THE WORKS
CAMBRIDGE DEPARTMENT OF PUBLIC

Lisa Peterson
Commissioner

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Cambridge, MA 02139
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P 05/28/08

May 21, 2008

U.S. Environmental Protection Agency, Region 1
Attn: Ann Herrick
1 Congress Street, Suite 1100 (CIP)
Boston, MA 02114-2023

and

Massachusetts Department of Environmental Protection
Attn: Fred Civian
One Winter Street - 5th Floor
Boston, MA 02108

Subject: NPDES Phase II Small MS4 General Permit (MAR041076)
Year 5 (2007 - 2008) Annual Report
Cambridge, Massachusetts

To whom it may concern:

On behalf of the City of Cambridge and its Department of Public Works (DPW), attached please find an annual report outlining the City's progress toward implementation of its Stormwater Management Program outlined in the above referenced permit.

Cambridge had been very active in its efforts to improve its stormwater discharges and has revised its ordinances and implemented regulations in accordance with the requirements of the NPDES Phase II Program. The attached information provides an overview of these efforts in accordance with the six Minimum Control Measures.

Please contact me at 617.349.4802 or Owen O'Riordan, Assistant Commissioner for Engineering/City Engineer at 617.349.4845.

Very truly yours,

Lisa Peterson

Lisa Peterson
Commissioner

Attachment

cc: Robert W. Healy, City Manager
Owen O'Riordan, Assistant Commissioner for Engineering, DPW
Catherine Daly Woodbury, Engineering Project Coordinator, DPW

5/08

Municipality/Organization: **City of Cambridge**

EPA NPDES Permit Number: **MAR041076**

MaDEP Transmittal Number: **W-040464**

Annual Report Number & Reporting Period: **No. 5: March 07-March 08**

NPDES PII Small MS4 General Permit Annual Report

Part I. General Information

Contact Person: Lisa Peterson Title: Commissioner, Dept. of Public Works

Telephone #: (617) 349-4802 Email: lisap@cambridgema.gov

Certification:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature: Robert W. Healy

Printed Name: Robert W. Healy

Title: City Manager

Date: May 20, 2008

Part II. Self-Assessment

The City of Cambridge has completed the required self-assessment and has determined that our municipality is in compliance with all permit conditions.

Part III. Summary of Minimum Control Measures (MCM)

MCM #1. Public Education and Outreach

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 4 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 5
1.a Revised	Develop Educational and Outreach Material for Residents and Businesses	Commissioner/ DPW	(i)Develop 3 brochures or fact sheets **(completed under year 1 activities)** - Continue the development of relevant materials. **Expanded BMP element in Year 3**	Fact Sheets for Healthy Household Habits for Clean Water (HHHCW) were translated into Haitian Creole, Chinese, Portuguese and Spanish. This fact sheet includes information on Watersheds, Lawn and Garden, Landscaping, Pet Care, Auto Care, Waste Disposal and the Stormwater Hotline. Copies of these fact sheets are available in the top 5 principle languages spoken in Cambridge including English and the translated information is provided in Appendix 1.	Continue to develop relevant information on stormwater management for residents and businesses.
		Commissioner/ DPW	(ii) Post information on the web	A Stormwater Management web page was developed as part of the DPW web site during program year 1. It can be viewed at http://www.cambridgema.gov/~TheWorks/stormwater/index.html. A copy of Year 4 Annual Report, a Public Service Announcement video from the Think Blue Massachusetts Program "Think Again", and information on how to locate catch basins and the importance of keeping them clear was added to the stormwater homepage. In addition, during Year 5 a new page was created that is devoted to the Federal Emergency Management proposed changes to the flood insurance rate maps (flood plain in Alewife). This website contains information on flooding, insurance, and proposed map revisions. A copy of theses web pages are provided in Appendix I. The translated information on Healthy Household Habits was added to the DPW "Translated Materials" page. Copy of this page is provided in Appendix I. Additional information on water quality and activities are posted through the DPW homepage, Engineering homepage, Sewer homepage and City of Cambridge homepage throughout the year.	This site will continue to be updated and expanded to include information relevant to the implementation of our stormwater management program.

Revised		Commissioner/ DPW	(iii) Distribute materials **Expanded BMP element in Year 3**	Why Should We Care About Trees in the City? was published in the Spring/Summer 2007 edition of *CityView* and Protect Our Watersheds was published in the Fall/Winter 2007 edition of *CityView*. CityView is a publication of the City of Cambridge which is mailed to every household in Cambridge actively receiving mail. In addition, copies of *CityView* are available at various municipal buildings. A copy is provided in Appendix 1. Preserving and Growing Cambridge's Urban Forest was published in *The Cambridge Life* Fall 2007 – Winter 2008 edition. *The Cambridge Life* is another publication of the City of Cambridge. This free magazine is distributed throughout Cambridge through 5 news boxes located in the major squares, and racks within City Hall and other municipal offices, and placed with other groups such as realtors, senior centers, university offices and others. A copy is provided in Appendix I.	Distribute information on Stormwater /Watersheds to every household actively receiving mail in Cambridge.
Revised		Commissioner/ DPW	(iv) Assess local/regional mass media marketing campaigns **Revised in Year 3– new BMP element**	DPW and Massachusetts Bays Estuary Association (Think Blue MA Coalition) jointly sponsored an interactive display and demonstration on watersheds and stormwater pollution and prevention during the 1st Annual Cambridge Science Festival on April 21 2007. The event included a watershed model, Think Again video, Storm Water booklet giveaway, and Stormy the Think Blue 18' yellow duck. Copies of the Storm Water booklet, Science Festival program book, pictures from the Think Blue exhibit, and copies of Fall 2007 and the Summer 2007 Think Blue MA's "Stormy Report" which includes articles on the Science Festival event are included in Appendix I. In addition, Cambridge's local cable station CITY TV-8 continues to periodically air the Think Again Think Blue PSA which began running the week of February 19 2007. This same PSA is also available through DPW's Stormwater Management webpage as mentioned in BMP 1.a (ii) above.	Participate in the 2008 Cambridge Science Festival with Think Blue MA. Evaluate future collaborations opportunities.
1.b	Develop Outreach Materials/Activities for Children	Commissioner/ DPW	(i) Begin school outreach in Cambridgeport	This activity was completed in Year 2. Outreach activities to children continue in general including the demonstration at the Science Festival discussed in 1.a.(iv) above and during the DPW Vehicle Road Show held on May 22, 2007 which featured activities explaining how DPW keeps Cambridge Clean. A copy of the Road Show flyer is attached in Appendix 1.	Schoolchildren will be included in stormwater outreach activities in general. This will combine BMP 1. b (i) and (ii).

