Draft Wildfire Safety Division (WSD) Geographic Information System (GIS) Data Reporting Requirements and Schema for California Electrical Corporations

ISSUED BY CALIFORNIA PUBLIC UTILITIES COMMISSION (CPUC)

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1. INTRODUCTION

As part of the 2020 wildfire mitigation plan (WMP) process overseen by the Wildfire Safety Division (WSD or Division) of the California Public Utilities Commission (CPUC), electrical corporations in California were required to submit certain geographic information system (GIS) data. While the submission of electrical corporation GIS data in support of the 2020 WMP process marked a significant advancement in data sharing and transparency, the inconsistent formats, lack of metadata, and overall discrepancies amongst electrical corporation data rendered analysis and utilization of such data difficult and inefficient. As such, the WSD identified a need to develop and implement standardized data formatting, structuring, and reporting requirements to support the rapid pace of the statutorily mandated three-month timeframe allotted for review and disposition of WMPs. In this document, the WSD presents standards, schemas, and a schedule for submission of GIS data to the Division in support of its assessment of WMPs. These standardized data submissions will provide the WSD with important asset and risk data that will be used to monitor and evaluate utility safety, wildfire risk reduction, and compliance activities. These GIS data reporting standards cover data files and geodatabases, attribute value formatting, metadata, the act of submitting data, data submission schedules, related table development, and data schema.

The GIS data reporting requirements described in this document shall apply to the following electrical corporations:

- Bear Valley Electric Service
- Horizon West
- Liberty Utilities
- Pacific Gas and Electric
- PacifiCorp
- San Diego Gas and Electric
- Southern California Edison
- Trans Bay Cable

2. SUBMISSION STANDARDS

2.1 Geodatabases and Data Files

2.1.1 Geodatabases to be Provided to Electrical Corporations

GIS data will include points, lines, polygons, and their associated attribute tables. Prior to data submission, the WSD provided each electrical corporation with a geodatabase (GDB) that includes empty feature classes and related tables for all data that the electrical corporation is required to submit to the WSD. The GDB includes a series of feature datasets with each one containing thematically similar feature classes. The GDB also contains related tables associated with the feature classes.

The GDB has attribute domains set up with all predetermined attribute table and related table field values specified by the WSD. The feature classes and tables provided to electrical corporations will follow appropriate WSD-required naming conventions and are compliant with

the required schema, as set forth in the instant document. The feature classes also have aliases[1] for all field names. Moreover, the GDB includes much of the required metadata that describe the data and define fields and field values. However, electrical corporations will need to define some custom field values for fields that do not have predetermined values and update metadata, as needed.

2.1.2 Overall Data File Requirements

Electrical corporations must meet the following requirements when submitting GIS data to the WSD:

1. Submit data as feature classes and related tables in a single GDB per submission.
2. Submit GDB files that are interoperable and compatible with ArcGIS Desktop 10.0 at a minimum, but ideally, all data will be interoperable with ArcGIS Pro.
3. Ensure all data attributes follow the schemas included in this document.
4. Customize metadata as needed and follow the requirements in this document.
5. Use the "WGS84 Web Mercator (auxiliary sphere)" projected coordinate system (WKID 3857)[2] for all data submitted.
6. Review data for quality prior to submission. This includes ensuring all records have reasonably correct geolocations.[3] Identify all data attributes that do not have accurate values and explain why this is the case in metadata. Data outside of California is not required, except where electrical infrastructure traverses state borders (e.g., cameras or weather stations installed on mountain tops at state borders). Any assets with inaccurate coordinates (which place them outside of California borders) will not be considered a complete part of a data submission. Upon receipt, the WSD will review data submissions for quality and completeness. Repeated issues with data quality will be considered in future WMP reviews by the WSD.

2.2 Geodatabase and Feature Class and Related Table Naming Conventions

Naming conventions are mostly preset in the GDB files provided by the WSD to electrical corporations. However, each electrical corporation must submit its completed GDB back to the WSD and rename it to include:

1. An abbreviation identifying the electrical corporation, and
2. The date of data submission in the YYYYMMDD format where YYYY = the 4-digit year (e.g., 2021), MM = month with a 0 if the month is a single number (e.g., 04 for April), and DD = day with a 0 if the date is a single number (e.g., 02 for the 2nd of the month).

[1] In the event an electrical corporation adds a new field, it must provide a corresponding alias that includes spaces between each field name word.

[2] This projected coordinate system will enhance performance for some of the WSD's data products. However, when calculating measurements from data (e.g., span length), use the "NAD 1983 California (Teale) Albers (Meters)" projected coordinate system (WKID 3310) as it is more localized and will result in more accurate values.

[3] For example, pole-mounted asset data points being a few feet offset from power lines would often not be an issue, but something like outage points in the middle of the Pacific Ocean would be an issue.

For example, a hypothetical electrical corporation named California Electric Company (CEC)[4] submitting a GDB on June 15, 2022 would use the following format for the GDB file name: "CEC_20220615." A full list of the feature classes and related tables to be included in each GDB are provided in Section 3 of this document. Feature classes and related tables in the GDB are to be named with a format similar to the GDB, except there will be a content label (i.e., feature class or related table name) in the middle of the filenames (e.g., "CEC_PrimaryDistributionLine_20220615").

2.3 Attribute Value Formatting

All text attribute values shall have sentence style capitalization in which the only words capitalized in a value are proper nouns, acronyms and the first letter of a sentence (e.g., "Tree branch fell into line," "Expulsion fuse," "All aluminum conductor [AAC]," etc.).

The YYYY-MM-DD format shall be used for all date values where YYYY = the 4-digit year (e.g., 2021), MM = month with a 0 if the month is a single number (e.g., 04 for April), and DD = day with a 0 if the date is a single number (e.g., 02 for the 2nd of the month).

The "hh:mm:ss" format shall be used for all time values where hh = the hour in military time (e.g., 13 for 1:00 pm), mm = minutes, and ss = the seconds. Enter "00" for the seconds if the exact value is not known.

2.4 Metadata

Although the GDBs provided by the WSD include much of the required metadata that describe the data and define fields and field values, electrical corporations are required to update and expand the metadata, as necessary. For each feature class, electrical corporations are required to update, at a minimum, the following "Item Description" metadata sections below with data-specific and electrical corporation-specific information. The "Summary" sections of the metadata have been completed by the WSD and do not require further editing.

- Description
  - Provide description information, including explanations for incomplete or partially inaccurate data and any details about unusual or problematic aspects of the data of which the WSD should be aware.
  - Describe the methodology for how the data were developed. This includes, at a minimum, identifying the sources (by filename) from which the data were derived and an explanation of how data were pulled from those sources. Also, describe any data field collection techniques.
  - Describe the timeframe represented by the data. This may vary by feature class and by electrical corporation. For example, certain asset data may be the latest available but only represent the state of data as of six months prior to submission because that was the last time such data were collected. Initiative and risk event data may also represent specific varying timeframes based on an electrical corporation's existing data collection and reporting procedures.

[4] The file templates provided to electrical corporations generally utilize "CEC" as a placeholder for the electrical corporation abbreviation that must be revised in accordance with the name of the respondent electrical corporation.

    - Clarify communication contacts and protocols.[5]
        - Identify a primary and secondary point of contact (POC) for future correspondence related to GIS data.
        - Provide the contact information (phone numbers and e-mail addresses for both primary and secondary GIS data POCs).
        - Identify preferred protocols for correspondence with GIS data POCs.
- Credits
    - List the entity or entities responsible for the data development. Include the names of any contracting companies that assisted with data development.
- Use limitations
    - Describe confidentiality concerns and any special notes about circumstances/purposes for which the data should not be used. For each feature class, include a list of fields that are confidential, and explain why the data in those fields are confidential.
- Definitions for electrical corporation-generated field values for fields that do not have predetermined values assigned as attribute domains in the provided GDB (e.g., the "SwitchgearType" field in the "Switchgear" feature class).
    - In ArcGIS Pro, field definitions can be added under "Entity and Attribute Information" in the "Fields" section.

Furthermore, the WSD encourages electrical corporations to expand the "Tags" section of the metadata as needed. Metadata submitted by electrical corporations must be embedded within GDB feature classes. Separate metadata in alternate formats will not be accepted by the WSD.

2.5 Actual Submission

Prior to submission, GDBs must be scanned for viruses and compressed into a zipped folder. Zipped GDBs must be transmitted through the CPUC's Kiteworks secure file transfer portal available at: https://cpucftp.cpuc.ca.gov/.[6] Electrical corporation data submissions through Kiteworks must be sent to the following email account: WildfireData@cpuc.ca.gov.

2.6 Related Tables

The GDBs provided to electrical corporations will include empty placeholder related tables for applicable feature classes. Electrical corporations must completely fill in and submit these related tables. A high-level entity-relationship diagram (ERD) is included in Appendix C of this document to depict the relationships between the spatial and non-spatial tabular data in these requirements. Subsets of this high-level ERD are included in appropriate subsections throughout the document.

[5] Electrical corporation or WSD staff may redact staff contacts and other information deemed confidential in public versions of the GIS data, but electrical corporation contact information and all other confidential data must be provided to the WSD.

[6] Additional information regarding the CPUC's Kiteworks secure file transfer portal is available at: https://www.cpuc.ca.gov/General.aspx?id=6442459667.

The data in these WSD GIS data reporting requirements are related (or joined) with primary keys and foreign keys that enable linking of feature class attribute tables with their related data tables.[7] Unique field values ("EventID," "CircuitID," etc.) contained within multiple layers and related tables can also be used to link various data tables to each other as needed. Electrical corporations are encouraged to provide additional related tables beyond those provided by the WSD, if available.

Relationship files for the related tables have not been provided because the WSD GIS data reporting requirements do not impose a strict database relationship rule between the parent and child tables. Another reason relationship files for related tables are not provided is because each electrical corporation uses different database management systems. When it comes to relating feature classes to associated related tables, at a minimum, electrical corporations must fill in all the primary key and foreign key field values applicable to feature classes and their related tables.

2.7 Submission Checklist

The following checklist may be used by electrical corporations to ensure adherence to the WSD's GIS data reporting standards.

	Data Reporting Checklist
	1. Data are interoperable & compatible with ArcGIS 10.0 at a minimum.
	2. All required feature classes are included in the GDB.
	3. All required related tables are included in the GDB.
	4. The feature classes and related tables adhere to the required schema.
	5. The "WGS84 Web Mercator (auxiliary sphere)" projected coordinate system was used for all feature classes.
	6. The "NAD 1983 California (Teale) Albers (Meters)" projected coordinate system was used for calculating measurements from data (e.g., span length) for specific fields.
	7. Data are appropriately geolocated.
	8. Data are complete.
	9. Data completeness and accuracy deficiencies are described in metadata as needed.
	10. Metadata was customized as needed.
	11. All dates are in the YYYY-DD-MM format.
	12. All times are in the hh:mm:ss format.
	13. All attribute text values are capitalized in the sentence style format.
	14. The submission GDB follows appropriate naming conventions and is zipped.
	15. All required photos are properly named, organized, and in a zipped folder.
	16. The WSD GIS Data Schema Status Report is complete and included with the overall batch of submission materials.

2.8 Submission Schedule

GIS data are to be submitted to the WSD on a regular basis, but some feature classes must be submitted more frequently than others. It is the WSD's expectation that data covering assets,

[7] Electrical corporations must not utilize "OBJECTID"—a field auto-generated by ArcGIS software—as a unique ID. The "OBJECTID" field should not be considered as a unique ID because its values change during geoprocessing.

critical facilities, and administrative areas are to be submitted at least once annually, while data covering risk events, initiatives, and weather are to be submitted on a quarterly basis. As it pertains to Public Safety Power Shutoff (PSPS) data, both events and damage, there are current California Public Utilities Commission (CPUC) requirements that certain information be reported within 10-days after a PSPS event.[8] However, while consolidating reporting requirements is ideal to eliminate duplicative efforts and use resources efficiently, the WSD recognizes that there may be elements in its GIS data reporting requirements for PSPS data that take longer than the current 10-day reporting deadline to collect, review, and deliver. Accordingly, the "WSD GIS Data Schema Status Report" Excel file, discussed further in Section 3, requires respondent electrical corporations to identify, among other information, whether each WSD-required PSPS data field will be submitted as part of its existing 10-day post-event reports. If certain WSD-required PSPS data is not feasible to provide within 10 days after the event, then the WSD plans to allow electrical corporations to submit such data within 30 days post-event.

Realistically, the WSD understands that electrical corporations are at different stages of their data journeys and employ differing business practices, which may impact certain electrical corporations' abilities to fully comply with the requirements in this document. The WSD looks forward to working collaboratively with electrical corporations and other stakeholders to determine appropriate and feasible submission schedules for regular reporting of GIS data. The WSD also expects to routinely review and refine its GIS data requirements, in executing its mission of reducing risk of catastrophic wildfire ignitions from electrical facilities and equipment through a data-driven approach. As such, the WSD GIS data requirements are best viewed as a living document and will continue to evolve as data quality and capabilities grow.

Considering existing limitations with electrical corporation data capabilities and differing business processes that support the collection, treatment, and storage of GIS data, the WSD is employing a phased approach to full implementation of these data reporting requirements. Due to the limited time before the September 9, 2020 due date for submission of quarterly reports stemming from the 2020 WMP conditional approvals, and the requirement in Condition Guidance-10 of Resolution WSD-002 for submission of data in accordance to these requirements, the WSD will not immediately seek enforcement action against any electrical corporation that fails to fully comply with its first quarterly report submission. Instead, in addition to the GDBs described in Sections 2.1 and 2.2, the WSD has provided electrical corporations with an Excel file, titled "WSD GIS Data Schema Status Report," which contains tables of the WSD GIS data schemas that include additional columns to illustrate data status.[9]

Although the WSD is taking a pragmatic approach to phasing the implementation of its GIS data reporting requirements, this does not indicate an acceptance of the status quo nor tolerance for any delay tactics. The WSD fully expects to push the upper boundaries of current data collection and reporting efforts. Moreover, because consistent, high quality, and standardized data is fundamental to the WSD's ability to effectively evaluate and monitor the implementation of electrical corporations' WMPs, the WSD expects electrical corporations' total cooperation and

[8] See Resolution ESRB-8, Commission Decision (D.)19-05-042, and D.20-05-051.
[9] The "WSD GIS Data Schema Status Report" file and instructions for completing it are provided in the "WSD GIS Data Preparation Guidance" document issued concurrently with the file GBD templates on August 21, 2020.

diligent effort to bring their data submissions into full compliance with these requirements as soon as possible.

3. DATA SCHEMA

3.1 Asset Point (Feature Dataset)

3.1.1 Camera (Feature Class)

Field Name	Field Description	Field Type
AssetID	Unique ID for a specific camera. It should be a traceable stable ID within the utility's operations/processes. Primary key for the Camera table.	Text
UtilityID	Standardized identification name of the utility ("UtilityG&E," etc.).	Text
AssetType	Type of point asset. Required value: • Camera	Text
MakeandManufacturer	What is the make and manufacturer of the asset? Enter "Unknown" if this cannot be determined.	Text
ModelNumber	Model number of the asset. Enter "Unknown" if this cannot be determined.	Text
HFTDClass	The CPUC high-fire threat district (HFTD) area the asset intersects. Possible values: • Tier 3 • Tier 2 • Zone 1 • Non-HFTD	Text
County	County in which asset is located.	Text
LastInspectionDate	Date of the last inspection. Use YYYY-MM-DD format. Leave blank if unknown. Do not include time.	Date
LastMaintenanceDate	Date of the last maintenance. Use YYYY-MM-DD format. Leave blank if unknown. Do not include time.	Date
InstallationDate	Date the asset was installed. Use YYYY-MM-DD format. Leave blank if unknown. Do not include time.	Date
InstallationYear	Year of asset installation. Use four digits. Enter "-99" if unknown.	Integer
UsefulLifespan	The number of years an asset is expected to have a useful functioning existence upon initial installation.	Integer
CameraHeight	Height of camera (in feet) above the ground below it.	Float
CameraURL	Website address for camera video feed (if publicly available).	Text
AssetLatitude	Latitude coordinate of asset (in decimal degrees).	Float
AssetLongitude	Longitude coordinate of asset (in decimal degrees).	Float

3.1.2 Connection Device (Feature Class)

Field Name	Field Description	Field Type
AssetID	Unique ID for a specific connection device. It should be a traceable stable ID within the utility's operations/processes. Primary key for the Connection Device table.	Text
UtilityID	Standardized identification name of the utility ("UtilityG&E," etc.).	Text
AssetType	Type of point asset. Required value: • Line connection device	Text
AssetOHUG	Is the asset overhead or underground? Possible values: • Overhead • Underground • Unknown	Text

Field Name	Field Description	Field Type
ConnectionDeviceType	What type of connection device is the asset? Possible values: • Splice • Connector • Clamp • Other – See comment. • Unknown	Text
ConnectionDeviceTypeComment	Connection device type not listed in the options above.	Text
ConnectionDeviceSubtype	What is the specific subtype of the connection device? • Automatic Splice • Crimp Splice • Explosive Sleeve Splice (i.e. permanent, fused) • 3-bolt • Parallel Groove • Unknown • Other – See comment.	Text
ConnectionDeviceSubtypeComment	Connection device subtype not listed in the options above.	Text
AssociatedNominalVoltagekV	Nominal voltage (in kilovolts) associated with asset. Do not use more than two decimal places. Enter “-99” if N/A.	Float
AssociatedOperatingVoltagekV	Operating voltage (in kilovolts) associated with asset. Do not use more than two decimal places. Enter “-99” if N/A.	Float
FromStructureID	ID of the structure upstream of the span of line containing a connection device. This structure may be a support structure (e.g., pole or tower) if the span is overhead, and it may be something else (e.g., manhole, vault, etc.) if the span is underground. Foreign key to the Support Structure table.	Text
ToStructureID	ID of the structure upstream of the span of line containing a connection device. This structure may be a support structure (e.g., pole or tower) if the span is overhead, and it may be something else (e.g., manhole, vault, etc.) if the span is underground. Foreign key to the Support Structure table.	Text
CircuitID	ID of circuit associated with asset. This will be a unique standardized identification name of the circuit. Foreign key to all the related asset line tables.	Text
CircuitName	Name of circuit associated with asset.	Text
SubstationID	ID of substation associated with asset. Foreign key to the Substation table.	Text
SubstationName	Name of substation associated with asset.	Text
MakeandManufacturer	What is the make and manufacturer of the asset? Enter “Unknown” if this cannot be determined.	Text
ModelNumber	Model number of the asset. Enter “Unknown” if this cannot be determined.	Text
HFTDClass	The CPUC high-fire threat district (HFTD) area the asset intersects. Possible values: • Tier 3 • Tier 2 • Zone 1 • Non-HFTD	Text
County	County in which asset is located.	Text
LastInspectionDate	Date of the last inspection. Use YYYY-MM-DD format. Leave blank if unknown. Do not include time.	Date
InstallationDate	Date the asset was installed. Use YYYY-MM-DD format. Leave blank if unknown. Do not include time.	Date
InstallationYear	Year of asset installation. Use four digits. Enter “-99” if unknown.	Integer
EstimatedAge	The age of the asset in years. Only fill this out if the “InstallationYear” and “InstallationDate” values are unknown. Possible values: • 0-9	Text

Field Name	Field Description	Field Type
	• 10-19 • 20-29 • 30-39 • 40-49 • 50-59 • 60-69 • 70-79 • 80-89 • 90-99 • >100 • Unknown • N/A (only enter this if there is an "InstallationYear" value)	
UsefulLifespan	The number of years an asset is expected to have a useful functioning existence upon initial installation.	Integer
ExemptionStatus	Is the asset exempt per California Public Resources Code (PRC) 4292? PRC 4292 requires clearance around support structures on which certain equipment is mounted in certain areas. Possible values: • Yes • No • Unknown • N/A	Text
AssetLatitude	Latitude coordinate of asset (in decimal degrees).	Float
AssetLongitude	Longitude coordinate of asset (in decimal degrees).	Float

3.1.3 Customer Meter (Feature Class)

Field Name	Field Description	Field Type
MeterID	Unique ID for a specific meter. It should be a traceable stable ID within the utility's operations/processes. Primary key for the Customer Meter table.	Text
UtilityID	Standardized identification name of the utility ("UtilityG&E," etc.).	Text
AssetType	Type of point asset. Required value: • Customer meter	Text
CircuitID	ID of circuit associated with asset. This will be a unique standardized identification name of the circuit. Foreign key to all the related asset line tables.	Text
CircuitName	Name of circuit associated with asset.	Text
SubstationID	ID of substation associated with asset. Foreign key to the Substation table.	Text
SubstationName	Name of substation associated with asset.	Text
MakeandManufacturer	What is the make and manufacturer of the asset? Enter "Unknown" if this cannot be determined.	Text
ModelNumber	Model number of the asset. Enter "Unknown" if this cannot be determined.	Text
HFTDClass	The CPUC high-fire threat district (HFTD) area the asset intersects. Possible values: • Tier 3 • Tier 2 • Zone 1 • Non-HFTD	Text
County	County in which asset is located.	Text
InstallationDate	Date the asset was installed. Use YYYY-MM-DD format. Leave blank if unknown. Do not include time.	Date
InstallationYear	Year of asset installation. Use four digits. Enter "-99" if unknown.	Integer

Field Name	Field Description	Field Type
EstimatedAge	The age of the asset in years. Only fill this out if the "InstallationYear" and "InstallationDate" values are unknown. Possible values: • 0-9 • 10-19 • 20-29 • 30-39 • 40-49 • 50-59 • 60-69 • 70-79 • 80-89 • 90-99 • >100 • Unknown • N/A (only enter this if there is an "InstallationYear" value)	Text
AssetLatitude	Latitude coordinate of asset (in decimal degrees).	Float
AssetLongitude	Longitude coordinate of asset (in decimal degrees).	Float

3.1.4 Fuse (Feature Class)

Field Name	Field Description	Field Type
AssetID	Unique ID for a specific fuse. It should be a traceable stable ID within the utility's operations/processes. Primary key for the Fuse table.	Text
UtilityID	Standardized identification name of the utility ("UtilityG&E," etc.).	Text
AssetOHUG	Is the asset overhead or underground? Possible values: • Overhead • Underground • Unknown	Text
AssociatedNominalVoltagekV	Nominal voltage (in kilovolts) associated with asset. Do not use more than two decimal places. Enter "-99" if N/A.	Float
AssociatedOperatingVoltagekV	Operating voltage (in kilovolts) associated with asset. Do not use more than two decimal places. Enter "-99" if N/A.	Float
SubstationID	ID of substation associated with asset. Foreign key to the Substation table.	Text
SubstationName	Name of substation associated with asset.	Text
CircuitID	ID of circuit associated with asset. This will be a unique standardized identification name of the circuit. Foreign key to all the related asset line tables.	Text
CircuitName	Name of circuit associated with asset.	Text
MakeandManufacturer	What is the make and manufacturer of the asset? Enter "Unknown" if this cannot be determined.	Text
ModelNumber	Model number of the asset. Enter "Unknown" if this cannot be determined.	Text
HFTDClass	The CPUC high-fire threat district (HFTD) area the asset intersects. Possible values: • Tier 3 • Tier 2 • Zone 1 • Non-HFTD	Text
County	County in which asset is located.	Text
LastInspectionDate	Date of the last inspection. Use YYYY-MM-DD format. Leave blank if unknown. Do not include time.	Date
LastMaintenanceDate	Date of the last maintenance. Use YYYY-MM-DD format. Leave blank if unknown. Do not include time.	Date

