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This presentation is provided by the Linn County Emergency Management Agency to provide some discussion points and lessons learned after the Derecho that struck 27 Iowa Counties including Linn County.

The information is unclassified

Linn County is located in east central Iowa and as of 2018 has a population of 225,909 residents and covers approx. 725 square miles

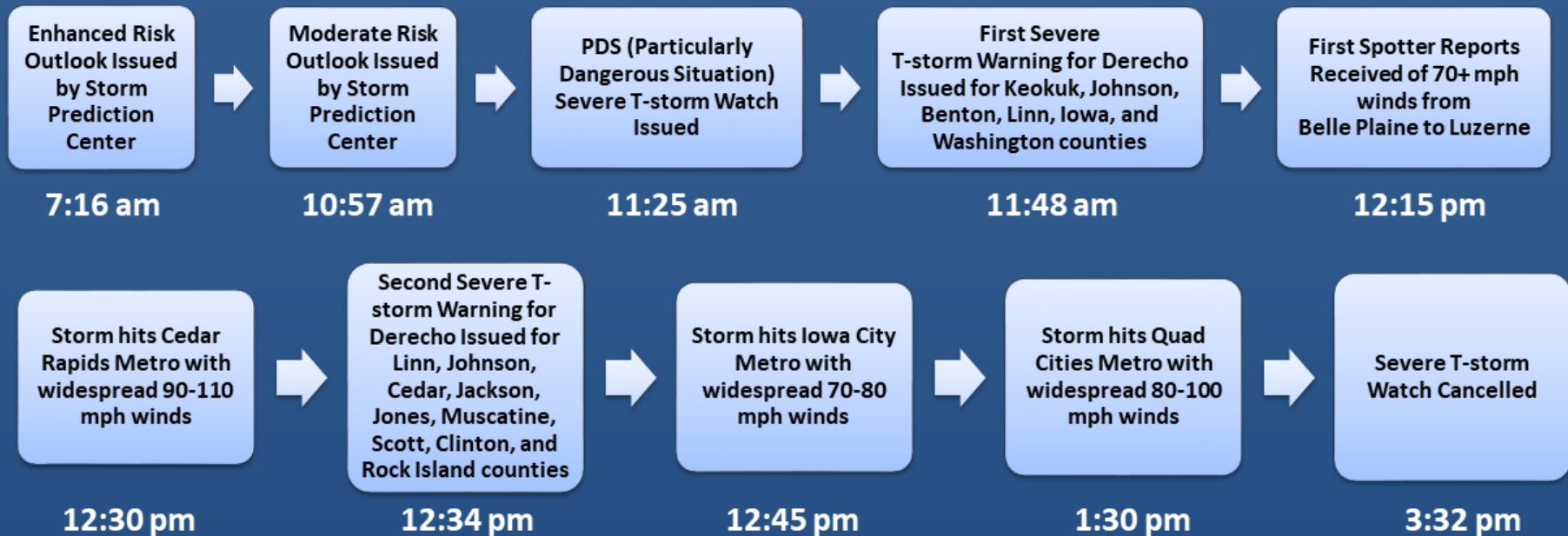


Derecho Defined:

- A widespread, straight-line windstorm produced by a complex of thunderstorms.
- Wind from particularly damaging downbursts creates the damage.
- A nearly continuous damage path over a swath at least ~400 mi long and ~60 mi wide.

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August 10th 2020 Derecho Timeline



Additional Notes:

- Longevity of severe winds lingered for 30+ minutes causing widespread damage
- Additional warnings were issued east through all of Illinois



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On August 10th 2020 Linn County EMA was notified by NWS Quad Cities of some potential severe weather predicted for Iowa. We attended a weather briefing at 1000.

- 1125NWS issues a Particularly Dangerous Situation and a Severe T-Storm Watch
- 1148 NWS issues Severe T-storm Warning until 1245
- 1158 Linn County FD's paged for storm watch
- 1217 New Severe T-Storm warning issues until 1315
- 1219 Linn County Activates OWS (approx. 10 mins. before storm enters Linn County – other communities activate as well.
- 1230 80-90 MPH winds strike CR and Marion
- Storm rages for approximately 30-40 minutes
- 1334 FD's secure from storm watch

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Marshalltown had 99 mph winds at their airport



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August 11, 2020

NASA TERRA Satellite - MODIS Imagery

Google Earth



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August 10, 2020 Derecho Estimated Peak Wind Gusts



