Town and the Center for Watershed Protection Correspondences

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April 20, 1999

Mr. Richard P. Merson
Director
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470 Dedham Avenue
Needham, MA 02492

Mr. Robert A. Lewis
Superintendent Water and Sewer
Division
Public Works Department
470 Dedham Avenue
Needham, MA 02492

Mr. Anthony Del Gaizo, P.E.
Needham Town Engineer
Public Works Department
470 Dedham Avenue
Needham, MA 02492

Dear Gentlemen:

Enclosed you will find the Center for Watershed Protection's draft review of the Town of Needham's stormwater management program and specifically the Town's 1996 document entitled: *Stormwater Pollution and Management Program.*

Please take the time to review the draft and provide us with your comments by May 4, 1999. We hope to finalize the review by May 11 for submittal to EPA. As we noted in the draft, our review was limited to the information contained within the 1996 document and information provided directly by you. It is quite possible that we have overlooked information or are unaware of existing programs in Needham that may be important to protecting the Charles River and its tributaries. Your review of the document will assist in identifying areas that we may need to address.

Thank you for your participation in this process. We hope that you find our review to be accurate and helpful.

Very Truly Yours,
Center for Watershed Protection

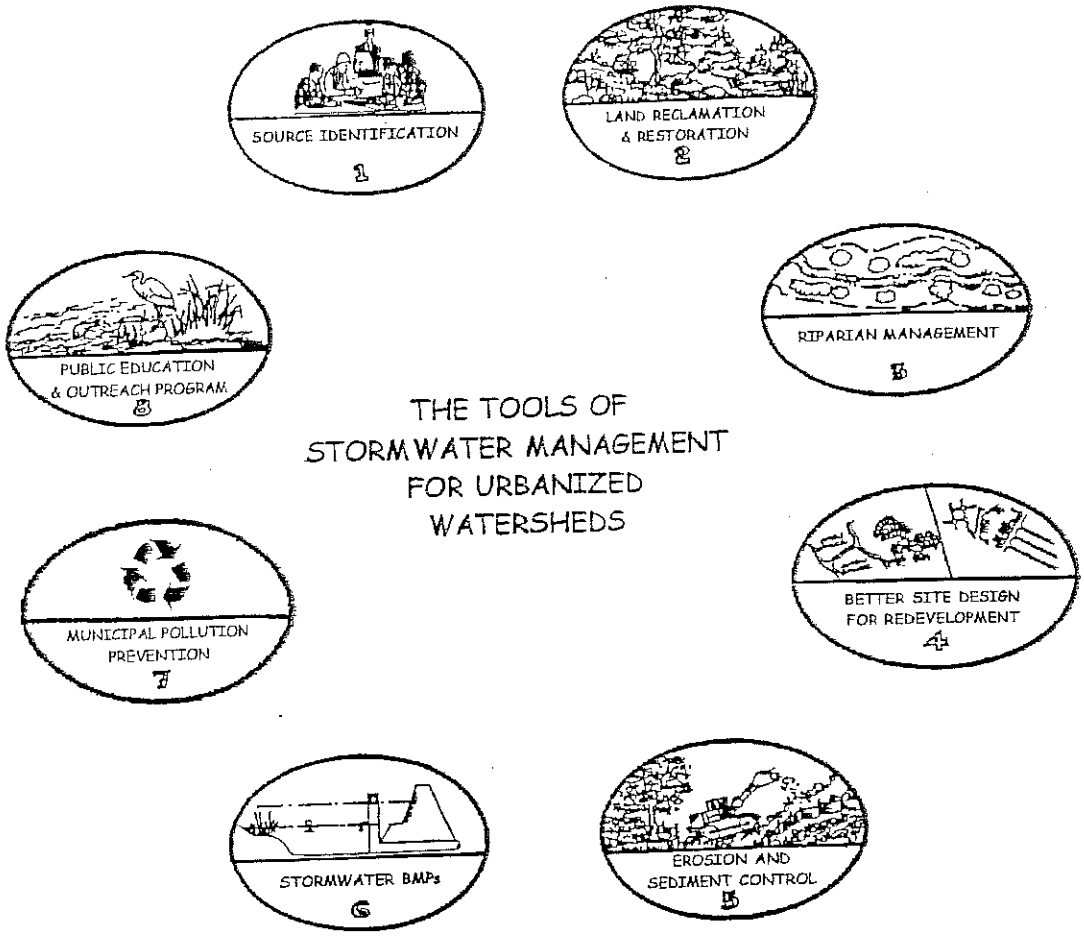
Ted Brown

Ted Brown
Water Resources Engineer

Enclosure

cc: Mr. Sean Scully, Beta Engineering

Town of Needham Stormwater Program Review - DRAFT



for: Town of Needham, Massachusetts
US EPA Region 1

by: The Center for Watershed Protection
8391 Main Street
Ellicott City, Maryland 21043

Introduction

Under a grant from the United States Environmental Protection Agency (EPA), Region 1, and as part of the Charles River 2005 Initiative, the Center for Watershed Protection is providing technical support in the following two task areas to support the Lower Charles River Restoration Plan:

Task 1: Review Community Stormwater Plans and Provide Technical Support
Task 2: Conduct Stormwater Retrofit Inventories for Priority Subwatersheds

This stormwater plan review represents one of four major deliverables for Task 1 of the project (the other deliverables include: conducting a stormwater management workshop for municipal representatives, developing a stormwater management tools reference notebook, and providing specific local technical support for each community).

The goal of this review is to provide the necessary technical assistance and training support to enable Needham to make its stormwater program more effective. This review is not a formal audit of the stormwater program, nor a critique of past stormwater management efforts in Needham. Instead, this review is intended to provide a basis for future efforts in controlling pollutants delivered to the Charles River. We view our role as assisting Needham in its development of a moderate cost, state-of-the-practice approach to meeting the stormwater control objectives set forth by EPA.

The following review is based on the Town of Needham's 1996 document, *Stormwater Pollution and Management Program* and information gathered in our meeting with Town officials in early February, 1999. The Town is in the process of preparing an updated stormwater management plan. This work was scheduled to begin in the spring of 1999. Our review does not consist of a critical evaluation of the Town's subdivision, zoning, roads, utilities or other codes. We relied only on the information contained within the above document and information provided directly by the Town officials.

