

NYC Green Infrastructure Grant Program

Program Description and Application



Background and Purpose

New York City, like other old urban centers, is largely serviced by a combined sewer system where stormwater and wastewater are conveyed together. During heavy storms, the system often reaches capacity and must discharge a mix of stormwater and untreated wastewater – called a combined sewer overflow (CSO) – into New York City’s waterways.

On September 28, 2010, the New York City Department of Environmental Protection (DEP) released the *NYC Green Infrastructure Plan* and put forth a strategy to improve the existing approach for reducing combined sewer overflow, which relies solely on traditional investments like holding tanks and tunnels. The Green Infrastructure Plan recommends a mix of green infrastructure and cost-effective traditional infrastructure that will reduce sewer overflows into waterways by 40 percent by 2030 by capturing more stormwater, reducing consumption, and optimizing the existing system. Green infrastructure is comprised of features on buildings, roads and other locations to absorb, retain, or minimize peak and overall flows of stormwater at or near the source. Examples of green infrastructure include bioswales, enhanced tree pits, rain gardens, porous pavement, green roofs, rooftop detention, and rainwater capture and reuse systems. Typified by relatively quick installation and minimal energy for operation, green infrastructure has the potential to be extremely cost-effective. In addition, the stormwater and other benefits – including providing shade and streetscape improvements – can accrue immediately. Finally, green infrastructure has the potential to serve as the basis of partnerships between DEP and local stewards and community groups. To begin the implementation of the green infrastructure program, the City has committed \$187 million to green infrastructure through 2015.

Grant Application Information

Up to \$3,000,000 will be provided in 2011 for green infrastructure projects within CSO drainage areas in New York City. DEP, as the administrative manager of the Green Infrastructure Grant Program, has the sole discretion to determine eligibility, award or retain funds, and make payments to grantees.

DEP will have a grant workshop on February 28, 2011, to answer questions about the grant program. Attendance is optional but strongly encouraged. **Applications are due April 29, 2011.**

Geographic Eligibility: Before applying, an applicant must confirm that its project is entirely located within a combined sewer drainage area within New York City boundaries. Only proposed projects fully located within these boundaries will be accepted and eligible for funding. Please see the provided map to confirm if the proposed project is within these boundaries or please contact DEP to confirm.

http://www.nyc.gov/html/dep/pdf/green_infrastructure/sewer_drainage_area_types_map.pdf

Eligible Applicants and Projects: Private property owners, businesses, and 501(c)(3) organizations are eligible for funding for projects that use green infrastructure to reduce or manage stormwater (1) on private property or (2) on public sidewalks, including the curb, where the abutting owner is the sole or co-applicant.

Projects must:

1. Be completed within a year from the construction start date;
2. Reduce the quantity of stormwater entering the combined sewer system (i.e., capture and retain the first 1” of rainfall or greater); and
3. Reduce impervious surfaces in the City.

Applicants are encouraged to submit projects that:

1. Can be completed early - by June 2012;
2. Maximize the purposes of the grant program in the most cost-effective manner;
3. Use designs and materials that are innovative, can be widely adopted, or both;
4. Provides monitoring as described below;
5. Promote and facilitate educational components and community involvement;
6. Provides letters of support from key local community stakeholders;
7. Support economic development and job creation in underserved neighborhoods;
8. Are matched with federal, state, local, or private funds; and
9. Advance the goals of the *NYC Green Infrastructure Plan* and *PlaNYC*.

Examples of the types of green infrastructure projects eligible for funding under the Green Infrastructure Grant Program include the following:

- **Bioretention swales:** Engineered and vegetated swales designed to treat and attenuate stormwater runoff for a specific water volume.

