

# Landscaping for a Healthy Environment

April 26, 2017



# Presenters



**Karen Walzer, Barnegat Bay Partnership**



**Athena Sarafides, NJ DEP**



**Neil Chambers, South Orange EC, South Orange, Maplewood,  
Millburn Green Team, Chambers Design**



**Jason Austin, The Little Plant Company**



# Relevant Sustainable Jersey Action



## *Create a Green Development Checklist* (10 points)

Municipalities can earn 10 points toward Sustainable Jersey certification by creating a [Green Development Checklist](#) and [enabling ordinance](#) as a part of their Site Plan/Subdivision approval process. A Green Development Checklist lists various green design strategies that can be incorporated into a development and is one of several items to be submitted with a completed Site Plan/Subdivision Application.

**It is important to note that completion of the Checklist by applicants is mandatory; however, compliance with the Checklist items is not a condition of approval.**



# Relevant Sustainable Jersey Action

## Create a Green Development Checklist (10 points)

Asks the following questions under **Category 2. Site Development**

**Does the design provide for the following:**

### Low Impact Design features?

- *Bio-swales*
- [Rain gardens](#)
- [Green Roofs](#)
- *Pervious pavements*
- *Green Walls*
- [Trees](#)
- *Indigenous species (non-invasive species, low maintenance landscaping)?*

A rain garden is a "sunken garden bed" that collects & treats stormwater runoff from rooftops, driveways, sidewalks, parking lots & streets.



# Relevant Sustainable Jersey Action



## Create a Green Development Checklist (10 points)

Asks the following questions under **Category 2. Site Development**

- **Does the site provide for onsite management of vegetative waste?**

## **Regenerative Design?**

- *Does the site design for habitat, wetlands or water body conservation*
- *Does the site design include restoration of habitat, wetlands or water bodies?*
- *Does the project include long-term conservation management of habitat, wetlands or water bodies?*
- **Does the site minimize heat island effects through reduced paving, landscaping or other methods?**
- **Does the site consider landscape and stormwater maintenance specifications that employ integrated pest management post-bond to assure implementation for five years after occupancy?**



# Relevant Sustainable Jersey Action

## [Create a Green Development Checklist](#)



### Submission Requirements:

1. Submit a copy of the certified Green Development Checklist and enabling ordinance. To receive Sustainable Jersey credit, the Green Development Checklist must have been developed or updated from within 3.5 years of the June submission deadline and reflect the required components in the model outlined above.
2. When recertifying for this action, the municipality must submit an evaluation of the Checklist and its implementation using the [Recertification Requirements Questionnaire](#). Towns are advised to retain the Green Development Checklist for each application in a consolidated file to make the review easier to conduct. The review should cover the period from initial certification through the recertification application.



# Relevant Sustainable Jersey Action

## **Efficient Landscape Design (10 points)**

**Adoption of a Green Grounds and Maintenance Policy is a pre-requisite** and must be completed before earning points for this action. Once a policy has been adopted, points may be awarded for implementing Efficient Landscape Design.



Efficient landscaping should be functional, cost-efficient, environmentally friendly, and aesthetically pleasing.

*Includes:*

**Xeriscaping** (Saves water, uses native plants, minimizes maintenance)

**Rainscaping** (Minimizes surface run-off so that areas retain water through natural controls)



# Relevant Sustainable Jersey Action

## Efficient Landscape Design (10 points)



### Submission Requirements:

1. **Short report** that explains the Efficient Landscape Design practices that were installed on the municipal site. Please describe the specific xeriscaping and rainscaping practices utilized in the site design.
2. **(OPTIONAL):** Before and after images.

**Note:** “Rain Gardens Demonstration Project” and the “Green Roofs Demonstration Project” are examples of rainscaping strategies that are eligible for credit as **separate** Sustainable Jersey actions.



# Relevant Sustainable Jersey for Schools Action

## **Biodiversity Audit & Management Plan**

*(10 points – School)*



- Schools identify and assess the abundance and distribution of animal species and plant life surrounding the school in order to develop a biodiversity management plan. The school must complete a biodiversity survey using the [audit tool](#) developed by the National Wildlife Federation's Eco Schools program (or similar tool). Using this audit information, the school next develops an [action plan](#) to incorporate or expand biodiversity on the school grounds.
- Schools must involve students in the biodiversity audit and management plan process. The audit and plan may be incorporated into the science curriculum or undertaken as a special project. The biodiversity audit and plan must be completed within the past three years to be eligible for points.



