AUTHORIZATION TO DISCHARGE UNDER THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provisions of the Federal Clean Water Act, as amended, 33 U.S.C. §§1251 et seq., and the Massachusetts Clean Waters Act, as amended, Massachusetts General Laws Chapter 21, §§26-53, the

City of Chelsea
Department on Public Works
380 Beecham Street
Chelsea, MA 02150

is authorized to discharge from:

4 Combined Sewer Overflow (CSO) outfalls listed in Attachment A

to the receiving waters named **Chelsea River and Boston Inner Harbor** (Mystic River Basin), both Class SB (CSO) waters, in accordance with effluent limitations, monitoring requirements, and other conditions set forth herein.

This permit shall become effective on the first day of the calendar month following sixty (60) days after the date of signature.

This permit and the authorization to discharge expire at midnight, five (5) years from the last day of the month preceding the effective date.

This permit supersedes the permit issued on April 11, 2003.

This permit consists of 10 pages, Attachment A (Chelsea CSO Outfall Discharges) and Attachment B (Second Stipulation of the United States and the Massachusetts Water Resources Authority) in Part I, and 25 pages in Part II, the Standard Conditions.

Signed this 26th day of November, 2013.

/S/ SIGNATURE ON FILE

Ken Moraff, Director	David Ferris, Director
Office of Ecosystem Protection	Massachusetts Wastewater Management Program
Environmental Protection Agency	Department of Environmental Protection
Region I	Commonwealth of Massachusetts
Boston, MA	Boston, MA

Part I. EFFLUENT LIMITATIONS AND OTHER PERMIT CONDITIONS

A. Effluent Limitations

1. During wet weather, the permittee is authorized to discharge combined stormwater and wastewaters that exceed the interceptor or regulator capacity as a result of precipitation inflow and precipitation-induced infiltration from combined sewer overflow outfalls 002, 003, 004, and 008, as listed in **Attachment A**. These discharges are authorized only during wet weather and are subject to the following effluent conditions and requirements:

   a. The permittee must monitor and report CSO discharges as follows:

Effluent Characteristic	Reporting Requirements	Monitoring Requirements	
	Total Monthly	Measurement Frequency	Sample Type
Total Flow	Report gallons	Daily, when discharging	Meter
Number of CSO events	Report Monthly Count	Daily, when discharging	Count

- For flow, measure total flow discharged, duration of discharge, and precipitation associated with discharge for each CSO outfall and each calendar day when the discharge occurs during the month. Report the total monthly flow discharged from each CSO outfall on the appropriate Discharge Monitoring Report (DMR) and include as an attachment to each DMR the individual daily results for total flow discharged, duration of discharge, and precipitation data measured during the month. The monthly DMRs for each calendar quarter shall be submitted no later than the 15th day of January, April, July, and October.

- For those months when a CSO discharge does not occur, the permittee must still complete the monthly DMR with the appropriate no discharge (NODI) code for each outfall.

   b. The permittee must continue to implement the Nine Minimum Controls (NMC) specified below and detailed further in Parts I.B. and I.C. of this permit upon the effective date of the permit.

      (1) Proper operation and regular maintenance programs for the sewer system and the combined sewer overflows.

      (2) Maximum use of the collection system for storage.

      (3) Review and modification of the pretreatment program to assure CSO impacts are minimized.

(4) Maximization of flow to the Publicly Owned Treatment Works (POTW) for treatment [Deer Island – Massachusetts Water Resources Authority (MWRA].

(5) Prohibition of dry weather overflows from CSOs.

(6) Control of solid and floatable materials in CSOs.

(7) Pollution prevention programs that focus on contaminant reduction activities.

(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.

c. The authorized typical year discharge (activation) frequencies and volumes for the CSO discharges are limited as shown in **Attachment A.** Discharge frequencies and volumes are expected to vary from year to year as a function of rainfall amount and intensity.

d. The permittee's discharges must meet Federal and State water quality standards (WQS).

B. Nine Minimum Controls (NMC) Implementation

Pursuant to the requirements of Part I.D.5 below, the permittee must review and update its NMC program no later than April 30th following the first full calendar year of this permit. Until the review and update of the NMC program described in Part I.D.5 is completed, the permittee shall continue to implement the NMCs in accordance with the documentation submitted in the City's CSO Annual Report in April of 2012, which encompassed the 2011 calendar year. The permittee may modify its NMC program to enhance its effectiveness, but the NMC program shall exceed the minimum implementation levels in Part I.C.

C. Minimum Implementation Levels

1. Each CSO structure/regulator, pumping station and/or tidegate shall be routinely inspected, at a minimum of once per month, to ensure that it is in good working condition and adjusted to minimize combined sewer discharges and tidal surcharging (NMC # 1, 2 and 4). The following inspection results shall be recorded: the date and time of the inspection, the general condition of the CSO structure, and whether the structure is operating satisfactorily. If maintenance is necessary, the permittee shall record, at a minimum: the description of the necessary maintenance, the date the necessary maintenance was performed, and whether the observed problem was corrected. The permittee shall maintain all records of inspections for at least eight (8) years.

2. Discharges to the combined system of septage, holding tank wastes or other material which may cause a visible oil sheen or containing floatable materials are prohibited during wet weather when CSO discharges may be active. (NMC# 3, 6, and 7)

3. Dry weather overflows (DWOs) are prohibited (NMC# 5). All dry weather sanitary and/or industrial discharges from CSO outfalls must be reported to EPA and MassDEP within 24 hours in accordance with the reporting requirements for plant bypass. See Part I.E. (Unauthorized Discharges) and Part II.D.1.e. of this permit.

4. The permittee shall quantify and record all discharges from each combined sewer overflow outfall (NMC# 9) with the metering equipment that is in place. The permittee shall undertake all actions necessary to ensure that the CSO metering equipment is properly maintained and operated in order to provide accurate measurements of CSO flows and shall replace such meters as necessary. The following information must be recorded for each CSO outfall and for each discharge event:

   - Estimated duration (hours) of discharge;
   - Estimated volume (gallons) of discharge;
   - National Weather Service precipitation data from the nearest gauge where precipitation is available at daily (24-hour) intervals and the nearest gauge where precipitation data at minimum of one-hour intervals is available to the permittee. Cumulative precipitation per discharge event shall be provided; and
   - A description of whether the discharge activation and volume for each CSO outfall is in accordance with the Massachusetts Water Resources Authority (MWRA) Final CSO Facilities Plan or updates to these documents.

   The permittee shall maintain all records of discharges for at least eight (8) years after the expiration date of this permit.

5. The permittee shall maintain identification signs for all CSO outfall structures (NMC# 8). The signs shall be located at or near the CSO outfall structures and be readable by the public both from the shore and from instream locations. These signs shall be a minimum of 12 x 18 inches in size, with white lettering against a green background, and shall contain the following language, at a minimum:

WARNING:*
CITY OF CHELSEA
DEPARTMENT OF PUBLIC WORKS
WET WEATHER SEWAGE DISCHARGE OUTFALL (discharge serial number)

***** For existing signs which otherwise meet all of the requirements of this section, the word “Warning” need not be added.

Where easements over property not owned by the permittee must be obtained to meet is requirement, the permittee shall identify the appropriate landowners and obtain the necessary easements, to the extent practicable.

The permittee, to the extent practicable, shall add a universal symbol to its warning signs reflecting a CSO outfall, or place additional signs in languages other than English based on

notification from the EPA and the MassDEP or on the permittee's own determination that the primary language of a substantial percentage of the residents in the vicinity of a given outfall structure is not English.

6. The permittee shall issue a press release by April 30th of each year and update its website to include general information regarding CSOs, including their potential health impacts, locations of its CSO discharges, a link to the City's website which includes the overall status of all CSO abatement programs, and the most recent information on all CSO outfall activations and volumes, including the latest Annual Report filed under this permit as detailed in Part I.D. below. (NMC# 8)

   This press release shall be distributed to the following, at a minimum:

   - local watershed advocacy groups, including the Chelsea Collaborative and the Mystic River Watershed Association
   - local health agents in Chelsea and adjacent communities, and
   - a newspaper of local circulation

7. The permittee shall provide an e-mail notification of CSO discharges from any of its outfalls to the entities listed above, with the exception of a newspaper of local circulation. The City will be required to provide such notification within 24 hours of the onset of such discharges, or as soon as feasible after such discharges begin. The City shall develop a plan to meet this requirement and submit it to EPA and the MassDEP within ninety (90) days of the effective date of the permit. This notification procedure shall be implemented no later than one (1) year after the effective date of the permit.

D. Annual Report

By April 30th of each year the permittee shall submit a report as an attachment to the April DMR submittal, which includes the following information:

1. Activation frequencies and discharge volumes for each CSO outfall listed on **Attachment A** during the previous calendar year. The permittee shall continue to utilize the outfall metering equipment at each one of its outfalls to quantify the activation frequency and discharge volume of overflow events. This metering equipment was installed in July of 2003 and was described in the City's 2011 Annual Report. Activation frequencies and discharge volumes shall continue to be reported in accordance with this method. Changes to any of the metering equipment at any outfall shall be described in the Annual Report.

2. Precipitation during the previous year for each day, including total rainfall, peak intensity, and average intensity.

3. Status of the implementation of CSO abatement work for which the permittee is directly responsible in accordance with the MWRA Final CSO Facilities Plan, the Federal court order [US v. MDC., et al., No. 85-0489 (D. Mass)], as amended by the Second Stipulation of the United States and the Massachusetts Water Resources Authority on

Responsibility and Legal Liability for Combined Sewer Overflow Control (as incorporated into the Federal Court Order on April 27, 2006), and any related, subsequent documents. The "Second Stipulation" document is included as **Attachment B**. A description of all additional sewer separation projects that the permittee is undertaking, including a status and schedule of any such projects.

4. For the outfalls listed in **Attachment A,** provide the following information in the Annual Report for years 1 and 3 of this permit (Year 1 is defined as the first full calendar year under this permit), using the updated MWRA model (or equivalent) for comparison:

   a. A comparison between the precipitation for the previous year and the precipitation in the typical year under future planned conditions used in the MWRA Final CSO Facilities Plan, or subsequent document, whichever is appropriate. This comparison shall include the number of discharge events and size (volume) of such events (including recurrence interval).

   b. For each CSO outfall, a comparison between the activation volume and frequency for the previous year and the volume and frequency expected during a typical year under future planned conditions.

   c. An evaluation of whether the CSO activation volumes and frequencies for the previous year are in accordance with the estimates in the MWRA Final CSO Facilities Plan, given the precipitation which occurred during the year, and the CSO abatement activities which have been implemented. Where CSO discharges are determined to be greater than the activation frequency or volume in either document above, the permittee shall include their assessment of such result, a discussion of remaining CSO abatement activities, and an assessment of the impact of those projects on attaining the level of CSO control identified in the relevant document, or any amendments thereto.

5. The first annual report submitted following completion of MWRA's North System Hydraulic Study shall summarize any findings of this study that are relevant to Chelsea's CSO discharges, including any previously unknown hydraulic restrictions that are exacerbating Chelsea's CSO discharges, and any recommended activities that may reduce Chelsea's CSOs or enhance its NMC program.

6. A summary of modifications to the approved NMC program which have been evaluated and a description of those which will be implemented during the upcoming year. In the first annual report based on a full calendar year and submitted in accordance with this permit (due by **April 30, 2014**), the permittee shall submit an updated nine minimum control plan that reviews the current controls and updates them to enhance their effectiveness. The updated NMC plan shall include or exceed all of the minimum implementation levels described in Part I.C.

7. A certification stating that the previous calendar year's monthly inspections were conducted, their results recorded, and records maintained.

E. Unauthorized Discharges

This permit only authorizes the discharge from those outfalls listed in **Attachment A** and only in accordance with the terms and conditions of this permit. Discharges of wastewater from CSO outfalls during dry weather or from any other point sources, including sanitary sewer overflows (SSOs) are not authorized by this permit and shall be reported to EPA and MassDEP in accordance with Part II. D.1.e. (1) of this permit (Twenty-four hour reporting).

An SSO Reporting Form that includes MassDEP Regional Office telephone numbers is available on-line at: http://www.mass.gov/eea/agencies/massdep/service/approvals/sanitary-sewer-overflow-bypass-backup-notification.html

F. Notice of Elimination

The permittee shall give notice of elimination or change in status of any outfall listed in **Attachment A** as soon as possible and in writing to the Director of the Office of Ecosystem Protection at EPA and to the Director of the Wastewater Management Program at MassDEP.

G. Certification and Signature of Reports

All reports required by the permit and other information requested by the EPA shall be signed and certified in accordance with Part II.D.2. of this permit.

H. Monitoring and Reporting

1. **For a period of one year from the effective date of the permit**, the permittee may either submit monitoring data and other reports to EPA in hard copy form or report electronically using NetDMR, a web-based tool that allows permittees to electronically submit discharge monitoring reports (DMRs) and other required reports via a secure internet connection. **Beginning no later than one year after the effective date of the permit**, the permittee shall begin reporting using NetDMR, unless the facility is able to demonstrate a reasonable basis that precludes the use of NetDMR for submitting DMRs and reports. Specific requirements regarding submittal of data and reports in hard copy form and for submittal using NetDMR are described below:

   a. Submittal of Reports Using NetDMR

      NetDMR is accessed from: http://www.epa.gov/netdmr. **Within one year of the effective date of this permit**, the permittee shall begin submitting DMRs and reports required under this permit electronically to EPA using NetDMR, unless the facility is able to demonstrate a reasonable basis, such as technical or administrative infeasibility, that precludes the use of NetDMR for submitting DMRs and reports ("opt-out request").

      All monthly DMRs for each calendar quarter (January 1 to March 31, April 1 to June 30, July 1 to September 30, and October 1 to December 31) shall be submitted

electronically to EPA no later than **15th** day of the month of January, April, July, and October. The first quarterly report may have less than three (3) months of information. The Annual Report, which is due on **April 30th** of each year, may be attached to the quarterly DMR submittal that is due in April. All reports required under the permit shall be submitted to EPA as electronic attachments to the DMR submittal. Once a permittee begins submitting reports using NetDMR, it will no longer be required to submit hard copies of DMRs or other reports to EPA and will no longer be required to submit hard copies of DMRs to MassDEP. However, permittees shall continue to send hard copies of reports other than DMRs to MassDEP until further notice from MassDEP.

b. Submittal of NetDMR Opt-Out Requests

Opt-out requests must be submitted in writing to EPA for written approval at least sixty (60) days prior to the date a facility would be required under this permit to begin using NetDMR. This demonstration shall be valid for twelve (12) months from the date of EPA approval and shall thereupon expire. At such time, DMRs and reports shall be submitted electronically to EPA unless the permittee submits a renewed opt-out request and such request is approved by EPA. All opt-out requests should be sent to the following addresses:

Attn: NetDMR Coordinator
U.S. Environmental Protection Agency, Water Technical Unit
5 Post Office Square, Suite 100 (OES04-1)
Boston, MA 02109-3912

and

Massachusetts Department of Environmental Protection
Surface Water Discharge Permit Program
627 Main Street, 2nd Floor
Worcester, Massachusetts 01608

c. Submittal of Reports in Hard Copy Form

Monthly monitoring results shall be summarized for each calendar quarter as noted above and reported on separate hard copy Discharge Monitoring Report Form(s) (DMRs) postmarked no later than the **15th** day of the month of January, April, July, and October. All reports required under this permit shall be submitted as an attachment to the DMRs. Signed and dated originals of the DMRs, and all other reports or notifications required herein or in Part II shall be submitted to the Director at the following address:

U.S. Environmental Protection Agency
Water Technical Unit (OES04-SMR)
5 Post Office Square - Suite 100
Boston, MA 02109-3912

Duplicate signed copies of all reports or notifications required above (including those in Part I.D) shall be submitted to the State at the following address:

Massachusetts Department of Environmental Protection
Bureau of Resource Protection
Northeast Regional Office
205B Lowell Street
Wilmington, MA 01887
Attention: Kevin Brander

Duplicate signed copies of all reports or notifications required above, with the exception of DMRs, shall be submitted to the State at the following address:

Massachusetts Department of Environmental Protection
1 Winter Street
Boston, MA 02108
Attention: David Ferris

and

Massachusetts Department of Environmental Protection
Surface Water Discharge Permit Program
627 Main Street, 2nd Floor
Worcester, Massachusetts 01608

Any verbal reports, if required in Parts I and/or II of this permit, shall be made to both EPA-New England and to MassDEP.

Alternatively, notifications and reports may be submitted to the State electronically using eDEP at: http://www.mass.gov/eea/agencies/massdep/service/approvals/state-specific-discharge-and-toxicity-reporting.html

I. Retention of Records

The permittee shall retain all records of all monitoring information, copies of all reports required by this permit, and records of all other data required by or used to demonstrate compliance with this permit, for at least eight (8) years. This time period may be modified by alternative provisions of this permit or extended by request of the Director of EPA's Office of Ecosystem Protection at any time.

J. State Permit Conditions

This authorization to discharge includes two separate and independent permit authorizations. The two permit authorizations are (i) a federal National Pollutant Discharge Elimination System permit issued by the U.S. Environmental Protection Agency (EPA) pursuant to the Federal Clean Water Act, 33 U.S.C. §§1251 et seq.; and (ii) an identical state surface water discharge permit issued by the Commissioner of the Massachusetts Department of Environmental Protection (MassDEP) pursuant to the Massachusetts Clean Waters Act, M.G.L. c. 21, §§ 26-53, and 314 CMR 3.00. All of the requirements contained in this authorization, as well as the standard conditions contained in 314 CMR 3.19, are hereby incorporated by reference into this state surface water discharge permit.

This authorization also incorporates the state water quality certification issued by MassDEP under § 401(a) of the Federal Clean Water Act, 40 C.F.R. 124.53, M.G.L. c. 21, § 27 and 314 CMR 3.07. All of the requirements (if any) contained in MassDEP's water quality certification for the permit are hereby incorporated by reference into this state surface water discharge permit as special conditions pursuant to 314 CMR 3.11.

Each Agency shall have the independent right to enforce the terms and conditions of this permit. Any modification, suspension or revocation of this permit shall be effective only with respect to the Agency taking such action, and shall not affect the validity or status of this permit as issued by the other Agency, unless and until each Agency has concurred in writing with such modification, suspension or revocation. In the event any portion of this permit is declared, invalid, illegal or otherwise issued in violation of State law such permit shall remain in full force and effect under Federal law as an NPDES permit issued by the U.S. Environmental Protection Agency. In the event this permit is declared invalid, illegal or otherwise issued in violation of Federal law, this permit shall remain in full force and effect under State law as a permit issued by the Commonwealth of Massachusetts.

Attachment A

MWRA Long Term CSO Control Plan Discharge Limitations
Chelsea CSO Outfall Discharges

Typical Year Rainfall With Long Term CSO Control Plan[1]		
Outfall	**Activation Frequency[2]**	**Volume (MG)[3]**
CHE002	4	0.22
CHE003	3	0.04
CHE004	3	0.32
CHE008	0	0.0

1. The most current estimates of CSO discharge frequency and volume expected in a typical year after full implementation of the CSO abatement projects as documented in Exhibit B of the "Second Stipulation of the United States and the Massachusetts Water Resources Authority on Responsibility and Legal Liability for Combined Sewer Overflow Control" (Second Stipulation), March 15, 2006 - United States District Court for the District of Massachusetts.

2. Activations per year

3. MG = Million Gallons per year

ATTACHMENT B

UNITED STATES DISTRICT COURT
for the
DISTRICT OF MASSACHUSETTS

UNITED STATES OF AMERICA, Plaintiff, v. METROPOLITAN DISTRICT COMMISSION, et al., Defendants.	CIVIL ACTION No. 85-0489-RGS
CONSERVATION LAW FOUNDATION OF NEW ENGLAND, INC., Plaintiff, v. METROPOLITAN DISTRICT COMMISSION, Defendants.	CIVIL ACTION No. 83-1614-RGS

SECOND STIPULATION OF THE UNITED STATES
AND THE MASSACHUSETTS WATER RESOURCES AUTHORITY
ON RESPONSIBILITY AND LEGAL LIABILITY FOR
COMBINED SEWER OVERFLOW CONTROL

The Massachusetts Water Resources Authority ("Authority") and the United States, on behalf of the Environmental Protection Agency ("EPA"), hereby agree and stipulate as follows:

1. The purpose of this Second Stipulation of the United States and the Massachusetts Water Resources Authority on Responsibility and Legal Liability for Combined Sewer Overflow Control ("Second Stipulation") is to terminate the February 27, 1987, Stipulation of the United States and the Massachusetts Water Resources Authority on Responsibility and Legal Liability for Combined Sewer Overflows (the "1987 Stipulation") and replace it with this Second Stipulation that reflects developments and progress in the control of combined sewer overflow ("CSO") discharges to Boston Harbor and its tributaries that have taken place since 1987. The 1987 Stipulation shall remain in effect until this Second Stipulation goes into effect. This Second Stipulation shall take effect, and the 1987 Stipulation shall terminate, upon approval by the Court in the above-captioned action of the Joint Motion of the United States and the Massachusetts Water Resources Authority To Amend Schedule Six with Respect to The Charles River, Alewife Brook and East Boston.

2. The Authority's Long-Term Combined Sewer Overflow ("CSO") Control Plan ("LTCP") presently consists of the Authority's July 31, 1997, Final Combined Sewer Overflow Facilities Plan and Environmental Impact Report (the "1997 Facilities Plan"), as modified by the planning documents identified in the attached Exhibit "A," entitled, MWRA Long-Term CSO Control Plan Facilities Planning Documentation.

3. The CSO outfalls that are the subject of the Authority's LTCP include the outfalls listed in Exhibit "B" hereto, entitled, "Summary of Typical

Year CSO Activation Frequency and Volume." The CSO outfalls identified with the prefix "MWR" are owned or operated by the Authority. The CSO outfalls identified with a prefix "BOS," "CAM," "CHE," or "SOM," are owned and operated by member municipalities (Boston, Cambridge, Chelsea, or Somerville, respectively), except that the Union Park Pump Station ("UPPS") is jointly operated by the Authority and the City of Boston.

4. With respect to all of the CSO outfalls within or hydraulically connected to the Authority's sewer system, including the outfalls identified in Exhibit "B" hereto, the Authority accepts legal liability to undertake such corrective action as may be necessary to implement the CSO control requirements set forth in Schedule Six and related orders of the Court in the above-captioned action, and to meet the levels of CSO control (including as to frequency of CSO activation and as to volume of CSO discharge) described in the Authority's Long-Term CSO Control Plan. Whether the Authority has met the levels of CSO control in its Long-Term CSO Control Plan shall be determined by the EPA and the Massachusetts Department of Environmental Protection. With respect to all CSO outfalls owned or operated by the Authority, including the CSO outfalls identified in Exhibit "B" identified with the prefix "MWR," and including the Union Park Pump Station, the Authority also accepts legal liability to undertake such future corrective action as may be necessary to meet the CSO control requirements of the Clean Water Act, 33 U.S.C. § 1251 et seq. The Authority does not accept liability for alleged past

violations of the CSO provisions of NPDES Permit No. MA0102351 (issued in 1976 and transferred to the Authority in 1985) prior to February 27, 1987.

5. This stipulation is not intended to and does not limit the Court's power to find, or any party's right to seek, liability for past or continuing violations of federal law or to enforce compliance with that law.

Massachusetts Water Resources Authority

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Dated: March 15, 2006

B3131253.1

Exhibit A
to
Second Stipulation

MWRA Long-Term CSO Control Plan - Facilities Planning Documentation

Planning Document	Project	Receiving Water
Final Combined Sewer Overflow Facilities Plan and Environmental Impact Report, July 31, 1997	Hydraulic Relief for CAM005	Upper and Lower Charles River Basin
	Stony Brook Sewer Separation	
	Floatables Control at CAM007, CAM009, CAM011 and CAM017	
	Baffle Manhole Separation at SOM 001 and SOM 006-007	Alewife Brook/Upper Mystic River
	Hydraulic Relief for BOS 017[1]	Mystic/Chelsea Confluence
	Chelsea Branch Relief Sewer	
Minor modifications were addressed in Notice of Project Change, March 1999	Trunk Sewer Relief for CHE 002-004	
	Outfall Repairs and Floatables Control at CHE 008	
	Storage Conduit for BOS 019	Upper Inner Harbor
	Detention/Treatment Facility at Union Park Pump Station	Fort Point Channel
	South Dorchester Bay Sewer Separation	South Dorchester Bay
	Constitution Beach Sewer Separation	Constitution Beach
	Neponset River Sewer Separation	Neponset River
The following reports <u>supplement</u> information in the Final CSO Facilities Plan and Environmental Impact Report, July 31, 1997		
Upgrades to Existing CSO Facilities, Supplemental Environmental Impact Report, September 30, 1998	Cottage Farm Facility Upgrade	Upper Charles River Basin
	Prison Point Facility Upgrade[2]	Upper Inner Harbor
	Somerville Marginal Facility Upgrade	Upper Mystic River; Mystic/Chelsea Confluence
	Commercial Point Facility Upgrade	South Dorchester Bay
Upgrades to the Fox Point CSO Treatment Facility, Supplemental Environmental Impact Report, December 31, 1998	Fox Point Facility Upgrade	South Dorchester Bay
Fort Point Channel CSO Storage Conduit Notice of Project Change, June 2003, and MWRA Long Term CSO Control Plan, Fort Point Channel Sewer Separation and System Optimization Project, Level of Control at CSO Outfalls BOS072 and BOS073, letter dated June 7, 2004.	Sewer Separation for BOS072 and BOS073	Fort Point Channel

Exhibit A
to
Second Stipulation

MWRA Long-Term CSO Control Plan - Facilities Planning Documentation

Planning Document	Project	Receiving Water
Re-Assessing Long Term Floatables Control for Outfalls MWR018, 019 and 020, February 2001 Report on Re-Assessment of CSO Activation Frequency and Volume for Outfall MWR010, April 2001, and supplemental letter report (Metcalf & Eddy, Inc.), May 31, 2001	Regionwide Floatables Controls and Outfall Closing Projects	Regionwide
Final Variance Report for Alewife Brook and the Upper Mystic River, July 2003, and supplemental letter report (Metcalf & Eddy, Inc.), July 8, 2003	Sewer Separation at CAM004 and CAM400	Alewife Brook
	Interceptor Connection Relief and Floatables Control at CAM002, CAM401B and SOM01A, and Floatables Control at CAM001 and CAM401A	
	Control Gate/Floatables Control at Outfall MWR003 and MWRA Rindge Avenue Siphon Relief	
East Boston Branch Sewer Relief Project Reevaluation Report, February 2004 Recommendations and Proposed Schedule for Long-Term CSO Control for the Charles River, Alewife Brook and East Boston, August 2, 2005	Interceptor Relief For BOS003-014	Mystic/Chelsea Confluence; Upper and Lower Inner Harbor
Supplemental Facilities Plan and Environmental Impact Report on the Long-term CSO Control Plan for North Dorchester Bay and Reserved Channel, April 27, 2004	North Dorchester Bay Storage Tunnel and Related Facilities	North Dorchester Bay
	Pleasure Bay Storm Drain Improvements	
	Morrissey Boulevard Storm Drain	
	Reserved Channel Sewer Separation	Reserved Channel
Recommendations and Proposed Schedule for Long-Term CSO Control for the Charles River, Alewife Brook and East Boston, August 2, 2005, and MWRA Revised Recommended CSO Control Plan for the Charles River, Typical Year CSO Discharge Activations and Volumes, November 15, 2005.	Brookline Connection, Cottage Farm Overflow Chamber Interconnection and Cottage Farm Gate Control	Upper and Lower Charles River Basin
	Brookline Sewer Separation	
	Bulfinch Triangle Sewer Separation	
	Charles River Valley/South Charles Relief Sewer Gate Controls	
	Evaluation of Additional Charles River Interceptor Interconnection Alternatives	

(1) Also "MWRA Long-Term CSO Control Plan Target CSO Activation Frequency and Volume by Outfall," letter dated December 9, 2005; "MWRA Long-Term CSO Control Plan Response to Additional EPA Questions Regarding Prison Point Discharges," letter dated January 9, 2005 (2006).

(2) Also "MWRA Long-Term CSO Control Plan Target CSO Activation Frequency and Volume by Outfall," letter dated December 9, 2005.

