

**BEFORE THE PUBLIC UTILITIES COMMISSION OF THE
STATE OF CALIFORNIA**

Order Instituting Rulemaking to Examine
Electric Utility De-Energization of Power
Lines in Dangerous Conditions.

Rulemaking 18-12-005

**SOUTHERN CALIFORNIA EDISON COMPANY'S (U 338-E) PUBLIC SAFETY
POWER SHUTOFF POST-EVENT REPORT FOR NOVEMBER 24, 2021 DE-
ENERGIZATION EVENT**

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Dated: **December 10, 2021**

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In compliance with California Public Utilities Commission Public Safety Power Shutoff (PSPS) Order Instituting Rulemaking Phase 1 Decision (D.) 19-05-042, Phase 2 D.20-05-051, Phase 3 D.21-06-034 and PSPS Order Instituting Investigation D.21-06-014, Southern California Edison Company (SCE) hereby submits its PSPS Post-Event Report (Attachment A hereto). Pursuant to the October 14, 2021 email ruling of ALJ Valerie Kao, SCE hereby provides the following link to access and download the attachments and appendices to its PSPS Post-Event Report:

https://library.sce.com/?10000_group.propertyvalues.property=jcr%3Acontent%2Fmetadata%2Fcq%3Atags&10000_group.propertyvalues.operation>equals&10000_group.propertyvalues.0_values=sce-document-library%3APSPS-Reports-to-the-CPUC%2FEvent-Reporting%2F2021

Appendix A and B will be filed via mixed media with the Commission’s Docket Office.

Respectfully submitted,

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December 10, 2021

Attachment A

SCE's PSPS Post-Event Report



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State Regulatory Relations
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December 10, 2021

Leslie Palmer, Director
Safety Enforcement Division
California Public Utilities Commission
505 Van Ness Avenue
San Francisco, CA 94102

SUBJECT: SCE PSPS Post Event Report – November 22 to November 26, 2021

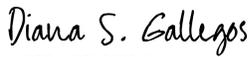
Dear Director Palmer:

As required by Resolution ESRB-8 and in accordance with Ordering Paragraph 1 of California Public Utilities Commission (CPUC) Decision (D.) 19-05-042, Southern California Edison Company (SCE) respectfully submits a compliance report for the proactive de-energization event that was initiated on November 22, 2021, and fully restored on November 26, 2021.

This report has been verified by an SCE officer in accordance with Rule 1.11 of the Commission's Rules of Practice and Procedure.

If you have any questions, please do not hesitate to call.

Sincerely,

DocuSigned by:

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Diana S. Gallegos
Director, State Regulatory Relations

cc: ESRB_CompplianceFilings@cpuc.ca.gov

**Southern California Edison
Public Safety Power Shutoff (PSPS) Post-Event Report
November 24, 2021**

**Filed with: The California Public Utilities Commission
Submitted to: Director of the Safety and Enforcement Division
Dated: December 10, 2021**

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Introduction

Southern California Edison submits this post-event report to address the de-energization event that started on November 24, 2021, at 11:58 am and ended on November 26, 2021, at 7:48 pm, in Kern, Los Angeles, Orange, Riverside, San Bernardino, and Ventura Counties, and to demonstrate its compliance with the California Public Utilities Commission's (CPUC or Commission) PSPS guidelines including Resolution ESRB-8, PSPS Order Instituting Rulemaking (OIR) Phase 1 (Decision (D.) 19-05-042), Phase 2 (D.20-05-051), Phase 3 (D.21-06-034), and PSPS Order Instituting Investigation (OII) (D.21-06-014).¹

SCE de-energized 78,514 customers during this event. This report explains SCE's decision to call, sustain, and conclude the de-energization event, and provides detailed information to facilitate the Commission's evaluation of SCE's compliance with applicable PSPS guidelines.

SCE appreciates that proactive de-energizations pose significant challenges and hardships for our customers and the public safety partners that provide vital services to the affected communities. SCE's decision to activate its PSPS protocol is based on careful consideration and weighing of multiple factors, including forecasted weather, fuel conditions, utility infrastructure vulnerabilities, and potential impacts of PSPS on communities and public safety partners.

SCE remains committed to continuously improving its PSPS processes and welcomes input from customers, public safety partners, community representatives, and local governments on ways to minimize the impact of PSPS events on all stakeholders.

¹ This PSPS post-event report is based on the best information and data available as of the 10-business-day filing deadline for the report. Given the magnitude of the November 24, 2021 PSPS event, SCE continues to gather, analyze, and validate some of the underlying data, and will supplement this report with updated information, as needed, in its annual post-season report. *See* D.21-06-014, Ordering Paragraph 66, p. 305 (directing SCE to "provide aggregate data . . . in an annual report, including aggregate data that may not have been available at the time the utility filed the 10-day post-event report").

Section 1. Executive Summary

1. Brief description of the PSPS event starting from the time when the utility's Emergency Operation Center is activated until service to all customers have been restored.

SCE activated its Emergency Operations Center on November 22, 2021, at 2:15 pm after SCE's meteorologists became aware of the potential for elevated fire weather for portions of Central and Southern California beginning November 24th. Over the next few days, successive weather models continually increased the strength of the event and this ultimately brought more circuits into scope. The expected peak wind gusts predicted by the weather models on November 22nd were around 55-60 MPH. However, on November 24th, the first day of the event, new weather model guidance was suggesting that wind gusts could be up to 75-80 MPH in some isolated locations. This same increase in intensity was also observed in successive runs of the external weather models, such as those used by the National Weather Services (NWS). As a result, the number of circuits in scope increased from about 77 circuits on the 22nd to about 154 circuits (including downstream circuits) on the 24th. In the end, winds ended up being much higher than originally forecasted, but weather models were correct in predicting the increasing strength of the event with the highest wind gust recorded at 89 MPH.

At approximately 10:00 am on November 24th, SCE began observing rapidly escalating wind speeds, decreasing humidity levels, and high Fire Potential Index (FPI) values in portions of Kern, Los Angeles, Orange, Riverside, San Bernardino, and Ventura counties. As part of SCE's scope of work and as a best practice, SCE's meteorology and fire science experts consulted the Geographic Area Coordination Center (GACC). GACC personnel indicated that due to the anticipated severity, widespread nature and duration (potentially longest of the year) of the weather event, a High Risk would be entered on the GACC's 7-Day Significant Fire Potential product that assesses the chance for a large fire, along with a Moderate rating on the Santa Ana Wildfire Threat Index (SAWTI). GACC personnel also confirmed that there was potential for a large fire due to the historically dry Energy Release Component (ERC) levels for the time of year and extreme dryness of the vegetation in the areas of concern. These same concerns were also amplified by SCE's Fire Scientist who also alerted the Dedicated PSPS IMT to extreme conditions as a result of the wind speed intensity, the state of the fuels and the potential extended duration of the event. Additionally, SCE also took into consideration when calling this event, the National Weather Service issued Red Flag Warnings beginning the morning of November 24th and continuing through 6 pm on November 26th for most of Southern California, including Los Angeles, Orange, Riverside, San Bernardino, and Ventura Counties.

By the afternoon on that day, actual fire weather conditions in the areas of concern met or exceeded SCE's established PSPS thresholds for proactive de-energization. SCE ultimately de-energized 78,514 customers on 102 circuits in Los Angeles, Orange, Riverside, San Bernardino, and Ventura Counties on November 24th and November 25th. SCE was able to reduce customer impacts through mitigations, as detailed in Section 10.

Weather conditions began improving and SCE began re-energizing customers in some of the impacted areas by late afternoon of Wednesday, November 24th, continuing through Friday, November 26th. After patrolling the de-energized circuits and remediating identified damage, service to customers on all but one circuit segment was restored by November 26th at 4:15 pm. Service to the remaining customers was restored on November 26th by 7:48 pm.

The notification process was impacted by the fast-moving weather and SCE’s commitment to minimize de-energizations through partial circuit de-energizations. Despite these challenges, approximately 95% of customers received at least one notification prior to de-energization. SCE remains committed to improving notification performance, and as detailed later, this performance should be notably improved with the completion of a fully automated system, scheduled for early 2022.

- A table including the maximum number of customers notified² and actually de-energized; number of counties de-energized; number of tribes de-energized; number of Medical Baseline customers de-energized; number of transmission and distribution circuits de-energized; damage/hazard count; number of critical facilities and infrastructure de-energized.**

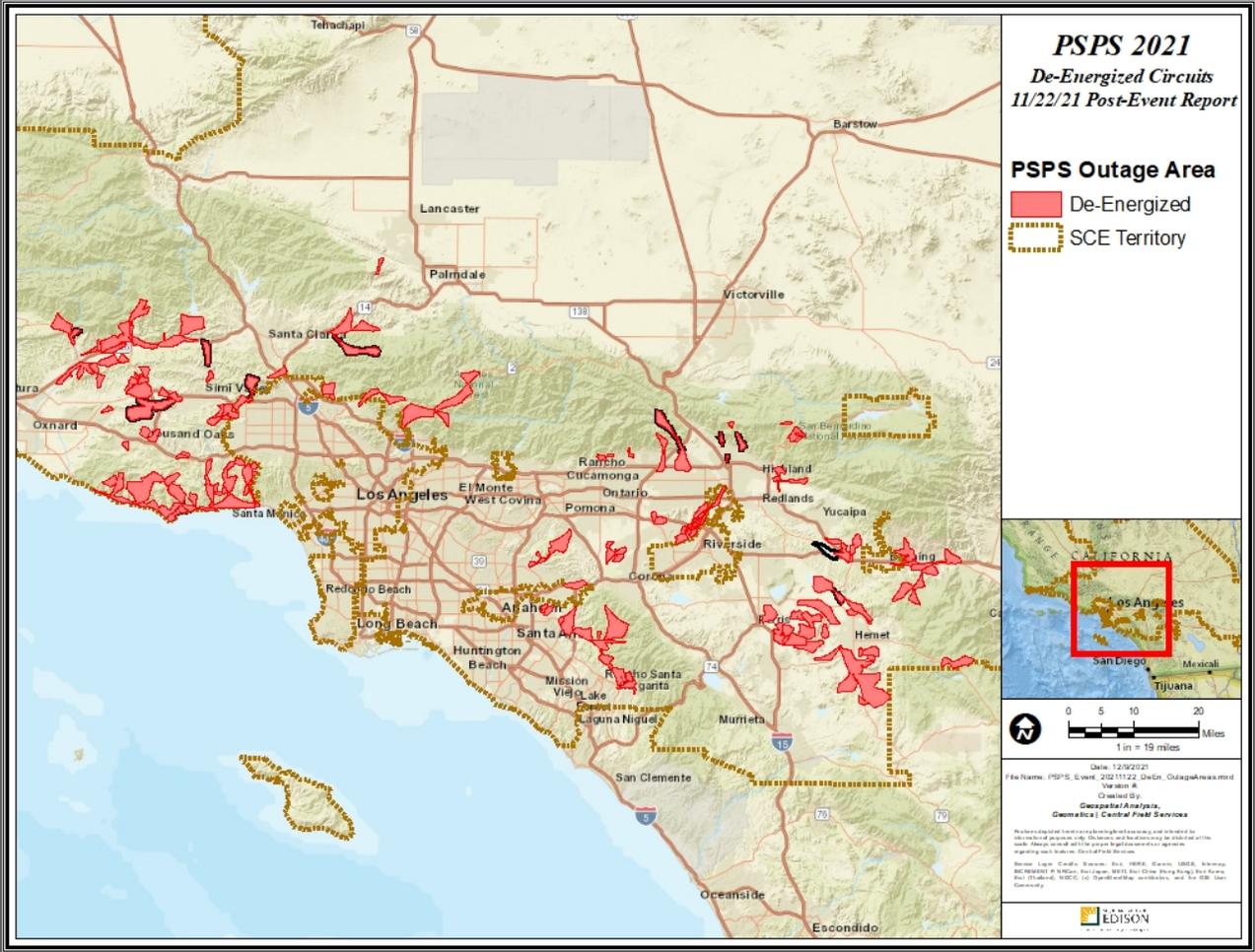
Table 1: PSPS Event Summary³

PSPS Event Summary										
Total Customers			De-energized				Number of Circuits			Damage Count
PSPS Notified	De-energized	Cancelled	MBL Customers	Number of Counties	Number of Tribes	Critical Facilities and Infrastructure	Transmission De-energized	Distribution Circuits in Scope	Distribution De-energized	
283,454	78,514	195,963	2,522	5	3	2,048	0	180	102	8

²SCE makes every effort to notify customers, public safety partners, and other impacted entities within two hours of a decision to cancel an anticipated de-energization event or to remove circuits or circuit segments from scope. When the period of concern is over for a circuit or a circuit segment, SCE sends an “All-Clear – Event Avoided” cancellation notification to entities and customers who had been notified of a potential de-energization, but not de-energized. Because weather conditions can change unexpectedly, SCE is not always able to declare that a circuit or segment is permanently out of scope until an “All Clear” declaration had been issued for the entire PSPS event. If conditions during a PSPS event do not support a decision to cancel or to remove from scope any of the notified customers before an “All Clear” declaration for all circuits in scope, the corresponding entries in Table 1: PSPS Event Summary, Table 8: Notifications Timeline, and Table 10: Breakdown of Notification Failures will state “Not Applicable” or “N/A.”

³ "Cancelled" refers to customers who received "PSPS All Clear-Event Avoided" notice within two hours of being removed from scope.

3. A PDF map depicting the de-energized area(s)



Section 2. Decision-Making Process

1. A table showing factors considered in the decision to shut off power for each circuit de-energized, including sustained and gust wind speeds, temperature, humidity, and moisture in the vicinity of the de-energized circuits.⁴

Table 2: Factors Considered in De-Energization (Continued in Attachment C in this report)

Factors Considered in De-Energization										
Circuit De-energized	Segment	Sustained Wind Speed			Gust Wind Speed			Fire Potential Index (FPI)		Firecast Output Ratio
		Threshold	De-energization Threshold	Actual	Threshold	De-energization Threshold	Actual	Threshold	Actual	
ACADIAN	2	28	28	28.66	39	39	51.44	13	14.42	35.32388808
ACOSTA	2,4,5,6	40	36	27.7	58	57	45.2	13	13.19	213.060142
ALLVIEW	ALL	Downstream of Rowco								131.413484
AMETHYST	2,3,4	40	36	32.7	58	52	59.4	13	13.78	322.1107969
ANGUS	2,3,4,5	33	29	29.77	49	44	46.91	12	13.58	64.88354525

2. Decision criteria and detailed thresholds leading to de-energization including the latest forecasted weather parameters versus actual weather. Also include a PSPS decision-making diagram(s)/flowchart(s) or equivalent along with narrative description.

SCE uses preset thresholds for dangerous wind conditions that create increased fire potential. These include wind speeds, humidity, fuel moisture levels and other factors, and are the basis for PSPS decision-making, as described in SCE’s technical paper.⁵ These thresholds are set for each of the circuits in SCE-designated high fire risk areas (HFRAs) and calibrate the risk of significant events against the potential for harm to customers from the loss of power. They are reviewed for each event during the development of the event management plan.⁶

All circuits have an activation threshold, defined by the Fire Potential Index (FPI) and the wind speed at which they are considered at risk. Activation thresholds are computed for each circuit for the season.

FPI is calculated using the following inputs:

- Wind speed—Sustained wind velocity at 6 meters above ground level.
- Dew point depression—The dryness of the air as represented by the difference between air temperature and dew point temperature at 2 meters above ground level.

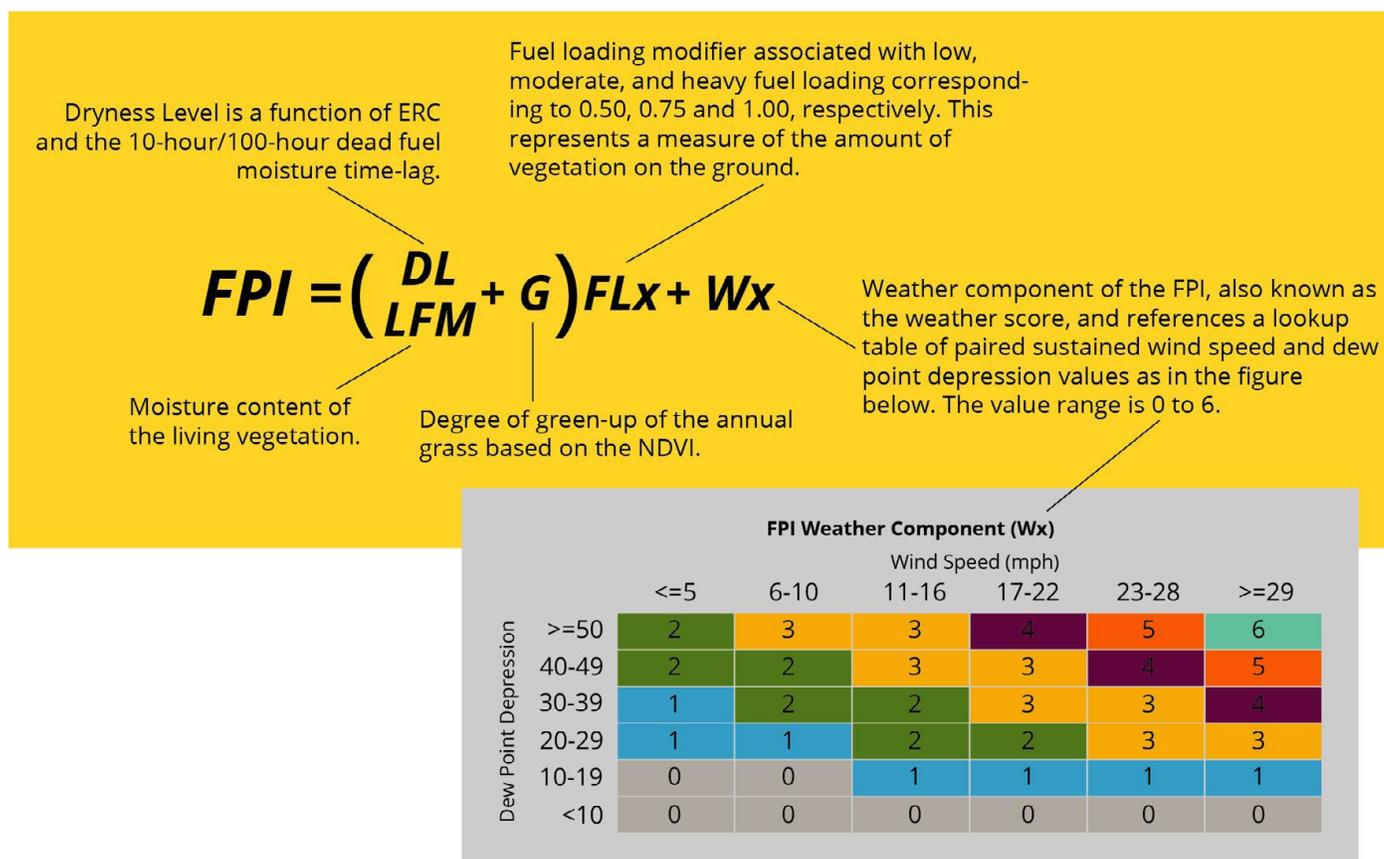
⁴SCE calculates a Fire Potential Index (FPI) rating for each circuit in scope for de-energization. FPI inputs include wind speed, dewpoint depression (which is a measure of how dry the air is), and various fuel moisture parameters, as detailed in Section 2-2 of this report. Other variables, such as temperature and humidity, while potential contributors to fire spread, are not direct inputs into the FPI calculation. Temperature and humidity are accounted for indirectly through the inclusion of dewpoint depression in the FPI rating. Because temperature, humidity, and moisture are not distinct “factors considered” in SCE’s de-energization decisions, they are not reported separately, but are reflected in the actual FPI rating for each de-energized circuit, as shown in Table 2. FPI estimates the likelihood of a spark turning into a major wildfire. FPI uses a whole-number scale with a range from 1 to 17; categorized as normal (1-11), elevated (12-14) and extreme (15+).

⁵ SCE’s detailed technical paper, Quantitative and Qualitative Factors for PSPS Decision-Making, can be found at <https://energized.edison.com/pssp-decision-making> and in Attachment C of this report.

⁶“The plan details the de-energization thresholds and cadence of decision-making based on the complexity of the event and situational information. Managing to the plan allows the PSPS team sufficient time to process simultaneous de-energizations when multiple circuits might approach de-energization thresholds in parallel.” Quantitative and Qualitative Factors for PSPS Decision-Making. <https://energized.edison.com/pssp-decision-making> and in Attachment C of this report.

- Energy release component (ERC)—“The available energy (BTU) per unit area (square foot) within the flaming front at the head of a fire ... reflects the contribution of all live and dead fuels to potential fire intensity.”⁷
- 10-hour dead fuel moisture—A measure of the amount of moisture in ¼-inch diameter dead fuels, such as small twigs and sticks.
- 100-hour dead fuel moisture—A measure of the amount of moisture in 1- to 3-inch diameter dead fuels, i.e., dead, woody material such as small branches.
- Live fuel moisture—A measure of the amount of moisture in living vegetation.
- Normalized Difference Vegetation Index (NDVI)— “... used to quantify vegetation greenness and is useful in understanding vegetation density and assessing changes in plant health.”⁸

Visual 1. Fire Potential Index Equation²



⁷U.S. Department of Agriculture. n.d. “Energy Release Component (ERC) Fact Sheet.” Forest Service. Accessed April 14, 2021. https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5339121.pdf.

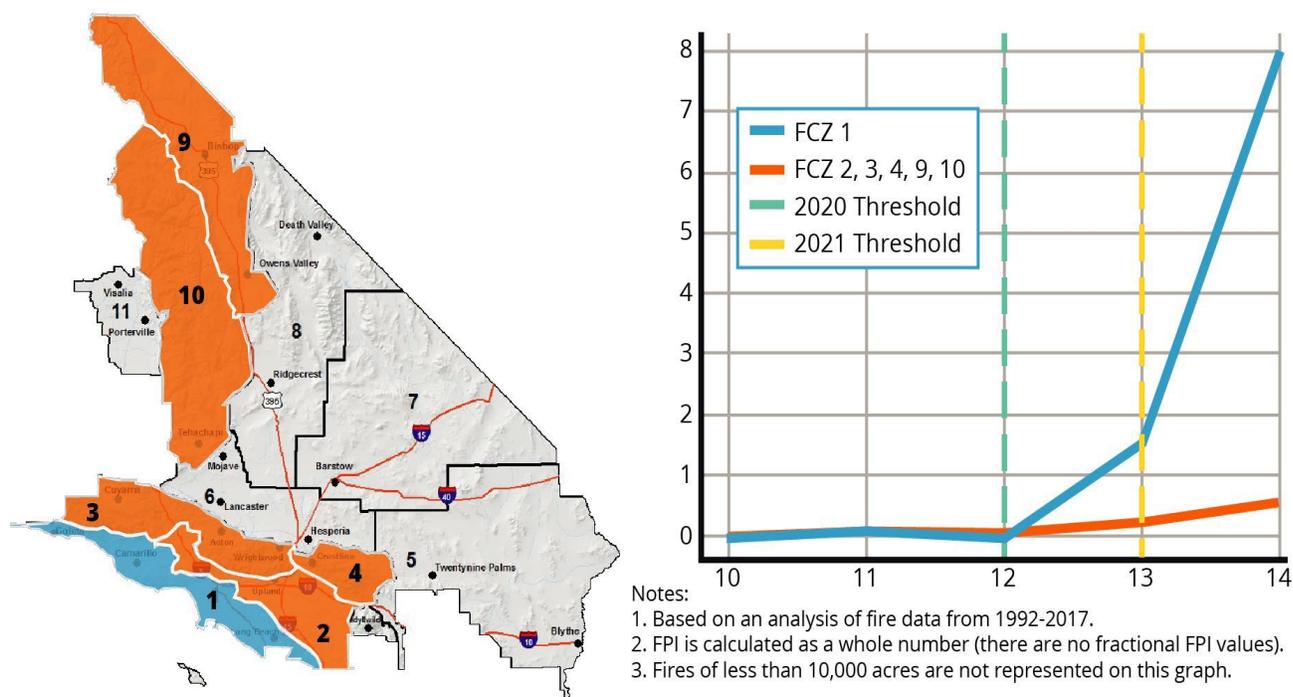
⁸ U.S. Department of the Interior. n.d. Landsat Normalized Difference Vegetation Index. Accessed April 14, 2021. https://www.usgs.gov/core-science-systems/nli/landsat/landsat-normalized-difference-vegetation-index?qt-science_support_page_related_con=0#qt-science_support_page_related_con.

⁹ Fire Potential Index adapted from San Diego Gas & Electric (https://www.sdge.com/sites/default/files/regulatory/SDGE_Fire_Prevention_Plan_2018.pdf, pages 25-27) and modified to serve SCE’s needs, including the insertion of the Live Fuel Moisture variable.

As of September 1, 2021, SCE has set the FPI at 13 for most areas and most events based on a risk analysis of historical fire data.¹⁰ Exceptions in which the FPI threshold will be set at 12 include:

- Fire Climate Zone 1 (FCZ1) (Coastal region) — The threshold for FCZ1 remains at 12 because probability calculations indicated a significantly higher ignition risk factor at an FPI threshold of 13 for this FCZ than for the other FCZs (2, 3, 4, 9, and 10).
- Geographic Area Coordination Center (GACC) preparedness level of 4 or 5 — The GACC coordinates multiple federal and state agencies to track and manage regional fire resources. It provides a daily fire preparedness level on a score of 1-5. A high score signals that there could be resource issues in responding to a fire.
- Circuits located in an active Fire Science Area of Concern (AOC) — AOCs are areas within FCZs that are at high risk for fire with significant community impact. This designation is based on factors that are common to FPI, as well as egress, fire history, and fire consequence. Further details about AOCs can be found in SCE’s Wildfire Mitigation Plan.¹¹

Visual 2. Probability of Wind-Driven Fires at 10,000 Acres at FPI 12 and 13¹²



¹⁰ Short, Karen C. 2017. Spatial wildfire occurrence data for the United States, 1992-2015 [FPA_FOD_20170508]. 4th Edition. Fort Collins, CO: Forest Service Research Data Archive <https://doi.org/10.2737/RDS-2013-0009.4> Supplemented with 2016-2017 ignition data supplied directly by CalFIRE via email.

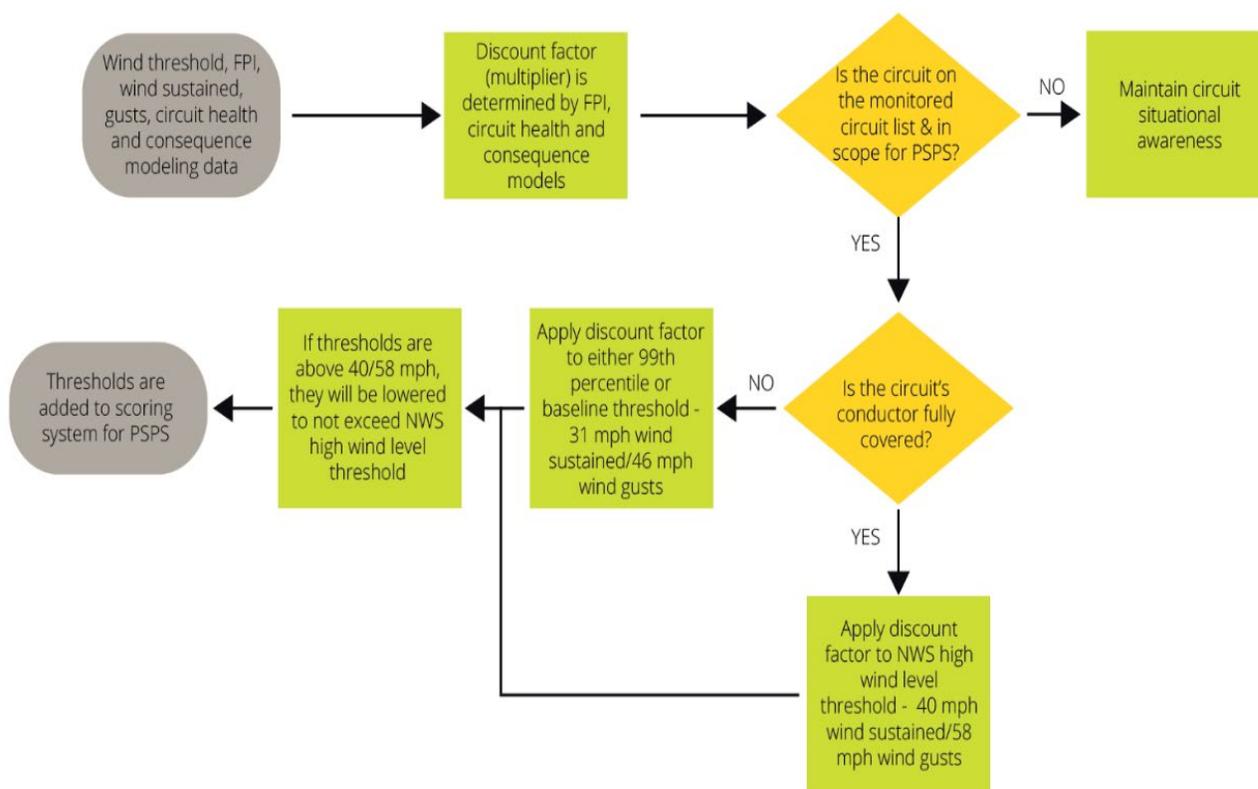
¹¹ SCE’s 2021 Wildfire Mitigation Plan Update (Revision) dated June 3, 2021: <https://www.sce.com/sites/default/files/AEM/Wildfire%20Mitigation%20Plan/2021/SCE%202021%20WMP%20Update%20Revision%20-%20CLEAN.pdf>

¹² Based on back cast FPI calculation.

For each PSPS event, every circuit also has a de-energization threshold. De-energization thresholds are determined separately for each circuit to prioritize circuits based on the specific risks of the event. This is particularly important for large events where many circuits must be evaluated simultaneously. There are a handful of circuits that have legacy thresholds below the NWS advisory level because they have a history of local circuit outages at lower wind speeds.

De-energization thresholds account for circuit health, including any issues identified through patrols, and are also informed by a consequence score for each specific high fire risk area. The consequence score estimates the impact of an ignition on communities. The higher the score, the greater the risk to a particular location from wildfires. SCE's process for calculating de-energization thresholds is outlined below.

Visual 3. PSPS Decision-Making Flowchart/Diagram



If actual conditions suggest more risk, or in large-scale events when many circuits are under consideration for shutoffs, the de-energization thresholds may be lowered (discounted), meaning power on a circuit will be turned off at lower wind speeds. This step prioritizes the circuits that represent the highest risk to be evaluated for de-energization before circuits at lower risk. Conversely, de-energization thresholds are raised for segments or circuits that have had covered conductor installed. The de-energization threshold for segments with covered conductor is 40 mph sustained/58 mph gusts, which aligns with the National Weather Service high wind warning level for windspeeds at which infrastructure damage may occur.

The thresholds for the 102 circuits de-energized during this event were set as follows:

Table 3: Circuit Thresholds (Continued in Attachment C in this report)

Circuit Thresholds					
Circuit	FPI Threshold Rating	Wind Speed Thresholds		De-Energization Thresholds	
		Sustained Wind	Gust Wind	Sustained Wind	Gust Wind
ACADIAN	13	28	39	28	39
ACOSTA	13	40	58	36	57
ALLVIEW	Downstream of Rowco				
AMETHYST	13	40	58	36	52
ANGUS	12	29	49	29	44

Forecasted versus actual weather parameters for this event were as follows:

- Wind: Wind gusts of 40 to 50 MPH with isolated gusts of 60 to 75 MPH were forecast for Kern, Los Angeles, Orange, Riverside, San Bernardino, and Ventura Counties. Peak observed winds speeds were 64 MPH sustained and 89 MPH gusts (observed in Los Angeles County) during this event.
 - Relative humidity: Relative humidity was forecast to be between 5% and 10% across all impacted counties. Conditions were dryer than forecasted and actual relative humidity ranged from 3% to 8%.
3. **A thorough and detailed description of the quantitative and qualitative factors SCE considered in calling, sustaining, or curtailing each de-energization event including any fire risk or PSPS risk modeling results, and a specification of the factors that led to the conclusion of the de-energization event.**

SCE’s PSPS decisions are based on quantitative analyses while accounting for qualitative factors such as societal and emergency management impacts. SCE makes PSPS decisions predominantly at the distribution grid level. SCE utilizes proactive de-energization as a measure of last resort when all other alternatives to de-energization have been exhausted. (See also Section 2-5 for descriptions of alternatives to de-energizations).

The decision to de-energize customers during this PSPS event was made in consideration of the quantitative and qualitative factors detailed below:

- **Coordination with the GACC regarding the potential for elevated fire weather within SCE service territory during the period of concern.** The GACC agreed with SCE’s forecast of elevated fire weather potential for identified areas.
- **Ongoing assessments before the period of concern from SCE’s in-house meteorologists.** Assessments used data from high-resolution weather models to determine the potential scope of the PSPS event, and real time weather data from SCE and publicly available weather stations during the period of concern to inform actual de-energization decisions.
- **Fire spread modeling to identify areas having the greatest potential for significant fire activity.** Results of this modeling by SCE identified the potential for fire in the 5- to 25-thousand-acre range in the areas of concern during the period of concern.

- **Relative humidity levels.** Minimum relative humidity levels in the areas of concern ranged from 3% to 8%.
- **Observed weather parameters relative to the preset thresholds for de-energization.** De-energization thresholds were reached or exceeded for the de-energized circuits or circuit segments as detailed in Table 2 (*See also* Section 2-2-Decision Criteria).
- **National Weather Service-issued watches and warnings for areas of concern in the SCE service area.** High Wind Warnings and Red Flag Warnings were issued for Los Angeles, Orange, Riverside, San Bernardino, and Ventura counties.

SCE considered the following factors when deciding to conclude this de-energization event:

- **Improving weather modeling for the areas of concern.** SCE’s meteorologists indicated elevated fire weather would continue to abate in some areas beginning the evening of November 25, and continue abating into the morning of Friday November 26th, due to forecasts indicating decreasing wind speeds and lowered FPIs.
 - **Observed lower wind speeds and FPI ratings.** Observed wind speeds and FPI ratings no longer met de-energization threshold criteria across the area of concern by 10:45 am on November 26.
4. **An explanation of how the utility determined that the benefit of de-energization outweighed potential public safety risks, and analysis of the risks of de-energization against not de-energizing. The utility must identify and quantify customer, resident, and the general public risks and harms from de-energization and clearly explain risk models, risk assessment processes, and how the power disruptions to customers, residents, and the general public is weighed against the benefits of a proactive de-energization.**

SCE uses its PSPS In-Event Risk Comparison Tool to assess and compare potential public safety risks associated with proactive de-energization (PSPS risk) and simulated wildfire risk (PSPS benefit in avoiding a wildfire) for all circuits in scope.¹³ Inputs into this Tool include in-event weather, wildfire simulation models, and circuit-specific data. The results of the analysis are displayed on the Incident Commander Dashboard and used by Incident Commanders on a circuit-by-circuit basis to inform de-energization decisions, in conjunction with other factors described in Section 2 of this report.

The comparative PSPS and wildfire risk estimates are based on the following circuit-specific criteria and information:

- **PSPS Risk:** Customers served, estimated population, and the relative ranking of the circuits in scope by the percentage of Access and Functional Needs (AFN) and Non-Residential Critical Infrastructure (NRCI) customers.
- **Wildfire Risk:** Wildfire simulations (using Technosylva FireCast¹⁴ modeling) for potential ignitions

¹³ SCE will continue to refine the In-Event PSPS Risk Comparison Tool based on real-time experience, additional data, and ongoing benchmarking with other IOUs. Estimates and assumptions described herein are based on risk models reflecting current industry best practices and are subject to being updated as the modeling improves.

¹⁴ Technosylva is a suite of wildfire simulation models or tools. While relying on a similar underlying fire propagation engine,

based on dynamic, in-event weather and wind conditions in proximity to the circuits in scope for de-energization. These conditions are used to determine the extent of an estimated fire footprint (or fire shed). Within that fire shed, the risk of a wildfire is calculated based on the number of structures, population, and acres potentially threatened within the impacted area.

This information is used to calculate potential Safety, Financial, and Reliability impacts (or attributes) of: (1) a wildfire and (2) a proactive de-energization event, as summarized in the table below:

Risk Attribute	Wildfire Consequences	PSPS Consequences
Safety	SCE calculates the estimated number of fatalities and serious injuries based on a forecast of impacted population within the Technosylva wildfire consequence simulation. This number, in turn, is converted into the Safety index.	SCE leverages epidemiological studies and information drawn from past widespread power outage events including the 2003 Northeast Blackout, the 2011 Southwest Blackout, and the IOUs' 2019 PSPS post-event reports. ¹⁵ The resulting estimates of fatalities and serious injuries per customer minutes interrupted (CMI) are intended to approximate potential safety consequences due to the power outage, such as illnesses resulting from food spoilage or exacerbation of existing underlying health conditions. SCE enhanced the PSPS safety attribute through the application of a circuit-specific AFN/NRCI multiplier. This multiplier represents the relative ranking of each circuit based on the number of AFN and NRCI customers on the circuit.
Reliability	SCE assumes 24 hours without power per customer on each circuit in scope due to wildfire. This duration was used to maintain consistency with Technosylva 24-hour fire propagation simulation, as well as the PSPS impact duration.	SCE estimates the total customer minutes interrupted (CMI) due to proactive de-energization on a circuit. It is the product of the number of customers on a circuit and the total number of minutes of estimated interruption. SCE assumes 1,440 CMI per customer (24 hours x 60 minutes) to represent de-energization over a 24-hour period.
Financial	SCE calculates the financial impact of wildfire by assigning a dollar value to the buildings and acres within the fire shed potentially threatened by wildfire. For buildings, SCE uses a system average replacement value assumption. For acres, SCE uses assumed costs of suppression and restoration. ¹⁶	SCE conservatively assumes \$250 ¹⁷ per customer, per de-energization event to quantify potential financial losses for the purpose of comparing PSPS risk to wildfire risk. The figure represents potential customer losses, such as lost revenue/income, food spoilage, cost of alternative accommodations, and equipment/property damage. This value is based on a Value of Lost Load (VoLL), which is a widely accepted industry methodology to estimate a customer's willingness to accept compensation for service interruption. VoLL is dependent on many factors, including

each model is designed to support a unique use case. FireCast is specifically designed to forecast ignition risk associated with electric utility assets over a 3-day horizon based on expected short-term weather conditions.

¹⁵ See, e.g., Anderson, G.B., Bell, M.B (2012). Lights Out: Impact of the August 2003 Power Outage on Mortality in New York, NY, *Epidemiology* 23(2) 189-193. doi: 10.1097/EDE.0b013e318245c61c.

¹⁶ See SCE 2018 Risk Assessment Mitigation Phase (RAMP) (I.18-11-006) Workpapers, Chapter 10.

¹⁷ SCE utilizes \$250 per customer, per de-energization event to approximate potential financial losses on average, recognizing that some customers may experience no financial impact, while other customers' losses may exceed \$250. The \$250 value is a conservative assumption used for the limited purpose of estimating the potential financial consequences of PSPS as one of many inputs into SCE's PSPS In-Event Risk Comparison Tool. It is not an acknowledgment that any given customer has or will

Risk Attribute	Wildfire Consequences	PSPS Consequences
		the type of customer, the duration of the outage, the time of year, the number of interruptions a customer has experienced. SCE's VoLL estimate is consistent with academic and internal studies to estimate VoLL for a single-family residential customer for a 24-hour period.

SCE quantifies the resulting PSPS risks and wildfire risks using natural unit consequences for each risk type or attribute—structures impacted, acres burned, customer minutes interrupted, serious injuries and fatalities, etc. “Safety” risk is expressed as an index, “Reliability” risk is measured in terms of customer minutes interrupted (CMI), and “Financial” risk is measured in dollar amounts. SCE then applies a Multi-Attribute Risk Score (MARS) framework to convert these natural unit consequences to unitless risk scores—one score for PSPS risks and one score for wildfire risks.¹⁸ These risk scores are compared to each other by dividing the wildfire risk score (*i.e.*, the potential benefit of PSPS) by the PSPS risk score (*i.e.*, the potential public harm of PSPS), yielding a benefit/risk ratio for each circuit in scope of the PSPS event. If the resulting ratio is equal to 1, the risks are equivalent. If the ratio is greater than one, the wildfire risk exceeds the PSPS risk (the higher the resulting number, the more the wildfire risk outweighs the PSPS risk). If the ratio is less than 1, the PSPS risk outweighs the wildfire risk.

The table below displays circuit-specific inputs—such as the number of customers on a circuit, AFN/NRCI multiplier, number of acres and buildings potentially threatened—which are used to calculate the PSPS and wildfire risk scores (shown in columns titled “PSPS Risk” and “Wildfire Risk”) and drive the final output of the Tool. These risk scores are then compared in the *FireCast Output Ratio* column (highlighted in yellow) which shows the ratios of wildfire risk (corresponding to potential benefit of PSPS) to PSPS risk (corresponding to potential public harm from PSPS) for each circuit in scope. All ratios in the “FireCast Output Ratio” column are greater than 1, meaning that the wildfire risk exceeded PSPS risk for all circuits in scope. These results were presented to the Incident Commanders in advance of de-energization to inform PSPS decision-making.

incur losses in this amount, and SCE reserves the right to argue otherwise in litigation and other claim resolution contexts, as well as in CPUC regulatory proceedings.

¹⁸ MARS is SCE’s version of Multi-Attribute Value Function (MAVF). The MAVF was developed as part of the Safety Model Assessment (S-MAP) proceeding and is used in the utilities’ 2018 Risk Assessment Mitigation Phase (RAMP) Report (I.18-11006, pp. 1-28) filings to compare risks and mitigation alternatives. SCE has improved its MARS framework since first developing it for the 2018 RAMP. SCE MARS 2.0 attributes, units, weights, ranges, and scales are shown below.

