Boston Water and Sewer Commission

Construction Site Inspection and Enforcement Program

Acknowledgements
This document was created by the Boston Water and Sewer Commission to satisfy the obligations of its National Pollutant Discharge Elimination System (NPDES) Permit No. MAS010001 and Section VII, Part K of the Consent Decree lodged in *Conservation Law Foundation, Inc., et al. v. Boston Water and Sewer Commission*, et al., U.S. District of Massachusetts, Civil Action No. 10-10250-RGS (the "Consent Decree"). This inspection guide is modeled after the information and inspection guide titled, "Stormwater Construction Inspection Guide" dated August 2008 created by the Minnesota Pollution Control Agency, in conjunction with Tetra Tech, Inc.

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Construction Site Inspection and Enforcement Program created on December 17, 2012.

Table of Contents

1.0 Introduction

1.1 Purpose and Background

The purpose of this Construction Site Inspection and Enforcement Program is to ensure that the Boston Water and Sewer Commission (BWSC) complies with the terms of its NPDES Permit No. MAS010001 and Part VII, Section K of the Consent Decree by minimizing the discharges of construction site run-off in the Commission's municipal separate stormwater sewer system ("MS4"). The program provides a comprehensive program to guide the BWSC's employees, Inspectional Service Department ("ISD") employees, developers and contractors and the public for the prevention of construction sites that discharge or have the potential to discharge into the BWSC MS4. For the purposes of this program, a "Construction Site" shall mean any development or redevelopment or other construction activity of a site, parcel and/or building disturbing equal to or greater than one (1) acre of land. Construction Sites shall include sites of less than one acre of total land area that is part of a larger common plan of development or sale if the larger common plan will ultimately disturb equal to or greater than one acre.

This Program outlines the BWSC's procedures for conducting a stormwater inspection of a Construction Site, how to inspect and monitor Best Management Practices (BMPs), describe the means by which contractors and developers will comply with the BWSC's regulations, EPA and MassDEP regulations and the Clean Water Act, and how the BWSC will enforce its regulations governing the use of sanitary and combined sewers and storm drains to ensure compliance with its NPDES Permit and the Consent Decree.

Inspections will primarily be accomplished by reviewing on-site construction activities and comparing them with the construction site's Stormwater Pollution Prevention Plan (SWPPP) submitted with the Site Plan. All construction sites with EPA NPDES permits are required to have a SWPPP on site.

1.2 Introduction to Inspections

Through the building permit process in the City of Boston and development process, developers and contractors are required to file a site plan for review and approval by the Inspectional Services Department prior to issuance of a building permit. The Commission also has an inter-municipal agreement with ISD to coordinate on development within the City specifically in relation to the impact of stormwater run-off from Construction Sites.

Inspections by BWSC personnel or other persons will be made within eight (8) weeks of implementation of a construction site's SWPPP. A contractor or developer must notify the BWSC of the issuance of the building permit by ISD and notice of intent to commence construction activities on site. Individuals listed as the SWPPP owner/operator for specific sites are required to provide to BWSC email address and phone number of direct contact and notify BWSC of the implementation of the SWPPP at the beginning of construction, so that the initial inspection can be scheduled. Construction site operators will be required to do regular inspections of their own sites every seven (7) days and within 24 hours following a rain event of 0.25 inches or more. Inspection forms will be made available by BWSC and it will be the responsibility of the SWPPP operators to email the completed inspection forms to BWSC on a monthly basis. Inspection forms must be emailed to the BWSC at SWPPP@bwsc.org. As issues with BMPs or discharge violations are discovered during inspections, it will be responsibility of the SWPPP

operators to document and remedy them immediately. The BWSC will perform additional inspections of any sites subject to complaints within four (4) days of receipt of the complaint by the BWSC.

1.3 Site Plan Requirements

The BWSC shall require that developers or construction site operators seeking construction of a Construction Site or common plan that may affect more than one (1) acre as defined above, or other construction site subject to the EPA NPDES General Construction Permit shall (to the extent applicable) include the following with each site plan application and review:

1. Storm Water Pollution Prevention Plan (SWPPP)
2. EPA / Notice of Intent Submission and Tracking Number
3. Notification of Dates of Commencement of Construction Activities.
4. Summary review by BWSC of the SWPPP.
5. Emails every month to SWPPP@bwsc.org as set forth below.
6. Notice of Completion of Construction Activities.

The BWSC has incorporated these requirements into its Requirements for Site Plan available at the BWSC offices at 980 Harrison Avenue and will make them available at www.bwsc.org. The BWSC will review SWPPP submissions as a part of its site plan review and approval process consistent with Section VII, Part K, Paragraph 46 of the Consent Decree. All site plans are subject to approval by the Chief Engineer and/or the Chief Engineer's designee.

1.4 Change of Ownership

When the owner/operator of a construction site changes, the new and former owner/operator must submit a Notice of Termination/Permit Modification to the EPA. The form and information regarding the change can be found on the EPA's Website. In addition, the owner/operators will also need to notify BWSC. BWSC notification should be in the form of an email to SWPPP@bwsc.org. Emails should be titled "SWPPP operation change of ownership- *project name or address and EPA tracking number."* Once EPA paperwork is complete and the change has been updated on the EPA permit, a copy needs to be forwarded to BWSC. The new owner/operator may either use the previous approved SWPPP or submit their own new one. In either instance BWSC and EPA should be notified of any change in ownership.

If the owner/operator change is also made to the dewatering permit, BWSC must be notified. If a new method or location of discharge is proposed, a new dewatering permit application must be made which references the previous, approved method or location, and describes the proposed change sought. If the dewatering discharges are to remain the same, then a new application is unnecessary; however, and the change in ownership must be noted on the existing dewatering permit.

2.0 Inspections

2.1 Inspection Frequency

The BWSC will perform an initial inspection of each active Construction Site within eight (8) weeks of commencement of construction activities. The BWSC will perform periodic inspections of active Construction Sites after the initial inspection. The BWSC will also perform additional inspections of any Construction Sites subject to complaints within four (4) days of receipt of the complaint by the BWSC.

