Appendix E

Public Participation Process Report
and
NJDEP approval letter dated March 29, 2019

State of New Jersey

PHIL MURPHY
Governor

SHEILA OLIVER
Lt. Governor

DEPARTMENT OF ENVIRONMENTAL PROTECTION
Mail Code – 401-02B
Water Pollution Management Element
Bureau of Surface Water Permitting
P.O. Box 420 – 401 E State St
Trenton, NJ 08625-0420
Phone: (609) 292-4860 / Fax: (609) 984-7938

CATHERINE R. McCABE
Commissioner

March 29, 2019

To: Distribution List

Re: Approval of Public Participation Process Report Required by Part IV.D.3.b.iii

Passaic Valley Sewerage Commissioners, NJPDES Permit No. NJ0021016
Bayonne Municipal Utilities Authority, NJPDES Permit No. NJ0109240
Borough of East Newark, NJPDES Permit No. NJ0117846
Town of Harrison, NJPDES Permit No. NJ0108871
Jersey City Municipal Utilities Authority, NJPDES Permit No. NJ0108723
Town of Kearny, NJPDES Permit No. NJ0111244
City of Newark, NJPDES Permit No. NJ0108758
North Bergen Municipal Utilities Authority, NJPDES Permit No. NJ0108898
City of Paterson, NJPDES Permit No. NJ0108880
North Bergen Municipal Utilities Authority - Woodcliff STP, NJPDES Permit No. NJ0029084
Town of Guttenberg, NJPDES Permit No. NJ0108715

Dear Permittees:

Thank you for your revised submission dated January 25, 2019 which serves to update your June 2018 submission entitled "Public Participation Process Report." This update was in response to comments provided by the New Jersey Department of Environmental Protection (the Department) on December 14, 2018. The Public Participation Process Report was submitted in accordance with Part IV.D.3.b.iii of your New Jersey Pollutant Discharge Elimination System (NJPDES) Combined Sewer Overflow (CSO) permit. The Department acknowledges that Passaic Valley Sewerage Commissioners, Bayonne Municipal Utilities Authority, Borough of East Newark, Town of Harrison, Jersey City Municipal Utilities Authority, Town of Kearny, City of Newark, North Bergen Municipal Utilities Authority, City of Paterson, North Bergen Municipal Utilities Authority - Woodcliff STP and Town of Guttenberg have committed to a single, coordinated LTCP where the Public Participation Process Report contains the appropriate certification statements. This submission serves as a necessary element to the Long Term Control Plan (LTCP) as due on June 1, 2020 for the above referenced NJPDES permits. **The Department has determined that the Public Participation Process Report is hereby approved**.

As per Part IV.G.2 of the NJPDES CSO permit, public participation shall actively involve the affected public throughout each of the three steps of the LTCP process. As a result, please provide information as to how public participation occurred for these subsequent LTCP steps by including a discussion of public participation within the Development and Evaluation of Alternatives Report and the Selection and Implementation of Alternatives Report. The discussion should include the public participation activities that occurred during the development of these reports, the feedback opportunities provided, and how feedback was considered. Adequate demonstration of actively involving the affected public is a required

component of these submittals as public participation is an element of the LTCP and must be conducted and documented during each stage of the LTCP process.

Additionally, include a discussion in the quarterly progress reports of public participation activities that occurred that quarter and the planned activities for the forthcoming quarter. Be sure to clearly state the outreach activities targeted to the affected public in each municipality in the Authority's service area. Thank you for your continued cooperation.

Sincerely,

Susan Rosenwinkel

Susan Rosenwinkel
Bureau Chief
Bureau of Surface Water Permitting

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- Woodcliff STP
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Alberto Gabrera, Town Clerk
Town of Guttenberg
6808 Park Avenue
Guttenberg, NJ 07093

C: Joe Mannick, Bureau of Surface Water Permitting
Dwayne Kobesky, Bureau of Surface Water Permitting, CSO Team Leader

PUBLIC PARTICIPATION PROCESS REPORT

Prepared by the Passaic Valley Sewerage Commission on behalf of the following participating Permittees:

Passaic Valley Sewerage Commissioners (NJ0021016)
City of Bayonne (NJ0109240)
Borough of East Newark (NJ0117846)
Town of Harrison (NJ0108871)
Jersey City Municipal Utilities Authority (NJ0108723)
Town of Kearny (NJ0111244)
City of Newark (NJ0108758)
Township of North Bergen (NJ0108898)
City of Paterson (NJ0108880)

North Bergen Municipal Utilities Authority (Woodcliff) (NJ0029084)
Town of Guttenberg (NJ0108715)

Passaic Valley Sewerage Commission
Essex County
600 Wilson Avenue
Newark, New Jersey

"Protecting Public Health and the Environment"

June 2018
Revised 1/25/19

PROJECT MANAGEMENT AND CERTIFICATIONS

SUMMARY OF CHANGES

This Report documents the public participation process and public outreach activities that were utilized for the development of the Passaic Valley Sewerage Commission's Combined Sewer Overflow Long Term Control Plan and the North Bergen Municipal Utilities Authority's Woodcliff Sewerage Treatment Plant Long Term Control Plan.

Future versions of this section will describe additional activities, actions, and measures the parties will have implemented since the publication of this Report. The history of this document and changes made to it are summarized below:

- June 25, 2018: Submitted Public Participation Process Report in fulfillment of the LTCP Permit requirement.
- Revised January 25, 2019: Modified the Public Participation Process Report to address comments made by NJDEP in letter dated December 14, 2018. A copy of the December 14, 2018 letter is included as Appendix K of this document. The June 25, 2018 submitted Public Participation Process Report was 519 pages. This version includes updates that resulted in a page total of 649 pages, including the addition of four (4) Appendices as noted in the responses below. The page numbers of the body of the report have been revised. Page number updates are not reflected with redline-strikeout in this document. The following pages in this document have been changed to address NJDEP comments, with changes shown in redline-strikeout throughout the document:

    a. DEP Comment 1 – No modifications required.
    b. DEP Comment 2 – Pages 2-31 through 2-34 and 5-1 through 5-2 modified.
    c. DEP Comment 3 – As outlined in Section 2, the members of the Supplemental CSO Teams are representatives of the affected public. As part of the Supplemental CSO Team public meetings, team members had discussions about the various types of public outreach materials and whether they provide more general or region-specific information and in which languages they should be made available. These languages are included in Sections 3.4 and 3.5. No changes made to the Report.
    d. DEP Comment 4 – The report does provide a description of the outcome of engagement activities. The Supplemental CSO Team public meeting outcomes are detailed in Section 2.2 thru 2.4. For instance, Table 2-3 contains a summary of public comments and concerns as well as the number of those in attendance from the SCSO Team and the general public. Since Part IV, Paragraph G.2.c. of the PVSC NJPDES permit highlights the importance of the Supplemental CSO Team, the efforts and participation of each permittee that went in to forming, organizing, and providing input to each Team should be recognized as each permittee having provided some level of engagement. Further sub-sections in Section 2 detail additional public meetings that were held and the level of engagement from any permittee that was in attendance. The LTCP Project Team also met with Municipal Action Teams such as Harrison TIDE and Kearney AWAKE. It should be noted that these Municipal Action Teams were developed as a result of the Permittees'

Public Outreach effort. Meetings with local groups such as these are important because they are actively promoted by and represented by the permittee municipalities and their utility authorities. Therefore, they demonstrate a level of engagement on behalf of the permittee. Moreover, the people who attend the meetings are interested and engaged members of the community providing another level of outreach to the public. For example, the Facebook page for Kearny AWAKE contains information about Kearny's CSOs and the LTCP alternatives analysis. Section 2.9 contains many outcomes from the engagement activities with Rutgers University, including individual municipalities (non-CSO and CSO) that met with and worked alongside the Rutgers partnership to develop clear outcomes such as GI reports, technical assistance, memorandums, and workshops. Several of these outcomes are tracked and provided. JCMUA and Newark provided additional detail about some of the more extensive public efforts in their municipalities and has detailed the number of rain barrels provided and catch basins adopted, as well as the outcome of the events. In general, sign-in sheets for events or meetings are maintained and specific items such as number of rain barrels distributed are tracked as metrics. Pages 2-18 and 2-31 through 2-34 modified.

e. DEP Comment 5 – Pages 5-1 to 5-2 modified.
f. DEP Comment 6 – The Supplemental CSO Team public meetings are open to the public and have been and will continue to be held throughout the three stages of LTCP development. Previous draft LTCP submittals have been distributed to the public for input, as detailed in Section 2.2. The LTCP social media presence and **njcelanwaterways.com** website will also continue to be used as a public input tool throughout the remainder of the LTCP. There are electronic comment forms on the website and individuals can post feedback using social media platforms. Report modified on several pages to change the phrase "Supplemental CSO Team Meetings" to "Supplemental CSO Team Public Meetings". Pages 2-8 and 4-1 modified. Appendix N added to document. Also please see modified pages 5-1 and 5-2.
g. DEP Comment 7 – Thank you for the comment. We are taking it under advisement. The mechanism for informing commenters of responses is still being determined.
h. DEP Comment 8 – Section 5 discusses future public outreach initiatives including those designed to update the public and hydraulically connected communities on LTCP implementation and construction. Please note that pages 5-1 and 5-2 have been modified to provide additional detail on future initiatives.
i. DEP Comment 9 – The NJPDES Permit does not include a requirement for submitting key draft submittals to the public and the schedule included in the NJPDES Permit for submittals does not include time considerations for key draft submittals to be reviewed by the public. However, the permittees have provided key draft submittals to the public for review as detailed in Section 2.2. If NJDEP would like this practice to continue or additional time to be provided to the public, the NJDEP will need to provide an amended NJPDES Permit schedule to allow for these reviews.
j. DEP Comment 10 – Some of the metrics that the NJDEP indicates are being tracked. However, targets are not being developed at this time. No modifications to Report.
k. DEP Comment 11 – All Permittees have agreed to add a link to **njcleanwaterways.com** on their individual permittee websites. The comments received via the website are tracked. No targets are being developed at this time. No modifications to Report.
l. DEP Comment 12 – Page 5-1 modified.

m. DEP Comment 13 – Thank you for the comment. We do not anticipate developing targets or tracking metrics for these types of events due to the impractical nature of doing so.
n. DEP Comment 14 – Page 2-33 modified.
o. DEP Comment 15 – Municipal Council meetings are open to the public. There are also individual meetings with local government officials which are not public. Private meetings with local government are still relevant because the officials themselves are members of the public and represent their constituents by shaping public policy. Informing officials on the particulars of the LTCP and soliciting feedback from them is in the interest of the public. No modifications to the Report.
p. DEP Comment 16 – No targets are recommended at this time. Going forward, if fliers are distributed to public areas, such as libraries, we will keep track of where they are distributed. No modification to Report.
q. DEP Comment 17 – No targets are recommended. As brochures are distributed in public facilities, we will track where they are distributed. No modifications to the Report.
r. DEP Comment 18 – Page 3-10 modified. Appendix M added to the Report.
s. DEP Comment 19 – No modifications required.
t. DEP Comment 20 – Relative to Bayonne, prominent community activists that were active in City Hall meetings were invited to join. Memberships are created via public meetings, such as the Bayonne Chamber of Commerce public participation meetings and social media interactions. The current CSO Supplemental Team members were formally invited by the City of Bayonne Mayor's office to join the team. Relative to Newark, the Director of Newark Water & Sewer sent personal invites to potential members. All members of Newark DIG were invited to attend and also asked to help inform the invitee list. No revisions to Report. Relative to PVSC, page 2-1 modified.
u. DEP Comment 21 – The referenced Permittees are maintaining a list of members of the respective Supplemental CSO Teams. Newark has provided a list of current Supplemental CSO Team members. Page 2-9 modified.
v. DEP Comment 22 – East Newark, Guttenberg, and Harrison are represented by various members including Rutgers University, NY/NJ Baykeeper, and the New Jersey Business and Industrial Association. Neither the NJPDES Permit nor NJDEP guidance indicate that individual representatives are required for each permittee; just regional representations for the entire PVSC Sewer District and NBMUA/Woodcliff Service Area. The members of the Bayonne and Newark Supplemental CSO Teams are representatives that are interested in the needs of the respective communities. Both the Bayonne Water Guardians and Newark DIG, along with their respective municipalities, provided significant input by including a diverse group of individuals in the community. These individuals include members of multiple civic, academic, regional, and neighborhood groups that are focused on many different issues and opportunities within the respective communities. No modifications to the Report.
w. DEP Comment 23 – No modifications required.
x. DEP Comment 24 – The mission and goals of the respective Supplemental CSO Teams are to work as an informal work group as a liaison between the general public and the decision makers for the Permittees. No modifications to the Report.
y. DEP Comment 25 – The respective Supplemental CSO Teams have been meeting quarterly and it is anticipated that meetings will continue to be held periodically. No modifications to the Report.

z. DEP Comment 26 – Information is distributed verbally and handouts are also provided, as needed. No modifications to the Report.
aa. DEP Comment 27 – Information and data will be shared verbally and/or via handouts, as determined appropriate by the Permittee. No modifications to the Report.
bb. DEP Comment 28 – Page 2-8 modified. Appendix L added to document.
cc. DEP Comment 29 – As the LTCP is implemented, the public will be updated on progress through verbal updates and presentations at Supplemental CSO Team Public Meetings, social media posts, and additions to the website. See modified pages 2-8, 5-1, and 5-2.
dd. DEP Comment 30 – As noted in DEP's comment, Section 2.2 provides a list of draft reports that were provided to members of the Supplemental CSO Team. Please see the Response to DEP Comment 9.
ee. DEP Comment 31 - Comments received by the respective Supplemental CSO Team members are reviewed by the Permittees for applicability, such as, but not limited to, appropriateness for the desired objective, cost, operation and maintenance requirements, and other factors. No modifications to the Report.
ff. DEP Comment 32 – Bayonne and Newark Supplemental CSO Team Meeting schedules, agendas, and meeting materials are not posted. However, members of the Supplemental CSO Team Meeting have the option of posting information to their respective websites, if desired. No modifications to the Report.
gg. DEP Comment 33 – Bayonne and Newark Supplemental CSO Team Meeting agendas are provided to the team prior to the meetings, when possible, via email. No modifications to the Report.
hh. DEP Comment 34 – Bayonne and Newark Supplemental CSO Team Meeting materials are available for review, if requested, after team meetings. If handouts are provided at the meeting, meeting participants are able to take copies of those materials after the meeting. No modifications to the Report.
ii. DEP Comment 35 – The goals or purpose of the respective Supplemental CSO Teams are to work as an informal work group as a liaison between the general public and the decision makers for the Permittees. No modifications to the Report.
jj. Table 2-1 has been modified to reflect the current PVSC Supplemental CSO Team roster, as of January 22, 2019.

In future versions, this section will be further updated to include summaries of changes and when they were incorporated as appropriate.

DISTRIBUTION LIST

Passaic Valley Sewerage Commission

Bridget McKenna, Chief Operating Officer

Marques Eley, PE, Senior Engineer

Other Entities Participating by Associated Sewage Treatment Plant

Passaic Valley Sewerage Commission (PVSC): Paterson; Newark; Kearny; Harrison; Bayonne MUA; Jersey City MUA; North Bergen MUA

North Bergen MUA – Woodcliff Plant: North Bergen Township; Guttenberg

New Jersey Department of Environmental Protection

Marzooq Alebus, Surface Water Permitting

Nancy Kempel, Surface Water Permitting

Dwayne Kobesky, Surface Water Permitting

Joseph Mannick, Surface Water Permitting

Marc Ferko, Office of Quality Assurance

Biswarup Guha, Water Monitoring and Standards

PROGRAM CONTACT INFORMATION

Contact information for those parties involved in Public Outreach is as follows:

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Deputy Registrar, Chief Finance
Officer, Treasurer, RPPO/RPPS,
Planning Board Secretary
Borough of East Newark
34 Sherman Avenue
East Newark, NJ 07029

TITLE OF REPORT AND APPROVAL

Title: Public Participation Report

Preparer:

Public Outreach Project Officer: _____ 6/20/18
Michael J. Hope, P.E., Greeley and Hansen LLC — Date

Public Outreach QA Officer: _____ 6/20/18
Timothy J. Dupuis, P.E., CDM Smith — Date

PVSC LTCP Consultants

LTCP Consultant Project Officer: _____ 6/20/18
Michael J. Hope, P.E., Greeley and Hansen LLC — Date

LTCP Consultant QA Officer: _____ 6/20/18
Timothy J. Dupuis, P.E., CDM Smith — Date

Passaic Valley Sewerage Commission

PVSC Program Manager: _____ 06/20/2018
Bridget McKenna, Chief Operating Officer, PVSC — Date

PVSC QA Officer: Marques Eley 6/20/2018
Marques Eley, Senior Engineer, PVSC — Date

New Jersey Department of Environmental Protection

DEP Permits: _____
Joseph Mannick, CSO Coordinator — Date

Public Participation Report

Submitted by Passaic Valley Sewerage Commission

NJPDES Number NJ0021016 (Passaic Valley Sewage Commission)

Approval of Report:

Permittee: _____ 06/20/2018

Bridget McKenna — Date
Chief Operating Officer, Passaic Valley Sewerage Commission

NJPDES Certification:

Without prejudice to any objections timely made to permit conditions, I certify under penalty of law that this document and all attachments were prepared either: (a) under my direction or supervision; or (b) as part of a cooperation performed by members of the NJ CSO group effort in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for purposely, knowingly, recklessly, or negligently submitting false information.

Permittee: _____ 06/20/2018

Bridget McKenna — Date
Chief Operating Officer, Passaic Valley Sewerage Commission

Public Participation Report

Submitted on behalf of the following participating Permittee by Passaic Valley Sewerage Commission

NJPDES Number NJ0109240 (Bayonne City)

Approval of Report:

Permittee: _____ 6.19.18

Timothy Boyle — Date
Superintendent, City of Bayonne Department of Public Works

NJPDES Certification:

Without prejudice to any objections timely made to permit conditions, I certify under penalty of law that this document and all attachments were prepared either: (a) under my direction or supervision; or (b) as part of a cooperation performed by members of the NJ CSO group effort in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for purposely, knowingly, recklessly, or negligently submitting false information.

Permittee: _____ 6.19.18

Timothy Boyle — Date
Superintendent, City of Bayonne Department of Public Works

Public Participation Report

Submitted on behalf of the following participating Permittee by Passaic Valley Sewerage Commission

NJPDES Number NJ0117846 (East Newark)

Approval of Report:

Permittee: _____ 6/25/18
Frank Pestana — Date
Licensed Operator, Borough of East Newark

NJPDES Certification:

Without prejudice to any objections timely made to permit conditions, I certify under penalty of law that this document and all attachments were prepared either: (a) under my direction or supervision; or (b) as part of a cooperation performed by members of the NJ CSO group effort in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for purposely, knowingly, recklessly, or negligently submitting false information.

Permittee: _____ 6/25/18
Frank Pestana — Date
Licensed Operator, Borough of East Newark

Public Participation Report

Submitted on behalf of the following participating Permittee by Passaic Valley Sewerage Commission

NJPDES Number NJ0108871 (Harrison)

Approval of Report:

Permittee: _____ 6/19/18

Rocco Russomano — Date
Town Engineer, Town of Harrison

NJPDES Certification:

Without prejudice to any objections timely made to permit conditions, I certify under penalty of law that this document and all attachments were prepared either: (a) under my direction or supervision; or (b) as part of a cooperation performed by members of the NJ CSO group effort in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for purposely, knowingly, recklessly, or negligently submitting false information.

Permittee: _____ 6/19/18

Rocco Russomano — Date
Town Engineer, Town of Harrison

Public Participation Report

Submitted on behalf of the following participating Permittee by Passaic Valley Sewerage Commission

NJPDES Number NJ0108723 (Jersey City MUA)

Approval of Report:

Permittee: _____ 6/20/18
Rich Haytas Date
Senior Engineer, Jersey City MUA

NJPDES Certification:

Without prejudice to any objections timely made to permit conditions, I certify under penalty of law that this document and all attachments were prepared either: (a) under my direction or supervision; or (b) as part of a cooperation performed by members of the NJ CSO group effort in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for purposely, knowingly, recklessly, or negligently submitting false information.

Permittee: _____ 6/20/18
Rich Haytas Date
Senior Engineer, Jersey City MUA

Public Participation Report

Submitted on behalf of the following participating Permittee by Passaic Valley Sewerage Commission

NJPDES Number NJ0111244 (Kearny)

Approval of Report:

Permittee: 6/20/18

Robert J. Smith — Date
Town Administrator, Town of Kearny

NJPDES Certification:

Without prejudice to any objections timely made to permit conditions, I certify under penalty of law that this document and all attachments were prepared either: (a) under my direction or supervision; or (b) as part of a cooperation performed by members of the NJ CSO group effort in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for purposely, knowingly, recklessly, or negligently submitting false information.

Permittee: 6/20/18

Robert J. Smith — Date
Town Administrator, Town of Kearny

Public Participation Report

Submitted on behalf of the following participating Permittee by Passaic Valley Sewerage Commission

NJPDES Number NJ0108758 (Newark)

Approval of Report:

Permittee: _____

Ras J Baraka — Date
Mayor, City of Newark

NJPDES Certification:

Without prejudice to any objections timely made to permit conditions, I certify under penalty of law that this document and all attachments were prepared either: (a) under my direction or supervision; or (b) as part of a cooperation performed by members of the NJ CSO group effort in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for purposely, knowingly, recklessly, or negligently submitting false information.

Permittee: _____

Ras J Baraka — Date
Mayor, City of Newark

Public Participation Report

Submitted on behalf of the following participating Permittee by Passaic Valley Sewerage Commission

NJPDES Number NJ0108898 (North Bergen MUA)

Approval of Report:

Permittee: _____ 6/25/18

Frank Pestana — Date
Exec. Director, North Bergen MUA

NJPDES Certification:

Without prejudice to any objections timely made to permit conditions, I certify under penalty of law that this document and all attachments were prepared either: (a) under my direction or supervision; or (b) as part of a cooperation performed by members of the NJ CSO group effort in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for purposely, knowingly, recklessly, or negligently submitting false information.

Permittee: _____ 6/25/18

Frank Pestana — Date
Exec. Director, North Bergen MUA

Public Participation Report

Submitted on behalf of the following participating Permittee by Passaic Valley Sewerage Commission

NJPDES Number NJ0108880 (Paterson)

Approval of Report:

Permittee: _____ 6/20/18
Manny Ojeda — Date
Director Public Works, City of Paterson

NJPDES Certification:

Without prejudice to any objections timely made to permit conditions, I certify under penalty of law that this document and all attachments were prepared either: (a) under my direction or supervision; or (b) as part of a cooperation performed by members of the NJ CSO group effort in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for purposely, knowingly, recklessly, or negligently submitting false information.

