

# Extend Operations beyond the Control Room

Remote workforce enablement

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# Speakers

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**Joseph Polito**

Project Manager  
Storm Execution &  
Support Ops  
ConEdison



**Anthony Cassar**

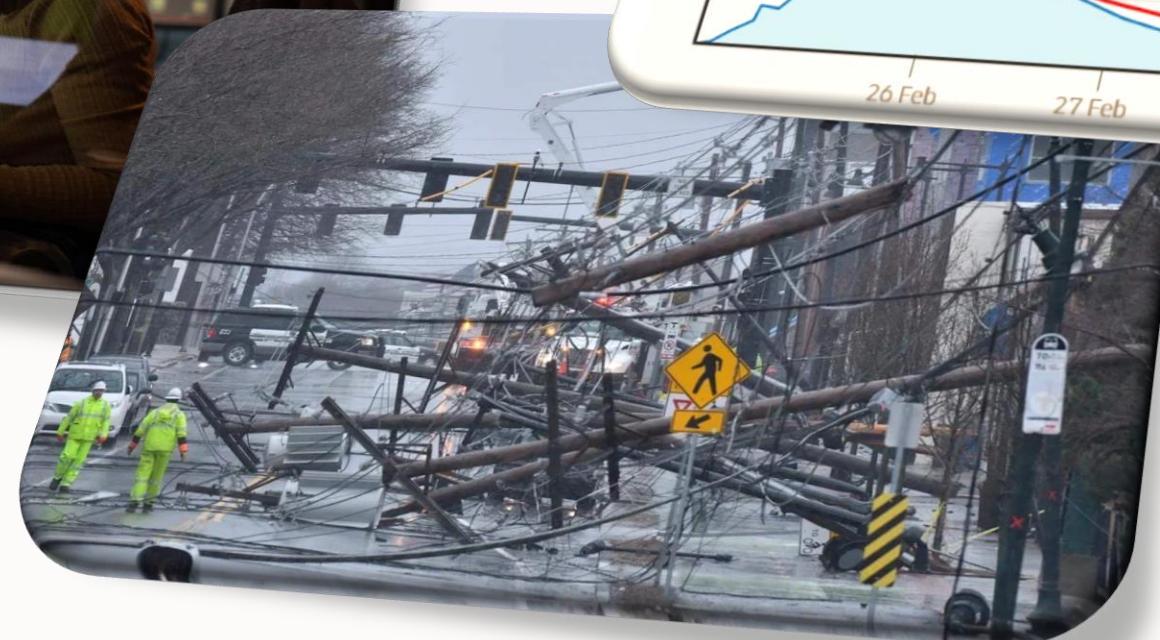
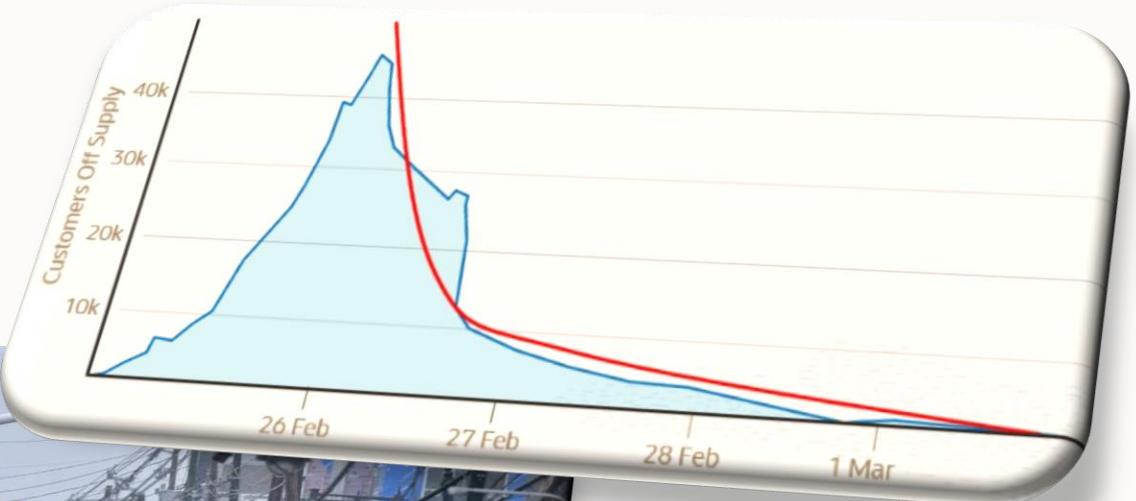
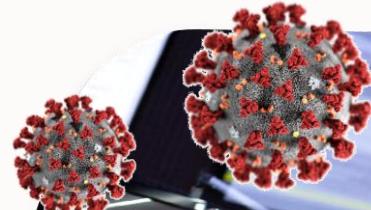
Project Specialist  
Storm Execution & Support  
ConEdison



**Russell Taylor**

NMS/UX Product Manager  
Oracle

# Meeting Today's Challenges with Remote Working



# Agenda



**Flex Operations**

**OMA**

**Storm Estimated Restoration Timeline**

**Discussion**

# Flex Operations and OMA Demo

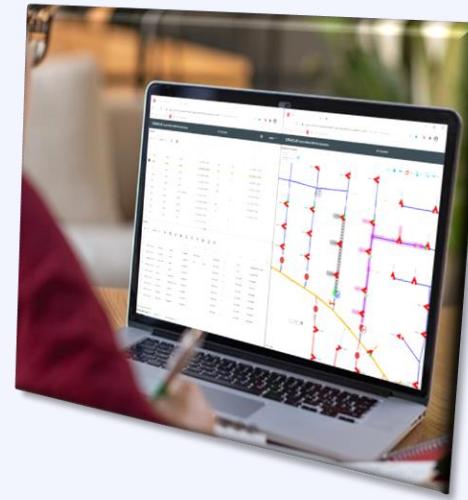
**Flex Operations:** browser-based NMS client

