

Hurricane Ian Report

May 10, 2023

Allan Ruth



Tampa

Sarasota

Fort Myers

Havana

150 km



Restoration Resource Estimates

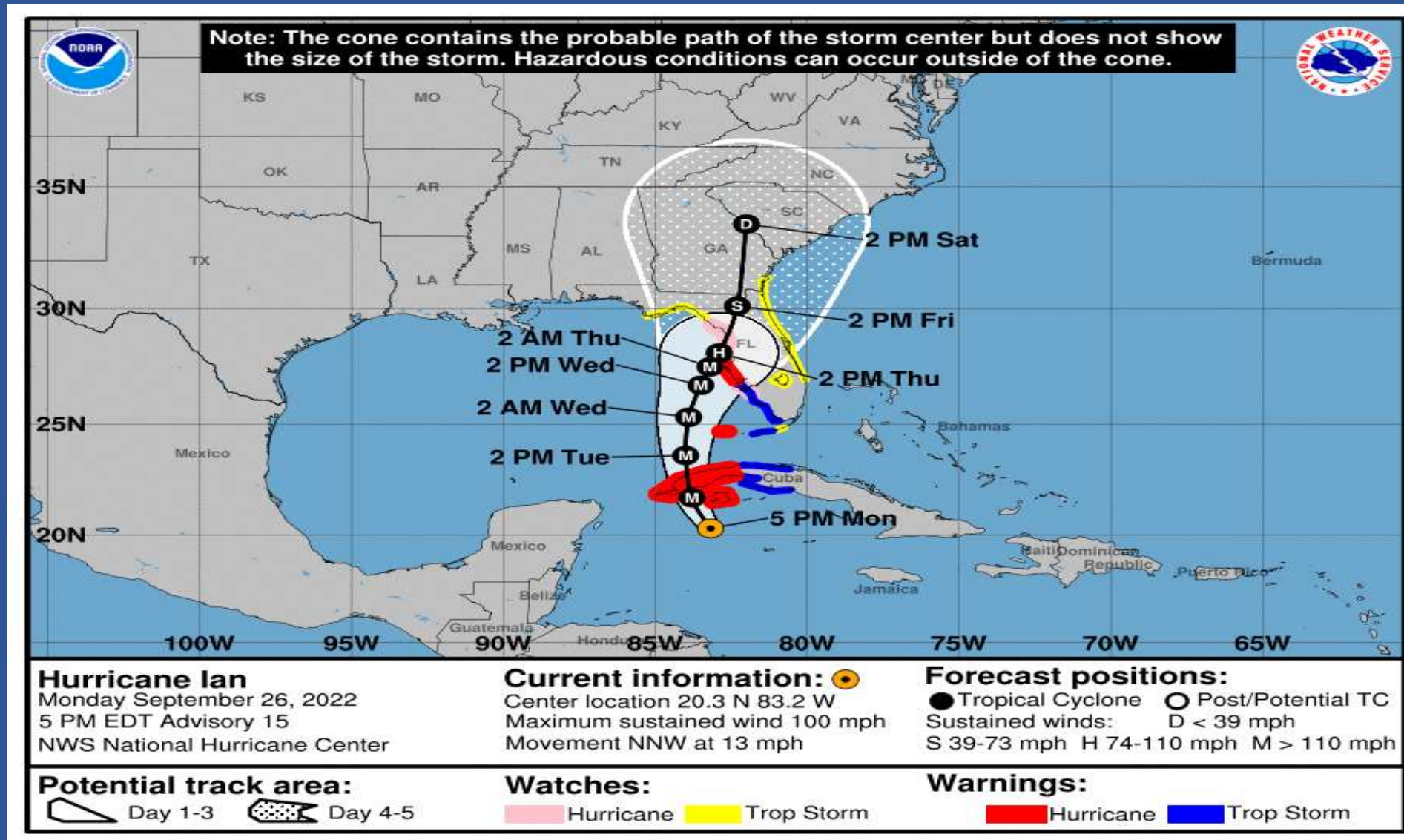
	Storm Category	Layer	Storm Restoration Supervisors (SRS)	Substations	LCEC Linemen	Contract Linemen	Tree Trimmers	Total
North System ONLY (16 Subst.)	Cat 1 & 2	1	8	8	40	85	48	173
	Cat 3	2	12	11	40	150	90	280
	Cat 4				40	220	115	375
	Cat 5	3	16	14	40	250	150	410
South System ONLY (9 Subst.)	Cat 1 & 2	4	6	6	40	85	48	173
	Cat 3	5	7	7	40	150	90	280
	Cat 4				40	-	-	357
	Cat 5	6	9	9	40	-	-	410
North & South Systems (25 Subst.)	Cat 1 & 2	7	12	12	40	95	53	188
	Cat 3	8	15	16	40	250	110	400
	Cat 4		21	21	40	300	135	516
	Cat 5	9	26	25	40	350	160	610

