

**Environmental Justice Analysis
in Support of the
National Pollutant Discharge Elimination System (NPDES)
Permits for the
Chelsea River Bulk Petroleum Storage Facilities**

March 2014

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I. Background

EPA and the Massachusetts Department of Environmental Protection (MassDEP) have developed draft National Pollutant Discharge Elimination System (NPDES) permits for seven bulk petroleum storage facilities located along Chelsea River (Creek) in Chelsea, East Boston, and Revere, Massachusetts in accordance with the requirements of the Clean Water Act (“the Act”). The seven fuel facilities and their respective NPDES permit numbers are:

Chelsea Sandwich, LLC
(MA0003280)
Chelsea

Gulf Oil Limited Partnership
(MA0001091)
Chelsea

Global REVCO Terminal, LLC
(MA0003298)
Revere

Irving Oil Terminal
(MA0001929)
Revere

Global Petroleum Corp., Inc.
(MA0003425)
Revere

Global South Terminal, LLC
(MA0000825)
Revere

Sunoco Logistics East Boston Terminal
(MA0004006)
East Boston

These facilities receive, store, and distribute petroleum products and additives such as gasoline, diesel, kerosene, ethanol, and fuel oil. Currently, petroleum products and additives are primarily received in bulk quantities by ship or barge at the marine vessel dock and transferred to aboveground steel tanks located within each facility’s tank farm area for storage. The petroleum products are transported off-site in smaller vessels such as tanker trucks, or via pipeline.

These Draft Permits, which will replace those issued in 2005-2006, limit water pollution from the seven facilities by regulating stormwater runoff and non-stormwater discharges such as:

- Treated groundwater from active groundwater remediation;
- Hydrostatic test water used to fill a bulk storage tank after it has been repaired to confirm that the tank does not leak; and
- Boiler blowdown from steam boilers that prevents buildup of impurities within the boiler.

When fulfilling its responsibilities and exercising its authorities under the Clean Water Act (CWA), EPA is guided by Presidential Executive Order 12898 (“the Executive Order”). Under the Executive Order, “[t]o the greatest extent practicable and permitted by law . . . each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and

adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations in the United States.” See Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, Executive Order 12898, 59 Fed. Reg. 7629 (Feb. 16, 1994), § 1-101. Furthermore, “[e]ach Federal agency shall conduct its programs, policies, and activities that substantially affect human health or the environment, in a manner that ensures that such programs, policies, and activities do not have the effect of . . . subjecting persons (including populations) to discrimination under, such, programs, policies, and activities, because of their race, color, or national origin.” *Id.* § 2-2. With respect to public process, the Executive Order also authorizes federal agencies to “translate crucial public documents, notices, and hearings relating to human health or the environment for limited English speaking populations,” *id.* § 5-5(b), and requires federal agencies to “work to ensure that public documents, notices, and hearings relating to human health or the environment are concise, understandable, and readily accessible to the public,” *id.* § 5-5(c).

EPA is also guided by its own definition of environmental justice:

Environmental Justice is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. EPA has this goal for all communities and persons across this Nation. It will be achieved when everyone enjoys the same degree of protection from environmental and health hazards and equal access to the decision-making process to have a healthy environment in which to live, learn, and work.¹

Based on the Executive Order, EPA's Environmental Appeals Board (EAB) has held that environmental justice issues must be considered in connection with the issuance of federal permits issued by EPA regional offices and states acting under delegations of Federal authority. *In re Prairie State Gen. Co.*, 13 E.A.D. 1, 123 (EAB 2006) (citing *In re Knauf Fiber Glass, GmbH*, 8 E.A.D. 121, 174-75 (EAB 1999). See also *In re AES Puerto Rico, L.P.*, 8 E.A.D. 324, 351 (EAB 1999) (order denying review based in part on the thorough environmental justice analysis), *aff'd sub nom Sur Contra La Contaminacion v. EPA*, 202 F.3d 443 (1st Cir. 2000); *In re EcoEléctrica, L.P.*, 7 E.A.D. 56, 67-69 (EAB 1997); *In re Puerto Rico Elec. Power Auth.*, 6 E.A.D. 253, 254-58 (EAB 1995) (citing *In re Chem. Waste Mgmt. of Indiana*, 6 E.A.D. 66 (EAB 1995) (examining for the first time the general policy directive set out in Executive Order 12898 and the EAB's role in implementing it in the context of a RCRA permit).

This document explains EPA's efforts to identify and address, as appropriate, disproportionately high and adverse human health or environmental effects of EPA's permitting actions of the seven Chelsea River bulk petroleum storage facilities on minority populations and low-income populations.

¹ Available at <http://www.epa.gov/environmentaljustice>.

II. Scope and Methodology

As noted, the purpose of this environmental justice (EJ) analysis is to identify and address, as appropriate, disproportionately high and adverse human health or environmental effects of EPA's permitting actions of the seven Chelsea River bulk petroleum storage facilities on minority populations and low-income populations. In addition, the Region will use the analysis to more fully characterize the demographic, economic, environmental, and health factors surrounding the bulk petroleum storage facilities and nearby populations. This analysis itself is not intended to be a cumulative impact assessment or the type of analysis described in EPA's national Toolkit for Assessing Potential Allegations of Environmental Injustice.²

The communities that border the Chelsea River include East Boston (a neighborhood of the City of Boston), the City of Chelsea, and the City of Revere. For state law purposes, these communities are defined by Massachusetts Executive Office of Energy and Environmental Affairs (EEA) as EJ populations because they meet the following three criteria: the median household income is 65% or less of the statewide median household income; 25% or more of the residents are minority; 25% or more of all households are identified as English-isolated. In order to gain a better understanding of demographic, economic, environmental, and health information surrounding the facilities, the Region collected readily available data on a list of factors which are summarized in Section III of this report.

An important task of any EJ analysis is to define an appropriate geographic area upon which to focus. For the purpose of EPA's EJ analysis for the seven Chelsea River bulk petroleum storage facilities, EPA chose to focus on the area within 0.5 miles of the Chelsea River (see Figure 1) because the discharges regulated by EPA and which are subject to these permits are predominantly to the Chelsea River. Furthermore, as the study area includes populations within 0.5 miles of the Chelsea River residing in the communities of Chelsea, East Boston, and Revere, it is thought that the study area is appropriately sized so as to capture characteristics relevant to the population most likely to be impacted while not so large as to dilute the analysis with populations that are less likely to be impacted and that are located further from the seven facilities.

To assist with the EJ analysis, EPA consulted several publically available on-line data sources supported by the federal and state government. One of these databases is EJView³ which is a web-based geographic tool developed by EPA designed for local community groups which summarizes demographic, environmental, and health information for a particular area of interest. EJView itself draws from other reliable data sources such as the US Census. EPA also consulted the Massachusetts Department of Public Health's (MA DPH) Community Health Information Profiles (CHIPS)⁴ and the

² Available at <http://www.epa.gov/environmentaljustice/resources/policy/ej-toolkit.pdf>.

³ EJView is available at <http://www.epa.gov/environmentaljustice/mapping.html>

⁴ Massachusetts Community Health Information Profiles: <http://www.mass.gov/dph/masschip>

MA DPH Environmental Public Health Tracking Network⁵ for access to community specific health and asthma statistics. Additionally, EPA consulted the Facility Registry Service (FRS) to obtain data on regulated facilities and the Enforcement and Compliance History Online (ECHO) database for inspection information. Both the FRS and ECHO databases are accessible via EPA's Envirofacts⁶ website.

III. Description of Community

This section provides EPA's findings from evaluating various demographic, economic, environmental, and health factors. Specifically, this information helps assess the following issues:

- Susceptibility of host population (e.g., disease and hospitalization rates);
- Ability of host populations to participate in decision-making or receiving information (e.g., lack of information, language barriers);
- Distribution of environmental burdens (e.g., location of potentially noxious facilities among certain populations).

The purpose of this section is to present demographic, economic, environmental, and health factors surrounding the facilities to help characterize the study area and as data permits, to compare the study area to nearby communities. For the purposes of this EJ analysis, the study area is defined as the area extending 0.5 miles beyond the Chelsea River including the seven facilities subject to this permit (see shaded area in Figure 1).

⁵ MA DPH Environmental Public Health Tracking Network:
https://matracking.ehs.state.ma.us/Health_Data/Pediatric_Asthma.html#

⁶ Envirofacts: www.epa.gov/envirofw/

A. Social Demographics

The Region compiled demographic indicators pertinent to the study area as well as comparable indicators obtained for the entire state of Massachusetts using EPA's EJView database and the U.S. Census' American Community Survey 2006-2010.

These indicators include:

Demographic Indicator	Study Area	Massachusetts
Population by Race		
White	59%	81.7%
Black	5%	6.5%
Asian	4%	5.2%
Some other race	11%	4.2%
Population Reporting Two or More Races	22%	2.2%
Total Hispanic Population	54%	9.0%
Per Capita Income	\$21,766	\$33,966
Non-English at Home	65%	21%

Sources:

Study Area: EJView ACS Summary Report. (see Attachment A).

