



2020 Wildfire Mitigation and PSPS Preparation

May 2020



2020 PSPS Preparation



2019 PSPS Summary and After- Action Review

2020 Fire Season Outlook

PSPS Potential Impact Reductions

Customer Resiliency Enhancements

Communications and Outreach

Aerial Inspection, Patrol and Firefighting Enhancements

Situational Awareness/PSPS Criteria

Pandemic PSPS Preparations

2019 Public Safety Power Shutoff Overview



EVENT DETAILS	OCT 10-11	OCT 24-25	OCT 30-31
METERS IMPACTED	395	19,000	27,700
CIRCUIT SEGMENTS	4	62	84
AVGERAGE METERS PER SEGMENT	99	333	304
AVERAGE OUTAGE DURATION	20 HRS	24 HRS	24 HRS
LONGEST OUTAGE DURATION	23 HRS	57 HRS	33 HRS
PEAK WINDS MPH	47	78	68
COMMUNITY RESOURCE CENTERS (CRCs) & COMMUNITY INFORMATION CENTERS (CICs) OPEN	2 CRCs	7 CRCs & 2 CICs	7 CRCs & 2 CICs
DAMAGE/ HAZARDS	0	5	10

2019 After-Action Review Summary

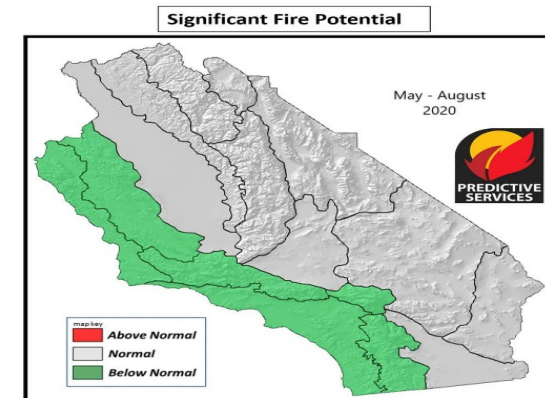
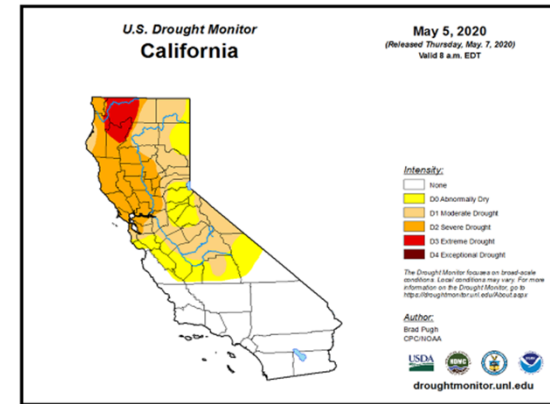
- 10 internal AARs conducted
- External partner AAR conducted
- Enhancements:
 - Standardization of customer data
 - Utility ICS maturation
 - Notification coordination and timing
 - Message consistency
 - Broader situational awareness
 - Increased technology integration and electric system enhancements
 - Refined plans, training and exercises



2020 Fire Season Outlook

Annual wildfire program enhancements target a September 1 completion date to stay ahead of Santa Ana wind season during the fall months.

- Southern California is not currently under drought conditions, though Northern California is experiencing significant drought
- Live fuel moistures have shown significant gains and are near their annual peak, with seasonal declines expected through the summer
- Small grass fires are beginning to occur, and as the grasses continue to dry-out, fires in grass will increase in size and frequency through June
- Elevated FPI conditions likely developing in June and increasing into July
- Periods of Extreme FPI conditions likely during Santa Ana Wind conditions from late September through November
- Official fire agency forecasts are predicting below normal “Significant Fire Potential” through August



