



Passaic County Green Infrastructure Plan Community Focus Group Meeting Summary

Date: April 24, 2017

Time: 3:00 pm

Location: New Jersey Community Development Corporation (NJCDC)
Rogers Meeting Center
32 Spruce Street
Paterson, NJ 07509

Attendees:

Name	Organization	Title
Richard Stomber	William Paterson University	AVP, Administration
Marlene Morgan	NJCDC	Real Estate Associate
Erin Maguire	City Green	Community Garden Coordinator
Mark Ricklis	Jewish Family Service of Clifton	Director of Operations
Sheri Ferreira	Greater Paterson Chamber of Commerce	Assoc. Director
Amy Rowe	Rutgers Coop Ext.	County Agent
Ariel Alonso	Catholic Family & Community	Coordinator
Zoltan Nagy	Passaic County Community College	Testing Department Technical Assistant
Courtenay Mercer	MPA	Principal
Steve Boudalis	Passaic County Education Association (PCEA)	President
Christine	Not provided	Master Gardener
Jason Simmons	Passaic County	Planner
Cathy Pariser	Passaic County Master Gardener	Not Provided
Blythe Eaman	NJTPA	Principal Planner
Rod Ritchie	AKRF	Project Manager
Shannon Donohoe	McCormick Taylor	Communications Specialist
John Mullen	McCormick Taylor	Communications Manager

Meeting Purpose: The purpose of this meeting was to conduct a focus group with members of the community that are involved in local organizations in order to identify ways to best reach out to community members to spread the word about the planning project. The focus group also served as a way to gauge participants' knowledge of green infrastructure and to better understand problem areas in their communities.

Agenda:

1. Welcome & Introductions
2. PowerPoint Presentation
3. Questions & Discussion

Meeting Summary:

Mr. Jason Simmons, Passaic County Principal Planner and Project Manager, opened the meeting by welcoming participants and explained the purpose of the study. The purpose of the focus group is to engage community partners to help guide the development of the planning documents and to get feedback on how to make them useful to community members. The selected participants were chosen because the communities that they work and live in are impacted by stormwater management issues.

Consulting project team members, Mr. John Mullen and Ms. Shannon Donohoe of McCormick Taylor; Ms. Courtenay Mercer of Mercer Planning Associates (MPA); and Mr. Rod Ritchie of AKRF, introduced themselves to the participants and explained their role in the project. Mr. Simmons then asked each participant to introduce themselves to the group.

After introductions were complete, Mr. Mullen explained that the GI plan will not only guide public improvement projects, but will also include requirements for private developments. The plan will take into consideration the County's diverse geography – rural, suburban, and urban conditions. The project team is looking to hear from the community before drafting model documents for the plan. This focus group is the first opportunity to have a discussion about how to develop an effective plan. The hope is that the focus group participants will be the conduit to community members that may not otherwise be engaged in the planning process.

During the presentation Mr. Ritchie explained that the purpose of green infrastructure (GI) is for water quality and slowing runoff. Existing examples of GI in Passaic County were discussed, including the Grand Street stormwater bumpout that addresses stormwater overflow, illegal parking, and pedestrian safety; and two rain gardens in Courthouse Plaza.

It was apparent that there is a common perception among the community members that maintenance of permeable pavement is more difficult. Mr. Ritchie responded that anything needs to be maintained to work properly, but the root of the issue is ensuring proper installation. Everything needs to be maintained to work properly. With porous pavement, it typically needs maintenance two times a year. Ms. Rowe stated that it depends a lot on design and installation. Ms. Rowe suggested using a vacuum sweeper in the spring & fall. These systems are designed to infiltrate high volumes (thousands of gallons), so even reduced permeation is still very effective.

Next, the project team discussed the project's interactive map and explained that it is an outreach tool that allows the community to identify areas of concern and areas of opportunity. The project team is also looking for help with ways to reach leaders in communities of limited English proficiency (LEP) populations. Mr. Simmons added that the

goal is to reach people who are not typically involved in the planning process, which include communities of concern, those impacted by environmental justice issues, and LEP communities.

After the presentation was complete, the focus group members were presented with a set of questions for discussion. The questions and responses to each are provided below:

Discussion:

Where are some of the most significant stormwater runoff and flooding problems in Passaic County?

- o The Greater Paterson Chamber of Commerce can share the information about this GI plan with their members, particularly the interactive map.
- o A focus group member asked how this project is different than any other flood management projects going on? Mr. Ritchie explained that this plan is specifically looking at green infrastructure, including guidelines on when and where to use certain techniques. Mr. Simmons stated that transportation is the County's main jurisdiction. They are trying to look for creative ways to not only deal with stormwater, but also address pedestrian improvements. The County realizes that they did not have the resources to do this consistently and widely. In the past, they have done small projects such as rain barrel distribution. The Army Corps usually looks at structural improvements such as how to pump the water out. The County wants to look at less structural ways that address water quality as well.
- o A focus group member expressed concern that this seems like a higher standard, and questioned the feasibility of the plan. Mr. Ritchie explained that this is not a huge departure from what the New Jersey Department of Environmental Protection (NJDEP) has by way of guidance; it's the intent of the Plan to formally integrate GI into practice in the County. Modern stormwater practices need to align with specific circumstances that exist in the County. Mr. Simmons stated that it means formalizing guidance for developers.
- o A focus group member asked how success will be measured. Mr. Ritchie explained that it improvement will be realized over time as the guidelines are implemented throughout the County. If they are implemented in all development and County capital improvement projects, it will prove out over time.
- o A focus group member asked if the County plans to change the way that it operates. Mr. Ritchie explained that this project was undertaken by Planning Department with participation from the Engineering Department. The result will be guidelines that the County Engineers will use in designing projects.

Do you believe that traditionally disadvantaged populations in your community may be disproportionately affected by stormwater runoff and flood events? If so, how?

- o A focus group member stated that all of the water ends up below the falls. People that live in this area are disproportionately impacted.
- o A focus group member asked if the County is looking to make developers implement these practices. Mr. Simmons stated that yes the County is looking to integrate these standards into site plan review. Mr. Ritchie explained that NJDEP has a requirement to use non-structural strategies, which can be met using green infrastructure. Mr. Simmons

stated that people are interested in doing it, but want to know what the standard is before they do it.

Green infrastructure practices are a means of reducing stormwater runoff and improving water quality by capturing rainwater where it lands and helping it to infiltrate into the ground. Green infrastructure measures may include installation of rain gardens, planters, rain barrels, vegetated swales, green roofs, and permeable pavement, among other practices. Are you aware of any green infrastructure measures in your community?

- A focus group member asked how people are recognized for doing GI. Mr. Ritchie stated that DEP credits are a major benefit. Mr. Simmons has looked at a nominal discount on application fees if they incorporate GI as recognition. Mr. Ritchie shared that the NJ Future Developers GI Guide describes various benefits, including financial and marketing.
- Ms. Rowe stated that Newark passed a Cumulative Impacts Ordinance about air quality, water quality, etc. The Environmental Committee reviews development plans to see if the project will have a negative impact on public health. This puts applications at a disadvantage if they do not incorporate innovative practices like GI.
- Mr. Mullen stated that there are organizations that give awards/recognition to those that incorporate GI BMPs.
- A focus group member stated that County Engineering has a comment area on their website.

What do you believe are the most appropriate sites and opportunities for green infrastructure in your community and Passaic County as a whole (i.e. street, municipal land, private development, etc.)?

- There is minimal understanding about green infrastructure, and education will be very important. Many will equate GI to parks. Developers will understand, but residents will not fully understand.
- Showing examples of different GI installations will help to get people interested. It is important to have images at the public meetings.
- Mr. Mullen asked the group for their thoughts on how to get people to come out to project meetings. He discussed sending information directly to community groups. It was also suggested by a focus group member that the stormwater impacts to mosquito populations be highlighted when discussing GI.

Do you believe there are barriers to the installation of green infrastructure in your community?

- Common barriers discussed by the group included a lack of understanding, perceived high cost, perception that developers like things to be streamlined, and discussion as to whether there are appropriate incentives such as taxes or higher development yields.

Do you or your organization do any education or outreach to community member about flooding, stormwater, or green infrastructure?

- William Paterson is the largest employer in the County. They have a Climate Action Committee. The Environmental Studies Department may be able to get involved or assist with the promotion of the GI plan.
- The Chamber of Commerce can provide a link to the project website and talk about the GI plan on their social media accounts.

We have established a project website

(<http://www.passaiccountynj.org/greeninfrastructure>) where we will be posting information about the project, including a survey and information about upcoming meetings. Understanding that not everyone has access to an internet service; would your organization be willing to assist us with disseminating paper surveys to encourage briefer participation? Are there any other ways you would recommend reaching residents with limited or no internet service?

- A focus group member expressed that the best ways to engage underrepresented communities is to create a network of trusted leaders and televise Council meetings. It was also suggested that the County tap into the televised Council meetings to help spread the word and ask City Councils to mention the GI plan. Partners should also be provided with suggested social media language.
- A focus group member asked about the role of Freeholders. Mr. Simmons explained that Freeholders are aware of the project, and Freeholder Bartlett is most involved with transportation systems. The County would like to integrate GI into existing projects, and in some cases it may be cheaper.
- A focus group member suggested using interpretive signage for pilot areas to advertise/educate about the project.
- A focus group member suggested adding a mobile text option for submitting comments on the project.
- A focus group member suggested a seal/logo/icon to recognize projects, for example, the Vision Zero of stormwater management/GI.
- Master Gardeners has a mailing list of 285 people.