The Center for Watershed Protection has developed and adapted a holistic approach to watershed protection that involves the realization that the impacts of stormwater runoff on receiving water quality are wide and varied. Research conducted by a wide range of scientists has conclusively demonstrated the link between urbanization and receiving water body health. These impacts of urbanization come from many sources, including alterations to natural hydrology, influxes of pollutants during both wet and dry weather, and modifications to natural vegetation. Based on these causes and sources of impacts, watershed practitioners have recognized the need to apply a wide array of techniques to help maintain or restore water body health. The Center refers to these techniques as the "Tools of Watershed Protection."

To facilitate our review of the Lower Charles River Basin, we have integrated our watershed approach with EPA's *Elements of a Stormwater Management Program*, resulting in 8 tools of urban watershed and stormwater management (see Table 1). The concept is that there are several areas of activities where watershed protection occurs, from basic land planning and zoning to daily behavior of citizens within the watershed. The premise behind a watershed approach is that it takes a concerted, fully integrated

approach to effectively maintain or enhance water resource quality.

Table 1. Description of the tools of urban watershed and stormwater management.

Watershed Protection Tools		Description
1.	Source identification	Stormwater program uses a mapping system coupled with a range of pollutant identification techniques to locate, catalog and quantify wet and dry weather pollutant sources in the watershed.
2.	Land reclamation and restoration	Local government program encourages and fosters the restoration of forests, wetlands, soils, and creation of natural areas in the urban environment.
3.	Riparian management	Local government program fosters the protection, restoration, creation, or reforestation of stream, wetland, and urban lake buffers.
4.	Better site design for redevelopment	Local ordinances and codes incorporate techniques to reduce impervious cover and/or redirect runoff onto pervious surfaces in the design of new development and redevelopment projects.
5.	Erosion and sediment control	Local government program encourages or requires the use of erosion control, sediment control, and dewatering practices at all new development and redevelopment sites.
6.	Stormwater best management practices (BMPs)	Local government program requires the use of structural BMPs for new development and redevelopment, and promotes retrofitting for existing development to help mitigate the impacts of urbanization and stormwater runoff on receiving water quality.
7.	Municipal pollution prevention	Local government employs operation and maintenance practices that prevent or reduce pollutants from entering the municipal or natural drainage system.
8.	Public education and outreach programs	Local government operates or supports stormwater and watershed education or outreach programs targeted towards fostering human behavior that prevents or reduces pollution over a range of urban land uses and activities.

Our review of Needham's stormwater management plan has been organized around these eight tools. This review is a draft document and as such, should be viewed as a work in progress. It is quite possible that we have overlooked information or are unaware of existing programs in Needham that may be important to protecting the Charles River and its tributaries. We will complete a final review document once Needham officials have had a chance to review this draft document.

Tool 1. Source Identification

Stormwater program uses a mapping system coupled with a range of pollutant identification techniques to locate, catalog and quantify wet and dry weather pollutant sources in the watershed.

Authority: Department of Public Works and Conservation Commission

Funding source: The Public Works budget in 1996 was approximately $11.4 million (only $7.9 million was issued, while the remainder was authorized debt which was not issued). It is unclear what the 1999 budget is; although, the Town indicated that they are pursuing no interest funds from the state specifically for the stormwater management program.

Review Evaluation Criteria:

- Mapping
- Use and identification of environmental and programmatic indicators
- Sanitary sewer overflow (SSO) detection
- Illicit connection detection
- Detection of infiltration from sanitary sewers and septic systems
- Hotspot[1] land use identification

General Comments on Town's Source Identification Practices and Program:

Existing mapping could be improved, particularly by the addition of topography. Some catchment-level delineation is done but without topography. A new GIS system is being proposed as part of the 1999 work being performed by Beta Engineering.

Selected outfalls are shown on the provided mapping as part of the dry weather inventory that occurred in 1996. Inventory will also be performed for the new GIS system. Location of structural controls owned and operated by the municipality (catch basins, oil water separators, stormwater ponds, etc.) are not shown on the provided mapping, and it is unclear on the number and location of these facilities. The number of catch basins and other BMPs within the Town jurisdiction needs to be clarified and maintenance responsibilities need to be identified and specified.

[1] A stormwater hotspot is defined as a land use or activity that generates higher concentrations of hydrocarbons, trace metals or toxicants than are found in typical stormwater runoff (e.g., commercial parking lots, vehicle service and fueling stations, public works yards, and fleet storage areas). See the Tools Notebook for a more detailed discussion on hotspots and their water quality implications.

Important features that should be kept up-to-date on the new Town mapping include:

- Location of hazardous material sites. These sites are identified in the 1996 report in a table. General spill response is assigned to the fire department based on complaint or notification.
- Location of NPDES holders. No details are provided in the 1996 report with regard to these industry permits and accompanying responsibilities.
- Location of landfills and/or solid waste transfer stations. The 1996 report provides a general discussion on the landfill site. Closure of this site just occurred in December 1998.
- Existing and future land use maps are important for planning purposes. The 1996 report does not contain any of this information. This mapping should be generated, verified and updated routinely.
- Location of public parks, recreation areas, and open lands. This information is provided only descriptively through the dry weather field study that was performed.
- Soils information, which is readily available from the local NRCS branch office or cooperative extension.

Due to the absence of an up-to-date mapping system and database, the Town can not take advantage of tracking pollutant indicators such as location of NPDES permit holders, building permits, septic systems, catch basins and associated outfalls. In addition, due to funding constraints, public education programs targeting pollution prevention are limited.

Discussion on sanitary sewer overflow and surcharge problems in wet and dry weather conditions for specific areas is provided in the 1996 report, and many of these areas have been targeted for repair.

The Town has performed video surveillance of primarily the sanitary sewer system; however, it is also considering video surveillance of the drainage system as well. Typically, illicit connections are detected on a report/complaint basis. It is believed that there are existing illicit connections in the Town, but it is unsure as to the number. The Town also relies on video surveillance and visual observations and reports to detect infiltration and inflow problems with the sanitary sewers.

A detailed inventory of hotspot areas does not currently exist; however, hazardous material storage sites are known.

Programmatic Strengths:

The biggest strength is that the Town is aware of its limitations and is taking necessary steps to address the program shortcomings. Past video surveillance and field reconnaissance studies have helped with the identification of problem areas. The new GIS system and accompanying inventory will go a long way in making the source identification process more efficient and proactive. The DPW staff has a good understanding of the areas that historically cause problems, which enables them to address these sites reasonably efficiently.