PSPS Potential Impact Reductions

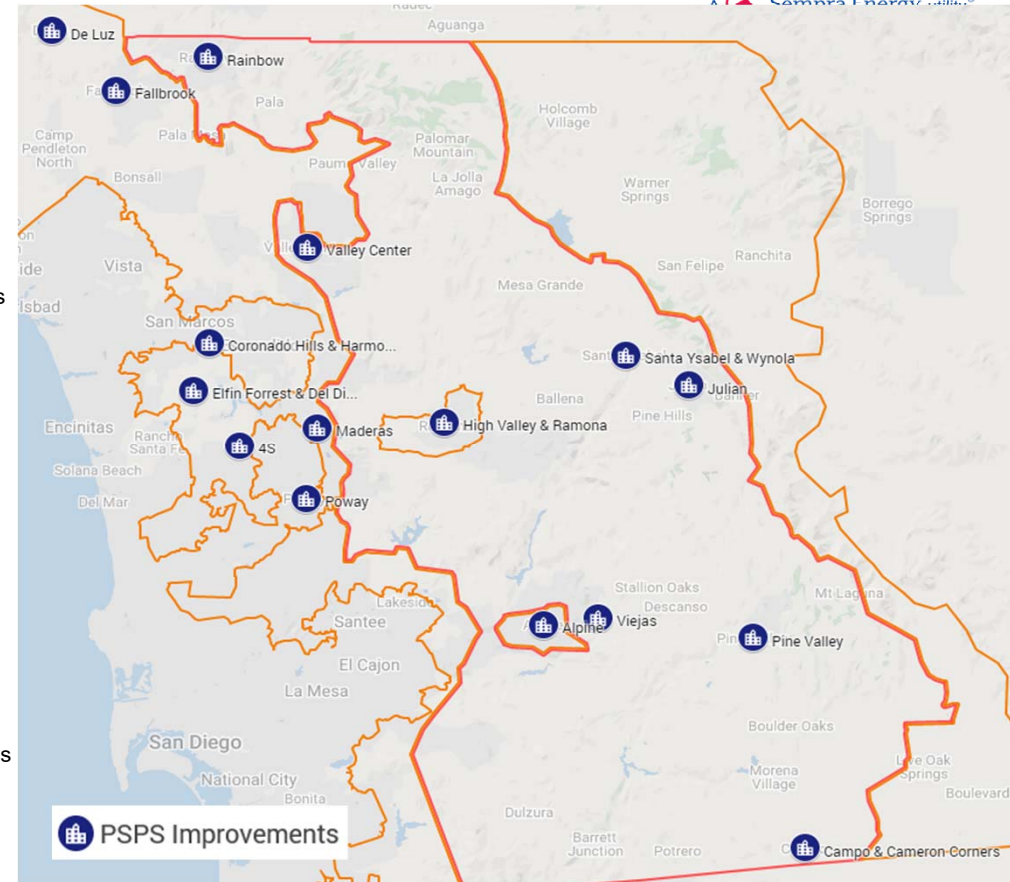


Solutions		Impact Reduction (confirmed/weather dependent*)
23	Sectionalizing Devices	6,324 / 10,950*
24	Weather Stations	
2.1	Miles of Undergrounding	18**
2	Reconfigurations / Operations	75 / 453*
2	Microgrids	15
100	Local Generation	100
PSPS Reduction by October 2020		6,442 / 11,158*

- 6 Schools
- 3 Fire Stations
- 0 Police Stations
- 0 Hospitals
- 47 Communication Sites
- 6 Water Facilities

Solutions		Impact Reduction (confirmed/weather dependent*)
27	Sectionalizing Devices	6,324 / 11,595*
26	Weather Stations	
11	Miles of Undergrounding	1,412**
2	Reconfigurations / Operations	75 / 453*
4	Microgrids	245
300	Local Generation	300
Overall PSPS Reductions		8,914 / 14,865*

- 10 Schools
- 8 Fire Stations
- 1 Police Stations
- 1 Hospitals
- 62 Communication Sites
- 8 Water Facilities



*Some mitigations have PSPS reductions that are weather dependent

** Securing easements and environmental impacts may delay some of the undergrounding

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Customer Resiliency Enhancement – Generators