# Relevant Sustainable Jersey for Schools Action

## **Biodiversity Audit & Management Plan**



### **Submission Requirements:**

1. Describe the approach used to complete the Biodiversity Audit and prepare the Biodiversity Plan.
2. Upload a copy of the biodiversity audit report and evidence of student involvement in conducting the audit. Include curriculum or lesson plans used to incorporate the audit, if applicable. The biodiversity audit report must include a school site map, site survey information that includes tree and shrub, habitat data (plants and habitat areas) and a mammal, reptile, and amphibian species observation. The audit must also include the documentation of the site biodiversity index.
3. Upload a letter from the school principal expressing a willingness to support incremental implementation of the plan (as funding permits). Submit a copy of the Biodiversity Plan that includes the components in the What to Do, and How to Do It sections bulleted list. The letter and plan have to have been completed or updated from within three years of the submission deadline.
4. Show how the results of the biodiversity audit and plan were communicated to the school community.



# Relevant Sustainable Jersey for Schools Action

## *Biodiversity Project* (10 points – School)

- The ultimate goal is to ensure that indigenous flora and fauna can continue to thrive within the school grounds. Example projects may include establishing a native species garden, replacing impervious surfaces with green space suitable for habitats, or creating food sources such as pollinator gardens or breeding habitats, ponds, or nesting boxes.
- Schools must involve students in the installation of the biodiversity project. The project may be incorporated into the science curriculum or undertaken as a special school or class project in partnership with the school community. Biodiversity projects that have been installed and maintained anytime within the previous three years are eligible for points under this action. The biodiversity project also must include a classroom learning component.



# Relevant Sustainable Jersey for Schools Action

## **Biodiversity Project** (10 points – School)

### Submission Requirements:

1. Provide a short summary of the biodiversity project, including when the project was installed, what has been accomplished, and the impact it has had on students and the school community.
2. Upload the biodiversity project plan and budget along with at least two photos of the final project installation that occurred in the past three years. Biodiversity projects installed more than three years ago that have been maintained and are still providing wildlife biodiversity benefits are eligible for points. The biodiversity plan must identify the project's target wildlife species.
3. Upload a summary of annual project maintenance activities. Identify type of maintenance and the person(s) responsible for completing the maintenance.
4. Upload lesson plans or activities that utilized the biodiversity project as part of the classroom learning.
5. **Optional:** Include outreach materials used to promote the project.



# Relevant Sustainable Jersey for Schools Action

## Green Infrastructure Assessment and Plan

(10 points – School)

The assessment report and plan must contain the following elements:

- An assessment of the amount of impervious (rooftops, parking lots, paved playgrounds, compacted soil, etc.) and permeable surfaces (lawns, woods, and other open space) on the school property.
- Identification of where the stormwater runoff goes (e.g., Are downspouts piped directly to underground to storm sewer systems? Does the parking lot drain to catch basins that carry water directly to the stream?).
- Assessment of where stormwater can be intercepted with a green infrastructure practice such as a rain garden, bioswale, rainwater harvesting system, or infiltration system.
- A map showing all the above information and determining the amount of impervious surfaces that can be treated with green infrastructure practices.



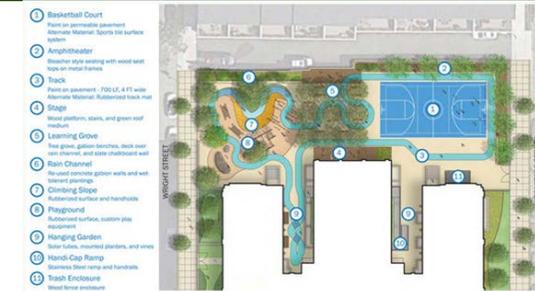
# Relevant Sustainable Jersey for Schools Action

## Green Infrastructure Assessment and Plan

(10 points – School)

### Submission Requirements:

- Provide a short narrative of what has been accomplished and the impact it has or will have on the school community.
- Upload a copy of the school's green infrastructure map of the school grounds showing the following information from tasks 1-5 in the "What to do, and How to Do it" section:
  - ❖ Impervious surfaces
  - ❖ Pervious surfaces
  - ❖ Drainage patterns
  - ❖ Areas where stormwater can be intercepted before it drains directly to the storm sewer or local waterway
  - ❖ Proposed green infrastructure projects, showing the area of impervious surface that is being treated with each project.



# Relevant Sustainable Jersey for Schools Action

## **Green Infrastructure Installation**

*(10 points – School)*



Schools can earn points for installing green infrastructure on their grounds to capture and treat stormwater. The installed project must be in place and currently maintained in working condition to qualify for points. The school is also expected to publicize the installation and the expected benefits to the school community (students, staff, and families).

