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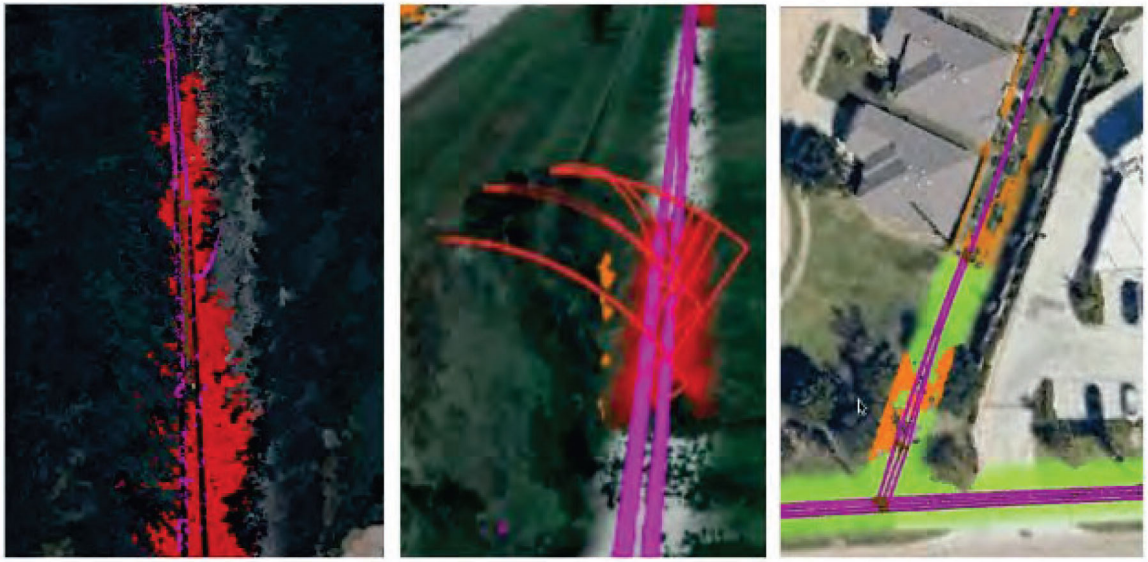
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Control Number - 57579

Item Number - 74

Hardening Feeders from Substation to URD

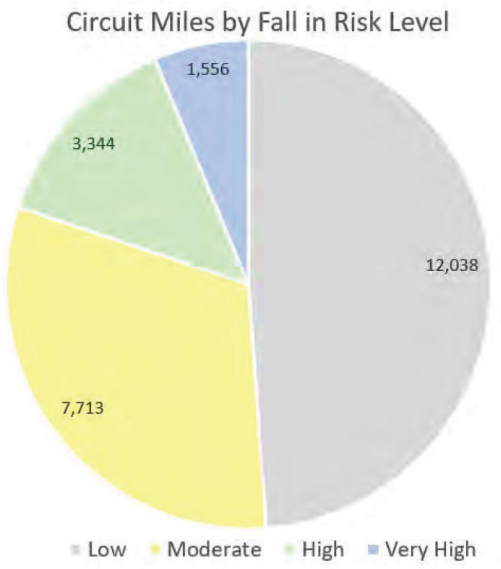
- Sectionalizing Automation
- Vegetation Management
- Strategic Undergrounding
- Build new substations to shorten distribution feeders



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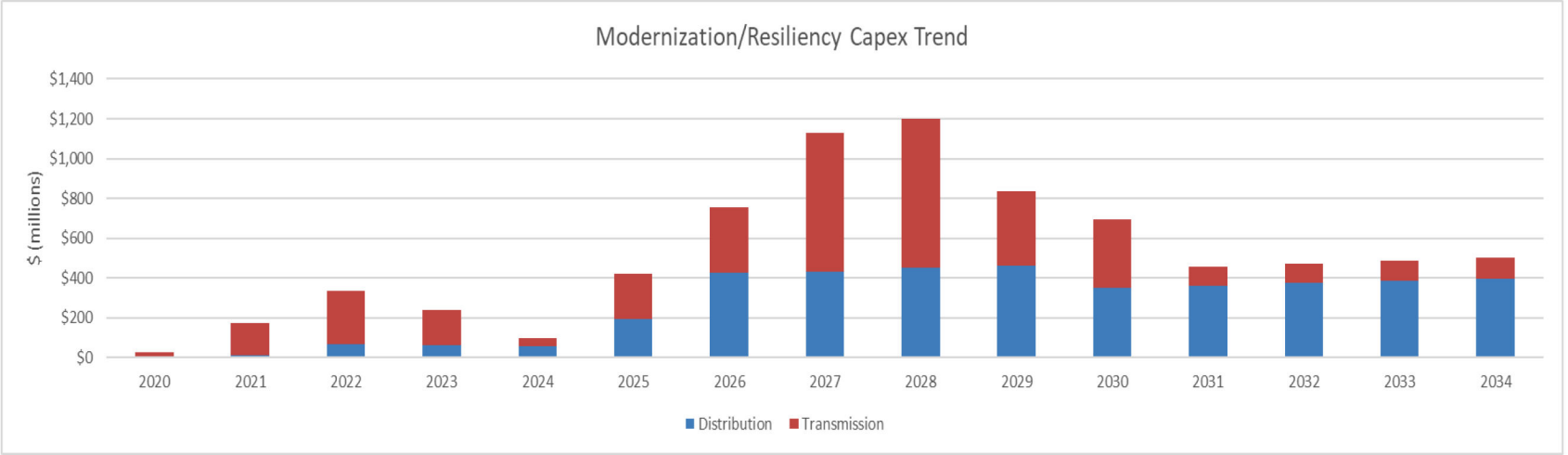
Critical Circuit Resiliency - Fall in Risk



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Transmission/Distribution Spend

- Transmission hardening and substation resiliency spend versus distribution resiliency spend



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Project 56822 – PUCT Hurricane Beryl Investigation

Physical Infrastructure

6. **Utilities should assess poles constructed under prior NESC standards for replacement with poles that meet current extreme wind and ice design standards.**
   - Utilities should target circuits chosen for upgrade according to those that serve critical facilities such as hospitals, water treatment plants, or police stations, and that support mobile generation or serve underserved communities.

7. **Utilities should consider automated grid performance devices, like sectionalizers or automatic circuit reclosers, to reduce unnecessary outage times and help restoration crews locate and resolve faults more quickly.**

8. **In more densely vegetated areas, utilities should assess whether to replace distribution lines with covered conductor.**
   - The conductor is the wire that carries the electricity. Covered conductors have an insulating outer layer. This replacement may yield better protection against vegetative debris blown-in from outside the right-of-way and decrease overall outage rates.

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Project 56822 – PUCT Hurricane Beryl Investigation

10. Utilities should use analytics-based vegetation management strategies to augment, not replace cyclical vegetation management plans.

- Vegetation management practices within Texas are not standardized, with some utilities moving away from a cyclical plan to a more analytics-based vegetation management plan. Analytics-based plans can help prioritize sections of a service territory due to heightened vegetation hazard. However, utilities should take precaution to not minimize factors like "time between trims." To ensure all segments in the service territory are addressed, utilities should augment cyclical vegetation management plans with analytics instead of replacing them with a solely analytics-based approach. Alternatively, utilities should ensure that maximum duration between trims serves as a default or failsafe factor within their analytics-based plan. This may require vegetation management budgets to increase slightly to accommodate additional priority segment work.

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System Resiliency Plan Comparison

April 2024 (PUCT Docket 56548)

- Time frame: 2025 – 2027
- Overall Spend: Approx $2.2B
- Approach: Program level analysis

January 2025 (PUCT Docket TBD)

- Time frame: 2026 – 2028
- Overall Spend: Approx $5B
- Approach: Project level analysis
  - Granular climate analysis at polygon level (roughly 2-mile area)
  - LiDAR data incorporated to inform project & investment decisions by program
  - Event scenario-based categorization (wind, flood, temp, etc.) vs measure-based categorization (hardening, modernization, etc.)
  - Aligns with other utility SRP applications approved or under review
  - County OEM damage prediction review
- Project Revisions
  - Coastal Contamination (+)
  - Communications Spectrum (+)
  - Advanced Distribution Technology (-)

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Industry Leading System Resiliency

Our mission is to build and operate the most resilient coastal grid within the country by leading the way through strategic resiliency mitigations and the best-in-class customer communications. This will be accomplished through:

- Optimization of the deployment of the most effective mitigations and processes
- Maximization of capital efficiency through leading AI tools that balance system performance and cost with customer expectations.

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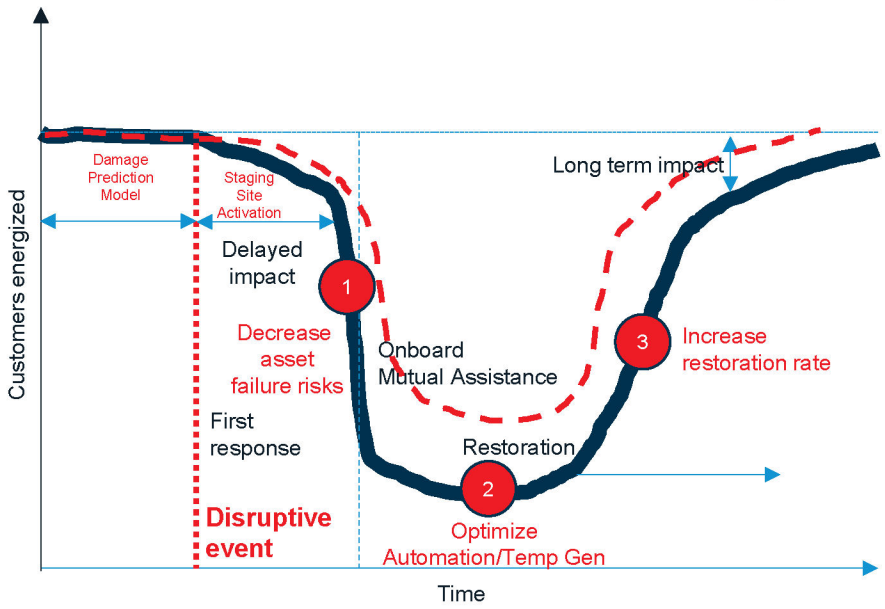
Model vs Real World View

Fall in Risk and Truck Accessibility

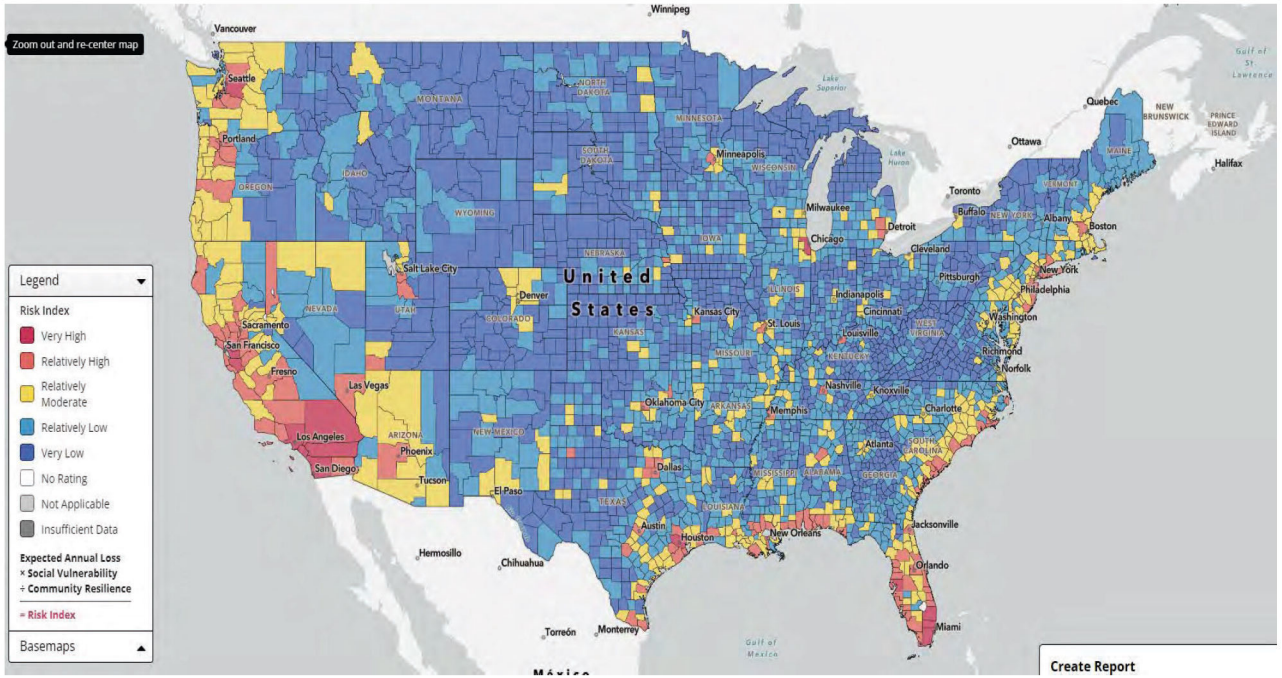


CEHE Strategy: Deploy the most effective mitigations in the least resilient locations