Program Name	Program Scope	Types of eligible customers and key criteria	Technology	Power/ Capacity	Expected Duration	Deployed by IOU or third-party	Previously Authorized by CPUC or
Generator Grant Program (GGP)	1,500 Portable Single Appliance or Medical Device	Medical baseline customers in the HFTD Tier 2, 3	Yeti 3000 (Solar + Li-Ion battery)	3kWh	20+ Hrs	Third-party	Pending WMP approval – memo account for recovery later
Generator Assistance Program (GAP)	1,000 Portable Home Generators	Customers in the HFTD Tier 2, 3 that have experienced 2+ PSPS events	Duromax Dual Fuel Portable Generator	5.5 KW	8hrs on full tank	Third-party	Pending WMP approval – memo account for recovery later
Whole House Generators – Residential & Commercial	300 Permanent Whole Home Generators	Customers on circuit segments where the highest risk spend efficiency is “generators”	Transfer switch + Local Generation (Renewable or Traditional)	13kW	PSPS duration	Third-party	Pending WMP approval – memo account for recovery later
Critical Infrastructure Generators	4 temporary solutions deployed based on need	Additional Community Resource Centers or Critical Infrastructure	Temporary Generators (Renewable or Traditional)	Varies	PSPS duration	IOU	Pending WMP approval – memo account for recovery later

Customer Resiliency Enhancement – Microgrids



Microgrid Name	Location	Generation Source	Customers	Installation Date	Proceeding
Cameron Corners	Low income community in Tier 3 HFTD located in eastern part of San Diego County	Solar (825kWac) + energy storage (500kW/2,000kWh) resource	Design to support 300 kW of critical load continuously including a medical care facility, CAL FIRE station, telecom switching center, gas (and propane) stations, a school, libraries, convenience stores and local food establishments	<ul style="list-style-type: none"> Temporary Generation in-service date (ISD) 9/2020 Final Complete System ISD 7/2021 	SDG&E 2019 WMP; SDG&E 2020 WMP; cost recovery will be sought pursuant to PUC 8386.4(b)(1),(2)
Ramona Air Attack Base	Tier 2 HFTD and directly adjacent to a low-income community	500kW/2,000 kWh energy storage resource	CAL FIRE Air Support, United States Forest Service Air Support, and fire-retardant mixing stations	<ul style="list-style-type: none"> Temporary Generation installed Final Complete System ISD 9/2020 	SDG&E 2020 WMP; cost recovery will be sought pursuant to PUC 8386.4(b)(1),(2)
Agua Caliente	Low-income desert community in far eastern part of San Diego County (distribution line feeding this community runs through Tier 3 HFTD)	Solar (650kWac) + energy storage (600kW/2,500kWh) resource	119 residential customers	<ul style="list-style-type: none"> Temporary Generation in-service date (ISD) 9/2020 Final Complete System ISD Spring 2021 	SDG&E 2020 WMP; cost recovery will be sought pursuant to PUC 8386.4(b)(1),(2)
Desert Circuit 221	Low-income desert community in far eastern part of San Diego County (distribution line feeding this community runs through Tier 3 HFTD)	Solar (850kWac) + energy storage (700kW/3,250kW) resource	218 residential customers and critical customers (San Diego Country Fire Station and Community Center)	<ul style="list-style-type: none"> Temporary Generation in-service date (ISD) 9/2020 Final Complete System ISD Spring 2021 	SDG&E 2020 WMP; cost recovery will be sought pursuant to PUC 8386.4(b)(1),(2)

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Customer Resiliency - Planned Enhancements



Tiger Team Convened to Recommend PSPS Customer Experience Solutions

- Dedicated cross-functional team proposes 2020 and 2021 customer-focused solutions before, during and after PSPS events
- The team's focus is to minimize customer pain points through innovation, collaboration, communication and streamlined operations

Solicited Internal and External Stakeholder Feedback

- Surveyed over 40 internal PSPS subject matter experts
- Engaged nearly 50 external community leaders, public safety partners and other impacted stakeholders
- Focused on solutions to address customer pain points

Prioritized Potential Customer Offerings

- Focused on implementation for the 2020 fire season across the following categories:



Examples of
2020 Solutions:






CRC Expansion

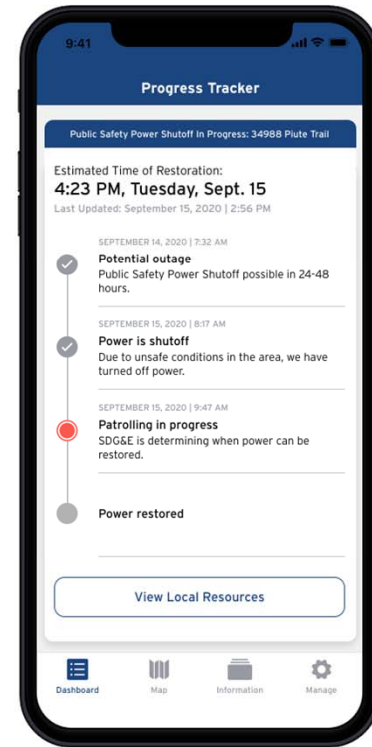
AFN Support Model

*"Life Hack" Videos;
Geo-targeted messages*

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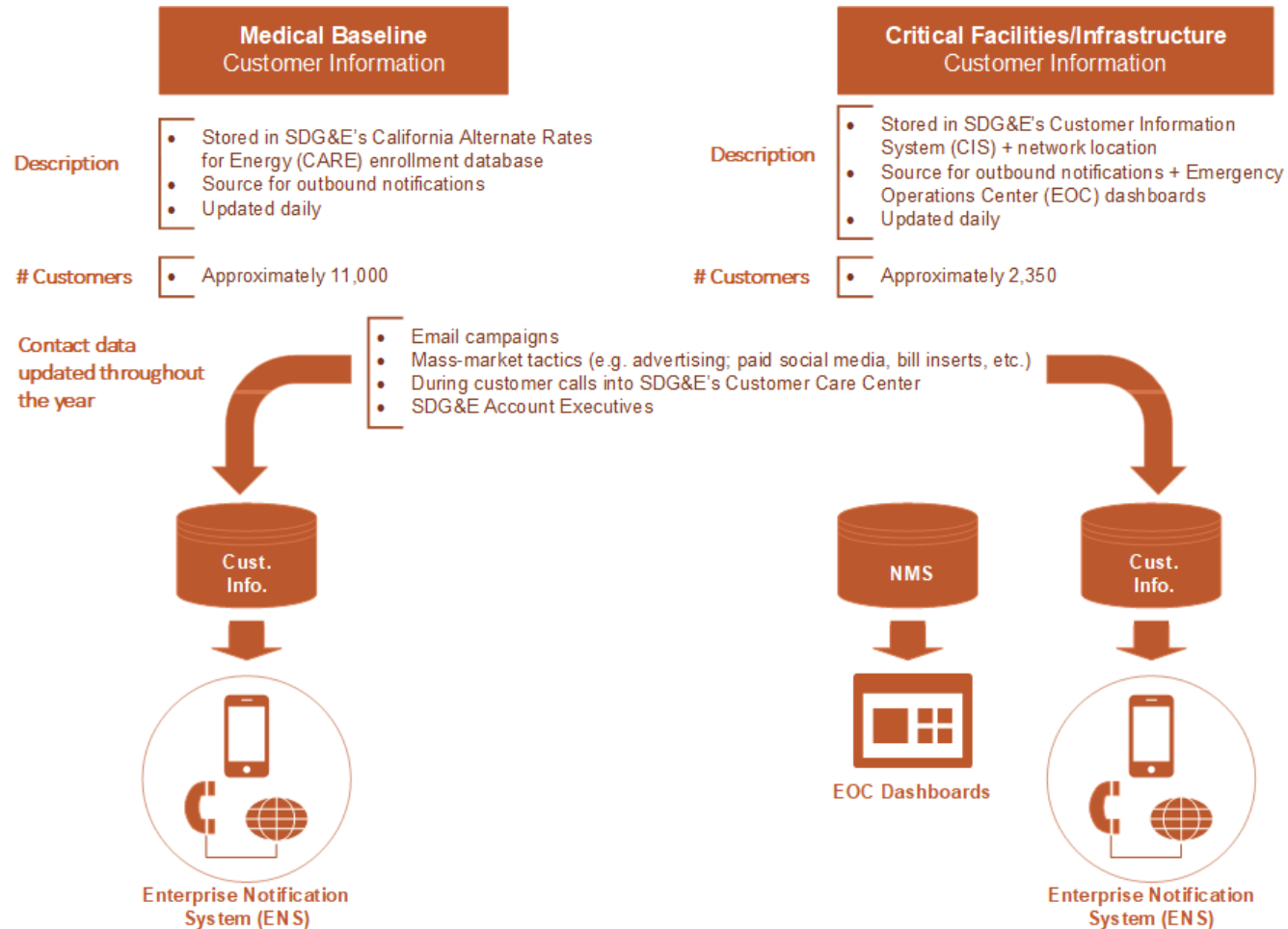
Communication and Outreach – Platforms

				
Notifications	Outbound Dialer	PSPS Mobile App	SDG&E Website	Social Media
<p>All notifications will be in multiple languages</p> <p>Channels:</p> <ul style="list-style-type: none"> • Email • Text • Phone 	<p>Capable of:</p> <ul style="list-style-type: none"> • Faster reporting • Analytics • Confirmed deliveries 	<p>Dedicated mobile application for customers and non-customers</p>	<p>Dedicated PSPS webpage during events:</p> <ul style="list-style-type: none"> • Map • Restoration Times • Communities • CRCs 	<p>Updated / Increased posts as information becomes available</p>



The PSPS mobile app.