2.2 Pre-Inspection Preparation

Before a Commission employee or person conducts an inspection, that person should review the SWPPP submitted on file as well as the approved Site Plan submitted for the project. A copy of the SWPPP should be available on the site, and if the SWPPP is not available, the SWPPP operator must be advised to have it available on site. A copy of the NPDES Construction General permit should also be available for review and inspection at the site so the Commission can ensure it is current. In addition, with any repeat site inspections, the employee or person performing the inspection should bring copies of recent inspections for this site with him or her to verify that any issues with BMPs or discharges are resolved.

Items needed for inspection:

- BWSC Stormwater Inspection Report
- GIS 100 scale sewer map of the area around the construction site
- Safety equipment (hard hat, steel toe boots, safety vest, etc.)
- Inspection credentials (BWSC ID and business cards to hand out)
- Digital camera with batteries
- Clipboard and writing utensils
- SWPPP and site plan if applicable
- Field book for notes
- Direct connect BWSC cell phone

2.3 Conducting the Inspection

Upon arriving at the construction site for inspection, take a look around the exterior of the site. Observe from the outside whether a silt fence encompasses all disturbed areas. Check to make sure that any catch basins that could potentially receive stormwater runoff from the site have proper inlet protection. Observe posting on the exterior of the site to see owner/operator of the site and SWPPP as well as EPA NPDES Construction Permit (if applicable).

As entering the site view the entranceway. A stabilized entranceway should be established to mitigate the amount of dirt and sediment that is able to leave the site from vehicles. This is most likely accomplished by a washed crushed stone entranceway with filter fabric separating the crushed stone from the existing soil. Observe the public roadway just outside the crushed stone entranceway. Easiest way to see the effectiveness of the stabilized entrance is to observe the roadway just outside the site. If sediment is gathered here then remediation of the entranceway may be needed as well as street sweeping of the existing sediment outside the site. The site may also require a vehicle washing station if it is having issues with vehicles tracking out dirt and sediment.

Upon entering the site, ask to speak with the SWPPP operator. In most cases, this person will be the superintendent of the site. If this person is not available find someone who is familiar with the SWPPP who you can inspect the site with. Make sure you get their name, title, email and phone number and put this onto your site inspection report. Ask this individual to see the on-site copy of the SWPPP, which this is required to be kept on site and made available to BWSC representatives. If not available, inform the individual of this requirement and note the infraction on the inspector report.

Review the SWPPP and make sure that all plan requirements as submitted are present and maintained on the construction site. The SWPPP operator should have all of their inspection reports filled out and kept with the SWPPP.

Common questions that should be asked when speaking with the SWPPP operator include:

- How long has construction been going on? When is the project scheduled to be finished?
- Is concrete being poured on site? How do you handle concrete washout?
- Are pilings being installed and is the contractor performing dewatering?
- What procedures are instituted prefacing a forecasted rain event?
- Are hazardous materials stored on site? Are vehicles fueled on site?
- Are there any changes to SWPPP that need to be looked at for approval?
- Is dewatering happening or going to happen? Do you have a copy of the dewatering permit and what is the tributary body of water? (Inspection of the dewatering treatment system can then be performed if necessary)

After review of the SWPPP, a list of the sites BMPs should be created on your inspector report. Using this list you can now proceed to walk the entire site and perform the inspection. The inspection should go as follows:

1. Inspect discharge points and downstream off site areas

   Find where the sediment is able to leave the construction site. This is often through the entrance/exit, which should be a stabilized crushed stone entrance. If sediment is being tracked out of the site, follow it to catch basins downstream. Verify these catch basins have inlet protection. If the sediment is excessive, additional BMPs may be needed to control this. Document with photographs and record on the inspector report.

2. Inspect perimeter controls

   Walk the silt fence around the interior of the site now. Ensure that it encompasses the entire site and locations where is does not are stabilized entrance/exit ways and are shown on the SWPPP. Photograph the fence in a few locations and make sure there are no locations where it is ineffective in preventing polluted stormwater from flowing off site. The SWPPP may often include hay bales lining the silt fence. Make sure the hay bales are installed and functioning properly.

3. Compare on site conditions with SWPPP BMPs

Are BMPs in the SWPPP all implemented on the site? Are there BMPs installed on the site that are not outlined in the SWPPP? Are BMPs needed in addition to what is outlined in the SWPPP? Check to make sure that the BMPs are installed properly so that they are functioning as they should and not simply placed there.

4. Photograph and document defected areas

   Inspector reports and photographs need to capture all compliant and non-compliant BMPs. These records will be used to access warnings and to track the progress throughout the project. Note any deficiencies and possible solutions to the problem.

5. Communicate issues with the SWPPP operator

   Let the site supervisor of the SWPPP know any immediate issues you can see. Most of the time the issues will be addressed quickly and immediately by the contractor. Document the issues so that patterns of non-compliance can be recognized and addressed. Remind the SWPPP operator of his responsibility to maintain the BMPs and continue to fill out the inspector reports and forward to BWSC.

2.4 Common compliance issues:

Issue #1 – Dewatering at the construction site
Does the site have an approved dewatering permit with either EPA or MWRA and well as approval letter from BWSC? If not, they will need to cease dewatering and apply for one. Sites that do have the appropriate dewatering permits: Are they following the stipulations of those permits? No discharge should be made from the site prior to sediment control measures

Issue #2 – No sediment control for temporary stock piles
Silt fence should be installed around all temporary stockpiles. Stockpiles may require additional sediment control if they are to be left undisturbed on site for a long period of time

Issue #3 – No sediment controls on site
Perimeter controls must be installed before any earthwork can begin. Only after the installation of the silt fence has been completed and inspected can earthwork activities begin

Issue #4 – No inlet protection
Any downstream inlet from the construction site must be protected for the duration of construction. Most often inlet protection will be in the form of a silt sack in a catch basin. These are to be changed as often as necessary throughout the project

Issue #5 – No BMPs to minimize vehicle tracking onto the road
The stabilized construction entrance is possibly the most important of the BMPs. No vehicle entrance or exit should be left without one. These will require regular maintenance and need to be installed correctly in the beginning of the job, with sufficient depth and length, as shown on the SWPPP.

