



# January 2012: PSE Storm Response



March 19, 2012

- Storm Response Review
- KEMA Report Status
- Customer call center operations
- Community and media communications
- Questions

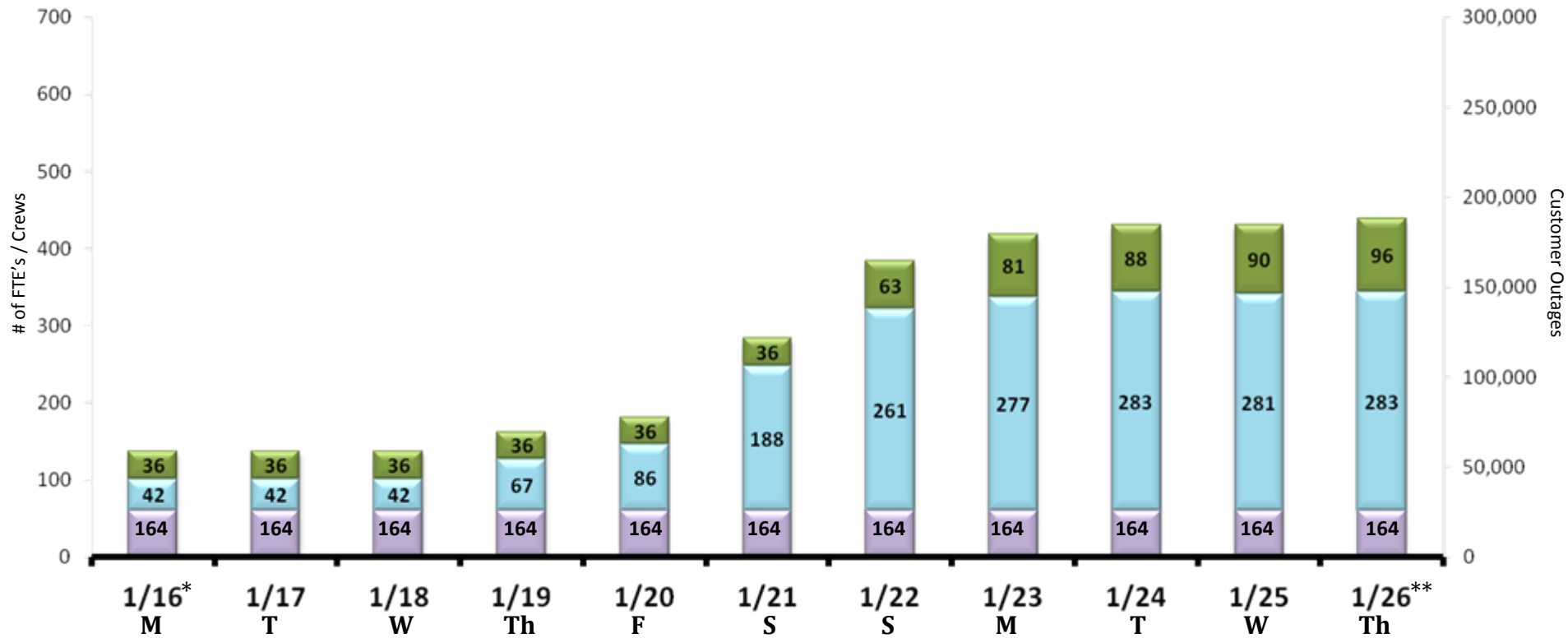
- Hazardous weather conditions
- On-going damage due to accumulated ice and snow
- Out of right-of-way trees and limbs
- Thurston, Pierce and South King Counties hardest hit



