects. This page is provided in the Excel attachment of the WMP Guidelines Clarification Guidance document and shall be referenced in lieu of the cited SDR Table 24, which does not exist.*

**Appendix 2: WMP initiative list**

1. A summarized risk map that shows the overall ignition probability and estimated wildfire consequence along the electric lines and equipment
2. Climate-driven risk map and modelling based on various relevant weather scenarios
3. Ignition probability mapping showing the probability of ignition along the electric lines and equipment
4. Initiative mapping and estimation of wildfire and PSPS risk-reduction impact
5. Match drop simulations showing the potential wildfire consequence of ignitions that occur along the electric lines and equipment
6. Advanced weather monitoring and weather stations
7. Continuous monitoring sensors
8. Fault indicators for detecting faults on electric lines and equipment
9. Forecast of a fire risk index, fire potential index, or similar
10. Personnel monitoring areas of electric lines and equipment in elevated fire risk conditions
11. Weather forecasting and estimating impacts on electric lines and equipment
12. Capacitor maintenance and replacement program
13. Circuit breaker maintenance and installation to de-energize lines upon detecting a fault
14. Covered conductor installation
15. Covered conductor maintenance
16. Crossarm maintenance, repair, and replacement
17. Distribution pole replacement and reinforcement, including with composite poles
18. Expulsion fuse replacement
19. Grid topology improvements to mitigate or reduce PSPS events
20. Installation of system automation equipment
21. Maintenance, repair, and replacement of connectors, including hotline clamps
22. Mitigation of impact on customers and other residents affected during PSPS event
23. Other corrective action
24. Pole loading infrastructure hardening and replacement program based on pole loading assessment program
25. Transformers maintenance and replacement
26. Transmission tower maintenance and replacement
27. Undergrounding of electric lines and/or equipment
28. Updates to grid topology to minimize risk of ignition in HFTDs
29. Detailed inspections of distribution electric lines and equipment
30. Detailed inspections of transmission electric lines and equipment
31. Improvement of inspections
32. Infrared inspections of distribution electric lines and equipment
33. Infrared inspections of transmission electric lines and equipment
34. Intrusive pole inspections
35. LiDAR inspections of distribution electric lines and equipment
36. LiDAR inspections of transmission electric lines and equipment
37. Other discretionary inspection of distribution electric lines and equipment, beyond inspections mandated by rules and regulations
38. Other discretionary inspection of transmission electric lines and equipment, beyond inspections mandated by rules and regulations
39. Patrol inspections of distribution electric lines and equipment
40. Patrol inspections of transmission electric lines and equipment
41. Pole loading assessment program to determine safety factor
42. Quality assurance / quality control of inspections
43. Substation inspections
44. Additional efforts to manage community and environmental impacts

45. Detailed inspections of vegetation around distribution electric lines and equipment
46. Detailed inspections of vegetation around transmission electric lines and equipment
47. Emergency response vegetation management due to red flag warning or other urgent conditions
48. Fuel management and reduction of "slash" from vegetation management activities
49. Improvement of inspections
50. LiDAR inspections of vegetation around distribution electric lines and equipment
51. LiDAR inspections of vegetation around transmission electric lines and equipment
52. Other discretionary inspections of vegetation around distribution electric lines and equipment
53. Other discretionary inspections of vegetation around transmission electric lines and equipment
54. Patrol inspections of vegetation around distribution electric lines and equipment
55. Patrol inspections of vegetation around transmission electric lines and equipment
56. Quality assurance / quality control of vegetation inspections
57. Recruiting and training of vegetation management personnel
58. Remediation of at-risk species
59. Removal and remediation of trees with strike potential to electric lines and equipment
60. Substation inspection
61. Substation vegetation management
62. Vegetation inventory system
63. Vegetation management to achieve clearances around electric lines and equipment
64. Automatic recloser operations
65. Crew-accompanying ignition prevention and suppression resources and services
66. Personnel work procedures and training in conditions of elevated fire risk
67. Protocols for PSPS re-energization
68. PSPS events and mitigation of PSPS impacts
69. Stationed and on-call ignition prevention and suppression resources and services
70. Centralized repository for data
71. Collaborative research on utility ignition and/or wildfire
72. Documentation and disclosure of wildfire-related data and algorithms
73. Tracking and analysis of near miss data
74. Allocation methodology development and application
75. Risk reduction scenario development and analysis
76. Risk spend efficiency analysis
77. Adequate and trained workforce for service restoration
78. Community outreach, public awareness, and communications efforts
79. Customer support in emergencies
80. Disaster and emergency preparedness plan
81. Preparedness and planning for service restoration
82. Protocols in place to learn from wildfire events
83. Community engagement
84. Cooperation and best practice sharing with agencies outside CA
85. Cooperation with suppression agencies
86. Forest service and fuel reduction cooperation and joint roadmap