Exhibit B
to
Second Stipulation

SUMMARY OF TYPICAL YEAR CSO ACTIVATION FREQUENCY AND VOLUME

OUTFALL	TYPICAL YEAR		REFERENCE (*)
	LONG TERM CONTROL PLAN 2005 (*)		
	Activation Frequency	Volume (MG)	
ALEWIFE BROOK[1]			
CAM001	5	0.19	5
CAM002	4	0.69	5
MWR003	5	0.98	5
CAM004	To be closed	N/A	5
CAM400	To be closed	N/A	5
CAM401A	5	1.61	5
CAM401B	7	2.15	5
SOM001A	3	1.67	5
SOM001	Closed	N/A	
SOM002A	Closed	N/A	
SOM003	Closed	N/A	
SOM004	Closed	N/A	
TOTAL		**7.29**	
UPPER MYSTIC RIVER			
SOM007A/MWR205A (Somerville Marginal)	3	3.48	
SOM007	Closed	N/A	
TOTAL		**3.48**	
MYSTIC / CHELSEA CONFLUENCE			
MWR205 (Somerville Marginal)	39	60.58	
BOS013	4	0.54	6
BOS014	0	0.00	6
BOS015	Closed	N/A	6
BOS017	1	0.02	9
CHE002	4	0.22	
CHE003	3	0.04	
CHE004	3	0.32	
CHE008	0	0.00	
TOTAL		**61.72**	
UPPER INNER HARBOR			
BOS009	5	0.59	6
BOS010	4	0.72	6
BOS012	5	0.72	6
BOS019	2	0.58	
BOS050	Closed	N/A	
BOS052	Closed	N/A	
BOS057	1	0.43	
BOS058	Closed	N/A	
BOS060	0	0.00	
MWR203 (Prison Point)	30	335.00	1, 9
TOTAL		**338.04**	
LOWER INNER HARBOR			
BOS003	4	2.87	6
BOS004	5	1.84	6
BOS005	1	0.01	6
BOS006	4	0.24	6
BOS007	6	1.05	6
TOTAL		**6.01**	

Exhibit B
to
Second Stipulation

SUMMARY OF TYPICAL YEAR CSO ACTIVATION FREQUENCY AND VOLUME

OUTFALL	TYPICAL YEAR		REFERENCE (*)
	LONG TERM CONTROL PLAN 2005 (*)		
	Activation Frequency	Volume (MG)	
CONSTITUTION BEACH			
MWR207	Closed	N/A	
TOTAL		**0.00**	
FORT POINT CHANNEL			
BOS062	1	0.01	
BOS064	0	0.00	
BOS065	1	0.06	
BOS068	0	0.00	
BOS070			
BOS070/DBC	3	2.19	3
UPPS	17	71.37	
BOS070/RCC	2	0.26	
BOS072	0	0.00	4
BOS073	0	0.00	4
TOTAL		**73.89**	
RESERVED CHANNEL			
BOS076	3	0.91	7
BOS078	3	0.28	7
BOS079	1	0.04	7
BOS080	3	0.25	7
TOTAL		**1.48**	
NORTHERN DORCHESTER BAY			
BOS081	0 / 25 year	N/A	
BOS082	0 / 25 year	N/A	
BOS083	0 / 25 year	N/A	
BOS084	0 / 25 year	N/A	
BOS085	0 / 25 year	N/A	
BOS086	0 / 25 year	N/A	
BOS087	0 / 25 year	N/A	
TOTAL		**0.00**	
SOUTHERN DORCHESTER BAY			
BOS088	To be closed	N/A	
BOS089 (Fox Point)	To be closed	N/A	
BOS090 (Commercial Point)	To be closed	N/A	
TOTAL		**0.00**	
UPPER CHARLES			
BOS032	Closed	N/A	
BOS033	Closed	N/A	
CAM005	3	0.84	8
CAM007	1	0.03	8
CAM009	2	0.01	8
CAM011	0	0.00	8
TOTAL		**0.88**	

Exhibit B
to
Second Stipulation

SUMMARY OF TYPICAL YEAR CSO ACTIVATION FREQUENCY AND VOLUME

OUTFALL	TYPICAL YEAR		REFERENCE (*)
	LONG TERM CONTROL PLAN 2005 (*)		
	Activation Frequency	Volume (MG)	
LOWER CHARLES			
BOS028	Closed	N/A	
BOS042	Closed	N/A	
BOS049	To be closed	N/A	
CAM017	1	0.45	8
MWR010	0	0.00	2
MWR018	0	0.00	1
MWR019	0	0.00	1
MWR020	0	0.00	1
MWR021	Closed	N/A	
MWR022	Closed	N/A	
MWR201 (Cottage Farm)	2	6.30	8
MWR023	2	0.13	
SOM010	Closed	N/A	
TOTAL		**6.88**	
NEPONSET RIVER			
BOS093	Closed	N/A	
BOS095	Closed	N/A	
TOTAL		**0.00**	
BACK BAY FENS			
BOS046	2	5.38	
TOTAL		**5.38**	

(*) Long-term Control Plan activation frequency and volumes were established in the 1997 CSO Facilities Plan and Enviromental Impact Report or as noted in the "Reference" column.

1- Re-assessing Long Term Floatables Control for Outfalls MWR018, 019 and 020, February 2001.

2- Report on Re-Assessment of CSO Activation Frequency and Volume for Outfall MWR010, April 2001, and supplemental letter report (Metcalf & Eddy, Inc.), May 31, 2001.

3- Report on Re-Assessment of CSO Activation Frequency and Volume to Dorchester Brook Conduit and Outfall BOS086, January 2001 and supplemental letter report (Metcalf & Eddy, Inc.), June 28, 2001.

4- MWRA Long Term CSO Control Plan, Fort Point Channel Sewer Separation and System Optimization Project, Level of Control at CSO Outfalls BOS072 and BOS073, June 7, 2004.

5- Final Variance Report for Alewife Brook and the Upper Mystic River, July 2003, and supplemental letter report (Metcalf &Eddy, Inc.), July 8, 2003.

6- East Boston Branch Sewer Relief Project Reevaluation Report, February 2004.

7- Supplemental Facilities Plan and Environmental Impact Report on the Long-term CSO Control Plan for North Dorchester Bay and Reserved Channel, April 27, 2004.

8- Recommendations and Proposed Schedule for Long-Term CSO Control for the Charles River, Alewife Brook and East Boston, August 2, 2005; MWRA Revised Recommended CSO Control Plan for the Charles River, Typical Year CSO Discharge Activations and Volumes, November 15, 2005; MWRA Long-Term CSO Control Plan, Response to Additional EPA Questions Reagarding Prison Point Discharges, January 9, 2005 (2006).

9- MWRA Long Term CSO Control Plan Target CSO Activation Frequency and Volume by Outfall, December 9, 2005.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND - REGION I
5 POST OFFICE SQUARE, SUITE 100
BOSTON, MASSACHUSETTS 02109-3912

FACT SHEET

DRAFT NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT TO DISCHARGE TO WATERS OF THE UNITED STATES PURSUANT TO THE CLEAN WATER ACT (CWA)

NPDES PERMIT NUMBER: MA0101877

PUBLIC NOTICE START AND END DATES: March 20, 2013 – April 18, 2013

NAME AND MAILING ADDRESS OF APPLICANT:

City of Chelsea
Department of Public Works
380 Beecham Street
Chelsea, Massachusetts 02150

NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:

4 Combined Sewer Overflow (CSO) Outfalls (See Figure 1)

RECEIVING WATERS: Chelsea River and Boston Inner Harbor
USGS Hydrologic Code #01090001, Mystic River Watershed and Boston Harbor

RECEIVING WATER CLASSIFICATION: Class SB (CSO)

Contents

I. Proposed Action, Type of Facility, and Discharge Locations

The City of Chelsea has applied to the U.S. Environmental Protection Agency ("EPA") for the reissuance of its NPDES permit to discharge from four (4) combined sewer overflow outfalls (CSOs) into the designated receiving waters. These CSO outfall discharge locations are shown on **Figure 1.**

The City's current permit was issued on April 11, 2003, and expired on June 10, 2008, five years from the effective date. EPA received a completed permit renewal application from the applicant dated March 18, 2009. Since the permit renewal application was deemed complete by EPA, the permit has been administratively continued pursuant to 40 CFR § 122.6.

II. Description of Discharges

The City of Chelsea owns and operates a combined sewer system that comprises about 70% of the City's wastewater sewer system. A combined sewer system is a wastewater collection system owned by a State or municipality [as defined by Section 502(4) of the Clean Water Act (CWA)] that conveys sanitary wastewaters (domestic, commercial and industrial wastewaters) and stormwater through a single-pipe system to a publicly owned treatment works (POTW) treatment plant [as defined in 40 CFR 403.3(p)]. The wastewater collected in this system is transported to the Massachusetts Water Resources Authority's (MWRA) Deer Island Wastewater Treatment Plant. There are four (4) CSO outfalls that discharge from the combined sewer system under certain wet weather conditions. A CSO is the discharge from a combined sewer system at a point prior to the POTW. CSO outfalls are point sources subject to NPDES permit requirements including both technology-based and water quality-based requirements of the CWA. CSOs occur during wet weather[1] when the flow in the combined sewer system exceeds the system's capacity and for the Chelsea CSO outfalls, activation (discharge) typically occurs during periods of heavy rain and is dependent on the precipitation intensity and the tide elevation. CSOs are distinguished from bypasses which are "intentional diversions of waste streams from any portion of a treatment facility" (40 CFR §122.41(m)).

The City began separating its combined collection system (building separate sanitary sewage and storm water systems) in the early 1970s. Work to further abate CSOs has continued according to a schedule in a federal court order [U.S. v. M.D.C., et al., No. 85-0489 (D. Mass)] and includes further sewer separation, hydraulic relief projects, and floatables control structures. The frequency and volume of CSO discharges have been reduced as CSO abatement projects have been completed. However, as will be discussed further in Section IV, the required projects were not expected to eliminate CSO discharges entirely.

[1] Flows in combined sewers can be classified into two categories: dry weather flow and wet weather flow. Dry weather flow is the flow that results from domestic sewage, groundwater infiltration, commercial and industrial wastewaters, and any other non-precipitation related flows (e.g. tidal infiltration). Wet weather flow includes all of the dry weather flow components plus storm water flow, including snow melt runoff (see 40 CFR 122.26(b)(13). The draft permit prohibits dry weather discharges from the City's CSO outfalls.

Modeled estimates of the number of CSO activations and flow volumes which are expected in a typical year for each CSO outfall after full implementation of the CSO abatement projects as documented in Exhibit B of the "Second Stipulation of the United States and the Massachusetts Water Resources Authority on Responsibility and Legal Liability for Combined Sewer Overflow Control" (Second Stipulation) are shown in **Permit Attachment A.**

III. Receiving Water Description

The Massachusetts Surface Water Quality Standards, found at 314 CMR 4.00, designate Boston Inner Harbor (Segment MA70-02), and the Chelsea River (Segment MA71-06), as Class SB (CSO) waters. Outfall CHE002 discharges to the Boston Inner Harbor and Outfalls CHE003, CHE004, and CHE008 discharge to the Chelsea River.

Class SB waters are described in the MA SWQS (314 CMR 4.05(4)(b)) and designated as a habitat for fish, other aquatic life and wildlife, including for their reproduction, migration, growth and other critical functions, and for primary and secondary contact recreation. In certain waters, habitat for fish, other aquatic life and wildlife may include, but is not limited to, seagrass. Where designated in the tables to 314 CMR 4.00 for shellfishing, these waters shall be suitable for shellfish harvesting with depuration (Restricted and Conditionally Restricted Shellfish Areas). These waters shall have consistently good aesthetic value. Waters with a B(CSO) or SB(CSO) designation are occasionally subject to short-term impairment of swimming or other recreational uses due to untreated CSO discharges in a typical year [314 CMR 4.06(11)]. The B(CSO) designation for these waters was adopted by MassDEP and approved by EPA, based on information included in MWRA's July 1997 Combined Sewer Overflow Plan and Environmental Impact Report. See Section V.A below for detailed information regarding this process.

The Chelsea River is an urban tidal river flowing from the mouth of Mill Creek, between Chelsea and Revere, to Boston's Inner Harbor, between East Boston and Chelsea. For centuries, the Chelsea River has been flanked by working industries, many of which used the channel to transport raw materials and finished goods. The Chelsea River is officially classified as a Designated Port Area: a stretch of waterfront set aside primarily for industrial and commercial use. Chelsea River, which is also locally known as Chelsea Creek, is designated as a Class SB (CSO) water body by the State of Massachusetts.

Sections 305(b) and 303(d) of the CWA require that States complete a water quality inventory and develop a list of impaired waters. Specifically, Section 303(d) of the CWA requires States to identify those water bodies that are not expected to meet surface water quality standards after the implementation of technology-based controls, and as such, require the development of a Total Maximum Daily Load (TMDL) for each pollutant that is prohibiting a designated use(s) from being attained. In Massachusetts, these two evaluations have been combined into an Integrated List of Waters. The integrated list format provides the status of all assessed waters in a single, multi-part list.

Boston Inner Harbor is listed on the *Final Massachusetts Year 2010 Integrated List of Waters*[2] and on the *Proposed Massachusetts Year 2012 Integrated List of Waters*[3] as a Category 5 waterbody, which are those classified as "Waters requiring a TMDL". The pollutants and conditions contributing to this impairment are as follows: fecal coliform, *Enterococcus*, dissolved oxygen, and Polychlorinated Biphenyls (PCBs) in fish tissue.

The Chelsea River is listed on the *Final Massachusetts Year 2010 Integrated List of Waters* and on the *Proposed Massachusetts Year 2012 Integrated List of Waters*, as a Category 5 waterbody. The pollutants and conditions contributing to this impairment are turbidity, taste and odor, petroleum hydrocarbons, dissolved oxygen, PCBs in fish tissue, fecal coliform, unionized ammonia, and floatables/debris. Primary and secondary contact uses are also impaired in this waterbody. Shellfishing is also impaired for the entire stretch of this segment due to a Massachusetts Division of Marine Fisheries (MarineFisheries) prohibition. These impairments are due mainly to historic spills of petroleum, the continued use of above ground storage tanks in the adjacent communities and associated cargo loading and unloading, and the general conditions of a high density urbanized area.

MassDEP is required under the CWA to develop a TMDL for waterbodies that are identified as impaired. A TMDL is essentially a pollution budget designed to restore the health of a water body. A TMDL first identifies the source(s) of the pollutant from direct and indirect discharges in order to next determine the maximum amount of pollutant (including a margin of safety) that can be discharged to a specific water body while maintaining water quality standards for designated uses. It then outlines a plan to meet the goal. No TMDLs have been drafted or finalized for either of these river segments.

IV. Permit Basis - Statutory and Regulatory Authority

A. Regulatory Background

The Clean Water Act (CWA) prohibits the discharge of pollutants to waters of the United States without a National Pollutant Discharge Elimination System (NPDES) permit unless such a discharge is otherwise authorized by the CWA. The NPDES permit is the mechanism used to implement technology and water quality-based effluent limitations and other requirements including monitoring and reporting. The draft NPDES permit was developed in accordance with various statutory and regulatory requirements established pursuant to the CWA and applicable State regulations. The regulations governing the EPA NPDES permit program are generally found at 40 CFR Parts 122, 124, 125, and 136. In this permit EPA considered (a) technology-based requirements, (b) water quality-based requirements, and (c) all limitations and requirements in the current/existing permit, when developing the permit limits.

CSO outfalls are point source discharges subject to NPDES permit requirements, including technology-based and water quality-based requirements of the CWA. Pursuant to a federal court decision, (Montgomery Environmental Coalition vs. Costle [646F.2d 568 (D.C. Cir 1980)] CSOs

[2] http://www.mass.gov/dep/water/resources/10list6.pdf
[3] http://www.mass.gov/dep/water/resources/12list2.pdf

are not subject to secondary treatment standards found in Section 301(b)(1)(B) of the CWA. Rather, CSOs are subject to technology-based requirements applicable to discharges other than publicly owned treatment works, found in Sections 301(b)(1)(B), 301(b)(2)(A) and 301(b)(2)(D). Pursuant to Section 301(b)(1)(C) of the CWA, CSOs are also subject to effluent limitations based on water quality standards.

On April 19, 1994 EPA published the National CSO Control Policy (59 FR 18688). The purpose of the National CSO Control Policy (the CSO Policy) was to establish a consistent national approach for controlling discharges from CSOs to the Nation's waters. The CSO Policy reiterates the goals of the 1989 National Combined Sewer Overflow (CSO) Control Strategy, which were:

- To ensure that if the CSO discharges occur, they are only as a result of wet weather;
- To bring all wet weather CSO discharge points into compliance with the technology based requirements of the CWA and applicable federal and state water quality standards; and
- To minimize water quality, aquatic biota, and human health impacts from wet weather flows.

To achieve these goals, the CSO Control Policy recommended technology–based limits developed using best professional judgment[4] (BPJ) and also recommended that each combined sewer system develop and implement a long-term CSO control plan (LTCP) that will ultimately result in compliance with the requirements of the CWA.

In 2001, Congress added Section 402(q) to the CWA to specifically address CSOs by stating that "Each permit, order, or decree issued pursuant to this Act after the date of enactment of this subsection for a discharge from a municipal combined storm and sanitary sewer shall conform to the Combined Sewer Overflow Control Policy signed by the Administrator on April 11, 1994."

The CSO conditions in the draft permit are consistent with the National CSO Control Policy.

B. Technology-based requirements

As discussed above, EPA's CSO Policy recommended technology-based effluent limitations for CSOs using best professional judgment. The policy establishes the minimum technology-based requirement as the implementation of the nine minimum controls (NMCs). The NMCs are:

1. Proper operation and regular maintenance programs for the sewer system and the CSOs;
2. Maximize use of the collection system for storage;
3. Review and modification of pretreatment requirements to assure CSO impacts are minimized;

[4] Section 402(a)(1)(B) of the CWA provides the authority to establish case-by case technology–based limitations. 40 CFR 125.3 establishes requirements and factors to be considered in establishing case-by-case technology–based limits using best professional judgment (BPJ). See specifically 125.3 (c)(2) and 125.3(d).

4. Maximization of the flow to the POTW for treatment;
5. Prohibition of CSOs during dry weather;
6. Control of solid and floatable material 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 CSO Policy required CSO communities to submit documentation of their implementation of the NMCs by January 1, 1997. The City of Chelsea submitted its documentation on December 31, 1996 as part of MWRA's submittal. The draft permit requires continued implementation of the NMC program, which was last updated in the City's CSO Annual Report in April of 2012, which encompassed the 2011 calendar year. The draft permit also requires that the City review and update its program no later than April 30th following the first full year of the permit and authorizes modifications to the NMC program during the term of the permit to enhance its effectiveness, while requiring that certain minimum controls be maintained in any such modifications. Part I.C. of the permit, the minimum implementation levels, provides specific minimum requirements that the permittee must fulfill in order to be in compliance with each of the NMCs.

C. Water Quality Based Requirements

Water quality-based limitations are required in NPDES permits when EPA and the State determine that effluent limits more stringent than technology-based limits are necessary to maintain or achieve state or federal water quality standards (WQS). See Section 301(b)(1)(C) of the CWA.

Receiving water requirements are established according to numerical and narrative standards adopted under state law for each water quality classification. When using chemical-specific numeric criteria to develop permit limits, both the acute and chronic aquatic-life criteria, expressed in terms of maximum allowable in-stream pollutant concentration, are used. Acute aquatic-life criteria are considered applicable to daily time periods (maximum daily limit) and chronic aquatic-life criteria are considered applicable to monthly time periods (average monthly limit). Chemical-specific limits are allowed under 40 CFR § 122.44(d)(1) and are implemented under 40 CFR § 122.45(d).

Narrative criteria from the State's WQS are often used to limit toxicity in discharges where (a) a specific pollutant can be identified as causing or contributing to the toxicity but the state has no numeric standard; or (b) toxicity cannot be traced to a specific pollutant.

EPA regulations require NPDES permits to contain effluent limits more stringent than technology-based limits where more stringent limits are necessary to maintain or achieve state or federal WQS. The permit must address any pollutant or pollutant parameter (conventional, non-conventional, toxic and whole effluent toxicity) that is or may be discharged at a level that

causes or has "reasonable potential" to cause or contribute to an excursion above any water quality criterion. See 40 CFR Section 122.44(d)(1). An excursion occurs if the projected or actual in-stream concentration exceeds the applicable criterion. In determining reasonable potential, EPA considers (a) existing controls on point and non-point sources of pollution; (b) pollutant concentration and variability in the effluent and receiving water as determined from the permit application, Monthly Discharge Monitoring Reports (DMRs), and State and Federal Water Quality Reports; (c) sensitivity of the species to toxicity testing; (d) known water quality impacts of processes on wastewater; and, where appropriate, (e) dilution of the effluent in the receiving water.

WQS consist of three parts: (a) beneficial designated uses for a water body or a segment of a water body; (b) numeric and/or narrative water quality criteria sufficient to protect the assigned designated use(s); and (c) antidegradation requirements to ensure that once a use is attained it will not be degraded. The Massachusetts Surface Water Quality Standards (MA SWQS), found at 314 CMR 4.00, include these elements. These standards require the state to "limit or prohibit discharges of pollutants to surface waters to assure that surface water quality standards of the receiving waters are protected and maintained or attained." [314CMR4.03 (1)(a)]. These standards also include requirements for the regulation and control of toxic constituents and require that EPA criteria, established pursuant to Section 304(a) of the CWA, shall be used unless a site-specific criterion is established. The conditions of the permit reflect the goal of the CWA and EPA to achieve and then to maintain WQS.

The WQS may also assign restrictions to receiving waters, which establish a subcategory of use assigned to a receiving water segment. One of the subcategories which may be established is for CSO-impacted segments. The permitting authority may allow overflow events to waters identified as impacted by CSOs provided that:

(1) an approved Final CSO Facilities Plan under 310 CMR 44.00 provides justification for the overflows (note – in this case the CSO Facilities Plan as defined by MassDEP and an LTCP, as defined by EPA, are the same document) ;

(2) the MassDEP finds through a Use Attainability Analysis (UAA), and EPA concurs, that achieving a greater level of CSO control is not feasible for one of the reasons specified at 314 CMR 4.03(4);

(3) existing uses and the level of water quality necessary to protect the existing uses shall be maintained and protected; and

(4) public notice is provided through procedures for permit reissuance or facility planning under M.G.L.c.21 §§ 26 through 53 and regulations promulgated pursuant to M.G.L.c. 30A.

Conversely, if a Final CSO Facilities Plan shows that elimination of CSO discharges is feasible, through relocation or sewer separation, no CSO discharges are authorized into that receiving water and the CSO-impacted subcategory is removed.

The State may also, with EPA concurrence, establish a water quality standards variance. A variance is a short-term modification of the standards, designed to obtain the information necessary to determine the appropriate water quality standard and level of CSO control for the segment. Variances are discharger and pollutant specific, are time-limited, and do not forego the currently designed use. At the end of the variance, a final Administrative Determination is made regarding the appropriate level of CSO control and final water quality determinations, in accordance with National and State CSO Policy.

D. Antibacksliding

A permit may not be renewed, reissued or modified with less stringent limitations or conditions than those contained in the previous permit unless in compliance with the anti-backsliding requirements of the CWA [see Sections 402(o) and 303(d)(4) of the CWA and 40 CFR §122.44(l)(1 and 2)]. EPA's antibacksliding provisions prohibit the relaxation of permit limits, standards, and conditions except under certain circumstances. Effluent limits based on BPJ, water quality, and state certification requirements must also meet the antibacksliding provisions found at Section 402(o) and 303(d)(4) of the CWA.

E. Antidegradation

Federal regulations found at 40 CFR Section 131.12 require states to develop and adopt a statewide antidegradation policy which maintains and protects existing instream water uses and the level of water quality necessary to protect the existing uses, and maintains the quality of waters which exceed levels necessary to support propagation of fish, shellfish, and wildlife and to support recreation in and on the water. The Massachusetts Antidegradation Regulations are found at 314 CMR 4.04. There are no new or increased discharges being proposed with this permit reissuance.

F. State Certification

Under Section 401 of the CWA, EPA is required to obtain certification from the state in which the discharge is located that all water quality standards or other applicable requirements of state law, in accordance with Section 301(b)(1)(C) of the CWA, are satisfied. EPA permits are to include any conditions required in the state's certification as being necessary to ensure compliance with state water quality standards or other applicable requirements of state law. See CWA Section 401(a) and 40 CFR §124.53(e). Regulations governing state certification are set out at 40 CFR §124.53 and §124.55. EPA regulations pertaining to permit limits based upon water quality standards and state requirements are contained in 40 CFR §122.44(d).

V. Explanation of Permit's Effluent Limitations

A. MWRA CSO Facilities Plan/Water Quality Standards

EPA's CSO Policy recommended that each combined sewer system prepare and implement an LTCP that would result in attainment of CWA requirements. In 1987, MWRA stipulated to responsibility and legal liability for all combined sewer overflows hydraulically connected to its collection system[5], which in addition to discharges owned and operated by MWRA includes CSOs owned and operated by the communities of Boston, Cambridge, Chelsea, and Somerville. The CSO planning conducted by MWRA subsequent to 1987 addressed all of these CSO outfalls, in accordance with the stipulation, and MWRA has funded the planning, design, and construction of the recommended CSO control facilities.

In 1994, MWRA completed a Conceptual CSO Control Plan that formed the basis of its final Combined Sewer Overflow Plan and Environmental Impact Report ("Facilities Plan"), completed in July 1997. The recommended CSO control projects included sewer separation, hydraulic relief, and floatables control projects. The MWRA also estimated the activation frequency and volume for the remaining CSOs under baseline (1992) conditions and after completion of the projects recommended by the Facilities Plan.

For those CSOs that MWRA believed could not be eliminated, the plan included information to support a UAA pursuant to 40 CFR Section 131.10 (g). A UAA is an evaluation conducted by the state which supports removal of a National Goal Use based on criteria such as costs and impacts associated with attaining that use. The state submitted its final administrative determinations, including a UAA, to EPA for approval on December 31, 1997. On February 27, 1998, EPA approved the state's changes to water quality standards, which included removal of CSO-impacted designations for the Neponset River, North Dorchester Bay, South Dorchester Bay, and Constitution Beach; a SB-CSO designation for Boston Inner Harbor, including the Chelsea River; a B-CSO designation for the Muddy River; and a tentative determination for the issuance of WQS variances for the Lower Charles River, the Alewife Brook, and the Upper Mystic River due to CSO discharges. Variance conditions for CSOs discharging to the Lower Charles River were issued on September 2, 1998 and variance conditions for CSOs discharging to the Alewife/Upper Mystic sub-basin were issued on March 5, 1999.

On March 15, 2006, MWRA and the United States supplanted the 1987 Stipulation defining responsibilities for CSO abatement and CWA compliance with a "Second Stipulation of the United States and the Massachusetts Water Resources Authority on Responsibility and Legal Liability for Combined Sewer Overflow Control" (Second Stipulation). In the Second Stipulation, the MWRA accepted "legal liability to … meet the levels of CSO control (including as to CSO activation and as to volume of CSO discharge) described in the Authority's Long-Term CSO Control Plan". The most current estimates of CSO discharge frequency and volume expected in a typical year after full implementation of the CSO abatement projects required by the court order are documented in Exhibit B of the "Second Stipulation". The figures for the four Chelsea CSO outfalls are shown in Table 1 as follows:

[5] Stipulation of the United States and the Massachusetts Water Resources Authority on Responsibility and Legal Liability for Combined Sewer Overflows

Table 1

Outfall	Typical Year	
	Activation Frequency	**Volume (MG)**
CHE002	4	0.22
CHE003	3	0.04
CHE004	3	0.32
CHE008	0	0.00

In 2000-2001, the MWRA and the City of Chelsea completed several projects that cost approximately $30 million. The Chelsea Trunk Sewer Replacement replaced an 18-inch diameter city–owned trunk sewer with a 30 inch pipe. The Chelsea Branch Sewer Relief project relieved the Chelsea Branch and Revere Extension Sewers with 48-inch to 66-inch diameter pipe. In addition, all four (4) CSOs were either repaired or rebuilt and underflow baffles were installed at all four (4) CSOs for floatables control. In 2003, the City installed CSO metering and telemetry at all of its CSO structures from which the City derives the CSO activation frequency and volume amounts for its Annual Reports.

As detailed in its 2011 Annual Report submittal, the City is currently in the evaluation, design, and construction phases of various sewer separation projects to further reduce the quantity of stormwater discharged to its combined sewer system.

B. Water Quality-Based Effluent Limitations

The discharges from the City of Chelsea's CSOs into the Chelsea River and Boston Inner Harbor have been limited in accordance with the activation frequency and discharge volume estimates that are presented in Exhibit B of the Second CSO Stipulation incorporated into the Federal Court Order on April 27, 2006. These limits can be seen in **Attachment A** of the draft permit.

The draft permit continues the Annual Report requirement, which is due by April 30th of each year. In the Annual Reports submitted following the first and third full calendar years under this permit, the permittee is required to compare the metered CSO activation and discharge volume data with the data predicted by MWRA's model for each CSO outfall. The Agencies believe that this analysis will be timely under this permit since the major CSO projects in MWRA's Facilities Plan have been completed in accordance with the Federal Court Order.

The last few years of Annual Reports have shown many activations (CSO discharges), particularly at Outfalls CHE004 and CHE008, where MWRA's model had predicted few if any activations based on actual rainfall for those years. For example, for the year 2011, there were 16 activations for Outfall CHE004 and 15 activations for Outfall CHE008. MWRA's modeling had predicted that there would be no activations at either of these outfalls based on actual 2011 rainfall or "typical year" rainfall. See results in Table 2 below.

Table 2

	2011 Rainfall Under 2011 System Conditions [6]		2011 Metered Data reported by permittee	
Outfall	Activation Frequency	Volume (MG)	Activation Frequency	Volume (MG)
CHE002	0	0.0	0	0.0
CHE003	0	0.0	0	0.0
CHE004	0	0.0	16	0.59
CHE008	0	0.0	15	0.42

If, following completion of all abatement projects recommended by the MWRA Facilities Plan the metered discharge flow and frequency under "typical year" conditions exceed the authorized "typical year" flows and frequency authorized by the permit, the permittee, working with the MWRA, will either be required to conduct further CSO abatement or must seek an adjustment of the water quality standards.