# Statistics

At 6:00 am PT each day

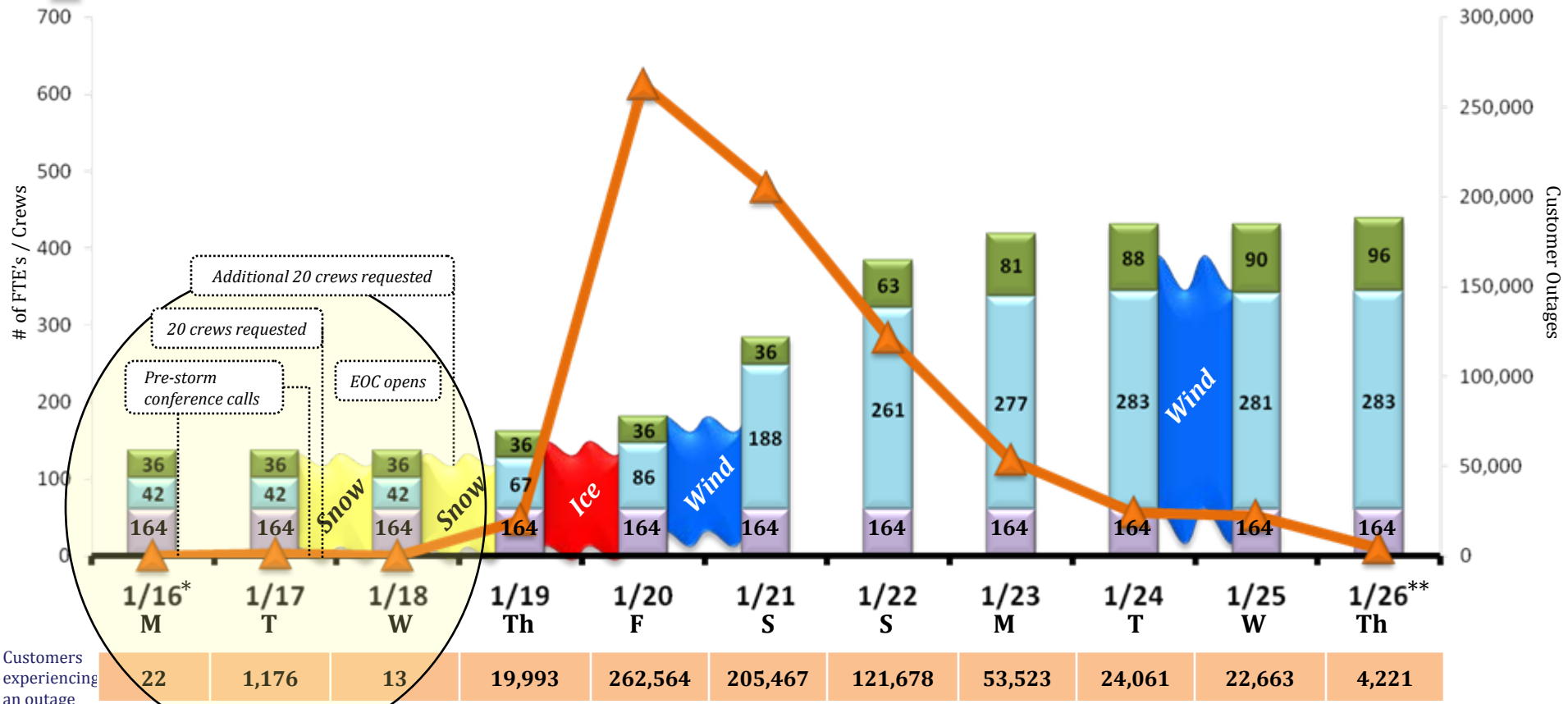
- Tree Crews
- Line Crews
- PSE Line & Wire FTE's



