

# FirstEnergy Utilities GIS: Hazard and Damage Assessment Applications

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12/8/2016



# FEU Storm Process Transformation....

## Manual Process



Creates hard-copy inspection maps and forms



*Repair Job Packet*



*Very Labor Intensive*



## Automation/Mobile Process

*Mobile Devices: Toughpad, iPhone*



*GISView & GISView Mobile Storm Assessment Application*

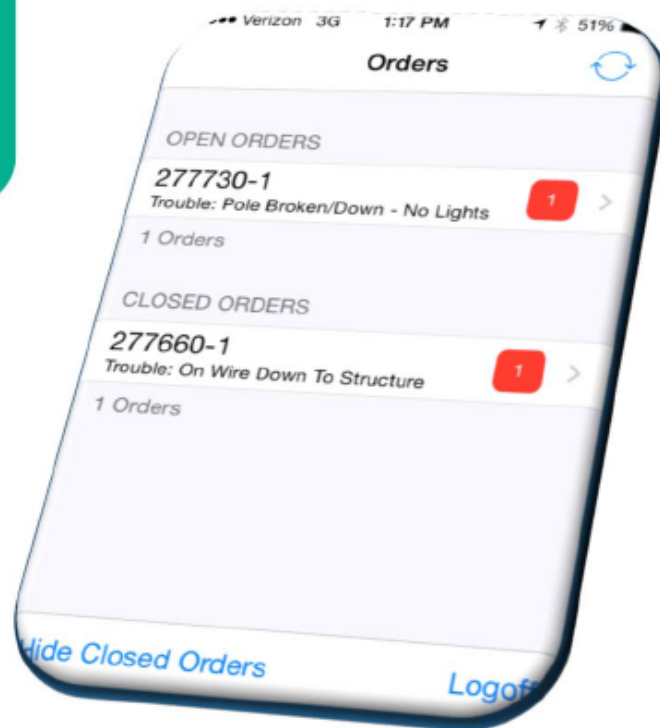


*Dashboard & Visualization Display*



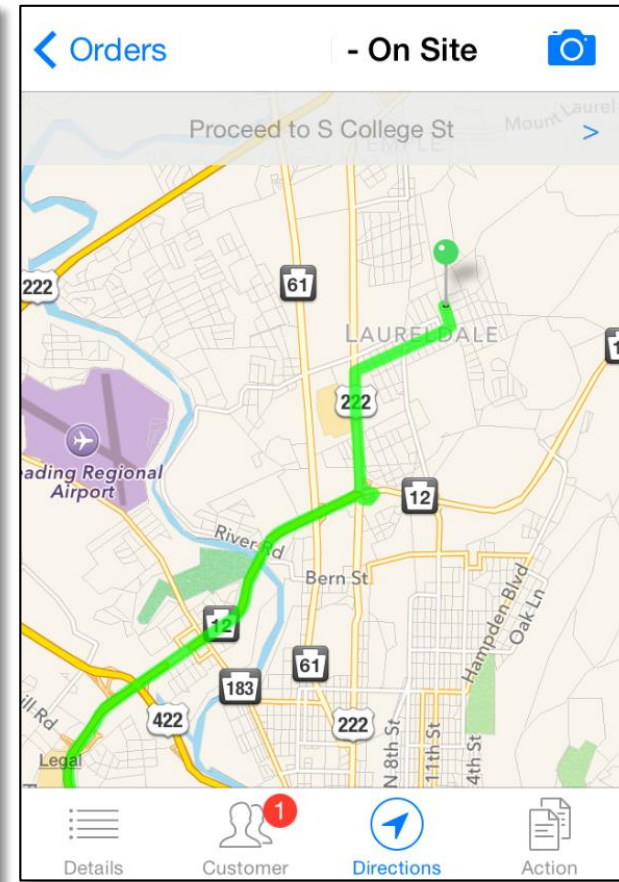
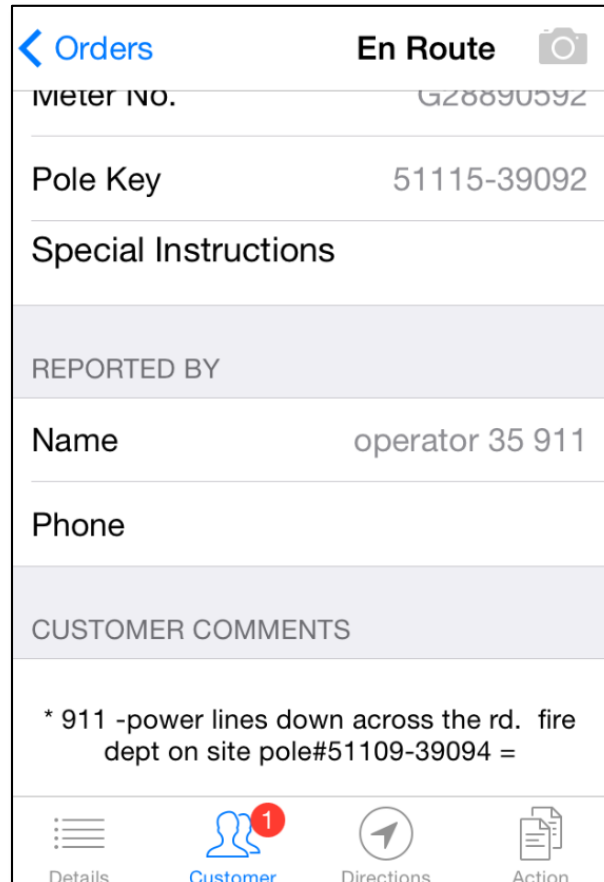
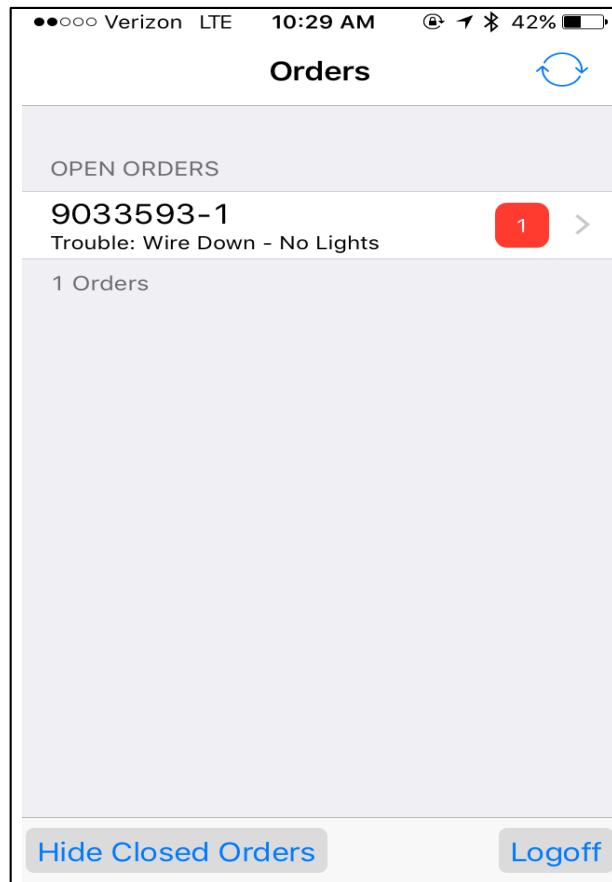
# Overview of the Hazard Responder Mobile Application