VI. Essential Fish Habitat Determination (EFH)

Under the 1996 Amendments (PL 104-267) to the Magnuson-Stevens Fishery Conservation and Management Act (16 U.S.C. § 1801 et seq. (1998)), EPA is required to consult with the National Marine Fisheries Services (NMFS) if EPA's action or proposed actions that it funds, permits, or undertakes, may adversely impact any essential fish habitat such as: waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity (16 U.S.C. § 1802 (10)). Adversely impact means any impact which reduces the quality and/or quantity of EFH (50 C.F.R. § 600.910 (a)). Adverse effects may include direct (e.g., contamination or physical disruption), indirect (e.g., loss of prey, reduction in species' fecundity), site-specific or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions.

[6] These are estimated CSO activations and volumes for storms during the calendar year 2011. The estimated were developed using the MWRA InfoWorks sewer system model by simulating each of the rainfall events and respective system operations in 2011. For the simulations, MWRA updated the model to account for new information and known changes to the system, including CSO projects and other system improvements completed during the year. From April 30, 2012 letter of M. Hornbrook (MWRA) to T. Borci (EPA) and K. Brander (MassDEP).

EFH is only designated for species for which federal fisheries management plans exist (16 U.S.C. § 1855(b) (1) (A)). EFH designations for New England were approved by the U.S. Department of Commerce on March 3, 1999. The following is a list of the EFH species and applicable lifestage(s) for the area that includes Massachusetts Bay, to which the Chelsea River and Boston Inner Harbor discharge:

Species	Eggs	Larvae	Juveniles	Adults
Atlantic cod (*Gadus morhua*)	X	X	X	X
haddock (*Melanogrammus aeglefinus*)	X	X		
pollock (*Pollachius virens*)	X	X	X	X
whiting (*Merluccius bilinearis*)	X	X	X	X
red hake (*Urophycis chuss*)	X	X	X	X
white hake (*Urophycis tenuis*)	X	X	X	X
winter flounder (*Pseudopleuronectes americanus*)	X	X	X	X
yellowtail flounder (*Pleuronectes ferruginea*)	X	X	X	X
windowpane flounder (*Scopthalmus aquosus*)	X	X	X	X
American plaice (*Hippoglossoides platessoides*)	X	X	X	X
ocean pout (*Macrozoarces americanus*)	X	X	X	X
Atlantic halibut (*Hippoglossus hippoglossus*)	X	X	X	X
Atlantic sea scallop (*Placopecten magellanicus*)	X	X	X	X
Atlantic sea herring (*Clupea harengus*)		X	X	X
long finned squid (*Loligo pealei*)	n/a	n/a	X	X
short finned squid (*Illex illecebrosus*)	n/a	n/a	X	X
Atlantic butterfish (*Peprilus triacanthus*)	X	X	X	X
Atlantic mackerel (*Scomber scombrus*)	X	X	X	X
summer flounder (*Paralicthys dentatus*)				X
scup (*Stenotomus chrysops*)	n/a	n/a	X	X
black sea bass (*Centropristus striata*)	n/a		X	X

surf clam (*Spisula solidissima*)	n/a	n/a	X	X
bluefin tuna (*Thunnus thynnus*)			X	X

A review of the relevant essential fish habitat information provided by NMFS indicates that EFH has been designated for 23 managed species within the NMFS boundaries encompassing Massachusetts Bay. It is possible that a number of these species utilize these receiving waters for spawning, while others are present seasonally.

Based on the available information, EPA has determined that these CSO discharges, as restricted by the draft permit conditions, will not directly or indirectly cause adverse effects to EFH species or their habitat, because the draft permit contains conditions (NMCs) that are protective of the aquatic species in both receiving waters.

VII. Endangered Species Act (ESA)

Section 7(a) of the Endangered Species Act of 1973, as amended (ESA) grants authority to and imposes requirements upon Federal agencies regarding endangered or threatened species of fish, wildlife, or plants ("listed species") and habitat of such species that has been designated as critical (a "critical habitat"). The ESA requires every Federal agency, in consultation with and with the assistance of the Secretary of Interior, to insure that any action it authorizes, funds, or carries out, in the United States or upon the high seas, is not likely to jeopardize the continued existence of any listed species or result in the destruction or adverse modification of critical habitat. The United States Fish and Wildlife Service (USFWS) typically administer Section 7 consultations for bird, terrestrial, and freshwater aquatic species. The NMFS typically administers Section 7 consultations for marine species and anadromous fish.

EPA has reviewed the federal endangered or threatened species of fish, wildlife, and plants to see if any such listed species might potentially be impacted by the reissuance of this NPDES permit and has not found any such listed species. EPA has determined that there are no species of concern present in the vicinity of Chelsea's CSO discharges. Therefore, EPA does not need to formally consult with NMFS or USFWS in regard to the provisions of the ESA.

EPA has structured the proposed limits to be sufficiently stringent to assure that Water Quality Standards will be met. The effluent limits and conditions established in this permit ensure the protection of aquatic life and maintenance of the receiving water as an aquatic habitat. During the public comment period, EPA has provided a copy of the Draft Permit and Fact Sheet to both NMFS and USFWS.

VIII. State Certification Requirements

EPA may not issue a permit unless the MassDEP certifies that the effluent limitations contained in the permit are stringent enough to assure that the discharge will not cause the receiving water to violate State Water Quality Standards. The staff of the MassDEP have reviewed the draft permit and advised EPA that the limitations are adequate to protect water quality. EPA has requested permit certification by the State pursuant to 40 CFR 124.53 and expects that the draft permit will be certified.

IX. Public Comment Period, Public Hearing, and Procedures for Final Decision

All persons, including applicants, who believe any condition of the Draft Permit is inappropriate must raise all issues and submit all available arguments and all supporting material for their arguments in full by the close of the public comment period, to George Papadopoulos, U.S. EPA, Office of Ecosystem Protection**,** Industrial Permits Branch, Mail Code OEP 06-1, 5 Post Office Square, Suite 100, Boston, Massachusetts 02109-3912. Any person, prior to such date, may submit a request in writing for a public hearing to consider the Draft Permit to EPA and the State Agency. Such requests shall state the nature of the issues proposed to be raised in the hearing. A public meeting may be held if the criteria stated in 40 C.F.R. § 124.12 are satisfied. In reaching a final decision on the Draft Permit, the EPA will respond to all significant comments and make these responses available to the public at EPA's Boston office.

Following the close of the comment period, and after any public hearings, if such hearings are held, the EPA will issue a Final Permit decision and forward a copy of the final decision to the applicant and each person who has submitted written comments or requested notice. Within 30 days following the notice of the Final Permit decision, any interested person may submit a petition for review of the permit to EPA's Environmental Appeals Board consistent with 40 C.F.R. § 124.19.

X. EPA and MassDEP Contacts

Additional information concerning the draft permit may be obtained between the hours of 9:00 a.m. and 5:00 p.m., Monday through Friday, excluding holidays, from the EPA and MassDEP contacts below:

George Papadopoulos, Industrial Permits Branch
5 Post Office Square - Suite 100 - Mailcode OEP 06-1
Boston, MA 02109-3912
Papadopoulos.george@epa.gov
Telephone: (617) 918-1579 FAX: (617) 918-1505

Cathy Vakalopoulos, Massachusetts Department of Environmental Protection
Surface Water Discharge Permit Program
1 Winter Street, Boston, Massachusetts 02108
catherine.vakalopoulos@state.ma.us
Telephone: (617) 348-4026; FAX: (617) 292-5696

February 27, 2013
Date

Ken Moraff, Acting Director
Office of Ecosystem Protection
U.S. Environmental Protection Agency

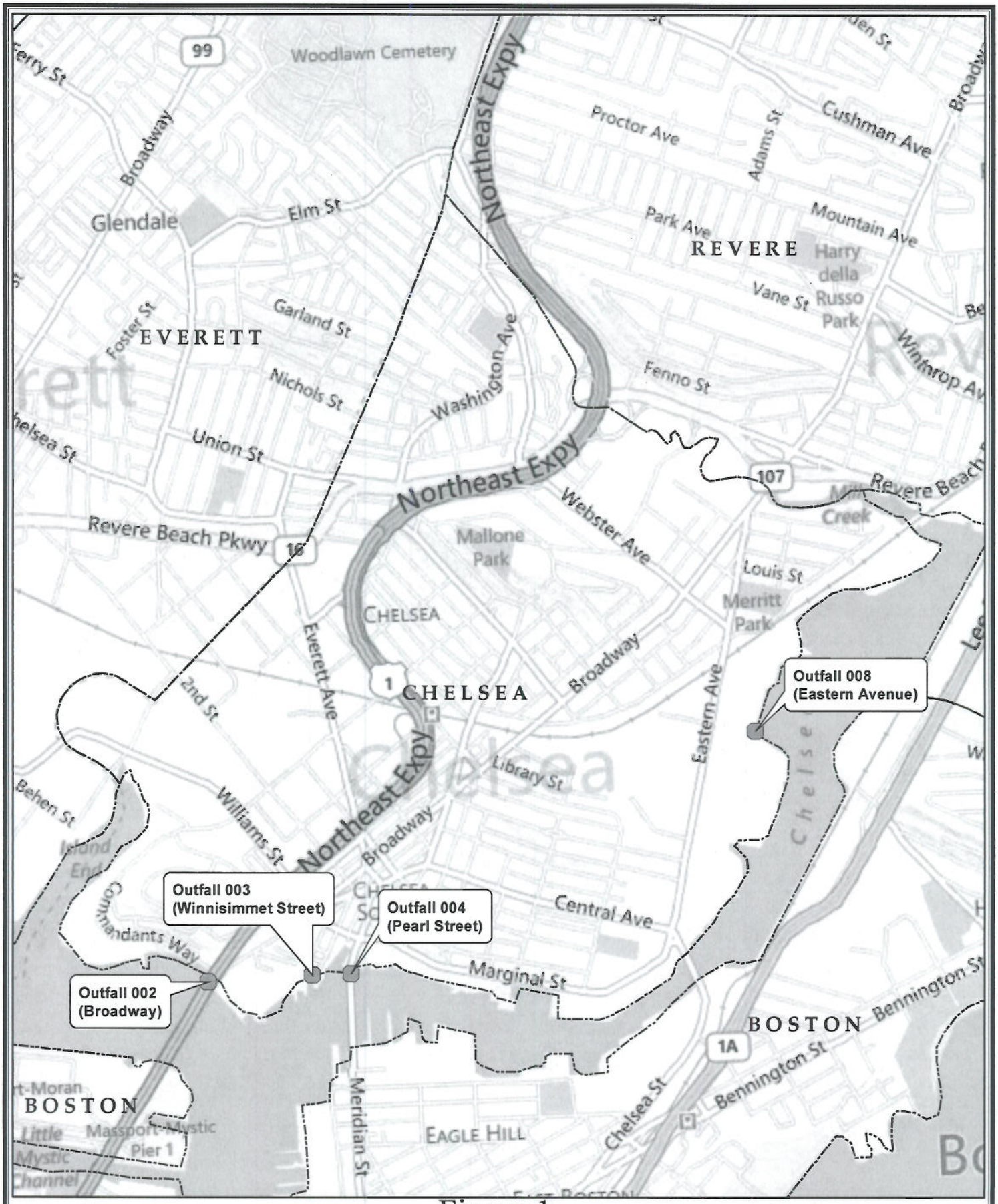

Figure 1
City of Chelsea
4 Combined Sewer Overflows

EPA

Map created by EPA Region 1 GIS Center
Map Tracker ID 8961 December 18, 2012
Data Sources: Base Map Data: (c) 2010 Microsoft Corporation and its data suppliers

Response to Public Comments

From March 20, 2013 to April 18, 2013, the United States Environmental Protection Agency ("EPA") and the Massachusetts Department of Environmental Protection ("MassDEP") (together, the "Agencies") solicited public comments on draft NPDES Permit No. MA0101877, developed pursuant to a permit application from the City of Chelsea, Massachusetts, for the reissuance of a National Pollutant Discharge Elimination System ("NPDES") permit to discharge combined sewer overflow consisting of sanitary wastewater, stormwater, and industrial wastewater from outfall serial number 002 to Boston Inner Harbor and from outfall serial numbers 003, 004, and 008 to the Chelsea River. In accordance with the provisions of 40 C.F.R. §124.17, this document presents EPA's responses to comments received on the draft permit. The responses to comments explain and support the EPA determinations that form the basis of the final permit.

After a review of the comments received, EPA and MassDEP have made a final decision to issue this permit authorizing these discharges. The final permit is substantially the same as the draft permit that was available for public comment. Although EPA's decision-making process has benefitted from the comments and additional information submitted, the information and arguments presented did not raise any substantial new questions concerning the permit. EPA did, however, make certain clarifications and changes in response to comments. The analyses underlying these changes are explained in the responses to individual comments that follow and are reflected in the final permit. A summary of the changes made in the final permit are listed below. Where applicable, relevant sections of the response document where these changes have been discussed have been included in parentheses at the end of each change.

Copies of the final permit may be obtained by writing or calling EPA's NPDES Water Permits Branch (OEP 06-1), Office of Ecosystem Protection, 5 Post Office Square, Suite 100, Boston, MA 02109-3912; Telephone: (617) 918-1579.

1. The final permit includes language in Part I.A and I.H. that requires the permittee to submit CSO discharge monitoring information on discharge monitoring reports, and allows electronic submittal of these reports and other submittals required by this permit. (**Comment A6**).

2. The final permit includes a requirement in Part I.C.6 that requires the permittee to issue an annual press release regarding its CSO discharges. (**Comment B2**)

3. The final permit includes a requirement in Part I.C.7 that the permittee provide e-mail notification of CSO discharges from any of its outfalls to certain entities within 24 hours after the onset of such discharges, or as soon after such discharges begin as feasible. (**Comment B2**)

4. The final permit has included a requirement in Part I.D.5 that the permittee incorporate any relevant findings or recommendations from the forthcoming Massachusetts Water Resources Authority (MWRA) North System Hydraulic Study into its NMC program and discuss these findings in the appropriate Annual Report. Parts I.D.5 and I.D.6 of the draft permit have been renumbered I.D.6 and I.D.7, respectively. (**Comment B5**)

Comments submitted by Andrew B. Desantis, Assistant Director of the City of Chelsea Department of Public Works:

Comment A1:

Section I.A.1.b: The permit sets limits on the activation frequencies and volumes for each of Chelsea's four CSOs without consideration for the appropriate party responsible for compliance with these limits. As clearly detailed in Attachment B to Chelsea's draft permit, *Second Stipulation of the United States and the Massachusetts Water Resources Authority [MWRA] on Responsibility and Legal Liability for Combined Sewer Overflow Control* (March 15, 2006), and the permit Fact Sheet, the MWRA has legal liability for meeting the frequency of CSO activations and volume of CSO discharges described in the MWRA's Long-Term CSO Control Plan (LTCP) until such time as Civil Action No. 83-1614-RGS is otherwise amended or terminated. Therefore, at this time:

- Chelsea is not legally liable for achieving the activation frequencies and volumes listed for its four CSOs in the MWRA LTCP.
- The EPA has no authority granted under the NPDES program to transfer legal liability for Chelsea's CSOs from the MWRA to Chelsea.
- The NPDES permit in question is being issued solely to the City of Chelsea, and not jointly to the MWRA and Chelsea.
- The EPA is not authorized to impose Effluent Limitations through NPDES permits on discharges for which the permittee does not have legal responsibility; hence, the CSO permit to be issued solely to Chelsea can contain only requirements for discharges under Chelsea's legal responsibility.
- Activation frequency and volume for each of the CSOs is directly related to the capacity of the MWRA wastewater system to accept and convey Chelsea's wastewater discharges.

For these reasons, achieving the activation frequencies and volumes set forth in Attachment A to Chelsea's draft CSO permit is both outside the scope of Chelsea's legal liability and operational control. Therefore, Chelsea's CSO permit must be revised to delete the requirement for Chelsea, as the permittee, to meet the CSO activation frequencies and volumes.

Response to Comment A1:

Section 301 of The Clean Water Act (CWA) prohibits discharges of pollutants to waters of the United States except as authorized by an NPDES permit issued pursuant to Section

402 of the Act. Permit regulations at 40 CFR 122.21(a) require that the discharger of pollutants apply for the permit. The City of Chelsea, the owner and operator of its combined sewer system, currently holds the NPDES permit authorizing the discharge from its combined sewer overflows and made a timely reapplication for renewal of that permit. Chelsea may not legally discharge combined sewer overflows to waters of the United States without an NPDES permit.

The MWRA's stipulation to liability for achieving the level of CSO control that the U.S. District Court established in its Order in the ongoing Boston Harbor civil action does not alter the City of Chelsea's obligation to comply with the Clean Water Act's permitting requirements. The MWRA did not assume ownership of Chelsea's combined sewer system, nor did it assume operational responsibilities for Chelsea's combined sewer system.

The permit includes mechanisms, however, for Chelsea and MWRA to determine whether the LTCP levels of control have been achieved and if not, for determining whether additional abatement projects are necessary and, if so, which entity is responsible for implementation.

The CWA requires that the reissued permit contain technology and water quality-based limits. The final permit has not been changed regarding Chelsea's legal liability to achieve the permit limits and conditions.

Comment A2:

Section I.A.1.b: The permit states that discharges shall be limited to the activation frequency and volume shown in Attachment A, but then states that discharge frequencies and volumes are expected to vary from year to year as a function of rainfall amount and intensity. This section is contradictory and there is no way for Chelsea to determine what will constitute compliance or non-compliance. Furthermore, Section V.B of the Fact Sheet accompanying the draft permit states that should activation frequency and volume differ from the LTCP (and proposed limits for Chelsea's CSO permit) upon completion of all CSO abatement projects, then the permittee will have to take action. This implies that the activation limits will not take effect until the LTCP is complete; however, the draft permit does not specifically state this anywhere. This section of the draft permit requires revision to clarify what will constitute a violation and when this will take effect.

Response to Comment A2:

The frequency and volumes of discharges set forth in the permit are based on the rainfall expected in the typical year used as the basis for LTCP modeling. These frequencies and volumes were also established as the water quality criteria for the receiving waters pursuant to a Use Attainability Analysis (UAA). Since all of the LTCP projects have been completed, the limits are effective upon the effective date of the permit.

Given that it is extremely unlikely that the exact "typical year" rainfall pattern will be observed in any given year, the actual overflow activation frequencies and volumes will vary from year to year; years with rainfall greater than the typical year will produce more CSO activations while years with less rainfall than the typical year will produce fewer activations. The permit establishes a mechanism for the City, in cooperation with MWRA to determine if the actual CSO frequencies and volumes are consistent with the "typical year" predictions. Overflows that are consistent with the performance expected from the controls put in place to achieve the "typical year" level of control would not be in violation of the permit, even if annual overflow frequency or volume exceeded the annual levels in the water quality standard established pursuant to the UAA.

Specifically, in the first and third Years of this permit, the Annual Report requires that the permittee compare the actual CSO activation frequencies and volumes with those estimated by MWRA's model. In the Annual Reports for these two years, the permittee will have the opportunity to discuss the reasons for any discharges that are greater, or more frequent than the modeled estimates. As necessary, we would expect the City of Chelsea to discuss these results with MWRA to understand differences from the modeled estimates, the possible reasons for such variations, and what measures can be taken in future years to address overflows in excess of those expected from full implementation of the LTCP. This would also be an opportunity for the City to investigate or recommend additional Nine Minimum Control (NMC) measures, reassessment of MWRA modeling, increased monitoring, and measures to reduce activation frequencies and volumes to those predicted by the LTCP and included in the water quality standards.

As noted in the Fact Sheet, all major CSO abatement projects required by the Court Order have been completed, and flow measurements for Chelsea's combined sewer overflow discharges have not been within the "typical year" activation frequency and volume predicted by the LTCP. In its April 2013 letter detailing MWRA CSO discharge totals for 2012, MWRA notes that "MWRA and the City of Chelsea are working collaboratively to identify and resolve the sources of differences between the City's metered overflow data and MWRA's model predictions at outfalls CHE002, CHE003, CHE004, and CHE008. Intensive field investigations are underway as a first step."

Comment A3:

Section I.A.1.c: This section states that the CSO discharges must meet Federal and State water quality standards. Neither the Fact Sheet accompanying the draft permit or the Federal and Massachusetts Surface Water Quality Standards (314 CMR 4.0) provide any limits or measurable goals for SB-CSO classified waterbodies; therefore, it is unclear how Chelsea would evaluate compliance with these standards. If proper implementation of the Nine Minimum Controls (NMCs) is presumed to achieve compliance with water quality standards, the permit needs revision to specifically state this. If additional effort is presumed to be needed to achieve compliance with water quality standards, the permit needs additional detail instructing the permittee what this additional effort is expected to be. This could be provided in the CSO permit, Fact Sheet, or Response to Comments.

Response to Comment A3:

Chelsea's CSO discharges must meet all water quality standards as set forth in the Massachusetts Water Quality Standards (WQS) (314 CMR 4.00), as modified by the Use Attainability Analysis (UAA) for the affected receiving waters. The UAA was the basis for a modification of the water quality standard for both of the receiving waters to SB(CSO), a subcategory of the SB classification. Designated uses for waters with SB(CSO) include all the uses associated with the SB classification except as temporarily impacted by CSO discharges that occur despite implementation of the LTCP (including all NMCs). For waters designated as SB(CSO), the MassDEP specifically allows "potential short-term excursions from any of the criteria in the state WQS, including toxicity, as long as acute toxicity impacts to fishery or biological resources do not occur."[1]

The NMCs are identified in EPA's CSO Control Policy as the minimum technology-based controls for CSO discharges, and are not water quality-based levels of control. However, implementation of the NMCs contribute towards attainment of WQS, such as those related to minimizing solids, reducing CSO volumes and frequencies, and removing illicit connections.

Aside from the minimum implementation levels for NMCs found in Part C, this Permit does not define specific further actions Chelsea must undertake to comply with the Permit's conditions, including the requirement to comply with water quality standards. If, for example, Chelsea became aware that its frequency of tidegate inspections or maintenance was insufficient to prevent frequent episodes of tidal intrusion, we would expect that the frequency of inspections or maintenance would be increased as an NMC measure. Similarly, if it is shown that any of Chelsea's CSOs activate more frequently or discharge greater volume in a typical year than specified in the LTCP and incorporated into the water quality standards, the City would need to work with MWRA to identify and undertake additional actions to comply with the Permit's terms.

Comment A4:

Section I.B & Section I.D.5: Under the 2003 permit, Chelsea was required to submit a CSO Monitoring Plan, which included discussion of how the City would address the Nine Minimum Controls. Chelsea also describes how it complies with the NMCs in each Annual Report due annually on April 30th, the same date as stated for the required revisions under Section I.B. Is the intent of Section B to have Chelsea submit to the EPA a revised version of this CSO Monitoring Plan, or is continued discussion of the NMCs in the Annual Report sufficient? This section of the permit requires revision to clarify what is required.

[1] December 31, 1997, Use Attainability Analysis included in correspondence from MassDEP to EPA, page 15.

Response to Comment A4:

While the permit does require that the City's NMC program include monitoring to effectively characterize CSO impacts and the efficacy of CSO control (See Part I.A.1.b.(9) of the permit) there is no specific requirement to update the existing CSO monitoring program. EPA does note that the minimum implementation level for CSO monitoring (See Part I.C.4.) requires the City to keep the existing metering devices in place and to report these measurements, whereas the minimum implementation measures in the 2003 permit allowed either metering devices or estimates.

The Agencies believe it is sufficient for the permittee, in its Annual Report, to discuss how it is implementing the Nine Minimum Controls, including a description of any changes in implementation from previous years and the rationale for such changes. The Annual Report that is due in April of 2014 should include any revisions to the City's NMC plan, including those regarding CSO monitoring.

Comment A5:

Section I.C.2: This section prohibits the discharge of materials that may cause visible oil sheen or containing floatable materials during wet weather when CSO discharges may be active. Since sanitary sewage and stormwater runoff almost always contain these materials, it is not feasible for Chelsea to prevent there discharge during wet weather. This section should be revised to add a statement such as "over and above that contained in normal sanitary sewage and stormwater connections".

Response to Comment A5:

As noted in the response to Comment A3 above, since the receiving waters are classified as Class SB (CSO), it is understood that there will be occasional discharges which do contain these materials. EPA's *Guidance for Nine Minimum Controls, (EPA 832-B-95-003; May 1995)* acknowledges that discharges of such materials may occur and that they may not always feasibly be eliminated. In Chapter 7 of this publication, the NMC regarding solid and floatable materials states that this NMC is intended to "reduce, if not eliminate, visible floatables and solids . . . ". In Chapter 8, the NMC regarding pollution prevention measures states that "the objective of this minimum control is to reduce to the greatest extent possible the amount of contaminants that enter the combined sewer system".

EPA notes that there has been a significant reduction in activation frequency and volume from Chelsea's CSOs since inplementation of the control measures in the LTCP. EPA believes that low discharge frequencies and volumes are the primary control mechanism for floatables and oil, and that floatables and oil in the few remaining discharges associated with normal combined sewage would not need to be further controlled. If there

were site–specific factors that exacerbated floatables and oils discharge from these CSOs, then it may be determined that further controls may be necessary.

Comment A6:

Section I.H: Submission of all reports or notifications required by the permit in hardcopy form to four different parties requires a large volume of paper. Chelsea requests that the permit be revised to specifically allow alternative submission of these documents in a more environmentally conscious manner via email or other digital means.

Response to Comment A6:

Part I.H. of the final permit includes information regarding the alternative electronic submission of notifications and reports that may be made to the MassDEP.

For alternative electronic submission of reports to EPA, the final permit has included language in Parts I.A and I.H of the final permit that allows the permittee to file discharge monitoring reports (DMRs), Annual Reports, and other required submittals electronically. Part I.A. describes the type of information that the permittee must report on DMRs and Part I.H. describes the report submittal process, including the procedure for the permittee to register for and begin submitting DMRs and other reports electronically through EPA's NetDMR system.

Notifications and reports may be submitted to MassDEP in hard copy or alternatively be submitted electronically using eDEP at: http://www.mass.gov/eea/agencies/massdep/service/approvals/state-specific-discharge-and-toxicity-reporting.html.

Comment A7:

Section I.I: Printing and retention of hardcopies of all reports and notifications required by the draft CSO permit requires a tremendous volume of paper and storage space. Chelsea requests that the permit be revised to specifically allow the Permittee to submit and retain copies in digital form.

Response to Comment A7:

The City of Chelsea may submit its ARs electronically to EPA and MassDEP as described in the final permit and response to Comment A6 above. In addition, the City of Chelsea may retain copies of reports required by this permit in digital form, but must be able to produce such reports upon request by EPA and MassDEP personnel.

Comments submitted by EkOngKar Singh Khalsa, Executive Director of the Mystic River Watershed Association and Roseann Bongiovanni, Associate Executive Director of the Chelsea Collaborative:

General Comment:

The Chelsea River, commonly referred to as Chelsea Creek, is not only the most contaminated tributary flowing into Boston Harbor, but also the second most polluted water body in Massachusetts[2]. Further, given that the Chelsea River connects some of the lowest income and most diverse areas of Chelsea, Revere, and East Boston, MyRWA recognizes environmental justice issues associated with inadequate storm- and sanitary-sewer infrastructure supporting these communities, which contributes to the heavily degraded water quality conditions in adjacent waters.

Our organizations are concerned about the substantial negative economic consequences that result from these discharges. Continued impairment of the receiving water bodies as a result of the proposed CSO activation has direct impact upon property values and public health and wellbeing in the communities adjacent to the receiving waters.

In general, in our opinion, efforts to improve and enhance conditions along the brooks and rivers of the Mystic River Watershed will be better supported by an expanded effort to improve water quality through the elimination of these types of discharges.

Comment B1:

We specifically request that the EPA include the following provisions in their final NPDES permit for the City of Chelsea:

1. Specific requirements for the City to consider green infrastructure in all sewer separation projects.

2. Increase focus on the City meeting all effluent limitation requirements, including Minimum Control Measures (MCM) 8 and 9.

3. Delay issuance, or develop the permit in a manner that takes into account a more robust understanding of the unique scale and complexity of Chelsea's sewer system and associated problems based on an outcome from an ongoing Massachusetts Water Resource Authority (MWRA) study.

Each of the above listed items is discussed in greater detail below.

[2] EPA Green Infrastructure Program Community Partner Profiles, 2011 Partners: Region 1: Chelsea, Massachusetts. EPA 832N12001.

GREEN INFRASTRUCTURE

Green infrastructure (GI), planned and implemented as a component to an integrated water management strategy, has demonstrated tangible benefits in reducing CSOs in combined systems[3]. The City began separating its combined sewer system (CSS) in the early 1970's and work to further abate CSOs continues to this day through additional sewer separation, hydraulic relief projects, and floatable control structure projects. Like most communities in the United States with CSO problems, Chelsea's sewer separation and large structural controls have typified the methods for reducing CSOs, as such technologies have been traditionally accepted as the Best Available Technologies (BAT). The problem with such traditional structural approaches is they are typically expensive, challenging to implement, and slow to construct.

