Project Hydrology Requirements of EISA

DSC Briefing Paper

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# Summary

* The Energy Independence and Security Act of 2007 (EISA) requires all Federal development and redevelopment projects to maintain or restore, to the maximum extent technically feasible, the predevelopment hydrology of the project site if such projects:  
  + alter landscape or disturb land area of at least 5,000 square feet  
    *and*
  + involve construction, renovation, lease or purchase of at least one building
* Each year there are many NPS projects that meet these conditions. In general, such projects must:
* prevent runoff from most rainfall events

*or*

* preserve the predevelopment runoff conditions following construction

DSC has workflow practices in place addressing the requirements of EISA.

# EISA Background

Development and redevelopment projects often affect the hydrology of the immediate project site and areas beyond the project site’s boundary. This can disrupt the project site and downstream area’s ability to infiltrate or evapotranspiration the rainfall. This disruption of the hydrology can lead to a new, higher level of stormwater runoff and this runoff is likely to carry silt that adversely affects drainages, streams and rivers, some of which may be distant from the site. Properly managing these storm flows can contribute to the maintenance or restoration of the natural, or predevelopment, condition of nearby and remote ecosystems.

The protection (or restoration) of the predevelopment hydrology is vital to maintaining natural resources. Under certain circumstances the Energy Independence and Security Act of 2007 [Section 438 (§438) Storm Water Runoff Requirements for Federal Development Projects](https://www.govinfo.gov/content/pkg/BILLS-110hr6enr/pdf/BILLS-110hr6enr.pdf#page=129) requires Federal facilities undergoing development or redevelopment to maintain or restore predevelopment hydrology at their project site. As a Federal agency, the National Park Service must ensure its facility development and redevelopment projects comply with this law.

Until December 2007, there were no Federal regulatory requirements regarding the “post construction hydrology” of facility development or redevelopment projects. Stormwater Pollution Prevention Plans (SWPPs) address the issue of stormwater runoff during the construction process but not once construction activities end. Any efforts made to ensure the maintenance or restoration of site hydrology for a Federal facility after construction were either as the result of requirements by local entities or were voluntary and site specific. With the passage of EISA, particularly §438, there is now a Federal law that requires protection of hydrology for Federal projects when the project site is greater than 5,000 square feet.

# Applicability of EISA

EISA §438 reads:

*“****STORM WATER RUNOFF REQUIREMENTS FOR FEDERAL DEVELOPMENT PROJECTS.***

*The sponsor of any development or redevelopment project involving a Federal facility with a footprint that exceeds 5,000 square feet shall use site planning, design, construction, and maintenance strategies for the property to maintain or restore, to the maximum extent technically feasible, the predevelopment hydrology of the property with regard to the temperature, rate, volume, and duration of flow.”* *(underline added)*

The first part of this section identifies for which projects this section applies. EISA §438 applies for a:

*“development or redevelopment project involving a Federal facility with a footprint that exceeds 5,000 square feet…”*

Looking carefully at the wording of this short section, there are several terms that need clarification. Some clarification is provided in other parts of EISA and some clarification is provided in “[Technical Guidance on Implementing the Stormwater Runoff Requirements for Federal Projects under Section 438 of the Energy Independence and Security Act](https://www.epa.gov/sites/production/files/2015-08/documents/epa_swm_guidance.pdf)” – hereafter called “EPA guidance document”.

*“Development or re-development”* is defined in the EPA guidance document as follows:

*“For the purposes of this provision this term applies to any action that results in the alteration of the landscape during construction of buildings or other infrastructure such as parking lots, roads, etc., (e.g., grading, removal of vegetation, soil compaction, etc.) such that the changes affect runoff volumes, rates, temperature, and duration of flow. Examples of projects that would fall under “re-development” include structures or other infrastructure that are being reconstructed or replaced and the landscape is altered. Typical patching or resurfacing of parking lots or other travel areas would not fall under this requirement.”*

In short…development or redevelopment includes projects that may or may not include buildings, but to be development or redevelopment the project must include “alteration of the landscape”.

No landscape alteration 🡪 not development/redevelopment 🡪 EISA §438 does not apply

If the project does alter the landscape such that the changes affect runoff volumes, rates, temperature, and duration of flow, then it must be determined if the project involves a “Federal facility”. EISA’s definition of “Federal facility”:

*“any building that is constructed, renovated, leased, or purchased in part or in whole for use by the Federal Government.”*

This clearly identifies a Federal facility as a building. Further it suggests (by the use of the present tense “is”) that a Federal facility must be a building that is undergoing construction, renovation, lease or purchase. This is a key understanding…and it derives solely from this legislation’s definition of Federal facility.

Putting these together, it is clear the following conditions must exist for EISA §438 to apply:

1. Project alters the landscape such that the changes affect runoff volumes, rates, temperature, and duration of flow.
2. Project involves construction, renovation, lease or purchase of a building.