Issue #6 – Sediment on the road
Sediment onto the roadway will happen with every construction site. Broom sweeping should be done daily and motorized street sweepers may need to be used as often as weekly if it is a persistent issue with a particular site.

Issue #7 – Improper solid waste or hazardous waste management
Solid waste must be disposed of properly, and hazardous materials (including oil, gasoline, and paint) must be properly stored. Routine removal of hazardous waste and material should be established so that these materials are not unnecessarily kept on site for prolonged periods of time.

Issue #8 – Concrete washout
Concrete trucks washout is not permitted to enter or potentially enter the storm drain system. This washout should either be done off site or in a manner than keeps it completely contained from entry or potential entry into the storm drain system.

2.5 Exit Interview

At the conclusion of your inspection, prepare to address your findings with the SWPPP operator. Complete your inspection form fully and determine the severity of the findings. Reporting of the findings should be written in detail, providing the next inspector a clear picture to determine if problems have been addressed.

Prepare positive aspects of the construction site to share as well as negative. Explain your findings with the person in charge. Politely let them know of the areas that need remediation and advise them that no written warnings or fines are necessary, if the issues are addressed in a timely manner. If applicable, let them know exactly what areas of the site are in violation of the sewer and stormwater use regulations for BWSC, and which regulations they are. Also point out areas that are in direct contrast with their approved SWPPP. Refer them to EPA or BWSC websites for information and more detail on BMPs if need be.

It is not the role of the Commission or inspector to instruct the operator which BMPs they should be implementing on the site. Explain to the operator any observed compliance issues (i.e. sediment washing into the street at an un-stabilized entrance) and explain how the issues are remedied at other construction sites in the past. Feel free to share with them your finding of what has or has not worked in the past. Ultimately it is up to the SWPPP operator to determine which BMPs to implement.

2.6 Post Inspection

Upon returning to the office from inspections for the day, gather all finding from each site. All sites have folders created for them that are labeled by site plan number on the (I:) drive. Put digital copies of photographs in the project folder as well as scanned inspections reports and label both of these as location and the date that they were taken. The scanned inspection reports, photos and other information need to be recorded within the Construction Site Database maintained by the Commission. Inspector reports and printed photographs can also go into the physical project file along with the

SWPPP and any other data that has accumulated for that project, including email and other written correspondence.

3.0 Enforcement

The Commission must inspect any site for which it receives a complaint within four (4) days. Any Construction Site that has not complied with the SWPPP on file, produces construction site discharges to the Commission's MS4 system or may other impact the stormwater quality may be subject to enforcement. Any post-inspection violations or reported discharges must be reported to the appropriate Commission personnel, including Matt Tuttle. Initial enforcement may be commenced by the Commission's Engineering Staff and additional enforcement matters may be referred to the Office of General Counsel.

3.1 Written Notice of Violation

As a first step to enforcement, the Commission personnel or site inspector should conduct an on-site meeting with a Commission Engineering supervisor and the construction site SWPPP operator. After a meeting is held to discuss the acts of non-compliance, a written warning notice must be issued to the construction site operator and developer to document the offense(s) and instruct the operator to immediately remediate the violation(s).

The first written notice will inform the construction site operator of the violation(s), order the operator to correct the violation(s) within a specified deadline, refer the operator to its SWPPP filing, and warn that failure to act may result in imposition of fines or other actions pursuant to the Commission's Regulations Governing Use of the Sanitary and Combined Sewers and Storm Drains ("Sewer Use Regulations").

3.2 Fines

If issues of non-compliance exist after site meeting and written warning then fines may be assessed. Commission may assess on a case-by-case basis; however, all repeat violations will be subject to fines. Construction site discharges to the MS4 system may result in fines up to $5,000.00 per day, with each day constituting a separate violation. Illegal discharges into a storm drain catch-basin violate several sections of the Sewer Use Regulations pursuant to Article V, Section D, as well as state and federal law. Regulations state "No person shall directly or indirectly dump, discharge or cause or allow to be discharged into any catch basin … dirt, sand, gravel or other pollutant." Pursuant to Article VII, Section C of the Sewer Use Regulations "Any person who violates any provision of these Regulations or a permit issued pursuant to these Regulations shall forfeit and pay to the Commission an amount set forth in the Schedule of Penalties adopted by the Commission from time to time in accordance with G.L. c. 83, section 10, as then in effect."

A second notice or subsequent enforcement letter will be sent to the construction site operator by the Office of General Counsel. The Commission may take other steps reasonable and necessary to ensure compliance, including issuance of a cease and desist order, notification of appropriate regulators (ISD, MassDEP, EPA) and revocation of necessary permits and approvals. The Commission may also take

other necessary legal action to prevent construction site discharges to the stormwater system that may impact public health or the environment.

3.3 EPA Enforcement

In addition, Construction Sites requiring a NPDES Construction General permit and SWPPP that do not have coverage are subject to fines by the EPA as much as $37,500 per day. Tracking numbers should be assigned to all sites before any construction has begun and the SWPPP and NPDES permit should be available for inspection. Sites should be informed of this when they do not have NPDES tracking numbers.

A scanned and written copy of all enforcement matters and complaints must be kept in the Construction Site Database file for the site and folder.

If situations arise where it is unclear if there has been a violation or not, inspectors should review BWSC's regulations governing the use of sanitary and combined sewers and storm drains. Inspectors can also contact the EPA or MassDEP directly for guidance when it is suspected that sites with NPDES coverage are in violation.

4.0 Common Best Management Practices

Examples of common best management practices (BMPs) are listed below; however, a more complete list of available construction site BMPs can also be found at http://cfpub1.epa.gov/npdes/stormwater/menuofbmps/index.cfm?action=min_measure&min_measure_id=4.