- **Blue roofs:** Roof drain devices, check dams, trays, or other elements that regulate flow from roof and allow water to drain over time.
- **Constructed wetlands:** New wetlands that use soil and drainage materials (such as pipes and gravel) and plant material to treat stormwater from adjacent impervious surfaces.
- **Green roofs:** Vegetated roofs that treat stormwater through retention or bioretention.
- **Infiltration bioswales:** Wide, shallow channels with a dense stand of vegetation covering the side slopes and a bottom designed to promote infiltration, reduce the flow velocity of stormwater run-off and maximize the amount of time water spends in the swale, which also aids in trapping particulate pollutants and silt. Bioswales are commonly used around parking lots.
- **Infiltration trenches:** Constructed chambers to receive stormwater runoff. Stormwater runoff passes through some combination of pretreatment measures, such as a swale or sediment basin before entering the trench where it infiltrates into the soil.
- **Permeable pavers:** Permeable pavement that allows water to seep into underlying soils through regularly interspersed gaps.
- **Porous asphalt:** Asphalt with structural properties of regular asphalt, but where a gravel aggregate mixture has been substituted for the fine particles, which allows water to easily pass through.
- **Porous concrete:** A pervious concrete mixture containing little or no sand, creating a substantial void content.
- **Rain barrels & cisterns:** Connection of downspout to a rain barrel or cistern for watering gardens and other green spaces.

Restrictions and Ineligible Activities: The following activities are **not** eligible for support under the Green Infrastructure Grant Program:

- Project proposals on or in public sidewalks where the abutting property owner(s) is not listed as an applicant on the grant;
- Education or outreach efforts that are not part of a green infrastructure construction project; and
- Designs, plans, or research that is not part of a green infrastructure construction project.

In addition, all of the following apply:

- Funds cannot be used for political advocacy, boycotts, advertising, or litigation expenses;
- Funds cannot be for legally mandated actions under local, state, or federal law, and/or associated with administrative permit conditions or terms of settlement agreements;
- Grantees and projects must be in compliance with all local, state, and federal laws including prevailing wage requirements where applicable;
- The City of New York will have unrestricted rights to use the designs selected for participation in the Green Infrastructure Grant Program for any future projects or purposes at no additional cost; and

- All maintenance obligations and covenants must be memorialized to the satisfaction of the City, which may include a requirement for a deed restriction or easement, prior to the distribution of funds.

Application materials: All applications are due to DEP no later than **April 29, 2011**, and must include:

- A completed application form;
- Preliminary design drawings, construction work plans, and specifications;
- If the project is bank-financed, a letter of interest from a proposed lender;
- Contractor estimate to support construction budget and green infrastructure installation and construction;
- Legal description of property involved, including description of leased premises (floor plan and legal description) and block and lot information, if applicable;
- Owner-applicants must supply copies of deed, title policy, or purchase option or contract;
- Tenant-applicant must supply copies of lease or lease proposal and proof of the owner's consent. However, for projects on public sidewalks, the abutting landowner must be listed as a co-applicant; and
- Long term maintenance plan for projects on private property ensuring that the project will remain viable and functional throughout its expected life.

Application Submission: Applications may be submitted by mail or electronically. Each application submitted by mail must include an electronic copy of their application on compact discs.

Applications can be sent to:

Margot Walker
NYC Department of Environmental Protection
59-17 Junction Blvd. 11th Floor
Flushing, NY 11373
margotw@dep.nyc.gov

Number of Applications: Up to five applications per organization will be accepted for review. Universities and other higher education institutions are excluded from this limit if different departments or investigators are involved.

Narrative Application Form

Instructions:

Use the template below and answer each question in full detail. Please provide as much relevant information as necessary to help us better understand the project being proposed and determine if it meets the objective of the Grant Program. Proposal narrative shall not exceed twelve (12) pages, however, maps, photos, lists, and plans/designs/drawings do not count toward the page limit.