Field Name	Field Description	Field Type
InstallationDate	Date the asset was installed. Use YYYY-MM-DD format. Leave blank if unknown. Do not include time.	Date
InstallationYear	Year of asset installation. Use four digits. Enter "-99" if unknown.	Integer
EstimatedAge	The age of the asset in years. Only fill this out if the "InstallationYear" and "InstallationDate" values are unknown. Possible values: • 0-9 • 10-19 • 20-29 • 30-39 • 40-49 • 50-59 • 60-69 • 70-79 • 80-89 • 90-99 • >100 • Unknown • N/A (only enter this if there is an "InstallationYear" value)	Text
UsefulLifespan	The number of years an asset is expected to have a useful functioning existence upon initial installation.	Integer
ExemptionStatus	Is the asset exempt per California Public Resources Code (PRC) 4292? PRC 4292 requires clearance around support structures on which certain equipment is mounted in certain areas. Possible values: • Yes • No • Unknown • N/A	Text
FuseRating	The nominal current rating of the fuse in amperes.	Float
AssetType	Type of fuse device. Possible values: • Bridged • Current limiting • Expulsion • Fused elbow • Unknown • Other – See comment.	Text
AssetTypeComment	Fuse asset type not listed in the options above.	Text
AssetSubtype	What is the specific subtype of the fuse device?	Text
AssetLatitude	Latitude coordinate of asset (in decimal degrees).	Float
AssetLongitude	Longitude coordinate of asset (in decimal degrees).	Float

3.1.5 Lightning Arrester (Feature Class)

Field Name	Field Description	Field Type
AssetID	Unique ID for a specific lightning arrester. It should be a traceable stable ID within the utility's operations/processes. Primary key for the Lighting Arrester table.	Text
UtilityID	Standardized identification name of the utility ("UtilityG&E," etc.).	Text
AssetType	Type of point asset. Required value: • Lightning arrester	Text
AssociatedNominalVoltagekV	Nominal voltage (in kilovolts) associated with asset. Do not use more than two decimal places. Enter "-99" if N/A.	Float
AssociatedOperatingVoltagekV	Operating voltage (in kilovolts) associated with asset. Do not use more than two decimal places. Enter "-99" if N/A.	Float

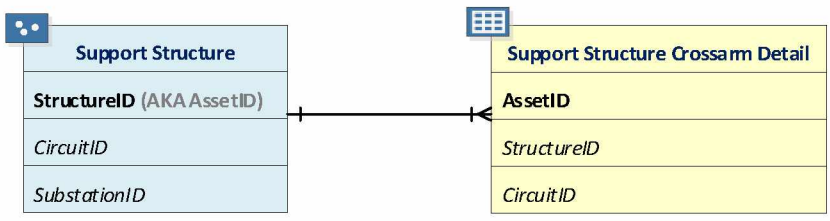
Field Name	Field Description	Field Type
SupportStructureID	Unique ID for support structure to which a lightning arrester is attached. It should be a traceable stable ID within the utility's operations/processes.	Text
SubstationID	ID of substation associated with asset. Foreign key to the Substation table.	Text
SubstationName	Name of substation associated with asset.	Text
CircuitID	ID of circuit associated with asset. This will be a unique standardized identification name of the circuit. Foreign key to all the related asset line tables.	Text
CircuitName	Name of circuit associated with asset.	Text
MakeandManufacturer	What is the make and manufacturer of the asset? Enter "Unknown" if this cannot be determined.	Text
ModelNumber	Model number of the asset. Enter "Unknown" if this cannot be determined.	Text
HFTDClass	The CPUC high-fire threat district (HFTD) area the asset intersects. Possible values: • Tier 3 • Tier 2 • Zone 1 • Non-HFTD	Text
County	County in which asset is located.	Text
LastInspectionDate	Date of the last inspection. Use YYYY-MM-DD format. Leave blank if unknown. Do not include time.	Date
LastMaintenanceDate	Date of the last maintenance. Use YYYY-MM-DD format. Leave blank if unknown. Do not include time.	Date
InstallationDate	Date the asset was installed. Use YYYY-MM-DD format. Leave blank if unknown. Do not include time.	Date
InstallationYear	Year of asset installation. Use four digits. Enter "-99" if unknown.	Integer
EstimatedAge	The age of the asset in years. Only fill this out if the "InstallationYear" and "InstallationDate" values are unknown. Possible values: • 0-9 • 10-19 • 20-29 • 30-39 • 40-49 • 50-59 • 60-69 • 70-79 • 80-89 • 90-99 • >100 • Unknown • N/A (only enter this if there is an "InstallationYear" value)	Text
UsefulLifespan	The number of years an asset is expected to have a useful functioning existence upon initial installation.	Integer
ExemptionStatus	Is the asset exempt per California Public Resources Code (PRC) 4292? PRC 4292 requires clearance around support structures on which certain equipment is mounted in certain areas. Possible values: • Yes • No • Unknown • N/A	Text
ArresterRating	Rating of the lightning arrester in kilovolts.	Float
AssetLatitude	Latitude coordinate of asset (in decimal degrees).	Float
AssetLongitude	Longitude coordinate of asset (in decimal degrees).	Float

3.1.6 Substation (Feature Class)

Field Name	Field Description	Field Type
SubstationID	ID of substation associated with asset. Primary key for the Substation table.	Text
UtilityID	Standardized identification name of the utility ("UtilityG&E," etc.).	Text
AssetType	Type of point asset. Required value: • Substation	Text
SubstationName	Name of substation.	Text
SubstationNominalVoltagekV	Nominal voltage (in kilovolts) ratings associated with the substation. Include all applicable voltages separated by slashes (e.g., "230/139/69/12"). Enter "-99" if N/A.	Float
AssociatedOperatingVoltagekV	Operating voltage (in kilovolts) ratings associated with the substation. Include all applicable voltages separated by slashes (e.g., "230/139/69/12"). Enter "-99" if N/A.	Float
SubstationRating	Power rating of the substation in mega volt amps (MVAs).	Float
SubstationType	Type of substation. Possible values: • Network • Loop • Radial	Text
HFTDClass	The CPUC high-fire threat district (HFTD) area the asset intersects. Possible values: • Tier 3 • Tier 2 • Zone 1 • Non-HFTD	Text
County	County in which asset is located.	Text
LastInspectionDate	Date of the last inspection. Use YYYY-MM-DD format. Leave blank if unknown. Do not include time.	Date
InstallationDate	Date the first asset of the substation was installed. Use YYYY-MM-DD format. Leave blank if unknown. Do not include time.	Date
InstallationYear	Year of asset installation. Use four digits. Enter "-99" if unknown.	Integer
AssetLatitude	Latitude coordinate of asset (in decimal degrees).	Float
AssetLongitude	Longitude coordinate of asset (in decimal degrees).	Float

3.1.7 Support Structure (Feature Class)

Using a one-to-many relationship, add as many related tables (per support structure point) as are necessary to provide information about each crossarm. Use the schema below. The entity-relationship diagram below illustrates the relationship between the feature class table (blue) and related table (beige).



Field Name	Field Description	Field Type
SupportStructureID	Unique ID for support structure. It should be a traceable stable ID within the utility's operations/processes. Primary key enabling connection to the "Support Structure Crossarm Detail" table.	Text
UtilityID	Standardized identification name of the utility ("UtilityG&E," etc.).	Text
AssetType	Type of point asset. Required value: • Support structure	Text
SubstationID	ID of substation associated with asset. Foreign key to the Substation table.	Text
HFTDClass	The CPUC high-fire threat district (HFTD) area the asset intersects. Possible values: • Tier 3 • Tier 2 • Zone 1 • Non-HFTD	Text
County	County in which asset is located.	Text
LastInspectionDate	Date of the last inspection. Use YYYY-MM-DD format. Leave blank if unknown. Do not include time.	Date
LastMaintenanceDate	Date of the last maintenance. Use YYYY-MM-DD format. Leave blank if unknown. Do not include time.	Date
LastIntrusiveDate	Date of the last intrusive. Use YYYY-MM-DD format. Leave blank if unknown. Do not include time.	Text
InstallationDate	Date the asset was installed. Use YYYY-MM-DD format. Leave blank if unknown. Do not include time.	Date
InstallationYear	Year of asset installation. Use four digits. Enter "-99" if unknown.	Integer
EstimatedAge	The age of the asset in years. Only fill this out if the "InstallationYear" and "InstallationDate" values are unknown. Possible values: • 0-9 • 10-19 • 20-29 • 30-39 • 40-49 • 50-59 • 60-69 • 70-79 • 80-89 • 90-99 • >100 • Unknown • N/A (only enter this if there is an "InstallationYear" value)	Text
UsefulLifespan	The number of years an asset is expected to have a useful functioning existence upon initial installation.	Integer
SupportStructureType	Type of support structure. Possible values: • Pole • Tower • Other – See comment.	Text
SupportStructureTypeComment	Support structure type analogous to a pole or tower and not listed in the options above. Note: Crossarms are support structures for which the WSD is requesting data, but they are addressed in a separate field at the end of this able and involve related tables.	Text
SupportStructureMaterial	Material from which pole, tower, or crossarm is made. Possible values: • Wood • Metal • Composite • Wrapped wood • Concrete	Text

Field Name	Field Description	Field Type
	• Other – See comment.	
SupportStructureMaterialComment	Support structure material not listed in the options above.	Text
SupportStructureMaterialSubtype	The subtype of structure material. For example, if a wood pole, the type of wood (i.e. Douglas Fir, Cedar, etc.).	Text
Underbuild	Does the line support multiple transmission or primary distribution circuits? Possible values: • Yes • No	Text
ConstructionGrade	Grade of construction, in accordance with GO 95, Rule 42. Possible Values: • Grade A • Grade B • Grade C	Text
CrossarmAttached	Is one or more crossarms attached to the support structure? Possible values: • Yes • No • Unknown	Text
AssetLatitude	Latitude coordinate of asset (in decimal degrees).	Float
AssetLongitude	Longitude coordinate of asset (in decimal degrees).	Float

3.1.8 Support Structure Crossarm Detail (Related Table)

Field Name	Field Description	Field Type
AssetID	Unique ID for a specific support structure crossarm. It should be a traceable stable ID within the utility's operations/processes. Primary key for the Support Structure Crossarm Detail table.	Text
SupportStructureID	Unique ID for specific support structure. It should be a traceable stable ID within the utility's operations/processes. Foreign key enabling connection to the "Support Structures" feature class.	Text
AssetType	Type of point asset. Required value: • Crossarm	Text
AssociatedNominalVoltagekV	Nominal voltage (in kilovolts) associated with asset. Do not use more than two decimal places. Enter "-99" if N/A.	Float
AssociatedOperatingVoltagekV	Operating voltage (in kilovolts) associated with asset. Do not use more than two decimal places. Enter "-99" if N/A.	Float
CircuitID	ID of circuit associated with asset. This will be a unique standardized identification name of the circuit. Foreign key to all the related asset line tables.	Text
CircuitName	Name of circuit associated with asset.	Text
LastInspectionDate	Date of the last inspection. Use YYYY-MM-DD format. Leave blank if unknown. Do not include time.	Date
LastMaintenanceDate	Date of the last maintenance. Use YYYY-MM-DD format. Leave blank if unknown. Do not include time.	Date
InstallationDate	Date the asset was installed. Use YYYY-MM-DD format. Leave blank if unknown. Do not include time.	Date
InstallationYear	Year of asset installation. Use four digits. Enter "-99" if unknown.	Integer
EstimatedAge	The age of the asset in years. Only fill this out if the "InstallationYear" and "InstallationDate" values are unknown. Possible values: • 0-9 • 10-19 • 20-29 • 30-39 • 40-49	Text

Field Name	Field Description	Field Type
	• 50-59 • 60-69 • 70-79 • 80-89 • 90-99 • >100 • Unknown • N/A (only enter this if there is an "InstallationYear" value)	
UsefulLifespan	The number of years an asset is expected to have a useful functioning existence upon initial installation.	Integer
CrossarmConfiguration	Configuration of crossarm. Possible values: • Single Arm • Double Arm • Alley Arm	Text
CrossarmLength	Length of crossarm in inches.	Float
CrossarmWidth	Width of crossarm in inches.	Float
CrossarmHeight	Height of crossarm in inches.	Float
CrossarmMaterial	Material from which pole, tower, or crossarm is made. Possible values: • Wood • Metal • Composite • Other – See comment.	Text
CrossarmMaterialComment	Crossarm material not listed in the options above.	Text
CrossarmMaterialSubtype	The subtype of structure material. For example, if a wood pole, the type of wood (i.e. Douglas Fir, Cedar, etc.).	Text
BraceType	The type of brace supporting the crossarm. Possible values: • V brace • Flat brace • Other – See comment.	Text
BraceTypeComment	Brace type not listed in the options above.	Text
CrossarmOrientation	Orientation of crossarm. Possible values: • In-line • Buck	Text
Balance	Balancing status of crossarm. Possible values: • Balanced • Unbalanced (i.e., end of line)	Text

3.1.9 Switchgear (Feature Class)

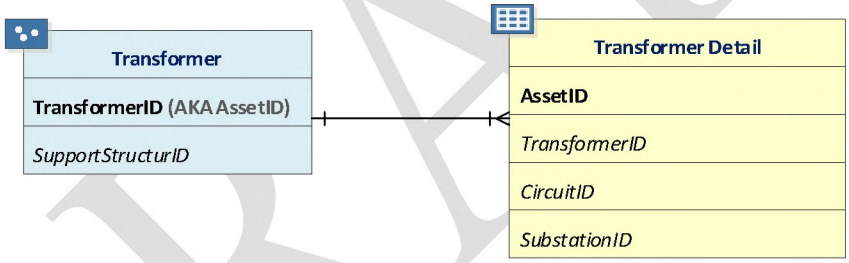
Field Name	Field Description	Field Type
AssetID	Unique ID for a specific switchgear asset. It should be a traceable stable ID within the utility's operations/processes. Primary key for the Switchgear table.	Text
UtilityID	Standardized identification name of the utility ("UtilityG&E," etc.).	Text
AssetType	Type of point asset. Required value: • Switchgear	Text
AssetOHUG	Is the asset overhead or underground? Possible values: • Overhead • Underground • Unknown	Text
AssociatedNominalVoltagekV	Nominal voltage (in kilovolts) associated with asset. Do not use more than two decimal places. Enter "-99" if N/A.	Float

Field Name	Field Description	Field Type
AssociatedOperatingVoltagekV	Operating voltage (in kilovolts) associated with asset. Do not use more than two decimal places. Enter "-99" if N/A.	Float
SupportStructureID	Unique ID for support structure to which a switchgear asset is attached. It should be a traceable stable ID within the utility's operations/processes. Foreign key to the Support Structure table.	Text
SubstationID	ID of substation associated with asset. Foreign key to the Substation table.	Text
SubstationName	Name of substation associated with asset.	Text
CircuitID	ID of circuit associated with asset. This will be a unique standardized identification name of the circuit. Foreign key to all the related asset line tables.	Text
CircuitName	Name of circuit associated with asset.	Text
MakeandManufacturer	What is the make and manufacturer of the asset? Enter "Unknown" if this cannot be determined.	Text
ModelNumber	Model number of the asset. Enter "Unknown" if this cannot be determined.	Text
HFTDClass	The CPUC high-fire threat district (HFTD) area the asset intersects. Possible values: • Tier 3 • Tier 2 • Zone 1 • Non-HFTD	Text
County	County in which asset is located.	Text
LastInspectionDate	Date of the last inspection. Use YYYY-MM-DD format. Leave blank if unknown. Do not include time.	Date
LastMaintenanceDate	Date of the last maintenance. Use YYYY-MM-DD format. Leave blank if unknown. Do not include time.	Date
InstallationDate	Date the asset was installed. Use YYYY-MM-DD format. Leave blank if unknown. Do not include time.	Date
InstallationYear	Year of asset installation. Use four digits. Enter "-99" if unknown.	Integer
EstimatedAge	The age of the asset in years. Only fill this out if the "InstallationYear" and "InstallationDate" values are unknown. Possible values: • 0-9 • 10-19 • 20-29 • 30-39 • 40-49 • 50-59 • 60-69 • 70-79 • 80-89 • 90-99 • >100 • Unknown • N/A (only enter this if there is an "InstallationYear" value)	Text
UsefulLifespan	The number of years an asset is expected to have a useful functioning existence upon initial installation.	Integer
ExemptionStatus	Is the asset exempt per California Public Resources Code (PRC) 4292? PRC 4292 requires clearance around support structures on which certain equipment is mounted in certain areas. Possible values: • Yes • No • Unknown • N/A	Text
CurrentRating	Nominal current rating of the switchgear in amperes.	Float
AssetClass	Is the asset associated with transmission or distribution? Possible values: • Distribution • Transmission	Text

Field Name	Field Description	Field Type
SCADAEnabled	Can supervisory control and data acquisition (SCADA) be utilized with the asset? Possible values: • Yes • No • N/A	Text
SwitchgearType	Type of switchgear (switch, cut-out fuse, circuit breaker, etc.)	Text
SwitchgearSubtype	Specific type of switch, cut-out fuse, circuit breaker, etc.	Text
SwitchgearInsulatingMedium	Medium (air, gas, oil, etc.) providing insulation for switchgear asset. Be specific.	Text
AssetLatitude	Latitude coordinate of asset (in decimal degrees).	Float
AssetLongitude	Longitude coordinate of asset (in decimal degrees).	Float

3.1.10 Transformer (Feature Class)

Using a one-to-many relationship, add as many related tables (per transformer point) as are necessary to provide information about each transformer represented by a single point. If there is only one transformer, use only one related table. If there is a bank of transformers represented by a single point, use one related table per transformer. Use the schema below. The entity-relationship diagram below illustrates the relationship between the feature class table (blue) and related table (beige).



Field Name	Field Description	Field Type
TransformerID	Unique ID for a specific transformer. It should be a traceable stable ID within the utility's operations/processes. Primary key enabling connection to the "Transformer Detail" table.	Text
UtilityID	Standardized identification name of the utility ("UtilityG&E," etc.).	Text
SupportStructureID	Unique ID for support structure to which transformer is attached. It should be a traceable stable ID within the utility's operations/processes. Foreign key to the Support Structure table.	Text
AssetType	Type of point asset. Required value: • Transformer	Text
AssetOHUG	Is the asset overhead or underground? Possible values: • Overhead • Underground • Unknown	Text
HFTDClass	The CPUC high-fire threat district (HFTD) area the asset intersects. Possible values: • Tier 3 • Tier 2	Text

Field Name	Field Description	Field Type
	• Zone 1 • Non-HFTD	
County	County in which asset is located.	Text
InaBank	Does a single point represent multiple assets that exist in a bank arrangement (i.e., transformer bank)? Possible values: • Yes (if multiple transformers are represented by a single point, use additional related tables as needed) • No • Unknown • N/A	Text
QuantityinBank	How many transformers exist in a bank arrangement (if applicable)? Enter -99 if unknown.	Integer
AssetLatitude	Latitude coordinate of asset (in decimal degrees).	Float
AssetLongitude	Longitude coordinate of asset (in decimal degrees).	Float

3.1.11 Transformer Detail (Related Table)

Field Name	Field Description	Field Type
AssetID	Unique ID for a specific switchgear asset. It should be a traceable stable ID within the utility's operations/processes. Primary key for the Transformer Detail table.	Text
TransformerID	Unique ID for a specific transformer. It should be a traceable stable ID within the utility's operations/processes. Foreign key enabling connection to the "Transformer" feature class.	Text
TransformerSubtype	Specific subtype of the transformer. Possible values: • Single phase pad-mounted • Single phase subsurface • Single phase overhead • Three phase pad-mounted • Three phase subsurface • Three phase overhead	Text
AssociatedNominalVoltagekV	Nominal voltage (in kilovolts) associated with asset. Do not use more than two decimal places. Enter "-99" if N/A.	Float
AssociatedOperatingVoltagekV	Operating voltage (in kilovolts) associated with asset. Do not use more than two decimal places. Enter "-99" if N/A.	Float
SubstationID	ID of substation associated with asset. Foreign key to the Substation table.	Text
SubstationName	Name of substation associated with asset.	Text
CircuitID	ID of circuit associated with asset. This will be a unique standardized identification name of the circuit. Foreign key to all the related asset line tables.	Text
CircuitName	Name of circuit associated with asset.	Text
MakeandManufacturer	What is the make and manufacturer of the asset? Enter "Unknown" if this cannot be determined.	Text
ModelNumber	Model number of the asset. Enter "Unknown" if this cannot be determined.	Text
LastInspectionDate	Date of the last inspection. Use YYYY-MM-DD format. Leave blank if unknown. Do not include time.	Date
LastMaintenanceDate	Date of the last maintenance. Use YYYY-MM-DD format. Leave blank if unknown. Do not include time.	Date
InstallationDate	Date the asset was installed. Use YYYY-MM-DD format. Leave blank if unknown. Do not include time.	Date
InstallationYear	Year of asset installation. Use four digits. Enter "-99" if unknown.	Integer
EstimatedAge	The age of the asset in years. Only fill this out if the "InstallationYear" and "InstallationDate" values are unknown. Possible values: • 0-9 • 10-19	Text

Field Name	Field Description	Field Type
	• 20-29 • 30-39 • 40-49 • 50-59 • 60-69 • 70-79 • 80-89 • 90-99 • >100 • Unknown • N/A (only enter this if there is an "InstallationYear" value)	
UsefulLifespan	The number of years an asset is expected to have a useful functioning existence upon initial installation.	Integer
ExemptionStatus	Is the asset exempt per California Public Resources Code (PRC) 4292? PRC 4292 requires clearance around support structures on which certain equipment is mounted in certain areas. Possible values: • Yes • No • Unknown • N/A	Text
TransformerRating	Nominal electrical load capacity in kilovolt amps (kVAs).	Float