4.1 Storm Drain Inlet protection

Storm drain inlet protection is providing the inlet to the storm drain with a filter to remove the large pieces of sediment from the runoff prior to entering the storm drain system, and ultimately, rivers and the harbor.

There are several ways to filter the stormwater entering storm drain inlet or catch basins. The most commonly used for sites in Boston are silt sacks installed in the surrounding catch basins. See Figure 1 and Figure 2 as examples of storm drain inlet protection below. Silt sacks are designed to be all internal and to block off the guttermouth of the catch basin. As water enters the catch basin, it passes through the filter hanging down and sediment is suspended in the silt sack.

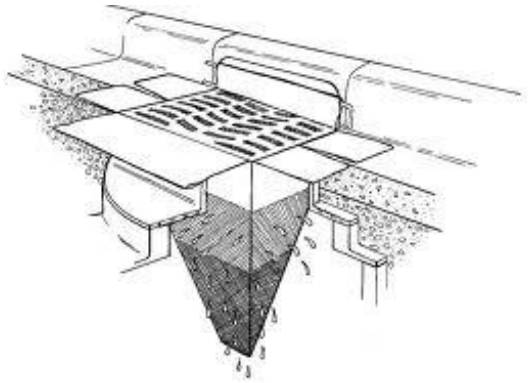

Figure 1

Figure 2

Silt sacks can be used on the catch basins surrounding a construction site because they do not create an obstacle that passing cars will need to avoid. Storm drain inlets inside of construction site may be surrounded by their own filter fabric fence or sand bags. These are easily to monitor and maintain.

Tips on inspection storm drain inlet protection:

- Make sure there are no gaps in the protection where unfiltered water can pass
- Inlet protection should be replaced after every major storm event. Once the sediment reaches a point where it is impeding the runoff from entering the storm drain, it needs to be replaced
- Storm drain inlet protection is required until the completion of the project and should remain until the earthwork activities are complete
- Inlet protection is a secondary BMP. Other means of runoff filtering should be encountered before runoff reaches a storm drain inlet
- Inspect fabric for integrity and effectiveness
- Catch basin cleaning may be required before and/or after the construction project if sediment accumulated in the sump

4.2 Stabilized Construction Entrance

Stabilized construction entrances are affective in removing a significant amount of mud and sediment from the tires of vehicles as they exit the site. The most common stabilized construction entrance is the use of a crushed stone driveway. The crushed stone driveway need to be observed during rain events to see if they are in fact useful in removing sediment from storm runoff particular to each individual site. The suggested construction of the crushed stone entrance ways is 50 feet long and 20 feet wide. The driveway should be excavated down to a depth of 6". At that 6" depth filter fabric should be place down with stone filled in on top of it. This ensures that the stone will not simply be pressed into the existing soil and thus become ineffective. See Figure 3 below showing a properly maintained stabilized entrance.

Figure 3: Properly maintained stabilized entrance

Figure 4: Poorly maintained entranceway after storm event

Should the construction entrance fail and allow sediment to wash out onto the street, street sweeping will be required. Street sweeping is the responsibility of the contractor and should be anticipated a number of times throughout the job regardless of BMPs installed. See Figure 4 above for an example of failing stabilized entrance.

Tips on inspecting stabilized entrance ways:

- Check to see if there is evidence of sediment washing out onto the street despite the presence of a stabilized entranceway
- Make sure there are no other travel ways without stabilized entrances at different areas of the site
- Does the amount of stone need to be replenished and is entranceway becoming scattered and less effective?
- Vehicles need to drive the entire length of the crushed stone. The installed length should be long enough to remove significant sediment from the tires and should be a minimum of 50 feet.
- The stone should be large enough to ensure that it does not wash away and does not get picked up by the tires
- EPA website offers additional valuable information on construction entrances for inspectors and developers/contractors as well: http://cfpub.epa.gov/npdes/stormwater/menuofbmps/index.cfm?action=factsheet_results&view=specific&bmp=35

4.3 Perimeter Controls/Silt Fences

Silt fences should be installed around the affected area of the construction site. Silt fences are down-gradient barriers intended to remove sediment from sheet flow storm runoff. They should be installed around the entire effected area of the construction site. They are not designed to handle concentrated flows.

Figure 5: Silt fence with hay bales

Figure 6: Silt fence over chain linked fence with rolled hay bale

In addition to silt fence, many SWPPP will also specify staked in hay bales lining the inside of the silt fence. These are additional sediment control measures and both need to be maintained throughout the construction.

Tips on Inspecting perimeter controls:

- Check the SWPPP to make sure that the silt fence installed is the same as the one approved and submitted with the NPDES permit
- Silt fence should be without holes or defects
- The filter fabric materials should be overlapped at all joints so that there are no breaks in the fence
- Ends should be curled up slope to ensure water will not travel horizontally along the fence and out of the site at the ends
- Silt fences should be installed along site contour lines (on the same horizontal plane). This may require multiple levels of silt fences for sites that vary greatly in elevations across the site
- Silt fences should be buried 6 inches beneath grade to prevent water from simply traveling beneath them
- Secure hay bales with wooden stakes. Silt fences should also be staked or attached to chain linked fence as in figure 6
- Soil should be compacted in front of silt fence prior to trenching and installing
- Extensive information is available on silt fences on the EPA website: http://www.epa.gov/npdes/pubs/siltfences.pdf

4.4 Diversion Ditches and Berms

Certain sites may require the use of berms or diversion ditches to control stormwater flow off site, from entering the site. Berms can be created along the upslope side of a construction site, to prevent runoff from entering and redirect it around site to a controlled outlet. Diversion ditches or berms can also direct runoff containing sediment to a sediment trapping structure prior to an outlet as a way of accomplishing sediment removal from runoff outside the scope of work of the project. These BMPs are not common in Boston as most sites are generally flat or bordered by streets all around.

