



Responding to a Natural Disasters: The May 2019 Dayton Tornadoes

Mike Wilson

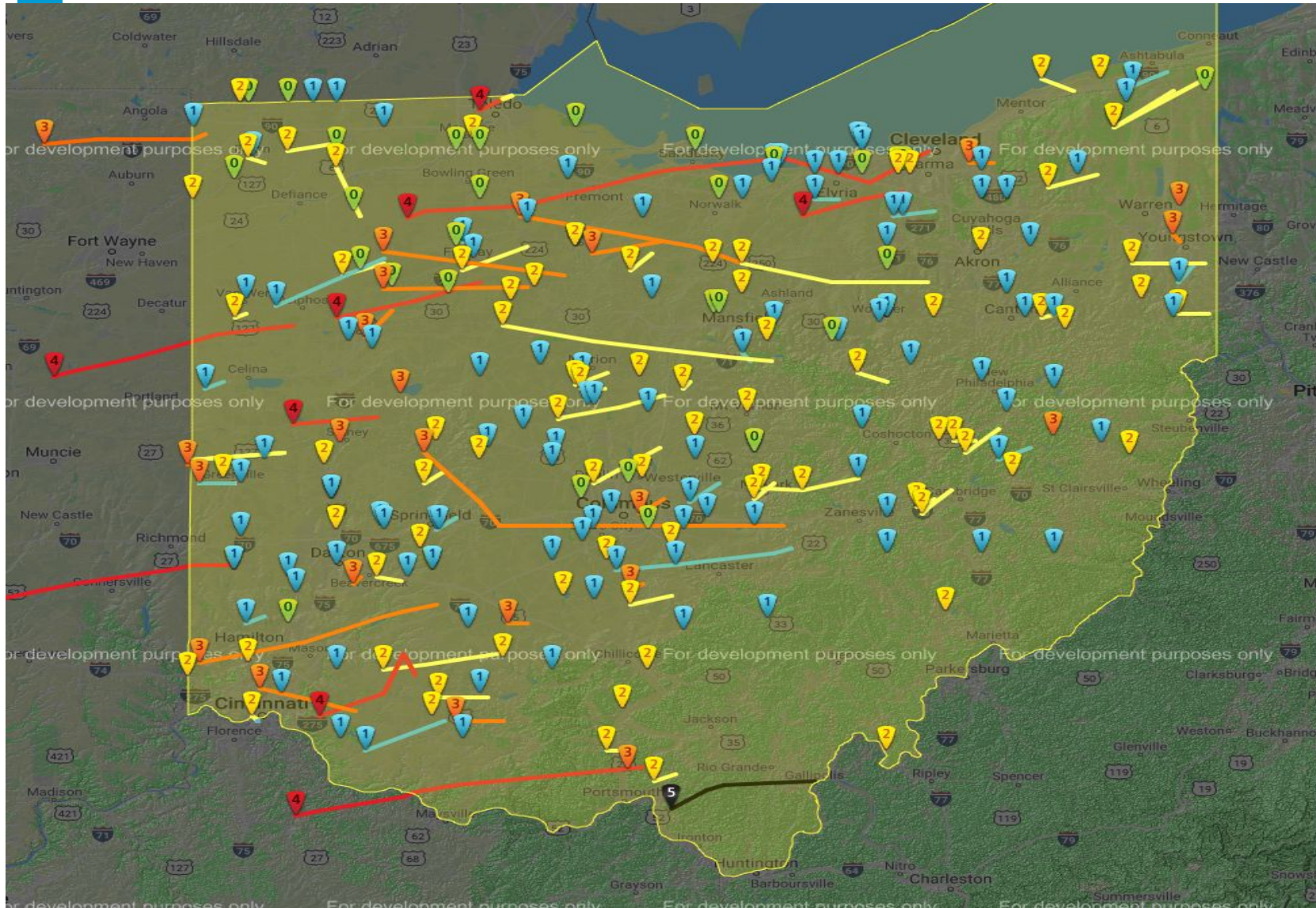
CenterPoint Energy- District Director

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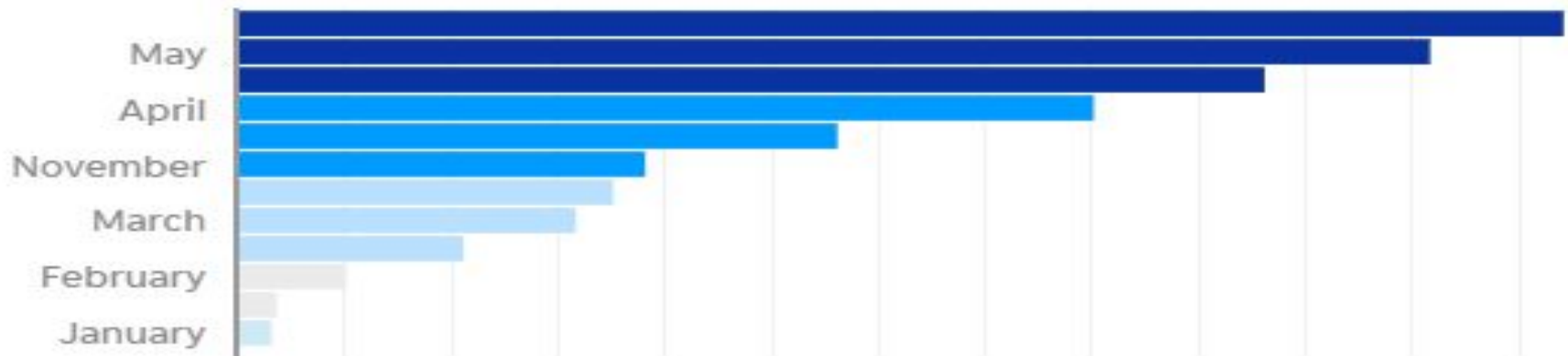
History of Tornadoes in Ohio



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| Date(s) (yyyy-mm-dd) | Tornadoes | Fatalities | Highest Fatalities | Injuries | Highest Injuries | Longest Path | Widest Path |
|-------------------------|-----------|------------|--------------------|-------------|------------------|--------------|-------------|
| 1950-01-03 - 2017-11-05 | 1095 | 242 people | 36 people | 5320 people | 1150 people | 118 miles | 1350 yards |

When's tornado season?*



* Data analysis does not include tornadoes since March 1, 2019.

Sources: National Weather Service's Storm Events Database and Enquirer research

What counties in Ohio have seen the most tornadoes?

Just as every month brings tornadoes to Ohio, no place in the state is immune to them. Every county has had at least one, the NWS data shows.

Van Wert County, bordering Indiana, has had the most since 1950 – 35.

Morgan and Vinton counties, in the southeast corner of the state, have had only one each.

A typical county sees at least one tornado every 4 1/2 years.

Butler, Clermont, Hamilton and Warren counties see tornadoes more frequently than many other parts of the state. Butler and Hamilton counties see a twister roughly once every four years.

Clermont and Warren counties see a twister nearly every three years.

What is the EF scale for tornadoes?

Three of four Ohio tornadoes cause no more than minor damage, The Enquirer analysis shows. Put another way, only one of every 13 tornadoes causes serious damage, or is measured as EF3 on the enhanced Fujita scale.

The scale ranges from:

- EF0 - Little damage - 4
- EF1 - Minor damage - 4
- EF2 - Roof is blown off - 2
- EF3 - Walls collapse - 3
- EF4 - Building blown down - 1
- EF5 - Building blown away

Calm Before the Storm

- Start the reporting chain
- Emergency Response Plan
- Corp Response Plan
- Gas Control
- Corp Comm
- Senior Leadership
- “this tornado is on the ground and doing damage”