**Primary Users:** Dispatchers, Control Engineers, Field Supervisors

**Designed For:** Flexibility, use inside or outside the Control Room – anywhere with internet connection – laptops and now tablet/touch-enabled

**Functions:** Outage Management, Crew Management, Damage Assessments

Submit switching requests, create and execute switching sheets and safety documents



**OMA:** Mobile application, complements NMS and Flex Operations

**Primary Users:** Restoration crews, switching crews, damage assessors, hazard responders

**Designed for:** Smart phones, tablets, tough-books, laptops – all touch enabled

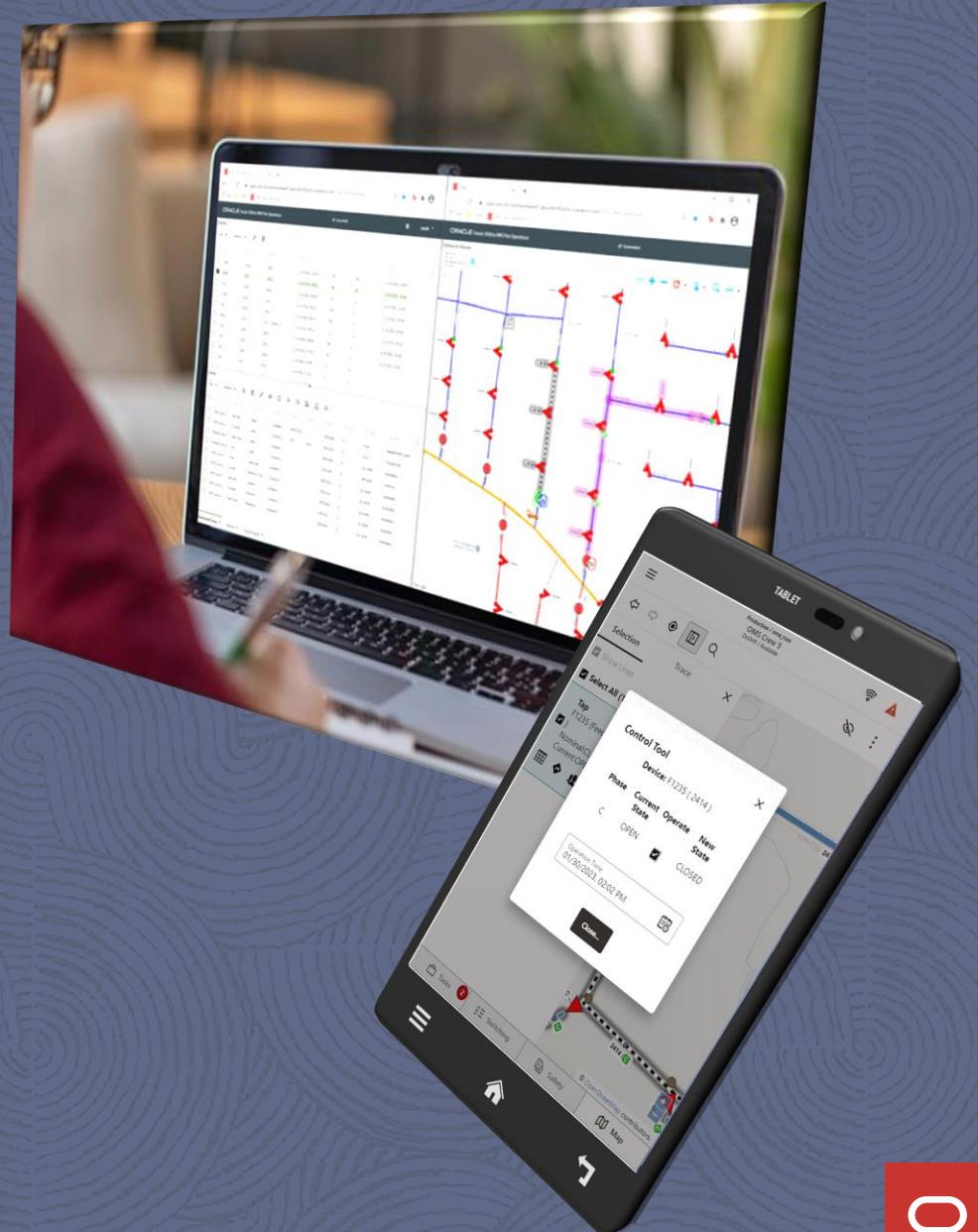
**Functions:** Enables crews to record outage updates, damage assessments, confirm instructed switching tasks