Tips on Inspecting diversion ditches or berms:

- Make sure the berm is properly compacted and is not itself being eroded by the runoff
- Check for sediment trapping structures at the outlet of ditches and berms carrying sediment-laden runoff
- High velocities should not be present in the diversion ditches or alongside the berms, if they are then additional velocity control structures will need to be installed

4.5 Soil Stabilizing Mats, Mulches, and Blankets

Mats, mulches, and blankets are used for temporary soil stabilization. Mats and blankets are most often used on slopes or on piles of gravel. These should be placed in locations on sites where the soil is exposed and is not being used or driven over regularly. The mats and blankets ensure that the soil cannot be eroded by wind or stormwater runoff. Mats are also effective if laid in channel beds or diversion ditches. Mulches are used on flat soils and can help foster vegetation growth. Mulch should not be placed in areas where it is subject to be washed out.

Tips on inspecting mats mulches and blankets:

- Blankets and mats should be in full contact with the soil underneath
- Make sure mats and blankets are trenched into the soil (no surface water can possibly wash underneath them)
- Mulch should not be in flow areas
- Mats and blankets should be overlapped and stapled or pinned together to prevent runoff from getting in seams

4.6 Temporary Sediment Trap or Pond

A temporary sediment trap or pond is an excavated pond in a site where storm runoff is directed to, so that sediment can settle out and stormwater can be infiltrated prior to going to a swale outlet. Sediment-laden runoff should be directed to ponds so that the majority (at least 65%) of sediment and pollutants can be filtered out. Traps should be designed to hold a volume of ½ inch of rainfall over the square footage of the disturbed area of the lot (1800 cubic feet/acre).

Tips on inspecting sediment traps or ponds

- Sediment in the trap needs to be removed when it reaches about 1/3 of the depth of the design volume
- Check the outlet to make sure maintenance is not needed. The SWPPP operator should be checking this daily to avoid any flooding of the site should the outlet become blocked
- The trap should not be installed in a stream or culvert with excessive flows

4.7 Vegetative Stabilization

Vegetative Stabilization is the temporary or permanent seeding or sodding of soil as a means of stabilizing and preventing erosion. Reestablishing vegetation helps to bind the soil with the root system of plants. Native and noninvasive species of grass and vegetation should be introduced rather than non-native.

Tips on inspecting vegetative stabilization:

- Are all exposed areas of soil that are not being moved or used in the near future stabilized?
- Make sure currently vegetated areas are not being eroded
- Concentrated overland flows should not be passing through vegetated areas
- Is proper seeding being done to areas that are to be vegetated?
- Seeding and sodding late in the construction season will not be effective and mats or mulches would need to be used instead

Appendix A:
BWSC Construction Stormwater Compliance Inspection Report

Construction Stormwater Compliance Inspection Report

Boston Water and Sewer Commission

Project Name: _____

Street Address: _____

Site Plan #: _____ Permit # (if any): MAR

On-site Representatives' Name(s) and Contact Information: _____

Name, Title, Phone #, Fax #, and Address of NPDES Permitee: Contacted: Yes ☐ No ☐

Date:	Entry Time:	Weather/Temp:	Exit Time:

Inspection Checklist

NPDES Authority

	Yes	No	N/A	
1	☐	☐	☐	Is a copy of the NOI posted at the construction site for public viewing?
2	☐	☐	☐	Is an up-to-date copy of the signed SWPPP retained at the construction site?
3	☐	☐	☐	Is a copy of the NPDES General Permit retained at the construction site?

SWPPP Content

	Yes	No	N/A	
4	☐	☐	☐	Does the SWPPP describe and identify the erosion & sediment control measures to be employed?
5	☐	☐	☐	Does the SWPPP provide a maintenance schedule for the erosion & sediment control measures?
6	☐	☐	☐	Does the SWPPP describe and identify the post-construction SW control measures to be employed?
7	☐	☐	☐	Does the SWPPP identify the contractor(s) and subcontractor(s) responsible for each measure?
8	☐	☐	☐	Does the SWPPP include all the necessary 'CONTRACTOR CERTIFICATION' statements?
9	☐	☐	☐	Is the SWPPP signed/certified by the permittee?

Recordkeeping

	Yes	No	N/A	
10	☐	☐	☐	Are inspections performed as required by the permit (every 7 days and after ¼" rain event)?
11	☐	☐	☐	Is the SWPP Log Book onsite?
12	☐	☐	☐	Are all required reports properly signed/certified?
13	☐	☐	☐	Does the SWPPP include copies of the monthly/quarterly written summaries of compliance status?

Visual Observation

	Yes	No	N/A	
14	☐	☐	☐	Are all erosion and sediment control measures installed/constructed?
15	☐	☐	☐	Are all erosion and sediment control measures maintained properly?
16	☐	☐	☐	Are stabilization measures initiated in inactive areas?
17	☐	☐	☐	Are permanent stormwater control measures implemented?
18	☐	☐	☐	Was there a discharge into waters of the U.S. or BWSC MS4 on the day of inspection?
19	☐	☐	☐	Are waters of the U.S. or BWSC MS4 free of the evidence of turbidity, sedimentation, or oil?

Construction Stormwater Compliance Inspection Report

Boston Water and Sewer Commission

Water Quality Observations

Describe the discharge(s) [source(s), impact on waters of the U.S. or BWSC MS4, etc]**:**

Describe the quality of the waters of the U.S. or BWSC MS4; both upstream and downstream of the discharge:

Describe any other water quality standards or permit violations:

Additional Comments:

Overall Inspection Rating: **Satisfactory** ☐ **Unsatisfactory** ☐	☐ Photographs Attached
Name:	
Signature:	
Name(s) of Other(s):	

Appendix B:
Site Plan requirements for NPDES Construction General Permit Sites

Stormwater Permit Requirement

If your construction site operations result in the disturbance of one acre or more of land, or are part of a planned disturbance of one acre or more, you are required to obtain permit coverage from EPA's National Pollutant Discharge Elimination System (NPDES) Construction General Permit.