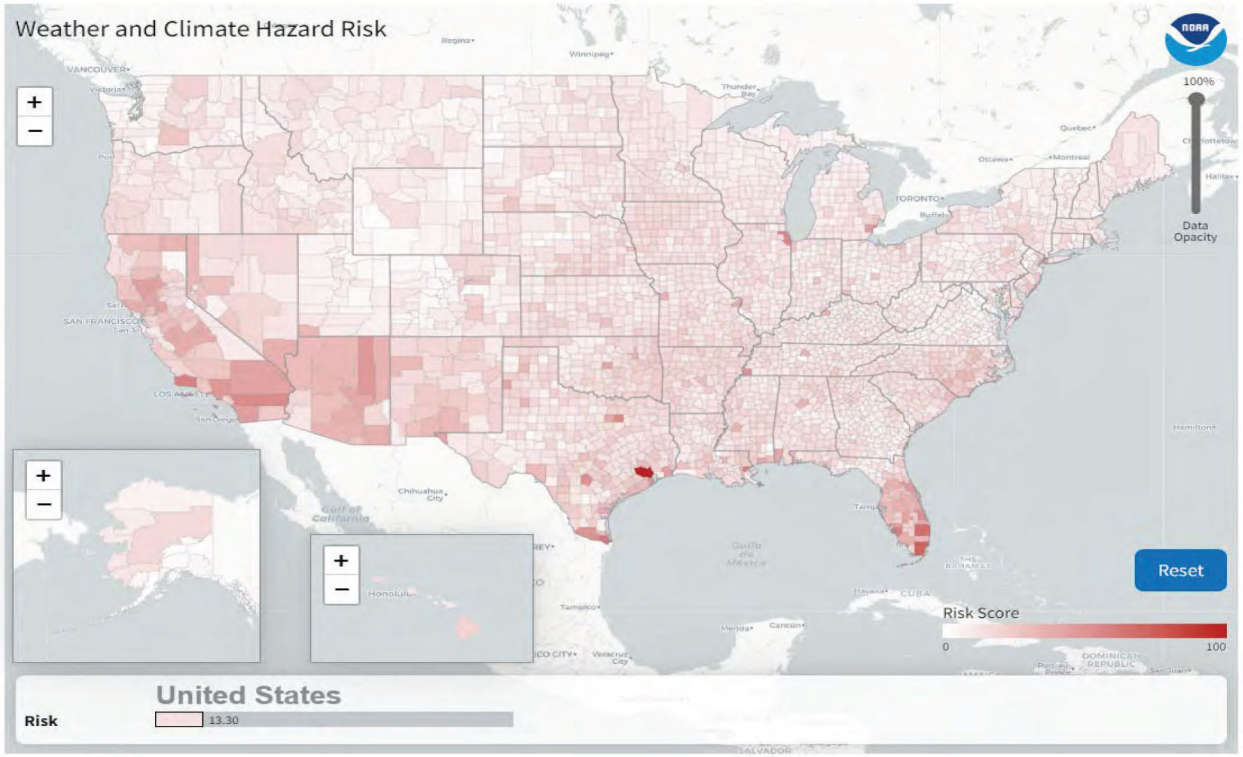
1. Decrease asset failure risks prioritizing less accessible locations based on criticality and total customer counts
2. Increase utilization of automated devices for a self-healing grid and optimization of temp generation
3. Reduce customer restoration times by decreasing the number of asset failures, customers affected, and time needed per asset repair.



FEMA National Risk Index Map



NOAA Weather and Climate Hazard Risk Map



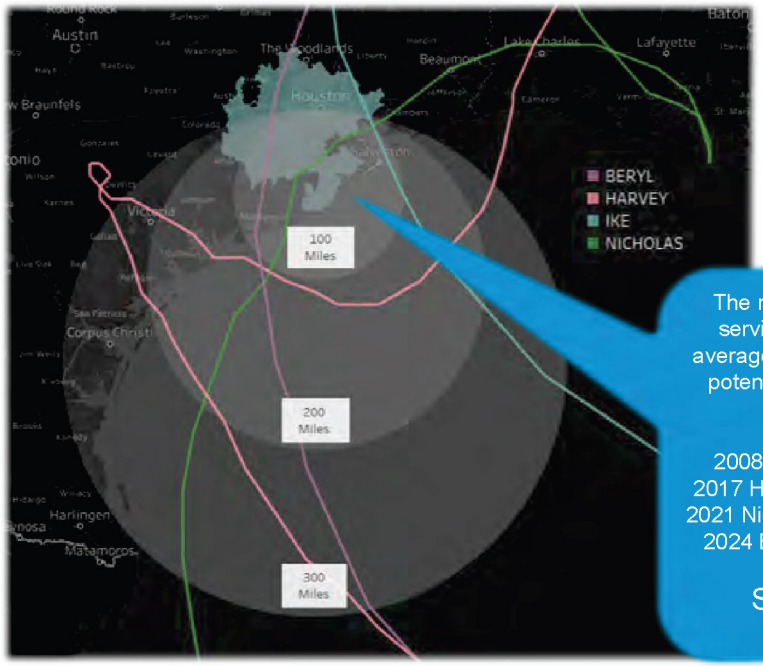
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NOAA Risk and Vulnerability Summary

Data Type	Harris County	Texas	U.S.
Weather and Climate Risk			
Drought Risk	20.36	14.32	11.61
Flooding Risk	100.00	12.97	9.13
Freeze Risk	12.05	13.09	15.72
Severe Storm Risk	94.56	20.58	16.99
Tropical Cyclone Risk	100.00	6.41	4.36
Wildfire Risk	11.81	11.28	6.30
Winter Storm Risk	65.33	15.99	13.71
Flooding, Freeze, Severe Storm, Tropical Cyclone, Wildfire, and Winter Storm Risk	100.00	15.88	12.14

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- Typical hurricanes: about **300 miles wide**
- Hurricane-force winds: extend outward about **25 miles (small hurricane) to more than 150 miles (large hurricane)**. Tropical storm-force winds can extend upwards of 300 miles
- Frequently, the **right side of a hurricane ("the dirty side") is the most dangerous** in terms of storm surge, rainfall, winds, and/or tornadoes.

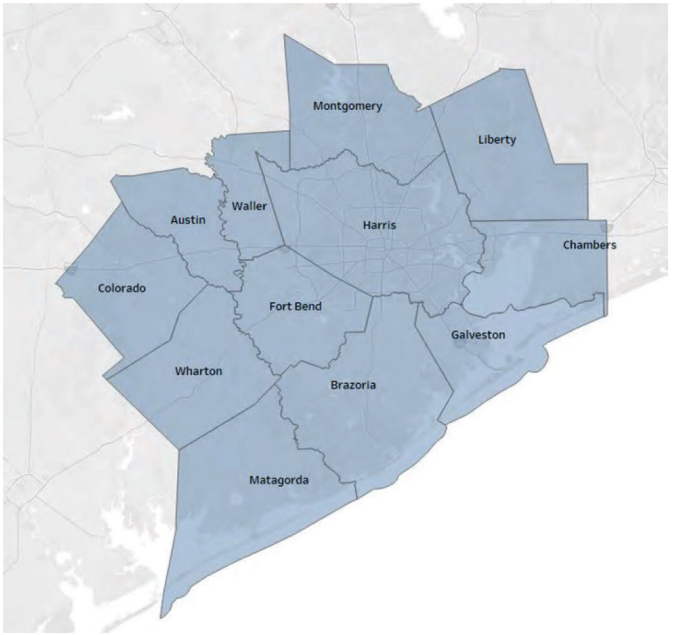


The relatively small CEHE service territory results in average hurricanes having the potential to impact **100%** of assets.

2008 Ike – 600 miles wide
2017 Harvey – 280 miles wide
2021 Nicholas – 115 miles wide
2024 Beryl – 376 miles wide

Storm track is important!

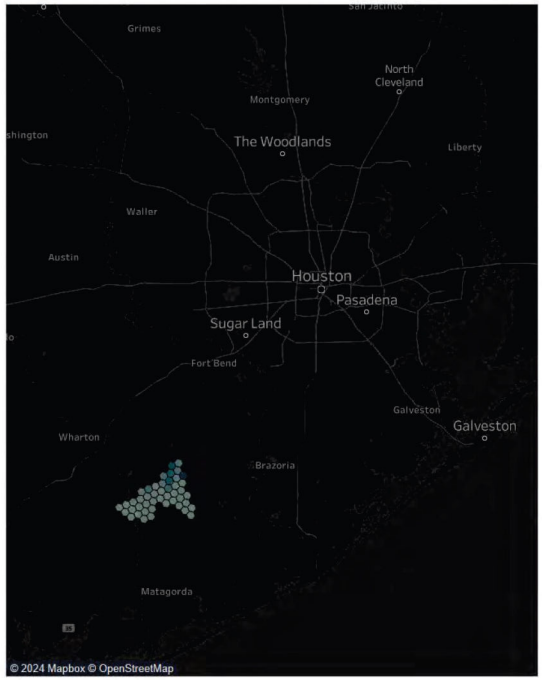
Adjusting to Exceed Resiliency Expectations



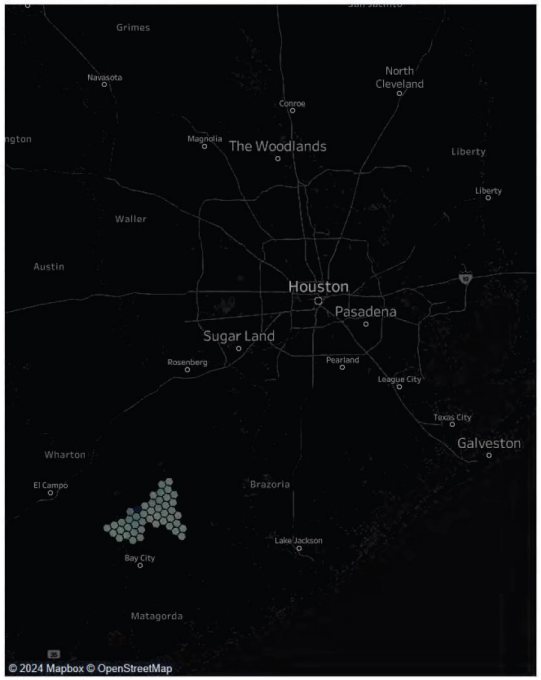
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County Based Customer Impact Analysis

Damage Prediction



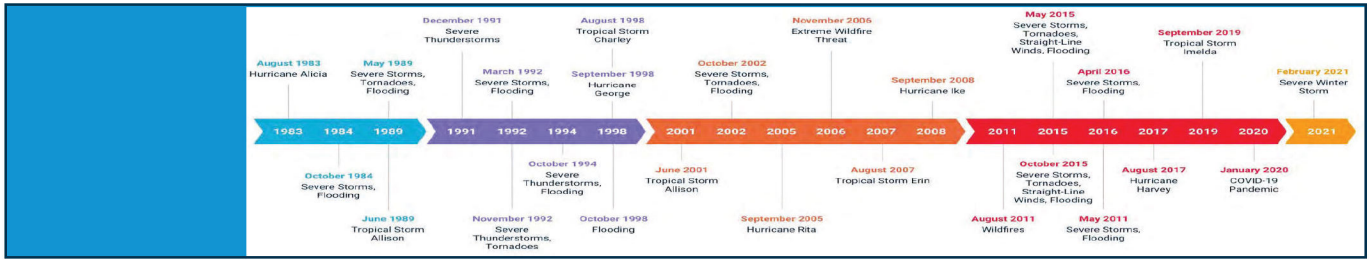
Outage Duration



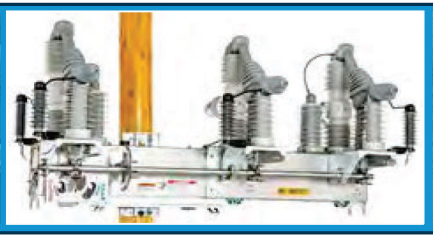
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3-Tiered Approach to Project Identification