The Hazard Responder Mobile Application Tool is a new mobile application that a Hazard Responder can use to work PowerOn Hazard orders using an iPhone.



# Hazard Mobile App

- Responders can easily see customer remarks, Order call information, and get directions



# Hazard Mobile App

- The four action panels allow for recording of crew needs, basic inventory, free form comments, and the attachment of two photos.

Verizon LTE 10:31 AM 41%

9033593-1 - En Route

NEEDS

Are forestry crews needed?

Are line crews needed?

Are service crews needed?

Is public protector needed?

Is customer electrician needed?

HAZARD/DAMAGE/OUTAGE

Is there damage at location?

Is there a valid hazard?

Is there an outage?

Details Customer Directions Action

Verizon LTE 10:31 AM 41%

9033593-1 - En Route

No. of Primary Spans Down

0 - +

No. of Secondary Spans Down

0 - +

No. of Poles Broken/To Replace

0 - +

No. of Transformers Damaged/To Replace

0 - +

No. of Crossarms Broken/To Replace

0 - +

No. of Oil Spills

0 - +

Details Customer Directions Action

Verizon LTE 10:31 AM 41%

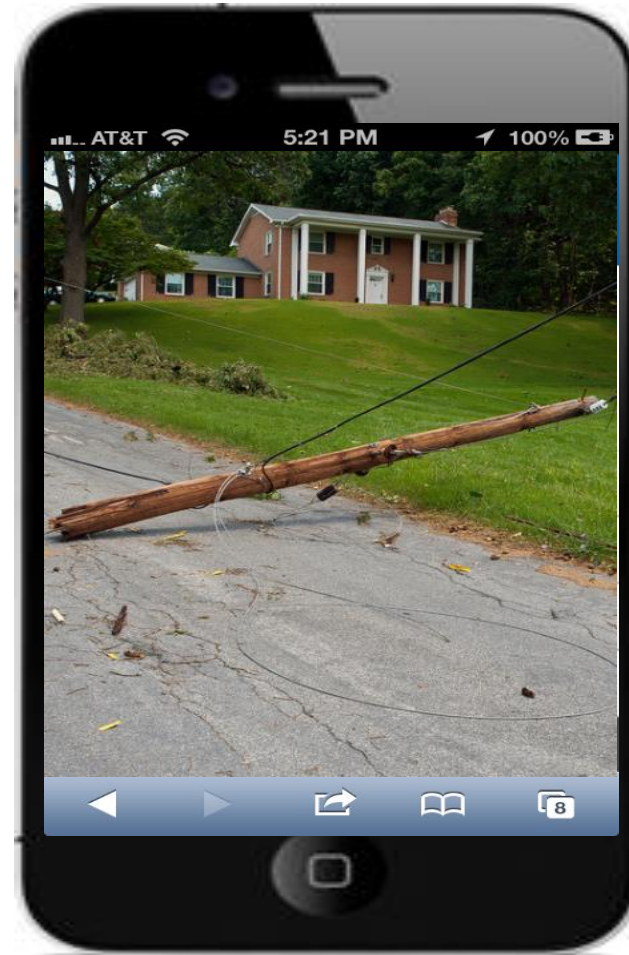
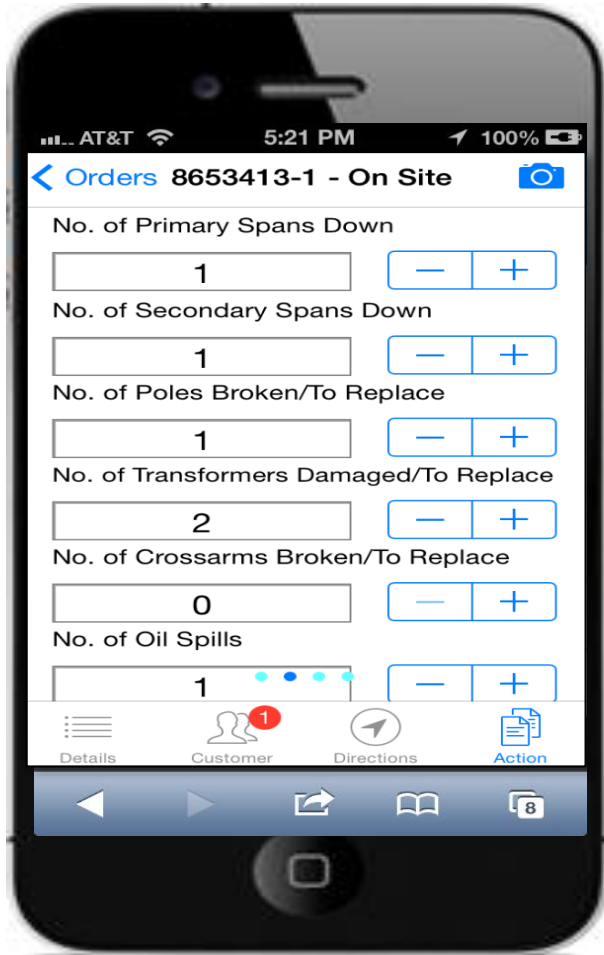
9033593-1 - En Route

Comments

Details Customer Directions Action

# Hazard Mobile App

- Inventory of damage can be easily documented and pictures taken to assist system operators with the restoration process





# Hazard Mobile App

- Damage information can be viewed by the dispatcher.

Order Management -> Orders -> Order -> Completion

Order Management -> Orders -> Order -> Completion

Detail      Trouble Calls      Assignment      **Completion**      Crews

**Trouble: 8633781-1**      **Status: Dispatched**      **Priority: 6**     

Priority:       Crew:       Time Off:

Device: [OH Transformer JC2035M A](#)      Normal Feeder #: **80**

### Field Completion Information

First Crew:

Initial Result:  Confirm  Fixed  No Problem       Time:

Weather:

Repairs: 

Facility	Component	Action	Phases	Cause?	Crew
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Cause:

Outage Type:

**Order Comments:**

Data Error     

#### Inventory

	Order Total	Project Total
<b>Spans of Wire</b>		
Primary Down:	<input type="text" value="0"/>	<input type="text" value="0"/>
Secondary/Service Down:	<input type="text" value="0"/>	<input type="text" value="0"/>
<b>Poles:</b>		
Broken/Replaced:	<input type="text" value="0"/>	<input type="text" value="0"/>
<b>Miscellaneous</b>		
Transformers Damaged/Replaced:	<input type="text" value="0"/>	<input type="text" value="0"/>
Crossarms Broken/Replaced:	<input type="text" value="0"/>	<input type="text" value="0"/>
Oil Spills:	<input type="text" value="0"/>	<input type="text" value="0"/>
Road Closures:	<input type="text" value="0"/>	<input type="text" value="0"/>
<b>Hazard App Info</b>		
Outage: <input type="checkbox"/>	Need Forestry: <input type="checkbox"/>	
Valid Hazard: <input type="checkbox"/>	Need Line: <input type="checkbox"/>	
Damage at Location: <input type="checkbox"/>	Need Public Protector: <input type="checkbox"/>	
<a href="#">Photos:</a> <input type="checkbox"/>	Need Service: <input type="checkbox"/>	