To obtain this permit developers or owners need to prepare a StormWater Pollution Prevention Plan (SWPPP) and submit a Notice of Intent (NOI) to the EPA. The NOI can be filed electronically with the EPA and can be found on their webpage at:

http://cfpub.epa.gov/npdes/stormwater/cgpenoi.cfm

Upon filing your NOI you are certifying that you have prepared a SWPPP and will implement it prior to starting construction activities. Information on preparing your SWPPP can also be found on the EPA's website at:

http://cfpub.epa.gov/npdes/stormwater/swppp.cfm

Failure to obtain the NPDES permit can result in EPA fines up $37,500 per day for applicable construction sites that do not have coverage.

All NPDES Construction General Permit sites will be inspected by the BWSC under the Stormwater Construction Inspection and Enforcement Program. The new program requires that sites submit EPA NOI tracking numbers and SWPPP plans in .pdf format to BWSC with site plan submissions. Site plans will not receive BWSC approval prior to receiving NOI tracking numbers and approved SWPPPs.

Upon approval of site plans, developers will be required to notify BWSC of the starting date of construction activities. BWSC will inspect all sites within 8 weeks of the start of construction activities and periodically from then until the end of the job. During that time it will be the requirement of the SWPPP operators to comply with BWSC's Construction Site Inspection and Enforcement Program in maintaining their SWPPPs and conducting their own inspections and keeping inspection logs per requirement of the EPA Construction General Permit.

Weekly inspection reports will be required to be sent to BWSC electronically on a monthly basis. Inspection reports can be emailed to SWPPP@bwsc.org.

Sites found not in compliance with their NPDES permits by the BWSC may be subject to BWSC and ISD enforcement measures including stop work orders and fines from BWSC's Regulations Regarding the use of Sanitary and Combined Sewers and Storm Drains.

Appendix C:
Site Plan Review Checklist

Boston Water Sewer Commission
Engineering Customer Services
980 Harrison Avenue
Boston, MA 02119-2540
(617) 989-7600

SITE PLAN REVIEW CHECKLIST

BWSC Site Plan Number: _____ **Account No.:** _____ **Check Here if New Account [_]**

Site Address: _____
Street Name & Number District (Neighborhood) Ward/Parcel

Applicant's Information: _____

Information & Instructions: This Site Plan Review Check-list must be completed and submitted with each new site plan application. Applicants shall provide copies of all supporting documentation and shall submit copies of all BWSC utility research information with each site plan submittal. Please select all applicable items by indecating "Yes" or "No" using a check (√) mark. Applicatants may provide any additional explenatory remarks in the "Notes" section. Please indicate if an item is "Not Required - N/R" or "Not Applicable - N/A". Additonal comments may be provided using separate sheet.

ITEM NO.	DESCRIPTION OF SITE PLAN REQUIREMENTS	Check One "Yes" or "No"		NOTES
Note: All Preliminary Site Plan must be accompanied by a project narrative and must include the following items:				
SECTION A: General Site & Project & Information:		**Yes**	**No**	
A1	**Project Address:** Provide Street Name & Number(s) for all new and existing locations. Call out all extended addresses			
A2	**Ward & Parcel Information:** Provide Ward & Parcel Information. Note: delineate lot lines for subdivisions on site plans)			
A3	**Account Information:** List all available BWSC Water Account(s) & Meter Number(s) - Active or Inactive			
A4	**Owner's Information:** Provide Owner's Name & Contact Information			
A5	**Landlord Information:** Provide BWSC Landlord Number (if available)			
A6	**Elevations (BCB):** Does elevations reference the Boston City Base (Datum): [NGVD Datum + 5.65 or MTA-CA/T Datum +100]			
A7	**Stationing:** Station all new service connections. Note: Station 0+00 shall begin at property line of nearest intersections.			
A8	**Limits-of-Construction:** Applicants must delineate the Limits of Public Way Excavation for all connections (Length, ft x Width,ft)			
A9	**Utility Information:** call out all existing and/or proposed utility in roadway (e.g. water, sewer, gas, phone, elect, steam, cable, ohw, etc..)			
Supporting Documentation				
A10	**Project Narrative**: A project narrative is required with all preliminary site plan submittals. Provide synopsis of proposed utility(ies).			
A11	**Site Plan Check List:** Applicant must completed and submit a checklist with all new/preliminary site plans. This is **MANDATORY**.			
A12	**Site Plan Form:** A completed Site Plan Form must accompany all new/preliminary site plan submittals.			
A13	**Research Documents:** Copies of all research documents shall accompany all new/preliminary site plan submittal(s).			
A14	**Street Numbering Form:** A Certified Street numbering form from ISD must accompany all preliminary site plan(s).			
A15	**As-built Plan & Checkout List:** As-built plans must be certified by the engineer-of-record or a Professional Land Surveyor (PLS).			
A16	**Rough Construction Sign-off:** Note: the rough construction sign-off is a Prerequisite for filing a GSA with BWSC			
A17	**NOI/NPDES Tracking No/SWPPP/Erosion Control Plans:** must be submitted prior to plan approval for sites > 1 acre			
Administrative				
A18	**Approvals:** A 5"x5" Box must be provided on the site, and shall be labeled as follows - "FOR BWSC USE ONLY"			
A19	**GSA Inspection Schedule:** A GSA Inspection Schedule in required - Note: use tabular format and list applicable GSA item(s) only.			
A20	**Site Plan Certification:** Professional Engineer (P.E.) & Professional Land Surveyor (P.L.S.) Certification Stamps.			
A21	**BPWD Notifications & COBUCS Coordination:** Note: Applicants and/or Homeowners are required to notify BPWD regarding all proposed new construction. Information will be entered into the City of Boston Utility Coordination Software (COBUCS) for tracking purposes. Please provide copy of COBUCS Approval Reference number			
SECTION B: Water (Mains & Services) - Fire and/or Domestic				
B21	**Water** - Main (Specify size, material & year installed. Mains must be identified as either public or private)			
B22	**Water** - Domestic Water Service (size, material type and connection detail.)			
B23	**Water** - Fire Protection Line (specify size, material, backflow device size, mfg and location of proposed and/or relocated meter)			
B24	**Water -** On-Demand fire Flow - Please down-load and complete the Commission's "Fire Flow Request Form" available on-line.			
B25	**Water** - On-Demand Fire Flow - Please down-load and complete the Commission's "Fire Flow Request Form" available on line. Applicants must indicate the hydrant and pressure system(s) to be tested. A Check in the amount of $250.00 must accompany each new fire flow request Please note that the Commission also maintains a database of fire flow data and information from previous flow test-the information on file is available at no charge.			
B26	**Water - Back-Flow Preventer** Applicants are required to down-load and fill out a Backflow Preventer design data sheet accompanied by a sketch showing the minimium distances from the nearest existing wall and floor.			
B27	**Water** - Hydrants (Indicate public or private). Provide details for new hydrant installations and/or relocations.			
B28	**Water** - Water Meter. Note: sizing calcs required for meters greater than 5/8". Call out meter size and location.			
B29	**Water** - Meter Testing Requirements. Note: show location of new or existing valves for testing and/or maintenance purposes.			
B30	**Water** - Called out Cut & Cap of existing services. Show location, specify pipe size, and station when necessary.			
B31	**Water** - Called out size and location of mechanical fittings & appurtenances (i.e. pipe bends, pito-taps, thrust restraints, air cock,etc..)			