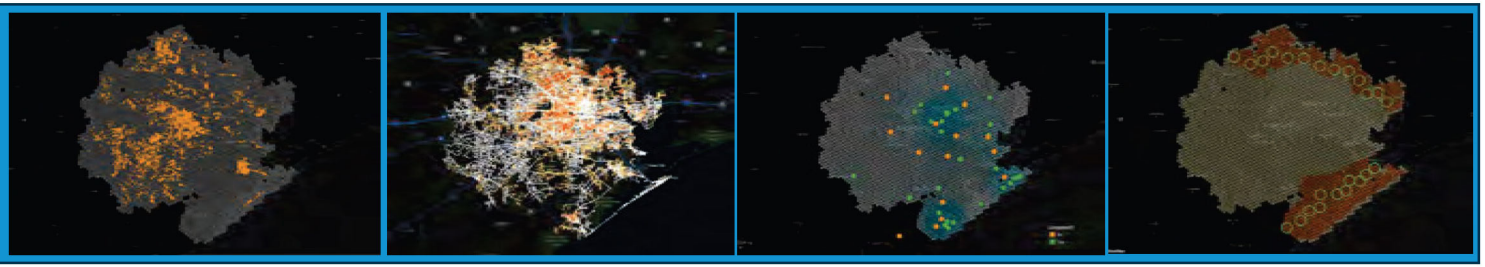




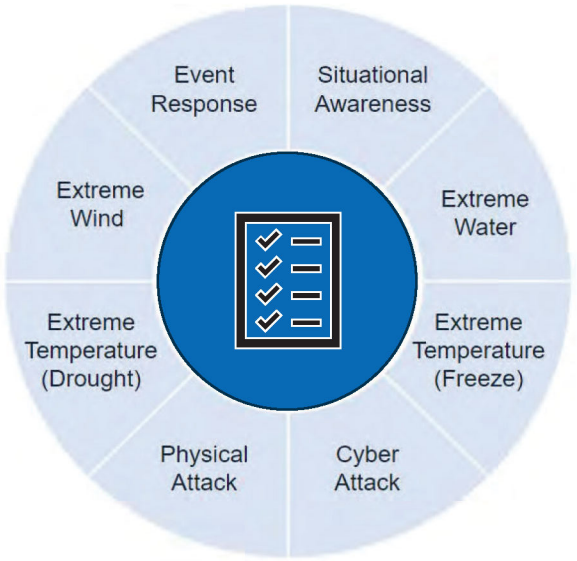




Scenario Based Modeling



Scenario Based Framework



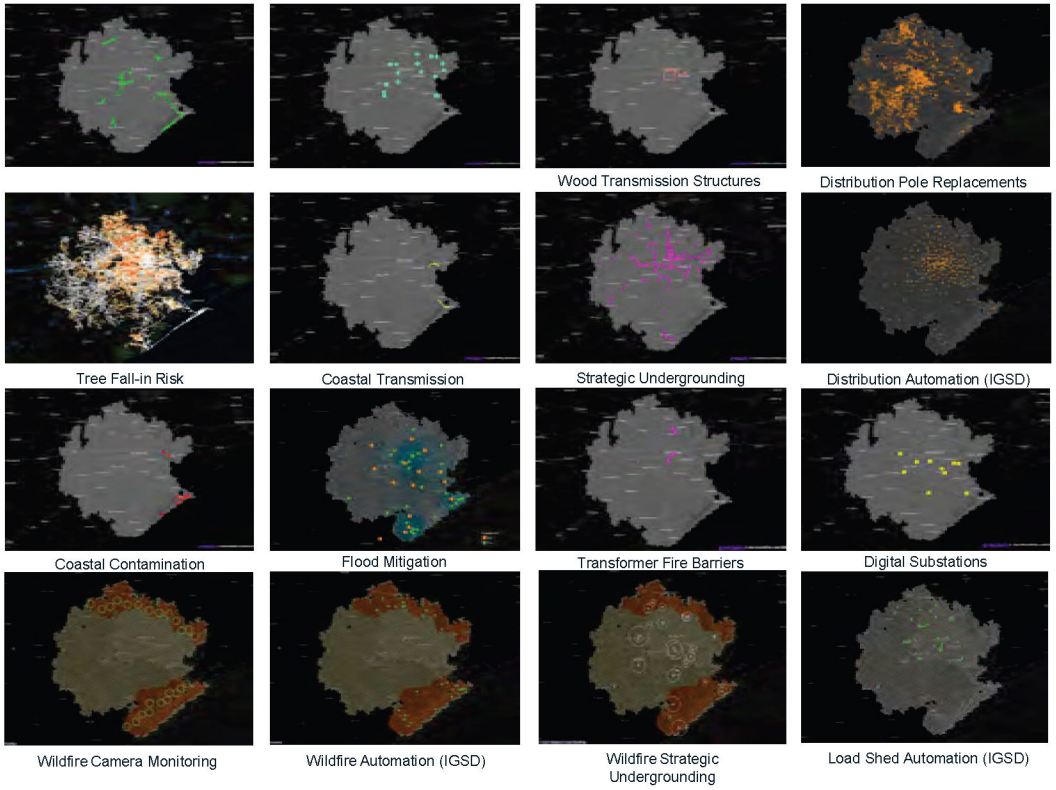
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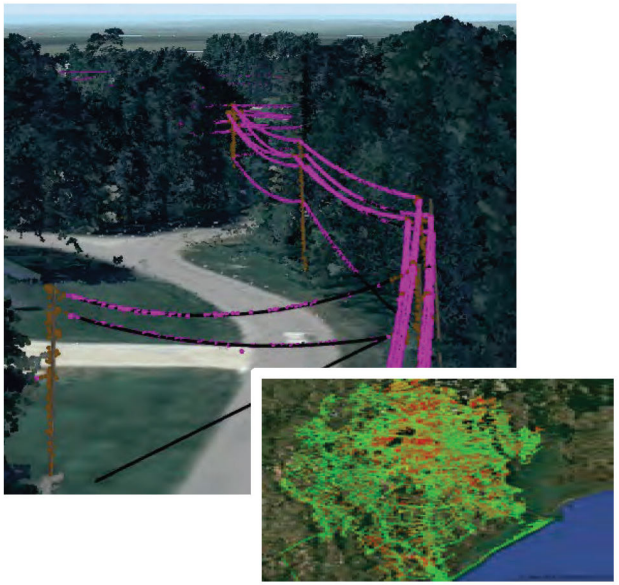
Event Types and Mitigations

Event Class	Event Type (% assets likely affected)	Mitigation Objective
Extreme Wind	Hurricane (100%)	Replace transmission structures with stronger towers or concrete/steel monopoles
		Replace select 90-degree structures with new steel monopoles
	Microburst (50%)	Replace wooden structures with stronger towers or concrete/steel monopoles
	Derecho (50%)	Replace or brace poles based on condition
		Replace equipment poles and reconfigure cross-arms
	Tornado (25%)	Build additional transmission lines for contingency case
	High wind (50%)	Underground freeway crossings and low access spans
		Automation to reduce outage durations for customers
		Increase awareness and coastal insulation levels
Extreme Water	Hurricane (100%) Flood (80%)	Elevate facilities based on potential flood levels
Extreme Temp	Heat (Drought) (100%)	Install fire barriers to avoid cascading failures
		Replace existing circuits with higher capacity
		Enable wildfire related protection schemes
		Provide situational awareness in HFRAs
		Enable circuit segmentation schemes for HFRAs
		Enable circuit segmentation during load shed events
		Reduce ignition risk by undergrounding conductors
	Freeze (100%)	Replace existing circuits with higher capacity
		Enable circuit segmentation during load shed events
		Detect and prevent galloping conductors from icing

Event Class	Event Type (% assets effected)	Mitigation Objective
Physical Attack/Third Party Damage	Substation Security	Security Upgrades and Fencing
	Damage from vessels (10%)	Mitigate extended outages from 3rd party damage
	Damage from vehicles (1%)	Mitigate widespread outages from vehicle events
		Mitigate localized outages from vehicle events
		Mitigate widespread outages from vehicle events
		Reduce outage durations for customers upstream
Cyber Attack	OT Security	Enhance security of OT systems
	Secure Communications	Provide increased security for critical voice, automation and monitoring systems
	Cybersecurity Monitoring	Threat detection for evolving cyber risk
Situational Awareness	LiDAR Modeling	Provide the basis for advance modeling and project selection
	Wildfire Analytics	
	Weather Analytics	
	Galloping Detection	Early warning for transmission line galloping
Event Response	Enhance Staging Sites	Increase crew productivity and deployment speed
	Operational Enhancements	Emergency Operations Platform to support disaster recovery decision making

LiDAR Based Model Library Development





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Matagorda County Take-Aways

- Communities of Concern
  - ?
- Additional discussion points
  - ?

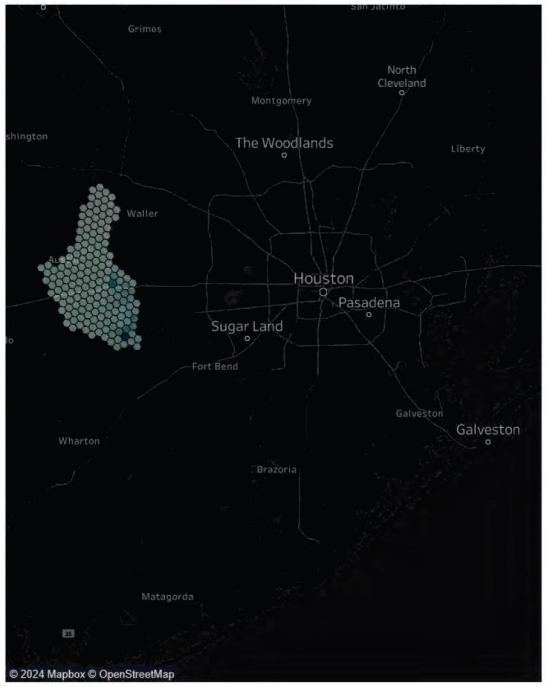
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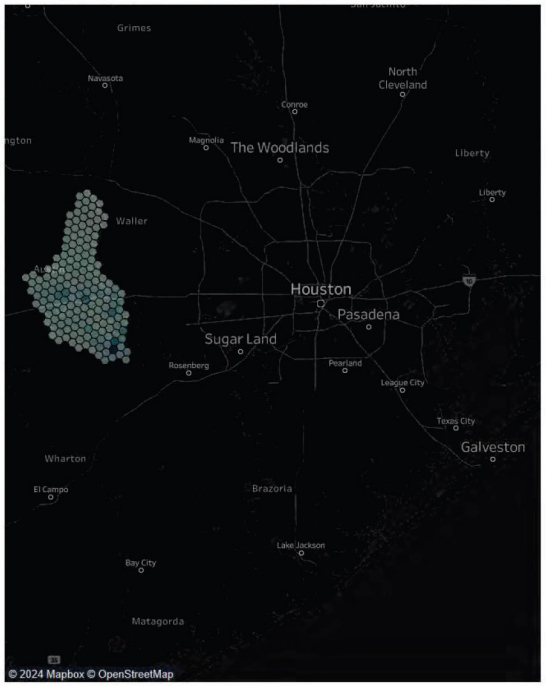
Individual County Analysis & Maps