3.1.12 Weather Station (Feature Class)

Field Name	Field Description	Field Type
StationID	The equivalent to the "Asset ID" field from other feature classes. Station ID for the weather station. It should enable data users to look up the data collected by the weather station. Primary key for the Weather Station table.	Text
UtilityID	Standardized identification name of the utility ("UtilityG&E," etc.).	Text
AssetType	Type of point asset. Required field: • Weather station	Text
MakeandManufacturer	What is the make and manufacturer of the asset? Enter "Unknown" if this cannot be determined.	Text
ModelNumber	Model number of the asset. Enter "Unknown" if this cannot be determined.	Text
HFTDClass	The CPUC high-fire threat district (HFTD) area the asset intersects. Possible values: • Tier 3 • Tier 2 • Zone 1 • Non-HFTD	Text
County	County in which asset is located.	Text
LastInspectionDate	Date of the last inspection. Use YYYY-MM-DD format. Leave blank if unknown. Do not include time.	Date
LastMaintenanceDate	Date of the last maintenance. Use YYYY-MM-DD format. Leave blank if unknown. Do not include time.	Date
InstallationDate	Date the asset was installed. Use YYYY-MM-DD format. Leave blank if unknown. Do not include time.	Date
InstallationYear	Year of asset installation. Use four digits. Enter "-99" if unknown.	Integer
EstimatedAge	The age of the asset in years. Only fill this out if the "InstallationYear" and "InstallationDate" values are unknown. Possible values: • 0-9 • 10-19 • 20-29	Text

Field Name	Field Description	Field Type
	• 30-39 • 40-49 • 50-59 • 60-69 • 70-79 • 80-89 • 90-99 • >100 • Unknown • N/A (only enter this if there is an "InstallationYear" value)	
UsefulLifespan	The number of years an asset is expected to have a useful functioning existence upon initial installation.	Integer
WeatherStationURL	Website address for weather station information (if publicly available).	Text
AssetLatitude	Latitude coordinate of asset (in decimal degrees).	Float
AssetLongitude	Longitude coordinate of asset (in decimal degrees).	Float

3.2 Asset Line (Feature Dataset)

3.2.1 Transmission Line (Feature Class)

Field Name	Field Description	Field Type
CircuitID	Unique ID for a specific circuit. It should be a traceable stable ID within the utility's operations/processes. Primary key enabling connection to the "Transmission Line Detail" table.	Text
UtilityID	Standardized identification name of the utility ("UtilityG&E," etc.).	Text
LineClass	Classification of line asset. Required value: • Transmission	Text
CircuitName	Name of circuit associated with asset.	Text
County	County in which asset is located. If the line crosses multiple counties, list all counties separated by commas.	Text
ConductorType	Type of conductor. Possible values: • Bare • Covered • Unknown	Text
AssetOHUG	Is the asset overhead or underground? Possible values: • Overhead • Underground • Unknown	Text
NominalVoltagekV	Nominal voltage (in kilovolts) of conductor. Do not use more than two decimal places. Enter "-99" if N/A.	Float
OperatingVoltagekV	Operating voltage (in kilovolts) of conductor. Do not use more than two decimal places. Enter "-99" if N/A.	Float
SubstationID	ID of substation associated with asset. Foreign key to the Substation table.	Text
SubstationName	Name of substation associated with asset.	Text
ConductorMaterial	Conductor material. Possible values: • All aluminum conductor (AAC) • All aluminum alloy conductor (AAAC) • Aluminum conductor aluminum reinforced (ACAR) • Aluminum conductor steel reinforced (ACSR) • Copper (Cu) • Other – See comment.	Text

Field Name	Field Description	Field Type
ConductorMaterialComment	Conductor material not listed in the options above.	Text
ConductorSize	Size of conductor (e.g. No. 4 Cu or 1/0 ACSR).	Text
ConductorOD	Overall diameter of the conductor in inches.	Float
ConductorCodeName	Codename of the conductor. For example, "Lapwing," "Sparrow," etc.	Text
Terminal1	Substation name of first terminal.	Text
Terminal2	Substation name of second terminal.	Text
Terminal3	Substation name of third terminal.	Text
Terminal4	Substation name of fourth terminal.	Text
Terminal5	Substation name of fifth terminal.	Text
Terminal(s)	Substation name of other terminals.	Text
LastInspectionDate	Date of the last inspection. Use YYYY-MM-DD format. Leave blank if unknown. Do not include time.	Date
LastMaintenanceDate	Date of the last maintenance. Use YYYY-MM-DD format. Leave blank if unknown. Do not include time.	Date
InstallationDate	Date the asset was installed. Use YYYY-MM-DD format. Leave blank if unknown. Do not include time.	Date
InstallationYear	Year of asset installation. Use four digits. Enter "-99" if unknown.	Integer
EstimatedAge	The age of the asset in years. Only fill this out if the "InstallationYear" and "InstallationDate" values are unknown. Possible values: • 0-9 • 10-19 • 20-29 • 30-39 • 40-49 • 50-59 • 60-69 • 70-79 • 80-89 • 90-99 • >100 • Unknown • N/A (only enter this if there is an "InstallationYear" value)	Text
UsefulLifespan	The number of years an asset is expected to have a useful functioning existence upon initial installation.	Integer
AmpacityRating	Nominal ampacity rating of the conductor in amperes.	Float
Greased	Is the conductor greased to prevent water intrusion? Possible values: • Yes • No • Unknown	Text

3.2.2 Primary Distribution Line (Feature Class)

Field Name	Field Description	Field Type
CircuitID	Unique ID for a specific circuit. It should be a traceable stable ID within the utility's operations/processes. Primary key enabling connection to the "Primary Distribution Lines Detail" table.	Text
UtilityID	Standardized identification name of the utility ("UtilityG&E," etc.).	Text
LineClass	Classification of line asset. Required value: • Primary distribution	Text

Field Name	Field Description	Field Type
CircuitName	Name of circuit associated with asset.	Text
County	County in which asset is located. If the line crosses multiple counties, list all counties separated by commas.	Text
ConductorType	Type of conductor. Possible values: • Bare • Covered • Unknown	Text
AssetOHUG	Is the asset overhead or underground? Possible values: • Overhead • Underground • Unknown	Text
NominalVoltagekV	Nominal voltage (in kilovolts) of conductor. Do not use more than two decimal places. Enter "-99" if N/A.	Float
OperatingVoltagekV	Operating voltage (in kilovolts) of conductor. Do not use more than two decimal places. Enter "-99" if N/A.	Float
SubstationID	ID of substation associated with asset. Foreign key to the Substation table.	Text
SubstationName	Name of substation associated with asset.	Text
ConductorMaterial	Conductor material. Possible values: • All aluminum conductor (AAC) • All aluminum alloy conductor (AAAC) • Aluminum conductor aluminum reinforced (ACAR) • Aluminum conductor steel reinforced (ACSR) • Copper (Cu) • Other – See comment.	Text
ConductorMaterialComment	Conductor material not listed in the options above.	Text
ConductorSize	Size of conductor (e.g. No. 4 Cu or 1/0 ACSR).	Text
ConductorOD	Overall diameter of the conductor in inches.	Float
ConductorCodeName	Codename of the conductor. For example, "Lapwing," "Sparrow," etc.	Text
LastInspectionDate	Date of the last inspection. Use YYYY-MM-DD format. Leave blank if unknown. Do not include time.	Date
LastMaintenanceDate	Date of the last maintenance. Use YYYY-MM-DD format. Leave blank if unknown. Do not include time.	Date
InstallationDate	Date the asset was installed. Use YYYY-MM-DD format. Leave blank if unknown. Do not include time.	Date
InstallationYear	Year of asset installation. Use four digits. Enter "-99" if unknown.	Integer
EstimatedAge	The age of the asset in years. Only fill this out if the "InstallationYear" and "InstallationDate" values are unknown. Possible values: • 0-9 • 10-19 • 20-29 • 30-39 • 40-49 • 50-59 • 60-69 • 70-79 • 80-89 • 90-99 • >100 • Unknown N/A (only enter this if there is an "InstallationYear" value)	Text
UsefulLifespan	The number of years an asset is expected to have a useful functioning existence upon initial installation.	Integer

Field Name	Field Description	Field Type
AmpacityRating	Nominal ampacity rating of the conductor in amperes.	Float
Greased	Is the conductor greased to prevent water intrusion? Possible values: • Yes • No • Unknown	Text

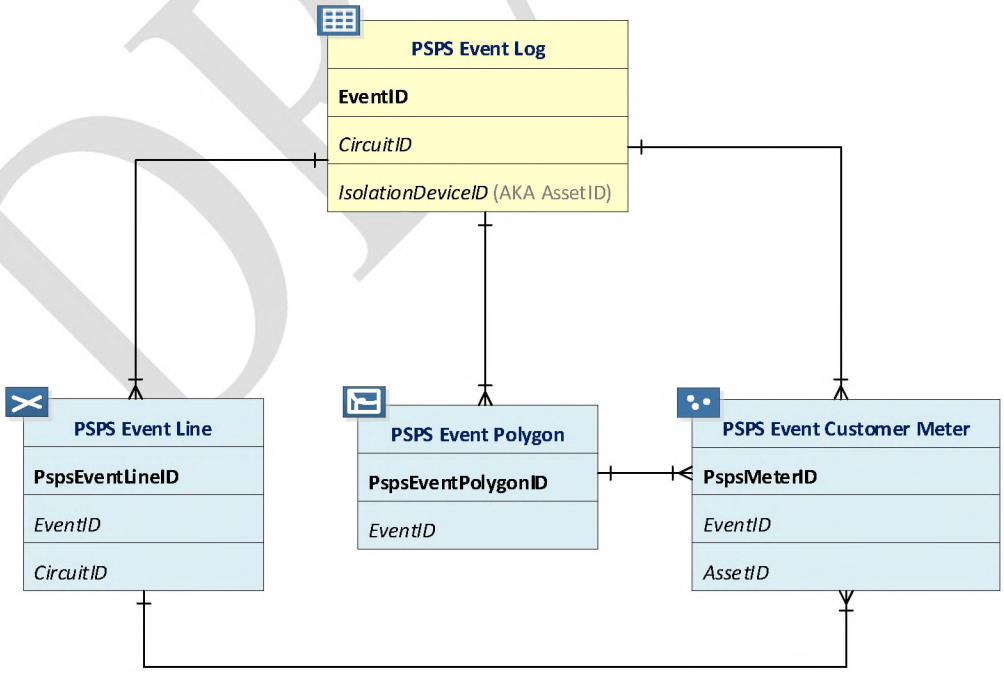
3.2.3 Secondary Distribution Line (Feature Class)

Field Name	Field Description	Field Type
CircuitID	Unique ID for a specific circuit. It should be a traceable stable ID within the utility's operations/processes. Primary key enabling connection to the "Secondary Distribution Lines Detail" related table. This ID is expected to be based on the circuit name of the secondary line's associated primary distribution line.	Text
UtilityID	Standardized identification name of the utility ("UtilityG&E," etc.).	Text
LineClass	Classification of line asset. Required value: • Secondary distribution	Text
CircuitName	Name of circuit associated with asset. This name is expected to be based on the circuit name of the secondary line's associated primary distribution line.	Text
County	County in which asset is located. If the line crosses multiple counties, list all counties separated by commas.	Text
ConductorType	Type of conductor. Possible values: • Open wire • Triplex • Other – See comment.	Text
ConductorTypeComment	Conductor type not listed in the options above.	
AssetOHUG	Is the asset overhead or underground? Possible values: • Overhead • Underground • Unknown	Text
NominalVoltagekV	Nominal voltage (in kilovolts) of conductor. Do not use more than two decimal places. Enter "-99" if N/A.	Float
OperatingVoltagekV	Operating voltage (in kilovolts) of conductor. Do not use more than two decimal places. Enter "-99" if N/A.	Float
SubstationID	ID of substation associated with asset. Foreign key to the Substation table.	Text
SubstationName	Name of substation associated with asset.	Text
ConductorMaterial	Conductor material. Possible values: • All aluminum conductor (AAC) • All aluminum alloy conductor (AAAC) • Aluminum conductor aluminum reinforced (ACAR) • Aluminum conductor steel reinforced (ACSR) • Copper (Cu) • Other – See comment.	Text
ConductorMaterialComment	Conductor material not listed in the options above.	Text
ConductorSize	Size of conductor (e.g. No. 4 Cu or 1/0 ACSR).	Text
ConductorOD	Overall diameter of the conductor in inches.	Float
ConductorCodeName	Codename of the conductor. For example, "Lapwing," "Sparrow," etc.	Text
LastInspectionDate	Date of the last inspection. Use YYYY-MM-DD format. Leave blank if unknown. Do not include time.	Date
LastMaintenanceDate	Date of the last maintenance. Use YYYY-MM-DD format. Leave blank if unknown. Do not include time.	Date
InstallationDate	Date the asset was installed. Use YYYY-MM-DD format. Leave blank if unknown. Do not include time.	Date

Field Name	Field Description	Field Type
InstallationYear	Year of asset installation. Use four digits. Enter "-99" if unknown.	Integer
EstimatedAge	The age of the asset in years. Only fill this out if the "InstallationYear" and "InstallationDate" values are unknown. Possible values: • 0-9 • 10-19 • 20-29 • 30-39 • 40-49 • 50-59 • 60-69 • 70-79 • 80-89 • 90-99 • >100 • Unknown N/A (only enter this if there is an "InstallationYear" value)	Text
UsefulLifespan	The number of years an asset is expected to have a useful functioning existence upon initial installation.	Integer
AmpacityRating	Nominal ampacity rating of the conductor in amperes.	Float
Greased	Is the conductor greased to prevent water intrusion? Possible values: • Yes • No • Unknown	Text

3.3 PSPS Event (Feature Dataset)

3.3.1 Entity-Relationship Diagram for PSPS Events



3.3.2 PSPS Event Log (Related Table)

Field Name	Field Description	Field Type
EventID	A unique standardized identification name of the unique event. Primary key enabling connection to PSPS event feature classes.	Text
CircuitID	A unique standardized identification name of the circuit that was de-energized. Foreign key to all the related asset line tables.	Text
CircuitName	Name of circuit associated with asset.	Text
SubstationID	A unique standardized identification name of the substation/feeder feeding the circuit that was de-energized during the PSPS event. Foreign key to the Substation table.	Text
SubstationName	Name of substation associated with asset.	Text
IsolationDevice	The device which isolated the circuit during the PSPS event. Possible values: • Circuit Breaker • Fuse • Switch • Other – See comment.	Text
IsolationDeviceComment	Isolation device not listed in the options above.	Text
IsolationDeviceID	A unique standardized identification name of the isolation device. Should match the value in the "AssetID" field of the isolation device's point data in the "Switchgear" feature class. A foreign key. AKA AssetID.	Text
EOCActivationDate	Date electrical corporation's emergency operation center (EOC) was activated in YYYY-MM-DD format. Do not include time.	Date
EOCActivationTime	Time electrical corporation's emergency operation center was activated. Must be in the "hh:mm:ss" format.	Date
StartDate	Start date of the PSPS event in YYYY-MM-DD format. Do not include time.	Date
StartTime	Start time of the PSPS event (i.e. when the first de-energization occurred). Must be in the "hh:mm:ss" format.	Date
AllClearDate	Date the weather event precipitating the PSPS event cleared the area, and the utility began inspection and restoration efforts. Must be in YYYY-MM-DD format. Do not include time.	Date
AllClearTime	Time the weather event precipitating the PSPS event cleared the area, and the utility began inspection and restoration efforts. Must be in the "hh:mm:ss" format.	Date
AllLoadUpDate	Date last customer was fully restored following the PSPS event. Must be in YYYY-MM-DD format. Do not include time.	Date
AllLoadUpTime	Time the last customer was fully restored following the PSPS event and "All Load Up" was declared. Must be in the "hh:mm:ss" format.	Date
PredictedDurationMinutes	Anticipated duration of PSPS event's circuit shutoff after it is initiated. Must be reported in whole number minutes.	Integer
ActualDurationMinutes	Actual duration of PSPS event's circuit shutoff. This would be determined after restoration and must be reported in whole number minutes.	Integer
DurationPredictionError	"PredictedDurationMinutes" minus "ActualDurationMinutes" Positive values indicate shorter than predicted PSPS outage duration; negative values indicate longer than predicted PSPS outage duration.	Integer
TotalCustomerMinutes	"ActualDurationMinutes" multiplied by "TotalCustomers" This field features total customer minutes impacted across the circuit.	Integer
TotalCustomerHours	"TotalCustomerMinutes" divided by 60 This field features total customer hours impacted across the circuit.	Integer
TotalCustomers	Total impacted customers. This is not necessarily a sum of all customer category values listed below because medical baseline customers may also be in other customer categories.	Integer
ResidentialCustomers	Total residential customers.	Integer

Field Name	Field Description	Field Type
MedicalBaselineCustomers	Total medical baseline customers.	Integer
CommercialIndustrialCustomers	Total commercial/industrial customers.	Integer
OtherCustomers	Total customers that do not fall within residential or commercial/industrial (as requested under Decision 12-04-024).	Integer
CriticalInfrastructure	Number of critical infrastructure locations (in accordance with Decision 19-05-042 as modified by D.20-05-051) impacted by the PSPS event.	Integer
CriticalInfrastructureDuration	Duration of critical infrastructure locations (in accordance with Decision 19-05-042) de-energized during the PSPS event. Must be reported in whole number minutes.	Integer
CriticalInfrastructureImpact	"CriticalInfrastructure" multiplied by "CriticalInfrastructureDuration" This field features the total PSPS impact on critical infrastructure.	Integer
County	County in which asset is located. If the line crosses multiple counties, list all counties separated by commas.	Text
WindRisk	Was high wind a driving risk factor in the PSPS decision? Possible values: • Yes • No	Text
RelativeHumidityRisk	Was low relative humidity a driving risk factor in the PSPS decision? Possible values: • Yes • No	Text
TemperatureRisk	Was high temperature a driving risk factor in the PSPS decision? Possible values: • Yes • No	Text
VegetationRisk	Was a higher probability of vegetation interference a driving risk factor in the PSPS decision? Possible values: • Yes • No	Text
AssetRisk	Was a higher probability of asset failure a driving risk factor in the PSPS decision? Possible values: • Yes • No	Text
DeadFuelRisk	Was a high presence of dead fuel a driving risk factor in the PSPS decision? Possible values: • Yes • No	Text
LiveFuelRisk	Was a high presence of live fuel a driving risk factor in the PSPS decision? Possible values: • Yes • No	Text
RedFlagWarningRisk	Was the presence of a Red Flag Warning risk day a driving factor in the PSPS decision? Possible values: • Yes • No	Text
OtherRisk	Was some other form of risk (not covered by the fields above) a driving risk factor in the PSPS decision? Possible values: • Yes • No	Text
OtherRiskReason	Brief description of what the "OtherRisk" category is if there is a "Yes" value under the "OtherRisk" field. Possible example statements include things like "vehicle collision," "reported ignition," etc. Enter "N/A" if the value for "OtherRisk" is "No."	Text

3.3.3 PSPS Event Line (Feature Class)

This feature class includes lines that experienced de-energizing during PSPS events.

Field Name	Field Description	Field Type
PspsEventLineID	An underscore delimited concatenation of "EventID"+"_"+"CircuitID." Primary key for the PSPS Event Line table.	Text
EventID	A unique standardized identification name of the unique event. Foreign key enabling connection to "PSPS Event Log" table.	Text
CircuitID	A unique standardized identification name of the circuit that was de-energized. Foreign key to all the related asset line tables.	Text
UtilityID	Standardized identification name of the utility ("UtilityG&E," etc.).	Text
County	County in which asset is located. If the line crosses multiple counties, list all counties separated by commas.	Text

3.3.4 PSPS Event Polygon (Feature Class)

This feature class includes the parcels of customers impacted by PSPS events. If an electrical corporation provides this layer as parcels, the electrical corporations does not need to provide the "PSPS Customer Meter Points" feature class. However, if the electrical corporation provides this layer as more general polygons that are not exact parcels, it does need to provide the "PSPS Customer Meter Points" feature class.

Field Name	Field Description	Field Type
PspsEventPolygonID	Primary key for PSPS Event Polygons.	Text
EventID	A unique standardized identification name of the unique event. Foreign key enabling connection to the "PSPS Event Log" table.	Text
CircuitID	A unique standardized identification name of the circuit that was de-energized. Foreign key to all the related asset line tables.	Text
UtilityID	Standardized identification name of the utility ("UtilityG&E," etc.).	Text
County	County in which parcel affected by PSPS event is located.	Text

3.3.5 PSPS Event Customer Meter (Feature Class)

This layer includes points for the customer meters assigned to customers who experience a PSPS event. Its geometry will always be a subset of the "Customer Meters" feature class.

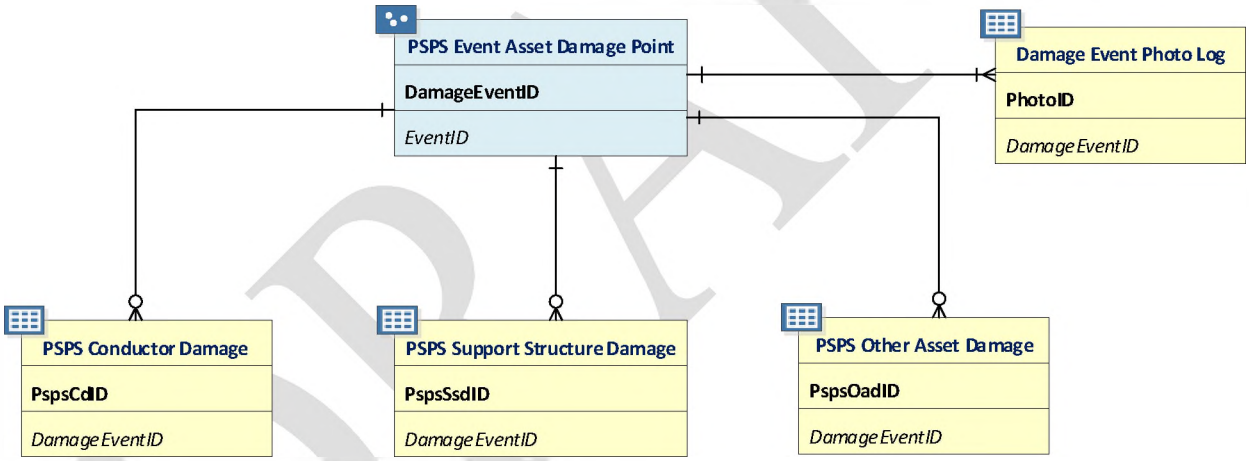
Field Name	Field Description	Field Type
PspsEventMeterID	An underscore delimited concatenation of "EventID"+"_"+"AssetID." Primary key for the PSPS Event Customer Meter Point.	Text
EventID	A unique standardized identification name of the unique PSPS event associated with a customer meter. Foreign key enabling connection to the "PSPS Event Log" table.	Text
AssetID	Unique ID for a specific meter. It should be a traceable stable ID within the utility's operations/processes. Foreign key to the Meter table.	Text
UtilityID	Standardized identification name of the utility ("UtilityG&E," etc.).	Text
HFTDClass	The CPUC high-fire threat district (HFTD) area the customer meter intersects. Possible values: • Tier 3 • Tier 2 • Zone 1 • Non-HFTD	Text
County	County in which asset is located.	Text

3.3.6 PSPS Event Asset Damage

3.3.6.1 Overview and Entity-Relationship Diagram for PSPS Asset Damage

The schemas in this section are intended to help electric utilities collect accurate data covering fire hazard-related damage to electrical assets that occurs during PSPS events. Among other actions, the data may be used to monitor damage, model fire hazard potential, and assess the effectiveness of PSPS events. PSPS damage GIS data is a valuable fire prevention resource and will help utilities, agencies, and other stakeholders reduce or eliminate the potential for ignitions associated with various electrical assets. If electrical corporations are interested, detailed guidance from CAL FIRE is available that covers how PSPS damage data could be collected with Collector for ArcGIS. E-mail CALFIREUtilityFireMitigationUnit@fire.ca.gov to request this guidance.

