



Eligible Flood Mitigation Practices: Flood Mitigation Pilot Grant Program



The purpose of this document is to provide a list of eligible flood mitigation practices, their description, and a quick snapshot of the City’s permit review/application requirements for each practice. These practices are supported through the [Flood Mitigation Pilot Grant Program](#). Several types of practices are considered through this Program to help mitigate flooding on private property and reduce the overall damage to property from flooding through flood protection. Other types of practices may be considered on a case-by-case basis and may be incorporated into the Program if warranted. For the purposes of understanding which practice might be required to undergo the City’s permit review/application requirements, please review the information in the table below. Approvals and/or permits are required prior to applying for the Flood Mitigation Pilot Grant Program at this time.

City Review Considerations

- 1) Department of Code Administration (Code) review may be required to ensure mitigation projects maintain compliance with Virginia's Uniform Statewide Building and Maintenance Codes (USBC) and the City Code nuisance and development provisions. Learn more at alexandriava.gov/Code.
- 2) Historic Preservation Division of the Department of Planning & Zoning, which supports the Board of Architectural Review (BAR), review may be required if you make a permanent change to your property, visible from the public right-of-way ONLY for properties which are located within the local historic district and/or is a City Council-designated 100 year-old building. If you are unsure if this applies to your property, you may check the property’s status using the [Historic Preservation Viewer](#). Learn more at alexandriava.gov/Preservation.
- 3) Transportation & Environmental Services (T&ES) requires a Grading Plan for exterior private land disturbance greater than 2,500 square feet and/or changes to grade of one (1) foot or greater. Any disturbance within the public right-of-way requires a T&ES permit. Learn more at alexandriava.gov/engineering.

Eligible Practices

Property Area	Practice	Description	City Review Considerations
Windows	Permanent glass protection materials	Permanent glass protection materials can prevent flood damage from extreme rain and other weather events.	Code; BAR
	Basement window protection	Fixed, translucent, water-tight covers installed on near grade or below grade basement windows.	Code; BAR

Property Area	Practice	Description	City Review Considerations
	Custom window wells	A window well should have a central drain that is either connected to an interior or exterior drain tile system or to a line that runs to a stormwater drain or out to daylight. Installing a new drain requires some digging and either reinstalling or replacing the window well liner. Also, for the best protection against floods, a window well should be custom fit and made of steel-reinforced polycarbonate plastic.	Code; BAR
Doorways	Permanent doorway flood gate or panel	Doorway floodgates are physical barriers that attach to external doorframe and can be quickly deployed. Floodgates prevent water from entering through the doorway and can be an easier and faster alternative to sandbags.	Code; BAR
	Temporary doorway flood gate or panel	Doorway floodgates are physical barriers that prevent water through the doorway.	N/A
General Flood stoppage equipment	Flood Socks	Flood socks are lightweight and flexible absorbent socks designed for residential use. Provides protection from shallow ponding of less than 6-inches. If deployed at a basement or garage entrance, these socks stop leaks and water seeps quickly and effectively.	N/A
	Quick Dams™, or similar	Quick Dams™ are a proprietary product ideal (no product is endorsed by the City) for redirecting flowing water away from an area. The product's specialized cover lets water in, and an internal absorbent holds water to inflate the dam quickly. This technology acts as a replacement for sandbags.	N/A
	Sandless Sandbags	Sandless sandbags are compact, lightweight bags that expand by filling them with water. Once filled, they act as a flood wall barrier.	N/A
Basement	Battery-back up for sump pump	A battery backup for a sump pump provides protection against power outages only and ensure a sump pump will continue to work regardless of electric status.	N/A
	Install drain tiles below basement floor	A drain tile is a sub-surface drain placed below the basement floor that alleviates ground water pressure build up and carries away the ground water that causes it. Consisting of perforated flexible plastic pipe buried in a bed of washed gravel, interior drain tile (placed on the inside perimeter of the footings) connects to a sump	Code