County Based Customer Impact Analysis

Damage Prediction



Outage Duration

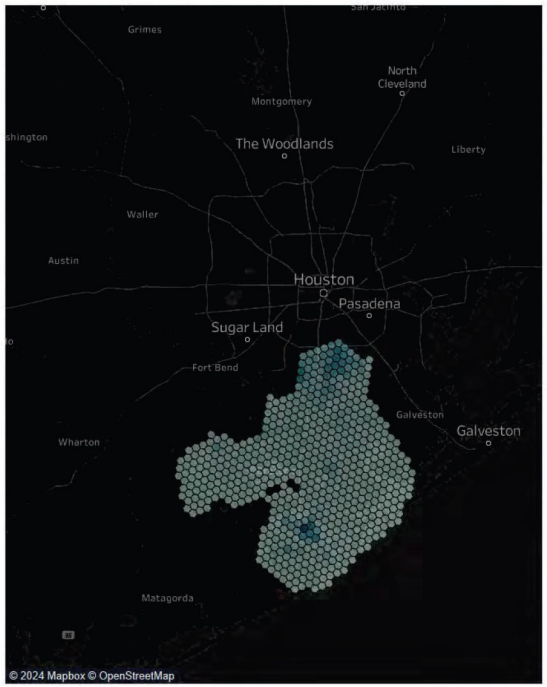


- Identify areas and circuits with:
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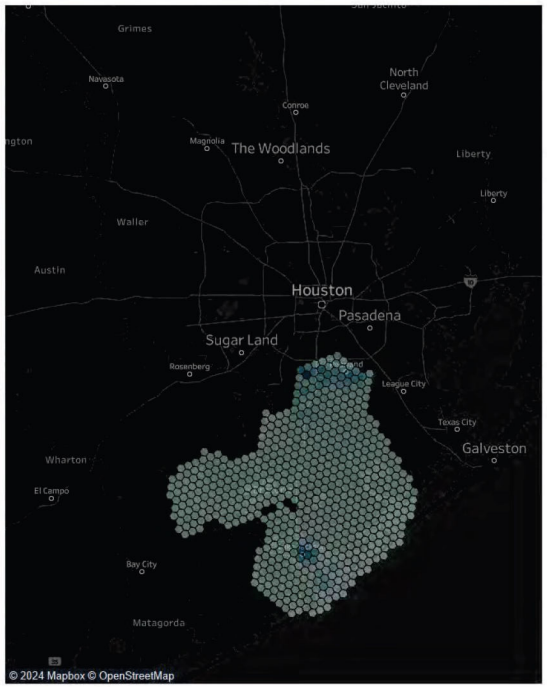
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County Based Customer Impact Analysis

Damage Prediction



Outage Duration

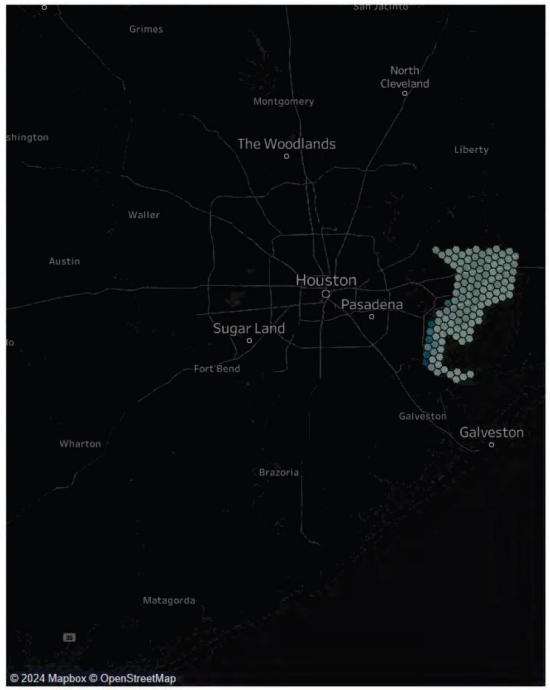


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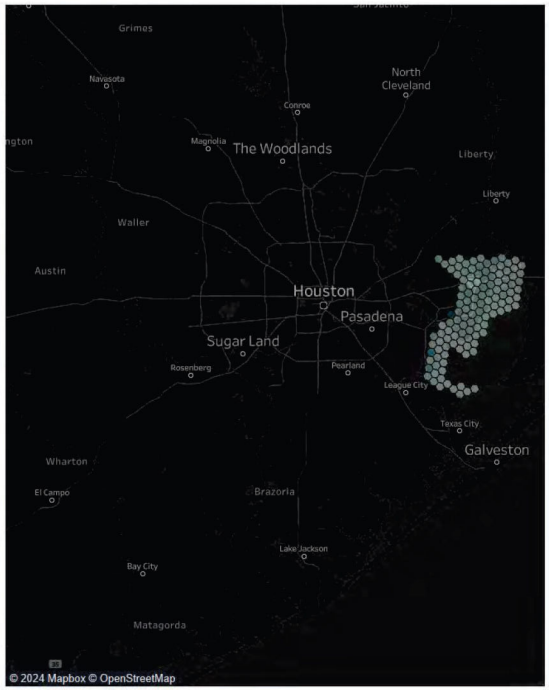
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Damage Prediction



Outage Duration

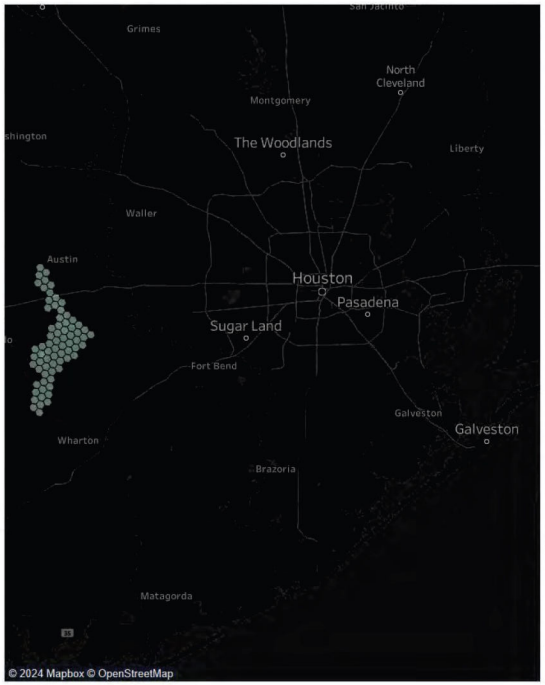


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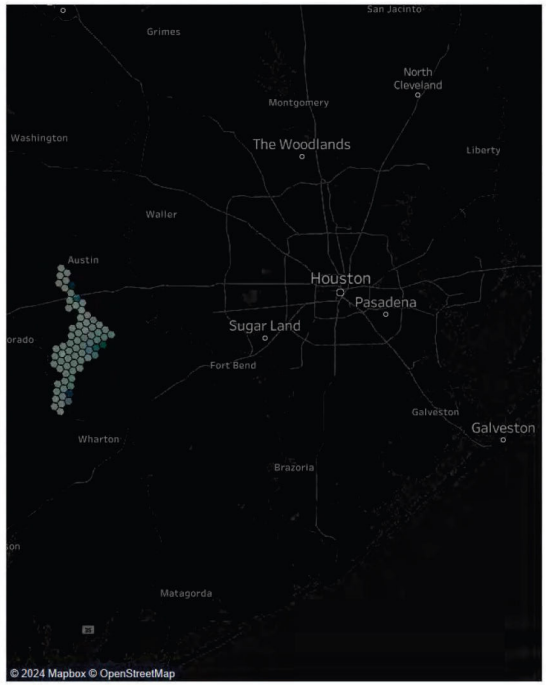
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Damage Prediction



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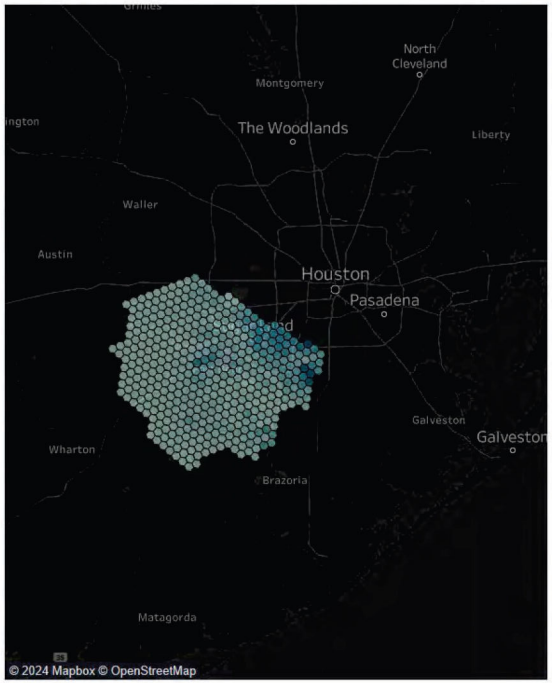


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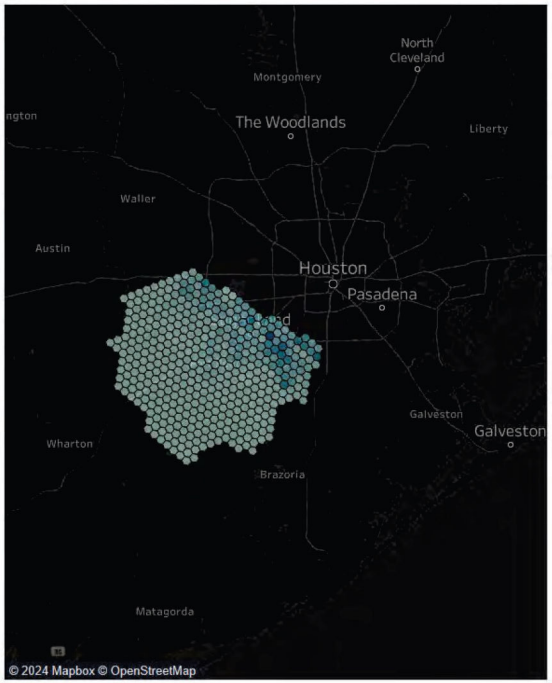
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Damage Prediction



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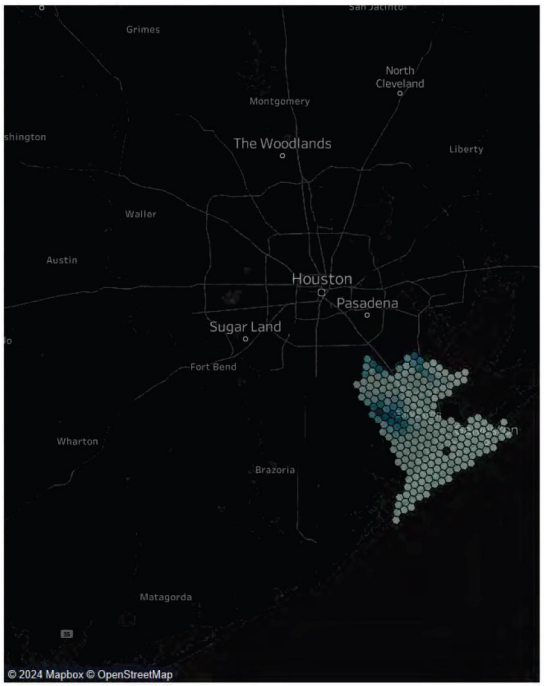


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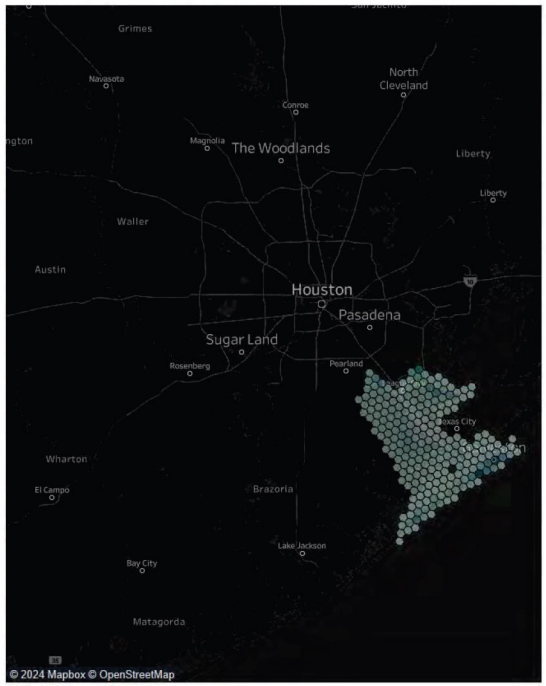
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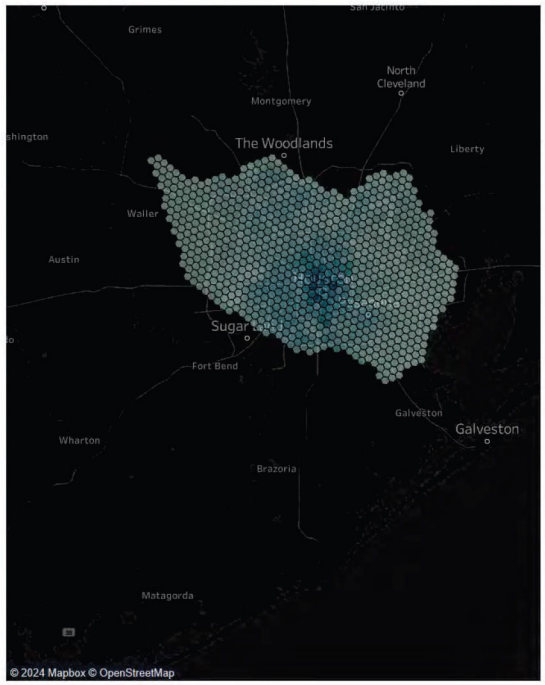