Attribute	Unit	Weight	Range	Scaling
Safety	Index	50%	0 – 100	Linear
Reliability	CMI	25%	0 – 2 billion	Linear
Financial	\$	25%	0 – 5 billion	Linear

Table 4: PSPS Risk vs. Benefit Comparison Tool (Continued in Attachment C in this report)

PSPS Risk vs. Benefit Comparison Tool										
Circuit	All Customers	Population	AFN/NRCI Multiplier	24 Hour CMI (24 x 60)	Firecast Acres	Firecast Buildings	Firecast Population	PSPS Risk (24 hr Impact-PSPS Model)	Wildfire Risk (24hr Impact-PSPS Model)	Firecast Output Ratio
ACOSTA	1227	3681	1.24804107	1440	5996.8	756	3360	0.000259742	0.055340657	213.060142
ACADIAN	1505	4515	1.23794092	1440	511.924	185	476	0.000318358	0.011245631	35.32388808
ACOSTA	1225	3675	1.24804107	1440	6010.11	1477	5566	0.000259319	0.100434516	387.3016663
ALLVIEW	300	900	1.01196532	1440	46.276	163	208	0.000062418	0.008202526	131.413484
AMETHYST	1517	4551	1.09812997	1440	1748.5	1593	5197	0.000317635	0.10231371	322.1107969

With the exception of 5 out of 102 de-energized or partially de-energized circuits (for which fire modeling data is not available or has not been fully validated), the results of the In-Event PSPS Risk Comparison Tool supported SCE’s decision to de-energize, indicating that the circuits in scope for potential de-energization during this event had a PSPS benefit/risk ratio greater than 1.¹⁹ Thus, the estimated benefit of PSPS outweighed the estimated risk of PSPS for this event.

5. Explanation of alternatives to de-energization considered and evaluation of each alternative.

Typically, ahead of the period of concern when fire weather that could potentially impact the SCE service territory is forecasted, SCE performs mitigations to minimize customer impacts, including enacting operating restrictions,²⁰ implementing fast curve settings,²¹ and performing switching operations where possible on circuits in scope for potential de-energization. SCE also pre-patrols circuits in scope and deploys field personnel to circuits at risk to monitor real-time weather and Fire Potential Index data. Once in the period of concern, SCE employs PSPS as a last resort measure only when it is necessary to protect public safety and there are no other available alternatives to mitigate identified wildfire risk.

During this event, SCE determined -- based on weather forecast data, fire weather modeling information, and results of the Risk Comparison Tool -- these precautionary measures alone may not sufficiently reduce the risk to public safety, and PSPS could be necessary.

Starting with the initial weather (wind and relative humidity) and fuel moisture forecasts for the period of concern, SCE also began evaluating its current system configurations for downstream circuits, that is, circuits receiving power from a different circuit that was forecast to exceed de-

¹⁹ Six circuits (Flabob, Naylor, Belltown, De Mille, Fortune, and Whizzin) were not in scope until shortly before they had to be de-energized due to rapidly escalating weather conditions, and a risk/benefit calculation could not be performed for these circuits prior to de-energization. Consequently, at the time of de-energization, the Incident Commander made the determination to de-energize these six circuits using the best data available -- primarily observed winds and the FPI index exceeding thresholds. A post-event calculation was performed for the De Mille circuit and is reflected in Tables 2 and 4, indicating that the benefit of PSPS outweighed the risk of PSPS. A post-event calculation could not be performed for Flabob, Naylor, Belltown, and Fortune circuits due to missing wildfire impact assessment data from Technosylva FireCast modeling for these circuits. SCE is currently working with Technosylva to resolve this issue. Preliminary post-event analysis for the Whizzin circuit showed no impact (or risk) from a wildfire in the vicinity of the circuit. SCE is currently evaluating the accuracy of the wildfire modeling data to determine next steps with respect to this circuit.

²⁰ SCE’s System Operating Bulletin No. 322 includes restrictions to limit the potential for a spark to occur or mitigate the risk of an ignition such as limits to circuit switching, recloser operations, and requirements for personnel to be physically present when operating equipment and circuits subject to hot work restrictions.

²¹ Fast curve settings reduce fault energy by increasing the speed with which a protective relay reacts to most fault currents. Fast curve settings can reduce heating, arcing, and sparking for many faults compared to conventional protection equipment settings. More details are in SCE’s 2021 Wildfire Mitigation Plan Update (Revised), initiative SH-6.

energization thresholds. SCE also sought to identify any circuit segment or subset of customers that could safely be transferred from a circuit that was expected to exceed thresholds to another adjacent circuit that was not. Ultimately, SCE was able to transfer approximately 7,800 customers on 8 circuits to adjacent circuits to avoid de-energization.

Additionally, two circuits (the Impala and Dartmouth) had backup generation available to maintain power to customers during the PSPS event. SCE prepared switching plans to move customers to these backup generators if needed. On the Impala circuit, 428 customers who had been de-energized were restored after they were switched to this backup generation. The Dartmouth generator remained on stand-by, however, it was not needed as the Dartmouth circuit was not de-energized.

To further mitigate customer impacts during this event, SCE also provided one medically sensitive customer with a backup generator and deployed backup generators to three Community Resiliency Sites²² in the de-energized areas.

²² Community Resiliency Sites include essential services such as police and / or fire stations, gas stations, grocery stores, pharmacies or other identified sites in selected communities.

Section 3. De-Energized Time, Place, Duration and Customers

1. The summary of time, place, and duration of the event, broken down by phase if applicable.

SCE activated its Emergency Operations Center on November 22nd at 2:15 pm. The first de-energization occurred on November 24th at 11:58 am and service was restored to all de-energized customers on November 26 at 7:48 pm. Some or all customers on 102 circuits were de-energized in Los Angeles, Orange, Riverside, San Bernardino, and Ventura counties. 283,454 customers were in scope for this PSPS event, and 78,514 customers were de-energized. Customers in Kern County were in scope for potential de-energized during the period but not actually de-energized (See Section 1-1 above and Section 8 below for additional information).

2. A zipped geodatabase file that includes PSPS event polygons of de-energized areas. The file should include items that are required in Section 3.3.

A zipped geodatabase file that includes all information in Section 3.3 is included with this filing.

3. A list of circuits de-energized, with the following information for each circuit. This information should be provided in both a PDF and excel spreadsheet.

The following two-part table details the specified information for each circuit de-energized during this PSPS event and has also been included in the PSPS Event Data Workbook filed with this report.

- County
- De-energization date/time
- Restoration date/time
- “All Clear” declaration date/time²³
- General Order (GO) 95, Rule 21.2-D Zone 1, Tier 2, or Tier 3 classification or non-High Fire Threat District
- Total customers de-energized²⁴
- Residential customers de-energized
- Commercial/Industrial customers de-energized
- Medical Baseline (MBL) customers de-energized

²³ SCE understands “All Clear” declaration date/time for each circuit in scope to refer to: (1) approval by the Incident Commander to begin patrols and restoration of power for any de-energized circuit or circuit segment, or (2) a final decision to remove a circuit or circuit segment from scope after the period of concern is over for that circuit or segment on the monitored circuit list that was not de-energized during the PSPS event.

²⁴ Whenever possible, SCE employs circuit-switching operations and/or sectionalization devices to minimize the number of customers in scope for proactive de-energization. As a result, some customers on a circuit in scope may briefly lose power while SCE switches them to an energized adjacent circuit or when SCE uses sectionalization devices to isolate portions of a circuit that can remain safely energized from de-energized segments of that same circuit or an adjacent circuit. The reported count of “total customers de-energized” does not include customers who experience a brief power interruption during such switching and/or sectionalization operations, but who are not otherwise impacted by the proactive de-energization.

- AFN other than MBL customers de-energized²⁵
- Other Customers
- Distribution or transmission classification

Table 5: De-Energized Time, Place, Duration and Customers (Continued as Attachment C in this report)

Circuits De-Energized											
County	Circuit Name	Isolation Device	Segment Number	De-energization Date	De-energization Time (2400)	All Clear Declaration Date	All Clear Declaration Time (2400)	Restoration Date	Restoration Time (2400)	GO 95, Tier HFTD Tier(s) 1,2,3	Distribution / Transmission Classification
Riverside	ACADIAN	RAR0157	2	11/25/21	01:30	11/25/21	15:30	11/25/21	16:31	Non HFRA, Tier 2	Distribution
San Bernardino	ACOSTA	RAR0800	6	11/24/21	14:57	11/26/21	5:58	11/26/21	13:07	Non HFRA, Tier 3, Tier 2	Distribution
San Bernardino	ACOSTA	RCS0879-1	2,4,5,6	11/25/21	0:58	11/25/21	5:58	11/25/21	20:04	Non HFRA, Tier 3, Tier 2	Distribution
San Bernardino	ALLVIEW	CB	ALL	11/24/21	17:55	11/25/21	16:26	11/25/21	20:28	Tier 3	Distribution
San Bernardino	AMETHYST	RCS5836-3	2,3,4	11/25/21	3:24	11/25/21	15:36	11/25/21	17:41	Non HFRA, Tier 3, Tier 2	Distribution

Customers De-Energized									
County	Circuit Name	Segment Number	Residential Customers De-energized	Commercial / Industrial customers De-energized	Medical Baseline customers De-energized	AFN other than MBL customers De-energized	Total customers De-energized	GO 95, Tier HFTD Tier(s) 1,2,3	Other Customers
Riverside	ACADIAN	2	276	10	14	N/A	286	Non HFRA, Tier 2	N/A
San Bernardino	ACOSTA	2,4,5,6	964	61	76	N/A	1025	Non HFRA, Tier 3, Tier 2	N/A
San Bernardino	ALLVIEW	ALL	298	1	6	N/A	299	Tier 3	N/A
San Bernardino	AMETHYST	2,3,4	232	7	14	N/A	239	Non HFRA, Tier 3, Tier 2	N/A
Ventura	ANGUS	2,3,4,5	220	13	5	N/A	233	Non HFRA, Tier 3, Tier 2	N/A

²⁵ The final post-event report template issued by SED on October 18, 2021, included for the first time a new requirement to provide a count of de-energized AFN customers other than customers enrolled in MBL. SCE maintains extensive data on customer populations, such as income-qualified customers enrolled in CARE and FERA programs and customers who receive Braille or large-font bills, that are included in the broad AFN definition referenced in CPUC decisions (*see, e.g.,* D.21-06-034 at pp. 104-105 n.255 quoting Gov. Code Sec. 8593.3(f)(1)). However, SCE does not currently have the capability to accurately identify within 10 business days of a PSPS event which of these customer groups had been impacted by a proactive de-energization. In addition, there may be significant overlap between AFN customer categories such as income-qualified, older adults (65+), large font bill recipients. At this time SCE is able to report on impacted AFN customers who have self-certified as sensitive (i.e., customers who have identified themselves as more reliant on electricity than the general population due to a medical or other condition, but who are not enrolled in SCE's MBL or Critical Care programs). SCE can also identify impacted customers that provide shelter to the homeless population, as these entities are included among critical facilities and infrastructure. SCE will endeavor to provide more complete data on impacted AFN customers in the annual post-season report.

Section 4. Damage and Hazards to Overhead Facilities

1. Description of all found wind-related damages or hazards to the utility’s overhead facilities in the areas where power is shut off.

Multiple instances of damage and potential hazards to distribution circuit structures and associated line hardware were found during restoration patrols for this event as a result of the high winds as detailed in the table below.

2. A table showing circuit name and structure identifier (if applicable) for each damage or hazard, county that each damage or hazard is located in, whether the damage or hazard is in a High Fire Threat District (HFTD) or non-HFTD and the type of damage/hazard.

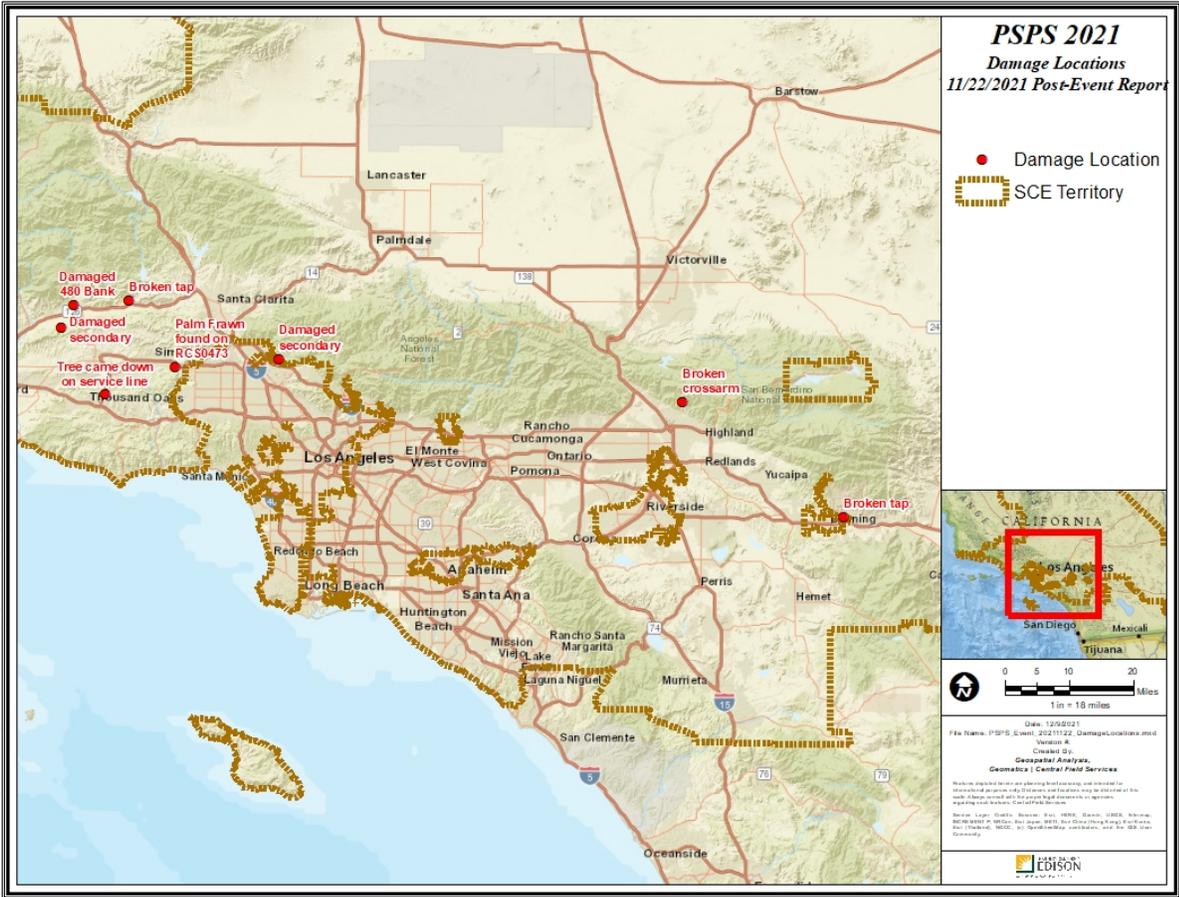
Table 6: Damage and Hazards to Overhead Facilities

Damage and Hazards				
Circuit Name	County	Structure Identifier	Tier 2/3 or Non-HFTD	Type and Description of Damage or Hazard
Sutt	San Bernardino	4552445E	Tier 2	Broken crossarm
Big Rock	Los Angeles Ventura	RCS0473	Tier 2	Palm frond found on RSC0473
Langer	Ventura	1275643E	Tier 2	Tree came down on service line
Timber Canyon	Ventura	1358862E	Tier 2	Damaged 480 Bank
Balcom	Ventura	874217E	Tier 2	Damaged secondary
De Mille	Los Angeles	1997221E	Tier 2	Damaged secondary
Buckhorn	Ventura	4434827E	Tier 2	Broken tap
Stores	San Bernardino	4358534	Tier 2	Broken tap

3. A zipped geodatabase file that includes the PSPS event damage and hazard points. The file should include fields that are in the table above.

A zipped geodatabase file that includes information in Section 4.2 is included with this filing.

4. A PDF map identifying the location of each damage or hazard.



Section 5. Notification

1. **A description of the notice to public safety partners, local/tribal governments, paratransit agencies that may serve all the known transit or paratransit dependent persons that may need access to a community resource center, multi-family building account holders/building managers in the AFN community²⁶, and all customers, including the means by which utilities provide notice to customers of the locations/hours/services available for CRCs, and where to access electricity during the hours the CRC is closed.**

SCE notified State public safety partners (including CalFIRE) of this PSPS event by submitting the required CalOES Notification forms via the California State Warning Center (CSWC) Dashboard beginning on November 22, 2021, at 6:18 pm, with subsequent updates daily as required by the CalOES PPS Standard Operating Guide. SCE also notified the CPUC of the PPS event on November 22 at 5:27 pm and maintained ongoing communication with them for the duration of the event.

SCE includes paratransit agencies that may be de-energized in its PPS notifications and classifies these agencies as critical facilities and infrastructure, so they receive priority notifications. All multi-family building SCE account holders receive customer notifications. In its customer notification, SCE directs potentially impacted customers to www.sce.com/psps for information related to the location, hours, and services available at Community Resource Centers. Instructions on where customers can access electricity during the hours the centers are closed has been made available on the SCE website. Descriptions of various types of PPS notifications are provided in the table below.

Table 7: Notification Descriptions

Notification Descriptions		
Type of Notification	Recipients	Description ²⁷
Initial	Public Safety Partners and Critical Facilities & Infrastructure (including local and Tribal governments, Community Choice Aggregators, hospitals, water/wastewater and telecommunications providers, CBOs and	Initial notification of potential PPS event when circuits are first identified for potential de-energization (72-48 hours before potential de-energization).

²⁶ SCE notifies multi-family building account holders in the ordinary course along with other customers of record in scope for a potential de-energization. SCE does not currently have a way to identify which multi-family building account holders have residents in their buildings who may be members of the AFN community. SCE conducts PPS-related outreach via flyers and trade publications to increase awareness of PPS among building/property managers who are not account holders. SCE also recently instituted an address-level alert program, which allows non-SCE account holders (such as building/property managers) to sign up for PPS alerts for specific addresses.

²⁷SCE makes every effort to adhere to the notification timelines required by the CPUC. However, notifications may be delayed in some circumstances due to the sudden onset of dangerous fire weather that was not forecasted or when such weather conditions manifest earlier than predicted by the forecast.

Notification Descriptions		
Type of Notification	Recipients	Description²⁷
	paratransit agencies serving the AFN community).	
	Customers (including multi-family building account holders).	Initial notification of potential PSPS event (48-24 hours before potential de-energization).
Update²⁸	Public Safety Partners and Critical Facilities & Infrastructure (including local and Tribal governments, Community Choice Aggregators, hospitals, water/wastewater and telecommunications providers, CBOs and paratransit agencies serving the AFN community).	PSPS event status update notification to alert for any changes or additions/deletions to current scope (timing varies).
	Customers (including multi-family building account holders).	
Imminent De-Energize	Public Safety Partners and Critical Facilities & Infrastructure (including local and Tribal governments, Community Choice Aggregators, hospitals, water/wastewater and telecommunications providers, CBOs and paratransit agencies serving the AFN community).	Power shutoff expected soon (1-4 hours before potential de-energization).
	Customers (including multi-family building account holders).	

²⁸ The Update notification type is SCE-specific and not part of the California Public Utilities Commission PSPS requirements.

Notification Descriptions		
Type of Notification	Recipients	Description²⁷
De-Energized	Public Safety Partners and Critical Facilities & Infrastructure (including local and Tribal governments, Community Choice Aggregators, hospitals, water/wastewater and telecommunications providers, CBOs and paratransit agencies serving the AFN community).	Power is being shut off (when de-energization is initiated).
	Customers (including multi-family building account holders).	
Prepare to Restore (Imminent Re-Energization)	Public Safety Partners and Critical Facilities & Infrastructure (including local and Tribal governments, Community Choice Aggregators, hospitals, water/wastewater and telecommunications providers, CBOs and paratransit agencies serving the AFN community).	Inspection/patrols of de-energized circuits for PSPS restoration has begun and power will be restored shortly.
	Customers (including multi-family building account holders)	
Re-Energized	Public Safety Partners and Critical Facilities & Infrastructure (including local and Tribal governments, Community Choice Aggregators, hospitals, water/wastewater and telecommunications	Power has been restored.

Notification Descriptions		
Type of Notification	Recipients	Description²⁷
	<p>providers, CBOs and paratransit agencies serving the AFN community).</p> <p>Customers (including multi-family building account holders).</p>	
Event Concluded-All Clear	Public Safety Partners and Critical Facilities & Infrastructure (including local and Tribal governments, Community Choice Aggregators, hospitals, water/wastewater and telecommunications providers, CBOs and paratransit agencies serving the AFN community).	PSPS event is concluded.
Event Avoided-All Clear	Customers (including multi-family building account holders).	PSPS event cancelled-no de-energizations have happened.
PSPS Ended, Restored & All Clear	Customers (including multi-family building account holders).	PSPS event concluded-no further PSPS expected.
PSPS Temporarily Restored; NOT All Clear, PSPS Risk Remains	Customers (including multi-family building account holders).	PSPS event ongoing-additional PSPS risk possible.

2. Notification timeline including prior to de-energization, initiation, restoration, and cancellation, if applicable. The timeline should include the required minimum timeline and approximate time notifications were sent.

Throughout the PSPS event, SCE’s goal was to notify all public safety partners, local/tribal governments, critical facilities and infrastructure, and customers in accordance with the minimum timelines set forth by the CPUC in PSPS Phase 1 Guidelines (D.19-05-042). Fast-moving weather was a root cause for many of the delayed or missed notifications. Additional complexity was added to the notification process through our commitment to minimize de-energizations. Many of the 102 circuits that were de-energized were only de-energized in part, so SCE was able to safely keep power on for some customers on these circuits. Despite these challenges, approximately 95% of all customers received at least one notification prior to de-energization. SCE remains committed to improving notification performance, and as detailed below, this performance should be notably improved with the completion of a fully automated system, scheduled for early 2022.

Please see Table 8: Notification Timeline in the attached event data workbook for a list of the notifications SCE sent for this event, including approximate times of notifications sent to local/tribal governments, public safety partners, and customers prior to potential de-energization and after the decision to cancel the de-energization or remove from scope in accordance with the minimum timelines set forth by the CPUC PSPS Phase 1 Guidelines (D.19-05-042).

3. For those customers where positive or affirmative notification was attempted, use the following table to report the accounting of the customers (which tariff and/or access and functional needs population designation), the number of notification attempts made, the timing of attempts, who made the notification attempt (utility or public safety partner) and the number of customers for whom positive notification was achieved. “Notification attempts made” and “Successful positive notification” must include the unique number of customer counts. When the actual notification attempts made is less than the number of customers that need positive notifications, the utilities must explain the reason. In addition, the utilities must explain the reason of any unsuccessful positive notifications.

Table 9: Positive Notification²⁹

Positive Notification					
Category	Total Number of Customers	Timing of Attempts	Notification Attempts	Successful Positive Notification	Who Made the Notification
Medical Baseline	9,035	Daily	9,035	9,035	SCE
Self-Certified Sensitive	398	Daily	398	398	SCE

²⁹Successful positive notification includes secondary verification by Consumer Affairs and escalated contact attempts, up to and including door knocks, if necessary.

4. A copy or scripts of all notifications with a list of all languages that each type of notification was provided in, the timing of notifications, the methods of notifications and who made the notifications (utility or public safety partners).

Scripts of all notifications are attached hereto in the Appendix as Attachment A. SCE performs all primary customer notifications and encourages public safety partners to amplify PSPS messages on their platforms as appropriate. SCE offers all notifications in the following languages: English, Spanish, Cantonese, Mandarin, Vietnamese, Tagalog, Korean, Khmer, Armenian, Farsi, Arabic, Japanese, Russian, Punjabi, Thai, Hmong, Portuguese, Hindi, French, German, Mixteco (indigenous - spoken only), Zapoteco (indigenous - spoken only), and Purapecha (indigenous - spoken only).

5. If the utility fails to provide notifications according to the minimum timelines set forth in D.19-05-042 and D.21-06-034, use the following table to report a breakdown of the notification failure and an explanation of what caused the failure.

SCE made significant efforts to notify public safety partners, local/tribal governments, critical facilities and infrastructure, and customers in accordance with the minimum timelines set forth by the CPUC in PSPS Phase 1 Guidelines (D.19-05-042), weather and other factors permitting. Any notification failures during the event are included in the following table.

Table 10: Breakdown of Notification Failure

Breakdown of Notification Failures			
Notifications sent to	Notification Failure Description	Number of Entities or Customer Counts	Explanation
Public Safety Partners excluding Critical Facilities and Infrastructure	Entities who did not receive 48- to 72-hour advance notification.	37	Not forecasted in scope by 48 hours before de-energization.
	Entities who did not receive 1- to 4-hour imminent notification.	39	Rapidly escalating weather conditions that required immediate de-energization (and, in some cases, possibly a temporary e-mail server outage) resulted in notification being sent less than 1 hour before de-energization or not being sent at all.

Breakdown of Notification Failures			
Notifications sent to	Notification Failure Description	Number of Entities or Customer Counts	Explanation
	Entities who did not receive any notifications before de-energization.	18	Rapidly escalating weather conditions that required immediate de-energization (and, in some cases, possibly a temporary e-mail server outage).
	Entities who were not notified immediately before re-energization.	20	Not sent due to missed communication between operations and notifications teams.
	Entities who did not receive cancellation notification within two hours of the decision to cancel.	0	N/A
Critical Facilities and Infrastructure	Facilities who did not receive 48- to 72-hour advance notification.	475	Not forecasted in scope as of 48 hours before de-energization; in some limited cases, not sent due to internal missed communication. (Some did receive notification at least 24 hours before de-energization).
	Facilities who did not receive 1- to 4-hour imminent notifications.	486	Rapidly escalating weather conditions that required immediate de-energization; in some limited cases, not sent due to internal missed communication.
	Facilities who did not receive any notifications before de-energization.	53	Rapidly escalating weather conditions required immediate de-energization; in some limited cases, not sent due to internal missed communication.

Breakdown of Notification Failures			
Notifications sent to	Notification Failure Description	Number of Entities or Customer Counts	Explanation
	Facilities who were not notified at de-energization initiation.	33	Not sent due to internal missed communication.
	Facilities who were not notified immediately before re-energization.	26	Not sent due to internal missed communication.
	Facilities who were not notified when re-energization is complete.	27	Not sent due to internal missed communication.
	Facilities who did not receive cancellation notification within two hours of the decision to cancel.	17	Not sent due to internal missed communication.
All other affected customers	Customers who did not receive 24- to 48-hour advance notifications.	32,177	Not forecasted in scope as of 24 hours before de-energization; in some limited cases, not sent due to internal missed communication.
	Customers who did not receive 1- to 4-hour imminent notifications.	30,866	Rapidly escalating weather conditions required immediate de-energization; in some limited cases, not sent due to internal missed communication.
	Customers who did not receive any notifications before de-energization.	3,754	Rapidly escalating weather conditions required immediate de-energization; in some limited cases, not sent

Breakdown of Notification Failures			
Notifications sent to	Notification Failure Description	Number of Entities or Customer Counts	Explanation
			due to internal missed communication.
	Customers who were not notified at de-energization initiation.	2,228	Not sent due to internal missed communication.
	Customers who were not notified immediately before re-energization.	3,173	Not sent due to internal missed communication.
	Customers who were not notified when re-energization is complete.	3,763	Not sent due to internal missed communication.
	Customers who did not receive cancellation notification within two hours of the decision to cancel.	8,977	Not sent due to internal missed communication.

6. Explain how the utility will correct the notification failures.

SCE is finalizing implementation of a new notification automation system, which will be fully in place ahead of the 2022 fire season. This system will replace manual handoffs in the notification process, which will speed responsiveness, reduce missed communications and improve accuracy.

SCE also continues to improve the accuracy and granularity of its weather and fuel modeling capabilities. These efforts will increase precision in notifications and will help to identify the scope and duration of de-energizations more accurately. More precise weather and fuels forecasts will address some of the inherent challenges in capturing details in the timing and magnitude of predicted fire weather events. These improvements will collectively help to identify the scope of where, when, and how long potential de-energizations may occur more clearly, reducing the number of “short notice” and missed notifications.

Despite these important improvements, there may still be instances where SCE is unable to meet all notification requirements due to sudden onset of unexpected weather given the differences in forecast to actual weather conditions. Furthermore, as described above, SCE is finalizing

implementation of a new notification automation system ahead of the 2022 fire season to further reduce missed notifications.

7. Enumerate and explain the cause of any false communications, citing the sources of changing data.

SCE is aware of the following situations during this PSPS event that may be viewed as “false communications,” as clarified by the Commission in D.21-06-034 (pp. 78-80).

Missed/Insufficient Notice:

- Refer to Table 8: Breakdown of Notification Failure in Section 5-5 above for specifics related to this topic.

Incorrect Notice:

- There were no incorrect notifications sent during this event.

Cancelled Notice:

- SCE used weather forecasts to determine potential circuits in scope for this PSPS event for the purposes of advance notification to customers. Once these in-scope circuits were identified, SCE further mitigated impacts to these customers as detailed in Section 10 of this report: Mitigation to Reduce Impact. These efforts decreased the final number of customers in scope for potential de-energization. There was a difference between the original scope and the final scope of this event given these mitigation measures, which resulted in SCE sending cancellation notices to 195,963 customers during this event.

Section 6. Local and State Public Safety Partner Engagement

- 1. List the organization names of public safety partners including, but not limited to, local governments, tribal representatives, first responders, emergency management, and critical facilities and infrastructure the utility contacted prior to de-energization, the date and time on which they were contacted, and whether the areas affected by the de-energization are classified as Zone 1, Tier 2, or Tier 3 as per the definition in CPUC General Order 95, Rule 21.2-D.**

Please see Table 11: Public Safety Partners Contacted in the attached event data workbook for a list of local public safety partners that received notifications related to this event.

- 2. List the names of all entities invited to the utility's Emergency Operations Center for a PSPS event, the method used to make this invitation, and whether a different form of communication was preferred by any entity invited to the utility's emergency operation center.**

SCE extends a daily invitation for agency representatives to its Emergency Operations Center (currently virtual only) during agency coordination calls with public safety partners and critical infrastructure providers. SCE also shares daily situational reports from these calls with all impacted public safety partners and critical infrastructure providers that includes contact information for requesting/receiving an agency representative to the Emergency Operations Center. All entities invited to the SCE Emergency Operations Center can be found in Table 12: Entities Invited to the SCE Emergency Operations Center in the attached the data workbook. No entities invited to the virtual Emergency Operations Center preferred a different form of communication during this event.

- 3. A statement verifying the availability to public safety partners of accurate and timely geospatial information, and real time updates to the GIS shapefiles in preparation for an imminent PSPS event and during a PSPS event.**

Before and during the PSPS event, SCE provided public safety partners with accurate and timely geospatial information and near real-time updates to GIS shapefiles via the SCE Representational State Transfer Service (REST) and on the Public Safety Partner Portal (Portal). SCE is aware of and working to resolve a limitation the Portal has in which tabular format data does not match the graphical format. SCE also made this information available to customers at www.sce.com/pmps.

- 4. A description and evaluation of engagement with local and state public safety partners in providing advanced outreach and notification during the PSPS event.**

SCE notified State public safety partners of this PSPS event by submitting the required CalOES Notification forms via the California State Warning Center (CSWC) Dashboard beginning on November 22, 2021, at 6:16 pm, with subsequent updates daily as required by the CalOES PSPS Standard Operating Guide. For the duration of this event, SCE conducted individual daily operational briefings, with State agencies, local public safety partners, and critical infrastructure providers, to provide critical incident updates and a forum for resolving issues. Table 11: Public Safety Partners Contacted in the attached event data workbook details a list of local public safety partners that received notifications related to this event.

5. Specific engagement with local communities regarding the notification and support provided to the AFN community.

SCE initially contacted representatives of local communities about the potential for this event on November 22, 2021, and maintained contact with these local representatives throughout the event to address any emergent issues. SCE also conducted daily briefing calls with the following invited Community-Based Organizations (CBOs): Regional Centers, American Red Cross, Independent Living Centers, 211 CA Network, and other CBOs supporting wildfire and emergency preparedness marketing and outreach efforts. During this event, SCE also coordinated with Independent Living Centers in impacted areas to loan batteries for two customers who use medical equipment; and United Way 211 to deliver a hot meal to a customer with disabilities.

6. Provide the following information on backup power (including mobile backup power) with the name and email address of a utility contact for customers for each of the following topics:

- a. Description of the backup generators available for critical facility and infrastructure customers before and during the PSPS.

SCE maintains a total of 20 mobile generators for use by critical facilities and infrastructure during PSPS events as needed.

- b. The capacity and estimated maximum duration of operation of the backup generators available for critical facility and infrastructure customers before and during the PSPS.

The generators SCE maintains for PSPS events are rated at 20-500 KW and have an estimated maximum duration of operation of 24 hours with a continuous fuel plan to ensure there is no interruption of power while the generators are deployed for usage.

- c. The total number of backup generators provided to critical facility and infrastructure customer's site immediately before and during the PSPS.

SCE received two inquiries related to backup generation from critical water infrastructure providers during this PSPS event. SCE worked with these entities and the respective County Offices of Emergency Management in Los Angeles and Riverside counties to evaluate these requests, which were ultimately resolved at the local level with no backup generation needing to be deployed by SCE.

- d. How the utility deployed this backup generation to the critical facility and infrastructure customer's site.

N/A. As detailed above, SCE did not deploy any backup generation to critical facility and infrastructure customers during this event.

- e. An explanation of how the utility prioritized how to distribute available backup generation.

N/A. As detailed above, SCE did not deploy any backup generation to critical facility and infrastructure customers during this event.

- f. Identify the critical facility and infrastructure customers that received backup generation.

N/A. As detailed above, SCE did not deploy any backup generation to critical facility and infrastructure customers during this event.

Any questions related to the information under this item may be directed to SCE at the following e-mail address: SCEBCDCustomersupport@sce.com.³⁰

³⁰ Although there is no designated contact person for questions, this e-mail inbox is monitored by SCE's Business Customer Division.

Section 7. Complaints and Claims

- 1. The number and nature of complaints received as the result of the de-energization event and claims that are filed against the utility because of de-energization. The utility must completely report all the informal and formal complaints, meaning any expression of grief, pain, or dissatisfaction, from various sources, filed either with CPUC or received by the utility as a result of the PSPS event.**

As of December 8th, there were 3,591 complaints and 477 claims associated with this PSPS event as detailed below. SCE will include any complaints or claims received after the filing of date of this report in its annual post-season report.

Table 13: Count and Nature of Complaints Received

Count and Nature of Complaints Received	
Nature of Complaints	Number of Complaints
PSPS Frequency/Duration Including, but not limited to complaints regarding the frequency and/or duration of PSPS events, including delays in restoring power, scope of PSPS and dynamic of weather conditions.	91
Safety/Health Concern Including, but not limited to complaints regarding difficulties experienced by AFN/MBL populations, traffic accidents due to non-operating traffic lights, inability to get medical help, well water or access to clean water, inability to keep property cool/warm during outage raising health concern	49
Communications/Notifications Including, but not limited to complaints regarding lack of notice, excessive notices, confusing notice, false alarm notice, problems with getting up-to-date information, inaccurate information provided, not being able to get information in the prevalent languages and/or information accessibility, complaints about website, Public Safety Partner Portal, REST/DAM sites (as applicable)	73
Outreach/Assistance Including, but not limited to complaints regarding community resource centers, community crew vehicles, backup power, hotel vouchers, other assistance provided by utility to mitigate impact of PSPS	2
General PPS Dissatisfaction/Other Including, but not limited to complaints about being without power during PPS event and related hardships such as food loss, income loss, inability to work/attend school, plus any PPS-related complaints that do not fall into any other category.	3376
Total	3591

Table 14: Count and Type of Claims Received

Count and Type of Claims Received	
Description of Claims	Number of Claims
Food loss only	405
Property damage	14
Food loss and property damage	12
Evacuation cost	9
Business interruption / economic Loss	4
Unspecified	33
Total	477

Section 8. Power Restoration Timeline

1. A detailed explanation of the steps the utility took to restore power, including the timeline for power restoration, broken down by phase if applicable.

SCE started re-energization process on individual circuits and partial circuits as soon as the weather threat cleared the local geographic area, even if the weather threat required simultaneous de-energizations in other areas. All restorations are subject to safety considerations, including safety risks associated with patrolling certain circuits at night.

On Wednesday night, November 24, (as discussed in Section 2.5) 428 customers on the Impala circuit were brought back online by a backup generator at 6:18 pm. Customers on the Sand Canyon, Energy, and Blackhills circuits (608 total) were restored to service around 8 pm and customers on the Tahquitz and Taiwan circuits (130 total) were restored by 10:12 pm. A total of 265 customers on the Morganstein circuit were restored at 11:29 pm. An additional 1605 customers on this circuit were restored at 6:42 on the morning of November 25. (The remaining 424 customers on the Morganstein circuit required daylight air patrol after unsafe wind conditions had subsided and were restored on the morning of November 26th.) Windy conditions on November 25th were too unsafe for any air patrol. All air patrols, if required, could not be safely conducted until Friday, November 26th.

In the overnight period (November 24-November 25), circuits were still being de-energized in all affected counties as high winds, low relative humidity, and dry fuel conditions posed extreme fire risk. Weather conditions stabilized (albeit still posing high risk for the currently de-energized communities) around 5 am. Broadcast and Boulder circuits were restored by 10 am and noon, respectively. A total of 429 customers on the Arabia circuit were restored by being transferred to the neighboring Qatar circuit at 8:31 am.

From 1:00 pm, November 25, to 2:00 am, November 26, SCE's meteorologists reviewed and confirmed the fire threat had subsided for 96 de-energized circuits or circuit segments. By 6:00 am on November 26, SCE restored power to just over 48,000 customers. Customers on 18 of these circuits required air patrol, which delayed restoration until air patrol could be safely conducted during the daylight hours of November 26th.

As of 9:00 pm on November 25, seven circuits continued to be forecast to exceed thresholds: Angus, Avanti, Calstate, Energy, La Grande, Northpark, and Sand Canyon. However, actual wind conditions varied for individual circuits through 2 am.

The final circuits to be out of the period of concern based on actual wind conditions were the Sutt, Crestline, and Sand Canyon circuit in the 10 o'clock hour of Friday morning. With air patrols underway, the final circuits authorized for patrol and restoration, and repairs being made to damaged circuits, SCE restored power to all but one circuit segment by 4:15 pm. The last 243 de-energized customers on one segment of the Sebastian circuit were restored at 7:48 pm, after discovering a device that remained opened.

2. For any circuits that require more than 24 hours to restore, the utility shall use the following table to explain why it was unable to restore each circuit within this timeframe.

Table 15: Circuits Requiring More Than 24 Hours to Restore

Circuits Requiring more than 24 hours to restore	
Circuit Name	Reason the utility was unable to restore the circuit within 24 hours
BROADCAST	Needed Air Patrol that was unsafe to start until following day (November 26) due to weather.
MORGANSTEIN	Extended time needed to patrol due to circuit's terrain. Weather Services released Morganstein on November 24 with caveat that winds may pick back up. Most customers were re-energized in the morning on November 25, with the last line section requiring air patrol, and was re-energized early morning on November 26.
SEBASTIAN	Most of the Sebastian circuit was re-energized on November 25 at 11:54 pm, but an isolation device remained open impacting 243 customers. On November 26, SCE safely closed the device at 7:48 pm, restoring power to the remaining 243 customers on the Sebastian circuit.

Section 9. Community Resource Centers

- Using the following table, report information including the address of each location during a de-energization event, the location (in a building, a trailer, etc.), the assistance available at each location, the days, and hours that it was open, and attendance (i.e., number of visitors).

Table 16: Community Resource Centers

Community Resource Centers				
Address	Location Type	Describe the assistance available	Hours of Operation (Date / Time)	Number of Visitors
Bear Valley Police Dept. - 2519 Bear Valley Rd., Tehachapi, CA 93001	CRC	Small portable device charging (such as a cell phone, laptop and small medical devices), seasonal heating and cooling, ice vouchers or ice, water, snacks, blankets and wood as needed, and customer resiliency kits	11/24/21 - 11AM to 10PM, 11/25/21 - 8AM to 12PM	76
Bluff Park – 24250 Pacific Coast Hwy., Malibu, CA 90265	CCV	Small portable device charging (such as a cell phone, laptop and small medical devices), seasonal heating and cooling, ice vouchers or ice, water, snacks, blankets and wood as needed, and customer resiliency kits	11/25/21 - 5PM to 10PM, 11/26/21 - 8AM to 4:30PM	71
Acton Community Center - 3748 Nickels St., Acton, CA 93510	CRC	Small portable device charging (such as a cell phone, laptop and small medical devices), seasonal heating and cooling, ice vouchers or ice, water, snacks, blankets and wood as needed, and customer resiliency kits, 2.5 water gallons	11/24/21 - 11AM to 10PM 11/25/21 - 8AM to 10PM 11/26/21 - 8AM to 4:30PM	79
Chatsworth Lake Church parking lot - 23449 Lake Manor Dr., Chatsworth, CA 91311	CCV	Small portable device charging (such as a cell phone, laptop and small medical devices), seasonal heating and cooling, ice vouchers or ice, water, snacks, blankets and wood as needed, and customer resiliency kits	11/24/21 - 11AM to 10PM 11/25/21 - 8AM to 10PM 11/26/21 - 8AM to 4:30PM	166

Community Resource Centers				
Address	Location Type	Describe the assistance available	Hours of Operation (Date / Time)	Number of Visitors
Residence Inn - 25320 The Old Rd., Stevenson Ranch, CA 91381	CRC	Small portable device charging (such as a cell phone, laptop and small medical devices), seasonal heating and cooling, ice vouchers or ice, water, snacks, blankets and wood as needed, and customer resiliency kits	11/24/21 - 11AM to 10PM	0
San Fernando Community Center - 208 Park Ave., San Fernando, CA 91340	CRC	Small portable device charging (such as a cell phone, laptop and small medical devices), seasonal heating and cooling, ice vouchers or ice, water, snacks, blankets and wood as needed, and customer resiliency kits	11/24/21 - 11AM to 10PM 11/25/21 - 8AM to 10PM 11/26/21 - 8AM to 4:30PM	194
Library of the Canyons (parking lot) - 7531 E. Santiago Canyon Rd., Silverado, CA 92676	CCV	Small portable device charging (such as a cell phone, laptop and small medical devices), seasonal heating and cooling, ice vouchers or ice, water, snacks, blankets and wood as needed, and customer resiliency kits	11/24/21 - 11AM to 10PM 11/25/21 - 8AM to 10PM 11/26/21 - 8AM to 2PM	235
San Jacinto Community Ctr. - 625 Pico Ave., San Jacinto, CA 92583	CRC	Small portable device charging (such as a cell phone, laptop and small medical devices), seasonal heating and cooling, ice vouchers or ice, water, snacks, blankets and wood as needed, and customer resiliency kits	11/24/21 - 11AM to 10PM 11/25/21 - 8AM to 10PM 11/26/21 - 8AM to 4:30PM	185
James A Venable Community Center - 50390 Carmen Ave., Cabazon, CA 92230	CRC	Small portable device charging (such as a cell phone, laptop and small medical devices), seasonal heating and cooling, ice vouchers or ice, water, snacks, blankets and wood as needed, and customer resiliency kits	11/24/21 - 11AM to 10PM 11/25/21 - 8AM to 10PM 11/26/21 - 8AM to 4:30PM	233

Community Resource Centers				
Address	Location Type	Describe the assistance available	Hours of Operation (Date / Time)	Number of Visitors
CSUSB - Parking Lot D - 5500 University Park, San Bernardino, CA 92407	CCV	Small portable device charging (such as a cell phone, laptop and small medical devices), seasonal heating and cooling, ice vouchers or ice, water, snacks, blankets and wood as needed, and customer resiliency kits	11/24/21 - 11AM to 10PM 11/25/21 - 8AM to 10PM 11/26/21 - 8AM to 4:30PM	155
Jessie Turner Community Center - 15556 Summit Ave., Fontana, CA 92336	CRC	Small portable device charging (such as a cell phone, laptop and small medical devices), seasonal heating and cooling, ice vouchers or ice, water, snacks, blankets and wood as needed, and customer resiliency kits	11/24/21 - 11AM to 10PM 11/25/21 - 8AM to 10PM 11/26/21 - 8AM to 4:30PM	181
Moorpark City Hall - 799 Moorpark Ave., Moorpark, CA 93021	CCV	Small portable device charging (such as a cell phone, laptop and small medical devices), seasonal heating and cooling, ice vouchers or ice, water, snacks, blankets and wood as needed, and customer resiliency kits	11/24/21 - 11AM to 10PM 11/25/21 - 8AM to 10PM 11/26/21 - 8AM to 4:30PM	161
Fillmore Active Adult & Community Center - 533 Santa Clara St., Fillmore, CA 93015	CRC	Small portable device charging (such as a cell phone, laptop and small medical devices), seasonal heating and cooling, ice vouchers or ice, water, snacks, blankets and wood as needed, and customer resiliency kits	11/24/21 - 11AM to 10PM 11/25/21 - 8AM to 10PM 11/26/21 - 8AM to 4:30PM	435

2. Any deviations and explanations from the CRC requirement including operation hours, ADA accessibility, and equipment.

SCE deviates from the CRC normal hours of operation of 8 am to 10 pm during PSPS events, as applicable, to either follow the period of concern more closely and provide appropriate customer support to best meet the needs of the community or when circuits have been re-energized and customer support is no longer necessary. Any deviations to these hours are noted in the table above.