Recognizing the benefits GI can have on reducing CSOs, the City has begun implementing measures to help intercept and infiltrate/delay discharge of runoff before it can drain to the CSS. In 2011, EPA Region 1 commended Chelsea for being a green infrastructure leader in the Mystic River watershed for installing tree boxes along Chester Avenue and other low impact stormwater mitigation strategies throughout the city.

EPA strongly encourages the use of GI and related innovative technologies, approaches, and practices to manage stormwater as a resource, reduce sewer overflows, enhance environmental quality, and achieve other economic and community benefits as a component to an integrated approach for managing municipal stormwater and wastewater. Properly planned, implemented, and operated GI can also slow the delivery of wet weather flows into sewer systems, helping to mitigate peak flows while providing filtration through plant materials and soil media for some portion of the runoff entering the sewer system, thereby reducing pollutant loads. By enhancing investments in GI, the City may be able to downsize or eliminate structural components of their CSO long-term control plan (LTCP). In addition, because GI is typically a fraction of the cost to design and construct compared to traditional pipe controls and structures, such approaches may yield significant cost savings to the City as work continues to further reduce the volume and frequency of their CSOs.

EPA has identified GI and associated innovations as important tools that are fundamental aspects of the agency's vision for integrated wastewater and stormwater planning solutions. In 2007, EPA recommended to permitting authorities that they structure their permits, as well as guidance or criteria for stormwater plans and CSO LTCPs, to encourage permittees to utilize GI approaches, where appropriate, in lieu of or in addition to more formal controls (Use of Green Infrastructure in NPDES Permits and Enforcement, EPA Memorandum to Water Division Directors, Regions 1 – 10, August 16, 2007). Increasing focus on GI also supports the efforts of the Mystic River Watershed Initiative, a collaborative effort between US EPA, MyRWA, and 21 other

[3] Stoner, N. (US EPA OW) and Giles, C. (US EPA OECA) (2011, October 27). [Memorandum to EPA Regional Administrators, OW & OECA Office & Division Directors]. Achieving Water Quality Through Integrated Municipal Stormwater and Wastewater Plans.

organizations to restore water quality in the Mystic River and quality of life in neighboring communities.

For these reasons, MyRWA and Chelsea Collaborative urge EPA to utilize this NPDES permit as a mechanism for further assisting/requiring the City to identify and implement GI practices as a component of their CSO LTCP and maximize use of such BATs for reducing CSOs from their CSS. We also recommend EPA require the City of Chelsea to perform a comprehensive GI analysis in a sample set of sewer sheds to determine which locations and types of GI will be most effective at intercepting and treating runoff.

Response to Comment B1:

Regarding Item #1, EPA appreciates the comment regarding consideration of green infrastructure (GI) in CSO planning and reduction efforts. As noted, EPA is very much committed to promoting the employment of GI practices, including such practices that may abate CSOs. In October of 2013, EPA released a new strategic agenda that affirmed its commitment to promoting and understanding where and how GI may be best employed. Refer to http://water.epa.gov/infrastructure/greeninfrastructure/gi_support.cfm. Consistent with this new agenda and EPA's ongoing Green Infrastructure Partnership, EPA Region 1 selected the City of Chelsea in 2012 for a GI direct technical assistance pilot project. As a result, Chelsea evaluated opportunities for incorporating GI into the City's municipal code and ordinance. This project also evaluated specific GI best management practices (BMPs) that may be considered given the City's hydraulically and geographically-constrained urban character. These evaluations and outreach materials developed during this 2012 project are available on the City's website. Refer to http://www.chelseama.gov/Public_Documents/ChelseaMA_Planning/EPA%20GI. This evaluation is in line with the commenter's recommendation for a comprehensive GI analysis in slected sewer sheds in Chelsea.

The following are examples of completed and proposed projects in Chelsea that incorporate GI elements:

In 2010, the City of Chelsea had funding in place for the replacement or rehabilitation of water, sewer and storm drain infrastructure. The Charles River Watershed Association (CRWA) worked with the City to develop a design which incorporated the addition of four stormwater tree pits as GI infiltration features into a larger reconstruction project on Chester Avenue, a residential street adjacent to the downtown area. Four stormwater tree pits were installed during the summer of 2010, which added stormwater treatment and infiltration to the area as well as much needed greenery to this street.

CRWA is working on a project to retrofit a parking lot of the Mace Apartments site with stormwater controls. This complex is adjacent to Mill Creek. The design includes the modification and enlargement of a central island in the parking lot with a rain garden to collect and treat sheet flow coming down Crescent Street and from the upper portion of the parking lot itself; a stormwater planter along Clinton Street to collect flow from the

street as it flows into Mill Court; and a bioretention area along the northern edge of the parking lot, adjacent to Mill Creek, to collect and treat sheet flow from the lower portion of the parking lot. In addition to treating stormwater runoff prior to it discharging to Mill Creek, the proposed project will add greenspace to the area, reduce impervious cover, and attract people to this Creek-side location. Finally, CRWA has also implemented a stormwater runoff monitoring program at this site to quantify and compare water quality of site runoff pre- and post-construction.

Although GI projects are believed to be beneficial in reducing CSO volumes as part of an integrated approach, this permit and NPDES permits in general do not include the specific measures by which the permittee will abate its CSOs and comply with permit limits. Specific abatement activities are typically evaluated in a CSO Long Term Control Plan, which identifies cost and effectiveness of a variety of alternatives, from which a recommended plan is selected.

In any event, we would expect and encourage the City to continue to consider GI and other techniques in future CSO abatement efforts. For this permit, this ongoing consideration of GI practices is in the context of the extent to which they could benefit the City, State, and the ratepayers by meeting the goals of CSO abatement work at lower cost, particularly if additional CSO abatement is needed to attain the permit conditions or if even higher levels of CSO control are required in the future. EPA expects that the permittee will describe any consideration or implementation of GI concepts in any projects related to CSO abatement or control in each Annual Report that is due with this permit.

Regarding Item #2, in Comment B1, see the response to Comment B2.

Regarding Item #3 in Comment B1, see the response to Comment C6.

Comment B2:

Nine Minimum Controls
Stronger requirements should be made on the City for meeting the Nine Minimum Controls (NMC). NMC 8 requires adequate public notification of CSO occurrences and CSO impacts. We request that a plan for public notice be drafted by Chelsea for use during a release and submitted for review and approval by EPA and all stakeholder groups that may be affected by such a release.

Response to Comment B2:

First, as a point of clarification, EPA refers to each of the nine minimum controls as an NMC (see Part I.A.1.a of the permit for a list of the NMCs). EPA has also identified minimum implementation levels in the permit (see Part I.C), which represent the minimum activities the permittee must include in its NMC program. Where the commenter refers to minimum control measures (MCMs), it is apparent he is referencing the list of NMCs in Part I.A 1.a, and not the minimum implementation levels in Part I.C.

Regarding the comment on adequate public notice (NMC #8), the permit has been changed to include additional language in Part I.C.6 requiring the issuance of an annual press release on April 30th regarding its CSO discharges. This press release shall be distributed to the following, at a minimum:

- local watershed advocacy groups, including the Chelsea Collaborative and the Mystic River Watershed Association
- local health agents in Chelsea and adjacent communities, and
- a newspaper of local circulation

In addition, in Part I.C.7, the final permit requires the permittee to develop a plan to provide an e-mail notification of CSO discharges from any of its outfalls to the entities listed above, with the exception of a newspaper of local circulation. The City will be required to provide such notification within 24 hours of the onset of such discharges, or as soon feasible after such discharges begin. This requirement is consistent with the requirement in the NPDES permit for the City of Cambridge's CSOs, permit #MA0101974, and also with NMC #8. Part I.C.7 of the final permit reads as follows:

> The permittee shall provide an e-mail notification of CSO discharges from any of its outfalls to the entities listed above, with the exception of a newspaper of local circulation. The City will be required to provide such notification within 24 hours of the onset of such discharges, or as soon as feasible after such discharges begin. The City shall develop a plan to meet this requirement and submit it to EPA and the MassDEP within ninety (90) days of the effective date of the permit. This notification procedure shall be implemented no later than one (1) year after the effective date of the permit.

Comment B3:

Minimal Control Measure (MCM) 9 requires municipalities perform "monitoring to effectively characterize CSO impacts and the efficacy of CSO controls." As a component to MCM 8, MyRWA requests that the City provide public notification of not just the timing, but the total volume and composition of CSOs, including fecal coliform, heavy metals, petroleum hydrocarbons, PCBs, and other potential pollutant concentrations.

Response to Comment B3:

Regarding more CSO monitoring for other parameters, the Agencies have found that CSO quality has varied dramatically in sampling programs (even among multiple samples at the same CSO), and the litany of factors affecting CSO quality makes it difficult to draw conclusions regarding which factors bear more impact. Typically, most of our CSO decisions have been based on discharge quantity/frequency and receiving water uses, which we still believe are better criteria. In any case, it would be challenging to determine how sampling of CSO quality would influence decisions to move forward with any further CSO abatement work.

The MWRA has a long term ambient monitoring program, which has collected a variety of water quality data, including bacteria data, with one sampling station at the mouth of the Mystic River, a short distance downstream of Outfalls 002, 003, and 004. As expected, this sampling station shows elevated bacteria concentrations during and following periods of precipitation. This monitoring effort will continue to provide information on bacteria in the vicinity.

MWRA will also be performing a three-year performance assessment of its CSO Long Term Control Plan (LTCP) starting in January 2018. The Court Order stipulates that this work be done in accordance with EPA's CSO policy, which reads in part as follows:

> "The selected CSO controls should include a post-construction water quality monitoring program adequate to verify compliance with water quality standards and protection of designated uses as well as to ascertain the effectiveness of CSO controls. This water quality compliance monitoring program should include a plan to be approved by the NPDES authority that details the monitoring protocols to be followed, including the necessary effluent and ambient monitoring and, where appropriate, other monitoring protocols such as biological assessments, whole effluent toxicity testing, and sediment sampling."

EPA believes that the CSO discharge measurement required in the permit and MWRA's receiving water CSO monitoring described above will be sufficient to characterize Chelsea's CSO discharges and their impact on receiving waters.

The Agencies believe that the focus of this permit should remain on minimizing CSO discharges and to continue implementing the NMCs in order to minimize the pollutants present in these discharges.

Comment B4:

Federal and State Water Quality Standards
A fundamental "effluent limitation" requirement as stated on page 2 of this draft NPDES permit states that the "permittee's discharges must meet Federal and State water quality standards (WQS)"; however, it is unlikely that any CSOs from the listed outfalls will meet Federal and State WQSs. The Chelsea River is listed on the *Final Massachusetts Year 2010 Integrated List of waters* and on the *Proposed Massachusetts Year 2012 Integrated List of Waters*, as a Category 5 waterbody impaired for turbidity, taste and odor, petroleum hydrocarbons, dissolved oxygen, PCBs in fish tissue, fecal coliform, unionized ammonia, and floatables/debris. Though a TMDL has not been developed by MassDEP for the Chelsea River or Boston Inner Harbor, it is likely that discharges from the proposed authorized outfalls will further contribute to the impairment of many of these pollutants and conditions.

Response to Comment B4:

As explained in the response to Comment A3, the waters receiving Chelsea's CSOs are classified SB(CSO), established on the basis of a UAA, that allows short term impacts from CSOs that occur after the implementation of the LTCP. CSOs discharges to these waters that are in accordance with the frequency and volumes in the UAA would meet the standard. If the water body is impaired from sources other than CSOs controlled via the LTCP, any TMDL for that receiving water would allow for impacts from LTCP-controlled CSOs and determine load allocations for the other sources.

As described by the commenter, Chelsea Creek and Boston Inner Harbor have been identified by the State as receiving waters that are not achieving water quality criteria for pathogens (among other pollutants), and are among over 1000 water body segments in Massachusetts for which TMDLs must be produced. MassDEP developed a Draft Pathogen TMDL for the Boston Harbor Watershed (excluding the Neponset River sub-basin) in 2009 that has yet to be finalized. When that TMDL is completed by the State and approved by EPA, any subsequently issued NPDES permit must be consistent with the TMDL's assumption and requirements of its wasteload allocations pursuant to 40 CFR 122.44(d)(1)(vii)(B)

Pending completion and approval of a TMDL, we expect that ongoing efforts to further reduce CSO discharges and to abate stormwater discharges, particularly through illicit connections, will result in improvements to water quality. Continuing sampling programs by the MWRA and other entities will be helpful in identifying and confirming pollutant sources and pollutant loads in the watershed, and will be important in developing the final TMDL.

Comment B5:

MWRA NORTH SYSTEM HYDRAULIC STUDY

As stated in the draft NPDES permit, the City's CSS comprises approximately 70% of the City's wastewater sewer system. The remaining CSS system is owned and operated by the Massachusetts Water Resource Authority (MWRA). Wastewater in both of these systems is collected and transported to the MWRA Deer Island Wastewater Treatment Plant Publically Owned Treatment Works Facility (POTW).

MWRA is in the process of completing an optimization study of their North System. The goal of this project is to "analyze the MWRA Chelsea Creek Headworks tributary area and develop recommended means for system optimization and sanitary sewer overflow (SSO) impact reduction as it related to the various discharge areas." The study area includes 18 communities and 46% of the North System flow to the POTW. A final report was scheduled to be released in November 2012, but has not yet been completed. The final report is anticipated to recommend an overall plan to eliminate, reduce, or relocate SSOs for the portion of the service area tributary to Chelsea Creek headworks.

The results of this study may have significant bearing on the City's CSS, especially if the study shows that system has upstream capacity. If upstream capacity is found to exist, it may obviate the need for the four (4) CSO outfalls that are currently proposed for authorization to discharge under this draft NPDES permit. The Mystic River Watershed Association and Chelsea Collaborative recommend that EPA require that, once the MWRA report has been issued, the City of Chelsea prepare and issue its own report on how the findings of the MWRA North System Hydraulic Study can allow Chelsea to reduce CSO flows or eliminate CSOs entirely within a reasonable timetable.

Response to Comment B5:

As stated in the fact sheet, 70% of the City's sewer system is combined, while the remaining 30% is separated. There was no attempt to characterize any sewer system or related installations owned and operated by the MWRA within the City of Chelsea.

Secondly, it does not appear that the study being conducted by the MWRA will have a direct bearing on the Chelsea CSO discharges. In a letter of July 29, 2011 from Michael Hornbrook of the MWRA to Todd Borci of the EPA, the MWRA stated that the purpose of this study was to "review the frequency and extent of the Sanitary Sewer Overflows (SSOs) in the area tributary to the Chelsea Creek Headworks and to develop recommended alternatives to optimize performance for the collection system which will result in the reduction of SSO volume, frequency, and/or location to local and regional sewer facilities and receiving waters". The study area for this study includes the MWRA interceptor system tributary to Chelsea Creek Headworks associated with overflows to the Mystic River and its tributaries. This includes 18 communities and 46% of the North System flow to Deer Island (and 30% of total system flow). Therefore, it appears that the main focus of this study will be on SSOs rather than CSOs and take place mostly upstream of Chelsea.

In communication with Michael Hornbrook of MWRA on May 8, 2013, it was indicated to George Papadopoulos that the completion of the study is likely months away and had not been released as of the issuance of this final permit. Therefore, since the scope of the project does not specifically address Chelsea CSOs and since the release of this report is not imminent, EPA and MassDEP do not believe that it is reasonable to delay issuance of this permit to account for the results of this study, as requested in Comment B1.

When the MWRA study is released, we would expect the City of Chelsea to review the study's analysis and findings to determine if there was useful information that would enhance its understanding of the its CSO discharges and possibly improve performance , and to document that in its Annual Report for that year. Therefore, Part I.D. 5 of the permit has been revised to require the permittee to incorporate any relevant findings or recommendations of this study into its NMC program and report this in the appropriate Annual Report. If the study showed that CSO "typical year" frequency and/or quantity could be reduced it would also be necessary to revisit the UAA and make the reduced amounts the water quality standard.

Comments submitted by Roger Frymire:

Comment C1:

For Chelsea now, and for all other CSO permits ongoing, I suggest that the two city permits be combined into one permit. CSO communities have distinct stormwater problems which so far are not fully addressed by the general stormwater permit. The reality is that CSOs are just a small portion of the overall stormwater problem - especially in regard to the sewage contamination of stormwater.

Response to Comment C1:

A single permit that authorized discharges from the CSOs and stormwater systems for the City of Chelsea would be possible, but it is not clear that the effort to do so would have any additional overall benefit. Stormwater (Municipal Separate Storm Sewer Systems, or MS4) permitting has historically been separate from other individual permits, including those for CSO discharges.

The City of Chelsea is currently authorized to discharge stormwater by its MS4 permit, which has many requirements in common with its CSO permit, such as those for pollution prevention, public notification, and illicit discharge detection and elimination efforts. Stormwater drainage system mapping is also required in the MS4 permit, which could inform efforts under this CSO permit.

The Agencies believe that each permit requires measures that need to be taken by the City of Chelsea that work towards attainment of WQS and that keeping these permits separate in no way ignores the issues or challenges the City must address in complying with both permits.

Comment C2:

When I began sampling in the vicinity of Chelsea for MyRWA, the Island End River particularly was found to be heavily sewage contaminated. Chelsea has since traced a major source here back to a stormwater pump station. In turn this has led to multiple large collapsed pipes and direct sewer cross-connections being found and fixed. Taking into account the very poor condition of these pipes once inspected, I fear that much of Chelsea's infrastructure is in similar condition, with a prevalence of sewer/stormwater interconnections thru disrepair. Chelsea suffers from being totally surrounded by corrosive tidal salt water intruding twice daily into all of its pipes, as well as from having one of the oldest infrastructures under one of the poorest cities in Massachusetts.

Response to Comment C2:

The City of Chelsea has been conducting an extensive program to find and repair illicit connections and broken or collapsed pipes, as mentioned above in the response to Comment B4. This effort was required mainly through an EPA Administrative Order issued to the City of Chelsea and effective on March 19, 2009. The City submitted its latest progress report on its Illicit Discharge Detection and Elimination (IDDE) Program to Todd Borci of the EPA on July 31, 2013.

The commenter is correct that these problems do exist in this old system of pipes, but also must understand that there is considerable time, effort, and expense that goes into such efforts.

To address the issue of the leakage of tidal waters back into the collection system, the City routinely inspects tidegates associated with these CSOs to assure they are in proper working order and makes repairs and adjustments as necessary. In the July 31st letter referenced above, the City noted that it had awarded a contract for repairs to the tidegate associated with Outfall 004, primarily to prevent tidal backwater flows from entering the sewer system at high tide.

Comment C3:

When confronted with the huge amount of sewage in the Island End River, MyRWA quantified the problem by repeatedly measuring bacteria levels from the two largest sources at the North end of the river throughout an outgoing tidal cycle. This clearly showed the loading in dry weather from the larger of these two pipes was gross enough to twice daily fill the entire Mystic River down to the Mystic Bridge to a depth of ten feet with a layer of water failing the MADEP water quality standards.

Once I was aware of the magnitude, I looked at the then most current MWRA I/I report and compared the numbers for Somerville and Chelsea. Chelsea has approximately half the area and population of Somerville with a similar percentage of CSO area. Rough calculations showed as much as 40% of Chelsea's total sewage was potentially not being conducted to Deer Island!

Response to Comment C3:

The data and calculations noted by the commenter were not specifically cited or provided, so the Agencies cannot confirm the commenter's calculations. However, the dry weather loading that was cited by the commenter during the outgoing tidal cycle may have been influenced by tidal water that had entered the collection system As was noted in the response to Comment C2, the IDDE program is addressing issues related to dry weather loading such as tide gate operation and identification of illicit flows.

Also see Responses to Comments B4 and C2.

Comment C4:

The MWRA's CSO model is a poor match to the actual metering data the city measures at their CSOs. I fear with the old and collapsing infrastructure, that the entire system is not well understood and that much more mapping, inspection, metering and modeling is required before any firm numbers should be placed in a permit. It seems likely that even current CSO metered flows miss the majority of sewage exiting from stormwater-designated outfalls or even unmapped outfalls.

Though tidal variation induces many measurement problems, I believe the piping here will not be fully understood without measuring stormwater flows from several events in every major drainage area so that stormwater runoff coefficients can verify that the flows collected in a basin actually correspond to flows exiting from each particular pipe. This must include both CSO and stormwater-only basins.

Response to Comment C4:

EPA recognizes that the actual CSO activations and discharge volumes are not consistent with modeled estimates. While some discrepancy is expected between modeled and actual performance these discrepancies are sufficiently large to warrant further investigation.

As discussed in the fact sheet, the last few years of Annual Reports have shown many activations (CSO discharges), particularly at Outfalls CHE004 and CHE008, where MWRA's model had predicted few if any activations based on actual rainfall for those years. For example, for the year 2011, there were 16 activations for Outfall CHE004 and 15 activations for Outfall CHE008.

Through ongoing monitoring and modeling, the City of Chelsea and MWRA are attempting to better understand the system to more accurately predict activations and volumes and the City of Chelsea continues to look for illicit connections in its IDDE program to further reduce CSO volume through its outfalls. It is possible that flows from illicit connections are contributing to the discrepancy regarding the modeled versus the actual activations and flow volumes. Also see Response to Comment A2.

Comment C5:

In December 2012, a 2-1/2" rainfall led to 4 million gallon sanitary sewer overflow (SSO) from the MWRA trunk sewer in the Fresh water portion of the Mystic River several miles upstream from Chelsea. Oddly, this SSO began as the rain ended and was coincident with the peak of a 14' high tide (5' above normal).

While one known broken Chelsea CSO tidegate might have produced part of this problem, the suspected gross tidal inflows to produce this problem likely came from several cities and ingress to the sewer for tidal inflow was via CSO pipes as well as

stormwater pipes with problem interconnections to sewers. Additionally, at least four low lying sections of Chelsea reported flooding, and any sewer manholes inundated likely added to the inflow problems.

Response to Comment C5:

According to information provided by the MWRA, a SSO was reported in Medford on 12/27/12 at 11:15 am. High tide was at 10:00 am, and was projected as a 10 foot tide as compared to an average 9 foot tide. Precipitation data indicate that by 11:00 am, 1.7 inches of rain had fallen over the course of the preceding 14 hours (start of the storm), with 1.08 inches of that total falling in the 5 hours preceding 11:00 am, and nearly an inch of rain falling between 7:00 am and 9:00 am. December 2012 was a somewhat warm and wet month with precipitation and snowmelt occurring throughout the earlier part of the month. According to MWRA, the SSO occurred because the Chelsea Creek Headworks, owned and operated by MWRA, was operating at capacity. MWRA reported that Deer Island was operating at a rate of 1.1 billion gallons per day (BGD) at the time of the SSO, at close to peak operating capacity of 1.3 BGD. MWRA reported SSO volume of 1.86 MG. High tide might have exacerbated the problem as suggested by the commenter. An above normal high tide would result in greater tidal intrusion through outfalls without tidegates or with non-functioning tidegates, and would also provide greater resistance to the opening of functioning tide gates, causing flows that would otherwise discharge to back up into the collection system,

The Agencies expect that the North System Hydraulic Study which is currently being conducted by the MWRA and which was discussed in the response to Comment B3 will provide some insight as to why SSOs are occurring in the area and what alternatives will be considered to alleviate such flows in the future. Although the City of Chelsea's implementation of the NMCs as required by the permit can minimize the occurrences of SSOs, study and actions taken by the MWRA across the wider North System which consists of multiple communities, is also expected to better understand the system and minimize the occurrences of SSOs.

Comment C6:

I feel that the scale and complexity of Chelsea's problems are not being taken into account with this permit, and ask that it be withdrawn and a new combined CSO/stormwater permit be written to fit these special circumstances. There is an elephant in the harbor. Ignoring it does not make it go away.

Response to Comment C6:

See Response to Comment C1.

November 25, 2013

NPDES PART II STANDARD CONDITIONS
(January, 2007)

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PART II. A. GENERAL REQUIREMENTS

1. Duty to Comply

The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Clean Water Act (CWA) and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application.

a. The permittee shall comply with effluent standards or prohibitions established under Section 307(a) of the sludge use or disposal established under Section 405(d) of the CWA within the time provided in the regulations that establish these standards or prohibitions, even if the permit has not yet been modified to incorporate the requirements.

b. The CWA provides that any person who violates Section 301, 302, 306, 307, 308, 318, or 405 of the CWA or any permit condition or limitation implementing any of such sections in a permit issued under Section 402, or any requirement imposed in a pretreatment program approved under Section 402 (a)(3) or 402 (b)(8) of the CWA is subject to a civil penalty not to exceed $25,000 per day for each violation. Any person who negligently violates such requirements is subject to a fine of not less than $2,500 nor more than $25,000 per day of violation, or by imprisonment for not more than 1 year, or both. Any person who knowingly violates such requirements is subject to a fine of not less than $5,000 nor more than $50,000 per day of violation, or by imprisonment for not more than 3 years, or both.

c. Any person may be assessed an administrative penalty by the Administrator for violating Section 301, 302, 306, 307, 308, 318, or 405 of the CWA, or any permit condition or limitation implementing any of such sections in a permit issued under Section 402 of the CWA. Administrative penalties for Class I violations are not to exceed $10,000 per violation, with the maximum amount of any Class I penalty assessed not to exceed $25,000. Penalties for Class II violations are not to exceed $10,000 per day for each day during which the violation continues, with the maximum amount of any Class II penalty not to exceed $125,000.

Note: See 40 CFR §122.41(a)(2) for complete "Duty to Comply" regulations.

2. Permit Actions

This permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or notifications of planned changes or anticipated noncompliance does not stay any permit condition.

3. Duty to Provide Information

The permittee shall furnish to the Regional Administrator, within a reasonable time, any information which the Regional Administrator may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The permittee shall also furnish to the Regional Administrator, upon request, copies of records required to be kept by this permit.

4. Reopener Clause

The Regional Administrator reserves the right to make appropriate revisions to this permit in order to establish any appropriate effluent limitations, schedules of compliance, or other provisions which may be authorized under the CWA in order to bring all discharges into compliance with the CWA.

For any permit issued to a treatment works treating domestic sewage (including "sludge-only facilities"), the Regional Administrator or Director shall include a reopener clause to incorporate any applicable standard for sewage sludge use or disposal promulgated under Section 405 (d) of the CWA. The Regional Administrator or Director may promptly modify or revoke and reissue any permit containing the reopener clause required by this paragraph if the standard for sewage sludge use or disposal is more stringent than any requirements for sludge use or disposal in the permit, or contains a pollutant or practice not limited in the permit.

Federal regulations pertaining to permit modification, revocation and reissuance, and termination are found at 40 CFR §122.62, 122.63, 122.64, and 124.5.

5. Oil and Hazardous Substance Liability

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from responsibilities, liabilities or penalties to which the permittee is or may be subject under Section 311 of the CWA, or Section 106 of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA).

6. Property Rights

The issuance of this permit does not convey any property rights of any sort, nor any exclusive privileges.

7. Confidentiality of Information

a. In accordance with 40 CFR Part 2, any information submitted to EPA pursuant to these regulations may be claimed as confidential by the submitter. Any such claim must be asserted at the time of submission in the manner prescribed on the application form or instructions or, in the case of other submissions, by stamping the words "confidential business information" on each page containing such information. If no claim is made at the time of submission, EPA may make the information available to the public without further notice. If a claim is asserted, the information will be treated in accordance with the procedures in 40 CFR Part 2 (Public Information).

b. Claims of confidentiality for the following information will be denied:

(1) The name and address of any permit applicant or permittee;
(2) Permit applications, permits, and effluent data as defined in 40 CFR §2.302(a)(2).

c. Information required by NPDES application forms provided by the Regional Administrator under 40 CFR §122.21 may not be claimed confidential. This includes information submitted on the forms themselves and any attachments used to supply information required by the forms.

8. Duty to Reapply

If the permittee wishes to continue an activity regulated by this permit after its expiration date, the permittee must apply for and obtain a new permit. The permittee shall submit a new application at least 180 days before the expiration date of the existing permit, unless permission for a later date has been granted by the Regional Administrator. (The Regional Administrator shall not grant permission for applications to be submitted later than the expiration date of the existing permit.)

9. State Authorities

Nothing in Part 122, 123, or 124 precludes more stringent State regulation of any activity covered by these regulations, whether or not under an approved State program.

10. Other Laws

The issuance of a permit does not authorize any injury to persons or property or invasion of other private rights, nor does it relieve the permittee of its obligation to comply with any other applicable Federal, State, or local laws and regulations.

PART II. B. OPERATION AND MAINTENANCE OF POLLUTION CONTROLS

1. Proper Operation and Maintenance

The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit and with the requirements of storm water pollution prevention plans. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems only when the operation is necessary to achieve compliance with the conditions of the permit.

2. Need to Halt or Reduce Not a Defense

It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

3. Duty to Mitigate

The permittee shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

4. Bypass

a. Definitions

(1) *Bypass* means the intentional diversion of waste streams from any portion of a treatment facility.

