

HAZARD ANNEXES

WHAT TO DO?

HOW-TO'S FOR EACH OF FAIRFAX COUNTY'S MOST PREVALENT HAZARDS

Fairfax County is vulnerable to a wide range of hazards (natural, human-caused, and everyday). These hazards threaten the safety of residents. They have the potential to damage or destroy property and disrupt the economy. While we cannot eliminate hazards, we can lessen their potential impacts.

Hazards may occur in isolation, or – more commonly – in ripple-effect clusters. For example, a hurricane may trigger a flood as well as power outages and medical emergencies. Or a thunderstorm may produce lightning that causes a structural fire.

The Northern Virginia Hazard Mitigation Plan and other sources were used to identify the hazards detailed below. These identified hazards are those that pose the greatest risk to the county (that is, the highest probability of causing the most severe impacts to exposed lives and property). The analyses are based on detailed reviews of prior hazard history, as well as forecasting and probabilistic modeling tools.

The hazard annexes are grouped by common characteristics, and do not imply any rank-order:

Natural hazards:

- ▶ Thunderstorm
- ▶ Hurricane or Tropical Storm
- ▶ Flooding
- ▶ Winter Storm or Extreme Cold
- ▶ Extreme Heat
- ▶ Tornado
- ▶ Earthquake
- ▶ Pandemic Influenza

Human-caused hazards (including accidents and intentional acts):

- ▶ Cyber Attack
- ▶ Civil Disorder
- ▶ Acts of Violence/Terrorism
- ▶ Hazardous Materials
- ▶ Chemical, Biological, Radiological, or Nuclear
- ▶ Dam Failure

“Everyday” emergencies:

- ▶ Structural Fire
- ▶ Power Outage/Blackout
- ▶ Medical Emergency

CYBER ATTACK

WHAT IT IS

Unlike physical threats that prompt immediate action, cyber threats and attacks are often difficult to identify or comprehend. Cybersecurity involves preventing, detecting, and responding to cyber incidents. Virtually all modern organizations – including governments, hospitals, corporations, banks, and utilities – rely on computer systems for their operations and data management, and are therefore vulnerable to cyber attacks.

The so-called “attack surface” that may be vulnerable to bad actors can include computer hardware, tablets, phones, and many other web-enabled devices and appliances in the so-called “internet of things.” Among the dangers of cyber attacks are intruders erasing entire systems, holding data or operating systems for ransom, stealing confidential or personal information, breaking into systems and altering files, or using a computer or device to access contact lists and attack or infect others.

WHAT TO DO

Before (Preparedness/ Mitigation)

- ❑ Keep your firewall turned on and updated.
- ❑ Install or update antivirus/ antispymware software.
- ❑ Use strong, unique passwords, and change them on a regular basis.
- ❑ Seek out and promptly install all updates to your operating system, firmware, software, and antivirus.
- ❑ Be careful what you download. Never click on an attachment, link, or macro in an unsolicited email or text.
- ❑ Turn off your computer when you are not using it.
- ❑ Always verify the source of emails, and if in doubt delete them.
- ❑ Be suspicious of emails from known contacts that seem “off” – misspellings, strange syntax or word usage, generic language, weird link URLs – many hacking campaigns will impersonate known emails.
- ❑ Screenshot suspicious content before deleting it, for analytics.
- ❑ Regularly back up all of your data to an external hard drive or the Cloud; enable the “Time Machine” feature if you use a Mac.

KEY TERMS

- ▶ A **Cyber Attack** may originate from individuals, networking groups, terrorist groups, or countries, and may cause severe (and dangerous) problems for government, business, utilities, and the general public.
- ▶ **Hacking** is a direct attack against a system “through the wires” in which an attacker (be they live or an automated “bot”) gains direct access to secured/restricted data or operations. Often the pathways that allow such hacks are opened via “phishing” or download scams.
- ▶ The **Internet of Things (IoT)** includes web-enabled devices and appliances including refrigerators, sound systems, clocks, thermostats, security systems, coffee makers, etc.
- ▶ **Phishing** consists of broadly disseminating email or text communications in the hope that a few recipients will click somewhere in the message (for example an attachment, a link, an “enable macros” button) that activates a virus or other malware. A targeted phishing campaign – for example, against a particular government or utility – is called spear-phishing.
- ▶ **Social Engineering** involves exploiting the vulnerabilities of a user, rather than their system, to circumvent IT security measures. Examples include phishing, email scams, and other cons. Users are often the most easily defeated element of IT security architecture.