Timeline of events

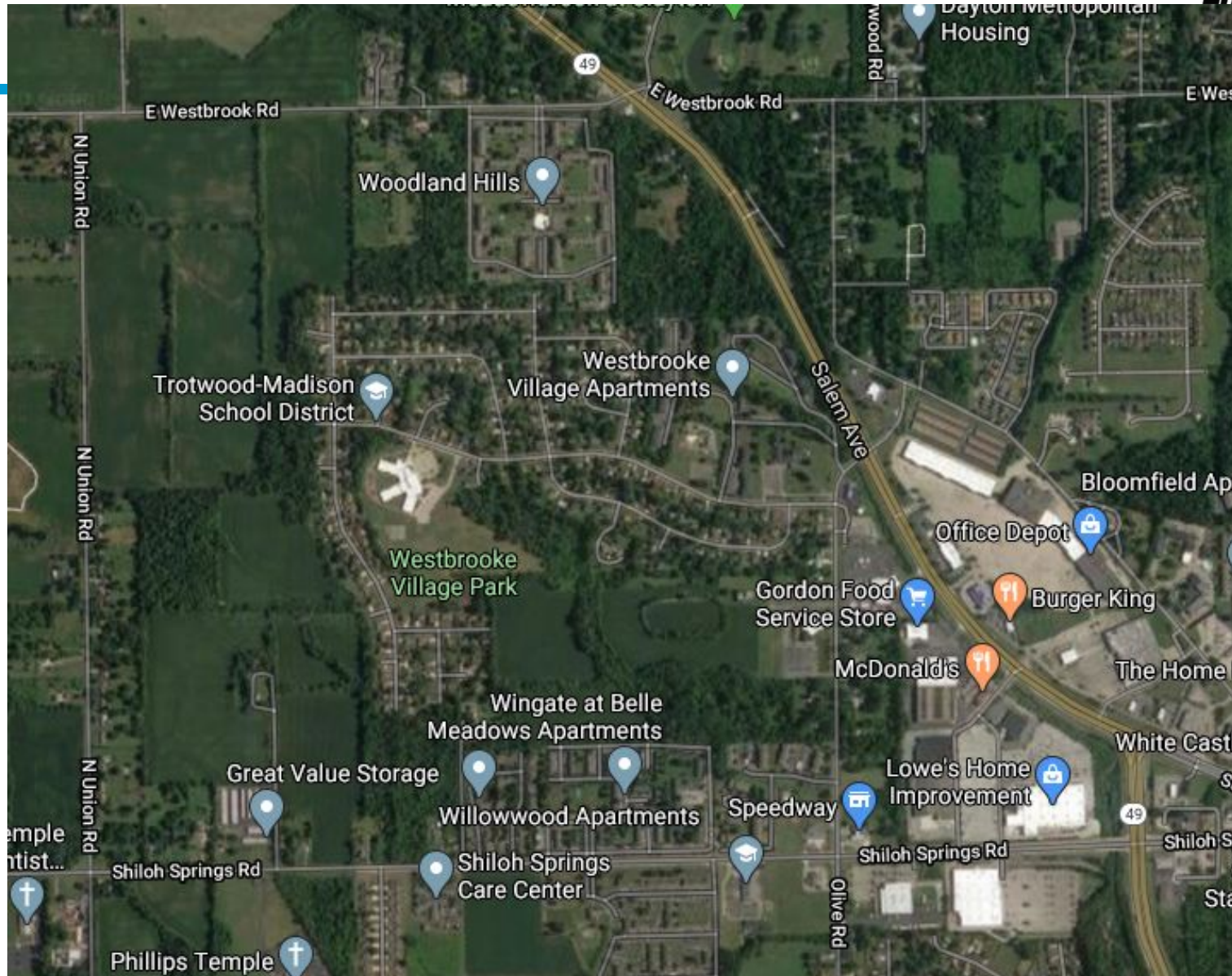
- **At 10:41 p.m. (May 27) —**
- This EF-4, carrying maximum winds of 200 mph
- **Brookville, continued through Trotwood to Dayton and to Riverside**
- Covered 19 miles and was on the ground about 30 minutes.
- Areas on the south side of Brookville sustained heavy damage. Many homes and apartment complexes were affected. The tornado continued southeast through Dayton crossing I-75 and into Old North Dayton where homes and businesses were heavily damaged.
- **At 11:12 p.m. (May 27) —** A tornado with damage as high as an EF-3 hit **eastern Montgomery and western/central Greene counties**. It covered 10 miles on the ground in about 20 minutes.