(2) *Severe property damage* means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can be reasonably expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

b. Bypass not exceeding limitations

The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provision of Paragraphs B.4.c. and 4.d. of this section.

c. Notice

(1) Anticipated bypass. If the permittee knows in advance of the need for a bypass, it shall submit prior notice, if possible at least ten days before the date of the bypass.
(2) Unanticipated bypass. The permittee shall submit notice of an unanticipated bypass as required in paragraph D.1.e. of this part (Twenty-four hour reporting).

d. Prohibition of bypass

Bypass is prohibited, and the Regional Administrator may take enforcement action against a permittee for bypass, unless:

(1) Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;
(2) There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventative maintenance; and
(3) i) The permittee submitted notices as required under Paragraph 4.c. of this section.
ii) The Regional Administrator may approve an anticipated bypass, after considering its adverse effects, if the Regional Administrator determines that it will meet the three conditions listed above in paragraph 4.d. of this section.

5. Upset

a. Definition. *Upset* means an exceptional incident in which there is an unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

b. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology-based permit effluent limitations if the requirements of paragraph B.5.c. of this section are met. No determination made during

administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.

c. Conditions necessary for a demonstration of upset. A permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:

(1) An upset occurred and that the permittee can identify the cause(s) of the upset;
(2) The permitted facility was at the time being properly operated;
(3) The permittee submitted notice of the upset as required in paragraphs D.1.a. and 1.e. (Twenty-four hour notice); and
(4) The permittee complied with any remedial measures required under B.3. above.

d. Burden of proof. In any enforcement proceeding the permittee seeking to establish the occurrence of an upset has the burden of proof.

PART II. C. MONITORING REQUIREMENTS

1. Monitoring and Records

a. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.

b. Except for records for monitoring information required by this permit related to the permittee's sewage sludge use and disposal activities, which shall be retained for a period of at least five years (or longer as required by 40 CFR Part 503), the permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least 3 years from the date of the sample, measurement, report or application except for the information concerning storm water discharges which must be retained for a total of 6 years. This retention period may be extended by request of the Regional Administrator at any time.

c. Records of monitoring information shall include:

(1) The date, exact place, and time of sampling or measurements;
(2) The individual(s) who performed the sampling or measurements;
(3) The date(s) 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. Monitoring results must be conducted according to test procedures approved under 40 CFR Part 136 or, in the case of sludge use or disposal, approved under 40 CFR Part 136 unless otherwise specified in 40 CFR Part 503, unless other test procedures have been specified in the permit.

e. The CWA provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than $10,000, or by

imprisonment for not more than 2 years, or both. If a conviction of a person is for a violation committed after a first conviction of such person under this paragraph, punishment is a fine of not more than $20,000 per day of violation, or by imprisonment of not more than 4 years, or both.

2. Inspection and Entry

The permittee shall allow the Regional Administrator or an authorized representative (including an authorized contractor acting as a representative of the Administrator), upon presentation of credentials and other documents as may be required by law, to:

a. Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;

b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and

d. Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the CWA, any substances or parameters at any location.

PART II. D. REPORTING REQUIREMENTS

1. Reporting Requirements

a. Planned Changes. The permittee shall give notice to the Regional Administrator as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is only required when:

(1) The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in 40 CFR§122.29(b); or
(2) The alteration or addition could significantly change the nature or increase the quantities of the pollutants discharged. This notification applies to pollutants which are subject neither to the effluent limitations in the permit, nor to the notification requirements at 40 CFR§122.42(a)(1).
(3) The alteration or addition results in a significant change in the permittee's sludge use or disposal practices, and such alteration, addition or change may justify the application of permit conditions different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan.

b. Anticipated noncompliance. The permittee shall give advance notice to the Regional Administrator of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

c. Transfers. This permit is not transferable to any person except after notice to the Regional Administrator. The Regional Administrator may require modification or revocation and reissuance of the permit to change the name of the permittee and

incorporate such other requirements as may be necessary under the CWA. (See 40 CFR Part 122.61; in some cases, modification or revocation and reissuance is mandatory.)

d. Monitoring reports. Monitoring results shall be reported at the intervals specified elsewhere in this permit.

(1) Monitoring results must be reported on a Discharge Monitoring Report (DMR) or forms provided or specified by the Director for reporting results of monitoring of sludge use or disposal practices.

(2) If the permittee monitors any pollutant more frequently than required by the permit using test procedures approved under 40 CFR Part 136 or, in the case of sludge use or disposal, approved under 40 CFR Part 136 unless otherwise specified in 40 CFR Part 503, or as specified in the permit, the results of the monitoring shall be included in the calculation and reporting of the data submitted in the DMR or sludge reporting form specified by the Director.

(3) Calculations for all limitations which require averaging or measurements shall utilize an arithmetic mean unless otherwise specified by the Director in the permit.

e. Twenty-four hour reporting.

(1) The permittee shall report any noncompliance which may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the permittee becomes aware of the circumstances.

A written submission shall also be provided within 5 days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

(2) The following shall be included as information which must be reported within 24 hours under this paragraph.

(a) Any unanticipated bypass which exceeds any effluent limitation in the permit. (See 40 CFR §122.41(g).)
(b) Any upset which exceeds any effluent limitation in the permit.
(c) Violation of a maximum daily discharge limitation for any of the pollutants listed by the Regional Administrator in the permit to be reported within 24 hours. (See 40 CFR §122.44(g).)

(3) The Regional Administrator may waive the written report on a case-by-case basis for reports under Paragraph D.1.e. if the oral report has been received within 24 hours.

f. Compliance Schedules. Reports of compliance or noncompliance with, any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than 14 days following each schedule date.

g. Other noncompliance. The permittee shall report all instances of noncompliance not reported under Paragraphs D.1.d., D.1.e., and D.1.f. of this section, at the time monitoring reports are submitted. The reports shall contain the information listed in Paragraph D.1.e. of this section.

h. Other information. Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Regional Administrator, it shall promptly submit such facts or information.

2. Signatory Requirement

a. All applications, reports, or information submitted to the Regional Administrator shall be signed and certified. (See 40 CFR §122.22)

b. The CWA provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance shall, upon conviction, be punished by a fine of not more than $10,000 per violation, or by imprisonment for not more than 2 years per violation, or by both.

3. Availability of Reports.

Except for data determined to be confidential under Paragraph A.8. above, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the State water pollution control agency and the Regional Administrator. As required by the CWA, effluent data shall not be considered confidential. Knowingly making any false statements on any such report may result in the imposition of criminal penalties as provided for in Section 309 of the CWA.

PART II. E. DEFINITIONS AND ABBREVIATIONS

1. Definitions for Individual NPDES Permits including Storm Water Requirements

Administrator means the Administrator of the United States Environmental Protection Agency, or an authorized representative.

Applicable standards and limitations means all, State, interstate, and Federal standards and limitations to which a “discharge”, a “sewage sludge use or disposal practice”, or a related activity is subject to, including “effluent limitations”, water quality standards, standards of performance, toxic effluent standards or prohibitions, “best management practices”, pretreatment standards, and “standards for sewage sludge use and disposal” under Sections 301, 302, 303, 304, 306, 307, 308, 403, and 405 of the CWA.

Application means the EPA standard national forms for applying for a permit, including any additions, revisions, or modifications to the forms; or forms approved by EPA for use in "approved States", including any approved modifications or revisions.

Average means the arithmetic mean of values taken at the frequency required for each parameter over the specified period. For total and/or fecal coliforms and Escherichia coli, the average shall be the geometric mean.

Average monthly discharge limitation means the highest allowable average of "daily discharges" over a calendar month calculated as the sum of all "daily discharges" measured during a calendar month divided by the number of "daily discharges" measured during that month.

Average weekly discharge limitation means the highest allowable average of "daily discharges" measured during the calendar week divided by the number of "daily discharges" measured during the week.

Best Management Practices (BMPs) means schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of "waters of the United States." BMPs also include treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

Best Professional Judgment (BPJ) means a case-by-case determination of Best Practicable Treatment (BPT), Best Available Treatment (BAT), or other appropriate technology-based standard based on an evaluation of the available technology to achieve a particular pollutant reduction and other factors set forth in 40 CFR §125.3 (d).

Coal Pile Runoff means the rainfall runoff from or through any coal storage pile.

Composite Sample means a sample consisting of a minimum of eight grab samples of equal volume collected at equal intervals during a 24-hour period (or lesser period as specified in the section on Monitoring and Reporting) and combined proportional to flow, or a sample consisting of the same number of grab samples, or greater, collected proportionally to flow over that same time period.

Construction Activities - The following definitions apply to construction activities:

(a) Commencement of Construction is the initial disturbance of soils associated with clearing, grading, or excavating activities or other construction activities.

(b) Dedicated portable asphalt plant is a portable asphalt plant located on or contiguous to a construction site and that provides asphalt only to the construction site that the plant is located on or adjacent to. The term dedicated portable asphalt plant does not include facilities that are subject to the asphalt emulsion effluent limitation guideline at 40 CFR Part 443.

(c) Dedicated portable concrete plant is a portable concrete plant located on or contiguous to a construction site and that provides concrete only to the construction site that the plant is located on or adjacent to.

(d) Final Stabilization means that all soil disturbing activities at the site have been complete, and that a uniform perennial vegetative cover with a density of 70% of the cover for unpaved areas and areas not covered by permanent structures has been established or equivalent permanent stabilization measures (such as the use of riprap, gabions, or geotextiles) have been employed.

(e) Runoff coefficient means the fraction of total rainfall that will appear at the conveyance as runoff.

Contiguous zone means the entire zone established by the United States under Article 24 of the Convention on the Territorial Sea and the Contiguous Zone.

Continuous discharge means a "discharge" which occurs without interruption throughout the operating hours of the facility except for infrequent shutdowns for maintenance, process changes, or similar activities.

CWA means the Clean Water Act (formerly referred to as the Federal Water Pollution Control Act or Federal Water Pollution Control Act Amendments of 1972) Pub. L. 92-500, as amended by Pub. L. 95-217, Pub. L. 95-576, Pub. L. 96-483, and Pub. L. 97-117; 33 USC §§1251 et seq.

Daily Discharge means the discharge of a pollutant measured during the calendar day or any other 24-hour period that reasonably represents the calendar day for purposes of sampling. For pollutants with limitations expressed in units of mass, the "daily discharge" is calculated as the total mass of the pollutant discharged over the day. For pollutants with limitations expressed in other units of measurements, the "daily discharge" is calculated as the average measurement of the pollutant over the day.

Director normally means the person authorized to sign NPDES permits by EPA or the State or an authorized representative. Conversely, it also could mean the Regional Administrator or the State Director as the context requires.

Discharge Monitoring Report Form (DMR) means the EPA standard national form, including any subsequent additions, revisions, or modifications for the reporting of self-monitoring results by permittees. DMRs must be used by "approved States" as well as by EPA. EPA will supply DMRs to any approved State upon request. The EPA national forms may be modified to substitute the State Agency name, address, logo, and other similar information, as appropriate, in place of EPA's.

Discharge of a pollutant means:

(a) Any addition of any "pollutant" or combination of pollutants to "waters of the United States" from any "point source", or

(b) Any addition of any pollutant or combination of pollutants to the waters of the "contiguous zone" or the ocean from any point source other than a vessel or other floating craft which is being used as a means of transportation (See "Point Source" definition).

This definition includes additions of pollutants into waters of the United States from: surface runoff which is collected or channeled by man; discharges through pipes, sewers, or other conveyances owned by a State, municipality, or other person which do not lead

to a treatment works; and discharges through pipes, sewers, or other conveyances leading into privately owned treatment works.

This term does not include an addition of pollutants by any "indirect discharger."

Effluent limitation means any restriction imposed by the Regional Administrator on quantities, discharge rates, and concentrations of "pollutants" which are "discharged" from "point sources" into "waters of the United States", the waters of the "contiguous zone", or the ocean.

Effluent limitation guidelines means a regulation published by the Administrator under Section 304(b) of CWA to adopt or revise "effluent limitations".

EPA means the United States "Environmental Protection Agency".

Flow-weighted composite sample means a composite sample consisting of a mixture of aliquots where the volume of each aliquot is proportional to the flow rate of the discharge.

Grab Sample – An individual sample collected in a period of less than 15 minutes.

Hazardous Substance means any substance designated under 40 CFR Part 116 pursuant to Section 311 of the CWA.

Indirect Discharger means a non-domestic discharger introducing pollutants to a publicly owned treatment works.

Interference means a discharge which, alone or in conjunction with a discharge or discharges from other sources, both:

(a) Inhibits or disrupts the POTW, its treatment processes or operations, or its sludge processes, use or disposal; and

(b) Therefore is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation) or of the prevention of sewage sludge use or disposal in compliance with the following statutory provisions and regulations or permits issued thereunder (or more stringent State or local regulations): Section 405 of the Clean Water Act (CWA), the Solid Waste Disposal Act (SWDA) (including Title II, more commonly referred to as the Resources Conservation and Recovery Act (RCRA), and including State regulations contained in any State sludge management plan prepared pursuant to Subtitle D of the SDWA), the Clean Air Act, the Toxic Substances Control Act, and the Marine Protection Research and Sanctuaries Act.

Landfill means an area of land or an excavation in which wastes are placed for permanent disposal, and which is not a land application unit, surface impoundment, injection well, or waste pile.

Land application unit means an area where wastes are applied onto or incorporated into the soil surface (excluding manure spreading operations) for treatment or disposal.

Large and Medium municipal separate storm sewer system means all municipal separate storm sewers that are either: (i) located in an incorporated place (city) with a population of 100,000 or more as determined by the latest Decennial Census by the Bureau of Census (these cities are listed in Appendices F and 40 CFR Part 122); or (ii) located in the counties with unincorporated urbanized

populations of 100,000 or more, except municipal separate storm sewers that are located in the incorporated places, townships, or towns within such counties (these counties are listed in Appendices H and I of 40 CFR 122); or (iii) owned or operated by a municipality other than those described in Paragraph (i) or (ii) and that are designated by the Regional Administrator as part of the large or medium municipal separate storm sewer system.

Maximum daily discharge limitation means the highest allowable "daily discharge" concentration that occurs only during a normal day (24-hour duration).

Maximum daily discharge limitation (as defined for the Steam Electric Power Plants only) when applied to Total Residual Chlorine (TRC) or Total Residual Oxidant (TRO) is defined as "maximum concentration" or "Instantaneous Maximum Concentration" during the two hours of a chlorination cycle (or fraction thereof) prescribed in the Steam Electric Guidelines, 40 CFR Part 423. These three synonymous terms all mean "a value that shall not be exceeded" during the two-hour chlorination cycle. This interpretation differs from the specified NPDES Permit requirement, 40 CFR § 122.2, where the two terms of "Maximum Daily Discharge" and "Average Daily Discharge" concentrations are specifically limited to the daily (24-hour duration) values.

Municipality means a city, town, borough, county, parish, district, association, or other public body created by or under State law and having jurisdiction over disposal of sewage, industrial wastes, or other wastes, or an Indian tribe or an authorized Indian tribe organization, or a designated and approved management agency under Section 208 of the CWA.

National Pollutant Discharge Elimination System means the national program for issuing, modifying, revoking and reissuing, terminating, monitoring and enforcing permits, and imposing and enforcing pretreatment requirements, under Sections 307, 402, 318, and 405 of the CWA. The term includes an "approved program".

New Discharger means any building, structure, facility, or installation:

(a) From which there is or may be a "discharge of pollutants";

(b) That did not commence the "discharge of pollutants" at a particular "site" prior to August 13, 1979;

(c) Which is not a "new source"; and

(d) Which has never received a finally effective NPDES permit for discharges at that "site".

This definition includes an "indirect discharger" which commences discharging into "waters of the United States" after August 13, 1979. It also includes any existing mobile point source (other than an offshore or coastal oil and gas exploratory drilling rig or a coastal oil and gas exploratory drilling rig or a coastal oil and gas developmental drilling rig) such as a seafood processing rig, seafood processing vessel, or aggregate plant, that begins discharging at a "site" for which it does not have a permit; and any offshore rig or coastal mobile oil and gas exploratory drilling rig or coastal mobile oil and gas developmental drilling rig that commences the discharge of pollutants after August 13, 1979, at a "site" under EPA's permitting jurisdiction for which it is not covered by an individual or general permit and which is located in an area determined by the Regional Administrator in the issuance of a final permit to be in an area of biological concern. In determining whether an area is an area of biological concern, the Regional Administrator shall consider the factors specified in 40 CFR §§125.122 (a) (1) through (10).

An offshore or coastal mobile exploratory drilling rig or coastal mobile developmental drilling rig will be considered a "new discharger" only for the duration of its discharge in an area of biological concern.

New source means any building, structure, facility, or installation from which there is or may be a "discharge of pollutants", the construction of which commenced:

(a) After promulgation of standards of performance under Section 306 of CWA which are applicable to such source, or

(b) After proposal of standards of performance in accordance with Section 306 of CWA which are applicable to such source, but only if the standards are promulgated in accordance with Section 306 within 120 days of their proposal.

NPDES means "National Pollutant Discharge Elimination System".

Owner or operator means the owner or operator of any "facility or activity" subject to regulation under the NPDES programs.

Pass through means a Discharge which exits the POTW into waters of the United States in quantities or concentrations which, alone or in conjunction with a discharge or discharges from other sources, is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation).

Permit means an authorization, license, or equivalent control document issued by EPA or an "approved" State.

Person means an individual, association, partnership, corporation, municipality, State or Federal agency, or an agent or employee thereof.

Point Source means any discernible, confined, and discrete conveyance, including but not limited to any pipe ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, landfill leachate collection system, vessel, or other floating craft, from which pollutants are or may be discharged. This term does not include return flows from irrigated agriculture or agricultural storm water runoff (see 40 CFR §122.2).

Pollutant means dredged spoil, solid waste, incinerator residue, filter backwash, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials (except those regulated under the Atomic Energy Act of 1954, as amended (42 U.S.C. §§2011 et seq.)), heat, wrecked or discarded equipment, rock, sand, cellar dirt and industrial, municipal, and agricultural waste discharged into water. It does not mean:

(a) Sewage from vessels; or

(b) Water, gas, or other material which is injected into a well to facilitate production of oil or gas, or water derived in association with oil and gas production and disposed of in a well, if the well is used either to facilitate production or for disposal purposes is approved by the authority of the State in which the well is located, and if the State determines that the injection or disposal will not result in the degradation of ground or surface water resources.

Primary industry category means any industry category listed in the NRDC settlement agreement (Natural Resources Defense Council et al. v. Train, 8 E.R.C. 2120 (D.D.C. 1976), modified 12 E.R.C. 1833 (D. D.C. 1979)); also listed in Appendix A of 40 CFR Part 122.

Privately owned treatment works means any device or system which is (a) used to treat wastes from any facility whose operation is not the operator of the treatment works or (b) not a "POTW".

Process wastewater means any water which, during manufacturing or processing, comes into direct contact with or results from the production or use of any raw material, intermediate product, finished product, byproduct, or waste product.

Publicly Owned Treatment Works (POTW) means any facility or system used in the treatment (including recycling and reclamation) of municipal sewage or industrial wastes of a liquid nature which is owned by a "State" or "municipality".

This definition includes sewers, pipes, or other conveyances only if they convey wastewater to a POTW providing treatment.

Regional Administrator means the Regional Administrator, EPA, Region I, Boston, Massachusetts.

Secondary Industry Category means any industry which is not a "primary industry category".

Section 313 water priority chemical means a chemical or chemical category which:

(1) is listed at 40 CFR §372.65 pursuant to Section 313 of the Emergency Planning and Community Right-To-Know Act (EPCRA) (also known as Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986);

(2) is present at or above threshold levels at a facility subject to EPCRA Section 313 reporting requirements; and

(3) satisfies at least one of the following criteria:

(i) are listed in Appendix D of 40 CFR Part 122 on either Table II (organic priority pollutants), Table III (certain metals, cyanides, and phenols), or Table V (certain toxic pollutants and hazardous substances);
(ii) are listed as a hazardous substance pursuant to Section 311(b)(2)(A) of the CWA at 40 CFR §116.4; or
(iii) are pollutants for which EPA has published acute or chronic water quality criteria.

Septage means the liquid and solid material pumped from a septic tank, cesspool, or similar domestic sewage treatment system, or a holding tank when the system is cleaned or maintained.

Sewage Sludge means any solid, semisolid, or liquid residue removed during the treatment of municipal wastewater or domestic sewage. Sewage sludge includes, but is not limited to, solids removed during primary, secondary, or advanced wastewater treatment, scum, septage, portable toilet pumpings, Type III Marine Sanitation Device pumpings (33 CFR Part 159), and sewage sludge products. Sewage sludge does not include grit or screenings, or ash generated during the incineration of sewage sludge.

Sewage sludge use or disposal practice means the collection, storage, treatment, transportation, processing, monitoring, use, or disposal of sewage sludge.

Significant materials includes, but is not limited to: raw materials, fuels, materials such as solvents, detergents, and plastic pellets, raw materials used in food processing or production, hazardous substance designated under section 101(14) of CERCLA, any chemical the facility is required to report pursuant to EPCRA Section 313, fertilizers, pesticides, and waste products such as ashes, slag, and sludge that have the potential to be released with storm water discharges.

Significant spills includes, but is not limited to, releases of oil or hazardous substances in excess of reportable quantities under Section 311 of the CWA (see 40 CFR §110.10 and §117.21) or Section 102 of CERCLA (see 40 CFR § 302.4).

Sludge-only facility means any "treatment works treating domestic sewage" whose methods of sewage sludge use or disposal are subject to regulations promulgated pursuant to Section 405(d) of the CWA, and is required to obtain a permit under 40 CFR §122.1(b)(3).

State means any of the 50 States, the District of Columbia, Guam, the Commonwealth of Puerto Rico, the Virgin Islands, American Samoa, the Trust Territory of the Pacific Islands.

Storm Water means storm water runoff, snow melt runoff, and surface runoff and drainage.

Storm water discharge associated with industrial activity means the discharge from any conveyance which is used for collecting and conveying storm water and which is directly related to manufacturing, processing, or raw materials storage areas at an industrial plant. (See 40 CFR §122.26 (b)(14) for specifics of this definition.

Time-weighted composite means a composite sample consisting of a mixture of equal volume aliquots collected at a constant time interval.

Toxic pollutants means any pollutant listed as toxic under Section 307 (a)(1) or, in the case of "sludge use or disposal practices" any pollutant identified in regulations implementing Section 405(d) of the CWA.

Treatment works treating domestic sewage means a POTW or any other sewage sludge or wastewater treatment devices or systems, regardless of ownership (including federal facilities), used in the storage, treatment, recycling, and reclamation of municipal or domestic sewage, including land dedicated for the disposal of sewage sludge. This definition does not include septic tanks or similar devices.

For purposes of this definition, "domestic sewage" includes waste and wastewater from humans or household operations that are discharged to or otherwise enter a treatment works. In States where there is no approved State sludge management program under Section 405(f) of the CWA, the Regional Administrator may designate any person subject to the standards for sewage sludge use and disposal in 40 CFR Part 503 as a "treatment works treating domestic sewage", where he or she finds that there is a potential for adverse effects on public health and the environment from poor sludge quality or poor sludge handling, use or disposal practices, or where he or she finds that such designation is necessary to ensure that such person is in compliance with 40 CFR Part 503.

Waste Pile means any non-containerized accumulation of solid, non-flowing waste that is used for treatment or storage.

Waters of the United States means:

(a) All waters which are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of tide;

(b) All interstate waters, including interstate "wetlands";

(c) All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, "wetlands", sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds the use, degradation, or destruction of which would affect or could affect interstate or foreign commerce including any such waters:

(1) Which are or could be used by interstate or foreign travelers for recreational or other purpose;

(2) From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or

(3) Which are used or could be used for industrial purposes by industries in interstate commerce;

(d) All impoundments of waters otherwise defined as waters of the United States under this definition;

(e) Tributaries of waters identified in Paragraphs (a) through (d) of this definition;

(f) The territorial sea; and

(g) "Wetlands" adjacent to waters (other than waters that are themselves wetlands) identified in Paragraphs (a) through (f) of this definition.

Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of the CWA (other than cooling ponds as defined in 40 CFR §423.11(m) which also meet the criteria of this definition) are not waters of the United States.

Wetlands means those areas that are inundated or saturated by surface or ground water at a frequency and duration to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.

Whole Effluent Toxicity (WET) means the aggregate toxic effect of an effluent measured directly by a toxicity test. (See Abbreviations Section, following, for additional information.)

2. Definitions for NPDES Permit Sludge Use and Disposal Requirements.

Active sewage sludge unit is a sewage sludge unit that has not closed.

Aerobic Digestion is the biochemical decomposition of organic matter in sewage sludge into carbon dioxide and water by microorganisms in the presence of air.

Agricultural Land is land on which a food crop, a feed crop, or a fiber crop is grown. This includes range land and land used as pasture.

Agronomic rate is the whole sludge application rate (dry weight basis) designed:

(1) To provide the amount of nitrogen needed by the food crop, feed crop, fiber crop, cover crop, or vegetation grown on the land; and

(2) To minimize the amount of nitrogen in the sewage sludge that passes below the root zone of the crop or vegetation grown on the land to the ground water.

Air pollution control device is one or more processes used to treat the exit gas from a sewage sludge incinerator stack.

Anaerobic digestion is the biochemical decomposition of organic matter in sewage sludge into methane gas and carbon dioxide by microorganisms in the absence of air.

Annual pollutant loading rate is the maximum amount of a pollutant that can be applied to a unit area of land during a 365 day period.

Annual whole sludge application rate is the maximum amount of sewage sludge (dry weight basis) that can be applied to a unit area of land during a 365 day period.

Apply sewage sludge or sewage sludge applied to the land means land application of sewage sludge.

Aquifer is a geologic formation, group of geologic formations, or a portion of a geologic formation capable of yielding ground water to wells or springs.

Auxiliary fuel is fuel used to augment the fuel value of sewage sludge. This includes, but is not limited to, natural gas, fuel oil, coal, gas generated during anaerobic digestion of sewage sludge, and municipal solid waste (not to exceed 30 percent of the dry weight of the sewage sludge and auxiliary fuel together). Hazardous wastes are not auxiliary fuel.

Base flood is a flood that has a one percent chance of occurring in any given year (i.e. a flood with a magnitude equaled once in 100 years).

Bulk sewage sludge is sewage sludge that is not sold or given away in a bag or other container for application to the land.

Contaminate an aquifer means to introduce a substance that causes the maximum contaminant level for nitrate in 40 CFR §141.11 to be exceeded in ground water or that causes the existing concentration of nitrate in the ground water to increase when the existing concentration of nitrate in the ground water exceeds the maximum contaminant level for nitrate in 40 CFR §141.11.

Class I sludge management facility is any publicly owned treatment works (POTW), as defined in 40 CFR §501.2, required to have an approved pretreatment program under 40 CFR §403.8 (a) (including any POTW located in a state that has elected to assume local program responsibilities pursuant to 40 CFR §403.10 (e) and any treatment works treating domestic sewage, as defined in 40 CFR § 122.2,

classified as a Class I sludge management facility by the EPA Regional Administrator, or, in the case of approved state programs, the Regional Administrator in conjunction with the State Director, because of the potential for sewage sludge use or disposal practice to affect public health and the environment adversely.

Control efficiency is the mass of a pollutant in the sewage sludge fed to an incinerator minus the mass of that pollutant in the exit gas from the incinerator stack divided by the mass of the pollutant in the sewage sludge fed to the incinerator.

Cover is soil or other material used to cover sewage sludge placed on an active sewage sludge unit.

Cover crop is a small grain crop, such as oats, wheat, or barley, not grown for harvest.

Cumulative pollutant loading rate is the maximum amount of inorganic pollutant that can be applied to an area of land.

Density of microorganisms is the number of microorganisms per unit mass of total solids (dry weight) in the sewage sludge.

Dispersion factor is the ratio of the increase in the ground level ambient air concentration for a pollutant at or beyond the property line of the site where the sewage sludge incinerator is located to the mass emission rate for the pollutant from the incinerator stack.

Displacement is the relative movement of any two sides of a fault measured in any direction.

Domestic septage is either liquid or solid material removed from a septic tank, cesspool, portable toilet, Type III marine sanitation device, or similar treatment works that receives only domestic sewage. Domestic septage does not include liquid or solid material removed from a septic tank, cesspool, or similar treatment works that receives either commercial wastewater or industrial wastewater and does not include grease removed from a grease trap at a restaurant.

Domestic sewage is waste and wastewater from humans or household operations that is discharged to or otherwise enters a treatment works.

Dry weight basis means calculated on the basis of having been dried at 105 degrees Celsius (°C) until reaching a constant mass (i.e. essentially 100 percent solids content).

Fault is a fracture or zone of fractures in any materials along which strata on one side are displaced with respect to the strata on the other side.

Feed crops are crops produced primarily for consumption by animals.

Fiber crops are crops such as flax and cotton.

Final cover is the last layer of soil or other material placed on a sewage sludge unit at closure.

Fluidized bed incinerator is an enclosed device in which organic matter and inorganic matter in sewage sludge are combusted in a bed of particles suspended in the combustion chamber gas.

Food crops are crops consumed by humans. These include, but are not limited to, fruits, vegetables, and tobacco.

Forest is a tract of land thick with trees and underbrush.

Ground water is water below the land surface in the saturated zone.