LCEC Readies for the Storm

- 9/21 (Wed.) – Hurricane prep meetings started twice a day
- 9/26 (Mon.) – Prep work was completed
 - Final review with staff on the Emergency Restoration Plan
 - Secured the system, substations, and yards
 - Set up the War Room
- 9/26 (Mon.) 291 linemen and 134 tree contractors available
 - Local (LCEC and contractors) – 124
 - Out-of-town contractors – 167
 - Local tree contractors – 73
 - Out-of-town tree contractors – 61



September 26th Projections



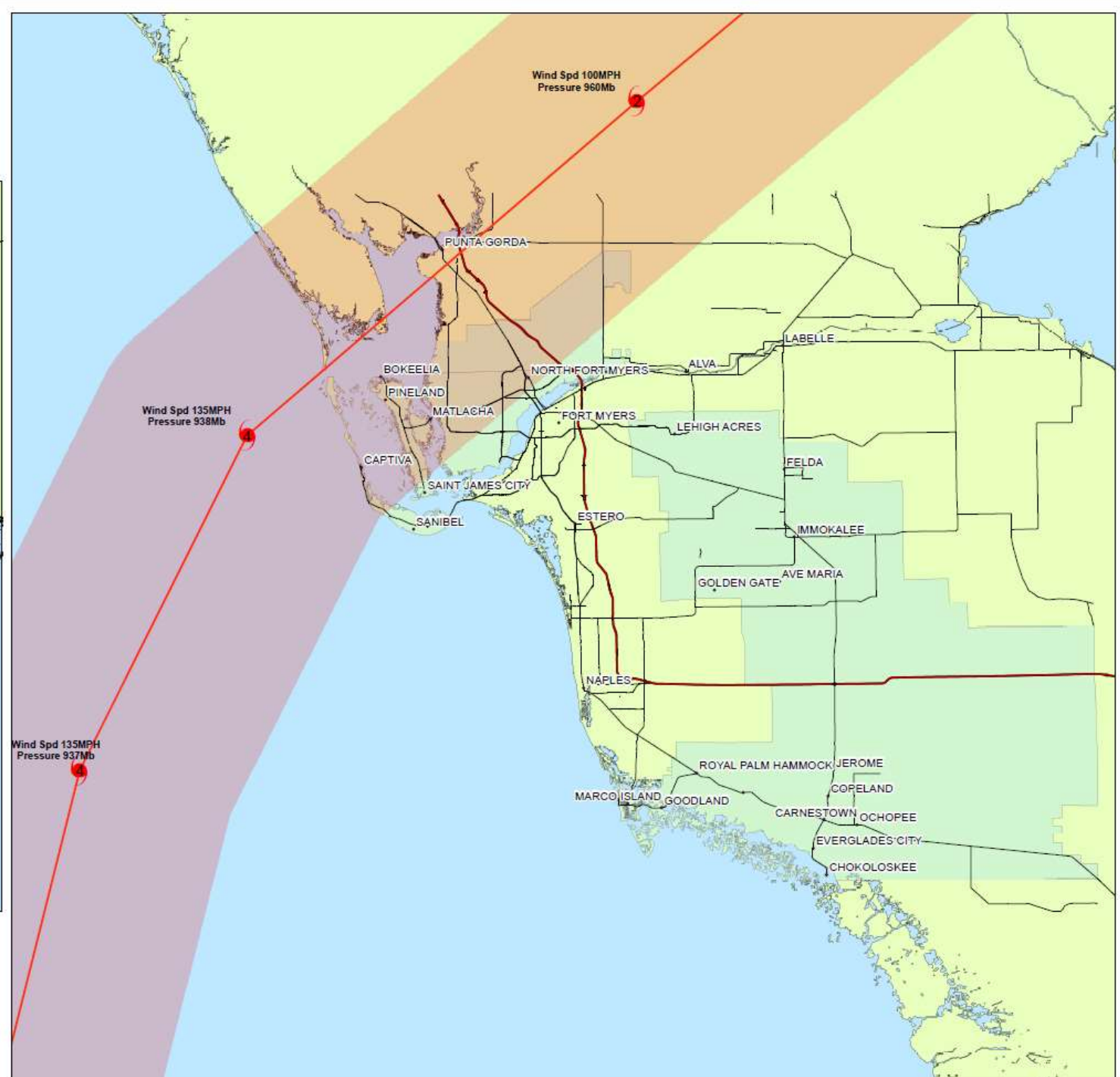
PATH OF HURRICANE IAN

SEPTEMBER 28, 2022



Legend

- HURRICANE IAN PATH
- EYE DIAMETER
- LCEC TERRITORY



SIZE & SPEED MATTER

Eighteen years apart, Hurricanes IAN and CHARLEY made landfall at the same intensity (~130 knots), at the same place (26.6N 82.2W), heading in the same direction (NNE).

IAN produced a massive, devastating storm surge over a wide swath of SW Florida, whereas CHARLEY did not.