Photos are a required part of PSPS event asset damage data collection. At least one photo is to be taken of the asset damage, and at least one photo is to be taken of the fuel bed below the asset damage (the area where sparks, burning debris, etc. could hit the ground and cause an ignition). Photos are required for all forms of damage covered by the tables below. Enter appropriate values in the "PSPS Damage Photo Log" related table (section 3.3.6.6 in this document) to ensure photos can be linked to their associated GIS points.



3.3.6.2 PSPS Event Damage Point (Feature Class)

Note: Data for all the fields in the tables in this section are not required to be submitted with the 10-day report associated with PSPS event damages. Electrical corporations have already been provided with the 10-day report requirements.

Field Name	Field Description	Field Type
DamageEventID	ID value for an individual PSPS event. Event ID values for damage points should match event ID values in corresponding PSPS event GIS data. Primary key enabling connection to PSPS event conductor, support structure, and other asset damage detail tables.	Text
EventID	A unique standardized identification name of the unique event. Foreign key enabling connection to "PSPS Event Log" table.	Text

Field Name	Field Description	Field Type
UtilityID	Standardized identification name of the utility ("UtilityG&E," etc.).	Text
FuelBedDescription	Type of fuel bed existing under damage location. Possible values: • Fire-resistive fuel bed - Fuel bed not conducive to propagating fire where damage occurred (e.g. asphalt, concrete, gravel, etc.). • Grass fuel model - Fuel bed comprised of annual grasses where damaged occurred. • Brush fuel model - Fuel bed comprised of mainly brush or shrubs where damage occurred (e.g. chamise, manzanita, chaparral, scotch broom, etc.). • Timber fuel model - Fuel bed comprised of a timber where damaged occurred (e.g. forests, timber litter, logging slash, etc.). • Other – See comment.	Text
FuelBedDescriptionComment	Fuel bed description not listed in the options above.	Text
HFTDClass	The CPUC high-fire threat district (HFTD) area the asset damage point intersects. Possible values: • Tier 3 • Tier 2 • Zone 1 • Non-HFTD	Text
County	County in which asset damage is located. If the line crosses multiple counties, list all counties separated by commas.	Text
Latitude	Latitude of point in decimal degrees.	Float
Longitude	Longitude of point in decimal degrees.	Float

3.3.6.3 PSPS Event Conductor Damage Detail (Related Table)

Using a one-to-many relationship, add as many related tables (per PSPS damage location point) as are necessary to provide information about each instance or instances of conductor asset damage represented by a single point. If there is only one instance of damage, use only one related table. If there are multiple instances of damage in the same location represented by a single point, use one related table per instance of damage.

Field Name	Field Description	Field Type
PspsCdID	Primary key for the PSPS Event Conductor Damage Detail table.	Text
DamageEventID	ID value for an individual PSPS event. Event ID values for damage points should match event ID values in corresponding PSPS event GIS data. Foreign key enabling connection to "PSPS Event Damage Points" feature class.	Text
DateofDamage	Date or estimated date damage occurred in YYYY-MM-DD format. Leave blank if unknown. Do not include time.	Date
EstimatedTimeofDamage	Estimated time damage occurred. Must be in the "hh:mm:ss" format.	Date
AssetID	Unique ID for a specific point asset. It should be a traceable stable ID within the utility's operations/processes. Foreign key to the related asset point tables.	Text
Asset	Specific type of asset that is damaged. Required value: • Conductor	Text
NominalVoltagekV	Nominal voltage (in kilovolts) associated with asset. Do not use more than two decimal places. Enter "-99" if N/A.	Float

Field Name	Field Description	Field Type
OperatingVoltagekV	Operating voltage (in kilovolts) associated with asset. Do not use more than two decimal places. Enter "-99" if N/A.	Float
FromDevice	The upstream support structure asset ID. Foreign key to the related asset point tables. AKA AssetID.	Text
ToDevice	The downstream support structure asset ID. Foreign key to the related asset point tables. AKA AssetID.	Text
FeederID	Circuit/feeder ID for the damaged span of line. Foreign to the related asset line tables.	Text
ConductorMaterial	Conductor material. Possible values: • All aluminum conductor (AAC) • All aluminum alloy conductor (AAAC) • Aluminum conductor aluminum reinforced (ACAR) • Aluminum conductor steel reinforced (ACSR) • Copper (Cu) • Other – See comment.	Text
ConductorMaterialComment	Conductor material not listed in the options above.	Text
ConductorType	Type of conductor. Possible values: • Bare • Covered • Unknown	Text
ConductorLength	Conductor length in feet based on GIS data.	Float
FailedEquipmentDescription	Equipment that contributed to the conductor damage. Write "Unknown" or "N/A" as appropriate.	Text
ExternalForceDescription	Force responsible for causing the conductor damage.	Text
SubstationName	Name of substation associated with asset.	Text
SubstationID	ID of substation associated with asset. Foreign key to the Substation table.	Text
SubstationType	Type of substation. Possible values: • Radial • Loop • Network	Text
Cause	High-level category for wire down event cause. Possible values: • Object contact • Equipment failure • Wire-to-wire contact • Contamination • Utility work/Operation • Vandalism/Theft • Unknown • Other – See comment.	Text
CauseComment	Cause category not listed in options above.	Text
EnergizedOnGround	Did the damaged conductor make contact with the ground while energized? Possible values: • Yes • No • Unknown	Text
ManufacturerModelID	The manufacturer and asset model specifications that would enable one to identify exactly what type of equipment was involved with the damage. If some sort of model or part code/name is not available, at least record the manufacturer name. Write "Unknown" if no manufacturer info can be determined based on information available in the field. "Unknown" values	Text

Field Name	Field Description	Field Type
	should be reviewed by other electrical corporation staff after data collection and filled in from existing databases or other sources if possible.	
InstallationDate	Date the asset was installed. Use YYYY-MM-DD format. Leave blank if unknown. Do not include time.	Date
InstallationYear	Year of asset installation. Use four digits. Enter "-99" if unknown.	Integer
EstimatedAge	The age of the asset in years. Only fill this out if the "InstallationYear" and "InstallationDate" values are unknown. Possible values: • 0-9 • 10-19 • 20-29 • 30-39 • 40-49 • 50-59 • 60-69 • 70-79 • 80-89 • 90-99 • >100 • Unknown • N/A (only enter this if there is an "InstallationYear" value)	Text
UsefulLifespan	The number of years an asset would have been expected to have a useful functioning existence prior to damage.	Integer
LikelyArcing	Was arcing likely because of the damage? Possible values: • Yes • No • Unknown	Text
DamageType	Type of damage sustained. Possible values: • Asset damage • Asset failure • Equipment damage • Equipment failure • Veg contact • Object contact	Text
DamageDescription	Description of damage. Possible values: • Broken conductor • Damaged conductor • Kite in line • Pine needles on line • Tree bark on line • Tree branch on line • Tree leaning into line • Tree leaning toward line • Wire-to-wire contact • Other – See comment.	Text
DamageDescriptionComment	Damage category not listed in the options above and/or additional relevant details about damage	Text

3.3.6.4 PSPS Event Support Structure Damage Detail (Related Table)

Using a one-to-many relationship, add as many related tables (per PSPS damage location point) as are necessary to provide information about each instance or instances of support structure asset damage represented by a single point. If there is only one instance of damage, use only one

related table. If there are multiple instances of damage in the same location represented by a single point, use one related table per instance of damage.

Field Name	Field Description	Field Type
PspsSsdD	Primary key for the PSPS Event Support Structure Damage Detail table.	Text
DamageEventID	ID value for an individual PSPS event. Event ID values for damage points should match event ID values in corresponding PSPS event GIS data. Foreign key enabling connection to "PSPS Event Damage Points" feature class.	Text
DateofDamage	Date or estimated date damage occurred in YYYY-MM-DD format. Leave blank if unknown. Do not include time.	Date
EstimatedTimeofDamage	Estimated time damage occurred. Must be in the "hh:mm:ss" format.	Date
AssetID	Unique ID for a specific point asset. It should be a traceable stable ID within the utility's operations/processes. Foreign key to the related asset point tables.	Text
Asset	Specific type of asset that is damaged. This list of dropdown menu items should be modified by each electrical corporation to cover the assets most likely to be involved in PSPS damage. Possible values: • Pole • Tower • Crossarm • Secondary arms • Other – See comment.	Text
AssetComment	Asset not listed in the options above.	Text
FeederID	Circuit/feeder ID for the damaged span of line. Foreign to the related asset line tables.	Text
AssociatedNominalVoltagekV	Nominal voltage (in kilovolts) associated with asset. Do not use more than two decimal places. Enter "-99" if N/A.	Float
AssociatedOperatingVoltagekV	Operating voltage (in kilovolts) associated with asset. Do not use more than two decimal places. Enter "-99" if N/A.	Float
SupportStructureMaterial	Material of which support structure is made. Possible values: • Wood • Metal • Composite • Wrapped wood • Concrete • Other – See comment.	Text
MaterialComment	Support structure material not listed in the options above.	Text
ManufacturerModelID	The manufacturer and asset model specifications that would enable one to identify exactly what type of equipment was involved with the damage. If some sort of model or part code/name is not available, at least record the manufacturer name. Write "Unknown" if no manufacturer info can be determined based on information available in the field. "Unknown" values should be reviewed by other electrical corporation staff after data collection and filled in from existing databases or other sources if possible.	Text
InstallationDate	Date the asset was installed. Use YYYY-MM-DD format. Leave blank if unknown. Do not include time.	Date
InstallationYear	Year of asset installation. Use four digits. Enter "-99" if unknown.	Integer
EstimatedAge	The age of the asset in years. Only fill this out if the "InstallationYear" and "InstallationDate" values are unknown. Possible values: • 0-9 • 10-19 • 20-29	Text

Field Name	Field Description	Field Type
	• 30-39 • 40-49 • 50-59 • 60-69 • 70-79 • 80-89 • 90-99 • >100 • Unknown • N/A (only enter this if there is an "InstallationYear" value)	
UsefulLifespan	The number of years an asset would have been expected to have a useful functioning existence prior to damage.	Integer
LikelyArcing	Was arcing likely because of the damage? Possible values: • Yes • No • Unknown	Text
DamageType	Type of damage sustained. Possible values: • Asset damage • Asset failure • Equipment damage • Equipment failure • Veg contact • Object contact	
DamageDescription	Description of damage. Possible values: • Broken pole • Damaged pole • Broken tower • Damaged tower • Broken crossarm • Damaged crossarm • Other – See comment.	Text
DamageDescriptionComment	Damage category not listed in the options above and/or additional relevant details about damage	Text

3.3.6.5 PSPS Event Other Asset Damage Detail (Related Table)

Using a one-to-many relationship, add as many related tables (per PSPS damage location point) as are necessary to provide information about each instance or instances of asset damage (other than conductor or support structure damage) represented by a single point. If there is only one instance of damage, use only one related table. If there are multiple instances of damage in the same location represented by a single point, use one related table per instance of damage.

Field Name	Field Description	Field Type
PspsOadID	Primary key for the PSPS Event Other Asset Damage Detail table.	Text
DamageEventID	ID value for an individual PSPS event. Event ID values for damage points should match event ID values in corresponding PSPS event GIS data. Foreign key enabling connection to "PSPS Event Damage Points" feature class.	Text
DateofDamage	Date or estimated date damage occurred in YYYY-MM-DD format. Leave blank if unknown. Do not include time.	Date
EstimatedTimeofDamage	Estimated time damage occurred. Must be in the "hh:mm:ss" format.	Date
AssetID	Unique ID for a specific point asset. It should be a traceable stable ID within the utility's operations/processes. Foreign key to the related asset point tables.	Text

Field Name	Field Description	Field Type
Asset	Specific type of asset that is damaged. This list of dropdown menu items should be modified by each electrical corporation to cover the assets most likely to be involved in PSPS damage. Possible values: • Down guy • Neutral • Service neutral • Span guy • Tie wire • Wood pin • Anchor • Other – See comment.	Text
AssetComment	Asset not listed in the options above.	Text
FeederID	Circuit/feeder ID for the damaged span of line. Foreign to the related asset line tables.	Text
AssociatedNominalVoltagekV	Nominal voltage (in kilovolts) associated with asset. Do not use more than two decimal places. Enter "-99" if N/A.	Float
AssociatedOperatingVoltagekV	Operating voltage (in kilovolts) associated with asset. Do not use more than two decimal places. Enter "-99" if N/A.	Float
ManufacturerModelID	The manufacturer and asset model specifications that would enable one to identify exactly what type of equipment was involved with the damage. If some sort of model or part code/name is not available, at least record the manufacturer name. Write "Unknown" if no manufacturer info can be determined based on information available in the field. "Unknown" values should be reviewed by other electrical corporation staff after data collection and filled in from existing databases or other sources if possible.	Text
InstallationDate	Date the asset was installed. Use YYYY-MM-DD format. Leave blank if unknown. Do not include time.	Date
InstallationYear	Year of asset installation. Use four digits. Enter "-99" if unknown.	Integer
EstimatedAge	The age of the asset in years. Only fill this out if the "InstallationYear" and "InstallationDate" values are unknown. Possible values: • 0-9 • 10-19 • 20-29 • 30-39 • 40-49 • 50-59 • 60-69 • 70-79 • 80-89 • 90-99 • >100 • Unknown • N/A (only enter this if there is an "InstallationYear" value)	Text
UsefulLifespan	The number of years an asset would have been expected to have a useful functioning existence prior to damage.	Integer
ExemptionStatus	Is the asset exempt per California Public Resources Code (PRC) 4292? PRC 4292 requires clearance around support structures on which certain equipment is mounted in certain areas. This field that may be most efficiently filled out by electrical corporation technical staff after field collection. Possible values: • Yes • No • Unknown • N/A	Text
LikelyArcing	Was arcing likely because of the damage? Possible values: • Yes	Text

Field Name	Field Description	Field Type
	• No • Unknown	
DamageType	Type of damage sustained. Possible values: • Asset damage • Asset failure • Equipment damage • Equipment failure • Veg contact • Object contact	Text
DamageDescription	Description of damage. Possible values: • Broken down guy • Broken hand tie • Broken neutral • Broken service neutral • Broken guy wire • Broken tie wire • Broken tree branch near line • Broken pin • Broken insulator • Damaged crossarm • Guy and anchor damage • Tree branch on transformer • Other – See comment.	Text
DamageDescriptionComment	Damage category not listed in the options above and/or additional relevant details about damage	Text

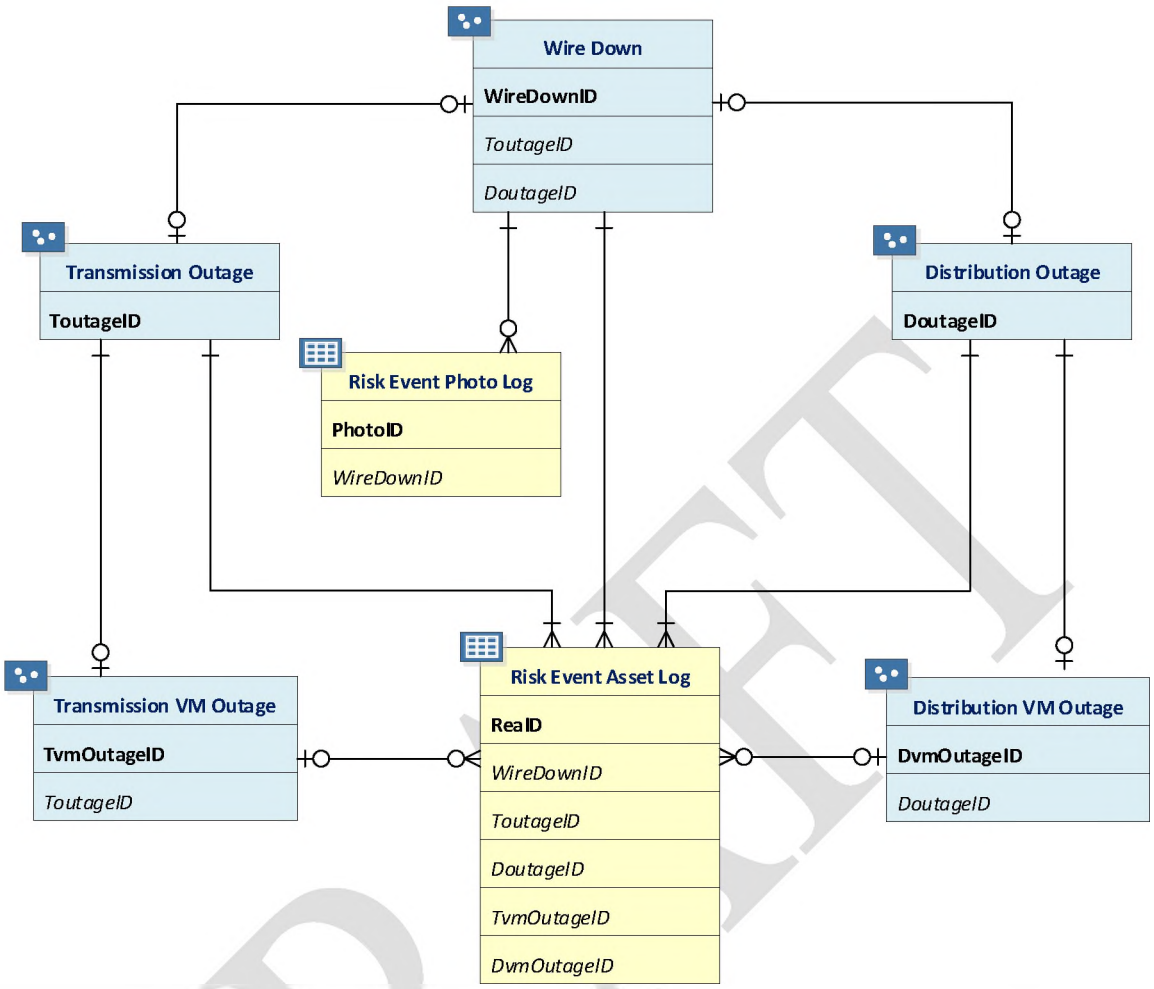
3.3.6.6 PSPS Damage Photo Log (Related Table)

Field Name	Field Description	Field Type
PhotoID	Number or other label for a photo of the asset that enables the point to be linked to GIS data. If more than one photo is taken, enter additional IDs with separation commas. A primary key for the "PSPS Damage Photo Log" table. Photo format: Geotagged JPEG or PNG. Use format: UtilityName_DistrictID_InspectorInitial_PspsDamage_YYYYMMDD_PhotoNumber. For example, "UtilityG&E_AB_PspsDamage_20200703_1.png".	Text
FuelBedPhotoID	Number or other label for a photo of the fuel bed below the damaged asset that enables the point to be linked to GIS data. If more than one photo is taken, enter additional IDs with separation commas. A primary key for the "PSPS Damage Photo Log" table.	Text
DamageEventID	Foreign key to the damage point tables.	Text

3.4 Risk Event (Feature Dataset)

3.4.1 Overview and Entity-Relationship Diagram for Wire Down Events, Outages, and Ignitions

This dataset contains feature classes for wire down events, overall outages, vegetation-related outages (VM outages), and ignitions. All these feature classes are related to the "Risk Event Asset Log" table. The ignition feature class is also related to the "Risk Event Photo Log" table.