Holocene time is the most recent epoch of the Quaternary period, extending from the end of the Pleistocene epoch to the present.

Hourly average is the arithmetic mean of all the measurements taken during an hour. At least two measurements must be taken during the hour.

Incineration is the combustion of organic matter and inorganic matter in sewage sludge by high temperatures in an enclosed device.

Industrial wastewater is wastewater generated in a commercial or industrial process.

Land application is the spraying or spreading of sewage sludge onto the land surface; the injection of sewage sludge below the land surface; or the incorporation of sewage sludge into the soil so that the sewage sludge can either condition the soil or fertilize crops or vegetation grown in the soil.

Land with a high potential for public exposure is land that the public uses frequently. This includes, but is not limited to, a public contact site and reclamation site located in a populated area (e.g., a construction site located in a city).

Land with low potential for public exposure is land that the public uses infrequently. This includes, but is not limited to, agricultural land, forest and a reclamation site located in an unpopulated area (e.g., a strip mine located in a rural area).

Leachate collection system is a system or device installed immediately above a liner that is designed, constructed, maintained, and operated to collect and remove leachate from a sewage sludge unit.

Liner is soil or synthetic material that has a hydraulic conductivity of 1×10^{-7} centimeters per second or less.

Lower explosive limit for methane gas is the lowest percentage of methane gas in air, by volume, that propagates a flame at 25 degrees Celsius and atmospheric pressure.

Monthly average (Incineration) is the arithmetic mean of the hourly averages for the hours a sewage sludge incinerator operates during the month.

Monthly average (Land Application) is the arithmetic mean of all measurements taken during the month.

Municipality means a city, town, borough, county, parish, district, association, or other public body (including an intermunicipal agency of two or more of the foregoing entities) created by or under State law; an Indian tribe or an authorized Indian tribal organization having jurisdiction over sewage sludge management; or a designated and approved management agency under section 208 of the CWA, as amended. The definition includes a special district created under state law, such as a water district, sewer district, sanitary district, utility district, drainage district, or similar entity, or an integrated waste management facility as defined in section 201 (e) of the CWA, as amended, that has as one of its principal responsibilities the treatment, transport, use or disposal of sewage sludge.

Other container is either an open or closed receptacle. This includes, but is not limited to, a bucket, a box, a carton, and a vehicle or trailer with a load capacity of one metric ton or less.

Pasture is land on which animals feed directly on feed crops such as legumes, grasses, grain stubble, or stover.

Pathogenic organisms are disease-causing organisms. These include, but are not limited to, certain bacteria, protozoa, viruses, and viable helminth ova.

Permitting authority is either EPA or a State with an EPA-approved sludge management program.

Person is an individual, association, partnership, corporation, municipality, State or Federal Agency, or an agent or employee thereof.

Person who prepares sewage sludge is either the person who generates sewage sludge during the treatment of domestic sewage in a treatment works or the person who derives a material from sewage sludge.

pH means the logarithm of the reciprocal of the hydrogen ion concentration; a measure of the acidity or alkalinity of a liquid or solid material.

Place sewage sludge or sewage sludge placed means disposal of sewage sludge on a surface disposal site.

Pollutant (as defined in sludge disposal requirements) is an organic substance, an inorganic substance, a combination or organic and inorganic substances, or pathogenic organism that, after discharge and upon exposure, ingestion, inhalation, or assimilation into an organism either directly from the environment or indirectly by ingestion through the food chain, could on the basis on information available to the Administrator of EPA, cause death, disease, behavioral abnormalities, cancer, genetic mutations, physiological malfunctions (including malfunction in reproduction) or physical deformations in either organisms or offspring of the organisms.

Pollutant limit (for sludge disposal requirements) is a numerical value that describes the amount of a pollutant allowed per unit amount of sewage sludge (e.g., milligrams per kilogram of total solids); the amount of pollutant that can be applied to a unit of land (e.g., kilograms per hectare); or the volume of the material that can be applied to the land (e.g., gallons per acre).

Public contact site is a land with a high potential for contact by the public. This includes, but is not limited to, public parks, ball fields, cemeteries, plant nurseries, turf farms, and golf courses.

Qualified ground water scientist is an individual with a baccalaureate or post-graduate degree in the natural sciences or engineering who has sufficient training and experience in ground water hydrology and related fields, as may be demonstrated by State registration, professional certification, or completion of accredited university programs, to make sound professional judgments regarding ground water monitoring, pollutant fate and transport, and corrective action.

Range land is open land with indigenous vegetation.

Reclamation site is drastically disturbed land that is reclaimed using sewage sludge. This includes, but is not limited to, strip mines and construction sites.

Risk specific concentration is the allowable increase in the average daily ground level ambient air concentration for a pollutant from the incineration of sewage sludge at or beyond the property line of a site where the sewage sludge incinerator is located.

Runoff is rainwater, leachate, or other liquid that drains overland on any part of a land surface and runs off the land surface.

Seismic impact zone is an area that has 10 percent or greater probability that the horizontal ground level acceleration to the rock in the area exceeds 0.10 gravity once in 250 years.

Sewage sludge is a solid, semi-solid, or liquid residue generated during the treatment of domestic sewage in a treatment works. Sewage sludge includes, but is not limited to:, domestic septage; scum or solids removed in primary, secondary, or advanced wastewater treatment processes; and a material derived from sewage sludge. Sewage sludge does not include ash generated during the firing of sewage sludge in a sewage sludge incinerator or grit and screening generated during preliminary treatment of domestic sewage in treatment works.

Sewage sludge feed rate is either the average daily amount of sewage sludge fired in all sewage sludge incinerators within the property line of the site where the sewage sludge incinerators are located for the number of days in a 365 day period that each sewage sludge incinerator operates, or the average daily design capacity for all sewage sludge incinerators within the property line of the site where the sewage sludge incinerators are located.

Sewage sludge incinerator is an enclosed device in which only sewage sludge and auxiliary fuel are fired.

Sewage sludge unit is land on which only sewage sludge is placed for final disposal. This does not include land on which sewage sludge is either stored or treated. Land does not include waters of the United States, as defined in 40 CFR §122.2.

Sewage sludge unit boundary is the outermost perimeter of an active sewage sludge unit.

Specific oxygen uptake rate (SOUR) is the mass of oxygen consumed per unit time per unit mass of total solids (dry weight basis) in sewage sludge.

Stack height is the difference between the elevation of the top of a sewage sludge incinerator stack and the elevation of the ground at the base of the stack when the difference is equal to or less than 65 meters. When the difference is greater than 65 meters, stack height is the creditable stack height determined in accordance with 40 CFR §51.100 (ii).

State is one of the United States of America, the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands, Guam, American Samoa, the Trust Territory of the Pacific Islands, the Commonwealth of the Northern Mariana Islands, and an Indian tribe eligible for treatment as a State pursuant to regulations promulgated under the authority of section 518(e) of the CWA.

Store or storage of sewage sludge is the placement of sewage sludge on land on which the sewage sludge remains for two years or less. This does not include the placement of sewage sludge on land for treatment.

Surface disposal site is an area of land that contains one or more active sewage sludge units.

Total hydrocarbons means the organic compounds in the exit gas from a sewage sludge incinerator stack measured using a flame ionization detection instrument referenced to propane.

Total solids are the materials in sewage sludge that remain as residue when the sewage sludge is dried at 103 to 105 degrees Celsius.

Treat or treatment of sewage sludge is the preparation of sewage sludge for final use or disposal. This includes, but is not limited to, thickening, stabilization, and dewatering of sewage sludge. This does not include storage of sewage sludge.

Treatment works is either a federally owned, publicly owned, or privately owned device or system used to treat (including recycle and reclaim) either domestic sewage or a combination of domestic sewage and industrial waste of a liquid nature.

Unstable area is land subject to natural or human-induced forces that may damage the structural components of an active sewage sludge unit. This includes, but is not limited to, land on which the soils are subject to mass movement.

Unstabilized solids are organic materials in sewage sludge that have not been treated in either an aerobic or anaerobic treatment process.

Vector attraction is the characteristic of sewage sludge that attracts rodents, flies, mosquitoes, or other organisms capable of transporting infectious agents.

Volatile solids is the amount of the total solids in sewage sludge lost when the sewage sludge is combusted at 550 degrees Celsius in the presence of excess air.

Wet electrostatic precipitator is an air pollution control device that uses both electrical forces and water to remove pollutants in the exit gas from a sewage sludge incinerator stack.

Wet scrubber is an air pollution control device that uses water to remove pollutants in the exit gas from a sewage sludge incinerator stack.

3. Commonly Used Abbreviations

BOD	Five-day biochemical oxygen demand unless otherwise specified
CBOD	Carbonaceous BOD
CFS	Cubic feet per second
COD	Chemical oxygen demand
Chlorine	
Cl_2	Total residual chlorine
TRC	Total residual chlorine which is a combination of free available chlorine (FAC, see below) and combined chlorine (chloramines, etc.)

TRO	Total residual chlorine in marine waters where halogen compounds are present
FAC	Free available chlorine (aqueous molecular chlorine, hypochlorous acid, and hypochlorite ion)
Coliform	
Coliform, Fecal	Total fecal coliform bacteria
Coliform, Total	Total coliform bacteria
Cont. (Continuous)	Continuous recording of the parameter being monitored, i.e. flow, temperature, pH, etc.
Cu. M/day or M^3/day	Cubic meters per day
DO	Dissolved oxygen
kg/day	Kilograms per day
lbs/day	Pounds per day
mg/l	Milligram(s) per liter
ml/l	Milliliters per liter
MGD	Million gallons per day
Nitrogen	
Total N	Total nitrogen
NH_3-N	Ammonia nitrogen as nitrogen
NO_3-N	Nitrate as nitrogen
NO_2-N	Nitrite as nitrogen
NO_3-NO_2	Combined nitrate and nitrite nitrogen as nitrogen
TKN	Total Kjeldahl nitrogen as nitrogen
Oil & Grease	Freon extractable material
PCB	Polychlorinated biphenyl
pH	A measure of the hydrogen ion concentration. A measure of the acidity or alkalinity of a liquid or material
Surfactant	Surface-active agent

Temp. °C	Temperature in degrees Centigrade
Temp. °F	Temperature in degrees Fahrenheit
TOC	Total organic carbon
Total P	Total phosphorus
TSS or NFR	Total suspended solids or total nonfilterable residue
Turb. or Turbidity	Turbidity measured by the Nephelometric Method (NTU)
ug/l	Microgram(s) per liter
WET	"Whole effluent toxicity" is the total effect of an effluent measured directly with a toxicity test.
C-NOEC	"Chronic (Long-term Exposure Test) – No Observed Effect Concentration". The highest tested concentration of an effluent or a toxicant at which no adverse effects are observed on the aquatic test organisms at a specified time of observation.
A-NOEC	"Acute (Short-term Exposure Test) – No Observed Effect Concentration" (see C-NOEC definition).
LC_{50}	LC_{50} is the concentration of a sample that causes mortality of 50% of the test population at a specific time of observation. The LC_{50} = 100% is defined as a sample of undiluted effluent.
ZID	Zone of Initial Dilution means the region of initial mixing surrounding or adjacent to the end of the outfall pipe or diffuser ports.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND - REGION I
5 POST OFFICE SQUARE, SUITE 100
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FACT SHEET

DRAFT NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT TO DISCHARGE TO WATERS OF THE UNITED STATES PURSUANT TO THE CLEAN WATER ACT (CWA)

NPDES PERMIT NUMBER: MA0101877

PUBLIC NOTICE START AND END DATES: March 20, 2013 – April 18, 2013

NAME AND MAILING ADDRESS OF APPLICANT:

City of Chelsea
Department of Public Works
380 Beecham Street
Chelsea, Massachusetts 02150

NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:

4 Combined Sewer Overflow (CSO) Outfalls (See Figure 1)

RECEIVING WATERS: Chelsea River and Boston Inner Harbor
USGS Hydrologic Code #01090001, Mystic River Watershed and Boston Harbor

RECEIVING WATER CLASSIFICATION: Class SB (CSO)

Contents

I. Proposed Action, Type of Facility, and Discharge Locations

The City of Chelsea has applied to the U.S. Environmental Protection Agency ("EPA") for the reissuance of its NPDES permit to discharge from four (4) combined sewer overflow outfalls (CSOs) into the designated receiving waters. These CSO outfall discharge locations are shown on **Figure 1.**

The City's current permit was issued on April 11, 2003, and expired on June 10, 2008, five years from the effective date. EPA received a completed permit renewal application from the applicant dated March 18, 2009. Since the permit renewal application was deemed complete by EPA, the permit has been administratively continued pursuant to 40 CFR § 122.6.

II. Description of Discharges

The City of Chelsea owns and operates a combined sewer system that comprises about 70% of the City's wastewater sewer system. A combined sewer system is a wastewater collection system owned by a State or municipality [as defined by Section 502(4) of the Clean Water Act (CWA)] that conveys sanitary wastewaters (domestic, commercial and industrial wastewaters) and stormwater through a single-pipe system to a publicly owned treatment works (POTW) treatment plant [as defined in 40 CFR 403.3(p)]. The wastewater collected in this system is transported to the Massachusetts Water Resources Authority's (MWRA) Deer Island Wastewater Treatment Plant. There are four (4) CSO outfalls that discharge from the combined sewer system under certain wet weather conditions. A CSO is the discharge from a combined sewer system at a point prior to the POTW. CSO outfalls are point sources subject to NPDES permit requirements including both technology-based and water quality-based requirements of the CWA. CSOs occur during wet weather[1] when the flow in the combined sewer system exceeds the system's capacity and for the Chelsea CSO outfalls, activation (discharge) typically occurs during periods of heavy rain and is dependent on the precipitation intensity and the tide elevation. CSOs are distinguished from bypasses which are "intentional diversions of waste streams from any portion of a treatment facility" (40 CFR §122.41(m)).

The City began separating its combined collection system (building separate sanitary sewage and storm water systems) in the early 1970s. Work to further abate CSOs has continued according to a schedule in a federal court order [U.S. v. M.D.C., et al., No. 85-0489 (D. Mass)] and includes further sewer separation, hydraulic relief projects, and floatables control structures. The frequency and volume of CSO discharges have been reduced as CSO abatement projects have been completed. However, as will be discussed further in Section IV, the required projects were not expected to eliminate CSO discharges entirely.

[1] Flows in combined sewers can be classified into two categories: dry weather flow and wet weather flow. Dry weather flow is the flow that results from domestic sewage, groundwater infiltration, commercial and industrial wastewaters, and any other non-precipitation related flows (e.g. tidal infiltration). Wet weather flow includes all of the dry weather flow components plus storm water flow, including snow melt runoff (see 40 CFR 122.26(b)(13). The draft permit prohibits dry weather discharges from the City's CSO outfalls.

Modeled estimates of the number of CSO activations and flow volumes which are expected in a typical year for each CSO outfall after full implementation of the CSO abatement projects as documented in Exhibit B of the "Second Stipulation of the United States and the Massachusetts Water Resources Authority on Responsibility and Legal Liability for Combined Sewer Overflow Control" (Second Stipulation) are shown in **Permit Attachment A.**

III. Receiving Water Description

The Massachusetts Surface Water Quality Standards, found at 314 CMR 4.00, designate Boston Inner Harbor (Segment MA70-02), and the Chelsea River (Segment MA71-06), as Class SB (CSO) waters. Outfall CHE002 discharges to the Boston Inner Harbor and Outfalls CHE003, CHE004, and CHE008 discharge to the Chelsea River.

Class SB waters are described in the MA SWQS (314 CMR 4.05(4)(b)) and designated as a habitat for fish, other aquatic life and wildlife, including for their reproduction, migration, growth and other critical functions, and for primary and secondary contact recreation. In certain waters, habitat for fish, other aquatic life and wildlife may include, but is not limited to, seagrass. Where designated in the tables to 314 CMR 4.00 for shellfishing, these waters shall be suitable for shellfish harvesting with depuration (Restricted and Conditionally Restricted Shellfish Areas). These waters shall have consistently good aesthetic value. Waters with a B(CSO) or SB(CSO) designation are occasionally subject to short-term impairment of swimming or other recreational uses due to untreated CSO discharges in a typical year [314 CMR 4.06(11)]. The B(CSO) designation for these waters was adopted by MassDEP and approved by EPA, based on information included in MWRA's July 1997 Combined Sewer Overflow Plan and Environmental Impact Report. See Section V.A below for detailed information regarding this process.

The Chelsea River is an urban tidal river flowing from the mouth of Mill Creek, between Chelsea and Revere, to Boston's Inner Harbor, between East Boston and Chelsea. For centuries, the Chelsea River has been flanked by working industries, many of which used the channel to transport raw materials and finished goods. The Chelsea River is officially classified as a Designated Port Area: a stretch of waterfront set aside primarily for industrial and commercial use. Chelsea River, which is also locally known as Chelsea Creek, is designated as a Class SB (CSO) water body by the State of Massachusetts.

Sections 305(b) and 303(d) of the CWA require that States complete a water quality inventory and develop a list of impaired waters. Specifically, Section 303(d) of the CWA requires States to identify those water bodies that are not expected to meet surface water quality standards after the implementation of technology-based controls, and as such, require the development of a Total Maximum Daily Load (TMDL) for each pollutant that is prohibiting a designated use(s) from being attained. In Massachusetts, these two evaluations have been combined into an Integrated List of Waters. The integrated list format provides the status of all assessed waters in a single, multi-part list.

Boston Inner Harbor is listed on the *Final Massachusetts Year 2010 Integrated List of Waters*[2] and on the *Proposed Massachusetts Year 2012 Integrated List of Waters*[3] as a Category 5 waterbody, which are those classified as "Waters requiring a TMDL". The pollutants and conditions contributing to this impairment are as follows: fecal coliform, *Enterococcus*, dissolved oxygen, and Polychlorinated Biphenyls (PCBs) in fish tissue.

The Chelsea River is listed on the *Final Massachusetts Year 2010 Integrated List of Waters* and on the *Proposed Massachusetts Year 2012 Integrated List of Waters*, as a Category 5 waterbody. The pollutants and conditions contributing to this impairment are turbidity, taste and odor, petroleum hydrocarbons, dissolved oxygen, PCBs in fish tissue, fecal coliform, unionized ammonia, and floatables/debris. Primary and secondary contact uses are also impaired in this waterbody. Shellfishing is also impaired for the entire stretch of this segment due to a Massachusetts Division of Marine Fisheries (MarineFisheries) prohibition. These impairments are due mainly to historic spills of petroleum, the continued use of above ground storage tanks in the adjacent communities and associated cargo loading and unloading, and the general conditions of a high density urbanized area.

MassDEP is required under the CWA to develop a TMDL for waterbodies that are identified as impaired. A TMDL is essentially a pollution budget designed to restore the health of a water body. A TMDL first identifies the source(s) of the pollutant from direct and indirect discharges in order to next determine the maximum amount of pollutant (including a margin of safety) that can be discharged to a specific water body while maintaining water quality standards for designated uses. It then outlines a plan to meet the goal. No TMDLs have been drafted or finalized for either of these river segments.

IV. Permit Basis - Statutory and Regulatory Authority

A. Regulatory Background

The Clean Water Act (CWA) prohibits the discharge of pollutants to waters of the United States without a National Pollutant Discharge Elimination System (NPDES) permit unless such a discharge is otherwise authorized by the CWA. The NPDES permit is the mechanism used to implement technology and water quality-based effluent limitations and other requirements including monitoring and reporting. The draft NPDES permit was developed in accordance with various statutory and regulatory requirements established pursuant to the CWA and applicable State regulations. The regulations governing the EPA NPDES permit program are generally found at 40 CFR Parts 122, 124, 125, and 136. In this permit EPA considered (a) technology-based requirements, (b) water quality-based requirements, and (c) all limitations and requirements in the current/existing permit, when developing the permit limits.

CSO outfalls are point source discharges subject to NPDES permit requirements, including technology-based and water quality-based requirements of the CWA. Pursuant to a federal court decision, (Montgomery Environmental Coalition vs. Costle [646F.2d 568 (D.C. Cir 1980)] CSOs

[2] http://www.mass.gov/dep/water/resources/10list6.pdf
[3] http://www.mass.gov/dep/water/resources/12list2.pdf

are not subject to secondary treatment standards found in Section 301(b)(1)(B) of the CWA. Rather, CSOs are subject to technology-based requirements applicable to discharges other than publicly owned treatment works, found in Sections 301(b)(1)(B), 301(b)(2)(A) and 301(b)(2)(D). Pursuant to Section 301(b)(1)(C) of the CWA, CSOs are also subject to effluent limitations based on water quality standards.

On April 19, 1994 EPA published the National CSO Control Policy (59 FR 18688). The purpose of the National CSO Control Policy (the CSO Policy) was to establish a consistent national approach for controlling discharges from CSOs to the Nation's waters. The CSO Policy reiterates the goals of the 1989 National Combined Sewer Overflow (CSO) Control Strategy, which were:

- To ensure that if the CSO discharges occur, they are only as a result of wet weather;
- To bring all wet weather CSO discharge points into compliance with the technology based requirements of the CWA and applicable federal and state water quality standards; and
- To minimize water quality, aquatic biota, and human health impacts from wet weather flows.

To achieve these goals, the CSO Control Policy recommended technology–based limits developed using best professional judgment[4] (BPJ) and also recommended that each combined sewer system develop and implement a long-term CSO control plan (LTCP) that will ultimately result in compliance with the requirements of the CWA.

In 2001, Congress added Section 402(q) to the CWA to specifically address CSOs by stating that "Each permit, order, or decree issued pursuant to this Act after the date of enactment of this subsection for a discharge from a municipal combined storm and sanitary sewer shall conform to the Combined Sewer Overflow Control Policy signed by the Administrator on April 11, 1994."

The CSO conditions in the draft permit are consistent with the National CSO Control Policy.

B. Technology-based requirements

As discussed above, EPA's CSO Policy recommended technology-based effluent limitations for CSOs using best professional judgment. The policy establishes the minimum technology-based requirement as the implementation of the nine minimum controls (NMCs). The NMCs are:

1. Proper operation and regular maintenance programs for the sewer system and the CSOs;
2. Maximize use of the collection system for storage;
3. Review and modification of pretreatment requirements to assure CSO impacts are minimized;

[4] Section 402(a)(1)(B) of the CWA provides the authority to establish case-by case technology–based limitations. 40 CFR 125.3 establishes requirements and factors to be considered in establishing case-by-case technology–based limits using best professional judgment (BPJ). See specifically 125.3 (c)(2) and 125.3(d).

4. Maximization of the flow to the POTW for treatment;
5. Prohibition of CSOs during dry weather;
6. Control of solid and floatable material 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 CSO Policy required CSO communities to submit documentation of their implementation of the NMCs by January 1, 1997. The City of Chelsea submitted its documentation on December 31, 1996 as part of MWRA's submittal. The draft permit requires continued implementation of the NMC program, which was last updated in the City's CSO Annual Report in April of 2012, which encompassed the 2011 calendar year. The draft permit also requires that the City review and update its program no later than April 30th following the first full year of the permit and authorizes modifications to the NMC program during the term of the permit to enhance its effectiveness, while requiring that certain minimum controls be maintained in any such modifications. Part I.C. of the permit, the minimum implementation levels, provides specific minimum requirements that the permittee must fulfill in order to be in compliance with each of the NMCs.

C. Water Quality Based Requirements

Water quality-based limitations are required in NPDES permits when EPA and the State determine that effluent limits more stringent than technology-based limits are necessary to maintain or achieve state or federal water quality standards (WQS). See Section 301(b)(1)(C) of the CWA.

Receiving water requirements are established according to numerical and narrative standards adopted under state law for each water quality classification. When using chemical-specific numeric criteria to develop permit limits, both the acute and chronic aquatic-life criteria, expressed in terms of maximum allowable in-stream pollutant concentration, are used. Acute aquatic-life criteria are considered applicable to daily time periods (maximum daily limit) and chronic aquatic-life criteria are considered applicable to monthly time periods (average monthly limit). Chemical-specific limits are allowed under 40 CFR § 122.44(d)(1) and are implemented under 40 CFR § 122.45(d).

Narrative criteria from the State's WQS are often used to limit toxicity in discharges where (a) a specific pollutant can be identified as causing or contributing to the toxicity but the state has no numeric standard; or (b) toxicity cannot be traced to a specific pollutant.

EPA regulations require NPDES permits to contain effluent limits more stringent than technology-based limits where more stringent limits are necessary to maintain or achieve state or federal WQS. The permit must address any pollutant or pollutant parameter (conventional, non-conventional, toxic and whole effluent toxicity) that is or may be discharged at a level that

causes or has "reasonable potential" to cause or contribute to an excursion above any water quality criterion. See 40 CFR Section 122.44(d)(1). An excursion occurs if the projected or actual in-stream concentration exceeds the applicable criterion. In determining reasonable potential, EPA considers (a) existing controls on point and non-point sources of pollution; (b) pollutant concentration and variability in the effluent and receiving water as determined from the permit application, Monthly Discharge Monitoring Reports (DMRs), and State and Federal Water Quality Reports; (c) sensitivity of the species to toxicity testing; (d) known water quality impacts of processes on wastewater; and, where appropriate, (e) dilution of the effluent in the receiving water.

WQS consist of three parts: (a) beneficial designated uses for a water body or a segment of a water body; (b) numeric and/or narrative water quality criteria sufficient to protect the assigned designated use(s); and (c) antidegradation requirements to ensure that once a use is attained it will not be degraded. The Massachusetts Surface Water Quality Standards (MA SWQS), found at 314 CMR 4.00, include these elements. These standards require the state to "limit or prohibit discharges of pollutants to surface waters to assure that surface water quality standards of the receiving waters are protected and maintained or attained." [314CMR4.03 (1)(a)]. These standards also include requirements for the regulation and control of toxic constituents and require that EPA criteria, established pursuant to Section 304(a) of the CWA, shall be used unless a site-specific criterion is established. The conditions of the permit reflect the goal of the CWA and EPA to achieve and then to maintain WQS.

The WQS may also assign restrictions to receiving waters, which establish a subcategory of use assigned to a receiving water segment. One of the subcategories which may be established is for CSO-impacted segments. The permitting authority may allow overflow events to waters identified as impacted by CSOs provided that:

(1) an approved Final CSO Facilities Plan under 310 CMR 44.00 provides justification for the overflows (note – in this case the CSO Facilities Plan as defined by MassDEP and an LTCP, as defined by EPA, are the same document) ;

(2) the MassDEP finds through a Use Attainability Analysis (UAA), and EPA concurs, that achieving a greater level of CSO control is not feasible for one of the reasons specified at 314 CMR 4.03(4);

(3) existing uses and the level of water quality necessary to protect the existing uses shall be maintained and protected; and

(4) public notice is provided through procedures for permit reissuance or facility planning under M.G.L.c.21 §§ 26 through 53 and regulations promulgated pursuant to M.G.L.c. 30A.

Conversely, if a Final CSO Facilities Plan shows that elimination of CSO discharges is feasible, through relocation or sewer separation, no CSO discharges are authorized into that receiving water and the CSO-impacted subcategory is removed.

The State may also, with EPA concurrence, establish a water quality standards variance. A variance is a short-term modification of the standards, designed to obtain the information necessary to determine the appropriate water quality standard and level of CSO control for the segment. Variances are discharger and pollutant specific, are time-limited, and do not forego the currently designed use. At the end of the variance, a final Administrative Determination is made regarding the appropriate level of CSO control and final water quality determinations, in accordance with National and State CSO Policy.

D. Antibacksliding

A permit may not be renewed, reissued or modified with less stringent limitations or conditions than those contained in the previous permit unless in compliance with the anti-backsliding requirements of the CWA [see Sections 402(o) and 303(d)(4) of the CWA and 40 CFR §122.44(l)(1 and 2)]. EPA's antibacksliding provisions prohibit the relaxation of permit limits, standards, and conditions except under certain circumstances. Effluent limits based on BPJ, water quality, and state certification requirements must also meet the antibacksliding provisions found at Section 402(o) and 303(d)(4) of the CWA.

E. Antidegradation

Federal regulations found at 40 CFR Section 131.12 require states to develop and adopt a statewide antidegradation policy which maintains and protects existing instream water uses and the level of water quality necessary to protect the existing uses, and maintains the quality of waters which exceed levels necessary to support propagation of fish, shellfish, and wildlife and to support recreation in and on the water. The Massachusetts Antidegradation Regulations are found at 314 CMR 4.04. There are no new or increased discharges being proposed with this permit reissuance.

F. State Certification

Under Section 401 of the CWA, EPA is required to obtain certification from the state in which the discharge is located that all water quality standards or other applicable requirements of state law, in accordance with Section 301(b)(1)(C) of the CWA, are satisfied. EPA permits are to include any conditions required in the state's certification as being necessary to ensure compliance with state water quality standards or other applicable requirements of state law. See CWA Section 401(a) and 40 CFR §124.53(e). Regulations governing state certification are set out at 40 CFR §124.53 and §124.55. EPA regulations pertaining to permit limits based upon water quality standards and state requirements are contained in 40 CFR §122.44(d).