Selected Customer Class Database Overview



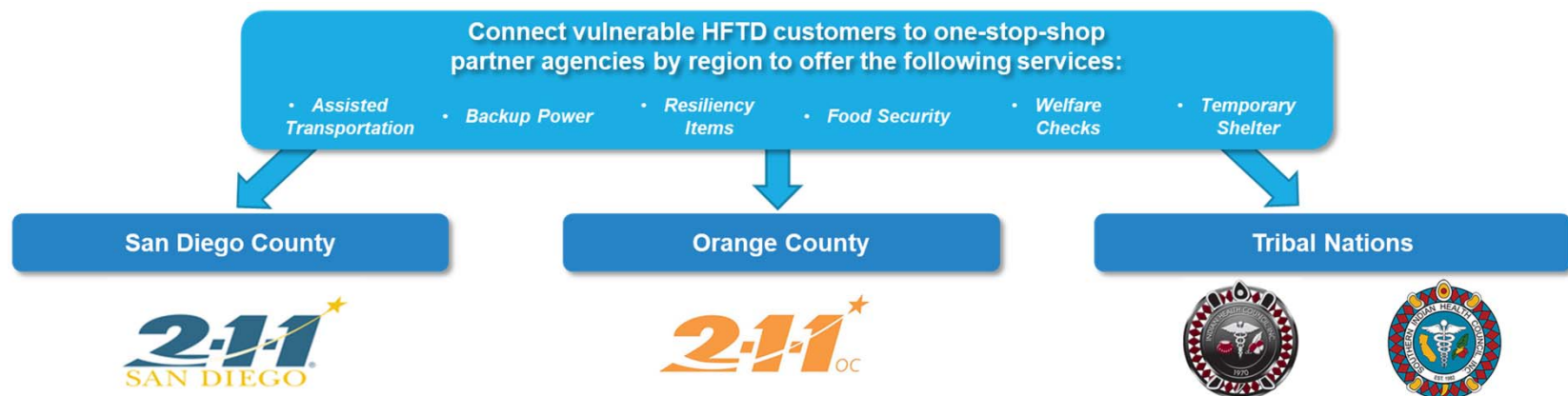
SDG&E's customer data is regularly maintained and feeds into PSPS information and notification systems

SDG&E's AFN Support Model is Designed to Serve All Customers



The AFN Support Model leverages strategic partnerships, by region, to reach affected populations.

- 2-1-1 San Diego and 2-1-1 Orange County are **well-positioned to support AFN populations** regardless of where they reside. Also, we are in discussions with Tribal partners to extend support to their vulnerable citizens.
- A hallmark of SDG&E's AFN Support Model is **proactive support outside of the fire season** to help AFN populations prepare for PSPS events, not simply react when an event occurs.
- SDG&E is **working closely with telecommunications providers** to ensure they have the necessary data, such as impacted PSPS circuits and real-time PSPS information during weather events, to help them plan targeted backup power strategies.



SDG&E Medical Baseline (MBL) Customers Behind the Master Meter Receive PSPS Notifications



MBL participant info is passed from the CARE database to SDG&E's notification system for PSPS messaging; enrollment into the MBL program promoted through direct engagement and partnerships



Promotion through Partnerships: Leverage existing relationships with Community Based Organizations (CBOs) who serve sub-metered customers, such as the San Diego Housing Federation.



Direct Outreach: SDG&E Outreach Liaisons promote the Medical Baseline Program to customers at outreach events where sub-metered customers might reside.



Mobilehome Park Utility Conversions: As SDG&E upgrades mobile homes with new gas and electric service, it builds awareness to residents who might be dependent on medical equipment.