		Commissioner/ DPW	(ii) Begin School Outreach in Alewife	Construction delays continued during Year 5 and therefore no specific presentation geared toward school children in the Alewife area related to construction activities was undertaken. Several activities discussed in BMP 1.b. (i) above included activities that were geared to children in general and not watershed or school specific.	Schoolchildren will be included in stormwater outreach activities in general. This will combine BMP 1. b (i) and (ii).
1.c	Develop a Stormwater Web Page	Commissioner/ DPW	(i) Develop a stormwater web page	A stormwater web page was developed during Year 1 and can be viewed at http://www.cambridgema.gov/~TheWorks/stormwater/index.html Also refer to 1.a (ii) above.	Completed
		Commissioner/ DPW	(ii) Update stormwater web page	See 1.a. (ii) above.	This site will continue to be updated and expanded
1.d	Create a Catch Basin Curb Marker Program	Commissioner/ DPW	(i) Install catch basin curb marker/plaques	DPW installed catch basin curb markers during sidewalk reconstruction projects and our remedial reconstruction projects. A total of 33 have been installed: 28 in the Charles and 5 in the Alewife watersheds (see Appendix 1).	Continue to install catch basin curb markers during construction projects.
1.e	Reduce Stormwater Pollution from Automobiles	Assistant City Manager for Community Development/CDD	(i) Sponsor an event to promote alternative forms of transportation	The Community Development Department sponsored and participated in many activities promoting alternative forms of transportation during the May 2007 Go Green Month events. Activities included alternative forms of transportation information tables at all major squares in Cambridge, giveaways to cyclists and pedestrians, participation in local bike week events/tours. A listing of Go Green Month events is provided in Appendix I.	Alternative forms of transportation will be promoted through activities and events.

MCM #1. Additional Information

- Cambridge CDD has monitored approximately 32 entities under the Parking and Transportation Demand Management (PTDM) Ordinance to reduce motor vehicle trips associated with increased parking and reviewed 4 new PTDM special permit plans. Information on the projects monitored and new plans is attached in Appendix 1.

- The City continues to provide a comprehensive City Employee Commuter Benefits to all of its employees. These benefits include subsidized T passes, a free shuttle service, and an internal car pool matching service. The City also supports bicycle use and walking through the respective city programs and provides an internal web site that provides information on other

regional ride matching and sharing programs. A study conducted by Prevention Magazine found Cambridge to be the best walking city in America in their April 2008 issue. A copy of this press release is attached in Appendix 1.

- To support DPW's efforts to improve and maintain the urban tree canopy a tree care door knocker was developed to enlist help from residents to care for newly planted trees adjacent to their properties. A copy of the door knocker is provided in Appendix 1.

- Catch basin curb markers were installed in the following projects:

  - FY07 Remedial: 1 (Alewife), 3 (Charles)
  - FY07 Miscellaneous Sidewalks: 2 (Alewife), 4 (Charles)
  - FY08 Remedial: 2 (Alewife), 1 (Charles)
  - Chapter 90 (Contract 7): 4 (Charles)
  - Chapter 90 (Contract 8a): 7 (Charles)
  - 238 Broadway: 3 (Charles)
  - Massachusetts Avenue (South): 6 (Charles)

MCM #2. Public Involvement and Participation

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 4 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 5
2.a	Participate in Public Meetings on Water Quality and Quantity	Commissioner/ DPW	(i) Participate in/sponsor a public meeting on water quality/quantity and/or the stormwater management plan	A public meeting to discuss the recently amended and adopted Ordinance Chapter 13.16 Cambridge Municipal Code regarding Wastewater and Stormwater Drainage Systems and the soon to be released Land Disturbance Regulations and the Wastewater and Stormwater Drainage Use Regulations was held on March 27, 2008. A copy of the presentation, sign-in sheet and amended ordinance is provided in Appendix 2.	Public meeting will be hosted by DPW regarding the status of the stormwater management program and/or stormwater issues.
		Commissioner/ DPW	(ii) Advertise meeting through various sources	The above meeting was advertised on the city's web site. In addition the NPDES meeting was posted in the Cambridge Chronicle. A copy of the meeting notice is provided in Appendix 2	Meeting will be publicly advertised in local newspapers, through the web site and/or other means.
2.b	Support Volunteer Efforts	Commissioner/ DPW	(i) Provide clean-up assistance for one event annually	The City provided support to the Friends of Alewife Reservation for a large clean up at Alewife on May 12, 2007. The City also worked with the Central Square Business Association on its 3rd Annual Central Square Spruce Up on May 18, 2007. Copies of the flyers are attached in Appendix 2.	Support/assistance will be provided for one clean-up event.
		Commissioner/ DPW	(ii) Support educational efforts of local watershed groups as opportunities arise through talks and /or support of grant applications	The Cambridge Water Department supported the efforts of the Friends of Fresh Pond Reservation in 2 Purple Loosestrife Biocontrol Project events on April 22, 2007 and October 20, 2007. These projects strive to remove invasive plant species from the Reservation to facilitate the growth of native plant species. A native ecosystem functions to filter pollutants and mitigates erosion by holding soils	The City will continue to provide support to local watershed associations as opportunities permit.

				in place Copies of the flyers are attached in Appendix 2.	
		Commissioner/ DPW	(iii) Seek permission to post links to local watershed groups' web sites	Links were updated to include the Massachusetts Bays Estuary Program – Think Blue MA.	As the stormwater management web page is expanded and updated additional links and resources will be added
2.c	Sponsor Recycling of Hazardous and Solid Waste	Commissioner/ DPW	(i) Hold 4 Household Hazardous Waste Collection (HHW) days annually		
Revised		Commissioner/ DPW	Hold 3 Household Hazardous Waste Collection days annually **(Revised in Year 1)**	Three Household Hazardous Waste collection days were held this permit year on April 21, June 23 and October 13, 2007. DPW has determined that the reduction in the amount of collection days has not resulted in a reduction in the amount of materials collected. See Appendix 2 for a summary of recycling tonnage from Drop-off center, curbside and HHW collections.	HHW collection will be held on April 21, June 23, and October 13, 2007.
		Commissioner/ DPW	(ii) Accept recycling materials at a drop off center on a regular basis	During 2007 DPW operated a recycling drop-off center at the DPW yard on Tuesdays and Thursdays from 4 – 7:30 p.m. and Saturdays form 9 a.m. – 4 p.m. Materials accepted include: books, clothing, electronic media (CD's, floppy disks, VHS tapes), plastic bags, cartridges, electronics, packing peanuts, non-alkaline batteries (NiMH, NiCd, Hg, Li Ion, Pb Acid, AgO2), fluorescent bulbs, mercury containing devices (thermometers, thermostats, etc.), motor oil, cell phones, and scrap metal. The City began a residential food compost recycling pilot program in February 2008. A program summary is provided in Appendix 2.	DPW will continue to operate a recycling drop-off center.