Using the green infrastructure assessment and plan completed under the Green Infrastructure Assessment and Plan action, select the project to be installed. If your school has not completed this assessment, please see that action for additional guidance and detailed steps. Working with a trained professional, develop a detailed plan for the green infrastructure project.



# Relevant Sustainable Jersey for Schools Action

## Green Infrastructure Installation

*(10 points – School)*



The detailed project plan will need to identify the materials, equipment, supplies and plant materials list.

Once the detailed plan is completed, secure funding and or in-kind contributions of materials or services to complete the project. Once the materials and equipment are secured, the team should then focus on recruiting students, parents and other volunteers to assist with the installation.

Schools may want to "quantify" the impact of their completed project by calculating the reductions in stormwater volumes captured by the green infrastructure project. Online stormwater calculators are available from [USEPA](#) and other [partners](#) to quantify the reduction in the stormwater volume.



# Relevant Sustainable Jersey for Schools Action

## Green Infrastructure Installation (10 points – School)



Don't forget to take "before" photographs of the site before installation and document the progress of the project with photographs. The pictures can be used for publicity, class room learning, and educational outreach on the project.

Publicize the project to the school community by sharing photographs and narrative accounts in school and local media, or on posters and flyers displayed in the school, library, and other community buildings.



# Relevant Sustainable Jersey for Schools Action

## Green Infrastructure Installation

(10 points – School)

### Submission Requirements:

- Provide an overview of the process used to implement the Green Infrastructure project and the results of the effort to date.
- Upload documentation showing that the green infrastructure project has been installed and is currently maintained and in working order. This can include a copy of the project plan, images and written accounts of the project, articles or posts published on websites, social media, or print media.
- Upload documentation that demonstrates that the school community was informed about the project and its benefits, materials such as copies of news articles, media posts, posters and photographs from workshops, assemblies or other events at which the green infrastructure project was publicized are acceptable.



# Relevant Sustainable Jersey for Schools Action

## Green Infrastructure Assessment and Plan (10 points – School)



Performing a green infrastructure assessment identifies green infrastructure opportunities for school grounds, and can be used as a learning opportunity to engage students and staff. To qualify for points, students in your school must have conducted an assessment of existing stormwater conditions of the school grounds and identified opportunities for installing green infrastructure. The assessment and plan should have been completed no more than three years prior to the submission deadline.



# Case Study Example – Neil Chambers

- **Case Studies** of Biodiversity Projects and Green Infrastructure Installations
- **South Orange, Maplewood, Millburn ReYard Program**





Landscaping for a Healthy Environment

[chambersdesign.net](http://chambersdesign.net) **INTRODUCTION**

**Water is Good.  
Stormwater is a Form of Water.  
Stormwater is Good too.**

**Neil Chambers, circa 2017**



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## RainParks



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[chambersdesign.net](http://chambersdesign.net) **INTRODUCTION**



## RainParks



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# Waterline



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## Waterline



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**Waterline**



**Landscaping for a Healthy Environment**

Efficient Landscape Design



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Efficient Landscape Design



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# Efficient Landscape Design