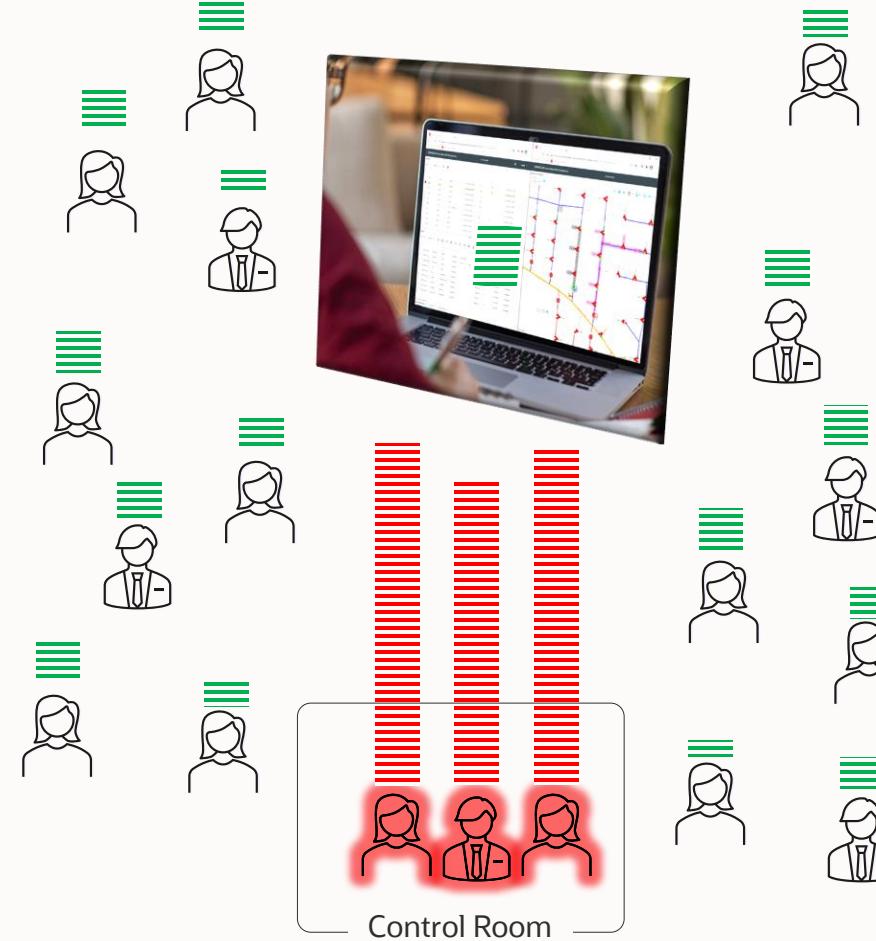
# Demo

# Flex Operations & OMA

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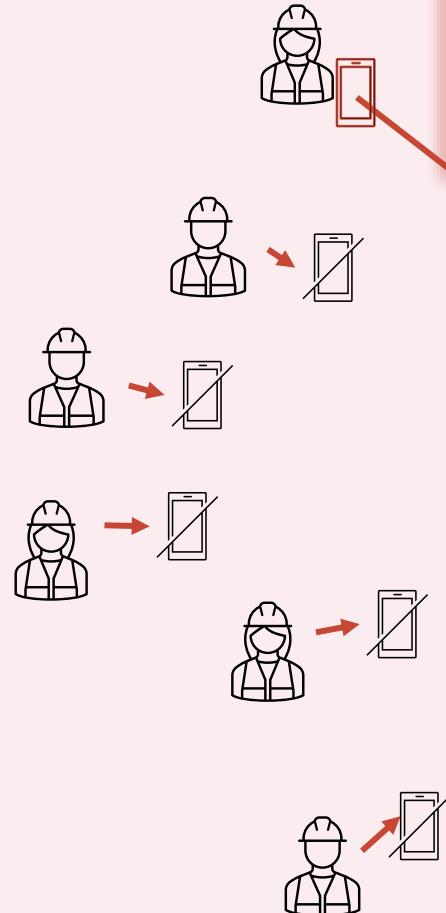