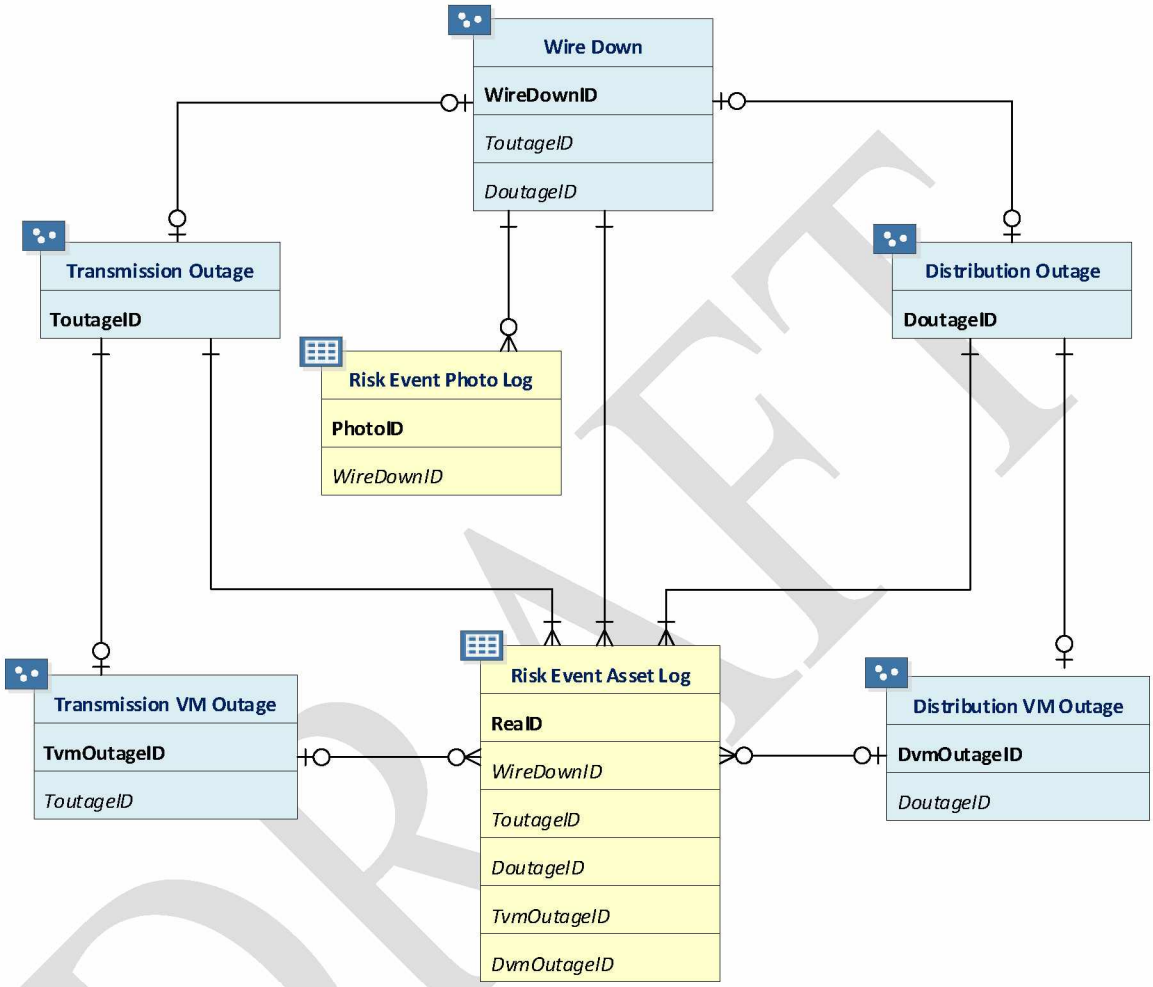
3.4.2 Wire Down Event (Point Feature Class)

Field Name	Field Description	Field Type
WireDownID	Unique ID for the wire down event. Primary key for the Wire Down Point table.	Text
UtilityID	Standardized identification name of the utility ("UtilityG&E," etc.).	Text
WireDownDate	The start date of the wire down event. Use YYYY-MM-DD format. Leave blank if unknown.	Date
WireDownYear	The year that the risk event occurred. Use four digits.	Integer
SuspectedWireDownCause	High-level category for wire down event cause. Possible values: • Object contact • Equipment failure • Wire-to-wire contact • Contamination • Utility work/Operation • Vandalism/Theft • Unknown • Other – See comment.	Text
SuspectedWireDownCauseComment	Suspected wire down cause description not listed in the options above.	Text

Field Name	Field Description	Field Type
ObjectContact	Description of object involved in the contact if the value of "SuspectedWireDownCause" is "Object contact." Enter N/A for this field if the value of "SuspectedWireDownCause" is not "Object contact." Possible values: • Vegetation contact • Animal contact • Balloon contact • Vehicle contact – car pole • Vehicle contact – aircraft • 3rd party contact (e.g. 3rd party tree trimmer) • Unknown • N/A	Text
EquimentFailure	Description of failed or damaged equipment or component involved if "SuspectedWireDownCause" value is "Equipment failure." Enter N/A for this field if the value of "SuspectedWireDownCause" is not "Equipment failure." Possible values: • Anchor/ guy • Capacitor bank • Conductor • Connector device • Crossarm • Fuse • Insulator and bushing • Lightning arrestor • Pole • Recloser • Relay • Sectionalizer • Splice • Switch • Tap • Tie wire • Transformer • Voltage regulator/ booster • Unknown • Other – See comment. • N/A	Text
EquipmentFailureComment	Equipment failure description not listed in the options above.	Text
AssociatedNominalVoltagekV	Nominal voltage (in kilovolts) associated with asset. Do not use more than two decimal places. Enter "-99" if N/A.	Float
AssociatedOperatingVoltagekV	Operating voltage (in kilovolts) associated with asset. Do not use more than two decimal places. Enter "-99" if N/A.	Float
SpanLength	The length of a single-phase conductor, in feet, as measured between the "FromDevice" and "ToDevice."	Float
TotalSplices	The total number of splices in the span of conductor involved in the wire down event. In the event of wire down events occurring over multiple spans, include the total number of splices in all failed spans.	Integer
MaxSplices	The maximum number of splices in an individual phase conductor involved in the wire down event.	Integer
MultipleDown	Was more than one span of conductors impacted by the wire down event? Possible values: • Yes • No	Text

Field Name	Field Description	Field Type
ConductorMaterial	Material of the conductor involved in the wire down event. Possible values: • All aluminum conductor (AAC) • All aluminum alloy conductor (AAAC) • Aluminum conductor aluminum reinforced (ACAR) • Aluminum conductor steel reinforced (ACSR) • Copper (Cu) • Other – See comment.	Text
ConductorMaterialComment	Conductor material description not listed in the options above.	Text
ConductorSize	Size (e.g. No. 4, 1/0, etc.) of the conductor involved in the incident, in AWG or KCMIL.	Text
ConductorOD	Overall diameter of the conductor, in inches.	Float
ConductorCodeName	The code name of the conductor involved in the wire down event. For example, Lapwing, Sparrow, Merlin, etc.	Text
ConductorRating	The nominal ampacity rating of the conductor involved in the wire down event in amperes.	Float
OutageStatus	Was there an outage associated with the event? Possible values: • Yes • No	Text
ToutageID	A unique ID for the transmission outage event. Foreign key to the Transmission Outages table.	Text
DoutageID	A unique ID for the distribution outage event. Foreign key to the Distribution Outages table.	Text
Energized	Was the conductor energized while in contact with a grounded object during the event? If the wire down event did not result in contact with a grounded object, then enter N/A for this field. Possible values: • Yes • No • N/A	Text
IgnitionStatus	Was there an ignition associated with the wire down event? Possible values: • Yes • No	Text
WireDownNotes	Additional information or notes available for the wire down event and not captured in other fields.	Text
HFTDClass	The CPUC high-fire threat district (HFTD) area the outage intersects. Possible values: • Tier 3 • Tier 2 • Zone 1 • Non-HFTD	Text
City	City in where the wire down event is located.	Text
County	County in where the wire down event is located.	Text
District	Operating district where the wire down occurred.	Text
Latitude	Latitude of event point in decimal degrees	Float
Longitude	Longitude of event point in decimal degrees.	Float

3.4.3 Ignition (Point Feature Class)



Field Name	Field Description	Field Type
IgnitionID	Unique ID for the ignition event. Primary key for the Ignition Point table.	Text
UtilityID	Standardized identification name of the utility ("UtilityG&E," etc.).	Text
FireStartTime	The start time of the event. Must be in the "hh:mm:ss" format.	Date
FireStartDate	The start date of the event. Use YYYY-MM-DD format. Leave blank if unknown. Do not include time.	Date
FireStartYear	The year that the risk event occurred. Use four digits.	Integer
FireDetectionMethod	The method by which the utility first learned of the ignition event. Possible values: • Public • Satellite • Camera • Utility staff • Fire agency • Other – Comment.	Text

Field Name	Field Description	Field Type
FireDetectionMethodComment	Fire detection method description not listed in the options above.	Text
SuspectedInitiatingCause	The suspected initiating event of the ignition. Possible values: • Object contact • Equipment failure • Wire-to-wire contact • Contamination • Normal operation • Vandalism/ Theft • Unknown • Other – See comment	Text
SuspectedInitiatingCauseComment	Suspected initiating event of the ignition cause description not listed in the options above.	Text
ObjectContact	Description of object involved in contact if "Object contact" is value of "SuspectedInitiatingEvent". If "Object contact" is not the value of "SuspectedInitiatingEvent," then enter N/A for this field. Possible values: • Vegetation • Animal • Balloon • Vehicle contact – car pole • Vehicle contact – aircraft • 3rd party facility • Unknown • N/A	Text
EquimentFailure	Description of equipment involved in ignition, if "Equipment failure" is value of "SuspectedInitiatingEvent". If "Equipment failure" is not the value of "SuspectedInitiatingEvent," then enter N/A for this field. Possible values: • Anchor/ guy • Capacitor bank • Conductor • Connector device • Crossarm • Fuse • Insulator and bushing • Lightning arrestor • Pole • Recloser • Relay • Sectionalizer • Splice • Switch • Tap • Tie wire • Transformer • Voltage regulator/ booster • Unknown • Other – See comment. • N/A	Text
AssociatedNominalVoltagekV	Voltage (in kilovolts) associated with ignition. Do not use more than two decimal places. Enter "-99" if N/A.	Float
AssociatedOperatingVoltagekV	Operating voltage (in kilovolts) associated with asset. Do not use more than two decimal places. Enter "-99" if N/A.	Float
SubstationID	Unique ID of the substation supplying the involved circuit. Foreign key to Substation table.	Text

Field Name	Field Description	Field Type
SubstationName	Name of the substation supplying the involved circuit.	Text
OtherCompanies	Affected companies from the event.	Text
EquipmentType	The type of equipment involved in the ignition event. Possible values: • Overhead • Pad-mounted • Subsurface	Text
Determination	The entity relied upon to make the determination of "SuspectedInitiatingEvent" above. Possible values: • Utility personnel • Fire Agency • Other – See comment	Text
DeterminationComment	Determination entity description not listed in the options above.	Text
FacilityContacted	The first facility that was contacted by an outside object. Only to be used if "Object contact" is selected as "SuspectedInitiatingEvent". Possible values: • Electric Facility • Pole • Communication Facility	Text
ContributingFactor	Factors suspected as contributing to the ignition. Possible values: • Weather • External Force • Human Error • Other – See comment • Unknown	Text
ContributingFactorComment	Contributing factor description not listed in the options above.	Text
RFWStatus	Was there a red flag warning (RFW) issued by the National Weather Service (NWS) in effect at the ignition location at the time of ignition? Possible values: • Yes • No	Text
RFWIssueDate	The date on which the NWS issued the RFW in effect at the ignition location at the time of the ignition event. Leave blank if there was no RFW in effect at the time of ignition at the ignition location. Also leave blank if unknown. Use YYYY-MM-DD format.	Date
RFWIssueTime	The time at which the NWS issued the RFW in effect at the ignition location at the time of the ignition event. Leave blank if there was no RFW in effect at the time of ignition at the ignition location. Must be in the "hh:mm:ss" format.	Date
FWWStatus	Was there a fire weather watch (FWW) issued by the National Weather Service (NWS) in effect at the ignition location at the time of ignition? Possible values: • Yes • No	Text
FWWIssueDate	The date on which the NWS issued the FWW in effect at the ignition location at the time of the ignition event. Leave blank if there was no FWW in effect at the time of ignition at the ignition location. Also leave blank if unknown. Use YYYY-MM-DD format.	Date
FWWIssueTime	The time at which the NWS issued the FWW in effect at the ignition location at the time of the ignition event. Leave blank if there was no FWW in effect at the time of ignition at the ignition location. Must be in the "hh:mm:ss" format.	Date
HWWStatus	Was there a high wind warning (HWW) issued by the National Weather Service (NWS) in effect at the ignition location at the time of ignition? Possible values: • Yes • No	Text
HWWIssueDate	The date on which the NWS issued the HWW in effect at the ignition location at the time of the ignition event. Leave blank if there was no HWW in effect at the	Date

Field Name	Field Description	Field Type
	time of ignition at the ignition location. Also leave blank if unknown. Use YYYY-MM-DD format.	
HWWIssueTime	The time at which the NWS issued the HWW in effect at the ignition location at the time of the ignition event. Leave blank if there was no HWW in effect at the time of ignition at the ignition location. Must be in the "hh:mm:ss" format.	Date
OriginLandUse	Status of land at origin of ignition. Possible values: • Rural • Urban	Text
MaterialAtOrigin	Fuel material for the ignition origin, Possible values: • Vegetation • Structure • Other – See comment	Text
MaterialAtOriginComment	Material at origin description not listed in the options above.	Text
FuelBedDescription	Type of fuel bed existing at the damage location. Possible values: • Fire-resistive fuel bed - Fuel bed not conducive to propagating fire where damage occurred (e.g. asphalt, concrete, gravel, etc.). • Grass fuel model - Fuel bed comprised of annual grasses where damaged occurred. • Brush fuel model - Fuel bed comprised of mainly brush or shrubs where damage occurred (e.g. chamise, manzanita, chaparral, scotch broom, etc.). • Timber fuel model - Fuel bed comprised of a timber where damaged occurred (e.g. forests, timber litter, logging slash, etc.). • Other – See comment.	Text
FuelBedDescriptionComment	Fuel bed description not listed in the options above.	Text
FireSize	Size, in acres unless otherwise indicated, of fire resulting from the ignition. Possible values: • Structure-only • <3 meters of linear travel • <0.25 • 0.26-9.99 • 100-299 • 300-999 • 1,000-4,999 • >5,000 • Unknown	Text
SuppressedBy	Entity responsible for suppressing ignition. Possible values: • Customer • Fire agency • Self-extinguished • Utility • Unknown	Text
SuppressingAgency	If the "SupressedBy" is "Fire Agency", enter the fire department name.	Text
FireInvestigation	Whether the fire authority having jurisdiction investigated the ignition and the status of the investigation. Possible values: • Yes – Complete • Yes – Pending • No	Text
FireAHJ	If there was an investigation of the ignition by a fire authority having jurisdiction, enter the fire agency name.	Text
OutageStatus	Was there an outage associated with the event? Possible values: • Yes • No	Text

Field Name	Field Description	Field Type
ToutageID	A unique ID for the transmission outage event. Foreign key to the Transmission Outages table.	Text
DoutageID	A unique ID for the distribution outage event. Foreign key to the Distribution Outages table.	Text
IgnitionNotes	Additional information regarding the ignition event. All additional data fields collected by the utility that are not included in this ignition schema shall be included in this field.	Text
HFTDClass	The CPUC high-fire threat district (HFTD) area the ignition event intersects. Possible values: • Tier 3 • Tier 2 • Zone 1 • Non-HFTD	Text
City	City in where the ignition event is located.	Text
County	County in where the ignition event is located.	Text
District	Operating district where the ignition occurred.	Text
Latitude	Latitude of event point in decimal degrees.	Float
Longitude	Longitude of event point in decimal degrees.	Float

3.4.4 Transmission Outages (Point Feature Class)

For this table, please include unplanned outage and exclude planned outage.

Field Name	Field Description	Field Type
ToutageID	The unique ID for outage event. Primary key for the Transmission Outages table.	Text
UtilityID	Standardized identification name of the utility ("UtilityG&E," etc.).	Text
EventYear	The year outage started. Use four digits.	Integer
OutageStartDate	The date outage started. Use YYYY-MM-DD format. Leave blank if unknown. Do not include time.	Date
OutageStartTime	The time outage started. Must be in the "hh:mm:ss" format.	Date
OutageEndDate	The date of full restoration.	Date
OutageEndTime	The time of full restoration. Must be in the "hh:mm:ss" format.	Date
OutageDuration	The total time to restore all customers from the first customer out. Must be in the "hh:mm:ss" format.	Date
CMI	Total customer-minutes interrupted associated with the outage. Not more than two decimal places.	Float
CustomersOutMomentary	Total number of unique customers that experienced an outage lasting 5 minutes or less.	Integer
CustomersOutSustained	Total number of unique customers that experienced an outage lasting longer than 5 minutes.	Integer
CustomerCount	The total number of customers impacted by the outage.	Integer
OutageInterval	Indication of whether the subject outage was momentary (i.e. 5 minutes or less) or sustained (i.e. longer than 5 minutes). Possible values: • Momentary • Sustained	Text
AssociatedNominalVoltagekV	Voltage (in kilovolts) associated with outage. Do not use more than two decimal places. Enter "-99" if N/A.	Float

Field Name	Field Description	Field Type
AssociatedOperatingVoltagekV	Operating voltage (in kilovolts) associated with asset. Do not use more than two decimal places. Enter "-99" if N/A.	Float
OtherCompanies	Affected companies from the event.	Text
OutageClass	The class of circuit involved in the outage. Possible Values • Transmission	Text
SubstationID	Unique ID for the source substation feeding the circuit impacted by the outage. Must be traceable stable ID within a specific asset class. Foreign key to Substation table.	Text
RecloserSetting	If the subject circuit is equipped with reclosing capabilities, indicate whether the reclose function was enabled or disabled at the time of the outage. If the subject circuit is not equipped with reclosing capabilities assign N/A. Possible values: • Enabled • Disabled • N/A	Text
IsolationDeviceType	Type of protective device that operated. Possible values: • Circuit Breaker • Fuse • Lightning Arrester • Switch • Other – See comment	Text
IsolationDeviceTypeComment	Isolation device type description not listed in the options above.	Text
BasicCause	High-level category for event cause. Possible values: • Object contact • Equipment failure • Wire-to-wire contact • Contamination • Operator error • Vandalism/ Theft • Unknown • Other – See comment.	Text
BasicCauseComment	Basic cause description not listed in the options above.	Text
BasicCauseObject	Description of object involved in contact if "Object contact" is value of "BasicCause." Possible values: • Vegetation • Animal • Balloon • Vehicle contact – car pole • Vehicle contact – aircraft • 3rd party facility • Unknown • Other – See comment.	Text
BasicCauseObjectComment	Basic cause object description not listed in the options above.	Text
DamagedDevice	The device type that failed or experienced damage which initiated the outage. Possible Values: • Anchor/ guy • Capacitor bank • Conductor • Connector device • Crossarm • Fuse • Insulator and bushing • Lightning arrestor • Pole	Text

Field Name	Field Description	Field Type
	• Recloser • Relay • Sectionalizer • Splice • Switch • Tap • Tie wire • Transformer • Voltage regulator/ booster • Unknown • Other – See comment. • N/A	
DamagedDeviceComment	Damaged device description not listed in the options above.	Text
ExpulsionFuseOperation	Did an expulsion fuse operate during the outage? Enter N/A if the subject circuit is not equipped with expulsion type fuses. Possible values • Yes • No • N/A	Text
OutageDescription	Description or additional information for the outage.	Text
MED	If all outages on a certain date exceed a statistical limit called Major Event Day (MED), this flag is set against outages associated with that day and typically excluded from certain types of reports. Possible values • Yes • No	Text
SupplementalCause	The supplemental cause of the outage.	Text
SupplementalCauseDescription	Please describe the supplemental cause of the outage.	Text
HFTDClass	The CPUC high-fire threat district (HFTD) area the outage intersects. Possible values: • Tier 3 • Tier 2 • Zone 1 • Non-HFTD	Text
LocationOrAddress	Address or location description for the outage location.	Text
City	City in where the outage event is located.	Text
County	County in where the outage event is located.	Text
District	Operating district where the outage event occurred.	Text
Latitude	Latitude of event point in decimal degrees.	Float
Longitude	Longitude of event point in decimal degrees.	Float

3.4.5 Transmission VM Outage (Point Feature Class)

Field Name	Field Description	Field Type
TvmOutageID	The unique ID for outage caused by vegetation. Primary key for the Transmission VM Outages table.	Text
UtilityID	Standardized identification name of the utility (“UtilityG&E,” etc.).	Text
ToutageID	Foreign key to the Outages table.	Text
EventYear	The year outage started. Use four digits.	Integer

Field Name	Field Description	Field Type
DateOut	The date outage started. Use YYYY-MM-DD format. Leave blank if unknown.	Date
TimeOut	The time outage started. Must be in the "hh:mm:ss" format.	Date
InspectionDate	Date of inspection. Use YYYY-MM-DD format. Leave blank if unknown. Do not include time.	Date
SubstationID	Unique ID for the source substation feeding the circuit impacted by the outage. Must be traceable stable ID within a specific asset class. Foreign key to Substation table.	Text
AssociatedNominalVoltagekV	Voltage (in kilovolts) associated with outage. Do not use more than two decimal places. Enter "-99" if N/A.	Float
AssociatedOperatingVoltagekV	Operating voltage (in kilovolts) associated with asset. Do not use more than two decimal places. Enter "-99" if N/A.	Float
TreeSpecies	Species of the subject tree involved in causing the outage.	Text
TreeHeight	Tree height estimation height of the subject tree involved in causing the outage, in feet.	Integer
TreeDBH	Tree diameter at breast height of the subject tree involved in causing the outage, in inches.	Integer
TreeTrunkDistance	Horizontal distance of the subject tree's trunk from the impacted power lines, in feet.	Integer
VmOutageDescription	Description or additional information for the VM outage event.	Text
HFTDClass	The CPUC High Fire Threat District area that the VM outage event intersects. Possible values: • Tier 3 • Tier 2 • Zone 1 • Non-HFTD	Text
LocationOrAddress	Address or location description for the outage location.	Text
City	City in where the VM outage is located.	Text
County	County in where the VM outage is located.	Text
District	Operating district where the VM outage occurred.	Text
Latitude	Latitude of event point in decimal degrees.	Float
Longitude	Longitude of event point in decimal degrees.	Float

3.4.6 Distribution Outages (Point Feature Class)

For this table, please include unplanned outage and exclude planned outage.

