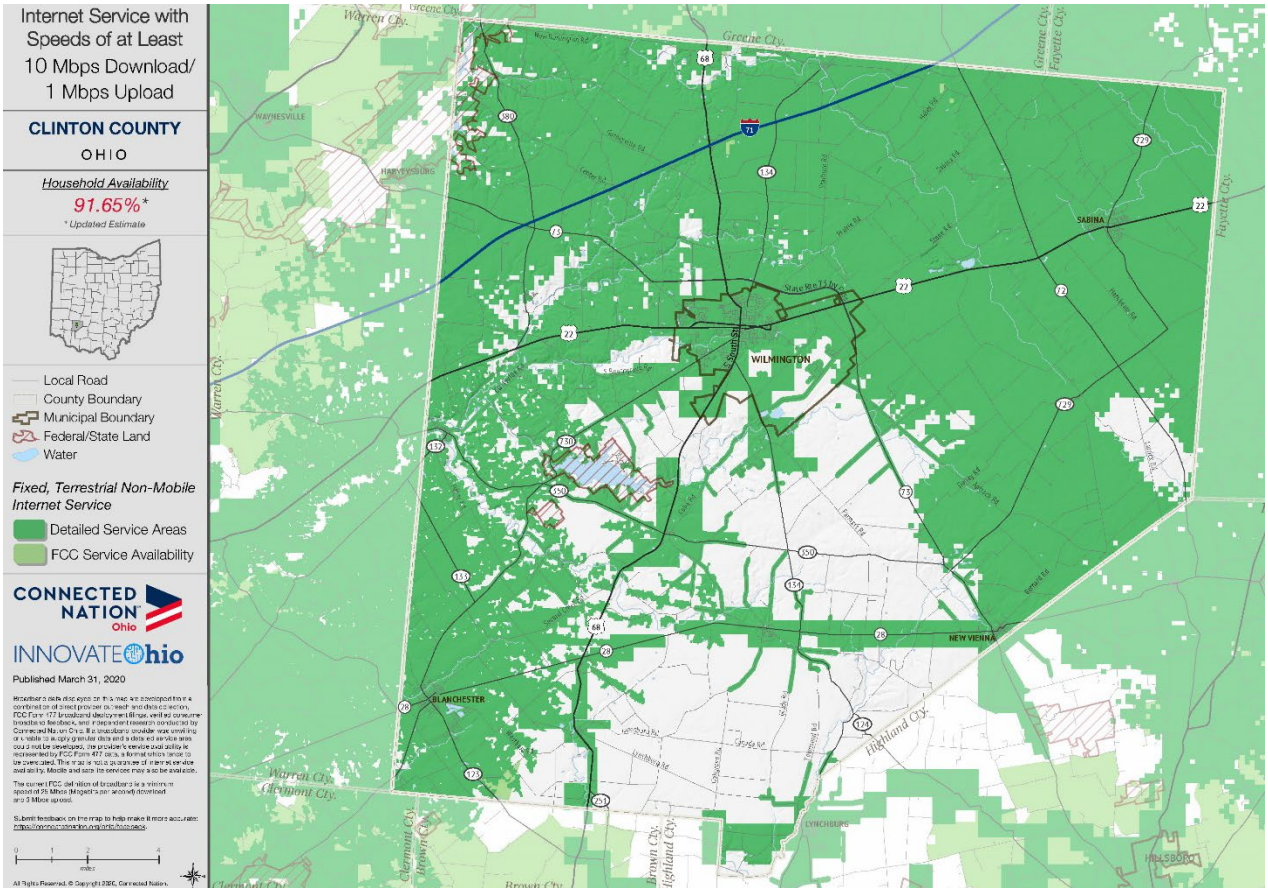
4.14 Utility Failure

Description

Utility failure refers to the loss of electric power (blackouts), water, sewage, natural gas or other utilities. These are primarily caused by system overload or lack of updated infrastructure. Power failures are generally caused by natural events such as severe storms, ice storms, tornadoes, and high winds. These power failures are common and cannot easily be predicted due to the random nature of storms; however, updates to infrastructure can reduce the amount and frequency of these power outages.