# Flex Operations Removes Workload Bottlenecks



# OMA Removes Communication Bottlenecks

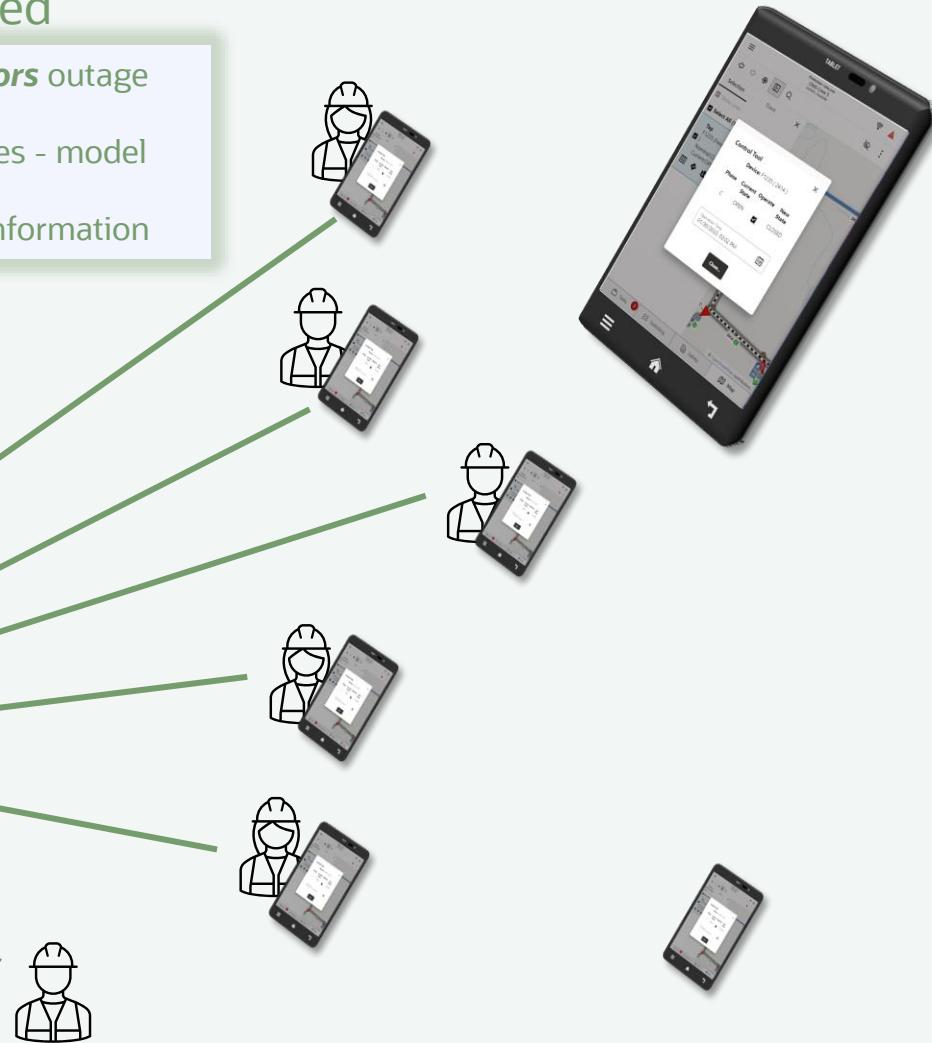
## Voice Communication



- Dispatcher **transcribes** one-at-a-time
- Network model lags behind
- Information loss

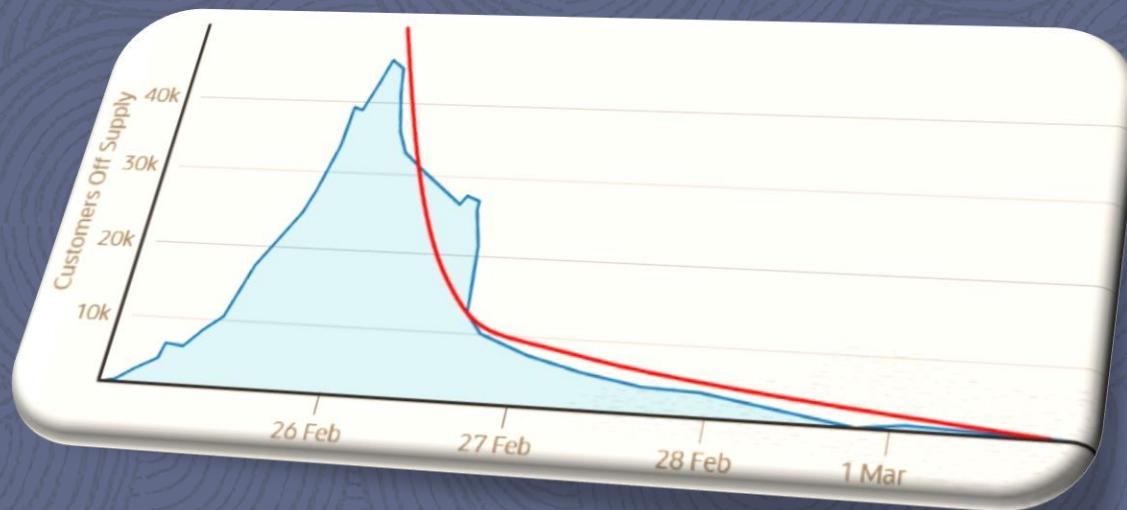
## OMA-Enabled

- Dispatcher **monitors** outage updates
- Concurrent updates - model stays up-to-date
- Accurate, timely information



# Storm ERT

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# Regulator Requirements

## Con Edison ETR Protocol – Small Storm (48 Hours or Less)

### Reporting Requirements:

- Communicate updates to our regulator every four hours from 7A-7P
  - Includes Event summary, Outage summary, ETRs, Resource summary
- Within the first 6 Hours
  - Notifications to our regulator the projected length of the storm
  - Provide public all available information
- Within the first 12 Hours
  - Provide our regulator any ETRs at all levels of reporting
  - Issue a press release with known ETRs

# Regulator Requirements

## Con Edison ETR Protocol – Large Storm (48 Hours or More)

### Reporting Requirements:

- All reporting requirements of a small storm apply
- Additional Pre-Event notifications must be made including:
  - Outbound calls to critical facilities
  - Communications to employees, media, social media sites and elected officials
  - Pre-Event Conference calls with municipal representatives
  - Public statements/Press Releases
- Within 12 hours of Starting Restoration
  - The first post weather municipal calls must be scheduled to be completed within 24 hours of the start of restoration to communicate system damage, outages, restorations and ETRs
- Within 24 hours of starting restoration
  - Provide our regulator with a global ETR and available regional/county level ETRs with remainder to be made available within 48 hours

## Con Edison Asked:

Besides not losing power, how else could Con Edison improve your outage experience?