State: US Census Bureau, American Community Survey 2006-2010.

<http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml> (Tables DP05, B19301, and DP02).

Overall the percent of the population residing within the study area that identifies itself as Hispanic in origin is about six-fold greater than that reported for the state as a whole and more than half of the individuals residing in the study area report speaking a language other than English in the home. Additionally, the per capita income reported for residents in the study area is about 2/3 of the per capita income reported for all Massachusetts residents.

B. Environment

EPA compiled readily available data on surface water quality and sites or facilities located in the study area and in Chelsea, Revere, and East Boston.

1. Surface Water Quality

Each facility operates one outfall that discharges into Chelsea River. One facility, Global REVCO, also discharges wastewater into Sales Creek. 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 Chelsea River has been flanked by working industries which have used the channel to transport raw materials and

finished goods. Sales Creek is a small water body which flows into Belle Isle Marsh and into Winthrop Bay.

The Chelsea River is one of eleven Designated Port Areas (DPAs) established by the Massachusetts Office of Coastal Zone Management to promote and protect water-dependent industrial uses.⁷ In general, the designation places some limitations on public access to and recreational use of a waterfront area.⁸

As discussed in the permit Fact Sheets, MassDEP's federally-approved water quality standards classify the segment of the Chelsea River in which the facilities are located as Class SB (CSO).⁹ Class SB waters are described in the Commonwealth of Massachusetts Surface Water Quality Standards (WQSS) (314 CMR 4.05(4)(b)) as follows: "*These waters are 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... These waters shall have consistently good aesthetic value.*" The Chelsea River and Sales Creek are part of the Boston Harbor Drainage Area.

EPA Region 1 has been issuing the Mystic River Watershed a water quality Report Card based on bacterial contamination since 2006. The report card is a collaborative effort between EPA and the Mystic River Watershed Association and informs the public about water quality issues as well as identifies watershed areas of concern. Historically, the report card grades have fluctuated between a D- and C-. The watershed received a D for water quality in 2012.¹⁰

2. Particular Facilities or Sites

EPA has identified facilities or sites located within the 0.5 mile study area bordering Chelsea River located in the cities of Chelsea, Revere, and East Boston that are required to report to, or that are otherwise listed or tracked by EPA and/or MassDEP. These sites are depicted in Figure 1¹¹ and in the table that follows and supporting Attachments B and C. The criteria that the agencies use in determining which sites or facilities to track varies depending on the particular type of site or facility involved. The fact that sites and facilities are tracked by the agencies does not necessarily reflect any conclusion regarding the extent to which particular sites or facilities present a health or environmental hazard to the surrounding community.

⁷ <http://www.mass.gov/eea/docs/czm/port-harbor/dpa/chelsea-creek-dpa-map.pdf>

⁸ Chelsea Creek Community Based Comparative Risk Assessment, Spring 2003. EPA Grant CX82756101

⁹ http://water.epa.gov/scitech/swguidance/standards/wqslibrary/upload/mawqs_figures_tables.pdf

¹⁰ <http://www.epa.gov/mysticriver/reportcards.html>

¹¹ Not every facility or site may be visible in Figure 1 due to the stacking of symbols. Some facilities or sites are regulated under multiple programs.

Number and Type of Regulated Facilities or Sites

Site Type	Study Area	East Boston	Chelsea	Revere
MassDEP Tier Classified Site	10	10	9	13
Combined Sewer Overflows (CSOs)	7	10	4	No Data
Toxic Release Inventory (TRI)	7	2	7	0
Air Facility System (AFS) Major	4	2	1	2
AFS Minor	34	29	37	23
NPDES Major	3	2	1	0
NPDES Non-Major	12	4	10	6
Resource Conservation and Recovery Act (RCRA) Large Quantity Generators (LQGs)	11	4	1	7

Sources: See Attachment C

C. Health

EPA compiled health indicators obtained from the Massachusetts Department of Public Health (MA DPH) Community Health Information Profiles (CHIPS) and the MA DPH Environmental Public Health Tracking Network database. These databases contain health information for Boston, Revere, Chelsea, and for the state of Massachusetts and were chosen because the scale of health data resolution (e.g., town vs. county level) is finer than that afforded by other databases such as EJView. Unfortunately, health statistics were not of fine enough resolution to enable health characterizations specific to the study area. In presenting this health information, it should not be concluded that the incidence of health conditions in these towns is specifically or directly linked to the existence of any particular pollution source in or affecting the area, or of pollution in general.

Community Health Status Indicators and Asthma Data

Health Status Indicator	City of Boston	City of Revere	City of Chelsea	Mass State
Infant mortality rate ¹²	3.7	2.7	4.6	4.4
Lead poisoning case rate ¹³	0.6	0.0	1	0.3
Age-adjusted rate of cancer deaths ¹⁴	181.3	197.2	192.5	170.3
Age-adjusted rate of cardiovascular disease death ¹⁴	187.4	191.6	258.2	192.0
Total age-adjusted rate of asthma inpatient hospitalization ^{14, 15}	330.0	167.9	NA	155.5
Black Non-Hispanic rate ^{14, 15}	591.5	657.4	NA	392.3
Hispanic rate ^{14, 15}	453.7	329.2	NA	341.8
Age 0 to 4 years rate ^{14, 15}	937.5	422.4	NA	429.7
Age 65 and older rate ^{14, 15}	410.3	175.5	NA	259.8
Age-adjusted rate for emergency room visits for asthma ^{14, 16}	985.9	570.0	NA	580.5
Pediatric asthma prevalence in the 2007-2008 School Year ¹⁷	13.9	9.9	9.6	10.8

NA = not available.

Sources: <http://www.mass.gov/dph/masschip> and https://matracking.ehs.state.ma.us/Health_Data/Pediatric_Asthma.html#

Database accessed Jan., 2014.

D. Enforcement & Compliance

EPA's Enforcement and Compliance History Online (ECHO)¹⁸ database maintains summary information of state and federal compliance and enforcement records of facilities regulated as Clean Air Act stationary sources, as Clean Water Act (CWA) permitted dischargers (under NPDES), and as Resource Conservation and Recovery Act (RCRA) hazardous waste sites. The table below reflects the compliance history for the seven facilities to be permitted under this action. Specifically noted below are the number of calendar quarters that a numerical value in the permit issued under the CWA was exceeded between Oct 2010 and Oct 2013. The total number of federal and state CWA

¹² Infant mortality rate is expressed per 1,000 live births in the same data year.

¹³ Lead poisoning rates is expressed per 1,000 children screened.

¹⁴ Age-adjusted and age-specific rates are usually expressed per 100,000 persons.

¹⁵ Asthma rates are 3-yr aggregates.

¹⁶ Data are for calendar year 2008.

¹⁷ Asthma prevalence is only for children enrolled in Kindergarten through 8th grade.

¹⁸ ECHO: www.echo.epa.gov and also available at <http://www.epa.gov/envirofw/>

inspections performed during the past five years as reported in the ECHO database have also been noted.

Compliance and Inspection History

Facility	Quarters of Permit Violations ¹⁹	Federal CWA Inspections ²⁰	State CWA Inspections ²⁰
Global Petroleum Terminal	4	2	1
Global Revco Terminal	3	2	1
Global South Terminal	1	2	1
Irving Oil Terminal	5	3	1
Sunoco Logistics–East Boston	0 ²¹	4	2
Chelsea Sandwich	2	2	1
Gulf Oil Terminal	4	1	2

Source: www.echo.epa.gov. Database accessed Jan. 2014

The majority of the above CWA permit violations were due to pH and total suspended solids (TSS) exceedances which are generally considered to have only minor environmental impact. Exceedances of these conventional pollutants did not occur consistently over the long term at any of the facilities. Therefore, the exceedances were not considered by EPA to represent significant non-compliance. Additional monitoring information can be found in each Draft Permit Fact Sheet and in the Discharge Monitoring Report (DMR) results included as attachments to each Draft Permit Fact Sheet for each individual draft permit.

The information highlighted below provides details on federal Clean Water Act (CWA) Enforcement Cases within the last five years with significant impacts to the Mystic River Watershed and/or Chelsea River and Sales Creek.

Sterling Suffolk Racecourse LLC (Suffolk Downs) is a 161-acre thoroughbred racing facility in Revere and East Boston, Mass. Because 500 or more horses are stabled at the facility for at least 45 days of the year, Suffolk Downs is classified as a large concentrated animal feeding operation (CAFO). Suffolk violated section 301 of the Clean Water Act by discharging pollutants (e.g., manure, urine and bedding materials) from a CAFO into Sales Creek (which flows into Belle Isle Inlet and Boston Harbor) without a NPDES permit.

