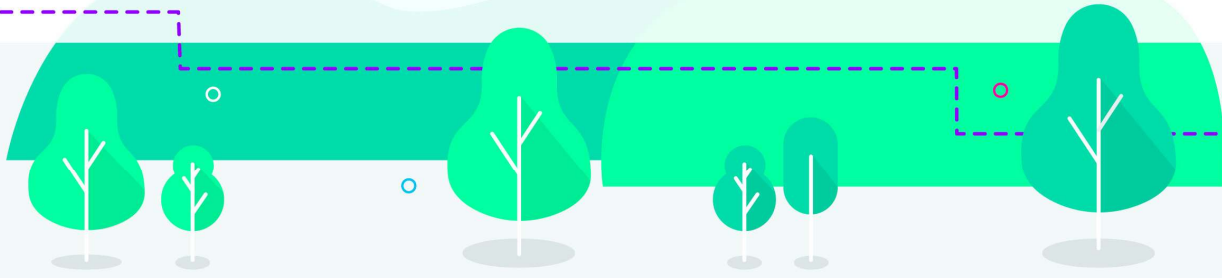




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ORGANIZED BY:



OFFICIAL MEDIA BRAND:



HOST UTILITY:



EDUCATION: FEBRUARY 26-29, 2024
EXHIBITION: FEBRUARY 27-29, 2024

Orange County Convention Center
Orlando, Florida, USA

PG&E's Reliability Intervention Analytics

Distributech 2024





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Planning/ PG&E



Devon Yates
Principal Data Scientist / PG&E





We are focused on providing safe, reliable, clean and affordable natural gas and electricity to our customers.

Service Area

70,000
SQUARE MILES



Service area population

16 million
CALIFORNIANS
(That's 1 in 20 Americans!)



25,000

EMPLOYEES WHO
LIVE AND WORK

in the communities we serve



MORE THAN

715,000

SOLAR CUSTOMERS
representing **>6,900 MW**
of solar energy generated



NEARLY

500,000

ELECTRIC VEHICLES
registered in our service area





Enhanced Powerline Safety Settings

Lines with
Enhanced Powerline Safety Settings
in High Fire-Threat Districts:

▼ **68%** reduction in **IGNITIONS** 

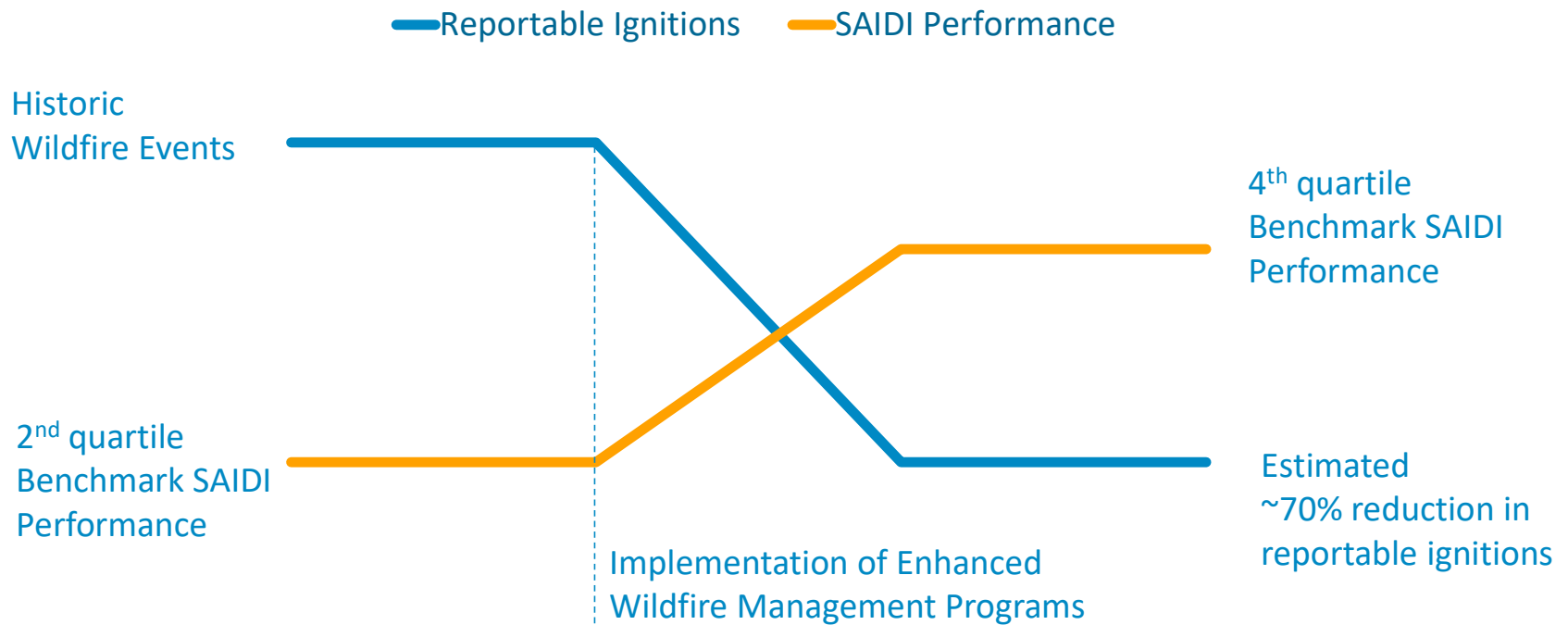
▼ **99%** reduction in **ACRES** 
impacted by ignitions