V. Explanation of Permit's Effluent Limitations

A. MWRA CSO Facilities Plan/Water Quality Standards

EPA's CSO Policy recommended that each combined sewer system prepare and implement an LTCP that would result in attainment of CWA requirements. In 1987, MWRA stipulated to responsibility and legal liability for all combined sewer overflows hydraulically connected to its collection system[5], which in addition to discharges owned and operated by MWRA includes CSOs owned and operated by the communities of Boston, Cambridge, Chelsea, and Somerville. The CSO planning conducted by MWRA subsequent to 1987 addressed all of these CSO outfalls, in accordance with the stipulation, and MWRA has funded the planning, design, and construction of the recommended CSO control facilities.

In 1994, MWRA completed a Conceptual CSO Control Plan that formed the basis of its final Combined Sewer Overflow Plan and Environmental Impact Report ("Facilities Plan"), completed in July 1997. The recommended CSO control projects included sewer separation, hydraulic relief, and floatables control projects. The MWRA also estimated the activation frequency and volume for the remaining CSOs under baseline (1992) conditions and after completion of the projects recommended by the Facilities Plan.

For those CSOs that MWRA believed could not be eliminated, the plan included information to support a UAA pursuant to 40 CFR Section 131.10 (g). A UAA is an evaluation conducted by the state which supports removal of a National Goal Use based on criteria such as costs and impacts associated with attaining that use. The state submitted its final administrative determinations, including a UAA, to EPA for approval on December 31, 1997. On February 27, 1998, EPA approved the state's changes to water quality standards, which included removal of CSO-impacted designations for the Neponset River, North Dorchester Bay, South Dorchester Bay, and Constitution Beach; a SB-CSO designation for Boston Inner Harbor, including the Chelsea River; a B-CSO designation for the Muddy River; and a tentative determination for the issuance of WQS variances for the Lower Charles River, the Alewife Brook, and the Upper Mystic River due to CSO discharges. Variance conditions for CSOs discharging to the Lower Charles River were issued on September 2, 1998 and variance conditions for CSOs discharging to the Alewife/Upper Mystic sub-basin were issued on March 5, 1999.

On March 15, 2006, MWRA and the United States supplanted the 1987 Stipulation defining responsibilities for CSO abatement and CWA compliance with a "Second Stipulation of the United States and the Massachusetts Water Resources Authority on Responsibility and Legal Liability for Combined Sewer Overflow Control" (Second Stipulation). In the Second Stipulation, the MWRA accepted "legal liability to … meet the levels of CSO control (including as to CSO activation and as to volume of CSO discharge) described in the Authority's Long-Term CSO Control Plan". The most current estimates of CSO discharge frequency and volume expected in a typical year after full implementation of the CSO abatement projects required by the court order are documented in Exhibit B of the "Second Stipulation". The figures for the four Chelsea CSO outfalls are shown in Table 1 as follows:

[5] Stipulation of the United States and the Massachusetts Water Resources Authority on Responsibility and Legal Liability for Combined Sewer Overflows

Table 1

Outfall	Typical Year	
	Activation Frequency	**Volume (MG)**
CHE002	4	0.22
CHE003	3	0.04
CHE004	3	0.32
CHE008	0	0.00

In 2000-2001, the MWRA and the City of Chelsea completed several projects that cost approximately $30 million. The Chelsea Trunk Sewer Replacement replaced an 18-inch diameter city–owned trunk sewer with a 30 inch pipe. The Chelsea Branch Sewer Relief project relieved the Chelsea Branch and Revere Extension Sewers with 48-inch to 66-inch diameter pipe. In addition, all four (4) CSOs were either repaired or rebuilt and underflow baffles were installed at all four (4) CSOs for floatables control. In 2003, the City installed CSO metering and telemetry at all of its CSO structures from which the City derives the CSO activation frequency and volume amounts for its Annual Reports.

As detailed in its 2011 Annual Report submittal, the City is currently in the evaluation, design, and construction phases of various sewer separation projects to further reduce the quantity of stormwater discharged to its combined sewer system.

B. Water Quality-Based Effluent Limitations

The discharges from the City of Chelsea's CSOs into the Chelsea River and Boston Inner Harbor have been limited in accordance with the activation frequency and discharge volume estimates that are presented in Exhibit B of the Second CSO Stipulation incorporated into the Federal Court Order on April 27, 2006. These limits can be seen in **Attachment A** of the draft permit.

The draft permit continues the Annual Report requirement, which is due by April 30th of each year. In the Annual Reports submitted following the first and third full calendar years under this permit, the permittee is required to compare the metered CSO activation and discharge volume data with the data predicted by MWRA's model for each CSO outfall. The Agencies believe that this analysis will be timely under this permit since the major CSO projects in MWRA's Facilities Plan have been completed in accordance with the Federal Court Order.

The last few years of Annual Reports have shown many activations (CSO discharges), particularly at Outfalls CHE004 and CHE008, where MWRA's model had predicted few if any activations based on actual rainfall for those years. For example, for the year 2011, there were 16 activations for Outfall CHE004 and 15 activations for Outfall CHE008. MWRA's modeling had predicted that there would be no activations at either of these outfalls based on actual 2011 rainfall or "typical year" rainfall. See results in Table 2 below.

Table 2

	2011 Rainfall Under 2011 System Conditions [6]		2011 Metered Data reported by permittee	
Outfall	Activation Frequency	Volume (MG)	Activation Frequency	Volume (MG)
CHE002	0	0.0	0	0.0
CHE003	0	0.0	0	0.0
CHE004	0	0.0	16	0.59
CHE008	0	0.0	15	0.42

If, following completion of all abatement projects recommended by the MWRA Facilities Plan the metered discharge flow and frequency under "typical year" conditions exceed the authorized "typical year" flows and frequency authorized by the permit, the permittee, working with the MWRA, will either be required to conduct further CSO abatement or must seek an adjustment of the water quality standards.

VI. Essential Fish Habitat Determination (EFH)

Under the 1996 Amendments (PL 104-267) to the Magnuson-Stevens Fishery Conservation and Management Act (16 U.S.C. § 1801 et seq. (1998)), EPA is required to consult with the National Marine Fisheries Services (NMFS) if EPA's action or proposed actions that it funds, permits, or undertakes, may adversely impact any essential fish habitat such as: waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity (16 U.S.C. § 1802 (10)). Adversely impact means any impact which reduces the quality and/or quantity of EFH (50 C.F.R. § 600.910 (a)). Adverse effects may include direct (e.g., contamination or physical disruption), indirect (e.g., loss of prey, reduction in species' fecundity), site-specific or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions.

[6] These are estimated CSO activations and volumes for storms during the calendar year 2011. The estimated were developed using the MWRA InfoWorks sewer system model by simulating each of the rainfall events and respective system operations in 2011. For the simulations, MWRA updated the model to account for new information and known changes to the system, including CSO projects and other system improvements completed during the year. From April 30, 2012 letter of M. Hornbrook (MWRA) to T. Borci (EPA) and K. Brander (MassDEP).

EFH is only designated for species for which federal fisheries management plans exist (16 U.S.C. § 1855(b) (1) (A)). EFH designations for New England were approved by the U.S. Department of Commerce on March 3, 1999. The following is a list of the EFH species and applicable lifestage(s) for the area that includes Massachusetts Bay, to which the Chelsea River and Boston Inner Harbor discharge:

Species	Eggs	Larvae	Juveniles	Adults
Atlantic cod (*Gadus morhua*)	X	X	X	X
haddock (*Melanogrammus aeglefinus*)	X	X		
pollock (*Pollachius virens*)	X	X	X	X
whiting (*Merluccius bilinearis*)	X	X	X	X
red hake (*Urophycis chuss*)	X	X	X	X
white hake (*Urophycis tenuis*)	X	X	X	X
winter flounder (*Pseudopleuronectes americanus*)	X	X	X	X
yellowtail flounder (*Pleuronectes ferruginea*)	X	X	X	X
windowpane flounder (*Scopthalmus aquosus*)	X	X	X	X
American plaice (*Hippoglossoides platessoides*)	X	X	X	X
ocean pout (*Macrozoarces americanus*)	X	X	X	X
Atlantic halibut (*Hippoglossus hippoglossus*)	X	X	X	X
Atlantic sea scallop (*Placopecten magellanicus*)	X	X	X	X
Atlantic sea herring (*Clupea harengus*)		X	X	X
long finned squid (*Loligo pealei*)	n/a	n/a	X	X
short finned squid (*Illex illecebrosus*)	n/a	n/a	X	X
Atlantic butterfish (*Peprilus triacanthus*)	X	X	X	X
Atlantic mackerel (*Scomber scombrus*)	X	X	X	X
summer flounder (*Paralicthys dentatus*)				X
scup (*Stenotomus chrysops*)	n/a	n/a	X	X
black sea bass (*Centropristus striata*)	n/a		X	X

surf clam (*Spisula solidissima*)	n/a	n/a	X	X
bluefin tuna (*Thunnus thynnus*)			X	X

A review of the relevant essential fish habitat information provided by NMFS indicates that EFH has been designated for 23 managed species within the NMFS boundaries encompassing Massachusetts Bay. It is possible that a number of these species utilize these receiving waters for spawning, while others are present seasonally.

Based on the available information, EPA has determined that these CSO discharges, as restricted by the draft permit conditions, will not directly or indirectly cause adverse effects to EFH species or their habitat, because the draft permit contains conditions (NMCs) that are protective of the aquatic species in both receiving waters.

VII. Endangered Species Act (ESA)

Section 7(a) of the Endangered Species Act of 1973, as amended (ESA) grants authority to and imposes requirements upon Federal agencies regarding endangered or threatened species of fish, wildlife, or plants ("listed species") and habitat of such species that has been designated as critical (a "critical habitat"). The ESA requires every Federal agency, in consultation with and with the assistance of the Secretary of Interior, to insure that any action it authorizes, funds, or carries out, in the United States or upon the high seas, is not likely to jeopardize the continued existence of any listed species or result in the destruction or adverse modification of critical habitat. The United States Fish and Wildlife Service (USFWS) typically administer Section 7 consultations for bird, terrestrial, and freshwater aquatic species. The NMFS typically administers Section 7 consultations for marine species and anadromous fish.

EPA has reviewed the federal endangered or threatened species of fish, wildlife, and plants to see if any such listed species might potentially be impacted by the reissuance of this NPDES permit and has not found any such listed species. EPA has determined that there are no species of concern present in the vicinity of Chelsea's CSO discharges. Therefore, EPA does not need to formally consult with NMFS or USFWS in regard to the provisions of the ESA.

EPA has structured the proposed limits to be sufficiently stringent to assure that Water Quality Standards will be met. The effluent limits and conditions established in this permit ensure the protection of aquatic life and maintenance of the receiving water as an aquatic habitat. During the public comment period, EPA has provided a copy of the Draft Permit and Fact Sheet to both NMFS and USFWS.

VIII. State Certification Requirements

EPA may not issue a permit unless the MassDEP certifies that the effluent limitations contained in the permit are stringent enough to assure that the discharge will not cause the receiving water to violate State Water Quality Standards. The staff of the MassDEP have reviewed the draft permit and advised EPA that the limitations are adequate to protect water quality. EPA has requested permit certification by the State pursuant to 40 CFR 124.53 and expects that the draft permit will be certified.

IX. Public Comment Period, Public Hearing, and Procedures for Final Decision

All persons, including applicants, who believe any condition of the Draft Permit is inappropriate must raise all issues and submit all available arguments and all supporting material for their arguments in full by the close of the public comment period, to George Papadopoulos, U.S. EPA, Office of Ecosystem Protection**,** Industrial Permits Branch, Mail Code OEP 06-1, 5 Post Office Square, Suite 100, Boston, Massachusetts 02109-3912. Any person, prior to such date, may submit a request in writing for a public hearing to consider the Draft Permit to EPA and the State Agency. Such requests shall state the nature of the issues proposed to be raised in the hearing. A public meeting may be held if the criteria stated in 40 C.F.R. § 124.12 are satisfied. In reaching a final decision on the Draft Permit, the EPA will respond to all significant comments and make these responses available to the public at EPA's Boston office.

Following the close of the comment period, and after any public hearings, if such hearings are held, the EPA will issue a Final Permit decision and forward a copy of the final decision to the applicant and each person who has submitted written comments or requested notice. Within 30 days following the notice of the Final Permit decision, any interested person may submit a petition for review of the permit to EPA's Environmental Appeals Board consistent with 40 C.F.R. § 124.19.

X. EPA and MassDEP Contacts

Additional information concerning the draft permit may be obtained between the hours of 9:00 a.m. and 5:00 p.m., Monday through Friday, excluding holidays, from the EPA and MassDEP contacts below:

George Papadopoulos, Industrial Permits Branch
5 Post Office Square - Suite 100 - Mailcode OEP 06-1
Boston, MA 02109-3912
Papadopoulos.george@epa.gov
Telephone: (617) 918-1579 FAX: (617) 918-1505

Cathy Vakalopoulos, Massachusetts Department of Environmental Protection
Surface Water Discharge Permit Program
1 Winter Street, Boston, Massachusetts 02108
catherine.vakalopoulos@state.ma.us
Telephone: (617) 348-4026; FAX: (617) 292-5696

February 27, 2013
Date

Ken Moraff, Acting Director
Office of Ecosystem Protection
U.S. Environmental Protection Agency

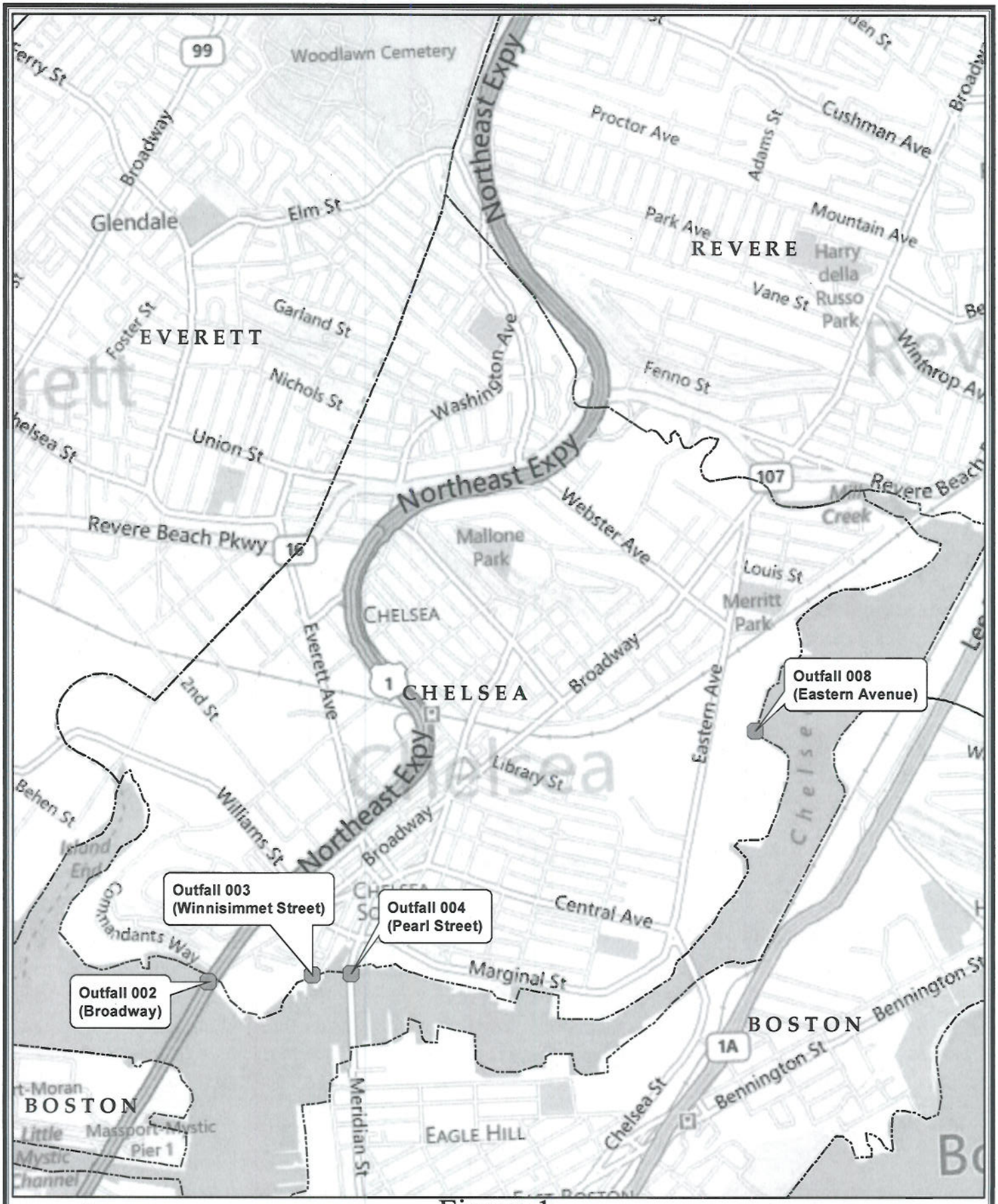

Figure 1
City of Chelsea
4 Combined Sewer Overflows

EPA

Map created by EPA Region 1 GIS Center
Map Tracker ID 8961 December 18, 2012
Data Sources: Base Map Data: (c) 2010 Microsoft Corporation and its data suppliers

Response to Public Comments

From March 20, 2013 to April 18, 2013, the United States Environmental Protection Agency ("EPA") and the Massachusetts Department of Environmental Protection ("MassDEP") (together, the "Agencies") solicited public comments on draft NPDES Permit No. MA0101877, developed pursuant to a permit application from the City of Chelsea, Massachusetts, for the reissuance of a National Pollutant Discharge Elimination System ("NPDES") permit to discharge combined sewer overflow consisting of sanitary wastewater, stormwater, and industrial wastewater from outfall serial number 002 to Boston Inner Harbor and from outfall serial numbers 003, 004, and 008 to the Chelsea River. In accordance with the provisions of 40 C.F.R. §124.17, this document presents EPA's responses to comments received on the draft permit. The responses to comments explain and support the EPA determinations that form the basis of the final permit.

After a review of the comments received, EPA and MassDEP have made a final decision to issue this permit authorizing these discharges. The final permit is substantially the same as the draft permit that was available for public comment. Although EPA's decision-making process has benefitted from the comments and additional information submitted, the information and arguments presented did not raise any substantial new questions concerning the permit. EPA did, however, make certain clarifications and changes in response to comments. The analyses underlying these changes are explained in the responses to individual comments that follow and are reflected in the final permit. A summary of the changes made in the final permit are listed below. Where applicable, relevant sections of the response document where these changes have been discussed have been included in parentheses at the end of each change.

Copies of the final permit may be obtained by writing or calling EPA's NPDES Water Permits Branch (OEP 06-1), Office of Ecosystem Protection, 5 Post Office Square, Suite 100, Boston, MA 02109-3912; Telephone: (617) 918-1579.

1. The final permit includes language in Part I.A and I.H. that requires the permittee to submit CSO discharge monitoring information on discharge monitoring reports, and allows electronic submittal of these reports and other submittals required by this permit. (**Comment A6**).

2. The final permit includes a requirement in Part I.C.6 that requires the permittee to issue an annual press release regarding its CSO discharges. (**Comment B2**)

3. The final permit includes a requirement in Part I.C.7 that the permittee provide e-mail notification of CSO discharges from any of its outfalls to certain entities within 24 hours after the onset of such discharges, or as soon after such discharges begin as feasible. (**Comment B2**)

4. The final permit has included a requirement in Part I.D.5 that the permittee incorporate any relevant findings or recommendations from the forthcoming Massachusetts Water Resources Authority (MWRA) North System Hydraulic Study into its NMC program and discuss these findings in the appropriate Annual Report. Parts I.D.5 and I.D.6 of the draft permit have been renumbered I.D.6 and I.D.7, respectively. (**Comment B5**)

Comments submitted by Andrew B. Desantis, Assistant Director of the City of Chelsea Department of Public Works:

Comment A1:

Section I.A.1.b: The permit sets limits on the activation frequencies and volumes for each of Chelsea's four CSOs without consideration for the appropriate party responsible for compliance with these limits. As clearly detailed in Attachment B to Chelsea's draft permit, *Second Stipulation of the United States and the Massachusetts Water Resources Authority [MWRA] on Responsibility and Legal Liability for Combined Sewer Overflow Control* (March 15, 2006), and the permit Fact Sheet, the MWRA has legal liability for meeting the frequency of CSO activations and volume of CSO discharges described in the MWRA's Long-Term CSO Control Plan (LTCP) until such time as Civil Action No. 83-1614-RGS is otherwise amended or terminated. Therefore, at this time:

- Chelsea is not legally liable for achieving the activation frequencies and volumes listed for its four CSOs in the MWRA LTCP.
- The EPA has no authority granted under the NPDES program to transfer legal liability for Chelsea's CSOs from the MWRA to Chelsea.
- The NPDES permit in question is being issued solely to the City of Chelsea, and not jointly to the MWRA and Chelsea.
- The EPA is not authorized to impose Effluent Limitations through NPDES permits on discharges for which the permittee does not have legal responsibility; hence, the CSO permit to be issued solely to Chelsea can contain only requirements for discharges under Chelsea's legal responsibility.
- Activation frequency and volume for each of the CSOs is directly related to the capacity of the MWRA wastewater system to accept and convey Chelsea's wastewater discharges.

For these reasons, achieving the activation frequencies and volumes set forth in Attachment A to Chelsea's draft CSO permit is both outside the scope of Chelsea's legal liability and operational control. Therefore, Chelsea's CSO permit must be revised to delete the requirement for Chelsea, as the permittee, to meet the CSO activation frequencies and volumes.

Response to Comment A1:

Section 301 of The Clean Water Act (CWA) prohibits discharges of pollutants to waters of the United States except as authorized by an NPDES permit issued pursuant to Section

402 of the Act. Permit regulations at 40 CFR 122.21(a) require that the discharger of pollutants apply for the permit. The City of Chelsea, the owner and operator of its combined sewer system, currently holds the NPDES permit authorizing the discharge from its combined sewer overflows and made a timely reapplication for renewal of that permit. Chelsea may not legally discharge combined sewer overflows to waters of the United States without an NPDES permit.

The MWRA's stipulation to liability for achieving the level of CSO control that the U.S. District Court established in its Order in the ongoing Boston Harbor civil action does not alter the City of Chelsea's obligation to comply with the Clean Water Act's permitting requirements. The MWRA did not assume ownership of Chelsea's combined sewer system, nor did it assume operational responsibilities for Chelsea's combined sewer system.

The permit includes mechanisms, however, for Chelsea and MWRA to determine whether the LTCP levels of control have been achieved and if not, for determining whether additional abatement projects are necessary and, if so, which entity is responsible for implementation.

The CWA requires that the reissued permit contain technology and water quality-based limits. The final permit has not been changed regarding Chelsea's legal liability to achieve the permit limits and conditions.

Comment A2:

Section I.A.1.b: The permit states that discharges shall be limited to the activation frequency and volume shown in Attachment A, but then states that discharge frequencies and volumes are expected to vary from year to year as a function of rainfall amount and intensity. This section is contradictory and there is no way for Chelsea to determine what will constitute compliance or non-compliance. Furthermore, Section V.B of the Fact Sheet accompanying the draft permit states that should activation frequency and volume differ from the LTCP (and proposed limits for Chelsea's CSO permit) upon completion of all CSO abatement projects, then the permittee will have to take action. This implies that the activation limits will not take effect until the LTCP is complete; however, the draft permit does not specifically state this anywhere. This section of the draft permit requires revision to clarify what will constitute a violation and when this will take effect.

Response to Comment A2:

The frequency and volumes of discharges set forth in the permit are based on the rainfall expected in the typical year used as the basis for LTCP modeling. These frequencies and volumes were also established as the water quality criteria for the receiving waters pursuant to a Use Attainability Analysis (UAA). Since all of the LTCP projects have been completed, the limits are effective upon the effective date of the permit.

Given that it is extremely unlikely that the exact "typical year" rainfall pattern will be observed in any given year, the actual overflow activation frequencies and volumes will vary from year to year; years with rainfall greater than the typical year will produce more CSO activations while years with less rainfall than the typical year will produce fewer activations. The permit establishes a mechanism for the City, in cooperation with MWRA to determine if the actual CSO frequencies and volumes are consistent with the "typical year" predictions. Overflows that are consistent with the performance expected from the controls put in place to achieve the "typical year" level of control would not be in violation of the permit, even if annual overflow frequency or volume exceeded the annual levels in the water quality standard established pursuant to the UAA.

Specifically, in the first and third Years of this permit, the Annual Report requires that the permittee compare the actual CSO activation frequencies and volumes with those estimated by MWRA's model. In the Annual Reports for these two years, the permittee will have the opportunity to discuss the reasons for any discharges that are greater, or more frequent than the modeled estimates. As necessary, we would expect the City of Chelsea to discuss these results with MWRA to understand differences from the modeled estimates, the possible reasons for such variations, and what measures can be taken in future years to address overflows in excess of those expected from full implementation of the LTCP. This would also be an opportunity for the City to investigate or recommend additional Nine Minimum Control (NMC) measures, reassessment of MWRA modeling, increased monitoring, and measures to reduce activation frequencies and volumes to those predicted by the LTCP and included in the water quality standards.

As noted in the Fact Sheet, all major CSO abatement projects required by the Court Order have been completed, and flow measurements for Chelsea's combined sewer overflow discharges have not been within the "typical year" activation frequency and volume predicted by the LTCP. In its April 2013 letter detailing MWRA CSO discharge totals for 2012, MWRA notes that "MWRA and the City of Chelsea are working collaboratively to identify and resolve the sources of differences between the City's metered overflow data and MWRA's model predictions at outfalls CHE002, CHE003, CHE004, and CHE008. Intensive field investigations are underway as a first step."

Comment A3:

Section I.A.1.c: This section states that the CSO discharges must meet Federal and State water quality standards. Neither the Fact Sheet accompanying the draft permit or the Federal and Massachusetts Surface Water Quality Standards (314 CMR 4.0) provide any limits or measurable goals for SB-CSO classified waterbodies; therefore, it is unclear how Chelsea would evaluate compliance with these standards. If proper implementation of the Nine Minimum Controls (NMCs) is presumed to achieve compliance with water quality standards, the permit needs revision to specifically state this. If additional effort is presumed to be needed to achieve compliance with water quality standards, the permit needs additional detail instructing the permittee what this additional effort is expected to be. This could be provided in the CSO permit, Fact Sheet, or Response to Comments.

Response to Comment A3:

Chelsea's CSO discharges must meet all water quality standards as set forth in the Massachusetts Water Quality Standards (WQS) (314 CMR 4.00), as modified by the Use Attainability Analysis (UAA) for the affected receiving waters. The UAA was the basis for a modification of the water quality standard for both of the receiving waters to SB(CSO), a subcategory of the SB classification. Designated uses for waters with SB(CSO) include all the uses associated with the SB classification except as temporarily impacted by CSO discharges that occur despite implementation of the LTCP (including all NMCs). For waters designated as SB(CSO), the MassDEP specifically allows "potential short-term excursions from any of the criteria in the state WQS, including toxicity, as long as acute toxicity impacts to fishery or biological resources do not occur."[1]

The NMCs are identified in EPA's CSO Control Policy as the minimum technology-based controls for CSO discharges, and are not water quality-based levels of control. However, implementation of the NMCs contribute towards attainment of WQS, such as those related to minimizing solids, reducing CSO volumes and frequencies, and removing illicit connections.

Aside from the minimum implementation levels for NMCs found in Part C, this Permit does not define specific further actions Chelsea must undertake to comply with the Permit's conditions, including the requirement to comply with water quality standards. If, for example, Chelsea became aware that its frequency of tidegate inspections or maintenance was insufficient to prevent frequent episodes of tidal intrusion, we would expect that the frequency of inspections or maintenance would be increased as an NMC measure. Similarly, if it is shown that any of Chelsea's CSOs activate more frequently or discharge greater volume in a typical year than specified in the LTCP and incorporated into the water quality standards, the City would need to work with MWRA to identify and undertake additional actions to comply with the Permit's terms.

Comment A4:

Section I.B & Section I.D.5: Under the 2003 permit, Chelsea was required to submit a CSO Monitoring Plan, which included discussion of how the City would address the Nine Minimum Controls. Chelsea also describes how it complies with the NMCs in each Annual Report due annually on April 30th, the same date as stated for the required revisions under Section I.B. Is the intent of Section B to have Chelsea submit to the EPA a revised version of this CSO Monitoring Plan, or is continued discussion of the NMCs in the Annual Report sufficient? This section of the permit requires revision to clarify what is required.

[1] December 31, 1997, Use Attainability Analysis included in correspondence from MassDEP to EPA, page 15.

Response to Comment A4:

While the permit does require that the City's NMC program include monitoring to effectively characterize CSO impacts and the efficacy of CSO control (See Part I.A.1.b.(9) of the permit) there is no specific requirement to update the existing CSO monitoring program. EPA does note that the minimum implementation level for CSO monitoring (See Part I.C.4.) requires the City to keep the existing metering devices in place and to report these measurements, whereas the minimum implementation measures in the 2003 permit allowed either metering devices or estimates.

The Agencies believe it is sufficient for the permittee, in its Annual Report, to discuss how it is implementing the Nine Minimum Controls, including a description of any changes in implementation from previous years and the rationale for such changes. The Annual Report that is due in April of 2014 should include any revisions to the City's NMC plan, including those regarding CSO monitoring.