# Statistics

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- ▲ Customer Outages



Customers experiencing an outage

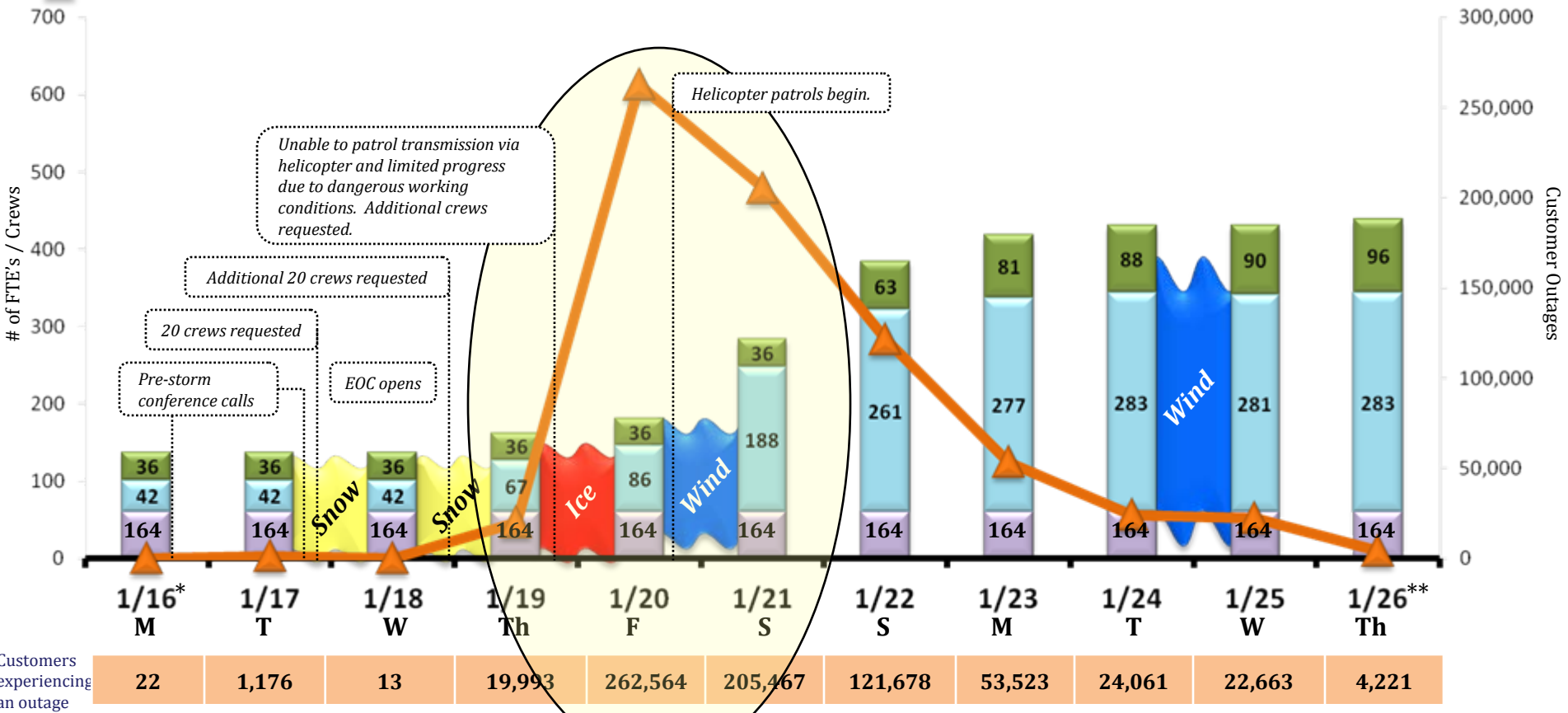
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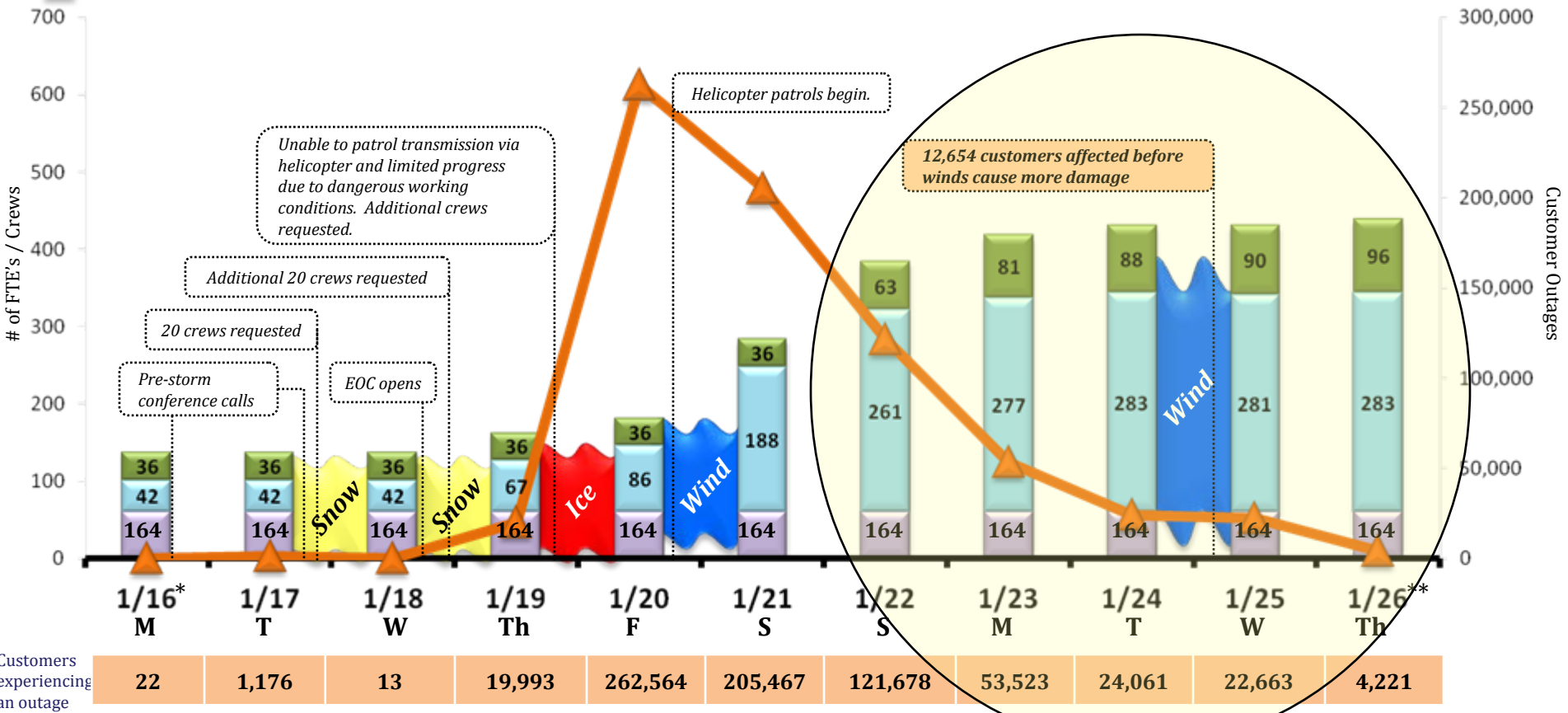




