

Policy on Practicability Analysis for Runoff Reduction

Forsyth County Department of Engineering

Introduction

Runoff reduction practices are stormwater best management practices (BMPs) used to disconnect impervious and disturbed pervious surfaces from the storm drainage system. The purpose is to reduce post-construction stormwater runoff rates, volumes, and pollutant loads. Runoff reduction is more than simple infiltration; the runoff reduction volume (RR_v) is the retention volume calculated to infiltrate, evapotranspire, harvest and use, or otherwise remove runoff from a post-developed condition to more closely mimic natural hydrologic conditions.

Certain conditions, such as soils with very low infiltration rates, high groundwater, or shallow bedrock, may lead the Forsyth County Department of Engineering (Department) to waive or reduce the runoff reduction requirement for proposed site development on a case-by-case basis. If any of the stormwater runoff volume generated by the first 1.0 inches of rainfall cannot be reduced or retained on the site because of site characteristics or constraints, the remaining volume shall be increased by a multiplier of 1.2 and shall be intercepted and treated in one or more BMPs that provide at least an 80 percent reduction in total suspended solids.

The Forsyth County Policy on Practicability Analysis for Runoff Reduction (practicability policy) was developed to provide guidance about the site conditions and supporting documentation that could justify a “Determination of Infeasibility” for the runoff reduction stormwater management standard. This policy does not address stormwater management standards infeasibility for linear transportation projects; refer to the Forsyth County Policy on Practicability Analysis for Linear Transportation Projects for additional information.

The practicability policy is based on the following principles:

- Designed to help County administrators implement a process for granting a Determination of Infeasibility that supports review of land development applications.
- Applies to new development and redevelopment projects for public and private post-construction stormwater BMPs. It is referenced in the Forsyth County Stormwater Management Ordinance and Forsyth County Addendum to the Georgia Stormwater Management Manual.
- Aligns with requirements for runoff reduction in the Georgia Environmental Protection Division’s permit to discharge from the municipal separate storm sewer system (MS4) permit. The MS4 permit states that the stormwater management system shall be designed to retain the first 1.0 inch of rainfall on the site to the maximum extent practicable. Many Georgia Stormwater Management Manual (GSMM) BMPs include a runoff reduction component.
- Focused on the site conditions and regulatory environment in the Metro Water District.
- Requires ensuring all attempts to provide 100 percent RR_v onsite have been exhausted when pursuing a Determination of Infeasibility.

Conditions that may Warrant a Determination of Infeasibility

The GSMM and the Forsyth County Addendum to the GSMM provide broad guidance about conditions that may lead the Department to waive or reduce the runoff reduction stormwater management standard. The following conditions may warrant a Determination of Infeasibility.

- **Soil Infiltration Rate:** The soil infiltration rate is less than 0.5 inch per hour as measured over a meaningful portion of the site. Consideration should be given to infiltration rates throughout the soil profile.
- **Water Table:** The water table seasonal high elevation is measured less than 2 feet from the subgrade of a proposed infiltration practice.

- **Shallow Bedrock:** Bedrock that cannot be excavated by mechanical means AND is less than 2 feet from the subgrade of an infiltration practice.
- **Extreme Topography:** Proposed conditions reflect surface grades steeper than 3:1 (H:V) slope for more than 50 percent of the contributing drainage area.
- **Karst Topography:** Any of the existing conditions onsite exhibit karst topography.
- **Hotspots/ Contamination:** Reasonable suspicion that previous land uses have resulted in soil contamination onsite.
- **Historic Resources:** Buildings, structures, or historic sites included in the Georgia Historic Preservation Division's Historic Resources Survey or listed in the National Register of Historic Places or that has been recommended as a historic resource by a Preservation Professional.
- **Site Constraints:** Sites where the density or nature of the proposed redevelopment would create irreconcilable conflicts for compliance between the runoff reduction stormwater management standard and other requirements such as zoning, floodplains, stream buffers, or septic fields.
- **Economic Hardship:** The cost of retaining the first 1.0 inch of rainfall onsite using runoff reduction practices is equal to or greater than three times the cost of providing water quality practices to meet the stormwater management standards. This condition must be present with at least one other condition to warrant a Determination of Infeasibility. Additionally, a Determination of Infeasibility for economic hardship is applicable to a maximum 50 percent of the volume required for meeting the runoff reduction stormwater management standard.