Field Name	Field Description	Field Type
DoutageID	The unique ID for outage event. Primary key for the Distribution Outages table.	Text
UtilityID	Standardized identification name of the utility ("UtilityG&E," etc.).	Text
EventYear	The year outage started. Use four digits.	Integer
OutageStartDate	The date outage started. Use YYYY-MM-DD format. Leave blank if unknown. Do not include time.	Date
OutageStartTime	The time outage started. Must be in the "hh:mm:ss" format.	Date
OutageEndDate	The date of full restoration.	Date
OutageEndTime	The time of full restoration. Must be in the "hh:mm:ss" format.	Date

Field Name	Field Description	Field Type
OutageDuration	The total time to restore all customers from the first customer out. Must be in the "hh:mm:ss" format.	Date
CMI	Total customer-minutes interrupted associated with the outage. Not more than two decimal places.	Float
CustomersOutMomentary	Total number of unique customers that experienced an outage lasting 5 minutes or less.	Integer
CustomersOutSustained	Total number of unique customers that experienced an outage lasting longer than 5 minutes.	Integer
CustomerCount	The total number of customers impacted by the outage.	Integer
OutageInterval	Indication of whether the subject outage was momentary (i.e. 5 minutes or less) or sustained (i.e. longer than 5 minutes). Possible values: • Momentary • Sustained	Text
AssociatedNominalVoltagekV	Voltage (in kilovolts) associated with outage. Do not use more than two decimal places. Enter "-99" if N/A.	Float
AssociatedOperatingVoltagekV	Operating voltage (in kilovolts) associated with asset. Do not use more than two decimal places. Enter "-99" if N/A.	Float
OtherCompanies	Affected companies from the event.	Text
OutageClass	The class of circuit involved in the outage. Possible Values • Transmission	Text
SubstationID	Unique ID for the source substation feeding the circuit impacted by the outage. Must be traceable stable ID within a specific asset class. Foreign key to Substation table.	Text
RecloserSetting	If the subject circuit is equipped with reclosing capabilities, indicate whether the reclose function was enabled or disabled at the time of the outage. If the subject circuit is not equipped with reclosing capabilities assign N/A. Possible values: • Enabled • Disabled • N/A	Text
IsolationDeviceType	Type of protective device that operated. Possible values: • Circuit Breaker • Fuse • Lightning Arrester • Switch • Other – See comment	Text
IsolationDeviceTypeComment	Isolation device type description not listed in the options above.	Text
BasicCause	High-level category for event cause. Possible values: • Object contact • Equipment failure • Wire-to-wire contact • Contamination • Operator error • Vandalism/ Theft • Unknown • Other – See comment.	Text
BasicCauseComment	Basic cause description not listed in the options above.	Text
BasicCauseObject	Description of object involved in contact if "Object contact" is value of "BasicCause." Possible values: • Vegetation • Animal • Balloon • Vehicle contact – car pole • Vehicle contact – aircraft • 3rd party facility	Text

Field Name	Field Description	Field Type
	• Unknown • Other – See comment.	
BasicCauseObjectComment	Basic cause object description not listed in the options above.	Text
DamagedDevice	The device type that failed or experienced damage which initiated the outage. Possible Values: • Anchor/ guy • Capacitor bank • Conductor • Connector device • Crossarm • Fuse • Insulator and bushing • Lightning arrestor • Pole • Recloser • Relay • Sectionalizer • Splice • Switch • Tap • Tie wire • Transformer • Voltage regulator/ booster • Unknown • Other – See comment. • N/A	Text
DamagedDeviceComment	Damaged device description not listed in the options above.	Text
ExpulsionFuseOperation	Did an expulsion fuse operate during the outage? Enter N/A if the subject circuit is not equipped with expulsion type fuses. Possible values • Yes • No • N/A	Text
OutageDescription	Description or additional information for the outage.	Text
MED	If all outages on a certain date exceed a statistical limit called Major Event Day (MED), this flag is set against outages associated with that day and typically excluded from certain types of reports. Possible values • Yes • No	Text
SupplementalCause	The supplemental cause of the outage.	Text
SupplementalCauseDescription	Please describe the supplemental cause of the outage.	Text
HFTDClass	The CPUC high-fire threat district (HFTD) area the outage intersects. Possible values: • Tier 3 • Tier 2 • Zone 1 • Non-HFTD	Text
LocationOrAddress	Address or location description for the outage location.	Text
City	City in where the outage event is located.	Text
County	County in where the outage event is located.	Text
District	Operating district where the outage event occurred.	Text

Field Name	Field Description	Field Type
Latitude	Latitude of event point in decimal degrees.	Float
Longitude	Longitude of event point in decimal degrees.	Float

3.4.7 Distribution VM Outage (Point Feature Class)

Field Name	Field Description	Field Type
DvmOutageID	The unique ID for outage caused by vegetation. Primary key for the Distribution VM Outages table.	Text
UtilityID	Standardized identification name of the utility ("UtilityG&E," etc.).	Text
DoutageID	Foreign key to the Distribution Outages table.	Text
EventYear	The year outage started. Use four digits.	Integer
DateOut	The date outage started. Use YYYY-MM-DD format. Leave blank if unknown.	Date
TimeOut	The time outage started. Must be in the "hh:mm:ss" format.	Date
InspectionDate	Date of inspection. Use YYYY-MM-DD format. Leave blank if unknown. Do not include time.	Date
SubstationID	Unique ID for the source substation feeding the circuit impacted by the outage. Must be traceable stable ID within a specific asset class. Foreign key to Substation table.	Text
AssociatedNominalVoltagekV	Voltage (in kilovolts) associated with outage. Do not use more than two decimal places. Enter "-99" if N/A.	Float
AssociatedOperatingVoltagekV	Operating voltage (in kilovolts) associated with asset. Do not use more than two decimal places. Enter "-99" if N/A.	Float
TreeSpecies	Species of the subject tree involved in causing the outage.	Text
TreeHeight	Tree height estimation height of the subject tree involved in causing the outage, in feet.	Integer
TreeDBH	Tree diameter at breast height of the subject tree involved in causing the outage, in inches.	Integer
TreeTrunkDistance	Horizontal distance of the subject tree's trunk from the impacted power lines, in feet.	Integer
VmOutageDescription	Description or additional information for the VM outage event.	Text
HFTDClass	The CPUC High Fire Threat District area that the VM outage event intersects. Possible values: • Tier 3 • Tier 2 • Zone 1 • Non-HFTD	Text
LocationOrAddress	Address or location description for the outage location.	Text
City	City in where the VM outage is located.	Text
County	County in where the VM outage is located.	Text
District	Operating district where the VM outage occurred.	Text
Latitude	Latitude of event point in decimal degrees.	Float
Longitude	Longitude of event point in decimal degrees.	Float

3.4.8 Risk Event Asset Log (Related Table)

Field Name	Field Description	Field Type

RealD	The unique ID for the associated asset. Primary key for the Risk Event Asset Log table.	Text
WireDownID	Foreign key to the Wire Down Event table.	Text
FromDevice	The AssetID of the upstream structure supporting the conductor involved in the wire down event. Enter multiple IDs if multiple upstream structures are in the same location. Foreign key to all the associated asset point tables.	Text
ToDevice	The AssetID of the downstream structure(s) supporting the conductor involved in the wire down event. Enter multiple IDs if multiple downstream structures are in the same location. Foreign key to all the associated asset point tables.	Text
IgnitionID	Foreign key to the Ignition table.	Text
StationID	Unique ID for the nearest weather station to the ignition location. Enter multiple IDs if multiple stations are in the same location. Must be traceable stable ID within a weather station. Foreign key to the Weather Station table.	Text
ToutageID	Foreign key to the Transmission Outages table.	Text
TvmOutageID	Foreign key to the Transmission Outages table.	Text
DoutageID	Foreign key to the Distribution Outages table.	Text
DvmOutageID	Foreign key to the Distribution Outages table.	Text
IsolationDeviceID	The AssetID of the device that operated to de-energize the circuit for an outage event. Should be traceable within a specific asset class. Foreign key to all the associated asset point tables.	Text
DamagedDeviceID	The AssetID of the device that failed or experienced damage which initiated the outage. Should be traceable within a specific asset class. Foreign key to all the associated asset point tables.	Text
AssetID	Unique ID for asset point tables. Must be traceable stable ID within a specific asset class. Foreign key to all the associated asset point tables.	Text
CircuitID	Unique ID for the specific circuit impacted by a risk event. Must be traceable stable ID within a specific asset class. Foreign key to all the associated asset tables.	Text
SubstationID	Unique ID for the source substation feeding the circuit impacted by the outage. Must be traceable stable ID within a substation. Foreign key to the Substation table.	Text

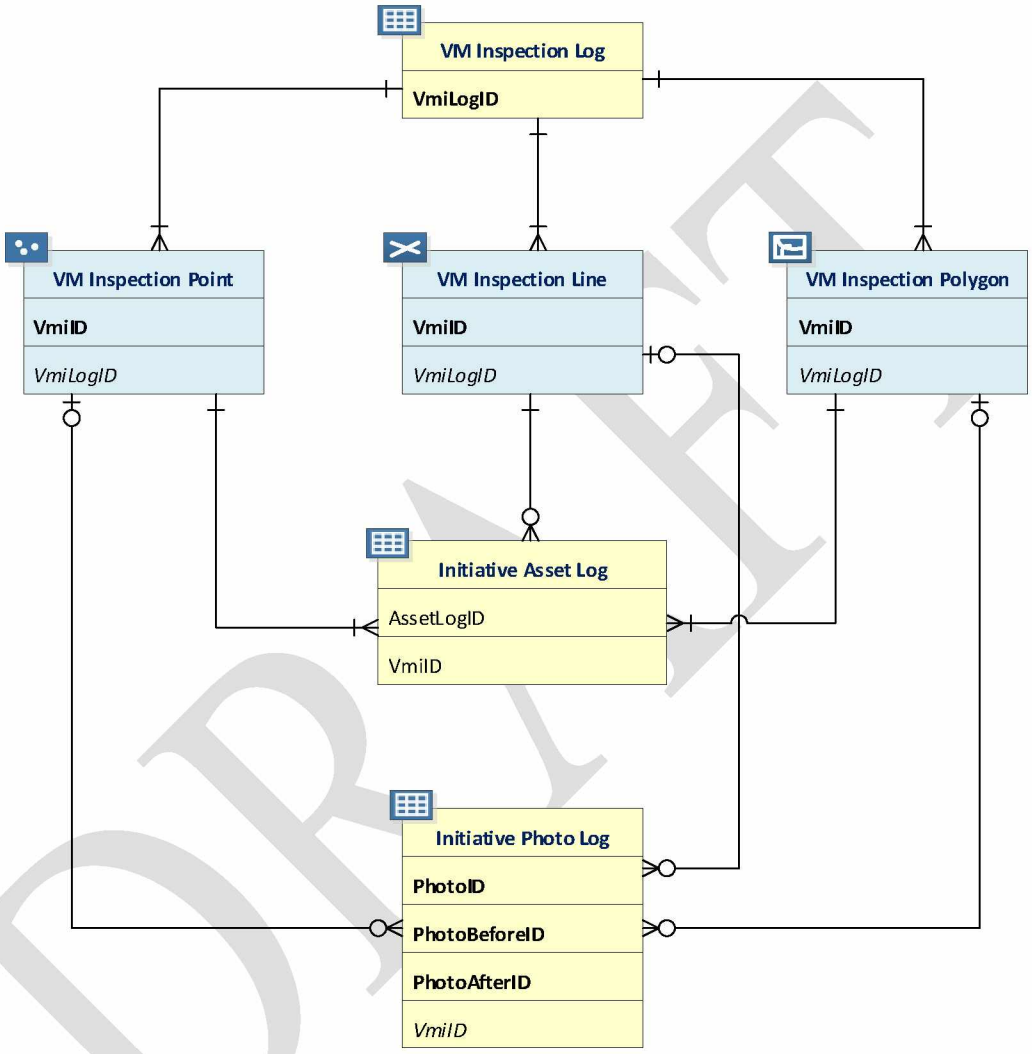
3.4.9 Risk Event Photo Log (Related Table)

Field Name	Field Description	Field Type
PhotoID	Illustration of the risk event location. Primary key for the Risk Event Photo Log table. Photo format: Geotagged JPEG or PNG. Use format UtilityName_DistrictID_InspectorInitial_RiskEvent_YYYYMMDD_PhotoNumber. For example, “UtilityG&E_AB_Ignition_20200703_1.png”. If more than one photo is taken, enter additional photo IDs with the duplicate risk event ID.	Text
IgnitionID	Foreign key to the Ignition table.	Text
WireDownID	Foreign key to the Wire Down Event table.	Text

3.5 Initiative (Feature Dataset)

3.5.1 Vegetation Management Inspections

3.5.1.1 Entity-Relationship Diagram for Vegetation Management Inspections



3.5.1.2 Vegetation Management Inspection Log (Related Table)

Field Name	Field Description	Field Type
VmiLogID	Unique ID or job ID of a vegetation management inspection activity. Primary key for the Vegetation Management Inspection Log table.	Text
VmpLogID	Unique ID or job ID of of a vegetation management project resulting from a vegetation management inspection. A Foreign key to the Vegetation Management Project table.	Text
InspectionDate	The date when a vegetation management inspection was or will be conducted. Use YYYY-MM-DD format. Leave blank if unknown. Do not include time.	Date
InpsectorName	Inspector performing the vegetation management inspection.	Text
InspectionType	Initiative activities related to the vegetation management project which include,	Text

Field Name	Field Description	Field Type
	• Assessing trees with the potential to strike • Clearances – routine • Clearances – enhanced • Hazard trees • Tree mortality • Other – See comment	
InspectionTypeComment	Inspection type description not listed in the options above.	Text
InspectionStatus	The status of the initiative activity related to the vegetation management project which include, • Planned • In-progress • Complete	Text
InspectionQA	Has the inspection been checked for quality assurance? Possible values: • Yes • No	Text
TreeTrimmingCount	The number of trees identified for trimming from the vegetation management inspection.	Integer
TreeTrimmingAcreage	The acreage of trees identified for trimming from the vegetation management inspection. Two decimal places	Float
InspectionComment	Additional comments regarding the vegetation inspection project.	Text
InspectionMethod	Inspection methods which include, • Ground inspection • Aerial – drone • Aerial – helicopter • Remote sensing – satellite imagery • Remote sensing – LiDAR • Other – See comment	Text
InspectionMethodComment	Inspection method description not listed in the options above.	Text
InspectionTechnology	The technology that an inspector uses for the vegetation management inspection. Possible values: • Collector for ArcGIS • Survey123 for ArcGIS • Workforce for ArcGIS • ArcGIS QuickCapture • Other – See comment • None	Text
InspectionTechnologyComment	Inspection technology description not listed in the options above.	Text

3.5.1.3 Vegetation Management Inspection Point (Feature Class)

Field Name	Field Description	Field Type
VmiID	Unique ID or job ID of a vegetation management inspection activity. Primary key for the Vegetation Management Inspection Point table.	Text
UtilityID	Standardized identification name of the utility ("UtilityG&E," etc.).	Text
VmiLogID	Unique ID or job ID of a vegetation management inspection activity. Foreign key to the Vegetation Management Inspection Log table.	Text
InspectionLocationOrAddress	Address or location description for the inspection location.	Text
ParcelAPN	Assessor Parcel Number (APN), a number assigned to parcels of real property by the tax assessor of a particular jurisdiction for purposes of identification and record-keeping. Use the format: ###-####-###-####. For example, 006-0144-029-0000.	Text

Field Name	Field Description	Field Type
TreeHealth	Is the tree healthy? Possible values: • Yes • No	Text
TreeSpecies	Common name for species of tree.	Text
TreeHeight	Tree height (feet). Round the value.	Integer
TreeDiameter	Tree diameter at breast height (inches). Round the value.	Integer
HFTDClass	The CPUC high-fire threat district (HFTD) area the management inspection intersects. Possible values: • Tier 3 • Tier 2 • Zone 1 • Non-HFTD	Text
City	City in where the vegetation management inspection is located.	Text
County	County in where the vegetation management inspection is located.	Text
District	Operating district where the vegetation management inspection occurred.	Text
Latitude	Latitude of event point in decimal degrees	Float
Longitude	Longitude of event point in decimal degrees.	Float

3.5.1.4 Vegetation Management Inspection Line (Feature Class)

Field Name	Field Description	Field Type
VmiID	Unique ID or job ID of a vegetation management inspection activity. Primary key for the Vegetation Management Inspection Line table.	Text
UtilityID	Standardized identification name of the utility ("UtilityG&E," etc.).	Text
VmiLogID	Unique ID or job ID of a vegetation management inspection activity. Foreign key to the Vegetation Management Inspection Log table.	Text
InspectionLocationOrAddress	Address or location description for the inspection location.	Text
HFTDClass	The CPUC High Fire Threat District (HFTD) area that the vegetation management project intersects. Possible values: • Tier 3 • Tier 2 • Zone 1 • Non-HFTD • Other – See comment.	Text
HFTDClassComment	If the project line intersects multiple HFTD areas, list all of them here.	Text
City	City in where the vegetation management inspection is located.	Text
County	County in where the vegetation management inspection is located.	Text
District	Operating district where the vegetation management inspection occurred.	Text

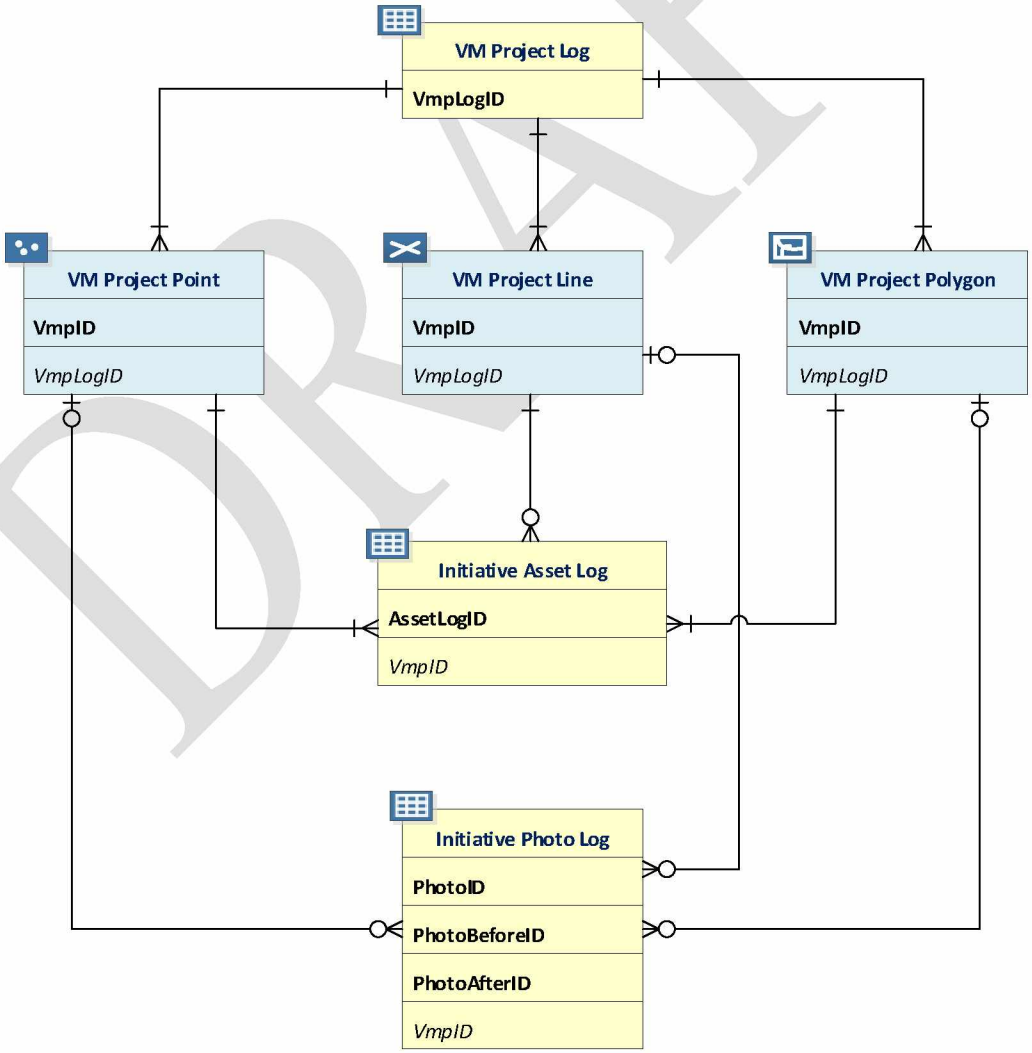
3.5.1.5 Vegetation Management Inspection Polygon (Feature Class)

Field Name	Field Description	Field Type
VmiID	Unique ID or job ID of a vegetation management inspection activity. Primary key for the Vegetation Management Inspection Polygon table.	Text
UtilityID	Standardized identification name of the utility ("UtilityG&E," etc.).	Text
VmiLogID	Unique ID or job ID of a vegetation management inspection activity. Foreign key to the Vegetation Management Inspection Log table.	Text

Field Name	Field Description	Field Type
InspectionLocationOrAddress	Address or location description for the inspection location.	Text
HFTDClass	The CPUC High Fire Threat District (HFTD) area that the vegetation management project intersects. Possible values: • Tier 3 • Tier 2 • Zone 1 • Non-HFTD • Other – See comment.	Text
HFTDClassComment	If the project line intersects multiple HFTD areas, list all of them here.	Text
City	City in where the vegetation management inspection is located.	Text
County	County in where the vegetation management inspection is located.	Text
District	Operating district where the vegetation management inspection occurred.	Text

3.5.2 Vegetation Management Projects

3.5.2.1 Entity-Relationship Diagram for Vegetation Management Projects



3.5.2.2 Vegetation Management Project Log (Related Table)

Field Name	Field Description	Field Type
VmpLogID	Unique ID or job ID of an initiative. Primary key for Vegetation Management Project Log table.	Text
DateStart	The start date of the vegetation management project. Use YYYY-MM-DD format. Leave blank if unknown. Do not include time.	Date
DateEnd	The completion date of the vegetation management project. Use YYYY-MM-DD format. Leave blank if unknown. Do not include time.	Date
VmpStatus	Status of the vegetation management project. Possible Values: • Complete • In progress • Planned • Delayed • Cancelled	Text
VmpStatusComments	Additional comments regarding the status of the vegetation management project.	Text
PersonInCharge	Name of the person in charge for the vegetation management project.	Text
CoastalRedwoodExemption	Coastal redwood exception to clearance being applied. Possible values: • Yes • No	Text
EncroachPermit	Is an encroachment permit required for the vegetation management project? Possible values: • Yes • No	Text
EnvPermit	Is special environmental permitting needed for the vegetation management project? Possible values: • Yes • No	Text
EnvPermitProject	Specific activity (e.g., timber harvest under an exemption) for which a permit was obtained.	Text
EnvPermitDocumentation	Include any key details about environmental permit documentation and project ID numbers. For example, when the permitted project is timber harvest under an exemption, this field must include the harvest document number of the exemption (e.g., 2-20EX-01049-BUT).	Text
BMPApply	Do best management practices apply for the vegetation management project? Possible values: • Yes • No	Text
AMMApply	Do avoidance and minimization measures apply to the vegetation management project? Possible values: • Yes • No	Text
WoodManagement	Is wood management needed for the vegetation management project? Possible values: • Yes • No	Text
WoodManagementComments	Additional comments regarding wood management needs for the vegetation management project.	Text
LandDesignation	The assigned designation of the land where the subject vegetation management project is scheduled. Possible values: • Local Responsibility Area (LRA) • State Responsibility Area (SRA) • Federal Responsibility Area (FRA)	Text
RiparianArea	Is the vegetation management project located in a riparian area? Possible values: • Yes • No	Text

Field Name	Field Description	Field Type
CaltransProp	Is the vegetation management project located on Caltrans property? Possible values: • Yes • No	Text
ProjectCategory	High-level category describing the nature of the vegetation management project. Possible values: • Tree trimming • Tree removal • Fuel management • Assessing trees with the potential to strike • Other – See comment.	Text
ProjectCategoryComment	Project category description not listed in the options above.	Text
TreeTrimCount	Number of trees listed for trimming in the vegetation management project.	Integer
TreeTrimAcreage	Acreage of trees listed for trimming in the vegetation management project. Two decimal places	Float
TreeRemovalCount	Number of trees listed for removal in the vegetation management project.	Integer
TreeRemovalAcreage	Acreage of trees listed for removal in the vegetation management project. Two decimal places	Float
TreeTrimCountActl	Number of trees actually trimmed as part of the vegetation management project.	Integer
TreeTrimAcreageActl	Acreage of trees actually trimmed as part of the in the vegetation management project. Two decimal places	Float
TreeRemovalCountActl	Number of trees actually removed as part of the vegetation management project.	Integer
TreeRemovalAcreageActl	Acreage of trees actually removed as part of the vegetation management project. Two decimal places	Float
VegetationTreatmentType	The type(s) of treatment scoped into the vegetation management project. Possible values: • Radial clearance – standard • Radial clearance - enhanced • Overhang clearing • Tree removal – hazard tree • Tree removal – tree mortality • Tree trimming • Pole brushing • Fire break creation • Brush clearance • Other or multiple treatment types – See comment.	Text
VegetationTreatmentTypeComment	Treatment type not listed in options above—or multiple treatment types listed in options above. If multiple, list all separated by commas.	Text
DescriptionOfWork	Additional description of the vegetation management work.	Text

3.5.2.3 Vegetation Management Project Point (Feature Class)

Photos are required to accompany this feature class. For each project point, take a photo of the project location before and after the project is undertaken. Populate the "PhotoBeforeID," "PhotoAfterID," and "VmpID" fields in the "Initiative Photo Log" related table (section 3.5.5.2 in this document) to ensure photos can be linked to their associated GIS points.

