State of New Jersey

CHRIS CHRISTIE
Governor

KIM GUADAGNO
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

BOB MARTIN
Commissioner

CERTIFIED MAIL
RETURN RECEIPT REQUESTED
7010 1870 0001 4760 9382
January 17, 2014

Frank Pestana, Executive Director
North Bergen Township MUA
4223 Kennedy Blvd
North Bergen, NJ 07047

Re: Draft Surface Water Renewal Permit Action
Category: CSM -Combined Sewer Management
NJPDES Permit No. NJ0108898
North Bergen Township, Hudson County

Dear Mr. Pestana:

Enclosed is a **draft** New Jersey Pollutant Discharge Elimination System (NJPDES) permit action identified above which has been issued in accordance with N.J.A.C. 7:14A. This permit action proposes to terminate the authorization to discharge for North Bergen Township MUA's NJPDES Combined Sewer Overflow (CSO) Permit NJG0108898 which is presently authorized under the Master General Permit NJ0105023, and issue an individual permit to authorize discharges from CSOs. Upon the effective date of the individual permit, North Bergen Township MUA's authorization under the Master General Permit will terminate.

Notice of this draft permit action will appear in the *Star Ledger* and in the January 22, 2014 *DEP Bulletin*. The *DEP Bulletin* is available on the internet at http://www.state.nj.us/dep/bulletin. In accordance with N.J.A.C. 7:14A-15.10(c)1i, the public comment period will close sixty (60) days after its appearance in the newspaper or the *DEP Bulletin*, whichever is later.

A non-adversarial public hearing has been scheduled on March 12, 2014, from 3:00 pm to 5:00 pm or until the end of testimony (whichever comes first), at the Passaic Valley Sewerage Commission, 600 Wilson Avenue, Newark, NJ 07105, to provide an opportunity for interested persons to present and submit information on the proposed action. Hearing attendees should bring a form of identification (a form of photo identification is preferred, such as a driver's license) for admittance to the hearing for security reasons only. If you have any questions regarding the identification requirements, please contact the Bureau of Surface Water Permitting at (609) 292-4860.

As detailed in the *DEP Bulletin* and aforementioned newspaper, written comments must be submitted in writing to Pilar Patterson, Chief, Mail Code 401-02B, Division of Water Quality, Bureau of Surface

Water Permitting, P.O. Box 420, Trenton, NJ 08625-0420 by the close of the public comment period. All persons, including the applicant, who believe that any condition of this draft document is inappropriate or that the Department's tentative decision to issue this draft document is inappropriate, must raise all reasonable arguments and factual grounds supporting their position, including all supporting materials, during the public comment period.

The Department will respond to all significant and timely comments upon issuance of the final document. The permittee and each person who has submitted written comments will receive notice of the Department's final decision to issue, revoke, or redraft the document.

If you have questions or comments regarding the draft permit action, please contact Andy Doyle at (609) 292-4860.

Sincerely,

Nancy L. Kempel
Supervising Environmental Engineer
Bureau of Surface Water Permitting

Enclosures

c: Permit Distribution List

Masterfile #: 38221; PI #: 47751

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New Jersey Department of Environmental Protection
Division of Water Quality
Bureau of Surface Water Permitting

PUBLIC NOTICE

The New Jersey Department of Environmental Protection (NJDEP) is hereby giving Notice in accordance with N.J.A.C. 7:14A-15.10(d) of New Jersey Pollutant Discharge Elimination System (NJPDES) permit actions for nine (9) permittees, a public hearing on those permits as well as a request for input on a related matter as described below.

The NJDEP proposes to renew Passaic Valley Sewerage Commissioner's (PVSC) Discharge to Surface Water (DSW) Permit NJ0021016 as well as to incorporate updated Combined Sewer Overflow (CSO) permit requirements. In addition the NJDEP proposes to terminate the authorizations to discharge which are presently authorized under the Master General Permit NJ0105023 for the towns that are located within the PVSC's service area and issue individual permits with new NJPDES numbers. The following permit actions for the towns include: the Bayonne City's NJPDES CSO Permit NJG0109240, East Newark Borough's NJPDES CSO Permit NJG0117846, Harrison Town's NJPDES CSO Permit NJG0108871, Jersey City's NJPDES CSO Permit NJG0108723, Newark City's NJPDES CSO Permit NJG0108758, North Bergen Township's NJPDES CSO Permit NJG0108898, Paterson City's NJPDES CSO Permit NJG0108880 and the Town of Kearny's NJPDES CSO Permit NJG0111244. The new NJPDES numbers will be NJ0109240, NJ0117846, NJ0108871, NJ0108723, NJ0108758, NJ0108898, NJ0108880 and NJ0111244, respectively, to authorize discharges from CSOs.

The above action is executed in accordance with N.J.A.C. 7:14A-1 et seq., and by authority of the Water Pollution Control Act at N.J.S.A. 58:10A-1 et seq., for the following discharge(s):

Applicants/Permittees	**Facilities**
Passaic Valley Sewerage Commissioners 600 Wilson Avenue Newark, NJ 07105	Passaic Valley Sewerage Commissioners Sewage Treatment Plant 600 Wilson Avenue Newark, NJ 07105
Bayonne City Municipal Utilities Authority 630 Avenue C Bayonne, NJ 07002	Bayonne City CSOs 630 Avenue C Bayonne, NJ 07002
East Newark Borough 34 Sherman Ave East Newark, NJ 07029-2793	East Newark Borough CSO 34 Sherman Avenue East Newark, NJ 07029
Harrison Town 318 Harrison Avenue Harrison, NJ 07029-1796	Harrison Town CSOs 318 Harrison Avenue Harrison, NJ 07029
Jersey City Municipal Utilities Authority 555 Route 440 Jersey City, NJ 07305	Jersey City CSOs 555 Route 440 Jersey City, NJ 07305
North Bergen Township Municipal Utilities Authority 4223 Kennedy Boulevard North Bergen, NJ 07047	North Bergen Township CSOs 4223 Kennedy Boulevard North Bergen, NJ 07047
Newark City Hall 920 Broad Street, Room B31f Newark, NJ 07102	Newark City CSOs 920 Broad Street Newark, NJ 07102

Paterson City 155 Market Street Paterson, NJ 07505	Paterson City CSOs 155 Market Street Paterson, NJ 07505
Town of Kearny 402 Kearny Avenue Kearny, NJ 07032	Town of Kearny CSOs 402 Kearny Avenue Kearny, NJ 07032

Combined Sewer Overflows are discharges from Combined Sewer Systems (CSS). CSSs are sewers that were designed many decades ago to collect rainwater and snowmelt runoff, domestic sewage, and industrial wastewater in the same pipe. CSSs are no longer permitted in New Jersey for new communities, but many older cities in the State continue to operate existing CSSs. Most of the time, the CSSs transport all wastewater to a sewage treatment plant, where it is treated and then discharged to a water body. However, during periods of rainfall or snowmelt, the wastewater volume in a CSS can exceed the hydraulic capacity of the sewer system or treatment plant. For this reason, CSSs were designed to overflow during these periods and discharge excess wastewater directly from CSOs to nearby streams, rivers, or other water bodies prior to reaching the sewage treatment plant.

NJDEP has historically been regulating the majority of discharges from CSOs through authorizations under a Master General Permit NJ0105023 and others through individual permits, consistent with the National Policy for CSO Controls, N.J.A.C. 7:14A-11.12 Appendix C. NJDEP has determined that it is more appropriate to regulate all CSO discharges under individual permits in order to address the site-specific regulatory requirements of each of the permittees and to promote better coordination of a Long Term Control Plan (LTCP) among all permittees contributing to the hydraulically connected systems.

Passaic Valley Sewerage Commissioners

The existing facility discharges treated and disinfected, domestic wastewater with industrial contribution into the Upper New York Harbor and Upper Newark Bay, classified as SE- 2 and SE-3 waters respectively. These water bodies are located within the NY/NJ Harbor Complex Basin and are both tributaries to the Lower New York Bay. The existing facility has a NJPDES flow value of 330 million gallons per day (MGD) on an annual average and currently discharges a monthly average flow of approximately 251 MGD on an annual average. This action proposes effluent limitations based on a flow of 369 MGD since the permit is authorizing increased loadings for some pollutants based on the facility conveying and treating wet weather flows.

Modification provisions as cited in the permit may be initiated in accordance with the provisions set forth in Part IV and upon written notification from the Department.

Bayonne City's CSOs

Bayonne City discharges combined sewage from thirty (30) CSO outfalls which have solids/floatables removal equipment installed just prior to the discharge. These CSO outfalls discharge into the Kill Van Kull, Upper New York Bay and Newark Bay. The Kill Van Kull and Newark Bay are classified as SE3(C2) waters and the Upper New York Bay is classified as SE2(C2). The receiving waterbodies are all located within the NY/NJ Harbor Basin.

East Newark Borough's CSO

East Newark Borough discharges combined sewage from one (1) CSO outfall which has solids/floatables removal equipment installed just prior to discharge. The CSO outfall discharges into the Passaic River which is classified as a SE3(C2) waters and is located within the NY/NJ Harbor Basin.

Harrison Town's CSOs

Harrison Town discharges combined sewage from seven (7) CSO outfalls which have solids/floatables removal equipment installed just prior to discharge. These CSO outfalls discharge into the Passaic River which is classified as a SE3(C2) water and is located within the NY/NJ Harbor Basin.

Jersey City's CSOs

Jersey City discharges combined sewage from twenty one (21) CSO outfalls which have solids/floatables removal equipment installed just prior to the discharge. These CSO outfalls discharge into the Penhorn Creek and the Hackensack River. The Penhorn Creek is classified as FW2-NT(C2) waters and the Hackensack River classified as SE2(C2) waters. The receiving waterbodies are located within the NY/NJ Harbor Basin.

Newark City's CSOs

Newark City discharges combined sewage from seventeen (17) CSO. Ten (10) outfalls have solids/floatables removal equipment installed just prior to the discharge. Of the remaining seven (7) CSO outfalls, construction is underway to install solids/floatables removal equipment at three (3) CSO outfalls. The CSO outfalls discharge into the Passaic River and the Elizabeth Channel. The Passaic River and the Elizabeth Channel are classified as SE3(C2) waters and are located within the NY/NJ Harbor Basin.

North Bergen Township's CSOs

North Bergen Township discharges combined sewage from nine (9) CSO outfalls have solids/floatables removal equipment installed just prior to the discharge. These CSO outfalls discharge into Bellmans Creek, Cromakill Creek and Penhorn Creek. Bellmans Creek, Cromakill Creek and Penhorn Creek are classified as SE2(C2) waters and are located within the NY/NJ Harbor Basin.

Paterson City's CSOs

The City of Paterson discharges combined sewage from twenty three (23) CSO outfalls. Nineteen (19) of the twenty-three (23) outfalls have solids/floatables removal equipment installed just prior to discharge. All CSO outfalls discharge into the Passaic River which is classified as FW2-NT(C2) waters and is located in the NY/NJ Harbor Basin.

Town of Kearny's CSOs

The Town of Kearny discharges combined sewage from five (5) CSO outfalls which have solids/floatables removal equipment installed just prior to discharge. These CSO outfalls discharge into the Passaic River and the Lower Passaic River Unnamed Tributary (Frank's Creek). The Passaic River and the Lower Passaic River Unnamed Tributary (Frank's Creek) are classified as SE3(C2) waters and are located within the NY/NJ Harbor Basin.

These above mentioned draft NJPDES permit actions have been prepared for these facilities based on the administrative record filed at the NJDEP, 401 East State Street, Trenton, New Jersey 08625. Copies of the fact sheet which describes in more detail the principal facts and significant considerations examined during the preparation of the draft permit, and the draft permit are posted on NJDEP's website at http://www.nj.gov/dep/dwq/cso.htm. Draft documents are obtainable, for a nominal charge, and the administrative record is available for inspection by appointment only, Monday through Friday. If you are interested in scheduling an appointment or requesting specific information regarding the draft documents, contact the Bureau of Surface Water Permitting at (609) 292-4860.

A non-adversarial public hearing has also been scheduled for these nine (9) permits on March 12, 2014 from 3:00 pm to 5:00 pm, or until the end of testimony (whichever comes first) at Passaic Valley Sewerage Commissioners, located at 600 Wilson Avenue, Newark, NJ 07105. Hearing attendees should bring a form of identification (a form of photo identification is preferred, such as a driver's license) for admittance to the hearing for security reasons only. If you have any questions regarding the identification requirements, please contact the Bureau of Surface Water Permitting at (609) 292-4860.

Written comments on these proposals must be submitted in writing to Pilar Patterson, Chief, or Attention: Comments on Public Notice, specifically noted as comments on NJ0021016, NJ0109240, NJ0117846, NJ0108871, NJ0108723, NJ0108758, NJ0108898, NJ0108880 or NJ0111244, Division of Water Quality, Mail Code: 401-02B, Bureau of Surface Water Permitting, PO Box 420, Trenton, NJ 08625 by the close of the public comment period, which will close sixty (60) calendar days after publication of this notice in the newspaper or the January 22, 2014 *DEP Bulletin*, whichever is later. All persons, including the applicant, who believe that any

condition of this draft document is inappropriate or that the Department's decision to issue this draft document is inappropriate, must raise all reasonable arguments and factual grounds supporting their position, including all supporting materials, during the public comment period.

The NJDEP will respond to all significant and timely comments upon issuance of the final document. The permittee and each person who has submitted written comments, or oral comments at the public hearing, will receive notice of the Department's permit decision.

NEW JERSEY POLLUTANT DISCHARGE ELIMINATION SYSTEM

The New Jersey Department of Environmental Protection hereby grants you a NJPDES permit for the facility/activity named in this document. This permit is the regulatory mechanism used by the Department to help ensure your discharge will not harm the environment. By complying with the terms and conditions specified, you are assuming an important role in protecting New Jersey's valuable water resources. Your acceptance of this permit is an agreement to conform with all of its provisions when constructing, installing, modifying, or operating any facility for the collection, treatment, or discharge of pollutants to waters of the state. If you have any questions about this document, please feel free to contact the Department representative listed in the permit cover letter. Your cooperation in helping us protect and safeguard our state's environment is appreciated.

Permit Number: NJ0108898

Draft: Surface Water Renewal Permit Action

Permittee:

NORTH BERGEN TWP MUA
4223 KENNEDY BLVD
North Bergen, NJ 07047

Co-Permittee:

Property Owner:

NORTH BERGEN TWP MUA
4223 KENNEDY BLVD
North Bergen, NJ 07047

Location Of Activity:

NORTH BERGEN TOWNSHIP
COMBINED SEWER COLLECTION
North Bergen, NJ 07047-0000

Authorization(s) Covered Under This Approval	Issuance Date	Effective Date	Expiration Date
CSM -Combined Sewer Management	*Pending*	*Pending*	*Pending*

By Authority of:
Commissioner's Office

DEP AUTHORIZATION
Pilar Patterson, Chief
Bureau of Surface Water Permitting
Division of Water Quality

(Terms, conditions and provisions attached hereto)

New Jersey Department of Environmental Protection
Division of Water Quality
Bureau of Surface Water Permitting

FACT SHEET

Masterfile #: 00038221 **PI #:** 47751

This fact sheet sets forth the principle facts and the significant factual, legal, and policy considerations examined during preparation of the draft permit. This action has been prepared in accordance with the New Jersey Water Pollution Control Act and its implementing regulations at N.J.A.C. 7:14A-1 et seq. - The New Jersey Pollutant Discharge Elimination System.

PERMIT ACTION: Surface Water Renewal Permit Action

The permittee has applied to renew the New Jersey Pollutant Discharge Elimination System (NJPDES) General Permit Authorization, NJG0108898, under the Master General Permit NJ0105023 through an application dated June 26, 2009.

The New Jersey Department of Environmental Protection (Department) proposes to terminate the authorization to discharge for North Bergen Township MUA's NJPDES Combined Sewer Overflow (CSO) Permit NJG0108898 which is presently authorized under the Master General Permit NJ0105023 and issue an individual permit to authorize discharges from CSOs. Upon the effective date of the individual permit, North Bergen Township MUA's authorization under the Master General Permit will terminate. The above action is executed in accordance with N.J.A.C. 7:14A-1 et seq., and by authority of the Water Pollution Control Act at N.J.S.A. 58:10A-1 et seq.

The Department has historically regulated the majority of discharges from CSOs through authorizations under a Master General Permit NJ0105023 and others through individual permits, consistent with the National Policy for CSO Controls, N.J.A.C. 7:14A-11.12 Appendix C. NJDEP has determined that it is more appropriate to regulate all CSO discharges under individual permits in order to address the site-specific conditions of each of the permittees and to promote better coordination of a long-term control plan (LTCP) among all permittees contributing to the hydraulically connected systems. Therefore, the applicant's renewal application for a general permit authorization is being converted to an application for an individual permit. No additional action on part of the permittee is required.

1 Name and Address of the Applicant:

North Bergen Township MUA
4223 Kennedy Blvd
North Bergen, NJ 07047

2 CSO and Receiving Water Discharge Location Information:

A copy of the appropriate section of a United States Geological Survey (USGS) quadrangle map indicating the location of the discharge points is included towards the end of this fact sheet.

Outfall Designator: 003A

General Information		Watershed Information	
Receiving Water:	Bellmans Creek	Downstream Confluences:	NY/NJ Harbor
Via :	Outfall pipe	Receiving River Basin:	Newark Bay
Classification (a):	SE2(C2)	WMA (b):	Hackensack, Hudson, and Pascack
County:	Hudson	Watershed:	Hackensack R (below/incl Hirshfeld Bk)
Municipality:	North Bergen Township	Subwatershed:	Hackensack R (Bellmans Ck to Ft Lee Rd)
		HUC 14 (c):	02030103180050
		Water Quality Impairments (d):	Dioxin (including 2,3,7,8-TCDD), Turbidity, Polychlorinated biphenyls, Dissolved Oxygen, Mercury in Fish Tissue, Benzo(a)pyrene (PAHs), Dieldrin, DDT, DDE, Chlordane, DDD, Ammonia (Un-ionized)
Outfall Description			
		Outfall Configuration:	Tidally submerged pipe

Outfall Designator: 005A, 006A, 007A, 008A, 009A, 014A

General Information		Watershed Information	
Receiving Water:	Cromakill Creek	Downstream Confluences:	NY/NJ Harbor
Via :	Outfall pipe	Receiving River Basin:	Newark Bay
Classification (a):	SE2(C2)	WMA (b):	Hackensack, Hudson, and Pascack
County:	Hudson	Watershed:	Hackensack R (below/incl Hirshfeld Bk)
Municipality:	North Bergen Township	Subwatershed:	Hackensack R (Rt 3 to Bellmans Ck)
		HUC 14 (c):	02030103180080
		Water Quality Impairments (d):	Benzo(a)pyrene (PAHs), Ammonia (Un-ionized), Cadmium, Chlordane, DDD, DDE, DDT, PCB in Fish Tissue, Dieldrin, Turbidity, Dissolved Oxygen, Mercury in Fish Tissue, Heptachlor epoxide, Dioxin (including 2,3,7,8-TCDD)
Outfall Description			
		Outfall Configuration:	Tidally submerged pipe

Outfall Designator: 010A, 011A

General Information		Watershed Information	
Receiving Water:	Penhorn Creek	Downstream Confluences:	NY/NJ Harbor
Via :	Outfall pipe	Receiving River Basin:	Newark Bay
Classification (a):	SE2(C2)	WMA (b):	Hackensack, Hudson, and Pascack
County:	Hudson	Watershed:	Hackensack R (below/incl Hirshfeld Bk)
Municipality:	North Bergen Township	Subwatershed:	Hackensack R (below Amtrak bridge)
		HUC 14 (c):	02030103180100
		Water Quality Impairments (d):	Benzo(a)pyrene (PAHs), Turbidity, Ammonia (Un-ionized), Cadmium, DDD, DDE, DDT, Dieldrin, Dioxin (including 2,3,7,8-TCDD), Heptachlor epoxide, Mercury in Fish Tissue, Dissolved Oxygen, PCB in Fish Tissue, pH, Chlordane
Outfall Description			
		Outfall Configuration:	Tidally submerged pipe

Footnotes:

(a) The designated uses for these waterbody classifications can be found at N.J.A.C. 7:9B-1.12.
(b) WMA = Watershed Management Area
(c) HUC 14 = 14 digit Hydrologic Unit Code
(d) These parameters are listed on Sublist 5 as impaired for this waterbody as per New Jersey's 2010 Integrated Water Quality Monitoring and Assessment Report (includes 305(b) Report and 303(d) List).