(despite increasingly dry conditions)

*Values reported in Jan 2023



Wildfire Mitigation and Reliability Correlation



*Impacts are approximate, and provided only for context



Goals

- Primary objective:
 - Improve CEMI and SAIDI reliability metrics.
- Need:
 - Develop Cost Effective Reliability Improvement Plan
 - React quickly to emerging problems
 - Provide visibility of the effectiveness of the plan to leadership



Technical Solution

Analyze

- Predict unmitigated outages
- Estimate impact of unmitigated outages

Plan

- Capture and Localize Proposed Work
- Quantify Impact of proposed work
- Rank and prioritize planned work

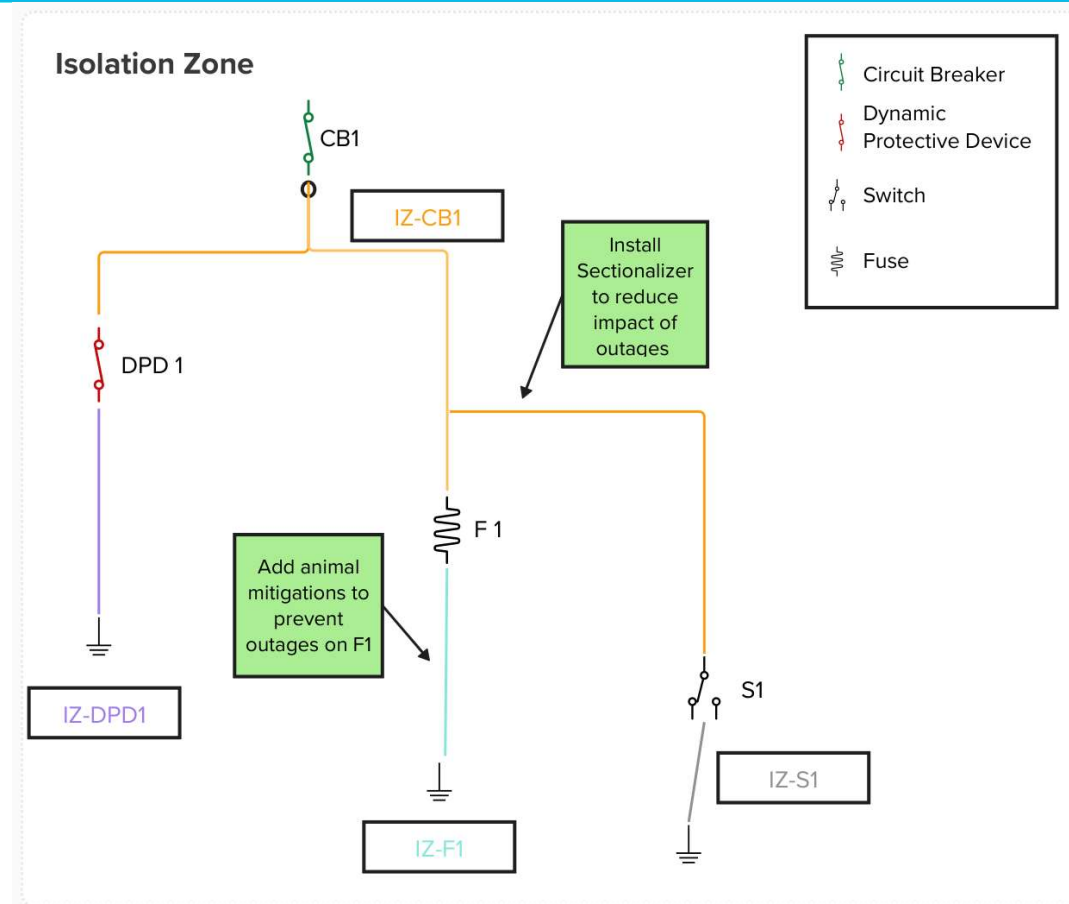
Evaluate

- Promote estimated impact of completed work
- Budget and prioritize future work



Sustained Outage Reliability Activities

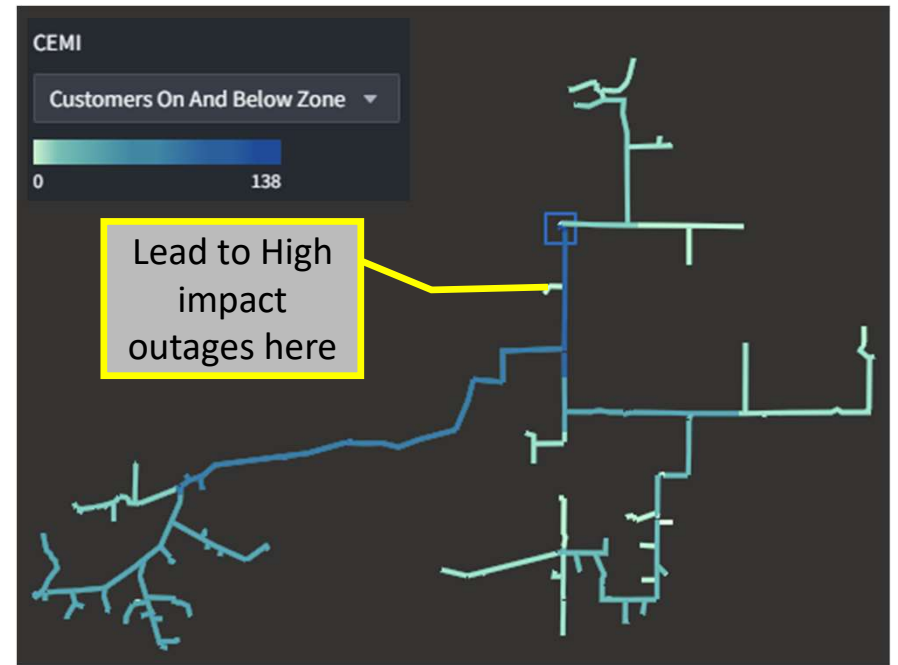
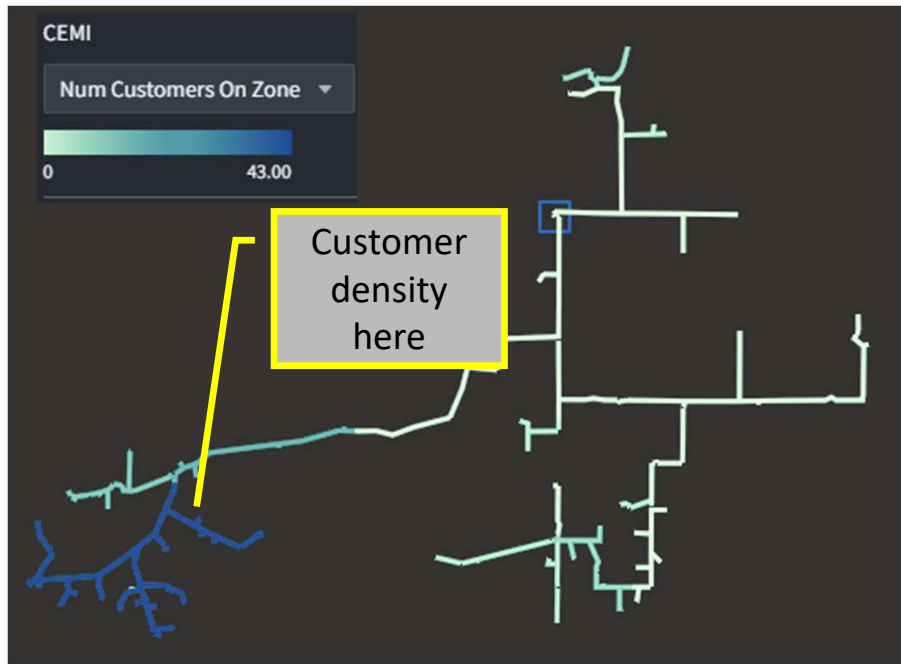
Activity	Impact
Mitigation <ul style="list-style-type: none"> • Animal • Vegetation • Prev. Maint. 	Prevent future sustained outage impacts at source side protective device
Sectionalization	Prevent impact of sustained outages on customers above installed sectionalizing protective device
Other activities	Fault indicators, line patrols (Impact not yet quantified)