During (Response)

- ❑ Disconnect an infected device from your network.
- ❑ If you are at work, inform your IT staff of any suspected or confirmed attacks on your devices, and provide a screenshot.
- ❑ If an incident incurs in loss of financial, personal, or medical information, file a police report.

After (Recovery)

- ❑ Notify anyone that could be adversely affected, including your credit accounts, bank accounts, clients, employer, family, and friends. Change your accounts and all passwords.
- ❑ Run appropriate scans and utilities to remove any infections.
- ❑ Monitor your credit report, banking statements, investments, and credit card statements.
- ❑ Ensure your device is not infected, and wipe the hard-drive and reinstall all software if there is any doubt.

CIVIL DISORDER

WHAT IT IS

Civil disorder may result from many situations, including a labor action (strike), political demonstrations and counter-demonstrations, or anniversaries of controversial incidents. Civil disorder can be a dangerous condition that can become increasingly chaotic and volatile.

KEY TERMS

- ▶ **Shelter-in-place** means selecting a small, interior room, with no or few windows, and taking refuge there.
- ▶ A **Curfew** is an order from public safety officials requiring people to remain indoors between specified hours, typically at night.

WHAT TO DO

Before (Preparedness/ Mitigation)

- Sign up for Fairfax Alerts and have a battery or crank powered radio available.
- If you know of a protest or demonstration that you suspect (or officials are warning the public) has the potential to turn violent, you should plan alternate routes to work, school, or any other destination. Avoid the area if possible.
- Obtain as much information as possible about the current situation.
- Be aware of your surroundings.
- Ensure your insurance policies are up to date.
- Learn First Aid.
- Refer to “Medical Emergency,” below.

During (Response)

- Stay away from the area.
- Lock and stay away from windows and doors.
- Stay informed about the current situation.
- Know emergency exit routes in the event you must evacuate.

During (When police arrive)

- Listen to official information.
- Comply with any law enforcement directives.
- Stay away from the area.
- If you witness the event changing, call 911 with the information.

After (Recovery)

- Check the area to make sure it's safe.
- Receive physical First Aid and/or mental health First Aid, if necessary.
- Check personal property for damages, if damaged, report it to police.
- Check in with family and friends by texting or using social media.

ACTS OF VIOLENCE/ TERRORISM

WHAT IT IS

Terrorism refers to the use of force or violence against persons or property for purposes of intimidation, coercion, or ransom. A terrorist assailant might use everyday items such as firearms, knives, or vehicles; purpose-made weapons such as improvised explosive devices; or weapons of mass destruction such as toxic or poisonous chemicals, biological weapons, or radiological-release devices.

An active assailant is an individual actively engaged in killing or attempting to kill people, usually in a confined and populated area, and typically through the use of firearms. An individual may or may not have terrorist motives, and they may or may not have accomplices.

WHAT TO DO

Before (Preparedness/ Mitigation)

- ❑ Sign up for Fairfax Alerts and have a battery or crank powered radio available.
- ❑ Be aware of your surroundings – if you see something, say something. Call 911.
- ❑ Take notice of the behavior of individuals – if anything is out of place, report it.
- ❑ Identify the two nearest exits in any facility you visit.
- ❑ Become familiar with “Run, Hide, Fight” or “ALICE.”
- ❑ Learn First Aid or BleedingControl.org’s “Stop the Bleed” program.
- ❑ Refer to “Medical Emergency,” below.

During (Response)

- ❑ Quickly determine the most reasonable way to protect your own life.
- ❑ In an active shooter/assailant situation:
 - Use Run Hide Fight and/or ALICE principles.
 - Silence your cell phone and remain quiet.
 - Leave your belongings behind.
 - Be out of an assailant’s view.
- ❑ Listen to official information.

During (When police arrive)

- ❑ In an active shooter/ assailant situation:
 - Remember the primary responsibility of first responders is to stop the threat – stay out of their way and do not expect their help until the situation is secure.
 - If you see law enforcement officers, raise your arms and spread your fingers out.
 - Comply with all instructions from law enforcement officers.
 - Officers are charged with clearing the building; they will enter every room. Be patient.