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# Damage and restoration

## Replaced:

- 87 miles of overhead wire
- 209 poles

## Repaired:

- 19,400 wire splices

## Restoration effort:

- 285 line crews
- 98 tree crews
- 191 consecutive hours of EOC and field operations



*Above / below: crews work around the clock*





## Storm costs are still estimates

- Invoices being processed
- Temporary-to-permanent repair continues

## Deferred storm expense

- \$55 million as of January 31

## \$50 customer outage credit

- Approximately 46,000 customers
- \$2.3 million
- Paid by shareholders





# PSE Vegetation Management

Program	2010	2011	2012 Budget
Distribution & High Voltage Distribution Vegetation Management	\$11.7 million 2,768 miles	\$10.2 million 2,579 miles	\$11.3 million 2,678 miles
Transmission (230 kV) Vegetation Management	\$1.0 million 330 miles	\$1.3 million 370 miles	\$0.9 million 380 miles
Off Right-of-Way Hazard Tree Removal	\$2.2 million 4,737 trees removed	\$1.9 million 6,214 trees removed	\$2.1 million 6,000 trees removed
<b>Totals</b>	<b>\$14.9 million 3,098 miles</b>	<b>\$13.4 million 2,949 miles</b>	<b>\$14.3 million 3,058 miles</b>

## Program effectiveness evaluation

2009 study by Ecological Solutions, Inc.

- PSE's pruning and maintenance cycles are appropriate for the local tree growth rates
- PSE's rate of tree-caused service interruptions are not due to a sub-standard vegetation management programs



\* Study was filed in the 2009 general rate case (UE-090704).



# Undergrounding

- Nearly half of PSE distribution system is underground
  - 10,200 miles of underground distribution
  - 10,700 miles of overhead distribution
- Underground conversions occur predominately through Schedules 73 and 74 – approximately 30 miles per year
- Undergrounding is not a panacea
  - Significantly higher cost to install and repair
  - Growth/capacity limitations
  - Outage duration is typically longer than overhead