During this event, the circuits in the Kern County area were removed from scope ahead of the period of concern on November 25th. SCE demobilized the CRC at the Bear Valley Police Department and

Section 10. Mitigation to Reduce Impact

1. Mitigation actions and impacts (both waterfall graph and map) including: sectionalization devices, temporary generation, microgrids, permanent backup generation, transmission switching, covered conductor, and any other grid hardening that mitigated the impact of the event

Absent mitigations, and under the same weather conditions, it may have been necessary to de-energize nearly 283,454 customers. For many of these, we were able to keep the entire circuits energized through pre-event mitigations such as covered conductor. With mitigations, SCE was able to limit de-energizations to 78,514 customers. (See waterfall graph below showing customer impact on circuits that experienced total or partial de-energization.)

Circuit Switching: Prior to the period of concern, SCE used circuit playbooks to identify sectionalizing devices that could reduce the number of customers in scope for PSPS. In total, approximately 7,800 customers were transferred and maintained service. One to two days prior to the period of concern, SCE transferred customers from eight circuits to adjacent circuits (some of these were transferred during the previous PSPS event). The waterfall graph below accounts for customers mitigated from these transfers only if another portion of the circuit was de-energized during the event. These circuits included:

- Acosta
- Arlene (underground portion)
- Big Rock circuit (portion)
- Hillfield
- Honeycrisp (underground portion)
- Northpark (underground portion)
- Sand Canyon
- Twin Lakes circuits

Covered Conductor: The replacement of bare wire with covered conductor reduced de-energization impacts to 22,434 customers on portions of 30 circuits. This analysis is limited to the circuits actually de-energized during the event and the benefits quantified in the waterfall graph below represent those customers where de-energization was avoided. Additional benefits—such as full circuits that avoided de-energization due to covered conductor—are not included here but will be included in the annual post season report due in 2022. For this event, mitigation from covered conductor included segments of the following circuits:

- Amethyst
- Anton
- Atento
- Bootlegger
- Buckhorn
- Calstate
- Chawa
- Condor
- Dartmouth
- Davenport
- Duke
- Dysart
- Echo
- Energy
- Estaban
- Gnatcatcher
- Impala
- Lopez
- Loucks
- Napoleon
- Northpark
- Pheasant
- Pick
- Rainbow
- Sand Canyon
- Shovel
- Stubby
- Tapo
- Vargas
- Zone

Sectionalizing Devices (used in combination with higher resolution situational awareness data): This allowed SCE to increase the de-energization thresholds or fully eliminate portions of 15 circuits removing 19,004 customers from scope. These included portions or all of:

- Angus
- Cassidy
- Nepal
- Stores
- Anton
- Echo
- Northpark
- Twin Lakes
- Balcom
- Hillfield
- Rosa
- Verdemont
- Calstate
- Iran
- Santorini

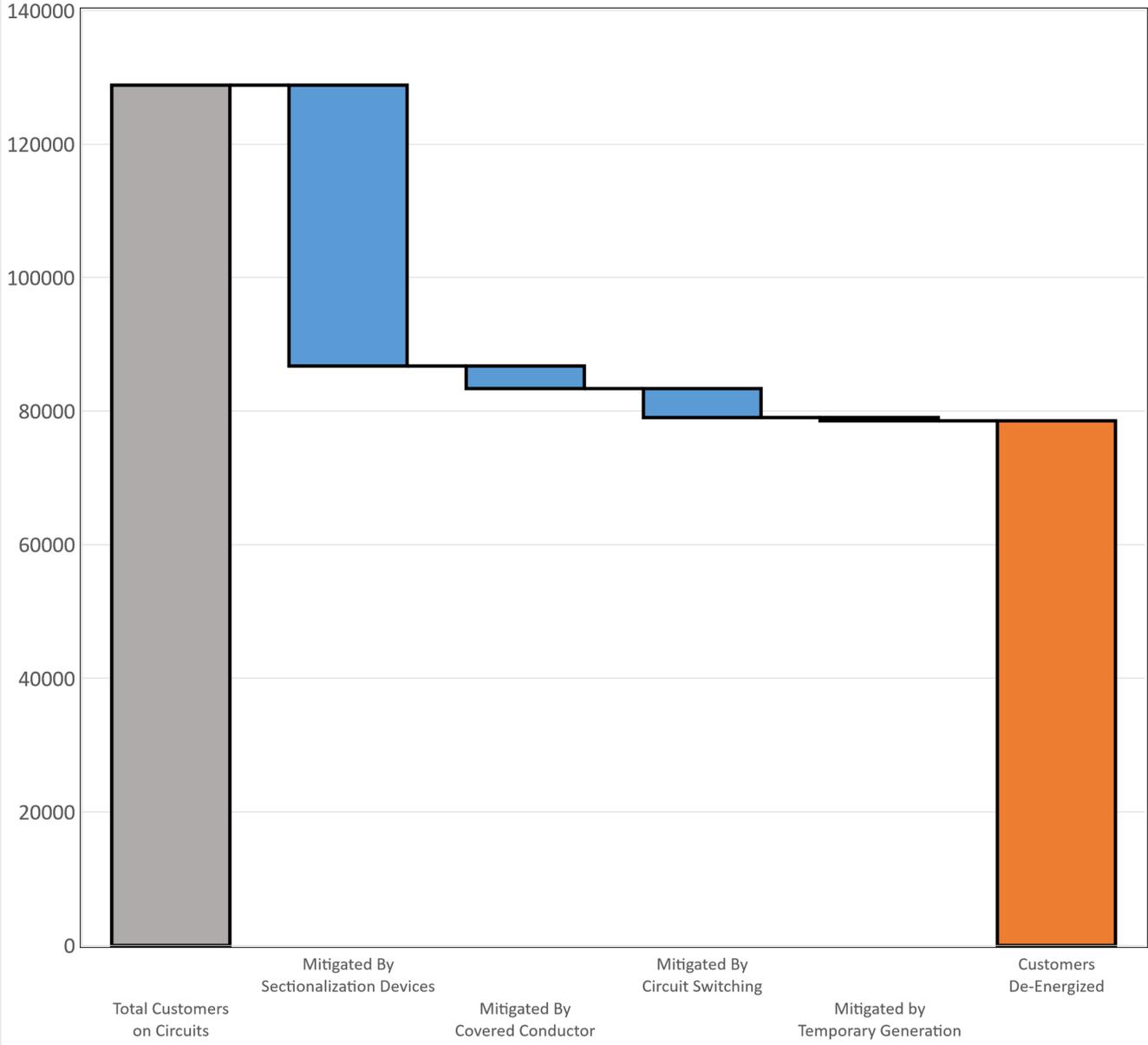
Temporary Generation: SCE switched customers in scope to a portion of the Impala circuit that was served by a backup generator. This restored 428 customers.³¹

The waterfall graph below shows the impact of measures that mitigated the scope of the PSPS event for the circuits listed in Table 5.

³¹ Customers picked up by backup generation are labeled in the waterfall graph as mitigated due to shortened duration of an outage that was experienced, and also shown in orange to depict that they were de-energized for a brief time. These 428 customers and the respective outage are reported throughout the document as an outage due to the timeframe between the initial de-energization and the time the generator was online.

11-24-2021 Event

Total Customers on Complete or Partially De-Energized Circuits;
 Impact Reductions from Mitigations;
 and Final De-Energized Customer Count



The mitigation impact maps included as Attachment D show the impacts of the above-described mitigation actions on each circuit where some form of mitigation was successfully deployed to limit the scope of de-energization. The shaded areas identify segments of each circuit that remained safely energized as a result of mitigation measures such as sectionalization. The circuit segments that had to be de-energized are identified by the crosshatched overlay.

Section 11. Lessons Learned

1. Threshold analysis and the results of the utility’s examination of whether its thresholds are adequate and correctly applied in the de-energized areas.

SCE believes our thresholds are adequate and correctly applied in de-energized areas as detailed in Attachment B - Quantitative and Qualitative Factors in PSPS Decision-Making Technical Paper.

2. Any lessons learned that will lead to future improvement for the utility.

Table 17: Lessons Learned

Lessons Learned		
Issue	Discussion	Resolution
Notification and Stakeholder Engagement	<p>This event escalated rapidly and the focus on de-energizing partial circuits when possible added complexity. The new automation to handle the complexity is not yet implemented across all workstreams. This complexity led to some delayed and missed customer and public safety partners notifications, and inconsistent reporting to state agencies.</p> <p>Additionally, the rapid increase in wind speed intensity introduced notification challenges for circuits that were not initially forecast to reach de-energization thresholds, but ultimately needed to be de-energized.</p>	<p>SCE’s expected adoption of fully integrated automated tools (Foundry system) across workstreams.</p> <p>In 2022, SCE will continue to refine its weather forecasting capabilities, developing approximately 500 additional machine learning technology (Artificial Intelligence) weather models to help improve estimations of wind speeds at specific locations where PSPS has occurred most frequently in prior wildfire seasons.</p>
Restoration Planning	<p>The Period of Concern for most circuits ended Thursday evening, but most restoration was not completed until Friday, including 9 circuits not approved for re-energization until completion of air operations.</p>	<p>SCE to examine air operations protocols for timely inspections and reporting. SCE to analyze whether some circuits could be patrolled sooner using foot patrols.</p>
Resource Availability	<p>CRC/CCV deployment was limited by resource constraints during event expansion: 3 additional CRCs/CCVs were requested during the event; one was provided. Additionally, logistics delays led to some supply shortages on Friday.</p>	<p>SCE to determine staff augmentation solutions and address gaps in logistics process for CRC/CCV supplies.</p>
Customer Engagement	<ul style="list-style-type: none"> • There were anecdotal complaints about wait times on 211 referral service lines. • SCE automated customer contact center messaging (IVR) seemed to suggest the call center was closed for the holiday • Notification language describing 3- to 8-hour “typical restoration time” did not account for slower overnight restoration or need for daylight patrols on certain hard-to-reach circuits 	<ul style="list-style-type: none"> • SCE to examine 211 responsiveness. • SCE will change messaging protocol for IVR messages over holidays to clarify that contact center is open 24/7 for outages and emergencies, including PSPS. • SCE will update restoration time notification messaging in 2022 after-season notifications review.

Section 12. Other Relevant Information

1. This section includes any other relevant information determined by the utility.

SCE has instituted an engagement survey process to capture feedback from State and county public safety partners and critical infrastructure customers during PSPS events. SCE encourages these stakeholders to provide survey feedback in daily coordination calls and emails links to the engagement survey once the event has concluded. Nine participants completed SCE’s engagement survey; five participants rated the engagement as fair or better; four rated it as poor.

Agency Type (Single Choice)

What type of agency do you represent?

Total: 9 responses

Total	9
1 Emergency Management	44%
2 Fire	0%
3 Law	0%
4 Local government	22%
5 State government	0%
6 Telecommunications	0%
7 Tribal government	11%
8 Waste-Water	0%
9 Water	0%
10 Other type of agency	22%

Overall Engagement Rating (Single Choice)

How would you rate our overall engagement with you during this PSPS event?

By engagement we mean all our interactions with you (i.e., across all briefings, your SCE emergency management contact(s), and the SCE portal) and the information we shared with you during all those interactions.

Total: 9 responses

	Total
Total	9
1 Poor	44%
2 Fair	22%
3 Average	11%
4 Good	0%
5 Excellent	22%

Appendix

Attachment A-Public Safety Partner and Customer Notification Scripts

Initial (72-hour) LNO Notification

Description:

Sent one time per county, preferably starting 72 hours in advance of a possible PSPS event, when possible, alerting contacts that our weather specialists forecast potential extreme weather ahead. Includes the Situational Awareness (SA) spreadsheet with information about weather event timing and circuits and locations that could be impacted. Sent to all impacted jurisdictions and other LNO contacts, grouped by county.

Notification Subject Line and Message

SCE Initial Notice for PSPS Event in COUNTY NAME on [start POC DATE].

Public Safety Power Shutoff initial notification for official use: Due to projected fire weather conditions, we may need to shut off power in high fire risk areas in COUNTY NAME. Please refer to the attached spreadsheet for status and periods of concern for specific circuits.

We are working to reduce the number of customers affected and weather patterns might change, so **not all circuits on the watch list will have their power shut off.**

Customers on the affected circuits will be notified starting two days before the forecasted start date, however the maps on sce.com/pmps will reflect this information today.

We have set up an incident management team for this event including in-house meteorologists, fire scientists, liaison and public information officers, and other technical staff.

Recommended Language to Share with the Public: *SCE is forecasting dangerous wind-driven fire conditions starting in the next three days and might need to shut off power during this time. For more information, visit sce.com/PSPS.*

Message cadence: The SCE Liaison Officer provides a rolling three-day advance warning of potential PSPS events, when possible, and sends update notifications every day. We will also notify you with time-sensitive shutoff and restoration information at the circuit level. Sudden weather changes may impact SCE's ability to provide advanced notice: a shutoff could occur sooner than anticipated.

Spreadsheet content: All circuits currently on the watch list in your county are listed in the attached spreadsheet. As the weather forecast becomes more exact, additional circuits could be added or removed from our watch lists. Circuits marked *Updated Period of Concern* in the Circuit Notification Status column will have new periods of concern or other changed status. Definitions are on the second tab of the spreadsheet. Please email SCELiaisonOfficer@sce.com with concerns or questions about the spreadsheet.

Weather forecasting: SCE's forecasting relies on in-house meteorologists and fire scientists. SCE may notify for a potential PSPS in advance of Red Flag Warnings being declared by the National Weather Service, and weather forecasts on radio and television may provide different information.

Online outage information: Information and maps are available at [sce.com/PSPS](https://www.sce.com/PSPS) starting three days before the forecasted start date. If an outage does not appear on the PSPS map, it might be a weather-related or repair outage in the same area. These are mapped and listed at [sce.com/outages](https://www.sce.com/outages).

For More Information:

[Public Safety Partner Portal](#) (available June 1, 2021)

PDFs of High Fire Risk Area (HFRA) circuit maps and GIS layers: [sce.com/maps](https://www.sce.com/maps).

Weather conditions: [sce.com/fireweather](https://www.sce.com/fireweather).

Post-PSPS reports: [sce.com/psp](https://www.sce.com/psp).

REST service (web-based password-protected access to GIS layers), contact: SCERestInfo@sce.com

SCE Contact Information for Public Officials only (Please DO NOT share with the public)

First Responders and Emergency Managers:

Phone: Business Resiliency Duty Manager 24/7 hotline: **(800) 674-4478**

Email: Business Resiliency Duty Manager/emergencies: BusinessResiliencyDutyManager@sce.com--

Only monitored during emergency activations.

Government/tribal officials:

Phone: Liaison (government relations) 24/7 hotline: 800-737-9811. Only monitored during emergency activations.

Email: SCELiaisonOfficer@sce.com. **Note: Only monitored during emergency activations.**

SCE Contact Information for the Public: (Please DO share this information via web and social media).

Outage-specific customer service issues: 800-611-1911

Billing and service inquiries: 800-684-8123

PSPS event status: [sce.com/PSPS](https://www.sce.com/PSPS)

Non-PSPS outages: [sce.com/outages](https://www.sce.com/outages)

Update customer contact information: [sce.com/pspsalerts](https://www.sce.com/pspsalerts).

Updated Conditions (Update) Notification

Description:

Sent once daily after the Initial Notification to provide updates as the period of concern approaches. Includes the Situational Awareness (SA) spreadsheet with information about weather event timing and circuits and locations that could be/are impacted. Sent to all impacted jurisdictions, grouped by county.

Notification Subject Line and Message:

SCE Update Notice for PSPS Event in [County Name].

Public Safety Power Shut-Off update notification for official use: We are providing ongoing information and periods of concern for PSPS circuits in [County Name], based on updated weather reports. A complete list, including both the forecasted start and end times for all circuits is attached.

Customers on the affected circuits are being updated if they are within two days of the period of concern, or if there has been a change to their status. The map on sce.com/psps is being continually updated to reflect current status.

Information about Community Resource Centers and Community Crew Vehicles will be available one day in advance of the period of concern at sce.com/psps.

Recommended Language to Share with the Public: *SCE is forecasting dangerous wind-driven fire conditions and might need to shut off power. For more information, visit sce.com/PSPS.*

Message cadence: The SCE Liaison Officer provides a rolling three-day advance warning of potential PSPS events, when possible, and sends update notifications every day. We will also notify you with time-sensitive shutoff and restoration information at the circuit level. Sudden weather changes may impact SCE's ability to provide advanced notice: a shutoff could occur sooner than anticipated.

Spreadsheet content: All circuits currently on the watch list in your county are listed in the attached spreadsheet. As the weather forecast becomes more exact, additional circuits could be added or removed from our watch lists. Circuits marked *Updated Period of Concern* in the Circuit Notification Status column will have new periods of concern or other changed status. Definitions are on the second tab of the spreadsheet. Please email SCELiaisonOfficer@sce.com with concerns or questions about the spreadsheet.

Weather forecasting: SCE's forecasting relies on in-house meteorologists and fire scientists. SCE may notify for a potential PSPS in advance of Red Flag Warnings being declared by the National Weather Service, and weather forecasts on radio and television may provide different information.

Online outage information: Information and maps are available at sce.com/PSPS starting three days before the forecasted start date. If an outage does not appear on the PSPS map, it might be a weather-related or repair outage in the same area. These are mapped and listed at sce.com/outages.

For More Information:

[Public Safety Partner Portal](#) (available June 1, 2021)

PDFs of High Fire Risk Area (HFRA) circuit maps and GIS layers: sce.com/maps.

Weather conditions: sce.com/fireweather.

Post-PSPS reports: sce.com/psps.

REST service (web-based password-protected access to GIS layers), contact: SCERestInfo@sce.com

SCE Contact Information for Public Officials only (Please DO NOT share with the public)

First Responders and Emergency Managers:

Phone: Business Resiliency Duty Manager 24/7 hotline: **(800) 674-4478**

Email: Business Resiliency Duty Manager/emergencies: BusinessResiliencyDutyManager@sce.com--
Only monitored during emergency activations.

Government/tribal officials:

Phone: Liaison (government relations) 24/7 hotline: 800-737-9811. Only monitored during emergency activations.

Email: SCELiaisonOfficer@sce.com. **Note: Only monitored during emergency activations.**

SCE Contact Information for the Public: (Please DO share this information via web and social media).

Outage-specific customer service issues: 800-611-1911

Billing and service inquiries: 800-684-8123

PSPS event status: sce.com/PSPS

Non-PSPS outages: sce.com/outages

Update customer contact information: sce.com/pspsalerts.

Expected De-Energize Notification (previously: Imminent De-Energization)

Description:

Sent up to 4 hours in advance of expected power shut off, when possible, for specific circuit(s). No spreadsheet attachment, all content is on the body of the notification. Sent to all impacted jurisdictions.

Note: as of 5/15/2021 we still don't have a way to eliminate duplicate notifications when a circuit crosses county lines – all jurisdictions are included with each notification sent for a circuit.

Notification Subject Line and Message:

SCE Expected Shutoff Notice for PSPS Event in County Name.

Public Safety Power Shutoff update notification for official use: SCE may need to shut off power in the next 4 hours to reduce the risk of wildfire ignition. Areas that may be impacted include:

Circuit: [CIRCUIT name]

County:

Segment: [if listed]

Incorporated City of:

Unincorporated County Area:

Shutoffs may occur earlier or later depending on actual weather conditions.

This notice expires after 4 hours; however, the listed circuit(s) will remain on the watch list and will be subject to PSPS until the conclusion of this weather event.

Customers on the affected circuits are being notified. Information about Community Resource Centers and Community Crew Vehicles is available at [sce.com/psps](https://www.sce.com/psps).

Recommended Language to Share with the Public: *Due to current weather conditions increasing the risk of wildfires, SCE may shut off power on specific circuits within the next 4 hours to protect public safety. Visit [sce.com/PSPS](https://www.sce.com/PSPS) for more information about the shutoffs and SCE's available customer care options.*

Message cadence: The SCE Liaison Officer provides a rolling three-day advance warning of potential PSPS events, when possible, and sends update notifications every day. We will also notify you with time-sensitive shutoff and restoration information at the circuit level. Sudden weather changes may impact SCE's ability to provide advanced notice: a shutoff could occur sooner than anticipated.

Spreadsheet content: All circuits currently on the watch list in your county are listed in the attached spreadsheet. As the weather forecast becomes more exact, additional circuits could be added or removed from our watch lists. Circuits marked *Updated Period of Concern* in the Circuit Notification Status column will have new periods of concern or other changed status. Definitions are on the second tab of the spreadsheet. Please email SCELiaisonOfficer@sce.com with concerns or questions about the spreadsheet.

Weather forecasting: SCE's forecasting relies on in-house meteorologists and fire scientists. SCE may notify for a potential PSPS in advance of Red Flag Warnings being declared by the National Weather Service, and weather forecasts on radio and television may provide different information.

Online outage information: Information and maps are available at [sce.com/PSPS](https://www.sce.com/PSPS) starting three days before the forecasted start date. If an outage does not appear on the PSPS map, it might be a

weather-related or repair outage in the same area. These are mapped and listed at [sce.com/outages](https://www.sce.com/outages).

For More Information:

[Public Safety Partner Portal](#) (available June 1, 2021)

PDFs of High Fire Risk Area (HFRA) circuit maps and GIS layers: [sce.com/maps](https://www.sce.com/maps).

Weather conditions: [sce.com/fireweather](https://www.sce.com/fireweather).

Post-PSPS reports: [sce.com/psp](https://www.sce.com/psp).

REST service (web-based password-protected access to GIS layers), contact: SCERestInfo@sce.com

SCE Contact Information for Public Officials only (Please DO NOT share with the public)

First Responders and Emergency Managers:

Phone: Business Resiliency Duty Manager 24/7 hotline: **(800) 674-4478**

Email: Business Resiliency Duty Manager/emergencies: BusinessResiliencyDutyManager@sce.com--

Only monitored during emergency activations.

Government/tribal officials:

Phone: Liaison (government relations) 24/7 hotline: 800-737-9811. Only monitored during emergency activations.

Email: SCELiaisonOfficer@sce.com. **Note: Only monitored during emergency activations.**

SCE Contact Information for the Public: (Please DO share this information via web and social media).

Outage-specific customer service issues: 800-611-1911

Billing and service inquiries: 800-684-8123

PSPS event status: [sce.com/PSPS](https://www.sce.com/PSPS)

Non-PSPS outages: [sce.com/outages](https://www.sce.com/outages)

Update customer contact information: [sce.com/pspsalerts](https://www.sce.com/pspsalerts).

Shutoff Notification (De-energization notification)

Description:

Sent after a PSPS power shut off has been authorized for specific circuit(s). No spreadsheet attachment, all content is on the body of the notification. In 2021 these no longer include the official date/time of the de-energization. Sent to all impacted jurisdictions, grouped by County.

Notification Subject Line and Message:

SCE Shutoff Notice for PSPS Event on [CIRCUIT NAME] Circuit in [COUNTY NAME].

Public Safety Power Shutoff update notification for official use: SCE is shutting off power to reduce the risk of wildfire ignition.

Impacted circuits and locations are:

Circuit: [CIRCUIT name]

County: [COUNTY NAME].

Segment: *If entered in Pega*

Incorporated City of: [Incorporated City]

Unincorporated County Area: [unincorporated area description]

SCE is notifying customers who are being shut off. The map on sce.com/pmps are being updated to reflect the current PSPS outages. [Information about Community Resource Centers and Community Crew Vehicles](#) is available at sce.com/pmps.

When weather conditions improve, crews will inspect and repair the lines and restore power. Typically power is restored 3 to 8 hours after the end of the weather event.

Recommended Language to Share with the Public: *Power has been shut off as part of public safety power shutoffs in our area. Please remember that all non-working traffic lights should be considered 4-way stop signs. Visit sce.com/PSPS for more information about the shutoffs and SCE's available customer care options.*

Message cadence: The SCE Liaison Officer provides a rolling three-day advance warning of potential PSPS events, when possible, and sends update notifications every day. We will also notify you with time-sensitive shutoff and restoration information at the circuit level. Sudden weather changes may impact SCE's ability to provide advanced notice: a shutoff could occur sooner than anticipated.

Spreadsheet content: All circuits currently on the watch list in your county are listed in the attached spreadsheet. As the weather forecast becomes more exact, additional circuits could be added or removed from our watch lists. Circuits marked *Updated Period of Concern* in the Circuit Notification Status column will have new periods of concern or other changed status. Definitions are on the second tab of the spreadsheet. Please email SCELiaisonOfficer@sce.com with concerns or questions about the spreadsheet.

Weather forecasting: SCE's forecasting relies on in-house meteorologists and fire scientists. SCE may notify for a potential PSPS in advance of Red Flag Warnings being declared by the National Weather Service, and weather forecasts on radio and television may provide different information.

Online outage information: Information and maps are available at sce.com/PSPS starting three days before the forecasted start date. If an outage does not appear on the PSPS map, it might be a weather-related or repair outage in the same area. These are mapped and listed at sce.com/outages.

For More Information:

[Public Safety Partner Portal](#) (available June 1, 2021)

PDFs of High Fire Risk Area (HFRA) circuit maps and GIS layers: [sce.com/maps](https://www.sce.com/maps).

Weather conditions: [sce.com/fireweather](https://www.sce.com/fireweather).

Post-PSPS reports: [sce.com/psps](https://www.sce.com/psps).

REST service (web-based password-protected access to GIS layers), contact: SCERestInfo@sce.com

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Email: Business Resiliency Duty Manager/emergencies: BusinessResiliencyDutyManager@sce.com--

Only monitored during emergency activations.

Government/tribal officials:

Phone: Liaison (government relations) 24/7 hotline: 800-737-9811. Only monitored during emergency activations.

Email: SCELiaisonOfficer@sce.com. **Note: Only monitored during emergency activations.**

SCE Contact Information for the Public: (Please DO share this information via web and social media).

Outage-specific customer service issues: 800-611-1911

Billing and service inquiries: 800-684-8123

PSPS event status: [sce.com/PSPS](https://www.sce.com/PSPS)

Non-PSPS outages: [sce.com/outages](https://www.sce.com/outages)

Update customer contact information: [sce.com/pspsalerts](https://www.sce.com/pspsalerts).

Patrol and Inspection (formerly: imminent re-en)

Description:

Sent once inspections are underway and with 1-hour advance notice of expected power restoration, when possible, for specific circuit(s). No spreadsheet attachment, all content is on the body of the notification. Sent to all impacted jurisdictions, grouped by County.

Notification Subject Line and Message:

SCE is inspecting [CIRCUIT NAME] Circuit in [COUNTY NAME] for PSPS restoration.

Public Safety Power Shutoff update notification for official use: Our crews are inspecting the following circuits or circuit segments to restore power as soon as it is safe to do so:

Circuit: [CIRCUIT name]

Segment(s): *if entered in Pega*

Incorporated City: [incorporated city]

Unincorporated County Area: [unincorporated area description]

Typically, power is restored in 3-8 hours. Exceptions include circuits in remote areas and circuits that have sustained significant damage.

SCE is notifying customers. The map on sce.com/psps will be updated to reflect the current status.

Recommended Language to Share with the Public: *SCE is inspecting its lines and, in most cases, will restore power within 3-8 hours. Exceptions include circuits in remote areas and circuits that have sustained significant damage. Please remember to treat all traffic lights that are out as 4-way stops. Visit sce.com/PSPS for more information.*

Message cadence: The SCE Liaison Officer provides a rolling three-day advance warning of potential PSPS events, when possible, and sends update notifications every day. We will also notify you with time-sensitive shutoff and restoration information at the circuit level. Sudden weather changes may impact SCE's ability to provide advanced notice: a shutoff could occur sooner than anticipated.

Spreadsheet content: All circuits currently on the watch list in your county are listed in the attached spreadsheet. As the weather forecast becomes more exact, additional circuits could be added or removed from our watch lists. Circuits marked *Updated Period of Concern* in the Circuit Notification Status column will have new periods of concern or other changed status. Definitions are on the second tab of the spreadsheet. Please email SCELiaisonOfficer@sce.com with concerns or questions about the spreadsheet.

Weather forecasting: SCE's forecasting relies on in-house meteorologists and fire scientists. SCE may notify for a potential PSPS in advance of Red Flag Warnings being declared by the National Weather Service, and weather forecasts on radio and television may provide different information.

Online outage information: Information and maps are available at sce.com/PSPS starting three days before the forecasted start date. If an outage does not appear on the PSPS map, it might be a weather-related or repair outage in the same area. These are mapped and listed at sce.com/outages.

For More Information:

[Public Safety Partner Portal](#) (available June 1, 2021)

PDFs of High Fire Risk Area (HFRA) circuit maps and GIS layers: sce.com/maps.

Weather conditions: sce.com/fireweather.

Post-PSPS reports: sce.com/psp.

REST service (web-based password-protected access to GIS layers), contact: SCERestInfo@sce.com

SCE Contact Information for Public Officials only (Please DO NOT share with the public)

First Responders and Emergency Managers:

Phone: Business Resiliency Duty Manager 24/7 hotline: **(800) 674-4478**

Email: Business Resiliency Duty Manager/emergencies: BusinessResiliencyDutyManager@sce.com--

Only monitored during emergency activations.

Government/tribal officials:

Phone: Liaison (government relations) 24/7 hotline: 800-737-9811. Only monitored during emergency activations.

Email: SCELiaisonOfficer@sce.com. **Note: Only monitored during emergency activations.**

SCE Contact Information for the Public: (Please DO share this information via web and social media).

Outage-specific customer service issues: 800-611-1911

Billing and service inquiries: 800-684-8123

PSPS event status: sce.com/PSPS

Non-PSPS outages: sce.com/outages

Update customer contact information: sce.com/pspsalerts.

Restore Notification (formerly: RE-ENERGIZE)

Description:

Sent after a PSPS re-energization has occurred for specific circuit(s). No spreadsheet attachment, all content is on the body of the notification. Sent to all impacted jurisdictions, grouped by County.

Notification Subject Line and Message:

Important: SCE Restoration Notice for PSPS Event on [CIRCUIT NAME] Circuit in [COUNTY NAME].

Public Safety Power Shutoff update notification for official use:

SCE crews have restored power on the following circuit or circuit segments:

Circuit: [CIRCUIT name]

Segment(s): *if entered in Pega*

Incorporated City: [incorporated city]

Unincorporated County Area: [unincorporated area description]

SCE is also notifying customers that power has been turned back on.

Recommended Language to Share with the Public: *SCE has restored power that was shut off during the PSPS event. Visit [sce.com/PSPS](https://www.sce.com/PSPS) for more information. If your power is out, visit [sce.com/outages](https://www.sce.com/outages).*

Message cadence: The SCE Liaison Officer provides a rolling three-day advance warning of potential PSPS events, when possible, and sends update notifications every day. We will also notify you with time-sensitive shutoff and restoration information at the circuit level. Sudden weather changes may impact SCE's ability to provide advanced notice: a shutoff could occur sooner than anticipated.

Spreadsheet content: All circuits currently on the watch list in your county are listed in the attached spreadsheet. As the weather forecast becomes more exact, additional circuits could be added or removed from our watch lists. Circuits marked *Updated Period of Concern* in the Circuit Notification Status column will have new periods of concern or other changed status. Definitions are on the second tab of the spreadsheet. Please email SCELiaisonOfficer@sce.com with concerns or questions about the spreadsheet.

Weather forecasting: SCE's forecasting relies on in-house meteorologists and fire scientists. SCE may notify for a potential PSPS in advance of Red Flag Warnings being declared by the National Weather Service, and weather forecasts on radio and television may provide different information.

Online outage information: Information and maps are available at [sce.com/PSPS](https://www.sce.com/PSPS) starting three days before the forecasted start date. If an outage does not appear on the PSPS map, it might be a weather-related or repair outage in the same area. These are mapped and listed at [sce.com/outages](https://www.sce.com/outages).

For More Information:

[Public Safety Partner Portal](#) (available June 1, 2021)

PDFs of High Fire Risk Area (HFRA) circuit maps and GIS layers: [sce.com/maps](https://www.sce.com/maps).

Weather conditions: [sce.com/fireweather](https://www.sce.com/fireweather).

Post-PSPS reports: [sce.com/psps](https://www.sce.com/psps).

REST service (web-based password-protected access to GIS layers), contact: SCERestInfo@sce.com

SCE Contact Information for Public Officials only (Please **DO NOT share with the public)**

First Responders and Emergency Managers:

Phone: Business Resiliency Duty Manager 24/7 hotline: **(800) 674-4478**

Email: Business Resiliency Duty Manager/emergencies: BusinessResiliencyDutyManager@sce.com--

Only monitored during emergency activations.

Government/tribal officials:

Phone: Liaison (government relations) 24/7 hotline: 800-737-9811. Only monitored during emergency activations.

Email: SCELiaisonOfficer@sce.com. **Note: Only monitored during emergency activations.**

SCE Contact Information for the Public: (Please **DO share this information via web and social media).**

Outage-specific customer service issues: 800-611-1911

Billing and service inquiries: 800-684-8123

PSPS event status: sce.com/PSPS

Non-PSPS outages: sce.com/outages

Update customer contact information: sce.com/pspsalerts.

Event Concluded Notification

Example 1: Use when ALL circuits have been restored. If any remain off, use Example 2, below.

Note: this is not a county-specific “all clear.” The automation system figures out all the jurisdictions that were notified during a specific activation and sends to each of them a finaly event all-clear.. **This is a single last activity performed at the end of the activation that includes all involved in the activation that the event is over. DO NOT send this notification while a PSPS activation is still in progress -- it will incorrectly tell ALL jurisdictions that the event is over!**

Notification Subject Line and Message:

SCE PSPS Event Concluded in [COUNTY NAME].

Public Safety Power Shutoff update notification for official use:

Power has been restored to all customers in [county name.] and the PSPS event has concluded,

Recommended Language to Share with the Public: *The public safety power shutoff in your area has concluded. If your power is still out, please visit [sce.com/outages](https://www.sce.com/outages) for more information.*

Message cadence: The SCE Liaison Officer provides a rolling three-day advance warning of potential PSPS events, when possible, and sends update notifications every day. We will also notify you with time-sensitive shutoff and restoration information at the circuit level. Sudden weather changes may impact SCE’s ability to provide advanced notice: a shutoff could occur sooner than anticipated.

Spreadsheet content: All circuits currently on the watch list in your county are listed in the attached spreadsheet. As the weather forecast becomes more exact, additional circuits could be added or removed from our watch lists. Circuits marked *Updated Period of Concern* in the Circuit Notification Status column will have new periods of concern or other changed status. Definitions are on the second tab of the spreadsheet. Please email SCELiaisonOfficer@sce.com with concerns or questions about the spreadsheet.

Weather forecasting: SCE’s forecasting relies on in-house meteorologists and fire scientists. SCE may notify for a potential PSPS in advance of Red Flag Warnings being declared by the National Weather Service, and weather forecasts on radio and television may provide different information.

Online outage information: Information and maps are available at [sce.com/PSPS](https://www.sce.com/PSPS) starting three days before the forecasted start date. If an outage does not appear on the PSPS map, it might be a weather-related or repair outage in the same area. These are mapped and listed at [sce.com/outages](https://www.sce.com/outages).

For More Information:

[Public Safety Partner Portal](#) (available June 1, 2021)

PDFs of High Fire Risk Area (HFRA) circuit maps and GIS layers: [sce.com/maps](https://www.sce.com/maps).

Weather conditions: [sce.com/fireweather](https://www.sce.com/fireweather).

Post-PSPS reports: [sce.com/psps](https://www.sce.com/psps).

REST service (web-based password-protected access to GIS layers), contact: SCERestInfo@sce.com

SCE Contact Information for Public Officials only (Please DO NOT share with the public)

First Responders and Emergency Managers:

Phone: Business Resiliency Duty Manager 24/7 hotline: **(800) 674-4478**

Email: Business Resiliency Duty Manager/emergencies: BusinessResiliencyDutyManager@sce.com--
Only monitored during emergency activations.

Government/tribal officials:

Phone: Liaison (government relations) 24/7 hotline: 800-737-9811. Only monitored during emergency activations.

Email: SCELiaisonOfficer@sce.com. **Note: Only monitored during emergency activations.**

SCE Contact Information for the Public: (Please DO share this information via web and social media).

Outage-specific customer service issues: 800-611-1911

Billing and service inquiries: 800-684-8123

PSPS event status: sce.com/PSPS

Non-PSPS outages: sce.com/outages

Update customer contact information: sce.com/pspsalerts.

Example 2: Use when most circuits have been restored but one or more circuit remains de-energized. Note: this is not a county-specific "all clear." When the POC has passed but some circuits remain out, most typically because of 1) delays in patrol (for example requiring air-ops), 2) significant repairs required, or 3) access prohibited by fire crews. Those circuits may be transitioned to Operations and closed out from a PSPS standpoint. That information is included in the Event Concluded notification, indicating power is not fully restored for that circuit(s). **DO NOT send this notification while a PSPS activation is still in progress -- it will incorrectly tell ALL jurisdictions that the event is over!**

Notification Subject Line and Message:

SCE PSPS Event Concluded Notice for [COUNTY NAME].

Public Safety Power Shutoff update notification for official use:

The PSPS event has concluded, however some customers in [county name] remain without power.

Repairs and restoration for these customers will be handled by SCE's regular grid operations:

Circuit:

Segments:

Incorporated City of:

Unincorporated County Area:

Reason for continued outage:

Recommended Language to Share with the Public: *The public safety power shutoff in your area has concluded, however some customers remain without power. If your power is still out, please visit sce.com/outages for more information.*

Message cadence: The SCE Liaison Officer provides a rolling three-day advance warning of potential PSPS events, when possible, and sends update notifications every day. We will also notify you with time-sensitive shutoff and restoration information at the circuit level. Sudden weather changes may impact SCE's ability to provide advanced notice: a shutoff could occur sooner than anticipated.

Spreadsheet content: All circuits currently on the watch list in your county are listed in the attached spreadsheet. As the weather forecast becomes more exact, additional circuits could be

added or removed from our watch lists. Circuits marked *Updated Period of Concern* in the Circuit Notification Status column will have new periods of concern or other changed status. Definitions are on the second tab of the spreadsheet. Please email SCELiaisonOfficer@sce.com with concerns or questions about the spreadsheet.

Weather forecasting: SCE's forecasting relies on in-house meteorologists and fire scientists. SCE may notify for a potential PSPS in advance of Red Flag Warnings being declared by the National Weather Service, and weather forecasts on radio and television may provide different information.

Online outage information: Information and maps are available at sce.com/PSPS starting three days before the forecasted start date. If an outage does not appear on the PSPS map, it might be a weather-related or repair outage in the same area. These are mapped and listed at sce.com/outages.

For More Information:

[Public Safety Partner Portal](#) (available June 1, 2021)

PDFs of High Fire Risk Area (HFRA) circuit maps and GIS layers: sce.com/maps.

Weather conditions: sce.com/fireweather.

Post-PSPS reports: sce.com/psps.

REST service (web-based password-protected access to GIS layers), contact: SCERestInfo@sce.com

SCE Contact Information for Public Officials only (Please DO NOT share with the public)

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Email: Business Resiliency Duty Manager/emergencies: BusinessResiliencyDutyManager@sce.com--
Only monitored during emergency activations.

Government/tribal officials:

Phone: Liaison (government relations) 24/7 hotline: 800-737-9811. Only monitored during emergency activations.

Email: SCELiaisonOfficer@sce.com. **Note: Only monitored during emergency activations.**

SCE Contact Information for the Public: (Please DO share this information via web and social media).

Outage-specific customer service issues: 800-611-1911

Billing and service inquiries: 800-684-8123

PSPS event status: sce.com/PSPS

Non-PSPS outages: sce.com/outages

Update customer contact information: sce.com/pspsalerts.

PSPS Variable Notification Templates-Customers
11/22/2021 Activation

1 | Initial Notification

TEXT/SMS

SCE Safety Outage Alert: High winds and fire conditions are forecasted in your area from ^Day of week^ ^morning/afternoon/evening^ through ^End Day of week^ ^morning/afternoon/evening^. We may have to shut off your power to decrease risk of dangerous wildfires. We are working to reduce the number of customers affected. We'll keep you updated so you know whether your power will be shut off. Visit sce.com/pmps for the latest information. For downed power lines, call 911. View in more languages: www.sce.com/PSPSInitial Please reply with 1 to confirm receipt of this message.