Is your organization able to help us spread the word about public meetings and other project outreach activities?

- Jewish Family Services will post flyer about project outreach activities.
- Through the American Democracy Project at William Paterson, students have to do community service and could help promote project outreach activities.

How would you like to see Passaic County's future Green Infrastructure Plan best help your community? Is there certain information you would like to see included in it?

- A focus group member relayed that they would like the project to bring awareness of the problems of stormwater, particularly combined sewer overflows (CSOs).
- A focus group member noted the success of the storm drain "drains to river" stencil project, and that it should be expanded.
- A focus group member asked about grants for pond dredging. Mr. Ritchie stated that resources will be discussed in the plan to help fund future projects.



County of Passaic

Department of Planning & Economic Development
930 Riverview Drive, Suite 250
Totowa, New Jersey 07512

www.passaiccountynj.org

Michael La Place AICP, PP
Director

PLANNING BOARD

TEL (973) 569-4040
FAX (973) 812-3450

April 6, 2017

Dear ,

Passaic County, with support from the North Jersey Transportation Planning Authority, has initiated a planning study to produce a county-wide Green Infrastructure Plan. The Plan will outline specific strategies to better implement green infrastructure and low impact design improvements through all County processes, as well as serve as a resource to local municipalities. The goal of the study is to provide the analysis required to reduce and/or mitigate the impacts of stormwater events to help maintain a safe and reliable transportation system that is often inundated by routine and major storm events.

On behalf of Passaic County, I would like to invite you to participate in a focus group discussion to: 1) learn more about the project and gather input on desired outcomes to be included in the Plan; and 2) offer feedback on our outreach strategy and advice on ways it can be improved to better engage all facets of the community, including the traditionally disadvantaged population groups. We encourage you to attend the following session:

Date: Monday, April 24

Time: 3:00 PM to 5:00 PM

Location: New Jersey Community Development Corporation (NJCDC)
Rogers Meeting Center
32 Spruce Street
Paterson, NJ 07509

Parking and Directions: Please park at the Overlook Park at Great Falls (map included). From the parking lot, walk south one block on Spruce Street to the courtyard of NJCDC's building. Take the stairwell alongside the playground to an asphalt walkway to the Rogers Meeting Center. The meeting will be held on the second floor of the building.

The focus group session will be a facilitated discussion, and include members of other local community groups and faith-based organizations representing impacted environmental justice communities. Attached is a list of questions that are intended to spur an informed and productive dialogue with the County's planning team. Please review these questions in advance of the session in order to discuss how these topics may be relevant and important to your organization.

Please RSVP acceptance or regrets at www.passaiccountynj.org/greeninfrastructure.



Passaic County Green Infrastructure Plan
April 6, 2017

Thank you in advance for your participation, and we look forward to your valuable input.

If you have any questions in advance of the session, you may contact our planning team consultant, Alexis Williams at 215.592.4200.

Thank you,

A handwritten signature in black ink, appearing to read 'Jason Simmons', with a large, stylized flourish at the end.

Jason Simmons, Principal Planner
Passaic County Department of Planning & Economic Development

Enclosure: Focus Group Questions
Parking and Building Directions

Community FG RSVP (Responses)							
Timestamp	First Name	Last Name	Organization	Title	Email address	Phone Number	Will you attend the Comm
4/12/2017 8:32:24	Michael	Cassidy	NJCDC	Director of Planning and F	mcassidy@njcdc.org	973-413-1589	Yes
4/12/2017 12:08:42	Nancy	Miller	United Food & Comm Wkrs Union Local 1262 & Employers Welfare Fund		cconnery@ufcwlocal1262.org		Yes
4/17/2017 10:45:34	Steve	Boudalis	The Education Association of Passaic (EAP)	President	steveb@eapassaic.org	9737771970	Yes
4/17/2017 11:17:44	Claire	Rolling	Paterson Habitat for Humanity	AmeriCorps Service Mem	claire@patersonhabitat.org	973-595-6868 x122	Yes
4/17/2017 16:24:38	Thomas	Henion	Madison Ave-crossroads Community Ministries Inc	Executive Director	tjhenionsr@gmail.com	9732785627	No, but I am interested in
4/20/2017 15:18:01	Richard C.	Williams	St. Paul's Community Development Corporation	Executive Director	rcwilliams@stpaulscdcnj.org	973-710-3900	No, but I am interested in
4/21/2017 12:12:50	Ariel	Alonso	Catholic Family and Community Services	Coordinator of Community	aalonso@catholiccharities.org	973-279-7100 x2032	Yes
4/21/2017 13:18:05	Mark	Ricklis	Jewish Family Service of Clifton-Passaic	Director of Operations	m.ricklis@jfsclifton.org	973.777.7638	Yes
	Jasmine	Moreano	City Green	Director of Community En	jmoreano@city-green.org		Yes

Passaic County Green Infrastructure Plan

Community Focus Group Discussion Items

April 24, 2017

3:00 PM – 5:00 PM

**New Jersey Community Development Corporation (NJCDC)
Rogers Meeting Center
32 Spruce Street
Paterson, NJ 07509**

1. Where are some of the most significant stormwater runoff and flooding problems in Passaic County?
2. How are members of your community or organization that you represent impacted by these events?
3. Do you believe that traditionally disadvantaged populations in your community may be disproportionately affected by stormwater runoff and flood events? If so, how?
4. Green infrastructure practices are a means of reducing stormwater runoff and improving water quality by capturing rainwater where it lands and helping it to infiltrate into the ground. Green infrastructure measures may include installation of rain gardens, planters, rain barrels, vegetated swales, green roofs, and permeable pavement, among other practices. Are you aware of any green infrastructure measures in your community?
5. Do you think there is an adequate understanding by members of the community you serve about the function and benefits of green infrastructure (enhanced water quality, absorb/store/detain stormwater volumes, etc.)?
6. What do you believe are the most appropriate sites and opportunities for green infrastructure in your community and Passaic County as a whole (i.e. streets, municipal land, private development, etc.)?
7. Do you believe there are barriers to the installation of green infrastructure in your community such as:
 - a. Lack of understanding of the function and effectiveness of green infrastructure
 - b. Perceived high costs
 - c. Lack of developer enthusiasm
 - d. Lack of incentives
 - e. Lack of funding or municipal structure for for ongoing maintenance

- f. Regulatory barriers
 - g. Lack of design standards
 - h. Lack of public support
8. Do you or your organization do any education or outreach to community members about flooding, stormwater, or green infrastructure?
9. From your experiences working with underrepresented communities, what have you found to be the best ways to engage these populations?
10. We have established a project website (<http://www.passaiccountynj.org/greeninfrastructure>) where we will be posting information about the project, including a survey and information about upcoming meetings. Understanding that not everyone has access to an internet service, would your organization be willing to assist us with disseminating paper surveys to encourage briefer participation? Are there any other ways you would recommend reaching residents with limited or no internet service?
11. Is your organization able to help us spread the word about public meetings and other project outreach activities?
12. How would you like to see Passaic County's future Green Infrastructure Plan best help your community? Is there certain information you would like to see included in it?

Passaic County GREEN INFRASTRUCTURE PLAN



Passaic County, with support from the North Jersey Transportation Planning Authority, has initiated a planning study to produce a county-wide Green Infrastructure Plan. The Plan will outline specific strategies to better implement green infrastructure and low impact design improvements through all County processes, as well as serve as a resource to local municipalities.

What is Green Infrastructure?

Green infrastructure is a set of site-specific stormwater management techniques that uses the natural process of infiltration to effectively manage stormwater runoff. Examples of green infrastructure can include rain gardens, green roofs, pervious pavement, stormwater planters, vegetated swales, and many other techniques.

Why is Green Infrastructure Important?

Stormwater runoff is a major cause of water pollution in urban areas. When a rain event causes runoff from parking lots, rooftops, streets, and other impervious surfaces, the water cannot infiltrate naturally into the ground as it should. The stormwater runs off these surfaces and is discharged by storm sewer systems into nearby water bodies; often picking up trash, bacteria, and other pollutants along the way. In the case of a combined system, the runoff is mixed with sewage. Green infrastructure allows stormwater to be absorbed and filtered by soil and plants at the source effectively removing it from the storm sewer network.

The Benefits of Green Infrastructure:

- Decreases amount of stormwater entering into sewer systems
- Protects water quality
- Improves air quality
- Reduces localized flooding
- Improves aquatic and wildlife habitat
- Improves aesthetics

How Can You Get Involved?

Please visit the project website at:

<http://www.passaiccountynj.org/greeninfrastructure>

for information on upcoming meetings and materials to review.



Passaic County Green Infrastructure Study



Green Infrastructure Survey

The survey will help us identify stormwater and flooding problem areas in the County, existing green infrastructure projects, and improvements that are desired to improve conditions. Your responses will help inform the future planning of green infrastructure in the county.

Take the survey online!

An interactive version of the green infrastructure survey is available online. Please help us gather additional information by visiting the website and completing the online version:

<http://www.passaiccountynj.org/greeninfrastructure>

Are you familiar with any of the following green infrastructure techniques? Select all that apply.