Public Education Campaigns: In 2020, SDG&E will expand promotion of the Medical Baseline Program and other service offerings to AFN populations and sub-metered customers throughout its High Fire-Threat District.

Enhanced Public Safety Partner Outreach



Local Governments and First Responders

- Initial meetings with San Diego and Orange Counties Emergency Manager groups conducted January 2020
- Monthly briefings held with all Fire Agencies
- Law enforcement outreach scheduled for June 2020
- Additional meetings will be held beginning in June 2020 to discuss a combined PSPS/pandemic response

Critical Infrastructure

- Direct communication with newly identified COVID-19 medical facilities
- Hosted quarterly meeting with Association of California Water Agencies (pre-COVID-19) to discuss PSPS best practices
- Ongoing outreach to critical business customers to confirm contact information and back-up generation

Public Officials and Tribal Partners

- Tribal emergency manager meeting rescheduled from May to June 2020 due to COVID-19
- Targeting PSPS outreach and briefings to local, including tribal governments, by end of June 2020

Planning Exercises

- Workshops with public safety partners will be conducted July – August 2020 timeframe
- Exercise scheduled for September 2020 to include CalOES/CPUC/County OES/CAL FIRE

PSPS Notifications to State Agencies



CalOES, CalFIRE, CPUC, Tribes, & Elected Officials

72 Hours

48 Hours

24 Hours

12 Hours

EOC Activation

De-energizing

Opening CRCs

Patrolling

Re-energization

EOC Deactivation

GIS for Public Safety Partners

Cal OES GIS Essential Elements of Information

- Critical Care and/or Medical Baseline Customer Count
- Energization Status
 - Monitoring
 - De-energized
 - Patrolling
 - Re-energized
 - Phase and Timing
- County
- Circuit Name
- Critical Infrastructure/Essential Customers
- Total Customers

Transferred via secure GIS link



Aerial Inspection, Patrol and Firefighting Enhancements

- Additional Airbus H-135 helicopter to ensure sufficient air inspection and patrol resources:
 - Pre-Event
 - Prior to Re-Energizing
 - Supplements existing H-145 platform
- Additional back-up Blackhawk firefighting helicopter:
 - Ensures no interruption of response capability due to maintenance requirements
 - Augments the existing Blackhawk and Air Crane firefighting platforms



Situational Awareness – Fire Safe 3.0

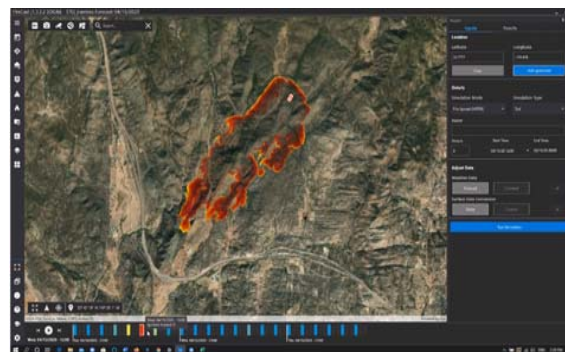


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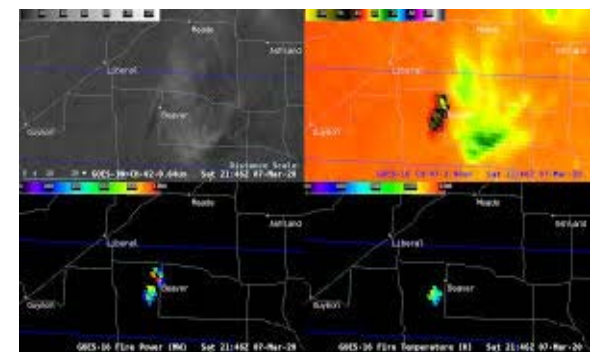
30 additional Weather Stations – enabling 30-second data reporting



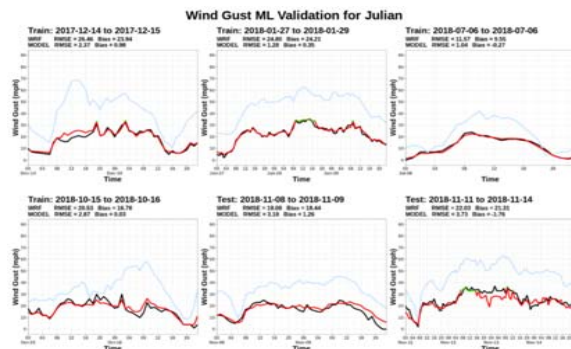
Improved Wildfire Modeling – new fuels, vegetation & fire growth algorithms



Satellite Wildfire Detection – fire alert notifications in 20-30 seconds.



