

Policy on Practicability Analysis for Runoff Reduction

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 the natural hydrologic conditions.

Certain conditions, such as soils with very low infiltration rates, high groundwater, or shallow bedrock, may lead Rockdale County 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” 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.

The 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 requirement. **This practicability policy does not address infeasibility for linear transportation projects being constructed by Rockdale County, other local governments, or State agencies.**

The practicability policy is based on the following principles:

- It is designed to help stormwater managers implement a process for granting a Determination of Infeasibility that supports efficient review of land development applications.
- It applies to new development and redevelopment projects for public and private post-construction stormwater BMPs. It is referenced in the *Model Ordinance for Post-Construction Stormwater Management for New Development and Redevelopment* (Model Ordinance) developed by the Metropolitan North Georgia Water Planning District (Metro Water District) and in Rockdale County Ordinance Chapter 310.
- It aligns with requirements for runoff reduction in the Georgia Environmental Protection Division’s (EPD’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. Most Georgia Stormwater Management Manual (GSMM) BMPs include a runoff reduction component.
- It is focused on the typical site conditions and regulatory environment in the Metro Water District and may not be applicable for all of Georgia.
- It requires a pre-submittal meeting when pursuing a Determination of Infeasibility to ensure all attempts to provide 100% RR_v on site have been exhausted.

Rockdale County is responsible for the review of land development applications and determination that it is infeasible to apply the runoff reduction requirement on part or all of a proposed site development.

Rockdale County may choose to make substantive changes or otherwise customize this practicability policy. These further changes and customizations are allowable so long as their substance meets the requirements of Rockdale County's MS4 permit. EPD is responsible for evaluating MS4 permit and District Plan compliance, which includes verifying whether changes and customizations are "at least as effective." EPD has reviewed this document and their comments have been incorporated.

Conditions that may warrant a Determination of Infeasibility

The GSMM provides broad guidance about conditions that may lead a local jurisdiction to waive or reduce the runoff reduction requirement. The following conditions may warrant a Determination of Infeasibility due to economic hardship, risk posed to a protected resource, or other site constraints. To claim economic hardship associated with various site conditions and constraints, one must demonstrate that the cost of retaining the first 1.0 inch of rainfall onsite using runoff reduction practices is a minimum of three times greater than the cost of providing conventional water quality treatment practices.

- **Poor Soil Infiltration Rate:** The performance of a contemplated runoff reduction practice will be negatively affected by native soil having an infiltration rate is less than 0.5 inch per hour. Consideration should be given to infiltration rates throughout the soil profile.
- **High Water Table:** The seasonal high water table is less than two feet from the bottom of a contemplated runoff reduction practice.
- **Shallow Bedrock:** A contemplated runoff reduction practice will require substantial removal of non-rippable rock, which cannot be excavated except by hammering, drilling, or blasting.
- **Extreme Topography:** Existing topography of the site requires at least 50% of the proposed development to have slopes steeper than 3:1, making the use of a contemplated runoff reduction practice difficult.
- **Environmental Concerns:** A contemplated runoff reduction practice will either negatively affect or be negatively affected by features such as streams, lakes, wetlands, springheads, frequently flooded areas, groundwater wells, specimen trees, environmental protection buffers and setbacks, conservation easements, endangered species, bury pits, sinkholes, septic systems, existing soil contamination, or proposed hotspot land uses.
- **Historic Resources:** A contemplated runoff reduction practice will negatively impact buildings, structures, or historic sites included in the Georgia Historic Preservation Division's Historic Resources Survey, listed in the National Register of Historic Places, or that has been recommended as a historic resource by a Preservation Professional.
- **Other Site Constraints:** Construction or maintenance of a contemplated runoff reduction practice will be complicated by laws, rules, administrative procedures, agreements, and other issues associated with the proposed development, such as zoning setbacks, landscaping standards, utility easements, ADA requirements, regulatory floodplains, HOA covenants, emergency access routes, etc.
- **Other Economic Hardship:** Construction of a contemplated runoff reduction practice is complicated by financial constraints that are unforeseeable, unavoidable, or unmanageable. A Determination of Infeasibility cannot be based on this factor alone, and this factor shall not account for more than 50% of the runoff reduction volume.