Customer Impact

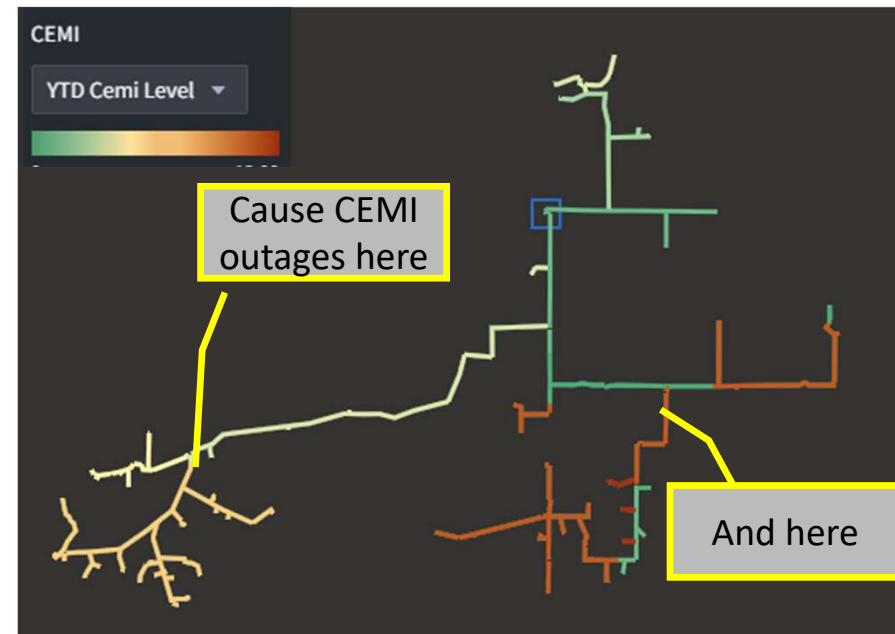
Quantify the impact of network topology on customer impact