Permittee: _____ 6/20/18.
Manny Ojeda — Date
Director Public Works, City of Paterson

Public Participation Report

Submitted on behalf of the following participating Permittee by Passaic Valley Sewerage Commission

NJPDES Number NJ0029084 (North Bergen Woodcliff)

Approval of Report:

Permittee: _____ 6/25/18

Frank Pestana — Date
Executive Director, North Bergen MUA

NJPDES Certification:

Without prejudice to any objections timely made to permit conditions, I certify under penalty of law that this document and all attachments were prepared either: (a) under my direction or supervision; or (b) as part of a cooperation performed by members of the NJ CSO group effort in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for purposely, knowingly, recklessly, or negligently submitting false information.

Permittee: _____ 6/25/18

Frank Pestana — Date
Executive Director, North Bergen MUA

Public Participation Report

Submitted on behalf of the following participating Permittee by Passaic Valley Sewerage Commission

NJPDES Number NJ0108715 (Town of Guttenberg)

Approval of Report:

Permittee: _____ 6/25/18
Frank Pestana — Date
Licensed Operator, Town of Guttenberg

NJPDES Certification:

Without prejudice to any objections timely made to permit conditions, I certify under penalty of law that this document and all attachments were prepared either: (a) under my direction or supervision; or (b) as part of a cooperation performed by members of the NJ CSO group effort in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for purposely, knowingly, recklessly, or negligently submitting false information.

Permittee: _____ 6/25/18
Frank Pestana — Date
Licensed Operator, Town of Guttenberg

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Executive Summary

ES-1 Background

The Passaic Valley Sewerage Commission (PVSC) provides wastewater treatment service to approximately 1.5 million people, 198 significant industrial users, and 5,000 commercial customers across 48 municipalities in northeastern New Jersey, covering parts of Bergen, Hudson, Essex, Union and Passaic counties.

The PVSC Sewerage District covers approximately 150 square miles from Newark Bay to regions of the Passaic River Basin upstream of the Great Falls in Paterson (PVSC Sewerage District). PVSC's main interceptor sewer begins at Prospect Street in Paterson and generally follows the alignment of the Passaic River to just above Newark Bay, where PVSC owns and operates a 142-acre water resource recovery facility (WRRF) in an industrial area of Newark, New Jersey. PVSC has a permitted annual average capacity of 330 million gallons per day.

There are eight municipalities within the PVSC Sewerage District that are serviced either in whole or in part by combined sewer systems. These municipalities (or associated municipal utilities authorities) entities hold New Jersey Pollutant Discharge Elimination System (NJPDES) permits, authorizing them to discharge combined sewage to surface waters during certain conditions. Two of the municipalities, Bayonne and Jersey City, own and operate their own combined sewer systems, interceptors, combined sewer outfall control facilities, and pumping stations. They jointly own the Hudson County Force Main, used to transport wastewater to the primary clarifiers at the PVSC WRRF. The North Bergen Municipal Utilities Authority (NBMUA) connects to PVSC through the Hudson County Force Main and owns and operates combined sewer overflow (CSO) outfalls, but does not own the collection system. PVSC neither owns nor operates any of the CSO control or transportation facilities which service this section of the Sewerage District.

The other municipalities with combined sewer systems—the Borough of East Newark, the Towns of Harrison and Kearny, and the Cities of Newark and Paterson—are tributary to PVSC main interceptor, and most of their combined sewer systems are tributary to CSO control facilities owned and/or operated by PVSC. Newark also owns and operates its Southside Interceptor, which discharges directly to PVSC's plant headworks.

The NBMUA provides wastewater and treatment services at the NBMUA Woodcliff Wastewater Treatment Facility (NBMUA Woodcliff) for a portion of Township of North Bergen and the Town of Guttenberg. NBMUA Woodcliff treats approximately three million gallons of wastewater per day, servicing roughly 305 acres in the contributing area (181 in North Bergen (Woodcliff) and 124 in Guttenberg). One combined sewer outfall is located in North Bergen Township and another is located in Guttenberg; both discharge along the Hudson River.

The NJPDES permits require PVSC, NBMUA Woodcliff and any hydraulically connected CSO communities to cooperatively develop a CSO Long Term Control Plan (LTCP). PVSC has undertaken the development and implementation of the public participation program on behalf of the permittees to facilitate the process.

This Report outlines the public participation process and the associated outreach program activities that have been conducted to date. The goals of the program are to foster public awareness and facilitate public involvement in the decision-making process towards developing and selecting the final LTCP. Continuing and future activities will be summarized and compiled in the final LTCP.

ES-2 Public Participation Summary

During the development of the LTCP, the permittees have conducted various public outreach activities in order to implement a process that actively involves the affected public, which includes communities within the PVSC Sewerage District and the NBMUA-Woodcliff Service Area. The diverse set of public activities include:

- **Creation of a Supplemental CSO Team.** A Supplemental CSO Team was created "as an informal work group [to act] as a liaison between the general public and the decision makers for the permittee," as required by NJPDES Permit Part IV.G.2.C. The Supplemental CSO Team is comprised of invited members of the affected and interested public, such as rate payers, industrial users, persons who reside downstream from the CSOs, and persons who use and enjoy the downstream waters.

- **Regular Interest Group Meetings.** The NJ CSO Group (all New Jersey CSO permittees) meets quarterly to discuss industry-wide concerns, including, but not limited to issues arising from the LTCP. The PVSC Sewerage District permittees have held monthly meetings since 2014 to discuss issues and goals directly related CSO compliance and the LTCP. PVSC has also held meetings with other existing groups and stakeholders within and outside of the PVSC Sewerage District. For example, PVSC holds quarterly conference calls with the New York City Department of Environmental Protection (NYCDEP) to coordinate data relative to the shared receiving streams. PVSC also attends New York – New Jersey Harbor & Estuary Program (NJ/NY HEP) Water Quality Work Group Meetings to provide information relative to the LTCP.

- **Collaborations with a national, public research university.** PVSC collaborated with Rutgers University's Department of Landscape Architecture to develop a curriculum that challenged students to solve environmental issues related to CSOs using green infrastructure. PVSC also partnered with Rutgers University to implement a municipal outreach and technical assistance program to provide guidance and direction to the 48 municipalities located within PVSC's Sewerage District on the benefits of green infrastructure.

- **Collaborations with a national, private research university.** PVSC collaborated with Stevens Institute of Technology's Department of Civil, Environmental, and Ocean Engineering to develop a curriculum that challenged students to solve environmental issues related to CSOs using non-traditional technologies. PVSC also partnered with Stevens Institute of Technology to implement a municipal outreach and technical assistance program to provide guidance and direction to the 48 municipalities located within PVSC's Sewerage District on the benefits of green infrastructure.

- **Direct solicitation for input.** PVSC contacted the non-CSO permittees (separate sewer systems) to request discussions regarding the reduction of infiltration and inflow from those non-CSO communities.

- **Computer Model Development Peer Review.** A Model Evaluation Group (MEG) was formed as part of the development of the various models of the CSS and receiving waters. Members of the MEG included professors from regional universities whose fingers are on the pulse of the latest computational tools and technologies.

- **Variety of Communication Tools.** Websites and social media, such as Facebook and Twitter, were utilized as an additional means of public outreach.

- **Briefings for elected and appointed officials.** Presentations were made to numerous municipal councils, administrators and officials within the PVSC Sewerage District to advise public decision makers with information related to the LTCP.

- **Participation in topical conferences.** PVSC gave presentations at regional and local seminars and conferences, such as the New Jersey Water Environment Association (NJWEA) Technology Transfer Seminar and also the NJWEA Annual Conference and Exposition. These presentations referenced a variety of topics relative to the LTCP, such as information pertaining to the water quality monitoring program and also the source sampling program.

- **Presentations at established local events.** PVSC has hosted a table with informative information at the North Bergen Health Green Fair for the past two years.

Section 1 Introduction

1.1 Background of the Public Participation Program for CSO LTCP Development

A public participation and outreach program was implemented as part of the development of the Long Term Control Plan (LTCP). This Report outlines the public participation process and the associated activities that were conducted as of the date of this Report. The goals of the program are to foster public awareness and to facilitate public involvement in the decision-making process to develop and select the final LTCP. The plan will continue to be implemented throughout the continued development of the LTCP and the continued activities beyond the date of this Report will be compiled in the final LTCP.

1.2 Principal Data Users

The principal users of the public input received are PVSC, NBMUA, hydraulically connected CSO municipalities and permittees, and the engineering consultants supporting the development of the LTCP. PVSC shares the public input gathered during the public participation program with permittees within and outside of PVSC's Sewerage District. Permittees may use the input gathered to satisfy certain NJPDES permit requirements. **Table 1-1** defines the list of primary data users.

Table 1-1: List of Primary Data Users

Water Resource Recovery Facility/ Wastewater Treatment Plant	Hydraulically Connected CSO Municipalities and Permittees
Passaic Valley Sewerage Commission (PVSC)	City of Paterson City of Newark Town of Kearny Town of Harrison Borough of East Newark City of Bayonne Jersey City Municipal Utilities Authority North Bergen Municipal Utilities Authority
North Bergen Municipal Utilities Authority (NBMUA) – Woodcliff	North Bergen Municipal Utilities Authority Town of Guttenberg

The primary data users elected PVSC to lead the development and implementation of the public participation program required for CSO permit compliance; however, all participating members actively participate in the public participation program and may utilize the input in the decision-making process to develop and select the final LTCP.

1.3 Decision Makers

PVSC has decision-making authority for the implementation of the public participation program. The Program Manager for PVSC is ultimately responsible for all technical, financial, and resource-related elements of the program and is the main contact for interagency communications. The implementation of

the public participation program will continue beyond the date of this Report. Continued public outreach activities will be discussed in the final LTCP.

1.4 Purpose Definition and Background

PVSC provides wastewater treatment service to forty-eight municipalities in its northeast New Jersey Sewerage District, which covers approximately 150 square miles from Newark Bay to regions of the Passaic River Basin upstream of the Great Falls in Paterson, New Jersey. PVSC's main interceptor sewer begins at Prospect Street in Paterson, and generally follows the alignment of the Passaic River to the PVSC WRRF in Newark, New Jersey. The extent of the PVSC Sewerage District and the combined sewer areas within the study area are illustrated in **Figure 1-1**.

Eight municipalities within the PVSC Sewerage District are serviced either in whole or in part by combined sewer systems. These municipalities (or associated municipal utilities authorities) hold New Jersey Pollutant Discharge Elimination System (NJPDES) permits, authorizing them to discharge combined sewage to surface waters during certain conditions. Two of the municipalities, Bayonne and Jersey City, own and operate their own combined sewer systems, interceptors, combined sewer outfall control facilities, and pumping stations. They jointly own the Hudson County Force Main, used to transport wastewater to the primary clarifiers at the PVSC WRRF. The North Bergen Municipal Utilities Authority (NBMUA) connects to PVSC through the Hudson County Force Main and owns and operates combined sewer overflow (CSO) outfalls, but does not own the collection system. PVSC neither owns nor operates any of the CSO control or transportation facilities which service this section of the Sewerage District.

The other municipalities serviced by combined sewer systems are East Newark, Harrison, Kearny, Newark, and Paterson. Newark owns and operates its Southside Interceptor, which connects directly to the PVSC headworks. A general schematic of the PVSC system is included in **Figure 1-2**. All of these municipalities are tributary to PVSC main interceptor, and most of their combined sewer systems are tributary to CSO control facilities owned and/or operated by PVSC.

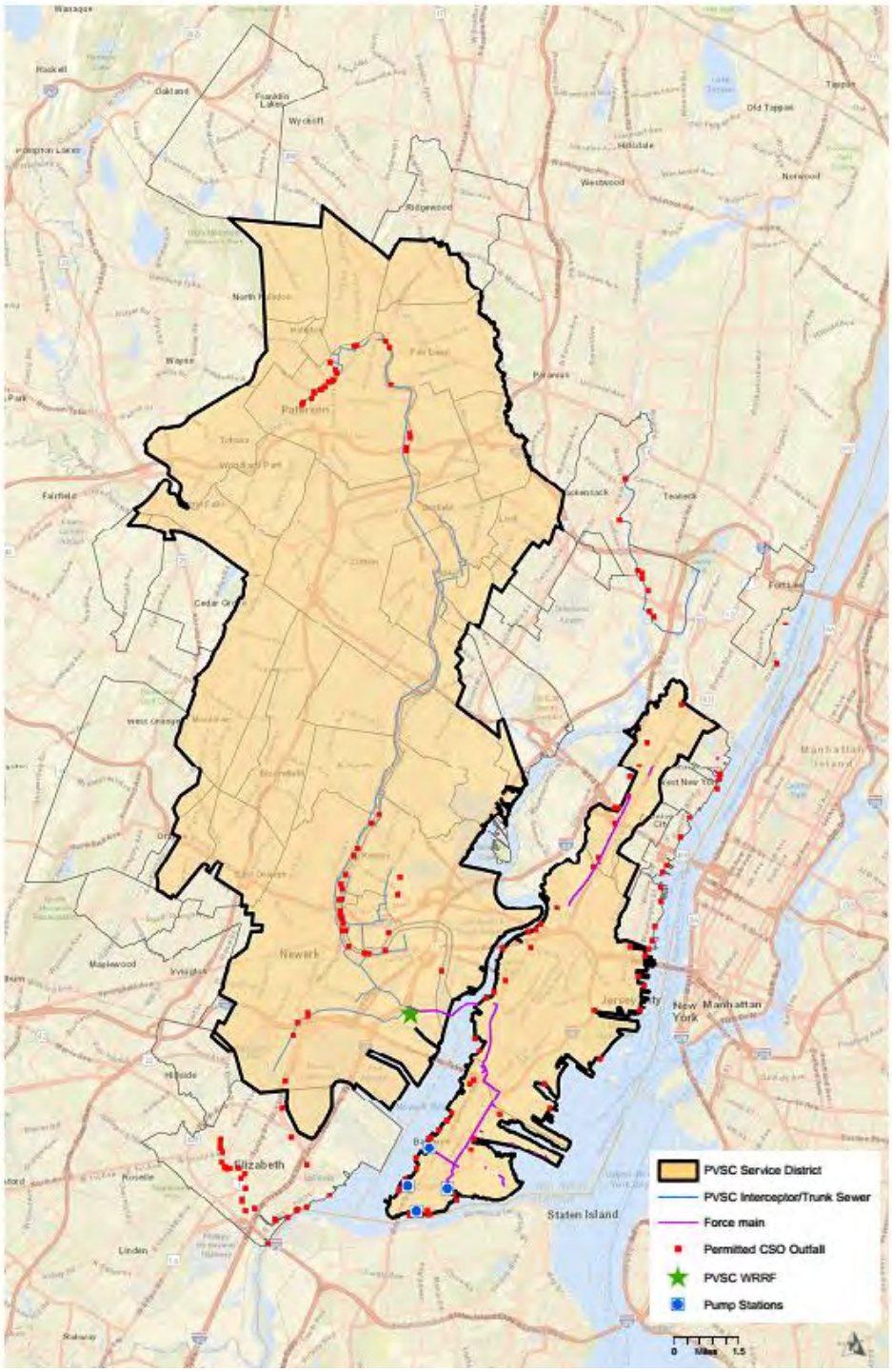


Figure 1-1: The PVSC Sewer District

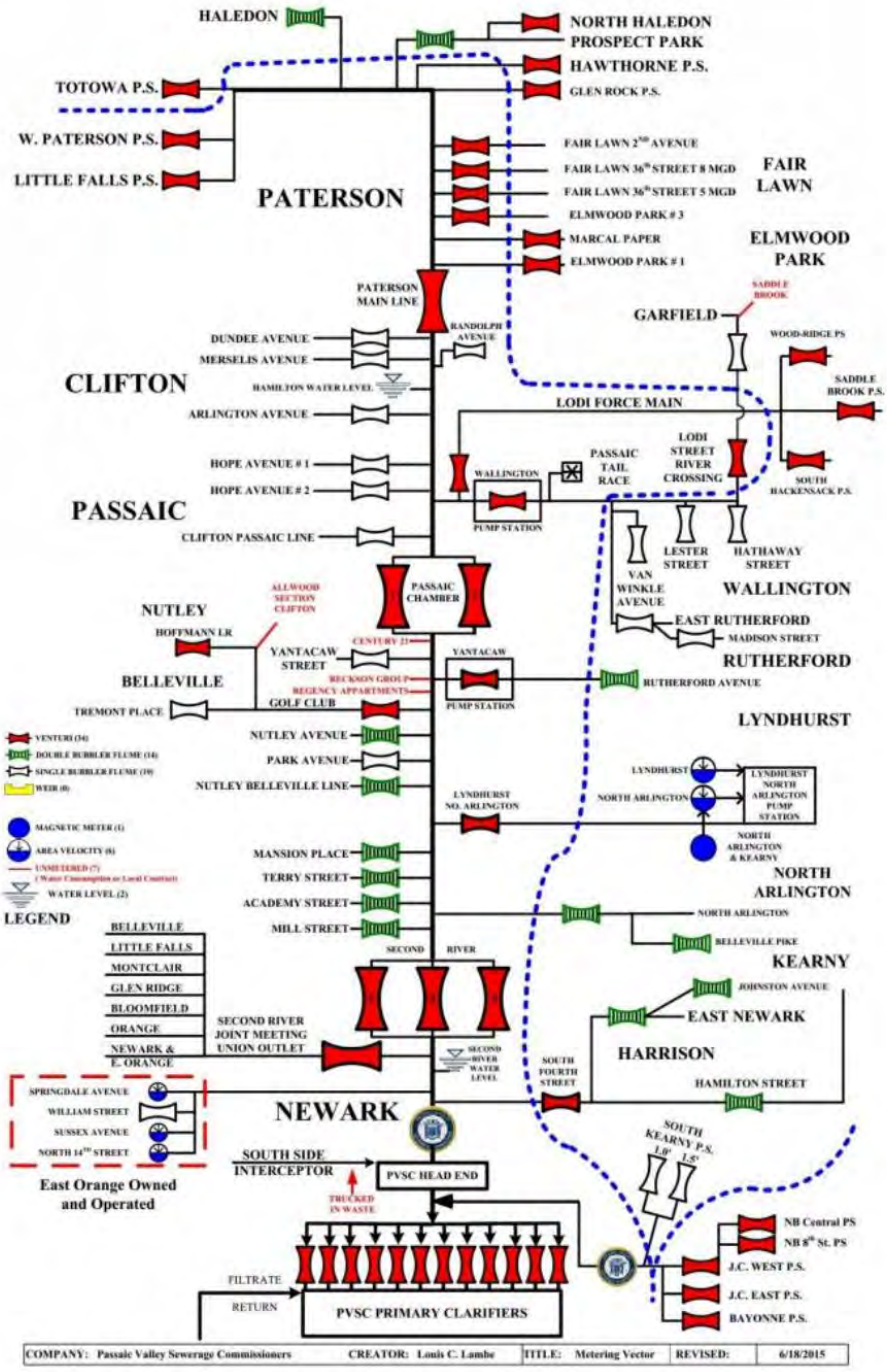


Figure 1-2: PVSC Service Area Schematic

The NBMUA provides wastewater collection and treatment services at the NBMUA Wastewater Treatment Facility (NBMUA Woodcliff) for Guttenberg and a portion of North Bergen. NBMUA Woodcliff treats approximately three million gallons of wastewater per day, servicing roughly 477 acres (368 in North Bergen and 109 in Guttenberg). One combined sewer outfall is located in North Bergen Township and another is located in Guttenberg; both discharge along the Hudson River. NBMUA Woodcliff's service area and the combined sewer areas within the study area are illustrated in **Figure 1-3**. A general schematic of the NBMUA/Guttenberg system is included in **Figure 1-4**.

The NJPDES permits require PVSC, NBMUA Woodcliff, and any hydraulically connected CSO communities to cooperatively develop a CSO Long Term Control Plan (LTCP). PVSC has undertaken the development and implementation of the public participation program on behalf of the permittees to facilitate the process.

