

Antrim Township Stormwater Administrative Review Checklist
For Preliminary and Final Plan Submissions
(including Conceptual Preliminary Plan and Detailed Final Plan Submissions in the
Conservation Design Overlay District)

Plan Name: _____ Antrim Township Tracking No.: _____
Project Location: _____ Dewberry Job No.: _____
Type of Submission: _____ Review Date: _____
Zoning District: _____ No. of Lots: _____

126-6 - General Requirements

- Use of the Standard Rational Method shall be acceptable for analysis of watersheds up to 20 acres in size.
- The Modified Rational Method shall be acceptable for analysis of watersheds up to 200 acres in size.
- NRCS Methods (TR-55 or TR-20) shall be acceptable for watershed analyses of all sizes.
- Where a development site is traversed by watercourses, drainage easements shall be provided conforming to the line of such watercourses.
- Any SWM facilities that would be located on State Highway ROW shall be subject to approval by the PA DOT.
- The SWM plan shall include calculations indicating velocities of flow, grades, sizes, and capacities of water carrying structures, and retention and detention structures as well as sufficient design information to construct such facilities.
- The plans shall specify the minimum allowable finished first floor elevation for these lots or buildings adjacent to basins and significant channels.
- Special provisions may be required for watersheds draining to high quality (HQ) and exceptional value (EV) waters in accordance with PADEP regs.
- Adequate erosion protection shall be provided along all open channels at all points of discharge.

126-7 & 126-8 - Stormwater Management Districts

- Narrative must include Stormwater Management District in which project is located.
- For proposed development located in 2 or more Districts, the allowable post-development peak discharge rate shall be determined based on the location of the point(s) of discharge from the site.

126-9 - Design Criteria for Stormwater Management Storage Facilities

- Proper erosion control measures shall be provided to protect the spillway and embankment against the erosive effects of accelerated discharge. Calculations for erosion protection shall be provided.
- Antiseep collars shall be installed on all basin outlet pipes. The required size and spacing of the collars shall be confirmed through calculations.

126-10 - Ground Water Recharge (Infiltration/Recharge/Retention)

- Calculations for ground water recharge must be included in the narrative appendix, if applicable.
- Ground water recharge must be addressed in the narrative.
- Detailed soils evaluation required to determine suitability of recharge facilities
 - Address soil permeability
 - Depth to bedrock
 - Depth to normal or seasonal high water table
 - Susceptibility to sinkhole formation
 - Subgrade stability.
 - Field test is required to determine appropriate soil percolation rates when infiltration BMPs are proposed.
 - A plan including the frequency and locations of soil tests shall be submitted to the Township for review and approval when infiltration BMPs are proposed.
 - Infiltration BMPs shall be constructed in virgin soil, not fill, after all site work is completed and the contributing drainage area has received final stabilization. Recharge/infiltration facilities shall not be used as sediment basins at any time. This requirement shall be provided in note form on the plan.
 - Specific requirements shall be included on the plans to protect infiltration BMPs from compaction by equipment and to prevent sediment from entering infiltration BMPs during construction. This requirement shall be provided in note form on the plan.
 - All infiltration BMPs shall incorporate a conveyance and control for overflow runoff.
- Waiver of any or all of these requirements may be granted at the discretion of the Township only upon written request and explanation of the reasons that these requirements should not apply provided by a Qualified Design Professional.
- Whenever a basin will be located in an area underlain by limestone, a geological evaluation of the proposed location shall be conducted to determine susceptibility to sinkhole formations.
 - All sinkhole and groundwater contamination prevention provisions shall be stated and shown on the plan with details provided for each.
 - Stormwater runoff from significant pollutant producing sources (industrial, gas stations, fast food and other commercial uses generating large numbers of vehicle trips, and other uses at the determination of the Township) shall be filtered and/or pre treated using a water quality BMP before being discharged in carbonate areas.
 - A detailed hydrogeologic investigation may be required by the Township for projects proposing infiltration in strip mine or limestone areas, to determine suitability for recharge, including both the potential for groundwater contamination and potential for sinkhole formation.
 - Performed by professional geologist licensed in PA and/or any other Township approved professional
 - Address soil permeability, depth to bedrock, susceptibility to sinkhole formation, and subgrade stability.
- Note must be included on all drainage plans: “I, _____, hereby certify that the proposed detention basin/infiltration BMP (circle one) is/is not underlain by limestone.”

- Where pervious pavement is permitted for parking lots, recreational facilities, non-dedicated streets, or other areas, pavement construction specifications and maintenance schedules shall be noted on the plan.

126-11 - Water Quality Requirements

- Calculations for water quality requirements must be included in the narrative appendix.
- Water quality requirements must be addressed in the narrative.

126-12 - Stream Bank Erosion Requirements

- Calculations for stream bank erosion must be included in the narrative appendix.
- Stream bank erosion requirements must be addressed in the narrative.

126-13 – Requirements for all developments

- All development shall be subject to the requirements of this article.

126-14 - Prohibited Discharges

- Stormwater discharges into the Township's separate storm sewer system which are not composed entirely of stormwater shall not be permitted except as indicated in Section 13.2 and discharges allowed under a state or federal permit.