¹⁹ This field represents the total number of times a monitored value was reported to have exceeded the effluent limit allowed in the facility's CWA permit between Oct 2010 and Oct 2013.

²⁰ The number of reported CWA inspections that have taken place at the facility over the past 5 years.

²¹ While no numerical values were exceeded during this period, seven permit schedule violations were noted.

Under a September 27, 2012 consent decree approved by federal court, Suffolk Downs will pay a civil penalty of \$1.25 million to resolve these violations. The company is also spending more than \$3 million to prevent polluted water from entering nearby waterways and will perform three environmental projects worth approximately \$742,000 that will provide water quality monitoring and protection efforts for more than 123 square miles of watershed. Two of these projects will involve monitoring the water quality of the Mystic River and the Saugus River watersheds. The third involves the installation of a boardwalk at Belle Isle Marsh, the largest surviving salt marsh in Boston Harbor. The boardwalk is designed to provide community access to the marsh without causing harm to sensitive wetland vegetation or destabilizing the marsh's riparian buffer.

As a result of another federal enforcement action and under the terms of a separate Consent Decree entered on November 16, 2010, the City of Revere will significantly reduce illegal discharges of raw sewage overflows into the environment from its wastewater collection system and separate storm sewer systems. The agreement will reduce discharges of untreated sewage to rivers and streams that flow into Boston Harbor and Massachusetts Bay, including Chelsea River, Sales Creek, Belle Isle Inlet and Pine River. The City of Revere has estimated that it will spend approximately \$50 million to address these illegal discharges. Revere paid a civil penalty of \$130,000 for past violations of the CWA.

Finally, as a result of another federal enforcement action, a federal administrative order was issued on March 19, 2009 to the City of Chelsea for Sanitary Sewer Overflow (SSO) discharges and discharges without a permit into Mill Creek, Chelsea River, and Island End River through its municipal separate storm sewer system (MS4) resulting in a total compliance action cost of \$120,000.

IV. Description of Discharges

The following four (4) types of discharges are authorized under the various Chelsea River Bulk Petroleum Storage Facility permits, subject to the permit terms and conditions.

Discharge A (Stormwater) – Any wastewater resulting from rainwater and runoff from surfaces, gutters and drains, or infrastructure including marine vessel dock, tank farm, and terminal yard areas within the facilities subject to the permits. All facilities discharge stormwater after treatment.

Discharge B (Hydrostatic Test Water) – Any wastewater resulting from maintenance and/or testing of tanks and/or pipe networks used for the storage and conveyance of petroleum products within the facilities subject to the permits. All facilities discharge hydrostatic test water after treatment.

Discharge C (Groundwater Remediation Effluent) – Any wastewater resulting from the removal and treatment of contaminated groundwater within the facilities subject to the permits. Three facilities discharge groundwater effluent after treatment.

Discharge D (Boiler Blowdown) – Any wastewater resulting from the water withdrawn from steam boilers as part of the required operation and maintenance within the facility subject to the permit. One facility discharges small volumes (i.e., ½ gallon per day) of boiler blowdown after treatment.

EPA has provided the discharge types and maximum total monthly discharge volumes on a per facility basis for each outfall using discharge monitoring data from the previous five years (i.e., Jan. 1, 2009 through Dec. 31, 2013) for each facility. Where multiple discharge types are discharged from the outfall, the maximum total monthly discharge represents the total volume discharged from the outfall and does not differentiate between discharge types. The maximum discharge volumes are summarized in the table below in million gallons per month (MG/Mo).

Facility Discharge Volumes

Facility	Outfall	Discharge Type	Maximum Volume (MG/Mo)
Sunoco (East Boston)	Outfall 001	A (Stormwater), B (Hydrostatic Test Water), C (Groundwater Remediation Effluent)	9.8
	Outfall 002 (internal)	C (Groundwater Remediation Effluent)	0.11
Irving Oil (Revere)	Outfall 001	A (Stormwater), B (Hydrostatic Test Water)	4.671
Global South (Revere)	Outfall 001	A (Stormwater), B (Hydrostatic Test Water)	13.8384
Global Petroleum (Revere)	Outfall 001	A (Stormwater), B (Hydrostatic Test Water), C (Groundwater Remediation Effluent)	5.534
	Outfall 002 (internal)	A (Stormwater), B (Hydrostatic Test Water)	5.334
	Outfall 003 (internal)	C (Groundwater Remediation Effluent)	0.371
Global REVCO (Revere)	Outfall 001	A (Stormwater)	0.4074
	Outfall 005 (to Sales Creek)	A (Stormwater), B (Hydrostatic Test Water)	15.624
Gulf Oil (Chelsea)	Outfall 003	A (Stormwater), B (Hydrostatic Test Water)	3.42
Chelsea Sandwich (Chelsea)	Outfall 001	A (Stormwater), B (Hydrostatic Test Water), C (Groundwater Remediation Effluent), D (Boiler Blowdown)	5.1555
	Outfall 002 (internal)	003 (Groundwater Remediation Effluent)	0.144304

Source: Draft Permit Fact Sheets

V. EPA's Consideration of Environmental Justice During the Permitting Process

This section describes how EPA considered EJ during the permitting process based on the factual analysis described above, describes how the region considered comments received from community representatives, and evaluates the potential impacts of EPA's actions to permit the seven facilities.

A. *Summary of Public Involvement Activities to Date*

Due to community concern regarding these permits and consistent with *EPA Region 1 Regional Implementation Plan to Promote Meaningful Engagement of Overburdened Communities in Permitting Activities*, EPA has committed to enhancing the public participation process for these permits and will continue to work with the communities to determine next steps for the public participation process.

Prior to issuing the Draft Permits, EPA met with community groups on several occasions to discuss EJ concerns. The following is a summary of these communications:

- On March 7, 2013, EPA convened a meeting in response to requests from Alternatives for Community and Environment (“ACE”), Chelsea Collaborative, and Neighborhood of Affordable Housing (“NOAH”) to discuss the groups’ concerns about a proposal by Global Partners to transport ethanol by rail to a terminal in Revere. EPA invited other federal agencies to attend this meeting in an effort to appropriately address their concerns. In follow-up to the meeting, the community representatives submitted a request for additional assistance and information, including a request for a robust public process for reviewing Global Petroleum’s NPDES permit and for ensuring that adequate plans for preventing ethanol releases are developed.
- On April 11, 2013, EPA staff met with ACE, Chelsea Collaborative, and NOAH. During the meeting, the community representatives raised numerous questions and concerns regarding the Draft Permits and activities in the communities, including:
 - Capacity of facilities to store ethanol
 - Frequency of reviewing compliance with permits
 - Past NPDES violations of facilities
 - Concerns about applicant’s request to reduce testing of polycyclic aromatic hydrocarbons (PAHs)
 - The cumulative impact of discharges from seven facilities on Chelsea Creek, of all sources of pollution to Chelsea Creek and of all environmental exposure and risks in the community.
 - Request for a robust EJ analysis
 - Request for enhanced outreach on Draft Permits

- On June 4, 2013, EPA held a meeting with ACE, Chelsea Collaborative and NOAH to discuss the scope of this EJ analysis. During the meeting, the community representatives made recommendations regarding the EJ analysis, including:
 - EJ analysis should lead to additional permit conditions
 - Suggestions for additional permit conditions, such as:
 - Requirements to discharge less
 - More frequent Whole Effluent Toxicity (WET) testing
 - Pre-treatment requirements
 - Consideration of cumulative impacts of 7 oil facilities discharging to Chelsea Creek
 - Inclusion of information about ethanol and alcohol resistant foam in the Stormwater Pollution Prevention Plans (SWPPP)
- On June 24, 2013, EPA held an informational community meeting to provide an overview of EPA's NPDES Program, to describe how these facilities operate, the environmental justice analysis of the Draft Permits for these facilities that EPA will conduct, and to explain how the public can become involved in the permitting process.

EPA anticipates that additional enhanced outreach will include:

- Coordination with MassDEP on the public comment process, to the extent practicable.
- A public comment period of at least 60 days rather than the required minimum of 30 days.
- The use of convenient and easily accessible locations for public meetings.
- A public hearing close to the facilities, readily accessible by public transit, and held at a time best designed to afford the public a meaningful chance to attend.
- The use of Spanish interpreters at all public meetings or hearings.
- Placement of notices of each public meeting or hearing in local publications.
- Development of a concise Fact Sheet for the benefit of the community, explaining in simple language the permits and the public process. This document should be translated into Spanish.

B. Potential Impacts of EPA's Proposed NPDES Permitting Actions

1. Potential Impacts on Designated Uses of Chelsea River

Discharges from the facilities must meet the numeric limits and requirements as proposed in the Draft Permits, which were derived in accordance with the CWA and the Massachusetts Surface Water Quality Standards. EPA evaluated the impact of reissuing NPDES permits to these facilities in relation to the status of and potential impacts on the designated uses of the Chelsea River.