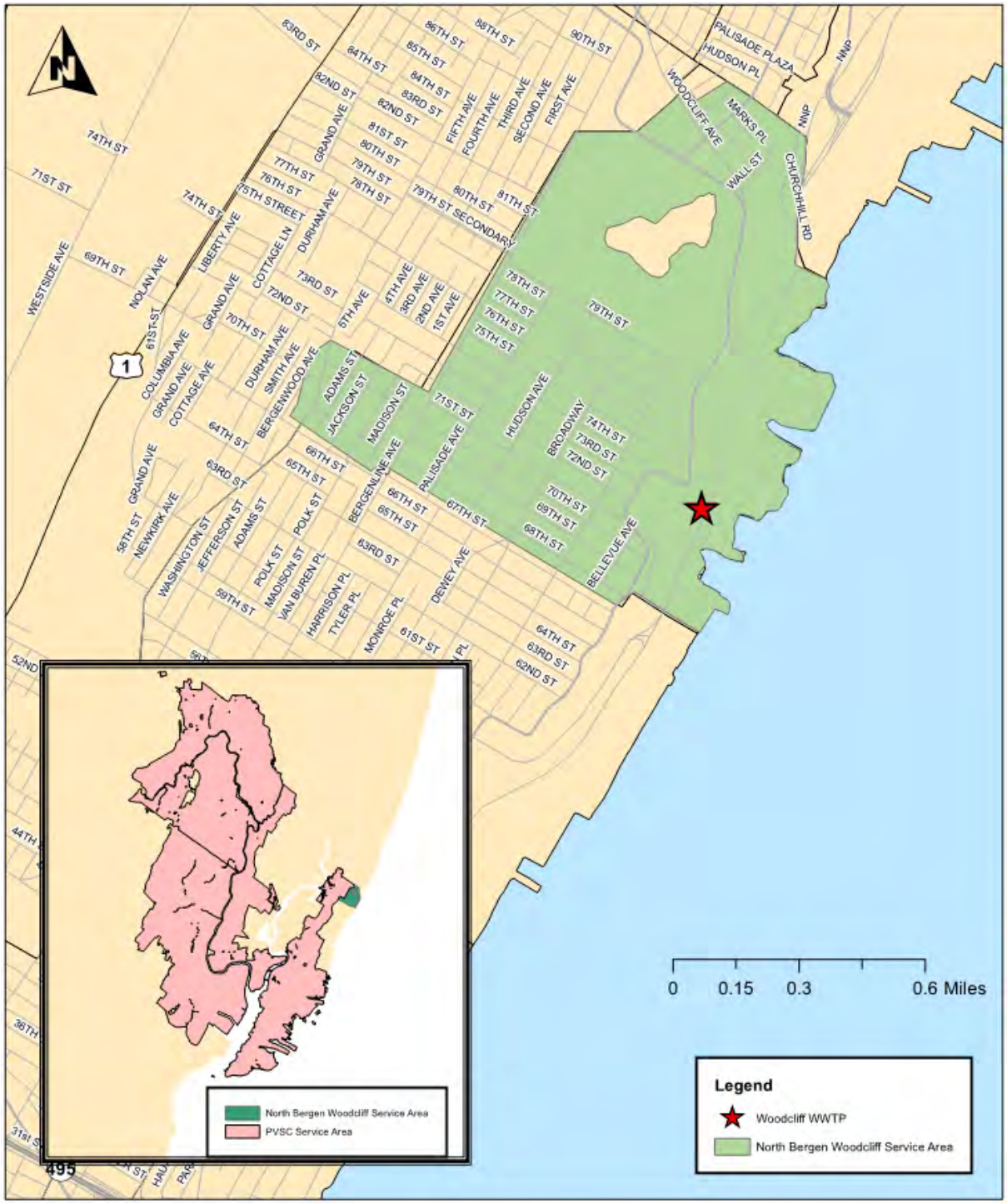


Figure 1-3: North Bergen MUA Sewer District

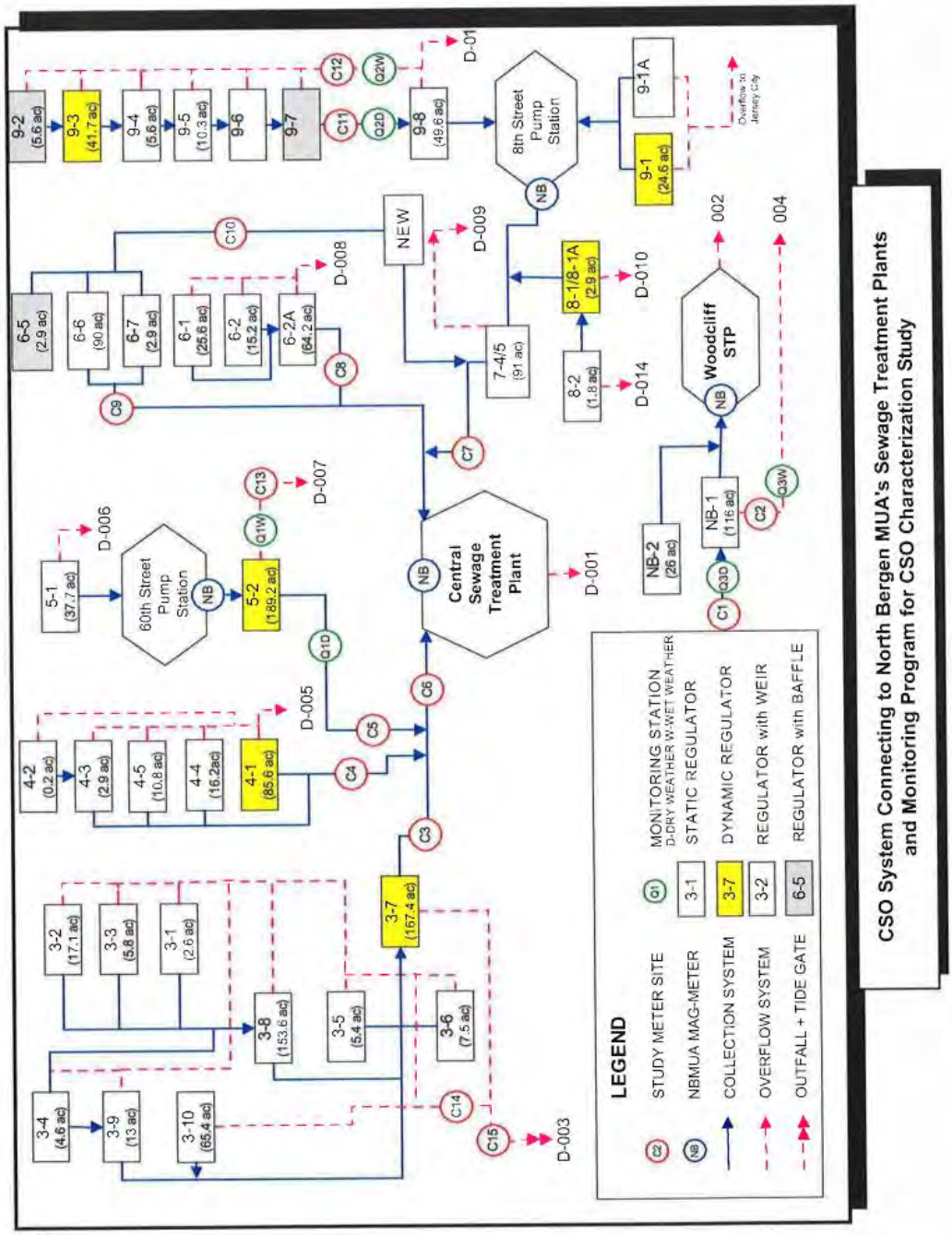


Figure 1-4: North Bergen MUA-Woodcliff / Town of Guttenberg Service Area Schematic

Section 2 Public Involvement During Development of Draft LTCP

2.1 Public Involvement Overview

During the development of the LTCP, the permittees have conducted a variety of public outreach activities to implement a process that actively involves the affected public. This Section will outline the various methods of public outreach that were conducted and will also summarize areas of public comments, input and concern.

2.2 PVSC Sewerage District Supplemental CSO Team

The Supplemental CSO Team is an important part of the LTCP development process. The overall goal of the Supplemental CSO Team is to "work as an informal work group as a liaison between the general public and the decision makers for the permittee" as required by NJPDES Permit Part IV.G.2.C. The Supplemental CSO Team is comprised of invited members of the affected and interested public, such as rate payers, industrial users, persons who reside downstream from the CSOs, persons who use and enjoy the downstream waters, and others based on recommendations of the permittees to ensure adequate representation of the entire service area. Members are representative of the permitted communities or areas that are served by the wastewater treatment plant, and are not required to have extensive engineering backgrounds or special expertise or knowledge of CSOs.

In order for the Supplemental CSO Team to operate effectively and provide a high value to the LTCP development process, members of the team are required to commit to a multi-year planning process that includes participation and attendance at regular meetings. The following list of responsibilities and expectations was formulated and utilized in the selection of members of the Supplemental CSO Team:

- A long term (3-year) commitment to the LTCP development process;
- Regular attendance at quarterly meetings (at various venues throughout the permittee's service area) to assist in the sharing information and providing input in the planning process;
- Review of the proposed nature and extent of data and information to be collected during LTCP development;
- Provide input for consideration in the evaluation of CSO control alternatives; and
- Provide input for consideration in the selection of those CSO controls that will cost-effectively meet the Clean Water Act requirements.

Permittees provided input with respect to the type of entities and individuals who should be invited to participate as members of the Supplemental CSO Team with the end goal of establishing a team that was represented by various and diverse members of the affected and interested public. Invitees were offered participation on the Supplemental CSO Teams via invitation letter. Several invitees declined to join the Team or did not respond. Current members of the Supplemental CSO Team and the organizations to which they belong are listed in **Table 2-1**:

Table 2-1: Supplemental CSO Team (alphabetically by organization)

Name	Representing
Matt Dorans	Bayonne Chamber of Commerce
Nancy Kontos	Bunker Hill Special Improvement District
Sheri Ferreira	Greater Paterson Chamber of Commerce
Captain Bill Sheehan	Hackensack Riverkeeper
Janet Castro	Hudson Regional Health Commission, Township of North Bergen
Drew Curtis	Ironbound Community Cooperation
Alison Cucco	Jersey City Environmental Commission
Currently Open	Jersey City Redevelopment Agency
Meiyin Wu, Ph.D.	Montclair State University – Passaic River Institute
Betty Jane Boros	New Jersey Business & Industrial Association (NJBIA)
Robin Dougherty	Newark Greater Conservancy/Newark Business Partnership
Jorge Santos	Newark Community Economic Development Corporation (NCEDC)
Nicole Miller	Newark DIG
Thomas Stampe	North Bergen "Sustainable Jersey" Group
Michele Langa	NY/NJ Baykeeper
Harvey Morginstin	Passaic River Boat Club & Passaic River Superfund CAG
Laurie Howard	Passaic River Coalition
Ben Delisle	Passaic River Rowing Association
Ruben Gomez	City of Paterson Economic Development
Sandra Meola	Paterson SMART
Christopher Obropta, Ph.D.	Rutgers University – Cooperative Extension Water Resources
Patricia Hester-Fearon	Town of Kearny
Christopher Vasquez	Town of Kearny
Chris Pianese	Township of North Bergen

Name	Representing
Dan Smerda	Bayonne Water Guardians
Lisha Smerda	Bayonne Water Guardians
Nancy Kontos	Bunker Hill Special Improvement District
Sheri Ferreira	Greater Paterson Chamber of Commerce
Captain Bill Sheehan	Hackensack Riverkeeper
Janet Castro	Hudson Regional Health Commission, Township of North Bergen
Drew Curtis	Ironbound Community Cooperation
Alison Cucco	Jersey City Environmental Commission
Currently Open	Jersey City Redevelopment Agency
Currently Open	Montclair State University – Passaic River Institute
Betty Jane Boros	New Jersey Business & Industrial Association (NJBIA)
Robin Dougherty	Newark Greater Conservancy/Newark Business Partnership
Jorge Santos	Newark Community Economic Development Corporation (NCEDC)
Nicole Miller	Newark DIG
Thomas Stampe	North Bergen "Sustainable Jersey" Group
Michele Langa	NY/NJ Baykeeper
Harvey Morginstin	Passaic River Boat Club & Passaic River Superfund CAG
Laurie Howard	Passaic River Coalition
Ben Delisle	Passaic River Rowing Association
Ruben Gomez	City of Paterson Economic Development
Sue Levine	Paterson SMART
Christopher Obropta, Ph.D.	Rutgers University – Cooperative Extension Water Resources
Patricia Hester-Fearon	Town of Kearny
Christopher Vasquez	Town of Kearny
Chris Pianese	Township of North Bergen

Supplemental CSO Team Public M~~m~~eetings were held over the course of the LTCP development effort. Each member of the Supplemental CSO Team was given a unique username and password to allow them to access a SharePoint site that was set up to share and transfer documents for review and comment. Meeting agendas were posted to the SharePoint site prior to each Supplemental CSO Team Public Meeting, and presentations given at each meeting were posted to the site following the meeting, along with other relevant documents, such as the various NJPDES permits and LTCP interim deliverables/reports. Supplemental CSO Team Public Meetings were held on the dates and locations presented in **Table 2-2**:

Table 2-2: Dates and Locations of Supplemental CSO Team Public Meetings

Meeting Number	Date	Location	City
1	October 5, 2016	Harrison Elks Lodge	Harrison
2	January 10, 2017	Bayonne Public Library	Bayonne
3	April 11, 2017	The Hamilton Club at Passaic County Community College	Paterson
4	July 11, 2017	Newark City Hall	Newark
5	October 16, 2017	PVSC WRRF	Newark
6	January 9, 2018	North Bergen Municipal Building	North Bergen
7	April 17, 2018	Jersey City Council Chambers	Jersey City

Meetings will continue to be held on a quarterly basis throughout the development of the LTCP.

At each Supplemental CSO Team Public M~~m~~eeting, presentations were prepared on various topics relevant to CSO Long Term Control Planning. Members of the Supplemental CSO Team were also given the opportunity to give presentations. For example, Paterson SMART gave a presentation that provided an overview of its organization and the initiatives it is implementing relative to green infrastructure. **Table 2-3** lists a summary of the topics presented at each meeting, as well as discussion items, concerns, and/or comments raised by the Supplemental CSO Team members and/or the public.

A photo of a Supplemental CSO Team Public M~~m~~eeting is provided as **Figure 2-1**.

Figure 2-1: A Typical Supplemental CSO Team Public Meeting

Table 2-3: Supplemental CSO Team Public Meetings

Public Meeting No.	No. of Attendees	Presentation Topics	Public Concerns / Comments
1	23 (11)	• Introduction to the Permittees • Passaic Valley Sewerage Commission Service Area • Supplemental CSO Team Roster • Overview of Separate and Combined Sewer Systems • Regulatory Background • Program Progress to Date • Branding of LTCP Program • Next Steps • Questions and Final Discussion	• Supplemental CSO Team should set some ground rules for the group and establish what it expects from PVSC and the project team and create accountability on both sides • Suggested the creation of a clear definition of the relationship between the Supplemental CSO Team, PVSC and the consultants • For the alternatives analysis, Supplemental CSO Team input is expected to be weighed against a cost-benefit analysis • Suggested the creation of a guide for community engagement • All meeting documents were requested to be sent to the Supplemental CSO Team in advance so that the team has time to review • Team requested to be updated on the water quality model at future meetings
2	44 (13)	• Introduction • Supplemental CSO Team Roster • Overview of the SharePoint Site • Recap of the October 5, 2016 Supplemental CSO Meeting • History of Combined Sewers in the Passaic Valley Sewerage Commission District • NJDEP – New Jersey CSO Permits • Permit Responsibilities • Highlights from CSO LTCPs from Elsewhere in the U.S. • Status Update on the PVSC District LTCP • Branding of LTCP Program	• Discussion about why the flow monitoring lasted for a 12-week period and adequacy of rain events to calibrate the water quality model • Concern about inspections of sewer interceptors • Discussed the reporting requirements for permittees in terms of Nine Minimum Control compliance • It was confirmed that population growth is a factor in the model and LTCP • Sewer separation can be costly • Concern that warning signs for CSOs aren't visible enough • Discussion about Supplemental Team's input on deliverables • Concern about how alternatives analysis will be discussed with the community at large • Discussion about how payment for sewer usage and improvements is distributed within the PVSC communities • Branding and logo was discussed

Public Meeting No.	No. of Attendees	Presentation Topics	Public Concerns / Comments
3	29 (12)	• Introduction and Recap • Branding Update • Project Schedule • Green Infrastructure (GI) for CSO Control • Supplemental CSO Team Member Presentations • Paterson SMART	• Discussion about the most effective methods of GI • Concern that public outreach is the most important part of GI. Consulting with the public would hopefully help implementation issues • GI can create jobs and build a relationship between the general public and the government • Brainstorming best uses for porous pavement • Discussion of GI costs and permit requirements
4	43 (13)	• Introduction and Recap • NJ CSO Permit Overview (NJDEP) • Water Quality Standards (NJDEP) • Hydrologic and Hydraulic Models	• Discussion about the flow monitoring that was completed for use in the model • The model was discussed. • Discussion regarding the details of PVSC's plant outfall • The Team requested a tour of the PVSC WRRF
5	40 (14)	• PVSC Plant Tour • Introduction and Recap • Introduction to Alternative Analysis • Stimulating Green Infrastructure on Private Property • Bayonne CSO Treatment Demonstration Project	• PVSC plant tour was provided • Discussion about the pros and cons of the presumption and demonstration approaches • Questions about how funding for GI is gathered and managed • Discussion about end-of-pipe treatment technologies such as peracetic acid
6	34 (11)	• Introduction and Recap • LTCP Deliverables due to NJDEP on July 1, 2018 • Cost estimate of the LTCP • Update on the activities performed by the Project Team • Passaic Valley Regional Planning & Design Studio presentation by Rutgers University • PVSC and Rutgers Green Infrastructure Municipal Outreach and Technical Assistance Program	• SCSO Team requested time to review all deliverables and give input before they are submitted to NJDEP • The cost opinions will be included in the LTCP submission. All eight of the CSO communities will be included in the cost opinions • Discussion about the different types of public outreach materials, whether they provide more general or region-specific information and in which languages they are available

Public Meeting No.	No. of Attendees	Presentation Topics	Public Concerns / Comments
7	48 (13)	• Introduction and Recap • Water Quality Monitoring Program Overview • Overview of Reports to be submitted to NJDEP on July 1, 2018 • Timeline for Submittals and Supplemental CSO Team Input • NJDEP Guidance Document for Evaluating Green Infrastructure • Social Media for Clean Waterways, Healthy Neighborhoods	• Discussion of contaminant and contamination source identification • Discussion of sampling methodology including weather patterns, specific contaminants, sampling locations, and saline and fresh water body sampling • Discussion regarding the model calibration, the contaminants being modeled, and the accuracy of the model • SCSO team recommended adding Arabic translations to the public outreach materials • Discussion about the effect the GI pilot studies will have on stormwater volume

'Number in parentheses indicates number of members of the Supplemental CSO Team present

As requested by the Supplemental CSO Team, PVSC arranged for a tour of the PVSC WRRF on October 16, 2017. The Supplemental CSO Team members were briefed on the WRRF process and how wet weather impacts the operations, and were given a tour of the facility.

In addition to the Supplemental CSO Team Public M~~m~~eetings, the following Draft Reports were provided to the members of the Supplemental CSO Team for review and comment:

- Service Area System Characterization Report;
- Public Participation Report;
- Identification of Sensitive Areas Report; and
- Compliance Monitoring Program Report.

As Supplemental CSO Team Public Meetings continue to be held, the SCSO Teams are updated on further LTCP development and implementation and are encouraged to provide feedback on such milestones, including the Development and Evaluation of Alternatives. It is anticipated that two Supplemental CSO Team Public Meetings, plus one additional Public Meeting, will focus on the Development and Evaluation of Alternatives. Additionally, it is anticipated that these meetings will continue during the Selection of Alternatives. The timeline for these review periods and for other programmatic updates to the LTCP are provided at Supplemental CSO Team Public Meetings, as shown in Appendix L.

2.3 Newark Supplemental CSO Team

Newark assembled its own local Supplemental CSO Team as a platform to discuss the LTCP and Newark's efforts under the NJPDES permit. The Newark Supplemental CSO Team Public M~~m~~eetings were held over the course of the LTCP development effort to work in conjunction with the primary Supplemental CSO Team. Current members of the Supplemental CSO Team and the organizations to which they belong are listed in **Table 2-4**. Meetings were held on the dates and locations presented in **Table 2-5**.

Table 2-4: Newark Supplemental CSO Team Members

Name	Representing
Nicole Miller	Newark DIG
Kim Gaddy	Clean Water Action
S. Greenwood	Victoria Foundation
Robert Thomas	City of Newark Department of Engineering
Nathaly Agosto	City of Newark Office of Sustainability
Upendra Sapkota	City of Newark Department of Economic Housing and Development
Karin Aaron	Newark Happening
Franklyn Ore	Newark CEDC
Ashaki Rouff	Rutgers University
Various/Rotating	South Ward Special Improvement District
Chris Bernardo	Commercial District Services
Anthony McMillan	Newark Downtown District
Mbacke Faye	Newark Downtown District
Seth A. Grossman	Ironbound Community Corporation
Dr. A Zachary Yamba	President Emeritus, Essex County College
Kimberly McLain	Newark Alliance
Michel Boufadel	New Jersey Institute of Technology
Isabel Bracero	New Jersey Institute of Technology
Various/Rotating	Newark Public Schools
Nicole Singletary	It Takes a Village

Table 2-5: Newark Supplemental CSO Team Public Meeting Dates and Locations

Meeting Number	Date	Location
1	April 25, 2017	Newark City Hall
2	October 24, 2017	Newark City Hall
3	March 27, 2018	Newark City Hall

At each Newark Supplemental CSO Team Public M~~m~~eeting, presentations were prepared on various topics related to CSO Long Term Control Planning. **Table 2-6** contains a summary of the topics presented at each meeting, as well as any discussion items, concerns, or comments raised by the public.

Table 2-6: Newark Supplemental CSO Team Public Meetings

Public Meeting No.	No. of Attendees	Presentation Topics	Public Concerns / Comments
1	22	• Introduction to the Newark Supplemental CSO Team • CSOs within Newark • Department of Water and Sewer Background • The CSO Notification System • Current Project Underway in Newark	• The possibility of Green Infrastructure being incorporated into Public School capital projects • Stakeholder involvement in stormwater detention and stakeholder partnership in stormwater management • Consideration of Climate Change • Development and redevelopment planning will take population growth and history into considerations • Runoff from commercial to residential properties.
2	16	• Personnel Changes • CSO Netting Facilities • Reports and Monitoring • Activity Book • CSO Brochure • Adopt a Basin and Rain Barrel Program	• The Activity Book mascot can work with the Office of Sustainability's catch basin adoption program • Engage schools to adopt catch basins around school grounds • Schools with Green Infrastructure should be prioritized since they are already engaged in stormwater management • Green Infrastructure opportunities in communities with repaving ordinances • Engaging residents to sign a petition to support community tax dollars to be invested in Green Infrastructure. • The team recommended a more detailed map of the CSO/MS4 areas
3	19	• South Street Project Presentation • CSO Brochure • General Discussion	• The group stated that curb bump outs as part of green infrastructure will have the added benefit of pedestrian safety. • A PDF copy of the coloring book should be shared with community groups. • Information and tools for private owners is important to share with residents in order to engage them.

It is anticipated that meetings will continue to be held on a regular basis throughout the development of the LTCP.

2.4 Bayonne Supplemental CSO Team

Like Newark, Bayonne assembled a local Supplemental CSO Team to discuss the LTCP and Bayonne's efforts under the NJPDES permit. The Bayonne Supplemental CSO Team Public M~~m~~eetings were held over the course of the LTCP development effort to work in conjunction with the primary Supplemental CSO Team. Meetings were held on the dates and locations presented in **Table 2-7**:

Table 2-7: Bayonne Supplemental CSO Team Public Meeting Dates and Locations

Meeting Number	Date	Location
1	June 29, 2017	Bayonne City Hall
2	October 2, 2017	Bayonne City Hall
3	December 13, 2017	Bridge Art Gallery
4	January 24, 2018	Bridge Art Gallery
5	February 27, 2018	Buttero
6	March 14, 2018	Bridge Art Gallery
7	April 11, 2018	Bridge Art Gallery
8	May 9, 2018	Bridge Art Gallery

At each Bayonne Supplemental CSO Team Public M~~m~~eeting, presentations were prepared on various related to CSO Long Term Control Planning. **Table 2-8** contains a summary of the topics presented at each meeting, as well as any discussion items, concerns, or comments raised by the public.