Supplemental Materials

The District has prepared supplemental materials to support the implementation of this practicability policy. *Appendix A* is meant for internal use and provides an overview of the steps Rockdale County could take to implement the practicability policy and issue a Determination of Infeasibility. *Appendix B* is Rockdale County's runoff reduction infeasibility form.

Appendix A:

Overview of Processing a Determination of Infeasibility

Overview of Processing a Determination of Infeasibility

Obtaining a Determination of Infeasibility

Determination of Infeasibility is not an all or nothing proposition. Designers must demonstrate that they have explored all avenues to meet the runoff reduction standard. If this is determined to be infeasible, they must attempt to provide the maximum percentage of RRV on site as feasible. Only after all attempts to provide any RRV on site are exhausted will the local jurisdiction consider a Determination of Infeasibility. The following process is recommended to:

1. identify conditions early,
2. provide flexibility,
3. support efficient land development application review, and
4. protect water quality to the maximum extent practicable.

Does the Site Qualify for a Determination of Infeasibility?

Answering “NO” to any of the following questions may indicate that the site qualifies for a Determination of Infeasibility:

1. Can GSMM runoff reduction BMPs fully meet the runoff reduction volume?
2. Does the site analysis show the conditions are supportive for managing the calculated runoff reduction volume needed for the site?
3. Can better site design practices (see GSMM, Volume 2, Section 2.3) be used to avoid challenging site conditions or constraints?
4. Can BMPs, such as green roofs and rainwater harvesting techniques, be used in ways that do not require infiltration into subsurface soils, but rather rely on evapotranspiration and reuse?
5. Can the installation of multiple runoff reduction BMPs, such as installing runoff reduction BMPs at higher elevations or in multiple sub watersheds, manage the calculated runoff reduction volume needed for the site?