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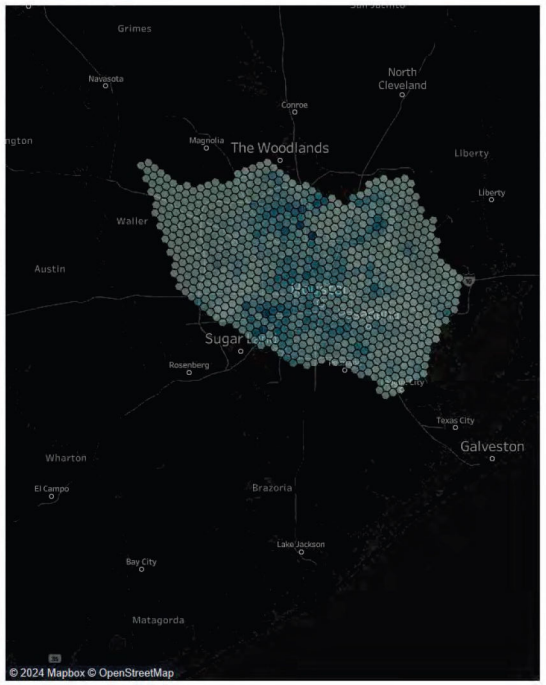
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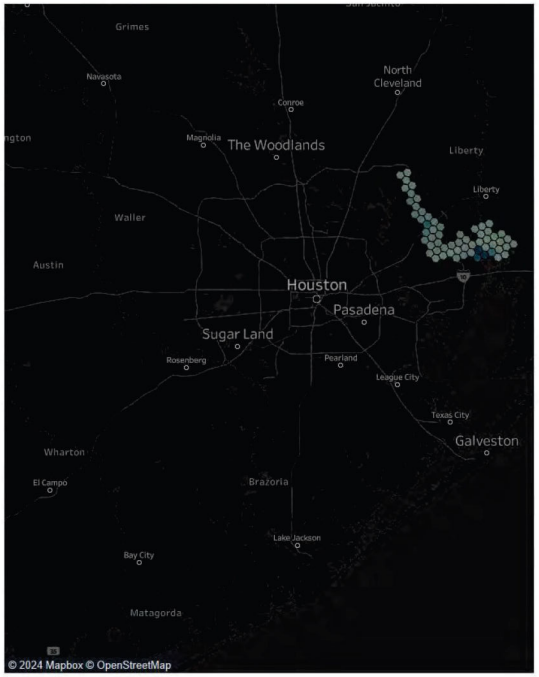
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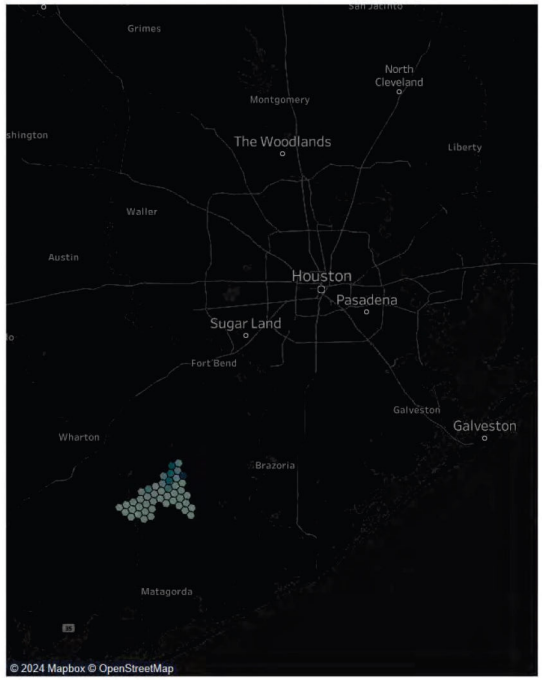


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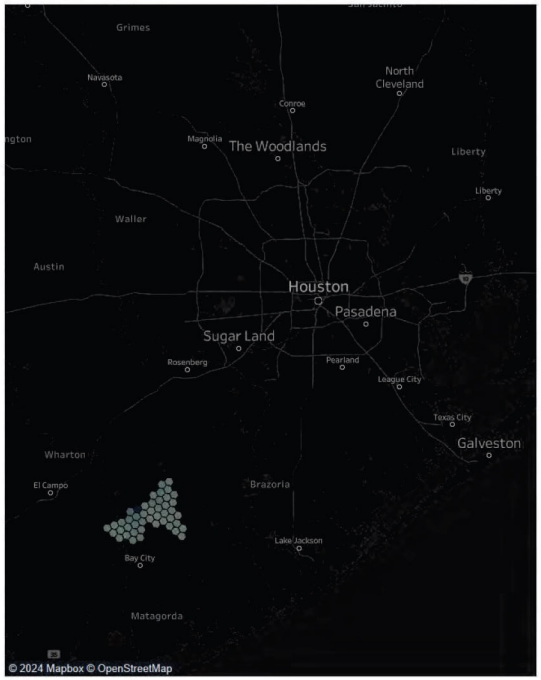
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Damage Prediction



Outage Duration



- Identify areas and circuits with:
  - higher probability of longer duration outages
  - Critical Infrastructure
  - Priority County OEM locations
- Aids in prioritizing strategic mitigation projects and aligning restoration processes

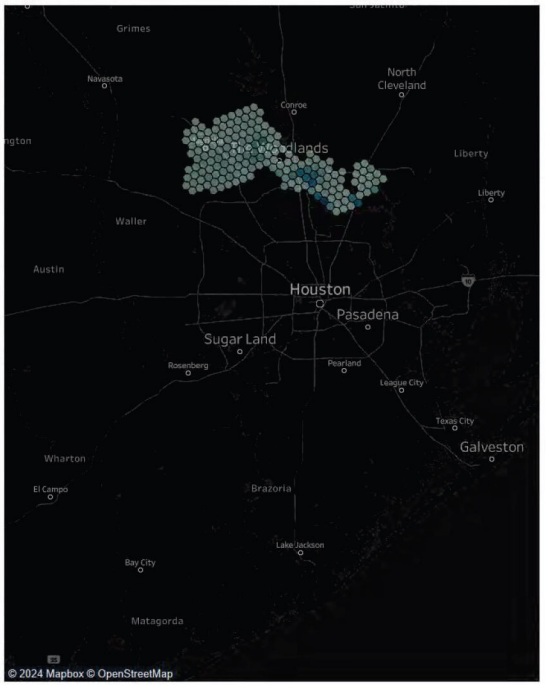
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County Based Customer Impact Analysis

Damage Prediction



Outage Duration



- Identify areas and circuits with:
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  - Critical Infrastructure
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- Aids in prioritizing strategic mitigation projects and aligning restoration processes

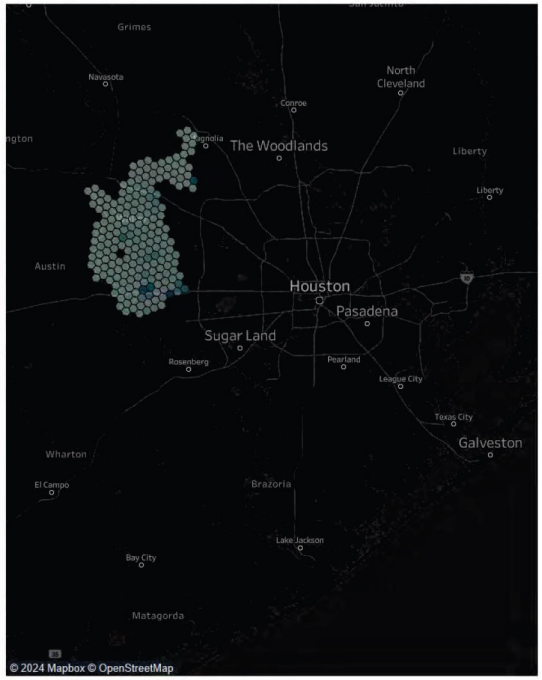
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County Based Customer Impact Analysis

Damage Prediction



Outage Duration

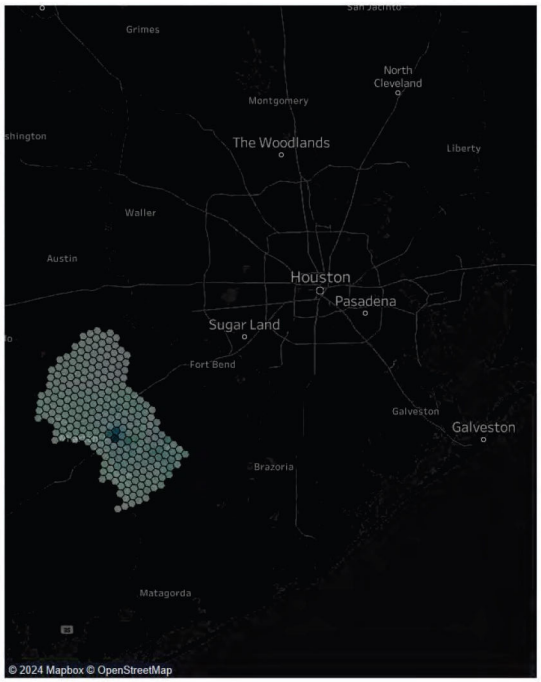


- Identify areas and circuits with:
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  - Priority County OEM locations
- Aids in prioritizing strategic mitigation projects and aligning restoration processes

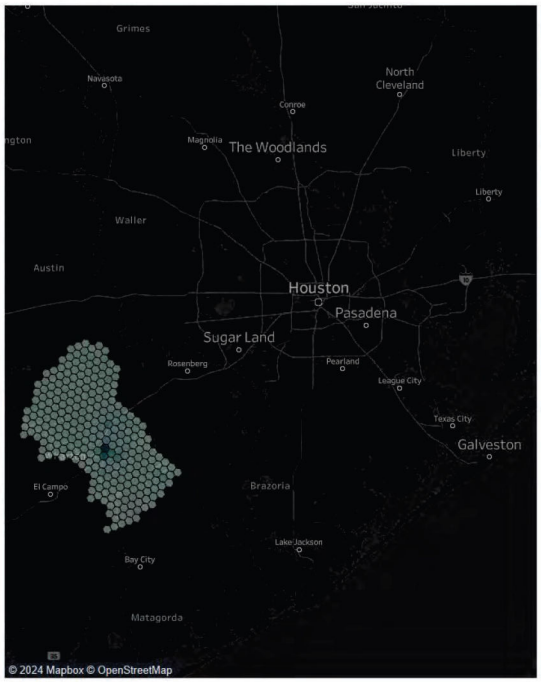
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County Based Customer Impact Analysis

Damage Prediction



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CenterPoint® Energy

SRP 2026-28 November Update

CenterPoint Energy Participants

Grid Transformation & Investment Strategy

- Eric Easton, VP Grid Transformation & Investment Strategy
- Hong Ablack, Director Asset Management
- Paul Mathew, Director Strategic Coordination & Analysis

Technology

- Ron Bahr, VP, Office of the CIO

Regulatory Affairs

- Patrick Reinhart, VP Electric Regulatory Relations & Policy
- Perrin Wall, Director Regulatory Affairs Texas Electric
- Stacey Murphree, Manager Regulatory & Rates
- Joymesha Jones, Analyst Regulatory & Rates

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Industry Leading System Resiliency

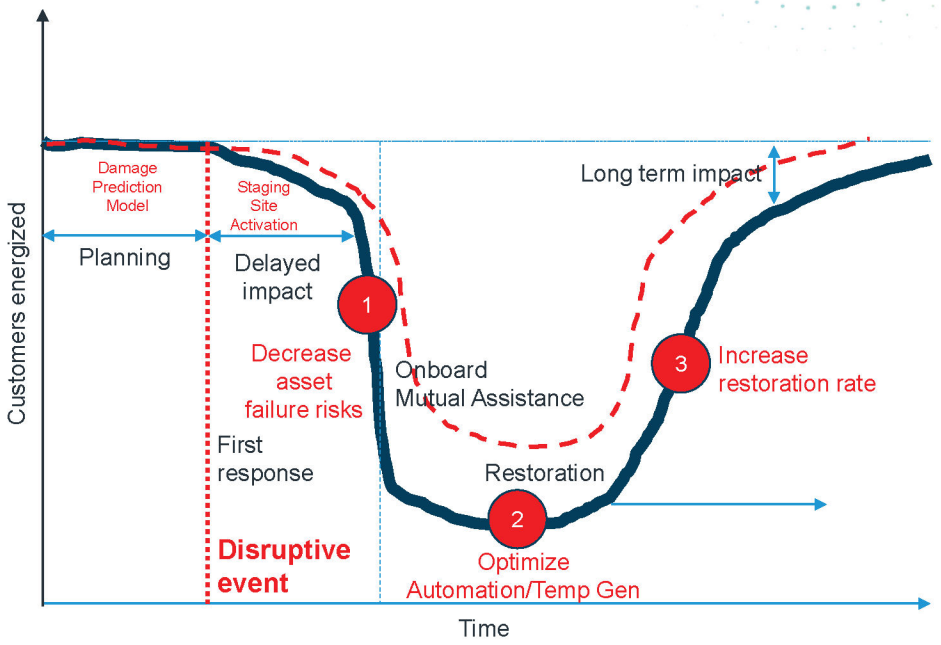
Our mission is to build and operate the most resilient coastal grid within the country by leading the way through strategic resiliency mitigations and the best-in-class customer communications. This will be accomplished through:

- Optimization of the deployment of the most effective mitigations and processes
- Maximization of capital efficiency through leading AI tools that balance system performance and cost with customer expectations.