- | | |
|---|---|
| <input type="checkbox"/> Stormwater planter or tree pit | <input type="checkbox"/> Vegetated swale (bioswale) |
| <input type="checkbox"/> Curb bump-out | <input type="checkbox"/> Rain garden |
| <input type="checkbox"/> Permeable pavement | <input type="checkbox"/> Rain barrel or cistern |
| <input type="checkbox"/> Green roof | |

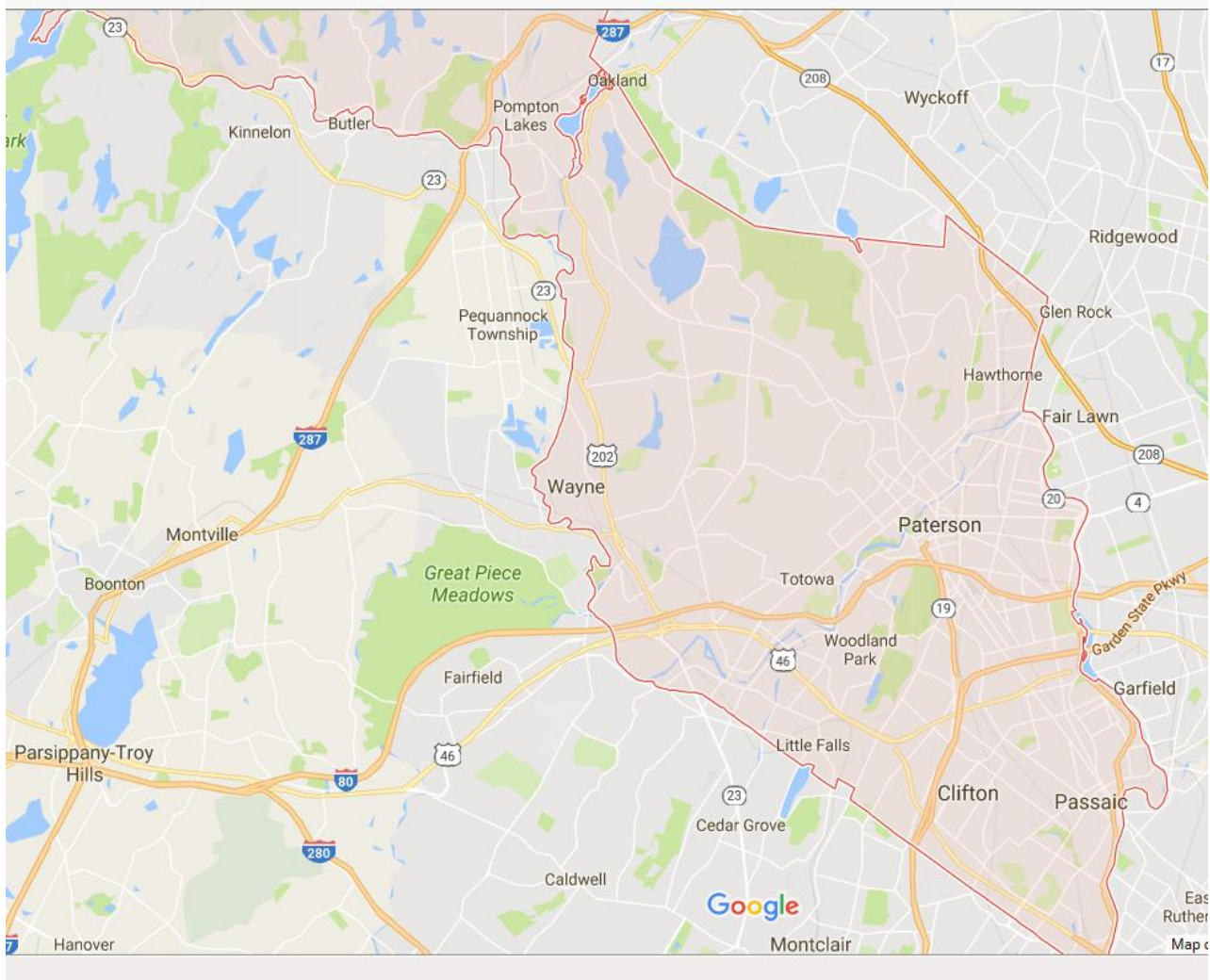
On a scale from one to five, how would you rate stormwater and flooding as a problem in the community where you live?

- 5 - Extreme problem. Flooding and stormwater always occur during storm events.
- 4 - Major problem. Flooding and stormwater often occur during storm events.
- 3 - Moderate problem. Flooding and stormwater sometimes occurs during storm events.
- 2 - Minor problem. Flooding and stormwater only occasionally occur during storm events.
- 1 - Not an issue
- Do not know

What is your home zip code?

Please turn the page and draw on the map any:

- **Stormwater or flooding areas**
- **Existing green infrastructure projects**
- **Green infrastructure opportunity areas**



Where are the major flooding and stormwater problem areas in Passaic County? Please mark with on the map with a circle (O) and describe below.

Are you aware of any existing green infrastructure projects in Passaic County? Please mark on the map with a triangle (Δ) and describe below.

Are there any opportunities for green infrastructure in Passaic County? Please mark on the map with a hashtag (#) and describe below.

Is there anything else you would like to tell us about stormwater, flooding or green infrastructure in Passaic County?

Raffle Drawing!

For a chance to win a \$5 Dunkin Donuts Gift Card, please return the completed survey to our Planning Consultant, **Alexis Williams** at **McCormick Taylor, 2001 Market St., Philadelphia, PA 19103** or scan and email to amwilliams@mccormicktaylor.com. Please return completed surveys by June 14, 2017.

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| <input type="checkbox"/> Green roof | |

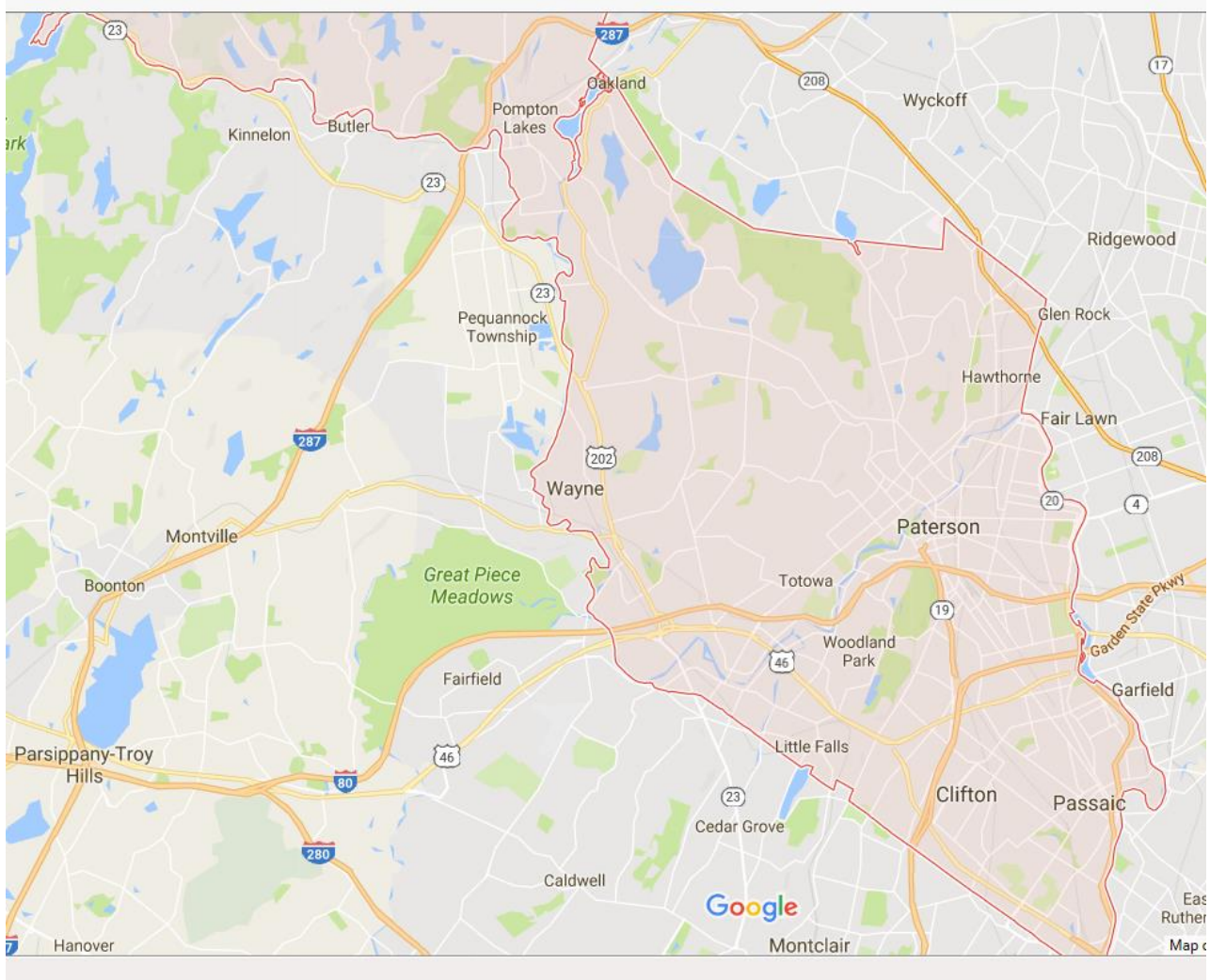
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Passaic County Green Infrastructure Plan Municipal Focus Group Meeting Summary