Field Name	Field Description	Field Type
VmpID	Unique ID or job ID of an initiative. Primary key for Vegetation Management Project Point table.	Text

Field Name	Field Description	Field Type
UtilityID	Standardized identification name of the utility ("UtilityG&E," etc.).	Text
VmpLogID	Unique ID or job ID of an initiative. Foreign key to the Vegetation Inspection Project Log table.	Text
ProjectLocationOrAddress	Address or location description for tree location. Enter "N/A" if there is no address where the subject tree is located.	Text
ParcelAPN	Assessor Parcel Number (APN), a number assigned to parcels of real property by the tax assessor of a particular jurisdiction for purposes of identification and record-keeping. Use the format: ###-####-###-####. For example, "006-0144-029-0000".	Text
TreeID	A unique ID associated with individual tree(s) within the scope of the vegetation management project.	Text
TreeHealth	Is the subject tree healthy? Possible values: • Yes • No	Text
TreeHazard	Is the subject tree a hazard tree? Possible values: • Yes • No	Text
TreeSpecies	Common name for tree species in scope for the vegetation management project.	Text
SpeciesGrowthRate	Generalized growth rate of the subject tree species. Possible values: • Slow growing • Moderately growing • Fast growing	Text
TreeHeight	Tree height (feet). Round the value.	Integer
TreeDiameter	Tree diameter at breast height (inches). Round the value.	Integer
HFTDClass	The CPUC High Fire Threat District (HFTD) area that the vegetation management project intersects. Possible values: • Tier 3 • Tier 2 • Zone 1 • Non-HFTD	Text
City	City in where the vegetation management project is located.	Text
County	County in where the vegetation management project is located.	Text
District	Operating district where the vegetation management project occurred.	Text
Latitude	Latitude of event point in decimal degrees	Float
Longitude	Longitude of event point in decimal degrees.	Float

3.5.2.4 Vegetation Management Project Line (Feature Class)

Photos are required to accompany this feature class. For each project, take photos of the project location before and after the project is undertaken. Populate the "PhotoBeforeID," "PhotoAfterID," "VmpID," "FromDevice," and "ToDevice" fields in the "Initiative Photo Log" related table (section 3.5.5.2 in this document) to ensure photos can be linked to their associated GIS lines. Photo must be taken at an interval of one "before" photo and one "after" photo per span of conductor line involved with the project.

Field Name	Field Description	Field Type
VmpID	Unique ID or job ID of an initiative. Primary key for Vegetation Management Project Line table.	Text
UtilityID	Standardized identification name of the utility ("UtilityG&E," etc.).	Text
VmpLogID	Unique ID or job ID of an initiative. Foreign key to the Vegetation Inspection Project Log table.	Text

Field Name	Field Description	Field Type
ProjectLocationOrAddress	Address or location description for tree location.	Text
HFTDClass	The CPUC High Fire Threat District (HFTD) area that the vegetation management project intersects. Possible values: • Tier 3 • Tier 2 • Zone 1 • Non-HFTD • Other – See comment.	Text
HFTDClassComment	If the project line intersects multiple HFTD areas, list all of them here.	Text
City	City in where the vegetation management project is located.	Text
County	County in where the vegetation management project is located.	Text
District	Operating district where the vegetation management project occurred.	Text

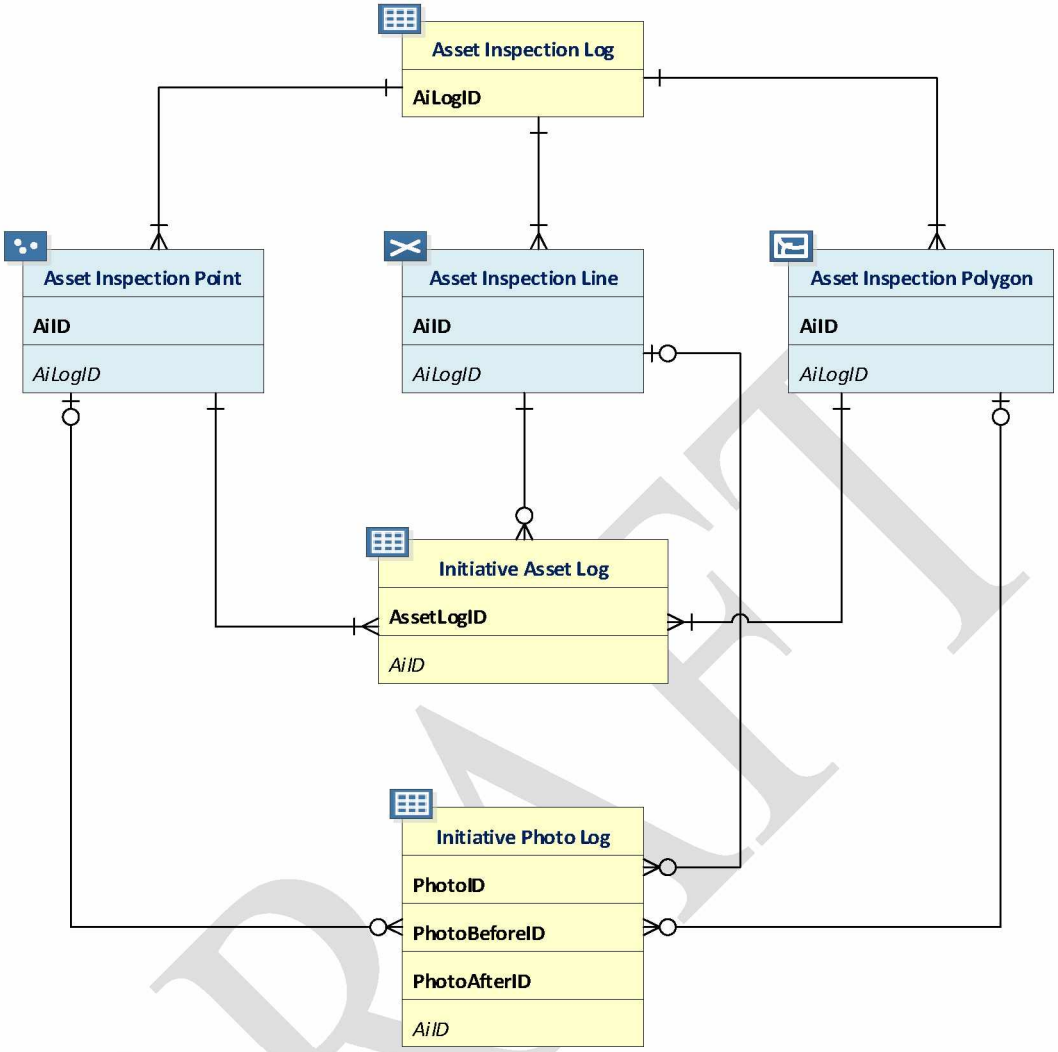
3.5.2.5 Vegetation Management Project Polygon (Feature Class)

Photos are required to accompany this feature class. For each project, take photos of the project location before and after the project is undertaken. Populate the "PhotoBeforeID," "PhotoAfterID," "VmpID," "FromDevice," and "ToDevice" fields in the "Initiative Photo Log" related table (section 3.5.5.2 in this document) to ensure photos can be linked to their associated GIS polygons. Photo must be taken at an interval of one "before" photo and one "after" photo per span of conductor line involved with the project. It is assumed that most project polygons will be based on conductor lines.

Field Name	Field Description	Field Type
VmpID	Unique ID or job ID of an initiative. Primary key for Vegetation Management Project Polygon table.	Text
UtilityID	Standardized identification name of the utility ("UtilityG&E," etc.).	Text
VmpLogID	Unique ID or job ID of an initiative. Foreign key to the Vegetation Inspection Project Log table.	Text
ProjectLocationOrAddress	Address or location description for tree location.	Text
HFTDClass	The CPUC High Fire Threat District (HFTD) area that the vegetation management project intersects. Possible values: • Tier 3 • Tier 2 • Zone 1 • Non-HFTD • Other – See comment.	Text
HFTDClassComment	If the project line intersects multiple HFTD areas, list all of them here.	Text
City	City in where the vegetation management project is located.	Text
County	County in where the vegetation management project is located.	Text
District	Operating district where the vegetation management project occurred.	Text

3.5.3 Asset Management Inspections

3.5.3.1 Entity-Relationship Diagram for Asset Management Inspections



3.5.3.2 Asset Management Inspection Log (Related Table)

Field Name	Field Description	Field Type
AiLogID	Unique ID or job ID of an asset inspection activity. Primary key for the Asset inspection table.	Text
VmpLogID	Unique ID or job ID of a vegetation management project resulting from an asset inspection. A Foreign key to the Vegetation Management Project table. Enter the corresponding VmpID if the subject asset inspection resulted in the creation of a vegetation management project. If the asset inspection did not result in the creation of a related vegetation management project, then enter "N/A" for this field.	Text
InspectionStartDate	The date when an asset inspection began. Use YYYY-MM-DD format. Leave blank if unknown. Do not include time.	Date
InspectionEndDate	The date when an asset inspection was completed. If the asset inspection was started and completed on the same day, "InspectionStartDate" and "InspectionEndDate" will have the same value. Use YYYY-MM-DD format. Leave blank if unknown. Do not include time.	Date
PerformedBy	Who performed the asset inspection? Possible values: • Utility staff • Contractor • Other – See comment	Text

Field Name	Field Description	Field Type
PerformedByComment	Inspector description not listed in the options above.	Text
InpsectorName	Inspector name for the asset management inspection.	Text
InspectionType	The type of asset inspection performed. Possible values: • Patrol • Detailed • Pole loading • Other – See comment.	Text
InspectionTypeComment	Inspection type description not listed in the options above.	Text
InspectionQA	Has the inspection been checked for quality assurance? Possible values: • Yes • No	Text
InspectionComments	Additional comments related to the asset management inspection.	Text
ComplianceFinding	Did the asset inspection result in the finding of any non-compliance issues? Possible values: • Yes • No	Text
InspectionMethod	The method(s) by which the asset inspection was conducted. Possible values: • Drive by • Walk out • Aerial – drone • Aerial – helicopter • Remote sensing – Infrared/Thermal • Remote sensing – LiDAR • Other – See comment.	Text
InspectionMethodComment	Inspection method not listed in the options above—or multiple inspection methods listed in the options above. If multiple, list all values separated by commas.	Text
InspectionTechnology	The technology that an inspector uses for the asset inspection project. Possible values: • Collector for ArcGIS • Survey123 for ArcGIS • Workforce for ArcGIS • ArcGIS QuickCapture • Other – See comment	Text
InspectionTechnologyComment	Inspection technology not listed in the options above.	Text

3.5.3.3 Asset Management Inspection Point (Feature Class)

Field Name	Field Description	Field Type
AiID	Unique ID or job ID of an asset inspection activity. Primary key for the Asset Inspection Point table.	Text
UtilityID	Standardized identification name of the utility ("UtilityG&E," etc.).	Text
AiLogID	Unique ID or job ID of an asset inspection activity. Foreign key to the Asset Inspection table.	Text
InspectionLocationOrAddress	Address or location description for the inspection location.	Text
ParcelAPN	Assessor Parcel Number (APN), a number assigned to parcels of real property by the tax assessor of a particular jurisdiction for purposes of identification and record-keeping. If the asset inspected does not intersect a parcel boundary, enter "N/A" for this field. Use the format: ###-####-###-####. For example, 006-0144-029-0000.	Text
HFTDClass	The CPUC high-fire threat district (HFTD) area the inspection intersects. Possible values: • Tier 3	Text

Field Name	Field Description	Field Type
	• Tier 2 • Zone 1 • Non-HFTD	
City	City in where the asset inspection project is located.	Text
County	County in where the asset inspection project is located.	Text
District	Operating district where the asset inspection project occurred.	Text
Latitude	Latitude of event point in decimal degrees	Float
Longitude	Longitude of event point in decimal degrees.	Float

3.5.3.4 Asset Management Inspection Line (Feature Class)

Field Name	Field Description	Field Type
AiID	Unique ID or job ID of an asset inspection activity. Primary key for the Asset inspection Line table.	Text
UtilityID	Standardized identification name of the utility ("UtilityG&E," etc.).	Text
AiLogID	Unique ID or job ID of an asset inspection activity. Foreign key to the Asset inspection table.	Text
InspectionLocationOrAddress	Address or location description for the inspection location.	Text
HFTDClass	The CPUC High Fire Threat District (HFTD) area that the vegetation management project intersects. Possible values: • Tier 3 • Tier 2 • Zone 1 • Non-HFTD • Other – See comment.	Text
HFTDClassComment	If the project line intersects multiple HFTD areas, list all of them here.	Text
City	City in where the asset inspection project is located.	Text
County	County in where the asset inspection project is located.	Text
District	Operating district where the asset inspection project occurred.	Text

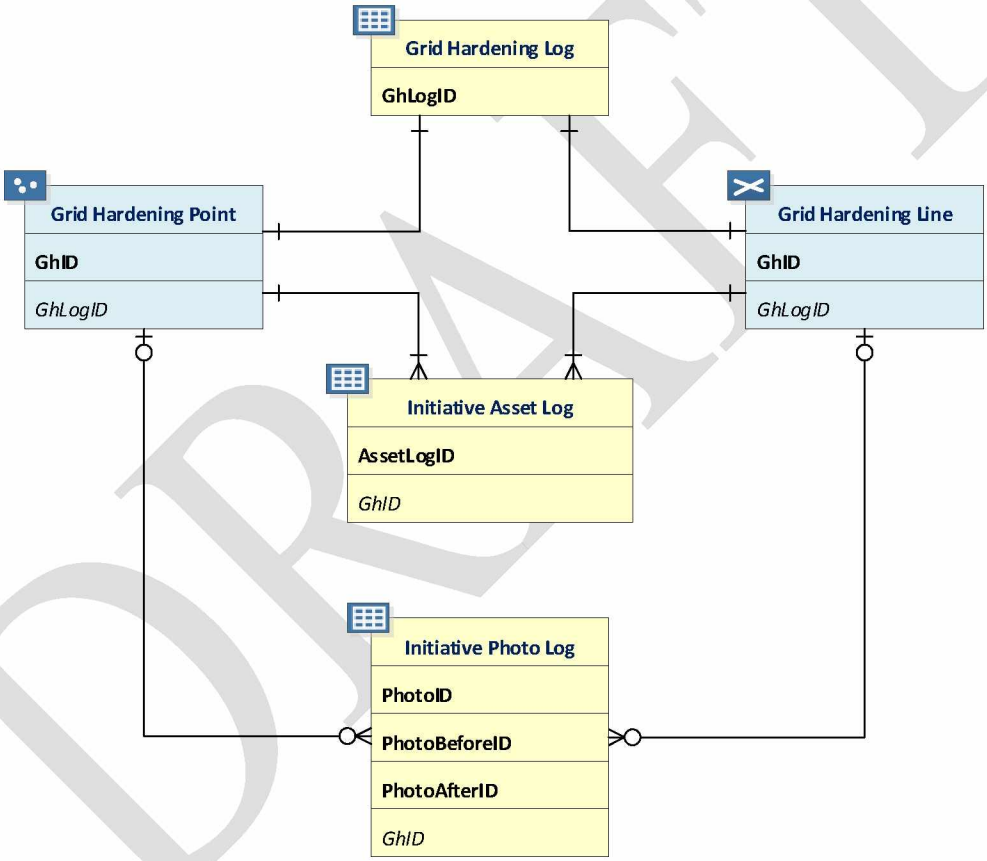
3.5.3.5 Asset Management Inspection Polygon (Feature Class)

Field Name	Field Description	Field Type
AiID	Unique ID or job ID of an asset inspection activity. Primary key for the Asset Inspection Polygon table.	Text
UtilityID	Standardized identification name of the utility ("UtilityG&E," etc.).	Text
AiLogID	Unique ID or job ID of an asset inspection activity. Foreign key to the Asset Inspection table.	Text
ParcelAPN	Assessor Parcel Number (APN), a number assigned to parcels of real property by the tax assessor of a particular jurisdiction for purposes of identification and record-keeping. If the asset inspected does not intersect a parcel boundary, enter "N/A" for this field. Use the format: ###-####-###-####. For example, 006-0144-029-0000.	Text
HFTDClass	The CPUC High Fire Threat District (HFTD) area that the vegetation management project intersects. Possible values: • Tier 3 • Tier 2 • Zone 1 • Non-HFTD	Text

Field Name	Field Description	Field Type
	• Other – See comment.	
HFTDClassComment	If the project line intersects multiple HFTD areas, list all of them here.	Text
City	City in where the asset inspection project is located.	Text
County	County in where the asset inspection project is located.	Text
District	Operating district where the asset inspection project occurred.	Text

3.5.4 Grid Hardening

3.5.4.1 Entity-Relationship Diagram for Grid Hardening



3.5.4.2 Grid Hardening Log (Related Table)

Field Name	Field Description	Field Type
GhLogID	Unique ID or job ID of a grid hardening activity. Primary key for the Grid Hardening Log table.	Text
AiLogID	Unique ID or job ID of an asset inspection activity. Foreign key to the Asset Inspection Log table.	Text
GhStatus	The status of the grid hardening activity. Possible values: • Planned • In progress	Text

Field Name	Field Description	Field Type
	• Complete • Cancelled	
GhChangeOrder	Has a change order been requested for this grid hardening initiative since the approval of the utility's previous WMP? Possible values: • Yes • No	Text
GhChangeOrderDate	The date of when the change order was submitted. Use YYYY-MM-DD format. Leave blank if unknown. Do not include time.	Date
GhChangeOrderType	The type of change order requested. Possible values: • Increase in scale • Decrease in scale • Change in prioritization • Change in deployment timing • Change in work being done • Other change – See comment	Text
GhChangeOrderTypeComment	Change order type not listed above.	Text
DateStart	The start date of the grid hardening project. Use YYYY-MM-DD format. Leave blank if unknown. Do not include time.	Date
DateEnd	The completion date of the grid hardening project. Use YYYY-MM-DD format. Leave blank if unknown. Do not include time.	Date
LineDeenergized	Lines need to be de-energized to perform the work. Possible values: • Yes • No	Text
PersonInChargeName	Person in charge for the grid hardening project.	Text
PerformedBy	Who performed the grid hardening activity? Possible values: • Utility staff • Contractor • Other – See comment.	Text
PerformedByComment	Entity that performed grid hardening and is not listed in options above.	Text
InitiativeActivity	Initiative activities related to the grid hardening project which include: • Capacitor maintenance and replacement • Circuit breaker maintenance and installation • Conductor replacement • Covered conductor installation • Covered conductor maintenance • Crossarm maintenance, repair, and replacement • Expulsion fuse replacement • Grid topology improvements to mitigate or reduce PSPS events • Installation of system automation equipment • Installation of sectionalizing equipment • Maintenance, repair, and replacement of connectors, including hotline clamps • Other corrective action • Pole replacement • Pole reinforcement • Transformer maintenance and replacement • Transmission tower maintenance and replacement • Undergrounding of electric lines and/or equipment • Other – See comment.	Text
InitiativeActivityComment	Initiative activity not listed in the options above.	Text
DescriptionOfGridHardening	Additional description for the grid hardening work.	Text

3.5.4.3 Grid Hardening Point (Feature Class)

Photos are required to accompany this feature class. For each project point, take a photo of the project location before and after the project is undertaken. Populate the "PhotoBeforeID," "PhotoAfterID," and "VmpID" fields in the "Initiative Photo Log" related table (section 3.5.5.2 in this document) to ensure photos can be linked to their associated GIS points.

Field Name	Field Description	Field Type
GhID	Unique ID or job ID of a grid hardening activity. Primary key for the Grid Hardening Point table.	Text
UtilityID	Standardized identification name of the utility ("UtilityG&E," etc.).	Text
GhLogID	Unique ID or job ID of a grid hardening activity. Foreign key to the Grid Hardening Log table.	Text
GridHardeningLocationOrAddress	Address or location description for the grid hardening location.	Text
ParcelAPN	Assessor Parcel Number (APN), a number assigned to parcels of real property by the tax assessor of a particular jurisdiction for purposes of identification and record-keeping. If the asset inspected does not intersect a parcel boundary, enter "N/A" for this field. Use the format: ~~###-####-###-####~~. For example, 006-0144-029-0000.	Text
HFTDClass	The CPUC high-fire threat district (HFTD) area the grid hardening project intersects. Possible values: • Tier 3 • Tier 2 • Zone 1 • Non-HFTD	Text
City	City in where the grid hardening project is located.	Text
County	County in where the grid hardening project is located.	Text
District	Operating district where the grid hardening project.	Text
Latitude	Latitude of event point in decimal degrees	Float
Longitude	Longitude of event point in decimal degrees.	Float

3.5.4.4 Grid Hardening Line (Feature Class)

Photos are required to accompany this feature class. For each project, take photos of the project location before and after the project is undertaken. Populate the "PhotoBeforeID," "PhotoAfterID," "VmpID," "FromDevice," and "ToDevice" fields in the "Initiative Photo Log" related table (section 3.5.5.2 in this document) to ensure photos can be linked to their associated GIS lines. Photo must be taken at an interval of one "before" photo and one "after" photo per span of conductor line involved with the project.