AI-Based Forecasting System – improving alerting capability



New Academic Partnerships – moving fire science forward



Additional Cameras – increasing real-time situational awareness



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Situational Awareness – PSPS Dashboard



PSPS Dashboard

Anemometer	Device	Gust	Alert Speed	95/99 Per	Forecast	VRI	Sub	Dist/FPI	Meters	Community
Sill Hill	79-799R*	60	42	36/44	45	H	WR	ME/15	638	Descanso
Sill Hill	626	60	42	36/44	45	H	WR	ME/15		Descanso
Buckman Springs	441-25R	65	42	36/44	45	H	GC	ME/15	120	Campo
Buckman Springs	629	65	42	36/44	45	H	GC	ME/15		Campo
Harrison Park	227-7R*	35	42	37/44	45	M	ST	RA/15	471	Julian
Round Potrero	157-75R	36	40	34/42	41	M	BAR	ME/14	319	Potrero
Crestwood	445-23R*	33	40	34/42	41	L	BUE, CW	ME/15	1365	Boulevard
Crestwood	1215-12R	33	40	34/42	41	L	BUE, CW	ME/15	219	Boulevard
Hellhole Canyon	1030-987	13	60	50/62	41	L	VC	NE/13	32	Valley Center
Boulder Creek	79-799R*	10	55	44/57	41	M	DE	ME/14	20	Descanso
Campo	448-13R*	20	60	34/42	35	M	CN	ME/15	155	Potrero
Campo	50001	20	55	34/42	35	M	CN	ME/15	155	Potrero
White Star	445-21R*	20	42	37/44	41	M	BUE	ME/15	166	Boulevard
Tierra Del Sol	445-24R*	15	42	37/44	41	M	BUE	ME/15	165	Campo
Round Potrero	6923	30	40	34/42	41	M	BAR	ME/14		Potrero
Round Potrero	50003	30	40	34/42	41	M	BAR	ME/14		Potrero
Round Potrero	6923	30	40	34/42	41	M	BAR	ME/14		Potrero
Round Potrero	50003	30	40	34/42	41	M	BAR	ME/14		Potrero
Crestwood	6931	12	43	34/45	39	L	BUE, CW	ME/15		Boulevard
Crestwood	629	12	43	34/45	39	L	BUE, CW	ME/15		Boulevard
Crestwood	6958	12	43	34/45	39	L	RIN, CTL	ME/15		Boulevard
Boulder Creek	626	10	55	44/57	41	M	DE	ME/14		Descanso
Alert Wind Speed										
>= Alert Speed		Alert Speed - 7 MPH								

Enhancements

- Added Alert speed
- Enhanced color coding for Alert speed warning and Alert speed reached
- Single line for each device and tie line
- Alert speed warning at 7 mph below threshold
- Community-friendly name
- De-energized circuit segment moved to new dashboard
- Impacted meter count

PSPS Criteria

Actual threshold values are dynamic and depend on the factors listed below

- Weather conditions
- Vegetation conditions and Vegetation Risk Index
- Field observations and flying/falling debris
- Information from first responders
- Meteorology, including 10 years of history, 99th and 95th percentile winds
- Expected duration of conditions
- Location of any existing fires
- Wildfire activity in other parts of the state affecting resource availability
- Information on temporary construction

Unhardened Lines: When the following thresholds are exceeded, SDG&E will consider the use of PSPS

- Consider the lowest value of 95th percentile wind with high VRI
- 99th percentile wind with low VRI
- 40 mph