Outfall Number	Outfall Name	Latitude N	Longitude W	Solids/Floatables (S/F) Control Measures Status
003A	West 91st St & Tonnelle Ave	40°48'56"	74°00'52"	**Completed** 1999 – Netting Facility (End-of-Pipe)
005A	West End of 69th Street	40°48'10"	74°01'44"	**Completed** 1999 – Netting Facility (In-Line)
006A	60th St & Tonnelle Ave	40°47'42"	74°01'57"	**Completed** 1999 – Netting Facility (In-Line)
007A	51st. St & Tonnelle Ave	40°47'28"	74°02'12"	**Completed** 1998 – Netting Facility (End-of-Pipe)
008A	43rd St. & Tonnelle Ave	40°47'05"	74°02'15"	**Completed** 1999 – Netting Facility (Floating Trash Trap)
009A	Paterson Plank Rd	40°46'52"	74°02'37"	**Completed** 1999 – Netting Facility (Floating Trash Trap)
010A	Penhorn Ave & Tonnelle Ave	40°46'32"	74°02'37"	**Completed** 1999 – Netting Facility (In-Line)
011A	11th Street	40°45'52"	74°03'03"	**Completed** 1998 – Netting Facility (In-Line)
014A	Paterson Plank Road	40°46'52"	74°02'31"	**Completed** – Static Bar Screen Facility

As per the Surface Water Quality Standards at N.J.A.C. 7:9B, the designated uses for Saline Estuary 2 (SE2) receiving waters are:

SE2:
1. Maintenance, migration and propagation of the natural and established biota;
2. Migration of diadromous fish;
3. Maintenance of wildlife;
4. Secondary contact recreation; and
5. Any other reasonable uses.

3 Combined Sewer Overflow Discharge Description:

This permit regulates the permittee's discharges from the combined sewer overflows (CSOs) from the combined sewer systems (CSSs).

CSSs are sewers that were designed many decades ago to collect rainwater and snowmelt runoff, domestic sewage, and industrial wastewater in the same pipe. CSSs are no longer permitted in New Jersey for new communities, but many older cities in the State continue to operate existing CSSs. Most of the time, the CSSs transport all wastewater to a sewage treatment plant, where it is treated and then discharged to a water body. However, during periods of rainfall or snowmelt, the wastewater volume in a CSS can exceed the hydraulic capacity of the sewer system or treatment plant. For this reason, CSSs were designed to overflow during these periods and discharge excess wastewater directly from CSOs to nearby streams, rivers, or other water bodies prior to reaching the sewage treatment plant.

CSOs often contain high levels of suspended solids, pathogenic microorganisms, toxic pollutants, floatables, nutrients, oxygen-demanding organic compounds, oil and grease, and other pollutants. CSOs can cause exceedances of water quality standards (WQS) which may pose risks to human health, threaten aquatic life and its habitat, and impair the use and enjoyment of the State's waterways.

North Bergen Township (located in Hudson County, NJ) has two (2) CSSs that are owned and operated by the North Bergen Township MUA under separate NJPDES permits (NJPDES Permit NJ0029084, and NJPDES Authorization No. NJG0108898 under Master General NJPDES Permit No. NJ0105023).

Under NJPDES Permit NJ0029084, the North Bergen Township MUA owns and operates a CSS that is located generally to the east of Bergenline Avenue in North Bergen Township, and is connected to the North Bergen Township MUA's Woodcliff STP. This CSS services the eastern portion of North Bergen Township (Minisystems NB1 and NB2) and the Town of Guttenberg. This CSS has one (1) CSO outfall (004A) that is owned and operated by the North Bergen Township MUA. Outfall 004A discharges to the Hudson River.

Under this permit (NJPDES Permit NJ0108898), the North Bergen Township MUA owns and operates a CSS in the western and central portions of North Bergen Township, which was previously connected to the North Bergen Township MUA's Central Treatment Plant (NJPDES No. NJ0034339). In October 2010, the North Bergen Township MUA's Central Treatment Plant was closed, and all sewage flows were directed into the Passaic Valley Sewerage Commission's (PVSC's) collection system. This CSS has nine (9) CSO outfalls (003A, 005A, 006A, 007A, 008A, 009A, 010A, 011A, and 014A). All nine (9) outfalls are owned and operated by the North Bergen Township MUA. Outfall 003A discharges into Bellmans Creek; Outfalls 005A, 006A, 007A, 008A, 009A, and 014A discharge into Cromakill Creek; and Outfalls 010A and 011A discharge into Penhorn Creek.

During dry weather conditions, all of the wastewater flows from the western and central portions of North Bergen Township are conveyed to the PVSC's wastewater treatment facility in Newark, NJ. However, during wet weather periods when the capacity of the collection system is exceeded, combined sewage will be discharged as a CSO from one (1) or more of North Bergen Township MUA's nine (9) outfalls. All nine (9) of these North Bergen Township

MUA's outfalls have solids/floatables removal facilities that remove solids/floatables which cannot pass through a bar screen having a spacing of 0.5-inches.

Combined sewage passes through the following structures prior to discharge through Outfalls 003A, 007A, 008A, and 009A:

1. CSO flow regulator;
2. Tide gate(s);
3. End-of-pipe ½-inch netting solids/floatables removal system; and
4. CSO outfall.

Combined sewage passes through the following structures prior to discharge through Outfalls 005A, 006A, 010A, and 011A:

1. CSO flow regulator;
2. In-line ½-inch netting solids/floatables removal system;
3. Tide gate(s); and
4. CSO outfall.

Combined sewage passes through the following structures prior to discharge through Outfall 014A:

1. CSO flow regulator;
2. In-line ½-inch static bar screen facility;
3. Tide gate(s); and
4. CSO outfall.

The permittee is classified as a minor discharger by the Department in accordance with the United States Environmental Protection Agency (EPA) rating criteria.

4 Combined Sewer Overflow Control Policy Background:

A. Regulatory Background

Historically, the control of CSOs has proven to be extremely complex. This complexity stems partly from the difficulty in quantifying CSO impacts on receiving water quality and the site-specific variability in the volume, frequency, and characteristics of CSOs. In addition, the financial considerations for communities with CSOs can be significant. The U.S. Environmental Protection Agency (EPA) estimated the CSO abatement costs for the 1,100 national communities served by CSSs to be approximately $41.2 billion in the May 1995 Combined Sewer Overflows - Guidance for Nine Minimum Controls. In 2008, New Jersey's CSO abatement costs were estimated at $9.3 billion. See National Clean Watersheds Needs Survey,

http://water.epa.gov/scitech/datait/databases/cwns/upload/cwns2008rtc.pdf.

To address these challenges, EPA's Office of Water issued a National Combined Sewer Overflow Control Strategy ("CSO Strategy") on August 10, 1989 (54 Federal Register 37370). Five years later, EPA issued the National CSO Control Policy (National Policy) on April 19, 1994, which remains the current national framework for control of CSOs. The National Policy provides guidance to permittees and state authorities on coordinating the planning, selection and implementation of CSO controls. It promotes a phased approach to the control of CSOs through a series of permits that include progressively more stringent requirements. The National Policy prohibits dry weather overflows and contains provisions for developing appropriate, site-specific NPDES permit requirements for all CSOs. In the Wet Weather Quality Act of 2000, Congress amended the CWA to incorporate the National Policy. As amended, the CWA requires that all permits, orders and decrees issued to regulate combined system overflows must

comply with the National Policy. 33 U.S.C.A. § 1342(q)(1). DEP incorporated the National Policy verbatim into its regulations at N.J.A.C. 7:14A-11.12 – Appendix C.

Key Elements of the National CSO Control Policy

The National Policy contains four key principles to ensure that existing and proposed CSO controls are cost-effective and meet the requirements of the CWA. These four principles are:

- Provide clear levels of control that would be presumed to meet appropriate health and environmental objectives;
- Provide sufficient flexibility to municipalities, especially those that are financially disadvantaged, to consider the site-specific nature of CSOs and determine the most cost-effective means of reducing pollutants and meeting CWA objectives and requirements;
- Allow a phased approach for implementation of CSO controls which considers a community's financial capability; and
- Review and revise, as appropriate, WQS and their implementation procedures when developing long-term CSO control plans to reflect the site-specific wet weather impacts of CSOs.

The National Policy requires permittees to implement Nine Minimum Controls (NMCs), and to develop and implement a Long Term Control Plan (LTCP). The NMCs are as listed below.

1. Proper operation and regular maintenance programs for the sewer system and the CSOs,
2. Maximum use of the collection system for storage,
3. Review and modification of pretreatment requirements to assure CSO impacts are minimized,
4. Maximization of flow to the publicly owned treatment works for treatment,
5. Prohibition of CSOs during dry weather,
6. Control of solid and floatable materials in CSOs,
7. Pollution prevention,
8. Public notification to ensure that the public receives adequate notification of CSO occurrences and CSO impacts, and
9. Monitoring to effectively characterize CSO impacts and the efficacy of CSO controls.

There are nine minimum elements of the LTCP. They are:

1. Characterization, monitoring, and modeling activities to serve as the basis for selection and design of effective CSO controls;
2. A public participation process that actively involves the affected public in the decision-making to select long-term CSO controls;
3. Consideration of sensitive areas as the highest priority for controlling overflows;
4. Evaluation of alternatives that will enable the permittee, in consultation with the NPDES permitting authority, WQS authority, and the public, to select CSO controls that will meet CWA requirements;
5. Cost/performance considerations to demonstrate the relationships among a comprehensive set of reasonable control alternatives;
6. Operational plan revisions to include agreed-upon long-term CSO controls;
7. Maximization of treatment at the existing POTW treatment plant for wet weather flows;
8. An implementation schedule for CSO controls; and
9. A post-construction compliance monitoring program adequate to verify compliance with water quality-based CWA requirements and ascertain the effectiveness of CSO controls.

In New Jersey, the CSO Strategy, and later, National Policy have been implemented, in part, through NJPDES Master General Permit (MGP) (NJ0105023) for Combined Sewer Systems. Most of the CSSs in the State were regulated under General Permit Authorizations issued under the MGP, however some CSSs continued to be regulated under individual NJPDES permits. In addition, some CSO controls were required under other enforceable documents, such as Administrative Consent Orders or Judicial Consent Orders.

The first MGP was issued on January 27, 1995, and became effective on March 1, 1995. Under the 1995 MGP, permittees which own and/or operated any portion of a CSS were required to develop and implement technology based control measures including the NMCs. Of significance to note, the Department required the installation of solid and floatable controls, i.e., netting or bar screens, that would not allow the passage of solids greater than one half inch. To date, 89% of such facilities across the State have installed these controls. In addition, the permittees were required to initiate the first element of the LTCP, by requiring the development of Combined Sewer System Characterization Studies (System Characterization Study) to demonstrate the relationship between rainfall, runoff and sewer system responses. As part of the studies, permittees were required to develop a field calibrated and verified CSO model designed to represent the CSS's response to historical events of precipitation. The study was divided into six components: 1. Monitoring Program Proposal and Work Plan; 2. Service Area and Land Use Report; 3. Sewer System Inventory and Assessment Report; 4. Rainfall Monitoring Study; 5. Combined Sewer Overflow Monitoring Study; and 6. Combined Sewer System Modeling Study.

On February 24, 2000, the Department renewed the MGP.

On June 30, 2004, the Department revoked and reissued the MGP. Existing requirements remained in place, and the Department added several new provisions to require permittees to address four additional elements of the CSO LTCP. Specifically, the permit required permittees to develop, with Department oversight, a Public Participation Plan, evaluate a specific set of alternatives, develop appropriate cost and performance curves, and maximize conveyance for treatment at the existing POTW treatment plant for wet weather flows. Permittees with CSO points were required to develop and evaluate a variety of disinfection control alternatives. The permit became effective on August 1, 2004, and expired on July 31, 2009. DEP issued a draft new general permit before the August 1, 2009 expiration date, but did not finalize it.

The 2004 MGP reflected the Department's intention to allow the CSO permittees to integrate the results of ongoing TMDL studies into their LTCPs. The TMDL water quality studies were intended to help develop water quality goals for the receiving waters, identify CSO and non-CSO sources of pollution, and identify load reduction objectives and allocations through establishment of TMDLs for pathogens, nutrients and other pollutants determined to be responsible for the impairments. As indicated in the Fact Sheet that accompanied the 2004 MGP, the Department did not intend to require the permittees to develop and implement all elements of the LTCP until the TMDLs for pathogens were established.

The Department expected that TMDL studies would have been completed during the lifetime of the 2004 MGP. However, the studies were not completed until after the MGP expired. Further, on March 15, 2012, EPA provided DEP with a draft of the water quality study and associated documentation that was intended to provide the basis for the pathogens TMDL in the NY/NJ Harbor. After reviewing the draft water quality study, the Department determined that it was technically deficient, and that the Department could not move forward with the TMDL for pathogens at that time. Rather than continue to wait for an acceptable water quality study and for TMDLs to be adopted, the Department has determined that it is necessary to move forward on individual permits requiring permittees to develop and implement all elements of the LTCP at this time. Thus, the Department has determined that it is no longer appropriate to control CSOs through a MGP and is issuing individual permits in a phased approach in order to address the site-specific conditions of each of the permittees and to promote better coordination of a LTCP among all permittees contributing to the hydraulically connected system.

Since the inception of the Department's CSO program, 64 CSO points in New Jersey have been eliminated. Permittees have put into place Solids/Floatables Control Measure for at least 183 CSO points. The control measures for the remaining CSO points are in various stages of construction. These Solids and Floatables control facilities currently capture, remove, or otherwise prevent the discharge of an estimated 700 tons of solids and floatables material per year. The New Jersey Environmental Infrastructure Financing Program, through a partnership with DEP and the New Jersey Environmental Infrastructure Trust has helped finance much of this work by funding over $1.4 billion for CSO abatement projects.

Specifically, North Bergen Township MUA has performed the following studies:

- North Bergen MUA Public Participation Report, prepared by Hatch Mott MacDonald, dated April 2007.
- North Bergen Municipal Utilities Authority CSO Long Term Control Plan, Cost & Performance Analysis Report, Volume 1, prepared by Hatch Mott MacDonald, dated March 2007.
- North Bergen Municipal Utilities Authority CSO Long Term Control Plan, Cost & Performance Analysis Report, Volume 2, Technical Guidance Manual, prepared by Hatch Mott MacDonald, dated December 2006.
- North Bergen Municipal Utilities Authority CSO Characterization Study, Final Water Quality and Quantity Monitoring Report, prepared by Hatch Mott MacDonald, dated March 2005.
- North Bergen Municipal Utilities Authority CSO Characterization Study, Supporting Laboratory Data, prepared by Hatch Mott MacDonald, dated March 2005.
- North Bergen Municipal Utilities Authority CSO Characterization Study Group 2 – Dry Weather Water Quality and Quantity Monitoring Report, prepared by Hatch Mott MacDonald, dated June 2003.
- North Bergen Municipal Utilities Authority CSO Characterization Study Group 1 – Dry Weather Water Quality and Quantity Monitoring Report, prepared by Hatch Mott MacDonald, dated March 2003.
- Combined Sewer Overflow Characterization Study, Quality Assurance/Work Plan, for the North Bergen Municipal Utilities Authority, prepared by Hatch Mott MacDonald, dated November 2002.
- North Bergen Township Sewer Mapping and Flow Monitoring Study, prepared by Metcalf & Eddy, December 1992.

A complete list of studies performed by all CSO permittees in PVSC's hydraulically connected system is summarized in Appendix B at the end of this permit.

Multiple municipalities/permittees own separate portions of a hydraulically connected combined sewer system, and any changes to the system, or CSO controls that are implemented by one of these municipalities/permittees will likely affect the CSO discharges in other portions of the hydraulically connected combined sewer system. Additionally, these municipalities/permittees are then connected to a STP which is owned by a separate entity. Therefore, the Department requires that the permittee work cooperatively with the receiving STP and all other appropriate municipalities/permittees in the hydraulically connected combined sewer system to ensure that the data collected is used consistently in the development of the LTCP and can be documented to achieve overall water quality benefits.

Further, the Department strongly encourages the permittees to combine their resources to develop and submit a single LTCP on behalf of the permittees in the hydraulically connected combined sewer system.

The Department recognizes that the development of such a single comprehensive LTCP among multiple entities will require extensive coordination and cooperation and, as such, will consider requests to extend the compliance schedule for the submittal of the single, comprehensive LTCP.

This permit contains conditions necessary to implement the National Policy pursuant to the Water Pollution Control Act, N.J.S.A. 58:10A-1 et seq., Sewage Infrastructure Improvement Act, N.J.S.A. 58:25-23 et seq., and the Clean Water Act, 33 U.S.C. 1251 et seq., and the regulations promulgated pursuant thereto, N.J.A.C. 7:14A, specifically, N.J.A.C. 7:14A-11.12, Appendix C.

5 Summary of Permit Conditions:

A. Nine Minimum Controls:

This permit requires that the permittee continue to comply with all of the Nine Minimum Controls (NMCs), as listed below.

1. Proper operation and regular maintenance programs for the sewer system and the CSOs,
2. Maximum use of the collection system for storage,
3. Review and modification of pretreatment requirements to assure CSO impacts are minimized,
4. Maximization of flow to the publicly owned treatment works for treatment,
5. Prohibition of CSOs during dry weather,
6. Control of solid and floatable materials in CSOs,
7. Pollution prevention,
8. Public notification to ensure that the public receives adequate notification of CSO occurrences and CSO impacts, and
9. Monitoring to effectively characterize CSO impacts and the efficacy of CSO controls.