		Commissioner/ DPW	(iii) Beginning in yr 2 provide information on illicit discharges and reporting	A pamphlet was developed in Year 2 and continues to be revised and distributed at the Household Hazardous Waste collection events. This pamphlet discussed illegal dumping into catch basins and the importance of proper disposal of wastes. A copy is provided in Appendix 2. During Year 5 this Information was included in the Healthy Household Habits information which was translated into 4 additional languages and included in the information on watersheds published in the Fall/Winter 2007 edition of *CityView* discussed in MCM 1 above.	DPW will continue to provide information on illicit discharges and reporting at Household Hazardous Waste events and/or in its meetings and through print materials.

Th. .ollowing BMP was relocated from BMP 5.b and further revised in Year 3.

2.d	Participate in Watershed and Planning Efforts	Assistant City Manager for Community Development/CDD and Commissioner/ DPW	(i) Complete Phase I of Concord-Alewife study	Not applicable in Year 5, completed in Year 1. Information from this process can be viewed at http://www.cambridgema.gov/~CDD/commplan/zoning/concalew/index.html	Completed.
		Assistant City Manager for Community Development/CDD and Commissioner/ DPW	(ii) Complete Phase II if authorized	Not applicable in Year 5, completed in Year 3.	Completed.
		Assistant City Manager for Community Development/CDD and Commissioner/ DPW	(iii) Forward study recommendations to the City Manager for consideration	Not applicable in Year 5, completed in Year 4. The Planning Board submitted the Concord-Alewife rezoning petition to the City Council on April 25, 2005. This petition was based on the zoning recommendations of the Concord-Alewife Planning Study Committee. The petition was refilled by the City Council on February 21, 2006. The Concord-Alewife Rezoning (http://www.cambridgema.gov/CDD/cp/zng/concalew/concale_ord.pdf) and Design Guidelines were adopted by the City Council on June 26, 2006. The changes have been incorporated into the Cambridge Zoning Ordinance and Zoning Map.	Completed
		Commissioner/ DPW	(iv) Discuss Concord-Alewife Stormwater Management strategies at a public meeting	Not applicable in Year 5, completed in Year 4. DPW participated in a City Council Ordinance Committee meeting on environmental and infrastructure issues with regard to the Concord/Alewife proposed zoning amendment on June 13, 2006. Issues on water quality/quantity in the Concord-Alewife area were discussed.	Completed.
		Commissioner/ DPW	(v) Publish LID guidelines	Not applicable in Year 5, completed in Year 4. DPW published the Concord-Alewife Stormwater Management Guidelines in May 2006. A copy can be found at: http://www.cambridgema.gov/TheWorks/stormwater/pdffiles/ConcordAlewifeStormwaterManagement.pdf	Completed.
		Commissioner/ DPW	(vi) Place LID document on the Stormwater web site	Not applicable in Year 5, completed in Year 4 (see BMP 2.d.(v) above).	Completed
		Commissioner/ DPW	(vii) Execute the Environmental Joint Powers Agreement (EJPA)		

revised			Work with EOEA to advance the EJPA to a final document **(Revised in Year 1)**	The final EJPA was fully executed on March 4, 2005 and forwarded to EOEA. Completed.	Completed.
		Commissioner/ DPW	(viii) ABC Flooding Board to meet 4 times annually	The ABC Flooding Board met approximately 7 times during Year 5 on April 10, June 12, July 10, September 11, October 16, January 8, 2008, and March 11, 2008. Discussion topics included Alewife channel maintenance, proposed hydraulic changes in the upper watershed by the Town of Winchester and continue support of USGS Alewife gauge contract by each of the 3 communities.	The ABC Flooding Board will meet 4 times.
revised			**Schedule Revised in Year 1**		
		Commissioner/ DPW	(ix) Finalize Tri-Community Working Group's *Progress Report*	Not applicable in Year 5, this report was finalized in Year 3	Completed.
revised					
		Commissioner/ DPW	(x) Place Tri-Community Working Group's *Progress Report* on web site	Not applicable in Year 5. This report was placed on the web site in Year 4 see: http://www.cambridgema.gov/TheWorks/departments/engnr/pdfs/Tri-CommunityWorkingGroupReport.pdf	Completed.
revised					

MCM #3. Illicit Discharge Detection and Elimination

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 4 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 5
3.a	Update Stormwater Drainage System, Outfalls and Receiving Waters in GIS	Commissioner/ DPW	(i) Map Fresh Pond outfalls	Not applicable in Year 5, projects are not yet complete.	Map the new drainage changes within Fresh Pond Reservation resulting from the completion of drainage improvements at Little Fresh pond and the NorthEast Sector upon the completion of these projects.
		Commissioner/ DPW	(ii) Migrate existing GIS database to a new format	Completed in Year 3.	DPW staff will primarily be responsible to maintain the GIS database. As-built information will be added to keep the system up to date.
		Commissioner/ DPW	(iii) Track private structural controls in a database	Private structural controls are tracked in a database (see Appendix 3). Approximately 114 projects underwent DPW site plan review (see Appendix 3).	We will continue to track private structural controls through our site plan review process. The new Land Disturbance Regulations will require the submittal of Operations & Maintenance plans for regulated project sites.
		Commissioner/ DPW	(iv) Catalogue record drawings	Cataloguing of record drawings was not necessary. The contract to update the GIS database included scanning record drawings and has been completed in Year 3. A catalogue of updated information is available to query.	Record drawings and as-built information will continue to be added on an ongoing basis.
		Commissioner/ DPW	(v) Train engineering staff on new GIS software	Not applicable in Year 5 this was completed in Year 3.	Completed.

		Commissioner/ DPW	(vi) Begin updating GIS information with as-built/record drawings	DPW staff has been trained to edit the GIS database. As-built and record drawings are being updated on an ongoing basis.	Record drawings will be linked as they become available.
3.b	Detect and Eliminate Illicit Discharges	Commissioner/ DPW	(i) Perform routine water quality sampling	Four (4) water quality samples were taken at 8 outfalls on the Alewife. As part of the expanded sampling effort proposed in 3.b (iii) below 3 additional locations were sample twice in the Alewife and an additional outfall was monitored twice and found to have no flow both times. Three (3) Water quality samples were taken at Charles River outfall locations during April '07, July/Aug '07 and Feb '08. Expanded locations were sampled once in the Charles (see 3.b (iii) below). See Appendix 3 and Part IV of this report.	Water quality samples will continue in each watershed.
		Commissioner/ DPW	(ii) Test one location in each watershed for oil and grease annually	.	One location in each watershed will be tested for oil and grease.
Revised			**(Revised for Year 2 only)**	Two (2) oil & grease samples were done during Year 5: one (1) samples in the Charles and one (1) in Alewife (see Appendix 3)	
		Commissioner/ DPW	(iii) Perform additional water quality testing and field investigations as necessary	Additional water quality testing was performed to isolate the location of illicit discharges and to confirm their successful removal.	We will perform additional water quality testing and field investigations as necessary.