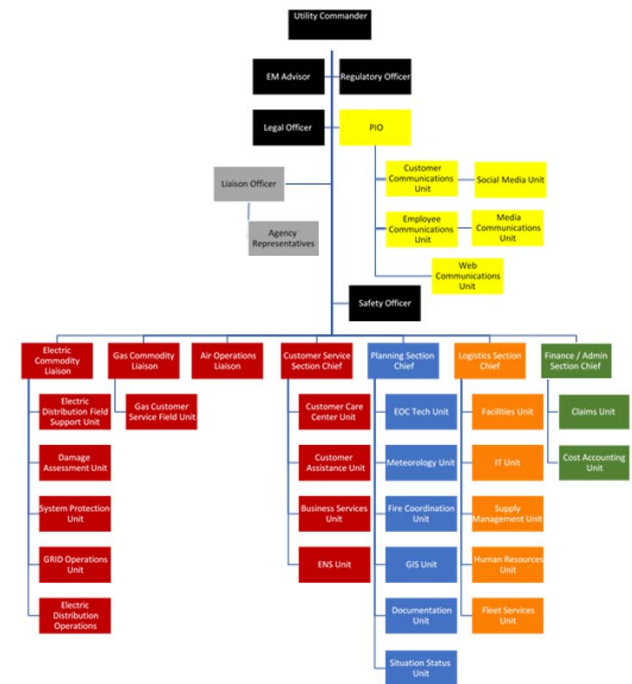
Hardened Lines: The thresholds for the decision to consider PSPS are raised for hardened lines

- SDG&E's hardened Transmission Lines remained energized during all previous PSPS events.

Pandemic PSPS Preparations

Implementing additional PSPS planning and preparedness to ensure the pandemic will not compromise our ability to operate safely

- Conducted internal continuity assessment to ensure a PSPS event can be planned and executed effectively
- Updating all internal PSPS processes and procedures to include pandemic planning
- Conducting additional pandemic-specific trainings and exercises to include:
 - Internal exercises and tabletops
 - External trainings with wildfire stakeholders, local governments and tribes
- Creating a remote EOC activation response plan
- Reviewing and designing all PSPS-related IT systems for remote support
- Added newly identified medical facilities and shelters to the SDG&E critical facilities list
- Engaging with all existing critical facilities to ensure updated contact information



Pandemic PSPS Preparations - Exercise



SDG&E is actively developing COVID-19 specific exercises to test a remote PSPS response

- Multiple scenarios are being considered, including an active wildfire in addition to PSPS and pandemic.
- Technology platforms and communication strategies have been established to support a remote PSPS response.
- Technology requirements, including system resiliency and redundancy have been created for all potential responders.
- Technology surveys are being finalized with all EOC responders to identify IT related vulnerabilities.
- Any IT related vulnerabilities will be addressed in June in preparation for an internal exercise schedule beginning in July.
- Coordination with external agencies is ongoing in preparation for a larger, region-wide exercise scheduled for September.



Pandemic PSPS Preparations - Operations



Enhancing operational response to keep our employees and communities safe

- Refine plans to create a safer COVID-19 work environment:
 - Health screenings and antibody testing, as available
 - Single cars/trucks, when possible
 - Appropriate PPE (field work and customer service)
 - Sequestration of system operators
 - Separation of critical PSPS response staff
- Securing additional air resources to support PSPS operations
- Continued use of external resources and contractors to support PSPS operations
- Will continue to work closely with public safety partners to ensure data-driven PSPS decision making, prioritizing community safety



Pandemic PSPS Preparations – Outreach

Implementing enhanced community preparedness, planning and outreach

- Outreach and coordination with local government and fire community stakeholders will incorporate pandemic PSPS planning
- Implemented a campaign to make contact with all Medical Baseline (MBL) Customers living in the High Fire Threat District
 - Updated contact information will support ongoing preparedness initiatives
- PSPS Mobile Application will enable additional community outreach capability
- Update PSPS website and outreach materials to include COVID-19 Preparedness



Pandemic PSPS Preparations – Customer Resource Support



SDG&E remains committed to supporting customers and communities during PSPS

- Developing contingency plans to facilitate drive-thru Community Resource Centers
- Social distancing and CDC guidelines will be followed to ensure safety
- Drive-thru resources include:
 - Preparedness materials (safety tips)
 - Ice, water, snacks
 - Car power-inverter
 - Small solar-powered batteries and radios



Pandemic PSPS Preparations – Joint IOU Coordination



Implementing enhanced community preparedness, planning and outreach

- Twice weekly (Mon & Wed) calls between all three IOUs outreach & notification staff
- Weekly calls between Emergency Management Directors
- Bi-weekly CPUC/CalOES Joint IOU operational calls
- Emergency Management planning staff ad-hoc calls, as needed



Questions