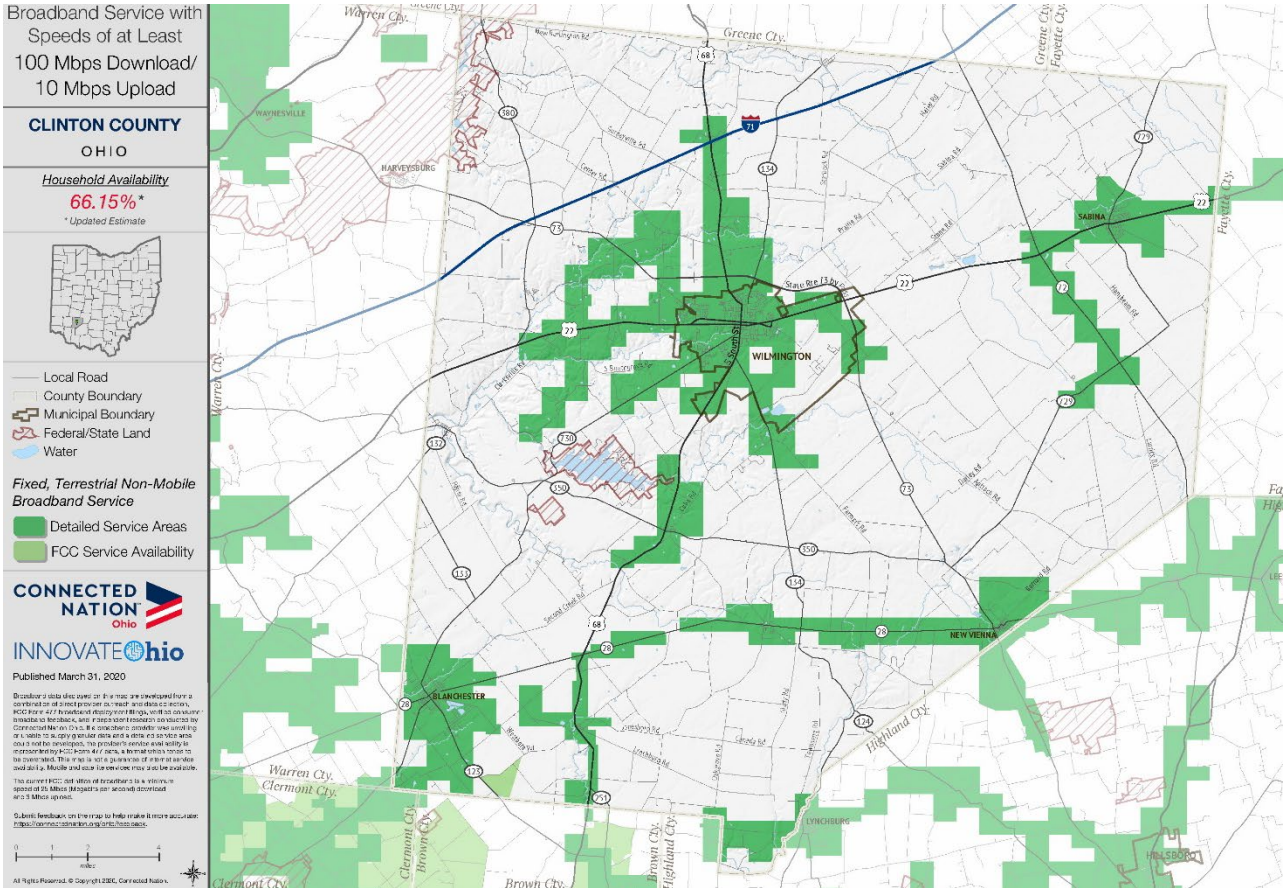
Residential internet providers include Spectrum and Frontier Communications. **Figures 4.14.1 and 4.14.2**, below, show the internet coverage in Clinton County. According to these images, which were provided by Connected Nation Ohio, 91.65 percent of Clinton County has access to internet service with speeds of at least 10 Mbps download and 1 Mbps upload. Additionally, only 66.11 percent of the County has broadband service with speeds of at least 100 Mbps download and 10 Mbps upload.