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ITEM NO.	DESCRIPTION OF SITE PLAN REQUIREMENTS	Check One "Yes" or "No"		NOTES
SECTION C: Sewer (Mains & Services)				
C32	**Sewer** - Main(s): 20-scale Plan & Profile required. All mains must be labeled as either "Public" or "Private"			
C33	**Sewer** - Service(s) - Call out slope (1/4" per foot), size, est. sewerage flow, material type, stationing, inverts]			
C34	**Sewer** - Grease Trap Requirements: Note: Grease traps are required in Restaurants and food establishments, where significants amounts of grease may be discharged.			
C35	**Sewer** - Grease Trap Sizing Calculations: Note: where applicable, grease trap sizing calculations must accompany the preliminary site plan submittal. Note: all Point-of-Use Grease traps are sized based on the size of the pot sink it serves. Large external (below ground) grease traps are required to serve the entire kitchen, when other appliances and fixtures such as dish washers, rinse sinks, pot sinks and floor drains are required and must be tributary to the sanitary sewer system only. These large external units and shall have a minimum effective storage capacity of 1,500 gallons. Dishwashers shall not be tributary to point-of-use grease trap in side the building. See BWSC Standard Detail No.G-02a through G-02d.			
C36	**Sewer** - MWRA Oil-Water Separator (in-door covered areas only). See BWSC Detail No. G-01.			
C37	**Sewer** - Called out location of existing services to be cut and capped. Specify pipe size and station when necessary.			
C38	**Sewer** - Provided Invert Elevation @ Bldg & Main (Boston City Base only).			
C39	**Sewer** - Called out Back Water Valves (BWV). Note: Back-water valves are required for all sewers and drain systems liable to backflow			
C40	**Sewer** - Called out Connection Details (Strap-on saddle or chimney detail). Note: Provide detail on Detail Sheet.			
C41	**Sewer** - Clean-Out (CO) Detail: Note: applicant must show location of PVC clean-out at property line on private property. Note: Where practicable, clean-outs are required on drain lines.			
C42	**Sewer** - Dye Test Sign-off required for all new drain and/or sewer connections to BWSC System.			
C43	**Sewer** - Video Inspection required? Note: Existing sewers slated for re-use must be televised prior to site plan approval (DVDs Only).			
SECTION D: Drain (Mains & Services)				
D44	**Drain** - Main(s): [provide 20 scale plan & profile. All mains must be identified as either public or private]			
D45	**Drain** - Provide Pre & Post Construction Drainage Calculations [Increase in net impervious cover]			
D46	**Drain** - Drain laterals: [Call out slope (1/8" per foot), pipe size, material type, inverts at building & main and stationing]			
D47	**Drain** - Calculations: Calculations for Article 32 Compliance: Note: Applicants must provide supporting calcs and documentation stamped and certified by a Professional Engineer registed in Massachusetts			
D48	**Drain** - Provided Storm-water Management system (i.e. BMPs,Catch Basin with oil trap, particle sep, infil. Systems & Low Impact Designs [L.I.Ds]) and Phosphorus Reduction and control)			
D49	**Drain** - Showed Catch Basins with Oil Trap [Use for external paved areas less than 7,500 sq ft. Note: Rim & Invert elev req'd]			
D50	**Drain** - Showed location of proposed Infiltration Systems. Call out type, size and storage capacity. Rims & invert elevation required.			
D51	**Drain** - Showed location of Particle Separator(s). Note: required for paved areas greater than 7,500 sq ft). Rim & inverts req'd.			
D52	**Drain** - Called out location and quantity of "DO NOT DUMP" Plaques (Fish Plates). Plaques must be purchased at E.C.S Dept.			
D53	**Drain** - Called out location of all storm drain Cut & Caps. Note: call out pipe size and stationing when necessary.			
D54	**Drain** - Dye Test Sign-off (Dye test required for each new connection(s) to the drain and/or sewer mains)			
D55	**Drain -** Is a Rain Harvesting (storm water collection & storage) system proposed?, Note: If "Yes", all make-up water system(s) using potable water, must be evaluated for cross connection control. Note: Rain Harvesting systems that discharges (overflow) to the Commission's sanitary or Combined sewer system will be assessed current sewer rate charges.			
D56	**Drain** - Are you planning to install a Geo-Thermal Well(s)? If you answer "Yes", applicants are required to file an Application for a Well Permit with the Boston Public Health Commission (BPHC). A copy of the approved Well plan(s) must be submitted to the Commission for review . Note: Geo-thermal systems must be evaluated for cross connection control by the Commission.			
SECTION E: Permits & Special Approvals [Permits & certain Special Approvals maybe required prior to final approval by BWSC]				
E57	**Permit Approval -** Secured BWSC General Service Application (GSAs). Please list any new or existing GSA(s) associated with the project. Note: GSA(s) will only be issued to Contractors who are Bonded and Licensed with the Commission. A Bonded Contractor list is available upon request.			
E58	**Permit Approval -** Permit Approval - Secured Hydrant Permit. Note: $750 deposit req'd for 90-day period for use of hydrant. A $50 hydrant meter fee is also req'd.			
E59	**Permit Approval** - Secured D.E.P Sewer Ext. Permit (Sewerage flows greater than 50,000 gallons per Day (gpd)			
E60	**Permit Approval** - Secured Copy of MWRA Sewer Use Discharge Permit (where applicable)			
E61	**Permit Approval** - Secured Copy of MWRA Direct Connect permit - for Direct Connections Only (Where applicable)			
E62	**Permit Approval** - Secured Copy of MWRA 8(m) Permit (for crossings and work within 10-ft of existing water and sewer main)			
E63	**Permit Approval - Is an EPA NPDES construction Permit (CGP) related to construction activities required? Note: for projects disturbing** one (1) acre or more, applicants are required to file a Notice-of-Intent (NOI) with the EPA when these permits triggers are exceeded. A copy of the project's Storm Water PollutionPrevention Plan [SWPPP] must be kept on-site at all times.			
E64	**Approvals** - Secured Public Improvement Commission (PIC) approval(s).			
E65	**Approvals** - Completed D.E.P One-Time Certification [Sewerage flows >=15,000 or <=50,000 gpd or Sewer Ext. less than l,000 ft]			
E66	**Approvals** - Secured permits or approvals from the Department of Conservation & Recreation (DCR) (where applicable)			
E67	**Approvals** - Reviewed Existing or prepared New Easement Request Document(s). Note: Forms available on-line at:www.bwsc.org			