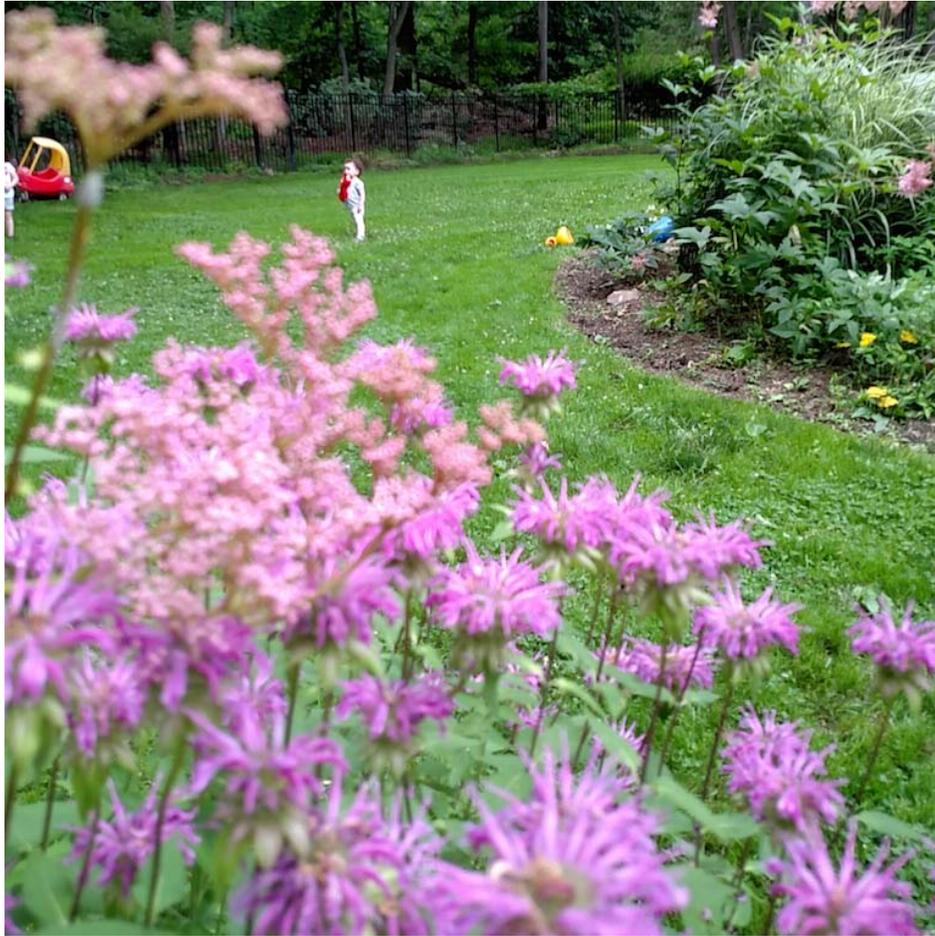


Area outlined in red are same location. Image 1 is before we did anything (2014). Image 2 is from this year (July 2015).



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# Efficient Landscape Design



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Efficient Landscape Design



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# Efficient Landscape Design



Install rain chain with catch pots at bottom

install sump pump pipe that connects underground

\*All Plants used shall be native, naturalized or adaptive species

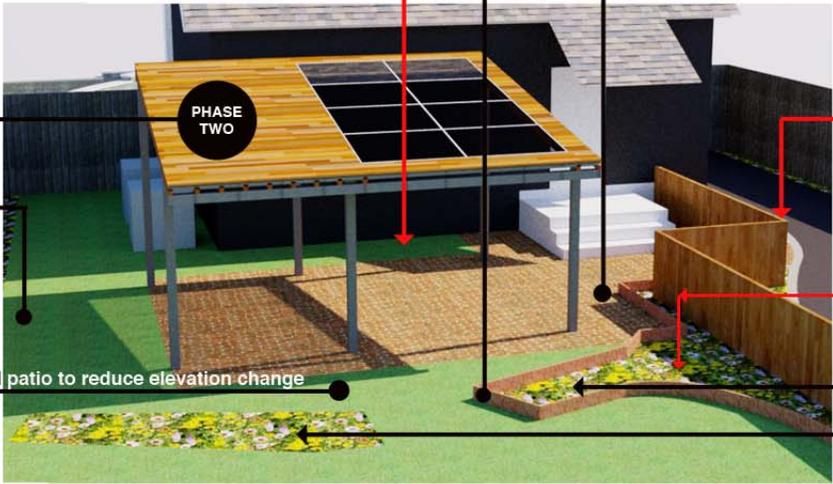
Cor-ten Steel edging, not currently part of Phase One

Install Bioswale/Dry Creek along house to direct rainwater away from patio and house

Shed must receive zoning approval and building permits from South Orange Village Township

existing pines trees to be removed

Soil to be added around patio to reduce elevation change



install new patio using reclaimed brick (herringbone pattern)

Reposition Existing Fence along new patio (install new fence as needed)

One Rain Garden shall be installed to manage water from sump pump

Install two rain gardens



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## Efficient Landscape Design



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## Efficient Landscape Design



