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DATA REQUEST RESPONSE
LIBERTY UTILITIES (LIBERTY)

Data Request No.: OEIS-P-WMP_2026-Liberty-001

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Subject: Q01. Regarding ESRI's Utility Network Rules
Q02. Regarding CSV Tabular Export to GIS Database
Q03. Regarding Field Data Collection Training
Q04. Regarding Asset Identification Process
Q05. Regarding Data Retention and Disposal Policy
Q06. Regarding Employing a Registered Professional Forester
Q07. Regarding Maintenance of Fire-Resilient Rights-of-Way
Q08. Regarding Substation Inspection Scheduling

Q01. Regarding ESRI's Utility Network Rules:

On page 343 of Liberty's 2027 Base WMP R0,¹ Liberty stated that, as a result of ESRI's Utility Network deployment, Liberty set rules to promote consistency in its GIS data, and the rules must be satisfied for the utility network to function as designed and will prevent its users from editing the utility subnetworks until all criteria are met.

- a. Describe the specific mechanism (e.g., software triggers, automated security checks, error-handling workflows) of the rules and criteria within Liberty's ESRI Utility Network that prevent its users from updating the utility subnetworks until all criteria are fully satisfied.
- b. Provide specific examples of those rules and criteria.

Response:

- a. ESRI's Utility Network uses a combination of network rules, validation processes, dirty-area tracking, and user permissions to maintain consistency in the GIS data. The network rules define which features can connect, associate, or participate in a utility network. When a user creates or modifies a feature, the Utility Network evaluates the change against the applicable rules. If the change violates a rule or creates an invalid network condition, the system identifies the affected area as a "dirty area" and generates a validation error. The network cannot be considered fully validated until the applicable errors have been corrected and the dirty areas have been validated.

For Liberty's electric Utility Network, access to make changes is also controlled through GIS roles and permissions. Authorized GIS personnel may make edits, typically within a version separate from the default version. The changes can then be validated and reviewed for errors. Once the edits satisfy the applicable Utility Network rules and validation requirements, the version can be posted or reconciled to the default version, which represents the current network used by the broader enterprise. This process provides an additional quality-control mechanism because invalid or incomplete edits should not be incorporated into the authoritative network without being reviewed and validated.

The Utility Network does not only rely on users to determine whether an edit is correct. The configured rules act as automated validation checks, while dirty areas and validation errors identify edits that require correction. Combined with GIS permissions and the versioning workflow, these controls help prevent unvalidated changes from becoming part of Liberty's authoritative electric utility network.

¹ Liberty 2027 Base WMP R0, published Aug. 31, 2026, URL: (<https://efiling.energysafety.ca.gov/eFiling/Getfile.aspx?fileid=61181&docket=WMP-LU&shareable=true>).

- b. Examples of rules and criteria that may be applied within an electric Utility Network include:
- Connectivity rules: Electrical features must connect to compatible network features. For example, a conductor must connect to an appropriate electrical device, structure, or other conductor at a valid connection point. The system can identify an invalid connection when features that are not permitted to connect are placed together..
 - Device-to-device connectivity: Certain electrical devices can only connect to other devices or conductors through permitted connection types. For example, a transformer may be permitted to connect to conductors on its primary and secondary sides, while an incompatible device or feature type would produce a validation error.
 - Terminal rules: Devices that have multiple terminals must have connections made to the appropriate terminal. For example, an electrical transformer or switch may have designated terminals, and a conductor connected to the wrong terminal can create a network validation error.
 - Containment rules: Some features are modeled as containing other network features. For example, electrical equipment or an enclosure may contain certain devices or components. A feature that is placed inside a container when that feature type is not permitted to be contained there would violate the Utility Network rules.
 - Structural attachment rules: Certain electrical assets can be attached to structures, such as poles. For example, a transformer, switch, or other piece of electrical equipment may be permitted to attach to a utility pole, while an unrelated feature type may not be permitted to have that structural attachment.
 - Association rules: The Utility Network can require specific associations between features that are related but do not necessarily share physical geometric connectivity. For example, an electrical device may be associated with a structure or enclosure even when the device and structure are modeled as separate features.
 - Subnetwork rules and validation: Electric subnetworks must satisfy the applicable connectivity and network-configuration requirements before they can be successfully validated and updated. If a network feature is disconnected, incorrectly connected, or otherwise violates the configured rules, the affected area can remain marked as dirty until the underlying problem is corrected and the network is revalidated.

Q02. Regarding CSV Tabular Export to GIS Database:

On page 343 of Liberty's 2027 Base WMP R0, Liberty stated that as part of its data flow path, data transformations are made in SQL and tabular data is exported in CSV format. The GIS

department converts these into feature classes stored in geodatabases for use in Liberty's GIS enterprise database.