Received call from Montgomery County Emergency Management Agency

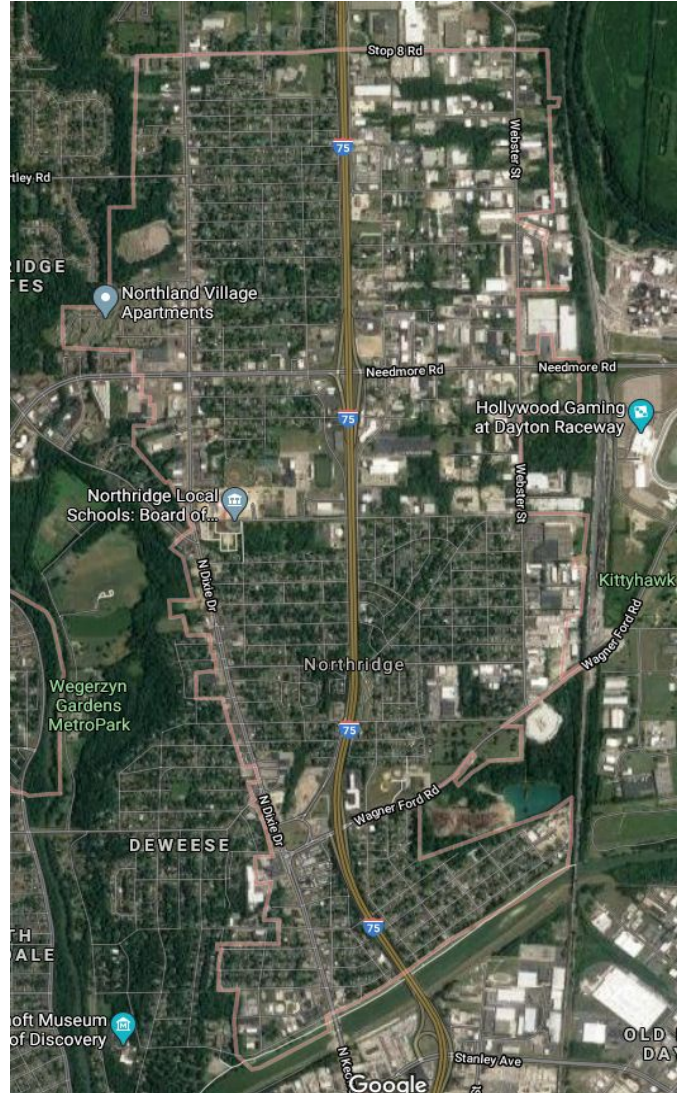


- SPOC of CNP is requested
- Fire Chief of Trotwood is requesting that you shut down the gas system west of the SR 49 exchange, north of Shilou Springs Rd. to the city limits. (west to Union Rd. and south of Westbrook Rd).
- Receive a second notification. Fire Chief in Harrison Township is requesting that you shut down the gas system for all of Harrison Township.

City of Trotwood Request



Harrison Twp. Request





- Trotwood shut off required 7 points of shut down, would affect 2500 customers, was completed between 1am and 6am and we were watching the pressure come down.
- Harrison Township required 3 points of shut down, would effect 2700 customers and the system almost immediately went to zero.



This image provided and posted by the Ohio Department of Transportation, early Tuesday, shows a view from one of the department's trucks as crews on Interstate 75 north of Dayton, Ohio, work to clean debris from the highway after a suspected tornado hit the area.

Ohio Department of Transportation via AP

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- Activated our Emergency Response Plan and this Crisis Communication Plan.
 - At this time, we expect to have an estimated 7000 customer effected.
 - We have set up SPOC with the appropriate Emergency Management Agency to assess and respond to the most urgent needs. This has heavily impacted the areas of Trotwood, Harrison township, Brookville and Beavercreek.
 - At this time, we are putting together our extended first and secondary response activities.
 - We have made the Fairborn OC our command center.

Brookville Damage



In doing this, we found additional communities in need.



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- We have made significant progress with today's efforts.
 - The Harrison township section is isolated leaving 2045 customer's safe.
 - We learned in the late morning hour that the reduced pressure on the Trotwood system had allowed them to conclude their work and we were no longer required to eliminate all pressure from the pipelines. This allowed us to leave gas on to an estimated 2700 customers.
 - Late morning notice and investigation brought about the discovery of 460 customer's out in the Beavercreek area and 161 in the Riverside area.
 - While complete systems were shut off and depleted of gas today, tomorrow's agenda will be to shut off the individual services.

Quick lessons from day 1

- Cell coverage was spotty.
- Gas stations were closed in many areas.
- Police reported looting had already started.
- We were supporting the township road closures with our vehicles and this had a potential of hindering our secondary emergency response.
- We could not do work at a residential level as EMS was still in search and rescue mode.



May 30th, 36 hour report



- Completed our wellness checks of the Trotwood system and leak survey efforts in this area have begun.
- For Trotwood we have left 764 meters in the off position and we estimate that 650 of those will be left off due to damage.
- The main and services to the 460 affected customers in Beavercreek is being energized at the time of this update.
- A one-call announcement was sent out to customer's yesterday telling them to expect relights to start on Friday.
- We did suffer a not-at-fault vehicle accident yesterday when another driver ran a stop signal.
- A mobile command center was deployed to establish a field presence that we felt would be instrumental once relights start.

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- We have completed 98% of the needed disconnects in the Harrison Township area.
 - A purge and pressurize the effected mains was planned.
 - When we eliminate the inactive customers and we eliminate the services to be retired due to damage, the new total for customers who will need to be relit in Harrison Township is 1689.
 - Leak survey of the effected areas was scheduled.
 - Reconnects were being planned and routed.
 - Our crews, both internal and contract, continued to work safely.