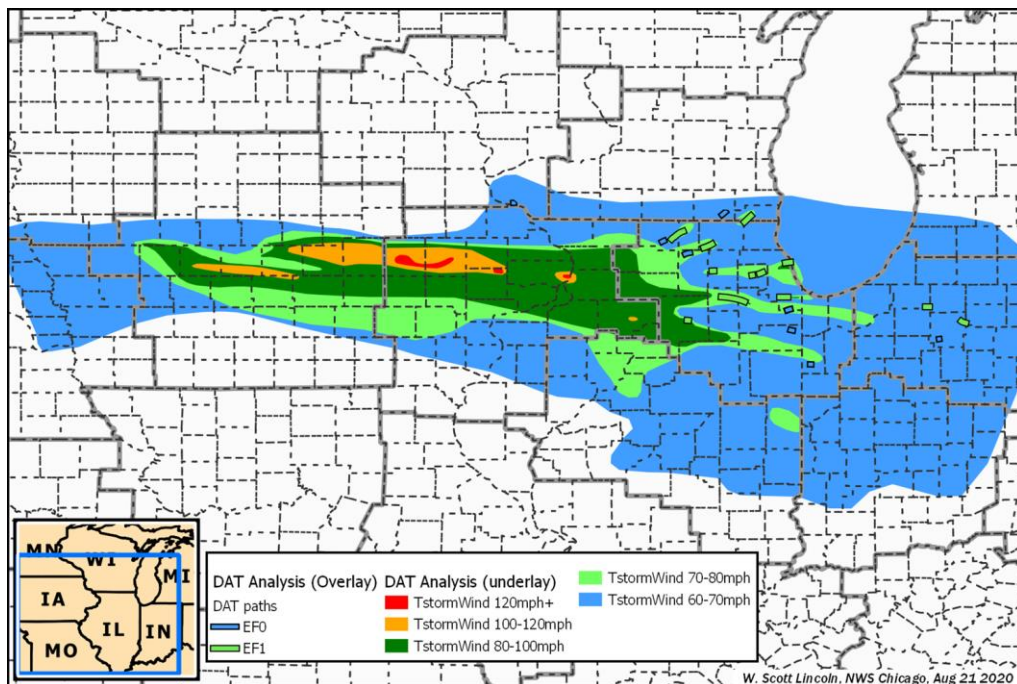
Preliminary map shows the ESTIMATED peak wind gusts:

- 60 mph or higher (light green),
- 80 mph or higher (light blue),
- Intermittent 100 mph or higher (darker green).
- 120 mph or higher (yellow).

This is collaborative effort between NWS Des Moines and NWS Quad Cities service areas.



Size and Scope of Storm



<i>City</i>	<i>Wind Gust</i>
Atkins	126 mph*
Near Midway	112 mph*
Le Grand	106 mph*
Hiawatha	100 mph*
Marshalltown	99 mph
Davenport	87 mph
Iowa City	82 mph
Des Moines	75 mph