Areas for Improvement:

As previously mentioned, an up-to-date mapping and database system is needed to streamline the Town's

operations and improve source identification efficiency and effectiveness. Important features that should be kept up-to-date on Town mapping include:

- Location of hazardous material sites.
- Location of NPDES holders.
- Location of landfills.
- Existing and future land use maps are important for planning purposes.
- Storm drains, sewers, utilities, etc.
- Location of public parks, recreation areas, and open lands.
- Soils information.

Another area of improvement is the need to develop a good working relationship with the Conservation Commission so that efforts are not duplicated and communication paths are left open to increase the efficiency of both entity's operations.

Tool 2. Land Reclamation and Restoration

Local government program encourages and fosters the restoration of forests, wetlands, soils, and creation of natural areas in the urban environment.

Authority: Department of Public Works and Conservation Commission

Funding source: The Public Works budget

Review Evaluation Criteria:

- Revegetation/forestry projects or programs
- Wetland restoration projects or programs
- Land purchase and reclamation programs
- Soil restoration programs in urban areas

General Comments on Town's Land Reclamation and Restoration Program:

There are no provisions for revegetation or reforestation programs or projects in the 1996 report. Nor are there any programs for wetland restoration in place in the Town. The Conservation Commission, however, does have authority to regulate development within water resource zones (i.e., 100 ft buffer from wetlands and 200 foot buffer from rivers and streams).

Programmatic Strengths:

With no specific programs identified in the 1996 report, it is difficult to identify program strengths.

Areas for Improvement:

Being largely built out, there are limited opportunities for improvement. The Town should be aware of opportunities where reforestation might be accomplished in redevelopment areas (through the use of conservation development strategies) and clearing limits required in new development areas. Redevelopment projects should be encouraged to create/restore as much natural area as possible. Land restoration is also an area where efforts can be tied into public education initiatives where the local community (i.e., individual citizens, schools, scout programs) can participate in tree planting and other programs. Similarly, the Conservation Commission should be active in requiring adequate wetland and riparian corridor protection measures within the resource areas.

Tool 3. Riparian Management

Local government program fosters the protection, restoration, creation, or reforestation of stream, wetland, and urban lake buffers.

Authority: Department of w and Conservation Commission

Funding source: The Public Works budget

Review Evaluation Criteria:

- Stream and wetland buffer requirements
- Reforestation, restoration, or riparian cover requirements or programs for buffers
- Stream and wetland buffer exemptions
- Daylighting programs for streams in culverts

General Comments on Town's Riparian Management Program:

Buffers are required along streams and wetlands per the MA Wetlands Protection Act, however existing development is not subject to this requirement. This includes redevelopment. The Act strives to maintain a 100 ft vegetated buffer for wetlands and rivers. However, if the development already exists or if redevelopment is planned, it can occur under a 25 ft setback requirement. There are no riparian buffer revegetation or reforestation programs in place currently.

Exemptions for disturbance within the buffer and 200 foot riverfront area are allowed by the Conservation Commission so long as appropriate notice of intent filings have been submitted and approved. The Conservation Commission has the authority and flexibility to treat issues on a case by case basis.

Programmatic Strengths:

Program strength lies in the authority that the Conservation Commission has. The active nature of the Commission is not well established in the 1996 report, so it is difficult to evaluate the efficacy of the Conservation Commission's involvement.

Areas for Improvement:

The DPW and the Conservation Commission should strive to work in a cooperative manner, as open lines of communication will improve the efficiency of the stormwater management operations. DPW indicated in the February meeting with the Center that urban wildlife was a major source of bacteria. Urban waterfowl can be managed to some degree with a focused effort on reforestation or at least maintaining native

vegetation along wetlands and waterways (see additional information in Tools Notebook). Finally, when sites within the resource area are redeveloped, DPW, working cooperatively with the Conservation Commission, should encourage (or require) reductions in the amount of impervious cover and strive to increase existing buffer widths to approach the 100- or 200-foot limit. Reforestation efforts should also be made within the buffer.

Tool 5. Erosion and Sediment Control

Local government program encourages or requires the use of erosion control, sediment control, and dewatering practices at all new development and redevelopment sites.

Authority: Department of Public Works and Conservation Commission

Funding source: The Public Works budget

Review Evaluation Criteria:

- Areas where required
- Different methods allowed
- Dewatering controls
- Sediment stockpiling controls
- Inspection and enforcement

General Comments on Town's Erosion and Sediment Control Program:
No formal erosion and sediment control requirements exist within the Town. The new plan should identify basic requirements.

Programmatic Strengths:
The DPW does require some form of erosion and sediment control at all construction sites; however, there does not appear to be a set of minimum requirements nor guidance.

Areas for Improvement:
The Town should require, through the development of an ordinance, that a minimum set of erosion and sediment control criteria be set for all development and redevelopment. As a component of this effort, guidance and design criteria should be provided. This guidance can usually be readily adopted from available sources (see Tools notebook for effective measures). It should be noted that there are some measures recommended in the NRCS handbook that have been shown to be ineffective when used as the sole control measure. These include: 1) straw bales; 2) inlet protection devices 3) catch basin inserts. Where possible, DPW should provide incentives to reduce clearing and grading on a site, and grading techniques that minimize the amount of soil disturbed should be emphasized. Finally, an inspection and enforcement component to an erosion and sediment control program needs to be provided, and it should include preconstruction meetings and inspection at specified points during construction. By providing rigorous erosion and sediment control measures, other areas of DPW operations are improved such as frequency of catch basin cleanings.

Tool 6. Stormwater BMPs

Local government program requires the use of structural BMPs for new development and redevelopment, and promotes retrofitting for existing development to help mitigate the impacts of urbanization and stormwater runoff on receiving water quality.

Authority: Department of Public Works and Conservation Commission

Funding source: The Public Works budget

Review Evaluation Criteria:

Stormwater management requirements or exemptions

- Quantity and quality control
- Special requirements for brownfield redevelopment, hotspots, small residential in-fill development, or basic redevelopment
- Exemptions from stormwater management requirements

Structural controls

- When on-site structural controls are required
- BMP selection criteria
- Availability of fee-in-lieu option

Proprietary products

- Guidelines for the selection of proprietary stormwater BMPs

Retrofitting

- Program to identify and prioritize retrofit projects

Maintenance, Inspection, Enforcement

- Required of the developer or owner
- Use of maintenance agreements
- BMP inspection for maintenance upkeep and structural integrity
- Enforcement measures to ensure maintenance upkeep

General Comments on Town's Stormwater BMP Program:

No specific provisions for stormwater quantity or quality control at new development and redevelopment sites are provided in the 1996 report. The 1996 report suggests that structural BMPs be discouraged due to space limitations and cost constraints and that nonstructural practices instead be emphasized.