The Chelsea River (segment MA71-06) is listed as a Category 5 “Waters Requiring a TMDL” on the Final Massachusetts Year 2012 Integrated List of Waters (CWA Sections 303d and 305b).²² The pollutants and conditions requiring a Total Maximum Daily Load (TMDL) are ammonia (un-ionized), fecal coliform, dissolved oxygen, polychlorinated biphenyls (PCBs) in fish tissue, petroleum hydrocarbons, sediment screening value, taste and odor, and turbidity. This segment is also impaired for debris/floatables/trash, which is considered a non-pollutant and does not require a TMDL. The status of each designated use for the Chelsea River (Segment MA 71-06) described in the Mystic River Watershed and Coastal Drainage Area 2004-2008 Water Quality Assessment Report (WQAR)²³ is presented in the table below and described in the text which follows.

Summary of Designated Uses for Chelsea River Segment MA71-06

Designated Use	Status
Aquatic Life	Impaired
Aesthetics	Impaired
Primary Contact	Impaired
Secondary Contact	Impaired
Fish Consumption	Impaired
Shellfishing	Impaired

The aquatic life use of the Chelsea River is assessed as impaired given contaminated sediments and accidental oil spills in the Chelsea River. The WQAR identified the sources of this impairment as contaminated sediments, aboveground storage tank leaks (tank farms), accidental release/spill, and cargo loading/unloading associated with bulk petroleum facilities, municipal sources (i.e., an urbanized high density area) and additionally notes contamination of groundwater as a result of petroleum releases. Petroleum is explicitly listed as the cause of this impairment. Regarding contaminated sediments as an additional cause of this impairment, a 2005 United States Geological Survey study identified chemicals present in sufficiently high concentrations in Chelsea River sediment to pose a threat to benthic organisms.²⁴ The Draft Permits specifically limit petroleum hydrocarbons and total suspended solids to ensure that discharges from the facilities do not cause or contribute to the aquatic life impairment.

Aesthetics, primary contact and secondary contact uses of the Chelsea River are each assessed as impaired given the history of oil spills. The WQAR identified the sources of these impairments as aboveground storage tank leaks (tank farms), accidental release/spill, cargo loading/unloading associated with bulk petroleum facilities, municipal

²² Massachusetts Year 2012 Integrated List of Waters (Final). MassDEP Division of Watershed Management, Watershed Planning Program, Worcester, Massachusetts; March 2013. <http://www.mass.gov/eea/docs/dep/water/resources/07v5/12list2.pdf>

²³ *Mystic River Watershed and Coastal Drainage Area 2004-2008 Water Quality Assessment Report*. MassDEP Division of Watershed Management, Worcester, Massachusetts; March 2010, Report Number: 71-AC-2. <http://www.mass.gov/eea/docs/dep/water/resources/71wqar09/71wqar09.pdf>.

²⁴ Breault, R.F., Durant, J.L., and Robbat, A, 2005. *Sediment quality of lakes, rivers, and estuaries in the Mystic River Basin, Eastern Massachusetts, 2001–03*. U.S. Geological Survey Scientific Investigations Report: 2005-5191, 110 p. http://pubs.usgs.gov/sir/2005/5191/pdf/SIR20055191_all.pdf

sources (i.e., an urbanized high density area), and in the instance of aesthetic use, the WQAR additionally notes contamination of groundwater as a result of petroleum releases. Petroleum is explicitly listed as the cause of these impairments. The Draft Permits specifically limit petroleum hydrocarbons to ensure that discharges from the facilities do not cause or contribute to the surface water impairment caused by petroleum. All facilities that discharge treated groundwater to surface water are subject to additional requirements and limitations on internal outfalls and are subject to additional Best Management Practices and pollutant monitoring to ensure that treated groundwater from the facilities does not contribute to surface water quality impairments. Facilities that do not discharge treated groundwater effluent but which may have groundwater contamination on site, are subject to Best Management Practices to control the surface water discharges of any groundwater collected in the storm drains of these facilities.

Fish consumption and shellfishing designated uses of Chelsea River are listed as impaired as a result of PCBs in fish tissue and fecal coliform, respectively. The source of these impairments is listed as unknown. Based on the operations conducted at the facilities, discharges of treated stormwater, hydrostatic test water and/or groundwater remediation effluent are not expected to contain PCBs or fecal coliform and thus issuance of the draft permits is not expected to cause or contribute to the PCB fish consumption impairment or the fecal coliform shellfishing impairments noted for Chelsea River.

Both the Chelsea River and the Mystic River (the DPA in which the Chelsea Sandwich facility is located) are Designated Port Areas established by the Commonwealth of Massachusetts. According to the Massachusetts Office of Coastal Zone Management these DPAs have “particular physical and operational features important for water-dependent industrial uses—such as commercial fishing, shipping, and other vessel-related marine commercial activities—and/or for manufacturing, processing, and production activities that require marine transportation or need large volumes of water for withdrawal or discharge. While water-dependent industrial uses vary in scale and intensity, they all generally share a need for infrastructure with three essential components: (1) a waterway and associated waterfront that has been developed for some form of commercial navigation or other direct utilization of the water; (2) backland space that is conducive in both physical configuration and use character to the siting of industrial facilities and operations; and (3) land-based transportation and public utility services appropriate for general industrial purposes.”²⁵

NPDES permits must undergo a federal consistency review with the Massachusetts Office of Coastal Zone Management before final issuance. This review is completed to ensure that permitting actions align with Massachusetts’ policy in order to “preserve and enhance the capacity of the DPAs to accommodate water-dependent industrial uses and prevent significant impairment by non-industrial or non-water-dependent types of development, which have a far greater range of siting options.”²⁶ The Draft Permits will undergo federal Coastal Zone Management consistency review as required and are not expected to conflict with the DPA designation in the Chelsea or Mystic Rivers.

²⁵ <http://www.mass.gov/eea/agencies/czm/program-areas/port-and-harbor-planning/designated-port-areas/>

²⁶ Ibid.

2. Assessment of Potential Adverse Human Health and Environmental Effects

The Executive Order states in relevant part that “each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations in the United States.” *See* Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, Executive Order 12898, 59 Fed. Reg. 7629 (Feb. 16, 1994), § 1-101. The Executive Order does not, however, “amend EPA’s statutory or regulatory requirements and obligations,” *In re Sierra Pacific Indus.*, PSD Appeal Nos. 13-01 through 13-04, slip op. at 31-32 (EAB July 18, 2013), but rather, by its own terms, directs that it is to be implemented “consistent with, and to the extent permitted by, existing law,” Exec. Order 12898 § 6-608. The Clean Water Act and its implementing regulations generally govern the development of NPDES Permits.

EPA expects that the permitting action at issue – the renewal of NPDES permits for the seven bulk storage facilities – will not have a disproportionately high and adverse human health or environmental effect on minority or low-income populations near the permitted facilities. As explained below, the NPDES permit renewal will not cause “adverse” effects within the meaning of Executive Order 12898.

As noted earlier, as well as in the Fact Sheet for each permit, the Chelsea River is assessed as impaired for its several designated uses (i.e., aquatic life, aesthetics, primary contact, secondary contact, fish consumption, and shellfishing) due to a number of causes, including contaminated sediments, aboveground storage tank leaks (tank farms), accidental release/spill, cargo loading/unloading associated with bulk petroleum facilities, municipal sources (i.e., an urbanized high density area), and groundwater contamination as a result of petroleum releases. Petroleum is listed as the cause of these impairments. Based on, among other things, this information, the materials handled at the facilities, and the nature of discharges from the facilities, EPA determined that discharges from the facilities could conceivably contribute pollutants associated with the cause of the existing impairments in the Chelsea River. In the development of the Draft Permits, EPA conducted “reasonable potential” analyses, where appropriate, to determine whether a particular pollutant is or may be discharged at a level that “will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard.” 40 C.F.R. § 122.44(d)(1). An excursion occurs if the projected or actual in-stream concentration exceeds an applicable water quality criterion. In many cases, the analyses indicated that discharges under the existing permits do not have a reasonable potential to cause violations of water quality standards established for the protection of public health, aquatic organisms and other uses. Where the analyses indicated, however, a reasonable potential for the discharge of a particular pollutant to cause or contribute to a violation of water quality standards, the Draft Permits propose limits to ensure that the discharges will not cause or contribute to water quality standards violations. Such limits are generally referred to as water quality-based effluent limitations (WQBELs). WQBELs may be numerical limits or narrative best management practices (BMPs). Where there is insufficient information to determine whether a discharge will contribute

to a violation of water quality standards, the Draft Permits often impose conditions on the permittees to undertake additional monitoring, or testing to inform future permitting or permit modifications or both. NPDES permits such as those for these facilities are issued for a maximum period of five years.