Field Name	Field Description	Field Type
GhID	Unique ID or job ID of a grid hardening activity. Primary key for the Grid Hardening Line table. This ID is exactly same as the GhID for the Grid Hardening Log. This key also joins with the Primary key for the Grid Hardening Log table.	Text
UtilityID	Standardized identification name of the utility ("UtilityG&E," etc.).	Text
GhLogID	Unique ID or job ID of a grid hardening activity. Foreign key to the Grid Hardening Log table.	Text
GridHardeningLocationOrAddress	Address or location description for the grid hardening location.	Text
HFTDClass	The CPUC High Fire Threat District (HFTD) area that the vegetation management project intersects. Possible values: • Tier 3 • Tier 2	Text

Field Name	Field Description	Field Type
	• Zone 1 • Non-HFTD • Other – See comment.	
HFTDClassComment	If the project line intersects multiple HFTD areas, list all of them here.	Text
City	City in where the grid hardening project is located.	Text
County	County in where the grid hardening project is located.	Text
District	Operating district where the grid hardening project.	Text

3.5.5 Data Related to Multiple Initiatives

3.5.5.1 Initiative Asset Log (Related Table)

Field Name	Field Description	Field Type
AssetLogID	Unique ID and primary key for the Initiative Asset Log table.	Text
VmiID	Unique ID or job ID of a vegetation management inspection activity. Foreign key to the Vegetation Management Inspection Point, Line, and Polygon tables. This value can be repeated based on the amount of asset or circuit segments.	Text
VmpID	Unique ID or job ID of an initiative. Foreign key to the Vegetation Management Project Point, Line and Polygon tables. This value can be repeated based on the amount of asset or circuit segments.	Text
AiID	Unique ID or job ID of an asset inspection activity. Foreign key to the Asset Inspection Point, Line and Polygon tables. This value can be repeated based on the amount of asset or circuit segments.	Text
GhID	Unique ID or job ID of a grid hardening activity. Foreign key to the Grid Hardening Point and Line tables. This value can be repeated based on the amount of asset or circuit segments.	Text
AssetID	Unique ID for a specific point asset. Must be traceable stable ID within a specific asset class. Foreign key to all the related Asset Point tables.	Text
AssociatedAssetCount	The number of assets which are associated with the initiative activity.	Integer
SubstationID	Unique ID of the substation supplying the circuit associated with vegetation management project.	Text
SubstationName	Name of the substation supplying the circuit associated with the vegetation management project.	Text
CircuitID	Unique ID for a specific line asset. Must be traceable stable ID within a specific asset class. Foreign key to the Asset Line tables.	Text
CircuitName	Name of the circuit associated with the vegetation management project.	Text
CircuitType	Circuit line type. Possible values: • Transmission line • Primary distribution line • Secondary distribution line • Unknown	Text
AssociatedCircuitLength	The length of circuits which are associated with the initiative activity (mile). Two decimal places.	Float
Underbuild	Are transmission lines also present on the subject structure? Possible values: • Yes • No	Text
LineDeenergized	Do the power lines need to be de-energized to perform the work? Possible values: • Yes • No	Text

3.5.5.2 Initiative Photo Log (Related Table)

Field Name	Field Description	Field Type
PhotoID	ID for photo showing the initiative or inspection findings. Primary key for the Initiative Photo Log table. Photo format: Geotagged JPEG or PNG. Use format UtilityName_DistrictID_InspectorInitial_Initiative_YYYYMMDD_PhotoNumber. For example, "UtilityG&E_AB_20200703_Initiative_1.png"	Text
PhotoBeforeID	ID for photo showing the initiative or inspection location prior to the project happening or a corrective action taking place. Primary key for the Initiative Photo Log table. Photo format: Geotagged JPEG or PNG. Use format UtilityName_DistrictID_InspectorInitial_Initiative_YYYYMMDD_PhotoNumber. For example, "UtilityG&E_AB_Initiative_20200703_1.png"	Text
PhotoAfterID	ID for photo showing the initiative or inspection location after a project happens or a corrective action takes place. Primary key for the Initiative Photo Log table. Use format UtilityName_DistrictID_InspectorInitial_Initiative_YYYYMMDD_PhotoNumber. For example, "UtilityG&E_AB_Initiative_20200703_1.png"	Text
VmpID	Unique ID or job ID of an initiative. Foreign key to the Vegetation Management Project Point, Line and Polygon tables. This value can be repeated based on the number of photos taken.	Text
VmiID	Unique ID or job ID of a vegetation management inspection activity. Foreign key to the Vegetation Management Inspection Point, Line, and Polygon tables. This value can be repeated based on the number of photos taken.	Text
AiID	Unique ID or job ID of an asset inspection activity. Primary key for the Asset inspection table. This value can be repeated based on the number of photos taken.	Text
GhID	Unique ID or job ID of a grid hardening activity. Foreign key to the Grid Hardening Point and Line tables. This value can be repeated based on the number of photos taken.	Text
FromDevice	The asset ID for a support structure upstream of an initiative location. This field is to be filled out to help locate initiatives that are along conductor lines or within a polygon based on conductor lines.	
ToDevice	The asset ID for a support structure downstream of an initiative location. This field is to be filled out to help locate initiatives that are along conductor lines or within a polygon based on conductor lines.	

3.6 Other Required Data (Feature Dataset)

3.6.1 Electrical Corporation Power Line-Other Power Line Connection Location (Point Feature Class)

The feature class below is intended to record the points where electrical corporation power lines feed into power lines managed by an organization other than the electrical corporation submitting data. These other power lines may be owned by individuals, businesses (including other electrical corporations), or other entities.

Field Name	Field Description	Field Type
OplcID	ID of private power line connection location.	Text
UtilityID	Standardized identification name of the utility ("UtilityG&E," etc.).	Text
OtherLineOwner	Name of individual or other entity that owns the private line to which an electrical corporation line is connecting.	Text
ConnectionAsset	Asset enabling the connection.	Text
ConnectionPointAssetID	AssetID of the asset that enables the connection. Must be traceable stable ID within a specific asset class.	Text
CorporationLineID	AssetID of the electrical corporation line that feeds energy into or receives energy from the private line. Must be traceable stable ID within a specific asset class.	Text
OtherLineClass	Classification of line asset that meets corporation line at connection location. Possible values:	Text

Field Name	Field Description	Field Type
	• Transmission • Primary distribution • Secondary Distribution • Unknown	
HFTDClass	The CPUC high-fire threat district (HFTD) area the connection location intersects. Possible values: • Tier 3 • Tier 2 • Zone 1 • Non-HFTD	Text
County	County in which connection location is located.	Text
OtherConductorType	Type of conductor that connects to corporation line. Possible values: • Bare • Covered • Unknown	Text
ConnectionType	Type of energy transfer happening at location. Possible values: • Other to corporation • Corporation to other	Text
ConnectionOHUG	Is the connection overhead or underground? Possible values: • All Overhead • All underground • Overhead to underground • Underground to overhead • Unknown	Text
OtherNominalVoltagekV	Nominal voltage (in kilovolts) of other conductor connected to corporation line. Do not use more than two decimal places. Enter "-99" if N/A.	Float
OtherOperatingVoltagekV	Operating voltage (in kilovolts) of other conductor connected to corporation line. Do not use more than two decimal places. Enter "-99" if N/A.	Float
OtherConductorMaterial	Conductor material of other line that connects to corporation line. Possible values: • All aluminum conductor (AAC) • All aluminum alloy conductor (AAAC) • Aluminum conductor aluminum reinforced (ACAR) • Aluminum conductor steel reinforced (ACSR) • Copper (Cu) • Unknown. • Other – See comment.	Text
ConductorMaterialComment	Conductor material not listed in the options above.	Text
OtherConductorSize	Size of other conductor that connects to corporation line (e.g. No. 4 Cu or 1/0 ACSR). Write "Unknown" if this is not known.	Text
OtherConductorOD	Overall diameter of the other conductor that connects to the corporation conductor in inches. Leave blank if this is not known.	Float
OtherConductorCodeName	Codename of the other conductor that connects to the corporation conductor. For example, "Lapwing," "Sparrow," etc. Write "Unknown" if this is not known.	Text
ConnectionLastInspectionDate	Date of the last inspection. Use YYYY-MM-DD format. Leave blank if unknown. Do not include time.	Date
ConnectionLastMaintenanceDate	Date of the last maintenance. Use YYYY-MM-DD format. Leave blank if unknown. Do not include time.	Date
ConnectionEstablishmentDate	Date the connection was established. Use YYYY-MM-DD format. Leave blank if unknown. Do not include time.	Date
ConnectionEstablishmentYear	Year of connection establishment. Use YYYY-MM-DD format. Leave blank if unknown. Do not include time.	Integer

Field Name	Field Description	Field Type
EstimatedConnectionAge	The age of the connection in years. Only fill this out if the "ConnectionEstablishmentYear" and "ConnectionEstablishmentDate" values are unknown. Possible values: • 0-9 • 10-19 • 20-29 • 30-39 • 40-49 • 50-59 • 60-69 • 70-79 • 80-89 • 90-99 • >100 • Unknown • N/A (only enter this if there is a "ConnectionEstablishmentYear" value)	Text
OtherUsefulLifespan	The number of years the other line connected to the corporation line is expected to have a useful functioning existence upon initial installation. Leave blank if unknown.	Integer
OtherAmpacityRating	Nominal ampacity rating of the other conductor in amperes.	Float
OtherLineGreased	Is the other conductor connected to the corporation line greased to prevent water intrusion? Possible values: • Yes • No • Unknown	Text
ConnectionComments	Describe any additional key details that should be known about the connection location.	Text

3.6.2 Critical Facility (Point Feature Class)

Field Name	Field Description	Field Type
FacilityID	Unique ID for a specific critical facility. It should be a traceable stable ID within the utility's operations/processes.	Text
UtilityID	Standardized identification name of the utility ("UtilityG&E," etc.).	Text
FacilityName	Name of the facility	Text
FacilityCategory	Critical facility category. See examples table below this table for examples of facilities that fall under these categories. Possible values: • Chemical • Communications • Emergency services • Energy • Government facilities • Healthcare and public health • Public safety answering points • Transportation • Water and wastewater systems • Other – See comment.	Text
FacilityCategoryComment	Facility category not covered by the options above.	Text
FacilityDescription	Brief facility description (e.g., fire station, prison, nursing home, etc.).	Text
CircuitID	ID of circuit associated with critical facility.	Text
CircuitName	Name of circuit associated with critical facility,	Text

Field Name	Field Description	Field Type
MeterID	ID of meter associated with critical facility.	Text
BackupPower	Does the facility have a backup power source? Possible values: • Yes • No • Unknown	Text
BackupType	Type of backup power source: Possible values: • Storage battery • Diesel generator • Gas generator • Combined/hybrid • Other – See comment.	Text
BackupTypeComment	Backup type not listed in the options above.	Text
BackupCapacity	Hours of energy storage of hours of backup generation from backup power source.	Float
PopulationImpact	The approximate number of people that depend on this critical facility	Float
HFTDClass	The CPUC high-fire threat district (HFTD) area the critical facility intersects. Possible values: • Tier 3 • Tier 2 • Zone 1 • Non-HFTD	Text
PSPSDays	The number of days the critical facility was impacted by PSPS events in the last 365 days.	Integer
PSPSDaysDateBasis	The date used for calculating the "PSPSDays" field. This would be the date from which 365 days would be subtracted to determine the timespan that may contain critical facility-impacting PSPS events.	Float
ParcelAPN	ID of parcel containing critical facility.	Text
Address	The address of the critical facility.	Text
City	The city of the critical facility.	Text
Zip	The 5-digit zip code of the critical facility.	Text
Latitude	Latitude coordinate of critical facility (in decimal degrees).	Float
Longitude	Longitude coordinate of critical facility (in decimal degrees).	Float

3.6.2.1 Critical Facility Category Examples

Chemical	Facilities associated with the provision of manufacturing, maintaining, or distributing hazardous materials and chemicals.
Communications	Communication carrier infrastructure including selective routers, central offices, head ends, cellular switches, remote terminals, and cellular sites.
Emergency services	Police stations, fire stations, emergency operations centers.
Energy	Public and private utility facilities vital to maintaining or restoring normal service, including, but not limited to interconnected publicly owned utilities and electric cooperatives.
Government facilities	Schools, prisons, government agency buildings, etc.
Healthcare and public health	Public health departments and medical facilities, including hospitals, skilled nursing facilities, nursing homes, blood banks, health care facilities, dialysis centers, and hospice facilities.

Public safety answering points	911 call centers.
Transportation	Rail stations, bus stations, gas stations, electric vehicle charging stations, etc.
Water and wastewater systems	Facilities associated with the provision of drinking water or processing of wastewater, including facilities used to pump, divert, transport, store, treat, or deliver water or wastewater.
Other	Does not fit in above categories.

3.6.3 Red Flag Warning Day (Polygon Feature Class)

The values in this feature class can be determined with publicly available information. Submit red flag warning day data in polygons for all fire weather zones, as defined by the National Weather Service, that intersect the electrical corporation's service territory, including those that only partially intersect the territory. Electrical corporations do not have to clip the polygons to match the service territory boundaries. Fire weather zone GIS polygon data can be downloaded from the National Weather Service here.

Field Name	Field Description	Field Type
RfwID	Unique ID and primary key for the red flag warning table	Text
UtilityID	Standardized identification name of the utility ("UtilityG&E," etc.).	Text
FireWeatherZoneID	ID number of fire weather zone	Text
FireWeatherZoneName	Unique ID for a specific point asset. It should be a traceable stable ID within the utility's operations/processes.	Text
NumberRedFlagWarningDays	Number of red flag warning days experienced in the fire weather zone in the last 365 days.	Float
RedFlagWarningIssueDate	Start date of the RFW in YYYY-MM-DD format. Do not include time.	Date
RedFlagWarningIssueTime	Start time of the RFW. Must be in the "hh:mm:ss" format.	Date
RedFlagDaysDateBasis	The date used for calculating the "NumberRedFlagWarningDays" field. This would be the date from which 365 days would be subtracted to determine the timespan that contained red flag warning days.	Text

3.6.4 Administrative Area (Polygon Feature Classes)

Submit administrative area polygons that follow the format of the schema below. Submit one feature class per administrative area type. The overall service territory is the broadest area type. If applicable, the service territory polygon should be submitted with areas removed to account for embedded service territories (e.g., public utilities and cooperative that may be entirely surrounded by an electrical corporation's service territory). Include all administrative areas used by the electrical corporation. All administrative area features classes should be submitted at least once, and when they are updated or revised, the latest version of them should be submitted with the next group of data required for submission.

Field Name	Field Description	Field Type
AdminID	Unique ID and primary key for the Administrative Area table.	Text
UtilityID	Standardized identification name of the utility ("UtilityG&E," etc.).	Text
AreaType	Type of administrative area (service territory, region, district, zone, etc.)	Text

Field Name	Field Description	Field Type
SubAreaType	Utility sub-area type. Possible values: • Operational • Construction • Weather • Organizational • Other - See comment	Text
SubAreaTypeComment	Sub-area type not listed in the options above.	Text
Name	Name of administrative area.	Text

APPENDIX A. ABBREVIATION DEFINITIONS

AAAC	all aluminum alloy conductor
AAC	all aluminum conductor
ACAR	aluminum conductor aluminum reinforced
ACSR	aluminum conductor steel reinforced
Actl	actual
AHJ	authority having jurisdiction
Ai	asset inspection
AKA	also known as
AMM	avoidance and minimization
APN	assessor parcel number
BMP	best management practice
CPUC	California Public Utilities Commission
Cu	copper
DD	2-digit day
Env	environmental
EOC	emergency operation center
ERD	entity-relationship diagram
FK	Foreign key
FRA	federal responsibility area
FWW	fire weather watch
GDB	geodatabase
Gh	grid hardening
GIS	geographic information system
HFTD	high-fire threat district
hh	hours
HWW	high wind warning
kV	kilovolt
kVA	kilovolt amp
LRA	local responsibility area
MM	2-digit month
mm	2-digit minutes
MVA	mega volt amp
N/A	not applicable
NWS	National Weather Service
Oplc	Other power line connection

PK	Primary key
POC	point of contact
PRC	Public Resources Code
PSPS	public safety power shutoff
RFW	red flag warning
SCADA	supervisory control and data acquisition
SRA	state responsibility area
ss	2-digit seconds
VM	vegetation management
Vmi	vegetation management inspection
Vmp	vegetation management project
WGS	World Geodetic System
WKID	well-known ID
WMP	wildfire mitigation plan
WSD	Wildfire Safety Division

APPENDIX B. GLOSSARY

GIS/Data Terminology

Attribute: Nonspatial information about a geographic feature in a GIS, usually stored in a table and linked to the feature by a unique identifier. For example, attributes of a river might include its name, length, and sediment load at a gauging station.
- Source: Esri GIS dictionary

Attribute domain: In a geodatabase, a mechanism for enforcing data integrity. Attribute domains define what values are allowed in a field in a feature class or nonspatial attribute table. If the features or nonspatial objects have been grouped into subtypes, different attribute domains can be assigned to each of the subtypes.
- Source: Esri GIS dictionary

Attribute table: A database or tabular file containing information about a set of geographic features, usually arranged so that each row represents a feature and each column represents one feature attribute. In a GIS, attribute tables are often joined or related to spatial data layers, and the attribute values they contain can be used to find, query, and symbolize features.
- Source: Esri GIS dictionary

Entity-relationship diagram (ERD): Data modeling technique that graphically illustrates an information system's entities and the relationships between those entities. An ERD is a conceptual and representational model of data used to represent the entity framework infrastructure.
- Source: Techopedia

Esri: Originally stood for Environmental Systems Research Institute. This is the company that makes the ArcGIS line of GIS software.

Feature class: Feature classes are homogeneous collections of common features, each having the same spatial representation, such as points, lines, or polygons, and a common set of attribute

columns, for example, a line feature class for representing road centerlines. The four most commonly used feature classes are points, lines, polygons, and annotation (the geodatabase name for map text).
- Source: ArcGIS Help

Feature dataset: In a geodatabase, a collection of feature classes stored together so they can participate in topological relationships with one another. All the feature classes in a feature dataset must share the same spatial reference; that is, they must have the same coordinate system and their features must fall within a common geographic area. Feature classes with different geometry types may be stored in a feature dataset.
- Source: Esri GIS dictionary

Field: A column in a table that stores the values for a single attribute.
- Source: Esri GIS dictionary

Foreign key: An attribute or set of attributes in one table that match the primary key attributes in another table. Foreign keys and primary keys are used to join tables in a database.
- Source: Esri GIS dictionary

Geodatabase: The geodatabase is the native data structure for ArcGIS and is the primary data format used for editing and data management. While ArcGIS works with geographic information in numerous geographic information system (GIS) file formats, it is designed to work with and leverage the capabilities of the geodatabase. At its most basic level, an ArcGIS geodatabase is a collection of geographic datasets of various types held in a common file system folder, a Microsoft Access database, or a multiuser relational DBMS (such as Oracle, Microsoft SQL Server, PostgreSQL, Informix, or IBM DB2). Geodatabases come in many sizes, have varying numbers of users and can scale from small, single-user databases built on files up to larger workgroup, department, and enterprise geodatabases accessed by many users.
- Source: ArcGIS Help

GIS: Stands for geographic information system. A system designed to capture, store, manipulate, analyze, manage, and present all types of geographic location data, allowing the user to question, analyze, and interpret data to understand relationships, patterns, and trends. GIS information is stored in layers of spatial data in a format that can be stored, manipulated, analyzed, and mapped.
- Source: California Open Data Portal

Metadata: Information about a dataset that makes the data easier to find or identify. Metadata includes the title and description, method of collection, limitations author, publisher, area and time period covered, license, date and frequency of release. Metadata describes the dataset's structure, data elements, its creation, access, format, and content.
- Source: California Open Data Portal

Primary key: An attribute or set of attributes in a database that uniquely identifies each record. A primary key allows no duplicate values and cannot be null.
- Source: Esri GIS dictionary

Projected coordinate system: A reference system used to locate x, y, and z positions of point, line, and area features in two or three dimensions. A projected coordinate system is defined by a

geographic coordinate system, a map projection, any parameters needed by the map projection, and a linear unit of measure.
- Source: Esri GIS dictionary

Schema: The structure or design of a database or database object, such as a table, view, index, stored procedure, or trigger. In a relational database, the schema defines the tables, the fields in each table, the relationships between fields and tables, and the grouping of objects within the database. Schemas are generally documented in a data dictionary. A database schema provides a logical classification of database objects.
- Source: Esri GIS dictionary

Shapefile: The shapefile format is a popular geospatial vector data format for geographic information system (GIS) software. The shapefile format can spatially describe vector features: points, lines, and polygons, representing, for example, water wells, rivers, and lakes.
- Source: California Open Data Portal

Electrical Terminology

Ampacity: Maximum amount of current that a wire or cable can safely carry.
- Source: Merriam-Webster

Ampere: The unit of measurement of electrical current produced in a circuit by 1 volt acting through a resistance of 1 Ohm.
- Source: U.S. Energy Information Administration Glossary

Arc: Sustained luminous discharge of electricity across a gap in a circuit or between electrodes.
- Source: Merriam-Webster

Conductor: Material or object that permits an electric current to flow easily
- Source: Merriam-Webster

Circuit: A conductor or a system of conductors through which electric current flows.
- Source: U.S. Energy Information Administration Glossary

Current: A flow of electrons in an electrical conductor. The strength or rate of movement of the electricity is measured in amperes.
- Source: U.S. Energy Information Administration Glossary

Electrical arc: An electrical current that is intentionally or unintentionally discharging itself across a gap between two electrodes via a gas, vapor, or air and expending a relatively low voltage across the conductors. The heat and light produced by this arc is usually intense, and can be used for specific applications, such as arc welding or spotlight illumination. Unintentional arcs can have devastating consequences, such as: fires, shock hazards, and property damage.

Fuse: An electrical safety device consisting of or including a wire or strip of fusible metal that melts and interrupts the circuit when the current exceeds a particular amperage.
- Source: Merriam-Webster

Distribution: The delivery of energy to retail customers.
- Source: U.S. Energy Information Administration Glossary

Isolation device: A mechanical device that physically prevents the transmission or release of energy, including but not limited to the following: A manually operated electrical circuit breaker; a disconnect switch; a manually operated switch by which the conductors of a circuit can be disconnected from all ungrounded supply conductors and, in addition, no pole can be operated independently; a line valve; a block; and any similar device used to block or isolate energy. Push buttons, selector switches and other control circuit type devices are not energy isolating devices.
- Source: Occupational Safety and Health Administration Loto Tutorial (definition for "energy-isolating device")

Kilovolt: Unit of potential difference equal to 1,000 volts.
- Source: Meriam-Webster

Ohm: A measure of the electrical resistance of a material equal to the resistance of a circuit in which the potential difference of 1 volt produces a current of 1 ampere.
- Source: U.S. Energy Information Administration Glossary

Recloser: Switch or circuit breaker that establishes an electrical circuit again manually, remotely, or automatically after an interruption of service.
- Source: Merriam-Webster

SCADA: Stands for supervisory control and data acquisition. Refers to industrial control systems that are employed to control and keep track of equipment or a plant in industries like water and waste control, telecommunications, energy, transport, and oil and gas refining. SCADA is a computer system used to gather and analyze real-time data. This data is processed by the computer and is presented on a regular basis. SCADA also saves and make logs for every event into a log file that is saved on a hard drive or is sent to a printer. SCADA gives warnings by sounding alarms if situations develop into hazardous scenarios.
- Source: Techopedia

Substation: Facility equipment that switches, changes, or regulates electric voltage.
- Source: U.S. Energy Information Administration Glossary

Transformer: An electrical device for changing the voltage of alternating current.
- Source: U.S. Energy Information Administration Glossary

Transmission: The movement or transfer of electric energy over an interconnected group of lines and associated equipment between points of supply and points at which it is transformed for delivery to consumers or is delivered to other electric systems. Transmission is considered to end when the energy is transformed for distribution to the consumer.
- Source: U.S. Energy Information Administration Glossary

Volt: The practical meter-kilogram-second unit of electrical potential difference and electromotive force equal to the difference of potential between two points in a conducting wire carrying a constant current of one ampere when the power dissipated between these two points is equal to one watt and equivalent to the potential difference across a resistance of one ohm when one ampere is flowing through it.

- Source: Merriam-Webster

Voltage: The electric force that causes current in a conductor.
- Source: San Diego Gas and Electric Glossary of EMF Terms

APPENDIX C. HIGH-LEVEL ENTITY-RELATIONSHIP DIAGRAM (ERD)