Revised 3.b cont.			**Revised in Year 3** Expand Water Quality testing in both watersheds	The following additional outfalls in the Charles watershed were tested on April '07 and July/Aug '07: • Lechmere Canal, • South Massachusetts Avenue, • Amesbury St., • Pearl St., • Cemetery (Range 23), • Cemetery (Shady Hill Rd), • North Point, • Kendal Square, and • Pleasant Street. Additional Alewife outfalls tested April '07 and July '07 include: • Matignon Road, • 54 CambridgePark Dr., • 100 CambridgePark Dr. • Blanchard Rd @ Normandy	All known Cambridge Outfalls will be sampled in the Charles and Alewife watersheds.
		Commissioner/ DPW	(iv) Identify and remove illicit discharges	Illicit discharges/connections were discovered at: • 857 Mass Ave (Clinton St) • 20 Gray Gardens West • 295 Huron Ave	We will continue to monitor for and remove illicit discharges. Illicit at 857 Mass Ave will be removed as part of Common Mabhole 4A project. Illicits at Gray Gardens and Huron will be removed through our Remedial Repair contracts.
		Commissioner/ DPW	(v) Perform water quality sampling at a Fresh Pond outfall annually	Three (3) water quality samples were taken at Little Fresh Pond (see Appendix 3 and Part IV of this report).	A water quality sample will be taken at Fresh Pond
3.b cont.		Commissioner/ DPW	(vi) Purchase sampling equipment as recommended by EPA's Lower Charles IDDE Protocol	Not applicable in Year 5. Sampling equipment was purchased in Year 4.	Supplies will be purchased as needed.

		Commissioner/ DPW	(vii) Investigate Sparks Street drainage area	Investigation of the Sparks Street drainage area using the Charles River IDDE Protocol was begun in the Summer of 2006. Approximately 75% of this investigation is complete. Several illicits were identified, refer to MCM 3. b. (iv) above. A summary of this investigation is provided in Appendix 3.	Complete investigation into the Sparks Street drainage area.
		Commissioner/ DPW	(viii) Investigate Lechmere Canal drainage area.	Investigation of the Lechmere Canal drainage area using the Charles River IDDE Protocol was begun in Year 5. Approximately 50% of the manholes have been checked. A summary of this investigation is provided in Appendix 3.	Complete investigation into the Lechmere Canal drainage area.
		Commissioner/ DPW	(ix) Separate Common Manholes (CMH).	Three (3) CMHs were separated in the Endicott Street project. Common Manhole Contract #6 contains 13 CMHs. This contract was not bid in Year 5 due to delays but is fully designed and ready for bid. CMH 4A contains approx. 22 CMHs and was fully designed and readied for bid during Year 5	The number of Common Manholes separated in separated drainage areas will be counted. CMH 4A and CMH 6 will be bid and construction will begin.
New		Commissioner/ DPW	**(X) Perform wet weather water quality sampling at 2 outfalls annually**	Cambridge began a wet weather sampling program by sampling 2 outfalls in catchment areas not influenced by common manholes, one catchment in the Alewife watershed and one in the Charles River watershed (see Appendix 3 for sampling results).	Cambridge will continue to take wet weather samples at the same 2 outfalls and monitor sampling results.
3.c	Conduct Illicit Discharge Education Program	Commissioner/ DPW	(i) Advertise illicit discharge hotline number and information on illicit discharges	Hotline information was included in the *CityView* article on Healthy Household Habits which was translated into 4 additional languages discussed in MCM 1.a. (i) above and in the article Protect our Watersheds article discussed in the MCM 1.a. (iii) above.	The Stormwater Hotline number for illicit discharges will be incorporated in additional public information. Also refer to MCM #1 and 2 above for additional information.

3.a	Develop Regulations Prohibiting Illegal Dumping of Non-Stormwater into the MS4	Commissioner/ DPW	(i) Develop a working draft	Not applicable in Year 5, completed in Year 1.	Complete.
		Commissioner/ DPW	(ii) Provide opportunity for peer and legal review of draft	Not applicable in Year 5, completed.	Completed.
		Commissioner/ DPW	(iii) Revise draft as necessary	The Wastewater and Stormwater Drainage Use Regulations were finalized. A copy of these Regulations is provided in Appendix 3.	Completed.
		Commissioner/ DPW	(iv) Present regulations/ordinance to City Council for consideration for adoption	On October 29, 2007 the City Manager submitted a comprehensive revision to Chapter 13.16 of the Cambridge Municipal Code to ensure this ordinance fully complies with the NPDES Phase II requirements for stormwater discharges. The City Council Ordinance Committee held a public hearing on the proposed revisions on December 12, 2007 and forwarded it to the full City Council with a favorable recommendation. On January 12, 2008 the Ordinance Committee Report was accepted, placed on file and passed to a second reading. On January 28, 2008 the City Council ordained the Wastewater and Stormwater Drainage System ordinance by a vote of 9-0-0. A copy of the revised ordinance is provided in Appendix 3. This ordinance authorized the Commissioner of DPW to promulgate regulations to enforce the ordinance.	Completed.

MCM #3. Additional Information

- During this program year Cambridge completed the design of the bid package for common manhole #6 (CMH) contract to separate 13 CMHs in the Alewife watershed. This contract was hoped to be bid during Year 5 but was delayed. It is expected to go to bid and begin construction in 2008. Common manholes contract #4A was designed and readied for bid during Year 5 and included the separation of approximately 22 CMHs. CMH #4A is expected to go to bid and begin construction during 2008. CMHs are underground structures that allow people to access both sewer and storm drainpipes through a single structure. Typically, the drainage system runs above the sanitary system, separated by a steel plate. Over time the steel plate deteriorates causing sewerage to mix with stormwater. This can lead to two problems during storm events. First it can cause stormwater to enter and overwhelm the sanitary system causing sewerage to overflow and back-up on to the street or into basements. Second, untreated sewerage can enter the storm drain system and be released into either the Charles River or Alewife Brook. See Appendix 3 for a map of the common manholes that have been separated throughout Cambridge. Approximately 218 common manholes have been separated through March 31, 2008.

- The outfalls located at Fresh Pond have not been sampled this year. The outfall located in the North East Sector portion of the reservation was removed and the new flow from the reconstructed portion of Lusitania Field will be directed to an infiltration berm, thus there will be no point source discharge from this area in the future. This work is still under construction. There is an outfall located at Weir Meadow, which is tied to a single catch basin, which is surrounded by meadow and receives no urban runoff. The 2 other outfalls, which are associated with the walking path and hillside, are also connected to single catch basins and receive flow from the adjoining hillside and rip rap swale. These areas have recently been reconstructed and pose no threat to water quality at the pond. Water quality at Fresh Pond is closely monitored and samples are taken from the pond itself. Sampling is done regularly for the small ponds within the Fresh Pond Reservations including Black's Nook and Little Fresh Pond. These sample results are attached in Appendix 3.