VOICE

Important SCE safety outage alert. To continue in English, press 1. [Spanish press 2], all other languages press 3.... High winds and fire conditions are forecasted in your area from ^Day of week^ ^morning/afternoon/evening^ through ^End Day of week^ ^morning/afternoon/evening^. We may have to shut off your power to decrease risk of dangerous wildfires. We are working to reduce the number of customers affected. We'll keep you updated so you know whether your power will be shut off. Visit [sce dot com slash pmps](http://sce.com/pmps) for the latest information. If you see a downed power line call 911.

EMAIL

Subject: SCE Safety Outage Initial Notification: Public Safety Power Shutoff (PSPS)
From: do_not_reply@scewebservices.com Southern California Edison

For more information on PSPS in your preferred language, click below:

[ESPAÑOL](#)

1-800-441-2233

[한국어](#)

1-800-628-3061

[中文](#)

1-800-843-8343

[TIẾNG VIỆT](#)

1-800-327-3031

[TAGALOG](#)

1-800-655-4555

[MORE LANGUAGES](#)

Important Safety Message from Southern California Edison:

High winds and dangerous fire conditions are forecasted in your area from **^Day of week^ ^morning/afternoon/evening^** through **^End Day of week^ ^morning/afternoon/evening^**. We may have to shut off your power to decrease risk of dangerous wildfires. We are working to reduce the number of customers affected. We'll keep you updated so you know whether your power will be shut off.

This alert applies to the following address(es):

Customer Address

Service Account

Meter Number

Rate

- For the latest updates, outage map, and information about customer care services, visit sce.com/psps.
- For information about preparing for a power outage, visit sce.com/safety/family/emergency-tips.
- REMEMBER: If you see a downed power line call 911 first, and then notify SCE at 1-800-611-1911.

Thank you for your patience as we work to keep your community safe!

4| Imminent Shutdown
PSPS EXPECTED 1-4 HOURS BEFORE SHUTOFF

TEXT/SMS

SCE Safety Outage Alert: It's likely we will need to shut off your power in the next 4 hours due to wind-driven fire conditions in your area. Conditions could last through ^End Day of week^ ^morning /afternoon /evening^. We'll keep you updated and notify you again at the time of shutoff if we need to shut off your power. Weather could affect shutoff timing and wind-related outages may also occur. Thanks for your patience. Visit sce.com/pmps for the latest information and availability of community resources. For downed power lines, call 911. View in more languages: www.sce.com/PSPSExpected
Please reply with 1 to confirm receipt of this message.

VOICE

Important SCE safety outage alert. To continue in English, press 1. [Spanish press 2], all other languages press 3.... It's likely we will need to turn off your power in the next 4 hours due to wind-driven fire conditions in your area. Conditions could last through ^End Day of week^ ^morning /afternoon /evening^. We'll keep you updated and notify you again at the time of shutoff if we need to turn off your power. Weather could affect shutoff timing and wind-related outages may also occur. Thank you for your patience. Visit [sce dot com slash pmps](http://sce.com/pmps) for the latest information and availability of community resources. If you see a downed power line call 911.

EMAIL

Subject: SCE Safety Outage Alert: Expected Public Safety Power Shutoff (PSPS)
From: do_not_reply@scewebservices.com Southern California Edison

For more information on PSPS in your preferred language, click below:

[ESPAÑOL](#)

1-800-441-2233

[한국어](#)

1-800-628-3061

[中文](#)

1-800-843-8343

[TIẾNG VIỆT](#)

1-800-327-3031

[TAGALOG](#)

1-800-655-4555

[MORE LANGUAGES](#)

Important Safety Message from Southern California Edison:

It's likely we will need to turn off your power in the next 4 hours due to wind-driven fire conditions in your area. Conditions could last through **^End Day of week^ ^morning /afternoon /evening^**. We continue working to reduce the number of customers affected. We'll keep you updated and notify you again at the time of shutoff if we need to turn off your power. Weather could affect shutoff timing and wind-related outages may also occur.

We understand this is inconvenient. We appreciate your patience as we work to keep your community safe.

This alert applies to the following address(es):

Customer Address

Service Account

Meter Number

Rate

For the latest updates, outage map, and availability of community resources, visit sce.com/psps.

For information about preparing for a power outage, visit sce.com/safety/family/emergency-tips.

REMEMBER: If you see a downed power line, call 911 first, and then notify SCE at 1-800-611-1911.

Thank you again for your continued patience as we work to keep your community safe!

5 | De-Energized

SMS/TEXT

SCE Start of Shutoff Alert: We are temporarily shutting off your power due to high risk of wind-driven wildfire in your area. These conditions could last through **^End Day of week^ ^morning/ afternoon/ evening^**. We will restore your power as soon as it's safe. Restoration typically takes 3-8 hours but could take longer if there is damage in your area. Remember to turn off or unplug appliances or equipment that may start automatically when power is restored. Thanks for your patience. Visit sce.com/pmps for the latest information and availability of community resources. For downed power lines, call 911. View in more languages: www.sce.com/PSPSshutoff Please reply with 1 to confirm receipt of this message.

VOICE

Important SCE safety outage alert. To continue in English, press 1. [Spanish press 2], all other languages press 3.... We are temporarily shutting off your power due to high risk of wind-driven wildfire in your area. These conditions could last through **^End Day of week^ ^morning/ afternoon/ evening^**. We will restore your power as soon as it's safe. Restoration typically takes 3 to 8 hours but could take longer if there is damage in your area. Remember to turn off or unplug appliances or equipment that may start automatically when power is restored. Thank you for your patience. Visit [sce dot com slash pmps](http://sce.com/pmps) for the latest information and availability of community resources. If you see a downed power line call 911.

EMAIL

Subject: SCE Safety Outage Alert: Start of Public Safety Power Shutoff (PSPS)
From: do_not_reply@scewebservices.com Southern California Edison

For more information on PSPS in your preferred language, click below:

ESPAÑOL	한국어	中文	TIẾNG VIỆT	TAGALOG
1-800-441-2233	1-800-628-3061	1-800-843-8343	1-800-327-3031	1-800-655-4555

[MORE LANGUAGES](#)

Important Safety Message from Southern California Edison:

We are temporarily shutting off your power due to high risk of wind-driven wildfire in your area. These conditions could last through **^End Day of week^ ^morning/ afternoon/ evening^**. We will restore your power as soon as it's safe. Restoration typically takes 3-8 hours but could take longer if there is damage in your area. Please remember to turn off or unplug appliances or equipment that may start automatically when power is restored. We will update you as conditions change.

This alert applies to the following address(es):

Customer Address

Service Account
Meter Number
Rate

For the latest information, outage map, and availability of community resources, visit sce.com/psps.

REMEMBER: If you see a downed power line, call 911 first and then notify SCE at 1-800-611-1911.

We understand this is inconvenient. We appreciate your continued patience as we work to keep your community safe.

7 | PREPARING TO RE-ENERGIZE (IMMINENT RESTORATION)

SMS/TEXT

SCE PSPS Safe Restoration Alert: We're working to restore power in your area now that winds have died down. This typically takes 3-8 hours but could take longer if there is damage in your area. We will alert you again when your power comes back on. Please turn off or unplug appliances or equipment that may start automatically when power is restored and inspect your property for downed power lines. Visit sce.com/psps for the latest information and availability of community resources. For downed power lines, call 911. Thank you for your patience as we work to keep your community safe. View in more languages: www.sce.com/PSPSPrepRestore Please reply with 1 to confirm receipt of this message.

VOICE

Important SCE safe restoration alert. To continue in English, press 1. [Spanish press 2], all other languages press 3... We're working to restore power in your area now that winds have died down. This process typically takes 3 to 8 hours but could take longer if there is damage in your area. We will alert you again when your power comes back on. Please turn off or unplug appliances or equipment that may start automatically when power is restored and inspect your property for downed power lines. If you see a downed power line stay away and call 911. For more information on the restoration process and availability of community resources, please visit [sce dot com slash psps](http://sce.com/psps). Thank you for your patience as we work to keep your community safe.

EMAIL

Subject: SCE PSPS Safe Restoration Alert: Power will be Restored Soon
From: do_not_reply@scewebservices.com Southern California Edison

For more information on PSPS in your preferred language, click below:

[ESPAÑOL](#)

1-800-441-2233

[한국어](#)

1-800-628-3061

[中文](#)

1-800-843-8343

[TIẾNG VIỆT](#)

1-800-327-3031

[TAGALOG](#)

1-800-655-4555

[MORE LANGUAGES](#)

Important Safety Message from Southern California Edison:

We're working to restore power in your area now that winds have died down. This process typically takes 3-8 hours but could take longer if there is damage in your area. We will alert you again when your power comes back on. Please turn off or unplug appliances or equipment that may start automatically when power is restored and inspect your property for downed power lines. If you see a downed power line, stay away, and call 911 first, then report it to SCE at 1-800-611-1911.

This alert applies to the following address(es):

Customer Address

Service Account

Meter Number

Rate

For more information on SCE's restoration process and availability of community resources, please visit sce.com/psps.

We understand that Public Safety Power Shutoff events can be disruptive and thank you for your patience as we work to keep your community safe.

9-A | PSPS ENDED - RESTORED & ALL CLEAR [NO MORE RISK OF PSPS]

SMS/TEXT

SCE PSPS Safe Restoration Alert: We were able to restore power in your area and end this Public Safety Power Shutoff due to improved weather conditions. If your power is still off, please call 1-800-611-1911 or visit sce.com/outage. We understand that safety outages are inconvenient and thank you for your patience. View in more languages: www.sce.com/PSPSEnded Please reply with 1 to confirm receipt of this message. Please reply with 1 to confirm receipt of this message.

VOICE

Important SCE safe restoration alert... To continue in English, press 1. [Spanish press 2], all other languages press 3.... We were able to restore power in your area and end this Public Safety Power Shutoff due to improved weather conditions. If your power is still off, please call 1-800-611-1911 or visit [sce dot com slash outage](http://sce.com/outage). We understand that safety outages are inconvenient and thank you for your patience.

EMAIL

Subject: SCE PSPS Safe Restoration Alert: All Power Restored
From: do_not_reply@scewebservices.com Southern California Edison

For more information on PSPS in your preferred language, click below:

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1-800-441-2233

[한국어](#)

1-800-628-3061

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Important Safety Message from Southern California Edison:

We were able to restore power in your area and end this Public Safety Power Shutoff due to improved weather conditions. If your power is still off, please call 1-800-611-1911 or visit sce.com/outage. We understand that safety outages are inconvenient and thank you for your patience.

This alert applies to the following address(es):

Customer Address

Service Account

Meter Number

Rate

For more information about PSPS and wildfire safety, please visit sce.com/psps.

Attachment B-Quantitative and Qualitative Factors in PSPS Decision-Making Technical Paper

PUBLIC SAFETY POWER SHUTOFF:

DECISION-MAKING

**PUBLIC SAFETY POWER SHUTOFFS
ARE A TOOL OF LAST RESORT TO
PROTECT OUR COMMUNITIES
FROM THE THREAT OF WILDFIRE.**



**FOR EACH
PSPS**

1 IS THIS SHUTOFF NEEDED TO PROTECT PUBLIC SAFETY?

2 CAN WE SAFELY REDUCE THE NUMBER OF CUSTOMERS WHO LOSE POWER?



We consider PSPS when weather and fire experts forecast dangerous conditions, including strong winds, very dry vegetation and low humidity. Combined, these create the risk that flying debris or other damage to our wires and equipment could cause a fire with the potential to spread rapidly.

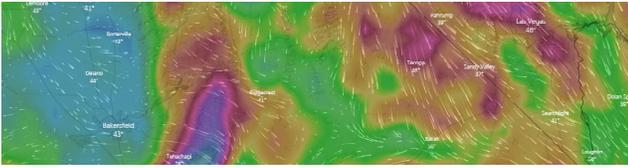


-5 DAYS FORECASTING

-3 DAYS FORECASTING

-2 DAYS FORECASTING

DAY OF THE
PSPS EVENT



Our meteorologists and fire scientists continue to review weather conditions, using both internal and external weather models and National Weather Service forecasts, alerts and warnings.



The PSPS Incident Management Team develops a list of circuits that could be impacted. We speak with county offices of emergency management to discuss any public safety issues.



The team is led by an incident commander. Incident commanders undergo continual training for this role and are responsible for all shutoff decisions.

! DECISION POINT

If the weather report is inconclusive, we will wait for additional weather reports or field assessments before we notify customers. We confer with the National Geographic Area Coordination Center (GACC) about fire danger risk.

! DECISION POINT

The PSPS Incident Management Team reviews options for supplying customers with power from different circuits to keep them energized.



Field crews look for factors that could increase the risk of fire such as existing damage or other hazards to poles and wires.



-5 DAYS FORECASTING

-3 DAYS FORECASTING

-2 DAYS FORECASTING

DAY OF THE
PSPS EVENT

DECISION POINT

The Incident Management Team looks at twice-daily weather reports to see if the weather pattern has shifted. As the forecast becomes more precise, we update the list of circuits that might be impacted. If the weather pattern has weakened, or shifted outside of high fire risk areas, we will cancel the event.



We notify customers. We try to visit our Critical Care and Medical Baseline customers who rely on life-saving medical equipment to confirm they have been informed about the event.

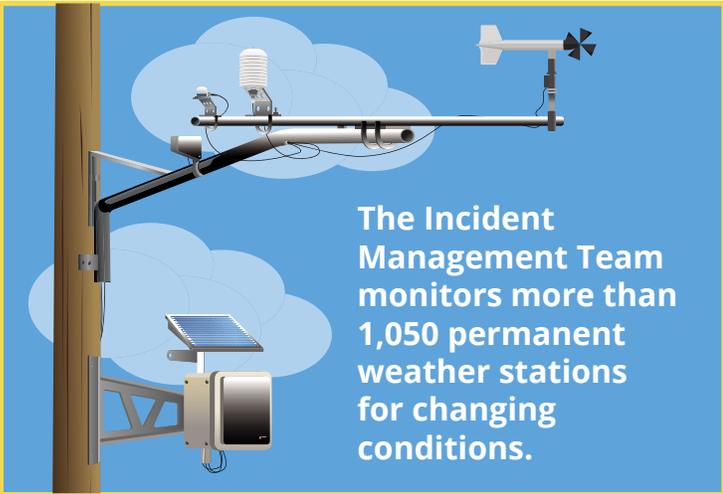
-5 DAYS FORECASTING

-3 DAYS FORECASTING

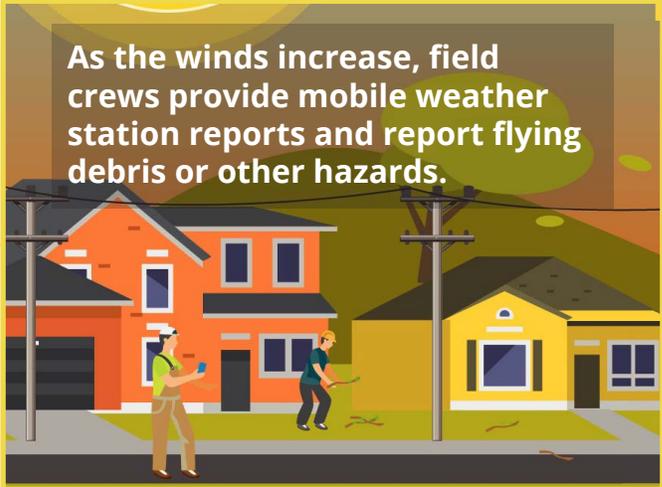
-2 DAYS FORECASTING

DAY OF THE
PSPS EVENT

3-6 Hours: Before the winds are forecasted to hit peak speeds, the Incident Management Team begins monitoring conditions. A team, including experts in grid operations, meteorology and fire science, advise the incident commander, who will make the final decisions to shut off power.



The Incident Management Team monitors more than 1,050 permanent weather stations for changing conditions.



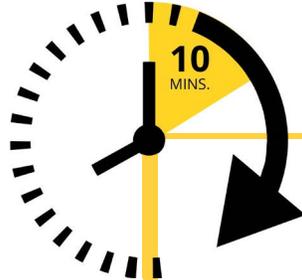
As the winds increase, field crews provide mobile weather station reports and report flying debris or other hazards.

-5 DAYS FORECASTING

-3 DAYS FORECASTING

-2 DAYS FORECASTING

DAY OF THE
PSPS EVENT



DECISION POINT

Weather:

Every 10 minutes, weather station readings are updated for each circuit. Meteorologists identify weather trends that could slow or speed up decision-making.



DECISION POINT

Grid Operations:

The team looks for opportunities to turn off individual segments of a circuit to keep the rest of the circuit powered.



DECISION POINT

Recommendation:

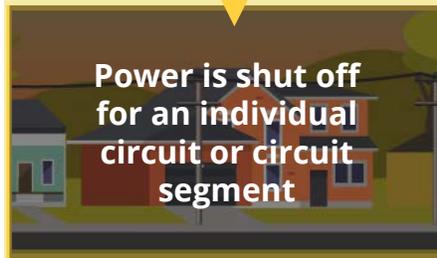
The lead PSPS operator recommends shutting off power to a circuit or segment when wind speeds are about to hit or exceed our predetermined threshold for unsafe conditions, or field crews advise of an urgent hazard in the field.



DECISION POINT

Authorization:

The incident commander reviews the recommendation and asks follow-up questions, if necessary, before approving the decision.



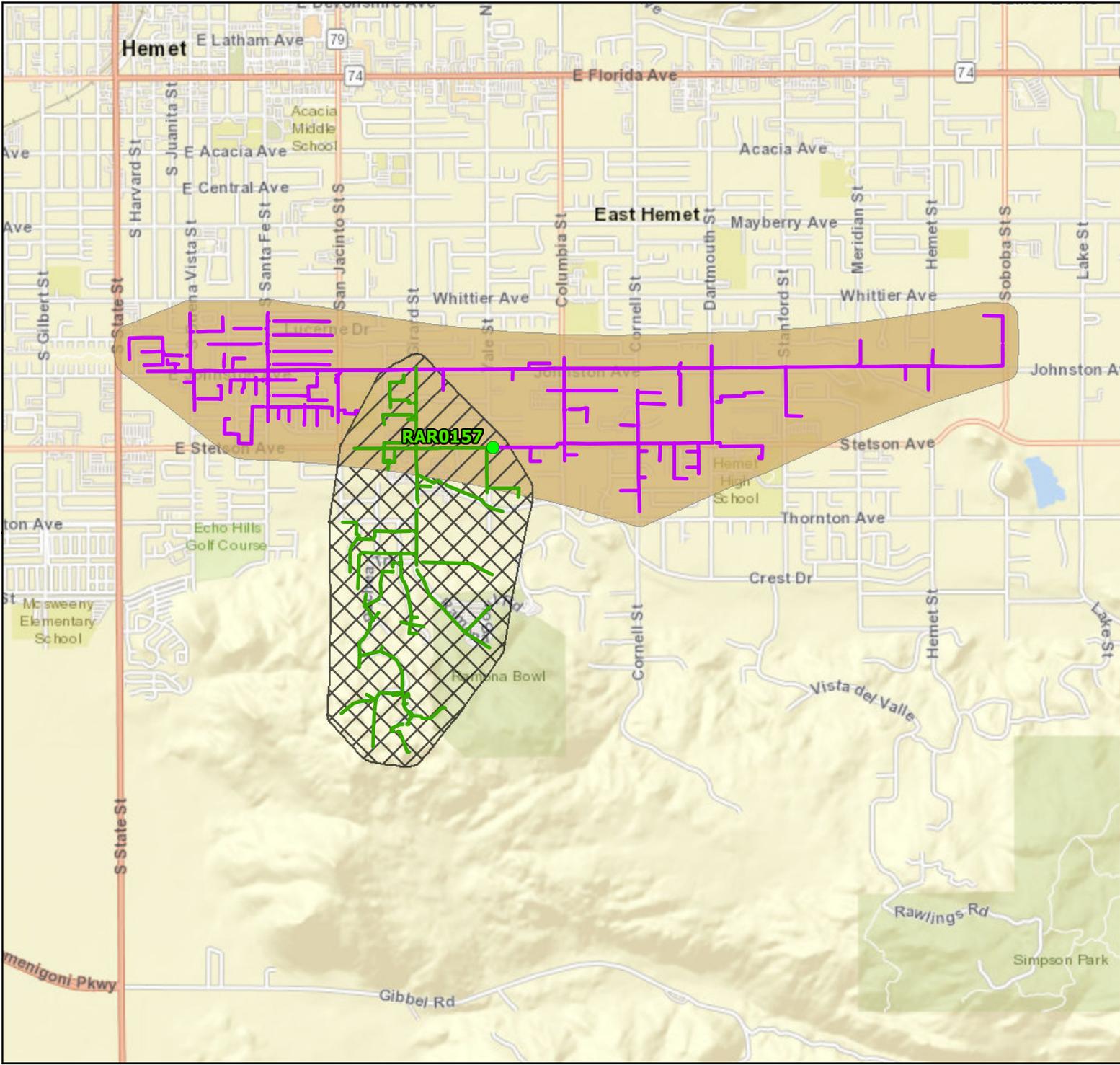
AS THE WINDS DIE DOWN,
POWER IS RESTORED TO
ALL CUSTOMERS

When dangerous winds diminish, field crews inspect the lines that had been shut off. Usually, this is done by crews in utility trucks. If there is no damage to the lines, electricity will be restored immediately. The average time for restoration in 2020 was five to six hours, excluding lines that were damaged or required air or foot patrol. Some of these patrols will take longer because they must be done in daylight hours.

Attachment C-PSPS Event Data Workbook (Excel File Under Separate Cover)

Attachment D- Mitigation Impact Maps

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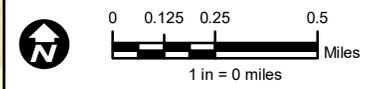
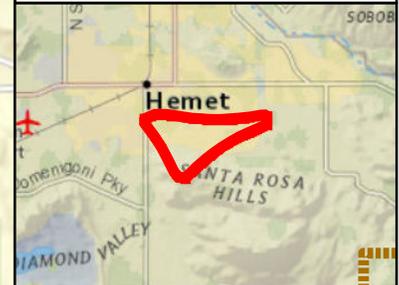
PSPS 2021

ACADIAN

Circuit

11/21/2021

-  Segments Not Impacted by Event
-  Segments De-energized
-  Isolation Point
- Circuit Segments**
-  Segment 1
-  Segment 2
-  Segment 3
-  Segment 4
-  Segment 5
-  Segment 6
-  Segment 7
-  Segment 8
-  Segment 9
-  Segment 10
-  Segment 11
-  Segment 12



Date: 12/9/2021
File Name: PSPS_Event_20211122_ImpactMitigation3.mxd
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Created By:
Geospatial Analysis,
Geomatics | Central Field Services

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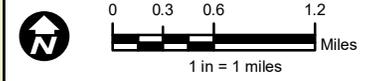
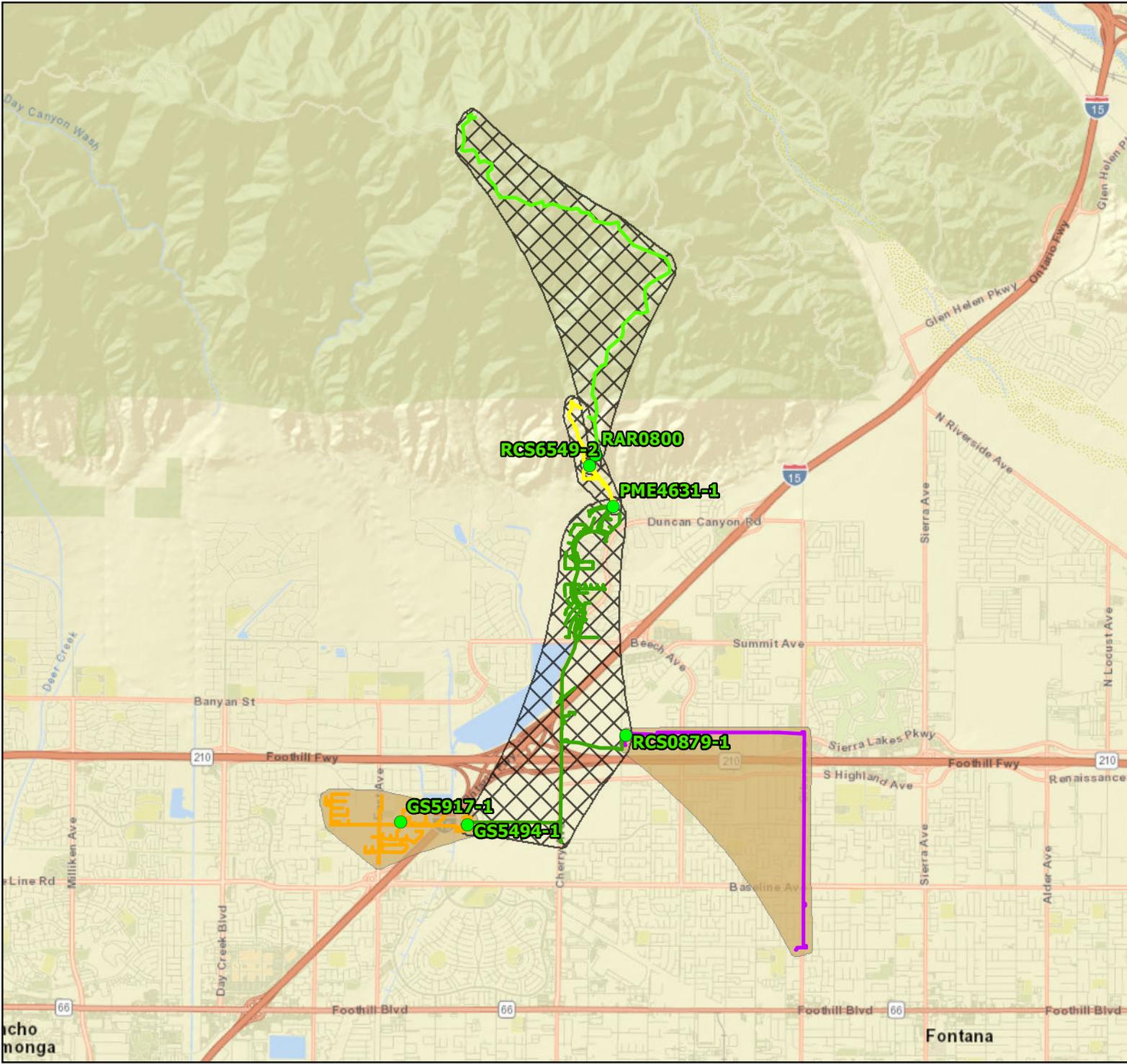
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PSPS 2021 ACOSTA Circuit 11/21/2021

-  Segments Not Impacted by Event
-  Segments De-energized
-  Isolation Point
- Circuit Segments**
-  Segment 1
-  Segment 2
-  Segment 3
-  Segment 4
-  Segment 5
-  Segment 6
-  Segment 7
-  Segment 8
-  Segment 9
-  Segment 10
-  Segment 11
-  Segment 12



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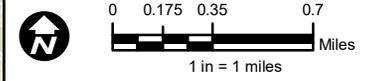
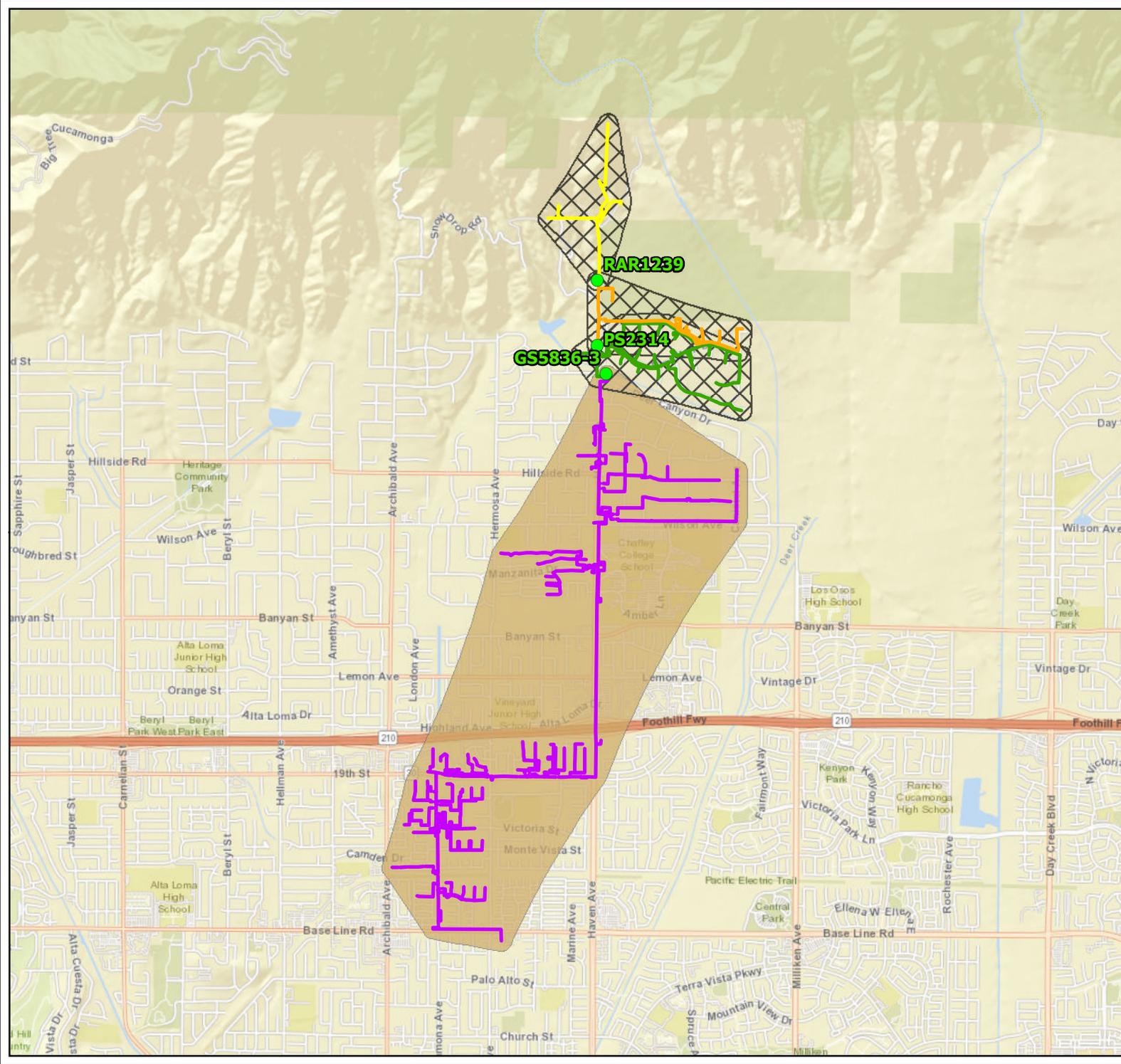
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PSPS 2021 AMETHYST Circuit 11/21/2021

-  Segments Not Impacted by Event
-  Segments De-energized
-  Isolation Point
- Circuit Segments**
-  Segment 1
-  Segment 2
-  Segment 3
-  Segment 4
-  Segment 5
-  Segment 6
-  Segment 7
-  Segment 8
-  Segment 9
-  Segment 10
-  Segment 11
-  Segment 12



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**Geospatial Analysis,
 Geomatics | Central Field Services**

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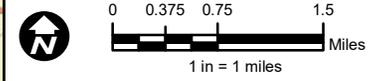
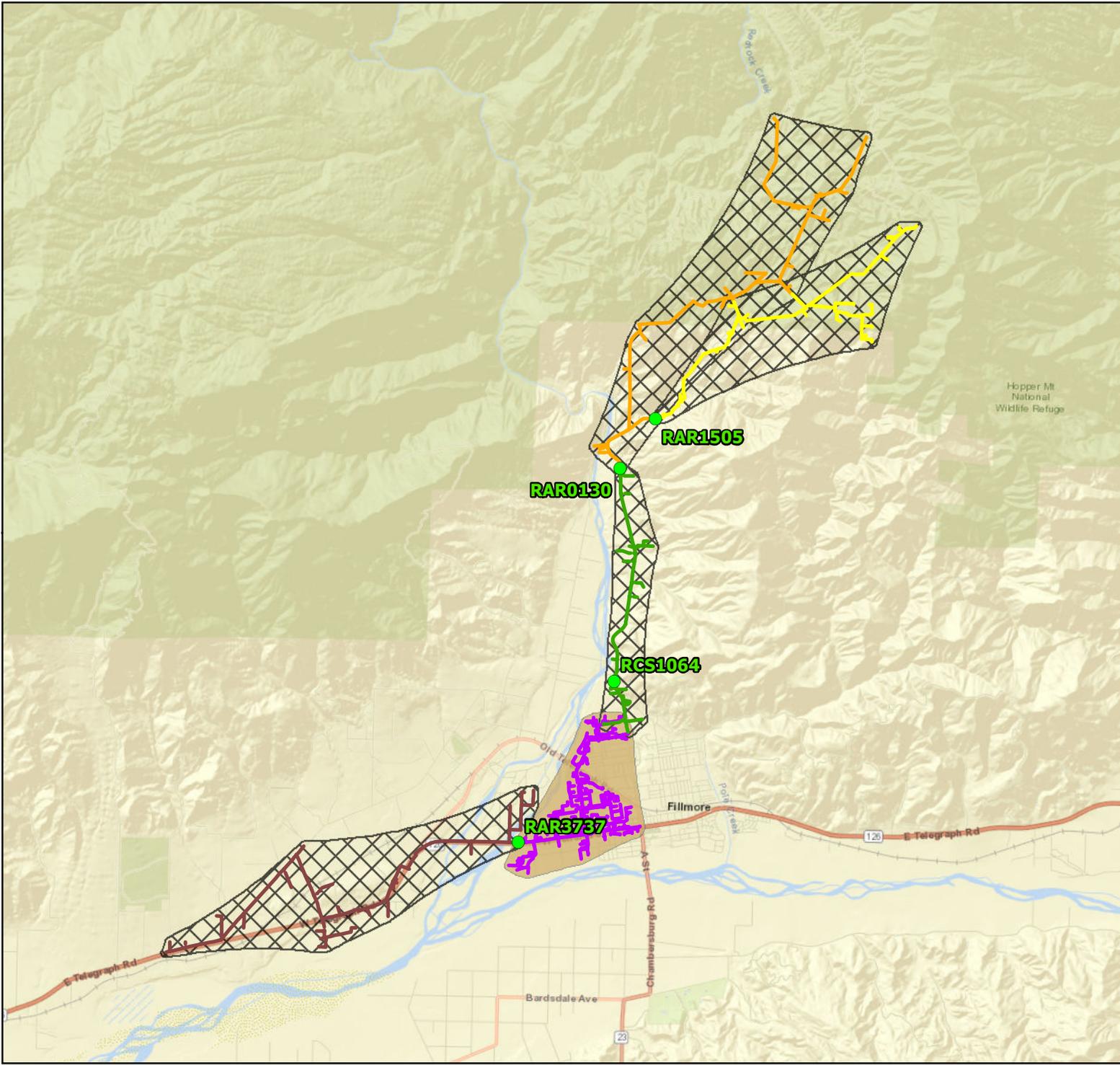
PSPS 2021

ANGUS

Circuit

11/21/2021

-  Segments Not Impacted by Event
-  Segments De-energized
-  Isolation Point
- Circuit Segments**
-  Segment 1
-  Segment 2
-  Segment 3
-  Segment 4
-  Segment 5
-  Segment 6
-  Segment 7
-  Segment 8
-  Segment 9
-  Segment 10
-  Segment 11
-  Segment 12



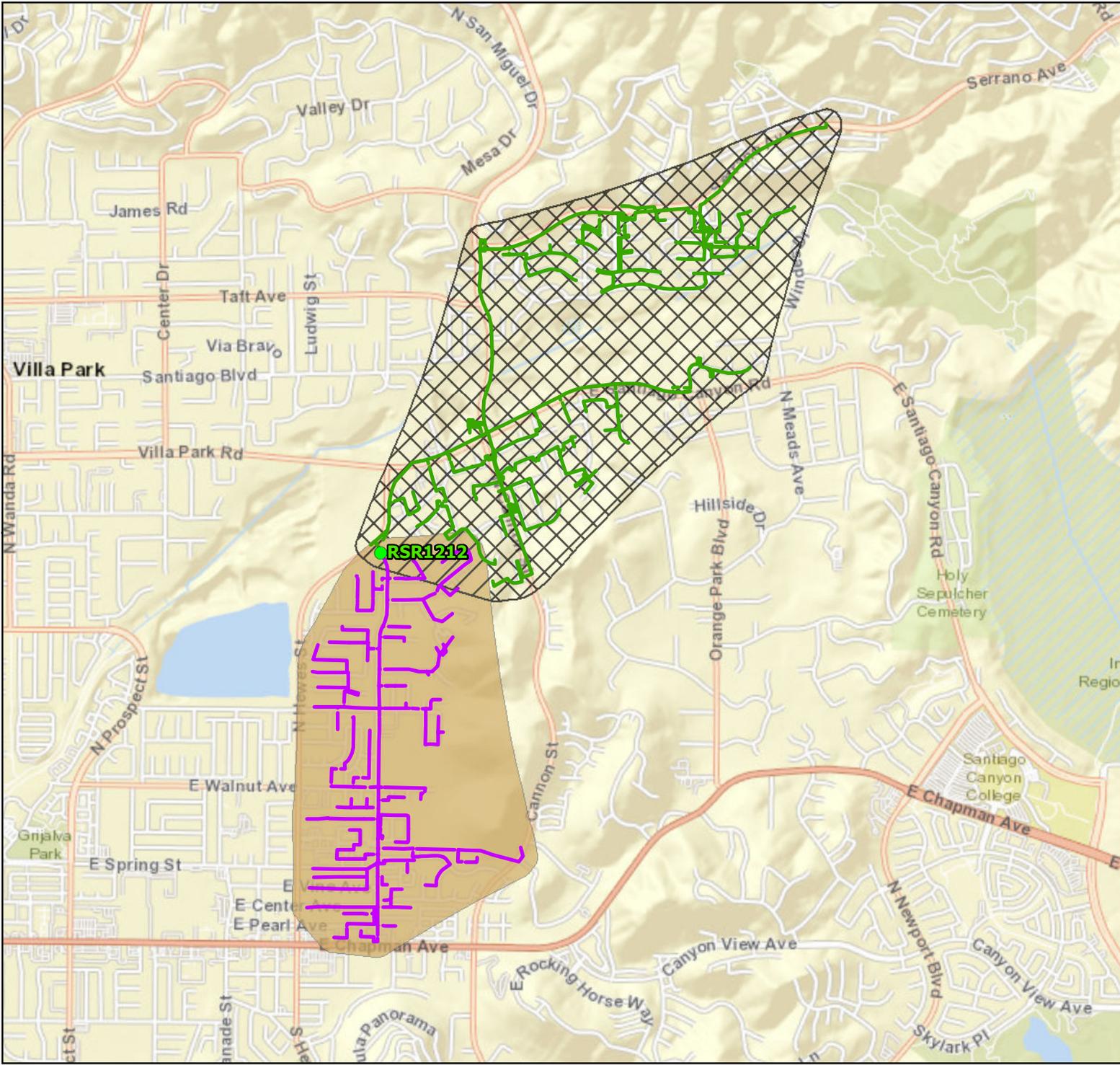
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Geospatial Analysis,
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PSPS 2021

ARABIA

Circuit

11/21/2021

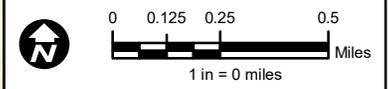
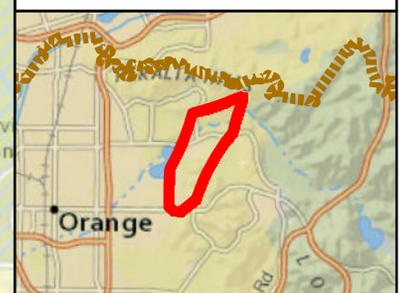
 Segments Not Impacted by Event

 Segments De-energized

 Isolation Point

Circuit Segments

-  Segment 1
-  Segment 2
-  Segment 3
-  Segment 4
-  Segment 5
-  Segment 6
-  Segment 7
-  Segment 8
-  Segment 9
-  Segment 10
-  Segment 11
-  Segment 12



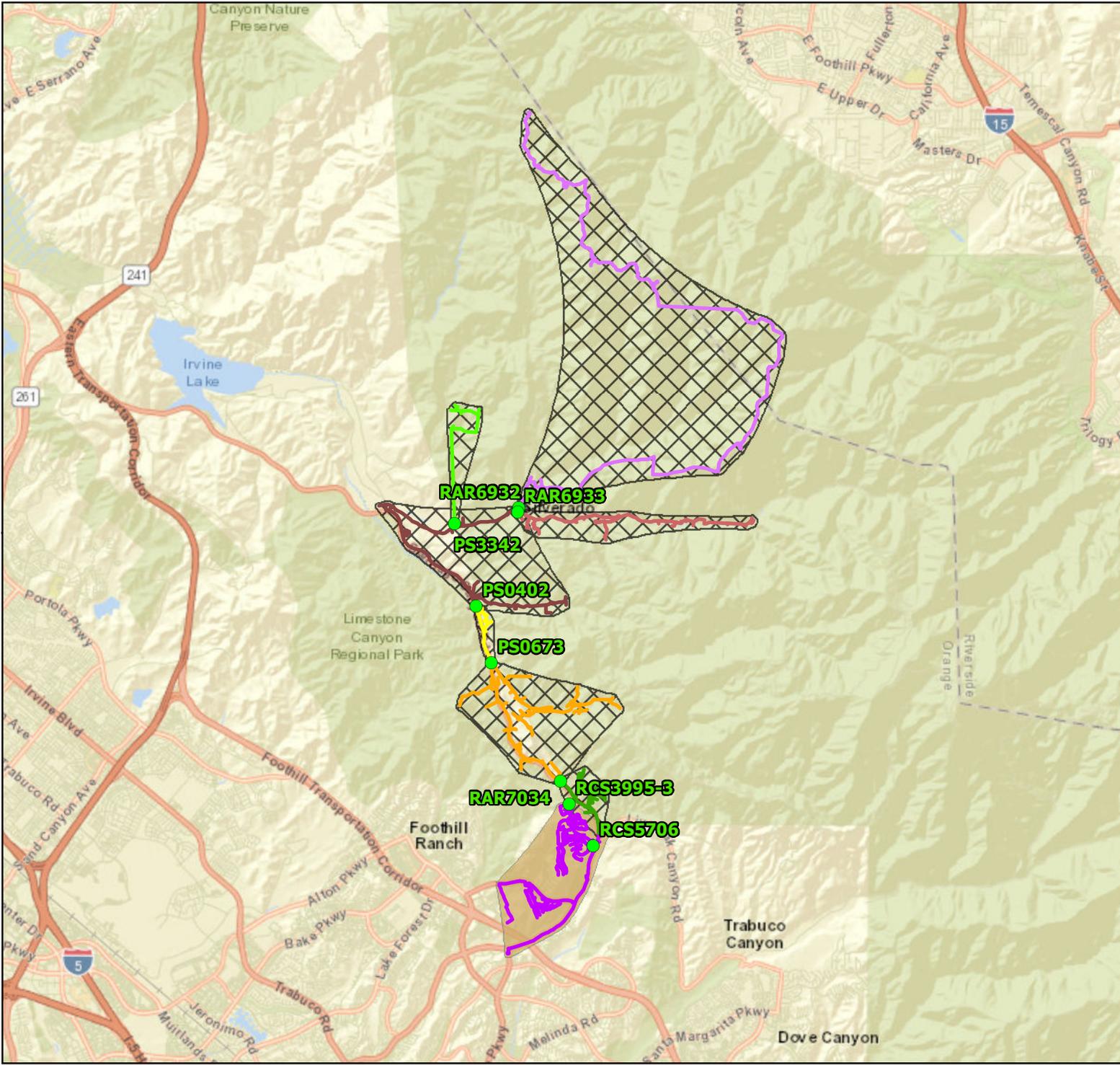
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PSPS 2021