Date: April 24, 2017

Time: 6:30 pm

Location: Passaic County Offices
930 Riverview Drive, Suite 200
Totowa, NJ

Attendees:

Name	Organization	Title
Barry Greenberg	Bloomingtondale	Planning/B.O.A
Rayna Laiosa	Hawthorne	Env. Com/Green Team
Rati Mandzulashvili	Distinct Engineering Solutions Inc.	Senior Staff Geotechnical Engineer
Steve Flormann	Pompton Lakes SWM Committee	SWM Chair
Maria Cordonnier	Little Falls Council	Council Woman
James Damiano	Little Falls	Mayor
Dennis Lindsay	Little Falls	Engineer
Greg Luciano	Totowa Shade Tree Commission	Chairman
Walt Kilpatrick	Little Falls Planning Board	Chairman
Kevin Barry	Little Falls Planning Board	Member
Lauren Venin	Pompton Lakes Flood Advisory Board	Chairwoman
Jason Simmons	Passaic County	Planner
Blythe Eaman	NJTPA	Principal Planner
Rod Ritchie	AKRF	Project Manager
Shannon Donohoe	McCormick Taylor	Communications Specialist
John Mullen	McCormick Taylor	Communications Manager

Meeting Purpose: The purpose of this meeting was to conduct a focus group with representatives from the municipalities within Passaic County, including floodplain administrators, and members of each municipality's Planning Board, Environmental Commission, Green Team, and/or Shade Tree Commission to explain the project and encourage involvement of their communities.

Meeting Summary: The format of the meeting was an open house. Computers were set up to allow people to explore the project's interactive map website and identify problem and opportunity areas in the County. Maps were displayed throughout the meeting space.

Project team members engaged in conversation with attendees and recorded the various suggestions and ideas they heard.

Comments included the following:

- Permeable pavement is a good option for stormwater management but maintenance is difficult.
- Permeable pavement may require more maintenance but it is much safer for driving in the rain.
- The public is not aware of stormwater features and their functions. They only see the aesthetic benefits.
- We need to make a push for using native plants when designing green infrastructure.
- Municipalities should be required to include green infrastructure in their stormwater management plans.
- The municipalities need to work together to find a solution; it is not one person's problem.
- We need to start thinking about how we can make a project better by including green infrastructure.
- Including the public in projects is important but it can be difficult to get them to participate.
- Ways to engage the public include children's workshops about rain gardens (Pompton Lakes is doing this).
- Properties at higher elevations need to do their part to manage stormwater from the top, so that it's more manageable when it reaches properties at lower elevations.
- Provide green infrastructure materials to schools to be used during assemblies and in classrooms.
- Include millennials as part of the outreach program as they generally support environmental sustainability.
- Prepare posters for locations where surveys will be placed to encourage visitors to fill out the information.
- Provide municipal buildings and public locations with plans displays summarizing green infrastructure as part of a larger public education effort.
- Little Falls elected officials are interested in learning more about the role of the County and municipalities regarding funding and implementation strategies.
- Provide materials to local stormwater management committees and flood advisory boards.



County of Passaic

Department of Planning & Economic Development
930 Riverview Drive, Suite 250
Totowa, New Jersey 07512

www.passaiccountynj.org

Michael La Place AICP, PP
Director

PLANNING BOARD

TEL (973) 569-4040
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April 6, 2017

Dear ,

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On behalf of Passaic County, I would like to invite the Chairpersons (or their designee) of your local Planning Board, Environmental Commission, Green Team, and Shade Tree Commission to participate in a focused discussion that will help us understand stormwater and flooding challenges, local problem areas, on the ground conditions, and localized implications and ramifications of draft recommendations. The session will be held:

Date: Monday, April 24
Time: 6:30 PM to 8:30 PM
Location: Passaic County Offices in Totowa (930 Riverview Drive, Suite 200, Totowa, NJ)

The session will be held in an open-house format where municipal officials may drop in anytime between 6:30 PM and 8:30 PM to speak one-on-one with members of the County's planning team, ask questions, and engage in dialogue with municipal officials from neighboring communities.

We ask that you please share this invitation with the Chairpersons from your local:

- Planning Board
- Environmental Commission
- Green Team
- Shade Tree Commission

They may RSVP acceptance or regrets for the April 24th session at www.passaiccountynj.org/greeninfrastructure.

Also, please share the attached list of questions so that attendees may review these questions in advance of the session in order to discuss how those topics may be relevant and important to your municipality.



Passaic County Green Infrastructure Plan
April 6, 2017

If you have any questions in advance of the session, you may contact our planning team consultant, Alexis Williams at 215.592.4200.

Thank you,



Jason Simmons, Principal Planner
Passaic County Department of Planning & Economic Development

Enclosure: Focus Group Questions



Municipal FG RSVP (Responses)							
Timestamp	First Name	Last Name	Organization	Title	Email	Phone	Will you attend the Municip
4/12/2017 8:34:17	Lauren	Venin	Pompton Lakes Flood Advisory Board	Chair	lauren.venin@gmail.com		Yes
4/12/2017 13:21:06	Steve	Flormann	Pompton Lakes Stormwater Management Committee	Chair	sflormann@gmail.com		Yes
4/17/2017 13:39:05	Ms.	Unknown	North Haledon	Green Team	unknown		Yes
4/23/2017 21:05:23	Rayna	Laiosa	Hawthorne Environmental Commission	Chairperson	rayna9001@yahoo.com	201-410-1796	Yes
4/24/2017 16:45:27	Kevin	Barry	Little Falls Planning Board	Member	Kevinbarry.eus@gmail.co	973-432-4192	Yes

Passaic County Green Infrastructure Plan

Municipal Officials Discussion Items

April 24, 2017

6:30 PM – 8:30 PM (Open House)

Passaic County Offices in Totowa (930 Riverview Drive, Suite 200, Totowa, NJ)

1. Where are some of the most significant flooding and stormwater problems in the County?
2. How does flooding and stormwater impact the transportation system in your community and the County as a whole?
3. What are the driving forces that can affect flooding and stormwater in Passaic County over the next 20 years (threats, trends, opportunities)?
4. Green infrastructure practices are a means of reducing stormwater runoff and improving water quality by capturing rainwater where it lands and helping it to infiltrate into the ground. Green infrastructure measures may include installation of rain gardens, planters, rain barrels, vegetated swales, green roofs, and permeable pavement, among other practices. Has your community installed green infrastructure practices or pursued funding to do so?
5. Do you through your municipal position on a planning board, green team, shade tree commission, or environmental commission encourage or require green infrastructure for new development or redevelopment in your community?
6. If your community is not engaging in the installation of green infrastructure practices, what are the primary reasons as to why not?
7. Do you think there is an adequate understanding by members of your community about the function and benefits of green infrastructure (enhanced water quality, absorb/store/detain stormwater volumes, etc.)?
8. Are there green infrastructure practices that you believe may work better than others in your community and Passaic County as a whole?
9. What do you believe are the most appropriate sites and opportunities for green infrastructure in your community and Passaic County as a whole (i.e. streets, municipal land, private development, etc.)?

10. Do you believe there are barriers to the installation of green infrastructure in your community such as:

- a. Lack of understanding of the function and effectiveness of green infrastructure
- b. Perceived high costs
- c. Lack of developer enthusiasm
- d. Lack of incentives
- e. Lack of funding or municipal structure for ongoing maintenance
- f. Regulatory barriers
- g. Lack of design standards
- h. Lack of public support

11. How do you envision Passaic County's future Green Infrastructure Plan being utilized to best help your community? Is there certain information you would like to see included in it?



Passaic County Green Infrastructure Plan Engineers' Focus Group Meeting Summary

Date: Monday, December 11, 2017

Time: 10:00 am – 12:00 pm

Location: Passaic County Offices
930 Riverview Drive
Suite 200
Totowa, New Jersey 07512

Attendees:

Name	Organization	Title
Jason Simmons	Passaic County Planning Division	Senior Environmental Planner
Tracey Cohen	AKRF	Technical Director
Michael Granter	McCormick Taylor	Project Manager
Blythe Eamen	NJTPA	Principal Planner
Joseph Mele	Dresdner Robin	Director of Engineering
Patrick McClellan	MCB Engineering Associates	Engineer
Chuck Silverstein	Passaic County	Traffic Engineer
Sonja Ommundsen	Stonefield Engineering and Design	Project Area
Sony David	Langan Engineering	Senior Project Manager
Grant Lewis	Dresdner Robin	Senior Project Manager

Meeting Purpose:

The purpose of this meeting was for engineers to learn more about the project as well as to gather feedback from the engineers on green infrastructure (GI) planning/low impact development (LID) tools and techniques that should be considered for inclusion in the Plan.

Agenda:

1. Welcome & Introductions
2. Project Overview
3. Status Update & Current Tasks
4. Discussion
5. Next Steps

Meeting Summary:

The Engineers' focus group opened with a welcome and introductions and followed by a PowerPoint presentation. The PowerPoint presentation included a project overview, status update and current tasks, questions to guide the discussion, and the next steps.

Discussion Questions:

Regulations

What is your experience designing to State (NJDEP), County and Municipal requirements?
Have you experienced conflicts or confusion in trying to meet different levels of regulatory requirements?
What kinds of analysis have you provided in your applications (downstream flooding, TSS removal, etc.)?
Do you have experience designing to meet stormwater regulations in other counties?
Are there precedents, examples, etc. from other counties that would be useful to consider for Passaic County regulations?