- A. Grant Eligibility Context:** Describe how this project specifically relates to the eligible activities described in the Green Infrastructure Grant Program information listed above and where available, a specific local or regional watershed initiative or plan. The primary objective of this grant program is to reduce stormwater flows into the sewer system and reduce combined sewer overflow volumes. A secondary goal of this grant program is to demonstrate strategies for stormwater management and to verify their effectiveness.
- B. Project Description:** Describe the current stormwater problem that the proposed project will address and its source. Describe and quantify the projected stormwater flow reduction to the existing sewers adjacent to the project site and how your project will reduce or eliminate the identified problem. Include all calculations used to determine the proposed stormwater reduction and any other relevant information.
- C. Project Size:** Estimate the extent of the area to be retrofitted or restored (linear feet, square feet, acres, etc.), including the contributing drainage area for the project and the proposed total storage volume of the project.
- D. Site Information, Location, & Boundaries:** Describe the site in written form and include an aerial photo or map with the project site location and boundaries marked on the photo or map. Include a description of the project site in terms of its relationship to the body of water fed by the watershed. Provide the latitude and longitude of the project location. Also, identify current uses of the proposed retrofit/restoration area and the expected impacts of the project upon those uses.
- E. Site Ownership:** Identify specific site ownership including name, address, and phone number. Where the applicant is not the owner, applicants must provide written consent from the property owner documenting permission to work and install the proposed project on his/her property. Tenants and other applicants must be co-applicants with property owners for projects on public sidewalks.
- F. Site Analysis:** Discuss/list any feasibility studies or assessments prepared to address the site restoration/retrofit and the major results of those studies (e.g., flow analysis, plant lists, soil borings, permeability studies, etc.). Include all other relevant documentation associated with the project design (e.g., plant lists, etc.).

- G. Conceptual Plans & Drawings:** Describe the methods to be used to complete the stormwater retrofit and submit conceptual plans and drawings. Plans and drawings are particularly important to our review. While not required for the grant application process, please note that all projects will ultimately require final signed/stamped engineering drawings by a New York State licensed architect, landscape architect, or engineer if they are approved for funding. Projects should be “engineering design ready” and not experimental.
- H. Maintenance:** Provide a detailed maintenance plan that includes equipment needs, management and protection, as appropriate, associated with the project (e.g., maintenance of debris-catching devices, removing blockages, vegetation maintenance, etc.) for an initial maintenance term of 3 years. Projects on private property must outline a long-term maintenance plan to ensure the functionality for the life of the installation. If the project is awarded, note that the City may require additional maintenance terms in the final agreement based on project details.
- I. Monitoring (optional):** Describe in detail the protocols for measuring flow inputs and outputs of the project and include equipment and methodology. See below for more information on the Monitoring Plan.
- J. Itemized Cost Breakdown:** Provide a detailed cost breakdown for each of the project elements (e.g., engineer design drawings, material and labor costs, admin/project management costs) for installation, permits (provide a detailed list of all required permits to be obtained prior to starting work), maintenance plans, three-year monitoring (if applicable), and reporting requirements. The itemized cost breakdown should include the total cost per gallon of stormwater reduced during the first three years after implementation, and the calculation and data used to support that projection.
- K. Experience and Expertise:** Describe the special skills and experience possessed by your organization, staff, and subcontractors in association with the type of project you are proposing. Outline the number of staff to be dedicated to project management and the information for primary point of contact. Indicate whether this project is a continuation or expansion of an existing project and provide information on the status and results/outcome of the previous work.
- L. Implementation Work Plan:** Provide work plan activities and anticipated implementation timetable in a table format.
- M. Partners:** Describe the strength, qualifications and nature of the contribution of other organizations or entities that are co-applicants. If applicable, describe how the project will engage with community partners and involve local institutions or community groups in the design, construction, and/or maintenance or future stewardship of the project. Describe any educational opportunities that will arise as a result of the project.

Project Scoring

The project scoring system described below is one part of the evaluation process that will lead to selection of grant awards, and is provided for the guidance of applicants only. DEP retains the sole discretion to evaluate proposals and provide grants.

1. Benefit-Cost & Feasibility

All projects must offer stormwater reduction benefits that are both significant and reasonable in comparison to the project costs. Projects will also be scored depending upon the feasibility of construction and/or implementation determined by the drawings, schematics, maps, and feasibility analyses such as permeability studies and soil borings.

In addition, preference will be given to projects that can provide evidence that they will provide co-benefits in addition to their function as stormwater source controls.

2. Application Completeness

Projects that provide detailed and accurate information about project scope, drawings, schematics, maps and plans will be rated higher than those with inadequate or incomplete information. All verification of property ownership must be included for the application to be complete.

Finally, the package should be clear, legible, and timely.