ATENTO

Circuit

11/21/2021

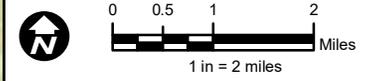
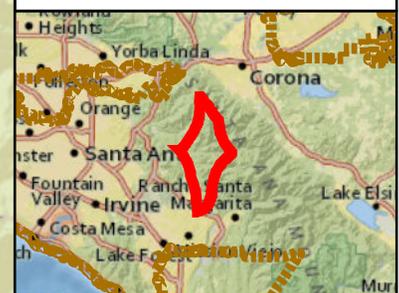
 Segments Not Impacted by Event

 Segments De-energized

 Isolation Point

Circuit Segments

-  Segment 1
-  Segment 2
-  Segment 3
-  Segment 4
-  Segment 5
-  Segment 6
-  Segment 7
-  Segment 8
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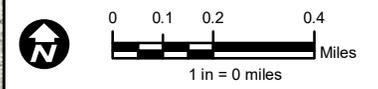
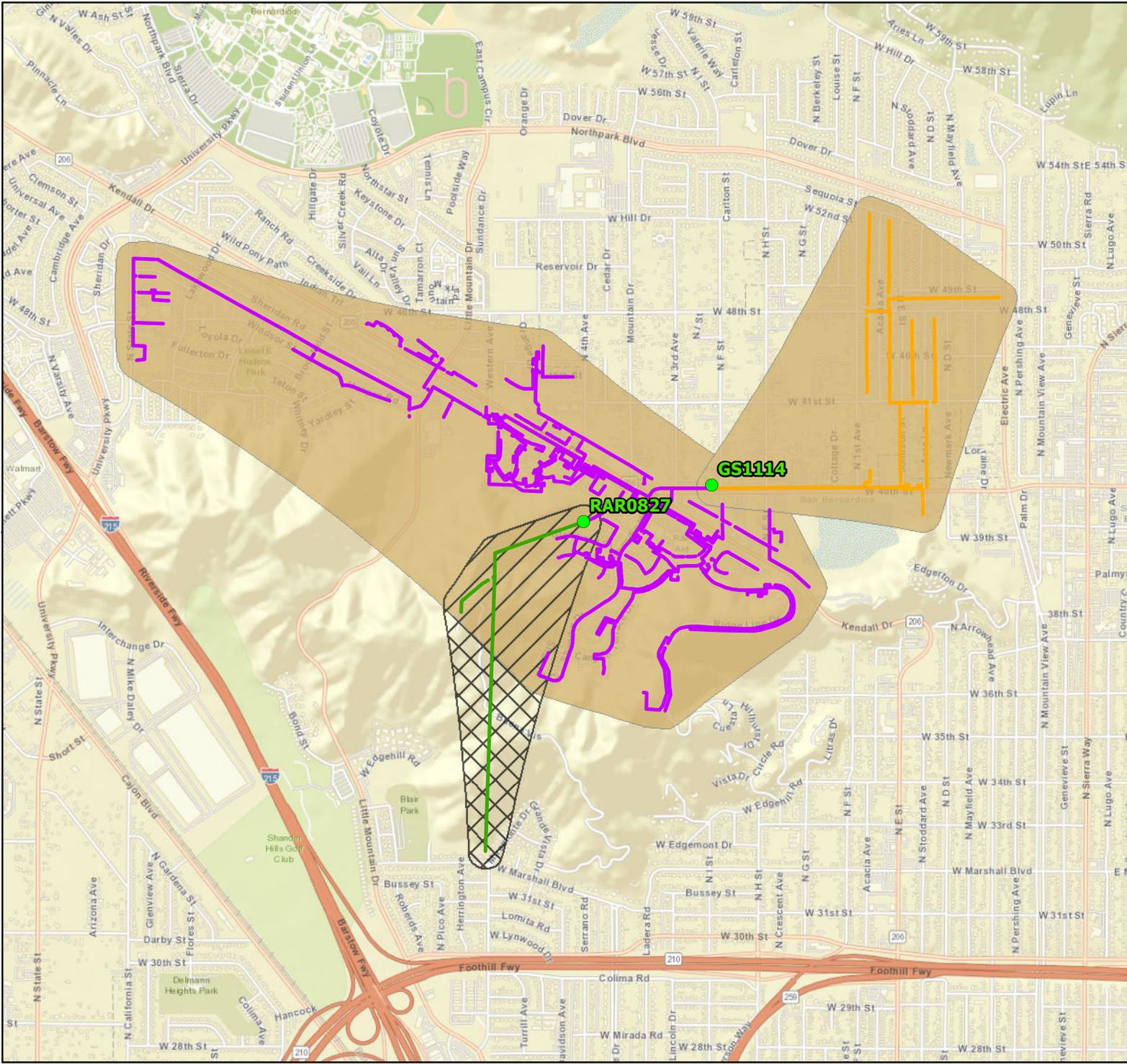
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PSPS 2021 BADGER Circuit 11/21/2021

-  Segments Not Impacted by Event
-  Segments De-energized
-  Isolation Point
- Circuit Segments**
-  Segment 1
-  Segment 2
-  Segment 3
-  Segment 4
-  Segment 5
-  Segment 6
-  Segment 7
-  Segment 8
-  Segment 9
-  Segment 10
-  Segment 11
-  Segment 12

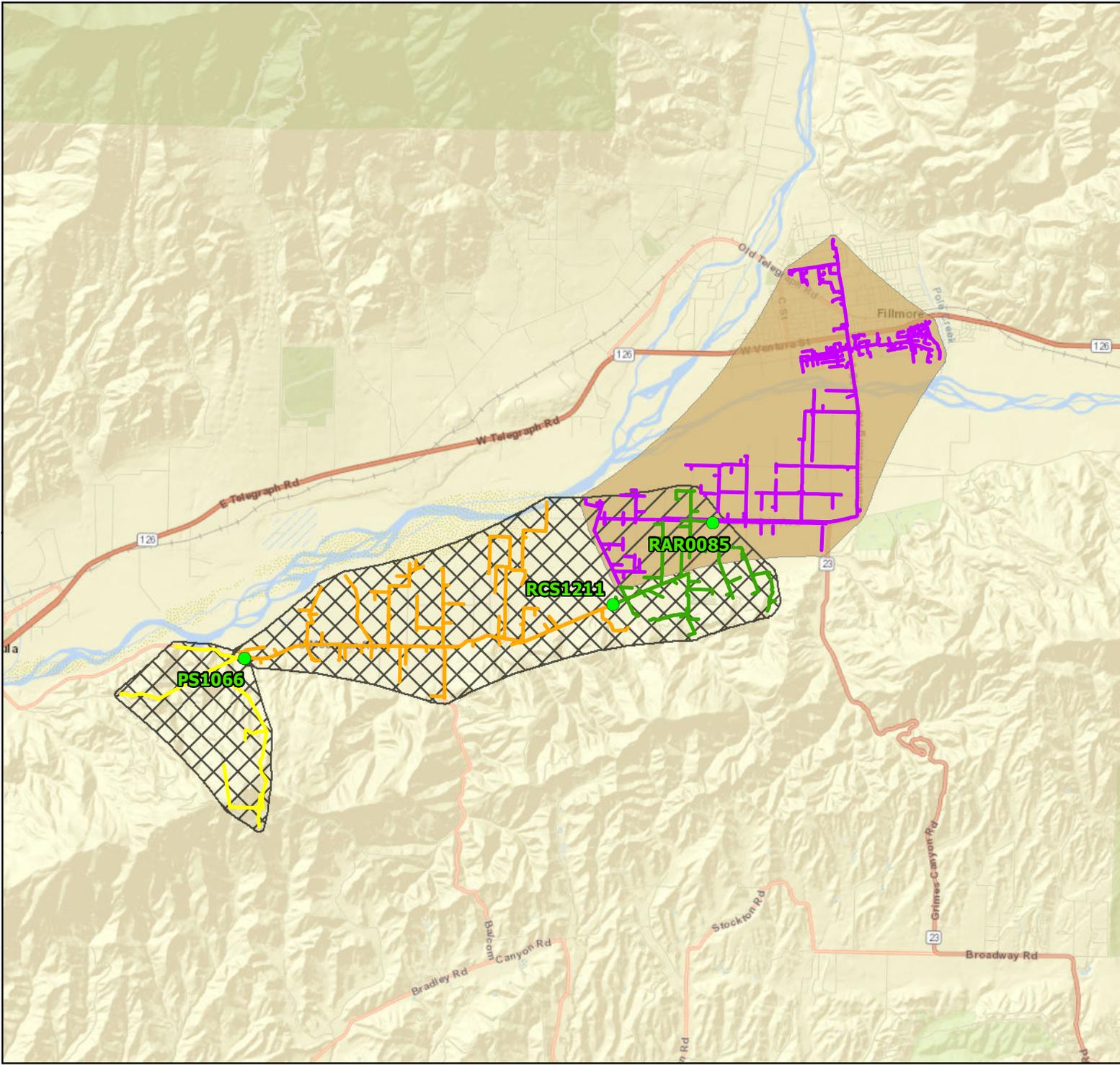


Date: 12/9/2021
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Geospatial Analysis,
Geomatics | Central Field Services

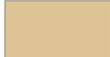
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PSPS 2021
BALCOM
Circuit
11/21/2021

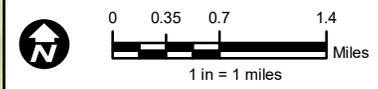
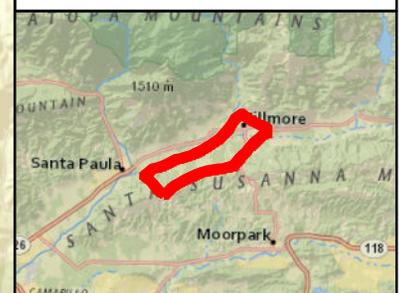
 **Segments Not Impacted by Event**

 **Segments De-energized**

 **Isolation Point**

Circuit Segments

-  Segment 1
-  Segment 2
-  Segment 3
-  Segment 4
-  Segment 5
-  Segment 6
-  Segment 7
-  Segment 8
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-  Segment 10
-  Segment 11
-  Segment 12



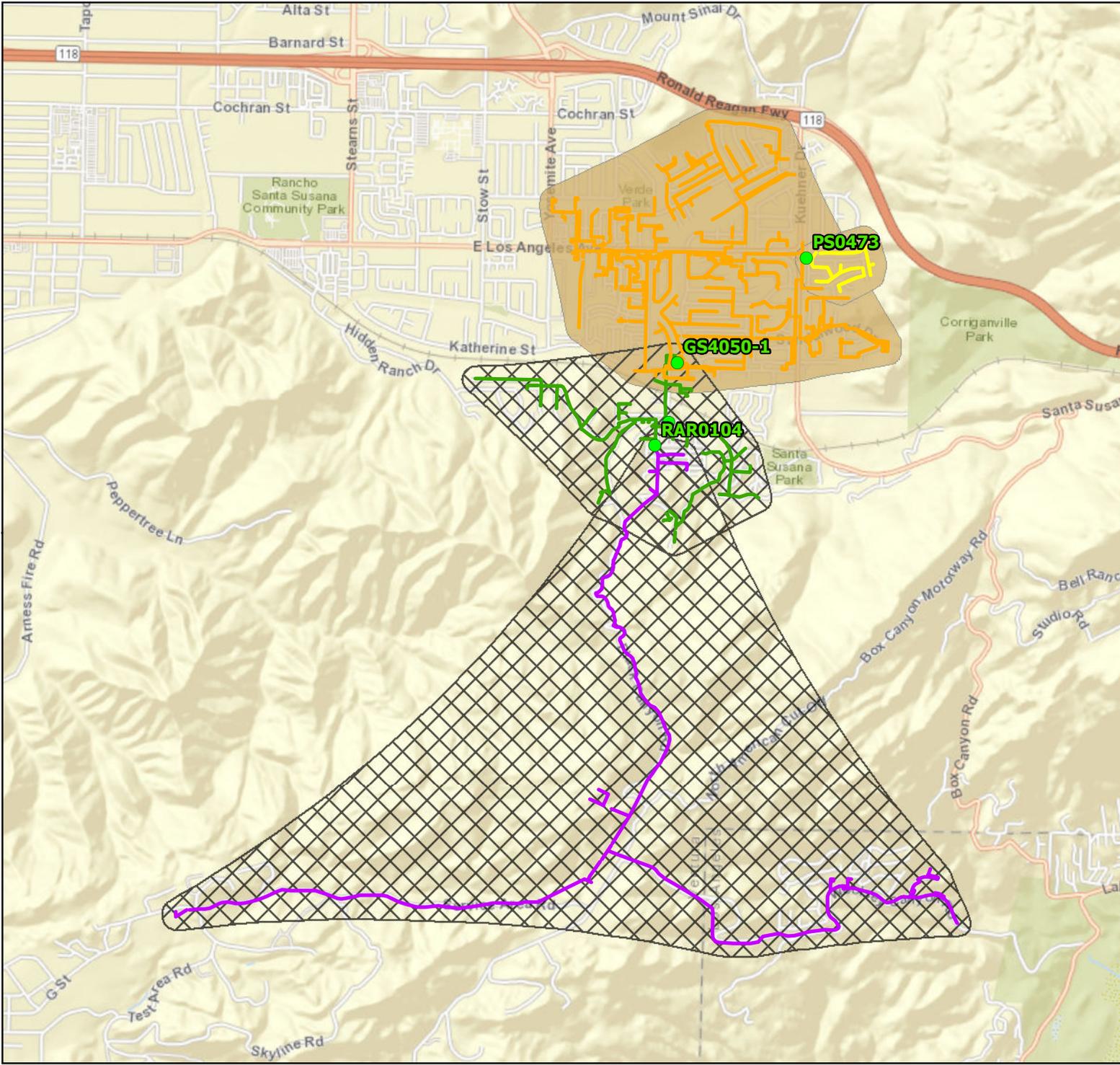
Date: 12/9/2021
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PSPS 2021 BIG ROCK Circuit 11/21/2021

 Segments Not Impacted by Event

 Segments De-energized

 Isolation Point

Circuit Segments

-  Segment 1
-  Segment 2
-  Segment 3
-  Segment 4
-  Segment 5
-  Segment 6
-  Segment 7
-  Segment 8
-  Segment 9
-  Segment 10
-  Segment 11
-  Segment 12



Date: 12/9/2021
 File Name: PSPS_Event_1_20211122_ImpactMitigation3.mxd
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PSPS 2021 BLACKHILLS Circuit 11/21/2021

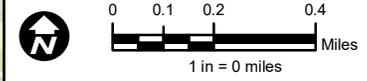
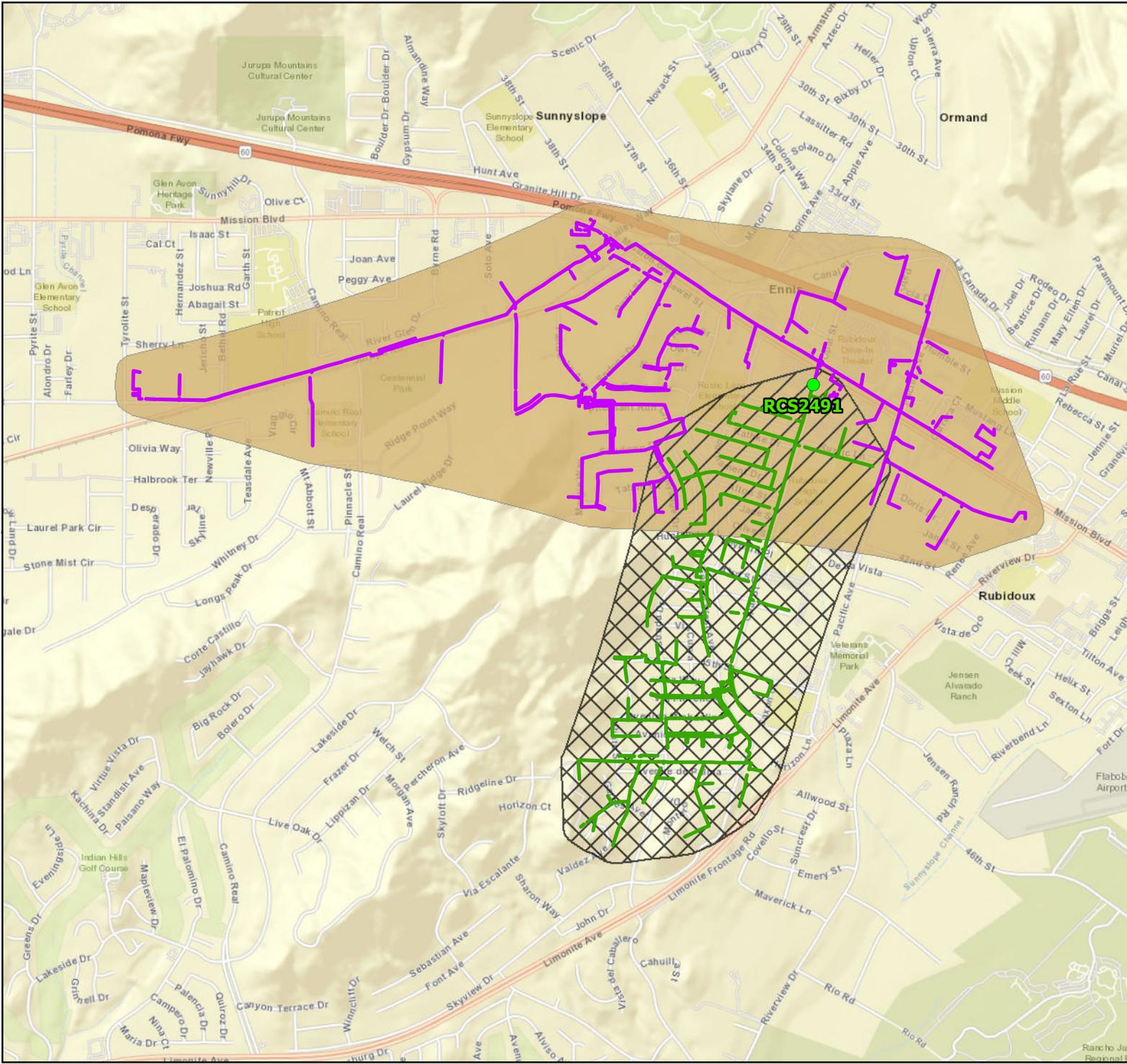
 Segments Not Impacted by Event

 Segments De-energized

 Isolation Point

Circuit Segments

-  Segment 1
-  Segment 2
-  Segment 3
-  Segment 4
-  Segment 5
-  Segment 6
-  Segment 7
-  Segment 8
-  Segment 9
-  Segment 10
-  Segment 11
-  Segment 12



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PSPS 2021 BORCHARD Circuit 11/21/2021

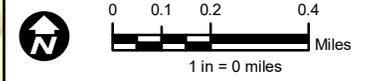
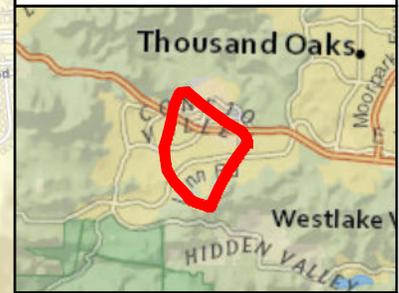
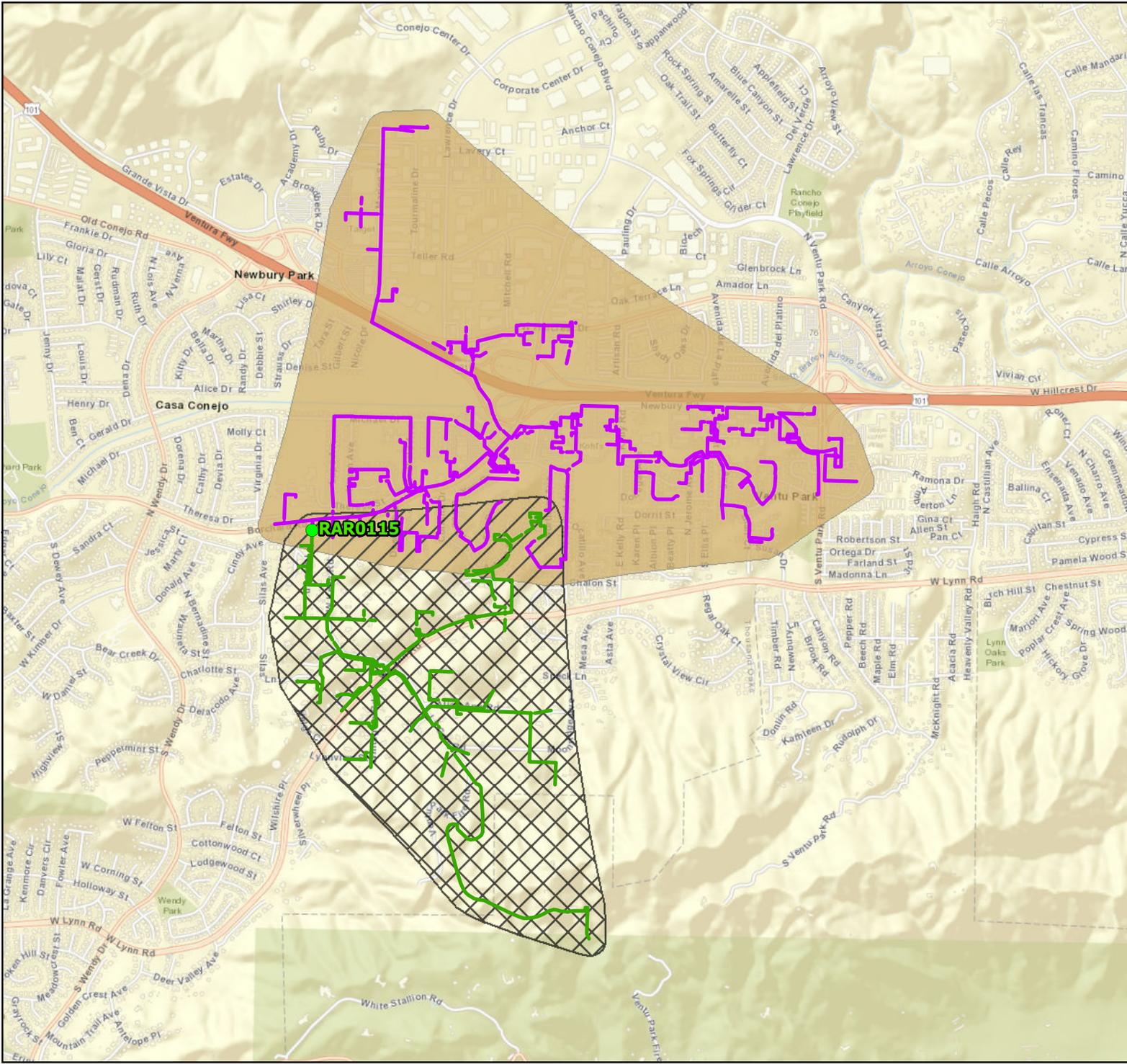
 Segments Not Impacted by Event

 Segments De-energized

 Isolation Point

Circuit Segments

-  Segment 1
-  Segment 2
-  Segment 3
-  Segment 4
-  Segment 5
-  Segment 6
-  Segment 7
-  Segment 8
-  Segment 9
-  Segment 10
-  Segment 11
-  Segment 12



Date: 12/9/2021
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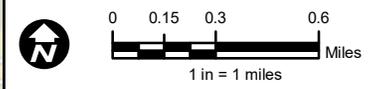
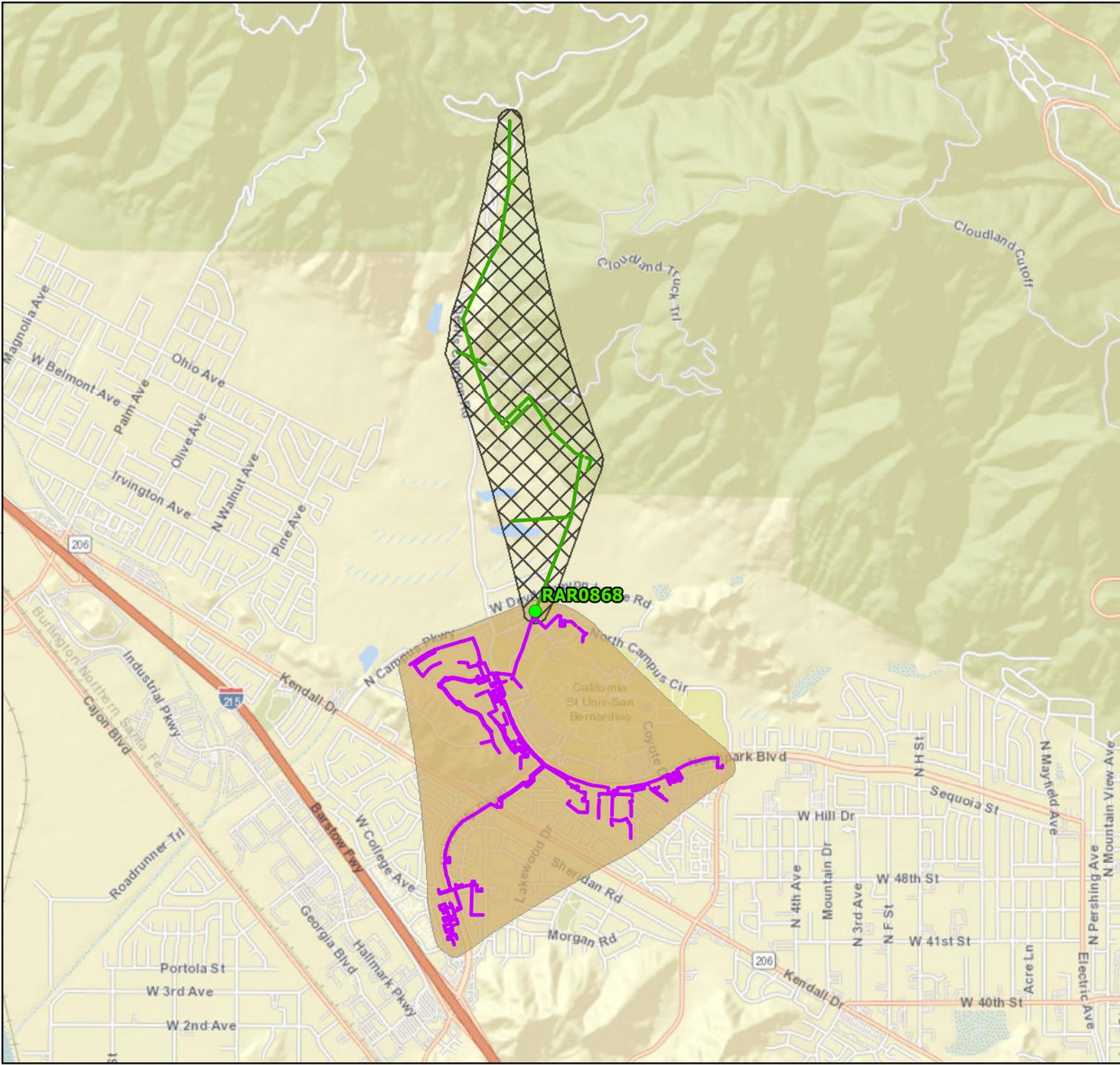
PSPS 2021

CALSTATE

Circuit

11/21/2021

-  Segments Not Impacted by Event
-  Segments De-energized
-  Isolation Point
- Circuit Segments**
-  Segment 1
-  Segment 2
-  Segment 3
-  Segment 4
-  Segment 5
-  Segment 6
-  Segment 7
-  Segment 8
-  Segment 9
-  Segment 10
-  Segment 11
-  Segment 12



Date: 12/9/2021
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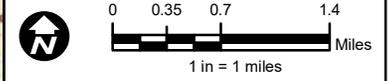
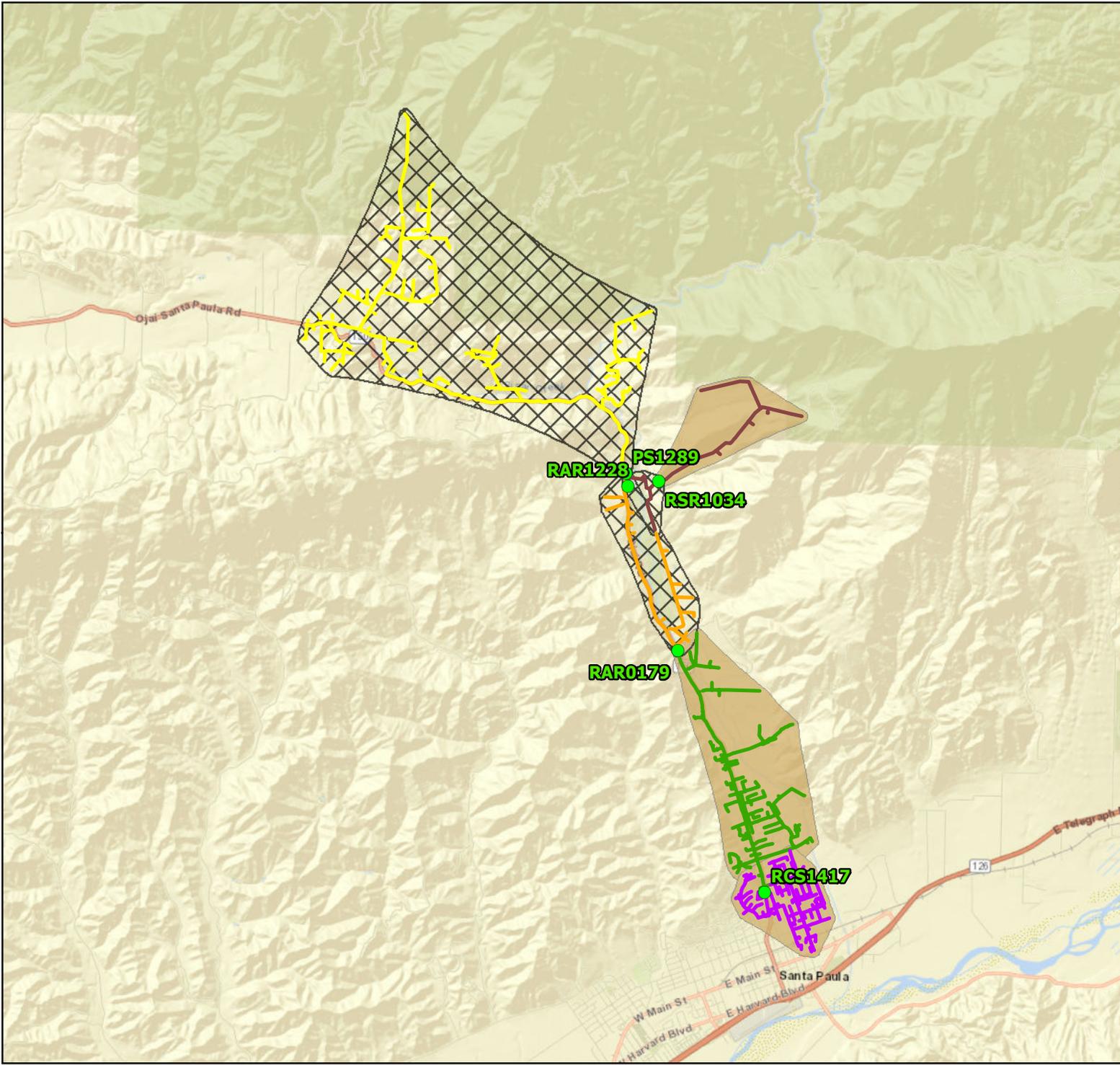
PSPS 2021

CASTRO

Circuit

11/21/2021

-  Segments Not Impacted by Event
-  Segments De-energized
-  Isolation Point
- Circuit Segments**
-  Segment 1
-  Segment 2
-  Segment 3
-  Segment 4
-  Segment 5
-  Segment 6
-  Segment 7
-  Segment 8
-  Segment 9
-  Segment 10
-  Segment 11
-  Segment 12



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PSPS 2021 CRESTLINE Circuit 11/21/2021

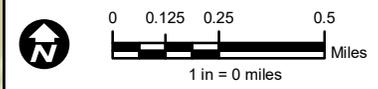
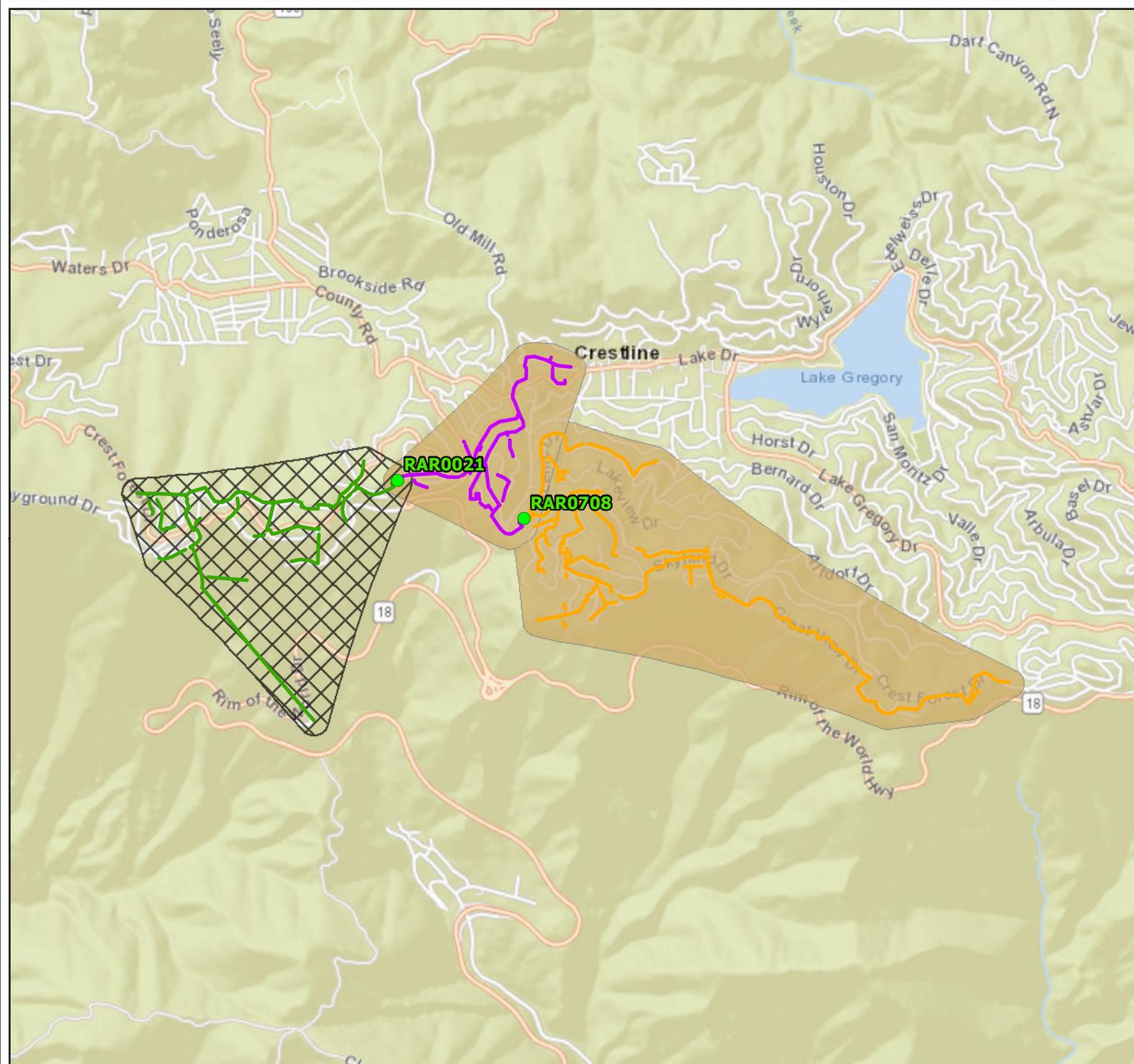
 Segments Not Impacted by Event

 Segments De-energized

 Isolation Point

Circuit Segments

-  Segment 1
-  Segment 2
-  Segment 3
-  Segment 4
-  Segment 5
-  Segment 6
-  Segment 7
-  Segment 8
-  Segment 9
-  Segment 10
-  Segment 11
-  Segment 12



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PSPS 2021

DONLON

Circuit

11/21/2021

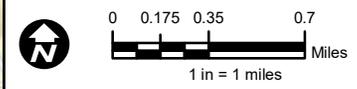
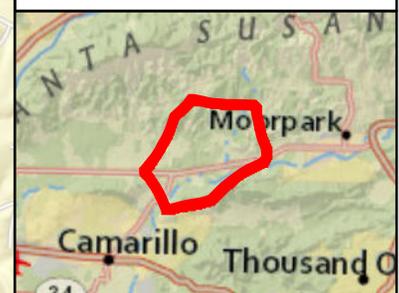
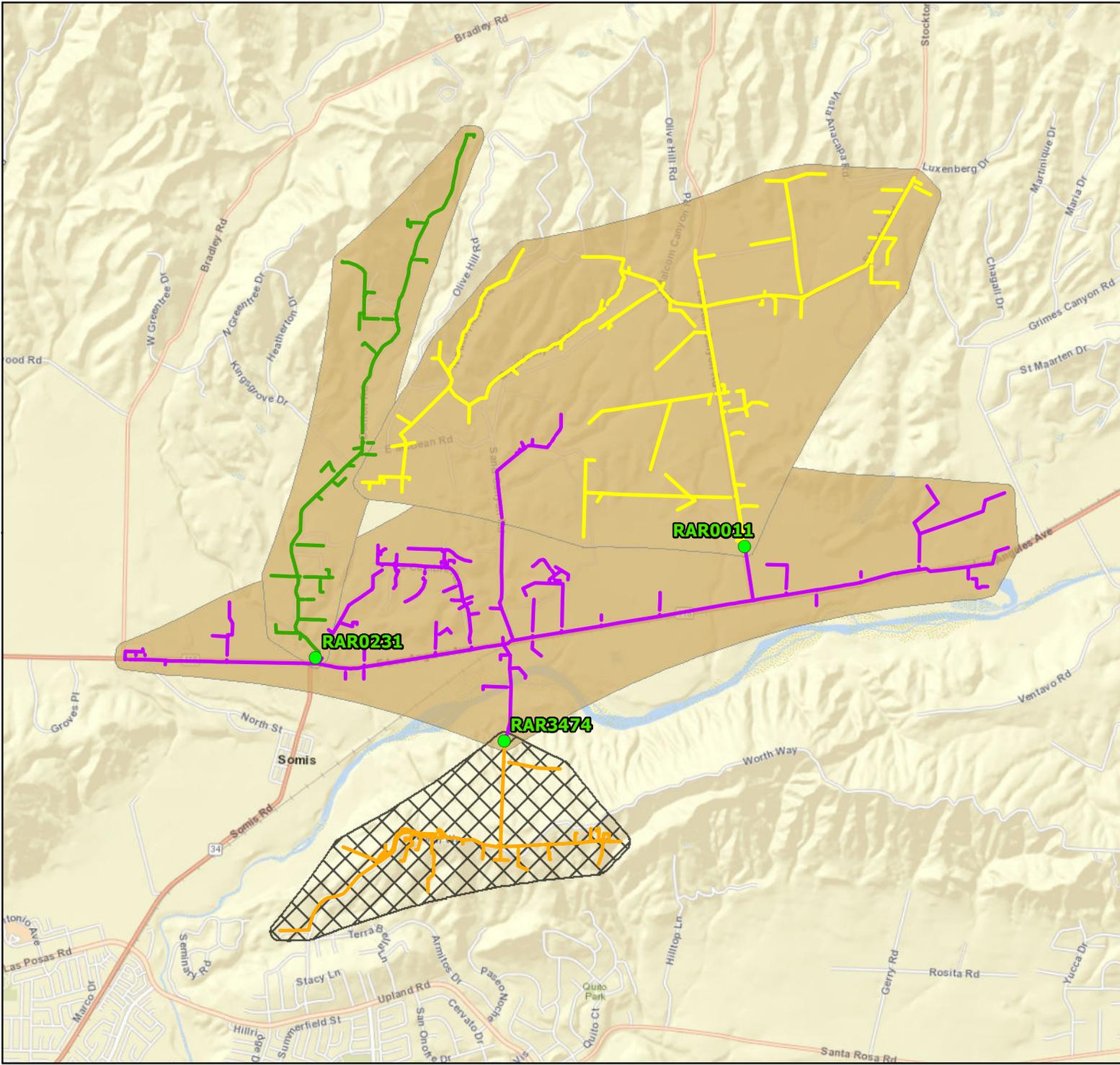
 Segments Not Impacted by Event

 Segments De-energized

 Isolation Point

Circuit Segments

-  Segment 1
-  Segment 2
-  Segment 3
-  Segment 4
-  Segment 5
-  Segment 6
-  Segment 7
-  Segment 8
-  Segment 9
-  Segment 10
-  Segment 11
-  Segment 12



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PSPS 2021 ENCHANTED Circuit 11/21/2021