The differences:

*** IAN was much larger than CHARLEY.**

- Eye diameter 20 vs 5 n mi
- Radius of hurricane winds 45 vs 20 n mi

*** IAN moved slower than CHARLEY.**

- Forward speed 7 vs 19 knots

All other factors being equal, a large, slow-moving cyclone will produce a higher storm surge than a small, fast-moving one.

**IAN
2022**

**CHARLEY
2004**

Ian forecast as event for Tampa for much of its approach. LCEC area was on the very south edge of cone at one time. However, as storm shifted, LCEC secured 600 resources, planning for stronger storm than forecast.

Early Challenges

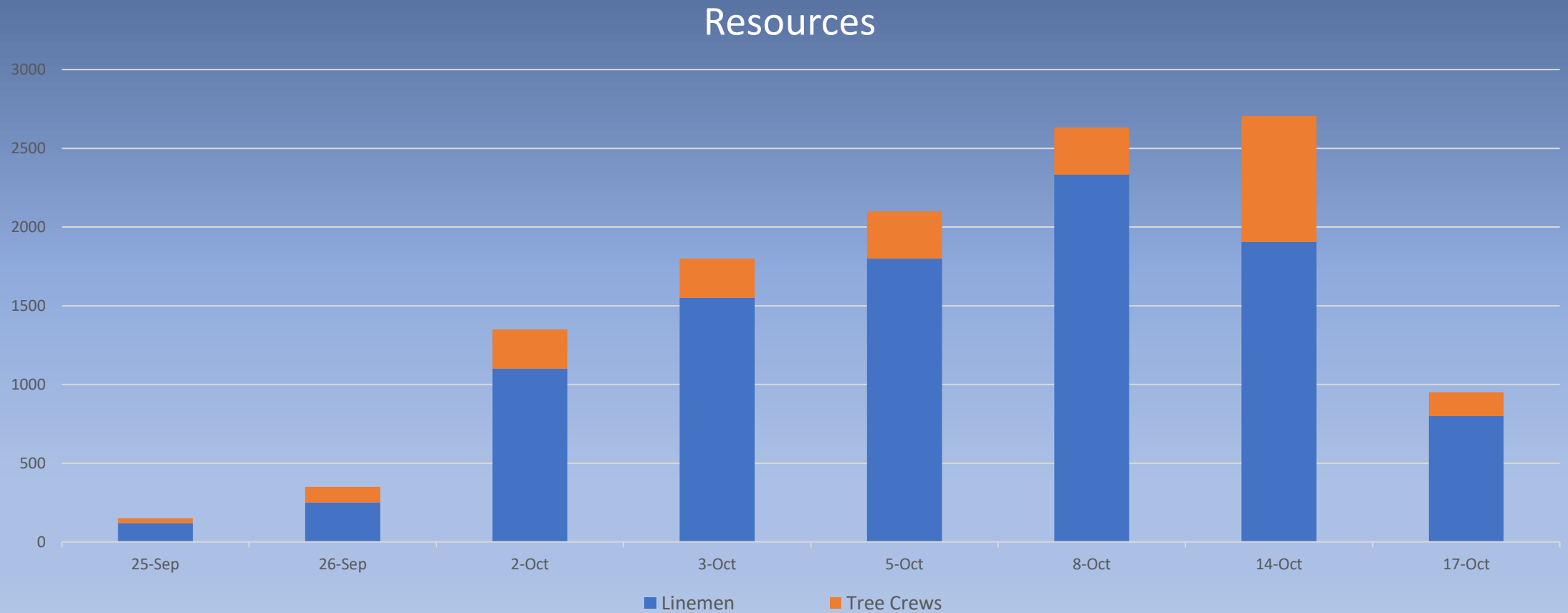
- Marco Island transmission availability
- North System transmission availability
- Request from the City of Cape Coral to delay rebuild and restoration activities
- Myakka Bridge closure on I-75
- Matlacha bridge/roadway damage
- Sanibel Causeway damage
- Storm surge