Figure 4.14.1: Internet Service with Speeds of at Least 10 Mbps Download/1 Mbps Upload



Source: Connected Nation Ohio

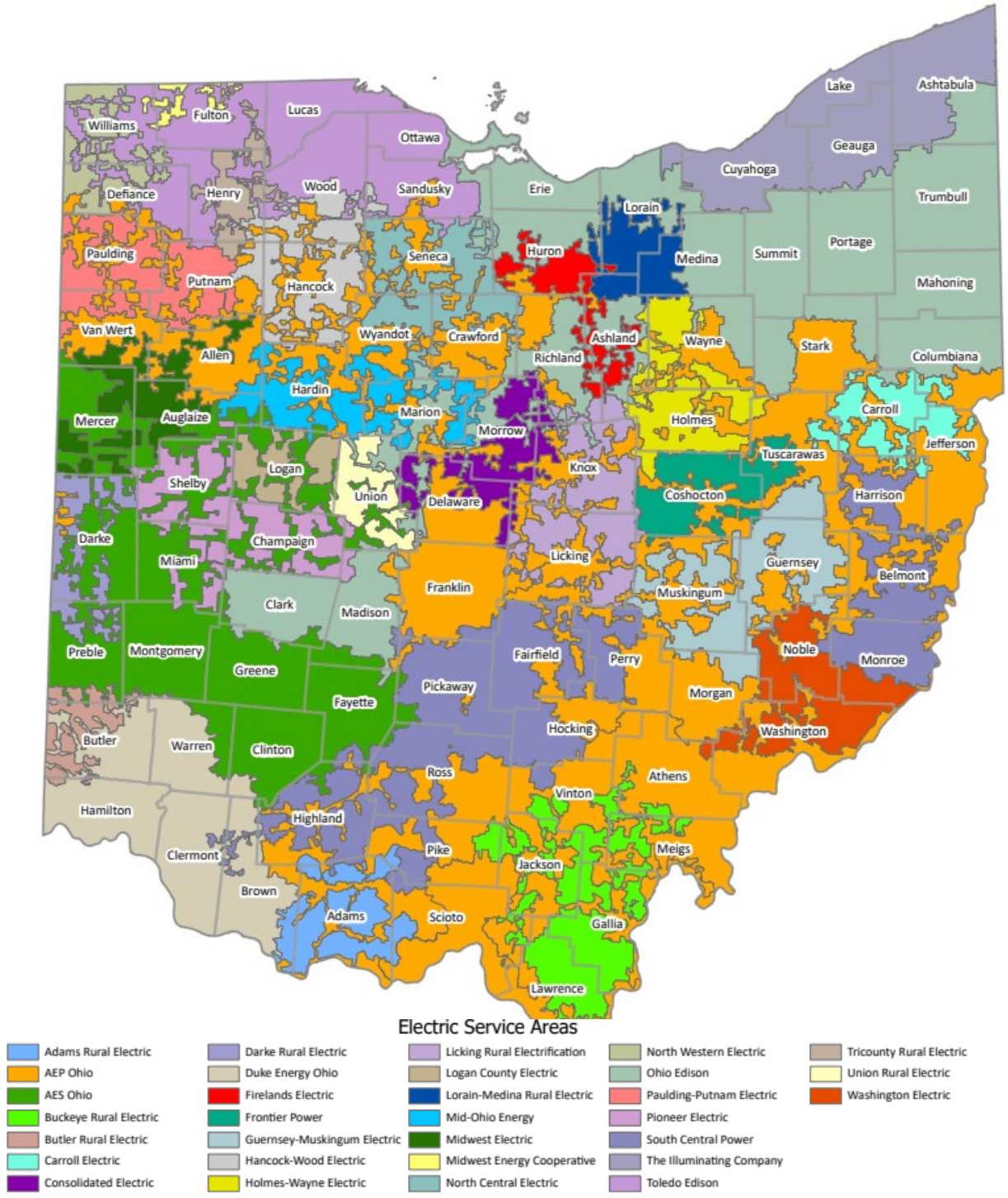
Figure 4.14.2: Internet Service with Speeds of at least 100 Mbps Download/10 Mbps Upload