But these conditions alone are not sufficient to require application of EISA §438. The legislation also requires the “footprint” exceeds 5,000 square feet. The legislation does not define footprint but the EPA guidance document does:

“Section 438 applies to a Federal facility “with a **footprint** that exceeds 5,000 square feet.” For the purposes of this guidance, any project involving a federal facility that disturbs 5,000 square feet or more of ground area is covered by this guidance. Existing facilities that have an overall **footprint** of 5,000 square feet or greater that disturb less than 5,000 square feet of land area as part of any single development or redevelopment project are not subject to Section 438 requirements. Consistent with the purpose of Section 438 to preserve or restore pre-development hydrology, the term “footprint” includes all land areas that are disturbed as part of the project.”

This helps Designers determine what area is included when calculating the footprint. The footprint is only the area of disturbance. For EISA §438 to apply to a project the area of disturbance must be greater than 5,000 square feet. And even more specifically the footprint “includes only those land areas disturbed as part of the project”. This means projects involving the renovation of an existing building (not changing the building’s area) need not include the area of the existing building (when determining if the project meets the 5,000 square feet threshold) since that area is not disturbed as part of the project (the disturbance of that land occurred when the building was first built).

This refines the conditions for which EISA §438 applies to:

1. Project alters the landscape or disturbs land area (such that the changes affect runoff volumes, rates, temperature, and duration of flow) of at least 5,000 square feet  
   *and*
2. Project involves construction, renovation, lease or purchase of a building.

With these criteria, the project team can determine if EISA §438 applies. The next step is to establish what EISA §438 requires of a project when it applies.

# Project Requirements of EISA

The text of the EISA §438 requires the project to:

*“use site planning, design, construction, and maintenance strategies for the property to maintain or restore, to the maximum extent technically feasible, the predevelopment hydrology of the property with regard to the temperature, rate, volume, and duration of flow.”*

EISA does not define the terms used in this part of §438. For more information turn to the EPA guidance document where it describes two options for complying with EISA §438:

1. Retaining the 95th percentile rainfall event

*or*

1. Site-specific hydrologic analysis to determine and place into service the types of stormwater practices necessary to preserve predevelopment runoff conditions.

Also, the EPA guidance document assists in understanding how to apply requirements to the “project footprint” and to the “property”. It states the “performance requirements of EISA Section 438 apply only to the project footprint” but, a larger area (land surrounding the project - the “property”) “is available to implement the appropriate…practices where optimal”. This text in the EPA guidance document clearly indicates the project does not need to restore or maintain the predevelopment hydrology of the entire property only the “footprint” – described in the EPA guidance document as disturbed area. If the project Designers find it advantageous to use some of the property outside the project footprint to address a hydrology issue, EISA §438 permits this.

Once EISA §438 is determined to apply, Designer(s) must take actions to maintain or restore the predevelopment hydrology of the disturbed area. For a project involving the renovation of an existing building and site work adjacent to the building, the predevelopment hydrology of the site work must be maintained or restored to predevelopment conditions – but not the area of the existing building, since the project wasn’t responsible for disturbing that area. If the project were for a new building and site work, and the area was sufficient to invoke the requirements of EISA §438 the site for which predevelopment hydrology must be restored or maintained includes the building area since the new building area is disturbed with the project.

# Confirming Compliance with EISA

EISA §438 does not require permitting to demonstrate compliance. Each Federal agency is expected to develop processes that ensure compliance. DSC has accomplished this by identifying EISA §438’s requirements within the DSC Workflows website. This website includes links to EISA §438 and to EPA guidance on the implementation of EISA §438. Further, through the required use of the NPS Project Sustainability Checklist (available on the DSC Workflows website and required for Development Advisory Board (DAB) submissions), all DSC A/E’s (Architects/Engineers) must address EISA §438 requirements at Predesign, Schematic Design, and at construction completion.

In addition, DSC performs Quality Assurance (QA) Reviews at all major phases (Predesign, Schematic Design, Design Development and Construction Documents) of the design process on all DSC managed projects to ensure compliance with Stormwater Management requirements identified in applicable Federal, State, and Local regulations; Laws (including EISA §438); Code of Federal Regulations (CFR); Executive Orders (EO); Management Policies; Director’s Orders; NPS Guidelines; and applicable Codes and Standards. These regulations are linked through the DSC Workflows [Civil (Site) and Environmental Engineering Design Standards](https://www.nps.gov/dscw/ds-civil-environmental.htm).

Documentation and submission of proposed stormwater management strategies, techniques, and calculations are required submissions for each project and are identified in the [Civil Engineering QA Review Checklist](https://www.nps.gov/dscw/qa-civil-environmental.htm).

These processes DSC employs provide assurance that DSC managed projects comply with EISA §438.