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Green Infrastructure



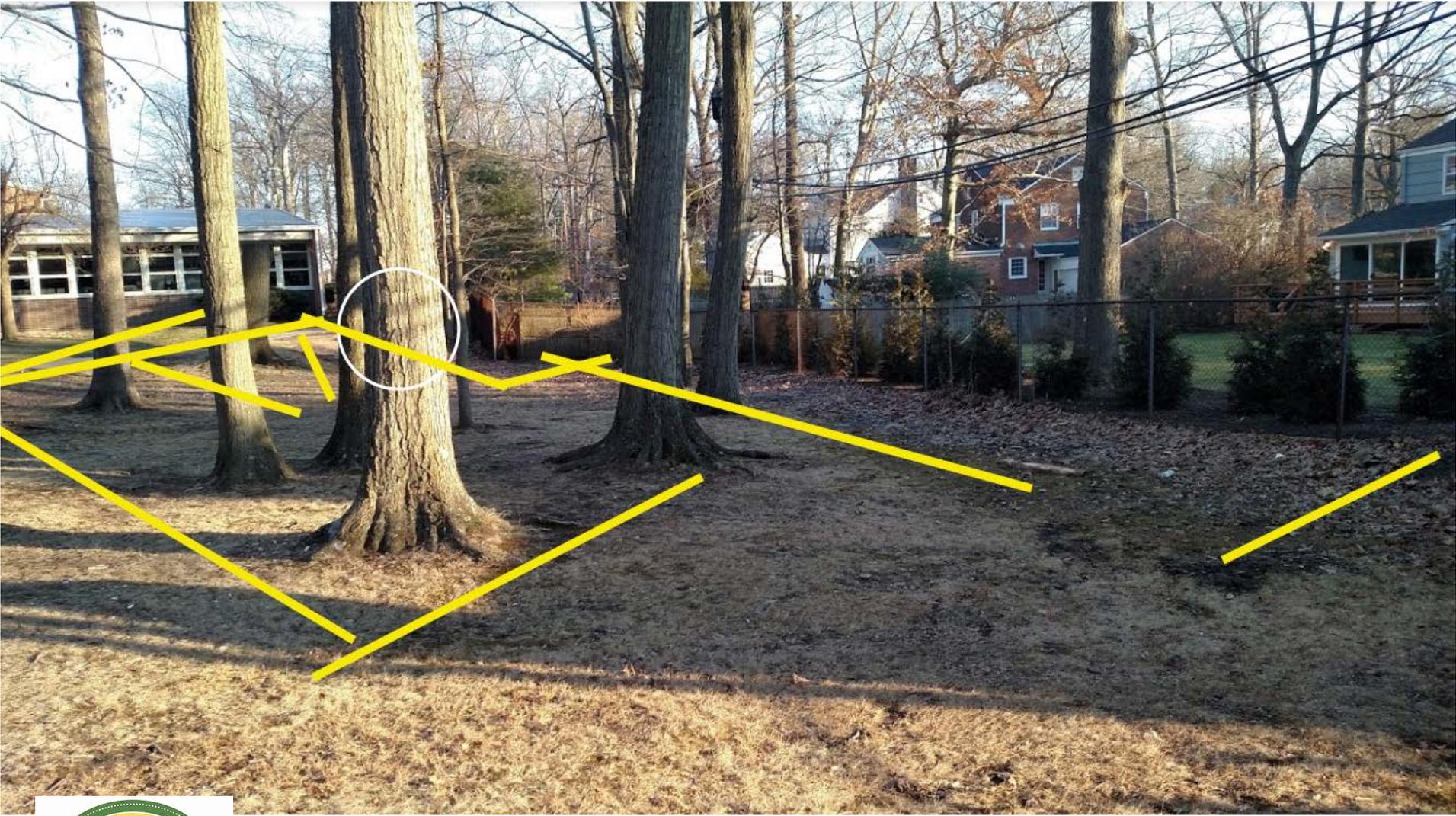
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# Green Infrastructure