“

Here's what  
customers are  
saying:

*“Accurate information  
updated in a periodic  
and timely manner.”*



*“Communicate more  
frequently and provide  
realistic expectations.”*



*“Timely and accurate  
information as best  
you can.”*

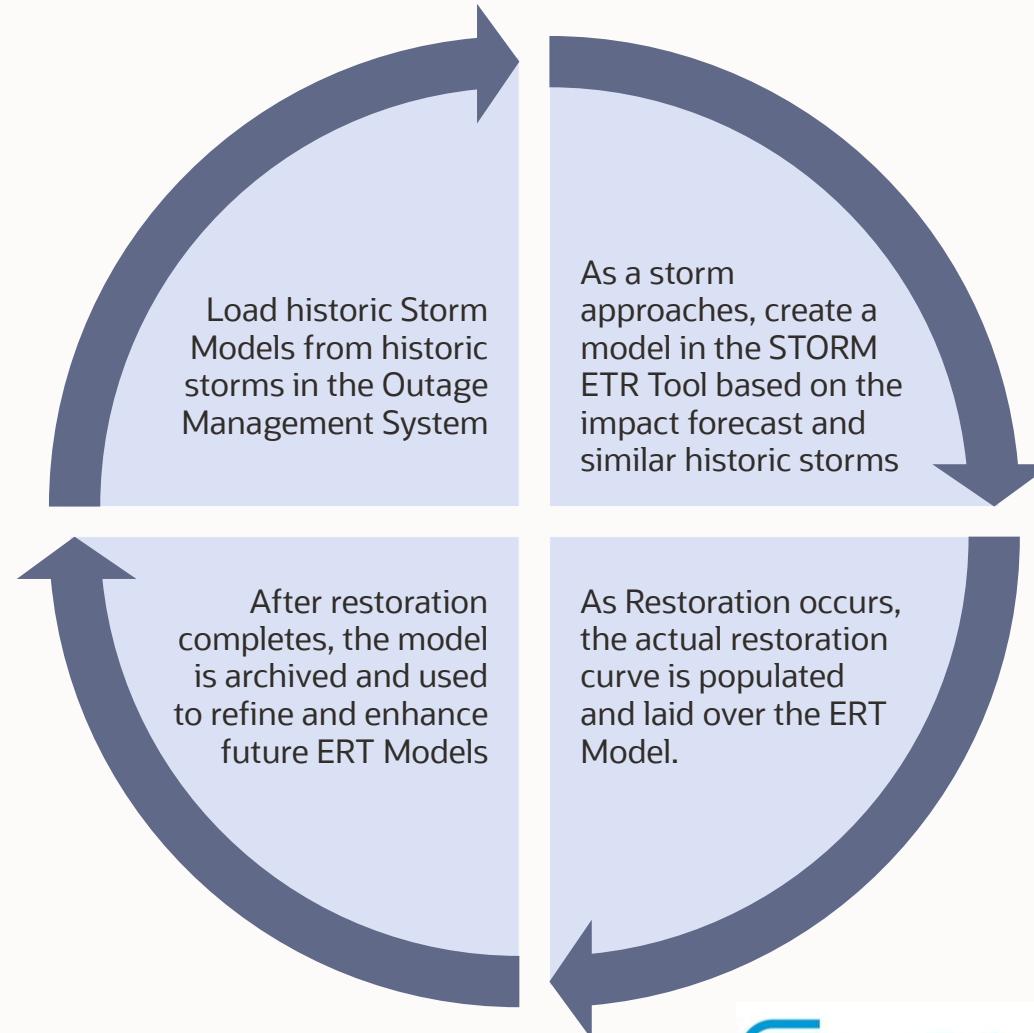


# Storm ERT Tool

Leveraging Data and Machine Learning to enhance the operational response and customer experience

## How It Works:

- **Inputs:**
  - Historic NMS Data
  - Weather Forecast (Future)
  - Impact Forecast
- **Output:**
  - ERT Model
  - Restoration Milestones



# Storm ERT Tool

## Creating a New Storm

- Storm Portal
  - List of Storms
  - Parameters of Storms
  - Storm Status
- New Storm Model

The screenshot shows a web browser window for 'OUAI' with the URL 'https://some\_url'. The page title is 'Oracle Utilities Analytics Insights'. The top navigation bar includes 'Explore v' and 'Export v'. The main content area is titled 'Storm ERT' with a gear icon. A red circle highlights the 'New Storm Model' button in the top right of this section. Below it is a 'More Filters' button. A table titled '5 results' lists the following data:

Model Name	Operating Company	Start Date	Cut-Off Date	Season	Customers	State
David	ORU	22 Aug 2010 14:34	23 Aug 2010 19:13	Winter	20000	Historic
Freya	CECONY	12 Jan 2017 12:24	15 Jan 2017 23:20	Winter	20000	Historic
Ruby	ORU	27 Jan 2017 15:03	30 Jan 2017 11:00	Winter	20000	Archived
Amy	CECONY	15 Feb 2018 08:00	20 Feb 2018 06:00	Winter	20000	Cancelled
Helen	ORU	15 May 2018 08:09	16 May 2018 10:01	Winter	20000	Draft
Belinda	ORU	23 Sep 2022 07:00	24 Sep 2022 11:00	Autumn	36675	Confirmed

# Storm ERT Tool

## Creating a New Storm

- Define Parameters
  - Estimated Jobs
  - Estimated Customers Affected
  - Crewing
  - Weather Forecast (Future State)
  - Zones Affected

The screenshot shows the Oracle Utilities Analytics Insights (OUAI) web interface for creating a new storm model. The interface is a standard web form with various input fields and controls.