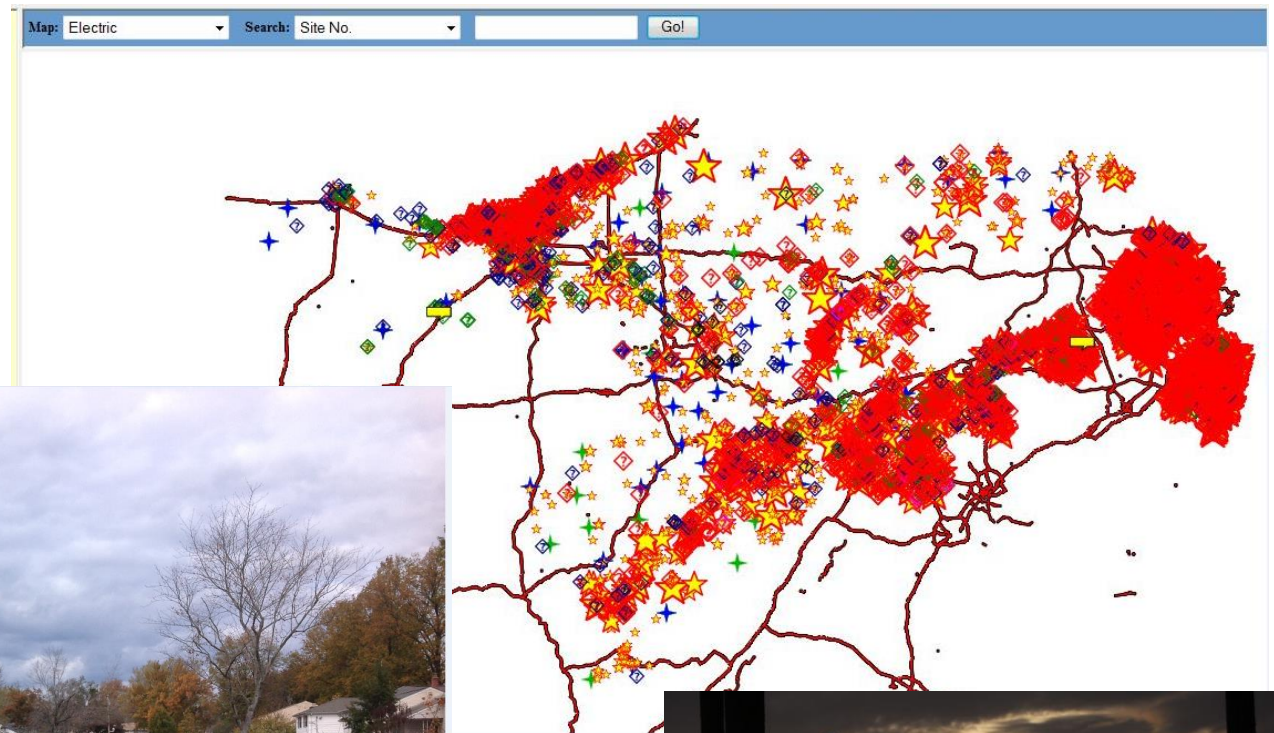
# Mapping- After a Disaster

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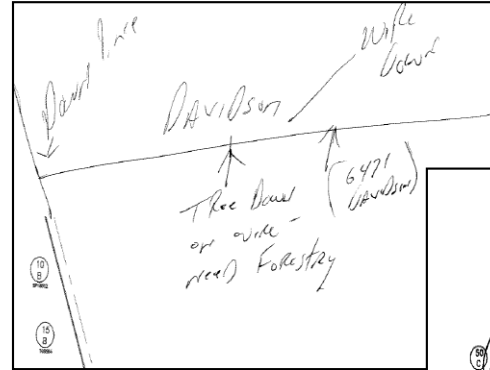




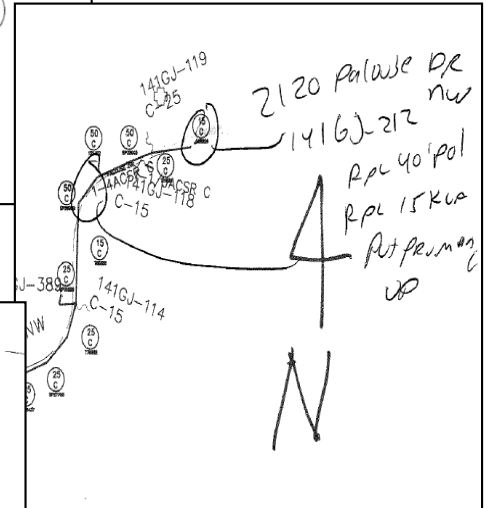
# Ike, Irene, Sandy, ???