Techniques

What GI/LID techniques, if any, have you used on land development projects?
What design parameters are applied – design storm event, volume (inches) of runoff treated, etc.?
Which techniques have been most successful and in what settings/conditions?
Which techniques have been least successful and in what settings/conditions?
Who is responsible for GI maintenance?
What are the enforcement mechanisms to address failing Best Management Practices (BMP)?

Discussion of Regulations and Approval Process

Mr. Jason Simmons, Passaic County Principal Planner and Project Manager, stressed that the County Plan is not meant to be redundant of regulations already in effect at state and municipal level. The County does not have basic details and standards to provide to applicants. Municipalities have asked for support in developing regulations.

Mr. Patrick McClellan, from MCB Engineering Associates, stated that the Plan needs to address zoning issues/ordinances and that developers want to maximize development that is allowed per zoning.

Mr. Chuck Silverstein, a traffic engineer for Passaic County, finds that inconsistencies between municipalities is a problem at the county review level.

According to Mr. Grant Lewis, of Dresdner Robin, funding GI is the drawback to implementing it.

Mr. Sony David, of Langan Engineering, gave the example of Hoboken, which includes density bonuses for developers who include GI.

Mr. McClellan asked for the definition of porous pavement (PP) and stated that some zoning does not recognize PP. It varies with agencies. Mr. David finds that site conditions make it difficult to implement PP, e.g., high water table, flood prone areas.

Mr. Lewis wants the County to consider education aspect as benefits. He suggests that there needs to be simple clear system for small commercial development projects. Mr. Joe Mele, of Dresdner Robin,

reiterated that regulations need to be black and white, clear, and to avoid language that is subjective. Mr. David added that the Plan should focus on what makes sense in a given situation

Mr. Simmons clarified that the County does not want to overregulate, but the County does want to enhance transportation system (decrease flooding, increase storage) and use this as opportunity to beautify right-of-ways (ROW) with GI. The Plan needs to work out ownership responsibilities and maintenance. Maybe tie use of GI to waived corridor enhancement fee?

Mr. McClellan asked what are the alternatives to individual site systems and if applicants contribute to a county regional system. He recommended looking for opportunities on capital improvement projects.

Mr. Simmons said that the County also looking at green streets and that they are identifying corridors with known drainage issues. The County can look at approaches with larger cost share (e.g., Infrastructure Trust Fund for public projects).

Mr. David asked how frequently the County has pre-application meetings. Mr. Silverstein said pre-application meetings are typical for larger projects and Mr. Simmons responded that pre-application meetings might need a trigger. Mr. McClellan suggested requiring all applicants to have a pre-application meeting. He believes it will save a lot of trouble and burdens on applicants – who do you go to first?

Mr. McClellan finds that small detention systems hold back flows. Their release coincides with peak release from larger systems and storms. Mr. David asked if this is a capacity issues with system or with the sediment. Perhaps get capacity back with maintenance?

Mr. Jason Simmons – there is basic maintenance, vactoring(?)

Mr. Mele suggested that the County should look countywide to find where there are combined sewer overflows (CSOs), tidally influenced systems, pipe control issues, erosion, and flooding. Find out where there are issues inherited by developers. If there are complete studies of these issues, developers can be engaged. Mr. Simmons responded that there is a long list of known issues system wide, however there is are budget and funding limitations.

Mr. Lewis recommended a straightforward, low cost approval process. The BMPs in the state manual are fine and already applicable. Credit for smaller practices could be cumulative. Mr. Silverstein does not think there is enough space on small sites. However, Mr. David believes that projects in ROW makes sense. They are small improvements that are not that costly. Mr. Mele believes that in urban settings ROW makes sense, but the County needs to look at how mitigating offsite and in the ROW affects disturbance calculations and regulatory thresholds. Another layer of approvals may need to be added, e.g., in Jersey City when there is an issue of CSOs in a tidally influenced area; disturbance, rather than impervious cover, triggers need the for detention. The County could ask for more space for GI on narrower roads (similar to Hudson County).

Mr. Lewis asked if there can be a change of use for small sites (e.g., Little Falls). Mr. Simmons suggested that maybe smaller change of use projects should not be a site plan application. Mr. David recommended the County to look at retrofits (e.g., catch basin inserts) that are less costly.

Mr. McClellan asked why the County looks at 25-year storm when state does 2, 10 and 100-year storm requirements. This adds inconsistency, more work in the application process. Standardization would help.

Ms. Tracey Cohen, of AKRF, asked if guidance documents should be standalone or supplement the state documents. Mr. Mele stated that the guidance documents need to tie into the state. Mr. Lewis said that time for approvals is important to applicants. Mr. McClellan suggested adding a flow chart to application package to show review paths and timing. Mr. Simmons confirmed that the County has developed draft flow charts. Mr. Lewis proposed that the County streamline the process for small projects. Mr. David recommended that the County provide cookie cutter options. Mr. Mele stated that some form of GI is better than nothing.

Discussion of Practices

Mr. David would like the Plan to marry cost of improvement to meeting requirements for smaller landscape features, e.g., tree pits with storage media versus more expensive manufactured treatment devices (MTDs). He has seen public entities not succeed with porous pavement. Construction is very important, especially contractor with experience as well as proper maintenance. He once had a project that lost 20% of function in one winter from improper maintenance. For PP, context is important, for example trees (leaf drop), landscape position (receiving sediment). Focus on where is most bang for the buck.

Mr. Lewis said that discussion with local municipalities on GI should include incentives, e.g., smaller parking stalls (9 x18 instead of 10 x 20) in exchange for tree pits

Mr. Mele believes that there needs to be a municipal ordinance. If municipal regulations do not trigger stormwater requirements, but County has a review for it, County could dial back requirements (e.g., 25-year storm) in exchange for GI.

Mr. Silverstein will consult with County engineer in regards to design storm and origin of 25-year requirement

Maintenance

Mr. McClellan stated that people have been writing manuals for 10 years, but they need be evaluated since many projects are not in the ground yet (slow pace of approvals). He is not sure if real estate attorneys understand that maintenance obligations are tied to the land and are transferrable to new owner. GI BMP that offer aesthetic quality (surface features) provide an incentive to maintain. Consider this when trying to narrow BMP selection to what has greatest aesthetic impact when it fails.

Mr. McClellan is in support of this for a regional system with agencies that know maintenance.

In regards to maintenance, Mr. Lewis said that Wayne requires active inspection logs.

Mr. Simmons said that within the Molly Ann Brook Watershed Management the County installed several rain gardens between 2008 and 2009. Maintenance was established early and that proved to be very important.

Mr. McClellan is skeptical about ROW GI in urban areas because it is a constrained space. Mr. Simmons responded that some areas do not have wide ROW, but it is possible where there is space (e.g., some places have overly wide sidewalk – 10')

Mr. Mele said that Association of New Jersey Environmental Commission (ANJEC) has tools, model ordinance.

Next Steps

Finalize GI/LID Goals & Strategies

Prepare Draft Documents for Passaic County and NJTPA Review:

- Recommended Revisions - County Site Plan Resolution
- GI/LID Resource Document
- Recommended Revisions - Municipal Model Ordinance

DRAFT



County of Passaic

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Director

PLANNING BOARD

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Invitation to Engineering Focus Group

Good morning.

Passaic County, with support from the North Jersey Transportation Planning Authority, has initiated the development of a county-wide Green Infrastructure Plan. The goal of the Plan is to help the County reduce and/or mitigate the impacts of storm events and maintain a safe, reliable transportation system, as well as address flooding, water quality, and habitat loss. The Plan will provide recommendations and technical guidance — including technical specifications and design details — to incorporate into the County's land development regulations. The Plan will also serve as a resource document for local municipalities to use in the implementation of their own green infrastructure programs.

On behalf of Passaic County, I would like to invite you to participate in a focus group discussion to: 1) learn more about the project and gather input on desired outcomes to be included in the Plan; and 2) offer feedback on green infrastructure planning/LID tools and techniques that should be considered for inclusion in the Plan. We encourage you to attend the following session:

Date: Monday, December 11, 2017
Time: 10:00 AM to 12:00 PM
Location: Passaic County Offices
930 Riverview Drive, Suite 200
Totowa, NJ 07512

The focus group session will be a facilitated discussion with design and engineering professionals from consulting firms around the county. Below is a list of questions that are intended to spur an informed and productive dialogue with the County's planning team regarding the design and implementation of Green Infrastructure/LID goals. Please review these questions in advance of the meeting in order to discuss how these topics may be applicable to your designs for your agencies/clients.

- What GI/LID techniques, if any, have you used on land development projects?
- What design parameters are applied – design storm event, volume (inches) of runoff treated, etc.?
- Which techniques have been most successful and in what settings/conditions?
- Which techniques have been least successful and in what settings/conditions?
- Who is responsible for GI maintenance?
- What are the enforcement mechanisms to address failing BMPs?

Please RSVP acceptance or regrets at [Engineer Focus Group RSVP](#).

Thank you in advance for your participation; we look forward to your valuable input.