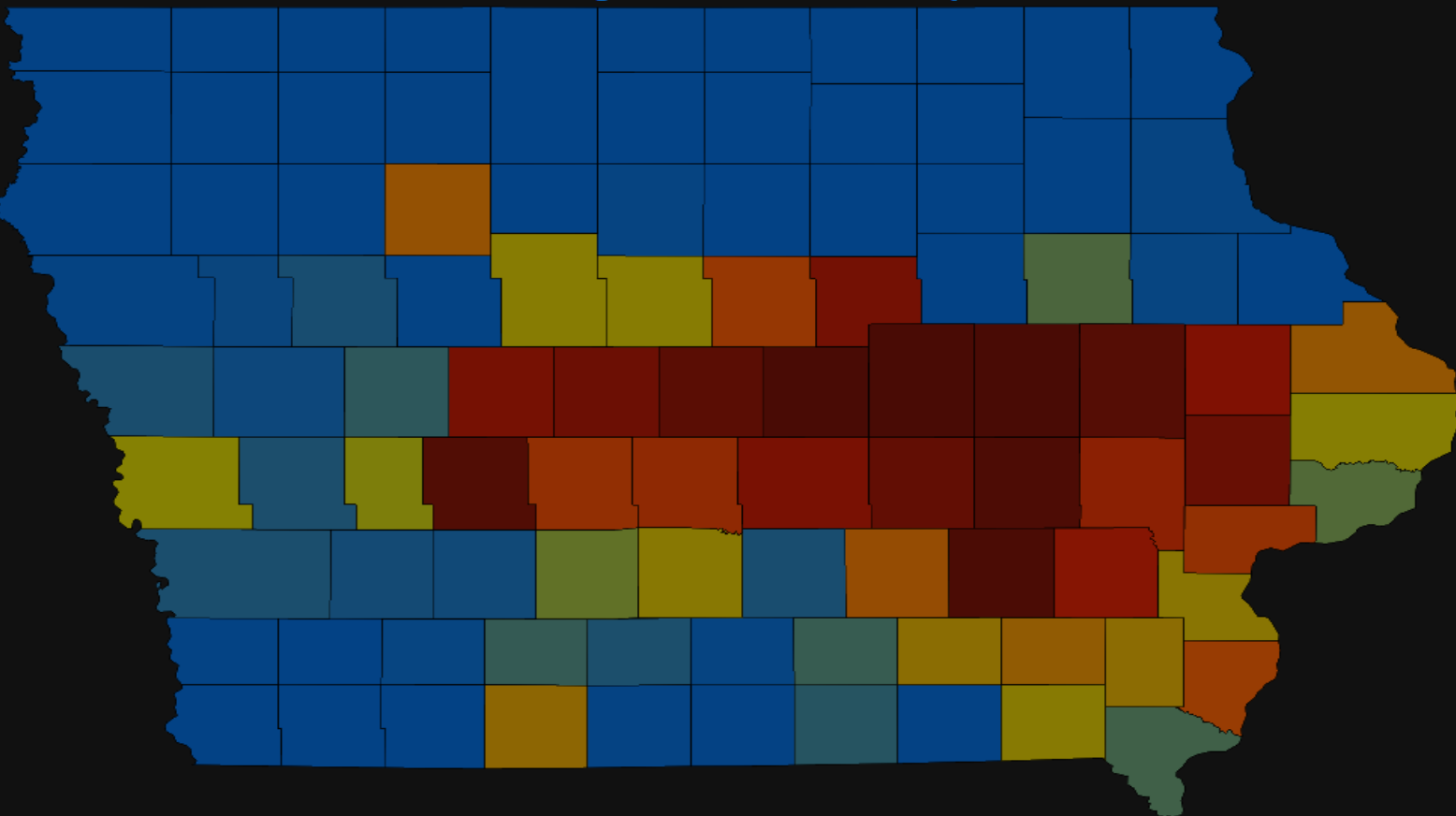
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Iowa

