

Stormwater Management for Federal Facilities under Section 438 of the Energy Independence and Securities Act of 2007 (EISA)

Guam Stormwater Workshop
July 27, 2011



Session Objectives

- What is EISA Section 438
- Stormwater Management Requirements of Section 438
 - Applicability and Requirements
 - Performance Options
- Resources
 - EPA Guidance Manual

EISA Section 438

“Stormwater 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.”



Applicability and Requirements

- EISA Section 438 applies to development or re-development of any facility **owned, operated or occupied** by a federal agency.
- If the federal agency hires a contractor, the federal agency should nonetheless be regarded as the sponsor and is responsible for ensuring compliance with the requirements of EISA Section 438.
- **Meet Performance Goals**
 - Implement storm water management measures to the **maximum extent technically feasible** (METF) to maintain or restore the pre-development hydrology conditions specifically with respect to temperature, rate, volume, and duration of flow.

Performance Options

- Design goals based on the pre-development hydrology can be achieved by using following performance options:
 - Option 1 (retaining the 95th percentile rainfall event) is a performance-based, simplified approach that site designers can use to meet EISA Section 438
 - Option 2 (site-based hydrologic analysis) allows the site designer to conduct a hydrologic analysis of the site based on site-specific conditions.



Performance Option 1:

Manage up to the 95th Percentile Storm

- Manage onsite the rainfall from all storms up to and including the 95th rainfall event.
- Use Low Impact Development (LID) and Green Infrastructure (GI) to infiltrate, harvest and re-use rainwater.

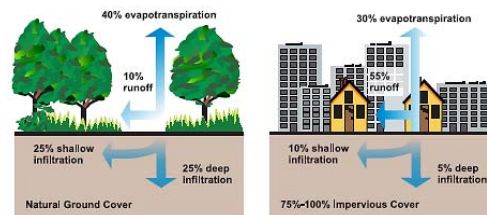
Note: The 95th percentile rainfall event is the event whose precipitation total is greater than or equal to the rainfall from 95 percent of all storm events over a given period of record.



Performance Option 2:

Site-Specific Hydrologic Analysis

- Analyze on site-specific conditions and local meteorology by using continuous simulation modeling techniques, published data, studies, or other established tools.
- Quantify the post-development runoff volume and peak flow discharges that are equivalent to pre-development conditions.
- Use LID and Green Infrastructure to infiltrate, harvest and re-use.



Summary Points

- 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
- Implementation via NAVFAC DPRI Sustainability & Storm Water Management Program which will be discussed in Session 11

Resources

- EPA website: Stormwater Management for Federal Facilities under Section 438 of the Energy Independence and Security Act
<http://www.epa.gov/owow/NPS/lid/section438/>
- *Technical Guidance on Implementing the Storm Water Runoff Requirements for Federal Projects under Section 438 of the Energy Independence and Security Act* - Peter S. Silva - Dec. 4, 2009.
Available at:
http://www.epa.gov/owow/NPS/lid/section438/pdf/final_sec438_eisa.pdf

Guidance includes:

- Storm water management requirements;
- Appropriate control techniques;
- Benefits of complying with Section 438; and
- Modeled compliance scenarios.