Outage impact on CEMI

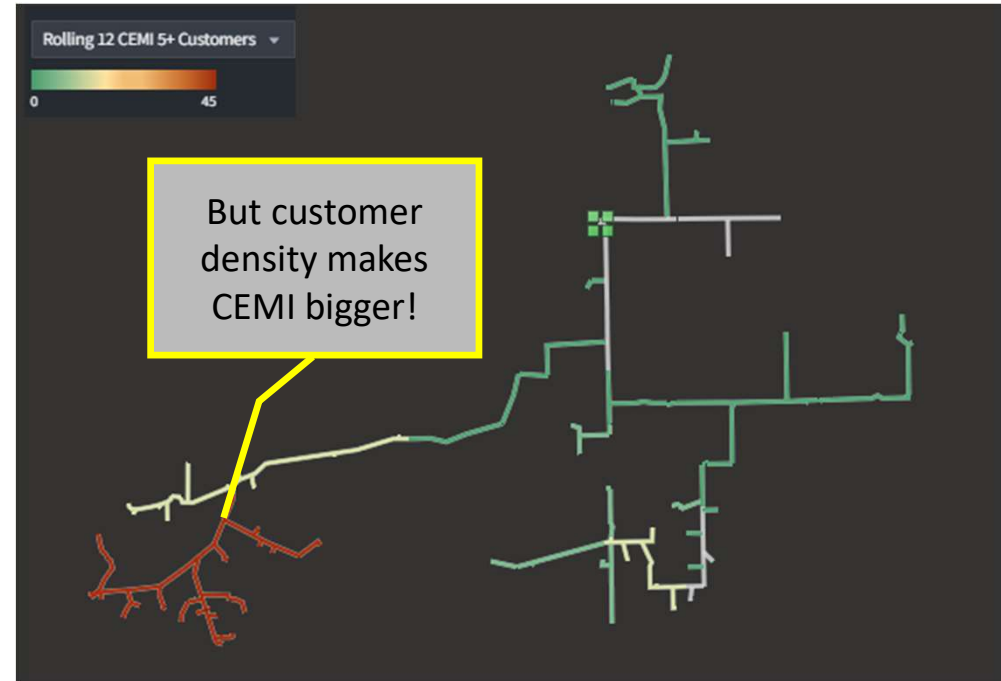
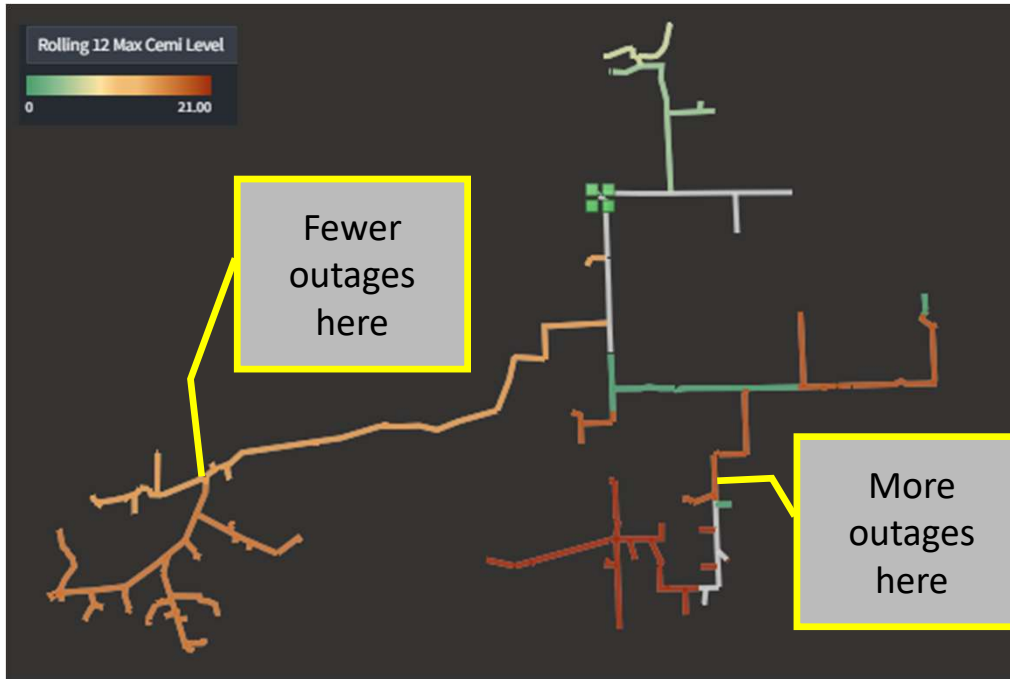
Visualization of CEMI, Impacted Customers