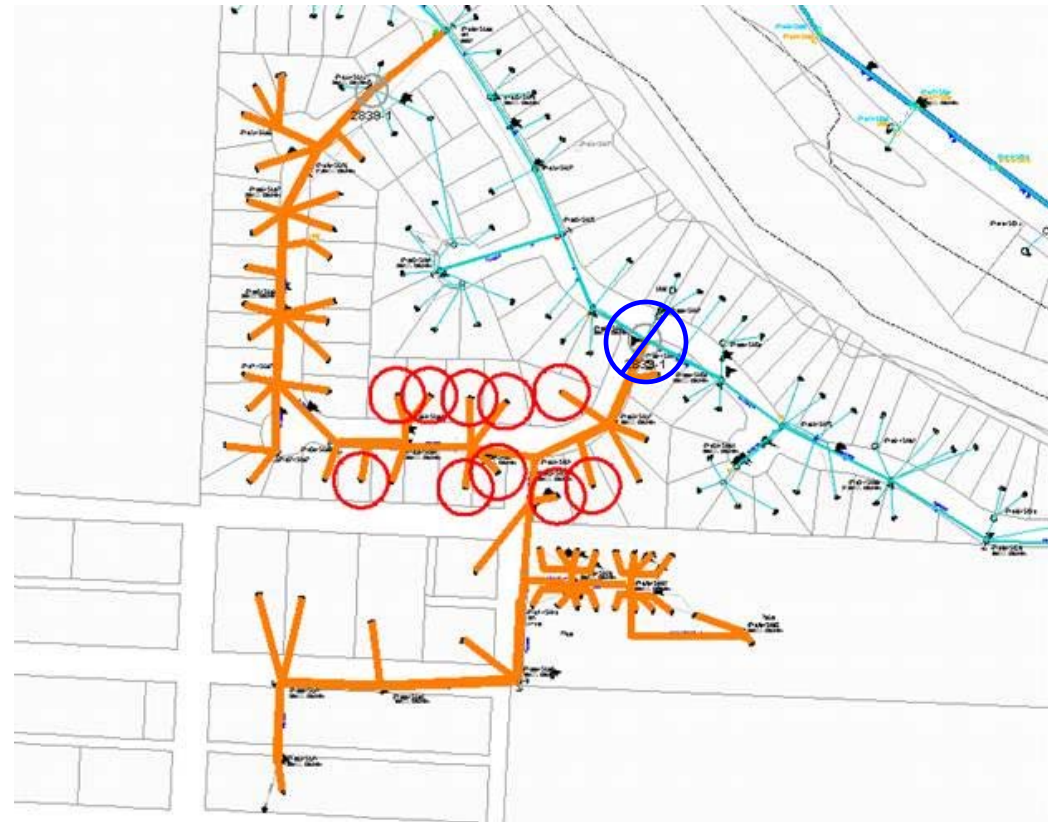
# 2007 KEMA Review

- PSE commissioned third party review with KEMA after the December 2006 storm
- 5-month effort in reviewing restoration practices
- 20 major recommendations with multiple actions
- PSE filed initial report and subsequent updates annually
- All recommendations completed but two:
  - Outage management system (OMS) – go live date is anticipated this summer
  - Mapping of cross-country transmission access roads onto the Geospatial Information System (GIS) platform, once GIS is fully implemented





- OMS is limited when transmission and substations are out early in a major storm
- OMS/GIS provides improved capability of capturing field information (e.g. wire down) for prioritization
- As transmission and substations are restored, customer feedback and OMS predictive models will help identify locations of the issues and prioritize restoration efforts