The Town has expressed an interest in installing proprietary hydrodynamic devices; however, a constraint facing the Town is that they do not own the vacuum equipment required for clean out of these devices. Catch basin clam shell cleaners are not capable of cleaning most proprietary devices.

No program exists for stormwater retrofits, nor is there an inspection and maintenance program for existing structural BMPs that is described.

Programmatic Strengths:

The 1996 report did not provide sufficient detail with respect to stormwater BMP requirements. There are apparently, however, subdivision and floodplain regulations which provide various levels of stormwater controls. These documents were not reviewed.

Areas for Improvement:

There is a critical need to extend the practices and regulations required by the Conservation Commission in resource areas to the areas beyond these boundaries. The Town needs to adopt comprehensive drainage and stormwater management requirements with minimum performance goals. The MA DEP manual is an excellent reference that can be adopted in whole or in part. Specifically, the Town should strive to require all redevelopment and new development sites where a building permit is issued to comply with a minimum set of stormwater quantity and quality requirements. In some redevelopment cases, exemption from quantity control may be considered. The Town should provide specific BMP recommendations along with design criteria. Finally, an effective and enforceable maintenance policy/requirement should be implemented where a clearly established responsibility is identified. In addition, because the Town is largely built out, it should always be looking for retrofit opportunities. Problem areas should be identified and prioritized and, if feasible, capital improvement funds should be earmarked for water quality retrofits.

Tool 7. Municipal Pollution Prevention Programs

Local government employs operation and maintenance practices that prevent or reduce pollutants from entering the municipal or natural drainage system.

Authority: Department of Public Works and Conservation Commission

Funding source: The Public Works budget

Review Evaluation Criteria:

Spill Response, Prevention and Cleanup
- Requirements

Street Sweeping
- Type of machine used
- Frequency of sweeping, including seasonality

Snow Management
- Type of deicing compounds and storage
- Snow storage and disposal

Catch Basin Cleaning
- Frequency
- Disposal
- Retrofitting
- Standard design

Trash and recycling
- Availability and frequency of curbside leaf and debris pickup
- Used oil recycling

Stormwater System Inspection
- Storm sewer inspection and maintenance schedule and practices
- Structural BMP inspection and maintenance schedule and practices

General Comments on Town's Municipal Pollution Prevention Program:

The Town fire department is generally responsible for spill response. There is no formal program for educating the public, and the program is typically reactionary.

Needham's street cleaning program consists of owning 2 street sweeping machines (Elgin Pelicans) which are used on a fairly regular basis throughout the year, except during the winter months.

Salt/sand mixture is the primary compound applied on streets. No detail about snow storage practices is provided in the 1996 report. Calcium chloride is also used on streets. There are no areas identified as

sensitive, where sanding/salting is minimized or alternative de-icers are used.

The Town owns a single "Stetco" cleaner for cleaning its catch basins, however, no records are kept on the frequency of cleanings. It is estimated that basins are cleaned at least once a year, with 30 % receiving maintenance a second time. Removed debris is stored in DPW compound and ultimate disposal used to be at the Town landfill. Now that the landfill has closed, there is concern about where catch basin as well as street sweeping debris can be stored. The Town has requested guidance on this issue from the State and EPA. No catch basin retrofitting was described in the 1996 report.

There is no discussion on Town trash collection provided in the 1996 report. Similarly, no discussion on large debris/leaf pickup programs is provided in the 1996 report. Recycling of used oil occurs under the household hazardous wasted collection program (see Tool 8).

Storm drain inspection usually occurs in response to complaints and/or reports. Line flushing and catch basin cleaning occur on a fairly regular basis to ensure proper functioning of the system and as a general maintenance practice.

Programmatic Strengths:

The Town has fairly strong pollution prevention programs in place and realizes the economic benefit of preventing pollution from occurring as opposed to cleaning it up once it has occurred.

Areas for Improvement:

With a GIS system, it will be relatively easy to maintain a database that tracks the amount of sediment collected in specific catch basins and identifies structural BMPs that routinely have maintenance problems. These types of features will increase the efficiency of the Town's operations and save time for other needed tasks. Other areas for improvement include:

- Combining pollution prevention practices with public education initiatives to get the public more involved in the process of minimizing pollutant sources.
- Consider purchasing, or sharing with another town, a vacuum sweeper to be used in tandem with the standard drive sweeper for commercial streets. This will greatly improve the efficiency of removal of fine-grained materials that carry the majority of the pollutant load.
- Ensure that the melt water from the snow storage area receives adequate treatment prior to discharge to the storm drain system or surface waters.
- Consider use of a alternative deicers such as "Ice Ban," or an equivalent. Ice Ban is an organic material derived from the beer brewing process that improves the effectiveness of salt, reducing the need for application. The BOD loadings are increased, but some use may be effective.

Tool 8. Public Education and Outreach Programs

Local government operates or supports stormwater and watershed education or outreach programs targeted towards fostering human behavior that prevents or reduces pollution over a range of urban land uses and activities.

Authority: Department of Public Works and Conservation Commission

Funding source: The Public Works budget

Review Evaluation Criteria:

Existence of education or outreach programs targeted towards:

- Range of land uses and activities including residential, commercial, industrial, municipal, or hotspot land uses
- Automotive and other motorized equipment maintenance
- Lawn care and landscaping
- Car washing
- Septic system maintenance
- Selection, storage, collection, and disposal of household hazardous waste products
- Pet waste management

General Comments on Town's Public Education and Outreach Program:

There are periodic TV segments on local cable television where selectmen can be asked questions about stormwater management and other Public Works-related questions. The effectiveness of this program as an education tool and community outreach tool is not known.

There is a household hazardous waste collection program; however, the frequency of this program has dropped off due to funding constraints in recent years.

Programmatic Strengths:

The Town has demonstrated in the past that it has the ability to implement a public education effort. This effort should be maintained and previously existing programs like household hazardous waste recycling and television question and answer spots should be renewed.

Areas for Improvement:

As stated in the Town's plan, given the fact that the Town of Needham is largely built out, there are limited opportunities to site and construct structural stormwater treatment facilities that will yield a substantial

water quality benefit. It is more likely that the most significant pollutant load reductions would occur as a result of changes in public behavior patterns. Through a targeted and consistent public education initiative on practices such as pet waste management, lawn care practices, and individual home drainage and septic maintenance practices, the Town should be able to realize substantial pollutant load reductions as well as a reduced burden on the operational tasks that DPW routinely needs to perform.

