

# Fund Low Impact Development/ Green Infrastructure Projects with FEMA Grants for Flood Mitigation

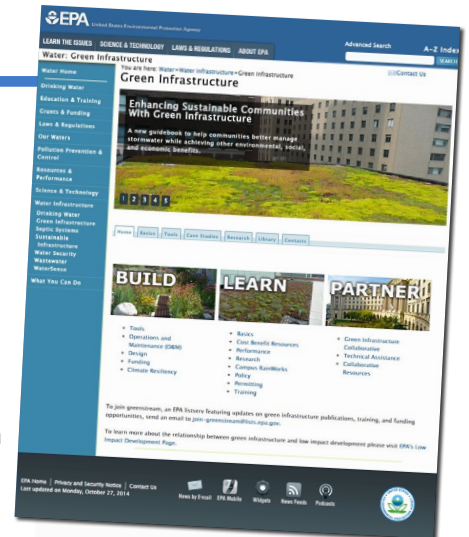
EPA promotes the use of Low Impact Development (LID) and Green Infrastructure (GI) as a cost-effective and resilient approach to stormwater management. LID/GI provides many community benefits including cleaner water, wildlife habitat, enhanced aesthetics, and can be designed to supplement localized or watershed flood protection. LID/GI projects that reduce flood losses to properties insured under the National Flood Insurance Program (NFIP) may be eligible for grant funding through the Federal Emergency Management Agency (FEMA).

## Where LID/GI Fits in FEMA's Grant Programs

LID/GI projects fit under the category "Minor Localized Flood Reduction Projects," including rain gardens, roadside swales, and infiltration trenches. The "Soil Stabilization" category includes vegetative buffers or other efforts, such as an LID/GI program, that reduce stream erosion. Minor localized flood reduction projects based on LID/GI may be eligible for funding under FEMA's mitigation grant programs. These projects lessen the frequency or severity of flooding and decrease flood damages. This designation can include a system of LID/GI-based stormwater management devices that reduce runoff volumes by infiltration, evapotranspiration, or storage of rainwater for beneficial uses, as long as the system demonstrably reduces the extent of flooding. These projects must not duplicate flood prevention activities of other Federal agencies and may not constitute a section of a larger flood control system. Eligible minor localized flood reduction efforts include measures that reduce flood losses for single structures or facilities, utilities or roads and bridges, groups of structures, or entire neighborhoods. Therefore, LID/GI may be an effective addition to conventional flood risk management. Hazard mitigation planning-related activities are also eligible for HMA funding, including updating or enhancing sections of the current FEMA-approved mitigation plan to incorporate climate adaptation, green building, or smart growth principles, including LID/GI principles, into the risk assessment and mitigation strategy.

If the LID/GI project is on the property being proposed for acquisition through FEMA funding, environmental benefits may be included in the benefit-cost analysis. Environmental benefits are considered only for acquisition projects at this time. A property is eligible for acquisition if it will be acquired from a voluntary seller, contains a structure that may or may not have been damaged or destroyed as a result of a hazard event, and the underlying land use is deed-restricted to open space in perpetuity. By proposing LID/GI design for the land, it may be possible to increase the environmental benefits and demonstrate cost effectiveness to obtain funding from FEMA or other co-sponsors for acquisition.

A new FEMA policy now encourages the monetary benefits of the ecosystem services of LID/GI to be included in the project benefit cost ratio (BCR), which can help make an acquisition project viable. Green open space and riparian land uses qualify for these environmental benefits, but the project must meet a BCR of at least 0.75 before environmental benefits can be included.



## LID/GI in State or Local Hazard Mitigation Plans

Incorporating watershed-based LID/GI into a State Hazard Mitigation Plan may help achieve "Enhanced" plan status for Integrated Planning for Land Use Development and Natural/Cultural Resources. This enhancement might include large-scale projects such as a statewide data registry prioritizing floodplain and wetland restoration, or policies on land development that discourage excess runoff. Local hazard mitigation plans should also consider how LID/GI practices can be incorporated as a means to reduce flood risk.



Photo: Melissa Kramer

## FEMA's Hazard Mitigation Assistance (HMA)

FEMA's HMA grant programs provide funding for eligible mitigation activities that reduce disaster losses and protect life and property from future disasters. Currently, there are three programs:

- **Hazard Mitigation Grant Program (HMGP)** assists in implementing long-term hazard mitigation measures following a major disaster.
- **Pre-Disaster Mitigation (PDM)** provides funds for hazard mitigation projects and planning on an annual application cycle.
- **Flood Mitigation Assistance (FMA)** provides funds for projects to reduce or eliminate the risk of flood damage to buildings that are insured under the NFIP on an annual application cycle.

### Eligibility and Applications

States, territories, and Tribes are eligible to apply for HMA program funds. Local governments are considered sub-applicants and must apply to their State Hazard Mitigation Officer. Applicants for PDM and FMA grants must have a FEMA-approved (Standard or Enhanced) Mitigation Plan. Local governments may sponsor an individual's application.

### Funding availability

HMA funding is subject to the availability of appropriations. For HMGP, funding is dependent upon the amount of FEMA disaster recovery assistance under a Presidential major disaster declaration.

### Federal share

In general, HMA funds may be used to pay up to 75 percent of the eligible activity costs. The remaining 25 percent must come from non-Federal sources.

### For additional information:

Hazard Mitigation Assistance Unified Guidance:

<https://www.fema.gov/media-library/assets/documents/103279>

FEMA Benefit-Cost Analysis: <https://www.fema.gov/benefit-cost-analysis>

For your local FEMA office: [www.fema.gov/regional-contact-information](http://www.fema.gov/regional-contact-information)

Contact information for each State Hazard Mitigation Officer (SHMO):

<http://www.fema.gov/state-hazard-mitigation-officers>

### Green Open Space and Riparian Benefits

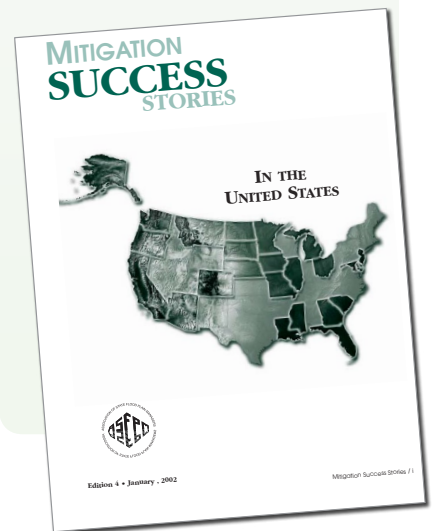
| Land Use         | Total Estimated Benefits (per acre per year) | Total Estimated Benefits <sup>1</sup> (per square foot) |
|------------------|--|---|
| Green Open Space | \$7,853                                      | \$2.57  |
| Riparian         | \$37,493                                     | \$12.29   |

<sup>1</sup> Projected for 100 years with 7 percent discount rate

(Source: HMA Guidance)

### Environmental benefits now included in benefit-cost analysis

For acquisition projects, FEMA has identified and quantified benefits that LID/GI features provide, including aesthetic value, air quality, erosion control, pollination, recreation, water filtration, and stormwater retention. The benefit-cost ratio (BCR) for an acquisition project must be 0.75 before the environmental benefits can be incorporated. The economic value of green open space and of riparian areas has been quantified in the 2015 HMA Guidance (page 66, Table 4).



### Contact information:

Contact your local government or tribal authority, or private non-profit, who would submit any grant application to the State or Federally-recognized tribe. States, Tribes, and Territories submit to FEMA as the official applicants.