After the Storm

- 09/29 (Thur.)
 - Lost source transmission to North System and Marco
- 09/30 (Fri.)
 - Source transmission restored
 - Aerial patrol of Sanibel, Captiva and Pine Island
 - Energized 22 of 25 substations
- 10/01 (Sat.)
 - Linemen on the system – 375
 - In route linemen – 225
 - Tree crews on the system – 150
 - Tree crews in route – 50

Resources, Up and Down





Rebuild & Restoration



Damage Assessment Begins!

Thursday, September 29, 2022



Infrastructure



Flooding



Trees



Closed Roads



Employee
Issues



Hotel
Shortages



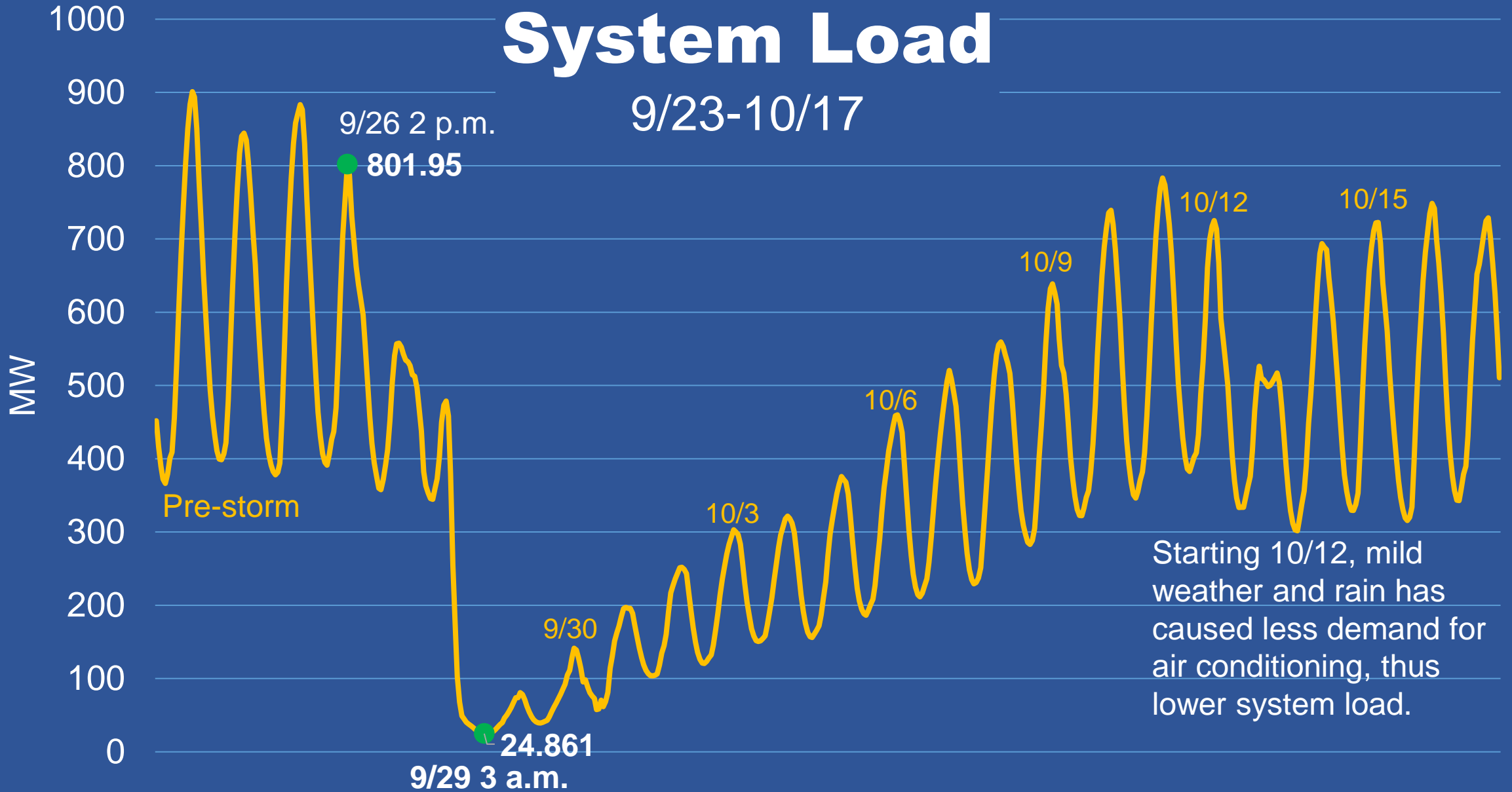
Crew
Arrivals



Cell/Internet
Network

System Load

9/23-10/17



Restoration

- 10/02 – Essentially restored
 - Immokalee
 - Lehigh Acres
- 10/03 – Essentially restored
 - Marco Island
- 10/10 – Essentially restored
 - Cape Coral
 - N. Ft. Myers
- 10/16 – Essentially restored
 - Pine Island
- 10/27 – Essentially restored
 - Sanibel, Captiva and Upper Captiva
 - Before Ian 9,025 customers
 - After Ian 4,858 customers loss of 46.2% (as of 01/16/2023)

Material Inventory Issued for Rebuild & Restoration

Critical Material Inventory Issued

- 1,950 transformers
- 3,042 poles
- 822,361 ft. OH conductor