After (Recovery)

- ❑ Receive physical First Aid and/or mental health First Aid, if necessary.
- ❑ Report any medical conditions to first responders.
- ❑ Do not interrupt the law enforcement investigation.
- ❑ Check in with family and friends by texting or using social media.
- ❑ If you did take pictures or witness any of the events, please notify law enforcement.
- ❑ You may be treated as one of the suspects when law enforcement first arrives and may be told to raise your arms and walk out in that position. This is being done out of caution.

KEY TERMS

- ▶ The **National Terrorism Advisory System** (NTAS) is the US Department of Homeland Security’s threat advisory system, which provides timely information about credible terrorist threats.
- ▶ **Sheltering-in-place** is selecting a small, interior room, with no or few windows, and taking refuge there.
- ▶ **Lockdown** means securing a building or physical space against intruders.

ACTIVE VIOLENCE RESPONSES:

“Run, Hide, Fight”

(www.dhs.gov/options-consideration-active-shooter-preparedness-video)

- ▶ **Run:** If there is an accessible escape path, attempt to evacuate.
- ▶ **Hide:** If you can’t evacuate, find a place to hide.
- ▶ **Fight:** If you can’t run or hide, attempt to disrupt or incapacitate the assailant.

“ALICE”

(www.alicetraining.com)

- ▶ **Alert:** Become aware, overcome denial, get ready to act.
- ▶ **Lockdown:** If you can’t evacuate, barricade entry points to the room you are in.
- ▶ **Inform:** Communicate information out, if it is possible and safe to do so.
- ▶ **Counter:** Create noise, movement, distance, and distraction (this may be distinct from “fighting”).
- ▶ **Evacuate:** When safe, remove yourself from the danger zone.

HAZARDOUS MATERIALS (HAZMAT)

WHAT IT IS

Some industrial or transportation accidents (including fires, explosions, and spills) have the capacity to release dangerous levels of hazardous substances, such as industrial chemicals, volatile fuels, toxic waste, compressed gas, or other poisons or explosives.

In some cases, the material released may not be visible or have an identifiable odor.

Hazardous materials releases sometimes require extended clean-up efforts and may result in residents being unable to be in their homes for long periods of time.

WHAT TO DO

Before (Preparedness/ Mitigation)

- Sign up for Fairfax Alerts and have a battery or crank powered radio available.
- Identify a shelter-in-place area within your home and know your evacuation plan.
- Contact your Local Emergency Planning Committee (LEPC) to know what hazardous materials are being moved, used, or stored in your area.
- Know the number to Poison Control.
- Learn First Aid.
- Refer to “Medical Emergency,” below.

KEY TERMS

- ▶ A **Local Emergency Planning Committee (LEPC)** is a group charged with identifying industrial hazardous materials and keeping the community informed of the potential risk. For more information about hazardous materials in your area, you can ask your LEPC about storage and usage. For more information, visit lepcfairfax.org/.
- ▶ A **Fixed Facility** is any industrial complex, warehouse, manufacturing site, or even an office building that contains or handles hazardous materials.
- ▶ **Shelter-in-place** means selecting a small, interior room, with no or few windows, and taking refuge there.

During (Response)

- Listen to official information: if you are told to evacuate, do so.
- If you are told to stay inside:
 - Take family members and pets to your predetermined shelter-in-place location.
 - Close all windows and vents, seal windows and doors with tape or wet towels, and turn off all fans and air-exchange heating or cooling systems.
- If you are outside at the time of the incident, try to stay upstream, uphill and upwind.
- If you are in a vehicle, stop and find shelter in a permanent building.
- Stay away from the incident site.

After (Recovery)

- Leave your shelter-in-place location or return home when officials say it is safe.
- Check in with family and friends by texting or using social media.

CHEMICAL, BIOLOGICAL, RADIOLOGICAL, NUCLEAR (CBRN)

WHAT IT IS

Intentional attacks using weaponized or non-weaponized chemical, biological, radiological, and nuclear materials can cause great harm and pose significant threats. Weaponized materials can be delivered by using conventional bombs, improvised explosive materials, enhanced blast weapons, and even non-explosive dispersion devices (including canisters and envelopes). Non-weaponized chemical materials are typically categorized as “hazardous materials” (HazMat).

CBRN releases sometimes require extended clean-up efforts and/or law enforcement investigations, and they may therefore result in residents being unable to be in their homes for long periods of time.