3. Other Factors

DEP will consider the context of each project, including whether it:

- Can be completed promptly;
- Leverages funding through matching funds or significant in-kind contributions;
- Is visible and accessible to the public;
- Is conceived, designed, or implemented with strong and multiple community partners;
- Has an education, community involvement, and/or stewardship component;
- Will generate economic development and employment opportunities;
- Uses innovative designs.

Grant Requirements

Following the award announcement of the Green Infrastructure Grant Program, grant recipients will be required to construct the project as set forth in the grant application. Failure to render satisfactory progress or to complete the project to the satisfaction of DEP may be deemed an abandonment of the project and may cause termination of further grant funding and recoupment of funds already granted. Satisfactory progress toward implementation includes, but is not limited to, executing agreements and submitting payment requests in a timely fashion, retaining consultants, completing plans, designs, permit applications, reports, and construction, or other tasks identified in the grant application within the time allocated for their completion. DEP may recapture awarded funds if satisfactory progress is not demonstrated by the Grantee. Applicants should not submit applications if they do not expect to submit 60% designs within 90 days of the approval letter date and be able to complete the project within 12 months from construction start date. The agreement term for construction, maintenance, and monitoring (if applicable) must be completed no later than four years from date of award.

Agreement: Upon approval of a successful grant application, an agreement will be prepared between the City and the applicant. Thirty (30) days from receipt, a final signed agreement must be filed with DEP. The applicant must provide the following prior to signing an agreement:

- Proof of equity and lender financing (if applicable);
- Detailed project budget (final estimate);
- Copy of maintenance plan;
- Any other legal documents as required by DEP;
- Credentials of the licensed engineer or architect who will design and stamp the project; and
- Name of licensed contractors and subcontractors who will build the project

Project Deadlines: Within 90 days from the award letter date, grantees shall submit 60% designs for review. Depending on the extent and complexity of the project, review of several draft iterations may be required. Final designs should be submitted as a package as a part of the *Green Infrastructure Construction Plan* (see below). Construction must commence within 30 days of the package submittal to DEP and must be completed within 12 months of construction start date.

Permitting: Grantee shall obtain all necessary permits for the implementation of the project. A list of required permits broken down by location and specific project shall be included in the *Green Infrastructure Construction Plan* (see below) and any amendments thereto. All permits are the responsibility of the grant applicant to secure prior to construction.

In addition to complying with local regulations and permits, grant recipients are responsible for complying with state and federal regulations, which may include, but are not limited to, the following:

- State Environmental Quality Review Act (SEQRA);
- State Pollutant Discharge Elimination Discharge System Permits (SPDES);

- State Freshwater and Tidal Wetlands Act Permits;
- U.S. Army Corps of Engineer Permits;
- Coastal Erosion Hazards Areas Act Permits;
- Floodplain Management Criteria; and
- State and federal laws and regulations pertaining to historic preservation.

Professional Requirements: Project design and construction supervision is required to be undertaken by an architect, landscape architect, and/or engineer licensed to practice in the State of New York. Proper certification from a licensed architect, landscape architect, or engineer, as appropriate to the task, will be required for the preparation of designs and specifications and for the submission of as-built plans upon completion of the project.

Design Review: Locations and designs for all awarded proposals will be reviewed and approved by DEP's Office of Green Infrastructure and must have a fail-safe connection returning stormwater back to the sewer system in the event of green infrastructure failure or heavy rainfall. Grantee shall complete the following to be included in the 60% design submittal no later than 90 days from award date:

- A survey of the areas surrounding each project location to characterize the precise scale, land uses, and quantity of water generated by each sub-watershed.
- Using the Rational Method, calculate the runoff generated by the contributing drainage area for the project using the one- and three-year rainfall events for New York City and the runoff coefficients for the drainage are surfaces. Evaluate the project based on the cost per capture volume, which shall be expressed in dollars per gallon of stormwater captured. Preference will be given to projects proposing to capture more than the 1" storm and/or will capture the largest design storm feasible. DEP is available for any questions or clarifications.

DEP also recommends including any soil boring results such as soil classification and permeability tests where applicable.