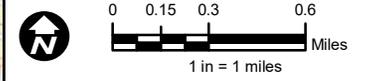
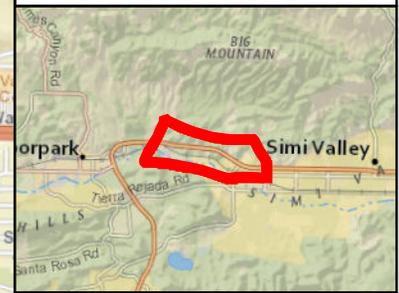
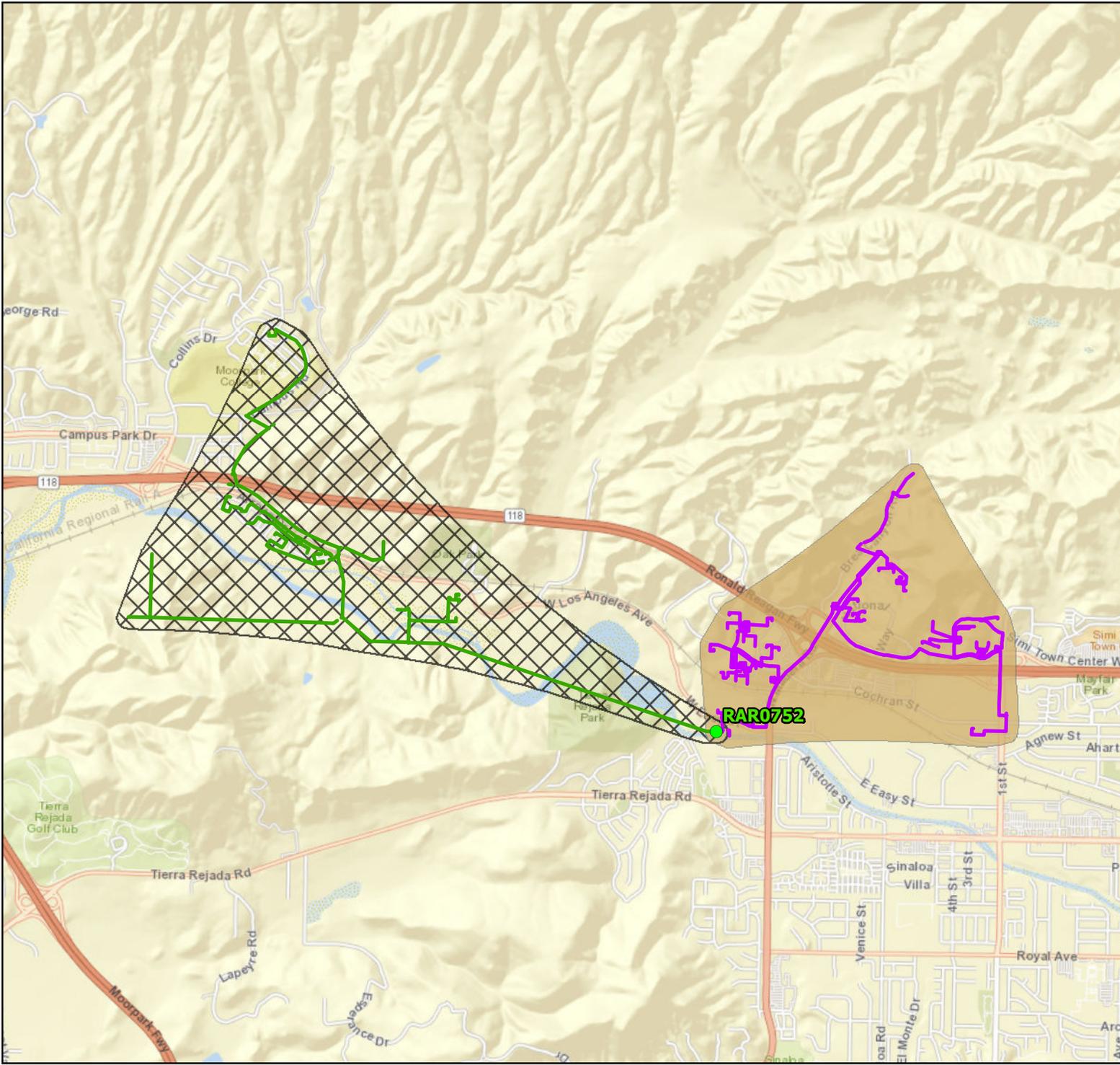
 Segments Not Impacted by Event

 Segments De-energized

 Isolation Point

Circuit Segments

-  Segment 1
-  Segment 2
-  Segment 3
-  Segment 4
-  Segment 5
-  Segment 6
-  Segment 7
-  Segment 8
-  Segment 9
-  Segment 10
-  Segment 11
-  Segment 12



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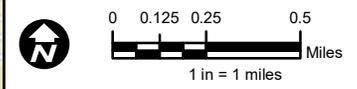
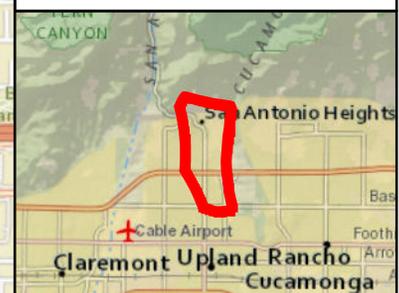
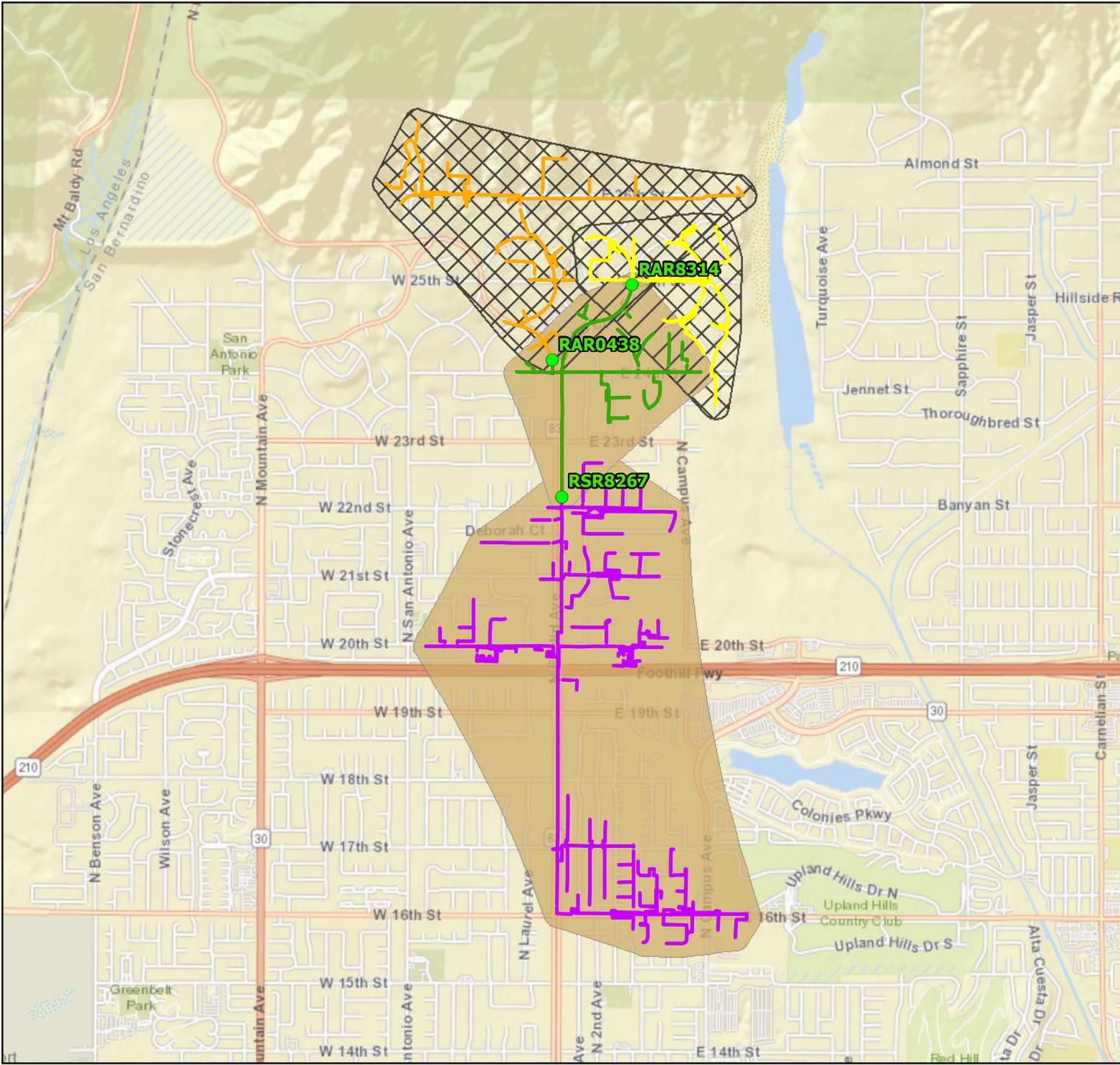
PSPS 2021

FANO

Circuit

11/21/2021

-  Segments Not Impacted by Event
-  Segments De-energized
-  Isolation Point
- Circuit Segments**
-  Segment 1
-  Segment 2
-  Segment 3
-  Segment 4
-  Segment 5
-  Segment 6
-  Segment 7
-  Segment 8
-  Segment 10
-  Segment 11
-  Segment 12



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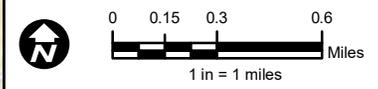
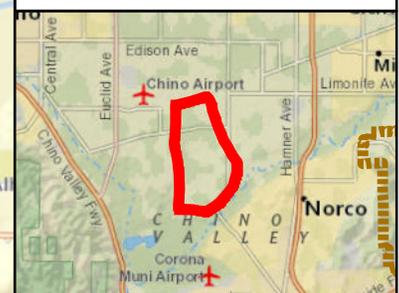
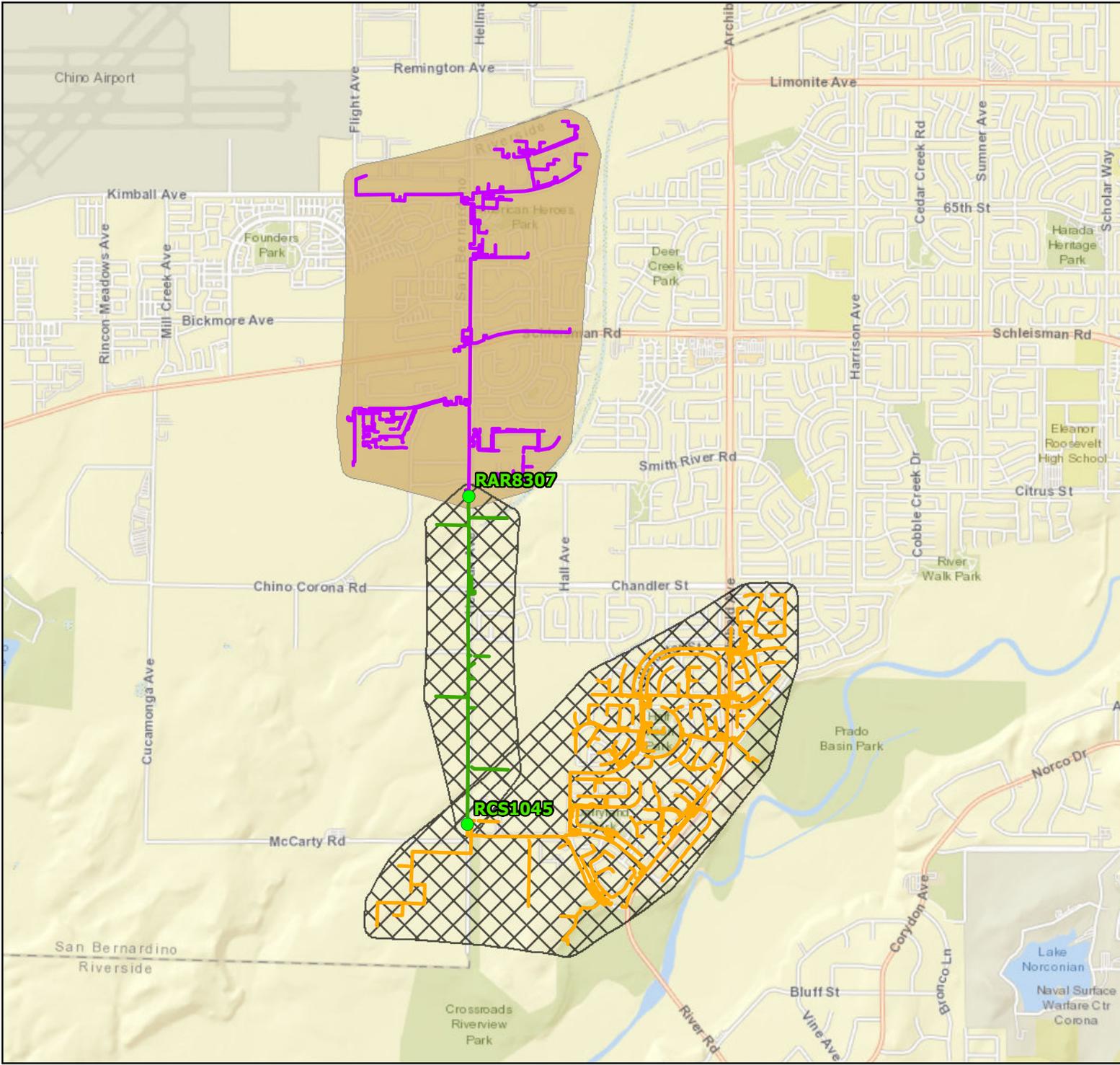
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PSPS 2021 FORTRESS Circuit 11/21/2021

-  Segments Not Impacted by Event
-  Segments De-energized
-  Isolation Point
- Circuit Segments**
-  Segment 1
-  Segment 2
-  Segment 3
-  Segment 4
-  Segment 5
-  Segment 6
-  Segment 7
-  Segment 8
-  Segment 9
-  Segment 10
-  Segment 11
-  Segment 12



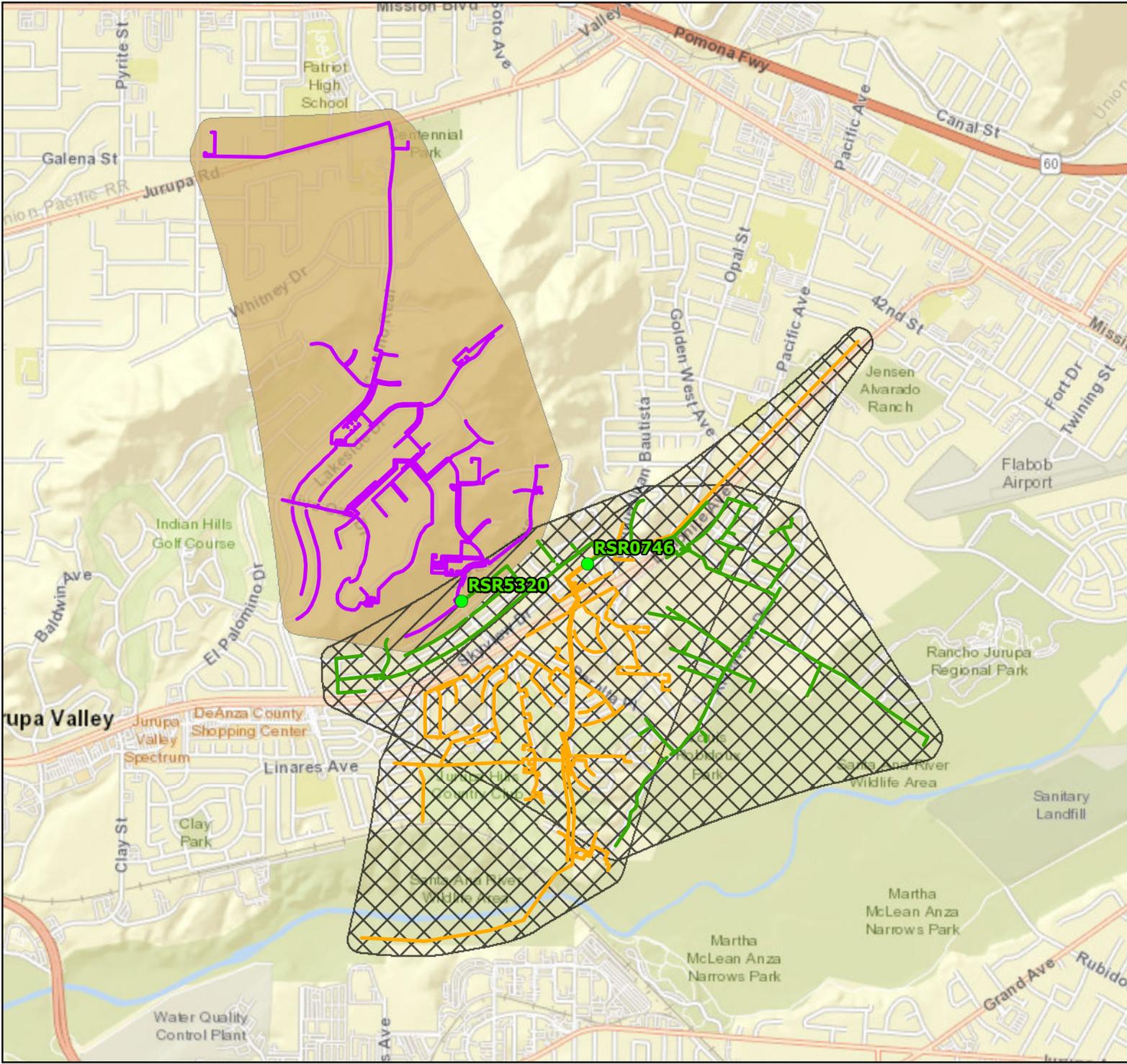
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PSPS 2021

GALENA

Circuit

11/21/2021

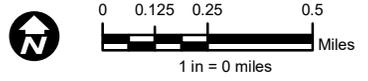
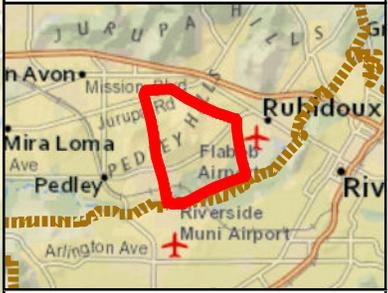
 Segments Not Impacted by Event

 Segments De-energized

 Isolation Point

Circuit Segments

-  Segment 1
-  Segment 2
-  Segment 3
-  Segment 4
-  Segment 5
-  Segment 6
-  Segment 7
-  Segment 8
-  Segment 10
-  Segment 11
-  Segment 12



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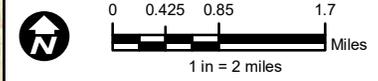
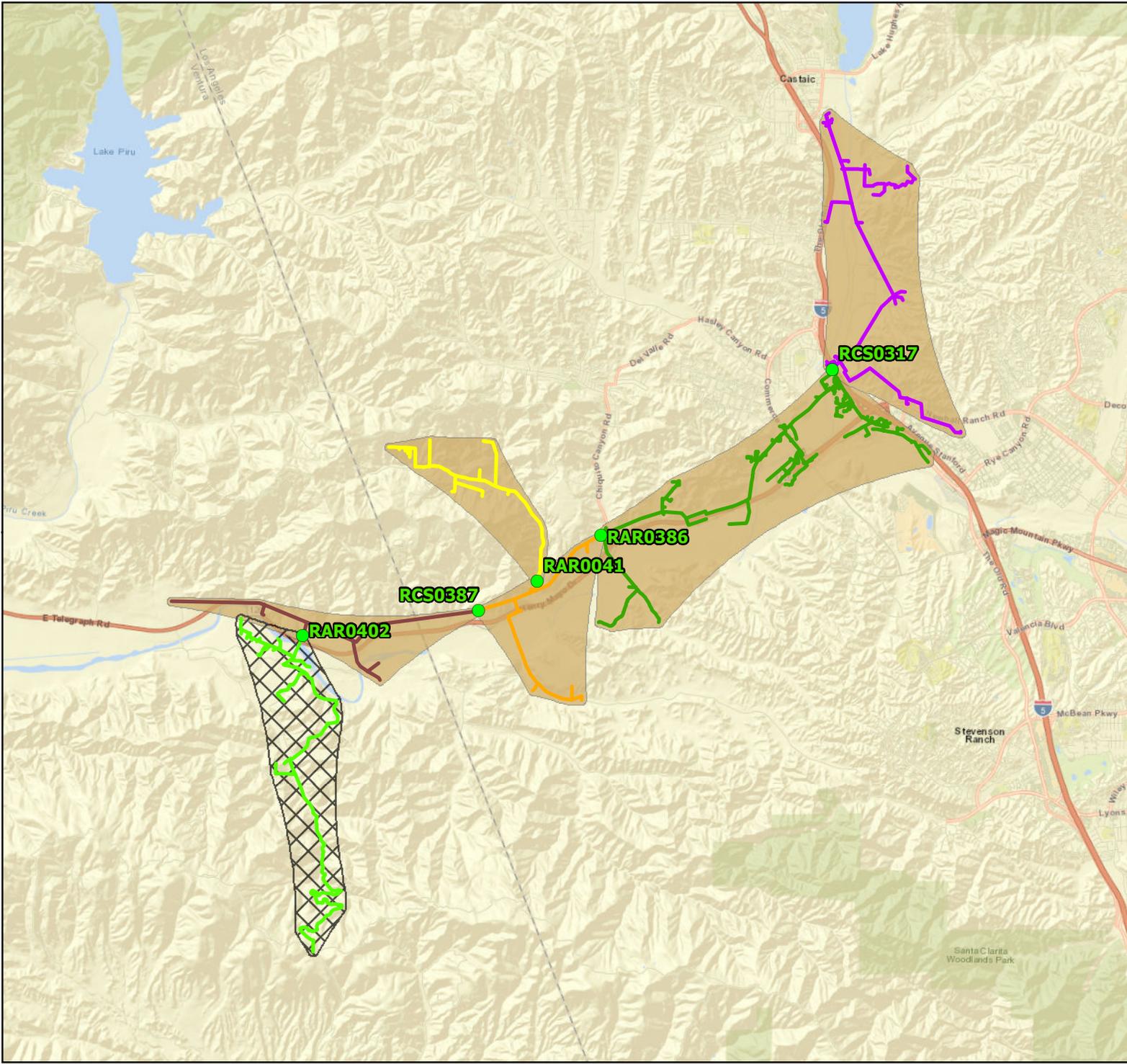


PSPS 2021

GUITAR Circuit

11/21/2021

-  Segments Not Impacted by Event
-  Segments De-energized
-  Isolation Point
- Circuit Segments**
-  Segment 1
-  Segment 2
-  Segment 3
-  Segment 4
-  Segment 5
-  Segment 6
-  Segment 7
-  Segment 8
-  Segment 9
-  Segment 10
-  Segment 11
-  Segment 12



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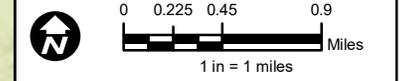
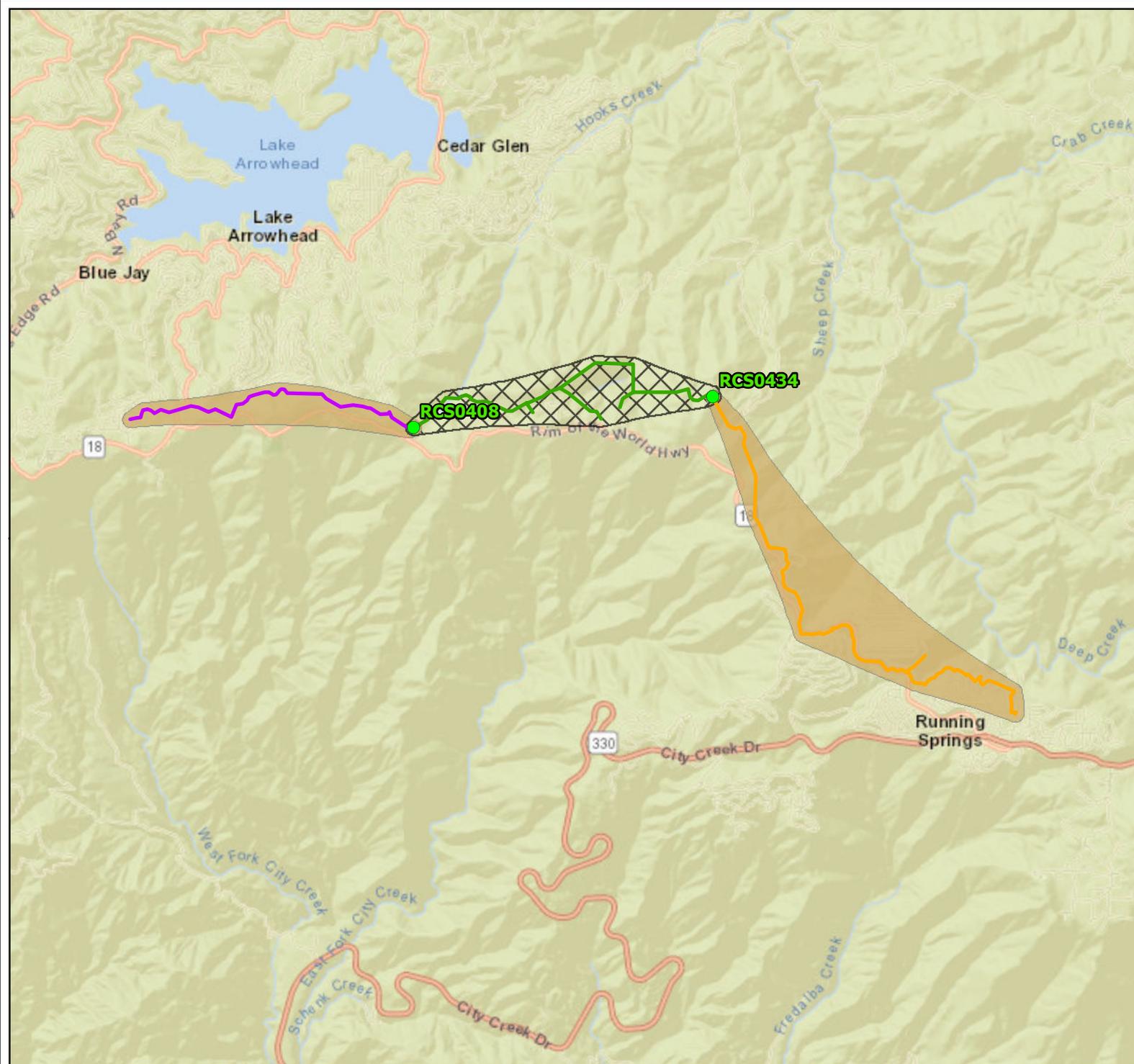
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PSPS 2021 HEAPS PEAK Circuit 11/21/2021

-  Segments Not Impacted by Event
-  Segments De-energized
-  Isolation Point
- Circuit Segments**
-  Segment 1
-  Segment 2
-  Segment 3
-  Segment 4
-  Segment 5
-  Segment 6
-  Segment 7
-  Segment 8
-  Segment 9
-  Segment 10
-  Segment 11
-  Segment 12



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PSPS 2021 HUCKLEBERRY Circuit 11/21/2021

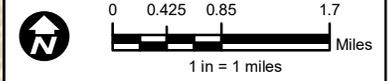
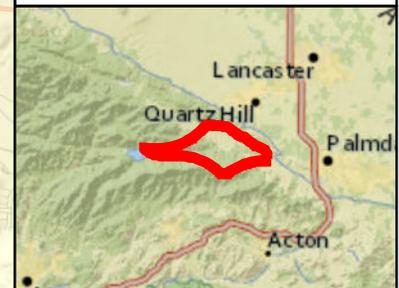
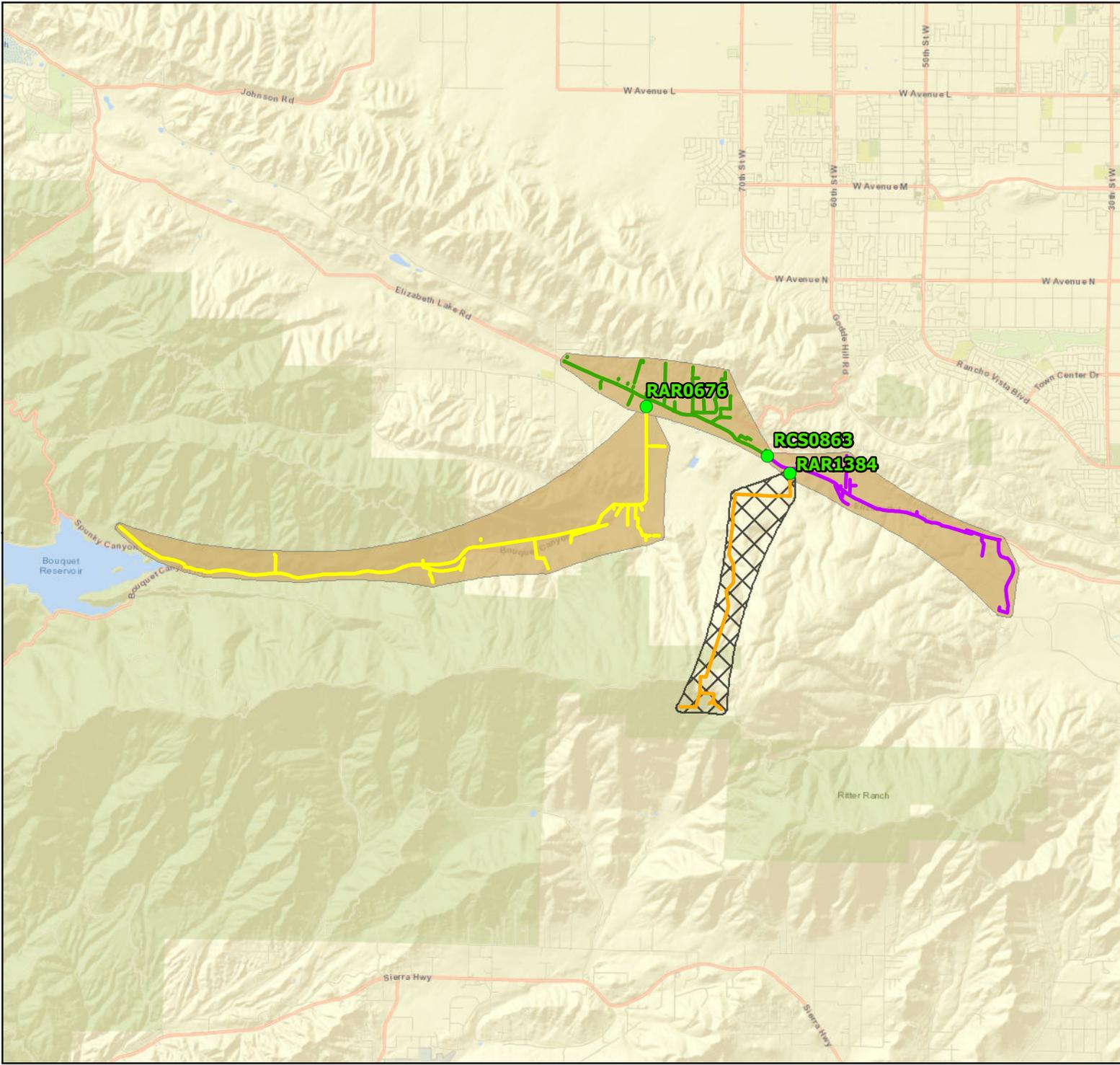
 Segments Not Impacted by Event

 Segments De-energized

 Isolation Point

Circuit Segments

-  Segment 1
-  Segment 2
-  Segment 3
-  Segment 4
-  Segment 5
-  Segment 6
-  Segment 7
-  Segment 8
-  Segment 9
-  Segment 10
-  Segment 11
-  Segment 12



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PSPS 2021

IRAN

Circuit

11/21/2021

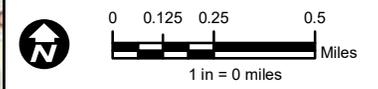
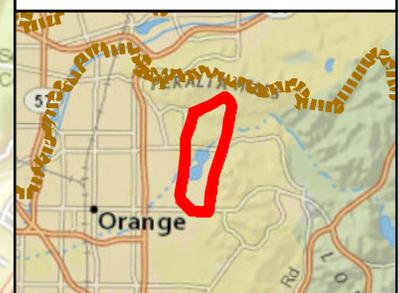
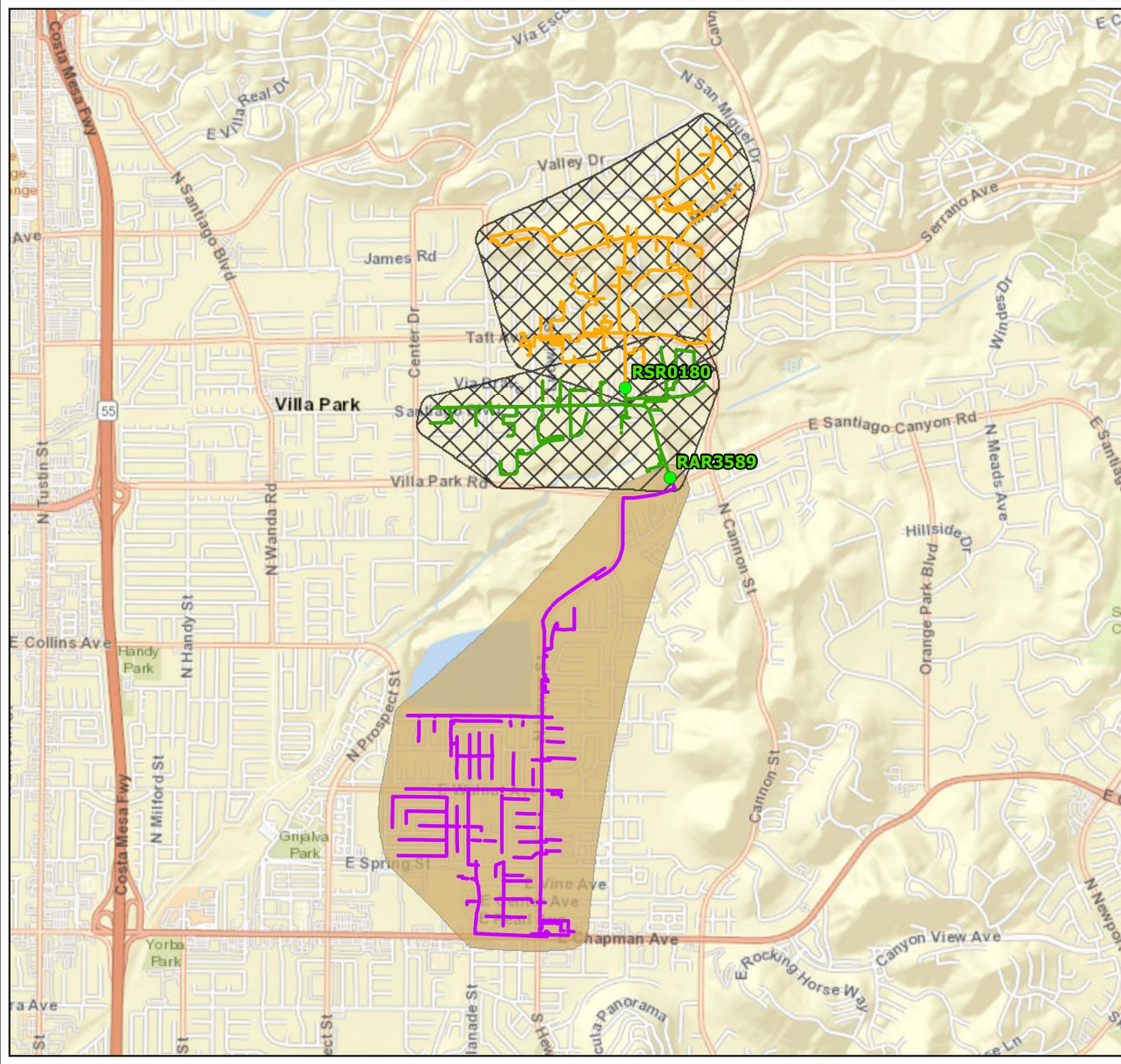
 Segments Not Impacted by Event

 Segments De-energized

 Isolation Point

Circuit Segments

-  Segment 1
-  Segment 2
-  Segment 3
-  Segment 4
-  Segment 5
-  Segment 6
-  Segment 7
-  Segment 8
-  Segment 9
-  Segment 10
-  Segment 11
-  Segment 12



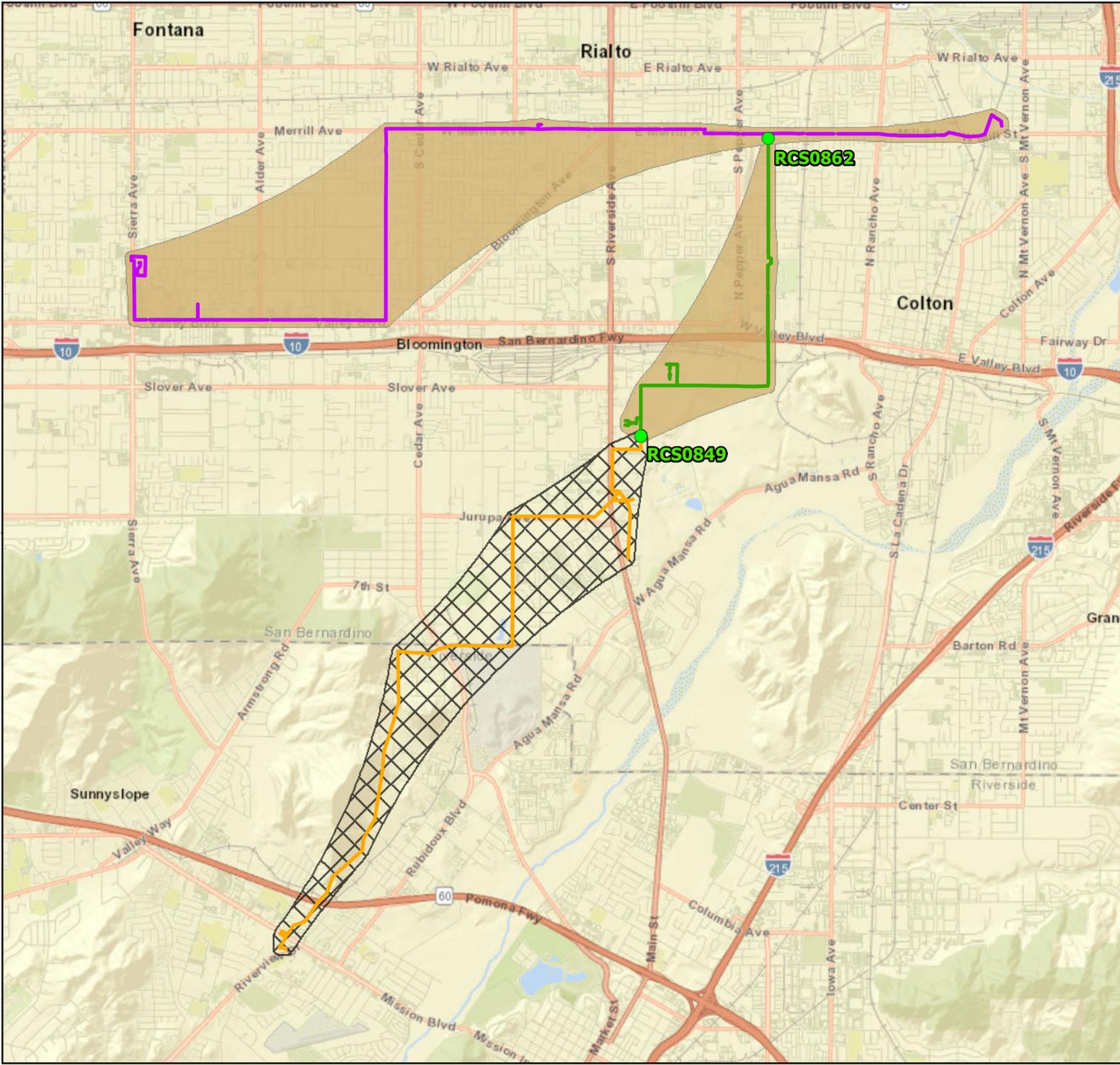
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PSPS 2021

LARCH

Circuit

11/21/2021

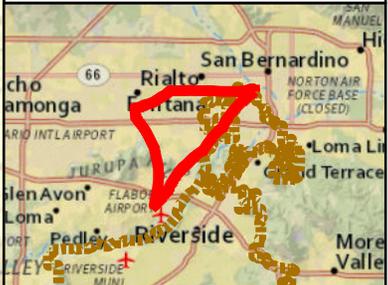
 Segments Not Impacted by Event

 Segments De-energized

 Isolation Point

Circuit Segments

-  Segment 1
-  Segment 2
-  Segment 3
-  Segment 4
-  Segment 5
-  Segment 6
-  Segment 7
-  Segment 8
-  Segment 10
-  Segment 11
-  Segment 12



Date: 12/9/2021
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PSPS 2021

LAUDA
Circuit
11/21/2021

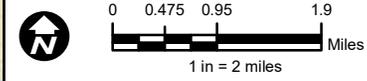
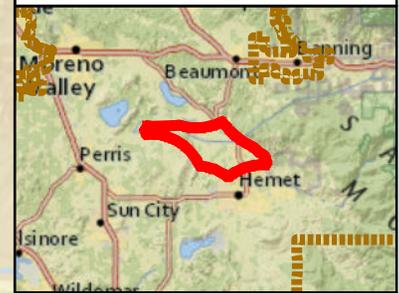
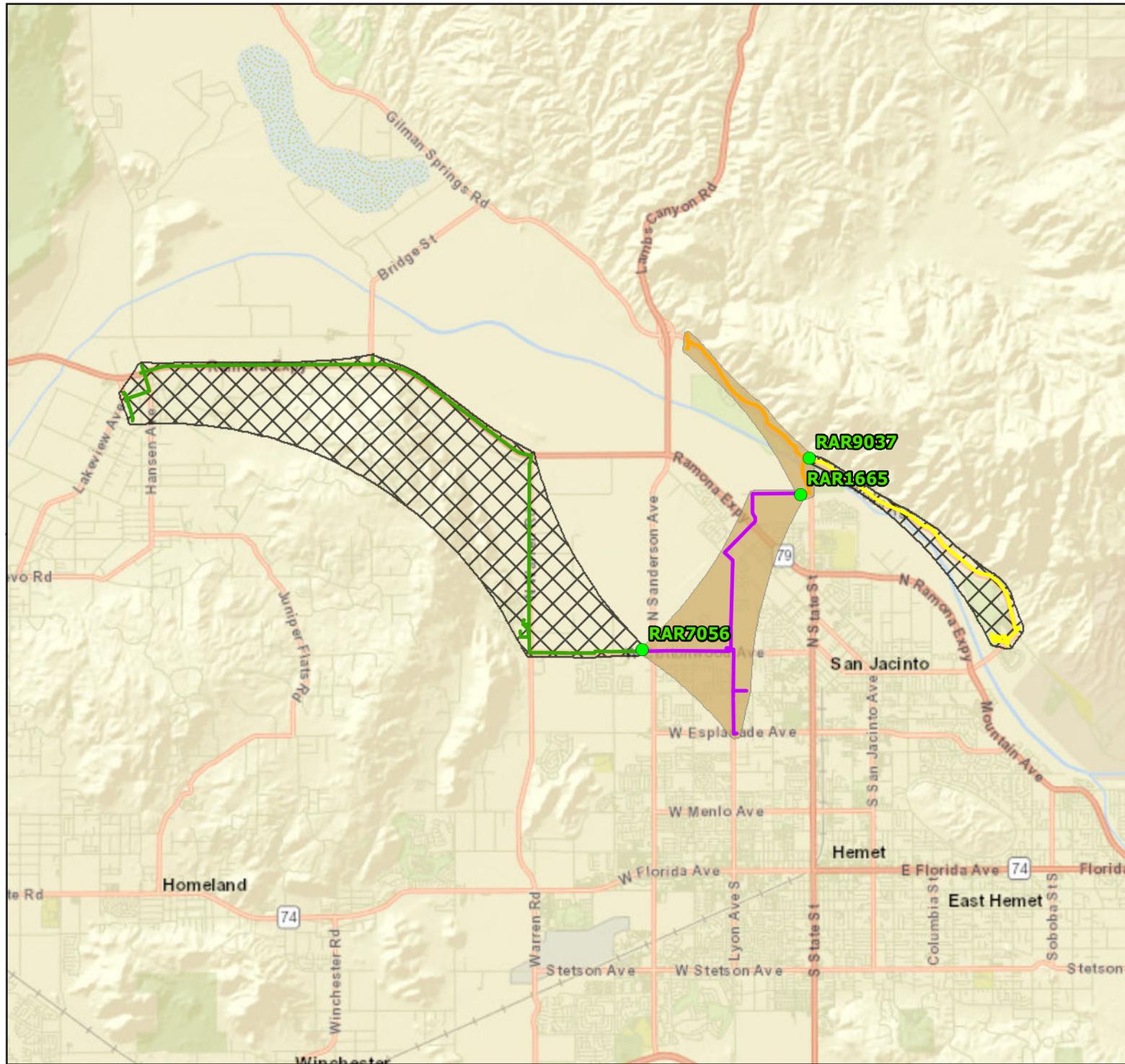
 Segments Not Impacted by Event