Source: Connected Nation Ohio

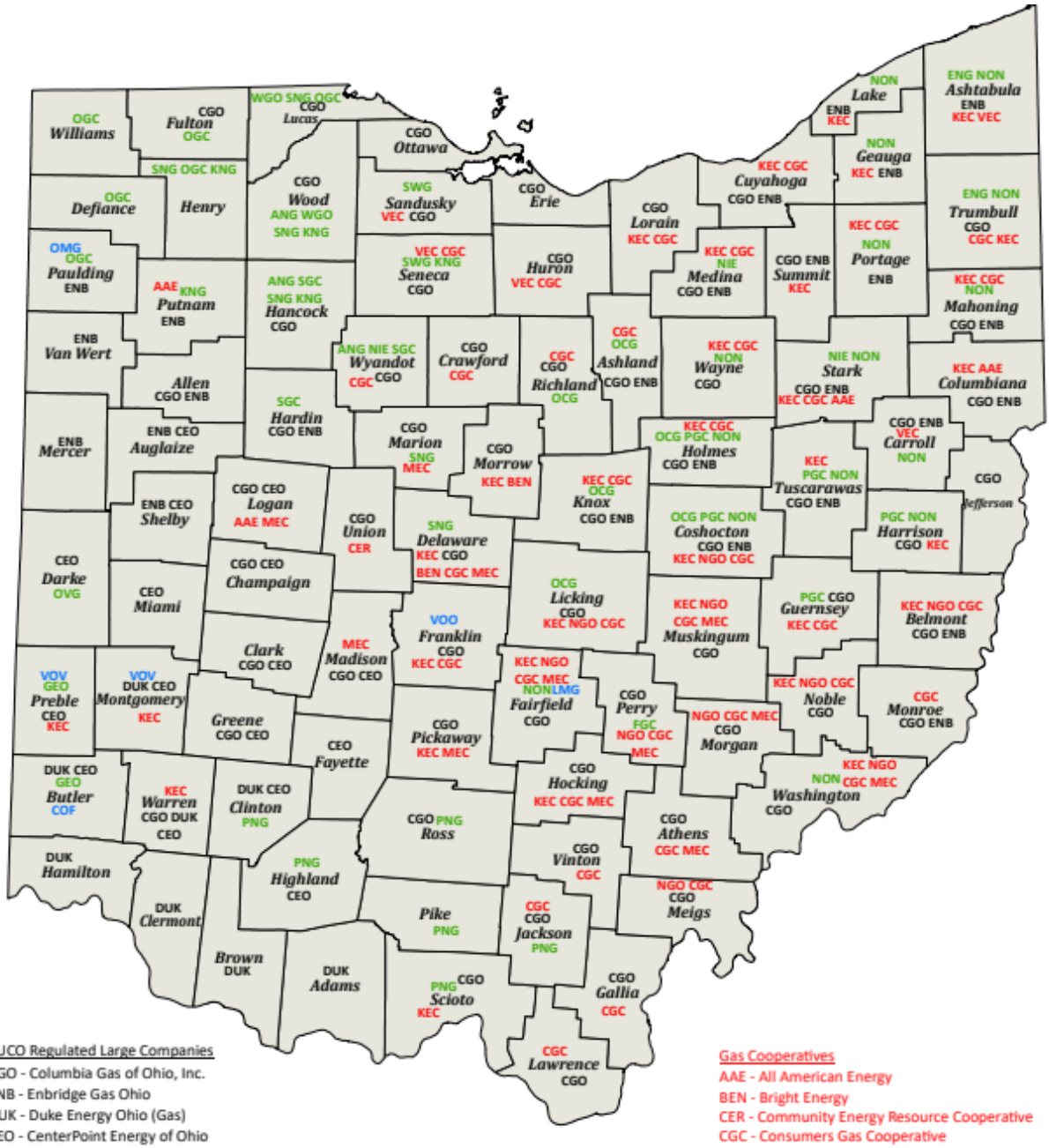
Clinton County residents receive electric services from American Electric Power (AEP), and Duke Energy (**Figure 4.14.3**). The Village of Blanchester then redistributes the power as a municipality under the Board of Public Affairs (BPA) to their residents. Residents are able to obtain services through the village of Blanchester's Board of Public Affairs. Natural gas is provided by Duke Energy Ohio (Gas), CenterPoint Energy of Ohio, Pike Natural Gas Company (**Figure 4.14.4**).