Stormwater Program Review Summary

The Town of Needham may not have a full suite of regulatory tools to ensure that appropriate stormwater management controls are in place and can be enforced for new development and redevelopment areas. However, the Town does have the government framework in place to develop specific by-laws that can require stormwater management controls. The Conservation Commission likely has sufficient authority and by-laws; however, their jurisdiction is limited to resource areas.

Specific allocation of budget dollars for stormwater management is not apparent from the 1996 report. As such, it is hard to determine what the Town's future commitment to stormwater protection is. Short-term funding is being pursued in the form of federal and state grants. These dollars are being used, for example, to update (or really establish for the first time) a stormwater management plan and Town-wide GIS mapping inventory and database. This should go a long way in increasing the efficiency of the Town's program and allow some of the program's strengths to become stronger. For example, what appears to be a good system of catch basin cleaning and street sweeping might be improved with a database that locates all existing catch basins and provides an up-to-date logbook of maintenance activities.

Table 2 below provides a summary of the areas of improvement recommended throughout this review. The recommendations have been divided into three priority (highest, medium, and lowest) categories based on relative cost of implementation and associated benefit realized in terms of reducing total pollutant loads to the Charles.

Table 2. Summary of Recommendations and Associated Cost Implications

Tool	Recommendation	Associated Costs
Highest Priority - Relatively inexpensive measures to implement with high potential for pollutant load reduction		
1	Update and improve existing mapping system. The following should be identified on Needham's stormwater system mapping: • Location of hazardous material sites. • Location of NPDES holders. • Location of landfills. • Existing and future land use maps are important for planning purposes. • Storm drains, sewers, utilities, etc. • Location of public parks, recreation areas, and open lands. • Soils information.	b - start-up costs have already been accounted for in the current contract for GIS development
4	Encourage / require disconnection of impervious surfaces such as roof leaders from storm drains, where appropriate.	a, b, e
4, 6	Review effectiveness of various stormwater BMPs and provide guidance on acceptable stormwater BMPs (e.g. use of bioretention in parking lots).	b
5	Adopt and enforce erosion and sediment control standards for all development and redevelopment sites.	b
5	Erosion control plan should be required on the site plan used in the plan review process. The plan designer should then be required to inspect and certify installation of the erosion and sediment control.	a, b
6	Require development and redevelopment projects throughout the whole Town, not just in resource areas, to meet the Stormwater Management Standards set forth in the MA DEP Stormwater Management Policy, or some comparable set of guidelines.	a
8	Consider outreach programs that target behavioral attitudes towards pet waste management, lawn care, and septic maintenance.	b, e
Medium Priority - Generally more costly yet critical to total pollutant load reduction		
3, 6	Look for retrofit and stream restoration opportunities. Include a retrofit line item in capital improvement programs.	b, d
4	Work with Needham Planning Board to review site design requirements to reduce impervious cover in new and redevelopment. Consider capping building footprint as a percent of total site area, minimizing road widths in low to medium density residential areas, minimizing the amount and size of parking spaces.	a, e
6	Regularly inspect BMPs and develop enforcement mechanisms for maintenance failure.	a, b

Tool	Recommendation	Associated Costs
Lowest Priority - Most costly measures and less critical to the goal of reducing total pollutant load to the Charles		
2	Examine potential restoration opportunities for wetlands and stream channels throughout Town.	f
7	Purchase of vacuum assisted sweeper (possibly in conjunction with other Towns) so that sweeping can be performed in tandem with traditional sweepers, especially on highly traveled, commercial, and industrial area roads. Also pursue purchase of vacuum cleaner for proprietary devices if the Town decides to install a significant number of these devices.	c, f

Associated Costs:

a. regulatory / legislative
b. personnel
c. equipment purchase
d. large start-up
e. inter-departmental coordination
f. inter-jurisdictional coordination

FILE

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 1
1 CONGRESS STREET, SUITE 1100
BOSTON, MASSACHUSETTS 02114-2023

OFFICE OF THE
REGIONAL ADMINISTRATOR

AUG 2 2 2000

August 14, 2000

Mr. Richard P. Merson
Director of Public Works
Town of Needham
470 Dedham Avenue
Needham, MA 02492

Dear Mr. Merson:

EPA is in receipt of your July 19, 2000, letter regarding Needham's response to the Center for Watershed Protection's comments on Needham's stormwater management plan. We have been in contact with the Center on your letter and hope to arrange a call with the appropriate town staff in early September to discuss Needham's concerns.

Bill Walsh-Rogalski of my office will be in contact with you to arrange a convenient time to discuss your issues with EPA and the Center for Watershed Protection.

Thank you for your continued commitment to the Clean Charles 2005 initiative.

Sincerely,

Mindy S. Lubber
Regional Administrator

cc: Carl Valente, Town Administrator

UNITED STAT__ ENVIRONMENTAL PROTECTION AGE Y
REGION 1
1 CONGRESS STREET, SUITE 1100
BOSTON, MASSACHUSETTS 02114-2023

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MAY 12 2000
PUBLIC WORKS DEPT.
NEEDHAM

Finance
Fire
Police
Consent Agenda

May 9, 2000

Mr. Carl Valente, Town Administrator
Town of Needham
1471 Highland Avenue
Needham, MA 02192

Re: Implementation of Storm Water Management Plans

Dear Mr. Valente:

We are sorry you were unable to attend the most recent meeting of the Clean Charles 2005 Task Force in March. As your representatives to the Task Force will tell you, during the meeting I affirmed EPA's continued commitment to our mutual goal of a fishable and swimmable Charles River by Earth Day 2005. The meeting included updates on illicit connection identification and removal, storm water management plans, a presentation of water quality sampling of the Charles River by EPA's Office of Environmental Measurement and Evaluation, and a presentation on the Watershed Study being conducted by USGS. The water quality sampling results indicate significant improvements in water quality since 1995 which we attribute to increased control of combined sewer overflows, and your efforts in storm water management and illicit connection removal. However, the sampling indicates more work is necessary to achieve our goal.

You have demonstrated your commitment by developing a storm water management plan, which was submitted to the Agency in November of 1996 and updated in June of 1998. As you know, over the past year, our consultant, Center for Watershed Protection, has met with your officials, reviewed your plan and provided comments on program strengths and recommendations for improvement. Attachment 1 provides a summary of those comments.

In the original MOU, you agreed to develop a storm water management program. It also stated that once that program was developed, "the parties intend to negotiate a further memorandum of agreement regarding its implementation."