**Header:** The top bar includes a back/forward button, a search bar, and a user profile for "Joe Bloggs".

**Page Title:** Oracle Utilities Analytics Insights

**Section:** Explore v Export v

**Back to Models:** A link to return to the main models page.

**Name:** The field is currently set to "Belinda".

**Control Zones:** A dropdown menu is set to "CECONY".

**Control Zones (Sidebar):** A sidebar on the right lists "Global" control zones, with checkboxes for "Electric Zone 1" (unchecked), "Electric Zone 2" (checked), "Electric Zone 3" (unchecked), "Electric Zone 4" (checked), and "Electric Zone 5" (checked).

**Form Fields:**

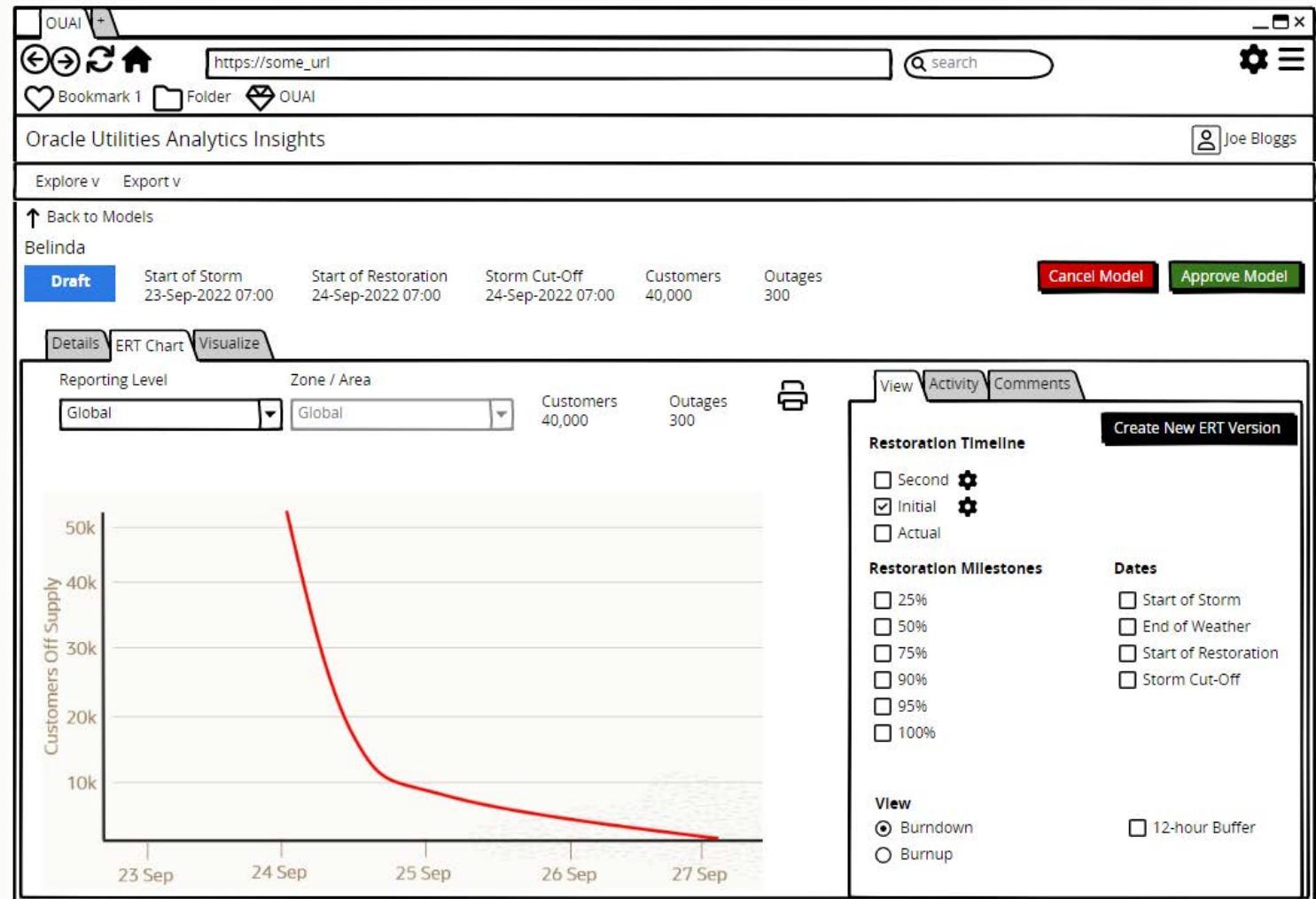
- Start of Storm:** 09/23/2022 07:00 AM
- Storm Cut-Off:** 09/24/2022 11:00 AM
- Exclude Single Customer Outages:**
- Estimated Customers:** 60,000
- Estimated Outages:** 300
- Customer to Outage Ratio:** Historic & Archived Storm Average = 221
- Actual Customers:** (empty input field)
- Actual Outages:** (empty input field)
- Customer to Outage Ratio:** (empty input field)