The NMCs are identified in the National Policy as minimum technology-based controls that can be implemented to address CSOs without extensive engineering studies or significant construction costs, prior to the implementation of long-term control measures. As described in the National Policy, permittees were to implement the NMCs as the first steps in controlling discharges from CSOs. EPA has prepared a document to guide permittees on how to implement the NMCs and document implementation. The document, Guidance for Nine Minimum Controls, can be found at http://www.epa.gov/npdes/pubs/owm0030.pdf.

Permittees are encouraged to be creative and explore innovative and cost-effective measures in implementing the NMCs to address their specific CSOs. The NMCs are not necessarily distinct and separate from one another. Many control measures can address and facilitate more than one of the controls at the same time (e.g., street sweeping can address both the "Control of Solids/Floatables" and the "Pollution Prevention" controls). With the assistance of the guidance document referenced above, permittees should continue to plan and pursue control measures that can achieve the ultimate goal of reducing overall CSO impacts in a holistic manner. Based upon the evaluation of the implementation of the NMCs, the Department has included enhancements in order to clarify requirements consistent with the National Policy. A brief description of the NMCs under this permit follows.

1. Proper Operation and Regular Maintenance Program Requirements

Under the MGP (a Combined Sewer Overflow Pollution Prevention Plan (CSOPPP) and a Proper Operation & Maintenance Plan and Manual is required), and consistent with state and federal regulations, (N.J.A.C. 7:14A-6.12 and 40 CFR 122.41(e)), all permittees with CSOs were required to develop and maintain a current Operations and Maintenance (O&M) Plan and Manual for their contributory collection system to the CSO outfalls. The Plan and Manual were to demonstrate that the permittee has made or will make all the necessary financial, administrative and institutional arrangements to meet the requirements of the permit. The Department has determined that it is necessary to provide more detail in the permit, consistent with EPA Guidance, on the necessary components of an O & M Program and Manual. Under this proposed permit action, the permittee is required to continue to implement and update annually as necessary, an Operations & Maintenance (O&M) Program (and corresponding Manual), Emergency Plan, detailed Standard Operating Procedures (SOPs) and an Asset Management Plan to ensure that the treatment works, which are owned and/or operated by the permittee, are operated and maintained in a manner that achieves compliance with all terms and conditions of this permit. For example, SOPs are required to be developed to ensure that the permittee:

a. Conduct visual inspections to provide that unpermitted discharges, obstructions, damage and dry weather overflows will be discovered,
b. Provides a system for documenting, assessing, tracking and addressing residential complaints regarding blockages and other situations that lead to flooding of basements, streets and other public and private areas,
c. Provides for ongoing infiltration and inflow (I/I) reduction strategies through the identification of sources and implementation of I/I reduction projects,
d. Includes Asset Management planning, addressing such measures as infrastructure inventory with infrastructure repair/replacement needs listed and scheduled according to priority/criticality, and

e. Includes under the Emergency Plan: a plan for addressing a wide range of emergencies, including procurement for energy (fuel oil, electricity) and replacement parts.

The permittee shall provide an updated accurate characterization on a GIS map (including the capacity, dimensions, age, type of material, etc.) of the entire collection system owned and/or operated by the permittee that conveys flows to the treatment. The permittee shall also review its rules, ordinances and sewer use agreements with its customer and/or upstream municipalities and revise if necessary to require them to identify I/I and reduce where appropriate, and to identify and eliminate interconnections and cross-connections in storm sewers. More specifically, the SOPs shall specify the operation, inspection, scheduled preventive maintenance and timely repairs required to ensure that the entire collection system conveys flows to the treatment works properly.

2. Maximum Use of the Collection System for Storage

Under the MGP, the permittee was required to conduct a feasibility study to evaluate in-line and off-line storage technologies for incorporation into possible future control strategies to store flow for subsequent treatment at the STP after downstream conveyance and treatment capacities were restored. Under this proposed permit action, the permittee will be required to minimize the introduction of sediment and obstructions and regularly remove any impediments to flows within the system and to identify and implement minor modifications to enable the entire collection system owned/operated by the permittee that conveys flows to the treatment works to store additional wet weather flows to minimize CSO discharges (volume, frequency and duration), while not creating or increasing sewage overflows to basements, streets and other public and private areas, until downstream sewers and treatment facilities can adequately convey and treat the flows.

3. Review and Modification of Pretreatment Requirements to Assure CSO Impacts are Minimized

Under the existing individual NJPDES Discharge to Surface Water permits issued to the STPs that receive combined sewage, the STPs were required to explore various options to minimize discharges of non-domestic users during wet weather periods. Under this proposed permit action, the CSO permittee is required to determine the locations of Significant Indirect/Industrial Users (SIUs) as it relates to the locations of its CSO outfalls, and the discharge nature of the SIUs for the entire collection system which is owned and/or operated by the permittee. Furthermore, the permittee is to determine and prioritize the environmental impact of these SIUs by CSO outfall and include this information in the characterization portion of its Operation & Maintenance Program. For delegated STPs, the permittee shall require that SIUs investigate ways to minimize their discharges during wet weather, and where necessary, establish agreements with SIUs or enact ordinances or rules specifying that the SIUs should restrict discharges to the greatest extent practicable during wet weather periods.

4. Maximization of Flow to the POTW for Treatment

Under the MGP (and the existing individual NJPDES Discharge to Surface Water permits issued to the STPs that receive combined sewage), the permittee was required to operate and maintain the facilities to maximize the conveyance of wastewater to the STP for treatment and to minimize the frequency and duration of CSOs to the receiving waters. Under this proposed permit action, this requirement is continued and the permittee is also required to evaluate and implement low-cost alternatives for increasing the flow to the STP, based upon capacity evaluations of the permittee's collection system.

5. Prohibition of CSOs during Dry Weather

Under the MGP, dry weather overflows (DWOs) are prohibited from any CSO outfall. Under this proposed permit action, this requirement is continued and the permittee is required to inspect the combined sewer system as part of its Operation & Maintenance Program to ensure there are no DWOs. Additionally, the permittee shall prohibit any connections, including but not limited to construction

dewatering, remediation activities or similar activities, downstream of a CSO regulator that will convey flow to the CSO during dry weather. On a case-by-case basis, the Department reserves the right to allow temporary use of the CSO outfall structures for other types of discharges to address extraordinary circumstances.

6. Control of Solids and Floatable Material in CSOs

Under the MGP, the permittee was required to capture and remove solids/floatables from the CSO discharges. The permittee accomplished this through the installation of solids/floatables removal facilities (eight (8) netting facilities and one (1) static bar screen facility) with a spacing of 0.5 inches on all nine (9) of their CSO outfalls. The Department recognizes that the introduction of solids and floatable materials is also regulated under other Department programs, such as the Statewide Mandatory Source and Recycling Act, N.J.S.A. 13:1E-99.11 et seq. Under this proposed permit action, the requirement to remove solids/floatables is continued and the permittee will also be required to report the amount of solids/floatables captured and removed from the CSO discharges. Additionally, the permittee is required to reduce solids/floatables from entering the collection system through pollution prevention measures, such as street sweeping and storm inlet retrofitting.

7. Pollution Prevention

Under the MGP, the permittee was required to develop, implement, and maintain a Combined Sewer Overflow Pollution Prevention Plan (CSOPPP). The CSOPPP required documentation of the procedures used to develop, evaluate and implement interim and long term solids/floatables control measures among other things. Under this proposed permit action, the permittee will be required to continue to implement and upgrade pollution prevention measures necessary to prevent and limit contaminants from entering the entire collection system owned and/or operated by the permittee including: implementation of a regular street cleaning program, implementation of stormwater pollution prevention rules and ordinances, implementation of solid waste collection and recycling ordinances, and implementation of public education programs. Measures shall also include the retrofitting of storm drain inlets such that each horizontal grate meets the specifications for maximum opening size. In addition, the permit requires the permittee to extend applicable stormwater management practices, ordinances and rules to combined sewer areas of their towns. This would mean the permittee should apply the same ordinances and rules in the combined sewer areas of the municipality as they apply in the separately sewered areas, for example for retrofitting the stormwater inlets and ensuring that the same street sweeping schedule applies to all streets in the town, regardless of how the area is sewered. The Department expects that many affected municipalities have already extended some of these stormwater requirements to CSO areas.

8. Public Notification to Ensure that the Public Receives Adequate Notification of CSO Occurrences and CSO Impacts

The permittee is presently required to tag the CSO outfalls. Under this proposed permit action, the Department is requiring enhanced signage and notification requirements to ensure public notification. The permittee will be required to post CSO Identification Signs (minimum 18" x 24") constructed out of reflective material at each of its CSO outfall locations providing its NJPDES Permit No., Discharge Serial No., phone numbers of the permittee and the NJDEP Hotline with language to report any dry weather discharges or discharges with foul odors or discoloration, and a general statement that there may be sewage overflows during and following wet weather with the possibility that contact with the water may cause illness. The permittee shall also employ measures such as the posting of leaflets/flyers/signs at affected use areas (i.e., beaches, marinas, docks, fishing piers, etc.), and/or notifying residents by either the US Postal Service or email describing what CSOs are, the locations of the CSO outfalls, and public health and safety information. Furthermore, the permittee shall create and maintain on a daily basis a telephone hot line or website to provide immediate/up-to-date information regarding where CSO discharges may be occurring.

9. Monitoring to Effectively Characterize CSO Impacts and the Efficacy of CSO Controls

Under the MGP, the permittee was required to characterize its CSO discharges for quality, flow volume, duration, and frequency sufficient to calibrate and validate a computer model to predict the response of the permittees's CSO system to varied precipitation events. Under this proposed permit action, the permittee is required to update the characterization information as described above and monitor the CSO discharge events and record the date, time, duration, precipitation, and weight/volume of Solids/Floatables removed for each CSO discharge event through appropriate modeling or by an appropriately placed flow meter/totaling device, level sensor, or other appropriate measuring device, and report the required information on the DMR as required by Part III of this permit.

B. Long Term Control Plan (LTCP):

This permit contains requirements for the permittee to develop and submit a final LTCP on or before the Effective Date of the Permit + 3 years. The permittee may utilize information collected under previous permits to the extent that they are accurate and representative of the current sewer system infrastructure and meet the current requirements, such as:

- North Bergen MUA Public Participation Report, prepared by Hatch Mott MacDonald, dated April 2007.
- North Bergen Municipal Utilities Authority CSO Long Term Control Plan, Cost & Performance Analysis Report, Volume 1, prepared by Hatch Mott MacDonald, dated March 2007.
- North Bergen Municipal Utilities Authority CSO Long Term Control Plan, Cost & Performance Analysis Report, Volume 2, Technical Guidance Manual, prepared by Hatch Mott MacDonald, dated December 2006.
- North Bergen Municipal Utilities Authority CSO Characterization Study, Final Water Quality and Quantity Monitoring Report, prepared by Hatch Mott MacDonald, dated March 2005.
- North Bergen Municipal Utilities Authority CSO Characterization Study, Supporting Laboratory Data, prepared by Hatch Mott MacDonald, dated March 2005.
- North Bergen Municipal Utilities Authority CSO Characterization Study Group 2 – Dry Weather Water Quality and Quantity Monitoring Report, prepared by Hatch Mott MacDonald, dated June 2003.
- North Bergen Municipal Utilities Authority CSO Characterization Study Group 1 – Dry Weather Water Quality and Quantity Monitoring Report, prepared by Hatch Mott MacDonald, dated March 2003.
- Combined Sewer Overflow Characterization Study, Quality Assurance/Work Plan, for the North Bergen Municipal Utilities Authority, prepared by Hatch Mott MacDonald, dated November 2002.
- North Bergen Township Sewer Mapping and Flow Monitoring Study, prepared by Metcalf & Eddy, December 1992.

A complete list of studies performed by all CSO permittees in PVSC's hydraulically connected system is summarized in Appendix B at the end of this permit.

As stated above, since multiple municipalities/permittees own portions of hydraulically connected combined sewer systems, the Department requires that the permittee work cooperatively with all other appropriate municipalities/permittees in the hydraulically connected combined sewer system to ensure that the data is used consistently in the development of the LTCP and can be documented to achieve overall water quality benefits. The Department encourages a single LTCP be developed and submitted on behalf of all of the permittees in a hydraulically connected combined sewer system. For example, the Department supports the permittee combining their resources with the Passaic Valley Sewerage Commission and the other combined sewer member municipalities of the Passaic Valley Sewerage Commissions' service area (Bayonne, East Newark, Harrison, Jersey City, Kearny, Newark and Paterson) in the development of a single LTCP to address this permit requirement.

The National Policy lists nine elements that must be addressed in the LTCP. The National Policy also encourages permittees to develop, and permit writers to evaluate LTCPs on a watershed management basis.

Permittees should evaluate all sources of pollution (e.g., point sources, CSOs, storm water) during system characterization and, wherever possible, develop control strategies on a watershed basis in coordination with the NPDES permitting authority.

This permit allows for the submittal of the LTCP in three steps. EPA has prepared a document to provide guidance to permittees on the development of the Long Term Control Plans and how to document the implementation. This document can be found at http://www.epa.gov/npdes/pubs/owm0272.pdf

As listed in the National Policy, the nine elements of the LTCP are:

1. Characterization, monitoring, and modeling activities as the basis for selection and design of effective CSO controls;
2. A public participation process that actively involves the affected public in the decision-making to select long-term CSO controls;
3. Consideration of sensitive areas as the highest priority for controlling overflows;
4. Evaluation of alternatives that will enable the permittee, in consultation with the NPDES permitting authority, WQS authority, and the public, to select CSO controls that will meet CWA requirements;
5. Cost/performance considerations to demonstrate the relationships among a comprehensive set of reasonable control alternatives;
6. Operational plan revisions to include agreed-upon long-term CSO controls;
7. Maximization of treatment at the existing POTW treatment plant for wet weather flows;
8. An implementation schedule for CSO controls; and
9. A post-construction compliance monitoring program adequate to verify compliance with water quality-based CWA requirements and ascertain the effectiveness of CSO controls.

The Department has grouped the LTCP submittal requirements into 3 steps, in accordance with EPA's LTCP planning approach outlined in the Guidance for Long Term Control Plans. The LTCP shall consist of the following steps and be submitted according to the schedule in the permit.

Step 1 entails the development and submittal of the Sewer System Characterization Workplan and final report as well as the creation of the Public Participation Process and identification, evaluation and prioritization of the Sensitive Areas. This step also entails understanding the water quality standards as they apply to the receiving water for each CSO and how achievement of those standards will affect the choice of the CSO control measures. The workplan is being required to ensure that all permittees of the hydraulically connected system conduct and update the characterization using a coordinated approach that will result in a comprehensive and integrated sewer system characterization. While the permittee has conducted characterization work under the MGP, it will be necessary to update the information from previous studies to incorporate modifications in the collection system and requirements under this permit. This Workplan is required to be submitted 3 months after the effective date of the permit and the final Sewer System Characterization Report, along with the Public Participation Process and the Consideration of Sensitive Areas information is then due 1 year after the effective date of the permit.

Based upon the information gathered under Step 1, Step 2 will entail the development and evaluation of the CSO control alternatives described below, that at a minimum will enable the permittee, in consultation with the Department's NJPDES program, the water quality standards program, and the public to select CSO control measures that will meet the Clean Water Act requirements. The Development and Evaluation of Alternatives Report required for Step 2 is to be submitted 2 years after the effective date of the permit.

Step 3 entails the final selection and implementation schedule of the agreed upon LTCP CSO control measures as well as the Compliance Monitoring Program (CMP). The CMP will require monitoring of the discharges and the receiving waters prior to, and at various intervals during, the implementation of the LTCP to evaluate the effectiveness of the ongoing CSO control measures. This step will also entail concurrent revisions to the O&M Program and Manual as control measures are implemented. The permittee is required to submit an approvable Selection and Implementation of Alternatives Report 3 years after the effective date of the permit.

A brief description of the LTCP requirements in the permit follows.

1. **Characterization, Monitoring and Modeling of the Combined Sewer System**

   Under the MGP, the permittee was required to submit a Combined Sewer Overflow Discharge Characterization Study consisting of a field calibrated and verified Combined Sewer Overflow Model designed to represent the combined sewer system's response to historical events of precipitation. Under this proposed permit action, the permittee will be required to submit an updated characterization study of the combined sewer system to: establish the existing baseline conditions, evaluate the efficiency of the technology based controls, determine the baseline condition upon which the LTCP will be based and uniformly characterize the hydraulically connected system with respect to the requirements of this permit, specifically the number of events as defined in this permit.

2. **Public Participation Process**

   Under the MGP, the permittee was required to create a Public Participation Program that would ensure the opportunity for participation by the public in the LTCP development process. Under this proposed permit action, the permittee will be required to submit a Public Participation Plan using their current sewer system infrastructure, and shall involve the public in the decision making process in determining the alternatives chosen under the LTCP.

3. **Consideration of Sensitive Areas**

   Under this proposed permit action, the permittee will be required to give the highest priority to controlling overflows in sensitive areas. The LTCP shall prohibit increased CSO overflows and eliminate/relocate CSO overflows in sensitive areas. If elimination/relocation is not possible, the permittee shall provide treatment necessary to meet the WQS.

4. **Evaluation of Alternatives**

   Under the MGP, the permittee was required to evaluate specific alternative interim and long term control measures for the control of pathogens and to formulate cost and performance relationships for treatment of CSO discharges. Under this proposed permit action, the permittee will be required to evaluate a broader range of control alternatives that meet the CWA requirements and provide attainment of the WQS using either the Presumption Approach or the Demonstration Approach. The control alternatives shall include: green infrastructure, increased storage in the collection system, STP expansion/storage, I/I reduction, sewer separation, discharge treatment and bypass of secondary treatment at the STP.

   When evaluating the alternatives for the LTCPs, the permittee may use one of two approaches:

   1) 'The Presumption Approach' in which the permittee chooses to implement a minimum level of treatment (e.g., 4 or less overflow events per year, or at least 85 percent removal of volume/mass of the collected combined sewage flows) that is presumed to meet the water quality-based requirements of the CWA, unless data indicate otherwise. The "Presumption" Approach, in accordance with N.J.A.C 7:14A-11 Appendix C provides the below:

      A program that meets any of the criteria listed below will be presumed to provide an adequate level of control to meet the water quality-based requirements of the CWA, provided the Department determines that such presumption is reasonable in light of the data and analysis conducted in the characterization, monitoring, and modeling of the system and the consideration of sensitive areas described above.

i. No more than an average of four overflow events (see below) per year from a hydraulically connected system as the result of a precipitation event that does not receive the minimum treatment specified below. These four overflow events shall be calculated over a 60 month rolling average, provided that the Department may allow up to two additional overflow events per year. For the purpose of this criterion, an 'event' is:

- In a hydraulically connected system that contains only one CSO outfall, multiple periods of overflow are considered one overflow event if the time between periods of overflow is no more than 24 hours.

- In a hydraulically connected system that contains more than one CSO outfall, multiple periods of overflow from one or more outfalls are considered one overflow event if the time between periods of overflow is no more than 24 hours without a discharge from any outfall.

ii. The elimination or the capture for treatment of no less than 85% by volume of the combined sewage collected in the CSS during precipitation events on a system-wide annual average basis.

iii. The elimination or removal of no less than the mass of the pollutants, identified as causing water quality impairment through the sewer system characterization, monitoring, and modeling effort, for the volumes that would be eliminated or captured for treatment under Section G.4.f.ii.