- 84,250 ft. UG cable
- 1,388 crossarms
- 31,873 insulators
- 60,000 splices
- 15,585 fuse links
- 188K lbs. of crushed stone

Property, Casualty, Liability Summary

Property

- Oil Spills – \$333,843 (partial invoice)
 - 5 large spills in total
- Property Damage - \$1,423,712
 - 8 roof structures
- Sanibel Substation Transformer - \$10,000
- **Mobile Equipment**
 - 8 miscellaneous items (forklifts, compressors, etc.)
- **Vehicle Losses - \$456,747**
 - 5 pickup trucks
 - 4 bucket/digger trucks

25% of our employees had major damages to their homes

Casualty

- **Workers Comp**
 - No lost time accidents
 - 2 Contractor (minor treated and released)

Liability

- Motor Vehicle Accidents
 - 3 auto accidents
 - 41 General Liability
 - \$24,500

Lessons Learned

- The Plan
 - Plan design was to manage 750 external resources
 - Use of contractors outside of Electrical Operations and expanded within
 - Customer expectations have changed
- Logistics
 - Tent city concept
 - Utilization of contractors vs internal resources alone
- Mutual Aid
 - FECA
 - Investor owned
- Community Outreach
 - Communication to members
 - Greater presences in the community at targeted locations
 - Buzz-word talk