Prior to Construction

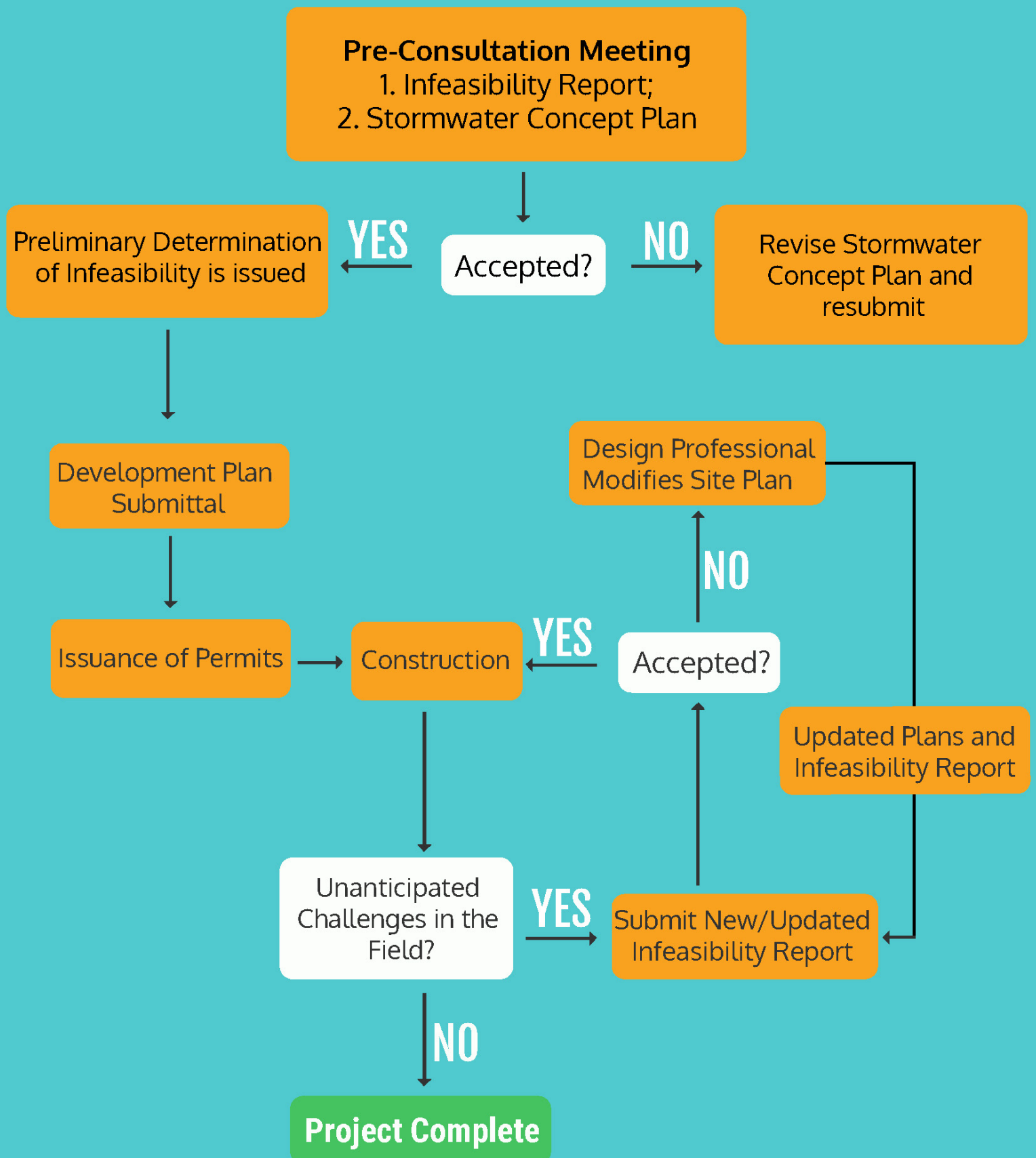
- 1) The design professional identifies conditions that limit using runoff reduction methods to retain 100% of the first 1.0 inch of rainfall onsite and initiates a pre-submittal meeting with the plan reviewer prior to submittal of the land development permit application. During the meeting, the following information will be reviewed:
 - Runoff Reduction Infeasibility Form to initiate the request and provide basic project information, confirmation that supporting documentation was submitted, and documentation of pre-submittal meeting outcomes.
 - Stormwater Concept Plan that has been developed based on site analysis, and natural resources inventory (including impracticability) in accordance with Section 2.4.2.5 of the GSMM.
- 2) The plan reviewer will evaluate the pre-submittal information on a case-by-case basis; coordinate with the design professional to understand site-specific issues; and (if possible) explore potential design strategies to achieve 100% RRV in compliance with the standards and specifications of the Post-Construction Stormwater Management Ordinance and GSMM.

- 3) Based on the pre-submittal information and meeting, the plan reviewer will provide one of the following determinations to the design professional:
 - Approval – preliminary Determination of Infeasibility issued
 - Approval with conditions – preliminary Determination of Infeasibility issued with conditions to incorporate plan reviewer comments into the Stormwater Concept Plan
 - Denial - revise the Stormwater Concept Plan to obtain 100% RRv
- 4) Design professional may either:
 - Submit the land development application with the Stormwater Management Plan and preliminary Determination of Infeasibility (as applicable).
 - Appeal the “denial” or “conditions” following the appeals process outlined in the local jurisdiction’s regulations.

During Construction

- 1) During the development process, the owner encounters a site condition that would prevent building stormwater BMPs as specified in the Stormwater Management Plan. The design professional will complete a Runoff Reduction Infeasibility Form and initiate a meeting with the local jurisdiction plan reviewer to discuss the findings. The designer must evaluate modifications to the proposed BMPs or installation of alternative BMPs that will provide some or all RRv in an alternative method.
- 2) The plan reviewer will evaluate the Runoff Reduction Infeasibility Form on a case-by-case basis; coordinate with the design professional to understand site-specific issues; and (if possible) explore potential design strategies to keep the stormwater BMPs identified in the Stormwater Management Plan.
- 3) Based on the Runoff Reduction Infeasibility Form and meeting, the plan reviewer will provide one of the following determinations to the design professional:
 - Approval – Determination of Infeasibility is issued and attached to the land development permit
 - Approval with conditions – preliminary Determination of Infeasibility issued with conditions to either:
 - i) Revise the design of runoff reduction methods (e.g. adding soil amendments or an underdrain to maximize runoff reduction volume) to retain the first 1.0 inch of rainfall onsite.
 - ii) Meet the stormwater runoff quality/reduction standard through a combination of Runoff Reduction and Water Quality.
- 4) Design professional may either:
 - Continue construction as outlined modified Stormwater Management Plan under the Permit Revision with approved Determination of Infeasibility.
 - Appeal the “conditions” following the appeals process as outlined in the local jurisdiction regulations.