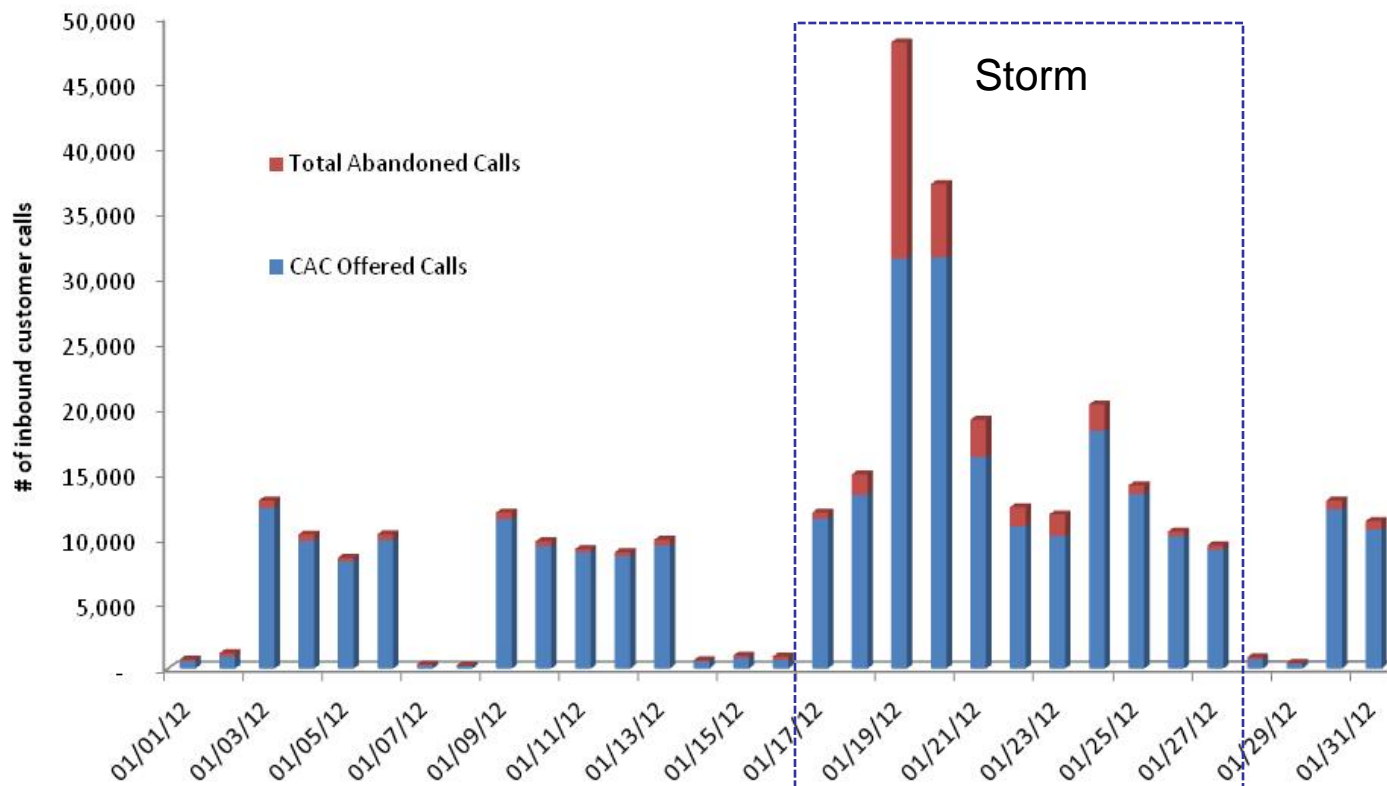






# Customer calls peaked on day 2

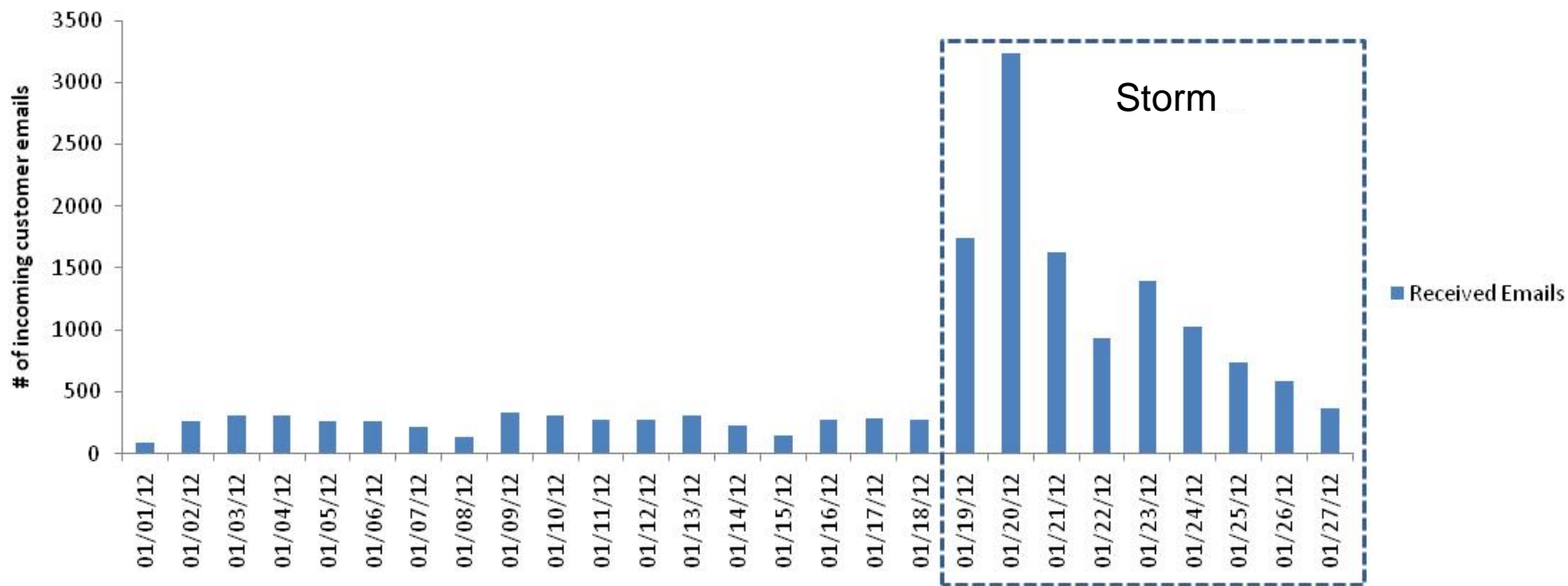
### Daily Call Center Volumes in January 2012