MCM #4. Construction Site Stormwater Runoff Control

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 4 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 5
4.a	Develop Program for Construction Site Runoff Control	Commissioner/ DPW	(i) Review existing planning and construction procedures	Not applicable in Year 5, completed.	Complete
		Commissioner/ DPW	(ii) Clarify needed regulatory mechanism	Not applicable in Year 5, completed.	Complete
		Commissioner/ DPW	(iii) Develop draft regulatory mechanism, procedures and guidelines	Land Disturbance Regulations were finalized following the adoption of the revisions to Cambridge Municipal Code Chapter 13.16 Wastewater and Stormwater Drainage System. A copy is provided in Appendix 4.	Completed.

4.a Cont.		Commissioner/ DPW	(iv) Present draft to City Manager, City Council and the community for review	On October 29, 2007 the City Manager submitted a comprehensive revision to Chapter 13.16 of the Cambridge Municipal Code "Sewer System Regulations" to ensure this ordinance fully complies with the NPDES Phase II requirements for stormwater management as it relates to construction site runoff. The City Council Ordinance Committee held a public hearing on the proposed revisions on December 12, 2007 and forwarded it to the full City Council with a favorable recommendation. On January 12, 2008 the Ordinance Committee Report was accepted, placed on file and passed to a second reading. On January 28, 2008 the City Council ordained the Wastewater and Stormwater Drainage System ordinance by a vote of 9-0-0. A copy of the revised ordinance is provided in Appendix 3. This ordinance authorized the Commissioner of DPW to promulgate regulations to enforce the ordinance.	Completed.
		Commissioner/ DPW	(v) Amend draft as necessary and submit for consideration for adoption	The ordinance submitted to the City Manager and City Council discussed above in MCM #3.d (iv) and 4.a (iv) was adopted as submitted. No amendments were necessary.	Completed.
		Commissioner/ DPW	(vi) Record number of required Stormwater Management Permits submitted	Not applicable in Year 5.	The number of Land Disturbance applications will be tracked.
4.a cont.		Commissioner/ DPW	(vii) Provide stormwater management guidance materials or references	Draft guidance documents were developed. A summary overview of the status and latest version of each chapter and appendix is provided in Appendix 4.	Finalize guidance document.

		Commissioner/ DPW	(viii) Adopt procedures for inspections during construction activities.	A peer review of inspection was completed. Inspection procedures are incorporated into the Land Disturbance Regulations (Article VII) and will be further clarified in the guidance documents A summary of the Peer Review of Inspection Procedures in provided in Appendix 4.	Incorporate inspection procedure information in the guidance document.
		Commissioner/ DPW	(ix) Adopt procedures for enforcement and penalties for violations.	Compliance and enforcement procedures are included in the Land Disturbance Regulations (Article X).	Complete.
		Commissioner/ DPW	(x) Record the number of enforcement actions taken and reported	Not applicable in Year 5.	The number of enforcement action taken and reported will be tracked.
4.b	Educate Contractors and Residents about the Construction Site Runoff Control Program	Commissioner/ DPW	(i) Make materials available on erosion and sediment control practices available through city web site and/or other means	Guidance material is still being developed for erosion and sediment control practices.	The guidance document will be placed on the DPW web site when completed.
4.b Cont.		Commissioner/ DPW	(ii) Discuss erosion and sediment control practices and problems at 3 construction coordination meetings annually	The City Engineer discussed erosion and sediment control practices and problems with permitted contractors working in the City during at least 3 construction coordination meetings on April 2nd, June 11th, and Oct 29th. Copies of the sign-in sheets are provided in Appendix 4.	The City Engineer will discuss erosion and sediment control practices and problems with contractors at 3 construction coordination meetings.
New		Commissioner/ DPW	(iii) Record the number of guidance materials or reference materials provided.	Guidance material is still being developed for erosion and sediment control practices. Our draft BMPs for construction controls are provided in Appendix 4.	Finalize guidance documents.

New		DPW	(iv) Create a list of resources, which provides BMP suggestions for the targeted pollutants of concern.	The construction BMPs are being developed in the form of fact sheets. Each fact sheet contains information on the ability of the BMP to address each of the Pollutants of Concern. Refer to the draft BMPs for construction controls in Appendix 4.	Finalize BMP fact sheets.
New		Commissioner/ DPW	(v) Record the number of workshops or meetings with City departments to discuss implementation of plan requirements	Meetings have been held with the City Manager, Law Department, and Inspectional Services. One workshop was held at DPW including staff from administration, engineering, sewer, and street maintenance. A copy of the attendance sheet and presentation is provided in Appendix 4.	Meetings will be held to discuss proposed ordinances and regulations

MCM #4. Additional Information

- 3 presentations were given on Permits and Works Zones for small, short-term excavations. 2 meetings (February 11 and 22, 2008) were geared toward contractors and 1 meeting (February 9, 2008) was for DPW. A copy of the sign-in sheets and presentation is provided in Appendix 4. These presentations included information on the protection of stormwater drains and catch basins. Approximately 75 people attended the 3 sessions.
- 44 city employees from the Electrical, Water, and Public Works Departments attended a presentation on Work Zone Safety and Access on March 14, 2008. This meeting included information on the importance of protecting catch basins and the storm drain system during construction. A copy of the presentation and sign-in sheet is provided in Appendix 4.

MCM #5. Post-Construction Stormwater Management in New Development and Redevelopment

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 4 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 5
5.a	Revise Sewer Use Regulations and Guidance	Commissioner/ DPW	(i) Complete a working draft	Not applicable in Year 5, this activity was competed in Year 4.	Completed.
Revised	Develop Program for Post Construction Site Runoff Control		**(Revised in Year 3)**		
		Commissioner/ DPW	(ii) Undertake and complete peer review and legal review of draft	Reviews were completed on the revisions to the Sewer Use Regulations (ordinance) Chapter 13.16 of the Cambridge Municipal Code (copy provided in Appendix 3) and Land Disturbance Regulations (copy provided in Appendix 4. The Regulations and Ordinance can also be viewed on-line at: http://www.cambridgema.gov/TheWorks/stormwater/index.html	Completed.
		Commissioner/ DPW	(iii) Develop draft guidelines on BMPs	A Draft stormwater management guidance document has been developed. A copy of the Guidance document summary overview is provided in Appendix 4. This overview identifies the chapters and their review status. A copy of the table of contents for DRAFT Appendix A Best Management Practices is provided in Appendix 5 and includes a list of the BMP fact sheets that are currently under discussion and review. Draft fact sheets have been developed for Section 1 through 6. The guidance document and associated BMP fact sheets provide information on Post-Construction maintenance and inspection of the BMPs.	Stormwater management guidance will be finalized.