Substations





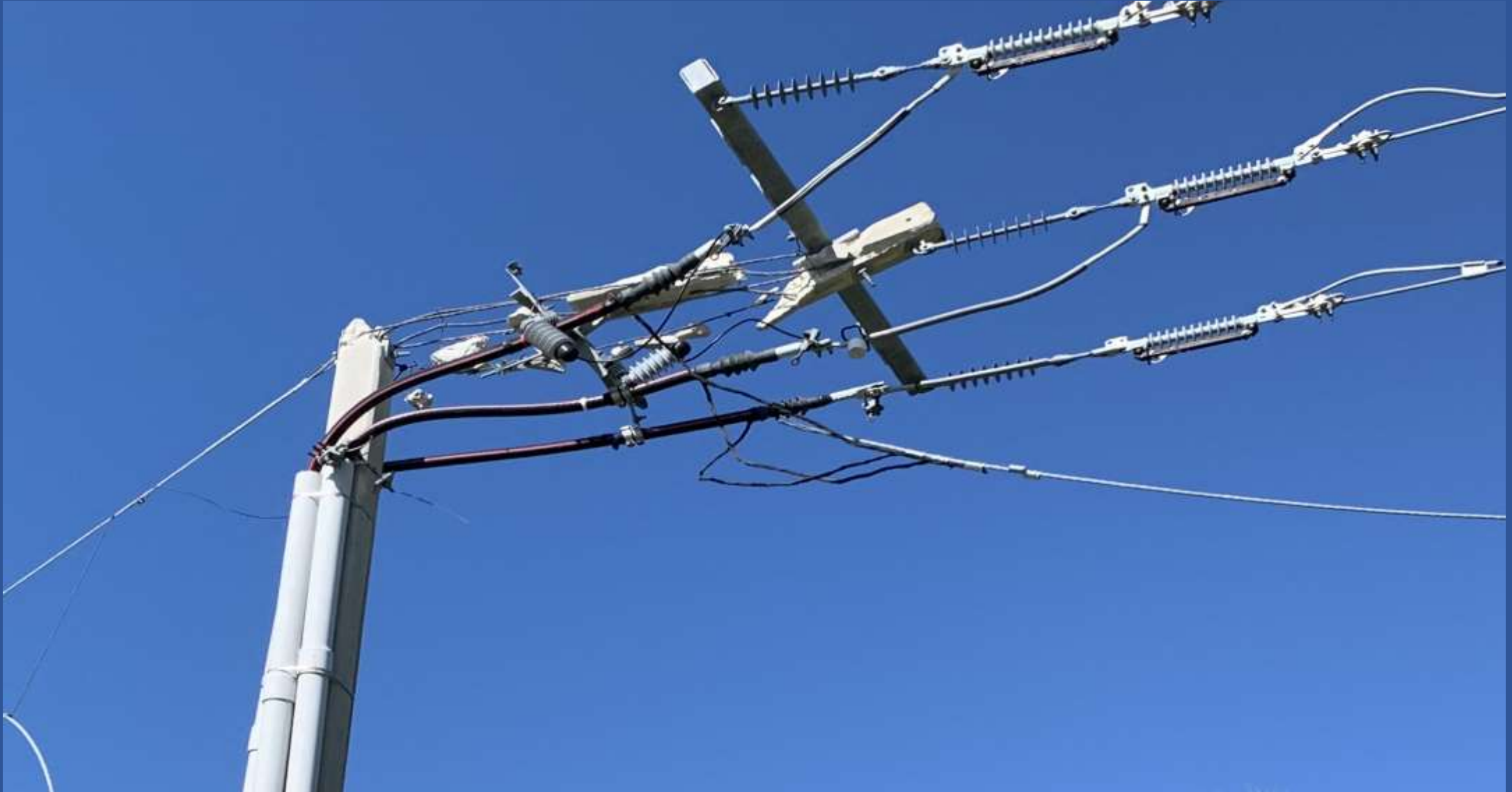
Wood Pole Damage







Concrete Pole Damage







Wood and Concrete



Underground Damage



PER
60-N

CAUTION
RELIEVE TANK PRESSURE
Before attempting to service or repair this equipment, the pressure must be relieved. Failure to do so may result in personal injury or death. For more information, see the Safety section of the operator's manual.
Caterpillar Power Systems