Table 2-8: Bayonne Supplemental CSO Team Public Meetings

Public Meeting No.	No. of Attendees	Presentation Topics	Public Concerns / Comments
1	7	• Bayonne CSO Permit • New Jersey Future and Jersey Water Works • NJCSO Permit Requirements	• Incentivize developers to incorporate green infrastructure in projects • Connect with national and international efforts related to sustainability • Develop community outreach opportunities like the Bayonne Arts Festival • Identify other stakeholders and invite them to the Bayonne SCSO Team Public M~~m~~eetings
2	6	• Bayonne CSO Program • Long Term Control Plan	• Discussed the Mission of the Bayonne SCSO Team

Public Meeting No.	No. of Attendees	Presentation Topics	Public Concerns / Comments
			• Discussed possible Bayonne SCSO Team goals
3	8	• Discussion about stormwater challenges and solutions • Branding exercise	
4	11	• Bayonne SCSO Team Update • Rutgers Cooperative Extension Water Resources Program Presentation • Discussed upcoming workshops • Logo and Branding Discussion	• Discussion about the Bayonne Supplemental Team Community Workshops and the Green Infrastructure Workshops for Developers • Bayonne SCSO Team has named the group “Bayonne Water Guardians”
5	N/A	• Presentation on the intent of the PVSC LTCP • Overall goals of Bayonne LTCP • Update on Bayonne Water Guardians progress	• Major elements of an LTCP • CSO control approaches • Cost/performance considerations • Green Infrastructure technologies
6	9	• CSO Notification System • Rain Barrel Workshop • Long Term Control Plan	• A model will predict wet weather CSOs • Tunnels and green infrastructure are used to reduce CSOs
7	8	• Bayonne Water Guardian Logo Update and Publicity • Rain Barrel Workshop Update	• Brainstorming speakers to address the attendees of the Rain Barrel Workshop • Brainstorming public outreach avenues
8	4	• Community Outreach including Bayonne Councilmen • Long Term Control Plan • Develop Community Goals	• Creating flyers and reaching out to councilmen • Discussion of event opportunities for community outreach • Information about PVSC and the LTCP

It is anticipated that meetings will continue to be held on a regular basis throughout the development of the LTCP.

2.5 NJ CSO Group Meetings

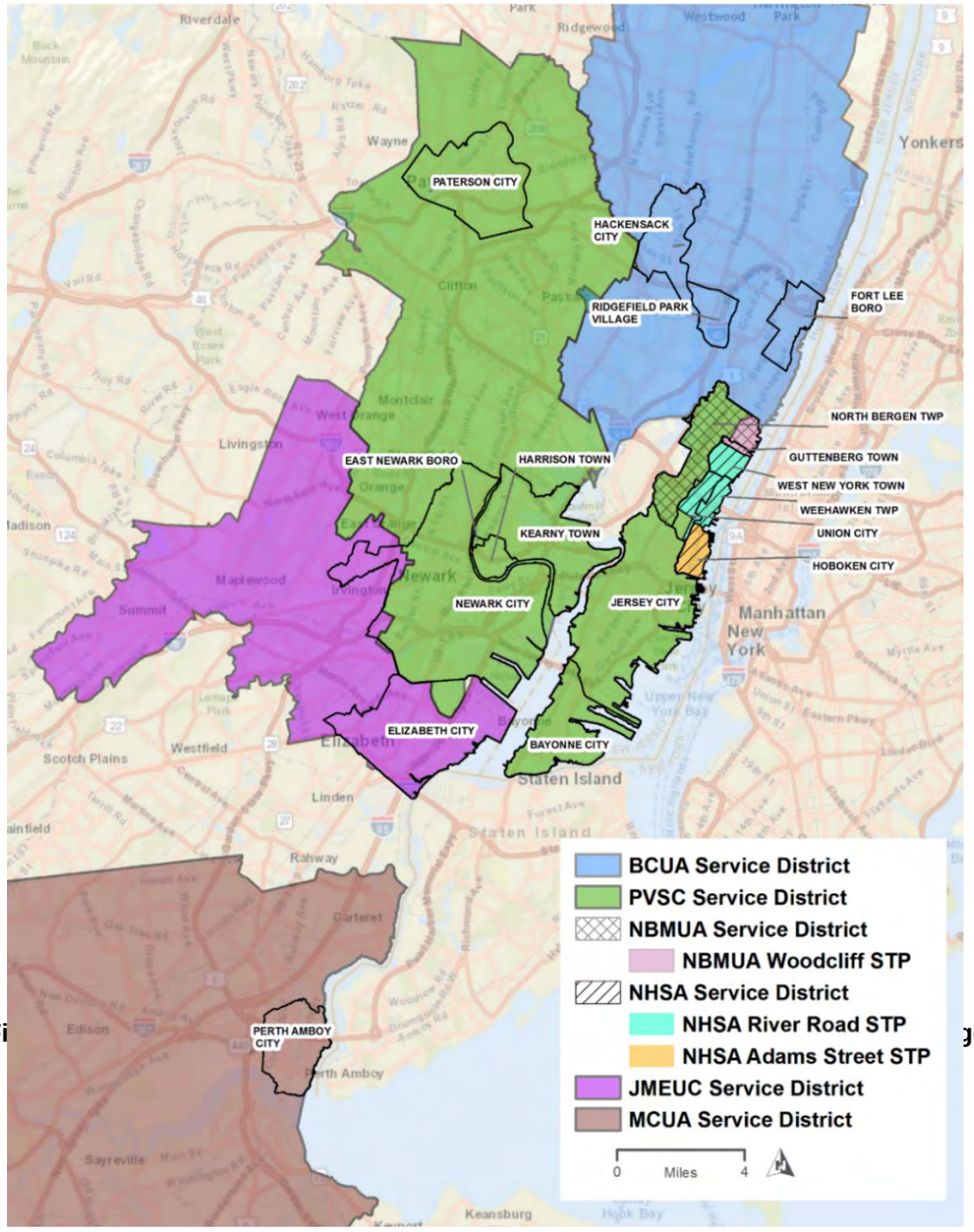
The NJ CSO Group was originally formed to work cooperatively to fulfill the requirements of the last CSO General Permit. The group was recently expanded to include more permittees that discharge to the tidally connected waterbodies in the NY/NJ Harbor Estuary. The NJ CSO Group is made up of the CSO permittees shown below alongside their NJPDES Permit numbers in **Table 2-9.**

Table 2-9: NJ CSO Group

NJ CSO Group Member	NJPDES Permit Number
City of Bayonne	NJ0109240
Borough of East Newark	NJ0117846
City of Elizabeth	NJ0108782
Borough of Fort Lee	NJ0034517
Town of Guttenberg	NJ0108715
City of Hackensack	NJ0108766
Town of Harrison	NJ0108871
Jersey City MUA	NJ0108723
Town of Kearny	NJ0111244
City of Newark	NJ0108758
North Bergen MUA - Central	NJ0108898
North Bergen MUA - Woodcliff	NJ0029084
City of Paterson	NJ0108880
City of Perth Amboy	NJ0156132
Village of Ridgefield Park	NJ0109118
Passaic Valley Sewerage Commission (PVSC)	NJ0021016
Middlesex County Utilities Authority (MCUA)	NJ0020141
Bergen County Utilities Authority (BCUA)	NJ0020028
Joint Meeting of Essex & Union Counties (JMEUC)	NJ0024741
North Hudson Sewerage Authority (NHSA) – Adams Street WRRF	NJ0026085
North Hudson Sewerage Authority (NHSA) – River Road WRRF	NJ0025321

Each of the entities listed above in **Table 2-9** owns and/or operates various components of a combined sewer system. The geographic locations of the NJ CSO Group Members are depicted on

Figure 2-2.


PATERSON CITY
HACKENSACK CITY
RIDGEFIELD PARK VILLAGE
FORT LEE BORO
NORTH BERGEN TWP
GUTTENBERG TOWN
WEST NEW YORK TOWN
WEEHAWKEN TWP
UNION CITY
HOBOKEN CITY
JERSEY CITY
EAST NEWARK BORO
HARRISON TOWN
KEARNY TOWN
NEWARK CITY
ELIZABETH CITY
BAYONNE CITY
PERTH AMBOY CITY
BCUA Service District
PVSC Service District
NBMUA Service District
NBMUA Woodcliff STP
NHSA Service District
NHSA River Road STP
NHSA Adams Street STP
JMEUC Service District
MCUA Service District
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Miles
4

Fi **ge**

Meetings with the NJ CSO Group were are, in general, on a quarterly basis. In addition to attendance by representatives of each NJ CSO Group member, members of the public or regulatory agencies have been invited to make presentations or give input, including the New Jersey Department of Environmental Protection and the Natural Resources Defense Council. NJ CSO Group Meetings were held on the dates listed in Table 1-1**Table 2-10**.Error! Not a valid bookmark self-reference.

Table 2-10: NJ CSO Group Meeting Dates

NJ CSO Group Meeting Dates	
August 7, 2013	October 19, 2015
February 20, 2014	April 6, 2017
March 7, 2014	October 16, 2017
July 1, 2014	February 2, 2017
October 8, 2014	February 20, 2018
January 15, 2015	April 5, 2018
June 29, 2015	May 3, 2018

Various topics were discussed as they relate to the development of the LTCP, to keep current with CSO issues, and to assist members with CSO compliance matters. The following is a summary of some of the topics discussed at each meeting:

- Ambient Monitoring Program
- Ambient Modeling Program
- Sensitive Areas
- Supplemental CSO Team
- Financial Capability Analysis
- Alternative Evaluation
- CSO Notification Website
- Water Quality Monitoring Program
- Receiving Water Quality Modeling
- Typical Hydrologic Year

2.6 PVSC CSO Sewer District and NBMUA-Woodcliff Permittees Meetings

NJPDES permittees located within PVSC's Sewerage District and NBMUA-Woodcliff's Service Area hold near monthly meeting to assist in collaboration, CSO compliance, and sharing of public information and/or input. The permittees that participated in these meetings are shown alongside their NJPDES Permit numbers in **Table 2-11**:

Table 2-11: PVSC CSO Sewer District and NBMUA-Woodcliff Permittees

PVSC CSO Sewer District Permittee	NJPDES Permit Number
PVSC	NJ0021016
City of Newark	NJ0108758
Borough of East Newark	NJ0117846
Town of Harrison	NJ0108871
Town of Kearny	NJ0111244
City of Paterson	NJ0108880
City of Bayonne	NJ0109240
Jersey City MUA	NJ0108723
North Bergen MUA - Central	NJ0108898
North Bergen MUA - Woodcliff	NJ0029084
Town of Guttenberg	NJ0108715

Members of the public or regulatory agencies, such as the New Jersey Department of Environmental Protection and Rutgers University, have been invited to make presentations or participate in the meetings. Permittee Meetings were held on the dates listed in **Table 2-12**:

Table 2-12: PVSC CSO Sewerage District and NBMUA-Woodcliff Permittees Meeting Dates

CSO PVSC Sewer District Permittees Meeting Dates		
September 24, 2013	May 5, 2016	January 5, 2017
January 6, 2014	January 5, 2016	April 6, 2017
December 10, 2014	June 2, 2016	August 3, 2017
April 2, 2015	July 7, 2016	November 2, 2017
April 16, 2015	August 11, 2016	December 7, 2017
May 21, 2015	July 7, 2016	January 9, 2018
May 26, 2015	August 11, 2016	February 1, 2018
June 4, 2015	September 1, 2016	March 1, 2018
July 2, 2015	October 6, 2016	November 2, 2017
August 5, 2015	November 3, 2016	December 7, 2017
September 24, 2015	December 1, 2016	February 1, 2018

CSO PVSC Sewer District Permittees Meeting Dates		
October 15, 2015	January 5, 2017	March 1, 2018
November 19, 2015	May 4, 2017	April 5, 2018
February 4, 2016	July 6, 2017	June 7, 2018
April 7, 2016	December 1, 2016	

Various topics were discussed as they relate to the development of the LTCP, to keep current with CSO issues, and to assist members with CSO compliance matters. The following is a summary of some of the topics discussed at each meeting:

- Status of NJPDES Permit
- Status of Compliance with Monitoring Work Plan
- Municipalities Engagement of CSO Consulting Engineers
- System Characterization Program
- Baseline Compliance Sampling Program
- Status Update on LTCP
- CSO Public Education
- Status of Agreements between PVSC and PVSC Municipalities
- Baseline Conditions
- Supplemental CSO Team
- Passaic River Superfund
- Revision of Rules, Ordinances, and/or Sewer Use Agreements
- Status of Landside Modeling Program QAPPs and Implementation
- Typical Hydrologic Year
- Green Infrastructure Pilot Projects
- Sewer Maps
- CSO Notification Website
- Quarterly Reports and Notification of CSO Construction Related Activities
- Financial Capability Assessments

Meetings with individual permittees were also held on an as needed basis. The permittees that participated in these meetings, as well as the dates the meetings were held, are shown below in **Table 2-13**:

Table 2-13: Meetings held with Individual Permittees

Attendees	Date
PVSC and Newark	March 14, 2014
PVSC and JCMUA	August 5, 2015
PVSC and BCUA	August 27, 2015
PVSC and Newark	October 9, 2015
PVSC and Newark	October 19, 2015
PVSC, JMEUC, MCUA and BCUA	December 15, 2015
PVSC and JCMUA	December 21, 2015
PVSC, Newark and Elizabeth	February 4, 2016

2.7 Municipal Action Teams

Employing yet another method of collecting information from and disseminating information to the public regarding the development of the LTCP, the LTCP Project Team attended regular monthly meetings with existing local groups such as the Bayonne Water Guardians, Harrison TIDE, Newark DIG, NY/NJ HEP Water Quality Work Group, Kearny AWAKE, Paterson SMART, and Jersey City START. Many of these community-based environmental groups have been formed as a direct result from the Permittees' public outreach efforts and are one of the main vehicles through which permittees have addressed public outreach. Working closely with public officials, monthly meetings have been specifically geared toward addressing CSOs and LTCP awareness. Each group has representation from its municipal government, community, businesses, green infrastructure experts, academia, local utility authorities, and nonprofit groups. The LTCP and development of long-term CSO controls were addressed at such groups' meetings. Stakeholders were encouraged to ask questions and provide input during and after these meetings. In addition to the monthly meetings, many of these groups have posted information related to CSOs and the LTCP online through social media and organization websites to help spread awareness to local citizens.

In addition to meeting with existing groups, PVSC has participated in various events by presenting the public with information at a table or booth. Events PVSC has participated in include the North Bergen Green and Health Family Festival, Day without Water in Jersey City, and the Newark Recycling Summit.

2.8 Ad Hoc Stakeholder Meetings

Stakeholders and community members may at any time request meetings with PVSC and/or the CSO permittees to discuss aspects of the LTCP. At their request, individual meetings were held with various groups, such as the Iron Bound Community Corporation and Jersey Water Works. The purpose of these meetings were to provide another source of public outreach in order to keep the public informed about the overall development of the LTCP, receive input relative to items pertaining to the LTCP, and to actively include the affected public in the development of long-term CSO controls.

2.9 Collaboration with Rutgers University

2.9.1 Landscape Architecture Environmental Planning Studio

PVSC and the Rutgers University Landscape Architecture Program (LAP) worked together to develop a curriculum for the 2017 fall semester that challenged Rutgers students to design projects focused on developing an open space system along the Passaic River to reduce stormwater runoff via green infrastructure. Refer to Appendix A for a copy of the syllabus for the Design Studio. The course was required for all students majoring in Landscape Architecture. The students worked on the project for the entire semester, and PVSC met with the professors and students on the following dates as shown in **Table 2-14**:

Table 2-14: Meetings with Rutgers University Professors and/or Students

Date	Subject
April 12, 2017	Overview of the LTCP
August 24, 2017	Discuss the Fall Semester Syllabus
September 5, 2017	Green Infrastructure for CSO Control
October 31, 2017	Students' Mid-Term Presentations
December 18, 2017	Students' Final Presentations

During the students' final presentations, PVSC and members of the LTCP Project Team reviewed each concept design and provided feedback regarding how the project could benefit CSO controls and/or improvements that could be made to provide additional benefits. Presentation of the concept designs were also made to the Supplemental CSO Team, and the concept designs were made available for review and consideration by each of the CSO permittees.

2.9.2 Green Infrastructure Municipal Outreach and Technical Assistance Program

For the past five years, PVSC has collaborated with Rutgers University as part of a Green Infrastructure Municipal Outreach and Technical Assistance Program (Program) to benefit all municipalities located within the PVSC Sewerage District. The purpose of the Program is to increase community outreach and education regarding the benefits of green infrastructure, as well as to provide the following:

1. Community-based technical assistance;
2. Outreach and education;
3. Green infrastructure demonstration projects; and
4. Municipal green infrastructure assessments.

The following is a summary of the accomplishments regarding the technical assistance portion of the program:

1. Completed 40 green infrastructure feasibility studies which are included in Appendix B;

2. Met with municipal officials in Bayonne, Belleville, Bloomfield, Cedar Grove, Clifton, East Newark, East Orange, East Rutherford, Elmwood Park, Fair Lawn, Garfield, Glen Ridge, Glen Rock, Haledon, Harrison, Hawthorne, Jersey City, Kearny, Little Falls, Lodi, Lyndhurst, Montclair, Newark, North Arlington, North Bergen, North Caldwell, North Haledon, Nutley, Orange, Passaic, Paterson, Prospect Park, Rutherford, Saddle Brook, Totowa, Union City, Wallington, West Orange and Woodland Park;

3. Secured Memorandums of Understanding with 13 municipalities including, Bayonne, East Newark, East Orange, Garfield, Harrison, Jersey City, Little Falls, Montclair, Newark, North Bergen, Paterson, Saddle Brook, and West Orange; and

4. Updated studies for Little Falls, Montclair, Saddle Brook, and West Orange in order to reflect a new planning process.

In addition to the above and as part of the outreach and education efforts, the following has been completed:

1. Delivered the following workshops/training programs with a total of 52 participants, as follows:

   a. Green Infrastructure Training Program held in January 2014 and June 2017;

   b. Stormwater Management in Your Schoolyard Teacher In-Service Workshop held in June 2015;

   c. Assessing Stormwater Infrastructure and Asking the Right Questions about Stormwater Workshop held in March 2016; and

   d. Complying with New Jersey Stormwater Regulations Workshop held in May 2016 and September 2017.

2. Continued to host and update the Green Infrastructure Municipal Outreach and Technical Assistance Program. See the following links for more information on this program (www.nj.gov/pvsc/news/photos/20150801a.html), (http://water.rutgers.edu/PVSC/PVSC.html);

3. Conducted a presentation entitled “Green Infrastructure 101” for the Bayonne Supplemental CSO Team;

4. PVSC hosted Municipal Day in which Rutgers presented information to the mayors and municipal officials in attendance. Mayors from the municipalities within PVSC’s Sewer District were invited to attend; and

5. Updated the Education and Outreach Program presentation to include green infrastructure for stormwater, installation of demonstration projects in schools.

2.10 Rain Barrel Program

2.10.1 PVSC Rain Barrel Program

To complement the work with Rutgers, PVSC implemented a recycling program in which it repurposes used pickle barrels from factories within its Sewerage District into rain barrels. To date, PVSC has recycled 87 pickle barrels for use as rain barrels, and has worked with the Watershed Management Area 4 Watershed Ambassador to offer rain barrel workshops to educate the public on the use of green infrastructure and the benefits of recycling rain water for household use of non-potable water. Photos of a typical Pickle Barrel Recycling Workshop are included as **Figure 2-3** and **Figure 2-4**. See **Table 2-15** and **Table 2-16** below for the number of pickle barrels recycled summary of PVSC's recycling efforts and the dates and locations of the rain barrel workshops.

Figure 2-3: Typical Pickle Barrel Recycling Workshop

Figure 2-4: Typical Pickle Barrel Recycling Workshop

Table 2-15: Pickle Barrels Obtained for Conversion to Rain Barrels

Date	Company Donated	Quantity
10/04/2013	Paterson Pickle Co.	1
10/04/2013	Patriot Pickle Co.	1
04/21/2014	Paterson Pickle Co.	4
07/17/2015	Patriot Pickle Co.	6
07/29/2015	Patriot Pickle Co.	6
01/08/2016	Patriot Pickle Co.	8
01/21/2016	Patriot Pickle Co.	8
02/05/2016	Patriot Pickle Co.	8
02/19/2016	Patriot Pickle Co.	5
03/11/2016	Patriot Pickle Co.	13
04/22/2016	Patriot Pickle Co.	10
06/10/2016	Patriot Pickle Co.	10
02/09/2018	Paterson Pickle Co.	30
04/25/2018	Paterson Pickle Co.	20
05/24/2018	Paterson Pickle Co.	26

Table 2-16: Rain Barrel Workshops

Date	Workshop Location and Partner
07/30/2015	Perth Amboy - Rutgers
05/26/2016	Clifton - Watershed Ambassador
06/07/2016	Clifton - Watershed Ambassador
07/12/2016	Paterson - City Green Garden
05/09/2017	Clifton - Watershed Ambassador
05/18/2017	Clifton - Watershed Ambassador
09/13/2017	Museum – Paterson
10/28/2018	Library Rain Garden - Harrison TIDE
04/13/2018	Harrison
05/23/2018	Bayonne

Additional demonstrations are planned for the future. Each municipality that is included in this program has agreed to implement two green activities. Rutgers University and PVSC will continue to coordinate in order to advance this program further.

2.10.2 JCMUA Rain Barrel Program

JCMUA has a rain barrel program and currently outlines their program on their website. This initiative has existed for 5 years and provides information to the public regarding the use and maintenance of the Rain Barrels. The program aims to educate the community about why rain barrels are important and how they can help homeowners save money on their water bill, reduce or prevent basement flooding, and

lessen flooding and pollution in local waterways. A typical set up of a rain barrel from the JCMUA rain barrel program is shown in **Figure 2-5**.

Figure 2-5: Typical JCMUA Rain Barrel

JCMUA provided participants with a complete guide on proper rain barrel installation along with helpful tips for maintenance. Residents are able to complete an online application and subsequently pick up the rain barrels at the JCMUA for a cost of $25/barrel. To date, JCMUA has sold 128 rain barrels through this initiative in addition to a handful of giveaways during Earth Day.

2.11 Green Infrastructure Pilot Projects

PVSC is proposing to finance the construction of up to three right-of-way rain gardens within the service area. These rain garden would be used to demonstrate green infrastructure features for possible use in development of the LTCP for CSO management. These right-of-way rain gardens will be located in highly-visible public locations within the sidewalk. Construction of the demonstration projects will allow the CSO permittees within PVSC's treatment district the opportunity to observe the planning and implementation process for these green infrastructure features. During precipitation events, stormwater runoff generated in the drainage area would flow into the rain garden through a curb cut. The water enters a slightly depressed vegetated bed, where it can infiltrate into the soil and be taken up by the plants. Water in excess of the rain garden's capacity will exit through a downstream curb cut, and continue down Winfield Avenue towards the next catch basin as it does during current conditions. The volume of water captured by the rain garden will reduce the burden on the combined sewer system, and consequently help to reduce the discharge of combined sewer overflows. Conceptual drawings have been created for the pilot projects in Newark and Jersey City, both sets are included in Appendix C

2.12 Model Evaluation Group (MEG) Meetings

A Model Evaluation Group (MEG) was formed in order to provide technical review and guidance regarding the development of the hydrologic and hydraulic model and the pathogen water quality monitoring and model. The MEG was comprised of the following individuals, who have extensive experience in the areas of model development and implementation:

- Dr. Alan Blumberg, Stevens Institute of Technology;
- Dr. Steve Chapra, Tufts University; and
- Dr. Wayne Huber, Oregon State University.