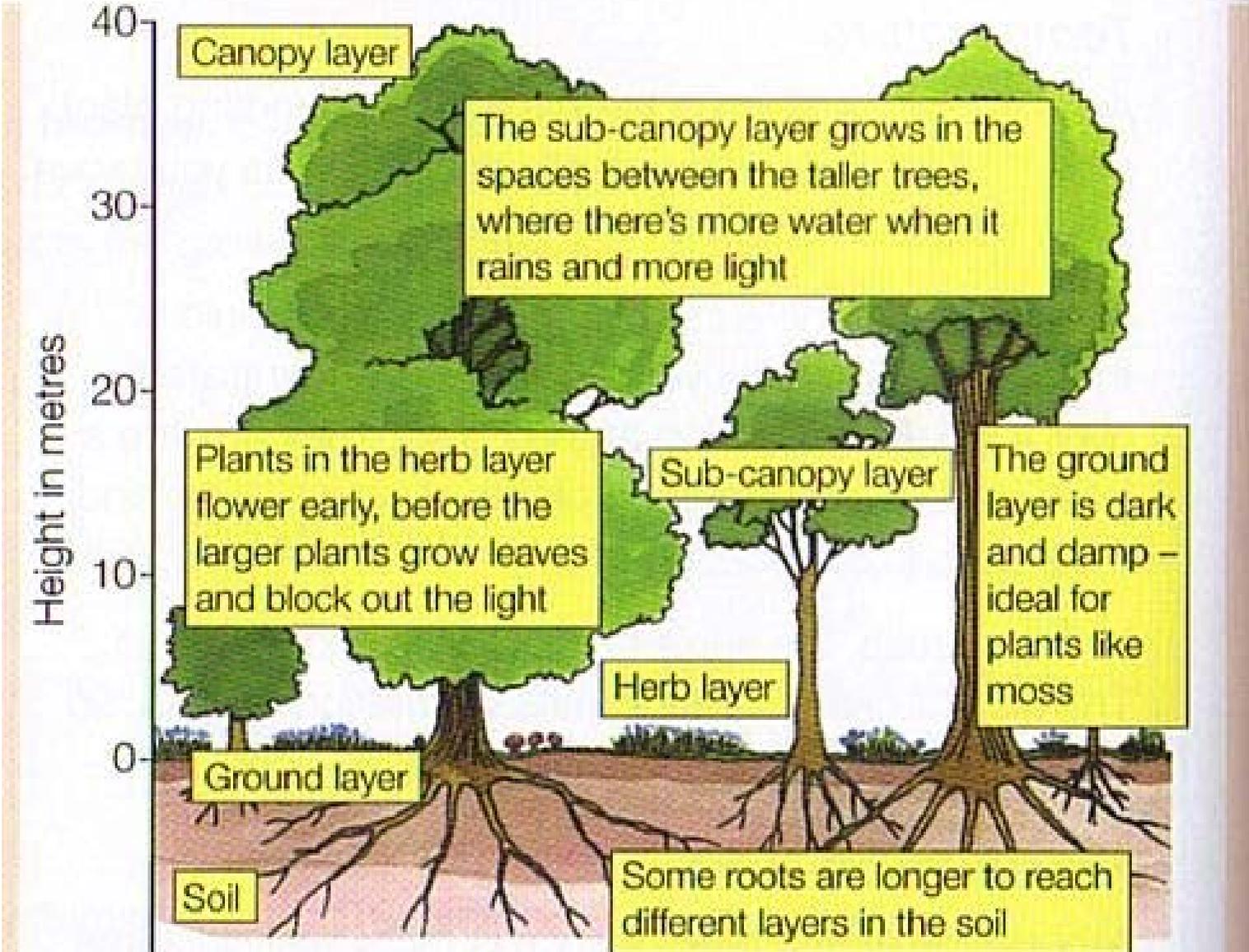
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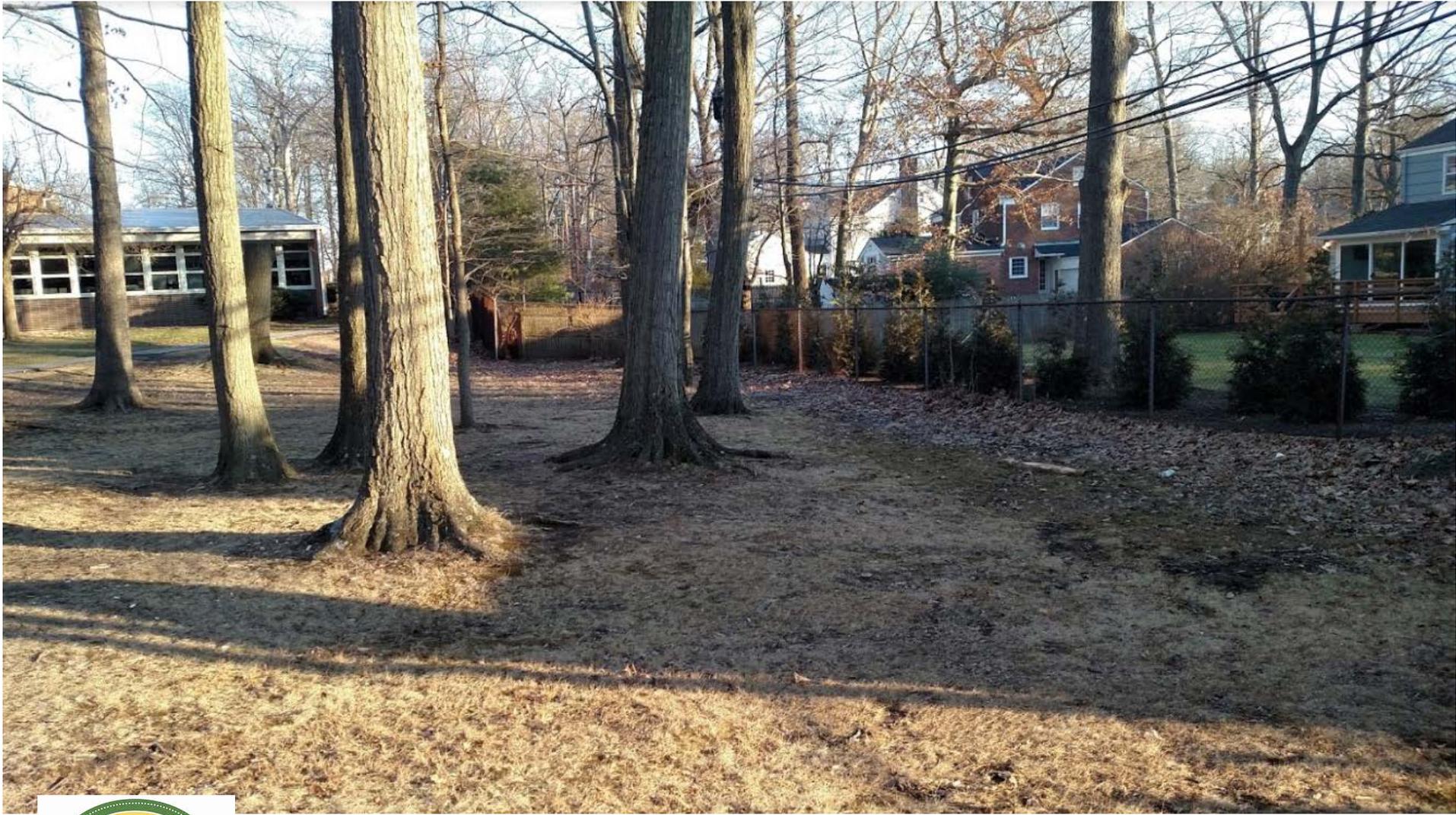