126-15 - Prohibited Connections

- Any drain or conveyance which allows any non-storm water discharge including sewage, process wastewater, and wash water, to enter the separate storm sewer system
- Any connections to the storm drain system from indoor drains and sinks
- Any drain or conveyance connected from a non-residential land use to the separate storm system which has not been documented in plans, maps or equivalent records, and approved by the Municipality

126-16 - Roof Drains

- Roof drains shall not be connected to streets, sanitary or storm sewers or roadside ditches, except as below
- When it is more advantageous to connect directly to streets or storm sewers, connections of roof drains to streets or roadside ditches may be permitted by the Municipality
- Roof drains shall discharge to infiltration areas or vegetative BMPs to the max extent possible.

126-17 - Content

- Signed and sealed by a qualified design professional
- General description of the project
- Detailed narrative of the SWM proposal
- Conclusions describing the management techniques, types of storage and conveyance facilities
- Comparison between the pre development and post development peak runoff levels

- Complete hydrologic and hydraulic structural computations for all SWM facilities. Structural computations can be requested at the discretion of the Twp and their Engineer.
- Runoff calcs and related design comps of the total drainage areas necessary to substantiate the proposed temporary and permanent SWM facilities.
 - Peak Flow
 - Ground water recharge
 - Water quality
 - Stream bank erosion
- Maps of the project area on 24'x36" sheets
 - Location of project relative to highways, municipalities and other identifiable landmarks
 - 100 yr flood plain as determined by FEMA
 - Existing contours at intervals of 2 ft. In areas of steep slopes (greater than 15%), 5-ft contour intervals may be used.
 - Existing streams, lakes, ponds, or other bodies of water and wetlands within project area.
 - A map showing extent of entire watershed contributing runoff to the site including offsite watershed, if any.
 - Downstream area affected by stormwater runoff from the proposed development.
 - Other physical features including sinkholes, streams, existing drainage courses, and areas of natural vegetation to be preserved.
 - Locations of all existing and proposed utilities, sanitary sewers, and water lines on property being developed AND within 50 ft of the subject property lines.
 - Overlay showing soil names and boundaries
 - Proposed changes to the land surface and vegetative cover, including type and amount of impervious area that would be added.
 - Existing and proposed structures, roads, paved areas, and buildings. These features shall be shown within 50 ft of the property lines when access is permitted.
 - Final contours at intervals of 2 ft. In areas of steep slopes (greater than 15%), 5-ft contour intervals may be used.
 - Construction details, sections and specifications for stormwater facilities with sufficient info and dimensions for construction interpretation that will provide the developer and constructor with sufficient info to meet the requirements of this Chapter.
 - The name of the development, the name and address of the property owner, the name of the individual or firm preparing the plan.
 - Submission date and all subsequent revisions
 - Graphic and written scale of no more than 1"=50'; for tracts of 20 acres or more, scale of no more than 1"=100'
 - North arrow
 - Total tract boundary and size with distances to nearest hundredth of a foot and bearings to nearest second.
 - Existing and proposed land use

- Key map showing all existing man-made features beyond the property boundary that would be affected by the project.
- Access easements around all SWM facilities that would provide ingress and egress from a public ROW and prohibit structure and other obstructions from being placed in areas intended and required for SWM.
- For regulated activities proposing individual on lot controls, a note shall be provided to grant the Township access to inspect facilities in the event of a malfunction.
- A note on the plan indicating the location and responsibility for maintenance of SWM facilities that would be located off-site.
- Staging and implementation schedule for constructing the proposed SWM facilities.
- A statement signed by the landowner acknowledging the SWM system to be a permanent fixture that can be altered or removed only after approval of a revised plan by the Municipality.
- A note which states that no person shall modify, remove, fill, landscape or alter any existing stormwater BMP, unless it is part of an approved maintenance program, without the written approval of the Municipality.
- A note which states that no person shall place any structure, fill, landscaping or vegetation into a stormwater BMP or within a drainage easement, which would limit or alter the functioning of the BMP, without written approval of the Municipality.
- Maintenance and ownership provisions.
- Location of all E&S control facilities
- Vertical profiles of all proposed open channels and storm sewers including hydraulic capacity.
- Overland drainage paths of proposed swales or channels to convey water.
- All points of discharge from the site (swale, pipe, watercourse, sheet flow, etc)
- Signature block for the design engineer who is licensed in PA: _____, on this date _____, have reviewed and hereby certify that, to the best of my knowledge and ability, the stormwater management plan meets all design standards and criteria of Antrim Township Stormwater Management Chapter.
- List of waivers of this Chapter that are requested
- Locations of all existing and proposed septic tank infiltration areas and wells.
- A note which states: During all stages of construction, the Owner, Developer and/or Contractor shall ensure that stormwater runoff is effectively managed prior to discharging from the property through collection and conveyance through approved on site stormwater and erosion and sediment pollution control facilities. Developer, Owner and/or Contractor shall be jointly and severally liable for ensuring that the stormwater runoff is effectively managed prior to discharging onto other property.

126-18 - Performance Guarantee

- 110% of construction cost for SWM facilities.

126-19 - Program Provisions (Ownership and Maintenance Program)

- Clearly set forth the ownership and maintenance responsibility of all permanent SWM facilities.
- Signed Stormwater Facilities Maintenance and Monitoring Agreement is required prior to final approval of SWM Plan.