Figure 4.14.3: Ohio Electric Service Areas



Source: Ohio Public Utilities Commission

Figure 4.14.4: Ohio Natural Gas Service Providers



PUCO Regulated Large Companies
CGO - Columbia Gas of Ohio, Inc.
ENB - Enbridge Gas Ohio
DUK - Duke Energy Ohio (Gas)
CEO - CenterPoint Energy of Ohio

PUCO Regulated Small Companies
ANG - Arlington Natural Gas Company
ENG - Eastern Natural Gas
FGC - Foraker Gas Company
GEO - Glenwood Energy of Oxford, Inc.
KNG - KNG Energy, Inc.
NON - Northeast Ohio Natural Gas Corporation
NIE - Northern Industrial Energy Development
OCG - Ohio Cumberland Gas Company
OGC - Ohio Gas Company
OVG - Ohio Valley Gas Corporation
PGC - Piedmont Gas Company
PNG - Pike Natural Gas Company
SGC - Sheldon Gas Company
SNG - Suburban Natural Gas Company
SWG - Swickard Gas Company
WGO - Waterville Gas and Oil Company

Gas Cooperatives
AAE - All American Energy
BEN - Bright Energy
CER - Community Energy Resource Cooperative
CGC - Consumers Gas Cooperative
KEC - Knox Energy Cooperative Association, Inc.
MEC - Madison Energy Cooperative Association, Inc.
NGO - National Gas and Oil Cooperative
VEC - Village Energy Cooperative Association, Inc.

Municipal Gas Systems
COF - City of Hamilton
LMG - Lancaster Municipal Gas
OMG - Oakwood Municipal Gas
VOO - Village of Obetz
VOV - Village of Verona
VOW - Village of Williamsport

Notes: Data on operations by county is from the PUCO Gas Pipeline Safety database.

Source: Ohio Public Utilities Commission

According to the Ohio Environmental Protection Agency there are a total of 12 water systems for drinking water and ground water in Clinton County, six of which are still active (Table 4.14.5). Water services are provided by jurisdictional water departments, as well as the Western Water Company. Cowan Creek and Caesar Creek Lake are the two primary sources of water for Clinton County. The City of Wilmington also maintains an auxiliary connection with the Western Water Company to supply the City's outlying customers, as necessary, during main break repairs. Some residents in the County also utilize water haulers to provide drinking water.

The table below has the water system number, water system name, type of water system (Non-public and Public, with further descriptions), status (Active or Inactive), the county served, and the primary source (where the water comes from). If a water system is public, it is categorized into the following types: Community (C) – Serves at least 15 service connections used by year-round residents or regularly serves 25 year-round residents. Non-Transient Non-Community (NTNC) – Serves at least the same 25 non-residential individuals during six months of the year. Transient Non-Community (NC) – Regularly serves at least 25 non-residential individuals (transient) during 60 or more days per year. The primary source water type is either surface water (SW), groundwater (GW), or surface water protection program (SWP). SWP is surface water from protected sources, like rivers, streams, lakes, reservoirs, springs, and groundwater.