In a letter dated October 21, 1999, EPA sent you a draft MOU for implementation of your storm water program. At that time, we asked that you agree to implement the storm water management plan as submitted to the Agency and to discuss with EPA which Center for Watershed Protection recommendations could be incorporated before the document was signed. Unfortunately, the process did not result in a signed MOU with your community, and we have decided to try again to work with you toward developing a mutually acceptable agreement.

The purpose of this letter is to develop a framework for those discussions. We have included several documents that we request you respond to.

1. Storm Water Management Recommendation Summary: This document (Attachment 1) summarizes recommendations made by the Center for Watershed Protection(CWP), which reviewed your initial program and spoke to officials in your municipality. CWP made recommendations regarding your program and ranked them by priority. The summary lists the priority of each item (High, Medium, or Low), identifies the task, and specifies what specific deliverable is associated with the task.

2. Example Narrative and Table Response to CWP Comments: This document provides an example for responding to CWP recommendations (Attachment 2). Please fill out the table in a way that addresses all of the recommendations. For all high and medium priority recommendations, please identify how you will implement them and the critical milestones and associated dates. For any low priorities that you do not intend to implement, please identify the reasons. For any activity that is presently being implemented please identify by which department and how, e.g. through planning and site plan review or through conservation and the wetlands protection program. In the chart, for each recommendation, please specify the output or deliverable and the end date you expect it to happen. Please use the narrative to further explain your implementation plan, and schedule to include all key milestones. We hope to receive this no later than May 30, 2000.

3. Implementation MOU: We hope to have a signed MOU (see Attachment 3 for draft MOU) agreeing to implement current activities and the negotiated recommendations implementation schedule no later than June 28, 2000.

If you have any questions or if you wish to meet, please contact Bill Walsh-Rogalski at (617)918-1035 or Jay Brolin, at (617)918-1699.

Sincerely,

Mindy Lubber
Regional Administrator

enclosures

Stormwater Program Review Summary

The Town of Needham does not have a full suite of regulatory tools to ensure that appropriate stormwater management controls are in place and can be enforced for new development and redevelopment areas. However, the Town does have the government framework in place to develop specific by-laws that can require stormwater management controls. The Conservation Commission likely has sufficient authority and by-laws; however, their jurisdiction is limited to resource areas.

Specific allocation of budget dollars for stormwater management is not apparent from the 1996 report. As such, it is hard to determine what the Town's future commitment to stormwater protection is. Short-term funding is being pursued in the form of federal and state grants. These dollars are being used, for example, to update (or really establish for the first time) a stormwater management plan and Town-wide GIS mapping inventory and database. This should go a long way in increasing the efficiency of the Town's program and allow some of the program's strengths to become stronger. For example, what the Town's system of catch basin cleaning and street sweeping would be improved with a database that locates all existing catch basins and provides an up-to-date logbook of maintenance activities.

Table 2 below provides a summary of the areas of improvement recommended throughout this review. The recommendations have been divided into three priority (highest, medium, and lowest) categories based on relative cost of implementation and associated benefit realized in terms of reducing total pollutant loads to the Charles.

Table 2. Summary of Recommendations and Associated Cost Implications

Tool	Recommendation	Associated Costs
Highest Priority - Relatively inexpensive measures to implement with high potential for pollutant load reduction		
1	Update and improve existing mapping system. The following should be identified on Needham's stormwater system mapping: ☐ Location of hazardous material sites. ☐ Location of NPDES holders. ☐ Location of landfills. ☐ Existing and future land use maps are important for planning purposes. ☑ Storm drains, sewers, utilities, etc. ☐ Location of public parks, recreation areas, and open lands. ☑ Soils information.	b - start-up costs have already been accounted for in the current contract for GIS development
3	Manage urban waterfowl with a focused effort on reforestation or at least maintaining native vegetation along wetlands and waterways (see additional information in Tools Notebook).	b, c
4	Encourage / require disconnection of impervious surfaces such as roof leaders from storm drains, where appropriate.	a, b, e
4, 6	Review effectiveness of various stormwater BMPs and provide guidance on acceptable stormwater BMPs (e.g. use of bioretention in parking lots).	b
5	Adopt and enforce erosion and sediment control standards for development and redevelopment sites. The ordinance should include guidance on when measures are required, necessary components of an erosion control plan submittal, acceptable control practices, and inspection and maintenance schedules.	a, b
5	An erosion control plan should be required on the site plan used in the plan review process. The plan should include among other things, location and type of controls being used, supporting design calculations, limits of disturbance, required buffers and setbacks, and construction schedule. The plan designer should then be required to inspect and certify installation of the erosion and sediment controls.	a, b
6	Require development and redevelopment projects throughout the whole Town, not just in resource areas, to meet the Stormwater Management Standards set forth in the MA DEP Stormwater Management Policy, or some comparable set of guidelines.	a
7, 8	Consider outreach programs that target behavioral attitudes towards pet waste management, lawn care, and septic maintenance. Combine municipal pollution prevention practices with public education initiatives.	b, e
Medium Priority - Generally more costly yet critical to total pollutant load reduction		
1	Develop better communication with the Conservation Commission so that efforts are not duplicated and communication paths are left open to increase the efficiency of both entity's operations.	a, e

ATTACHMENT 2
Example Narrative and Table Response to CWP Comments

City of Lower Charles
Implementation of Recommended Improvements to the Storm Water Management Program

Highest Priority:

Tool 1. Existing Storm Drainage Map.
City has existing digital base map for sewer and water infrastructure, zoning, and assessments. Existing drain maps will be digitized and added to the base map by July 2000. Known outfalls will be GPSed by November 2000. Field verification of remaining components of the storm drain system will be conducted in conjunction with ongoing infrastructure and roadway improvement projects and illicit connection program. A decision to link this with an Management Information System such as Hansen to track complaints, work orders, and illicit connections has not been made. This decision will be primarily based on the FY2001 budget which will not be available until June 2000. We expect to have a GIS map of the system with the location of all known drains, drainage areas, and outfalls by January 2001.

Tool 5. Sediment and Erosion Control Policy/Regulations
The City will strengthen it's existing sediment and erosion control program by November 2000 as follows:

A. Conservation Commission Sediment and Erosion Control standards were adopted as a city-wide policy for all development and redevelopment in November 1998. The Town's Storm Water Management Committee (DPW, BOH, Building Inspector, Conservation, Planning) will draft city wide regulations for City Solicitor review by June 2000. The City Council Environmental Subcommittee review and approval should be complete by August 2000. The Public Works Committee review and approval should be complete by September 2000. The City Council should vote on the regulations by October 2000.