Regards,

Jason Simmons

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Passaic County Green Infrastructure Plan Engineers' Focus Group

**December 11, 2017, 10 am – noon
Passaic County Offices
930 Riverview Drive, Suite 200
Totowa, NJ**

AGENDA

1. Welcome & Introductions
2. Project Overview
3. Status Update & Current Tasks
 - a. GI/LID Goals & Strategies
 - b. Draft Recommended Revisions – County Site Plan Resolution
 - c. Draft GI/LID Resource Document
 - d. Draft Recommendations – Municipal Model Ordinance
4. Discussion – Engineers' Experience
 - a. Regulations
 - What is your experience designing to State (NJDEP), Passaic County and Municipal requirements? Have you experienced conflicts or confusion in trying to meet different levels of regulatory requirements?
 - What kinds of analysis have you provided in your applications (downstream flooding, TSS removal, etc.)?
 - Do you have experience designing to meet stormwater regulations in other counties?
 - Are there precedents, examples , etc. from other counties that would be useful to consider for Passaic County regulations?



b. Design and Practices

- What GI/LID techniques, if any, have you used on land development projects?
- Which current guidance documents do you use to design stormwater management practices? NJDEP Stormwater BMP Manual? Other?
- Do these guidance documents provide adequate technical information?
- What design parameters are applied – design storm event, volume (inches) of runoff treated, etc.?
- Which techniques have been most successful and in what settings/conditions?
- Which techniques have been least successful and in what settings/conditions?
- Who is responsible for GI maintenance?
- Are there issues with maintenance? Does that affect choices about which practice to use?
- Longevity of practices?
- What are the enforcement mechanisms to address failing BMPs?

5. Next Steps

PASSAIC GREEN INFRASTRUCTURE PLAN SURVEY – ENGINEERS FOCUS GROUP

Name _____ Email _____

What is your role in implementing green infrastructure (GI)?

- Local government staff County/regional government staff State government staff Private Consultant
 Other (please specify) _____

How much experience do you have designing green infrastructure projects?

- None Limited (< 10 projects) Moderate (10 – 20 projects) Extensive (> 20 projects)

How much experience do you have with obtaining permits and approvals for green infrastructure projects?

- None Limited (< 10 projects) Moderate (10 – 20 projects) Extensive (> 20 projects)

For which municipalities and/or agencies have you designed and permitted green infrastructure projects?

Based on your experience, please rate the following barriers to implementing green infrastructure on a scale of 1 to 5, where 1= not important and 5 = very important. If you do not have experience with GI, please leave blank.

Barriers	1	2	3	4	5
Not enough technical knowledge and experience among local authorities					
Not enough technical knowledge and experience among county authorities					
Not enough technical knowledge and experience among state authorities					
Not enough technical knowledge and experience among design professionals					
Lack of design standards, best management practices, etc.					
Limited access to materials and qualified contractors (e.g., porous asphalt)					
Limited appropriate sites (due to soil types, available space, etc.)					
Local rules/policies are lacking, restrictive, and/or unclear					
County rules/policies are lacking, restrictive and/or unclear					
State rule/policies are lacking, restrictive and/or unclear					
Rules and policies at different regulatory levels are contradictory or not coordinated					
Rules and policies across offices and departments (e.g., municipal planning, public works and traffic) are contradictory or not coordinated					
No long-term structure for maintenance and ownership					
Not enough incentives					
High initial costs					
High long-term (maintenance) costs					
Lack of funding for ongoing maintenance					
Not enough information about relative costs and benefits					
Green infrastructure is undervalued by the development community					
Lack of cooperation/support for GI among stakeholders (e.g., agencies, departments, community)					
People are concerned about how GI looks (messy)					
Other Barriers (Please list):					

Which of the following GI Practices have you used to meet state and/or county regulatory requirements?

GI Practice	Water Quantity Control	Water Quality – TSS	Water Quality - Nutrients	Groundwater Recharge
Bioretention/Bioinfiltration – Large Basin				
Bioretention/Bioinfiltration – Stormwater Tree Pits and Trenches				
Bioretention/Bioinfiltration – Stormwater Planter Boxes				
Bioretention/Bioinfiltration – Stormwater Bumpouts				
Standard Constructed Wetlands				
Dry Wells				
Extended Detention				
Infiltration Basins				
Manufactured Treatment Devices				
Pervious Paving (Porous Pavement)				
Blue Roofs				
Sand Filters				
Vegetated Filter Strips				
Wet Ponds and Wet Basins				
Grass Swales				
Subsurface Gravel Wetlands				
Green Roofs				
Subsurface Detention				
Cisterns				

Based on your experience, please rate the following green infrastructure practices on a scale of 1 to 5, where 1= poor and 5 = very good.

GI Practice	Performance/ Effectiveness	Aesthetics/ Appearance	Ease of implementation	Ease of maintenance	Longevity	Installation cost	Maintenance cost
Bioretention/Bioinfiltration – Large Basin							
Bioretention/Bioinfiltration – Stormwater Tree Pits and Trenches							
Bioretention/Bioinfiltration – Stormwater Planter Boxes							
Bioretention/Bioinfiltration – Stormwater Bumpouts							
Standard Constructed Wetlands							
Dry Wells							
Extended Detention							
Infiltration Basins							
Manufactured Treatment Devices							
Pervious Paving (Porous Pavement)							
Blue Roofs							
Sand Filters							
Vegetated Filter Strips							
Wet Ponds and Wet Basins							
Grass Swales							
Subsurface Gravel Wetlands							
Green Roofs							
Subsurface Detention							
Cisterns							

Passaic County Green Infrastructure Plan Stakeholder Interviews: Camden County Municipal Utilities Authority (CCMUA)

Interviewee: Andrew Kricun, Executive Director of CCMUA

Interview Date: August 22, 2017

- **Please describe the history of the CCMUA's role in green infrastructure.**

CCMUA owns a treatment plant into which the sewage systems from Camden City and surrounding areas drain. Two sewage systems in Camden County are combined sewer overflow systems (CSOs): Gloucester City and Camden City. Camden City's sewage system has major problems with overflow and the City has been working with the CCMUA and NJDEP to develop corrective and mitigation measures, including green infrastructure (GI).

- **What led to the formation of the Camden SMART Initiative? Please tell me more about that effort, some successes, and lessons learned.**

The Camden SMART initiative is comprised of DEP, CCMUA, Rutgers, NJ Tree Foundation, and a local nonprofit focused on economic development. The goal of the initiative is to divert stormwater away from the CCMUA's treatment facility. This is done through a number of different measures:

1. The initiative is working to optimize maintenance of the existing CSO. Approximately 90% of combined sewage flooding could be prevented if pipes were kept clean from sediment build-up. A contract has been put in place for an operator to clean pipes regularly.
2. The initiative is working on several GI pilot projects. One of these involved Rutgers designing and implementing 60 rain gardens in Camden City. Some of these are on school properties and some are on County property. The initiative hired at-risk youth in Camden to maintain the rain gardens. They are trained by Rutgers and AmeriCorps pays half of the salaries. It costs about \$120,000 a year to maintain rain gardens and a park. Most of the funding came from NJ Environmental Infrastructure Trust (EIT) loans. CCMUA also created and owns three riverfront parks that are used for GI and stormwater management. There is an additional park owned by the City. The Camden SMART initiative has also engaged in stream daylighting and a rain barrel program (utilizing a grant from William Penn Foundation) to support additional GI efforts.
3. The Camden SMART initiative is working to separate and replace combined sewage system pipes where possible.
4. The CCMUA is working to optimize operation of the existing treatment plant so that it can accept as much water flow as possible.

- **What was the CCMUA's role in development of the 2013 City of Camden Green Infrastructure Design Handbook?**

The Camden SMART initiative took the lead in creating the handbook. It was funded by the CCMUA.

- **What policy, guidance, and/or regulations does Camden County have to encourage the use of green infrastructure?**

The focus of the use of green infrastructure in the County is in areas with CSOs. The majority of the County is separate sewer. The County helped Camden City developed a Sustainability Ordinance for Camden City that requires them to look at GI when reviewing land developments in order to minimize impacts. The City adopted the Sustainability Ordinance two or three years ago, but has not enforced it.

The CCMUA is also considering a stormwater fee. However, stormwater fees are currently not legal in New Jersey but several groups (e.g. NJ Waterworks) and municipalities are working on ways to test the feasibility of stormwater fees.

- **Is the County and/or SMART initiative undertaking any pilot projects or implementing any BMPs? What is the public perception of these projects?**

See above. Public perception of the projects has been very positive. The parks are well utilized. People participate in the rain barrel program, and enjoy the rain gardens. Much of the success has been due to advocacy from the local nonprofit involved in the SMART initiative.

- **Who is responsible for operations and maintenance of green infrastructure on public land? Is there a system for green infrastructure assets tracking and management?**

See above. CCMUA is also implementing a long-term control plan which has modeling involved. All 21 wastewater utilities in New Jersey are required to create and implement a Long Term Control plan by 2021.

- **What are the requirements for long-term O&M on private property when the green infrastructure was part of a permit approval process for land development?**

The CCMUA and SMART initiative have not done any projects on private property yet. There is no funding for this and they have not been able to persuade developers or private landowners to do it voluntarily.

- **What funding sources have you been using for implementation of green infrastructure?**

See above response. County Open Space funds are also being utilized.

- **The Camden SMART initiative is a collaboration between City of Camden, Camden County Municipal Utilities Authority, Rutgers Cooperative Extension Water Resources Program, New Jersey Tree Foundation (NJTF), Cooper's Ferry Partnership (CFP), New Jersey Department of Environmental Protection (NJDEP), public-private partners, community organizations, and most importantly, Camden residents to restore and revitalize their neighborhoods. How have these partner organizations played a role in green infrastructure?**

The nonprofits have been very involved and have been critical to the success of the program. In particular, they have helped with public education and identification of public sites for GI projects.