Determination of Infeasibility Process



Appendix B:

Runoff Reduction Infeasibility Form

Date (submitted): _____

Rockdale County
Runoff Reduction Infeasibility (RRI) Form for
Determination of Infeasibility

Design Professional Primary Contact (Name/Email/Phone): _____

Description of Site/Land Development Application Number: _____

Address: _____

Size (acres): _____

Maximum Practicable Runoff Reduction Volume*: _____

**If any of the stormwater runoff volume generated by the first 1.0" 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 Concept Plan that has been developed based on site analysis, and natural resources inventory (including impracticability) in accordance with Section 2.4.2.5 of the GSMM
 - GSMM Stormwater Quality Site Development Review Tool for the Stormwater Concept Plan
 - Please include justification that the site cannot accommodate best management practices that rely on evapotranspiration and reuse such as rainwater harvesting or green roofs
-

SITE CONDITION APPLICABILITY

(descriptions are in *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"/> Poor Soil Infiltration Rate	Report including interpretation of infiltration tests, boring logs, soil maps, site plans, etc. to determine infiltration rates, as certified by an appropriately licensed design professional
<input type="checkbox"/> High Water Table	Report including interpretation of boring logs, piezometer readings, site plans, etc. to determine seasonal high water table elevations, as certified by an appropriately licensed design professional
<input type="checkbox"/> Shallow Bedrock	Report including the interpretation of boring logs, rock quality tests, test pit observations, site plans, etc. to determine the amount of non-rippable rock that must be removed, as certified by an appropriately licensed design professional
<input type="checkbox"/> Extreme Topography	Report including the interpretation of survey data, site plans, etc. to determine the amount of the proposed development which will have slope steeper than 3:1, as certified by an appropriately licensed design professional
<input type="checkbox"/> Environmental Concerns	Report including interpretation of survey data, site plans, soil maps, photos, Phase I Environmental Assessments, etc. to determine the potential impact to the environment, as certified by an appropriately licensed design professional
<input type="checkbox"/> Historic Resources	Report including interpretation of survey data, site plans, photos, documentation of the NAHRGIS listing, report of assessment from a Preservation Professional (including Archaeologist, Architectural Historian, Historian, Historic Preservationist, or Historic Preservation Planner) to determine the potential impact to historic resources, as certified by an appropriately licensed design professional
<input type="checkbox"/> Site Constraints	Report including interpretation of survey data, site plans, regulations, policies, contracts, correspondence, etc. to determine conflicts associated with the proposed development, as certified by an appropriately licensed design professional
<input type="checkbox"/> Economic Hardship*	Report including interpretation of cost estimates, invoices, financial statements, market research, economic reports, correspondence, etc. to determine potential or experienced financial impacts, along with justification of why such impacts were unforeseeable, unavoidable, or unmanageable

* *Note:* A Determination of Infeasibility cannot be based on this factor alone, and this factor shall not account for more than 50% of the runoff reduction volume.

STORMWATER RUNOFF QUALITY/ REDUCTION SUMMARY

Maximum Practicable Runoff Reduction Volume*: _____

Remainder of Volume treated by Water Quality Best Management Practice: _____

**If any of the stormwater runoff volume generated by the first 1.0" 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.*

Design Professional's Printed Name _____

Design Professional's License Type and Number _____

Design Professional's GSWCC Level II Certification Number _____

Design Professional's GSWCC Level II Certification Expiration Date _____

Design Professional's Signature _____

FOR ROCKDALE COUNTY USE ONLY

APPROVED

APPROVED with
conditions _____

DENIED _____

Reviewer: _____

(Print Name)

(Signature)

(Date)