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## Adams Ridge Stormwater Management Facilities Maintenance Plan: Resident Guidance

Mars, PA 16046  
Adams Township, Butler County, Pennsylvania

**PREPARED FOR**

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RESIDENT SWM PLAN  
STORMWATER MANAGEMENT FACILITIES MAINTENANCE PLAN

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## RESIDENT RESPONSIBILITY

The Adams Ridge development contains several stormwater best management practices (BMPs) to control and manage the impact of increased stormwater runoff due to the development's construction and to reduce the amount of pollutants entering local waterways from stormwater runoff.

**The following plan has been developed to provide guidance to residents for the completion of inspections and implementation of maintenance measures for specific BMPs.** Each section outlines how often the BMP should be inspected and measures the resident should take if maintenance or repairs are required. Certain items should be addressed by the HOA and not the resident. These items are outlined within the associated BMP sections. An example resident inspection template is enclosed in the Appendix to assist residents with documentation of BMP conditions. This inspection report can be completed by residents and submitted to the HOA, if a concern arises.

A separate report has been created to outline HOA specific stormwater management responsibilities. For information on the HOA's responsibilities, please refer to the "Adams Ridge Stormwater Management Facilities Maintenance Plan: HOA Guidance."

To learn more about stormwater management, please refer to the Pennsylvania Department of Environmental Protection (<https://www.dep.pa.gov/>) and United States Environmental Protection Agency (<https://www.epa.gov/>) websites.

## GRASS/VEGETATED SWALE

**BMP Description:** A grass or vegetated swale is a broad, shallow, trapezoidal, or parabolic channel, planted with trees, shrubs, and/or grasses. Swales control the flow path of stormwater runoff and divert it away from residences and into a stream or stormwater management facility.

**Maintenance Frequency:** Residents shall inspect at least once per year and after major storm events (more than 2 inches of rain in 24 hours).

### Inspection and Maintenance Measures:

- Remove debris (e.g. leaves, sticks, sediment) from the swale.
- Inspect for evidence of erosion in the swale. If identified, notify the HOA.
- Inspect swale inlets (curb cuts, pipes, etc.) and outlets (headwalls) for debris and blockages. Remove any debris within your means and notify the HOA of any blockages.
- Check for pools of standing water in the swale. If identified, notify the HOA.
- Inspect for uniformity in cross-section and slope. Ensure the slope is not becoming steeper or flattening. If identified, notify the HOA.

### Winter Related Maintenance:

- Inspect swales after the spring melt, remove residuals (e.g. sand), and replace damaged vegetation.

### Vegetation Management:

- Reseed bare areas.
- Mow and trim vegetation when the swale is dry.
- Remove undesirable, exotic/invasive species, and replace with desirable vegetation.
  - Do not apply herbicide.
- Water the swale during dry periods.

### HOA Maintenance

**Maintenance Frequency:** HOA to inspect every 2–5 years or as required by field identified conditions and after major storm events (>2 inches of rain in 24-hr). HOA to notify property owner(s) of identified routine swale maintenance measures or issues found following the completion of the inspection.

### Inspection and Maintenance Measures:

- Install erosion control measures when soil is exposed or erosion channels are forming.
- Remove any identified blockages from swale inlets or outlets.
- Regrade the swale if pools of standing water exist or the swale appears to be changing shape (e.g. flattening or steepening).

### **Winter Related Maintenance:**

- If roadside or parking lot runoff is directed to the swale:
  - Mulching and/or soil aeration/manipulation may be required to restore soil structure and moisture capacity as well as reduce the impacts of deicing agents.
  - Apply nontoxic, organic deicing agents, applied either as blended, magnesium chloride-based liquid products or as pretreated salt.
  - Plant salt-tolerant vegetation in swales.

### **Vegetation Management:**

- Rototill and replant swale if draw down time exceeds 48 hours.
  - To be completed by a hired professional only.

## **DOWNSPOUTS**

**BMP Description:** A downspout conveys runoff from a roof towards the surface.

**Maintenance Frequency:** Residents shall inspect quarterly and after major storm events (more than 2 inches of rain in 24 hours).

### **Inspection and Maintenance Measures:**

- Ensure gutters remain clear of debris.
- Replace damaged or broken components of the downspout and gutter system.
- If the downspout daylight to the surface, provide a splash guard or small rock pile at the outlet to prevent erosion. Downspouts should not discharge directly to impervious areas (e.g. driveways, roads).
- If the downspout is directed into an underground sump, remove the access cap to the sump and ensure there is no buildup of sediment, trash, or other debris. If buildup occurs, contact a professional to clean the system.

## **YARD DRAINS**

**BMP Description:** A yard drain collects runoff from a pervious area, such as a grass yard or landscaped area.

**Maintenance Frequency:** Residents shall inspect quarterly and after major storm events (more than 2 inches of rain in 24 hours).

### **Inspection and Maintenance Measures:**

- Ensure yard drains are clear of debris.
- Contact the HOA before performing work that could potentially direct additional water to the yard drain or involves re-grading the area around the yard drain.
- Contact the HOA if any structural issues are identified in the yard drain grate or box.

### **Vegetation Management:**

- Maintain the lawn around the yard drain as you would the rest of your lawn. Be sure to take caution around the yard drain though to avoid structural damage.

### **HOA Maintenance**

**Maintenance Frequency:** HOA to inspect every 2–5 years or as required by field identified conditions.

### **Inspection and Maintenance Measures:**

- Address structural issues on HOA-owned yard drains.
- Clean sediment from HOA-owned yard drain basins and pipes.

## **DRY WELL (SUMP)**

**BMP Description:** A dry well is an underground infiltration/storage BMP. Water is held within the well and drains slowly to the surrounding soil. There may also be a small pit before the dry well to collect debris. Runoff is typically collected by gutters and directed into the underground dry well.