 Segments De-energized

 Isolation Point

Circuit Segments

-  Segment 1
-  Segment 2
-  Segment 3
-  Segment 4
-  Segment 5
-  Segment 6
-  Segment 7
-  Segment 8
-  Segment 9
-  Segment 10
-  Segment 11
-  Segment 12



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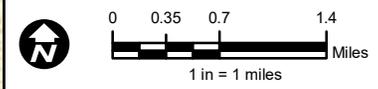
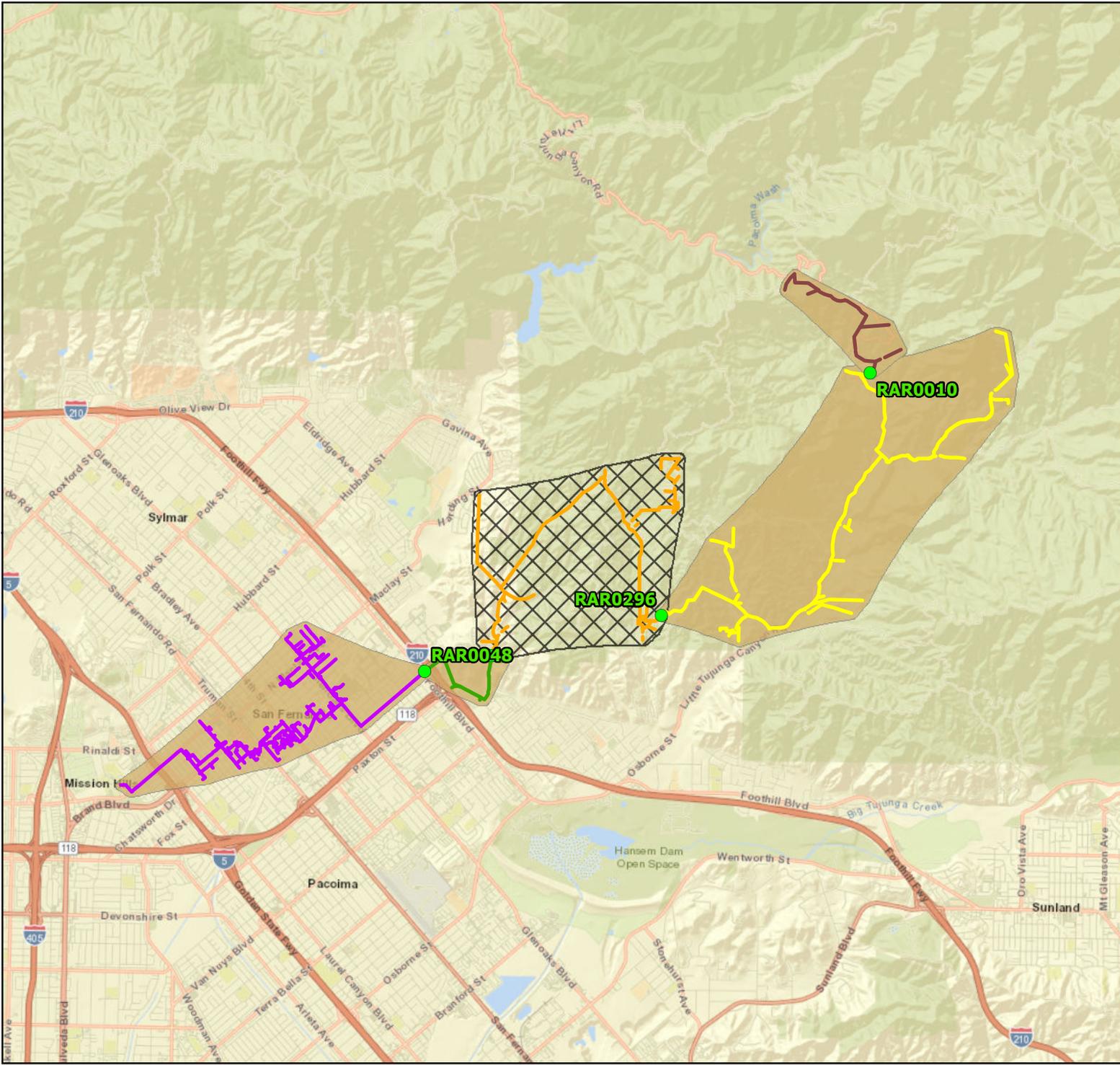
PSPS 2021

LOPEZ

Circuit

11/21/2021

-  Segments Not Impacted by Event
-  Segments De-energized
-  Isolation Point
- Circuit Segments**
 -  Segment 1
 -  Segment 2
 -  Segment 3
 -  Segment 4
 -  Segment 5
 -  Segment 6
 -  Segment 7
 -  Segment 8
 -  Segment 9
 -  Segment 10
 -  Segment 11
 -  Segment 12

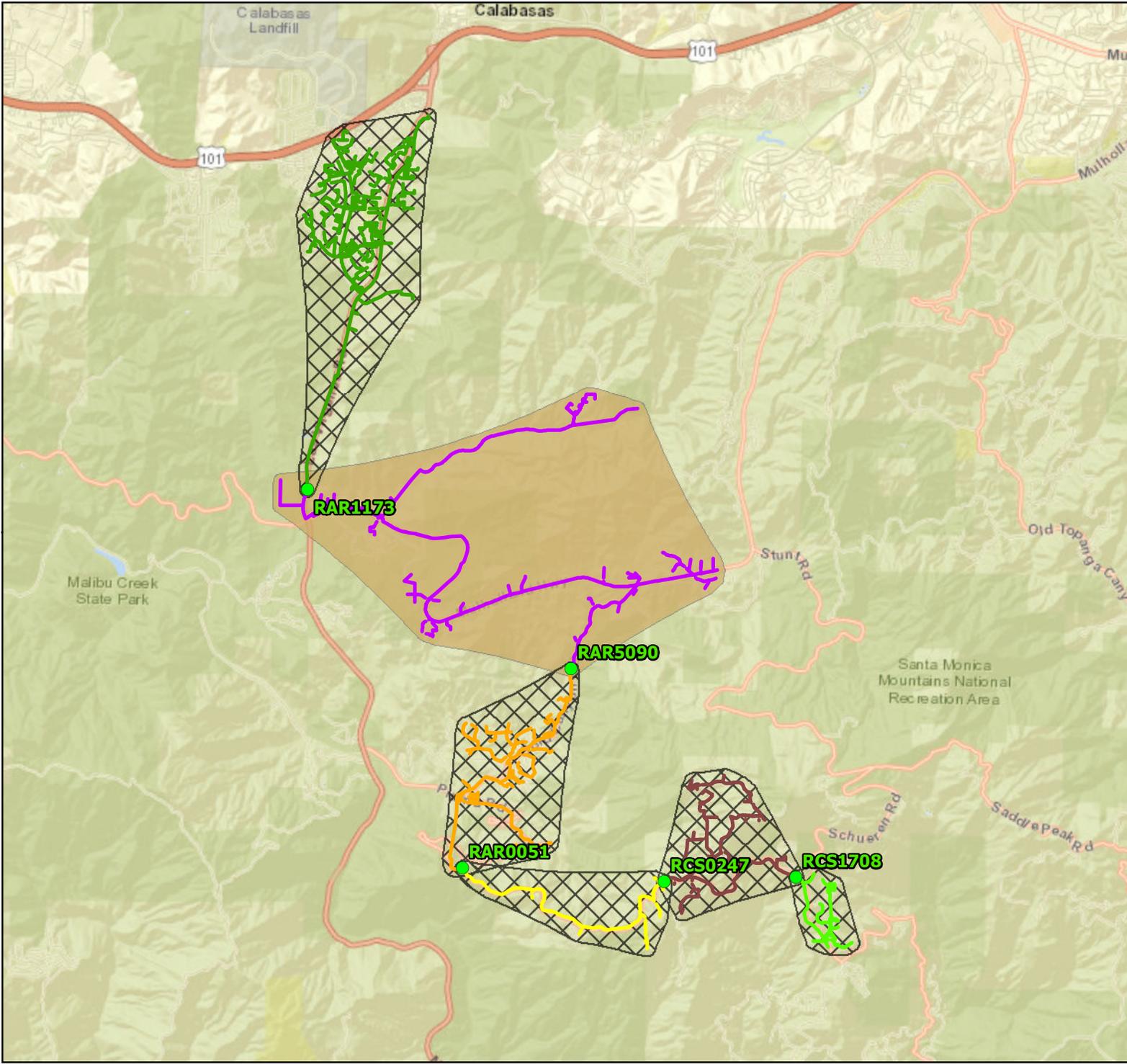


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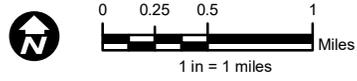
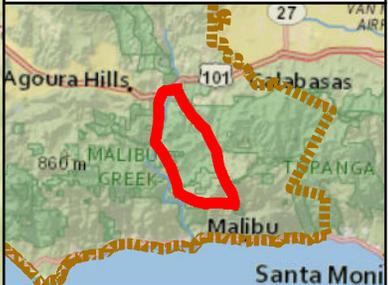
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PSPS 2021
PLATEAU
Circuit
11/21/2021

-  Segments Not Impacted by Event
-  Segments De-energized
-  Isolation Point
- Circuit Segments**
-  Segment 1
-  Segment 2
-  Segment 3
-  Segment 4
-  Segment 5
-  Segment 6
-  Segment 7
-  Segment 8
-  Segment 9
-  Segment 10
-  Segment 11
-  Segment 12



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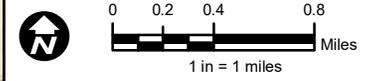
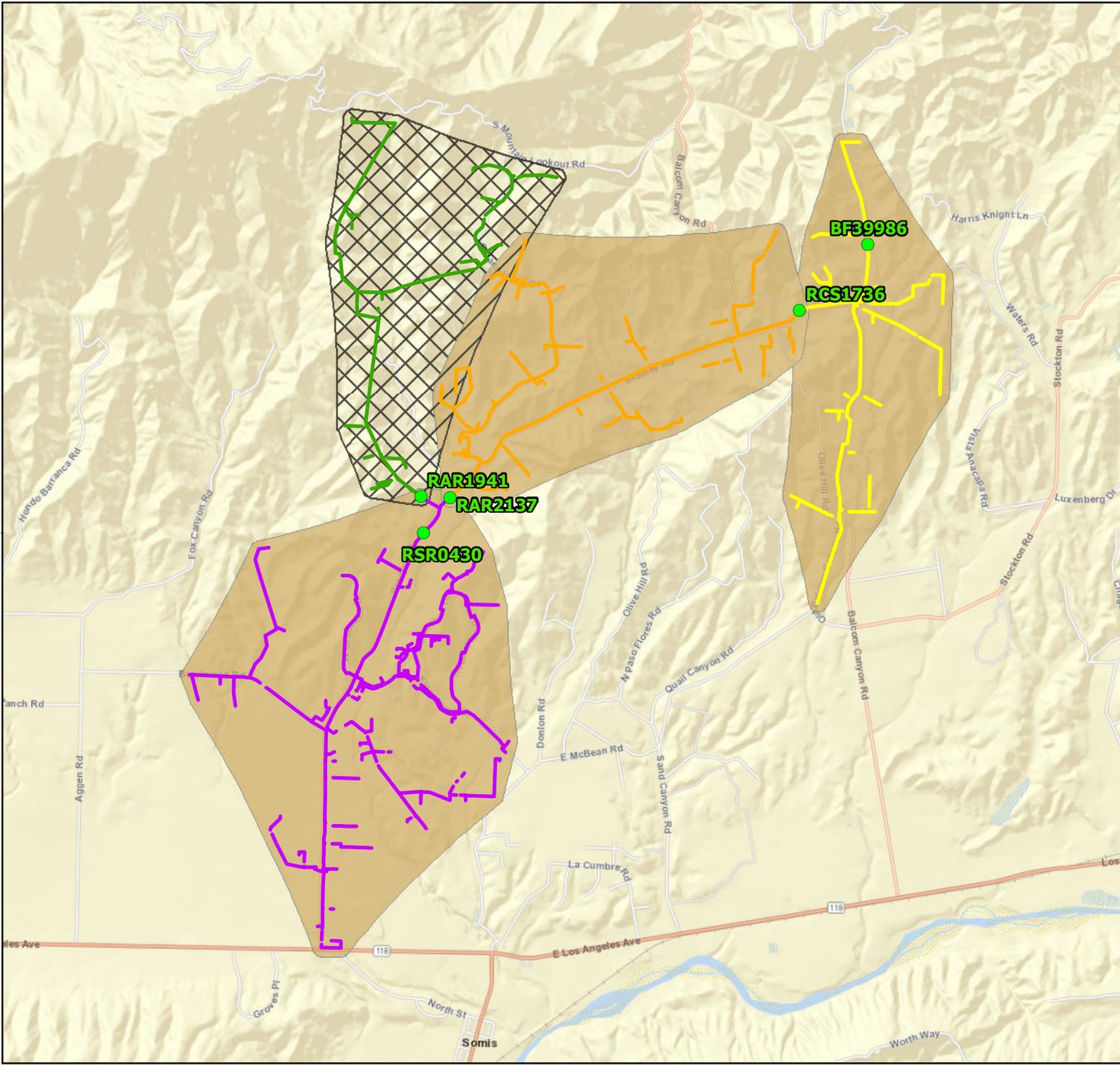
PSPS 2021

RAINBOW

Circuit

11/21/2021

-  Segments Not Impacted by Event
-  Segments De-energized
-  Isolation Point
- Circuit Segments**
-  Segment 1
-  Segment 2
-  Segment 3
-  Segment 4
-  Segment 5
-  Segment 6
-  Segment 7
-  Segment 8
-  Segment 10
-  Segment 11
-  Segment 12



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PSPS 2021 RESORT Circuit 11/21/2021

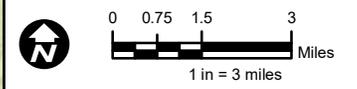
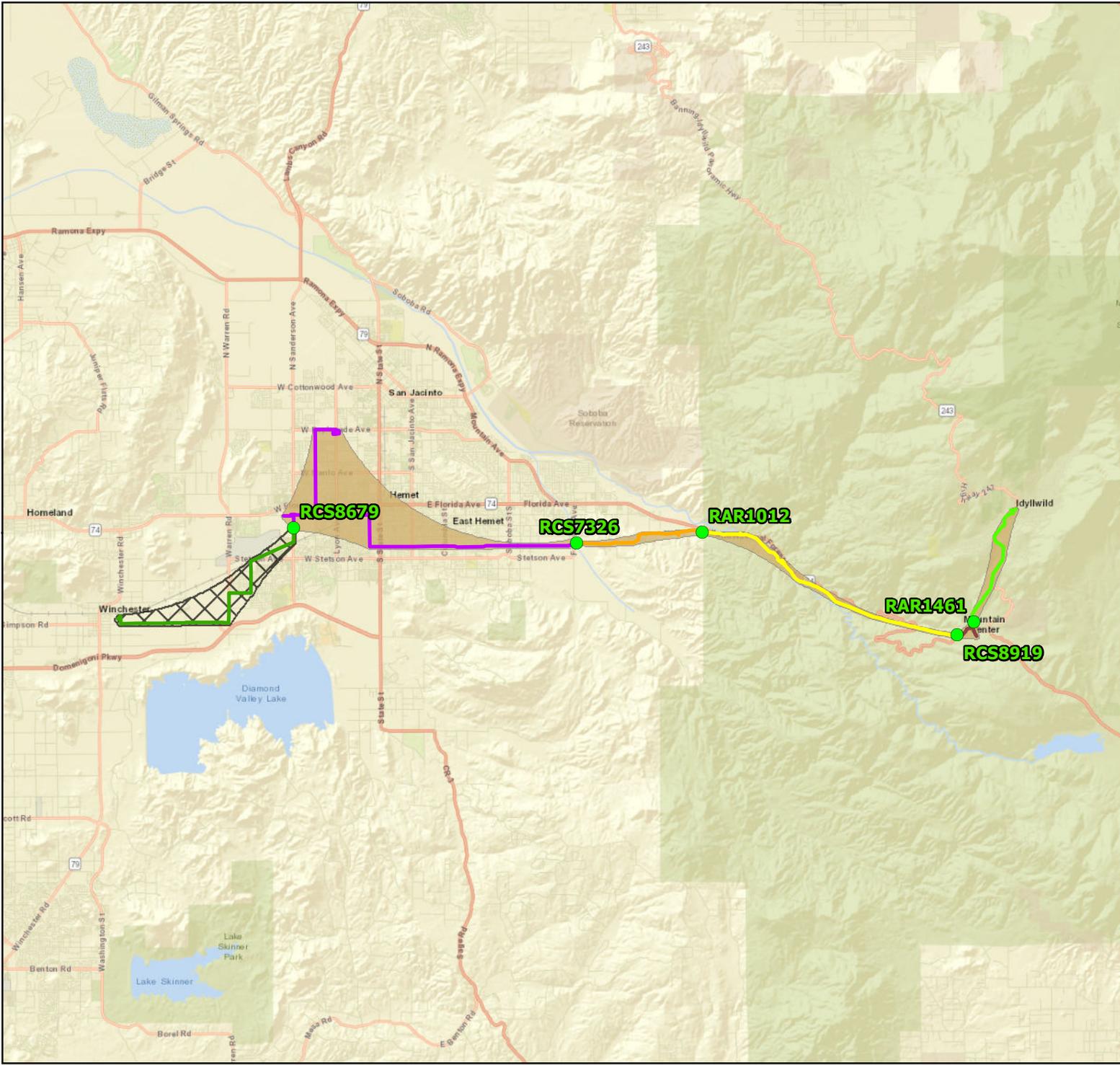
 Segments Not Impacted by Event

 Segments De-energized

 Isolation Point

Circuit Segments

-  Segment 1
-  Segment 2
-  Segment 3
-  Segment 4
-  Segment 5
-  Segment 6
-  Segment 7
-  Segment 8
-  Segment 9
-  Segment 10
-  Segment 11
-  Segment 12



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PSPS 2021

ROS

Circuit

11/21/2021

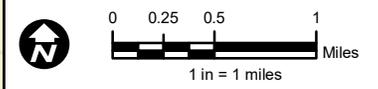
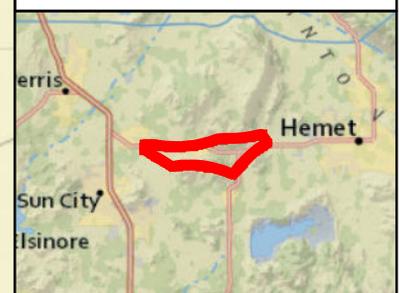
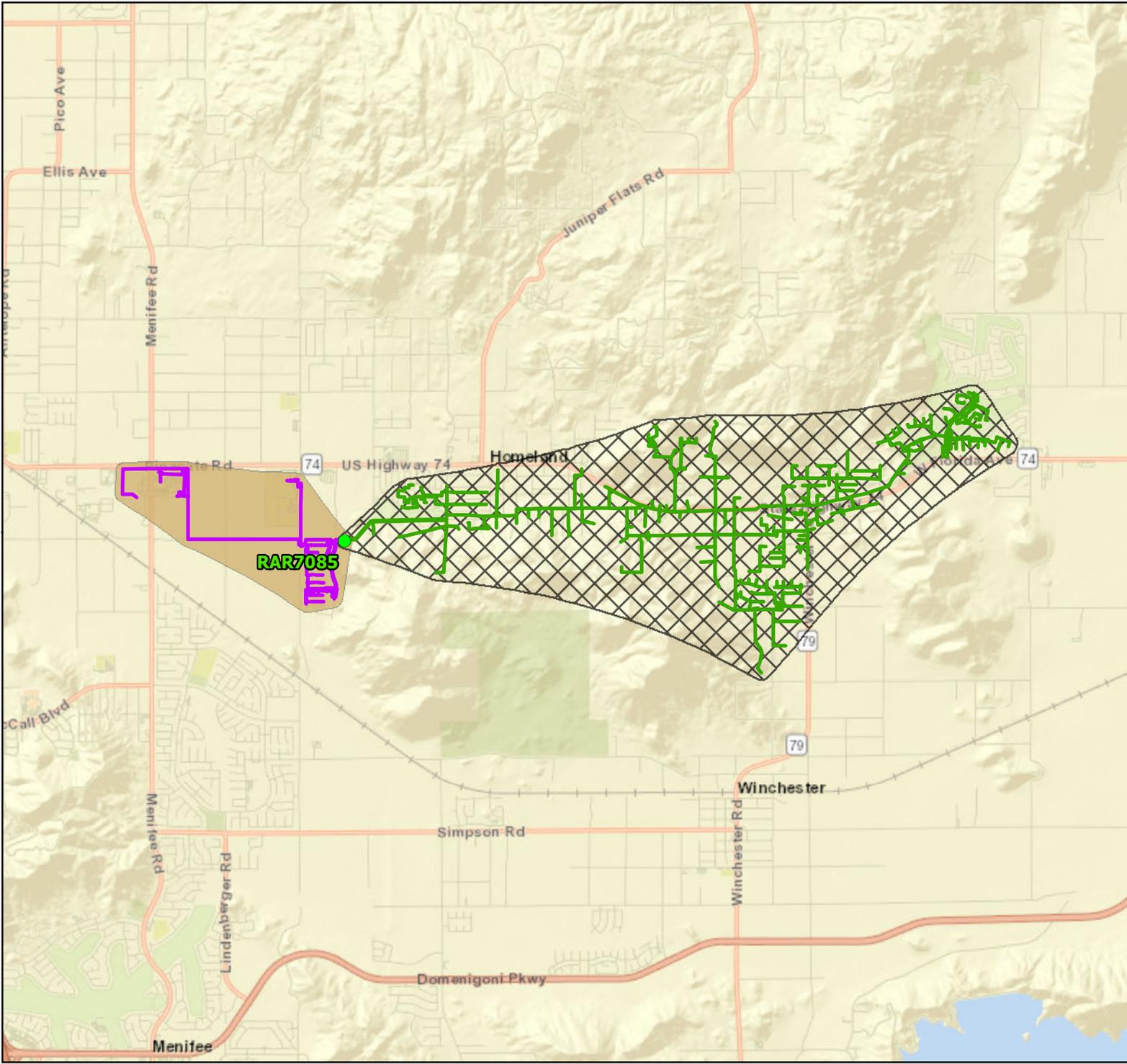
 Segments Not Impacted by Event

 Segments De-energized

 Isolation Point

Circuit Segments

-  Segment 1
-  Segment 2
-  Segment 3
-  Segment 4
-  Segment 5
-  Segment 6
-  Segment 7
-  Segment 8
-  Segment 9
-  Segment 10
-  Segment 11
-  Segment 12



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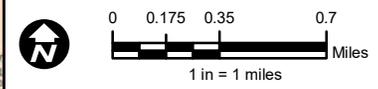
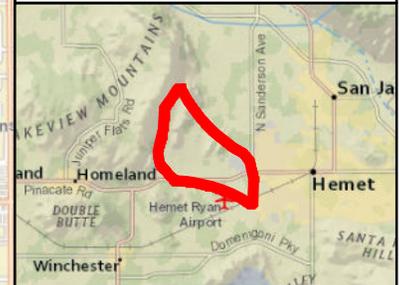
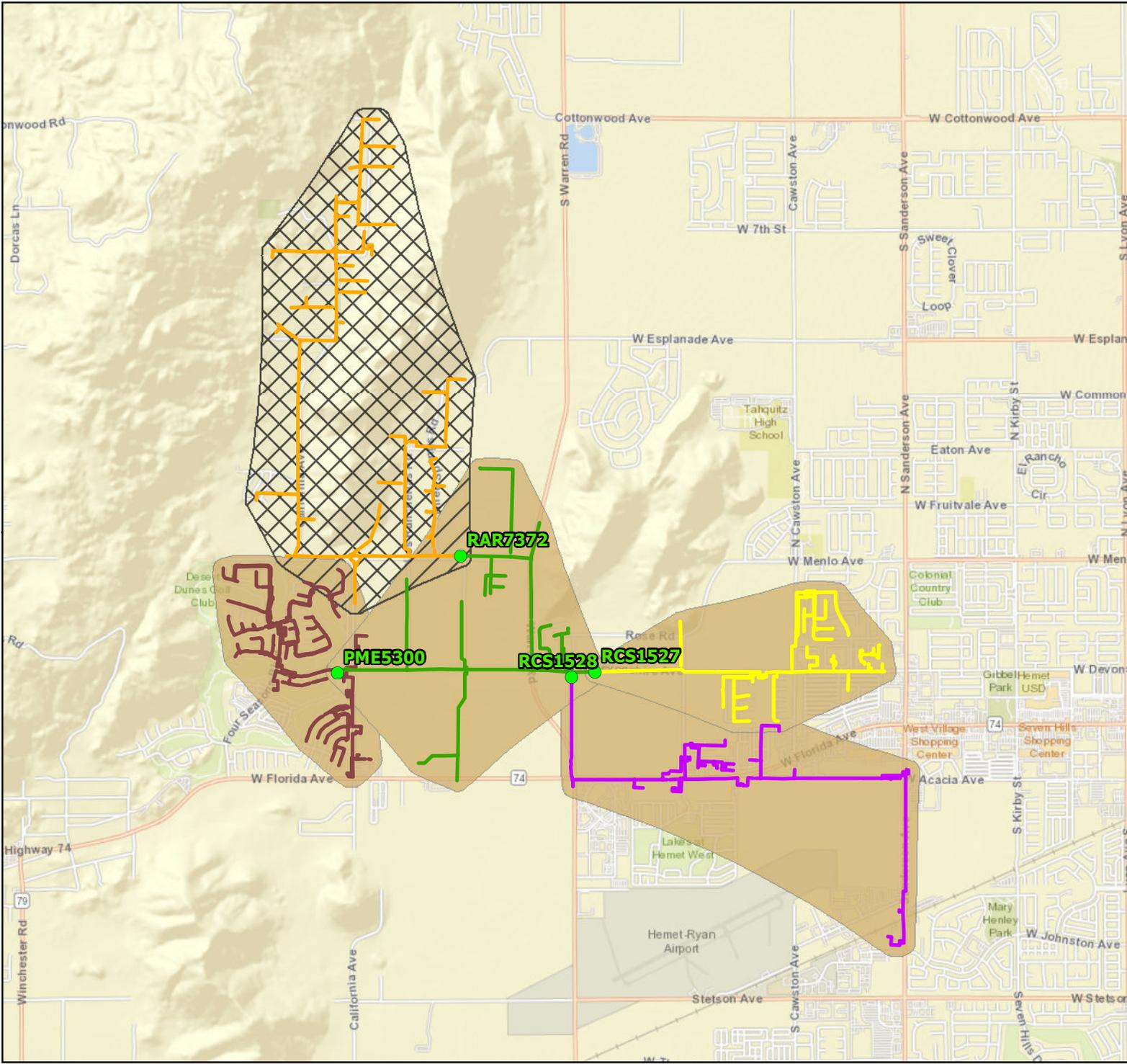
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PSPS 2021 ROTEC Circuit 11/21/2021

-  Segments Not Impacted by Event
-  Segments De-energized
-  Isolation Point
- Circuit Segments**
-  Segment 1
-  Segment 2
-  Segment 3
-  Segment 4
-  Segment 5
-  Segment 6
-  Segment 7
-  Segment 8
-  Segment 9
-  Segment 10
-  Segment 11
-  Segment 12



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PSPS 2021

RUSTIC

Circuit

11/21/2021

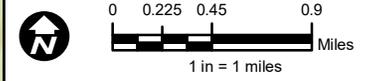
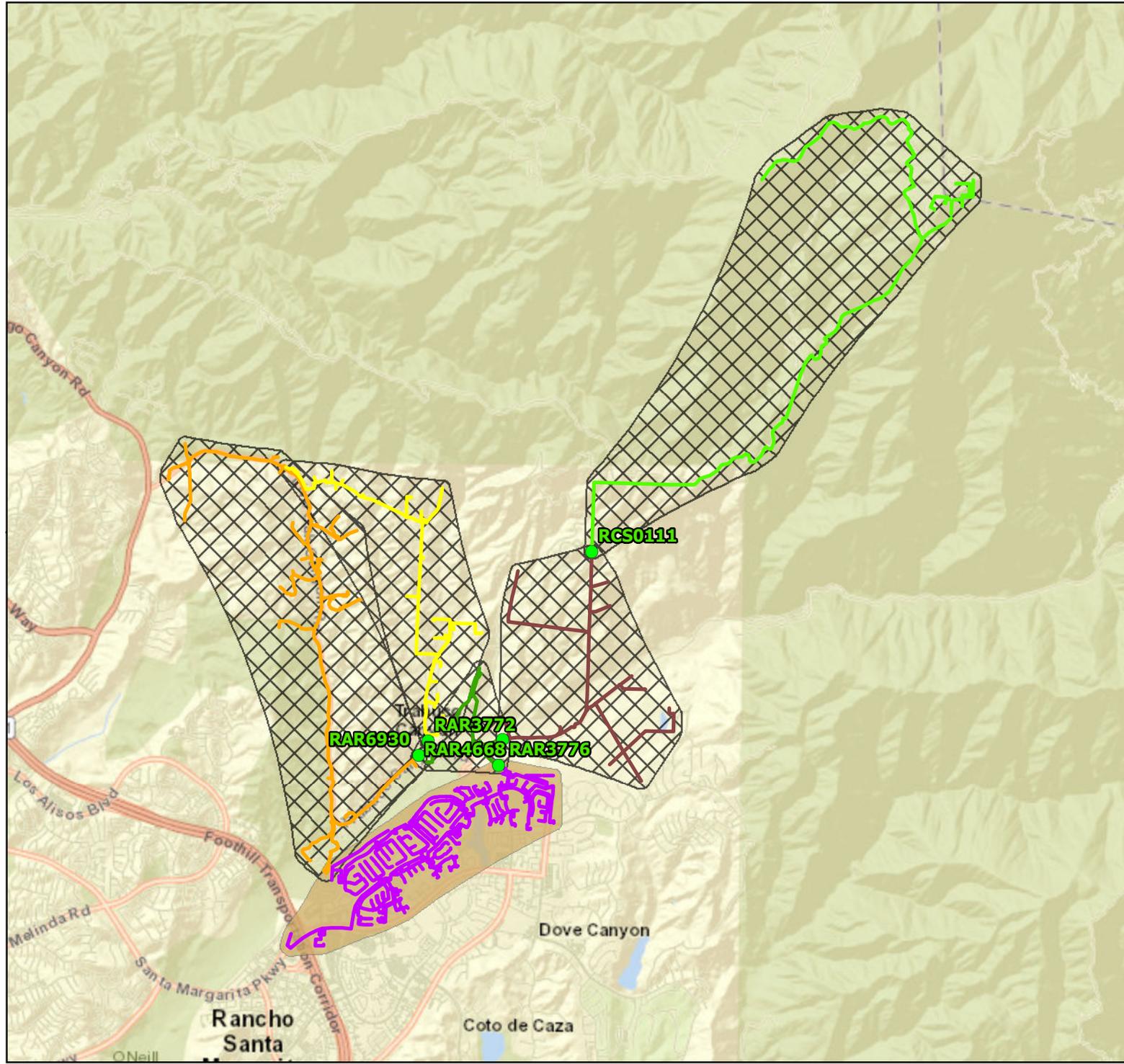
 Segments Not Impacted by Event

 Segments De-energized

 Isolation Point

Circuit Segments

-  Segment 1
-  Segment 2
-  Segment 3
-  Segment 4
-  Segment 5
-  Segment 6
-  Segment 7
-  Segment 8
-  Segment 9
-  Segment 10
-  Segment 11
-  Segment 12



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PSPS 2021 SAND CANYON Circuit 11/21/2021

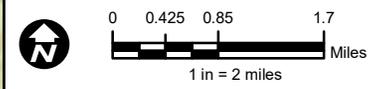
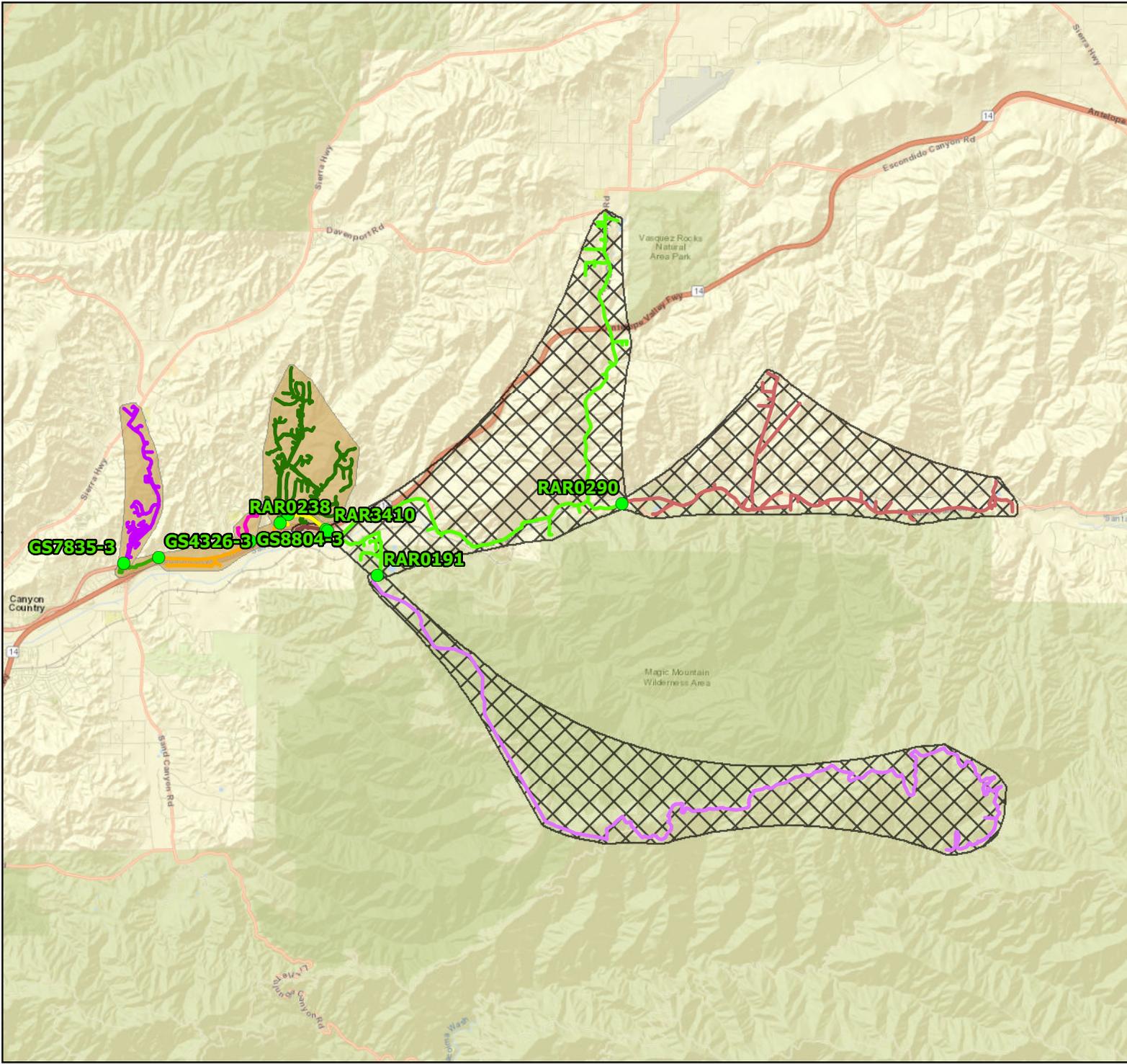
 Segments Not Impacted by Event

 Segments De-energized

 Isolation Point

Circuit Segments

-  Segment 1
-  Segment 2
-  Segment 3
-  Segment 4
-  Segment 5
-  Segment 6
-  Segment 7
-  Segment 8
-  Segment 9
-  Segment 10
-  Segment 11
-  Segment 12



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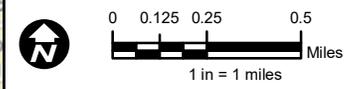
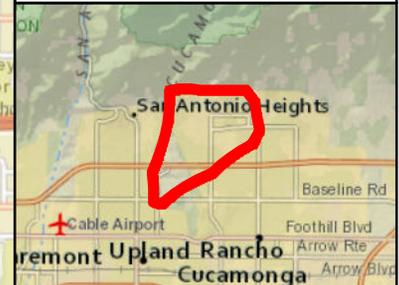
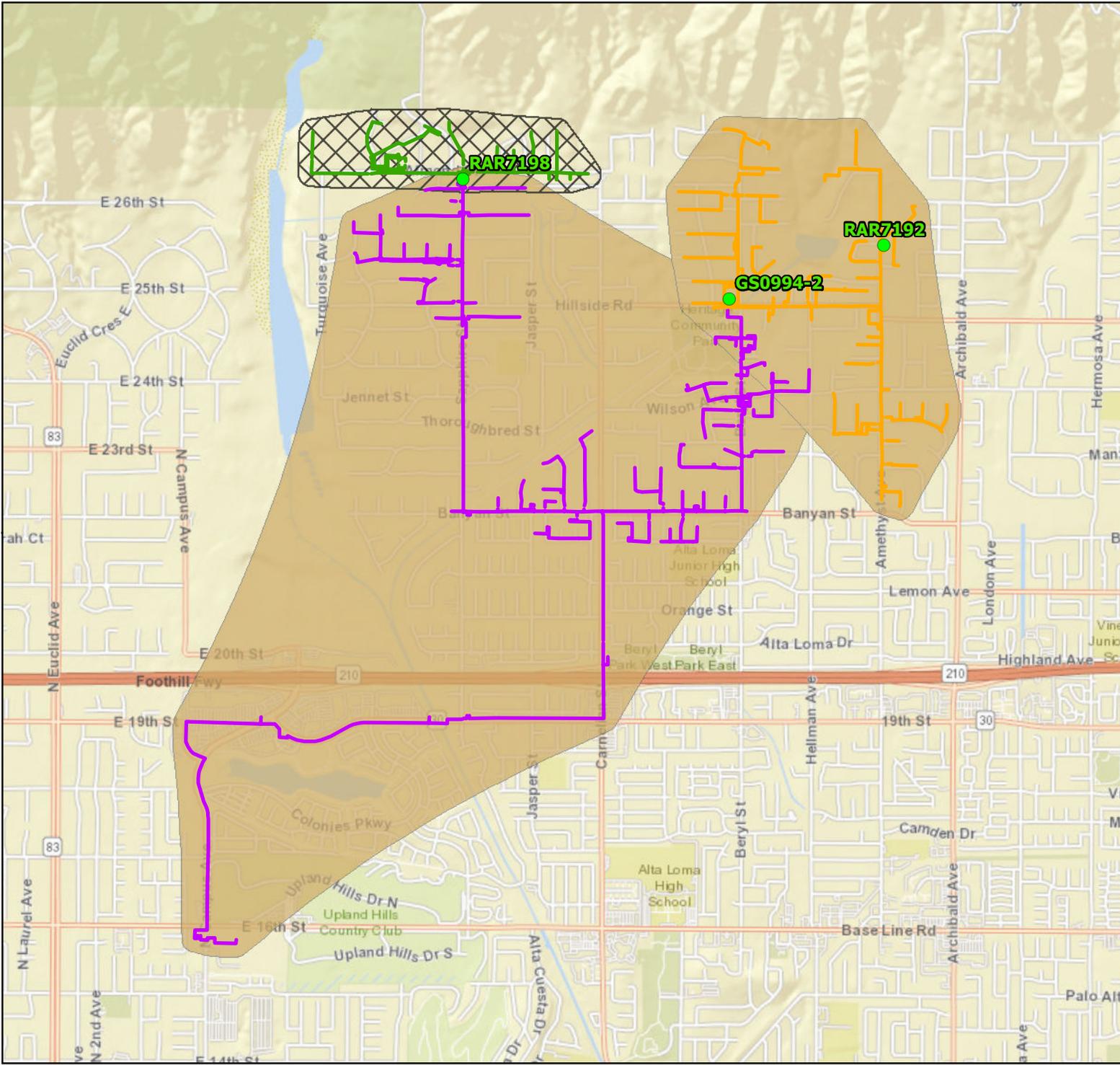
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PSPS 2021 SANTORINI Circuit 11/21/2021

-  Segments Not Impacted by Event
-  Segments De-energized
-  Isolation Point
- Circuit Segments**
-  Segment 1
-  Segment 2
-  Segment 3
-  Segment 4
-  Segment 5
-  Segment 6
-  Segment 7
-  Segment 8
-  Segment 9
-  Segment 10
-  Segment 11
-  Segment 12