Comment A5:

Section I.C.2: This section prohibits the discharge of materials that may cause visible oil sheen or containing floatable materials during wet weather when CSO discharges may be active. Since sanitary sewage and stormwater runoff almost always contain these materials, it is not feasible for Chelsea to prevent there discharge during wet weather. This section should be revised to add a statement such as "over and above that contained in normal sanitary sewage and stormwater connections".

Response to Comment A5:

As noted in the response to Comment A3 above, since the receiving waters are classified as Class SB (CSO), it is understood that there will be occasional discharges which do contain these materials. EPA's *Guidance for Nine Minimum Controls, (EPA 832-B-95-003; May 1995)* acknowledges that discharges of such materials may occur and that they may not always feasibly be eliminated. In Chapter 7 of this publication, the NMC regarding solid and floatable materials states that this NMC is intended to "reduce, if not eliminate, visible floatables and solids . . . ". In Chapter 8, the NMC regarding pollution prevention measures states that "the objective of this minimum control is to reduce to the greatest extent possible the amount of contaminants that enter the combined sewer system".

EPA notes that there has been a significant reduction in activation frequency and volume from Chelsea's CSOs since inplementation of the control measures in the LTCP. EPA believes that low discharge frequencies and volumes are the primary control mechanism for floatables and oil, and that floatables and oil in the few remaining discharges associated with normal combined sewage would not need to be further controlled. If there

were site–specific factors that exacerbated floatables and oils discharge from these CSOs, then it may be determined that further controls may be necessary.

Comment A6:

Section I.H: Submission of all reports or notifications required by the permit in hardcopy form to four different parties requires a large volume of paper. Chelsea requests that the permit be revised to specifically allow alternative submission of these documents in a more environmentally conscious manner via email or other digital means.

Response to Comment A6:

Part I.H. of the final permit includes information regarding the alternative electronic submission of notifications and reports that may be made to the MassDEP.

For alternative electronic submission of reports to EPA, the final permit has included language in Parts I.A and I.H of the final permit that allows the permittee to file discharge monitoring reports (DMRs), Annual Reports, and other required submittals electronically. Part I.A. describes the type of information that the permittee must report on DMRs and Part I.H. describes the report submittal process, including the procedure for the permittee to register for and begin submitting DMRs and other reports electronically through EPA's NetDMR system.

Notifications and reports may be submitted to MassDEP in hard copy or alternatively be submitted electronically using eDEP at: http://www.mass.gov/eea/agencies/massdep/service/approvals/state-specific-discharge-and-toxicity-reporting.html.

Comment A7:

Section I.I: Printing and retention of hardcopies of all reports and notifications required by the draft CSO permit requires a tremendous volume of paper and storage space. Chelsea requests that the permit be revised to specifically allow the Permittee to submit and retain copies in digital form.

Response to Comment A7:

The City of Chelsea may submit its ARs electronically to EPA and MassDEP as described in the final permit and response to Comment A6 above. In addition, the City of Chelsea may retain copies of reports required by this permit in digital form, but must be able to produce such reports upon request by EPA and MassDEP personnel.

Comments submitted by EkOngKar Singh Khalsa, Executive Director of the Mystic River Watershed Association and Roseann Bongiovanni, Associate Executive Director of the Chelsea Collaborative:

General Comment:

The Chelsea River, commonly referred to as Chelsea Creek, is not only the most contaminated tributary flowing into Boston Harbor, but also the second most polluted water body in Massachusetts[2]. Further, given that the Chelsea River connects some of the lowest income and most diverse areas of Chelsea, Revere, and East Boston, MyRWA recognizes environmental justice issues associated with inadequate storm- and sanitary-sewer infrastructure supporting these communities, which contributes to the heavily degraded water quality conditions in adjacent waters.

Our organizations are concerned about the substantial negative economic consequences that result from these discharges. Continued impairment of the receiving water bodies as a result of the proposed CSO activation has direct impact upon property values and public health and wellbeing in the communities adjacent to the receiving waters.

In general, in our opinion, efforts to improve and enhance conditions along the brooks and rivers of the Mystic River Watershed will be better supported by an expanded effort to improve water quality through the elimination of these types of discharges.

Comment B1:

We specifically request that the EPA include the following provisions in their final NPDES permit for the City of Chelsea:

1. Specific requirements for the City to consider green infrastructure in all sewer separation projects.

2. Increase focus on the City meeting all effluent limitation requirements, including Minimum Control Measures (MCM) 8 and 9.

3. Delay issuance, or develop the permit in a manner that takes into account a more robust understanding of the unique scale and complexity of Chelsea's sewer system and associated problems based on an outcome from an ongoing Massachusetts Water Resource Authority (MWRA) study.

Each of the above listed items is discussed in greater detail below.

[2] EPA Green Infrastructure Program Community Partner Profiles, 2011 Partners: Region 1: Chelsea, Massachusetts. EPA 832N12001.

GREEN INFRASTRUCTURE

Green infrastructure (GI), planned and implemented as a component to an integrated water management strategy, has demonstrated tangible benefits in reducing CSOs in combined systems[3]. The City began separating its combined sewer system (CSS) in the early 1970's and work to further abate CSOs continues to this day through additional sewer separation, hydraulic relief projects, and floatable control structure projects. Like most communities in the United States with CSO problems, Chelsea's sewer separation and large structural controls have typified the methods for reducing CSOs, as such technologies have been traditionally accepted as the Best Available Technologies (BAT). The problem with such traditional structural approaches is they are typically expensive, challenging to implement, and slow to construct.

Recognizing the benefits GI can have on reducing CSOs, the City has begun implementing measures to help intercept and infiltrate/delay discharge of runoff before it can drain to the CSS. In 2011, EPA Region 1 commended Chelsea for being a green infrastructure leader in the Mystic River watershed for installing tree boxes along Chester Avenue and other low impact stormwater mitigation strategies throughout the city.

EPA strongly encourages the use of GI and related innovative technologies, approaches, and practices to manage stormwater as a resource, reduce sewer overflows, enhance environmental quality, and achieve other economic and community benefits as a component to an integrated approach for managing municipal stormwater and wastewater. Properly planned, implemented, and operated GI can also slow the delivery of wet weather flows into sewer systems, helping to mitigate peak flows while providing filtration through plant materials and soil media for some portion of the runoff entering the sewer system, thereby reducing pollutant loads. By enhancing investments in GI, the City may be able to downsize or eliminate structural components of their CSO long-term control plan (LTCP). In addition, because GI is typically a fraction of the cost to design and construct compared to traditional pipe controls and structures, such approaches may yield significant cost savings to the City as work continues to further reduce the volume and frequency of their CSOs.

EPA has identified GI and associated innovations as important tools that are fundamental aspects of the agency's vision for integrated wastewater and stormwater planning solutions. In 2007, EPA recommended to permitting authorities that they structure their permits, as well as guidance or criteria for stormwater plans and CSO LTCPs, to encourage permittees to utilize GI approaches, where appropriate, in lieu of or in addition to more formal controls (Use of Green Infrastructure in NPDES Permits and Enforcement, EPA Memorandum to Water Division Directors, Regions 1 – 10, August 16, 2007). Increasing focus on GI also supports the efforts of the Mystic River Watershed Initiative, a collaborative effort between US EPA, MyRWA, and 21 other

[3] Stoner, N. (US EPA OW) and Giles, C. (US EPA OECA) (2011, October 27). [Memorandum to EPA Regional Administrators, OW & OECA Office & Division Directors]. Achieving Water Quality Through Integrated Municipal Stormwater and Wastewater Plans.

organizations to restore water quality in the Mystic River and quality of life in neighboring communities.

For these reasons, MyRWA and Chelsea Collaborative urge EPA to utilize this NPDES permit as a mechanism for further assisting/requiring the City to identify and implement GI practices as a component of their CSO LTCP and maximize use of such BATs for reducing CSOs from their CSS. We also recommend EPA require the City of Chelsea to perform a comprehensive GI analysis in a sample set of sewer sheds to determine which locations and types of GI will be most effective at intercepting and treating runoff.

Response to Comment B1:

Regarding Item #1, EPA appreciates the comment regarding consideration of green infrastructure (GI) in CSO planning and reduction efforts. As noted, EPA is very much committed to promoting the employment of GI practices, including such practices that may abate CSOs. In October of 2013, EPA released a new strategic agenda that affirmed its commitment to promoting and understanding where and how GI may be best employed. Refer to http://water.epa.gov/infrastructure/greeninfrastructure/gi_support.cfm. Consistent with this new agenda and EPA's ongoing Green Infrastructure Partnership, EPA Region 1 selected the City of Chelsea in 2012 for a GI direct technical assistance pilot project. As a result, Chelsea evaluated opportunities for incorporating GI into the City's municipal code and ordinance. This project also evaluated specific GI best management practices (BMPs) that may be considered given the City's hydraulically and geographically-constrained urban character. These evaluations and outreach materials developed during this 2012 project are available on the City's website. Refer to http://www.chelseama.gov/Public_Documents/ChelseaMA_Planning/EPA%20GI. This evaluation is in line with the commenter's recommendation for a comprehensive GI analysis in slected sewer sheds in Chelsea.

The following are examples of completed and proposed projects in Chelsea that incorporate GI elements:

In 2010, the City of Chelsea had funding in place for the replacement or rehabilitation of water, sewer and storm drain infrastructure. The Charles River Watershed Association (CRWA) worked with the City to develop a design which incorporated the addition of four stormwater tree pits as GI infiltration features into a larger reconstruction project on Chester Avenue, a residential street adjacent to the downtown area. Four stormwater tree pits were installed during the summer of 2010, which added stormwater treatment and infiltration to the area as well as much needed greenery to this street.

CRWA is working on a project to retrofit a parking lot of the Mace Apartments site with stormwater controls. This complex is adjacent to Mill Creek. The design includes the modification and enlargement of a central island in the parking lot with a rain garden to collect and treat sheet flow coming down Crescent Street and from the upper portion of the parking lot itself; a stormwater planter along Clinton Street to collect flow from the

street as it flows into Mill Court; and a bioretention area along the northern edge of the parking lot, adjacent to Mill Creek, to collect and treat sheet flow from the lower portion of the parking lot. In addition to treating stormwater runoff prior to it discharging to Mill Creek, the proposed project will add greenspace to the area, reduce impervious cover, and attract people to this Creek-side location. Finally, CRWA has also implemented a stormwater runoff monitoring program at this site to quantify and compare water quality of site runoff pre- and post-construction.

Although GI projects are believed to be beneficial in reducing CSO volumes as part of an integrated approach, this permit and NPDES permits in general do not include the specific measures by which the permittee will abate its CSOs and comply with permit limits. Specific abatement activities are typically evaluated in a CSO Long Term Control Plan, which identifies cost and effectiveness of a variety of alternatives, from which a recommended plan is selected.

In any event, we would expect and encourage the City to continue to consider GI and other techniques in future CSO abatement efforts. For this permit, this ongoing consideration of GI practices is in the context of the extent to which they could benefit the City, State, and the ratepayers by meeting the goals of CSO abatement work at lower cost, particularly if additional CSO abatement is needed to attain the permit conditions or if even higher levels of CSO control are required in the future. EPA expects that the permittee will describe any consideration or implementation of GI concepts in any projects related to CSO abatement or control in each Annual Report that is due with this permit.

Regarding Item #2, in Comment B1, see the response to Comment B2.

Regarding Item #3 in Comment B1, see the response to Comment C6.

Comment B2:

Nine Minimum Controls
Stronger requirements should be made on the City for meeting the Nine Minimum Controls (NMC). NMC 8 requires adequate public notification of CSO occurrences and CSO impacts. We request that a plan for public notice be drafted by Chelsea for use during a release and submitted for review and approval by EPA and all stakeholder groups that may be affected by such a release.

Response to Comment B2:

First, as a point of clarification, EPA refers to each of the nine minimum controls as an NMC (see Part I.A.1.a of the permit for a list of the NMCs). EPA has also identified minimum implementation levels in the permit (see Part I.C), which represent the minimum activities the permittee must include in its NMC program. Where the commenter refers to minimum control measures (MCMs), it is apparent he is referencing the list of NMCs in Part I.A 1.a, and not the minimum implementation levels in Part I.C.

Regarding the comment on adequate public notice (NMC #8), the permit has been changed to include additional language in Part I.C.6 requiring the issuance of an annual press release on April 30th regarding its CSO discharges. This press release shall be distributed to the following, at a minimum:

- local watershed advocacy groups, including the Chelsea Collaborative and the Mystic River Watershed Association
- local health agents in Chelsea and adjacent communities, and
- a newspaper of local circulation

In addition, in Part I.C.7, the final permit requires the permittee to develop a plan to provide an e-mail notification of CSO discharges from any of its outfalls to the entities listed above, with the exception of a newspaper of local circulation. The City will be required to provide such notification within 24 hours of the onset of such discharges, or as soon feasible after such discharges begin. This requirement is consistent with the requirement in the NPDES permit for the City of Cambridge's CSOs, permit #MA0101974, and also with NMC #8. Part I.C.7 of the final permit reads as follows:

> The permittee shall provide an e-mail notification of CSO discharges from any of its outfalls to the entities listed above, with the exception of a newspaper of local circulation. The City will be required to provide such notification within 24 hours of the onset of such discharges, or as soon as feasible after such discharges begin. The City shall develop a plan to meet this requirement and submit it to EPA and the MassDEP within ninety (90) days of the effective date of the permit. This notification procedure shall be implemented no later than one (1) year after the effective date of the permit.

Comment B3:

Minimal Control Measure (MCM) 9 requires municipalities perform "monitoring to effectively characterize CSO impacts and the efficacy of CSO controls." As a component to MCM 8, MyRWA requests that the City provide public notification of not just the timing, but the total volume and composition of CSOs, including fecal coliform, heavy metals, petroleum hydrocarbons, PCBs, and other potential pollutant concentrations.

Response to Comment B3:

Regarding more CSO monitoring for other parameters, the Agencies have found that CSO quality has varied dramatically in sampling programs (even among multiple samples at the same CSO), and the litany of factors affecting CSO quality makes it difficult to draw conclusions regarding which factors bear more impact. Typically, most of our CSO decisions have been based on discharge quantity/frequency and receiving water uses, which we still believe are better criteria. In any case, it would be challenging to determine how sampling of CSO quality would influence decisions to move forward with any further CSO abatement work.

The MWRA has a long term ambient monitoring program, which has collected a variety of water quality data, including bacteria data, with one sampling station at the mouth of the Mystic River, a short distance downstream of Outfalls 002, 003, and 004. As expected, this sampling station shows elevated bacteria concentrations during and following periods of precipitation. This monitoring effort will continue to provide information on bacteria in the vicinity.

MWRA will also be performing a three-year performance assessment of its CSO Long Term Control Plan (LTCP) starting in January 2018. The Court Order stipulates that this work be done in accordance with EPA's CSO policy, which reads in part as follows:

> "The selected CSO controls should include a post-construction water quality monitoring program adequate to verify compliance with water quality standards and protection of designated uses as well as to ascertain the effectiveness of CSO controls. This water quality compliance monitoring program should include a plan to be approved by the NPDES authority that details the monitoring protocols to be followed, including the necessary effluent and ambient monitoring and, where appropriate, other monitoring protocols such as biological assessments, whole effluent toxicity testing, and sediment sampling."

EPA believes that the CSO discharge measurement required in the permit and MWRA's receiving water CSO monitoring described above will be sufficient to characterize Chelsea's CSO discharges and their impact on receiving waters.

The Agencies believe that the focus of this permit should remain on minimizing CSO discharges and to continue implementing the NMCs in order to minimize the pollutants present in these discharges.

Comment B4:

Federal and State Water Quality Standards
A fundamental "effluent limitation" requirement as stated on page 2 of this draft NPDES permit states that the "permittee's discharges must meet Federal and State water quality standards (WQS)"; however, it is unlikely that any CSOs from the listed outfalls will meet Federal and State WQSs. The Chelsea River is listed on the *Final Massachusetts Year 2010 Integrated List of waters* and on the *Proposed Massachusetts Year 2012 Integrated List of Waters*, as a Category 5 waterbody impaired for turbidity, taste and odor, petroleum hydrocarbons, dissolved oxygen, PCBs in fish tissue, fecal coliform, unionized ammonia, and floatables/debris. Though a TMDL has not been developed by MassDEP for the Chelsea River or Boston Inner Harbor, it is likely that discharges from the proposed authorized outfalls will further contribute to the impairment of many of these pollutants and conditions.

Response to Comment B4:

As explained in the response to Comment A3, the waters receiving Chelsea's CSOs are classified SB(CSO), established on the basis of a UAA, that allows short term impacts from CSOs that occur after the implementation of the LTCP. CSOs discharges to these waters that are in accordance with the frequency and volumes in the UAA would meet the standard. If the water body is impaired from sources other than CSOs controlled via the LTCP, any TMDL for that receiving water would allow for impacts from LTCP-controlled CSOs and determine load allocations for the other sources.

As described by the commenter, Chelsea Creek and Boston Inner Harbor have been identified by the State as receiving waters that are not achieving water quality criteria for pathogens (among other pollutants), and are among over 1000 water body segments in Massachusetts for which TMDLs must be produced. MassDEP developed a Draft Pathogen TMDL for the Boston Harbor Watershed (excluding the Neponset River sub-basin) in 2009 that has yet to be finalized. When that TMDL is completed by the State and approved by EPA, any subsequently issued NPDES permit must be consistent with the TMDL's assumption and requirements of its wasteload allocations pursuant to 40 CFR 122.44(d)(1)(vii)(B)

Pending completion and approval of a TMDL, we expect that ongoing efforts to further reduce CSO discharges and to abate stormwater discharges, particularly through illicit connections, will result in improvements to water quality. Continuing sampling programs by the MWRA and other entities will be helpful in identifying and confirming pollutant sources and pollutant loads in the watershed, and will be important in developing the final TMDL.

Comment B5:

MWRA NORTH SYSTEM HYDRAULIC STUDY

As stated in the draft NPDES permit, the City's CSS comprises approximately 70% of the City's wastewater sewer system. The remaining CSS system is owned and operated by the Massachusetts Water Resource Authority (MWRA). Wastewater in both of these systems is collected and transported to the MWRA Deer Island Wastewater Treatment Plant Publically Owned Treatment Works Facility (POTW).

MWRA is in the process of completing an optimization study of their North System. The goal of this project is to "analyze the MWRA Chelsea Creek Headworks tributary area and develop recommended means for system optimization and sanitary sewer overflow (SSO) impact reduction as it related to the various discharge areas." The study area includes 18 communities and 46% of the North System flow to the POTW. A final report was scheduled to be released in November 2012, but has not yet been completed. The final report is anticipated to recommend an overall plan to eliminate, reduce, or relocate SSOs for the portion of the service area tributary to Chelsea Creek headworks.

The results of this study may have significant bearing on the City's CSS, especially if the study shows that system has upstream capacity. If upstream capacity is found to exist, it may obviate the need for the four (4) CSO outfalls that are currently proposed for authorization to discharge under this draft NPDES permit. The Mystic River Watershed Association and Chelsea Collaborative recommend that EPA require that, once the MWRA report has been issued, the City of Chelsea prepare and issue its own report on how the findings of the MWRA North System Hydraulic Study can allow Chelsea to reduce CSO flows or eliminate CSOs entirely within a reasonable timetable.

Response to Comment B5:

As stated in the fact sheet, 70% of the City's sewer system is combined, while the remaining 30% is separated. There was no attempt to characterize any sewer system or related installations owned and operated by the MWRA within the City of Chelsea.

Secondly, it does not appear that the study being conducted by the MWRA will have a direct bearing on the Chelsea CSO discharges. In a letter of July 29, 2011 from Michael Hornbrook of the MWRA to Todd Borci of the EPA, the MWRA stated that the purpose of this study was to "review the frequency and extent of the Sanitary Sewer Overflows (SSOs) in the area tributary to the Chelsea Creek Headworks and to develop recommended alternatives to optimize performance for the collection system which will result in the reduction of SSO volume, frequency, and/or location to local and regional sewer facilities and receiving waters". The study area for this study includes the MWRA interceptor system tributary to Chelsea Creek Headworks associated with overflows to the Mystic River and its tributaries. This includes 18 communities and 46% of the North System flow to Deer Island (and 30% of total system flow). Therefore, it appears that the main focus of this study will be on SSOs rather than CSOs and take place mostly upstream of Chelsea.

In communication with Michael Hornbrook of MWRA on May 8, 2013, it was indicated to George Papadopoulos that the completion of the study is likely months away and had not been released as of the issuance of this final permit. Therefore, since the scope of the project does not specifically address Chelsea CSOs and since the release of this report is not imminent, EPA and MassDEP do not believe that it is reasonable to delay issuance of this permit to account for the results of this study, as requested in Comment B1.

When the MWRA study is released, we would expect the City of Chelsea to review the study's analysis and findings to determine if there was useful information that would enhance its understanding of the its CSO discharges and possibly improve performance , and to document that in its Annual Report for that year. Therefore, Part I.D. 5 of the permit has been revised to require the permittee to incorporate any relevant findings or recommendations of this study into its NMC program and report this in the appropriate Annual Report. If the study showed that CSO "typical year" frequency and/or quantity could be reduced it would also be necessary to revisit the UAA and make the reduced amounts the water quality standard.

Comments submitted by Roger Frymire:

Comment C1:

For Chelsea now, and for all other CSO permits ongoing, I suggest that the two city permits be combined into one permit. CSO communities have distinct stormwater problems which so far are not fully addressed by the general stormwater permit. The reality is that CSOs are just a small portion of the overall stormwater problem - especially in regard to the sewage contamination of stormwater.

Response to Comment C1:

A single permit that authorized discharges from the CSOs and stormwater systems for the City of Chelsea would be possible, but it is not clear that the effort to do so would have any additional overall benefit. Stormwater (Municipal Separate Storm Sewer Systems, or MS4) permitting has historically been separate from other individual permits, including those for CSO discharges.

The City of Chelsea is currently authorized to discharge stormwater by its MS4 permit, which has many requirements in common with its CSO permit, such as those for pollution prevention, public notification, and illicit discharge detection and elimination efforts. Stormwater drainage system mapping is also required in the MS4 permit, which could inform efforts under this CSO permit.

The Agencies believe that each permit requires measures that need to be taken by the City of Chelsea that work towards attainment of WQS and that keeping these permits separate in no way ignores the issues or challenges the City must address in complying with both permits.

Comment C2:

When I began sampling in the vicinity of Chelsea for MyRWA, the Island End River particularly was found to be heavily sewage contaminated. Chelsea has since traced a major source here back to a stormwater pump station. In turn this has led to multiple large collapsed pipes and direct sewer cross-connections being found and fixed. Taking into account the very poor condition of these pipes once inspected, I fear that much of Chelsea's infrastructure is in similar condition, with a prevalence of sewer/stormwater interconnections thru disrepair. Chelsea suffers from being totally surrounded by corrosive tidal salt water intruding twice daily into all of its pipes, as well as from having one of the oldest infrastructures under one of the poorest cities in Massachusetts.

Response to Comment C2:

The City of Chelsea has been conducting an extensive program to find and repair illicit connections and broken or collapsed pipes, as mentioned above in the response to Comment B4. This effort was required mainly through an EPA Administrative Order issued to the City of Chelsea and effective on March 19, 2009. The City submitted its latest progress report on its Illicit Discharge Detection and Elimination (IDDE) Program to Todd Borci of the EPA on July 31, 2013.

The commenter is correct that these problems do exist in this old system of pipes, but also must understand that there is considerable time, effort, and expense that goes into such efforts.

To address the issue of the leakage of tidal waters back into the collection system, the City routinely inspects tidegates associated with these CSOs to assure they are in proper working order and makes repairs and adjustments as necessary. In the July 31st letter referenced above, the City noted that it had awarded a contract for repairs to the tidegate associated with Outfall 004, primarily to prevent tidal backwater flows from entering the sewer system at high tide.

Comment C3:

When confronted with the huge amount of sewage in the Island End River, MyRWA quantified the problem by repeatedly measuring bacteria levels from the two largest sources at the North end of the river throughout an outgoing tidal cycle. This clearly showed the loading in dry weather from the larger of these two pipes was gross enough to twice daily fill the entire Mystic River down to the Mystic Bridge to a depth of ten feet with a layer of water failing the MADEP water quality standards.

Once I was aware of the magnitude, I looked at the then most current MWRA I/I report and compared the numbers for Somerville and Chelsea. Chelsea has approximately half the area and population of Somerville with a similar percentage of CSO area. Rough calculations showed as much as 40% of Chelsea's total sewage was potentially not being conducted to Deer Island!

Response to Comment C3:

The data and calculations noted by the commenter were not specifically cited or provided, so the Agencies cannot confirm the commenter's calculations. However, the dry weather loading that was cited by the commenter during the outgoing tidal cycle may have been influenced by tidal water that had entered the collection system As was noted in the response to Comment C2, the IDDE program is addressing issues related to dry weather loading such as tide gate operation and identification of illicit flows.

Also see Responses to Comments B4 and C2.

Comment C4:

The MWRA's CSO model is a poor match to the actual metering data the city measures at their CSOs. I fear with the old and collapsing infrastructure, that the entire system is not well understood and that much more mapping, inspection, metering and modeling is required before any firm numbers should be placed in a permit. It seems likely that even current CSO metered flows miss the majority of sewage exiting from stormwater-designated outfalls or even unmapped outfalls.

Though tidal variation induces many measurement problems, I believe the piping here will not be fully understood without measuring stormwater flows from several events in every major drainage area so that stormwater runoff coefficients can verify that the flows collected in a basin actually correspond to flows exiting from each particular pipe. This must include both CSO and stormwater-only basins.

Response to Comment C4:

EPA recognizes that the actual CSO activations and discharge volumes are not consistent with modeled estimates. While some discrepancy is expected between modeled and actual performance these discrepancies are sufficiently large to warrant further investigation.

As discussed in the fact sheet, the last few years of Annual Reports have shown many activations (CSO discharges), particularly at Outfalls CHE004 and CHE008, where MWRA's model had predicted few if any activations based on actual rainfall for those years. For example, for the year 2011, there were 16 activations for Outfall CHE004 and 15 activations for Outfall CHE008.

Through ongoing monitoring and modeling, the City of Chelsea and MWRA are attempting to better understand the system to more accurately predict activations and volumes and the City of Chelsea continues to look for illicit connections in its IDDE program to further reduce CSO volume through its outfalls. It is possible that flows from illicit connections are contributing to the discrepancy regarding the modeled versus the actual activations and flow volumes. Also see Response to Comment A2.

Comment C5:

In December 2012, a 2-1/2" rainfall led to 4 million gallon sanitary sewer overflow (SSO) from the MWRA trunk sewer in the Fresh water portion of the Mystic River several miles upstream from Chelsea. Oddly, this SSO began as the rain ended and was coincident with the peak of a 14' high tide (5' above normal).

While one known broken Chelsea CSO tidegate might have produced part of this problem, the suspected gross tidal inflows to produce this problem likely came from several cities and ingress to the sewer for tidal inflow was via CSO pipes as well as

stormwater pipes with problem interconnections to sewers. Additionally, at least four low lying sections of Chelsea reported flooding, and any sewer manholes inundated likely added to the inflow problems.

Response to Comment C5:

According to information provided by the MWRA, a SSO was reported in Medford on 12/27/12 at 11:15 am. High tide was at 10:00 am, and was projected as a 10 foot tide as compared to an average 9 foot tide. Precipitation data indicate that by 11:00 am, 1.7 inches of rain had fallen over the course of the preceding 14 hours (start of the storm), with 1.08 inches of that total falling in the 5 hours preceding 11:00 am, and nearly an inch of rain falling between 7:00 am and 9:00 am. December 2012 was a somewhat warm and wet month with precipitation and snowmelt occurring throughout the earlier part of the month. According to MWRA, the SSO occurred because the Chelsea Creek Headworks, owned and operated by MWRA, was operating at capacity. MWRA reported that Deer Island was operating at a rate of 1.1 billion gallons per day (BGD) at the time of the SSO, at close to peak operating capacity of 1.3 BGD. MWRA reported SSO volume of 1.86 MG. High tide might have exacerbated the problem as suggested by the commenter. An above normal high tide would result in greater tidal intrusion through outfalls without tidegates or with non-functioning tidegates, and would also provide greater resistance to the opening of functioning tide gates, causing flows that would otherwise discharge to back up into the collection system,

The Agencies expect that the North System Hydraulic Study which is currently being conducted by the MWRA and which was discussed in the response to Comment B3 will provide some insight as to why SSOs are occurring in the area and what alternatives will be considered to alleviate such flows in the future. Although the City of Chelsea's implementation of the NMCs as required by the permit can minimize the occurrences of SSOs, study and actions taken by the MWRA across the wider North System which consists of multiple communities, is also expected to better understand the system and minimize the occurrences of SSOs.

Comment C6:

I feel that the scale and complexity of Chelsea's problems are not being taken into account with this permit, and ask that it be withdrawn and a new combined CSO/stormwater permit be written to fit these special circumstances. There is an elephant in the harbor. Ignoring it does not make it go away.

Response to Comment C6:

See Response to Comment C1.

November 25, 2013