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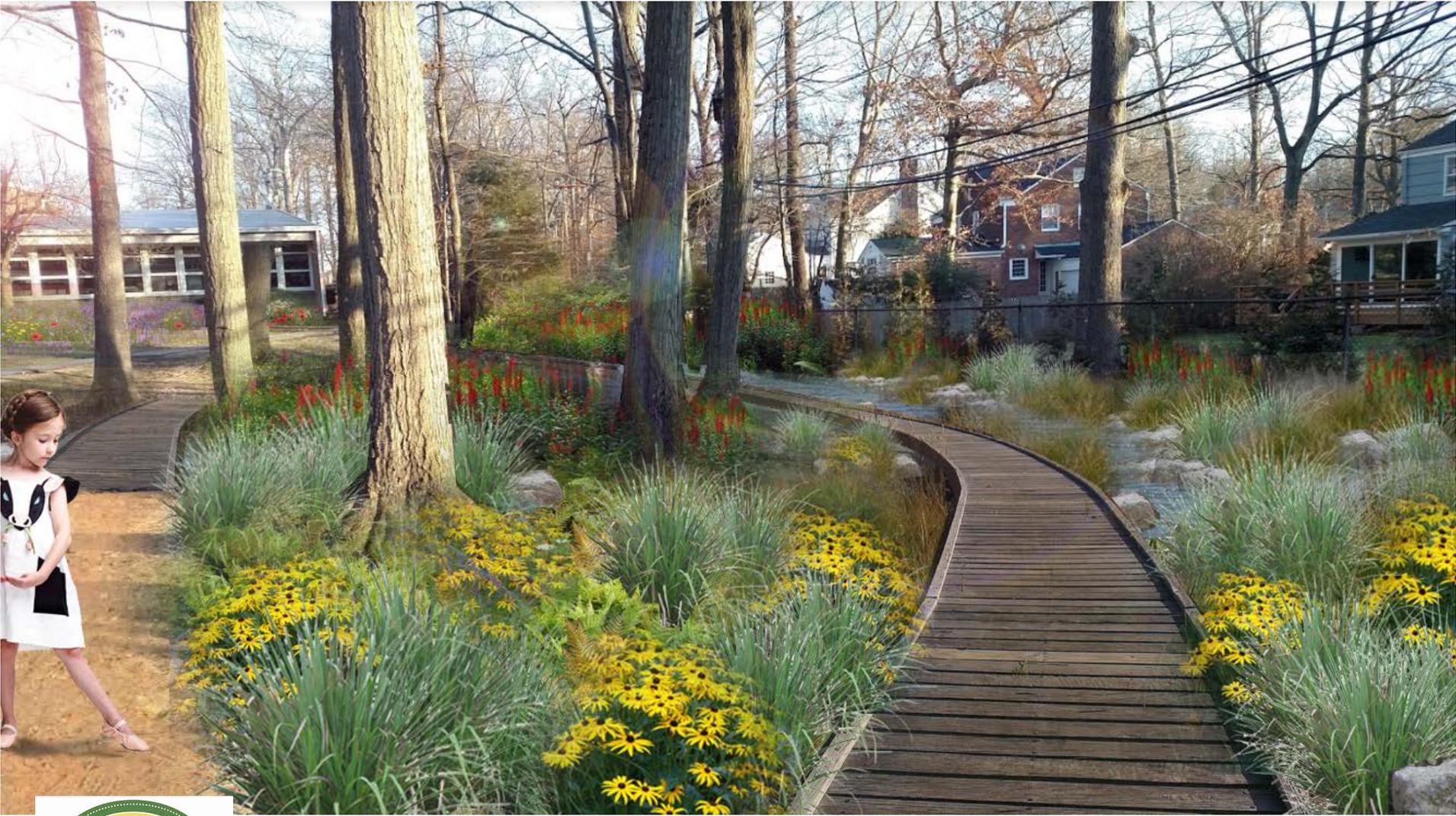
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Green Infrastructure