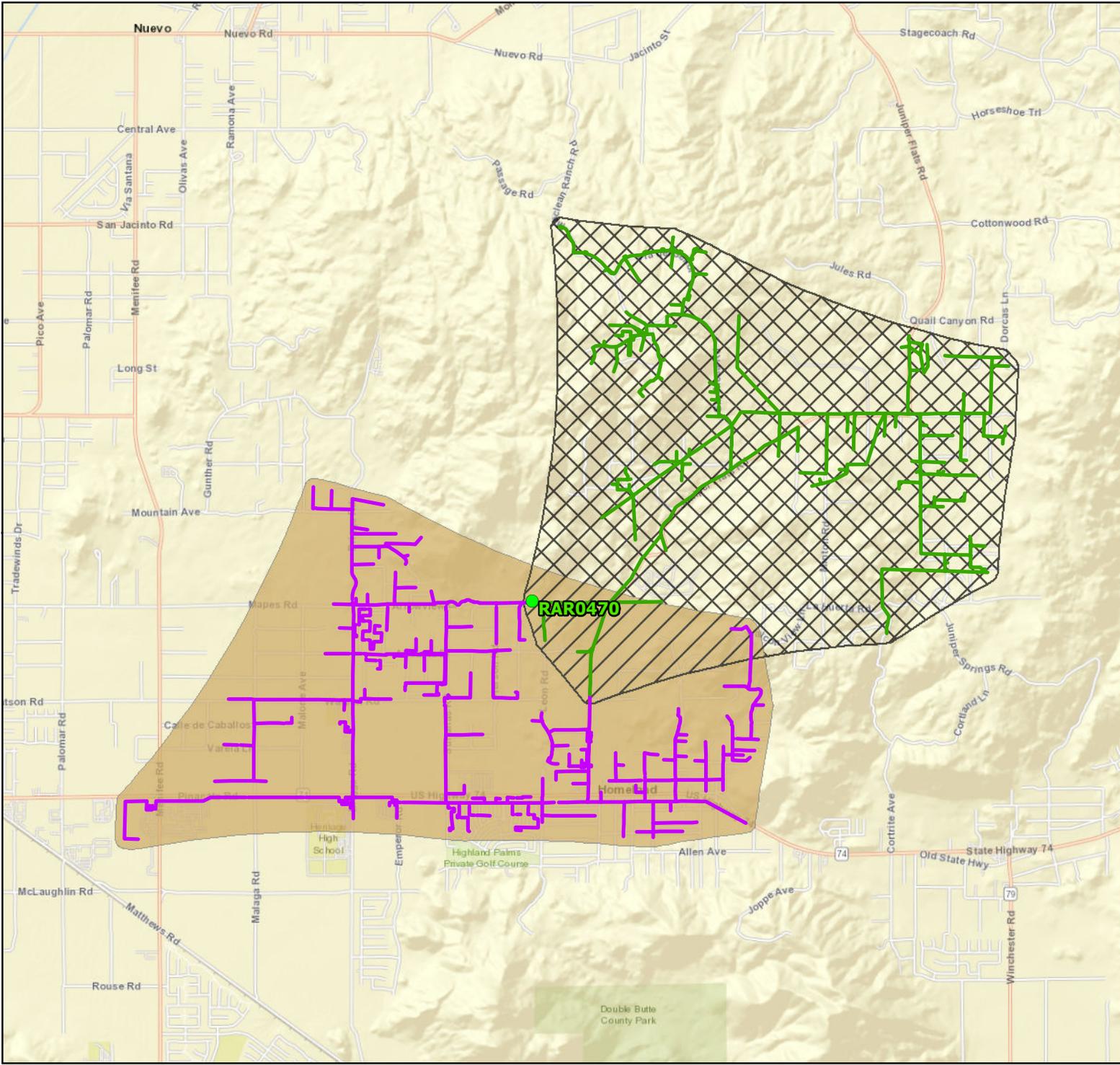


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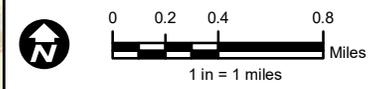
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PSPS 2021
SONOMA
Circuit
11/21/2021

-  Segments Not Impacted by Event
-  Segments De-energized
-  Isolation Point
- Circuit Segments**
-  Segment 1
-  Segment 2
-  Segment 3
-  Segment 4
-  Segment 5
-  Segment 6
-  Segment 7
-  Segment 8
-  Segment 9
-  Segment 10
-  Segment 11
-  Segment 12



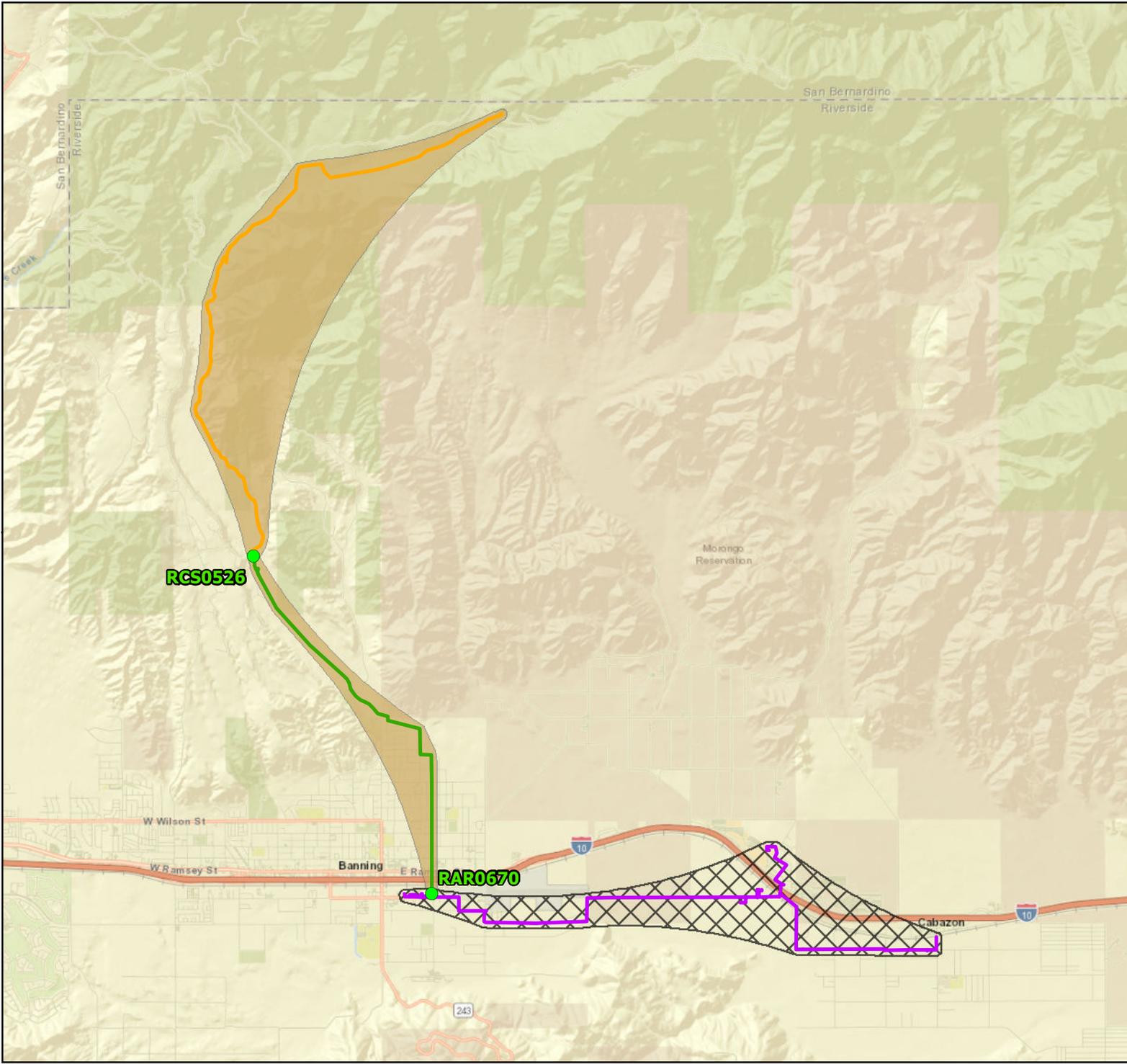
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PSPS 2021

STUBBY

Circuit

11/21/2021

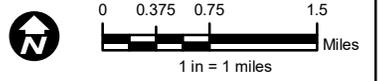
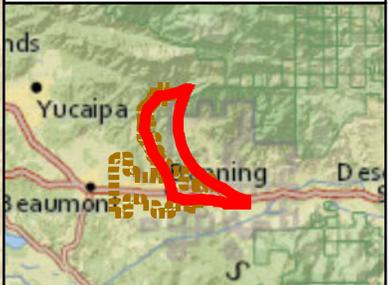
 Segments Not Impacted by Event

 Segments De-energized

 Isolation Point

Circuit Segments

-  Segment 1
-  Segment 2
-  Segment 3
-  Segment 4
-  Segment 5
-  Segment 6
-  Segment 7
-  Segment 8
-  Segment 9
-  Segment 10
-  Segment 11
-  Segment 12



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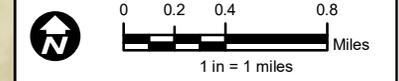
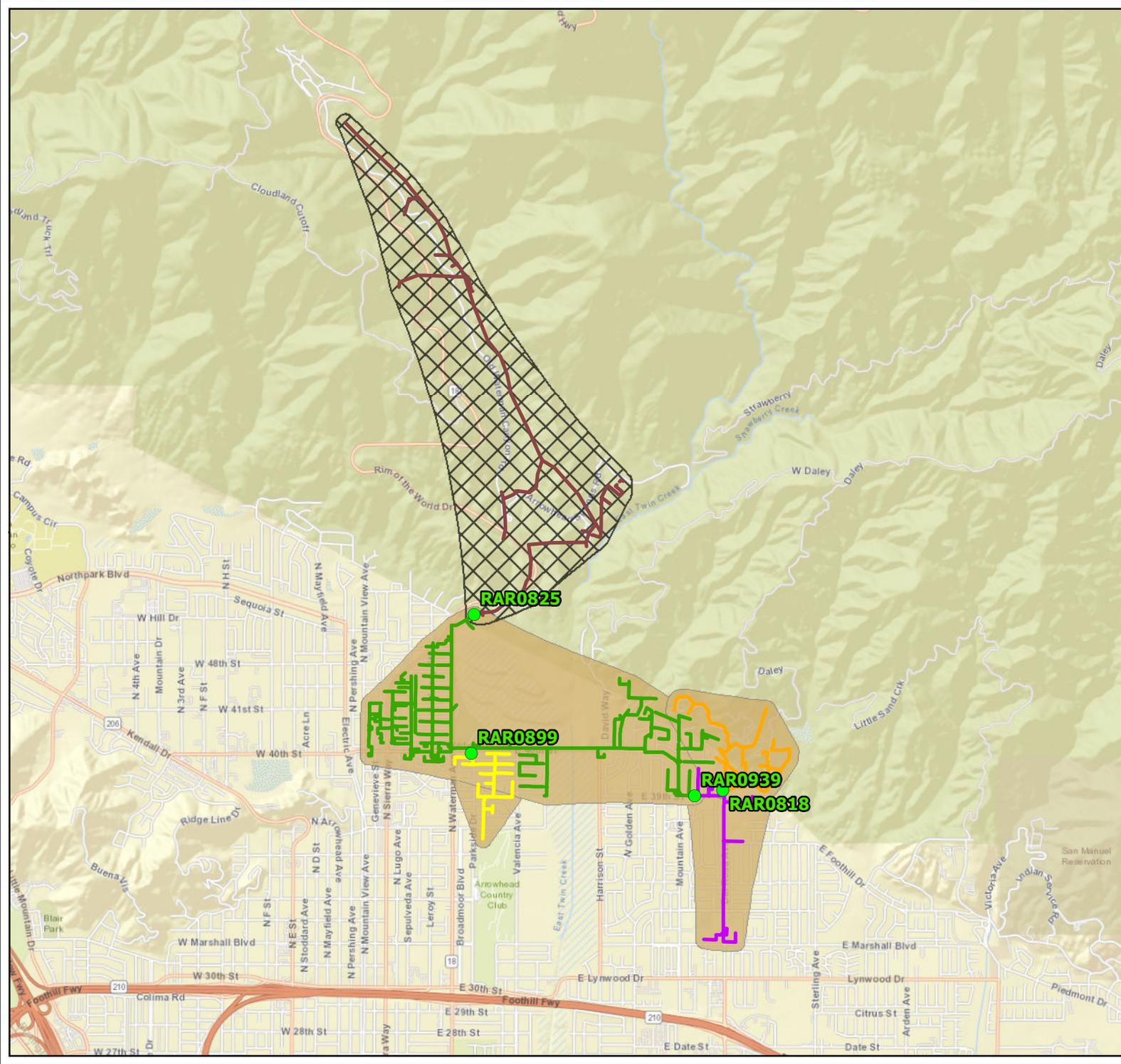
PSPS 2021

SUTT

Circuit

11/21/2021

-  Segments Not Impacted by Event
-  Segments De-energized
-  Isolation Point
- Circuit Segments**
-  Segment 1
-  Segment 2
-  Segment 3
-  Segment 4
-  Segment 5
-  Segment 6
-  Segment 7
-  Segment 8
-  Segment 9
-  Segment 10
-  Segment 11
-  Segment 12



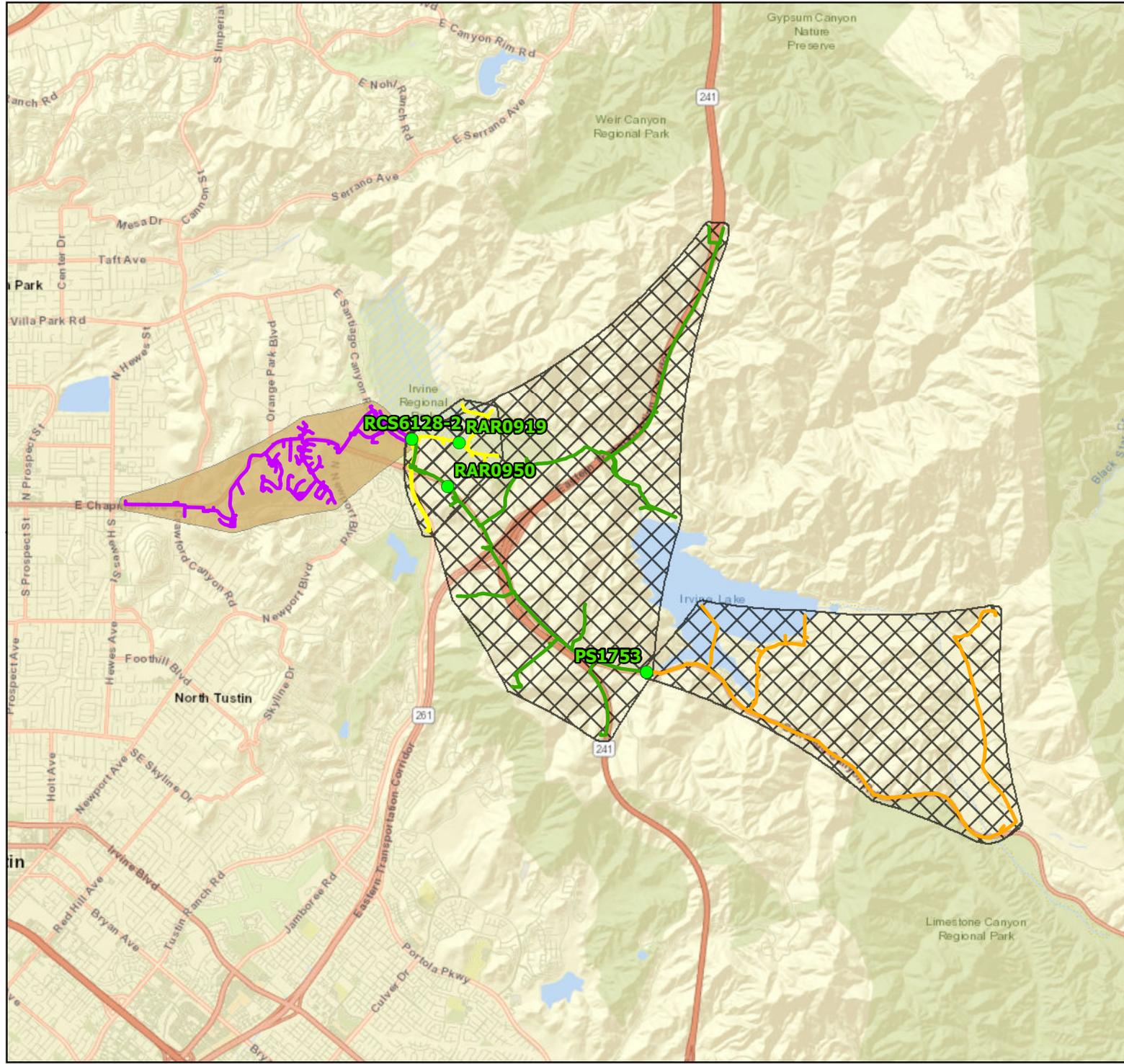
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PSPS 2021

TAIWAN

Circuit

11/21/2021

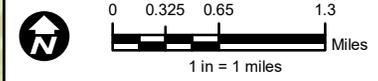
 Segments Not Impacted by Event

 Segments De-energized

 Isolation Point

Circuit Segments

-  Segment 1
-  Segment 2
-  Segment 3
-  Segment 4
-  Segment 5
-  Segment 6
-  Segment 7
-  Segment 8
-  Segment 9
-  Segment 10
-  Segment 11
-  Segment 12



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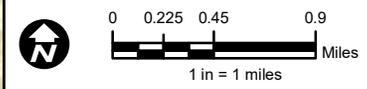
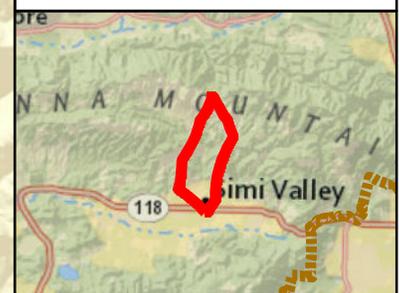
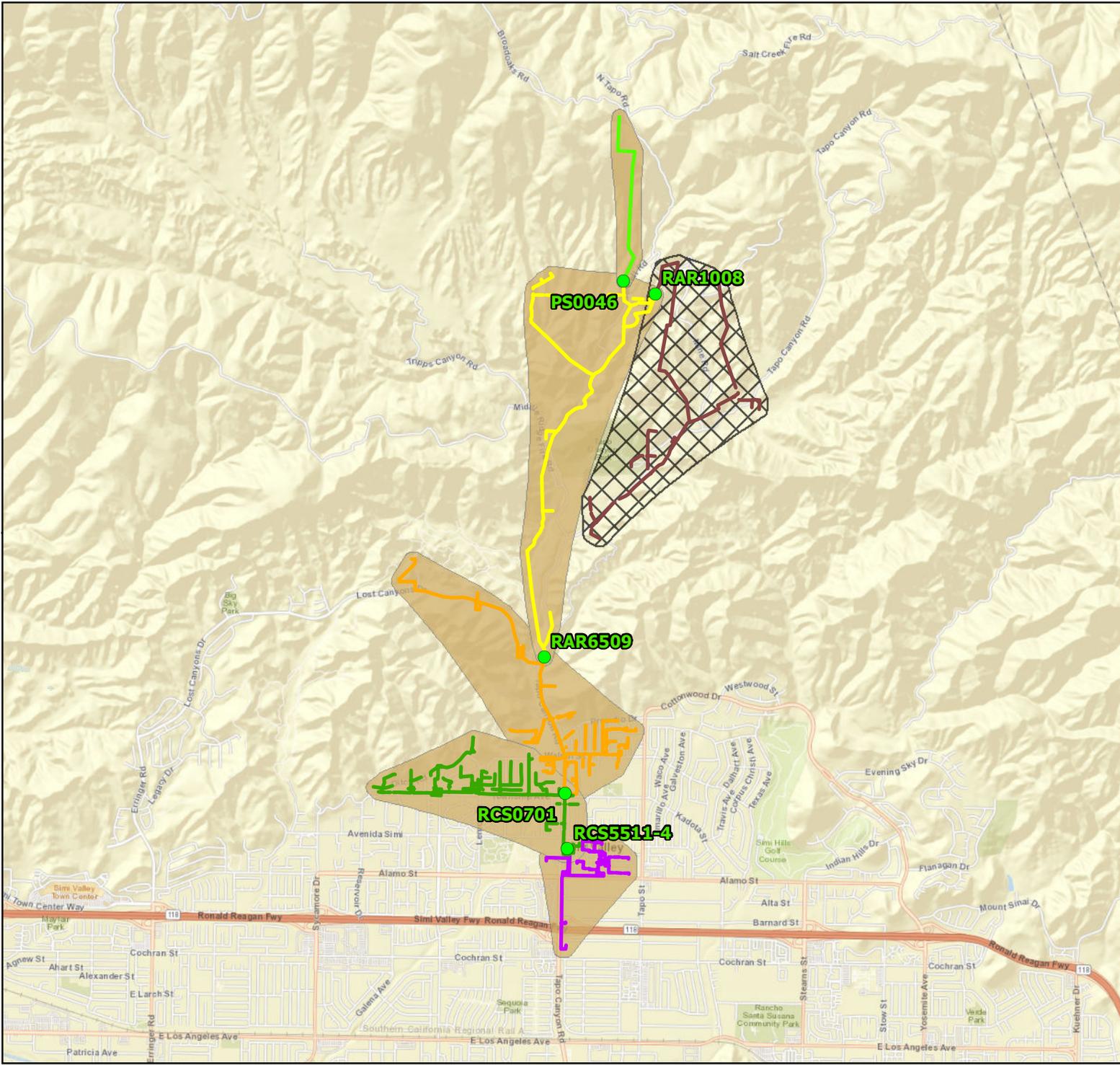
PSPS 2021

TAPO

Circuit

11/21/2021

-  Segments Not Impacted by Event
-  Segments De-energized
-  Isolation Point
- Circuit Segments**
-  Segment 1
-  Segment 2
-  Segment 3
-  Segment 4
-  Segment 5
-  Segment 6
-  Segment 7
-  Segment 8
-  Segment 9
-  Segment 10
-  Segment 11
-  Segment 12



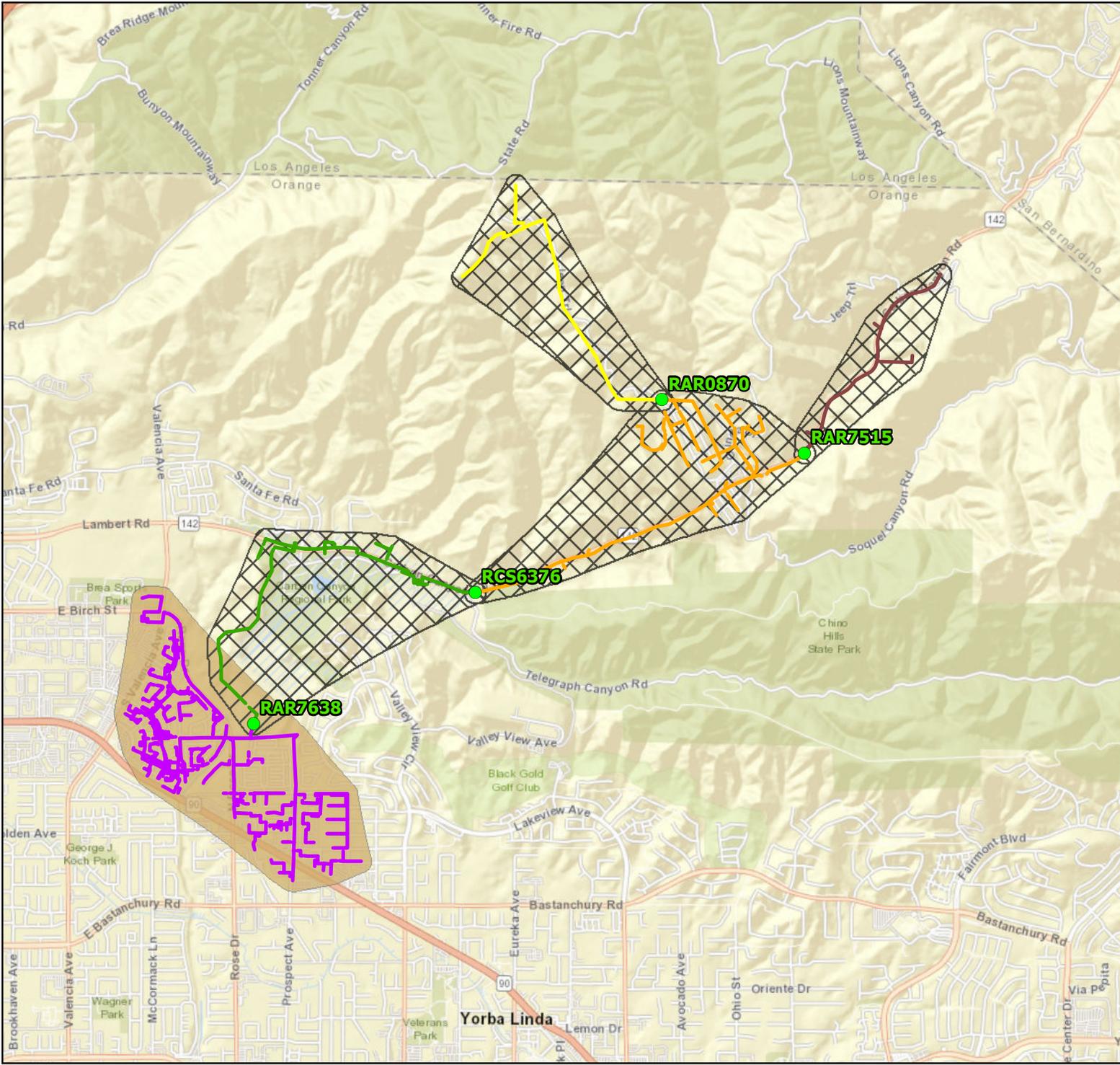
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 File Name: PSPS_Event_20211122_ImpactMitigation3.mxd
 Version #: -
 Created By:
Geospatial Analysis,
Geomatics | Central Field Services

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Path: P:\PROJECTS\Special Projects\Business Resiliency\IMT\2021\PSPS\IMT_20211122_Post_Event_Evidence\PSPS_Event_20211122_ImpactMitigation3.mxd



PSPS 2021

VERA CRUZ

Circuit

11/21/2021

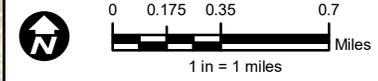
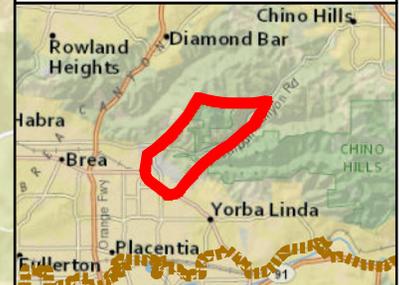
 Segments Not Impacted by Event

 Segments De-energized

 Isolation Point

Circuit Segments

-  Segment 1
-  Segment 2
-  Segment 3
-  Segment 4
-  Segment 5
-  Segment 6
-  Segment 7
-  Segment 8
-  Segment 9
-  Segment 10
-  Segment 11
-  Segment 12



Date: 12/9/2021
File Name: PSPS_Event_20211122_ImpactMitigation3.mxd
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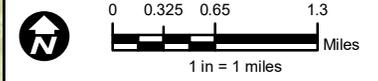
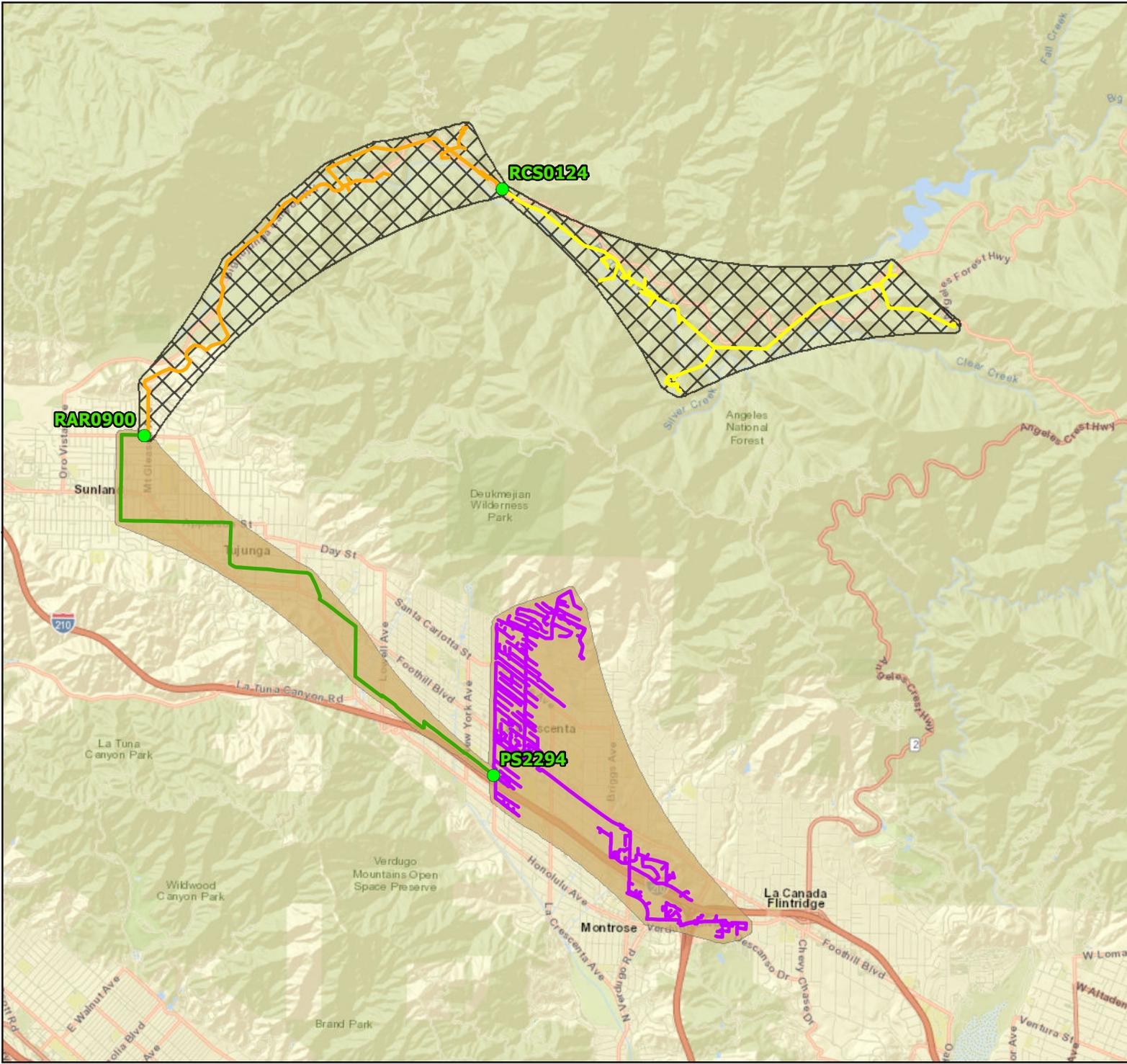
PSPS 2021

VERDUGO

Circuit

11/21/2021

-  Segments Not Impacted by Event
-  Segments De-energized
-  Isolation Point
- Circuit Segments**
 -  Segment 1
 -  Segment 2
 -  Segment 3
 -  Segment 4
 -  Segment 5
 -  Segment 6
 -  Segment 7
 -  Segment 8
 -  Segment 9
 -  Segment 10
 -  Segment 11
 -  Segment 12

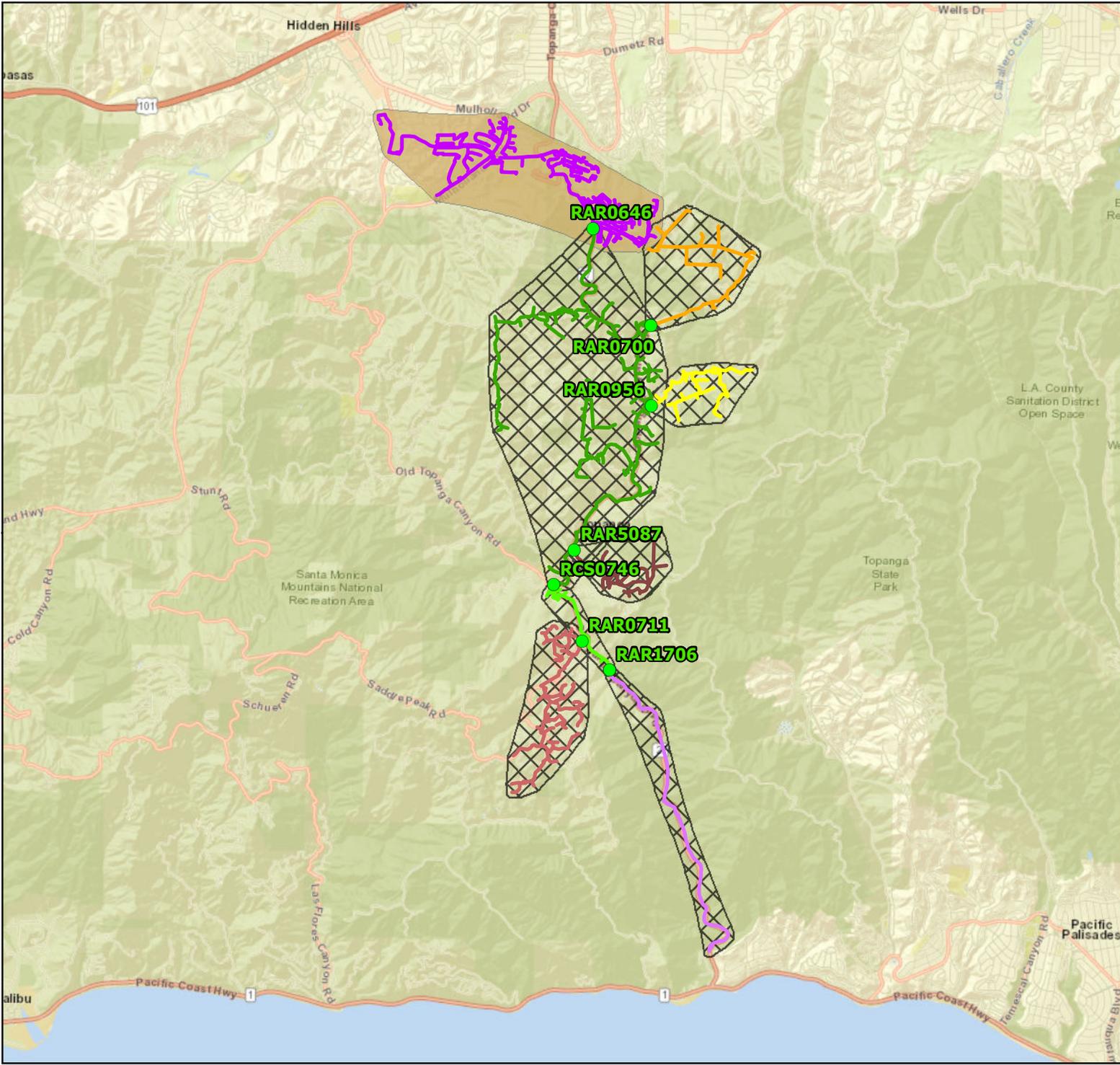


Date: 12/9/2021
 File Name: PSPS_Event_20211122_ImpactMitigation3.mxd
 Version #: -
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PSPS 2021

VICASA

Circuit

11/21/2021



Segments Not Impacted by Event

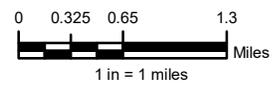
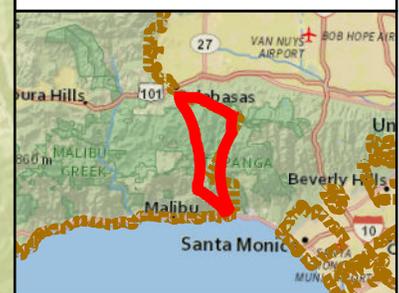


Segments De-energized

● Isolation Point

Circuit Segments

- Segment 1
- Segment 2
- Segment 3
- Segment 4
- Segment 5
- Segment 6
- Segment 7
- Segment 8
- Segment 9
- Segment 10
- Segment 11
- Segment 12



Date: 12/9/2021
File Name: PSPS_Event_20211122_ImpactMitigation3.mxd
Version #: -

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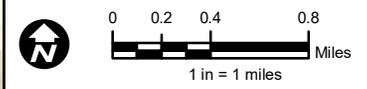
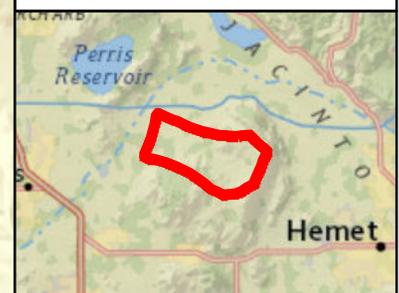
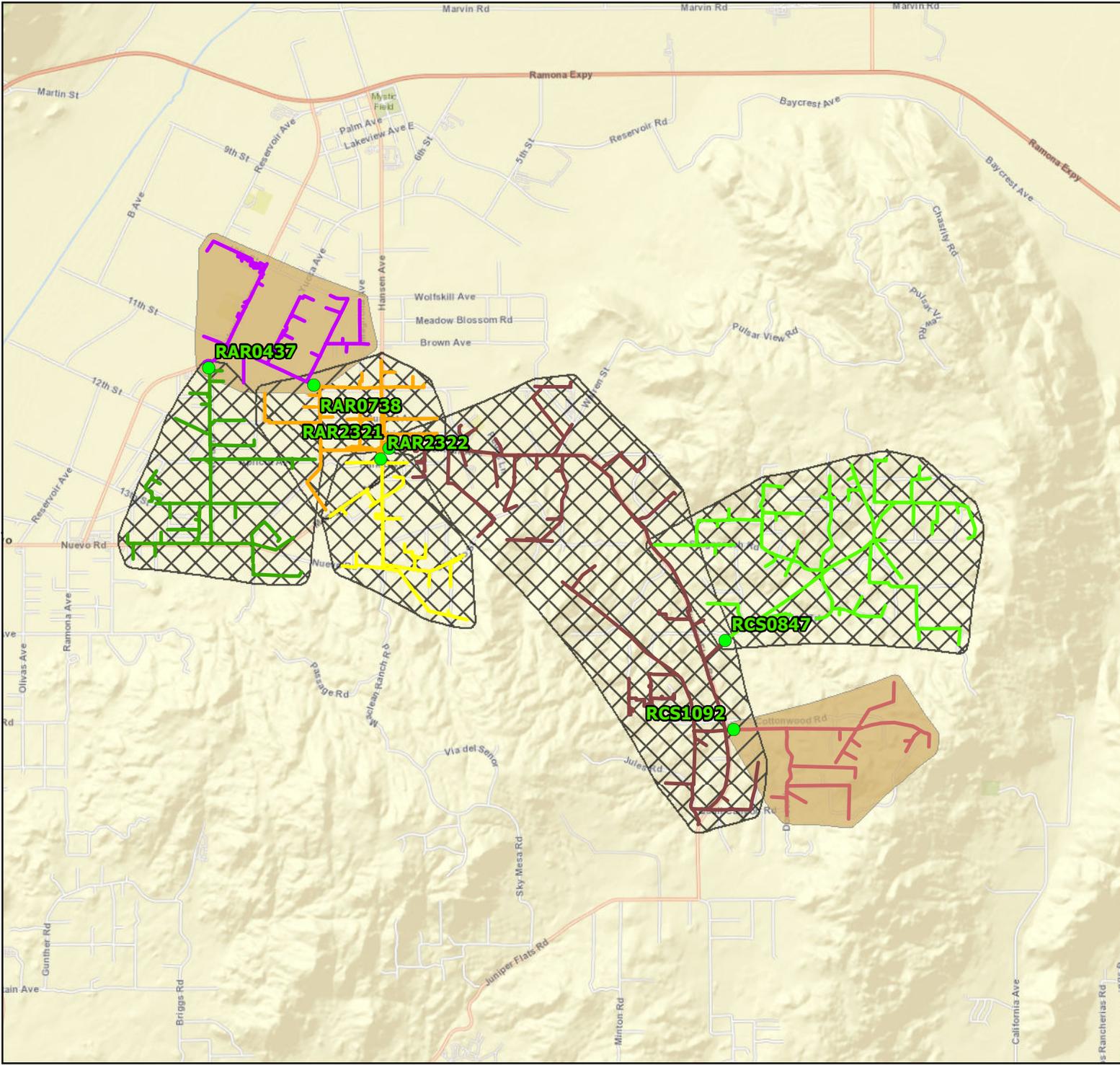
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PSPS 2021 WOBEGONE Circuit 11/21/2021

-  Segments Not Impacted by Event
-  Segments De-energized
-  Isolation Point
- Circuit Segments**
-  Segment 1
-  Segment 2
-  Segment 3
-  Segment 4
-  Segment 5
-  Segment 6
-  Segment 7
-  Segment 8
-  Segment 9
-  Segment 10
-  Segment 11
-  Segment 12



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Officer Verification

I am an officer of the applicant corporation herein and am authorized to make this verification on its behalf. I am informed and believe that the matters stated in the foregoing document are true.

I declare under penalty of perjury that the foregoing is true and correct. Executed this 10th day of December 2021 in Cerritos, California

DocuSigned by:
Erik Takayesu
086543334F1F400...

Erik Takayesu
Vice President,
Asset Strategy & Planning

Appendix A

11.24.2021 Public Safety Power Shutoff Post-Event Report Data

This appendix will be filed via mixed media with Commission's Docket office and can be accessed at:

https://library.sce.com/?10000_group.propertyvalues.property=jcr%3Acontent%2Fmetadata%2Fcq%3Atags&10000_group.propertyvalues.operation>equals&10000_group.propertyvalues.0_values=sce-document-library%3APSPS-Reports-to-the-CPUC%2FEvent-Reporting%2F2021

Appendix B

**PSPS_Event_20211124_DamageLocations.gdb and
PSPS_Event_20211124_DeEnergized_CircuitOutageAreas.gdb**

This appendix will be filed via mixed media with Commission's Docket office and can be accessed at:

https://library.sce.com/?10000_group.propertyvalues.property=jcr%3Acontent%2Fmetadata%2Fcq%3Atags&10000_group.propertyvalues.operation>equals&10000_group.propertyvalues.0_values=sce-document-library%3APSPS-Reports-to-the-CPUC%2FEvent-Reporting%2F2021