**Buttons:** "Cancel Model" (red), "Approve Model" (green), "Save" (black), and "Cancel" (black).

# Storm ERT Tool

## Create the Model

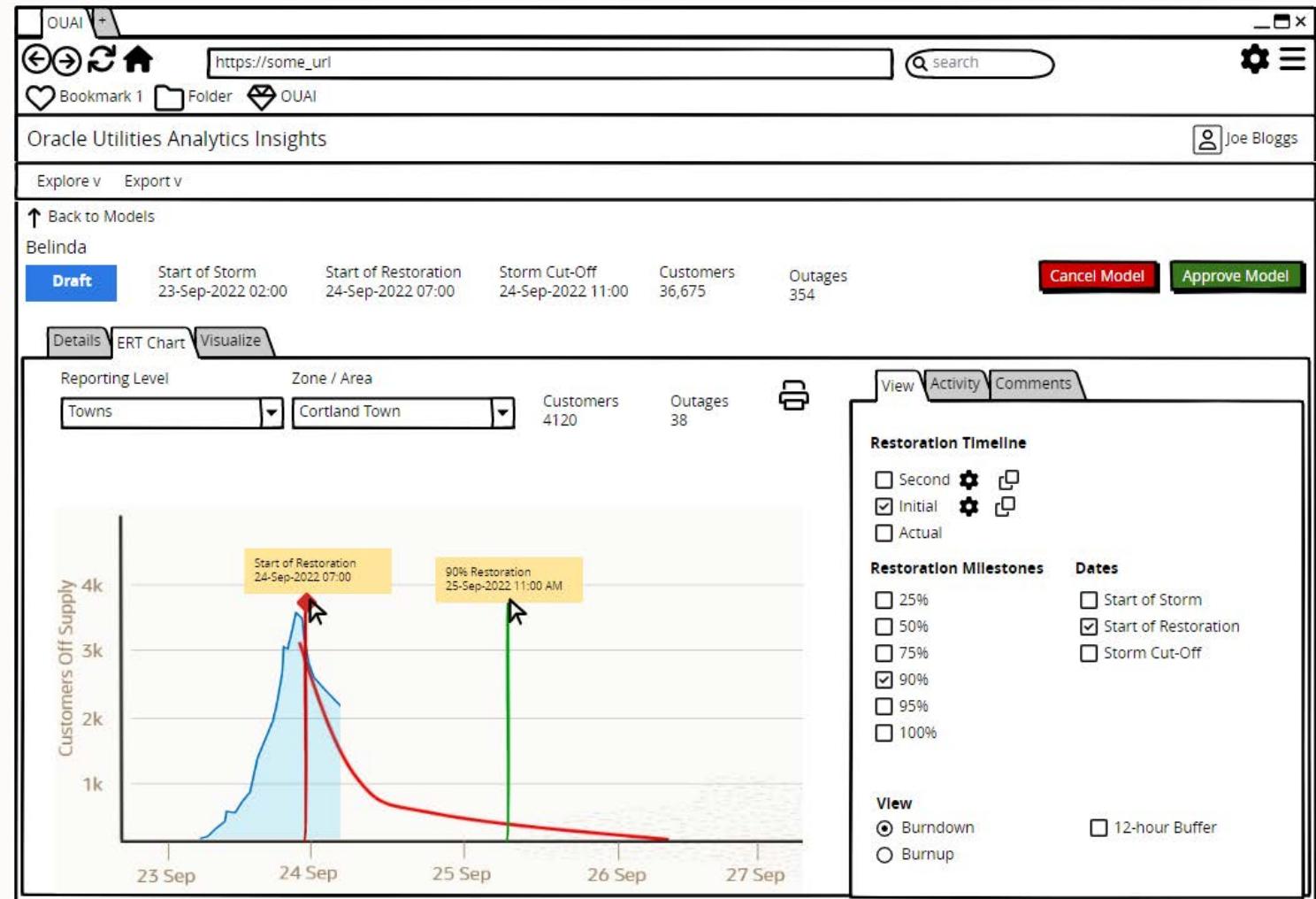
- Display Projected ERT Curve
- Display Projected Milestones
- Burn up or Burn Down



# Storm ERT Tool

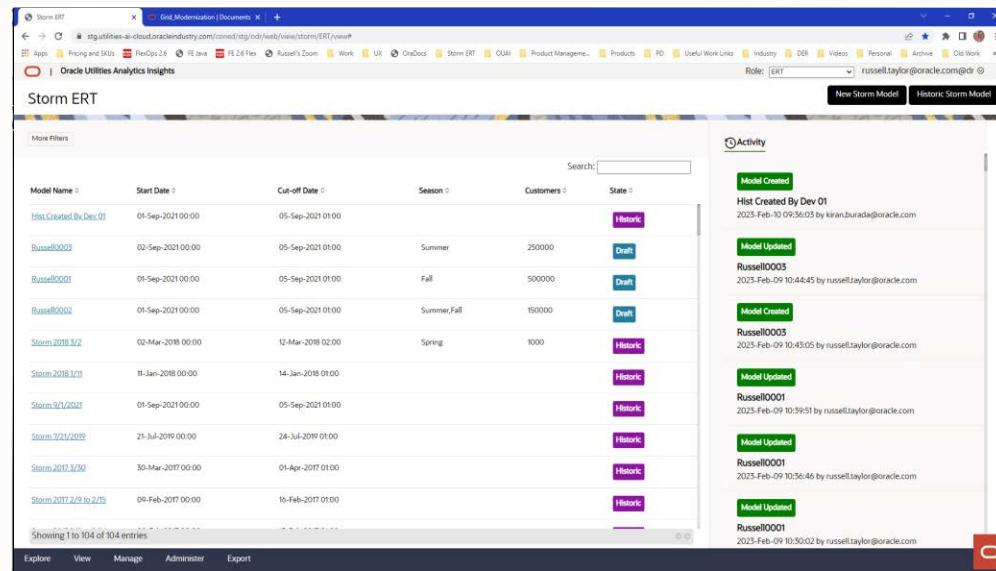
## Associate Outages and Actual Restoration Curve