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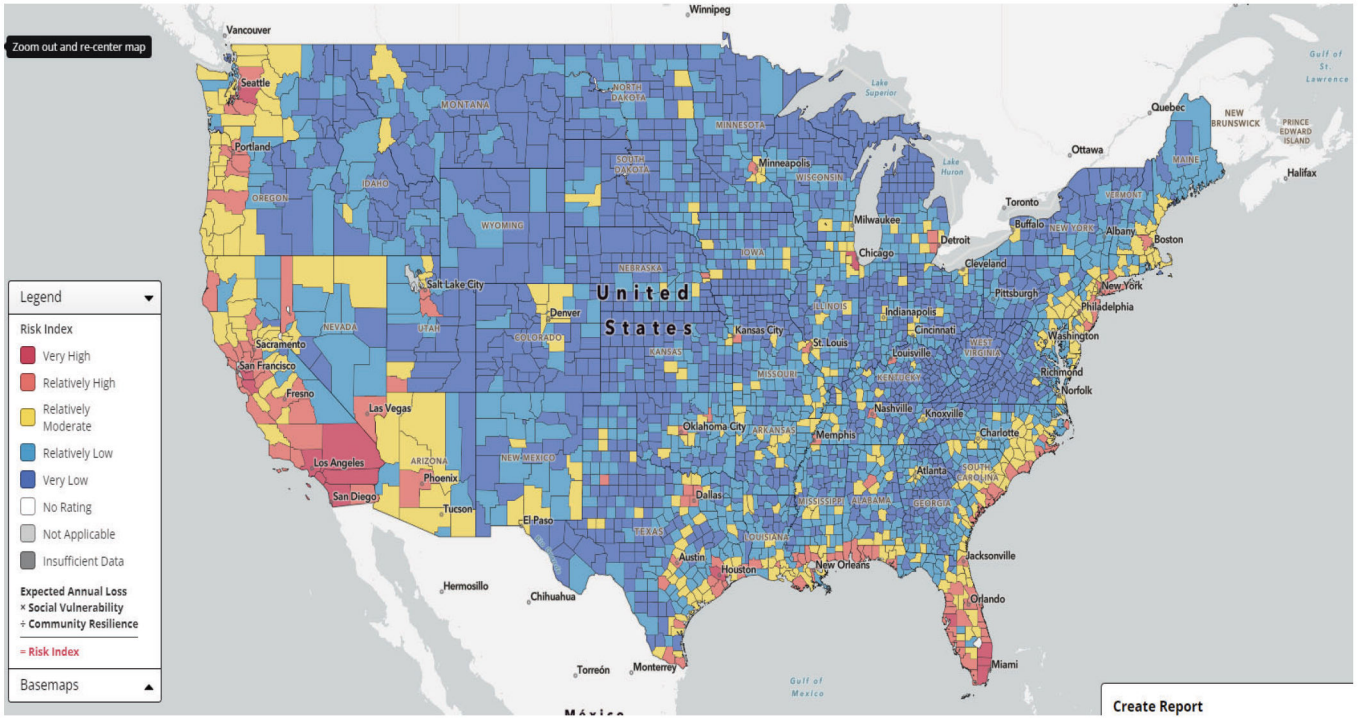
CEHE Strategy: Deploy the most effective mitigations in the least resilient locations

1. Decrease asset failure risks prioritizing less accessible locations based on criticality and total customer counts
2. Increase utilization of automated devices for a self-healing grid and optimization of temp generation
3. Reduce customer restoration times by decreasing the number of asset failures, customers affected, and time needed per asset repair.

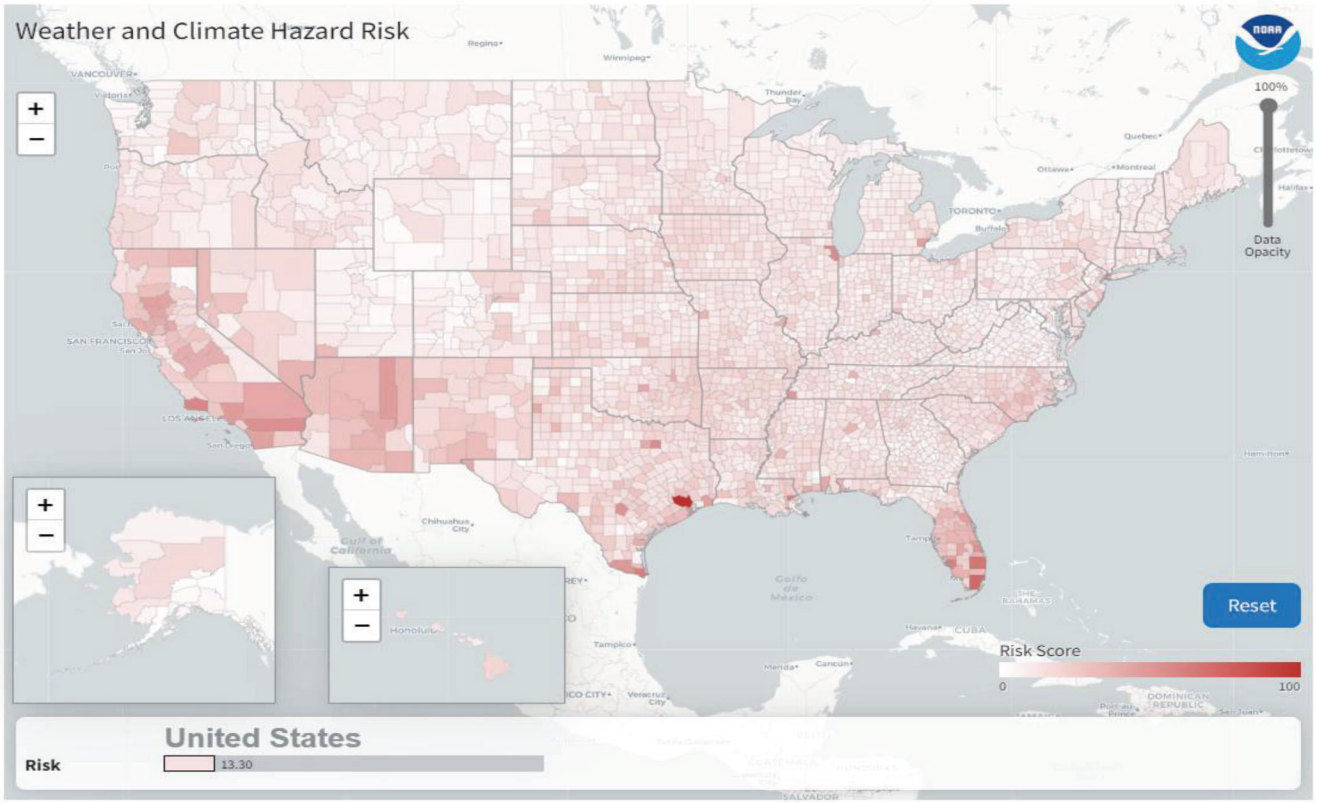


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FEMA National Risk Index Map



NOAA Weather and Climate Hazard Risk Map



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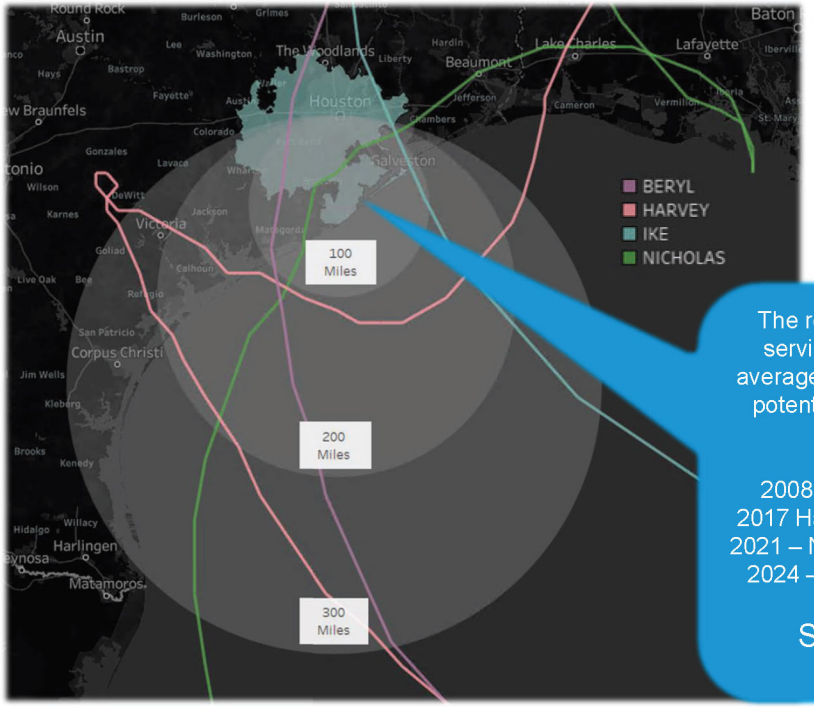
NOAA Risk and Vulnerability Summary

Data Type	Harris County	Texas	U.S.
Weather and Climate Risk			
Drought Risk	20.36	14.32	11.61
Flooding Risk	100.00	12.97	9.13
Freeze Risk	12.05	13.09	15.72
Severe Storm Risk	94.56	20.58	16.99
Tropical Cyclone Risk	100.00	6.41	4.36
Wildfire Risk	11.81	11.28	6.30
Winter Storm Risk	65.33	15.99	13.71
Flooding, Freeze, Severe Storm, Tropical Cyclone, Wildfire, and Winter Storm Risk	100.00	15.88	12.14

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Houston Area Challenges to Coastal Resiliency

- **Highest coastal Population Density and a compact area**; customers in entire service territory subject to impacts
- Of coastal areas with higher **Population Density,** the Greater Houston Area has the **highest Vegetation Density**
- Higher levels of **Population and Vegetation Density** increase non-utility asset occurrence causing failures and limit **Asset Accessibility;** a major factor in rate of customer restoration
  - Typical hurricanes: about **300 miles wide**
  - Hurricane-force winds: extend outward about **25 miles (small hurricane) to more than 150 miles (large hurricane)**. Tropical storm-force winds can extend upwards of 300 miles
  - Frequently, the **right side of a hurricane ('the dirty side") is the most dangerous** in terms of storm surge, rainfall, winds, and/or tornadoes.



The relatively small CEHE service territory results in average hurricanes having the potential to impact **100%** of assets.