Impact of Customer Density on CEMI Impact

CEMI-5





Work impact on reliability

Localization of work impact on customer interruption benefit





Work impact on reliability

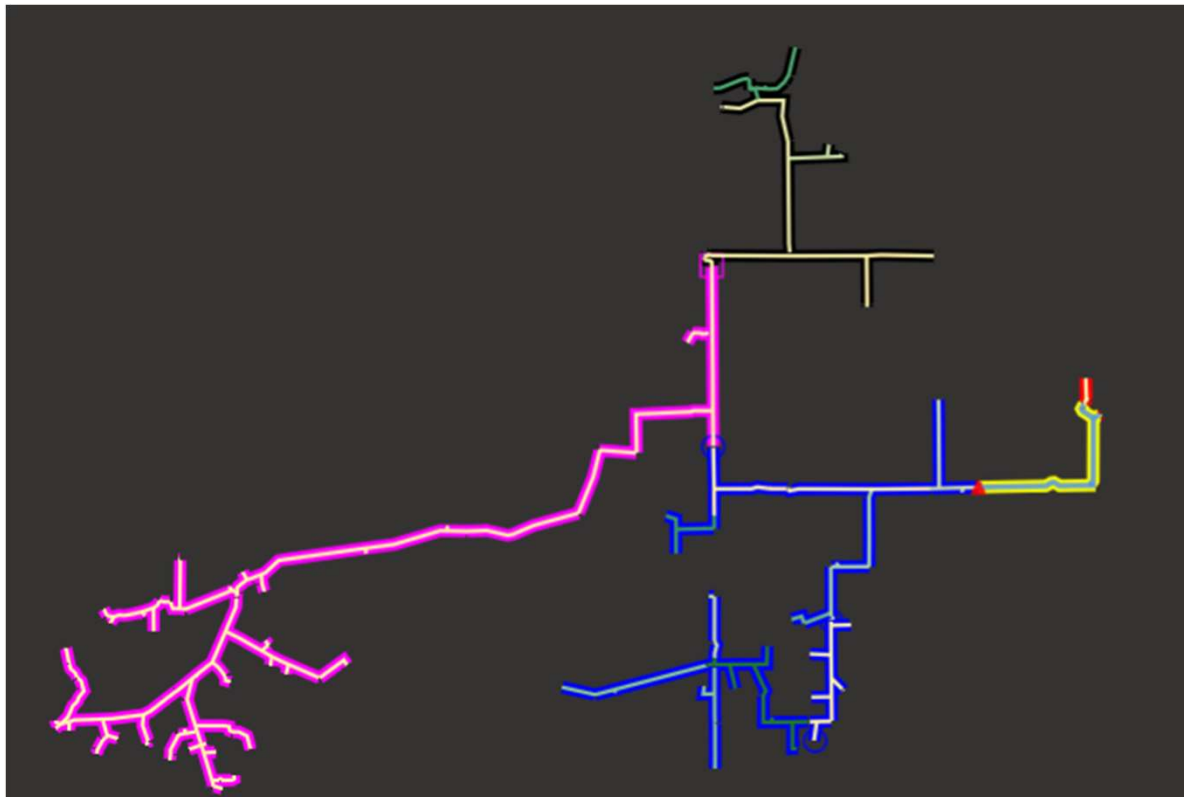
Localization of outage customer interruption benefit