A photo of a typical MEG meeting is provided as **Figure 2-6**.

Model workshop meetings were held on the following dates in order to keep all parties informed of issues associated with the development and use of each of the models, as well as to receive any feedback and input regarding the monitoring and modeling work:

- February 5, 2016;
- March 17, 2017; and
- September 15, 2017.

In addition to the MEG members, the following parties were regularly in attendance at meetings:

- New Jersey Department of Environmental Protection; and
- PVSC and its consultants.

2.13 Municipal Council Meetings

Presentations are planned for municipal councils at regularly scheduled public meetings in the municipalities of the PVSC CSO Sewer District and the NBMUA-Woodcliff Service Area. Additionally, meetings with local government officials, such as business administrators and finance Directors, were also held. The purposes of these meetings are to inform the municipalities and the public of the LTCP process and the regulatory requirements, as well as to solicit input and feedback regarding the development of the LTCP.

Figure 2-6: A Typical MEG Meeting

2.14 JCMUA Partnerships and Initiatives

2.14.1 Earth Day Fair

For the past three years, JCMUA has hosted an annual event called the Earth Day Fair, in which they aim to educate the public on a variety of environmental and community topics. This past year, the Fair took place on May 18 and included several events including environmental exhibits and other information dissemination regarding CSOs. In partnership with Great Jersey City Clean Up and Keep Jersey City Beautiful, the Fair sponsored volunteers to plant planters for housing projects and JCMUA staff also participated in a similar activity at Liberty Park. At the Fair, JCMUA staff distributed brochures which provided general information on JCMUA. At future events, brochures will be distributed to the public which provide information on CSOs and green infrastructure in English, Spanish, Portuguese and Arabic.

2.14.2 Adopt a Catch Basin Program

JCMA has offers an Adopt a Catch Basin program in partnership with the Department of Public Works. Residents can volunteer to adopt their very own catch basin and the City provides illustrations on how catch basins operate and educate the community on the importance of ensuring proper functionality. Further, instructions on how to care for the basin using techniques such as sweeping and disposing of trash, clearing the drain after heavy precipitation events and others. The initiative offers a creative approach to the volunteer effort in that it allows for the residents to paint and decorate their own catch basin to make it unique and promote the cause. Once painted, residents are encouraged to post pictures of their adopted catch basins to social media with a hashtag that further markets the initiative. Several adopted catch basins on display with completed artwork are shown in **Figure** 2-7. A map of the adopted basins, information about CSOs, and an online application to adopt a basin are available on the JCMUA website Adopt a Catch Basin page at https://www.jcmua.com/adopt-a-catch-basin/.

Figure 2-7: Painted Catch Basins from the Adopt a Catch Basin Program

2.14.3 Resilient Design Handbook

JCMUA has also partnered with the Jersey City Office of Innovation and the Jersey City Office of Sustainability to create a Resilient Design Handbook. This handbook provides information to residents and business owners on how to make the city greener and more resilient. The link to this handbook is available on jcmakeitgreen.org and will be added to the JCMUA website in the near future. Further, this information is already promoted through the various social media outlets on a regular basis.

2.15 City of Newark Partnerships and Initiatives

City of Newark Mayor Ras Baraka has convened groups of experts to help co-develop a 'look back/look forward' piece about the City's accomplishments and priorities. This document will look back at the accomplishments of Mayor Baraka's administration and lay out a blueprint of what we should try to accomplish during the next term. One subcommittee will focus on Environmental Sustainability Goal Development. With the Mayor's commitment to Newark infrastructure and the environment, the citywide partnerships and initiatives highlighted below are expected to continue to grow.

2.15.1 Sustainable Stormwater Stewards

The City of Newark Department of Water & Sewer Utilities has partnered with the Office of Sustainability to create the Sustainable Stormwater Stewards. The Sustainable Stormwater Stewards recruits citizens of Newark to engage and implement sustainability projects in their neighborhoods. The Sustainable Stormwater Stewards website is found at https://www.newarknj.gov/card/sustainability-stewards. The Sustainable Stormwater Stewards includes a free Rain Barrel Giveaway and an Adopt a Catch Basin program.

Newark has committed to not only providing the rain barrels free of charge but also assisting with delivery and installation of each rain barrel. Installations are completed by the Office of Sustainability's AmeriCorps Vistas, Water and Sewer Department employees, and/or trained volunteers. As of June 1, 2018, 85 residents have requested rain barrels; 20 of which have been installed. More installations will be completed throughout 2018.

The Adopt a Catch Basin program asks that volunteers, in the form of residents, school groups, faith groups, and community organizations, commit to clearing debris out of their adopted catch basin on a regular recurring day and time; with an extra emphasis on dates before and after every precipitation event. Volunteers are provided a Catch Basin Care Kit available on a first-come first-served basis while supplies last. The Care Kits include: a reflective safety vest, a one-year supply of refuse bags (25 trash bags, 25 recycling bags, and 10 leaf litter bags), a one-year supply of disposable gloves (25 pairs of gloves), instructions handout, and a volunteer maintenance log sheet. Volunteers who commit to the program and regularly report their activities to the Office of Sustainability will also be eligible to receive prizes for their participation. The City is also offering to coordinate painting of catch basins by local artists for interested volunteers. As of June 1, 2018, 82 catch basins have been adopted, nine of which have been painted. A public service announcement regarding the Adopt a Catch Basin program is available on YouTube: https://www.youtube.com/watch?v=ZvuoE0uQivo. A flyer for the Sustainable Stormwater Stewards and photos of typical paintings and installations have been included in Appendix D.

2.15.2 Sustainability Action Plan

The Newark Sustainability Action Plan: Commitments & Priority Actions "*2018-2020 Plan for Building a Cleaner, Greener, Healthier, More Engaged & More Prepared Newark for All*" details Newark's shared commitments to implement policies, programs, and build partnerships to achieve our goals. The Plan was informed through a series of events, held from July – September 2017, dubbed the Summer Sustainability Series as well as a survey to map out priority concepts. The preparation and rollout of the Plan involve information sharing with the public related to stormwater management and combined sewer overflow initiatives. The Plan is expected to be adopted fall of 2018.
Upcoming public engagement efforts will include broad-based, widespread dissemination of custom-made materials that are designed to elevate the importance of sustainability commitments and build public support for activities. A preview of the Plan is available on the Office of Sustainability's website https://www.newarknj.gov/departments/sustainability and in Appendix E.

One chapter in the Plan focuses on "A Green Newark" with a commitment to maximize the use of green infrastructure strategies for stormwater management. "In An Engaged Newark" commitments include working with partners to make it easier for businesses and residents to access savings for energy, waste and water use as well as leveraging activities to expand opportunities for residents and businesses in the "green" economy. The Department of Water & Sewer will be integral to implementing priority actions.

2.15.3 Green Team

The Newark Green Team is a multi-sector coalition of local stakeholders actively working to advance policies and programs related to urban sustainability, environmental health, community greening, and quality of life and green economic opportunities for Newark residents. The Office of Sustainability is serving as an incubator to help spur the establishment of the Newark Green Team while it develops its governance structure and secures funding to operate independently. The top four focus areas of the group are: serving as advisors to the Office of Sustainability, establishing themselves as an information and resource hub with regards to sustainability efforts city-wide (collaborative fundraising, materials development, etc.), campaign/project work, and seeking certification through Sustainable Jersey.

2.15.4 Meetings and Events

City of Newark representatives have attended and/or hosted various meetings and events to share information with the interested public. Information regarding the meetings and events held in the City of Newark is listed in **Table 2-17.**

Table 2-17: Meetings and events held in the City of Newark

Date	Location	Hosted by	Topics
Held Monthly on the 4th Tuesday from 11am-12:30pm	Newark City Hall	Newark DIG	Green Infrastructure to Improve Resiliency to Flooding and Quality of Life for Newark Residents
July 27, 2017	Down Bottom Farms, 375 Ferry Street	The City of Newark's Summer Sustainability Series	An East Ward Community Conversation About Environmental Justice
July 29, 2017	Vincent Lombardi Community Center, 201 Bloomfield Ave.	The City of Newark's Summer Sustainability Series	A North Ward Community Conversation About Quality of Life
August 5, 2017	Nan Newark Tech World, Hawthorne Ave	The City of Newark's Summer Sustainability Series	A South Ward Community Conversation About Environmental Health
September 30, 2017	Bethany Baptist Church, 275 W Market St.	The City of Newark's Summer Sustainability Series	A Central Ward Celebration of Community Green Spaces
April 14, 2018	Rotunda in City Hall	Newark Resiliency Action Plan Coalition (City of Newark, Clean Water Action, Ironbound Community Corporation, & New Jersey Environmental Justice Alliance)	Newark Resilience Action Plan Summit
June 13, 2018	Paul Robenson Center, 350 Martin Luther King Jr. Blvd.	The City of Newark	Recycling Summit

The City of Newark will continue to host and attend events related to the environment. Typical conversations include discussions surrounding our infrastructure and combined sewer overflows; advertising the rain barrel giveaway and adopt a catch basin program; obtaining feedback on flooding issues or community engagement activities; and, green infrastructure discussions. A photo from the April 14, 2018 Resilience Action Summit depicting residents marking up a map where they see flooding issues and also where there are opportunities for green infrastructure has been included in Appendix F.

2.16 Public Outreach to Separate Sewer System (non-CSO) Communities

Several of the previously discussed public outreach activities were open and accessible to both the CSO communities and the non-CSO (separate sewer system) communities~~,~~. ~~such as attendance at the~~Supplemental CSO Team Public Meetings were and will continue to be open to all members of the public, including those from non-CSO communities. ~~and the social media platforms~~ Likewise, the social media and **njcleanwaterways.com** website platforms are available to all members of the public, creating awareness of the CSO LTCP beyond even PVSC's service area. In addition to those activities, PVSC

contacted the separate sewer system communities directly in order to request meetings and have discussions about ways, as well as the separate sewer system communities' willingness, to reduce infiltration and inflow into the separate sewer systems in order to provide additional capacity in the combined sewer systems. **Table 2-18** includes a correspondence log between PVSC and the separate sewer system communities, which highlights these outreach efforts. Appendix G includes various letters written to the separate sewer communities.

Table 2-18: Municipal Correspondence Log

Date	Activity
November 6, 2015	PVSC sent letters to all 48 municipalities in the PVSC Sewer District.
March 3, 2016	PVSC sent second letter to municipalities that did not respond to the November 6, 2015 letter.
June 20, 2016	PVSC met with North Bergen MUA and Township of North Bergen. PVSC met with East Newark.
June 23, 2016	PVSC met with Woodland Park
June 28, 2016	PVSC met with North Haledon
August 3, 2016	PVSC met with JCMUA
August 25, 2016	PSVC met with JCMUA
September 16, 2016	PVSC sent follow-up letters to North Bergen, East Newark, Woodland Park, and North Haledon.
September 28, 2016	Response letter received from Woodland Park; Woodland Park declined to renegotiate.
September 29, 2016	Response letter received from North Haledon, North Haledon declined to renegotiate.
October 26, 2016	PVSC met with Clifton.
November 2, 2016	PVSC met with Bloomfield, Garfield and Elmwood Park.
November 9, 2016	PVSC met with Little Falls.
November 17, 2016	PVSC sent follow-up letters to Clifton, Bloomfield, Garfield, Elmwood Park and Little Falls.
December 9, 2016	Response letter received from Clifton; Clifton declined to renegotiate
January 6, 2017	Response letter received from Bloomfield; Bloomfield is aware of I/I requirement, but did not mention a change of agreement.

As discussed in Section 2.9 of this Report ~~In addition to the above activities~~, PVSC's collaboration with Rutgers University through the Landscape Architecture Environmental Planning Studio and the Green Infrastructure Municipal Outreach and Technical Assistance Program (Program) benefits all municipalities—CSO and non-CSO communities—located within PVSC Sewerage District. ~~The purpose of the Program is discussed in more detail in Section 2.9.2 of this Report.~~ This comprehensive outreach program provided technical assistance and education to many separate sewered municipalities within the PVSC service area and led to feasibility studies, memorandums of understanding, and updated GI studies in some of the non-CSO communities. As presented to the public at Supplemental CSO Team Public Meeting No. 10 on January 22, 2019, PVSC's collaboration with Rutgers University is continuing under

this program with the development of a green infrastructure database that will benefit both CSO and non-CSO communities. A full list of those communities is provided in Section 2.9.2. Additional outreach will be provided to hydraulically-connected, separately sewered communities. These initiatives are detailed in Section 5.

2.17 PVSC WRRF Plant Tours

As highlighted in Section 2.2, PVSC offered a tour of the WRRF plant during the Supplemental CSO Team Public Meeting Number 5. PVSC also provides tours to the public upon request. The tour includes a discussion about how the plant operates, the differences between separate and combined sewer systems, the impacts from CSOs to receiving water bodies, and ways to minimize CSO occurrence. As part of the tour, there is a display of a green infrastructure site at the Administration Building. **Figure 2-8** shows educational signage posted for the Administration Building Plaza GI Project at the plant.

Figure 2-8 Educational Signage at the PVSC WRRF

2.18 Collaboration with Stevens Institute of Technology

PVSC collaborated with Stevens Institute of Technology's Department of Civil, Environmental, and Ocean Engineering to develop a curriculum that challenged students to solve environmental issues related to a conceptual design of a sewer separation project to control CSOs in East Newark, New Jersey. As part of the students' design project, a non-traditional approach of sewer separation was evaluated, analyzed, and conceptually designed. The results of this project were presented to the public at Supplemental CSO Team Public Meeting No. 10 on January 22, 2019, which was held in East Newark.

Section 3 Public Information

A concerted effort was made to make the public aware of the CSO LTCP development process and to actively involve and educate it about CSO issues. Public outreach was facilitated by PVSC, the websites of the PVSC Sewerage District municipalities and the NBMUA, the NJ CSO Group's CSO Notification System, public meetings, informational handouts, and branded CSO informational website, Facebook and Twitter pages.

3.1 Branding of CSO LTCP Program – Clean Waterways Healthy Neighborhoods

PVSC, the PVSC Sewerage District municipalities, and the Town of Guttenberg developed a brand and logo associated with the LTCP Program to build public awareness of the LTCP as it relates to the communities the CSO improvements will impact. The brand and logo were developed with input from each of the CSO permittees within PVSC's Sewerage District and the NBMUA-Woodcliff Service Area, as well as input received from members of the Supplemental CSO Team. The brand and logo are shown below in **Figure 3-1**:

Figure 3-1: The Clean Waterways Healthy Neighborhoods Logo

3.2 Website

The PVSC webpage (www.nj.gov/pvsc) provides numerous informational postings related to the CSO LTCP, such as information regarding CSO construction-related activities for each of the permittees within the PVSC Sewerage District. There is also a link to the NJ CSO Group's CSO Notification System. Notices for public meetings, plant tour request forms, as well as the history of and descriptions of PVSC's infrastructure are posted on the website. PVSC also advertises volunteering opportunities and educational outreach programs for kids K-12 on their website. **Figure 3-2** below is a flyer that gives information about the Educational Outreach Program. Details about the program can be found in **Section 3.9**.

The NBMUA webpage (www.nbmua.com) provides a number of postings of information for the public related to the NBMUA-Woodcliff and Town of Guttenberg LTCP. The website includes information on the CSO construction-related activities, a link to the NJ CSO Group's CSO Notification System, as well as notices for public meetings.

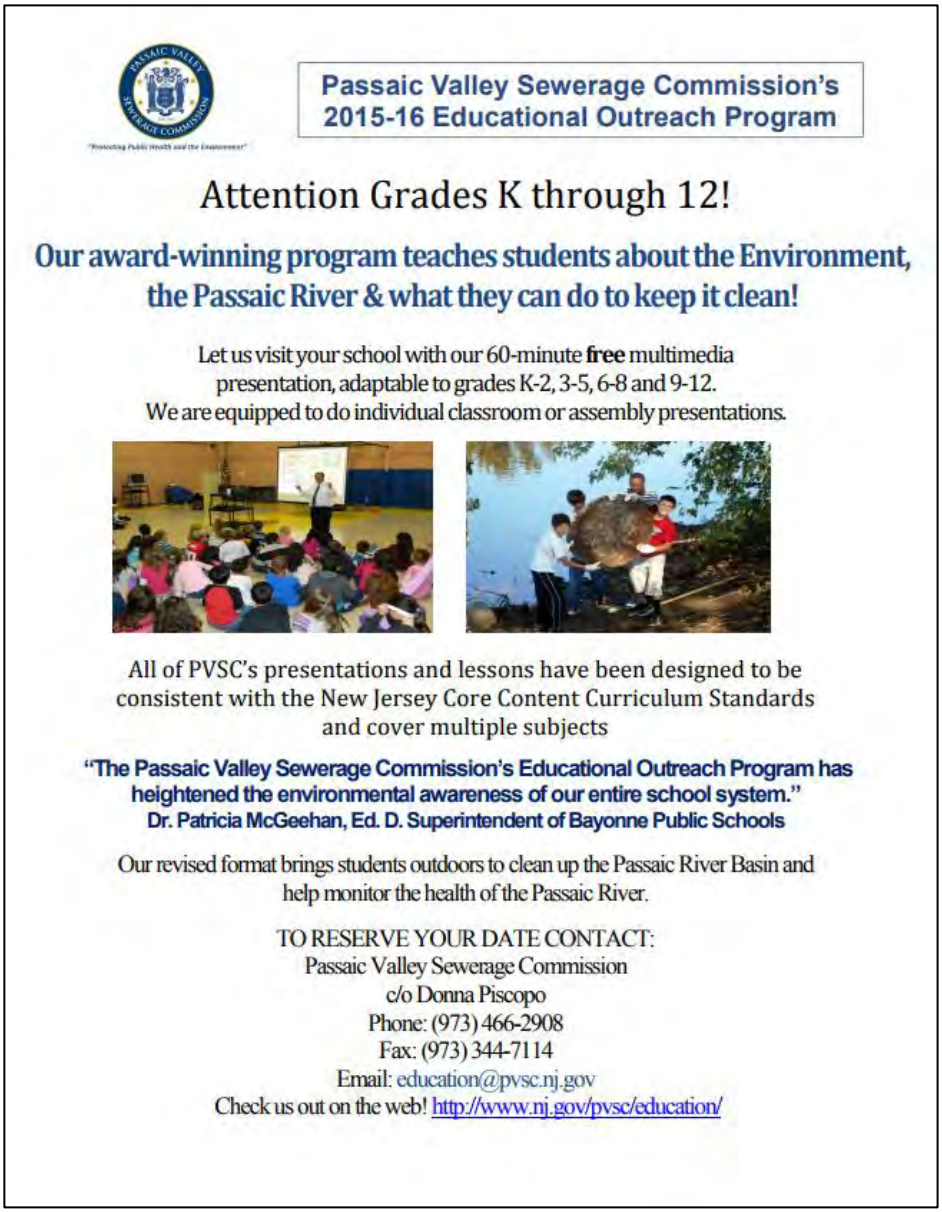


Figure 3-2: PVSC Education Outreach Program Flyer

The JCMUA webpage (https://www.jcmua.com/)will also be updated to include a link to the NJ CSO Group's CSO Notification System.

In addition to PVSC's, NBMUA's, and JCMUA's websites, a CSO specific website was created (www.njcleanwaterways.com) that provides information for the general public on combined sewers and the LTCP. The Clean Waterways Healthy Neighborhoods website is presented as **Figure 3-3**.

Figure 3-3: The Clean Waterways Healthy Neighborhoods Website

3.3 NJ CSO Group's CSO Notification System

The NJ CSO Group has created a CSO Notification System (njcso.hdrgateway.com/). This system provides up-to-date information regarding where CSO discharges may or may not be occurring. **Figure 3-4** includes a screenshot of the webpage of the CSO Notification System.

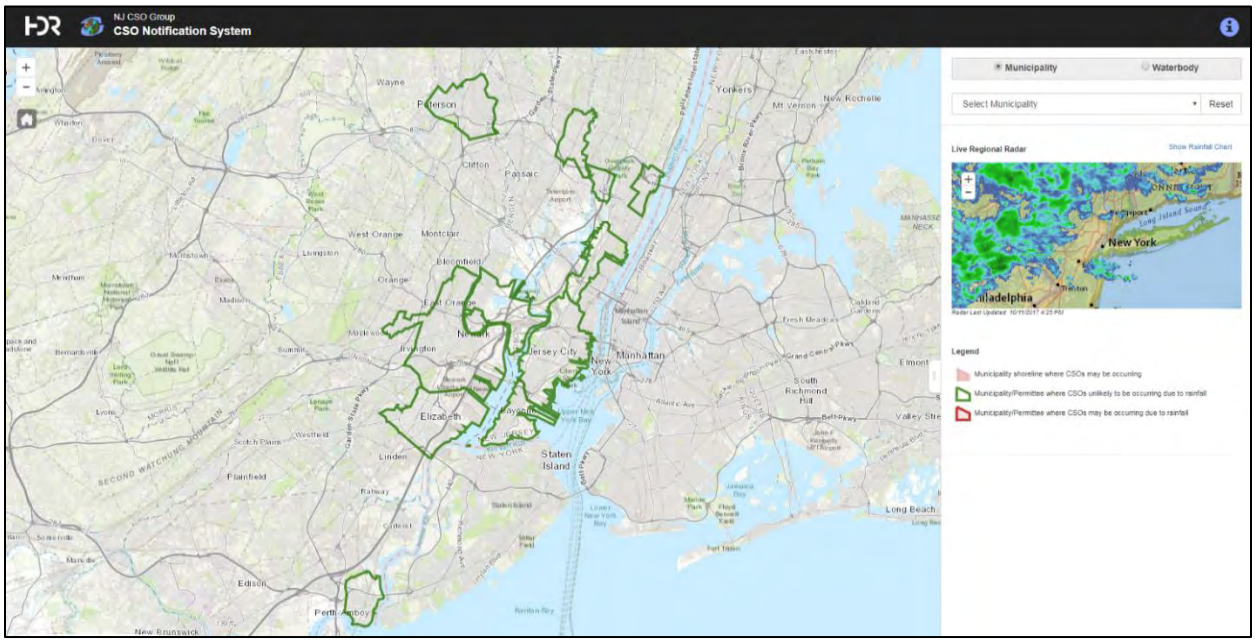


Figure 3-4: The CSO Notification System Map

3.4 Fact Sheets

Fact Sheets were developed as part of the public outreach and education efforts. Three separate Fact Sheets were prepared on the following topics:

- What is Green Infrastructure?
- Controlling CSO's with Sewer Separation; and
- Downspout Disconnection.