- **Has there been any coordination with the PWD and their efforts with green infrastructure in the City of Philadelphia?**

Yes, very much so. In particular, the use of at-risk youth through AmeriCorps to help maintain GI was modeled after the City's success with this maintenance partnership.

- **What have been the biggest challenges to green infrastructure implementation? Have you experienced any issues regarding short term or long term maintenance?**

The CCMUA would like to do more but has a capacity issue with resources. The CCMUA hopes that the maintenance partnerships that it has arranged will be sustainable.

- **What recommendations do you have for Passaic County as it works on this project on how to best integrate green infrastructure into County practices?**

The CCMUA recognizes that every situation is different, so Passaic County should craft its program around goals. CCMUA also recommends reaching out to Philadelphia to learn more about their program, successes, and challenges.

Passaic County Green Infrastructure Plan Stakeholder Interviews: Hudson County

Interviewee: Kevin Force, Assistant Planner, Hudson County Division of Planning

Interview Date: August 4, 2017

- **Please describe Hudson County's role in green infrastructure and any current efforts underway.**

Hudson County's main role with green infrastructure (GI) pertains to the County planning board process. The County requires two "green techniques" in land developments that come before the County planning board. Some of these green techniques include GI practices such as green roofs, bioswales, etc. There are other non-GI techniques included such as inclusion of bike racks, additional trees and landscaping. Recently, as of last year, a consultant prepared new land development regulations, as the current regulations are from 2008 are outdated. The regulations are in draft form, pending approval from the County Freeholder Board. The County wanted to see the new regulations better tied to reduction of stormwater. The new land development regulations have a tiered system based on the size of projects. For projects 5,000 square feet or less, one green technique is required. For projects greater than 5,000 square feet, two techniques are required. The regulations were developed based on feedback from developers and public meetings.

Some developers will go beyond the County regulations. Smaller projects sometimes object to the regulations because of cost burden. Those green techniques most often seen in development proposals include native landscaping; green roofs; shade trees; porous pavement; and on-lot treatment (storage and detention).

- **What was the County's role in development of the 2013 Together North Jersey Hoboken Green Infrastructure Plan? Are you familiar with how that document is being used?**

Utilization of the plan is similar to the County land development regulations that regulate the use of GI in land developments.

- **What policy, guidance, and/or regulations does the County have to encourage the use of green infrastructure?**

In addition to the land development regulations described above, the County updated the Master Plan a year ago and included information on sustainability with regard to land use.

The County also has a checklist for developers called the LID checklist. The LID checklist is one of the initial forms that developers are required to fill out and submit. It requires them to review their site plan and discuss with the County stormwater issues and ideas for how to make the site greener. It is not binding though.

- **How has green infrastructure been incorporated into existing engineering design specs? What design storm or amount of runoff is the County using as a capture requirement?**

GI is not currently included in engineering specs. However, the planning department has a close relationship with County Engineering Department and tries to work with them to incorporate GI in County projects.

- **How is the County using GI to address CSO issues? Is the County working to address CSO issues through means other than GI?**

The County is supporting Jersey City with their efforts to address CSO issues. However, it is really the jurisdiction of the local municipal utilities authority to create the CSO plans.

- **Has Hudson County done any work to engage partners in green infrastructure? What specific role do the municipalities play, such as Jersey City and Hoboken?**

Hudson County reached out to the municipalities during the land development regulations update process. Jersey City Make It Green has also engaged in efforts with the County on GI incorporation. Some municipalities already have requirements for GI techniques. The Jersey City Make it Green Team is working toward a CSO reduction plan.

- **Is the County undertaking any pilot projects or implementing any BMPs?**

The County is not undertaking any pilot projects currently, but would like to do so. Municipalities and partners are implementing projects. A group connected with the Jersey City Office of Innovation that is trying to implement GI demonstration projects.

- **Does the incorporation of green infrastructure into land development/redevelopment projects affect the permitting and approval process? Is there expedited review as an incentive to developers?**

GI is required to be part of land developments. If developers do not account for GI in their site plans, it can delay the project. The County does not currently offer expedited reviews or other incentives for incorporating GI.

- **What are the requirements for long-term operation and maintenance on private property when the green infrastructure was part of a permit approval process for land development?**

The County requires developers to submit a stormwater management report that details runoff plans on-site and operation of infrastructure if stormwater has a large effect on County drainage. The plan does not include operation and maintenance of BMPs themselves.

- **Do you believe that green infrastructure in Hudson County is helping to play a role in building resiliency to large storm events like Super Storm Sandy?**

Yes, it has led to good levels of partnership with municipalities, which is particularly important because Hudson County is subject to coastal flooding and storm surge. Municipalities are seeing developers include GI in their scope because of County requirements.

- **What are the keys to successful implementation of green infrastructure, both on public and private lands?**

The larger the impact a GI project can have, the better. It is also important to keep an open conversation with everyone involved and explain to everyone the positive benefits of GI.

- **What have been the biggest challenges to green infrastructure implementation?**

The County has limited jurisdiction since it is focused only on developments that affect County road traffic and drainage.

- **What recommendations do you have for Passaic County as it works on this project on how to best integrate green infrastructure into County practices?**

Passaic County should tie implementation of GI to the land development process if possible. Before changing the regulations, the County should explain the benefits of GI to developers to get them on board.

Passaic County Green Infrastructure Plan Stakeholder Interviews: City of Newark Question List

Interviewee: Robert Thomas, Chief of Energy and Environment

Interview date: August 10, 2017

- **Briefly describe the history of the City's role in green infrastructure (GI).**

Newark has been looking at GI as a stormwater management solution for the past five to six years. In 2010, the City, through the Water and Sewer Department, issued a report that identified grey infrastructure projects with a piece carved out for GI. The City is looking to implement GI and support it however they can through the City's Master Plan. As Newark is a CSO community, it is working to enhance operations and provide support for administration and the water/sewer departments to implement GI. The City received funding from NJTPA to identify areas in the City to implement GI projects. These are areas that are routinely inundated by flooding and have community support for the projects. The City is working to implement these projects using the state revolving loan fund to finance them. One project is tentatively approved and five other projects are in the pipeline. Non-profits are also assisting with the work.

- **Do you believe that the 2015 Newark Greenstreets initiative has been successful and is it being actively implemented? Please tell me more about that effort, some successes, and lessons learned.**

Yes, the City is working on a couple projects to create financing mechanisms for GI and having conversations on a citywide GI Plan. The City believes it is important to have a guide, financing, and support for projects. Another report was done to build a business case for the municipality to support GI. The City worked with Brownfield Redevelopment Solutions (BRS) to create a mapping process of the planning and zoning approval process for private developers and city projects.

- **Can you describe the work of the City's Green Stormwater Infrastructure Task Force? What are the biggest accomplishments of the task force?**

The task force was a recommendation of the Greenstreets report and also the BRS report. It is an internal working group that meets periodically to share information between departments. Some contractors and attorneys of the city are included in the group.

North DIG (facilitated but Rutgers Coop. Extension) is also a community working group of city, state, academic, non-profits, NJ Future, and community representatives. This group was able to secure grants from the state for community events, create a GIS of rain barrels and GI planned or proposed activities. The group has implemented many rain barrel projects. It is also working with the Ironbound community to do buy-outs of properties that flood.

- **What policy, guidance, and/or regulations does the City have to encourage the use of green infrastructure?**

The City is working on making amendments to the stormwater chapter of its land use planning regulations. A draft has been prepared with regulations that go above and beyond volume retention. The draft also clears up some language and includes supporting language that defines GI and developed/undeveloped parcels.

- **Is the City undertaking any pilot projects or implementing any BMPs?**

The City is implementing a couple traffic triangle projects that include stormwater bump outs in the East Ward. This City is also implementing pervious pavement at some sites in the South Ward

- **What is the public perception of these projects?**

Public perception is good since the City has been working collaboratively with the community. However, more education will be needed on the backend.

- **Are there community groups that are responsible for maintenance?**

The City built in maintenance costs to the projects and proactively talked to community groups about maintenance. The City support community maintenance as it can help keep project costs down.

- **Does the incorporation of green infrastructure into land development/redevelopment projects impact the permitting and approval process? Is there expedited review as an incentive to developers?**

The City has not looked at incentives yet but it will in the future. The City's Deputy Mayor has experience with GI and has informally encouraged prioritizing GI project reviews.

- **What are the requirements for long-term O&M on private property when the green infrastructure was part of a permit approval process for land development?**

The City encourages developers to build-in their own costs for long-term operation and maintenance. Nothing formal has been established yet.

- **Have you experienced any right of way issues related to green infrastructure implementation in an urban setting?**

No

- **What funding sources or mechanisms have you been using for implementation of green infrastructure?**

Funding for GI has not been built into City budgets yet. It is currently supported through the Environmental Infrastructure Trust (EIT) Program. Some resources are also provided through Rutgers for GI design. The City is also conducting a stormwater utility fee feasibility study right now which will have a green component. A stormwater utility could be a potential financing mechanism moving forward.

- **How is the City using GI to address CSO issues? Is the City working to address CSO issues through means other than GI?**

The focus of the City right now is on cleaning up outfalls. GI has not become a big piece of addressing CSO issues yet.