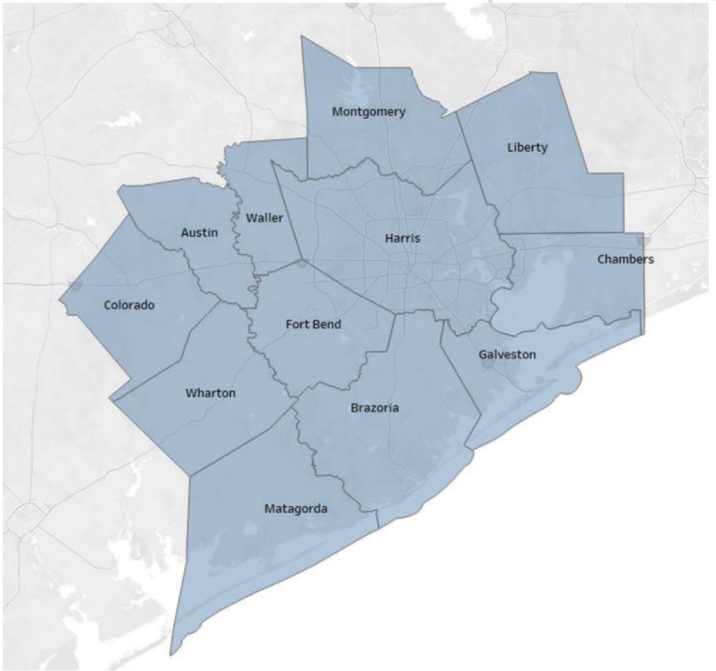
2008 Ike - 600 miles wide
2017 Harvey – 280 miles wide
2021 – Nicholas 115 miles wide
2024 – Beryl 376 miles wide

Storm track is important!

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Adjusting to Exceed Resiliency Expectations

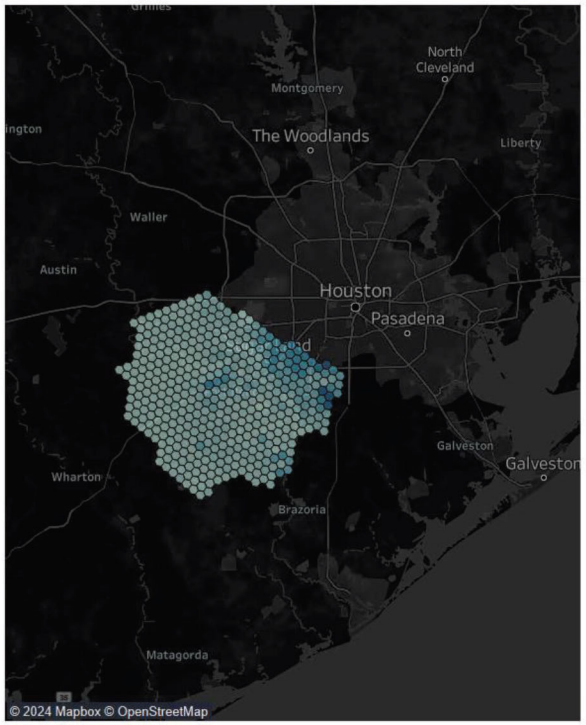
- Incorporated 3rd party feedback for communications, smarter grid, stronger grid, and customer restoration
- Accelerate deployment of industry leading AI technologies to optimize mitigation of risks, investment decisions, and improve customer restoration decision making processes and execution
- Transitioning from a program to project based approach based using recently completed accessibility analytics
- Must increase the pace of asset deployment based on: Post-Beryl lessons learned, Greater Houston Resiliency Initiative, and PUCT report



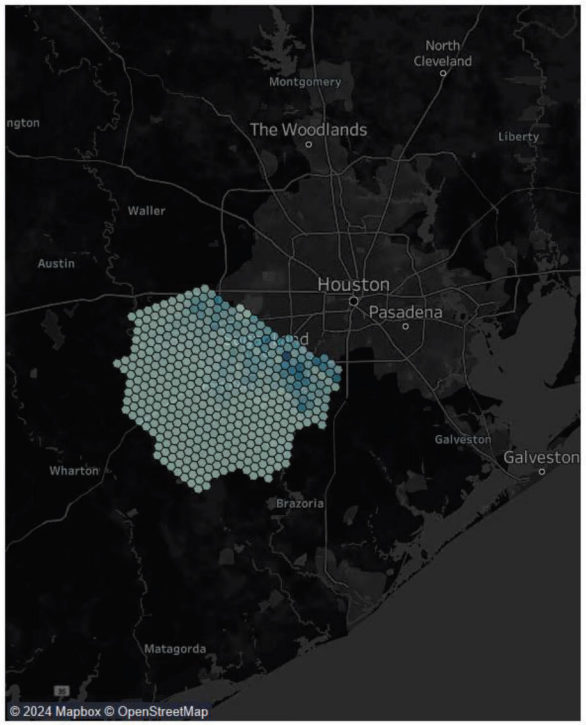
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County Based Customer Impact Analysis

Damage Prediction



Outage Duration



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3-Tiered Approach to Project Identification

Post-Event Analysis



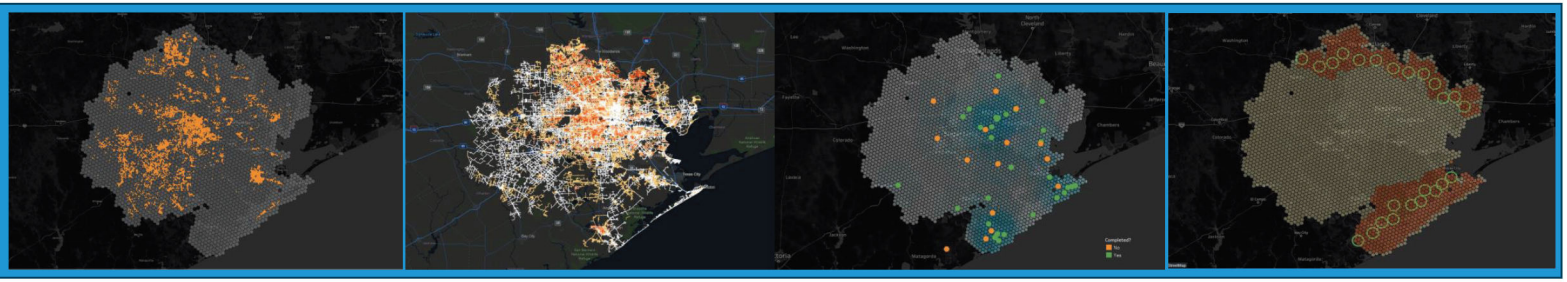
Industry Best Practices







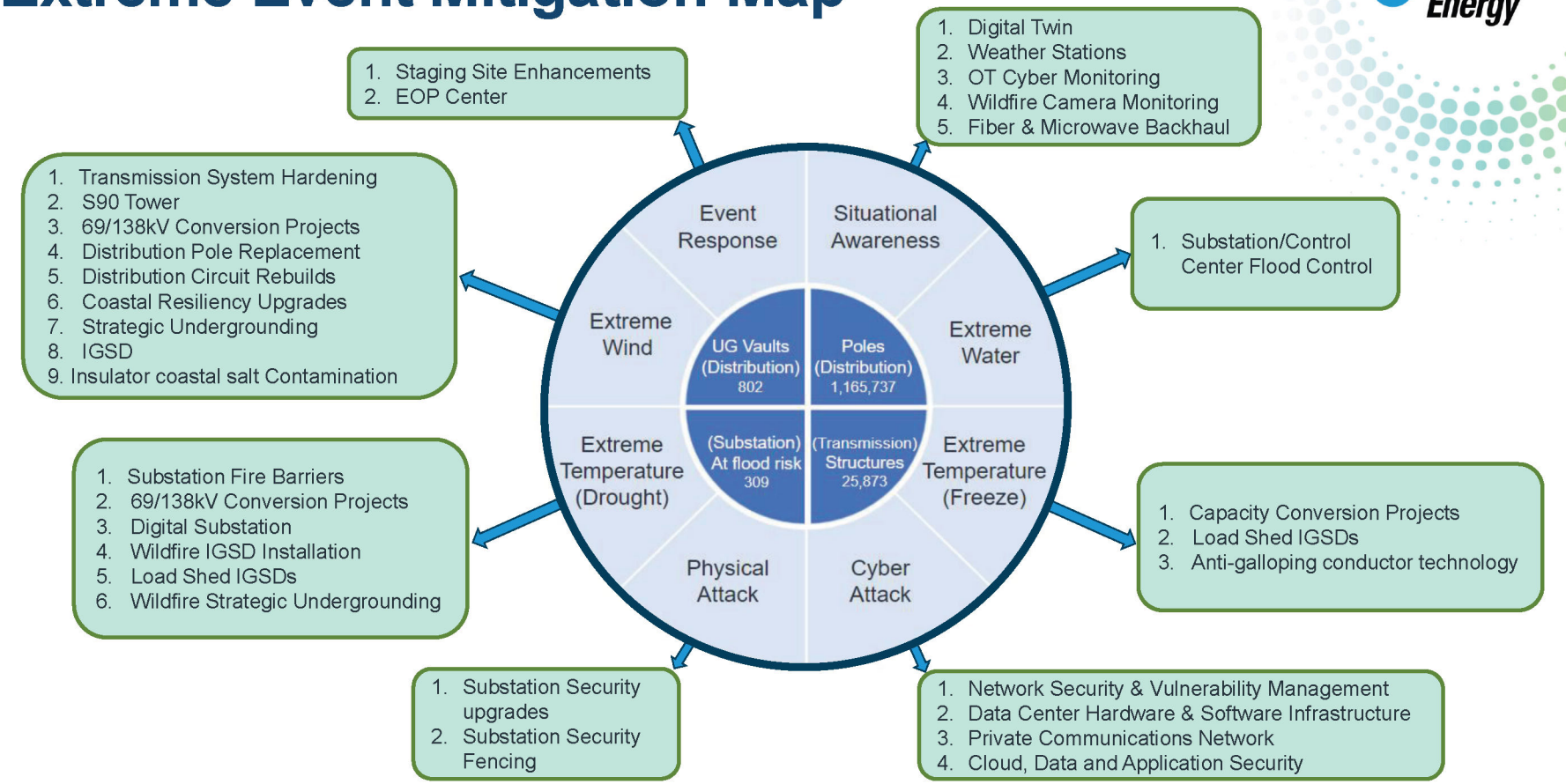
Scenario Based Modeling



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Extreme Event Mitigation Map

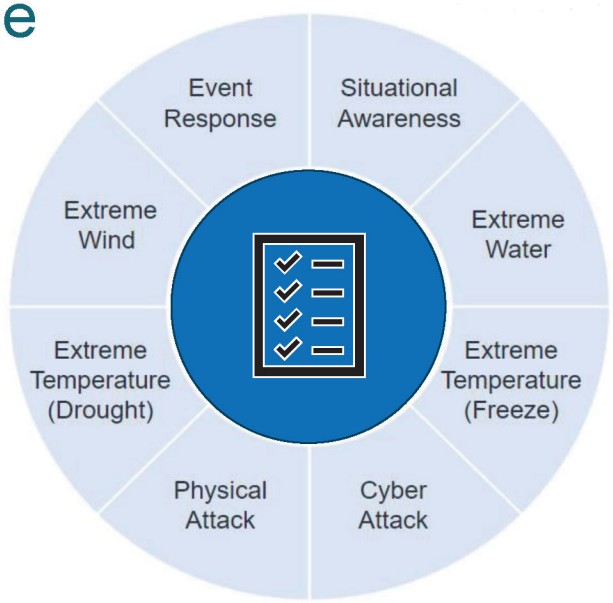


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Scenario Based Framework

Review by Event Type

a. Risk Characterization of Event Type
b. Planning and Response
c. Benchmark Events
d. Best Practice Mitigations
e. Mitigation Prioritization
f. Project Selection Criteria
g. Project Location Map
h. Explanation of Benefits



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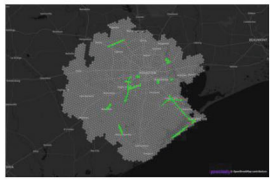
Event Types and Mitigations

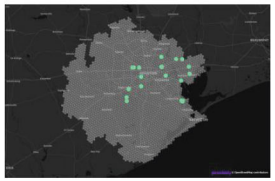
Based on the different event types the following mitigations will be deployed based on the 3-tiered analysis approach

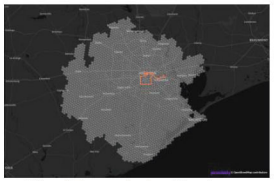
Event Class	Event Type (% assets likely affected)	Mitigation Objective
Extreme Wind	Hurricane (100%) Microburst (50%) Derecho (50%) Tornado (25%) High wind (50%)	Replace transmission structures with stronger towers or concrete/steel monopoles
		Replace select 90-degree structures with new steel monopoles
		Replace wooden structures with stronger towers or concrete/steel monopoles
		Replace or brace poles based on condition
		Replace equipment poles and reconfigure cross-arms
		Build additional transmission lines for contingency case
		Underground freeway crossings and low access spans
		Automation to reduce outage durations for customers
		Increase awareness and coastal insulation levels
Extreme Water	Hurricane (100%) Flood (80%)	Elevate facilities based on potential flood levels
Extreme Temp	Heat (Drought) (100%)	Install fire barriers to avoid cascading failures
		Replace existing circuits with higher capacity
		Enable wildfire related protection schemes
		Provide situational awareness in HFRAs
		Enable circuit segmentation schemes for HFRAs
		Enable circuit segmentation during load shed events
		Reduce ignition risk by undergrounding conductors
	Freeze (100%)	Replace existing circuits with higher capacity
		Enable circuit segmentation during load shed events
		Detect and prevent galloping conductors from icing