Customers Tracked: 1,445,289

State Outages: 419,310

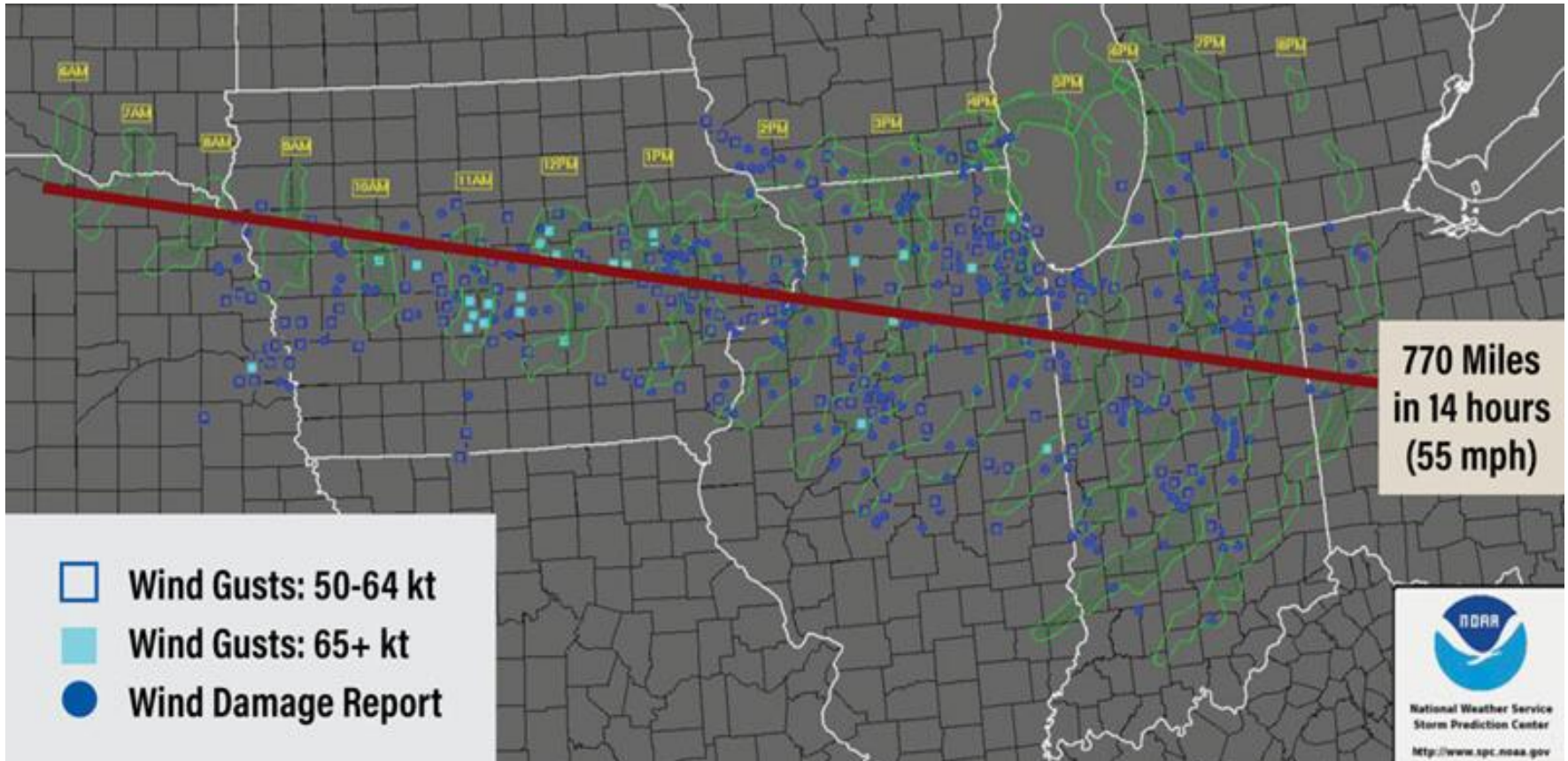
Last Updated: 8/10/2020, 02:14:22 PM



Outage Scale: 0% 10% 30% 60% 100%

Electric Providers for Iowa

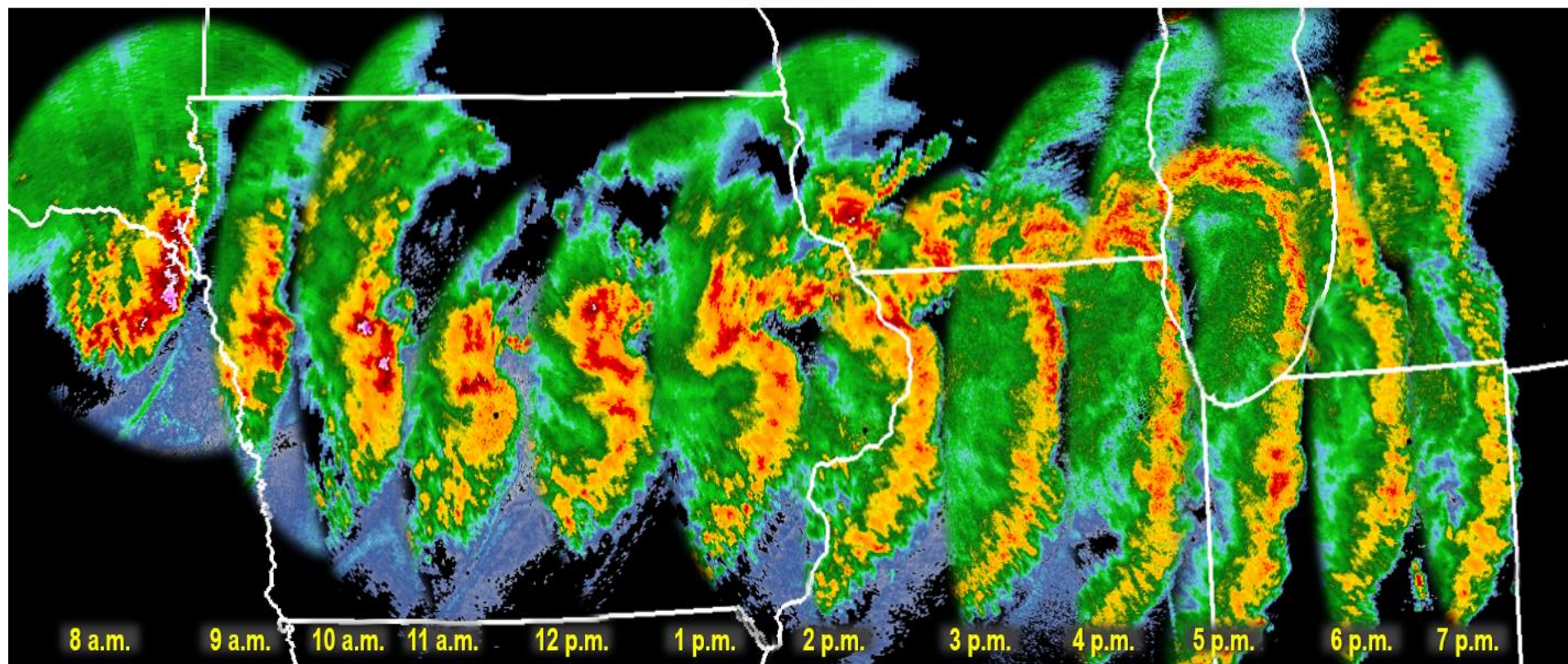
Path/Length and duration of storm



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August 10, 2020 Derecho: Lowest Angle NWS Radar Reflectivity at One-Hour Time Steps

All times in CDT



This long-lasting, severe wind thunderstorm complex (known as a derecho) produced hundreds of reports of damage along with likely a few tornadoes.

Status after the storm

- 100% power outage across Linn County
- Phones, Cell service – all carriers, internet, cable TV, out or severely degraded
- WMT-AM radio off air (link to EAS messaging) Tower on the ground
- Major tree and debris damage
- 911 system degraded for approx. 2 hours – backup initiated
- 911 Calls for Service were approx. 1-2 hours response
- Fire, PD and EMS overwhelmed with CFS for approx. 24-30 hours (life safety) – welfare checks, damaged structures, natural gas main leaks, medically fragile patients, need for shelters.

EOC Status after the storm

- 100% power outage, using backup generator
- Phones, internet, cell service, wi-fi out, or severely degraded
- EMA begins to conduct damage assessment to determine needs
- EMA Coordinator asks HSEMD to request Iowa disaster declaration from Governor Reynolds
- Red Cross contacted to begin shelter ops.
- EMA staff drives to make contact with cities that reported major damage due to lack of comms
- EMA monitors and attempts to determine status of infrastructure – Power, Gas, Roadways, Rail, etc.

EOC Status after the storm

- Temporary Shelter was set up at Marion FD
- Later moved and staffed by Red Cross at 0100 in Thomas park
- Sheltering was problematic due to power outages at shelter sites or damage to the sites.

Infrastructure - Power

- 100% power outages – Linn County customers
 - Alliant 97,588
 - Linn County REC – 14,213
- Near 500K customers out statewide
- Main transmission lines to Substations - Down
- Distribution lines to communities - Down
- Lines to homes and businesses - Down

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Roadway infrastructure