- a. Is it feasible for Liberty to replace its current intermediate CSV tabular export process with direct database-to-database (db2db) Extract-Transformation-Load (ETL)?
 - i. If feasible, provide details and timelines of the direct db2db ETL implementation.
 1. If feasible, but Liberty does not plan to implement db2db, explain why.
 - ii. If not feasible, explain how Liberty controls potential operational errors and synchronization delays from the CSV tabular export step.

Response:

- a. Based on the data flow described on page 343 of Liberty's 2027 Base WMP R0, it is technically feasible to replace the intermediate CSV export with a direct database-to-database (DB2DB) Extract-Transformation-Load (ETL) process.
 - i. The primary technical requirements for implementation would be establishing connectivity between the source and destination databases, replicating the existing SQL transformations and field mappings, ensuring that the required point geometry and attributes are correctly generated, and testing the resulting feature classes against the specifications of OEIS. None of these requirements inherently requires an intermediate CSV file.
 1. While this approach is feasible, Liberty does not plan to implement DB2DB for the following reasons:
 - The CSV-to-geodatabase process is straightforward and repeatable. The existing process provides a consistent and efficient method for converting CSV data into feature classes without introducing unnecessary complexity.
 - Schema changes are more easily managed within the GIS environment. Any modifications required to the feature-class schema can be implemented more efficiently and transparently within the GIS, rather than requiring changes to the SQL-based application.
 - The risk of data corruption or unintended changes during conversion is minimal. The CSV-to-feature-class conversion process is well established, and GIS specialists review the resulting feature classes to verify that the data has been converted accurately and that no unintended changes have occurred.
 - The capacity to design and maintain an SQL-based ETL process has not yet been established. The level of SQL and GIS expertise

required to develop, implement, and maintain the proposed ETL process is currently undetermined. Implementing DB2DB could therefore introduce additional development and maintenance requirements without a demonstrated benefit over the existing workflow.

Q03. Regarding Field Data Collection Training:

On page 344 of Liberty's 2027 Base WMP R0, Liberty stated that accuracy of compliance data is accomplished through consistent training of data collectors and that data analysts, system arborists, and electrical foreman are heavily involved in training inspectors, contractors, and other groups that are tasked with data collection.

- a. Describe Liberty's training program provided to its personnel and contractors responsible for data collection.
- b. Explain how data analysts, system arborists, and electrical foreman conduct oversight and train the field data collectors to ensure accuracy of the self-policing in raw data collection prior to in-house Data Quality Management (DQM).

Response:

- a. Liberty trains all internal staff and contractors performing inspection and maintenance activities on the system on data collection requirements. Workers are trained regularly on the data collection application Fulcrum based on the projects they are working on (G.O. Inspections, Repairs, WMP work, QAQC, etc.). Each project has a unique workflow with data governance and standard procedures. Trainings are performed in person before the start of each project. Afterwards, the training documentation is uploaded to Fulcrum's Reference Files in the application, which can be downloaded by field crews as necessary. Additional trainings are completed at a monthly cadence or ad hoc when relevant updates are made to the data collection application.
- b. Data Analysts conduct the Fulcrum training and monitor data coming in during all steps of the data collection and reporting process. Asset Tracking, the inspection and maintenance Fulcrum application, uses code to trigger data review events, which are performed by the Data Analysts. Electrical Foremen work with data analysts to create training materials and conduct training seminars. Foremen also conduct peer to peer training on data collection, related to projects that field crews are working on.

Liberty documents vegetation management data collection requirements through its plans, processes, procedures, contractor specifications, and scopes of work. Liberty's vegetation management contractors provide training to their employees on the functionality of work management software and associated data collection requirements. Liberty works directly with its contractors to provide training on

updates to work management software layers or configurations and data collection requirements on an as needed basis.

Liberty's System Arborists provide oversight of vegetation management contractors and field data collectors to promote accurate and consistent data collection. System Arborists conduct periodic data quality reviews, field observations, and targeted checks of contractor-collected data to verify that inventories, work prescriptions, and completed work records are entered correctly. Additionally, data quality issues identified through standard QA/QC processes are communicated to contractors and are assigned for corrective action.

To support ongoing data quality improvement, Liberty's Vegetation Management team and data analysts hold monthly meetings to review vegetation management dashboards, verify data accuracy, discuss data quality issues, and develop tracking tools. In addition, Liberty conducts monthly contractor meetings to review work progress, address quality concerns, and reinforce data collection and documentation expectations. This continuous oversight and feedback process helps improve the accuracy of raw data collection prior to in-house Data Quality Management (DQM) review.

Q04. Regarding Asset Identification Process:

On page 342 of Liberty's 2027 Base WMP R0, Liberty stated, to achieve 100 percent asset identification, it relies on a 5-year detailed asset inspection cycle by reconciling as-builts data against actual field data after assets are installed in the field.