B. A guidance package on the Sediment and Erosion Control Policy has been available for any proponent of development or redevelopment from all departments since January 1999.

C. The first training courses will be conducted by the City and MA DEP by June 2000 for all City staff that would review or inspect sediment and erosion controls. We intend to conduct training for all new staff and annual refresher training for appropriate staff.

D. The Department of Public Works in association with the Conservation Agent will apply for a MA DEP 319 grant to establish a pilot "Third Party Inspection Program" by April 2000.

ATTA MENT 2

Example Narrative and Table Response to CWP Comments

CITY OF LOWER CHARLES
STORM WATER MANAGEMENT RECOMMENDATION IMPLEMENTATION SUMMARY

PRIORITY	TOOL	TASK	DELIVERABLE	DATE
H	1	MAPPING	DIGITIZE EXISTING MAPS	JUNE 2000
H	5	SEDIMENT AND EROSION CONTROL POLICY/REGULATION	MODIFY EXISTING REGULATIONS	NOVEMBER 2000
H	6	CITY SPECIFIC GUIDANCE ON ACCEPTABLE BMPS FOR DEVELOPMENT AND REDEVELOPMENT	GUIDANCE DOCUMENT/REPORT	JUNE 2000
H	8	TARGETED EDUCATION AND OUTREACH	WORKSHOPS	ONGOING NOVEMBER 2000
M	3	25' BUFFER/REPLANTING FOR ALL REDEVELOPMENT	REGULATIONS	EXISTING CONCOM
M	4	COMPREHENSIVE SITE PLAN REVIEW	REGULATIONS	EXISTING ZONING
M	6	STORM WATER PERFORMANCE STANDARDS FOR DEVELOPMENT AND REDEVELOPMENT	REVIEW EXISTING STANDARDS MODIFY REGULATIONS	NOVEMBER 2000
M	6	POST-CONSTRUCTION BMP INSPECTION MAINTENANCE ENFORCEMENT PROGRAM	REGULATIONS	JUNE 2000

TOWN OF NEEDHAM, MASSACHUSETTS
PUBLIC WORKS DEPARTMENT
470 Dedham Ave., Needham, MA 02492
Telephone: (781) 455-7537 Fax: (781) 449-9023

RICHARD P. MERSON
Director

COPY RPM

February 18, 2000

Mr. Ted Brown
Center for Watershed Protection
8391 Main Street
Ellicott City, MD 21043

Re: Needham's Stormwater Management Program

Dear Mr. Brown:

Your organization completed a review of our Stormwater Pollution and Management Program dated December 1996 and your comments were summarized in a letter to the Town dated July 21, 1999. Since the report was prepared, the Town has taken many steps towards improving stormwater management in our community. We felt that it would be appropriate to respond to your comments so you will be fully aware of the Town's commitment to improving stormwater quality. Included below is a discussion of what the Town is doing or intends to do regarding the eight watershed protection tools listed in your letter.

Tool 1 – Source Identification

It was recommended that existing mapping and facility inventories be improved to create a tool that would help locate, catalog and quantify wet and dry weather pollutant sources in the watershed.

The Town is currently in the process of completing a Stormwater Master Plan/Non-Point Source Pollution Study (the Study) funded thorough the SRF program. Included in this project is the preparation of photogrammetric mapping of the entire town at a scale of 1"=40' for use in a GIS system. The mapping will include all prominent surface features and contours at two foot intervals. The drainage system will be added to the base mapping based on our record drawings, supplemented by field information, and a GIS coverage created. This will provide the Town with a complete and comprehensive inventory of our drainage system. The sewer system has previously been digitally compiled and will be added to the new base mapping in the future.

It was also recommended that other features be added to the mapping and databases:

Location of hazardous material sites – Although not included in the Study, adding the location of hazardous material sites to the base mapping would be beneficial. The Town will add this information as identified on CERCLA and Superfund site lists in the future.

Tool 3 – Riparian Management

It was recommended that the Department of Public Works (DPW) and Conservation Commission work in a cooperative manner with open lines of communication to improve the efficiency of stormwater management operations. In addition, it was recommended that when sites within the resource area are redeveloped, the Town should encourage (or require) reductions in the amount of impervious cover, increases of the existing buffer widths, and reforestation efforts.

The DPW currently works in the common interest of the Town's Conservation Commission through the Planning Board process. This occurs on all development throughout the Town including those areas within the jurisdiction of the Conservation Commission. All references to the jurisdiction of the Conservation Commission are typically incorporated into the Planning Board's approvals for all subdivisions and site developments or redevelopments. Regardless of this, specific measures are routinely required of the developers by the DPW to be incorporated into the design plans as they relate to either the Massachusetts Department of Environmental Protection's (DEP) Stormwater Regulations, the Environmental Protection Agency's (EPA) Memorandum of Understanding (MOU) signed by the Board of Selectmen or to impacts upon the Town's systems.

Tool 4 – Better Site Design for Redevelopment

It was recommended that the Town require all building permits receive approval from the DPW to ensure proper handling of stormwater and that the Town adopt stormwater regulations, similar to DEP Stormwater Regulations, to improve water quality throughout the Town. It was also recommended that the Town work with the Needham Planning Board to review site design requirements to reduce impervious cover in redevelopment and new development.

The DPW, working with the Planning Board, enforces DEP Stormwater regulations in all areas of Town that are within watersheds that discharge directly to the Charles River in accordance with the MOU signed by the Town.
The DPW also enforces the provisions in the MOU through the Town's Subdivision Regulations for development and redevelopment projects and Stormwater connection permits for projects that may not require approval of the Planning Board. In addition to the DPW and the Planning Board, the Conservation Commission enforces the DEP Stormwater regulations in all areas within their jurisdiction.

Tool 5 – Erosion and Sediment Control

It was recommended that the Town adopt an ordinance that requires all development and redevelopment projects to comply with erosion and sediment control standards that are clearly defined, documented and enforced.

All projects under the jurisdiction of the Planning Board are reviewed by the DPW, through the Town Engineer, for adequacy of erosion and sediment control. Projects under the jurisdiction of the Conservation Commission are reviewed by the Town

Engineer at the request of the Commission. The Town Engineer ensures that proper controls are in place based on the Town's Standard Construction Specifications (March 1995).