Sectionalization Details

Display Impact zones for selected zone



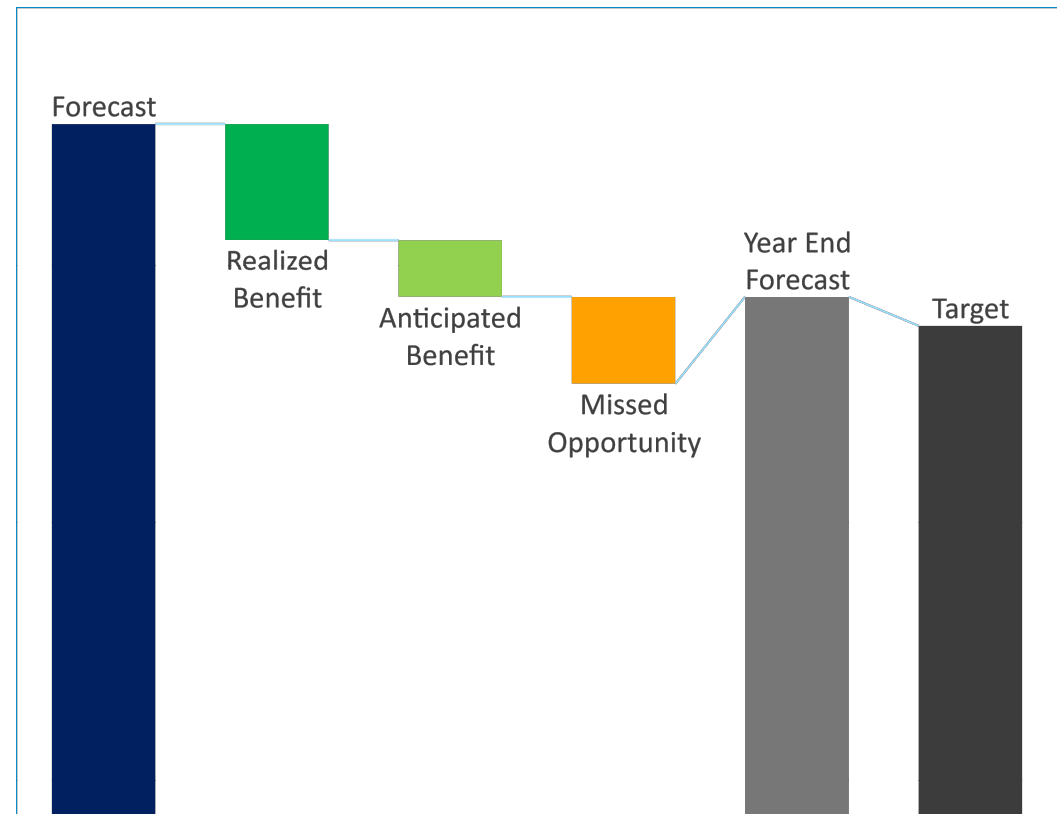
Internal

<input type="checkbox"/>	Circuit Source	<input type="checkbox"/>
<input checked="" type="checkbox"/>	Zone Device	<input type="checkbox"/>
<input checked="" type="checkbox"/>	Auto Source Side Device	<input type="checkbox"/>
<input type="checkbox"/>	Auto Load Side Device	<input type="checkbox"/>
<input type="checkbox"/>	EPSS SSD	<input type="checkbox"/>
Impact Zones		
<input checked="" type="checkbox"/>	Selected Zone	
<input checked="" type="checkbox"/>	Zone Impact Area	<input type="checkbox"/>
<input checked="" type="checkbox"/>	Auto Protective Impact Area	
<input checked="" type="checkbox"/>	EPSS Protective Impact Area	
<input type="checkbox"/>	Other	



Catch Back Plan

- Track current year realized and anticipated benefit for completed work.
- Capture impact of proposed work not completed
- Enable prioritization individual work by anticipated benefit



Thank you!

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