Once comments from DEP have been transmitted, grantees shall resubmit revised designs within 14 calendar days. Applicants should factor in sufficient time for design review and revisions into the project schedule. Once approved and final stamped designs are on file at DEP, grantees must mobilize and start construction within thirty (30) days.

Green Infrastructure Construction Plan: Grantee shall submit a *Green Infrastructure Construction Plan* to DEP for review and approval at the time of final design submission. The *Green Infrastructure Construction Plan* shall include:

- Locations for project;
- Final engineering design, plans and specifications;
- Final maintenance plan and provisions;
- All permissions, approvals and any federal, state, or local permits required to build the project; and
- If applicable, a three-year monitoring plan (including measurement of stormwater flow inputs and outputs through the green infrastructure system).

Pre-construction Requirements: Prior to commencing construction there shall be a pre-construction meeting involving Grantee, DEP and project contractor at the project site detailing proposed schedule and agreements in place.

During Construction: Grantee will maintain construction records & photograph weekly progress. The City/DEP has the right to inspect construction progress and photograph the project.

Invoicing and Reimbursement: Once the project has been awarded and the agreement has been signed, an amount equaling 25% of total requested funds will be disbursed. The remaining funds will be disbursed based on milestones to be set forth in the grant agreement. The grantee will submit written supporting documentation and quarterly expense reports to DEP for all costs associated with the project. In addition, throughout the construction period, quarterly progress reports are required and shall be submitted to DEP for review.

An expense report form shall be developed by DEP in coordination with the Grantee. Expense reports shall include a detailed listing of the work performed and documentation of expenses incurred for each project location, which includes, but is not limited to:

1. Materials purchased and installed;
2. Employee time sheets, including a summary table of personnel hours.
 - a. Applicable Grantee time sheets must only show work conducted for green infrastructure under the Green Infrastructure Grant Program.
 - b. Hourly charges; and
3. Construction and monitoring progress (if applicable) for each project (including equipment).

All costs shown on each expense report for which payment is sought shall be consistent with the budget, documented, reasonable, and necessary. All equipment and materials shall be purchased at prices competitive in the industry. If DEP determines that any costs are excessive, the excess shall be disallowed.

All employees hired with Green Infrastructure Grant Program funding for work on public sidewalks shall be paid no less than the prevailing wage as [established by the Bureau of Labor Law of the New York City Office of the Comptroller](#). All expense reports and timesheets must reflect compliance with prevailing wage rates.

After Construction: Once construction is completed and proof of completion has been provided, DEP will conduct a final inspection of the project and issue a Certificate of Completion (see below):

- Project Certification

I certify that _____ (name of organization and Grantee) is in compliance with all local, state and federal laws. I certify that this project is not a legally mandated action under local, state or federal law, under an administrative permit condition, or under the terms of a settlement agreement.

- Testing to Capacity/Testing to Failure

Capacity/Testing to Failure will allow for a mass balance check on how water delivery actually behaves in the system. To that purpose:

1. Each of the systems shall be designed to capture as large a design storm as feasible.
2. In all cases, the system will be designed and engineered to discharge excess water into the New York City storm sewer system.
3. Based on the area of the sub-watershed, a table will be created showing catchment capabilities of each project for a specific design storm.
4. Using known quantities of input water, all installed systems shall be tested to capacity.

The Grantee **must** provide a completed Claim Form to DEP (provided by DEP) within 60 (sixty) days of the issuance of the Certificate of Completion.

Maintenance Plan: A three year initial maintenance term shall be outlined in a plan to be submitted and approved by DEP. The plan shall include the following: all maintenance requirements including labor, equipment, materials, and frequencies. It should also include any documents that will bind the property owners to the maintenance and care of the project for its expected life. Draft Plans and draft legal documents should be submitted to DEP as soon as possible after the award letter and well in advance of the *Green Infrastructure Construction Plan* package to allow for sufficient time for review and revisions.

Reporting will also be required as a record for maintenance activities performed and shall be included in the reports submitted to DEP as described below.