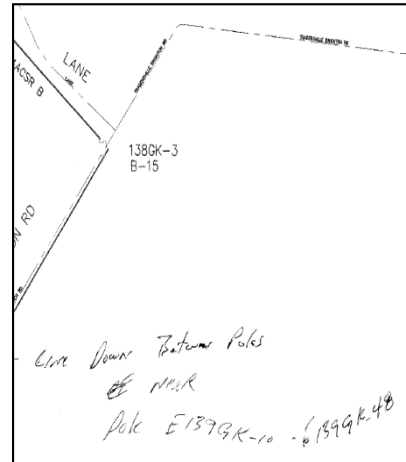
# 2008 Storm Hurricane Ike Print Collected



Wire Down - Tree Down on Wire -  
Need Forestry



Rpl 40' pole - Rpl 15 kva -  
Put primary up



Line Down Between  
Poles

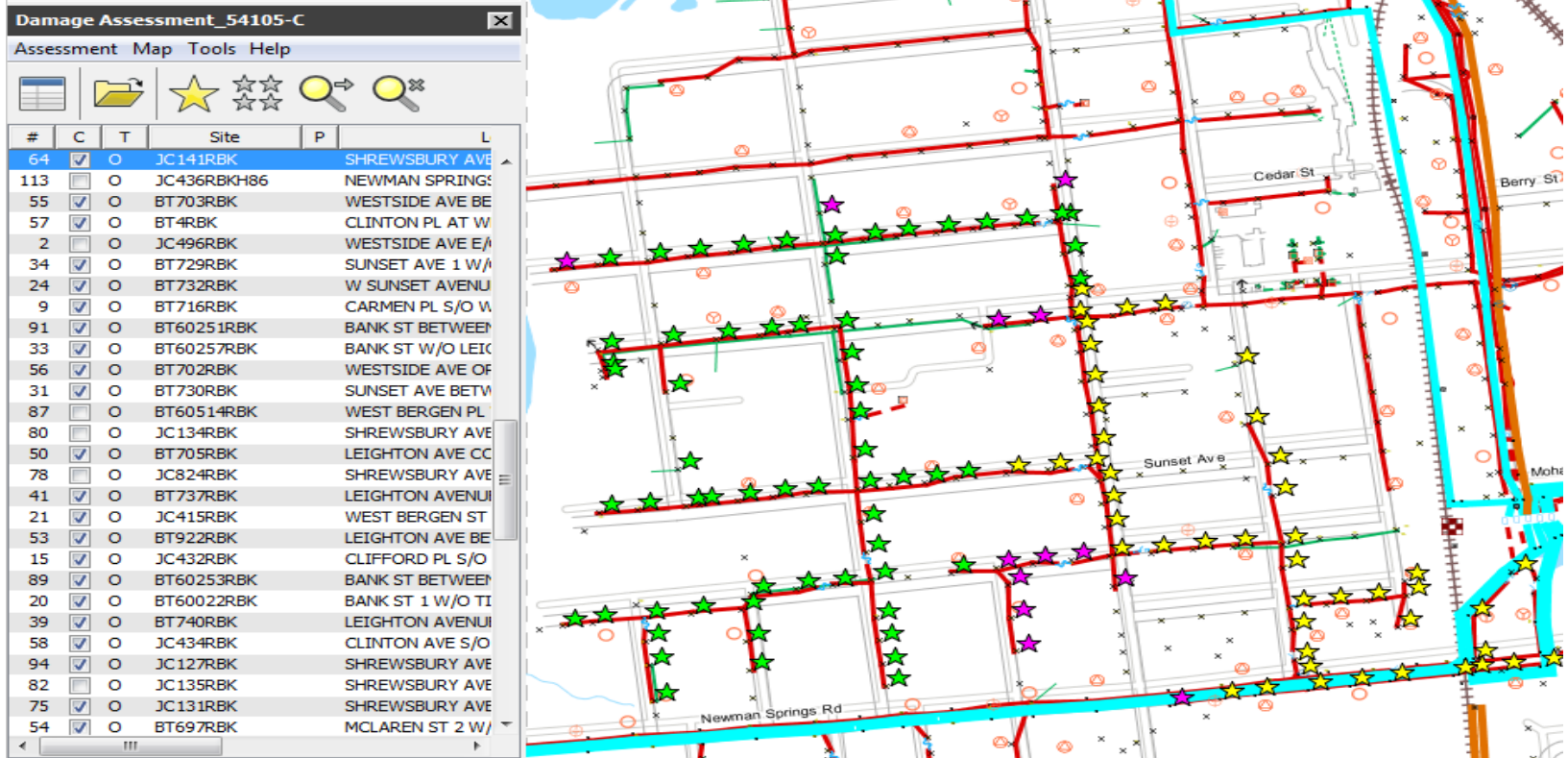
# TOUGHPAD FZ-G1 Spec. Highlights



- ❑ Light Weight
- ❑ Rugged
- ❑ High Memory Capacity and Fast Processing Speed
- ❑ Built-in Camera
- ❑ Mobile Communication – GPS, WiFi, 4G LTE, Bluetooth
- ❑ Long Battery Life