# Customer email communication

## Received Emails January 2012





# Call Center – Technology Impacts

**Background:** EZRoute is a call overflow service that PSE has implemented to automatically increase “call handling” capacity during high volume situations, such as storms. This service is provided by Century Link.

## January 19

### EZ Route Limited Customer Access

**Duration:**

1.5 hours (8:30AM – 10:00AM)

**Customer Impact:**

Some customers experienced a busy signal, a series of clicks, or disconnects when routed to EZ Route

**Root Cause:**

A system update at Century Link inadvertently reduced PSE’s capacity on EZRoute

## January 19

### PSE Call Center Voice Response System Outage

**Duration:**

8.5 hours (11:19AM – 8:00PM)

**Customer Impact:**

All customers calls were routed to EZRoute. This allowed access to agents for emergencies only. Some customers experienced busy signals.

**Root Cause:**

A feature that logs system information exceeded capacity due to call volume, impacting the system’s ability to handle calls.

## January 23

### EZ Route “Transfer to Agent” Issue

**Duration:**

5 hours (7:40AM – 12:50PM)

**Customer Impact:**

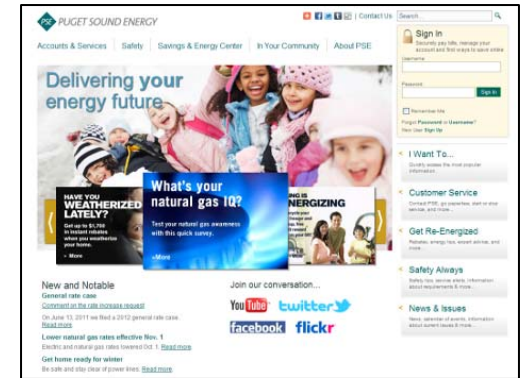
Customers overflowing to EZRoute received a busy signal when attempting to transfer to a PSE agent

**Root Cause:**

Century Link experienced a network outage that affected the EZRoute service

# Communicating with customers

- **PSE. Com:** 385,156 visitors (217% increase)
- **Service Alert Map (SAM):** 549,686 views during the storm
- **Outage reporting** on PSE.com : 26,763
- **Flickr** photography social media website: 1.6 million page views (400%+ increase)
- **Facebook** social media website: 6,719 friends (5,700+ increase from pre-storm)
- **Twitter** social media website: 5,724 followers (3,000+ increase from pre-storm)



# Communicating with the community

- Face-to-face communication at community information centers
  - Rochester substation
  - Rochester shopping center
  - Olympia office – open through the weekend
  - Yelm
  - Griffin
- Posting community restoration estimates on PSE.com



The screenshot shows a web browser window displaying the PSE website's 'Real-time Updates' page. The page title is 'Real-time Updates - Windows Internet Explorer provided by Puget Sound Energy'. The URL is 'http://pse.com/accountsandservices/ServiceAlert/Pages/Real-time-Updates.aspx'. The page content includes a navigation menu with 'Accounts & Services', 'Safety', 'Savings & Energy Center', 'In Your Community', and 'About PSE'. A 'Sign In' form is visible on the right. The main content area is titled 'Restoration Information' and is updated on 'Wednesday, Jan. 25, 2012, 6 a.m.'. The text describes a winter-storm outage on January 25, 2012, where power was knocked out to 38,000 additional PSE customers. It mentions that the new damage affected larger power lines rather than those in neighborhoods, which enabled overnight restoration to 20,000 customers. The page also includes a 'Featured Content' section with links to 'Accounts & Services Customer Commitment' and 'Related Information' such as 'Electric Safety', 'Natural Gas Safety', and 'Generator Safety'.







# APPENDIX



# Hardest hit areas



1+” of ice.

This National Weather Service map shows how ice was heaviest in Thurston, Pierce and King counties.