Reporting: Reporting should begin at the start of design for each project location and should continue for three years after installation of each green infrastructure installation. The Grantee should provide quarterly summary reports describing the performance of the project as well as an annual report and a final report. These reports should be considered property of DEP and will be made available in digital format for DEP to publish online.

- **Quarterly Summary:**

Grantee should prepare summary and submit within 7 days of the end of the quarter and should provide the status of project design, construction, and maintenance and/or monitoring during the previous three-month period. The summary should contain all maintenance activities (but not be limited to) percent volume capture of total runoff of project watershed, estimated and actual soil infiltration rates, estimated transpiration rates by species, and soil porosity. Photographs should be included. The quarterly periods are defined as December 1 – February 28, March 1 – May 30, June 1 - August 30 and September 1- November 30.

- **Annual Reports:**

An annual report should be submitted within 15 days of the end of the September 1 - November 30 Quarter. More frequent reporting after significant precipitation events

may provide important information or reveal potential problems with the performance of the green infrastructure installation.

- **Final Report:**

At the conclusion of the three year time period, a final report should be submitted by the Grantee and at a minimum should describe the following: performance, maintenance issues and future design modifications and recommendations for improved performance of each project.

Monitoring Requirements

Monitoring Plan: If applicants propose to monitor their project, a Monitoring Plan will be required and should provide for the collection and recording of a representative data sample pertinent to each project as outlined below. The Monitoring Plan should be designed to be adaptive and to allow for the collection of additional data as the projects are constructed and as new information becomes available over the three-year monitoring period (with no additional grant funds provided). Many of the monitoring parameters may be used interchangeably with other projects within the City to normalize data collection and to allow direct comparisons of their effectiveness. All data and reports generated from the Green Infrastructure Grant Program will be considered the property of the City of New York and DEP.

The Monitoring Plan should outline the frequency of testing for all projects for DEP review and approval that provides for the following (minimum parameters to be established by DEP):

- To capture the performance of the projects, monitoring should coincide to the greatest extent possible, during or shortly after precipitation events; and
- Data will be entered into a data base system (e.g., Microsoft Excel or Access) to allow detailed searching and analysis of monitoring data.

General Data Requirements for Monitoring Plan for three years:

Monitoring Plan should provide for the collection and recording of the data outlined below and as requested by DEP, including, but not limited to:

- Summary of sub-watershed characteristics and estimated flow volume rates
- Meteorological conditions from nearby certified weather locations and actual on-site measured precipitation data and stormwater flow data
- Observed weather conditions (precipitation, cloud cover, wind, temperature, etc.)
- Estimated evapotranspiration rates of various plant species used in the project utilizing meteorological conditions data from nearby certified weather station or on-site data collectors
- Estimated and actual soil infiltration rates
- Percent volume capture with respect to drainage area total
- Incidental wildlife observations

Equipment: As DEP may continue to monitor the green infrastructure locations beyond the required three years, any monitoring equipment purchased with funds paid under the Green Infrastructure Grant Program should be owned by DEP and should remain installed within each green infrastructure for additional data collection and analyses by DEP. In addition, removal of monitoring devices will likely compromise the integrity and function of the green infrastructure. Sample equipment for monitoring may include but is not limited to the following:

- Pressure Transducers, water flow meters and data logger
- PVC wells can be installed to provide access to soil water/shallow groundwater as well as soil sampling at various depths

- Gypsum block resistors with terminals accessible to the surface (consider the lifetime of blocks/replacement in use of this method)
- ECHO or analogous tensiometric probes
- Float valves in subsurface systems
- Rain gauges and weather stations

Monitoring Forms

Grantee should record all Project monitoring data on monitoring forms that will be developed in consultation with DEP. However, the scope and methods of the monitoring plan should be sufficiently developed (with estimated costs) with the grant application submission.

The input of data on the monitoring forms is the responsibility of the Grantee. A monitoring form should be completed for each project location. The Grantee should provide DEP with legible completed monitoring forms and spreadsheets in digital form (either in Microsoft Excel or Access formats) for each project location on a quarterly basis.

Reporting: See reporting requirements above and include any monitoring information in the quarterly, annual, and final reports to be submitted to DEP. Actual dates for monitoring and climate conditions must be recorded.