Because EPA is proposing effluent limits in these Draft Permits that will ensure discharges from the facilities do not cause or contribute to violations of water quality standards, EPA has determined that its permitting actions will not have disproportionately high and adverse human health or environmental effects. This is so because a state's water quality standards are designed "to protect the public health or welfare, enhance the quality of water and serve the purposes of th[e Clean Water Act]." 33 U.S.C. § 1313(c)(2)(A); *accord In re HECLA Mining Co.*, 13 E.A.D. 216, 220 n.7 (EAB 2006). Moreover, water quality standards take into consideration the waters' "use and value for public water supplies, propagation of fish and wildlife, recreational purposes, and agricultural, industrial, and other purposes" 33 U.S.C. § 1313(c)(2)(A); *see also* 40 C.F.R. § 130.3. Additionally, Massachusetts has adopted, and the permits incorporate, EPA's National Recommended Water Quality Criteria²⁷ for the protection of aquatic life and human health in surface water, *see* 314 CMR 4.05(5)(e), which "reflect the latest scientific knowledge on[, among other things,] the kind and extent of all identifiable effects on health and welfare . . . which may be expected from the presence of pollutants in any body of water." 33 U.S.C. § 1314(a)(1). Furthermore, in the case of toxic pollutants, section 307 of the Act provides that effluent standards shall be at a level that "provides an ample margin of safety." 33 U.S.C. § 1317(a)(4). In other words, water quality standards and criteria are developed to protect against adverse impacts to human health and the environment.

Additionally, the reasonable potential analyses and any WQBELs established thereafter to comply with water quality standards, inherently account for cumulative effects of multiple discharges of a particular pollutant – as well as non-point source contributors of that pollutant – to the receiving water. When determining whether a permittee's discharge of that pollutant could cause or contribute to a violation of water quality standards, and again when calculating a WQBEL that will achieve water quality standards in the river, EPA permit writers factor in the upstream or background concentration of a particular pollutant in the receiving water, if available. In general, as the background level of the pollutant increases, the allowable discharge of that pollutant by permitted facilities decreases. The goal of this process is to ensure that the combined pollutant sources do not result in an exceedance of any water quality standard downstream of the discharge. If the upstream or background concentration exceeds water quality standards even before the discharged effluent is added, then that pollutant is typically limited to the water quality criterion for that pollutant, also referred to as a "criteria end-of-pipe" limit. In this way, the effluent is as clean or cleaner than the receiving water with respect to that pollutant and, therefore, cannot cause the receiving water to exceed the applicable water quality standard. Thus, pursuant to EPA's authority under the CWA, the Draft Permits address

²⁷ <http://water.epa.gov/scitech/swguidance/standards/criteria/current/index.cfm>

potential cumulative impacts to water quality of multiple discharges that otherwise could adversely affect human health or the environment.²⁸

Finally, EPA is unaware of any information suggesting that the discharges, as limited by the conditions in the Draft Permits, would violate any other federal requirement designed to protect human health or the environment that applies to NPDES permits. In short, the permitted discharges will not cause or contribute to a violation of water quality standards, and EPA's action in setting the effluent limits for the discharges will not have adverse human health or environmental effects.

In addition to numerical effluent limits and monitoring requirements, the Draft Permits contain several non-numeric measures to reduce or prevent the discharge of pollutants through the storm water system. For example, the Draft Permits include conditions requiring the permittees to develop stormwater pollution prevention plans (SWPPPs) and to incorporate best management practices into the SWPPPs for the facilities. Furthermore, the Draft Permits require permittees to monitor discharges and to conduct ambient monitoring in connection with whole effluent toxicity (WET) testing even where the permits do not impose numeric limits for particular pollutants. Moreover, each of the permits may be modified, or revoked and reissued in accordance with 40 C.F.R. § 122.62, if, among other things, new information is received that was unavailable at the time of permit issuance and that would have justified the application of different permit conditions at the time of issuance.

Based on EPA's analysis and the permit conditions described in more detail in the Fact Sheets for each Draft Permit, EPA has determined that the discharges will not cause or contribute to violations of water quality standards in the Chelsea River. Accordingly, EPA also concludes that its permitting actions will not have disproportionately high and adverse human health or environmental effects on minority or low-income populations within the meaning of Executive Order 12898.

C. Permit Requirements and Conditions

While the discharges will not cause adverse environmental or human health effects on minority or low-income populations, EPA has, in accordance with the CWA, proposed several conditions in the permits and adopted enhanced outreach measures that address concerns raised during the meetings and discussions with community representatives. Specifically:

1. EPA is providing enhanced public participation – including a public comment period of at least 60 days rather than the required minimum of 30 days and the use of Spanish interpreters at all public meetings or hearings to ensure that all members of the public have an opportunity for meaningful involvement.

²⁸ Cumulative impacts are also assessed to some degree in whole effluent toxicity (WET) testing, which examines the combined effect resulting from exposure to a mixture of pollutants present in the effluent on a representative aquatic species.

2. In determining whether discharges from these facilities have reasonable potential to cause or contribute to a violation of water quality standards, the Draft Permits do not allow a mixing zone. In other words, where numeric effluent limitations have been derived for the discharges, they apply at end-of-pipe, regardless of any dilution that mixing with river water would provide.
3. The Draft Permits limit the flow from each facility based on the design flow capacity of a facility's respective treatment system.
4. The Draft Permits limit discharge of total suspended solids from each facility based on the design flow capacity of a facility's respective treatment system.
5. The Draft Permits propose effluent limitations for indicator parameters for multiple classes of pollutants associated with petroleum products (e.g., benzo(a)pyrene, naphthalene, and benzene) at several facilities where such limits had not previously existed and continue the existing limits for indicator parameters for those facilities that currently have such limits.
6. As a result of the above limitations for indicator parameters, the Draft Permits impose additional effluent and ambient monitoring requirements to confirm that limitations for indicator parameters are sufficient to address other pollutants associated with petroleum products and to meet Water Quality Standards.
7. The Draft Permits establish new monitoring requirements for certain site-specific pollutants including ammonia, chromium, cyanide, fecal coliform, and phenol.
8. The Draft Permits include additional effluent limitations or monitoring requirements for facilities that currently store or have residual contamination from the storage of certain oxygenates (e.g., methyl-tert butyl ether (MTBE) and ethanol).
9. The Draft Permits impose new or enhanced requirements for Whole Effluent Testing (WET) testing in order to determine whether the combined effect resulting from exposure to multiple pollutants may produce a toxic effect in aquatic organisms. This testing includes requirements for ambient surface water sampling.
10. The Draft Permits impose additional requirements for discharges of hydrostatic test water, which includes requirements for ambient surface water sampling where the Chelsea River is the facility's source water for the hydrostatic testing.
11. The Draft Permits prohibit the discharge of tank bottom water, bilge water, sludge or bottom deposits, and runoff resulting from the spill or release of reportable quantities of petroleum products in order to protect the Chelsea River from toxic pollutants in such materials. Tank bottom water and bilge water, for instance, remain in intimate proximity with petroleum derivatives for prolonged periods, allowing concentrations of some of the more soluble and denser petroleum components to reach toxic levels.
12. The Draft Permits contain site specific stormwater pollution prevention plans (SWPPPs) and best management practice (BMP) requirements to limit exposure of stormwater to contaminated soil, groundwater or remediation materials on site.
13. The Draft Permits include additional effluent limitations or monitoring requirements for facilities that discharge treated groundwater to surface water.

For more detailed information on these permit requirements for each facility, refer to the Draft Permit Fact Sheets.

VI. Actions Relating to Community Concerns Beyond the Context of the NPDES Permits

In February 2013, three environmental justice groups including ACE, Chelsea Collaborative and NOAH contacted EPA Region 1's EJ Program to request a meeting with EPA to express their concerns over the transportation of ethanol gas by rail. The groups explained that Global Partners, LP intended to modify the existing railcar unloading facility at its terminal in Revere and that site improvements would be partnered with a project by Pan Am Southern Railroad to upgrade the rail line spur that connects to the facility, allowing it to receive ethanol by railcar. As explained to EPA, the proposed delivery of ethanol by rail would supplement and possibly replace existing deliveries by barge and truck. The rail deliveries of ethanol would principally originate in the Midwest and be moved through western Massachusetts and ultimately to the Revere location.

In response to this community request and in an effort to appropriately address the community concerns, as noted in a previous Section of this analysis, a meeting was convened by EPA on March 7, 2013 to which EPA had invited several federal and state partners. Representatives from the Federal Railroad Administration, MassDEP, the U.S. Department of Homeland Security including TSA Surface Transportation, and the U.S. Coast Guard attended the meeting. At this meeting, the community provided EPA with a list of concerns and comments, most of which related to the potential impacts of increased train and vehicle traffic associated with rail shipments of ethanol to the Global Partners facility, including noise, air emissions, derailment, and potential for fires. EPA responded to these concerns on April 1, 2013 by offering technical assistance and information, where possible. EPA staff committed to providing support to the community on this issue by:

- Evaluating whether EPA could quantify the air quality impacts of Global Petroleum's ethanol proposal;
- Providing information to the community on train idling and train safety;
- Coordinating with the relevant federal and state agencies to obtain information for the community about the transportation of ethanol by rail;
- Researching information on the health impacts of the firefighting foam used to extinguish an ethanol fire; and
- Being accessible and responsive to the community as questions and concerns arise.