5.a Cont.		Commissioner/ DPW	(iv) Discuss final draft and guidance with City Manager, City Council and the community	On October 29, 2007 the City Manager submitted a comprehensive revision to Chapter 13.16 of the Cambridge Municipal Code "Sewer System Regulations" to ensure this ordinance fully complies with the NPDES Phase II requirements for stormwater management as it relates to construction site runoff. The City Council Ordinance Committee held a public hearing on the proposed revisions on December 12, 2007 and forwarded it to the full City Council with a favorable recommendation. On January 12, 2008 the Ordinance Committee Report was accepted, placed on file and passed to a second reading. On January 28, 2008 the City Council ordained the Wastewater and Stormwater Drainage System ordinance by a vote of 9-0-0. A copy of the revised ordinance is provided in Appendix 3. This ordinance authorized the Commissioner of DPW to promulgate regulations and guidance documents to enforce the ordinance.	Completed.
		Commissioner/ DPW	(v) Present final regulation, guidance and monitoring program for consideration and adoption	The Commissioner of Public Works promulgated Land Disturbance Regulations and Wastewater and Stormwater Drainage Use Regulations. ❑ The Wastewater and Stormwater Drainage Use Regulations are intended to protect the public health, safety and welfare and the environment and to ensure proper and safe operation of the City's Sanitary Sewers, Combined Sewers and Stormwater Drains by regulating the direct and indirect discharge of Waste, stormwater and pollutants to the City's Wastewater and Stormwater Drainage system. These Regulations are also intended to prohibit and remove illicit connections and unauthorized discharges to the City's Stormwater Drainage system. This includes the legal authority to carry out all inspection, surveillance and monitoring procedures necessary to comply with this Regulation. ❑ The Land Disturbance Regulations are intended to reduce pollutants in any stormwater runoff from construction activities and to address post construction stormwater runoff from new development and redevelopment projects. These Regulations include procedures for inspection and enforcement.	Guidance documents will be finalized.

5.a Cont.		Commissioner/ DPW	(vi) Record the number of meetings held by the City for the regulatory process	The City has held **13 staff meetings** to review regulations on 6-14-07, 7-24-07, 7-29-07, 8-15-07, 9-04-07, 9-06-07, 9-26-07, 10-03-07, 10-15-07, 1-31-08, 2-07-08, 3-26-08, and 3-27-08. There was one (1) public hearing held by the ordinance committee on 12-12-07 and the ordinance was addressed at **three (3) city council meetings** on 10-29-97, 1-14-08 and 1-28-08. In addition the regulations and guidance documents were discussed at **12 meetings with our consultants** Malcolm Pirnie on 7-26-07, 8-30-07, 10-25-07, 12-03-07, 1-24-08, 2-04-08, 2-12-08, 3-03-08, 3-06-08, 3-11-08, 3-18-08 and 3-25-08. The **annual community meeting** held on 3-27-08 focused most of the discussion on the revised ordinance and regulations.	Continue to record the number of meetings held to discuss regulations and permits.
		Commissioner/ DPW	(vii) Administer stormwater management permit requirements	Two new permit processes have been established: the new Stormwater and Wastewater Infrastructure Permit (referred to in attachment as Wastewater and Stormdrain System Permit) and the Land Disturbance Permit. Copies of the Draft Land Disturbance Permit Fact Sheet and the Wastewater and Stormdrain System Permit application process flow chart are attached in Appendix 5. A workshop was held with DPW staff on these new permits and associated regulations on March 6, 2008. A copy of the presentation and sign-in sheet is provided in Appendix 4 and discussed in MCM 4.b (v) above. Draft guidance and checklists were also developed for the permits. The Operation and Maintenance Plan required as part of the Land Disturbance Permit is specific to Post-Construction requirements. Draft Appendix G of the guidance document contains checklists for the various permits and plans required. A copy is provided in Appendix 5.	Finalize permits, guidance documents and fact sheets.
		Commissioner/ DPW	(viii) Administer procedures for enforcement and penalties for violations	Provisions for enforcement and penalties for violations are included in the Land Disturbance Regulations (Article X). Prior to promulgating these Regulations meetings were held with the Law Department to ensure provisions are consistent with state rules and regulations.	Completed.
		Commissioner/ DPW	(ix) Adopt procedures for post construction inspections	Procedures for Post-Construction inspections have been incorporated in the Draft guidance documents and are included in the Land Disturbance Regulations.	Finalize procedures in guidance document.

		Commissioner/ DPW	(x) Discuss alternatives to ensure adequate long-term operation and maintenance of BMPs	Owner's are required to perform long-term operation and maintenance of BMPs as follows: • Owner is responsible for ongoing maintenance, inspections, recordkeeping and reporting. • Owner is required to maintain log and update plan. New owner must submit a new plan. • Applicant is responsible for adhering to design standards. Plan requirements and guidance will be provided in the guidance documents • The Plan and Logs are required to be made available for inspection upon request by any public entity with administrative, health, environmental, or safety authority over the site.	Finalize process and requirements and include in guidance document.
		Commissioner/ DPW	(xi) Provide legal mechanism to require annual compliance for the operation and maintenance of BMPs	The Land Disturbance Regulations provide for Post-Construction inspection and enforcement of provisions in the Regulations.	Completed.
5.b	Undertake Tree Protection Activities	Commissioner/ DPW	(i) Provide one community outreach and education activity annually on the care, importance and protection of trees and their role in climate protection	The City Arborist participated in a minimum of 5 outreach and education activities including school visits, Arbor day events neighborhood tree walks and other volunteer events. The arborist also works closely with the Public Planting Committee and administers Tree hearings for the removal of trees from the public way.	DPW will continue outreach efforts on the importance and protection of trees.

MCM #5. Additional Information

- The tri-community working group worked with the USGS on a cooperative watershed effort to install a flow gage along the Alewife Brook to obtain and share important hydraulic information. The gage became functional in August 2005. Arlington, Belmont and Cambridge are continuing to participate on an equal financial and resource basis for the gauging station's installation and maintenance. Te real time flow measurements can be observed at http://waterdata.usgs.gov/ma/nwis/uv?01103025 .

- DPW has monthly meetings with the Committee on Public Planting regarding the benefits of green space and trees.

- DPW received a grant from the MA Department of Conservation and Recreation to undertake a comprehensive tree management inventory. During year 5, DPW completed an inventory and mapped the data onto the City's GIS using ArcPad technology. This inventory is used in conjunction with the City's work order management system, Remedy. Every tree planting, removal and tree pruning will be recorded and tracked in the work order system, with overall goal of understanding if the caliper, canopy and age of Cambridge Public trees is increasing or decreasing. The information will also be used in planning future plantings and in analysis on the density of the tree cover in Cambridge.

- 2007 marked the 15th year that Cambridge received the "Tree City USA" award from the Massachusetts Department of Conservation and Recreation, which recognizes municipalities for their efforts to maintain the urban forest. In addition, Cambridge was also among 22 communities presented with the first ever MA Sustainable Community Forestry Award for achieving a particularly high standard of community forest management.