Table 4.14.5: Drinking and Ground Water in Clinton County

Water System No.	Water System Name	Type	Status	Principal County Served	Primary Source Water Type
OH1400111	Blanchester Village Pws	C	A	Clinton	SW
OH1400203	Clarksville Village Pws	C	A	Clinton	SWP
OH1432112	East Clinton High School	NTNC	A	Clinton	GW
OH1400815	New Vienna Village	C	A	Clinton	GW
OH1400912	Sabina Village Pws	C	A	Clinton	GW
OH1401211	Wilmington City Pws	C	A	Clinton	SW
OH1435012	Adventure Cove Pws	NC	I	Clinton	GW
OH1434012	Beechwood Acres	NC	I	Clinton	GW
OH1434812	Community Christian Church	NC	I	Clinton	GW
OH1432612	Maple Grove Campground	NC	I	Clinton	GW
OH1400512	Martinsville Village Pws	C	I	Clinton	GW
OH1430712	McCall's Grocery	NC	I	Clinton	GW

Source: Ohio Environmental Protection Agency

Location

Depending on the cause, blackouts can be isolated or countywide. Utility failures can occur in any area where the utility is provided.

Extent

Utility failures due to damaged infrastructure have the potential to impact large areas of the County through the loss of utilities that provide necessary services for the population. Loss of electric or gas can affect household temperatures, which can lead to severe dehydration or possibility of loss of life

if outdoor temperatures are extreme. Additionally, utility failure affecting the water service has the potential to lead to contamination of the water supply.

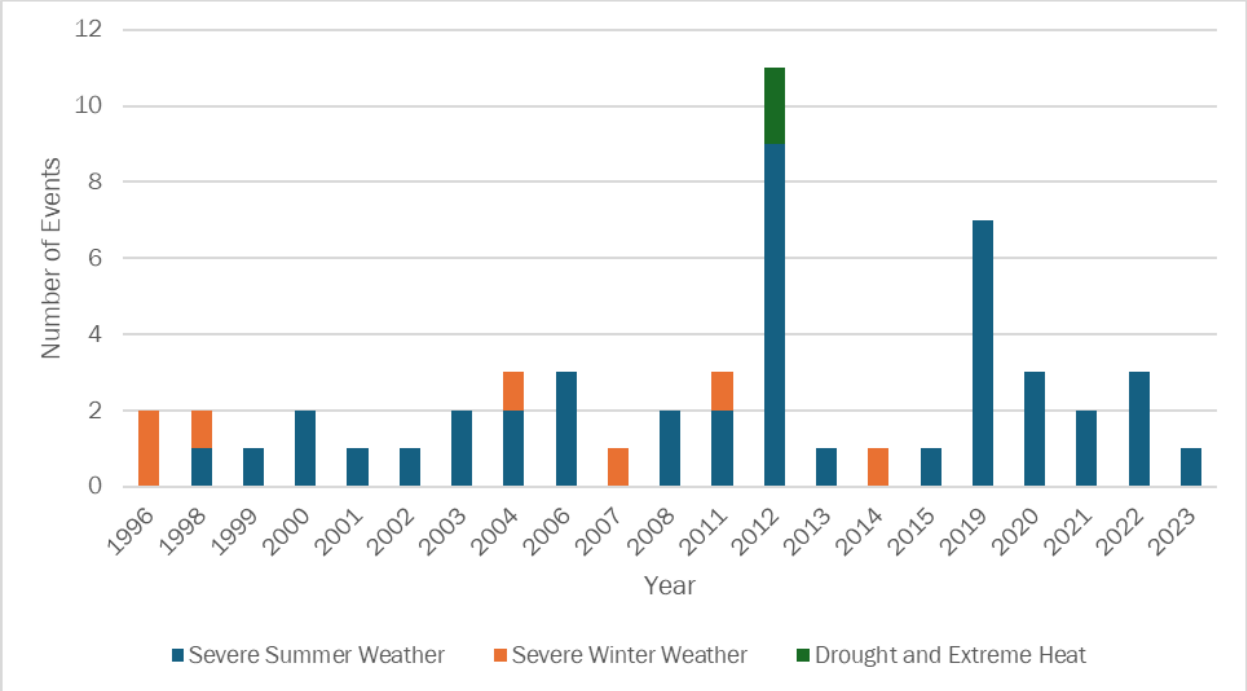
Furthermore, lack of utility access during a larger hazard event such as epidemic/pandemic, as seen with the COVID-19 pandemic, can result in an inability to perform work duties remotely, which has the potential to have negative economic impacts at both the individual and family levels, as well as at a larger scale.