In June 2013, while EPA was pursuing these tasks, it was announced that Global Partners had withdrawn its proposal to transport ethanol by rail to its facility on the Chelsea River. Given this announcement, the EPA has taken a step back from its role in collecting and researching information related to the proposal.

In addition to these actions, EPA is involved in other efforts to improve water quality in the Mystic River Watershed, an area that includes Chelsea River, primarily through the EPA Mystic River Watershed Initiative. This initiative is a collaborative effort to improve water quality and environmental conditions as well as create and protect open

space and public access to the Mystic River and its tributaries through safe public pathways and access points. The Initiative is guided by a steering committee composed of 22 organizations including not-for-profit community groups, local, state, and federal governmental agencies and is co-chaired by EPA and the Mystic River Watershed Association.

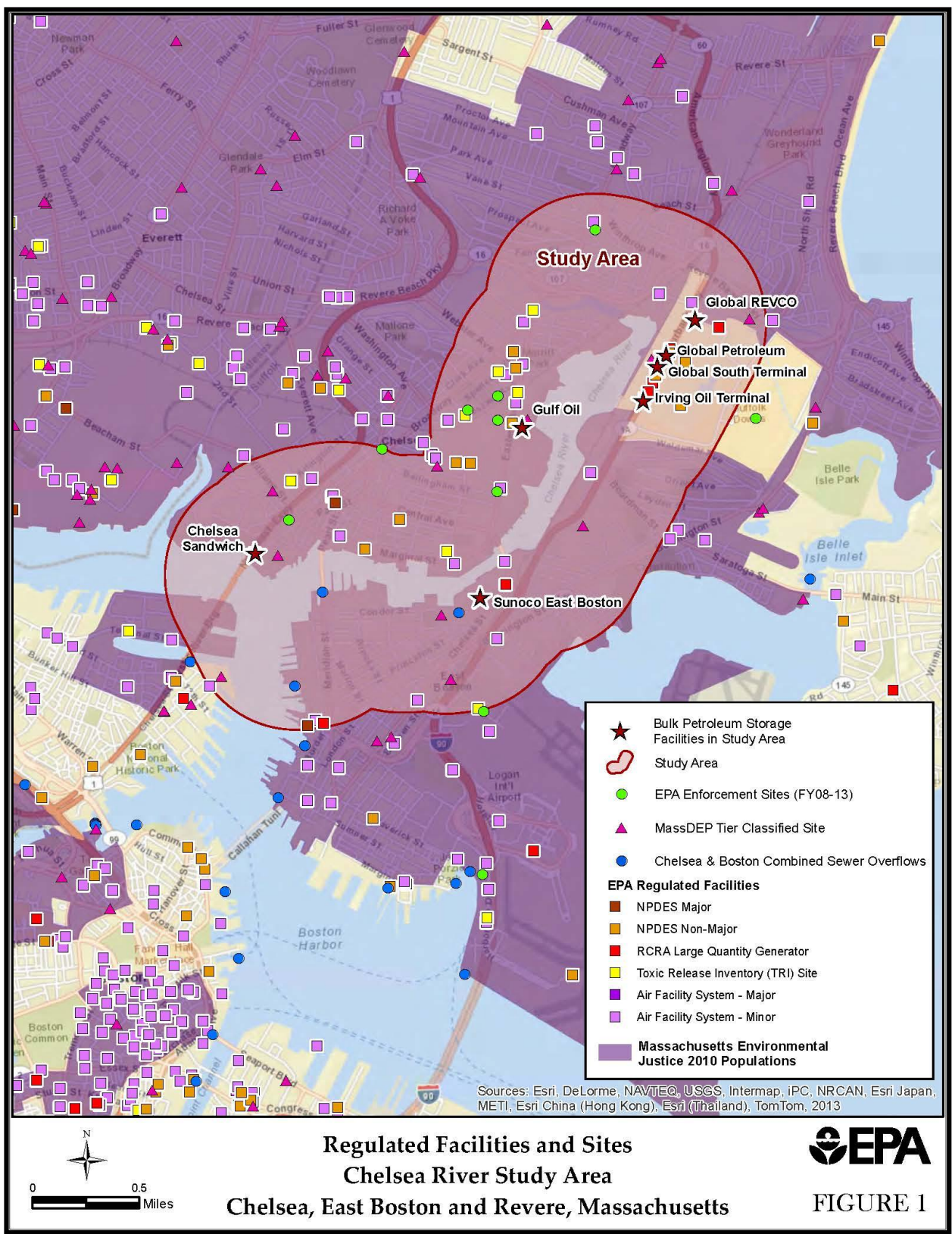
Some accomplishments of the Initiative to date include²⁹:

- The City of Chelsea is one of ten national partnership projects selected by EPA Headquarters to expand the use of green infrastructure. In January 2012, EPA awarded a \$50,000 technical assistance contract to help the City of Chelsea expand the use of green infrastructure. The contract completed an audit of the city's ordinances, developed green infrastructure guidelines and a workshop for the city's Boards, and produced a public outreach brochure. This was amplified by a \$68,000 green infrastructure planning grant awarded by the Metropolitan Area Planning Commission through a Sustainable Communities Regional Planning Grant from the U.S. Department of Housing and Urban Development (HUD).
- In April 2011, EPA Region 1 held a stormwater workshop in Chelsea, MA to review the new provisions of the draft North Coastal Small MS4 NPDES permit and low impact development techniques.
- In December 2011, EPA Region 1 signed a Memorandum of Understanding with UMass Boston for the region's Urban Waters/Mystic River University Collaborative. UMass Boston continues to support EPA's urban waters/Mystic River Watershed efforts, beach, nonpoint source and other programs.
- EPA enforcement efforts have stopped over 14,000 gallons per day of sewage from being discharged to the watershed through illicit connections.
- Over the years, EPA has loaned nearly \$14,000 worth of monitoring equipment to the Mystic River Watershed in support of baseline and hotspot monitoring. The agency has analyzed over 2,000 samples for *E. coli* and *Enterococcus* bacteria and has deployed a real-time cyanobacteria monitoring buoy in the Mystic River Watershed for the past three years.
- The Mystic River Watershed received grant funding derived from the criminal sentence imposed in the federal Clean Water Act case against ExxonMobil Pipeline Company. As a result of this case, the Massachusetts Environmental Trust issued \$1 million in grants and the North American Wetlands Conservation Trust issued \$1,663,150 in grants, all for environmental projects to the Mystic and Chelsea Rivers.

²⁹ <http://www.epa.gov/region1/mysticriver/pdfs/MysticRiverWatershedInitiative.pdf>

VII. Conclusion

This EJ analysis was developed by EPA Region 1 in compliance with Executive Order 12898. Through the process of developing the Draft Permits, EPA provided enhanced public involvement opportunities. The input and substantial concerns received by EPA were considered and, where allowable by law, addressed through the inclusion of appropriate terms and conditions in the Draft Permits. Although EPA acknowledges that the Chelsea River and surrounding communities are impacted by many environmental burdens, EPA has determined that the facilities' discharges will not result in disproportionately high and adverse human health or environmental effects on minority or low-income populations within the meaning of Executive Order 12898.



Map created by EPA Region 1 GIS Center Map Tracker ID 9662 Feb. 27, 2014 Data Sources: See Attachment C



ATTACHMENT A

EJView ACS Summary Report



Location: -71.042233,42.387078,-71.040344,42.381499,-71.027126,42.382514,-71.018715,42.386317,-71.014423,42.392911

Study Area: 0.5 miles around the polygonal location

Summary of ACS Estimates		2006 - 2010	
Population		53,300	
Population Density (per sq. mile)		16,163	
Minority Population		34,934	
% Minority		66%	
Households		18,285	
Housing Units		19,675	
Housing Units Built Before 1950		13,784	
Per Capita Income		21,766	
Land Area (sq. miles) (Source: SF1)		3.30	
% Land Area		86%	
Water Area (sq. miles) (Source: SF1)		0.52	
% Water Area		14%	
	2006 - 2010 ACS Estimates	Percent	MOE (±)
Population by Race			
Total	53,300	100%	1,183
Population Reporting One Race	41,778	78%	2,088
White	31,255	59%	639
Black	2,805	5%	452
American Indian	94	0%	139
Asian	1,965	4%	253
Pacific Islander	47	0%	127
Some Other Race	5,612	11%	478
Population Reporting Two or More Races	11,522	22%	1,045
Total Hispanic Population	29,024	54%	1,140
Total Non-Hispanic Population	24,276		
White Alone	18,366	34%	423
Black Alone	2,191	4%	454
American Indian Alone	32	0%	127
Non-Hispanic Asian Alone	1,965	4%	253
Pacific Islander Alone	47	0%	127
Other Race Alone	509	1%	261
Two or More Races Alone	1,166	2%	328
Population by Sex			
Male	27,031	51%	623
Female	26,269	49%	596
Population by Age			
Age 0-4	4,740	9%	223
Age 0-17	12,959	24%	283
Age 18+	40,340	76%	474
Age 65+	5,076	10%	195

Data Note: Detail may not sum to totals due to rounding. Hispanic population can be of any race. N/A means not available.