- Associate Realized Storm Outages and Customers
- Display Actual Restoration Curve



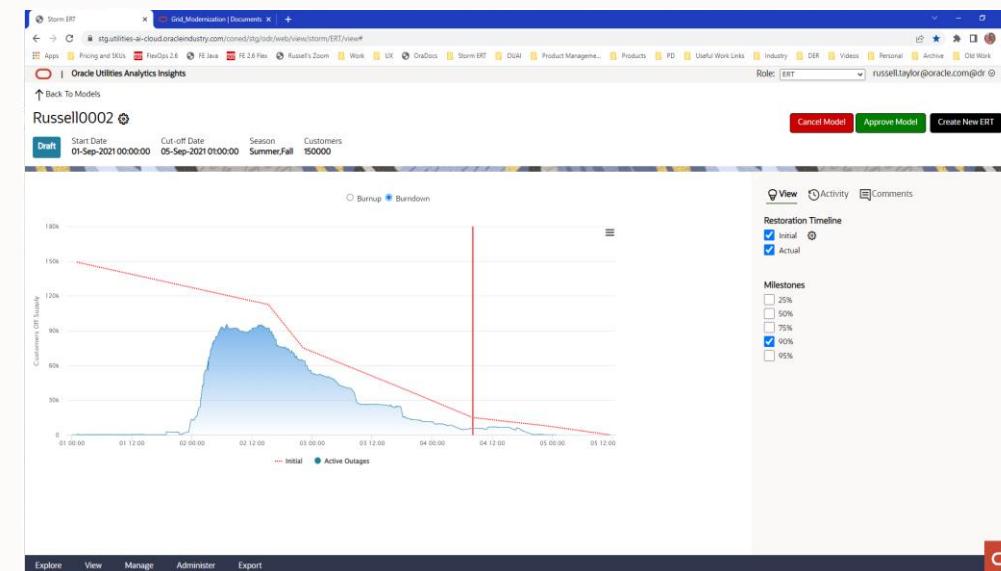
# Storm ERT Tool

Turning Designs into product...



The screenshot shows a list of Storm ERT models. Each model entry includes fields for Model Name, Start Date, Cut-off Date, Season, Customers, and State. The 'Hist' column indicates historical data, while 'Draft' indicates a draft model. The 'Activity' section on the right shows a timeline of events for each model, such as 'Model Created' and 'Model Updated', with details like the date and user who performed the action.

Model Name	Start Date	Cut-off Date	Season	Customers	State
Hist.Created by Dev01	01-Sep-2021 00:00	05-Sep-2021 01:00			Historic
Russell0003	02-Sep-2021 00:00	05-Sep-2021 01:00	Summer	250000	Draft
Russell0001	01-Sep-2021 00:00	05-Sep-2021 01:00	Fall	500000	Draft
Russell0002	05-Sep-2021 00:00	05-Sep-2021 01:00	Summer,Fall	590000	Draft
Storm 2018 3/2	02-Mar-2018 00:00	12-Mar-2018 02:00	Spring	1000	Historic
Storm 2018 3/17	11-Jan-2018 00:00	14-Jan-2018 01:00			Historic
Storm 9/1/2022	01-Sep-2021 00:00	05-Sep-2021 01:00			Historic
Storm 3/21/2022	21-Jul-2019 00:00	24-Jul-2019 09:00			Historic
Storm 2017 3/30	30-Mar-2017 00:00	01-Apr-2017 01:00			Historic
Storm 2017 2/9 to 2/15	09-Feb-2017 00:00	16-Feb-2017 01:00			Historic



# Discussion

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# Storm Estimated Restoration Timelines

## Initial thoughts on Storm ERT

Do you have the same challenges as ConEd? Different challenges?

How do you calculate and communicate Storm ETRs today?

What inputs do you use to work out estimated restoration times?

What's missing from the Storm ERT application?



# Remote Working Discussion

## Initial thoughts on remote working...

How open is your utility to devolving traditional Control Room functions outside of the Control Room or Dispatch Center?

## Customer Service Agent – Call Taker

Logging calls, providing caller feedback, other?

## Outage Dispatcher using Flex Operations

- Full Outage Management - Dispatching Crews, recording outage updates and outage completion.
- Which kinds of outages? Complex outages, single customer outages?
- Occasional Dispatchers? How do you do it now in high volume situations?
- Damage assessments

## System Operator / Control Engineer using Flex Operations

- Submitting switching requests for planned switching
- Preparing switch plans
- Executing switching plans
- Preparing, issuing safety documents
- SCADA switching

## What's missing from FlexOps?

What which traditional NMS functions would you like to see added to Flex Operations? Call Entry, Alarms, Other?

## Outage Crews

- Recording outage updates
- Damage Assessment
- Hazard response Work

## Damage Assessment Crews

- Recording outage updates
- Damage Assessment
- Hazard response Work

## Switching Crews

- Confirming instructed switching instructions
- Issuing, cancelling safety documents
- Should crews be allowed to execute SCADA switching steps directly from OMA?

# Remote Working Special Interest Group

*As the way we work changes, Oracle is enabling remote working **now** – developing solutions to help utilities face the challenges of **tomorrow**.*

Will you help guide and influence our strategy?

We invite you to join a “Remote Working” Special Interest Group.

Quarterly meetings to discuss relevant topics, share experiences, and showcase solutions.

Please let us know if you would like to be involved...



# Thank You

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