Combined sewer overflow remaining after implementation of the NMCs and within the criteria specified in Sections ii. and iii. above, shall receive minimum treatment in accordance with the items below.

- Primary clarification (Removal of floatables and settleable solids may be achieved by any combination of treatment technologies or methods that are shown to be equivalent to primary clarification.).

- Solids and floatables disposal.

- Disinfection of effluent, if necessary, to meet WQS, protect designated uses and protect human health, including removal of harmful disinfection chemical residuals, where necessary.

<u>OR</u>

2) The 'Demonstration Approach' in which the permittee demonstrates that its plan is adequate to meet the water quality-based requirements of the CWA. The "Demonstration" Approach, in accordance with N.J.A.C. 7:14A-11 Appendix C provides the below.

A permittee may demonstrate that a selected control program, though not meeting the criteria specified under the Presumption Approach, is adequate to meet the water quality-based requirements of the CWA. The permittee must demonstrate each of the following below.

i. The planned control program is adequate to meet WQS and protect designated uses, unless WQS or uses cannot be met as a result of natural background conditions or pollution sources other than CSOs.

ii. The CSO discharges remaining after implementation of the planned control program will not preclude the attainment of WQS or the receiving waters' designated uses or contribute to their impairment.

iii. The planned control program will provide the maximum pollution reduction benefits reasonably attainable.

iv. The planned control program is designed to allow cost effective expansion or cost effective retrofitting if additional controls are subsequently determined to be necessary to meet WQS or designated uses.

The permittee will be required to evaluate a range of CSO control alternatives, based on their practical and technical feasibility, and the water quality benefits of constructing and implementing various remedial controls and combinations of such controls. The permittee should be prepared to address any future changes in the WQS. For example, on November, 26, 2012, EPA recommended new recreational water quality criteria for pathogens. NJDEP will be evaluating these new criteria and considering a proposal to incorporate them within the next 3 years.

The permit requires the permittee to consider at least the following:

- Green infrastructure which allows for stormwater management close to its source, providing both water quality treatment and some volume control. The volume that is retained onsite and kept out of the sewer system can help delay expensive gray infrastructure maintenance and upgrades. Some examples of green infrastructure measures include, but are not limited to, pervious pavements, street bump-outs, rain gardens, and tree trenches.

- Increased storage capacity in the collection system to store the wastewater until the sewage flows subside sufficiently for the downstream sewers to be able to transport the flow to the STP for treatment;

- STP expansion and/or storage at the plant. Based on information provided by the STP, an evaluation of the capacity of the unit processes must be conducted at the STP and a determination made of whether there is any additional treatment capacity available at the STP. The permittee shall use this information and determine (modeling may be used) the amount of CSO discharge reduction that would be achieved by utilizing the additional treatment capacity while maintaining compliance with all permit limits;

- I/I reduction in the entire collection system that conveys flows to the treatment works. I/I reduction can free up storage capacity or conveyance in the sewer system and/or treatment capacity at the STP. The permittee shall determine the amount of CSO discharge reduction that could be achieved and the feasibility of implementing in the entire system or portions thereof;

- Sewer separation through construction of new sewer lines to separate and remove the stormwater from the sanitary sewer system;

- CSO discharge treatment at individual CSO outfalls; and

- Providing CSO related bypasses of the secondary treatment portion of the STP in accordance with the National Policy.

  The National Policy encourages permittees to consider the use of a bypass of secondary treatment in the evaluation of alternatives. The intentional diversion of waste streams from any portion of a treatment facility, including secondary treatment, is considered a bypass. EPA bypass regulations at 40 CFR 122.41(m) allow for a facility to bypass some or all the flow from its treatment process under specified limited circumstances. Under the regulation, the permittee must show that the bypass was unavoidable to prevent loss of life, personal injury or severe property damage, there was no feasible alternative to the bypass and the permittee submitted the required notices. In addition, the regulation provides that a bypass may be approved only after consideration of adverse effects.

Under the National Policy, a CSO-related bypass of the secondary treatment portion of the POTW treatment plant for combined sewer flows may be an appropriate alternative for CSO controls that can be considered in certain limited circumstances. For example, EPA suggests that a bypass can be justified if:

- the permittee can demonstrate that the secondary treatment system is properly operated and maintained;
- the system has been designed to meet secondary limits for flows greater than the peak dry weather flow, plus an appropriate quantity of wet weather flow;
- it is either technically or financially infeasible to provide secondary treatment at the existing facilities for greater amounts of wet weather flow; and
- the permittee can ensure that the discharge will not cause exceedances of WQS.

Further, in order for the Department to consider a by-pass as a feasible alternative under the LTCP the permittee must address compliance with the requirements of all other applicable regulations, such as N.J.A.C. 7:14A, N.J.A.C. 7:9B, and N.J.A.C. 7:15. N.J.A.C. 7:14A-23.13(m) prohibits plant designs that propose the use of bypass lines which would circumvent treatment units and allow untreated or partially treated wastewater to be discharged. The Department recognizes that the rule would need to be modified in order to allow bypasses as part of an approved LTCP.

The permittee may refer to Combined Sewer Overflows - Guidance for Long-Term Control Plan (EPA 832-B-95-002) for further information on these alternatives.

5. Cost/Performance Considerations

Under the MGP, the permittee was required to develop a cost and performance analysis report for specific control alternatives for each CSO. Under this proposed permit action, the permittee will be required to update and submit cost/performance considerations to determine where the increment of pollution reduction diminishes compare to the increased cost, often known as "knee of the curve". If the permittee chooses the Presumption Approach of no more than an average of 4 discharge events per year, the permittee is not required to conduct analysis for the other events (i.e., 0, 7, 10, 20). The permittee can use previous studies in developing cost/performance considerations to the extent that the studies meet the requirements of this permit.

6. Operational Plan

Under the MGP, the permittee was required to develop an operational plan to implement control alternatives for continuous disinfection on outfalls that had been required to remove solids floatables. Under this proposed permit action, the permittee will be required to modify the O&M Program and Manual to address the final LTCP CSO control facilities and operating strategies.

7. Maximizing Treatment at the Existing STP

Under this proposed permit action, the permittee will be required to investigate the control alternative of maximizing flow through the STP, including the alternative of bypassing of secondary treatment at the STP.

8. Implementation Schedule

Under this proposed permit action, the permittee will be required to submit a construction and financing schedule for implementation of the LTCP CSO controls. The schedule may be phased and shall consider: addressing areas of overflows, discharges to sensitive areas as highest priority, use impairment of receiving waters, permittee's financial capability, grant/loan availability, user fees and rate structures, funding mechanisms and resources necessary to implement an asset management plan.

As noted in the National Policy, permittees are required to develop and submit their LTCPs "as soon as practicable, but generally within two years after the date of the NPDES permit provision, Section 308 information request, or enforcement action requiring the permittee to develop the plan." However, "NPDES authorities may establish a longer timetable for completion of the long-term CSO control plan on a case-by-case basis to account for site-specific factors which may influence the complexity of the planning process."

New Jersey has determined that due to the fragmented nature of the CSS ownership in this hydraulically connected sewer system, and the extreme complexities of integrated sewer systems involving multiple municipalities and dozens of interdependent outfalls, that a compliance schedule of 36 months is appropriate. However, as noted above, if the permittees work cooperatively to develop one LTCP, the Department will consider extending the compliance schedule for submittal of the final LTCP.

9. Compliance Monitoring Program (CMP)

Under the MGP, the permittee was required to conduct an annual inspection of all combined sewer overflow control facilities owned and/or operated by the permittee. Additionally, the permittee was required to submit a rainfall monitoring study and a CSO monitoring study. The permittee was not required to monitor the water quality of the receiving waterbody.

Under this proposed permit action, the permittee will be required to implement a CMP to verify: baseline and existing ambient conditions, effectiveness of controls, compliance with the WQS and protection of designated uses. The permittee can use previously submitted studies in developing the CMP that shall detail the monitoring protocols. If using the Demonstration Approach, the ambient monitoring must be ongoing ever year, however, if using the Presumption Approach the ambient monitoring may be reduced during implementation of the CSO controls.

C. <u>Reporting Requirements</u>:

All data requested to be submitted by this permit shall be reported on the Discharge Monitoring Reports (DMRs), and submitted to the Department as required by N.J.A.C. 7:14A-6.8(a).

D. <u>General Conditions</u>:

In accordance with N.J.A.C. 7:14A-2.3 and 6.1(b), specific rules from the New Jersey Administrative Code have been incorporated either expressly or by reference in Part I and Part II.

E. <u>Operator Classification Number</u>:

The specific licensed operator classification requirement for the collection system is not included in the permit, however, as part of the O&M requirements in Part IV.F., the permittee is required to have an appropriately licensed operator as per N.J.A.C. 7:10-13. To obtain or determine the appropriate licensed operator classification for the treatment works specified, the permittee shall contact the Bureau of Finance and Construction at (609) 633-1180.

F. Compliance Schedule:

This permit includes a compliance schedule for the submittal of the LTCP which is established at three (3) years from the effective date of the permit (EDP) to allow the permittee sufficient time to coordinate the development of the LTCP with all of the municipalities in the hydraulically connected sewer system. This permit also requires other submittal deadlines to document the permittee's progress toward compliance with the NMC and LTCP of the National Policy and N.J.A.C. 7:14A-11 – Appendix C, in accordance with N.J.A.C. 7:14A-6.4.

6 Description of Procedures for Reaching a Final Decision on the Draft Action:

Please refer to the procedures described in the public notice that is part of the draft permit. The public notice for this permit action is published in the *Star Ledger* and in the *DEP Bulletin*.

7 Contact Information

If you have any questions regarding this permit action, please contact Andy Doyle, Bureau of Surface Water Permitting at (609) 292-4860.

8 Contents of the Administrative Record

The following items are used to establish the basis of the Draft Permit:

Rules and Regulations:

1. 33 U.S.C. 1251 et seq., Federal Water Pollution Control Act. [C]
2. 40 CFR Part 131, Federal Water Quality Standards. [A] [C]
3. 40 CFR Part 122, National Pollutant Discharge Elimination System. [C]
4. National CSO Control Policy (Published April 19, 1994, at 59 Federal Register 18688)
5. N.J.S.A. 58:10A-1 et seq., New Jersey Water Pollution Control Act. [A] [B]
6. N.J.A.C. 7:14A-1 et seq., New Jersey Pollutant Discharge Elimination System Regulations. [A] [B]
7. N.J.A.C. 7:9B-1 et seq., New Jersey Surface Water Quality Standards. [A] [B]
8. N.J.A.C. 7:15, Statewide Water Quality Management Planning Rules. [A] [B]
9. N.J.A.C. 7:14C, Sludge Quality Assurance Regulations. [B]
10. Interstate Environmental Commission Regulations, N.J.S.A. 32:18-1 et seq.
11. N.J.S.A. 58:25-23 et/ seq., Sewage Infrastructure Improvement Act
12. New Jersey's 2010 Integrated Water Quality Monitoring and Assessment Report (includes 305(b) Report and 303(d) List
13. Pretreatment Requirements (N.J.A.C. 7:14A-19)

Guidance Documents / Reports:

1. "Field Sampling Procedures Manual", published by the NJDEP. [A]
2. "NJPDES Monitoring Report Form Reference Manual", updated December 2007, and available on the web at http://www.state.nj.us/dep/dwq/pdf/MRF_Manual.pdf.

To help permittees and NPDES permitting and WQS authorities implement the provisions of the CSO Control Policy, EPA has developed the following guidance documents:

- Combined Sewer Overflows - Guidance for Long-Term Control Plan (EPA 832-B-95-002)

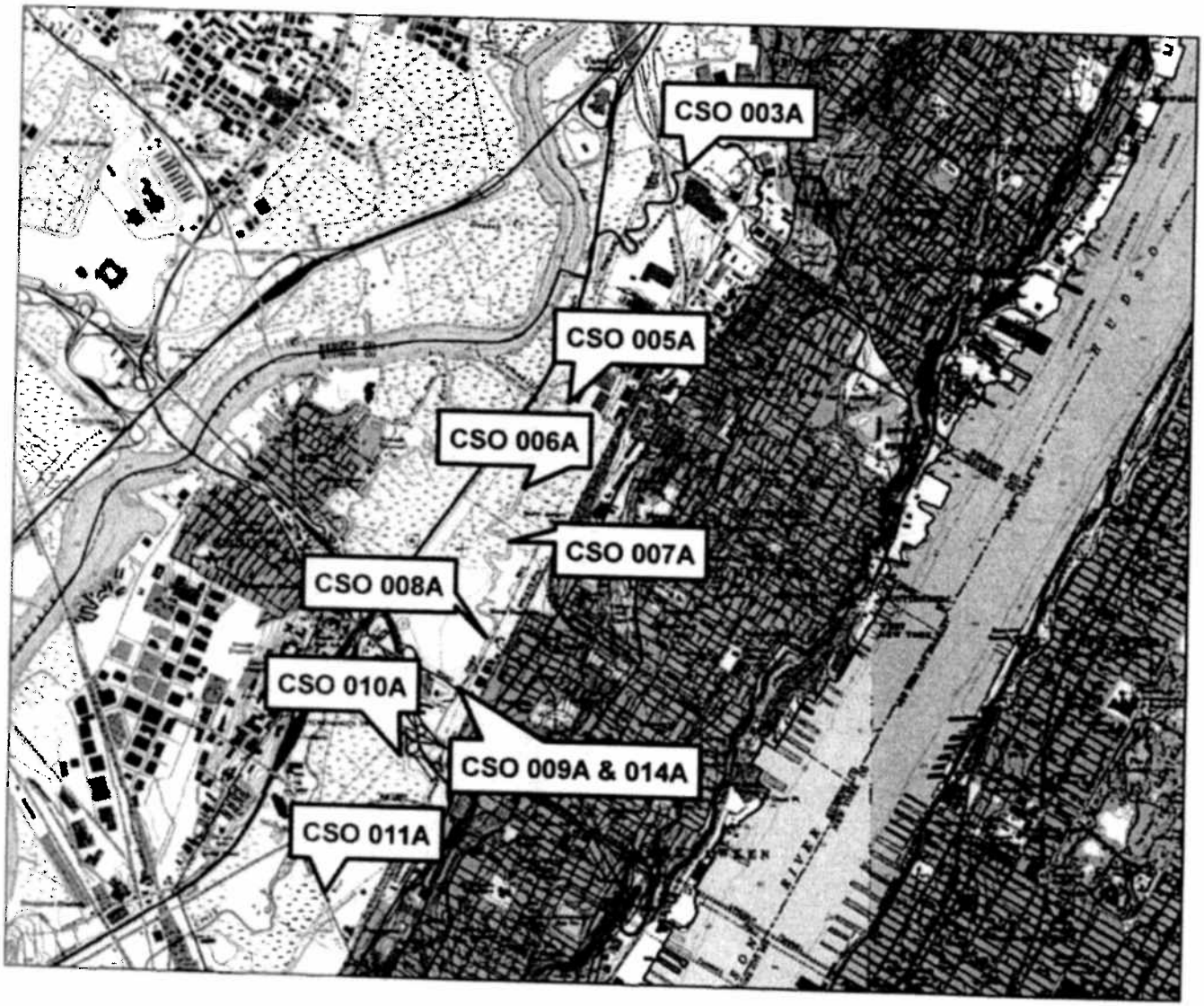
- Combined Sewer Overflows - Guidance for Nine Minimum Controls (EPA 832-B-95-003)
- Combined Sewer Overflows - Guidance for Screening and Ranking Combined Sewer System Discharges (EPA 832-B-95-004)
- Combined Sewer Overflows - Guidance for Monitoring and Modeling (EPA 832-B-95-005)
- Combined Sewer Overflows - Guidance for Financial Capability Assessment (EPA 832-B-95-006)
- Combined Sewer Overflows - Guidance for Funding Options (EPA 832-B-95-007)
- Combined Sewer Overflows - Guidance for Permit Writers (EPA 832-B-95-008)
- Combined Sewer Overflows - Questions and Answers on Water Quality Standards and the CSO Program (EPA 832-B-95-009)

Permits / Applications:
1. NJPDES/DSW Permit Application dated June 26, 2009. [A]
2. Existing NJPDES/DSW Authorization NJG0108898, issued June 30, 2004 and effective August 1, 2004. [A]

Correspondences/Submittals:
A complete list of studies performed by all CSO permittees in PVSC's hydraulically connected system is summarized in Appendix B at the end of this permit.

Meetings / Site Visits:
1. CSO Roll-Out Meeting at PVSC, Newark, NJ on December 18, 2013.

Footnotes:
[A] Denotes items that may be found in the NJPDES/DSW Administrative Record Library located in the NJDEP Central File Room, 401 East State Street, Trenton, New Jersey.
[B] Denotes items that may be found on the New Jersey Department of Environmental Protection (NJDEP) website located at "http://www.state.nj.us/dep/".
[C] Denotes items that may be found on the United States Environmental Protection Agency (USEPA) website at "http://www.epa.gov/".



CSOs of

North Bergen Twp

NJ0108898

USGS Topo Map

N

0 8,000 16,000 32,000 Feet

PART I
GENERAL REQUIREMENTS: NJPDES

A. General Requirements of all NJPDES Permits

1. Requirements Incorporated by Reference

a. The permittee shall comply with all conditions set forth in this permit and with all the applicable requirements incorporated into this permit by reference. The permittee is required to comply with the regulations, including those cited in paragraphs b. through e. following, which are in effect as of the effective date of the final permit.

b. General Conditions

Penalties for Violations	N.J.A.C. 7:14-8.1 et seq.
Incorporation by Reference	N.J.A.C. 7:14A-2.3
Toxic Pollutants	N.J.A.C. 7:14A-6.2(a)4i
Duty to Comply	N.J.A.C. 7:14A-6.2(a)1 & 4
Duty to Mitigate	N.J.A.C. 7:14A-6.2(a)5 & 11
Inspection and Entry	N.J.A.C. 7:14A-2.11(e)
Enforcement Action	N.J.A.C. 7:14A-2.9
Duty to Reapply	N.J.A.C. 7:14A-4.2(e)3
Signatory Requirements for Applications and Reports	N.J.A.C. 7:14A-4.9
Effect of Permit/Other Laws	N.J.A.C. 7:14A-6.2(a)6 & 7 & 2.9(c)
Severability	N.J.A.C. 7:14A-2.2
Administrative Continuation of Permits	N.J.A.C. 7:14A-2.8
Permit Actions	N.J.A.C. 7:14A-2.7(c)
Reopener Clause	N.J.A.C. 7:14A-6.2(a)10
Permit Duration and Renewal	N.J.A.C. 7:14A-2.7(a) & (b)
Consolidation of Permit Process	N.J.A.C. 7:14A-15.5
Confidentiality	N.J.A.C. 7:14A-18.2 & 2.11(g)
Fee Schedule	N.J.A.C. 7:14A-3.1
Treatment Works Approval	N.J.A.C. 7:14A-22 & 23

c. Operation And Maintenance

Need to Halt or Reduce not a Defense	N.J.A.C. 7:14A-2.9(b)
Proper Operation and Maintenance	N.J.A.C. 7:14A-6.12

d. Monitoring And Records

Monitoring	N.J.A.C. 7:14A-6.5
Recordkeeping	N.J.A.C. 7:14A-6.6
Signatory Requirements for Monitoring Reports	N.J.A.C. 7:14A-6.9

e. Reporting Requirements

Planned Changes	N.J.A.C. 7:14A-6.7
Reporting of Monitoring Results	N.J.A.C. 7:14A-6.8
Noncompliance Reporting	N.J.A.C. 7:14A-6.10 & 6.8(h)
Hotline/Two Hour & Twenty-four Hour Reporting	N.J.A.C. 7:14A-6.10(c) & (d)
Written Reporting	N.J.A.C. 7:14A-6.10(e) &(f) & 6.8(h)
Duty to Provide Information	N.J.A.C. 7:14A-2.11, 6.2(a)14 & 18.1
Schedules of Compliance	N.J.A.C. 7:14A-6.4
Transfer	N.J.A.C. 7:14A-6.2(a)8 & 16.2

PART II

GENERAL REQUIREMENTS: DISCHARGE CATEGORIES

A. Additional Requirements Incorporated By Reference

1. Requirements for Discharges to Surface Waters

a. In addition to conditions in Part I of this permit, the conditions in this section are applicable to activities at the permitted location and are incorporated by reference. The permittee is required to comply with the regulations which are in effect as of the effective date of the final permit.

i. Surface Water Quality Standards N.J.A.C. 7:9B-1

ii. Water Quality Management Planning Regulations N.J.A.C. 7:15

B. General Conditions

1. Scope

a. The issuance of this permit shall not be considered as a waiver of any applicable federal, state, and local rules, regulations and ordinances.