**Maintenance Frequency:** Residents shall inspect quarterly and after major storm events (more than 2 inches of rain in 24 hours).

### **Inspection and Maintenance Measures:**

- Install debris screens where downspouts enter the dry well. Clean the screen by removing debris that may block the flow of water into the dry well.
- Replace any damaged or broken part of downspouts to keep debris out of the system.
- Remove the access cap to the sump, if equipped, and ensure there is no buildup of sediment, trash, or other debris. Remove any debris buildup.
- If buildup occurs, contact a professional to clean the system.
- After large rain events, check the access pipe, if equipped, to ensure the dry well is draining. If the drain time is more than 72 hours, the dry well may need to be cleaned or replaced. Contact a professional to assist with the cleaning or replacement of the dry well.

## INFILTRATION TRENCH & FRENCH DRAIN

**BMP Description:** An infiltration trench and french drain include a perforated pipe in a stone section intended to infiltrate or convey stormwater runoff. Surface runoff or downspouts may be directed into the system.

**Maintenance Frequency:** Residents shall inspect quarterly and after major storm events (more than 2 inches of rain in 24 hours).

### **Inspection and Maintenance Measures:**

- If there is an access port, inspect the system for sediment/debris buildup. Remove sediment/debris.
- Do not drive over the drain area. This could compact the stone or crush the perforated pipe, causing the system to fail.
- If ponding occurs on the surface above the drain, this is an indication that there is a problem with the system. Contact a professional to assist with fixing or replacing the infiltration trench or french drain.

### **Vegetation Management:**

- Maintain lawn above the infiltration trench as you would the rest of your lawn.
- Reseed bare areas.

## HOA MAINTENANCE – DO YOUR PART TO HELP

This section outlines additional BMPs located in the Adams Ridge development that are maintained by the HOA. Within each section you will find a list of items you can look for in and around the facility as you walk or drive around the neighborhood. Please alert the HOA by completing the inspection sheet included in the appendix if anything seems out of place or of concern.

Please do not enter any of the BMP facilities listed below. This section is meant to be used as an educational tool only. The HOA is responsible for the inspection and maintenance of these BMPs.

### WET POND (RETENTION BASIN)

**BMP Description:** A surface facility that has a substantial permanent pool of water with additional capacity to temporarily handle stormwater runoff.

#### What you can look for:

- Debris in the pond or its associated structures
- Evidence of erosion (e.g. rills, channels, gullies) in or around the pond
- Displaced stone riprap
- Stone riprap filled with sediment
- Significant changes in the pond's water level
  - It is typical for the water level to rise after a storm; however, watch for circumstances where the water level is near the top of the facility, or is low or nonexistent.
- Dead/dying vegetation or bare spots around the pond
- Increased level of insects around the pond

#### What you should do:

- Notify the HOA of your identified concern. The HOA will investigate the issue further and address it as required.

### DETENTION BASIN

**BMP Description:** A surface facility that provides temporary storage of stormwater. This basin has a low-flow outlet, or orifice, to slowly release stormwater.

#### Inspection and Maintenance Measures:

- Debris in the basin or its associated structures
- Evidence of erosion (e.g. rills, channels, gullies) in or around the basin



- Displaced stone riprap
- Stone riprap filled with sediment
- Significant changes in the basin’s water level
  - It is typical for the water level to rise after a storm; however, watch for circumstances where the water level is near the top of the facility.
  - A detention basin should NOT have a permanent pool of water
- Dead/dying vegetation or bare spots around the basin
- Evidence of cattails growing in the basin’s bottom
- Increased level of insects around the basin
- Stagnant water within the basin
- A marshy smell near the basin

**What you should do:**

- Notify the HOA of your identified concern. The HOA will investigate the issue further and address it as required.

## CONSTRUCTED WETLAND

**BMP Description:** Constructed wetlands are shallow marsh systems planted with emergent vegetation designed to treat stormwater runoff.

**What you can watch for:**

- Sediment and debris accumulation within and around the wetland
- Evidence of erosion (rills, channels, gullies) in and around the wetland
- Structures and pipes blocked by trash, debris, or sediment
- Displaced stone riprap
- Stone riprap filled with sediment
- Dead/dying vegetation or bare spots in the wetland

**What you should do:**

- Notify the HOA of your identified concern. The HOA will investigate the issue further and address it as required.

## STREAMS

**BMP Description:** A body of running water flowing in a channel.

**What you can watch for:**

- Sediment and debris accumulation within and around the stream
- Discoloration of water
- Evidence of erosion in/around the stream and stream banks
- Fallen trees or branches in/along stream

**What you should do:**

- Notify the HOA of your identified concern. The HOA will investigate the issue further and address it as required.

## RIPRAP CHANNEL

**BMP Description:** A riprap channel is a permanent layer of large, angular stones used to protect the soil surface against erosion.

**What you can watch for:**

- Displacement of stone
- Vegetation or sediment accumulation within the channel
- Ponding water in the channel

**What you should do:**

- Notify the HOA of your identified concern. The HOA will investigate the issue further and address it as required.

## REFERENCES

Pennsylvania Department of Environmental Protection. (2006). *Pennsylvania Stormwater Best Management Practices Manual*.

United States Environmental Protection Agency. (2009). *Stormwater Wet Pond and Wetland Management Guidebook*.

# Appendix A

**RESIDENT STORMWATER BMP INSPECTION SHEET**

Location:

Name:

Phone:

BMP Type:

Inspection Date:

***COMMENTS/DESCRIPTIONS OF IDENTIFIED CONCERN OR ISSUE***


***PHOTOGRAPHS***

Attach photographs to show current conditions of the BMP and identified issue(s) or concern(s).

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