History

Numerous utility failures have occurred within Clinton County in the form of power outages due to severe storms, severe winter weather, or other natural hazards. Events resulting in power outages can be referenced in the Risk Assessment sections of the appropriate hazard. **Table 4.14.6** below shows the number of events (53 in total) between 1995 and 2023 that have resulted in a power loss. In 2012, there were 11 events that resulted in a power loss. Severe Summer Weather is the leading cause of power loss in Clinton County. It should be noted that outages for individuals that have power through the Village of Blanchester BPA will not be included in the table as that data is not available through standard reporting means.

A notable example occurred on August 25, 2023, when a power outage in the Village of Blanchester during an active Heat Advisory impacted over 3,000 residents and multiple critical facilities, including two long-term care centers. These facilities were not equipped with HVAC-capable backup generators, resulting in rising indoor temperatures and elevated risk to medically vulnerable residents. One resident required hospital transport for evaluation. In another facility, the backup generator failed due to overheating. Although the event did not result in loss of life, it highlighted a significant gap in emergency power capacity for cooling systems in healthcare and assisted living settings. The incident prompted local review of facility preparedness and underscores the need to reassess utility failure contingencies during extreme weather events.

Table 4.14.6: Power Loss by Weather Event in Clinton County



Source: NCEI

Probability

As there are no previous indications that a widespread utility failure has occurred in Clinton County, there is less than one percent chance of a widespread utility failure within the County. However, it is likely that utility failures in the form of power outages will occur throughout any given year due to severe storms, ice storms, and other natural hazards. Probability of these natural hazards can be found in their respective sections.

Vulnerability Assessment

Infrastructure Impact

In the event of a utility failure caused by downed power lines, roads may be closed. Utility infrastructure may also suffer long-term damage as a result of such an event.

Population Impact

Extensive utility failures can threaten the health and safety of the public. During extreme temperature events, the impacts on residents are heightened. Loss of utilities that provide air conditioning or heat can create a safety hazard, especially for children and older populations. The County and/or communities should have a plan in place for how to notify and assist residents in case of utility failure. The HHS emPOWER Program provides federal data, mapping, and artificial intelligence tools to help communities nationwide at-risk Medicare beneficiaries who rely on electricity-dependent durable medical and assistive equipment and/or devices. Table 4.14.7 shows the type of services that require electricity that if electricity were to be lost would be at risk.

Table 4.14.7: HHS emPOWER Program Power Dependent Devices

Type of Devices	Number At-Risk
Cardiac Devices	33
Ventilators	55
BiPAPs	58
O2 Concentrators	521
Enteral Feeding	45
IV Infusion Pumps	48
Suction Pumps	33
At-Home ESRD Dialysis	44
# Motorized Wheelchairs or Scooters	71
Electric Beds	106
Grand Total	**1,104**

Source: HHS emPOWER Program

Property Damage

Direct damage to property may result directly from downed power lines. Fires may also occur because of downed power lines.

Loss of Life

Loss of life from the loss of electricity can occur. Those who depend on electricity for necessary medical treatment are at risk. Critical facilities such as hospitals and nursing homes should be prepared in the

event of a utility failure, as they manage sensitive populations that may be reliant on utilities. Downed power lines can also lead to unsafe environments with live electric lines that have the potential to lead to loss of life.

Economic Losses

Blackouts are often caused by systems that are aging and deteriorating, and updates to these systems may require additional funds. Economic loss can occur because of reduced commercial activity. Goods that need electricity or other utilities for preservation may also be lost. If widespread blackouts occur, people may not be able to work, and wages or income may be lost as a result.

Future Trends

Land Use and Development Trends

Utility failure can impact any development. All development that has occurred since the previous plan and all development in the future can be impacted by utility failure. To reduce potential power outages, power lines can be buried. This would reduce any potential damage caused by windstorms, downed trees, tornadoes, and snow weight.