What went well:



- ✓ No at fault accidents, OSHA reportable or PMVIs from this event.
- ✓ Only working in daylight hours allowed for time to rest and strategize for the next day; set shifts ensured that everyone was well rested
- ✓ Signing in and out assisted in ensuring that everyone made it back safely from the field
- ✓ Assigning zones to supervisors helped coordinate the information coming in and out of the field and the use of a scribe for paperwork assisted in field coordination, consistent reporting and less duplication of efforts
- ✓ The availability of Engineering Support in the field helped identify purge points
- ✓ Two-way radios worked well when cell service was scattered.
- ✓ The contact center was brought in from the beginning which allowed them to be prepared for calls and how to assist when needed.
- ✓ The addition of a mobile command center to assist with relights was useful and gave an area to muster.

Media: External Communications & Outbound Calls



- **Update on Ohio Tornado Response**
- Vectren crews remain working safely and diligently in response to the tornadoes which devastated portions of our Ohio service territory earlier this week. Working closely with emergency response agencies and building regulation departments, we continue to assess system impacts, conduct wellness checks on our infrastructure and communicate with customers on the status of their natural gas service. We are keeping media informed of our progress, as well as regulators and elected officials. Importantly, we continue to remind customers what to do in the event they smell natural gas or detect a natural gas leak. To refamiliarize yourself, [click here](#).

- Standard Outage Tool: Find a work around or improved tool that will allow more than two individuals to work in the system at a time. This tool would ideally provide real-time outage information for those working in the field and eliminate the need for tracking by paper, scanning and making updates.
- Get a grasp of the potential size of outage using local media information, NOAA prediction and tracking information, etc.
- Use a resource to make sure that the area scheduled for the next phase of activities is clear and safe to work. This will help coordinate and ensure that our resources are being sent to areas ready for work or sent home to rest until the next phase is ready to be worked.
- Resources were available and under utilized such as office staff being willing to assist in coordinating meals, etc. Utilize the resources available to you.
 - Consider setting up accounts with restaurants for the purpose of feeding those working during emergencies such as this.
- Delegate or Share responsibility of communicating with fire chiefs and local authorities, match those individuals up to make it less cumbersome.
- Consider using small group texts for relight groups to communicate work status, lunch, etc.
- Check on techs mental state, during a natural disaster it can be overwhelming, offer to move them around to allow for a break.

After the storm: County Damage Assessment



- We found ourselves exchanging a listing of addresses with those responsible with damage assessment at the county level. They have very limited resources and did very good with what they had.
- Working collaboratively helped us to double check for a complete listing of gas services to be retired and the services that we agreed would require a house line release before reconnect.
- Further meetings were held with the electric utility and the county building inspectors to standardize our approach.

Rules for the road:



- Below is a description of FEMA Level 1 and Level 2 damage caused by the tornado. Montgomery and Greene county building officials have been identifying all these properties. To help with the conversation with the customer, you may consider saying: *Sir or Madam, in our onsite evaluation, FEMA guidelines on Level 1 and Level 2 damages prohibit us from reinstating your gas service at this time. You may contact your city or county officials to have your home inspected if you believe we are in error.*

Level 1: Destroyed

- Failure or partial failure of 2 or more major structural components (i.e. collapse of roof, load bearing walls, basement walls and/or foundation.)
- Only the foundation remains
- A residence that is in imminent threat of collapse due to impending landslide, mudslide or sinkhole.
- Total loss; not repairable

Level 2: Major

- Examples of failure or partial failure to structural elements:
- Roof to include rafters, ceiling joists, ridge boards, etc. Clearly a lifted roof.
- Walls to include framing, sheathing, etc.
- Foundation to include bulging, collapsing, etc. Shifting the residence on the foundation more than 6 inches.
- Significant structural damage; requires extensive repairs.

Time for relights...not so fast.



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- Understanding the rule of 10. Event lasted 10 days times 10 is your recovery period (100 days) times 10 is your repair and rebuild stage (1000 days/3 years). It will take 3 years for the effected areas to fully recover.
 - It is estimated that over the next 3 years there will be 6000 damages repaired and 1200 total rebuilds take place.
 - The Miami Valley Regional Planning Commission is taking the lead for coordinating efforts.
 - The plan is to make use of an online tool to provide guidance for building requirements.

Thanks to...



- Safety
- Operations
- Engineering
- Dispatch
- Contact Center
- Corporate Communications
- Technical Training
- Compliance
- Gas Control
- Supply Chain
- Customer Billing