INSPECTED
1/16/16
E2F

H1B

X1

H1A

W2C - 0100

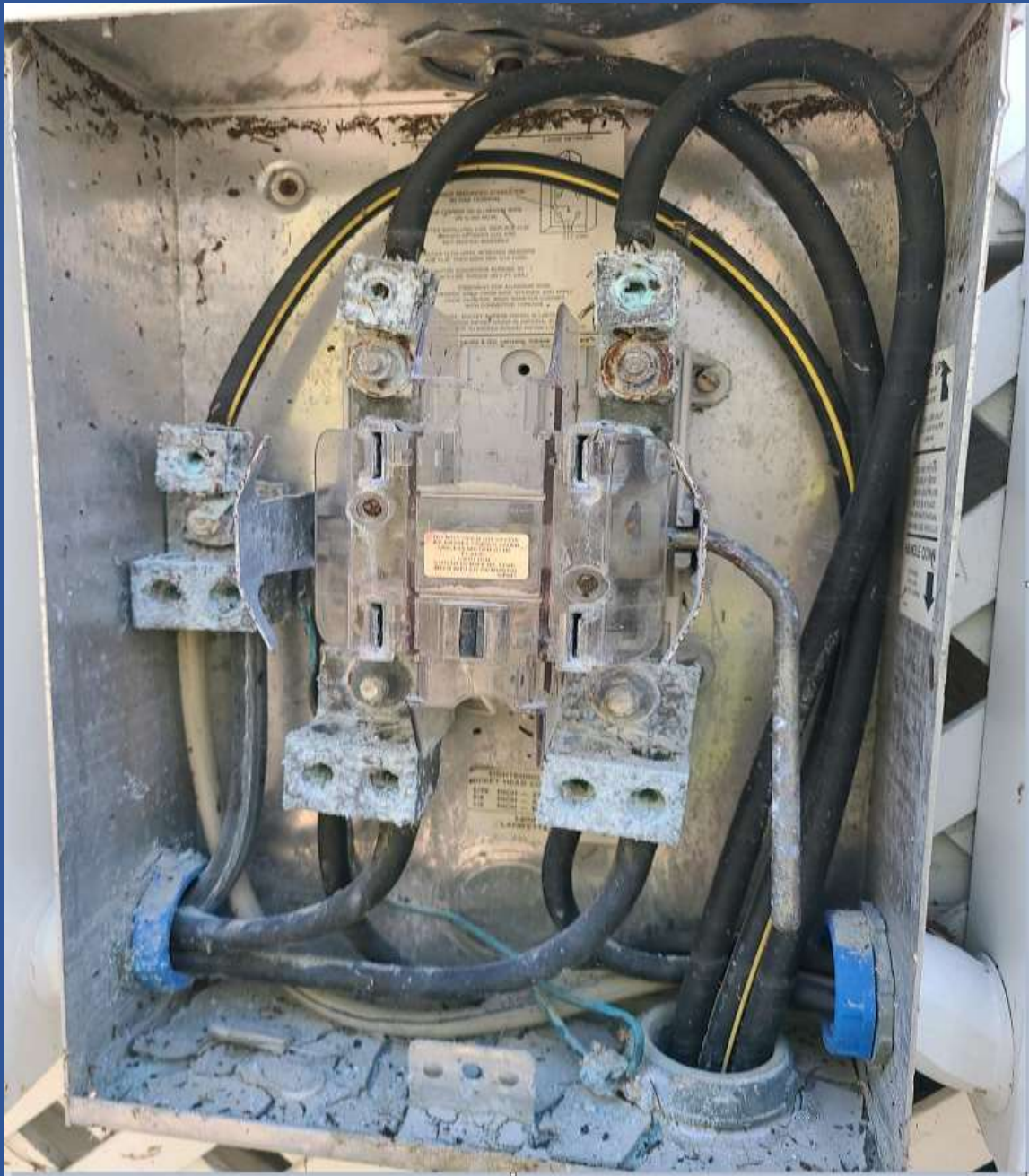




Corrosion on Secondary Equipment







QUESTIONS?