Property Area	Practice	Description	City Review Considerations
		pit so that water that would otherwise end up on the basement floor is discharged from the basement by a sump pump.	
	Flood vents	Flood vents are small openings that allow floodwater to pass through and drain out of an enclosed area of the home (e.g., garage, crawlspace, etc.) reducing the risk of damage to the structure by the pressure of floodwaters.	Code
Utility Protection	Utility Flood Covers	Fast-installing, plastic utility flood covers are designed to protect your utilities from flood and water damage. These covers, which can be installed in minutes, can keep up to 4-ft. of flood water out while keeping your furnace, boiler or hot water heater dry.	N/A
	Concrete blocks for Inside Use	Elevating large appliances in a basement or other areas vulnerable to flooding onto concrete blocks can reduce the risk of water damage in a flood event.	Code
	Elevate electrical outlets and switches	All outlets, switches, sockets and circuit breakers should be at least one foot above "flood level" to avoid significant electrical damage in the case of a flood.	Code
	Elevate utilities and service equipment	If possible, relocate the main components a home's heating, ventilation, and air conditioning (HVAC) systems to a higher floor or the attic. Consider raising other major appliances, such as washers, dryers, and hot water heaters, out of basement areas. If relocation or elevation is not possible, homeowners can protect HVAC and appliances in-place by using low floodwalls and shields. For external utilities consider elevating using riders and cement blocks.	Code
General Preventative / Protective equipment	Flood alert system	Flood alert systems can notify the homeowner when water first enters an area. This can enable the homeowner to take immediate response actions to avoid more extensive flood damage.	N/A
	Install drain tiles	A drain tile is a sub-surface drain placed below the basement floor that alleviates hydrostatic pressure and carries away the ground water that causes it. Consisting of perforated flexible plastic pipe buried in a bed of washed gravel, interior drain tile (placed on the inside perimeter of the footings) connects to a sump pit so that water	Code

Property Area	Practice	Description	City Review Considerations
		that would otherwise end up on the basement floor is discharged from the basement by a sump pump.	
	Portable Submersible Water Pump and Hoses	A submersible water pump and hose can be used to prevent accumulation of flood water entering a building, or remove water after a flood event, mitigating damage to the building or supplies and expedites the recovery process.	Code
	Flood-resistant building materials	Flood resistant building materials include cement board, vinyl and rubber flooring, concrete, lime plaster and decay-resistant wood. These are defined as any building product [material, component or system] capable of withstanding direct and prolonged contact with floodwaters without sustaining significant damage. The term "prolonged contact" means at least 72 hours, and the term "significant damage" means any damage requiring more than cosmetic repair.	Code
	Concrete sealer	Waterproofing compounds such as polyurethane can be applied to interior concrete surfaces to decrease their water absorbency.	N/A
Exterior	Protective Walls and/or Stairs	Brick, cinder block or similar materials formed into a wall or similar barrier (i.e., stair or "step up") to help to prevent the intrusion of flood waters.	BAR; T&ES
	Perform surface grading	Surface grading can prevent flood waters from reaching an area by redirecting storm water. This is typically done by grading a slope away from a residential structure at a grade of at least 0.5 inch per foot for 10 feet and the soil must be tramped (mechanically compacted) to prevent later settling.	Code; T&ES
	Install earthen berm	An earthen berm is a small hill covered with grass or other plants that is built to divert runoff so that it will not affect a certain area. As opposed surface grading, this involves building "up" instead of grading "down."	Code; T&ES
	Install impermeable (water resistant) material around the foundation of the structure	Reduce intrusion of surface flood waters to the below ground structure by the installation of impermeable material around the foundation.	Code, BAR; T&ES

Property Area	Practice	Description	City Review Considerations
	Disconnect basement stairwell drain	Disconnecting stairwell drains that connected to sanitary sewer laterals external to the structure or to the sanitary piping internal to the structure and connecting can reduce the chance of sewer backups occurring.	Code

The Flood Mitigation Pilot Grant Program was launched through the Flood Action Alexandria initiative to address flooding issues that arise in our community. Visit alexandriava.gov/FloodAction to learn more.