2. Permit Renewal Requirement

a. Permit conditions remain in effect and enforceable until and unless the permit is modified, renewed or revoked by the Department.

b. Submit a complete permit renewal application: 180 days before the Expiration Date.

3. Notification of Non-Compliance

a. The permittee shall notify the Department of all non-compliance when required in accordance with N.J.A.C. 7:14A-6.10 by contacting the DEP HOTLINE at 1-877-WARNDEP (1-877-927-6337).

b. The permittee shall submit a written report as required by N.J.A.C. 7:14A-6.10 within five days.

4. Notification of Changes

a. The permittee shall give written notification to the Department of any planned physical or operational alterations or additions to the permitted facility when the alteration is expected to result in a significant change in the permittee's discharge and/or residuals use or disposal practices including the cessation of discharge in accordance with N.J.A.C. 7:14A-6.7.

b. Prior to any change in ownership, the current permittee shall comply with the requirements of N.J.A.C. 7:14A-16.2, pertaining to the notification of change in ownership.

5. Access to Information

a. The permittee shall allow an authorized representative of the Department, upon the presentation of credentials, to enter upon a person's premises, for purposes of inspection, and to access / copy any records that must be kept under the conditions of this permit.

6. Operator Certification

a. Pursuant to N.J.A.C. 7:10A-1.1 et seq. every wastewater system not exempt pursuant to N.J.A.C. 7:10A-1.1(b) requires a licensed operator. The operator of a system shall meet the Department's requirements pursuant to N.J.A.C. 7:10A-1.1 and any amendments. The name of the proposed operator, where required shall be submitted to the Department at the address below, in order that his/her qualifications may be determined prior to initiating operation of the treatment works.

i. Notifcations shall be submitted to:
NJDEP
Bureau of Licensing and Pesticide Operations
Mail Code 401-04E
P.O. Box 420
Trenton, New Jersey 08625-0420
(609)777-1012.

b. The permittee shall notify the Department of any changes in licensed operator within two weeks of the change.

7. Operation Restrictions

a. The operation of a waste treatment or disposal facility shall at no time create: (a) a discharge, except as authorized by the Department in the manner and location specified in Part III of this permit; (b) any discharge to the waters of the state or any standing or ponded condtion for water or waste, except as specifically authorized by a valid NJPDES permit.

8. Residuals Management

a. The permittee shall comply with land-based sludge management criteria and shall conform with the requirements for the management of residuals and grit and screenings under N.J.A.C. 7:14A-6.15(a), which includes:

i. Standards for the Use or Disposal of Residual, N.J.A.C. 7:14A-20;

ii. Section 405 of the Federal Act governing the disposal of sludge from treatment works treating domestic sewage;

iii. The Solid Waste Management Act, N.J.S.A. 13:1E-1 et seq., and the Solid Waste Management Rules, N.J.A.C. 7:26;

iv. The Sludge Quality Assurance Regulations, N.J.A.C. 7:14C;

v. The Statewide Sludge Management Plan promulgated pursuant to the Water Quality Planning Act, N.J.S.A. 58:11A-1 et seq., and the Solid Waste Management Act, N.J.S.A. 13:1E-1 et seq.; and

vi. The provisions concerning disposal of sewage sludge and septage in sanitary landfills set forth at N.J.S.A. 13:1E-42 and the Statewide Sludge Management Plan.

vii. Residual that is disposed in a municipal solid waste landfill unit shall meet the requirements in 40 CFR Part 258 and/or N.J.A.C. 7:26 concerning the quality of residual disposed in a municipal solid waste landfill unit. (That is, passes the Toxicity Characteristic Leaching Procedure and does not contain "free liquids" as defined at N.J.A.C. 7:14A-1.2.)

b. If any applicable standard for residual use or disposal is promulgated under section 405(d)of the Federal Act and Sections 4 and 6 of the State Act and that standard is more stringent than any limitation on the pollutant or practice in the permit, the Department may modify or revoke and reissue the permit to conform to the standard for residual use or disposal.

c. The permittee shall make provisions for storage, or some other approved alternative management strategy, for anticipated downtimes at a primary residual management alternative. The permittee shall not be permitted to store residual beyond the capacity of the structural treatment and storage components of the treatment works. N.J.A.C. 7:14A-20.8(a) and N.J.A.C. 7:26 provide for the temporary storage of residuals for periods not exceeding six months, provided such storage does not cause pollutants to enter surface or ground waters of the State. The storage of residual for more than six months is not authorized under this permit. However, this prohibition does not apply to residual that remains on the land for longer than six months when the person who prepares the residual demonstrates that the land on which the residual remains is not a surface disposal site or landfill. The demonstration shall explain why residual must remain on the land for longer than six months prior to final use or disposal, discuss the approximate time period during which the residual shall be used or disposed and provide documentation of ultimate residual management arrangements. Said demonstration shall be in writing, be kept on file by the person who prepares residual, and submitted to the Department upon request.

d. The permittee shall comply with the appropriate adopted District Solid Waste or Sludge Management Plan (which by definition in N.J.A.C. 7:14A-1.2 includes Generator Sludge Management Plans), unless otherwise specifically exempted by the Department.

PART III
LIMITS AND MONITORING REQUIREMENTS

MONITORED LOCATION:	RECEIVING STREAM:	STREAM CLASSIFICATION:	DISCHARGE CATEGORY(IES):
003A CSO	Bellmans Creek	SE2(C2)	CSM - Combined Sewer Management

Location Description

The permittee is authorized to discharge combined sewage from Outfall 003A located at the west end of 91st Street into Bellmans Creek at:
Latitude N: 40d 48m 56s
Longitude W: 74d 00m 52s

Contributing Waste Types

Sanitary, Storm Water Runoff

Surface Water DMR Reporting Requirements:

Submit a Monthly DMR: within twenty-five days after the end of every month beginning from the effective date of the permit (EDP).

Comments:

For this outfall, the total quantity of Solids/Floatables removed from all outfalls shall be reported here when the solid waste is measured for disposal. Precipitation shall be reported from a rain gauge representative of the area, and Duration of Discharge shall be reported as a whole day for any day when a discharge occurs.

Table III - A - 1: Surface Water DMR Limits and Monitoring Requirements

PHASE: Final **PHASE Start Date:** **PHASE End Date:**

Parameter	Sample Point	Limit	Limit	Units	Limit	Limit	Limit	Units	Frequency	Sample Type
Solids/Floatables	Effluent Gross Value	REPORT Monthly Total	*****	TONS	*****	REPORT Monthly Total	*****	CU YARDS	1/Month	Measured
January thru December	QL	***	***		***	***	***			
Precipitation	Effluent Gross Value	*****	*****	*****	*****	REPORT Monthly Total	*****	# INCHES	1/Month	Measured
January thru December	QL	***	***		***	***	***			
Duration Of Discharge	Effluent Gross Value	*****	*****	*****	*****	REPORT Monthly Total	*****	# OF DAYS	1/Month	Measured
January thru December	QL	***	***		***	***	***			

MONITORED LOCATION:	RECEIVING STREAM:	STREAM CLASSIFICATION:	DISCHARGE CATEGORY(IES):
005A CSO	Cromakill Creek	SE2(C2)	CSM - Combined Sewer Management

Location Description

The permittee is authorized to discharge combined sewage from Outfall 005A located at the west end of 69th Street into Cromakill Creek at:
Latitude N: 40d 48m 10s
Longitude W: 74d 01m 44s

Contributing Waste Types

Sanitary, Storm Water Runoff

Surface Water DMR Reporting Requirements:

Submit a Monthly DMR: within twenty-five days after the end of every month beginning from the effective date of the permit (EDP).

Comments:

Duration of Discharge shall be reported as whole day for any day when a discharge occurs.

Table III - B - 1: Surface Water DMR Limits and Monitoring Requirements

PHASE: Final **PHASE Start Date:** **PHASE End Date:**

Parameter	Sample Point	Limit	Limit	Units	Limit	Limit	Limit	Units	Frequency	Sample Type
Duration Of Discharge	Effluent Gross Value	*****	*****	*****	*****	REPORT Monthly Total	*****	# OF DAYS	1/Month	Measured
January thru December	QL	***	***		***	***	***			

MONITORED LOCATION:	RECEIVING STREAM:	STREAM CLASSIFICATION:	DISCHARGE CATEGORY(IES):
006A CSO	Cromakill Creek	SE2(C2)	CSM - Combined Sewer Management

Location Description

The permittee is authorized to discharge combined sewage from Outfall 006A located west of 60th Street and Tonnelle Avenue into Cromakill Creek at:
Latitude N: 40d 47m 42s
Longitude W: 74d 01m 57s

Contributing Waste Types

Sanitary, Storm Water Runoff

Surface Water DMR Reporting Requirements:

Submit a Monthly DMR: within twenty-five days after the end of every month beginning from the effective date of the permit (EDP).

Comments:

Duration of Discharge shall be reported as whole day for any day when a discharge occurs.

Table III - C - 1: Surface Water DMR Limits and Monitoring Requirements

PHASE: Final **PHASE Start Date:** **PHASE End Date:**

Parameter	Sample Point	Limit	Limit	Units	Limit	Limit	Limit	Units	Frequency	Sample Type
Duration Of Discharge	Effluent Gross Value	*****	*****	*****	*****	REPORT Monthly Total	*****	# OF DAYS	1/Month	Measured
January thru December	QL	***	***		***	***	***			

MONITORED LOCATION:	RECEIVING STREAM:	STREAM CLASSIFICATION:	DISCHARGE CATEGORY(IES):
007A CSO	Cromakill Creek	SE2(C2)	CSM - Combined Sewer Management

Location Description

The permittee is authorized to discharge combined sewage from Outfall 007A located at 51st Street and Westside Avenue into Cromakill Creek at:

Latitude N: 40d 47m 28s
Longitude W: 74d 02m 12s

Contributing Waste Types

Sanitary, Storm Water Runoff

Surface Water DMR Reporting Requirements:

Submit a Monthly DMR: within twenty-five days after the end of every month beginning from the effective date of the permit (EDP).

Comments:

Duration of Discharge shall be reported as whole day for any day when a discharge occurs.

Table III - D - 1: Surface Water DMR Limits and Monitoring Requirements

PHASE: Final **PHASE Start Date:** **PHASE End Date:**

Parameter	Sample Point	Limit	Limit	Units	Limit	Limit	Limit	Units	Frequency	Sample Type
Duration Of Discharge	Effluent Gross Value	*****	*****	*****	*****	REPORT Monthly Total	*****	# OF DAYS	1/Month	Measured
January thru December	QL	***	***		***	***	***			

MONITORED LOCATION:	RECEIVING STREAM:	STREAM CLASSIFICATION:	DISCHARGE CATEGORY(IES):
008A CSO	Cromakill Creek	SE2(C2)	CSM - Combined Sewer Management

Location Description

The permittee is authorized to discharge combined sewage from Outfall 008A located at 43rd Street and Westside Avenue into Cromakill Creek at:
Latitude N: 40d 47m 05s
Longitude W: 74d 02m 15s

Contributing Waste Types

Sanitary, Storm Water Runoff

Surface Water DMR Reporting Requirements:

Submit a Monthly DMR: within twenty-five days after the end of every month beginning from the effective date of the permit (EDP).

Comments:

Duration of Discharge shall be reported as whole day for any day when a discharge occurs.

Table III - E - 1: Surface Water DMR Limits and Monitoring Requirements

PHASE: Final **PHASE Start Date:** **PHASE End Date:**

Parameter	Sample Point	Limit	Limit	Units	Limit	Limit	Limit	Units	Frequency	Sample Type
Duration Of Discharge	Effluent Gross Value	*****	*****	*****	*****	REPORT Monthly Total	*****	# OF DAYS	1/Month	Measured
January thru December	QL	***	***		***	***	***			

MONITORED LOCATION:	RECEIVING STREAM:	STREAM CLASSIFICATION:	DISCHARGE CATEGORY(IES):
009A CSO	Cromakill Creek	SE2(C2)	CSM - Combined Sewer Management

Location Description

The permittee is authorized to discharge combined sewage from Outfall 009A located at Westside Avenue and Paterson Plank Road into Cromakill Creek at:
Latitude N: 40d 46m 52s
Longitude W: 74d 02m 37s

Contributing Waste Types

Sanitary, Storm Water Runoff

Surface Water DMR Reporting Requirements:

Submit a Monthly DMR: within twenty-five days after the end of every month beginning from the effective date of the permit (EDP).

Comments:

Duration of Discharge shall be reported as whole day for any day when a discharge occurs.

Table III - F - 1: Surface Water DMR Limits and Monitoring Requirements

PHASE: Final **PHASE Start Date:** **PHASE End Date:**

Parameter	Sample Point	Limit	Limit	Units	Limit	Limit	Limit	Units	Frequency	Sample Type
Duration Of Discharge	Effluent Gross Value	*****	*****	*****	*****	REPORT Monthly Total	*****	# OF DAYS	1/Month	Measured
January thru December	QL	***	***		***	***	***			

MONITORED LOCATION:	RECEIVING STREAM:	STREAM CLASSIFICATION:	DISCHARGE CATEGORY(IES):
010A CSO	Penhorn Creek	SE2(C2)	CSM - Combined Sewer Management

Location Description

The permittee is authorized to discharge combined sewage from Outfall 010A located at 29th Street and the Penske facility into Penhorn Creek at:
Latitude N: 40d 46m 32s
Longitude W: 74d 02m 37s

Contributing Waste Types

Sanitary, Storm Water Runoff

Surface Water DMR Reporting Requirements:

Submit a Monthly DMR: within twenty-five days after the end of every month beginning from the effective date of the permit (EDP).

Comments:

Duration of Discharge shall be reported as whole day for any day when a discharge occurs.

Table III - G - 1: Surface Water DMR Limits and Monitoring Requirements

PHASE: Final **PHASE Start Date:** **PHASE End Date:**

Parameter	Sample Point	Limit	Limit	Units	Limit	Limit	Limit	Units	Frequency	Sample Type
Duration Of Discharge	Effluent Gross Value	*****	*****	*****	*****	REPORT Monthly Total	*****	# OF DAYS	1/Month	Measured
January thru December	QL	***	***		***	***	***			

MONITORED LOCATION:	RECEIVING STREAM:	STREAM CLASSIFICATION:	DISCHARGE CATEGORY(IES):
011A CSO	Penhorn Creek	SE2(C2)	CSM - Combined Sewer Management

Location Description

The permittee is authorized to discharge combined sewage from Outfall 011A located at 11th Street and Dell Avenue into Penhorn Creek at:
Latitude N: 40d 45m 52s
Longitude W: 74d 03m 03s

Contributing Waste Types

Sanitary, Storm Water Runoff

Surface Water DMR Reporting Requirements:

Submit a Monthly DMR: within twenty-five days after the end of every month beginning from the effective date of the permit (EDP).

Comments:

Duration of Discharge shall be reported as whole day for any day when a discharge occurs.

Table III - H - 1: Surface Water DMR Limits and Monitoring Requirements

PHASE: Final **PHASE Start Date:** **PHASE End Date:**

Parameter	Sample Point	Limit	Limit	Units	Limit	Limit	Limit	Units	Frequency	Sample Type
Duration Of Discharge	Effluent Gross Value	*****	*****	*****	*****	REPORT Monthly Total	*****	# OF DAYS	1/Month	Measured
January thru December	QL	***	***		***	***	***			

MONITORED LOCATION:	RECEIVING STREAM:	STREAM CLASSIFICATION:	DISCHARGE CATEGORY(IES):
014A CSO	Cromakill Creek	SE2(C2)	CSM - Combined Sewer Management

Location Description

The permittee is authorized to discharge combined sewage from Outfall 014A located at Westside Avenue and Paterson Plank Road into Cromakill Creek at:
Latitude N: 40d 46m 52s
Longitude W: 74d 02m 31s

Contributing Waste Types

Sanitary, Storm Water Runoff

Surface Water DMR Reporting Requirements:

Submit a Monthly DMR: within twenty-five days after the end of every month beginning from the effective date of the permit (EDP).

Comments:

Duration of Discharge shall be reported as whole day for any day when a discharge occurs.

Table III - I - 1: Surface Water DMR Limits and Monitoring Requirements

PHASE: Final **PHASE Start Date:** **PHASE End Date:**

Parameter	Sample Point	Limit	Limit	Units	Limit	Limit	Limit	Units	Frequency	Sample Type
Duration Of Discharge	Effluent Gross Value	*****	*****	*****	*****	REPORT Monthly Total	*****	# OF DAYS	1/Month	Measured
January thru December	QL	***	***		***	***	***			

PART IV

NOTES AND DEFINITIONS

Combined Sewer Management

A. NOTES

1. **These notes are specific to this permit.**

   a. EDP means the Effective Date of the Permit which can be found on the final permit authorization page.