Source: U.S. Census Bureau, American Community Survey (ACS) 2006 - 2010.



ATTACHMENT A

EJView ACS Summary Report



Location: -71.042233,42.387078,-71.040344,42.381499,-71.027126,42.382514,-71.018715,42.386317,-71.014423,42.392911

Study Area: 0.5 miles around the polygonal location

	2006 - 2010 ACS Estimates	Percent	MOE (±)
Population 25+ by Educational Attainment			
Total	34,466	100%	607
Less than 9th Grade	7,843	23%	268
9th - 12th Grade, No Diploma	3,858	11%	206
High School Graduate	12,265	36%	279
Some College, No Degree	5,537	16%	222
Associate Degree	1,475	4%	142
Bachelor's Degree or more	4,963	14%	206
POPULATION AGE 5+ YEARS BY ABILITY TO SPEAK ENGLISH			
Total	48,559	100%	997
Speak only English	16,976	35%	398
Non-English at Home ¹⁺²⁺³⁺⁴	31,584	65%	911
¹ Speak English "very well"	10,821	22%	324
² Speak English "well"	7,012	14%	274
³ Speak English "not well"	7,520	15%	300
⁴ Speak English "not at all"	6,230	13%	618
³⁺⁴ Speak English "less than well"	13,750	28%	650
²⁺³⁺⁴ Speak English "less than very well"	20,762	43%	688
POPULATION AGE 5+ YEARS BY LANGUAGE SPOKEN AT HOME			
Total	N/A	N/A	N/A
Speak only English	N/A	N/A	N/A
Non-English Speaking	N/A	N/A	N/A
Population by Place of Birth for the Foreign-Born			
Total	N/A	N/A	N/A
Europe	N/A	N/A	N/A
Asia	N/A	N/A	N/A
Africa	N/A	N/A	N/A
Oceania	N/A	N/A	N/A
Americas	N/A	N/A	N/A
Households by Household Income in 1999			
Household Income Base	18,285	100%	154
< \$15,000	3,297	18%	180
\$15,000 - \$25,000	2,175	12%	156
\$25,000 - \$50,000	4,588	25%	186
\$50,000 - \$75,000	3,668	20%	142
\$75,000 +	4,557	25%	208
Occupied Housing Units by Tenure			
Total	18,285	100%	154
Owner Occupied	6,302	34%	127
Renter Occupied	11,983	66%	159

Data Note: Detail may not sum to totals due to rounding. Hispanic population can be of any race. N/A means not available.

2006-2010 ACS 5-year Estimates: The American Community Survey (ACS) summary files provide nation-wide population and housing characteristic data at all Census summary levels down to the Block Group level. This data was collected between January 1, 2006 and December 31, 2010. ACS replaces the decennial census sample data, and is not the 2010 Census population counts data. (<http://www.census.gov/acs/www/#fragment-3>)

Margin of error (MOE): The MOE provides a measure of the uncertainty in the estimate due to sampling error in the ACS survey. Applying the MOE value yields the confidence interval for the estimate. For example, an estimate value of 50 and +/- MOE of 5 means the true value is between 45 and 55 with a 90 percent certainty (http://www.census.gov/acs/www/Download/data_documentation/Accuracy/MultiyearACSaccuracyofData2010.pdf). Maximum MOE is shown for each value within study area.

Source: U.S. Census Bureau, American Community Survey (ACS) 2006 - 2010.

ATTACHMENT B

Facilities and Sites Located in the Study Area

Enforcement Sites (FY 08-13)		
NAME	ADDRESS	CITY
Paul Revere Transportation	100 Eastern Avenue	Chelsea
Suffolk Downs	111 Waldemar Avenue	Boston
City of Chelsea	500 Broadway	Chelsea
NStar	61 Beacon Street	Chelsea
NStar	194 Crescent Avenue	Chelsea
NStar	Willoughby Street	Chelsea
JSB Industries	130 Crescent Avenue	Chelsea
City of Revere	281 Broadway Street	Revere
Swissport/Biofuel	196 Prescott Street	E. Boston

Mass DEP Tier Classified Chapter 21E Sites			
Name	Address	City	Type
CITY OF BOSTON DPW YARD	0 CONDOR ST	BOSTON	TIERII
NAVAL SHIPYARD PRCLS 567	CHELSEA ST	BOSTON	TIER1D
NEW EAST BOSTON BRANCH LIBRARY	365 PRESCOTT ST	BOSTON	TIERII
NO LOCATION AID	225 AND 345-365 MCCLELLAN HWY	BOSTON	TIERII
CHELSEA SANDWICH TERMINAL	11 BROADWAY	CHELSEA	TIERII
FORMER GASOLINE STATION	156 WILLIAMS ST	CHELSEA	TIERII
GULF OIL TERMINAL	281 EASTERN AVE	CHELSEA	TIERII
MULTI-UNIT RESIDENTIAL BUILDING	116 MARLBOROUGH ST	CHELSEA	TIER1D
NO LOCATION AID	140 LEE BURBANK HWY	REVERE	TIER1D
NO LOCATION AID	400 REVERE BEACH PKWY	REVERE	TIERII

ATTACHMENT B (con't)

Facilities and Sites Located in the Study Area

EPA Regulated Facilities – National Pollutant Discharge Elimination System (NPDES)			
Name	Address	City	Type
CHELSEA COMBINED SEWER OVERFLOWS	CITYWIDE	CHELSEA	MAJOR
CHELSEA SANDWICH PETROLEUM STORAGE FACILITY	11 BROADWAY	CHELSEA	NON-MAJOR
GULF OIL TERMINAL	281 EASTERN AVE.	CHELSEA	NON-MAJOR
MA WATER RESOURCES AUTHORITY	2 GRIFFIN WAY	CHELSEA	NON-MAJOR
MWRA - PHASE 5 VALVE RP- #6346	LYNN, REVERE, CHELSEA	CHELSEA	NON-MAJOR
SPENCER ROW HOUSING	205 SPENCER AVENUE	CHELSEA	NON-MAJOR
WATER, SEWER AND DRAIN IMPROVEMENTS	LIBRARY ST	CHELSEA	NON-MAJOR
WEBSTER BLOCK RESIDENTIAL & COMMERCIAL	1 WEBSTER AVE	CHELSEA	NON-MAJOR
SUNOCO LOGISTICS EAST BOSTON TERMINAL	467 CHELSEA ST	EAST BOSTON	MAJOR
BOSTON WATER AND SEWER COMMISSION CSO	CITYWIDE	EAST BOSTON	MAJOR
FEDEX	201 LEE BURBANK HIGHWAY	REVERE	NON-MAJOR
GLOBAL PETROLEUM TERMINAL	140 LEE BURBANK HIGHWAY	REVERE	NON-MAJOR
GLOBAL REVCO TERMINAL	101/201 LEE BURBANK HIGHWAY	REVERE	NON-MAJOR
GLOBAL SOUTH TERMINAL	49/96 LEE BURBANK HIGHWAY	REVERE	NON-MAJOR
IRVING OIL TERMINAL	41 LEE BURBANK HIGHWAY	REVERE	NON-MAJOR

ATTACHMENT B (con't)

Facilities and Sites Located in the Study Area

RCRA Large Quantity Generator		
Name	Address	City
FORMER MOBIL EAST BOSTON LUBE PLANT	580 CHELSEA ST	BOSTON
LOGAN INTERNATIONAL AIRPORT	1 HARBORSIDE DRIVE	BOSTON
CVS PHARMACY 1265	210 BORDER ST	BOSTON-EAST BOSTON
SUNOCO LOGISTICS EAST BOSTON TERMINAL	467 CHELSEA ST	EAST BOSTON
GULF OIL TERMINAL	281 EASTERN AVE.	CHELSEA
GLOBAL PETROLEUM TERMINAL	140 LEE BURBANK HIGHWAY	REVERE
GLOBAL PETROLEUM TERMINAL	71 LEE BURBANK HWY	REVERE
GLOBAL REVCO TERMINAL LLC	101 LEE BURBANK HWY	REVERE
GLOBAL REVCO TERMINAL LLC	186 LEE BURBANK HWY	REVERE
GLOBAL SOUTH TERMINAL LLC	49 LEE BURBANK HWY	REVERE
IRVING OIL TERMINAL	41 LEE BURBANK HIGHWAY	REVERE
TARGET T1942	36 FURLONG DR	REVERE