Appendix A
Runoff Reduction Infeasibility (RRI) Form for
Determination of Infeasibility

Date Submitted: _____

Forsyth County

Runoff Reduction Infeasibility (RRI) Form for Determination of Infeasibility

DESIGN PROFESSIONAL CONTACT INFORMATION

Name: _____

Email: _____

Phone: _____

DESCRIPTION OF SITE

Land Development Application Number: _____

Site Address: _____

PROPOSED CONDITIONS OF SITE

Disturbed Area (acres): _____

Impervious Area (acres): _____

RUNOFF REDUCTION AND WATER QUALITY VOLUME SUMMARY

Maximum Practicable Runoff Reduction Volume* (cubic feet):

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Volume for Water Quality Treatment* (cubic feet):

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**If any of the stormwater runoff volume generated by the first 1.0 inches of rainfall cannot be reduced or retained on the site, due to site characteristics or constraints, the remaining volume shall be increased by a multiplier of 1.2 and shall be intercepted and treated in one or more best management practices that provide at least an 80 percent reduction in total suspended solids.*

GENERAL SUPPORTING DOCUMENTATION

All General Supporting Documentation must be included with this RRI Form for the submittal for a Determination of Infeasibility to be considered complete. Please check each item below to confirm it has been included in the submittal package.

- Stormwater Management Plan
 - Forsyth County Stormwater Quality Site Development Review Tool v2.2
 - Written justification that the site cannot accommodate runoff reduction practices that rely on evapotranspiration and reuse such as rainwater harvesting or green roofs
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SITE CONDITION APPLICABILITY

(descriptions are in the *Forsyth County Policy on Practicability Analysis for Runoff Reduction*)

Please check each applicable item below and confirm the supporting documentation has been included in the submittal for a Determination of Infeasibility.

Site Condition	Supporting Documentation
<input type="checkbox"/> Soil Infiltration Rate	Infiltration test(s), soil boring log(s), and report of results as interpreted by a Professional Engineer, Professional Geologist, or Soil Scientist licensed in Georgia
<input type="checkbox"/> Water Table	Soil boring log(s) and report with results of the seasonal highwater table assessment as interpreted by a Professional Engineer, Professional Geologist, or Soil Scientist licensed in Georgia
<input type="checkbox"/> Bedrock	Soil boring log(s) and report with results of the shallow bedrock assessment as interpreted by a Professional Engineer, Professional Geologist, or Soil Scientist licensed in Georgia
<input type="checkbox"/> Extreme Topography	Site survey showing 50 percent of the contributing drainage area is steeper than 3:1 (H:V) slopes as interpreted by a Professional Engineer or Land Surveyor licensed in Georgia AND Stormwater Management Plan showing the post-development surface grades will reflect the same condition as the site survey
<input type="checkbox"/> Karst Topography	Report developed by a Professional Engineer, Professional Geologist, or Soil Scientist licensed in Georgia
<input type="checkbox"/> Hotspots/ Contamination	Phase I Environmental Assessment Report
<input type="checkbox"/> Historic Resources	Documentation of the Georgia's Natural, Archaeological, and Historic Resources GIS listing OR Report of assessment from a Preservation Professional (including Archaeologist, Architectural Historian, Historian, Historic Preservationist, or Historic Preservation Planner)
<input type="checkbox"/> Site Constraints	Site plan identifying all development requirements (zoning side/front setbacks, build-to-lines, stream buffers, floodplains, septic fields, etc.) that are creating irreconcilable conflicts with onsite runoff reduction
<input type="checkbox"/> Economic Hardship*	An estimated construction cost comparison of proposed runoff reduction practices compared to proposed water quality practices must be included to show the cost of runoff reduction practices is equal to or greater than three times the cost of providing water quality practices

* *Note: Economic Hardship must be present with at least one other condition to warrant a Determination of Infeasibility. Additionally, a Determination of Infeasibility for economic hardship is applicable to a maximum 50 percent of the volume required for meeting the runoff reduction stormwater management standard.*

GEORGIA PROFESSIONAL ENGINEER CERTIFICATION

Printed Name: _____

Signature: _____

Date: _____

FOR FORSYTH COUNTY INTERNAL USE ONLY

APPROVED

APPROVED with the following requirements:

DENIED