- Roadways blocked by down tree powerlines and damaged cars.
- Semi's blown over on I380 and other roadways
- Other cars abandoned on the roadway or involved in crashes.

Infrastructure – Natural Gas

- Reports of gas main breaks and leaking gas due to uprooted trees
- FD's received reports of 200+ gas leak call for service

Infrastructure – Water

- No issues 100% water distribution system is safe
- Water treatment plants – unaffected and 100% operational

Infrastructure – Business

- Power outages affect gasoline stations and stores
- Stores with generator back up remained operational
 - Hy-Vee and some neighborhood stores and some restaurants had power.
 - Gasoline lines were hours long for fuel for the few open stations
 - LE responded to upset public who needed fuel

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Lessons learned

- Carefully plan for damage assessments (large scale)
- Alert the public about requirement for insurance policies and coverages.
- Remember agricultural losses in damage assessments
- Plan for losses not covered under insurance policies, (ie Trees, non-organic debris, etc.)
- Don't assume rental property owners will follow the law or even their own rental agreements.
- Prepare for immigrant populations and cultural differences who may not know the law or insurance availability.

Lessons learned

- Use JIS/JIC system to coordinate messaging across the county
- Stress the need for ICS training and NIMS processes with community leaders
- Conduct EMA Plan reviews – Considering COVID-19 concerns
- Update the use of Linn Alerts with technology partners
- Develop technology redundancy plans
- Review EMA equipment capabilities.

Lessons learned

- Develop sheltering plans with partners that consider COVID-19 concerns – NCS vs. congregate sheltering
- Use ARC/GIS collector to gather damage assessments – Build a plan with all communities building officials to ensure DA's can be done by the communities – Fill GAPS and use technology
- Develop a plan for political interference / influence(s)
- Communicate with HSEMD through your EMA Coordinator
- Be prepared for FOIA requests
- Be careful with media inquiries

Questions ?

Thank you!