WHAT TO DO



Before (Preparedness/ Mitigation)

- ❑ Sign up for Fairfax Alerts and have a battery or crank powered radio available.
- ❑ Identify a shelter-in-place area within your home.
- ❑ Learn First Aid.
- ❑ Refer to “Medical Emergency,” below.



During (Response)

- ❑ Listen to official information: if you are told to evacuate, do so.
- ❑ If you are told to stay inside:
 - Take family members and pets to your predetermined shelter-in-place location.
 - Close all windows and vents, seal windows and doors with tape or wet towels, and turn off all fans and air-exchange heating or cooling systems.
- ❑ If you are outside at the time of the incident, try to stay upstream, uphill, and upwind.

KEY TERMS

- ▶ An **Accidental CBRN incident** is an incident containing a chemical, biological, radiological, nuclear material caused by human error, natural or technological reasons, such as spills, accidental releases or leakages. Accidental release of non-weaponized chemical materials is typically categorized as a “hazardous materials” (HazMat) incident.
- ▶ An **Intentional CBRN incident** is a criminal act that involves serious violence against persons or property or the illegal dumping of chemical, biological, radiological, or nuclear materials.

- ❑ If you are in a vehicle, stop and find shelter in a permanent building.
 - ❑ Stay away from the incident site.
 - ❑ Local officials may direct you to locations to receive medical treatment or services. Follow all instructions provided by local officials through the media.
-  **After (Recovery)**
- ❑ Leave your shelter-in-place location or return home when officials say it is safe.
 - ❑ Check in with family and friends by texting or using social media.

DAM FAILURE

WHAT IT IS

Dam failures or levee breaches can occur with little warning, sometimes within hours – or less – of the first signs of structural concerns. Dams can fail for one or a combination of the following reasons:

- Overtopping caused by floods that exceed the capacity of the dam
- Structural failure of materials used in construction
- Movement and/or failure of the foundation
- Settlement and cracking of concrete or embankment
- Piping and internal erosion of soil in embankment dams
- Inadequate maintenance and upkeep
- Deliberate acts of sabotage

WHAT TO DO

Before (Preparedness/ Mitigation)

- Sign up for Fairfax Alerts and have a battery or crank powered radio available.
- Decide early whether you will evacuate, and where you will go if ordered to leave.
- Disconnect electrical appliances.
- Know if your residence or business is in a floodplain or an “excluded area” that is protected by a dam or levee but would otherwise be within the Special Flood Hazard Area.
- Apply for flood insurance, even if you may be in an “excluded area” or otherwise not be required to do so.
- Learn First Aid.
- Refer to “Power Outage/ Blackout” and “Medical Emergency,” below.

During (Response)

- If you encounter rising water, move to higher ground immediately.
- Always stay clear from floodwaters.
- Do not drive through flooded roads – “turn around, don’t drown.”

KEY TERMS

- ▶ A **Flood Watch** means there is a possibility of flooding or a flash flood in your area.
- ▶ A **Flash Flood Watch** means flash flooding is possible. Be prepared to move to higher ground. A flash flood can occur without any warning.
- ▶ A **Flood Warning** means a flood is occurring or will likely occur soon. If you are advised to evacuate do so immediately.
- ▶ A **Flash Flood Warning** means a flash flood is occurring. Seek higher ground immediately; do not wait for instructions.
- ▶ An **Excluded Area (Zone X)** on a FEMA flood map is an area that is protected by a dam or levee that would otherwise be in the Special Flood Hazard Area, or “100-year floodplain”; properties in excluded zones are not required to carry flood insurance to get a mortgage, but owners should strongly consider it regardless.
- ▶ An **Emergency Action Plan (EAP)** is a formal document that identifies potential emergency conditions at a dam and specifies actions to be followed to minimize loss of life and property damage.

- Stay away from downed power lines to avoid the risk of shock or electrocution.
- Do not touch electrical equipment if you are wet or standing in water.

After (Recovery)

- Return home when local officials say it is safe.
- Avoid walking or driving through floodwaters.
- Do not eat any food that may have come into contact with flood water. If in doubt, throw it out.
- Remove all porous items that have been wet for more than 48 hours and that cannot be thoroughly cleaned and dried. These items can remain a source of mold growth and should be removed from the home.
- Check in with family and friends by texting or using social media.