2. **CSO related resources are listed below with a link to the current webpage.**

   a. NJDEP's CSO main website and related links can be found at http://www.nj.gov/dep/dwq/cso.htm.
   b. EPA's Combined Sewer Overflows Principal Guidance Documents can be found at http://cfpub.epa.gov/npdes/cso/guidedocs.cfm.
   c. The Nine Minimum Control requirements from the National CSO Policy along with EPA's guidance document can be found at N.J.A.C. 7:14A-11.12-Appendix C and http://cfpub.epa.gov/npdes/cso/ninecontrols.cfm?program_id=5.
   d. The Nine elements of a Long Term Control Plan from the National CSO Policy along with EPA's guidance document can be found at N.J.A.C. 7:14A-11.12-Appendix C and http://cfpub.epa.gov/npdes/cso/ltplan.cfm.
   e. EPA's Post Construction Compliance Monitoring Guidance document can be found at http://www.epa.gov/npdes/pubs/final_cso_pccm_guidance.pdf.
   f. EPA's Guidance: Coordinating Combined Sewer Overflow (CSO) Long-Term Planning with Water Quality Standards Reviews (PDF).
   g. EPA's Capacity, management, operation and maintenance (CMOM) guidance document can be found at http://www.epa.gov/npdes/pubs/cmom_5.pdf.
   h. Dry-Weather Deposition and Flushing for Combined Sewer Overflow Pollution Control: http://nepis.epa.gov/EPA/html/DLwait.htm?url=/Exe/ZyPDF.cgi?Dockey=30000821.PDF.
   i. Combined sewer overflow control (manual): http://nepis.epa.gov/EPA/html/DLwait.htm?url=/Exe/ZyPDF.cgi?Dockey=30004MAO.PDF.
   j. EPA's Storm Water and Combined Sewer Overflows Publications can be found at http://water.epa.gov/polwaste/wastewater/StormwaterPubs.cfm.

B. DEFINITIONS

1. **These definitions are specific only to this permit.**

   a. "Dry weather overflow (DWO)" means a combined sewer overflow that cannot be attributed to a precipitation event, including snow melt, within the hydraulically connected system. DWOs can include flows from one or more of the following: domestic sewage, ground water infiltration,

commercial and industrial wastewaters, and any other non-precipitation event related flows (e.g., discharge of tidal infiltration and/or any connections downstream of the regulator to the outfall pipe).

b. "Green Infrastructure" means methods of stormwater management that reduce wet weather/stormwater volume, flow, or changes the characteristics of the flow into combined or separate sanitary or storm sewers, or surface waters, by allowing the stormwater to infiltrate, to be treated by vegetation or by soils; or to be stored for reuse. Green infrastructure includes, but is not limited to, pervious paving, bioretention basins, vegetated swales, and cisterns.

c. "Hydraulically connected system" means the entire collection system that conveys flows to one Sewage Treatment Plant (STP). On a case-by-case basis, the permittee, in consultation with the Department, may segment a larger hydraulically connected system into a series of smaller inter-connected systems, based upon the specific nature of the sewer system layout, pump stations, gradients, locations of CSOs and other physical features which support such a sub area. A hydraulically connected system could include multiple municipalities, comprised of both combined and separate sewers.

C. NINE MINIMUM CONTROL REQUIREMENTS

1. **Proper operation and regular maintenance programs for the sewer system and the CSOs.**
2. **Maximum use of the collection system for storage.**
3. **Review and modification of pretreatment requirements to assure CSO impacts are minimized.**
4. **Maximization of flow to the POTW for treatment.**
5. **Prohibition of CSOs during dry weather.**
6. **Control of solid and floatable materials in CSOs.**
7. **Pollution prevention.**
8. **Public notification to ensure that the public receives adequate notification of CSO occurrences and CSO impacts.**
9. **Monitoring to effectively characterize CSO impacts and the efficacy of CSO controls.**

D. NINE ELEMENTS OF THE LONG TERM CONTROL PLAN

1. **Characterization, Monitoring, and Modeling of the Combined Sewer Systems.**
2. **Public Participation.**
3. **Consideration of Sensitive Areas.**
4. **Evaluation of Alternatives.**

5. **Cost/Performance Considerations.**

6. **Operational Plan.**

7. **Maximizing Treatment at the Existing POTW Treatment Plant.**

8. **Implementation Schedule.**

9. **Post-Construction Compliance Monitoring Program.**

SPECIFIC REQUIREMENTS: NARRATIVE

Combined Sewer Management

A. MONITORING REQUIREMENTS

1. CSO Monitoring Requirements

a. All monitoring shall be conducted as specified in Part III.

b. All monitoring frequencies expressed in Part III are minimum requirements. Any additional samples taken consistent with the monitoring and reporting requirements contained herein shall be reported on the Monitoring Report Forms.

c. Discharges shall be directly monitored or predicted using a DEP approved up-to-date model.

B. RECORDKEEPING

1. CSO Recordkeeping Requirements

a. The permittee shall identify the Combined Sewer System (CSS) complaint, maintenance, inspection, and repair documentation forms and related tracking forms and/or systems and specify how, where and when this documentation will be maintained.

b. The permittee shall retain records of all monitoring information, including 1) all calibration and any other methods of monitoring which may be employed, maintenance records and all original strip chart recordings for continuous monitoring instrumentation (if applicable), 2) copies of all reports required by this NJPDES permit, 3) all data used to complete the application for a NJPDES permit, and 4) monitoring information required by the permit related to the permittee's residual use and/or disposal practices, for a period of at least 5 years, or longer as required by N.J.A.C. 7:14A-20, from the date of the sample, measurement, report, application or record.

c. Records of monitoring information shall include 1) the date, locations, and time of sampling or measurements, 2) the individual(s) who performed the sampling or measurements, 3) the date(s) the analyses were performed, 4) the individual(s) who performed the analyses, 5) the analytical techniques or methods used, and 6) the results of such analyses.

d. The permittee shall retain records to document implementation of the Nine Minimum Controls (NMC) and Long Term Control Plan (LTCP) requirements in Sections F. and G., and shall utilize this information when preparing and submitting progress reports required in Section D, including residential complaints, inspection records, maintenance records. This information shall be made available to the Department upon request.

C. REPORTING

1. CSO Reporting Requirements

a. The permittee shall submit all required monitoring results to the Department on the forms provided by the Department. The Monitoring Report Forms (MRFs) may be provided to the permittee in either a paper format or in an electronic file format. Unless otherwise noted, all requirements below pertain to both paper and electronic formats.

b. The permittee shall summarize the information for the total quantity of Solids/Floatables removed from ALL outfalls on the MRF for the first CSO outfall only. This information needs to be reported on the MRF only when the Solids/Floatables solid waste is measured for disposal. For the months when no Solids/Floatables are disposed of, the permittee shall report 'NODI'.

c. The permittee shall report Precipitation from a rain gauge representative of the area on the MRF for the first CSO outfall only.

d. The permittee shall report Duration of Discharge on the MRF for each CSO outfall as a whole day for any calendar day when a discharge occurs.

e. Any MRFs in paper format shall be submitted to the following addresses.

NJDEP
Mail Code - 401-02B
Division of Water Quality - Office of Permit Management
P.O. Box 420
Trenton, New Jersey 08625-0420

f. Electronic data submissions shall be in accordance with the guidelines and provisions outlined in the Department's Electronic Data Interchange (EDI) agreement with the permittee. Paper copies must be available for on-site inspection by DEP personnel or provided to the DEP upon written request.

g. All MRFs shall be certified by the highest ranking official having day-to-day managerial and operational responsibilities for the discharging facility.

h. The highest ranking official may delegate responsibility to certify the MRFs in his or her absence. Authorizations for other individuals to sign shall be made in accordance with N.J.A.C. 7:14A-4.9(b).

i. Monitoring results shall be submitted in accordance with the current Monitoring Report Form Manual and any updates thereof.

j. If there are no CSO discharges during an entire monitoring period, the permittee must notify the Department when submitting the monitoring results. This is accomplished by placing a check mark in the "No Discharge this monitoring period" box on the paper or electronic version of the monitoring report submittal form.

D. SUBMITTALS

1. CSO Submittal Requirements

a. The permittee shall correct all deficiencies cited by the Department and submit a revised approvable document within 30 days of notification of the deficiencies by the Department.

b. All reports submitted to the Department pursuant to the requirements of this permit shall comply with the signatory requirements of N.J.A.C. 7:14A-4.9., and contain the following certification.

i. "I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. 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."

c. Since multiple municipalities/permittees own separate portions of the hydraulically connected sewer system, the permittee shall work cooperatively with all other appropriate municipalities/permittees in the hydraulically connected sewer system to ensure that the NMC & LTCP activities are being developed and implemented consistently. The permittee shall identify their joint and separate responsibilities with all other appropriate municipalities/permittees in the hydraulically connected sewer system regarding implementation of the NMCs and LTCPs.

The permittee shall also notify the Passaic Valley Sewerage Commission (PVSC) of all CSO construction related activities in their collection system on a quarterly basis.

d. The permittee shall submit all information required by or related to this permit via email or other electronic format acceptable to the Department to NJCSOProgram@dep.state.nj.us and to the permittee's enforcement inspector. The Department cannot accept any file larger than 20 megabytes (MB). Any submission larger than that must be broken into files less than 20MB and sent separately.

2. Updated Nine Minimum Controls Submittal Requirements

a. The permittee shall submit GPS latitude and longitude coordinates in degrees-minutes-seconds (at a minimum to the tenth of a second accuracy) for all CSO regulators and discharge outfalls owned/operated by the permittee: on or before EDP + 4 months. This data shall be submitted in accordance with N.J.A.C. 7:1D-Appendix A, and NJ GIS protocol at http://www.state.nj.us/dep/gis/standard.htm.

b. The permittee shall submit a PDF of a sewer map depicting the actual locations of the separate and combined sanitary sewers, storm sewers, CSO regulators and outfalls owned/operated by the permittee: on or before EDP + 4 months. This map shall identify flow direction and manhole invert elevations.

c. The permittee shall submit proof that signs were installed for each CSO: on or before EDP + 6 months, in accordance with Section F.8. The proof shall include all items listed below.

i. Photographs of both sides of sign installation area from the land and water sides.

ii. A chart listing the distance from the shoreline.

iii. The physical street address/location of the sign for each CSO.

3. Long Term Control Plan (LTCP) Submittal Requirements

a. The Department encourages a single LTCP to be developed and submitted on behalf of all of the permittees in a hydraulically connected sewer system. If the STP and the hydraulically connected municipalities work cooperatively to develop and implement a single LTCP, the permittee may request an extension of time to the LTCP compliance due dates.

b. The permittee shall develop an approvable LTCP that will include the elements contained in Section G. The LTCP shall consist of the following steps and be submitted according to the schedule below.

i. Step 1a – System Characterization Workplan for the LTCP - In accordance with Section G.1., the permittee shall submit an approvable system characterization workplan: on or before EDP + 3 months.

ii. Step 1b - In accordance with G.1., G.2. and G.3., the permittee shall submit the System Characterization Report, the Public Participation Process, and Consideration of Sensitive Areas of the LTCP: on or before EDP + 12 months.

iii. Step 2 - Development and Evaluation of Alternatives for the LTCP - In accordance with Sections G.2. through G.5. and G.9., the permittee shall submit an approvable Development and Evaluation of Alternatives Report on or before EDP + 24 months.

iv. Step 3 - Selection and Implementation of the LTCP: In accordance with Sections G.2. and G.6. through G.9., the permittee shall submit an approvable Selection and Implementation of Alternatives Report: on or before EDP + 36 months.

v. Upon Department approval of the LTCP, the permittee shall begin implementation of the LTCP in accordance with the schedule contained therein.

c. In accordance with Section G.9., the permittee shall submit an approvable baseline Compliance Monitoring Program (CMP) work plan: on or before EDP + 3 months.

d. In accordance with Section G.9. and the approved work plan, the permittee shall submit an approvable baseline CMP Report and data: on or before EDP + 12 months.

4. CSO Progress Report Submittal Requirements

a. The permittee shall submit Progress Reports: within twenty-five (25) days after the end of every quarter beginning from the effective date of the permit (EDP).

b. The Progress Reports shall be prepared in accordance with the following requirements.

i. The Progress Reports shall follow the outline structure of the permit requirements in Sections F. and G.

ii. The Progress Reports shall include a summary of all required information, CSO control measures implemented by the permittee to comply with the NMCs, a prioritized schedule for additional CSO control measures to be implemented, and the effectiveness of the implemented CSO control measures, pursuant to this permit for the previous calendar quarter. The first Progress Report shall include a summary of all CSO control measures implemented to date and the effectiveness of those control measures.

iii. Each Progress Report must include a verification that the Operation and Maintenance Manual, including the SOPs, Asset Management Plan and Emergency Plan, have been updated in accordance with this permit and amended annually, as necessary.

iv. Each Progress Report shall contain a detailed discussion of, and document compliance with, the continued implementation of the NMCs and the manner in which all owners/operators of the hydraulically connected collection system participated in the development of the LTCP, including information regarding the development and status of the telephone hotline/website pursuant to Section F.8.

v. Upon Departmental approval of the LTCP, the permittee shall begin implementation of the CSO control measures in accordance with the schedule in the approved LTCP.

E. FACILITY MANAGEMENT

1. CSO Discharge Requirements

a. The permittee shall discharge at the location(s) specified in PART III of this permit.

b. The permittee shall not discharge foam or cause foaming of the receiving water that 1) forms objectionable deposits on the receiving water, 2) forms floating masses producing a nuisance, or 3) interferes with a designated use of the waterbody.

c. The permittee's discharge shall not produce objectionable color or odor in the receiving stream.

d. The permittees discharges shall not exhibit a visible sheen.

2. Interstate Environmental Commission (IEC)

a. The permittee shall comply with the Interstate Environmental Commission's (IEC) "Water Quality Regulations."

3. CSO Discharge Monitoring and Reporting Effective Dates

a. Monitoring Report Form (MRF) Requirements.

i. The monitoring and reporting conditions contained in PART III apply for the full term of this permit action.

F. NINE MINIMUM CONTROL REQUIREMENTS

1. Proper Operation and Regular Maintenance Program Requirements

a. The permittee shall continue to implement and update annually, an Operations & Maintenance (O&M) Program and corresponding Manual, including an Emergency Plan, in accordance with N.J.A.C. 7:14A-6.12, to ensure that the treatment works, including but not limited to collection system, the CSO outfalls, solids/floatables facilities, regulators, and related appurtenances which are owned/operated by the permittee are operated and maintained in a manner that achieves compliance with all terms and conditions of this permit.

b. The permittee shall operate the treatment works using a licensed operator in accordance with N.J.S.A. 58:11-66(a), N.J.A.C. 7:14A-6.12(b) and N.J.A.C. 7:10A.

c. The permittee shall provide adequate operator staffing for the treatment works,

d. The permittee shall provide documentation that ensures that employees are properly trained to perform the operation and maintenance duties required and to follow the Standard Operating Procedures (SOPs) in the O&M Program and corresponding Manual. This shall include a current training program for the purpose of informing new employees and maintaining training levels for current employees in regards to the CSO O&M Program and corresponding Manual, including safety related concerns.

e. The permittee shall implement an O&M Program & corresponding Manual that includes, at a minimum, the following.

i. A directory of appropriate O&M staff, including a description of their individual responsibilities and emergency contact information.

ii. A description of the permittee's Fats, Oils and Grease (FOG) Program.

iii. An updated characterization of the entire collection system owned/operated by the permittee that conveys flows to the treatment works. The permittee may use previous studies to the extent that they are accurate and representative of a properly operated and maintained sewer system and of the currently required information.

A complete list of studies performed by all CSO permittees in PVSC's hydraulically connected system is summarized in Appendix B at the end of this permit.

This characterization shall include a spreadsheet (the spreadsheet shall be completed no later than at the time of the first quarterly Progress Report), organized by CSO outfall, as appropriate, of the capacity, dimensions, age, type of material, and specific location of:

- CSO outfalls;
- Tide gates;
- Solids/floatables controls;
- Regulators;
- Catch basins;
- gravity lines and force mains, including size, length and direction of flow;
- Manholes, including invert elevations of all gravity sewers inlets and outlets;

- Pump stations;
- Significant Industrial Users (SIUs); and
- Specific locations that have historically experienced the following: blockages, bottlenecks, flow constrictions, sewer overflows including to basements, streets and other public and private areas, overflows or related incidences.

f. The permittee shall delineate the characterization information required in Section F.1.e.iii., on a GIS map, as applicable, pursuant to N.J.A.C. 7:1D-Appendix A and shall follow the NJ GIS protocol at http://www.state.nj.us/dep/gis/standard.htm. This map shall be completed on or before the first annual update of the O&M Program and Manual.

g. The permittee shall review its rules, ordinances, and its sewer use agreements with its customer municipalities and revise them within 4 months of the EDP if necessary to require the customer municipalities to:

   i. operate and maintain their treatment works,

   ii. identify Infiltration and Inflow (I/I) and reduce where appropriate, and

   iii. identify and eliminate interconnections and cross-connections in storm sewers.

h. The permittee shall also include Standard Operating Procedures (SOPs) in the O&M Program and corresponding Manual for the operation, inspections, and scheduled preventative maintenance in accordance with the appropriate manufacturer's recommendations and equipment manuals at a minimum, to ensure that the entire collection system that is owned/operated by the permittee that conveys flows to the treatment works will function properly. At a minimum the SOPs shall contain detailed instructions for system operations, such as frequency of inspections, regular maintenance, and the timely repair, and documentation of such information, of the entire collection system that conveys flows to the treatment works. These SOPs shall include procedures to.

   i. Ensure that the entire collection system owned/operated by the permittee that conveys flows to the treatment works functions at all times in such a way as to not result in sewage overflows including to basements, streets and other public and private areas, or bottlenecks/constrictions that limit flow in specific areas and prevent the downstream STP treatment capacity from being fully utilized, in accordance with Section F.4.

   ii. Ensure that the storage and conveyance of combined sewage to the STP is maximized in accordance with Sections F.2 and F.4.

   iii. Ensure that the discharges from SIUs contributing to the CSOs are minimized to the greatest extent practicable in accordance Section F.3.

   iv. Ensure there will be no dry weather overflows from any CSO in accordance with Section F.5.

   v. Conduct a visual inspection program, of sufficient scope and frequency of the CSS, to provide reasonable assurance that unpermitted discharges, obstructions, damage, and DWOs will be discovered.

   vi. Ensure the solids/floatables appurtenances will be maintained and the solids/floatables will be removed from the CSO discharge and disposed of properly at such frequency so as not to cause

obstructions of flow for any future CSO discharges, in accordance with Part II of this permit and Section F.6.

vii. Prevent the intrusion upstream of the regulators of receiving waters due to high tides and/or receiving water flooding into the entire collection system owned/operated by the permittee that conveys flows to the treatment works.

viii. Provide a gravity sewer and catch basin cleaning schedule.

ix. Provide a system for documenting, assessing, tracking, and addressing residential complaints regarding blockages, bottlenecks, flow constrictions, sewer overflows including to basements, streets and other public and private areas, or related incidents.

x. Remove within one (1) week of the permittee becoming aware, any obstructions due to debris, Fats, Oils and Greases, and sediment buildup, or other foreign materials in the collection system owned/operated by the permittee.

xi. Require immediate corrective action(s) to repair damage and/or structural deterioration, address unpermitted discharges, and eliminate DWOs of the entire collection system owned/operated by the permittee that conveys flows to the treatment works.

xii. Provide for ongoing infiltration and inflow (I/I) reduction strategies through the identification of I/I sources and the prioritization and implementation of I/I reduction projects.

xiii. Identify the equipment currently owned, operated and maintained for investigating and maintaining the CSS and, at a minimum, reference the appropriate equipment manuals.

xiv. Provide procedures whereby wet weather flows are maximized for conveyance to the STP and discharges from CSOs are minimized.

i. The permittee shall incorporate an Asset Management Plan as part of the overall O&M strategy. This plan shall include an infrastructure inventory with infrastructure repair/replacement needs listed and scheduled according to priority/criticality, that ensures the entire collection system owned/operated by the permittee that conveys flows to the treatment works is perpetually and proactively managed with the appropriate resources (capital, staffing, training, supplies, equipment) allocated in the permittee's budget as prepared and submitted to Department of Community Affairs. The Asset Management Plan shall be completed no later than at the time of the first quarterly Progress Report.

j. The permittee shall also include in the O&M Program and corresponding Manual, an Emergency Plan, in accordance with N.J.A.C. 7:14A-6.12(d). The Emergency Plan shall provide for, to the maximum extent possible, uninterrupted treatment works operation during emergency conditions using in-house and/or contract based services. The Emergency Plan shall include Standard Operating Procedures (SOPs), which ensure the effective operation of the treatment works under emergency conditions, such as extreme weather events (including 100 and 500 year storm events) and extended periods of no power, (e.g., 7 days and 14 days).

k. The permittee shall amend the O&M Program & Manual no less frequent than annually to reflect updated information and changes in the characterization, design, construction, operations, maintenance, Emergency Plan, and SOPs as listed in Section F.1. and include verification that the

O&M Program and corresponding Manual has been prepared and updated in accordance with the submittal requirements in Section D.4.