These Fact Sheets were distributed to the public at various meetings and public outreach events. The Fact Sheets can be found in Appendix H and are available in various languages, including English, Spanish, and Portuguese.

3.5 LTCP Brochure

A LTCP brochure was developed in order to provide additional information to the public relative to the CSO LTCP. The brochure provides the following information:

- Overview and general information on combined sewer systems (CSS) and CSOs;
- Clean Waterways, Healthy Neighborhoods branding;

- Overview of NJPDES Permit and requirements to develop LTCP;
- Listing and location of each CSO Permittee participating in Public Outreach efforts;
- LTCP information;
- Supplemental CSO Team information; and
- Information regarding public notification signs at CSO outfalls.

Copies of the LTCP Brochure are distributed to the public at various meetings and other public outreach events. The LTCP Brochure can be found in Appendix I and are available in various languages, including English, Spanish, and Portuguese.

3.6 City of Newark CSO Brochure

The Newark Supplemental CSO Team created a CSO Brochure to provide the public with information about state regulations, CSSs, and the mitigation of CSOs. A copy of the Newark CSO Brochure is attached in Appendix J. The CSO Brochure helps readers determine if they live in a neighborhood with a combined or separated sewer system. The brochure also gives readers tips on how they can get involved in order to assist with reductions in stormwater runoff and reductions in CSOs.

3.7 Social Media Plan

An LTCP Facebook and Twitter social media plan was developed to enhance electronic outreach about the LTCP. The PVSC Facebook page provides relevant information about their services and ways that communities can learn more about getting involved with the agency. The page is open for comments and questions, which are answered by PVSC personnel. This allows the agency to showcase transparency and signals a real commitment to public input. The PVSC Facebook page is accessible via the PVSC website (www.nj.gov/pvsc) and a screenshot can be seen below in **Figure 3-5**.

Additionally, a ***Clean Waterways, Healthy Neighborhoods*** LTCP Facebook page was also developed. As with the PVSC Facebook page, the LTCP page is accessible via the ***Clean Waterways, Healthy Neighborhoods*** website (www.njcleanwaterways.com). The LTCP Facebook page is branded with the ***Clean Waterways, Healthy Neighborhoods*** logo. It is updated on a regular basis to keep it fresh and informative, and serves to promote relevant LTCP information, including upcoming events and meetings, project visuals, Supplemental CSO Team and relevant municipal information, and other related news and articles. As with the PVSC Facebook page, the LTCP Facebook page is open to public feedback and comment.

Twitter is also a useful outreach tool to inform the public, especially via mobile phone. As with the ***Clean Waterways, Healthy Neighborhoods*** Facebook page, the Twitter page is branded with the ***Clean Waterways, Healthy Neighborhoods*** logo and is updated on a regular basis to keep it fresh and informative. The Twitter feed serves to promote relevant LTCP information, including upcoming events and meetings, project visuals, Supplemental CSO Team and relevant municipal information, and other related news and articles. The LTCP Twitter page is also open to public feedback and comment.

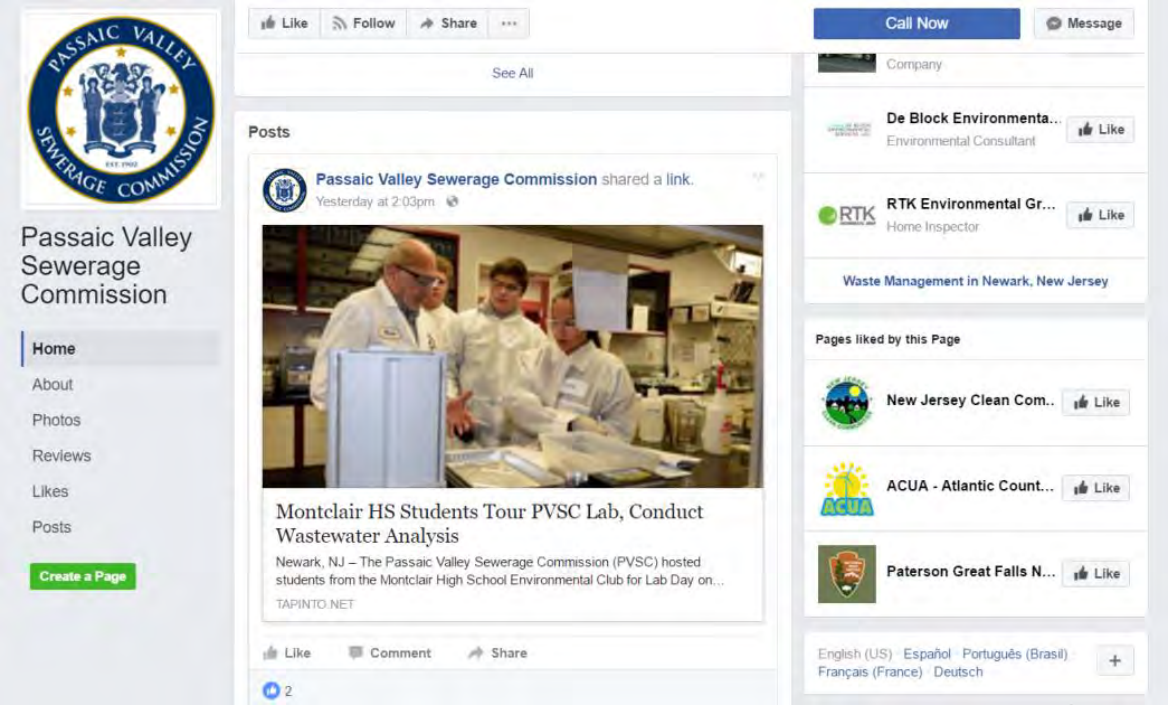


Figure 3-5: The PVSC Facebook Page

Twitter is also a useful outreach tool to inform the public, especially via mobile phone. As with the ***Clean Waterways, Healthy Neighborhoods*** Facebook page, the Twitter page is branded with the ***Clean Waterways, Healthy Neighborhoods*** logo and is updated on a regular basis to keep it fresh and informative. The Twitter feed serves to promote relevant LTCP information, including upcoming events and meetings, project visuals, Supplemental CSO Team and relevant municipal information, and other related news and articles. The LTCP Twitter page is also open to public feedback and comment.

The ***Clean Waterways, Healthy Neighborhoods*** Facebook and Twitter page screenshots are shown below in **Figure 3-6** and **Figure 3-7**.

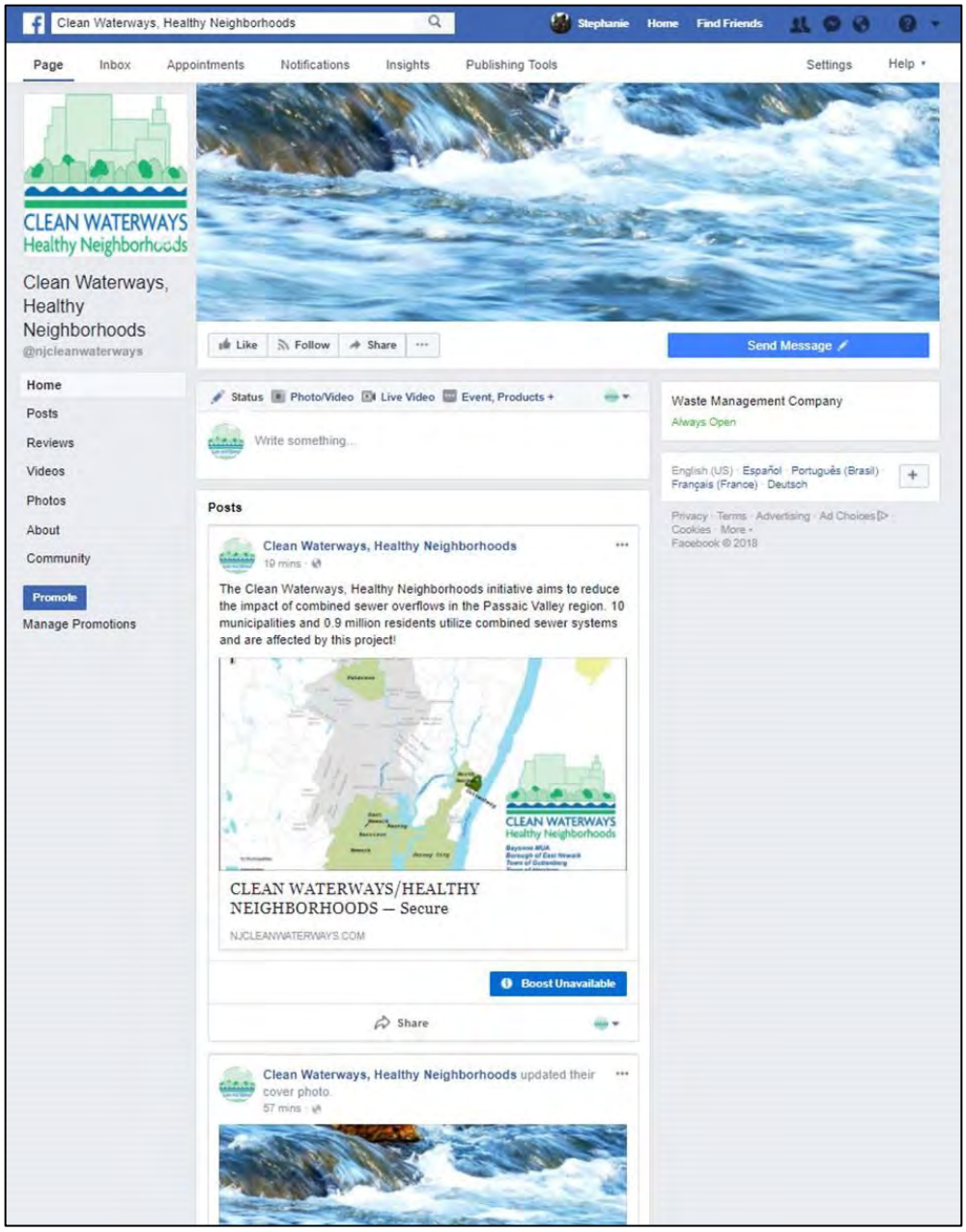


Figure 3-6: Clean Waterways, Healthy Neighborhoods Facebook Page

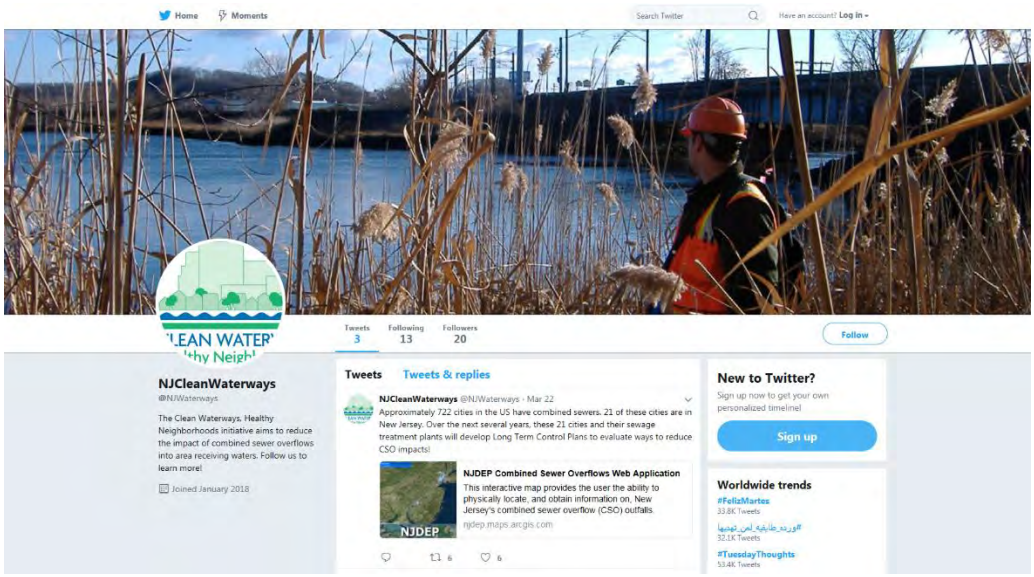


Figure 3-7: Clean Waterways Health Neighborhoods Twitter Page

3.8 Identification Signs for CSO Outfalls

Permittees installed signs at every CSO outfall for the purposes of warning the public of possible combined sewage overflows during and following wet weather. The signage includes a NJDEP Hotline telephone number for reporting of dry weather overflows and the reporting of foul odors or unusual discoloration. The signage also discloses the permittee's NJPDES Permit Number, as well as the Discharge Serial Number. All signage includes the NJDEP website address (www.state.nj.us/dep/dwq/cso.htm), and depicts symbols prohibiting swimming, fishing, and kayaking. An example of typical CSO signage is shown in **Figure 3-8** below.

Figure 3-8: Typical CSO Signage Located at Each CSO Outfall

3.9 PVSC Educational Program

PVSC offers a free program to regional schools that is designed to educate students about the Passaic River, PVSC's WRRF, water pollution prevention, water conservation, and volunteering opportunities along the Lower Passaic River. Each program is tailored to students' learning abilities and includes an assembly-style program, outdoor adventure, or volunteer stream cleanup for grades K through 2nd Grade, 3rd Grade through 5th Grade, 6th Grade through 8th Grade, and High School. In the three years since School Year 2015-2016, the PVSC Environmental Education Outreach Program has reached a total of 64,631 students over 466 assemblies held at an average of 88 schools per year. Appendix M contains schedules of the PVSC Environmental Education Outreach Program for School Years 2015-2016, 2016-2017, and 2017-2018.

Section 4 Public Comments on Draft LTCP

4.1 Opportunities for Public Comment on Draft LTCP

Many forums and opportunities have been and will continue to be made available for public comment. An overview of the major opportunities is summarized below:

- Supplemental CSO Team Public Meetings – Quarterly Supplemental CSO Team Public M~~m~~eetings were held and will continue to be held throughout the preparation of the LTCP.
- NJ CSO Group Meetings – The NJ CSO Group met and will continue to meet periodically throughout the preparation of the LTCP.
- PVSC CSO Sewer District and NBMUA-Woodcliff Sewer Area Permittee Meetings – Meetings with the PVSC CSO permittees, as well as the NBMUA-Woodcliff and Town of Guttenberg permittees were held and will continue to be held to facilitate discussion during the preparation of the LTCP.
- Meetings with Existing Groups – PVSC met and will continue to meet with various local organizations such as Newark DIG, Paterson SMART and Jersey City START to discuss various elements of the LTCP.
- Ad Hoc Stakeholder Meetings – PVSC, as well as the NBMUA and Town of Guttenberg, met with Stakeholders upon their request to discuss aspects of the LTCP throughout the drafting process. As similar opportunities arise, PVSC, as well as the NBMUA and Town of Guttenberg, will continue to meet with stakeholders upon request.
- Municipal Council Meetings – Presentations to Municipal Councils at public meetings will be made in various CSO Municipalities in order to present and discuss aspects of the LTCP throughout the drafting process.
- Letters, Faxes and E-mail – Members of the public have opportunities to submit letters, faxes and e-mail comments throughout the process.
- The ***Clean Waterways, Healthy Neighborhoods*** website provides a contact page where comments can be submitted and members of the public can sign up for a mailing list. ~~and~~
- Social media ~~pages~~ platforms are also open for public feedback and comment from any member of the public.

4.2 Number and Types of Comments Received

The majority of comments received thus far on the LTCP have been verbal comments at public meetings. Comments and responses at Supplemental CSO Team Public Meetings are tracked in meeting minutes which are provided in Appendix N. The other public comments received have been through social media (commenting, liking, or sharing tweets and Facebook posts), which drive individuals to the website. No questions or comments have been received from the website contact form.

It is anticipated that a number of comments will be received on the Draft LTCP with various types of comments. The number and types of comments will continue to be tracked and documented. To date, the permittees have not received any comments on any of the draft LTCP submittals provided to the SCSO Teams for review and feedback.

4.3 Approach to Addressing Comments

In the event that a large number of comments on the draft LTCP are received, the comments will be grouped by type and subject matter and addressed ~~in a~~ jointly in a commentary type response. The goal of this approach is to produce a commentary that is both readable and comprehensive. Some potential groups that may be utilized for organization of the comments are as follows:

- Nine Minimum Controls;
- Alternatives Evaluation;
- Separation;
- Low Impact Development Source Control, Pollution Prevention;
- PVSC Wastewater Treatment Plant;
- CSO Location;
- Flooding;
- Implementability;
- Tunneling;
- Regulatory Compliance;
- Public Participation;
- Financial Capability;
- Schedule;
- Water Quality Standards Requirements; and
- Miscellaneous Comments.

Section 5 Future Public Participation

PVSC, the NBMUA, and each of the CSO permittees are committed to active public participation and consultation during the planning, design and construction of CSO control projects. Future public participation will be designed to educate the public about the status of the program; progress in implementing the program; to inform neighborhood residents before, during, and after construction; and to report on progress in reducing CSOs and improving water quality as a result of the program.

5.1 Continuation of Existing Public Participation Initiatives

Future public participation activities will include continuing the Supplemental CSO Team Public ~~m~~Meetings with the PVSC/NBMUA Districts, Newark and Bayonne Supplemental CSO ~~teams~~Team Public Meetings, NJ CSO Group meetings, PVSC and NBMUA CSO Sewer District permittees meetings, MEG meetings, municipal council meetings, continued coordination with NYCDEP, other meetings with existing groups, and any ad hoc meetings. The LTCP Project Team intends to continue to attend the regular local community group meetings at key points in the LTCP development. Also, collaboration with Rutgers University will continue along with the Newark Sustainability Action Plan.

In addition to future public participation activities, information will continue to be provided to the public via PVSC's, NBMUA's, and other municipalities' web pages, the Clean Waterways, Healthy Neighborhoods' Facebook and Twitter pages, the NJ CSO Group's CSO Notification System, Newark Sustainable Stormwater Stewards activities, public information fact sheets and brochures, and other social media outreach efforts.

5.2 Additional Public Participation Initiatives

Additional future public participation initiatives aim to reach a larger segment of the PVSC service area population through physical and digital media dissemination and expanded public meetings in non-CSO PVSC communities. The desired outcome is to foster an informed public on matters relating to the CSO LTCP through its remaining development and implementation.

Fact sheets and brochures that were developed and distributed to the public during public meetings and other public outreach events will continue to be provided for use by all Permittees. PVSC is currently considering distributing these materials at hydraulically connected, separated sewer community municipal buildings and distribution to PSE&G for use as mail stuffers in electric and gas bills that would direct people onto the **njcleanwaterways.com** site and LTCP social media platforms. Similarly, Permittees are also considering the feasibility of including mail stuffers in their bills to customers. PVSC is also actively soliciting email addresses from individuals of the affected public for planned digital distribution of public outreach materials. A combination of physical and digital media distribution should reduce information discrepancies that occur in communities where internet access is limited or conversely, in areas where people favor "going paperless".

While the Supplemental CSO Team public meetings will continue to be held at regular intervals throughout the LTCP development and implementation, PVSC and NBMUA are considering offering public meetings that would take place in non-CSO municipalities. These public meetings would provide an overview on the development of the CSO LTCP and focus on progress made to date, as well as a

discussion of the relevance and impact to the separated sewer communities. The timeline for these initiatives will be determined as PVSC and the individual permittees gain a clearer understanding of the best approach for their execution. An additional Public Meeting to present the preliminary development and evaluation of alternatives will be held in the first quarter of 2019. Initiatives will be shared at Supplemental CSO Team public meetings and it~~I~~ is anticipated that future public participation outreach efforts will continue to be documented and summarized in the final LTCP.

LIST OF APPENDICES

Appendix A: Syllabus for the Intermediate Landscape Architecture Environmental Planning Studio at Rutgers University

Appendix B: Green Infrastructure Feasibility Studies

Appendix C: PVSC Right-of-Way Green Infrastructure Pilot Program

Appendix D: City of Newark Sustainable Stormwater Stewards Flyer and Photos of Typical Rain Barrel Painting and Installation

Appendix E: Preview of the City of Newark Sustainability Action Plan

Appendix F: Photo of the Resilience Action Summit

Appendix G: Letters to Non-CSO Communities

Appendix H: Fact Sheets

Appendix I: LTCP Brochure

Appendix J: City of Newark CSO Brochure

Appendix K: NJDEP Public Participation Process Report Review Letter and Evaluation Table

Appendix L: Supplemental CSO Team Public Meeting No. 8 – July 31, 2018

Appendix M: PVSC Environmental Education Outreach Program Schedule (2015 – 2018)

Appendix N: Supplemental CSO Team Public Meeting Minutes

APPENDIX A

Syllabus for the Intermediate Landscape Architecture Environmental Planning Studio at Rutgers University

Environmental Planning Studio

Intermediate Landscape Architecture 550:331, Fall 2017, 5 Credits
Dr. Wolfram Hoefer; whoefer@sebs.rutgers.edu and David Smith; dave.c.smith@rutgers.edu

Planning is about future. Any action we take today has an impact on our future. Planning is one approach to anticipate a possible future and coordinate today's actions in a way that this future will be good for us. Environmental planning has a focus on those human actions and decisions that will alter our future environment.

Planning and design in the public realm also means that we make decisions which impact the lives of other people. When we design a garden for a privat client,we ought to follow the directions the he or she gives us. If that client wants a basketball court in the back yard instead of flowers, we will follow his or her wishes and integrate the court as good as possible in the garden—even if that might be tricky. But what about a public park? How do we decide that a basketball court will be built in a park instead of a rose garden? Does that decision belong to a local mayor, the DEP, a donor who might give money for new roses, or a local activist group agitating for basketball?