- a. Explain the procedures Liberty uses to identify and correct any unrecorded field updates or asset discrepancies during the interim 5-year window.
 - i. Explain how Liberty prevents unverified interim asset data from contaminating risk models prior to the full 5-year inspection reconciliation.

Response:

- a. Liberty examines detailed inspection records in Fulcrum to identify any discrepancies in the GIS database that occurred during the drawing in of as-builts. GIS data will then be updated based on the more up to date data recorded in the field. Yearly LiDAR data is also used to reconcile GIS data by displaying the most up to date location of assets in the field.
 - i. Liberty's current risk model operates at the circuit-level based on the verified locations of overhead distribution and transmission circuits. Liberty has not developed an asset-level risk model that estimates specific failure probabilities

down to individual system components (e.g., fuses, tree attachments).

Q05. Regarding Data Retention and Disposal Policy:

On page 343 of Liberty's 2027 Base WMP R0, Liberty stated it is required to maintain inspection data over a ten-year period. However, it stated that there is currently no determination for when a cutoff period will be put in place for disposal of its historical data and that, as it reaches the ten-year mark, it will create a plan to evaluate retention / disposal rate of historical data.

- a. State the exact year and quarter Liberty projects it will accumulate ten continuous years of historical inspection data.
- b. Given that Liberty's formal data disposal policy will not be created until the ten-year mark is reached, explain how Liberty ensures compliance with retention mandates without performance degradation due to database bloat, or any data governance vulnerabilities in the interim.

Response:

- a. Liberty projects that it will accumulate ten continuous years of historical inspection data by the end of Q4 2029.
- b. Liberty maintains a SQL Server database for its assets and their inspection and maintenance records. The database holds roughly 2 gigabytes of character and numeric data from G.O. inspections and maintenance work dating back to 2020, including quarterly archives of SQL Views. Photos are stored in Fulcrum's database, as well as a Liberty hosted SharePoint site, for certain projects. Liberty's current plan allows for 500 gigabytes of storage in Fulcrum's database, of which roughly 175 gigabytes are accounted for. Due to Liberty's ETL process, the use of Fulcrum's database for storage, and the relatively small number of assets under management compared to larger ECs, database bloat, and the resulting performance degradation, is not a concern for retaining 10 years of historical data.

Q06. Regarding Employing a Registered Professional Forester:

On page 244 of its 2023-2025 Base WMP R0,² Liberty indicated that it employed a Registered Professional Forester. In Section 9.13 Workforce Planning of its 2027 Base WMP R0 (pages 257-262), it is not clear whether Liberty currently employs or contracts a Registered Professional Forester.

- a. Does Liberty employ, internally or contracted, a Registered Professional Forester?
 - i. If yes, identify the Worker Title(s) in Table 9-9 of Liberty's 2027 Base WMP R0

² Liberty 2023-2025 Base WMP R0, published May 5, 2023,
URL: (<https://efiling.energysafety.ca.gov/eFiling/Getfile.aspx?fileid=53807&docket=2023-2025-WMPs&shareable=true>).

- that currently holds a Registered Professional Forester license.
- ii. If Liberty does not employ or contract with a Registered Professional Forester, explain why it does not.

Response:

- a. Liberty currently contracts with one Registered Professional Forester (RPF).
 - i. This individual is represented under the Utility Forester V worker title in Table 9-9 of Liberty's 2027 Base WMP. The reference in the 2023-2025 Base WMP indicating that Liberty employed one RPF reflected the qualifications of Liberty's internal Vegetation Management staff at that time. Specifically, Table 8-32 identified one internal employee holding an RPF license. That employee is no longer employed by Liberty.

As shown in Table 9-23 of the 2027 Base WMP, Liberty does not currently employ an internal Vegetation Management employee who holds an RPF license. However, Liberty does employ one individual who is a Society of American Foresters (SAF) Certified Forester. While this certification demonstrates professional forestry expertise, it is distinct from and does not constitute a California Registered Professional Forester license.

Q07. Regarding Maintenance of Fire-Resilient Rights-of-Way:

On page 193 of its 2026-2028 Base WMP R1 (Clean),³ Liberty indicated it “is developing a Right-of-Way Management Plan as a part of its IVM [Integrated Vegetation Management] Program.” However, in its 2027 Base WMP R0, Liberty did not state it was developing a Right-of-Way Management Plan.

- a. Has Liberty developed or is Liberty developing a Right-of-Way Management Plan?
 - i. If Liberty has developed a Right-of-Way Management Plan, provide the plan.
 - ii. If Liberty is in the process of developing a Right-of-Way Management Plan, specify:
 1. When Liberty will complete the plan.
 2. The purpose of the plan.
 - iii. If Liberty has not developed or is not developing a Right-of-Way Management Plan, describe how it will ensure ongoing maintenance of the fire-resilient rights-of-way it has established.