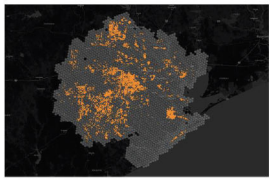
Event Class	Event Type (% assets effected)	Mitigation Objective
Physical Attack/Third Party Damage	Substation Security	Security Upgrades and Fencing
	Damage from vessels (10%)	Mitigate extended outages from 3rd party damage
	Damage from vehicles (1%)	Mitigate widespread outages from vehicle events
		Mitigate localized outages from vehicle events
		Mitigate widespread outages from vehicle events
		Reduce outage durations for customers upstream
Cyber Attack	OT Security	Enhance security of OT systems
	Secure Communications	Provide increased security for critical voice, automation and monitoring systems
	Cybersecurity Monitoring	Threat detection for evolving cyber risk
Situational Awareness	LiDAR Modeling	Provide the basis for advance modeling and project selection
	Wildfire Analytics	
	Weather Analytics	
	Galloping Detection	Early warning for transmission line galloping
Event Response	Enhance Staging Sites	Increase crew productivity and deployment speed
	Operational Enhancements	Emergency Operations Platform to support disaster recovery decision making

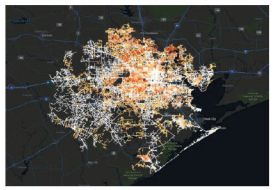
LiDAR Based Model Library Development

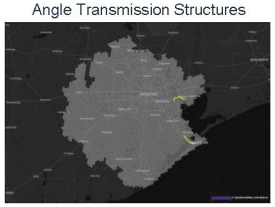

Lattice Transmission Structures


Angle Transmission Structures


Wood Transmission Structures


Distribution Pole Replacements

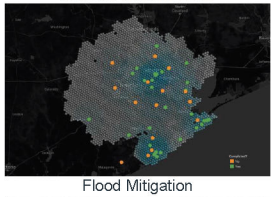

Tree Fall-in Risk

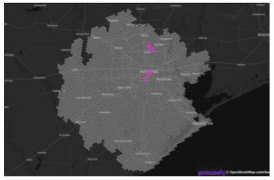

Coastal Transmission

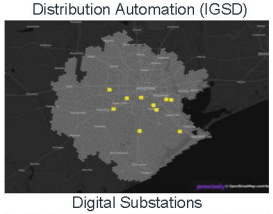

Strategic Undergrounding


Distribution Automation (IGSD)


Coastal Contamination


Flood Mitigation

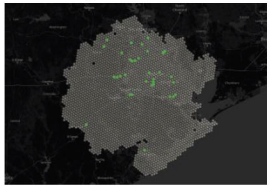

Transformer Fire Barriers

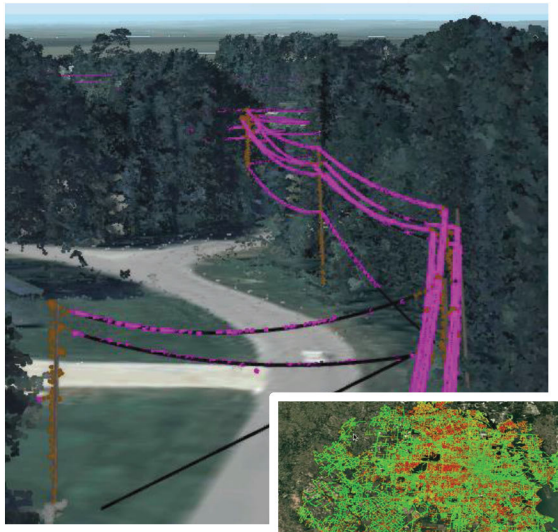

Digital Substations

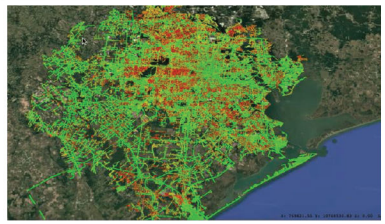

Wildfire Camera Monitoring


Wildfire Automation (IGSD)


Wildfire Strategic Undergrounding


Load Shed Automation (IGSD)







System Resiliency Plan Comparison

April 2024 (PUCT Docket 56548)

- Time frame: 2025 – 2027
- Overall Spend: Approx $2.2B
- Approach: Program level analysis
  - Climate analysis at county level
  - Project & investment decision based on historical trends
  - Categorization of programs based on resiliency measure as defined in PUCT rule (hardening, modernization, etc.)
  - First SRP filed in Texas therefore no context of other TDU approach
  - Limited input from stakeholders; pre-filing preview meetings with PUCT and intervening parties

January 2025 (PUCT Docket TBD)

- Time frame: 2026 – 2028
- Overall Spend: Approx $5B
- Approach: Project level analysis
  - Granular climate analysis at polygon level (roughly 2-mile area)
  - LiDAR data incorporated to inform project & investment decisions by program; predictive modeling
  - Event scenario-based categorization (wind, flood, temp, etc.) to provide more customer focused understanding ~~vs measure-based categorization (hardening, modernization, etc.)~~
  - Aligns with other utility SRP applications approved or under review
  - Additional stakeholder input from County OEM damage prediction review meetings
- Project Revisions
  - Coastal Contamination (+)
  - Communications Spectrum (+)
  - Advanced Distribution Technology (-)

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System Resiliency Plan Comparison

April 2024 (PUCT Docket 56548)

- Time frame: 2025 – 2027
- Overall Spend: Approx $2.2B
- Approach: Program level analysis
  - Climate analysis at county level
  - Risk analysis (Forecast) project & investment decision based on historical trends
  - Categorization of programs based on resiliency measure as defined in PUCT rule (hardening, modernization, etc.)
  - BCA Approach: Lifecycle analysis at program/measure level
  - Industry benchmarking: Peer Utility Benchmarking and Jurisdictional Analysis
  - Guidehouse valuation metric (Reliability) BCA results based on ERCOT Value of Lost Load (VOLL) of $25,000/MWh (vs. DOE ICE calculator)
  - Stakeholders input; pre-filing preview meetings with PUCT and intervening parties

January 2025 (PUCT Docket TBD)

- Time frame: 2026 – 2028
- Overall Spend: Approx $5B
- Approach: Project level analysis
  - Granular climate analysis at polygon level (roughly 2-mile area)
  - LiDAR data incorporated to inform project & investment decisions by program; predictive modeling
  - Event scenario-based categorization (wind, flood, temp, etc.) to provide more customer focused understanding
  - Aligns with other utility SRP applications approved or under review
  - Jurisdictional analysis updated to include Texas utility SRPs and Wildfire mitigation
  - Guidehouse valuation metric BCA results based on ERCOT VOLL increased to $35,000/MWh per PUCT revision August 2024
  - Stakeholder input from PUCT staff & County OEM damage prediction review meetings

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System Resiliency Plan Comparison

April 2024 (PUCT Docket 56548)	January 2025 (PUCT Docket TBD)
Time frame: 2025 – 2027	Time frame: 2026 - 2028
Overall Spend: Approx $2.2B	Overall Spend: Approx $5B
Approach: Program level analysis	Approach: Project level analysis
• Climate analysis at county level	• Granular climate analysis at polygon level (roughly 2-mile area)
• Risk analysis (Forecast) project & investment decision based on historical trends	• LiDAR data incorporated to inform project & investment decisions by program; predictive modeling
• Categorization of programs based on resiliency measure as defined in PUCT rule (hardening, modernization, etc.)	• Event scenario-based categorization (wind, flood, temp, etc.) to provide more customer focused understanding
• BCA Approach: Lifecycle analysis at program/measure level	• Aligns with other utility SRP applications approved or under review
• Industry benchmarking: Peer Utility Benchmarking and Jurisdictional Analysis	• Jurisdictional analysis updated to include Texas utility SRPs and Wildfire mitigation
• Guidehouse valuation metric (Reliability) BCA results based on ERCOT Value of Lost Load (VOLL) of $25,000/MWh (vs. DOE ICE calculator)	• Guidehouse valuation metric BCA results based on ERCOT VOLL increased to $35,000/MWh per PUCT revision August 2024
• Stakeholders input; pre-filing preview meetings with PUCT and intervening parties	• Stakeholder input from PUCT staff & County OEM damage prediction review meetings

CEHE System Resiliency Plan (2026-28) Filing Kick Off

CenterPoint Energy

- Effective June 13, 2023
- PURA Sec 38.078 (b) states: An electric utility may file, in a manor authorized by commission rule, a plan to enhance the resiliency of the utility's transmission and distribution system through at least one of the following measures:
  - Hardening electrical transmission and distribution facilities
  - Modernizing electrical transmission and distribution facilities
  - Undergrounding certain electrical distribution lines
  - Lightning mitigation measures
  - Flood mitigation measures
  - Information technology
  - Cybersecurity measures
  - Physical security measures
  - Vegetation management
  - Wildfire mitigation and response
- PUCT rulemaking (Docket 55250) effective February 8, 2024

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2025 Transmission & Distribution System Resiliency Plan (SRP)

- Timeframe: 2026 – 2028
- SRP Includes: transmission, distribution, technology and cybersecurity programs
  - Capital and incremental O&M
- Total spend: Up to $5 billion over three years
  - SRP 2025-2027 (Docket 56548) spend totaled $2.1B with option to accelerate up to an additional $500M
- Favorable Accounting Treatment: Eligible distribution capital to be deferred in a regulatory asset and recovered through existing interim mechanisms and/or CEHE's next base rate proceeding;
  - Transmission capital does not receive favorable accounting treatment; capital is recovered through normal interim mechanisms

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Witness	Topics
Darin Carroll	Overall Strategy & Policy
Muss Akram	Affordability
Eric Easton	Risk Based Analysis & Damage Prediction Modeling Wildfire Mitigation
Deryl Tumlinson	Distribution Operations
David Mercado	Transmission & Substation Operations
Randy Pryor	Vegetation Management Strategic Undergrounding
Ron Bahr	IT/OT Technology
Marty Christensen	Cybersecurity
Brad Tutunjian	Microgrid Pilot Program
Jeff Garmon	Accounting

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Team	Members
Docket Coordinator	Stacey Murphree
Regulatory Affairs & Rates	Patrick Reinhart Perrin Wall Peggy Sorum Joymesha Jones
Internal Legal	Sam Chang - Lead Patrick Peters
External Legal	Jim Barkley Landon Lill Diane Evans
Independent External Witness Support	Guidehouse Inc.

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Activity	Date
SRP 2026–2028 Kick-Off Meeting	November 6
Initial Meetings: PUCT Staff/County & OEMs	Weeks of November 11 & 18
PUCT Beryl Investigation Report Draft (Docket 56822)	November 21 Open Meeting
Testimony & Report Draft 1	November 22
Thanksgiving	November 28
Draft 1 Page Turn Meetings	Week of December 9
Follow Up Meetings: PUCT Staff/County & OEMs	Mid-December
Testimony & Report Draft 2	December 20
Christmas	December 25
Draft 2 Page Turn Meetings	Week of January 6
Testimony & Report Final	January 17
Intervenor Preview Meetings	Weeks of January 20 & 27
Filing Date	January 31

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CenterPoint Energy Proprietary and Confidential Information

CENTERPOINT ENERGY HOUSTON ELECTRIC, LLC
PUC DOCKET NO. 57579
SOAH DOCKET NO. 473-25-11558

HOUSTON COALITION OF CITIES
REQUEST NO.: HCC-RFP01-12

QUESTION:

Provide any presentations given to management concerning the different Resiliency Plan measures and recommendations.

ANSWER:

Please see response to HCC RFP01-11.

SPONSOR:
Eric Easton

RESPONSIVE DOCUMENTS:
None.

CERTIFICATE OF SERVICE

I hereby certify that on March 6, 2025, notice of the filing of this document was provided to all parties of record via electronic mail in accordance with the Second Order Suspending Rules, filed in Project No. 50664.

Terence Glenn Russell

Terence Russell