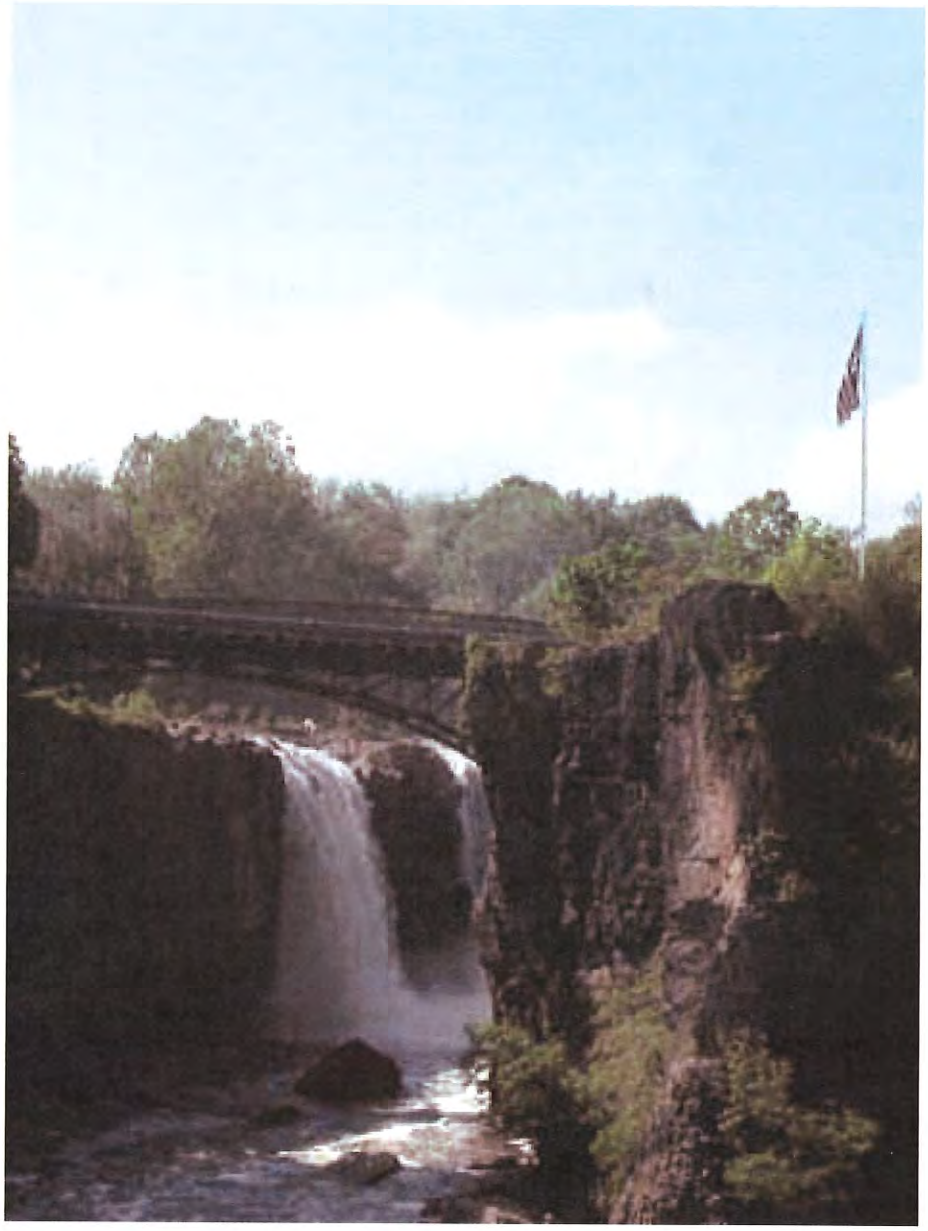
You get the picture. Such a simple decisions already require us to identify values and criteria, understand processes of democratic legitimation, and consider what "the people" actually want. This decision making becomes even more difficult when we consider long term environmental effects. For example: Does the basketball court lead to growth of impervious surface which might increase flooding risks for future generations? Will the rose garden require pesticides and herbicides that may cause long term damage to flora, fauna, or water quality? As responsible designers we pay attention to all these questions, however, very quickly all these interconnected decisions and possible consequences grow into a complex system which may turn out to be overwhelming. Structuring and organizing that complexity is one main aspect of environmental planning. Some of you may think that this is probably not the most attractive thing for a creative landscape architect to spent time with. Well the truth is, understanding environmental planning is of utmost importance for any landscape architect working on a specific site, a neighborhood, or at regional scale. Your sophomore year focused on creative site design, this semester we will "scale it up."

This studio shall help you to bridge the gap between site design and regional environmental planning. Our project provides the opportunity to consider both sides of the equation.

Goal 1: Students will be able to analyze ecological and other landscape processes in order to substantively inform their design decisions.
Goal 2: Students will be able to craft designs at the regional scale that facilitate or enable desired ecological and social scenarios at multiple scales.
Goal 3: Students will understand and apply policies and planning recommendations that regulate the use and design of the landscape in order to develop more sustainable and implementable designs.
Goal 4: Students will be able to effectively communicate their designs and design principles.

The class also fulfills the **core requirement experienced based learning**: Development of problem solving skills; the ability to interpret data, information, and ideas. Submit of report of the experience is required.

This course is required for all students majoring in Landscape Architecture, it is the 3rd studio in the design studio sequence. For students of Environmental Planning & Design with the Landscape Planning Option this class is a suggested elective.



You are ready for a complex system!

By now, you have learned all relevant basic knowledge needed for this class. The first year of design studio gave you a handle on the design process and the graphic tools needed for expressing your ideas. The class Fundamentals of Environmental Planning provided a basis for the understanding of planning and zoning and how these tools relate to state and federal regulations. You learned that making informed decisions on complex planning issues requires a thorough analysis of spatial and other information, the relevant GIS tool were taught in Fundamentals of Environmental Geomatics. Because you are so well prepared, we are expecting truly innovative concepts, well thought out solutions and exceptional graphics.

June 25, 2018 (Revised 1/25/2019)

Passaic River Open Sace System

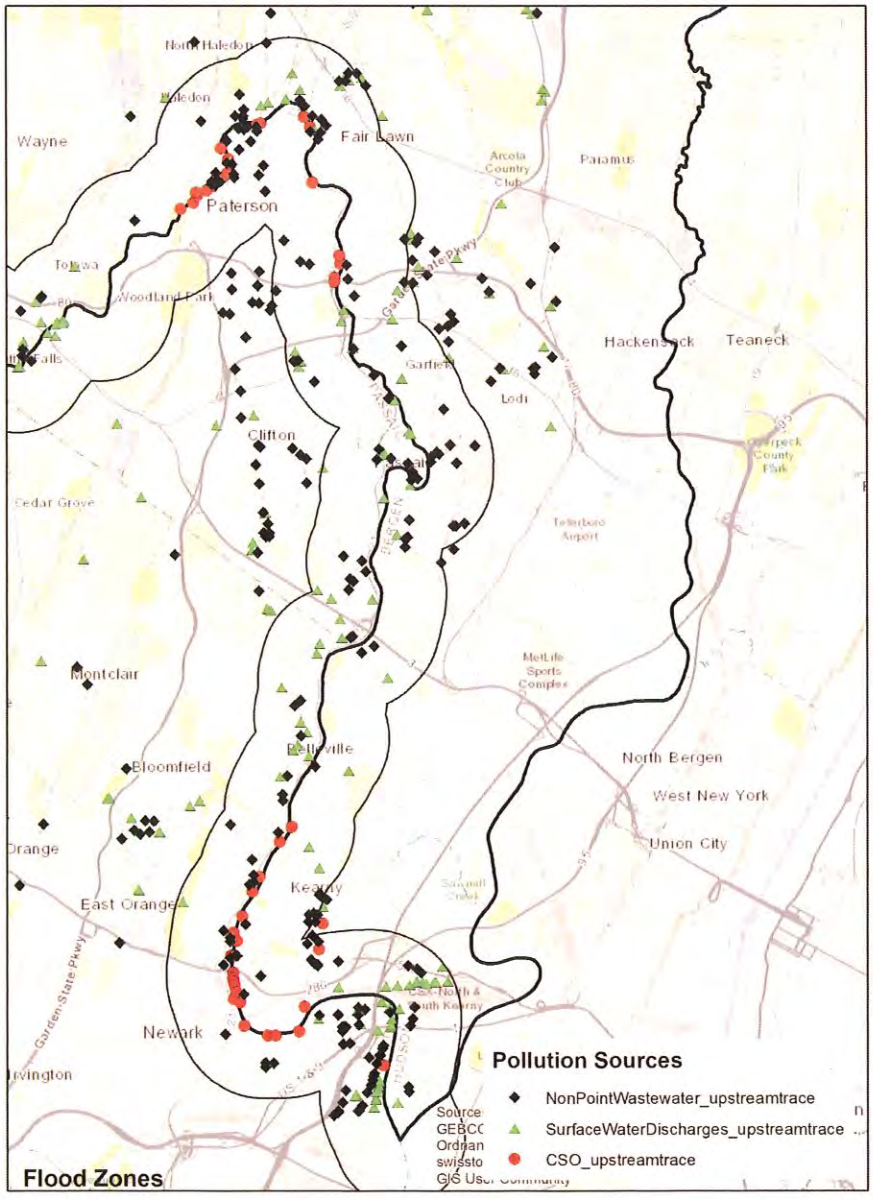
The Studio is addressing a real world challenge: Develop open space system along the Passaic River that can help reduce storm water runoff and also clarify polluted water. That open space system shall further create attractive parks and provide safe and easy access to the river.

The Passaic River was an important factor for early European settlements and industrial development in northern New Jersey. The river provided necessary drinking water, transportation for people and goods, and energy to power commercial activity. The Great Falls at Paterson, for instance, provided energy for one of the earliest industrial developments in the Nation. However, the Passaic River is also a "victim" of heavy use and pollution. One example is the production of Agent Orange in Newark. The pollution in the lower portion of the river became so severe that it was declared a superfund site. An additional problem are combined sewage outlets (CSO) that spill raw sewage in the river when heavy rain overburdens treatment plants.

Our client is the Passaic Valley Sewerage Commission (PVSC), established in 1902 by an Act of New Jersey State Legislature, began operation of the Newark Bay Treatment Plant in 1924 as a means to alleviate pollution in the Passaic River and its tributaries.

Our concepts will help our client to steer engineering decisions into a more people friendly direction, our maps, diagrams, and design drawings may support future outreach into the community.

Our challenge includes how to handle the extreme complexity of the issues at hand, identify appropriate approaches, and develop beautiful designs.



Assignment 1
Problem & Solution Trees

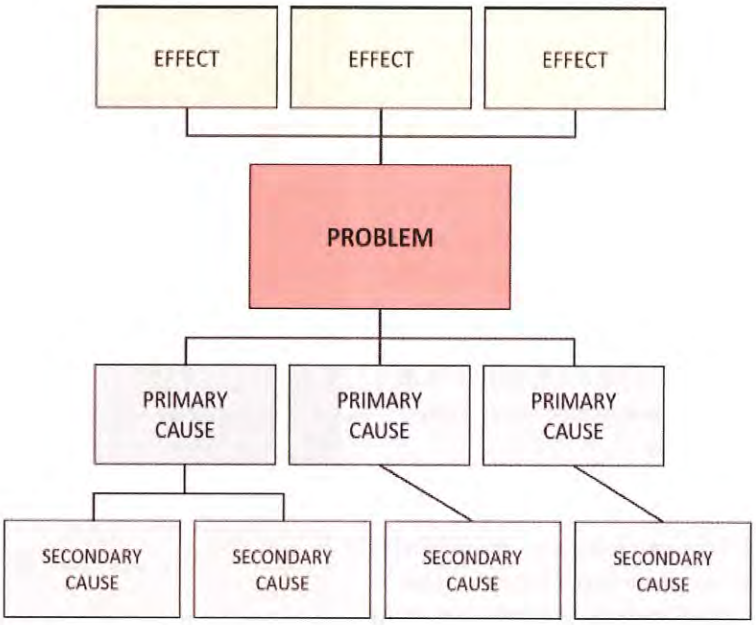
Design Group
Given 09/5, Due 9/7
Combined 09/12
Due 10/24

Deliverables:

- Two flexible diagrams pinned to the wall, using images, sketches, words.
- Identify relationships with strings.

Evaluation Criteria:

- How clearly the Problem Tree shows how the identified problems are caused by primary and secondary causes, and how those causes interact.
- How well the between problems and apparent effects are illustrated in the collage and the accompanying text.



Example Problem Tree

The problems that we address in planning, especially at the regional scale, are often highly complex. They involve numerous natural, built, socio-economic, and political systems; all interacting with each other in different ways across different scales. If we're going to find meaningful solutions to these problems, we need to apply tools and techniques that help us bring structure to all that complexity. This semester we will be using a tool called "problem tree-solution tree" analysis to do just that. This approach involves deciding on a core problem that we want to address, and identifying the chains of cause and effect that contribute to that problem—along with the larger impacts that core problem may cause—creating a diagram called a problem tree. A solution tree changes the core problem into a goal, and the causes into objectives. This helps us to develop focused interventions that meet naturally related objectives, leading to more effective contributions to the core goal.

The problem tree and the solution tree are not static documents. They will need to be reevaluated, revised, and modified as we learn about the Passaic and its place in the region throughout the semester.

Example Solution Tree

Assignment 2
Data Inventory

Inventory Group
Given 09/14
PDF Due 9/26
Pin up 9/28
Revisions Due 10/5

Deliverables:

- Data collection.
- Data documentation.
- Data dictionaries.
- 24"x36" paper maps.

Evaluation Criteria:

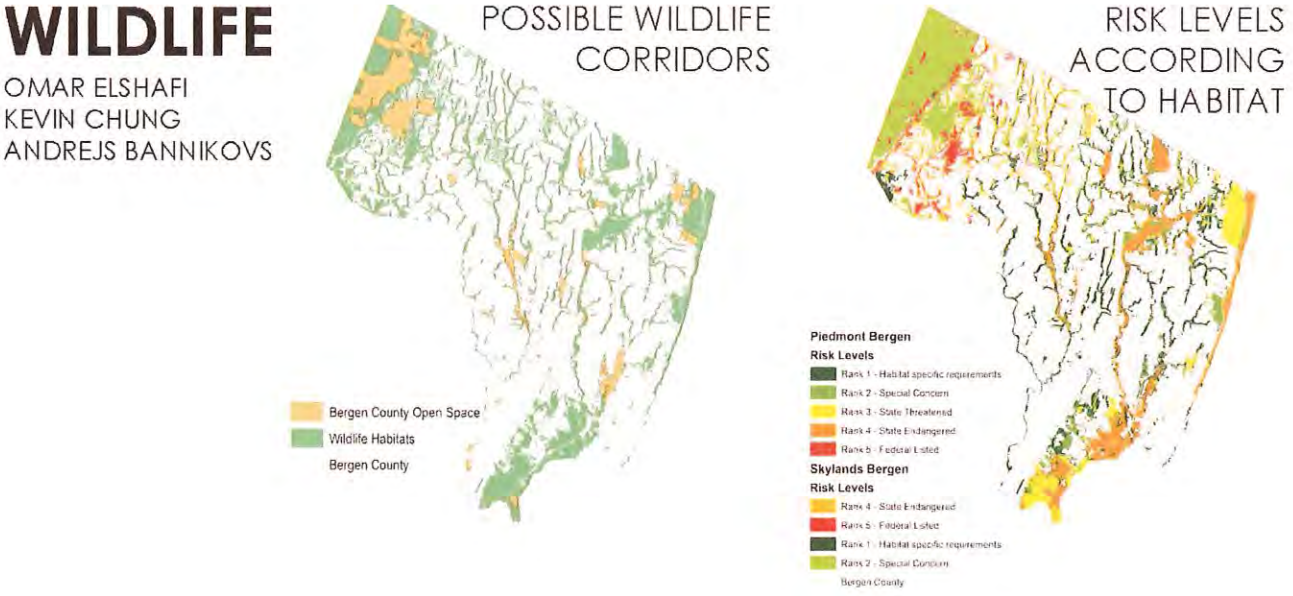
- Relevance of available data collected.
- Completeness of data dictionary (all appropriate fields for all datasets)
- Cohesive selection of data themes for individual maps
- Map design (clarity, effective representation, and aesthetic quality).
- Oral presentation of inventory.

Rational decision making requires correct and accessible information. Decisions based on false or incomplete information are most likely wrong. Of course it is an illusion to think that you may gather all relevant information and that you can ground proof everything. Therefore it is of utmost importance to identify and document the information source and to take into consideration possible limits of factual correctness and completeness.

During a class exercise we will identify a number of natural, cultural, and social systems that are relevant to the development of an open space concept plan, and grouping those into appropriate inventory segments. Each group will select a segment and produce a set of preliminary inventory maps of the systems in that segment.
You will identify and collect GIS data from various sources (or produce them where necessary), document the data you have collected in a data dictionary, and produce maps representing those systems as well as interactions among them.

Data collection: you will gather appropriate GIS datasets and place them in in a folder with the name of their inventory segment at R:\331_Env_Planning_Studio_2017\ClassData\GIS_DATA\a_inventory\
Data documentation: you will use the data dictionary template in the Resources section of the Sakai site to document the location and basic information about each dataset you have collected (any necessary information should be found in the dataset's metadata). Data dictionaries should be submitted in the Sakai dropbox for your inventory segment.
Maps: You will design 24"x36" paper maps representing the systems within their segment and interactions among those systems. This may require a single complex map or a number of individual maps, depending on the themes involved. These maps should be printed for presentation. In addition, a PDF of each map should be placed on the R:/ drive at R:\331_Env_Planning_Studio_2017\ClassData\Maps_Inventory

Example senior studio fall 2016
Omar Eshafi, Kevin Chung, Andrejs Bannikovs



Assignment 3
Case studies

Individual
Given 09/13
Due 10/10

Deliverables:

- 5 PowerPoint slides.
- Illustrations and corresponding text.
- Oral presentation and leading of class discussion.

Evaluation Criteria:

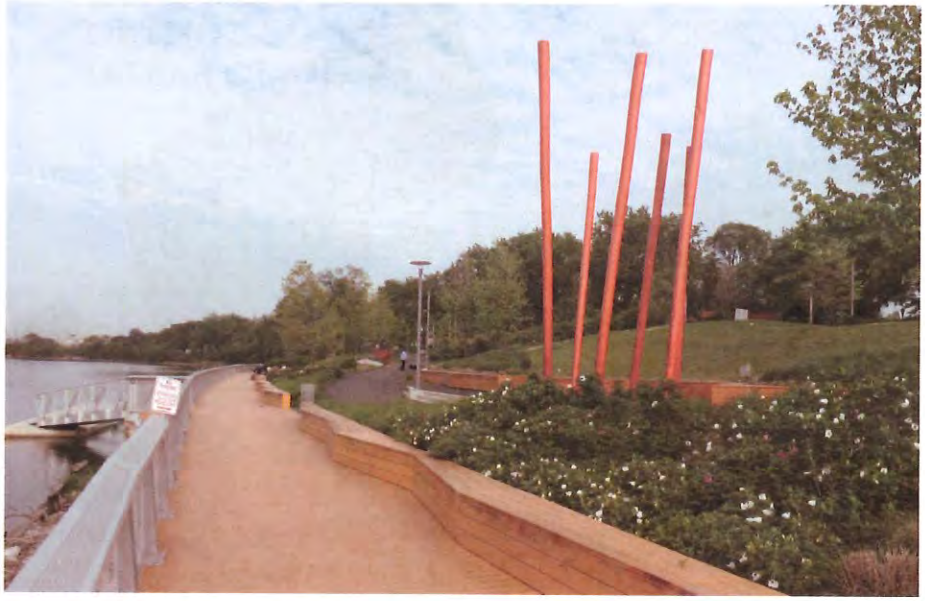
- Comprehensive rational of investigation.
- How well the gathered information is made accessible through text.
- Quality of oral presentation.

For this research assignment individuals have two options.

1) Case studies of open space systems, which may include park masterplans on city, county and state level. They may be locates in the US or abroad. What are the goals of these park systems? What makes a parks system good? What is relevant information for developing a successful park system? What is needed to transform a number of individual parks into a cohesive system? What connects Parks? What are core elements of a park system?

2) Research on Green Infrastructure Best Practices. This research gives the opportunity to explore a wide range of best practices concerning storm water management, sewage water treatment, addressing CSOs, green streets, multiple use retention spaces, and so forth.

Possuble esase study Newark Riverfront Park
Lee Weintraub



Assignment 4
Section Intervention

Design Group
Given 10/13
Pin up 10/24
Due 10/30 at 4:00 pm
Midterm 10/31

Deliverables:

- One colored print and one digital version that is reproducible (PDF & JPEG file).
- According text.

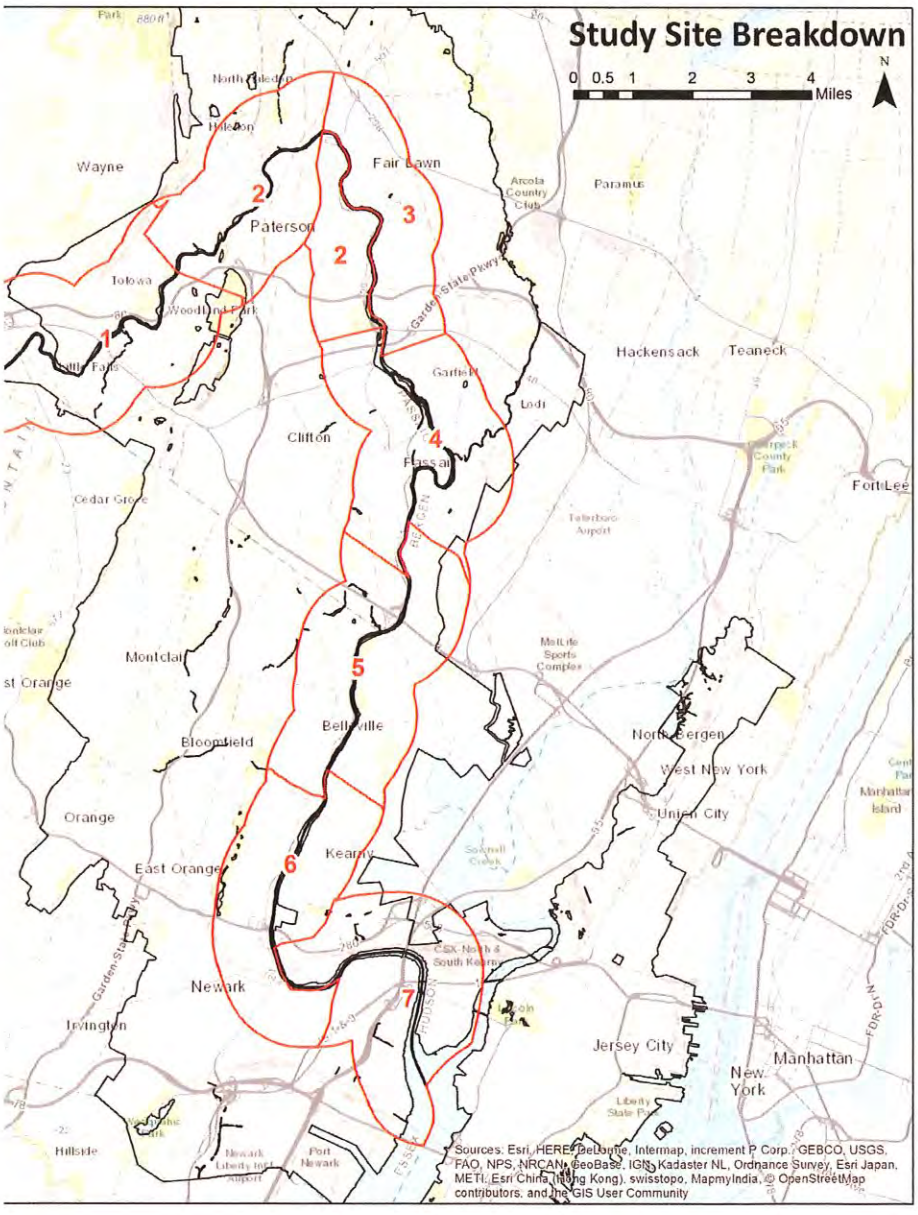
Evaluation Criteria:

- Green space connection.
- Handling of significant elements.
- Urban context.
- Vehicular/pedestrian Connections/ parking.
- Innovation carried through
- Graphics/readability.
- Completeness of information.