Toxics Release Inventory (TRI)		
Name	Address	City
NORTHWEST AIRLINES	51 HARBORSIDE DR	BOSTON
US AIRWAYS	180 PRESCOTT ST	EAST BOSTON
AMERICAN FINISH & CHEMICAL CORP	1012 BROADWAY	CHELSEA
BILTRITE CORP	31 HIGHLAND AVENUE	CHELSEA
EMTEX INCORPORATED	181 SPENCER AVENUE	CHELSEA
GLYPTAL INC	305 EASTERN AVENUE	CHELSEA
MARSON CORP MARVEL CORP	130 CRESCENT AVENUE	CHELSEA
MODINE NORTHEAST INC	25 ARLINGTON STREET	CHELSEA
WATER CHEMICALS INC	155 6TH ST.	CHELSEA

ATTACHMENT B (con't)

Facilities and Sites Located in the Study Area

Air Facility System			
Name	Address	City	Type
CATERAIR INTERNATIONAL	5 WOOD ISLAND PARK	BOSTON	AIR MINOR
MASS GENERAL HOSPITAL	300 CHELSEA STREET	BOSTON	AIR MINOR
MWRA CENTRAL MAINTENANCE FACILITY	20 ADDISON ST	BOSTON	AIR MINOR
ORIENT HEIGHTS HOUSING	220 WALDEMAR AVE.	BOSTON	AIR MINOR
AMERICAN AIRLINES	LOGAN INTERNATIONAL AIRPORT	BOSTON (EAST BOSTON)	AIR MINOR
BUDGET RENT A CAR SYSTEMS INC	20 TOMAHAWK DRIVE	BOSTON (EAST BOSTON)	AIR MINOR
AIR SERV CORPORATION	257 MARGINAL STREET	CHELSEA	AIR MINOR
AMERICAN FINISH & CHEMICAL COMPANY	960 BROADWAY	CHELSEA	AIR MINOR
AMOCO OIL COMPANY	111 EASTERN AVENUE	CHELSEA	AIR MINOR
CHELSEA SANDWICH PETROLEUM STORAGE FACILITY	11 BROADWAY	CHELSEA	AIR MINOR
DENNIS K BURKE INC	284 EASTERN AVENUE	CHELSEA	AIR MINOR
E CIARDI CO INC	96 LIBRARY STREET	CHELSEA	AIR MINOR
EASTERN SALT COMPANY INC	37 MARGINAL ST	CHELSEA	AIR MINOR
EMTEX INCORPORATED	181 SPENCER AVENUE	CHELSEA	AIR SYNTHETIC MINOR
GENERAL ELECTRIC COMPANY	96 LIBRARY STREET	CHELSEA	AIR MINOR
GLYPTAL INC	305 EASTERN AVENUE	CHELSEA	AIR MINOR
GULF OIL TERMINAL	281 EASTERN AVE.	CHELSEA	AIR MAJOR
JSB INDUSTRIES	130 CRESENT AVENUE	CHELSEA	AIR MINOR
KAYEM FOODS	75 ARLINGTON ST	CHELSEA	AIR MINOR
MANCHESTER GR REALTY	248 BROADWAY	CHELSEA	AIR MINOR
MARSON CORP MARVEL CORP	130 CRESCENT AVENUE	CHELSEA	AIR MINOR
MODINE NORTHEAST INC	25 ARLINGTON STREET	CHELSEA	AIR MINOR
MWRA CHELSEA CREEK	340 MARGINAL ST	CHELSEA	AIR SYNTHETIC MINOR
NEW ENGLAND TRAWLER EQUIPMENT	291 EASTERN AVE.	CHELSEA	AIR MINOR
NOVELTY BIAS BIND CO	11 WEBSTER AVENUE	CHELSEA	AIR MINOR
RAPID FLOW	85 CRESCENT AVE	CHELSEA	AIR MINOR
ROCK CHAPEL MARINE LLC	99 MARGINAL STREET	CHELSEA	AIR MINOR
TILL BUILDING	241-265 BROADWAY	CHELSEA	AIR MINOR

Air Facility System con't			
Name	Address	City	Type
TRAVACO LABS INC	345 EASTERN AVENUE	CHELSEA	AIR MINOR
SUNOCO LOGISTICS EAST BOSTON TERMINAL	467 CHELSEA ST	EAST BOSTON	AIR MAJOR
US AIRWAYS	180 PRESCOTT ST	EAST BOSTON	AIR MINOR
BOSTON GAS CO	RAILROAD AVE	REVERE	AIR MINOR
CAPITOL WASTE SERVICES,	20 RAILROAD STREET	REVERE	AIR MINOR
GLOBAL PETROLEUM TERMINAL	140 LEE BURBANK HIGHWAY	REVERE	AIR MAJOR
GLOBAL REVCO TERMINAL	101/201 LEE BURBANK HIGHWAY	REVERE	AIR MINOR
GLOBAL SOUTH TERMINAL	49/96 LEE BURBANK HIGHWAY	REVERE	AIR MINOR
IRVING OIL TERMINAL	41 LEE BURBANK HIGHWAY	REVERE	AIR MAJOR
REVERE SCHOOL DEPT	10 PLEASANT STREET	REVERE	AIR MINOR

ATTACHMENT C

DATA SOURCES FOR FIGURE 1 AND FOR ATTACHMENT B

Bulk Petroleum Storage Facilities. Facilities storing petroleum products (e.g., gasoline, ethanol, diesel, kerosene, and fuel oil), within a half mile of the Chelsea River, that have been issued National Pollutant Discharge Elimination System (NPDES) surface water permits under the Clean Water Act.

Study Area. The Chelsea River and lands within a half-mile of the river.

EPA Enforcement Sites. Locations of EPA Enforcement actions within the communities of Chelsea, Revere and East Boston from FY08-13.

MassDEP Tier Classified Site. A statewide point dataset containing the approximate location of oil and/or hazardous material disposal sites that have been (1) reported and (2) Tier Classified under M.G.L. Chapter 21E and the Massachusetts Contingency Plan (MCP). MassDEP, January 2013. <http://www.mass.gov/anf/research-and-tech/it-serv-and-support/application-serv/office-of-geographic-information-massgis/datalayers/massdep-21e.html>

Chelsea & Boston Combined Sewer Overflows. Sewers that are designed to collect rainwater runoff, domestic sewage, and industrial wastewater in the same pipe. City of Chelsea. http://www.ci.chelsea.ma.us/public_documents/ChelseaMA_DPW/cso.htm
Boston Water & Sewer Commission, 2013. http://www.bwsc.org/ABOUT_BWSC/systems/outfall_maps/CSO_INNERHARBOR.pdf

NPDES Major & Non-Major. EPA Region 1 PCS regulated facilities feature class. The Permit Compliance System (PCS) provides information on companies which have been issued permits to discharge wastewater into rivers. PCS tracks NPDES surface water permits issued under the Clean Water Act. Facilities designated as major are those discharging equal to or greater than 1 million gallons per day. <http://www.epa.gov/region1/npdes/mass.html>

RCRA Large Quantity Generator. Facilities qualifying as Resource Conservation and Recovery Act sites (RCRA). RCRA governs the management of hazardous wastes. Large Quantity Generators (LQG) generate 1,000 kilograms per month or more of hazardous waste, or more than 1 kilogram per month of acutely hazardous waste. <http://www.epa.gov/waste/inforesources/online/index.htm>

ATTACHMENT C

DATA SOURCES FOR FIGURE 1 AND FOR ATTACHMENT B

Toxic Release Inventory (TRI). A publicly available EPA database that contains information on toxic chemical releases and waste management activities reported annually by certain industries as well as federal facilities. <http://www.epa.gov/TRI/>

Air Facility – Major & Minor. The Air Facility System (AFS) contains compliance and permit data for stationary sources of air pollution (such as electric power plants, steel mills, factories, and universities) regulated by EPA, state and local air pollution agencies. <http://www.epa.gov/oecaerth/data/systems/air/afssystem.html>

Massachusetts Environmental Justice 2010 Populations. Areas across the state with high minority, non-English speaking, and/or low-income populations. Data in this layer were compiled for Census 2010 block groups from the 2010 census redistricting tables and from the American Community Survey (ACS) 2006-2010 5 year estimates tables. <http://www.mass.gov/anf/research-and-tech/it-serv-and-support/application-serv/office-of-geographic-information-massgis/datalayers/cen2010ej.html>

Base Map. ESRI World Street Map.
http://goto.arcgisonline.com/maps/World_Street_Map