2. Maximum use of the collection system for storage

a. The permittee shall use the entire collection system owned/operated by the permittee for in-line storage of sewage for future conveyance to the STP when sewer system flows subside by ensuring that the sewage is retained in the sewer system to the extent possible to minimize CSO discharges (volume, frequency and duration), while not creating or increasing sewage overflows, including to basements, streets and other public and private areas.

b. The permittee shall minimize the introduction of sediment and obstructions in the entire collection system owned/operated by the permittee that conveys flows to the treatment works pursuant to Sections F.1. and F.7.

c. The permittee shall operate and maintain the entire collection system owned/operated by the permittee that conveys flows to the treatment works pursuant to Section F.1.

d. The permittee shall identify and implement minor modifications, based on the ongoing evaluations from the characterization required under Section F.1. to enable the entire collection system owned/operated by the permittee that conveys flows to the treatment works to store additional wet weather flows to reduce any sewage overflows until downstream sewers and treatment facilities can adequately convey and treat the flows.

3. Review and modification of pretreatment requirements to assure CSO impacts are minimized

a. The permittee shall determine the locations, associated CSO outfalls and discharge nature of the Significant Industrial Users (SIUs) for the entire collection system which is owned/operated by the permittee; determine and prioritize the potential environmental impact of these SIUs by CSO outfall; include this information in the characterization portion of the O&M Program and corresponding Manual as required in Section F.1. This information shall be updated annually in the Progress Report in accordance with Section D.4.

4. Maximization of flow to the POTW for treatment

a. The permittee shall operate and maintain the entire collection system owned/operated by the permittee that conveys flows to the treatment works to maximize the conveyance of wastewater to the STP for treatment.

b. The permittee shall evaluate and implement in cooperation with the receiving STP, low cost alternatives for increasing flow to the STP in accordance with i. and ii. below.

i. Capacity evaluations of the entire collection system owned/operated by the permittee that conveys flows to the treatment works in accordance with Section F.1.e.iii. to determine the maximum amount of flow that can be stored and transported.

ii. Identification of other activities conducted and/or planned to further maximize flow to the POTW.

5. Prohibition of CSOs during dry weather

a. Dry weather overflows (DWOs) are prohibited from any CSO outfall in the entire collection system owned/operated by the permittee.

b. All DWOs must be reported to the Department as incidents of non-compliance in accordance with the requirements at N.J.A.C. 7:14A-6.10(c) and (e), along with a description of the corrective actions taken.

c. The permittee shall inspect the combined sewer system as required under Section F.1. to ensure there are no DWOs.

d. The permittee shall prohibit any connections, including but not limited to construction dewatering, remediation activities or similar activities, downstream of a CSO regulator, that will convey flow to the CSO during dry weather. On a case-by-case basis, the Department reserves the right to allow temporary use of the CSO outfall structures for other types of discharges to address extraordinary circumstances. Any use under this provision must be specifically approved by the Department.

6. Control of Solids/Floatables in CSOs

a. The permittee shall continue to implement measures to capture and remove solids/floatables which cannot pass through a bar screen having a bar or netting spacing of 0.5 inches from all CSOs.

b. Treatment, including mechanical measures used for particle size reduction of solids/floatables in the wastewater collection system prior to discharge to the waters of the state to achieve compliance with paragraph F.6.a. is not permitted.

c. The captured debris shall be removed from each solids/floatables control system as necessary to ensure that there will be no flow restrictions during the next CSO discharge event.

d. All captured debris removed from the solids/floatables control system must be disposed of properly at a permitted solid waste facility authorized to accept grit and screening materials from wastewater treatment facilities in accordance with N.J.A.C. 7:14A and Part II of this permit.

7. Implementation of Pollution Prevention Measures

a. The permittee shall continue to implement and upgrade pollution prevention measures necessary to prevent and limit contaminants from entering the entire collection system owned/operated by the permittee that conveys flows to the treatment works. Unless demonstrated to the Department to be impracticable measures shall include, but not be limited to, the following:

i. Implementation of a regular street cleaning program.

ii. Retrofitting of existing storm drains to meet the standards in Appendix A, where such inlets are in direct contact with repaving, repairing (excluding repair of individual potholes), reconstruction, resurfacing (including top coating or chip sealing with asphalt emulsion or a thin base of hot bitumen) or alterations of facilities owned/operated by the municipality. For exemptions to this standard see "Exemptions" listed in Appendix A.

iii. Implementation of stormwater pollution prevention rules and ordinances.

iv. Implementation of solid waste collection, and recycling ordinances.

v. Implementation of public education programs.

vi. Enforcement of illegal dumping regulations.

vii. Revision as necessary of applicable rules, ordinances and sewer use agreements to address the reduction of inflow and infiltration (I/I) into the collection system where feasible.

8. Public notification to ensure that the public receives adequate notification of CSO occurrences and CSO impacts

a. The permittee shall post CSO Identification Signs at every CSO outfall location identified in Part III of this permit. The signs shall conform to the following specifications, unless alternatives have been approved by the Department. Any requests for such alternatives shall be submitted to the NJDEP within 30 days of EDP.

i. Signs shall be installed in such a manner as to have the same information visible from both the land and from the water, within 100' from the outfall pipe along the shoreline.

ii. Signs shall be at least 18" x 24" and printed with reflective material.

iii. Signs shall be in compliance with applicable local ordinances.

iv. The signs shall depict the following information below.
- Warning, possible sewage overflows during and following wet weather. Contact with water may also cause illness.
- Report dry weather discharge to NJDEP Hotline at 1 (877) 927-6337 (WARN-DEP).
- Report foul odors or unusual discoloration to NJDEP Hotline or North Bergen Township MUA at ___(phone no.)___.
- NJPDES Permit No. NJ0108898
- Discharge Serial No. ____(e.g. 003A)___.
- www.state.nj.us/dep/dwq/cso.htm
- International Standards Organization symbols prohibiting swimming, fishing, and kayaking.

b. The permittee shall submit to DEP the required proof the signs were installed in accordance with Section D.2.c.

c. The permittee shall continue to employ measures to provide reasonable assurance that the affected public is informed of CSO discharges in a timely manner. These measures shall include, but are not limited to the below.

i. Posting leaflets/flyers/signs with general information at affected use areas such as beaches, marinas, docks, fishing piers, boat ramps, parks and other public places (within 100 feet of outfall) to inform the public what CSOs are, the locations of the CSO outfall and the frequency and nature of the discharges and precautions that should be undertaken for public health/safety and web sites where additional CSO/CSS information can be found.

ii. Notification to all residents by either US Postal Service or email, (with copies sent to the NJDEP at the address listed in C.1.e. or by email in D.1.d.) in the permittee's sewer service area

providing additional information as to what efforts the permittee has made and plans to continue to undertake to reduce/eliminate the CSOs and related threat to public health. Updated notifications shall be mailed on an annual basis.

iii. On or before EDP + 12 months, the permittee shall create and maintain on a daily basis a telephone hot line or website (using the same platform as NJDEP) for interested citizen inquiries to provide immediate/up-to-date information regarding where CSO discharges may be occurring, or that no discharges are occurring.

9. Monitoring to effectively characterize CSO impacts and the efficacy of CSO controls

a. The permittee shall monitor the CSO discharge events and record the date, time, duration, rainfall, location of rain gauge and quantity of solids/floatables removed for each CSO and discharge event through appropriate modeling or by an appropriately placed flow meter/totaling device, level sensor, or other appropriate measuring device, and report the required information on the DMR as required by Part III of this permit.

G. LONG TERM CONTROL PLAN REQUIREMENTS:

1. Characterization, Monitoring and Modeling of the Combined Sewer System

a. The permittee in coordination with the PVSC and the other hydraulically connected communities shall submit an updated characterization study as per D.3.a., that will result in a comprehensive characterization of the CSS developed through records review, monitoring, modeling and other means as appropriate to establish the existing baseline conditions, evaluate the efficacy of the CSO technology based controls, and determine the baseline conditions upon which the LTCP will be based. The characterization shall include a thorough review of the entire collection system that conveys flows to the treatment works, including areas of sewage overflows, including to basements, streets and other public and private areas, to adequately address the response of the CSS to various precipitation events; identify the number, location, frequency and characteristics of CSOs; and identify water quality impacts that result from CSOs. Ambient in-stream monitoring shall be performed in accordance with the guidance document entitled: *To Be Determined.*

The permittee may use previous studies to the extent that they are accurate and representative of a properly operated and maintained sewer system and of the currently required information, such as:

North Bergen Township MUA:

- North Bergen Municipal Utilities Authority CSO Characterization Study, Final Water Quality and Quantity Monitoring Report, prepared by Hatch Mott MacDonald, dated March 2005.
- North Bergen Municipal Utilities Authority CSO Characterization Study Group 2 – Dry Weather Water Quality and Quantity Monitoring Report, prepared by Hatch Mott MacDonald, dated June 2003.
- North Bergen Municipal Utilities Authority CSO Characterization Study Group 1 – Dry Weather Water Quality and Quantity Monitoring Report, prepared by Hatch Mott MacDonald, dated March 2003.
- Combined Sewer Overflow Characterization Study, Quality Assurance/Work Plan, for the North Bergen Municipal Utilities Authority, prepared by Hatch Mott MacDonald, dated November 2002.
- North Bergen Township Sewer Mapping and Flow Monitoring Study, prepared by Metcalf & Eddy, December 1992.

A complete list of studies performed by all CSO permittees in PVSC's hydraulically connected system is summarized in Appendix B at the end of this permit.

b. The major elements of the sewer system characterization are noted below.

i. Rainfall Records – The permittee shall examine the rainfall record as per Section F.9. for the geographic area of its existing CSS using sound statistical procedures and best available data. The permittee shall evaluate flow variations in the receiving water body to correlate between CSOs and receiving water conditions.

ii. Combined Sewer System Characterization – the permittee shall evaluate sewer system records, field inspections gathered from the O&M Characterization required under Section F.1. (and other previous relevant studies), and other activities necessary to understand the number, location and frequency of overflows and their location relative to sensitive areas and to pollution sources in the collection system, such as SIUs.

iii. CSO Monitoring – Using all available information, including the information gathered from Section F.9., the permittee shall develop and/or update a previously existing, comprehensive, representative monitoring program that measures the frequency, duration, flow rate, volume and pollutant concentration of CSO discharges and assesses the impact of the CSOs on the receiving waters. The monitoring data summary may utilize existing data from previous studies, and must include necessary CSO effluent and ambient in-stream monitoring for pathogens (including current and recreational standards for bacteriological indicators (e.g., fecal coliform, Enterococcus and E. Coli)). This ambient baseline monitoring requirement may also satisfy the baseline monitoring requirement in Section G.9. A representative sample of overflow points can be selected that is sufficient to allow characterization of CSO discharges, their water quality impacts and to facilitate evaluation of control plan alternatives.

iv. Modeling – the permittee may employ NJDEP or EPA approved models, which include appropriate calibration and verification with field measurements, to aid in the characterization. If models are used they shall be identified by the permittee along with an explanation of why the model was selected and used in the characterization. The permittee should base its choice of a model on the characteristics of the entire collection system that conveys flows to the treatment works (including flows from other hydraulically connected municipal sewer systems), the number and location of overflow points, and the sensitivity of the receiving water body to the CSO discharges. The sophistication of the model should relate to the complexity of the system to be modeled and to the information needs associated with evaluation of CSO control options and water quality impacts. Because of the iterative nature of modeling sewer systems, CSOs, and their impacts, monitoring and modeling efforts are complementary and should be coordinated with other affected entities.

v. The permittee shall identify sensitive areas where CSOs occur. These areas include designated Outstanding National Resource Waters, National Marine Sanctuaries, waters with threatened or endangered species and their habitat, waters with primary contact recreation, bathing beaches, public drinking water intakes or their designated protection areas, and shellfish beds.

2. Public Participation Process

a. The permittee shall submit a Public Participation Plan using their current sewer system infrastructure, in accordance with D.3.a., and shall involve the public (and the PVSC) in the decision making

process in determining the alternatives chosen under the LTCP. The permittee may use information from the following previous submittal:

North Bergen Township MUA:

- North Bergen MUA Public Participation Report, prepared by Hatch Mott MacDonald, dated April 2007.

A complete list of studies performed by all CSO permittees in PVSC's hydraulically connected system is summarized in Appendix B at the end of this permit.

Implementation shall actively involve the affected public throughout each of the 3 Steps of the LTCP process. The affected public includes rate payers (including rate payers in the separate sewer sections), industrial users of the sewer system, persons who reside downstream from the CSOs, persons who use and enjoy the downstream waters, and any other interested persons.

b. The permittee shall invite members of the affected/interested public to establish a supplemental CSO Team to work with the permittee's assigned staff from Section F.1.

3. Consideration of Sensitive Areas

a. The permittee's LTCP shall give the highest priority to controlling overflows to sensitive areas in accordance with D.3.a. Sensitive areas include designated Outstanding National Resource Waters, National Marine Sanctuaries, waters with threatened or endangered species and their habitat, waters with primary contact recreation, bathing beaches, public drinking water intakes or their designated protection areas, and shellfish beds.

b. The LTCP shall comply with the following requirements.

i. Prohibit new or significantly increased CSO overflows.

ii. Eliminate or relocate CSO overflows that discharge to sensitive areas wherever physically possible and economically achievable, except where elimination or relocation would provide less environmental protection than additional treatment.

iii. Where elimination or relocation is not physically possible and economically achievable, or would provide less environmental protection than additional treatment, provide the level of treatment for remaining CSO overflows deemed necessary to meet WQS for full protection of existing and designated uses.

4. Evaluation of Alternatives

a. The permittee shall evaluate a range of CSO control alternatives, in accordance with D.3.a, that will provide for attainment of water quality standards using either the Presumption Approach or the Demonstration Approach (as described in Sections G.4.f.and G.4.g).

b. The permittee shall submit, as per Section D.3.b.iii., the Evaluation of Alternatives Report that will enable the permittee, in consultation with the Department, the public, owners and/or operators of the entire collection system that conveys flows to the treatment works, to select the alternatives to ensure the CSO controls will meet CWA requirements, ensure CSO discharges do not cause exceedances of any water quality criteria, will be protective of the existing and designated uses in accordance with

N.J.A.C. 7:9B, give the highest priority to controlling CSOs to sensitive areas and address minimizing impacts from SIU discharges.

c. The permittee shall select either the Demonstrative or Presumptive Approach for each group of hydraulically connected CSOs, and identify each CSO group and its individual discharge locations.

d. The Evaluation of Alternatives Report shall include a list of control alternative(s) evaluated for each CSO.

e. The permittee shall evaluate a range of CSO control alternatives predicted to accomplish the requirements of the CWA. In its evaluation of each potential CSO control alternative, the permittee shall use NJDEP approved hydrologic, hydraulic and water quality models. The permittee shall utilize the models to simulate the existing conditions and conditions as they are expected to exist after construction and operation of the chosen alternative(s). The permittee shall evaluate the practical and technical feasibility of the proposed CSO control alternative, and water quality benefits of constructing and implementing various remedial controls and combination of such controls and activities which shall include, but not be limited to the controls below.

   i. Green infrastructure (which allows for greater removal of load/flow per gallon captured).

   ii. Increased storage capacity in the collection system.

   iii. STP expansion and/or storage at the plant (an evaluation of the capacity of the unit processes must be conducted at the STP resulting in a determination of whether there is any additional treatment capacity available at the STP). Based upon this information, the permittee shall determine (modeling may be used) the amount of CSO discharge reduction that would be achieved by utilizing this additional treatment capacity while maintaining compliance with all permit limits.

   iv. I/I reduction in the entire collection system that conveys flows to the treatment works to free up storage capacity or conveyance in the sewer system and/or treatment capacity at the STP, and feasibility of implementing in the entire system or portions thereof.

   v. Sewer separation.

   vi. CSO discharge treatment.

   vii. CSO related bypass of the secondary treatment portion of the STP in accordance with N.J.A.C. 7:14A-11.12 Appendix C, II C.7.

f. The "Presumption" Approach, in accordance with N.J.A.C 7:14A-11 Appendix C provides:

   A program that meets any of the criteria listed below will be presumed to provide an adequate level of control to meet the water quality-based requirements of the CWA, provided the Department determines that such presumption is reasonable in light of the data and analysis conducted in the characterization, monitoring, and modeling of the system and the consideration of sensitive areas described above.

   i. No more than an average of four overflow events (see below) per year from a hydraulically connected system as the result of a precipitation event that does not receive the minimum treatment specified below. These four overflow events shall be calculated over a 60 month

rolling average, provided that the Department may allow up to two additional overflow events per year. For the purpose of this criterion, an 'event' is:

- In a hydraulically connected system that contains only one CSO outfall, multiple periods of overflow are considered one overflow event if the time between periods of overflow is no more than 24 hours.

- In a hydraulically connected system that contains more than one CSO outfall, multiple periods of overflow from one or more outfalls are considered one overflow event if the time between periods of overflow is no more than 24 hours without a discharge from any outfall.

ii. The elimination or the capture for treatment of no less than 85% by volume of the combined sewage collected in the CSS during precipitation events on a system-wide annual average basis.

iii. The elimination or removal of no less than the mass of the pollutants, identified as causing water quality impairment through the sewer system characterization, monitoring, and modeling effort, for the volumes that would be eliminated or captured for treatment under Section G.4.f.ii.

Combined sewer overflow remaining after implementation of the NMCs and within the criteria specified in Section G.4.f.ii. and iii., shall receive minimum treatment in accordance with the items below.