- The Municipal Tree Protection Ordinance reinforces the City Councils finding that the preservation of existing trees and the promotion of new tree planting is a public purpose that protects the public health, welfare, environment and aesthetics of the City of Cambridge and its citizens. The Urban forest serves a wide variety of functions, which promote the health, safety and welfare of residents. To date trees have been replaced to maintain/exceed the total significant tree diameter inches on all project sites. Where this can not be met project proponents have contributed into a municipal tree fund for tree plantings in other areas.

MCM #6. Pollution Prevention and Good Housekeeping in Municipal Operations

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 3 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 4
6.a	Educate Municipal Employees about Pollution Prevention	Commissioner/ DPW	(i) Provide stormwater training for municipal employees annually	Municipal Good Housekeeping Refresher Training was conducted by DPW on 3-17-08. See Appendix 6 for a copy of the sign-in sheet, presentation, and handouts (BMP fact sheets, list of facilities and facility maps). Emphasis for this training was on municipal parking garages and parking lots.	Conduct training annually.
		Commissioner/ DPW	(ii) Work with managers to identify operations personnel with stormwater responsibilities	A list of responsible operations personnel with stormwater responsibilities was updated.	Continue to record names and keep running count of City employees who receive training.
		Commissioner/ DPW	(iii) Develop and implement training protocols that are applicable to operations	The Good Housekeeping Manual was placed on the city's intranet site.	Completed.
		Commissioner/ DPW	(iv) Record number of facility personnel who complete inspections on an annual basis	98 facility inspections were completed.	Number of good housekeeping inspections completed by facility personnel on an annual basis.

		Commissioner/ DPW	(v) Record number of facilities that have initial good housekeeping inspections conducted	Approximately 4 facilities had initial inspections.	Record additional facilities inspected.
		Commissioner/ DPW	(vi) Record the number of municipal facility site plans updated, including structural controls based upon initial site visits.	GIS updates are performed as information is obtained.	Municipal facility site plans will be updated based upon revised information from the initial site inspections.
6.b	Maintain Strong Operations & Maintenance Program to Reduce Pollutants from Operations	Commissioner/ DPW	(i) Review operations and maintenance programs	There were no new activities identified at the inspected facilities.	Record new activities at facilities should be noted and applicable BMPs implemented.
		Commissioner/ DPW	(ii) Identify municipal facilities in separated areas and identify structural controls	Maps were created for all municipal parks and municipal parking facilities.	Incorporate facility inspection drainage findings into the City's GIS system. Work to provide updated facility maps for staff (refer to 6.a. (vi) above.
		Commissioner/ DPW	(iii) Document inspections procedures and maintenance schedules in a procedures manual	Good Housekeeping Inspection Manuals were developed for municipal facilities.	Completed.
		Commissioner/ DPW	(iv) Develop inspections procedures and maintenance schedules for long term structural controls	Over 1100 work orders were tracked for catch basin maintenance/repair/clean/clear in the Cambridge Request System. A summary of all work orders submitted relative to the stormwater drainage system is in Appendix 6.	The DPW will keep track of the number and type of drainage system work orders completed, as recorded in the Cambridge Request System.

		Commissioner/ DPW	(v) Record percentage of City catch basins cleaned	534 catch basins cleaned [approximately 14% (3900 total)]	Keep record of City catch basins cleaned annually.
		Commissioner/ DPW	(vi) Record tons of street sweepings collected	1,925.03 tons	Keep record of tons of street sweepings collected annually.
		Commissioner/ DPW	(vii) Record tons of waste/recycling collected	13021.14 tons	Keep record of tons of waste and recycling collected annually.
		Commissioner/ DPW	(viii) Record number of new trees planted	116 trees were planted in the following contracts: • Chapter 90 #7: 12 • 238 Broadway: 66 • Father Callahan Park: 33 • Harvard Square Improvements.: 5	Keep record of new trees planted.
		Commissioner/ DPW	(ix) Record number of public structural controls constructed/repaired.	Refer to information provided below under "Additional Information"	Keep record of public structural controls constructed or repaired.

MCM #6. Additional information

- The Street Cleaning Division is responsible for maintaining clean public ways through a contractual (Millennium Sweeping Services.) street sweeping operation, which runs from April through December each year. Two contract sweepers are used to clean both residential streets and major City squares. The City squares are cleaned very early in the morning (between 4:00 AM and 8:00 AM) 7 days per week. Residential streets are swept city wide on a monthly basis, resulting in approximately 11,000 street miles being cleaned each year.

  Additionally, beginning in 2006 the city started a pilot program which utilized two vacuum sweepers to supplement the mechanical sweepers during the months of April and November. Through these months the two vacuum sweepers were sent out behind the mechanical sweepers on a daily basis in an effort to further remove fine material that was being left on the roadway after mechanical sweepers had made a first pass. Because of the success of this pilot, the city has committed to using these two additional sweepers twice a year as part of our standard operations.

- In public construction projects DPW has constructed the following stormwater best management practices (BMPs)
  - number of new catch basins with 6' deep sumps and hoods installed = 3 [(2) FY08 Remedial, (1) Endicott Street]
  - number of deep sump drainage manholes = 1 [(1) Chapter 90 Contract 8a
  - number of remodeled catch basins = 36 [(40 FY07 Remedial, (32) FY08 Remedial]
  - number of catch basins retrofitted with new grate and no curb inlet = 9 Endicott Street Project (Albany Street)
- Additional maintenance activities were performed on stormwater drainage systems including:
  - 2 Floatable control devices were installed and 2 CSO structures were plugged on the Charles River.
  - Stormwater pump station inspected = 91
  - Storm drain cleaned and televised = 11,127 LF (FY08 TV & Cleaning) and 1,231 LF (FY07 TV & Cleaning)

Part IV. Summary of Information Collected and Analyzed

- See Appendix 3 for the results of water quality sampling at Alewife Brook, Charles River and Fresh Pond from April 2005 through March 2006 and their associated summary of results.
  - Alewife Brook samples from April, 2007, July, 2007, October, 2007 and February, 2007.
  - Alewife Brook wet weather sample from March 19, 2008.
  - Charles River dry weather samples from April, 2007 and August, 2007.
  - Charles River wet weather sample from March 19, 2008.
  - Little Fresh Pond samples from April 25, 2007, August 22, 2007 and March 4, 2008.
  - Alewife Brook Oil and Grease sample from July 26, 2007.
  - Charles River Oil and Grease sample from August 21, 2007

Pa.. V. Program Outputs & Accomplishments (OPTIONAL)
(Since beginning of permit coverage unless specified otherwise by a **, which indicates response is for period covering April 1, 2007 through March 31, 2008)

Programmatic

	(Preferred Units)	Response
Stormwater management position created/staffed	(y/n)	Y
Annual program budget/expenditures **	($)	
Total program expenditures since beginning of permit coverage	($)	
Funding mechanism(s) (General Fund, Enterprise, Utility, etc)		