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# Barnegat Bay Partnership

## *Jersey Friendly Yards*

Karen Walzer, Public Outreach  
Coordinator



# Upcoming Events

## ANJEC Lunch~n~Learn Webinar: Green Infrastructure & Stream Daylighting

Thursday, April 27

12:30pm - 1:30pm

### Registration:

\$10 registration fee to participate.

If your commission/committee is on the ANJEC Workshop Plan, there is no charge to attend.

To register [email ANJEC](#) or call [973-539-7547](#).

This workshop will present ideas for implementing green stormwater infrastructure in urban and suburban areas. Learn about two case studies of stream daylighting in New Jersey.

Presenters include: Debbie Mans, Executive Director, NY-NJ Baykeeper David Peifer, Project Director, ANJEC

### Program includes:

- § Green infrastructure techniques
- § Initiatives to mitigate Combined Sewer Outflows (CSOs)
- § Stream Daylighting case studies
- § Opportunities and initiatives for Environmental Commissions and municipal officials



# Upcoming Events

## What would you do with \$4000 to make your school healthier?

### Webinar on May 11, 2017 – Register on SJ or SJS website

The New Jersey Department of Health (NJ DOH), through its Maternal and Child Health Services Title V Block Grant, is providing \$120,000 for a Sustainable Jersey Small Grants Program cycle. The cycle will fund thirty \$4,000 awards to complete specific Sustainable Jersey for Schools health and wellness actions.

Join us to learn more about the programs and activities that could be funded by this grant and the online grant application process.

The grant application deadline is Friday, June 29, 2017. Notification of grant awards will be made by the end of August, 2017 to implement actions in 2017-2018 school year.



# Upcoming Events

## Countdown to Certification: Make Sure You're Ready!

Webinar on May 31, 2017 – 1:00 – 2:00 PM Register on SJ website

*The clock is ticking...and the June 4th application deadline is rapidly approaching.*

- If you have last minute questions about the certification process, Sustainable Jersey is here to help. This webinar will review what you need to know to insure that your application process is as smooth as possible.
- **Topics covered:**
  - 2017 submission and review cycle
  - Steps for submitting an application in June and throughout the remainder of the year
  - Overview of uploading documentation and submitting the application.
  - YOUR QUESTIONS!
- **Who Should Attend:**

All municipal users, including Green Team members and volunteers, municipal officials and staff, and others interested in submitting an application this year.



# Upcoming Events

## 2017 New Jersey Sustainability Summit

June 21, 2017

The College of New Jersey



The 2017 New Jersey Sustainability Summit will explore how coordinated local action can achieve an increased collective impact. As federal and state budgets decline, there is renewed energy at the local level to make progress. But no community can be an island.

Sustainable Jersey brings together a unique mix of public and private, state and local partners to support communities in achieving remarkable progress. The 2017 Sustainability Summit will explore how we can all work together to build local capacity for change.

You will participate in thought provoking conversations that focus on engaging government, community, schools, business and academia in sustainable action. The event attracts over 300 diverse participants from across New Jersey. At concurrent sustainability sessions, you will have the opportunity to learn, listen and discuss issues ranging from water resources, energy, waste, civic engagement and local economies to school and municipal green teams. The event offers an exciting venue for networking, engagement and collaboration.

### Who Should Attend?

Sustainable Jersey and Sustainable Jersey for Schools green team and Task Force members, academics, elected officials, state and local agency representatives, businesspeople, non-profit organizations and the interested public.

For information about registering, visit [www.sustainablejersey.com](http://www.sustainablejersey.com)