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E68	**Approvals** - Reviewed Existing or prepared New License Request Document(s). Note: Forms are available on-line at:www.bwsc.org			
E69	**Demolition Plan** - Demolition plans shall delineate all buildings and services to be discontinued, abandoned and cut and capped where necessary. Note: existing water meters are owned by the Commissions and must be returned to the Commission after removal from service.			
E70	**Demolition Plan** - Demolition - Provide a Dewatering Plan (If Applicable). Dewatering Permit Applications are available on-line. Note: existing water meters are owned by the Commissions and must be returned to the Commission after removal from service.			
SECTION F: Special Conditions, Approvals & Supplemental Documentation [Please provide the following supplemental documentation where applicable]				
E71	**Special Condition** - As-built Conditions letter (prepared by BWSC and must be signed by the property owner or designated Representative)			
E72	**Special Condition** - Secured "Article 32 Compliance Letter". Note: the Compliance letter will be prepared by the Commission and issued to the property owner or his/her designee. A copy of the compliance letter will be sent to the ZBA by the Commission)			
E73	**Approvals** - If Applicable,secured necessary approvals from the Boston Conservation Commission [i.e Determination of Applicability (DOA and Order of Conditions].			
E74	**Approvals** - Secured necessary approvals from the Boston Historical Society Approval (If Applicable)			
E75	**Approvals** - "Gray" Water or "Green" Recycled and/or Rain Harvesting Systems. Note: Submit piping schematics & applicable pluming plans only. Proponents must also identify water system eligible for sewer abatement that do not discharge to the Commission's sewer system. Systems that discharge to the Commissions' sanitary sewer or combined sewer will be assessed current sewer rate charges.			
E76	**Documentation** - 4:1 Infiltration & Inflow Reduction Compliance Letter of Agreement & Understanding [LOAU]. Note: For Fee Calculations, a work sheet for 4:1 Fee Payment is available from the Commission upon request			
E77	**Documentation** - Provided Condo Agreement Letter and/or Notation on site plan (Required for Condominium Developments)			
E78	**Documentation** - Provided Access & Utility Easement Plan (Note: Plans required when filing new easements with Land Court)			
E79	**Documentation** - Geo-Technical Report. Note: BWSC may request report information based on site assessment (If warranted)			
E80	**Documentation** - Is a Storm-Water Pollution Plan [SWPPP] required? Note: A soil erosion and sediment control plan must be submitted as part of SWPPP.			
SECTION G: Utility Research Requirements [All applicants must request the following documents and/or information while conducting utility research at BWSC]				
E81	**Index Card(s)** - Requested copy(ies) of Connection Cards ("Distance Cards") for water service connections			
E82	**Index Card(s)** - Requested copy(ies) of Connection Cards ("Distance Cards") for sewer and/or drain connections			
E83	**Maps** - Reviewed 100 Scale GIS Map (Water)			
E84	**Maps** - Reviewed 100 Scale GIS Map (Sewer & Drain)			
E85	**Maps** - Reviewed Old Sewer Sections			
E86	**Maps** - Reviewed Old Bromley Map (Water only)			
E87	**Plans** - Reviewed Old Record Plans (Review Old Inspection & Survey Books)			
E88	**Plans** - Requested Capital Improvement Plans & Contract information. May include As-built plans and Design Drawings.			
E89	**Plans** - Requested Utility Site Plans (Pending review or approved)			
E90	**Street Listing** - Cross referenced Street/project address with BPWD Paving Program List (Consult Mark Cardarelli at (617) 635 - 4950)			
E91	**Street Listing** - Cross referenced other scheduled or planned roadway work (Boston Public Works Dept.)			
E92	**Survey Plans** - Secured and reviewed field Survey of adjacent property connections			
E93	**Survey Plans** - Locate existing Wye Connection(s) in roadway for future use.			
E94	**Survey Plans** - Secured and reviewed Utility information for abutting property and surrounding area of interest			
SECTION H: As-built Requirements				
E95	**ACAD Drawings** - ACAD Standards & Requirements - Provide electronic copy of proposed site plan in AutoCAD 2010. Note: Copies of electronic files must be submitted in .dwg format only			