Education, Involvement, and Training

Estimated number of property owners reached by education program(s)	(# or %)	100% residents
Stormwater management committee established	(y/n)	N
Stream teams established or supported	(# or y/n)	1
Shoreline clean-up participation or quantity of shoreline miles cleaned **	(y/n or mi.)	Y
Shoreline cleaned since beginning of permit coverage	(mi.)	
Household Hazardous Waste Collection Days		
▪ days sponsored **	(#)	3
▪ community participation **	(# or %)	934 vehicles
▪ material collected **	(tons or gal)	39.87 tons
School curricula implemented	(y/n)	

Legal/Regulatory

	In Place Prior to Phase II	Reviewing Existing Authorities	Drafted	Draft in Review	Adopted
Regulatory Mechanism Status (indicate with "**X**")					
▪ Illicit Discharge Detection & Elimination					X
▪ Erosion & Sediment Control					X
▪ Post-Development Stormwater Management					X
Accompanying Regulation Status (indicate with "**X**")					
▪ Illicit Discharge Detection & Elimination					X
▪ Erosion & Sediment Control					X
▪ Post-Development Stormwater Management					X

Mapping and Illicit Discharges

	(Preferred Units)	Response
Outfall mapping complete	(%)	100%
Estimated or actual number of outfalls (identified an unknown outfall at River Street)	(#)	33
System-Wide mapping complete (complete storm sewer infrastructure)	(%)	99%
Mapping method(s)		
▪ Paper/Mylar	(%)	
▪ CADD	(%)	100%
▪ GIS	(%)	100%
Outfalls inspected/screened **	(# or %)	100%
Outfalls inspected/screened (Since beginning of permit coverage)	(# or %)	100%
Illicit discharges identified **	(#)	3
Illicit discharges identified (Since beginning of permit coverage)	(#)	17
Illicit connections removed **	(#); and (est. gpd)	0
Illicit connections removed (Since beginning of permit coverage)	(#); and (est. gpd)	14
% of population on sewer	(%)	99.9%
% of population on septic systems	(%)	.1%

Construction

	(Preferred Units)	Response
Number of construction starts (>1-acre) **	(#)	7*
Estimated percentage of construction starts adequately regulated for erosion and sediment control **	(%)	100%
Site inspections completed **	(# or %)	100%
Tickets/Stop work orders issued **	(# or %)	0
Fines collected **	(# and $)	0
Complaints/concerns received from public **	(#)	5

* MIT – Koch; MIT – Sloan; 9 Camp St; 178 Coolidge Hill; MIT – Media Lab; Harvard Law School; Harvard – Rockefeller Hall

Post-Development Stormwater Management

Estimated percentage of development/redevelopment projects adequately regulated for post-construction stormwater control	(%)	100%
Site inspections (for proper BMP installation & operation) completed **	(# or %)	100%
BMP maintenance required through covenants, escrow, deed restrictions, etc.	(y/n)	Y
Low-impact development (LID) practices permitted and encouraged	(y/n)	Y

Operations and Maintenance

Average frequency of catch basin cleaning (non-commercial/non-arterial streets) **	(times/yr)	
Average frequency of catch basin cleaning (commercial/arterial or other critical streets) **	(times/yr)	
Qty of structures cleaned **	(#)	584
Qty. of storm drain cleaned **	(%, LF or mi.)	12,300 LF
Qty. of screenings/debris removed from storm sewer infrastructure **	(lbs. or tons)	
Disposal or use of screenings (landfill, POTW, compost, beneficial use, etc.) **	(location)	Landfill
Basin Cleaning Costs		
• Annual budget/expenditure (labor & equipment)**	($)	$250,000
• Hourly or per basin contract rate **	($/hr or $ per basin)	$120/basin
• Disposal cost**	($)	$85/ton

Cleaning Equipment		
• Clam shell truck(s) owned/leased	(#)	2
• Vacuum truck(s) owned/leased	(#)	2
• Vacuum trucks specified in contracts (Stormdrain pipe maintenance)	(y/n)	Y
• % Structures cleaned with clam shells **	(%)	95%
• % Structures cleaned with vactor **	(%)	5%

	(Preferred Units)	Response
Average frequency of street sweeping (non-commercial/non-arterial streets) **	(times/yr)	10 times/yr
Average frequency of street sweeping (commercial/arterial or other critical streets) **	(times/yr)	Approximately daily
Qty. of sand/debris collected by sweeping **	(lbs. or tons)	1505.87 tons
Disposal of sweepings (landfill, POTW, compost, beneficial use, etc.) **	(location)	landfill
Annual Sweeping Costs		
• Annual budget/expenditure (labor & equipment)**	($)	$293,000 (contract only)
• Hourly or lane mile contract rate **	($/hr. or ln mi.)	$90/hour/sweeper
• Disposal cost**	($)	$20/ton
Sweeping Equipment		
• Rotary brush street sweepers owned/leased	(#)	2
• Vacuum street sweepers owned/leased	(#)	2
• Vacuum street sweepers specified in contracts	(y/n)	Y (for 2x/yr)
• % Roads swept with rotary brush sweepers **	%	100
• % Roads swept with vacuum sweepers **	%	100

Reduction (since beginning of permit coverage) in application on public land of: ("N/A" = never used; "100%" = elimination)		
▪ Fertilizers	(lbs. or %)	IPM followed – only organic fertilizers used
▪ Herbicides	(lbs. or %)	NA
▪ Pesticides	(lbs. or %)	NA
Integrated Pest Management (IPM) Practices Implemented	(y/n)	Y

	(Preferred Units)	Response
Average Ratio of Anti-/De-Icing products used ** (also identify chemicals and ratios used in specific areas, e.g., water supply protection areas)	% NaCl % $CaCl_2$ % $MgCl_2$ % CMA % Kac % KCl % Sand	80% 0 20% 0 0 0 0
Pre-wetting techniques utilized **	(y/n or %)	Y
Manual control spreaders used **	(y/n or %)	Y (100%)
Zero-velocity spreaders used **	(y/n or %)	N
Estimated net reduction or increase in typical year salt/chemical application rate	(±lbs/ln mi. or %)	
Estimated net reduction or increase in typical year sand application rate **	(±lbs/ln mi. or %)	100% reduction
% of salt/chemical pile(s) covered in storage shed(s)	(%)	100%
Storage shed(s) in design or under construction	(y/n or #)	N
100% of salt/chemical pile(s) covered in storage shed(s) by May 2008	(y/n)	Y

Water Supply Protection

Storm water outfalls to public water supplies eliminated or relocated	# or y/n	1
Installed or planned treatment BMPs for public drinking water supplies and their protection areas	# or y/n	Y
• Treatment units induce infiltration within 500-feet of a wellhead protection area	# or y/n	