- Primary clarification (Removal of floatables and settleable solids may be achieved by any combination of treatment technologies or methods that are shown to be equivalent to primary clarification.).

- Solids and floatables disposal.

- Disinfection of effluent, if necessary, to meet WQS, protect designated uses and protect human health, including removal of harmful disinfection chemical residuals, where necessary.

g. The "Demonstration" Approach, in accordance with N.J.A.C. 7:14A-11 Appendix C provides.

A permittee may demonstrate that a selected control program, though not meeting the criteria specified under the Presumption Approach above, is adequate to meet the water quality-based requirements of the CWA.

The permittee must demonstrate each of the following below.

i. The planned control program is adequate to meet WQS and protect designated uses, unless WQS or uses cannot be met as a result of natural background conditions or pollution sources other than CSOs.

ii. The CSO discharges remaining after implementation of the planned control program will not preclude the attainment of WQS or the receiving waters' designated uses or contribute to their impairment.

iii. The planned control program will provide the maximum pollution reduction benefits reasonably attainable.

iv. The planned control program is designed to allow cost effective expansion or cost effective retrofitting if additional controls are subsequently determined to be necessary to meet WQS or designated uses.

5. Cost/Performance Considerations

a. The permittee shall submit in accordance with the submittal requirements at Section D.3.a. and D.3.b.iii., the cost/performance considerations that demonstrate the relationships among proposed control alternatives that correspond to those required in accordance with Section G.4. This shall include an analysis to determine where the increment of pollution reduction achieved in the receiving water diminishes compared to the increased costs. If the permittee chooses to pursue the "Presumption Approach" of 'no more than an average of four discharge events per year', the permittee is not required to conduct this analysis for the other number of events (i.e. 0, 7, 10, 20). This analysis, often known as "knee of the curve", shall be among the considerations used to help guide selection of controls.

In accordance with Section G.1.a., the permittee may use previous studies to the extent that they are accurate and representative of a properly operated and maintained sewer system and of the currently required information, such as:

North Bergen Township MUA:

- North Bergen Municipal Utilities Authority CSO Long Term Control Plan, Cost & Performance Analysis Report, Volume 1, prepared by Hatch Mott MacDonald, dated March 2007.
- North Bergen Municipal Utilities Authority CSO Long Term Control Plan, Cost & Performance Analysis Report, Volume 2, Technical Guidance Manual, prepared by Hatch Mott MacDonald, dated December 2006.

A complete list of studies performed by all CSO permittees in PVSC's hydraulically connected system is summarized in Appendix B at the end of this permit.

6. Operational Plan

a. Upon Department approval of the final LTCP and throughout implementation of the approved LTCP as appropriate, the permittee shall modify the O&M Program and Manual, in accordance with D.3.a., to address the final LTCP CSO control facilities and operating strategies, including but not limited to, maintaining Green Infrastructure, staffing and budgeting, inflow/infiltration, and emergency plans.

7. Maximizing Treatment at the Existing STP

a. The permittee shall incorporate the receiving STP's plan, in accordance with D.3.a., for maximizing flow and treatment at the STP.

8. Implementation Schedule

a. The permittee shall submit a construction and financing schedule, in accordance with D.3.a., for implementation of NJDEP approved LTCP CSO controls. Such schedules may be phased based on the relative importance of the adverse impacts upon water quality standards, the permittee's financial capability, and other water quality related infrastructure improvements, including those related to stormwater improvements that would be connected to CSO control measures.

b. Upon Department approval of the LTCP, the permittee shall begin implementation of the LTCP in accordance with the schedule contained therein.

c. In accordance with Section D.3.b.iv., the permittee shall submit an implementation schedule, including yearly milestones, which considers the below.

i. Adequately addressing areas of sewage overflows, including to basements, streets and other public and private areas.

ii. CSO overflows that discharge to sensitive areas as the highest priority.

iii. Use impairment of the receiving water.

iv. The permittee's financial capability including consideration of such factors as below.

- Median household income.
- Total annual wastewater and CSO control costs per household as a percent of median household income.
- Overall net debt as a percent of full market property value.
- Property tax revenues as a percent of full market property value.
- Property tax collection rate.
- Unemployment.
- Bond rating.

v. Grant and loan availability.

vi. Previous and current residential, commercial and industrial sewer user fees and rate structures.

vii. Other viable funding mechanisms and sources of financing.

viii. Resources necessary to design, construct and/or implement other water related infrastructure improvements as part of an overall Asset Management Plan.

9. Compliance Monitoring Program (CMP)

The monitoring information collected from the ambient baseline monitoring phase of the CMP, in accordance with D.3.a., will be compared to subsequent CMP events during and after LTCP implementation to evaluate the effectiveness of implemented CSO controls.

a. The permittee shall implement a CMP, adequate to verify ambient baseline and existing conditions, the effectiveness of CSO controls, compliance with water quality standards, and protection of designated uses. This CMP shall be conducted before, during and after implementation of the LTCP and shall include a work plan to be approved by the Department that details the monitoring protocols to be followed, including the following necessary monitoring below.

i. Ambient in-stream monitoring performed in accordance with the guidance document entitled: *To Be Determined.*

ii. Discharge frequency for each CSO (days/hours per month).

iii. Duration of each discharge (event) for each CSO (start and stop times for each calendar day).

iv. Quality of the flow discharged from each CSO, which shall include pathogen monitoring at a minimum.

v. Rainfall monitoring in the vicinity of each CSO/municipality.

vi. Characterization monitoring and modeling of the CSS in accordance with Section G.1.

The permittee may use previous studies to the extent that they are accurate and representative of a properly operated and maintained sewer system and of the currently required information, such as:

North Bergen Township MUA:

- North Bergen Municipal Utilities Authority CSO Characterization Study, Final Water Quality and Quantity Monitoring Report, prepared by Hatch Mott MacDonald, dated March 2005.
- North Bergen Municipal Utilities Authority CSO Characterization Study Group 2 – Dry Weather Water Quality and Quantity Monitoring Report, prepared by Hatch Mott MacDonald, dated June 2003.
- North Bergen Municipal Utilities Authority CSO Characterization Study Group 1 – Dry Weather Water Quality and Quantity Monitoring Report, prepared by Hatch Mott MacDonald, dated March 2003.
- Combined Sewer Overflow Characterization Study, Quality Assurance/Work Plan, for the North Bergen Municipal Utilities Authority, prepared by Hatch Mott MacDonald, dated November 2002.
- North Bergen Township Sewer Mapping and Flow Monitoring Study, prepared by Metcalf & Eddy, December 1992.

A complete list of studies performed by all CSO permittees in PVSC's hydraulically connected system is summarized in Appendix B at the end of this permit.

b. For the Demonstration Approach, the above monitoring must be ongoing every year upon LTCP approval to document trends in water quality due to CSO discharges. The results must be submitted in the Progress Reports required in Section D.4.

c. For the Presumption Approach, the above monitoring may be reduced, with prior Departmental approval, during construction/implementation of the CSO controls.

APPENDIX A

Design Standards for Storm Drain Inlets

Grates in pavement or other ground surfaces, such as roads (including bridges), driveways, parking areas, bikeways, plazas, sidewalks, lawns, fields, open channels and stormwater basin floors used to collect stormwater from the surface into a storm drain or surface water body, shall meet the following standards:

1. The New Jersey Department of Transportation (NJDOT) bicycle safe grate standards described in Chapter 2.4 of the NJDOT Bicycle Compatible Roadways and Bikeways Planning and Design Guidelines (April 1996).

2. A grate where each individual clear space in that grate has an area of no more than seven (7.0) square inches, or is not greater than 0.5 inches across the smallest dimension.

3. For curb-openings inlets, including curb-opening inlets in combination inlets, the clear space in the curb opening, or each individual clear space if the curb opening has two or more clear spaces, shall have an area of no more than seven (7.0) square inches or be no greater than two (2.0) inches across the smallest dimension.

The following exemptions apply:

1. Where each individual clear space in the curb opening in existing curb-opening inlets do not have an area of more than nine (9.0) square inches.

2. Where the review agency determines that the standards would cause inadequate hydraulic performance that could not practicably be overcome by using additional or larger storm drain inlets.

3. Where flows from the water quality design storm as specified in N.J.A.C. 7:8 are conveyed through any device (e.g., end of pipe netting facility, manufactured treatment device, or a catch basin hood) that is designed, at a minimum, to prevent delivery of all solid and floatable materials that could not pass through one of the following:

    a. A rectangular space four and five-eighths inches long and one and one-half inches wide (this option does not apply for outfall netting facilities); or

    b. A bar screen having a bar spacing of 0.5 inches.

4. Where flows are conveyed through a trash rack that has parallel bars with one inch (1") spacing between the bars, to the elevation of the water quality design storm as specified in N.J.A.C. 7:8.

5. Where the Department determines, pursuant to the New Jersey Register of Historic Places Rules at N.J.A.C. 7:4-7.2(c), that action to meet the standard is an undertaking that constitutes an encroachment or will damage or destroy the New Jersey Register listed historic property.

APPENDIX B

LIST OF STUDIES
PVSC and Hydraulically Connected Sewer Systems

PVSC:

- Passaic Valley Sewerage Commissioners CSO Characterization Study – Modeling Study, prepared by HydroQual, dated December 2003.
- Passaic Valley Sewerage Commissioners Public Participation Report, prepared by Hatch Mott Macdonald, dated April 2007.
- Cost and Performance Analysis Report for Domestic Treatment Works, prepared by Malcolm Pirnie, dated March 2007.
- Passaic Valley Sewerage Commissioners CSO Long Term Control Plan Cost and Analysis Report Volume 1 and Volume 2, prepared by Hatch Mott Macdonald, dated April 2007.

Bayonne:

- Combined Sewer Overflow Characterization Study and Work Plan, prepared by Hatch Mott MacDonald, dated February 14, 2003.
- Combined Sewer Overflow Discharge Characterization Study, Volume I – Final Monitoring Report, prepared by Hatch Mott MacDonald, dated November 2005.
- Combined Sewer Overflow Discharge Characterization Study, Volume II – Supplemental Data, prepared by Hatch Mott MacDonald, dated November 2005.
- Combined Sewer Overflow Discharge Characterization Study, Rainfall Monitoring Report, prepared by HydrolQual, Inc. and Hatch Mott MacDonald, dated August 2, 2006.
- CSO Long Term Control Plan, Cost & Performance Analysis Report, Volume 2 – Technical Guidance Manual, prepared by Hatch Mott MacDonald, dated December 2006.
- CSO Long Term Control Plan, Cost & Performance Analysis Report, Volume 1, prepared by Hatch Mott MacDonald, dated March 2007.
- Public Participation Report, prepared by Hatch Mott MacDonald, dated April 2007.

Jersey City:

- Jersey City Municipal Utilities Authority Combined Sewer System Modeling Study, prepared by Malcolm Pirnie, Inc., dated July 2007.
- Jersey City Municipal Utilities Authority Cost and Performance Analysis Report, prepared by Malcolm Pirnie, Inc., dated April 2007.
- Jersey City MUA Public Participation Report, as prepared through the NJCSO Group, prepared by Hatch Mott MacDonald, dated April 2007.
- Jersey City Municipal Utilities Authority CSO Long Term Control Plan, Cost and Performance Analysis Report, Volume 2, Technical Guidance Manual, prepared by Hatch Mott MacDonald, dated December 2006.
- JCMUA Rainfall and CSO Monitoring Study, Volume 1 of 3, prepared by Malcolm Pirnie, Inc., dated November 2005.

- JCMUA Rainfall and CSO Monitoring Study, Volume 2 of 3, prepared by Malcolm Pirnie, Inc., dated November 2005.
- JCMUA Rainfall and CSO Monitoring Study, Volume 3 of 3, prepared by Malcolm Pirnie, Inc., dated November 2005.
- Combined Sewer Overflow Discharge Characterization Study – JCMUA Combined Sewer System Monitoring Program Supplemental Proposal and Work Plan, prepared by Malcolm Pirnie, Inc., dated December 2004.
- Combined Sewer Overflow Discharge Characterization Study - JCSA Monitoring Proposal and Work Plan, prepared by Malcolm Pirnie, Inc., dated July 1996.
- Combined Sewer Overflow Discharge Characterization Study - Sewer System Inventory and Assessment Report, prepared by Malcolm Pirnie, Inc., dated July 1996.
- Combined Sewer Overflow Discharge Characterization Study - Service Area Drainage and Land Use Report, prepared by Malcolm Pirnie, Inc., dated July 1996.

North Bergen:

- North Bergen MUA Public Participation Report, prepared by Hatch Mott MacDonald, dated April 2007.
- North Bergen Municipal Utilities Authority CSO Long Term Control Plan, Cost & Performance Analysis Report, Volume 1, prepared by Hatch Mott MacDonald, dated March 2007.
- North Bergen Municipal Utilities Authority CSO Long Term Control Plan, Cost & Performance Analysis Report, Volume 2, Technical Guidance Manual, prepared by Hatch Mott MacDonald, dated December 2006.
- North Bergen Municipal Utilities Authority CSO Characterization Study, Final Water Quality and Quantity Monitoring Report, prepared by Hatch Mott MacDonald, dated March 2005.
- North Bergen Municipal Utilities Authority CSO Characterization Study, Supporting Laboratory Data, prepared by Hatch Mott MacDonald, dated March 2005.
- North Bergen Municipal Utilities Authority CSO Characterization Study Group 2 – Dry Weather Water Quality and Quantity Monitoring Report, prepared by Hatch Mott MacDonald, dated June 2003.
- North Bergen Municipal Utilities Authority CSO Characterization Study Group 1 – Dry Weather Water Quality and Quantity Monitoring Report, prepared by Hatch Mott MacDonald, dated March 2003.
- Combined Sewer Overflow Characterization Study, Quality Assurance/Work Plan, for the North Bergen Municipal Utilities Authority, prepared by Hatch Mott MacDonald, dated November 2002.
- North Bergen Township Sewer Mapping and Flow Monitoring Study, prepared by Metcalf & Eddy, December 1992.

Newark:

- City of Newark Department of Water and Sewer Utilities Cost and Performance Evaluation of CSO Control Technologies, March 6, 2008
- City of Newark Department of Water and Sewer Utilities Cost and Performance Evaluation of CSO Control Technologies, March 29, 2007
- Public Participation Report for the City of Newark Department of Water and Sewer Utilities Division of Sewers and Water Supply, March 2007
- City of Newark CSO Long Term Control Plan Cost and Performance Analysis Report Volume 2 – Technical Guidance Manual, December 2006
- Interim Report for the Public Participation Program for the City of Newark Department of Water and Sewer Utilities Division of Sewers and Water Supply, July 2005
- Combined Sewer Modeling Study: Final Report for the City of Newark Department of Water and Sewer Utilities Division of Sewers and Water Supply, April 2005

Harrison:

- Cost & Performance Analysis Report, CSO Long Term Control Plan, Appendix E, prepared by Town of Harrison, dated April 1, 2007.
- Cost & Performance Analysis Report, CSO Long Term Control Plan, Appendix F-1, through F-8, prepared by Town of Harrison, dated April 1, 2007.
- Public Participation Report, prepared by Hatch Mott MacDonald, dated April 2007.

Kearny:

- Town of Kearny, Public Participation Report, prepared by Hatch Mott MacDonald, dated April 2007.
- Town of Kearny, CSO Long Term Control Plan, Cost and Performance Analysis Report, Volume 1, prepared by Hatch Mott MacDonald, dated March 2007.
- Town of Kearny, CSO Long Term Control Plan, Cost and Performance Analysis Report, Volume 2 – Technical Guidance Manual, prepared by Hatch Mott MacDonald, dated December 2006.

East Newark:

- Borough of East Newark Public Participation Report as prepared through the NJ CSO Group, prepared by Hatch Mott Macdonald, dated April 2007.
- Cost & Performance Analysis Report for the Borough of East Newark, prepared by Boswell McClave Engineering, dated March 2007.

Paterson:

- City of Paterson, Public Participation Report, prepared by Hatch Mott MacDonald, dated April 2007.
- City of Paterson, Combined Sewer System, Cost and Performance Analysis, prepared by Schoor DePalma in conjunction with HydroQual, Inc., dated March 2007.
- City of Paterson, Combined Sewer System, Cost and Performance Analysis, Appendix Sections A – E, Appendix Section F (TGM Analysis), CSO Areas 001/003/005/006/007/010/013, prepared by Schoor DePalma in conjunction with HydroQual, Inc., dated March 2007.
- City of Paterson, Combined Sewer System, Cost and Performance Analysis, Appendix Section F (TGM Analysis), CSO Areas 014/015/016/021/022/023/024/025/026, prepared by Schoor DePalma in conjunction with HydroQual, Inc., dated March 2007.
- City of Paterson, Combined Sewer System, Cost and Performance Analysis, Appendix Section F (TGM Analysis), CSO Areas 027/028/029/030/031, Appendix sections G – M, prepared by Schoor DePalma in conjunction with HydroQual, Inc., dated March 2007.
- City of Paterson, CSO Long Term Control Plan, Cost and Performance Analysis Report, Volume 2 – Technical Guidance Manual, prepared by Hatch Mott MacDonald, dated December 2006.

Studies common to multiple facilities (Towns of Harrison and Kearny, Borough of East Newark, and Cities of Newark and Paterson):

- Passaic Valley Sewerage Commissioners Interim Service Area Drainage and Land Use Report for the Towns of Harrison and Kearny, Borough of East Newark, and Cities of Newark and Paterson, Appendix B –

Combined Sewer Overflow Drainage Area and Control Information – Towns of Harrison and Kearny, and Borough of East Newark, prepared by Elson T. Killam Associates, dated February 1996.

- Passaic Valley Sewerage Commissioners Interim Sewer System Inventory and Assessment Report for the Towns of Harrison and Kearny, Borough of East Newark, and Cities of Newark and Paterson, prepared by Elson T. Killam Associates, dated February 1996.
- Combined Sewer Overflow Discharge Characterization Study - Final Quality Assurance/Work Plan for the Towns of Harrison and Kearny, Borough of East Newark, and City of Paterson, submitted on behalf of the above municipalities by the Passaic Valley Sewerage Commissioners, prepared by Elson T. Killam Associates, dated November 1997.
- Combined Sewer Overflow Discharge Characterization Study - Final CSO Monitoring Report for the Towns of Harrison and Kearny, Borough of East Newark, and City of Paterson, submitted on behalf of the above municipalities by the Passaic Valley Sewerage Commissioners, prepared by Elson T. Killam Associates, dated April 2002.
- Combined Sewer Overflow Discharge Characterization Study - Final Rainfall Monitoring Study Report for the Towns of Harrison and Kearny, Borough of East Newark, and City of Paterson, submitted on behalf of the above municipalities by the Passaic Valley Sewerage Commissioners, prepared by Elson T. Killam Associates and HydroQual, Inc., dated April 2002.
- CSO Characterization Study – Modeling Report, submitted by the Passaic Valley Sewerage Commissioners on behalf of the Towns of Harrison and Kearny, Borough of East Newark, and the City of Paterson, prepared by HydroQual, Inc., dated December 2003.