- **Do you believe that green infrastructure in Newark is helping to play a role in building resiliency to large storm events like Super Storm Sandy?**

Yes, GI is helping with resiliency but the City is having challenges on messaging with the community. Many people think that GI will mitigate flooding, but GI will not be the solution to the City's flooding problems. GI can only capture 1.25 inches of a 100-year storm. The solution will need to focus on a combination of green and grey infrastructure. The City will also need storage systems to retain stormwater and drain it later.

- **What are the keys to successful implementation of green infrastructure, both on public and private lands?**

Successful implementation will involve a combination of creating a clear and concise process, development of guidance manuals and best practices, permit requirements, and having the guidance in place to quickly move through the approval process to spend grant money. Also, support from stakeholders at all levels and financing are keys to successful implementation.

- **What have been the biggest challenges to green infrastructure implementation?**

Not having guidance documents in place has been a large challenge to GI implementation. The City will be breaking ground on six public projects next year so having this information available will be necessary for a successful project.

- **What recommendations do you have for Passaic County as it works on this project on how to best integrate green infrastructure into County practices?**

The City recommends that Passaic County continue its outreach to its municipalities and residents. Every community is different so it will be important to take pieces that best fit the overall practices that the County would like to implement.

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Passaic County Green Infrastructure Plan Stakeholder Interviews: NJDEP Question List

Interviewees: Corey Anen, Gabriel Mahon, and Jim Murphy from the DEP Bureau Nonpoint Source Pollution

Interview date: September 7, 2017

- **Please describe the State's efforts to promote green infrastructure (GI).**

The State has a number of different GI efforts underway:

- The State is updating its stormwater management regulations for developers. The new regulations will require developers to use GI to meet water quality requirements. Legal review is currently being done and then the regulations have to go through a public comment period. It is anticipated the rule will take effect next year.
 - The State is updating its BMP manual to include specific BMPs and specific chapters about BMPs. However, the manual does not include regulations, just guidance.
 - The State performs outreach about GI for townships and developers.
 - The State grants CSO permits to permittees and requires that they evaluate GI in a long-term control plan.
 - The State works with municipal actions teams to get GI on the ground. Some include Camden, Paterson, and Jersey City.
 - The State is also been providing funding through low interest loans and 318 grants. These provide 50% funding if GI is being done in a CSO community.
- **Are acceptable BMPs (from a regulatory approval perspective) limited to those identified in the NJ Stormwater BMP Manual or can others be used, e.g., downspout/impervious area disconnection; green roofs; stormwater tree pits, trenches, and planter boxes, ROW bump outs, cisterns?**

No, BMPs are not just limited to those in the manual. Updates to the manual are continuous.

- **Are any changes being made to model ordinance?**

No changes will be made to the model ordinance unless the rule change moves forward. It should also be noted that Sustainable Jersey is also working on a model ordinance.

- **How can green infrastructure help with groundwater recharge and water quality requirements?**

GI reduces the impact of development by mimicking the natural hydrology of a site. It provides reductions in runoff volume by evapotranspiration and provides other benefits such as improvements to aesthetics.

- **How does the State look to the Counties and municipalities to promote and implement green infrastructure?**

The State provides outreach and education to municipal officials and helps them develop ordinances that go above minimum requirements. Local governments with MS4 permits are also required to do public education. The County can collaborate with private developers that have to meet stormwater standards. Since only public entities can apply for State loan programs, the County and private developers could partner, having the County act as the pass through for funding.

- **Are there ways that this Passaic project can enhance the State's green infrastructure guidance?**

The State would like to see the County detail lessons learned including what works and what does not work.

- **What other policy, guidance, and/or regulations does the State have to encourage the use of green infrastructure?**

Rule 7A (changes to land use regulations) will impact reviews completed at the municipal level.

- **What funding sources or funding mechanisms can you recommend that Passaic County investigate as it moves forward with its green infrastructure initiatives?**

Funding sources include EIT and 319H funding. EPA and Jersey Waterworks also have a water finance clearing houses.

- **How can partner organizations play a role in promoting and implementing green infrastructure?**

Partner organizations can play a role in reaching new audiences and helping take down barriers. In addition, any time you can find a party to help with maintenance is very beneficial since GI maintenance is a challenge. Additionally, non-profits can apply for grants and other funding sources for GI projects.

- **Is there a mechanism for monitoring maintenance?**

It is the responsibility of the property owner to perform maintenance, but NJDEP has updated its webpage to include inspection checklists and maintenance information. As part of on-site audits, NJDEP wants to see documentation.

Municipal action teams can also play a role in engaging with local groups and schools to take on maintenance of a GI site.

- **What are the keys to successful implementation of green infrastructure, both on public and private lands?**

In general, proper design, construction, and maintenance are necessary for successful GI implementation. For private lands, education of developers on the benefits of GI is very important.

- **What are the biggest challenges to green infrastructure implementation?**

Education is needed since there is often a perception that it is more difficult to build, maintain, and get GI projects through the application process. Also, if a site has limited space, developers prefer underground basins instead of GI practices.

- **What does the State see as administrative, regulatory, fiscal, and/or technical barriers to the use of GI? How can these be reduced?**

The State is trying to promote GI in any way possible in addition to what the State is doing with regulatory aspects. The State provides a significant amount of money to support GI. There needs to be a paradigm shift to encourage developers to look at new designs to incorporate GI in order to help meet water quality/quantity issues.

- **What about retrofits (not new development or redevelopments) such as convincing property owners to add GI?**

DEP finances retrofit projects and will often see them in CSO communities. DEP also sees retrofit projects used at a small-scale level, such as when repairing existing sidewalk and replacing it with a rain garden.

- **From your experience, are you aware of short term or long-term maintenance issues with green infrastructure projects?**

As long as projects are maintained, issues can be avoided. DEP does require maintenance plans for projects.

- **What recommendations do you have for Passaic County as it works on this project on how to best integrate green infrastructure into County practices?**

Encourage developers and the public to view GI as an asset and not a nuisance. Also, keep implementing GI at the County level, as it will show municipalities that it is possible to implement GI at the municipal level too. Incorporate GI education in land development reviews so that developers can understand the importance of it.

- **Are there any municipalities that go above and beyond with their ordinances?**

Most municipalities have adopted the model stormwater management ordinance. It is important to convince municipalities that if GI is an improvement for community, it is an improvement for the State itself.

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**Passaic County Green Infrastructure Plan Stakeholder Interviews: Passaic Valley Sewerage
Commission (PVSC) Question List**

Interviewees: Dave Kysniak (PVSC), Sheldon Lipke (FJL Consultants), Marcus Eley (PVSC)

Interview Date: August 1, 2017

- **Does the PVSC currently undertake any efforts to promote green infrastructure (GI)? What about other types of stormwater management?**

PVSC is part of the NJ CSO group for communities and entities with CSO permits. The group is pooling its resources and working together on its new CSO permit. It is evaluating GI as part of its long-term control permit.

The NJ CSO group is trying to implement three green infrastructure projects in Newark, Jersey City, and Patterson. These projects are still in the research phase and they are trying to find sites to do the projects. PVSC has also sponsored with Rutgers a series of smaller demonstration projects throughout the sewer district. These include rainfall planters at several public schools.

PVSC is not responsible for stormwater management. PVSC is a regional sewage authority that owns interceptors and wastewater treatment systems. PVSC does not own the collection systems.

- **What do you think are the most important benefits of green infrastructure?**

Public awareness of CSO issues and steps that the public can take to help address issues are important.

- **What policy, guidance, and/or regulations does the PVSC have to encourage the use of green infrastructure?**

PVSC does not have its own regulations or policies; it follows its long-term control permit. PVSC does however assist municipalities in setting up the framework for GI in their communities. As part of its permit, PVSC and the NJ CSO group are developing a guidance manual to assist with long-term control. It is anticipated to be complete within the upcoming months and will contain write-ups on GI, cost, etc.

- **How is the PVSC using GI to address CSO issues? Is the PVSC working to address CSO issues through means other than GI?**

Green infrastructure is one of the alternatives in the CSO long-term control plans. An underlying objective of PVSC is to advance GI for CSO purposes and heighten public awareness. Public education through pilot projects and some materials are currently being developed. As part of long-

term control process, PVSC is also working with a supplemental control team which includes universities and other partners. Municipalities within PVSC have their own public information teams and PVSC participates in those as well.

- **What do you think are the biggest challenges to green infrastructure implementation in Passaic County?**

Most groups currently leading GI projects are private groups, not municipal groups. Unfortunately, PVSC has observed that there is a slow pace with municipalities to move forward with GI, even those with a mandated CSO program. For green infrastructure implementation to be successful within municipalities, a municipality should form an implementation team and appoint one department to be in charge of GI implementation and make it a priority. Municipalities also should put together regulations, rules, and guidance to assist with implementation of GI projects.

- **How can the PVSC and Passaic County work together to promote green infrastructure practices?**

The goals for GI in a separately sewered town are different from those in a CSO community like Paterson. The County can play a lead role in creating model regulations. The County can also lead municipal department teams to help them get set-up with evaluating opportunities for GI. The County also has jurisdiction over County roads and there is an opportunity for GI to be part of planning process.

- **What recommendations do you have for Passaic County as it works on this project on how to best integrate green infrastructure into County practices?**

The most important role that County can have is coordinating with the multiple municipalities. Since the County does not own land, most GI implementation needs to be done at the municipal level; however, often municipalities do not want to give up land for GI projects. There is an opportunity for the County to assist municipalities with setting up programs and encouraging GI.