# Damage Assessment Circuit Map



**Damage Assessment Not Completed**



**Damage Assessment Completed – No Issue**



**Damage Assessment Completed – Repair Needed**

# Damage Assessment Form

1-9398927 - WEST BERGEN PL W/O BRIDGE AVE SHREWSBURY AVE

**BT60514RBK**

**BT60514RBK**

- Pole
- Conductor
- Equipment
- Service Work
- Tree Work
- Completion

—Assessment—

Assessment ID: 1-9398927      Lead: 15640

Due Date: 9/25/2014      Issue Date: 9/25/2014

Work Request:      SAP Order #:

—Site—

Site Number: BT60514RBK      Site Type: Overhead

SAP #: JCDNP5897670      Crews Zone:

Circuit: 54105-C      Substation: REDBANK SUBSTATION

Location: WEST BERGEN PL W/O BRIDGE AVE SHREWSBURY AVE

Completed On:

GPS Location:      Capture

+ Add...  
- Remove...

Add photo...      OK      Cancel

**Damaged Condition Information**

**Add a damage photo**

# Damage Assessment Form

1-9398927 - WEST BERGEN PL W/O BRIDGE AVE SHREWSBURY AVE

BT60514RBK

BT60514RBK

**Pole**

Conductor

Equipment

Service Work

Tree Work

Completion

Pole New Required

0 + = 4' Wood Crossarm Required

0 + = 8' Wood Crossarm Required

0 + = 10' Wood Crossarm Required

0 + = 8' Fiberglass Crossarm Required

0 + = 10' Fiberglass Crossarm Required

0 + = Spacer Cable Support Bracket Required

0 + = Crossarm Brace Required

Pole Top Extension

Other-Pole

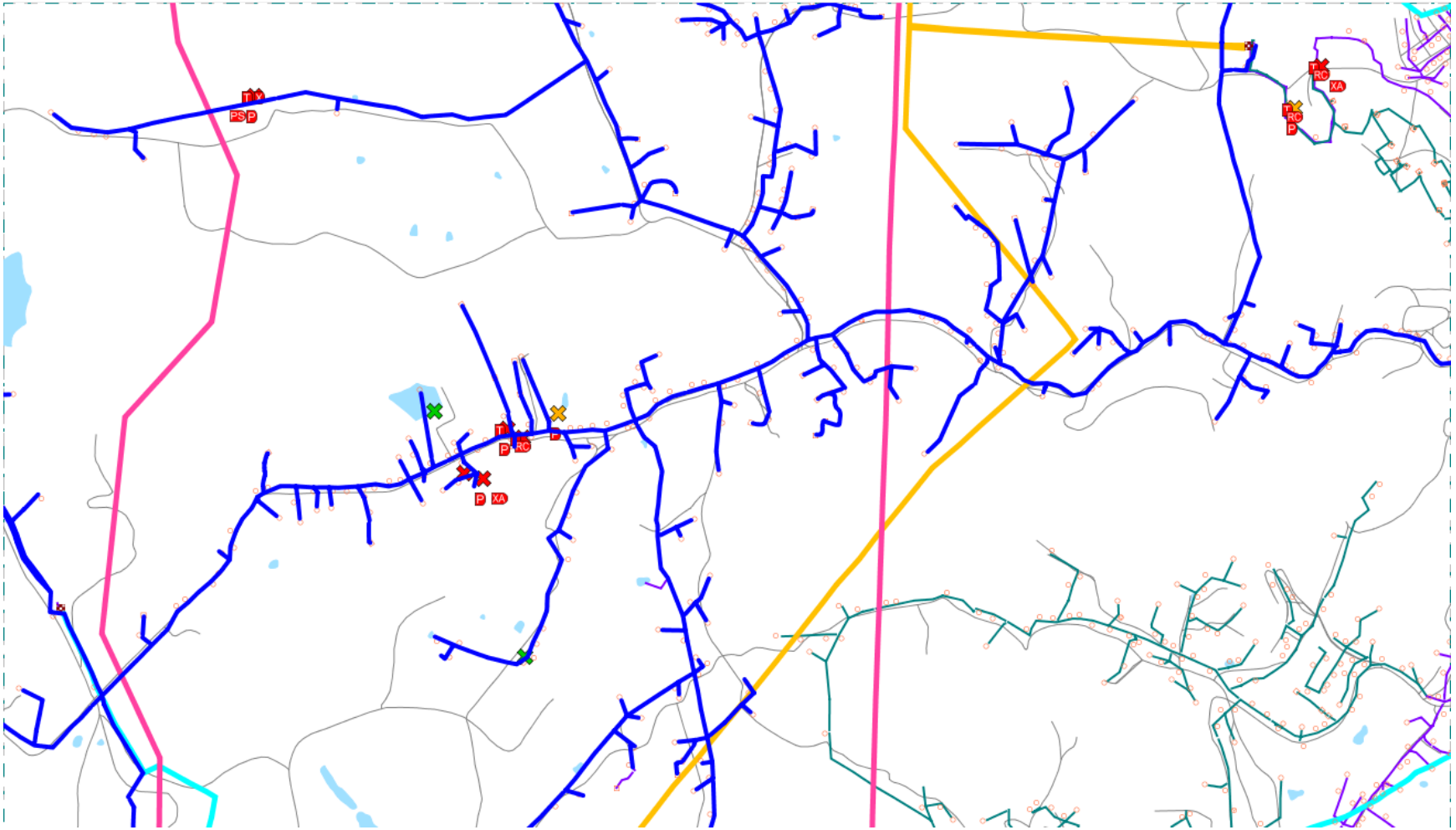
+ Add...