The goals and values developed in exercise I will enable you to design an innovative systems intervention. Think outside the box! The sky is the limit for your creativity. In this phase we will also discuss whether your intervention goes well with the work of any of the other design groups or if your system should stand alone. Collaboration and coordination with other groups would be perfectly fine, in fact very welcome.

You will assess the performance of the first draft of your intervention using your Statement of Purpose. This impact assessment exercise will allow you to repeatedly test the ideas behind their intervention as you develop them.

Example senior studio fall 2013,
Jessie Woods, Michelle Hartmann, Rebecca Cook



Assignment 5

Site Scale Intervention

Individual
Given 10/24
first sketches 10/30
Pin up 11/14

Deliverables:

- One plan at appropriate scale of the interventions.
- Minimum of one additional representation that illustrates the interventions.
- Documentation of iterative process.

Evaluation criteria:

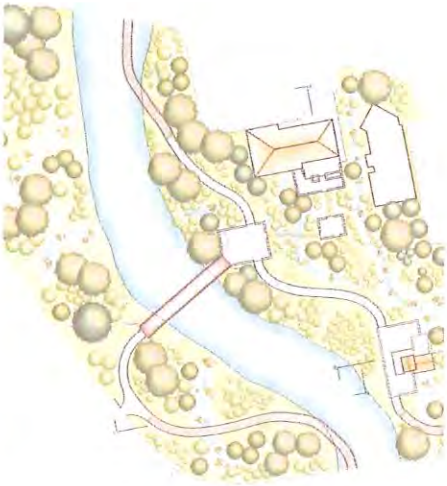
- Relationship to system intervention.
- Visual and verbal presentation.
- Appropriateness to site.

You will use the iterative process of design to explore innovative site scale designs based on your group's section intervention.

The experience and knowledge about the new Passaic River Open Space System you gained so far will inform your site design. Further, this is an opportunity to assess the quality of your overall concept and make improvements based on your site designs.

Design development, design 1,
spring 2009, Charles Oropallo

Design development, design 2,
spring 2009, Charles Oropallo



Design development, design 3,
spring 2009, Charles Oropallo

Assignment 6
Strategies

Design Group
Given 11/3
Due 11/8

Deliverables:

- Strategy outline.
- List and description of supportive groups.
- According text.

Evaluation Criteria:

- Completeness of consideration.
- Quality of descriptive text.

Parks are about people. Without the support of neighbors, local stakeholders, relevant advocacy groups, and administration, the best thought out innovation will fail. This assignments encourages you to identify "your friends" who will provide public support for your intervention. Of course you will also have to acknowledge who may not be in favor of your concept. A solution that is appreciated by everybody is most likely useless because it is just too vague. Further you will explore which existing level of administration could be utilized to support your project and/or which policy should be adjusted. Your task is to identify community support and administrative implementation strategies.

Assignment 7

Merge into Master Plan(s)

Class
Given 11/15
Pin Up 11/28
Due 12/5 at 3:00 pm
Final Presentation 12/18

Deliverables:

- One colored print and one digital version that is reproducible (PDF & JPEG file).
- According text.

Evaluation criteria:

- Green space connection
- Handling of significant elements.
- Urban context,
- Vehicular/pedestrian Connections/ parking.
- Innovation carried through
- Graphics/readability.
- Completeness of information.
- Documentation of iterative process.

By now it will have become evident that some of your interventions go well with the work of other design groups. In class we will discuss the possibility to form several "interventions clusters." Each cluster might describe a set of interventions which are competitive to the solutions of another cluster. You don't have to agree with some solutions of your classmates, but we have to understand where and why you disagree.

FIG. 4.4

The image above is the "People to Parks" Master Plan Board, presented on Dec. 16th, 2016.

Assignment 8

Documentation

Individual & Groups
Given 09/03
Due 12/12 at 3:00 pm

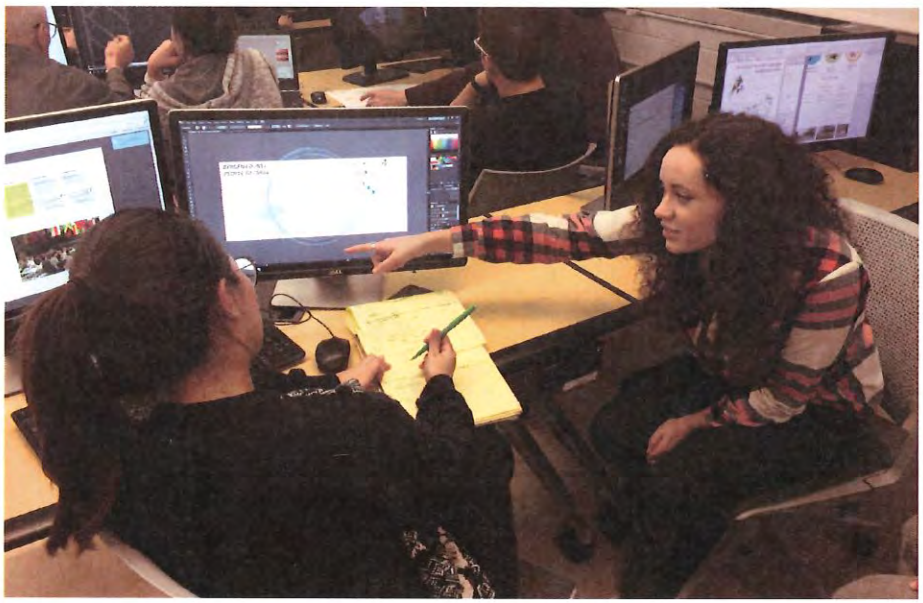
Final product will be a brochure that documents acquired data, research papers, design process and reproductions of models and drawings. Please follow the Chicago Manual of Style for any written document you produce. Layout details (chapters, headlines, fond, graphics, etc.) will be discussed in class. For a professional appearance of the final booklet, consistency is essential.

Deliverables:

- One colored print of the complete brochure.
- A digital version that is reproducible (PDF file).

Evaluation criteria:

- Completeness of Information.
- Sheet layout.
- Graphics/readability.
- Digital organization (all files at appropriate location).



Readings

Nordh, Helena; Hägerhall, Caroline; Hartig, Terry: Urban nature as a resource for public health. In: The Routledge Companion to Landscape Studies, edited by Howard, Peter; Thompson, Ian; Waterton, Emma. Routledge. Milton Park. 296-307

Ollwig, Kenneth 2013: The law of landscape and the landscape of law: th ehtings that matter. In: The Routledge Companion to Landscape Studies, edited by Howard, Peter; Thompson, Ian; Waterton, Emma. Routledge. Milton Park. 253-262

Price, Colin: Researching the economics of landscape. In: The Routledge Companion to Landscape Studies, edited by Howard, Peter; Thompson, Ian; Waterton, Emma. Routledge. Milton Park. 308-321

Qviström, Mattias 2013: Peri-urban landscapes: from disorder to hybridity. In: The Routledge Companion to Landscape Studies, edited by Howard, Peter; Thompson, Ian; Waterton, Emma. Routledge. Milton Park. 427-437

Steiner, F. R. (2008). The living landscape: An ecological approach to landscape planning (2nd ed.). Washington, DC: Island Press.

Waldheim, Charles 2016: Landscape as Urbanism. A general Theory. Chapter Three: Planning, Ecology, and the Emergence of Landscape. Princeton University Press. Princeton and Oxford. Pages 50-68.

It is expected that you research additional literature according to your group and individual approaches!

WWW

https://www.tpl.org/
http://www.pps.org/
http://www.nj.gov/pvsc/

Public arts event at Gret Falls Naitonal Park

Events*

Thursday 09/7
Pin up problem tree & solution tree

Tuesday 09/19
Field trip

Tuesday 9/28
Pin up GIS inventory

Tue 10/10 & Thu 10/12
Present case studies

Thursday 10/5
Pin up revised GIS inventory

Tuesday 10/24
Pin up system interventions

Tuesday 10/31
Midterm presentation

Tuesday 11/14
Pin up site designs

Tuesday 11/28
Pin up final Master Plan(s)

Tuesday 12/05 at 3:30 pm
Final boards due

Tuesday 12/12 at 3:00 pm
Booklet due

Monday 12/18, 1:00 pm Final presentation

Lectures*

09/05 Introduction into studio and schedule

09/12 GIS Data Collection, management, and mapping

09/19 no lecture, field trip

09/26 Expert Input

10/03 Expert Input

10/10 Students present Case studies

10/17 Green Systems

10/24 no lecture, pin up

10/31 Midterm Review

11/07 The Promise of Suburbia

11/14 EP administrate levels in New Jersey

11/21 The –isms:

* Date changes may occur due to group process and availability of project partners.

Fine Print

RUTGERS
School of Environmental and Biological Sciences

Department of Landscape Architecture
Intermediate Landscape Architecture
550:331, Fall 2017, 5 Credits

Lecture

Tuesday	12:35-1:55
Wednesday	3:55-5:15 (common)

Studio

Tuesday	2:15-5:15
Thursday	2:15-5:15

Except for circumstances truly beyond the student's control, all assignments are due at the dates and times specified throughout the semester. Projects that are incomplete on the due date should still be submitted on the date it is due to receive at least partial credit. Any work submitted late will be penalized a grade step for each day past due. Working beyond a due date is both unrealistic in a professional setting and unfair to your classmates in this course.

If you encounter any personal circumstances that inhibit your ability to fulfill the requirements of this course, you should immediately contact the instructor. In addition, any student with a special need, circumstance, or disability, should make an appointment to see me during the first week of classes. Studios provide a very effective but also very intense learning environment and all of us need to feel encouraged to support a studio culture that provides space for every individual to unfold his or her creativity.

Studio sessions, lectures, and the common lectures all count as individual class sessions for this course. More than three unexcused absences will result in a step reduction in your semester grade. Each additional three absences will result in another step reduction.Content missed due to an excused absence will be made available however, any missed quizzes or in-class assignments will not. In addition, an excused absence does not prolong an assigned due date for any assignment.

All equipment must be use appropriately according to the student handbook. Access to the fabrication lab is granted after successfully passing the safety instructions. Access is monitored and can be revoked if students use tools they are not qualified for or if students do not clean after themselves.

If there is a plotting problem, PDF files can be placed on the appropriate folder in the R-Drive and the assignment will not be considered late. However, a printed version is due by the following class period and the late penalty will be assessed thereafter.

It is requested that you will give proper reference to all sources (text and image) quoted in every drawing or text.

Submitted drawings, models, photographs, or written papers for any project assigned in Landscape Architecture courses are considered the property of the Department.
The formatting of all digital submission must follow the department guidelines because they will beretained in its archives for exhibition and accreditation purposes.

All information in this syllabus and course schedule is subject to change throughout the semester and will be announced in the scheduled class periods. It is your responsibility to stay informed!

Grade Rational

# 1 Problem Tree & Decision Tree	10
# 2 Data Inventory	20
# 3 Case Studies	5
# 4 Section intervention	15
#5 Site Scale Intevention	10
# 6 Strategies	10
# 7 Merge into master plan(s)	20
# 8 Documentation	10

Assignment # 1-4 will define whether warning rosters may become necessary.

A – Outstanding –This not only means fulfilling the requirements, but impressing and going beyond the initial expectations of the project. The student has demonstrated a superior grasp of the subject matter coupled with a high degree of creative or logical expression, and strong ability to present these ideas in an organized and analytical manner.

B – Very Good – The student has demonstrated a solid grasp of the material with an ability to organize and examine the material in an organized, critical, and constructive manner. The projects and in class performance reveal a solid understanding of the issues and related theories or literature.

C – Acceptable –The student has shown a moderate ability to grasp concepts and theories for the class, producing work that, while basically adequate, is not in any way exceptional. This performance in class display a basic familiarity with the relevant literature and techniques.

D – Unacceptable – The work demonstrates a minimal understanding of the fundamental nature of the material or the assignment with a performance that does not adequately examine the course material critically or constructively. Students cannot graduate from the Landscape Architecture program with 2 D's in required 550-classes.

F – Failure – The student has demonstrated a lack of understanding or familiarity with course concepts and materials. Their performance has been inadequate. Failure is often the result of limited effort and poor attendance which may indicate that the student is not in the proper field of study.

APPENDIX B

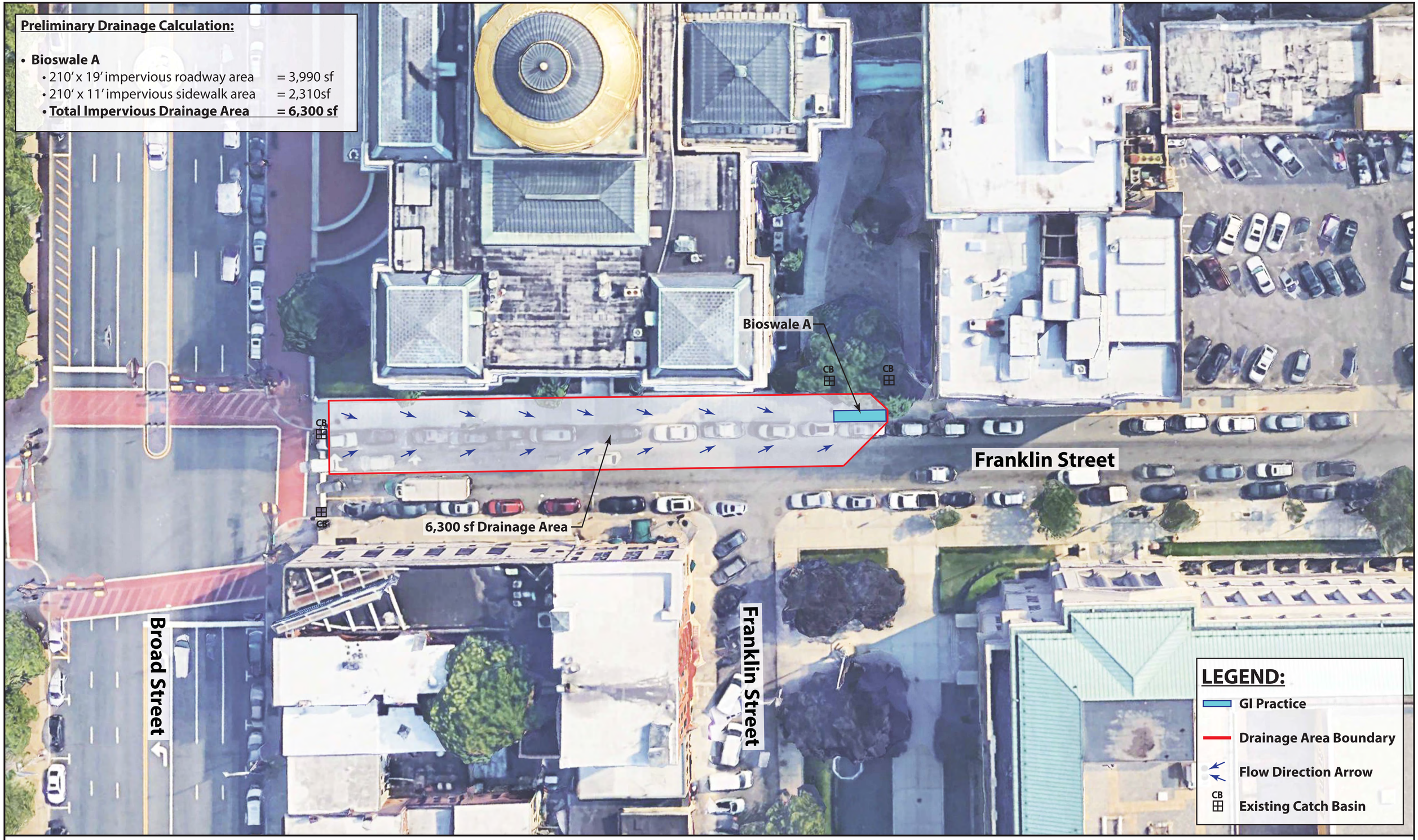
Green Infrastructure Feasibility Studies

APPENDIX C

PVSC Right-of-Way Green Infrastructure Pilot Program

Preliminary Drainage Calculation:

- **Bioswale A**
  - 210' x 19' impervious roadway area = 3,990 sf
  - 210' x 11' impervious sidewalk area = 2,310sf
  - **Total Impervious Drainage Area = 6,300 sf**



CDM Smith

PVSC - Right-of-Way Green Infrastructure Pilot Program

Newark City Hall

April 2018

June 25, 2018 (Revised 1/25/2019)

CDM Smith

PVSC - Right-of-Way Green Infrastructure Pilot Program

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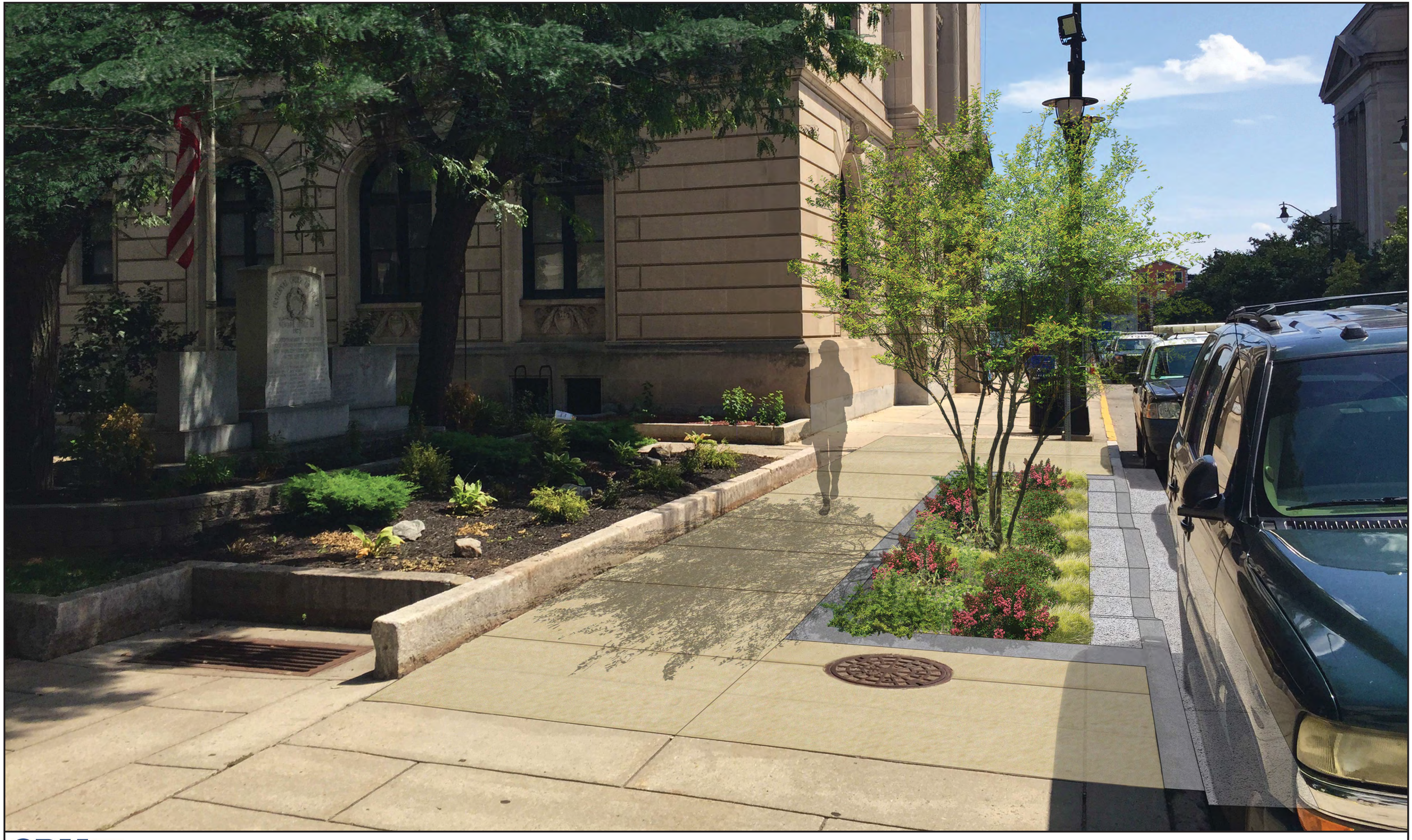

CDM Smith

PVSC - Right-of-Way Green Infrastructure Pilot Program

Newark City Hall

April 2018

June 25, 2018 (Revised 1/25/2019)

Preliminary Drainage Calculation:

- **Bioswale A**
  - 400' x 14' impervious roadway area = 5,600 sf
  - 400' x 14' impervious sidewalk area = 5,600 sf
  - **Total Impervious Drainage Area = 11,200 sf**

Pearsall Avenue

Bartholdi Avenue

Winfield Avenue

Neptune Avenue

Old Bergen Road

Kennedy Boulevard

Bioswale A

11,200 sf Drainage Area

CB

LEGEND:

- GI Practice
- Drainage Area Boundary
- Flow Direction Arrow
- CB Existing Catch Basin

CDM Smith

PVSC - Right-of-Way Green Infrastructure Pilot Program

Columbia Park

April 2018

June 25, 2018 (Revised 1/25/2019)

CDM Smith

PVSC - Right-of-Way Green Infrastructure Pilot Program

Columbia Park

April 2018

June 25, 2018 (Revised 1/25/2019)

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