Response:

³ Liberty 2026-2028 Base WMP R1 (Clean), published Dec. 4, 2025, URL: (<https://efiling.energy.ca.gov/eFiling/Getfile.aspx?fileid=59813&docket=2026-2028-Base-WMPs&shareable=true>).

- a. Currently, Liberty is not developing a Right-of-Way Management Plan..
 - i. N/A
 - ii. N/A
 - iii. While Liberty is currently not developing a standalone Right-of-Way Management Plan, it maintains fire-resilient rights-of-way through its established vegetation management, inspection, maintenance, and wildfire mitigation programs, which collectively ensure ongoing monitoring and upkeep of these corridors.

Liberty is continue advancing fire-resilient right-of-way objectives through operational program implementation. This includes continued implementation of Forest Resilience Corridors, completing planned Zone 1 and Zone 2 treatments, and prioritizing future Zone 3 treatments. Because a significant portion of this work occurs on U.S. Forest Service lands, Liberty intends to continue coordinating with the U.S. Forest Service to develop and implement appropriate fuel reduction and maintenance strategies within and adjacent to utility rights-of-way.

Liberty's vegetation management personnel receive annual training on Integrated Vegetation Management principles, compatible vegetation management, and fire-resilient right-of-way practices. This training supports consistent application of vegetation management strategies for the ongoing maintenance of fire-resilient rights-of-way post treatment.

Following completion of fire-resilient right-of-way and Forest Resilience Corridor projects, Liberty maintains established corridor conditions through its existing Vegetation Management Program. During routine maintenance cycles, Liberty removes newly established incompatible woody vegetation within treated rights-of-way, promotes the continued development of compatible vegetation cover, and performs ongoing inspections and maintenance activities to identify vegetation conditions that may warrant corrective action.

Additionally, maintenance may be achieved through Liberty's Fuel Management Program and collaborative projects with local land managers. For example, Liberty is currently working with the Tahoe National Forest and National Forest Foundation on the Big Jack East WUI Maintenance Project. The project includes maintenance activities along approximately 1.7 miles of 120 kV transmission lines across 46 structures and more than 470 acres which were originally treated in 2021. This project is an example of Liberty's collaborative approach to maintaining treated forest conditions, including vegetation within and adjacent to the powerline right-of-way.

Q08. Substation Inspection Scheduling:

On page 232 of its 2027 Base WMP R0, Liberty states "A minimum of 12 substation inspections will occur each year. Generally, two site visits will occur per facility per year."

- a. Does Liberty intend to inspect each individual substation facility at least once per year?
- b. What conditions would force Liberty not to conduct two inspections of a substation facility in a given year?
- c. In the past 5 years, how many times has Liberty inspected a substation facility only once during a calendar year?
- d. In the past 5 years, how many times has Liberty failed to inspect a substation facility during a calendar year?
- e. Provide substation inspection records for the past 5 years.

Response:

- a. Yes. Liberty intends to inspect each substation under its Substation Defensible Space (WMP-VM-VFM-03) initiative at least once per year to identify vegetation management work requirements, including vegetation and debris removal within and adjacent to the substation perimeter.
- b. Conditions that may prevent Liberty from conducting two inspections of a substation within a calendar year include severe weather conditions (such as early snowfall that limits site access) and significant substation construction or rebuilding activities that restrict access or render routine vegetation management inspections unnecessary during the construction period.
- c. Refer to table "Substation Defensible Space (WMP-VM-VFM-03) Inspections."
- d. Refer to table "Substation Defensible Space (WMP-VM-VFM-03) Inspections."

- e. See files: “Substation Defensible Space (WMP-VM-VFM-03) Inspections 2022-2026.pdf” and “Substation Defensible Space (WMP-VM-VFM-03) Inspections 2022-2026.xlsx”.

Substation Defensible Space (WMP-VM-VFM-03) Inspections

Substation	2022	2023		2024		2025		2026	
	Fall	Spring	Fall	Spring	Fall	Spring	Fall	Spring	Fall
Portola	No - weather	Yes	No – construction	No - construction	Yes	Yes	Yes	Yes	Planned
Cemetery	No – weather	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Planned
Sierra Brooks	No – weather	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Planned
Glenshire	No – weather	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Planned
Hobart Mills	No – weather	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Planned
Stampede	No – weather	No – construction	No - construction	Yes	Yes	Yes	Yes	Yes	Planned
North Star	No – weather	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Planned
Kings Beach	No – weather	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Planned
Squaw Valley	No – weather	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Planned
Tahoe City	No – weather	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Planned
Stateline	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Planned
Meyers	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Planned

Note: Liberty implemented its Substation Defensible Space initiative in Fall of 2022.