- Remove...

Map Fix...

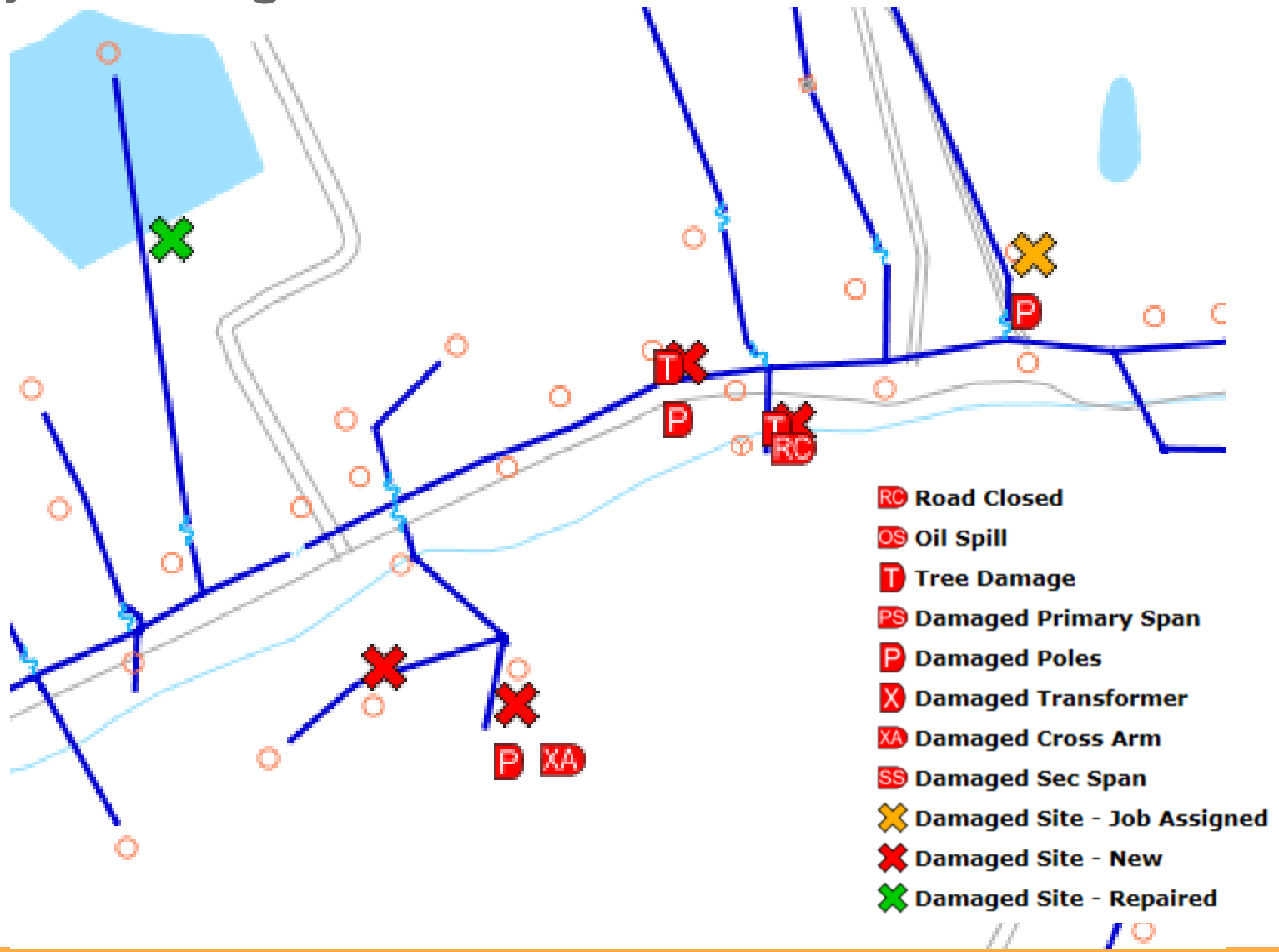
OK Cancel

# What to DO?





# Why Damage Assessment?



# The Damage Dashboard?

Assessed Circuits Refresh:

Operating Co: Mon Power

Circuit	Circuit No.	Q?	Start Date	Last Date	Total	Assessed	Assessed %	Damaged	Unassigned ...	Assigned D...	Repaired
#8 TIMBERLINE	300640078		2014-11-04 07:22:51	2014-11-04 11:23:48	43	43	100	3	0	1	2
#2 BLACKSVILLE	302300072		2014-11-06 07:49:03	2014-11-06 11:41:48	142	142	100	5	2	3	0
#3 THOMAS-DAVIS	300650073		2014-11-04 07:16:27	2014-11-04 11:31:28	133	133	100	2	1	0	1
TOWN/ST GEORGE	300670071		2014-11-04 07:13:20	2014-11-05 14:25:08	16	16	100	5	5	0	0
#3 CANAAN HEIGHTS	300640073		2014-11-04 07:22:05	2014-11-04 11:28:44	40	40	100	1	1	0	0
MEADOWVILLE	300900071		2016-04-21 14:47:21	2016-05-10 11:19:11	357	17	4.8	10	10	0	0
KINGSFORD	300670072		2014-11-04 07:15:35	2014-11-06 11:30:23	64	64	100	2	0	0	2
PLEASANT VALLEY	301760071		2014-11-05 06:35:23	2014-11-05 11:41:19	213	213	100	7	5	2	0
#6 ROHR RD	302820076		2016-05-18 13:17:06		119	0	0	0	0	0	0
#3 MALL	302490073		2014-11-06 08:14:27	2014-11-06 11:40:40	20	20	100	2	1	1	0
RT 19N	302390072		2014-11-06 08:15:33	2014-11-06 11:42:12	133	133	100	8	1	4	3
#1 BARRACKVILLE	301630071		2014-11-05 06:36:27	2014-11-05 11:42:39	97	97	100	9	4	2	3
MEADOWDALE	301720072		2014-11-05 06:39:08	2014-11-05 11:42:06	202	202	100	8	4	3	1
#1 ROUTE 19 SOUTH	302490071		2014-11-06 07:49:48	2014-11-06 11:43:02	75	75	100	12	8	1	4
INDUSTRIAL PARK	301660073		2014-11-05 06:40:37	2014-11-05 11:42:08	26	26	100	4	0	2	2
GRANTTOWN	301700071		2014-11-05 06:41:19	2014-11-06 14:44:42	17	17	100	4	1	2	1

# Dashboard by Circuit

Damage Assessment Overview

Find  Damaged Circuits:  Refresh:  None

Operating Co: Mon Power

Circuit	Circuit No.	Damage...	Road Clsd	Poles	Xfms	Pri Spans	Sec Spans	Oil Spills	Xarms	Trees
#2 HARMAN	300640072	2	2	1	0	1	0	0	3	0
#3 CANAAN HEIGHTS	300640073	1	1	1	0	0	0	0	1	0
#8 TIMBERLINE	300640078	3	3	3	2	1	0	0	2	1
#3 THOMAS-DAVIS	300650073	2	2	2	0	0	1	0	0	2
TOWN/ST GEORGE	300670071	5	5	3	1	3	0	0	2	1
KINGSFORD	300670072	2	2	2	1	1	0	0	2	2
MEADOWVILLE	300900071	10	10	4	2	4	1	0	6	5
#1 BARRACKVILLE	301630071	9	9	8	2	0	0	0	6	1
GRANTTOWN	301700071	4	4	3	2	1	0	0	3	3
MEADOWDALE	301720072	8	8	7	3	2	0	0	4	6
PLEASANT VALLEY	301760071	7	7	4	3	0	0	1	3	0
FLEMINGTON	301800073	1	1	1	0	0	0	0	3	1
#2 BLACKSVILLE	302300072	5	5	3	2	1	1	0	1	3
RT 19N	302390072	8	6	6	5	3	1	0	5	1
#1 ROUTE 19 SOUTH	302490071	12	12	7	1	2	0	0	5	7
#3 MALL	302490073	2	2	1	0	0	0	0	1	2
1ST AVE	303890075	1	1	1	0	0	0	0	0	0
#1 NORMANTWN TANNER	305170071	3	3	2	0	1	0	0	1	2
TACY	305860072	1	1	0	0	0	0	0	1	0
INDUSTRIAL PARK	301660073	4	4	1	0	1	0	0	4	2

Read 20 Damaged Circuits 3:10 PM

# LIVE DEMO

# Thank You

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# Questions & Answers