Tool 6 – Stormwater BMPs

It was recommended that the practices and regulations required by the Conservation Commission in resource areas be extended to all areas of the Town and that the Town investigate any opportunities for retrofitting existing stormwater facilities to enhance water quality.

As stated previously, the Town is currently in the process of completing a Stormwater Master Plan/Non-Point Pollution Study (the Study) funded thorough the SRF program. Included in this project is dry weather sampling of all the Town's stormwater discharges, wet weather sampling of selected outfalls, investigation of opportunities for stormwater quality structural BMPs, and development of a Stormwater Master Plan/Capital Improvement Plan. Through this effort, opportunities for retrofit of existing stormwater facilities and implementation of new stormwater BMPs will be investigated and potential solutions recommended to a conceptual level of detail.

Tool 7 - Municipal Pollution Prevention Programs

It was recommended that the Town develop a GIS system to maintain a database that tracks the amount of sediment collected in specific catch basins and identifies structural BMPs that routinely have maintenance problems. It was also recommended that additional public education be conducted, that a vacuum sweeper be used in tandem with a standard sweeper, that melt from snow storage be properly treated, and that the Town consider alternative deicers.

The Town's Stormwater Management Program Report, dated December 1996, recommended a development of a municipal database that tracks cleaning dates, amount of debris removed, repairs required and other related data. The town, through the Study currently underway, will inventory all of the municipal drainage systems and create a database that can be easily expanded to include record data on catch basin and BMP cleaning operations. The Town desires to implement this system in the future and will do so when appropriate funding is available.

Public education programs are addressed in the Tool 8 discussion that follows.

A vacuum sweeper would be a welcome addition to the Town's equipment inventory. The units, however, are quite expensive and funding is not currently available to purchase this equipment. Should funding become available, the Town will consider purchasing a vacuum sweeper and using it in tandem with our standard sweeper currently in use.

At a recent Special Town Meeting, funding was provided to undertake a vehicle and equipment study for the entire DPW fleet. Due to the high cost of equipment replacement and the financial impact upon the Town, it was recommended that this study be conducted. Contained within this study will be an investigation of potential or future

requirements that will affect the number and type of equipment required. Recommendations such as this will be incorporated into this investigation.

Melt from snow storage areas is currently handled by an extended detention basin located at the Town's landfill.

The Town has evaluated alternative deicers. We have found that magnesium chloride is an effective deicer and is presently being used in a 50% mix with rock salt. This has allowed the Town to reduce salt application to the roadway from 800 lbs./lane mile to as little as 400 lbs./lane mile.

Tool 8 – Public Education and Outreach Programs

It was recommended that the Town conduct a targeted and consistent public education initiative on practices such as pet waste management, lawn care practices, and individual home drainage and septic maintenance practices.

The Town intends to continue its outreach programs through Hazardous Waste Days and cable TV spots.

We hope the information contained in this response to your comments clarifies the Town's position on current and future activities related to stormwater quality enhancements. If you have any questions or need any additional information please feel free to call.

Sincerely,

Richard P. Merson

Richard P. Merson
Director

cc: C. Valente, Town Administrator
A. Del Gaizo, Town Engineer
R. Lewis, Superintendent
C. Alwin, Asst. Superintendent
L. Newman, Planning Director
R. Cramer, Chair, Needham Conservation Commission
J. Brolin, U.S. Environmental Protection Agency
M. Vignale, BETA Engineering, Inc.

Memo

CENTER FOR WATERSHED PROTECTION

8391 Main Street
Ellicott City, MD 21043
(410) 461-8323

Date: January 15, 2001

To: U.S. EPA, Region 1
Mr. William Walsh-Rogalski
Mr. David Gray

From: The Center for Watershed Protection

Re: Town of Needham - Implementation of Stormwater Management Plan Recommended Action in Response to Town's Submission Dated February 18, 2000

The Center for Watershed Protection has reviewed the Town's response to our initial recommendations (from July 1999) for implementing stormwater program elements in association with the Clean Charles River Initiative (and indirectly, the NPDES, Phase II permit rules). We are providing herein recommended actions that EPA may elect to pursue in negotiating with Town officials. While we believe that our original recommendations were structured in a way to allow flexibility and cooperation between EPA and the Town in meeting a cleaner Charles River, we feel that some of the Town's responses may not go far enough in meeting the goals and objectives of controlling stormwater runoff, particularly in light of the recently promulgated rules for Phase II NPDES. In general, we believe the highest priority recommendations should receive the greatest level of detail by the Town and the greatest scrutiny by EPA, and the Town can provide somewhat less detail and be allowed more flexibility for lower priority recommendations.

We have prepared this memorandum as follows:

Our original comment is listed first, followed by the Town's response (dated February 18, 2000), and then followed by our recommended action on the part of EPA with the justification or logic behind the recommendation.

Highest Priority

1. Original Comment: *Update and improve existing mapping system. The following should be identified on Needham's stormwater system mapping:*

   Location of hazardous material sites
   Location of NPDES holders
   Location of landfills
   Existing and future land use maps are important for planning purposes
   Storm drains, sewers, utilities, etc.
   Location of public parks, recreation areas, and open lands

Soils information

Needham's Response:

The Town is currently in the process of completing a Stormwater Master Plan/Non-Point Source Pollution Study (the Study) funded through the SRF program. Included in this project is the preparation of photogrammetric mapping of the entire Town at a scale of 1" = 40' for use in a GIS system. The mapping will include all prominent surface features and contours at two foot intervals. The drainage system will be added to the base mapping based on our record drawings, supplemented by field information, and a GIS coverage created. This will provide the Town with a complete and comprehensive inventory of our drainage system. The sewer system has previously been digitally compiled and will be added to the new base mapping in the future.

It was also recommended that other feature be added to the mapping and databases:

Location of hazardous material sites - Although not included in the Study, adding the location of hazardous material sites to the base mapping would be beneficial. The Town will add this information as identified on CERCLA and Superfund sites lists in the future.

Location of NPDES holders - The Town has no specific jurisdiction over NPDES permit holders nor are we informed when a new permit is granted. However, providing the locations of these permit holders to our mapping may be beneficial in understanding the pollutants at our discharges and this information will be added to the mapping at a later date based on the availability of obtaining a NPDES permit list from the EPA.

Location of Landfills - Landfill locations will be added the base mapping and database.

- Land Use Maps - Land use mapping will be added to the base mapping as part of the Study in all areas where critical pipes are located (about 15% of the Town) to allow for hydrology to be completed. Land use mapping will be added in the future as additional hydrologic studies are completed or when funding for additional GIS implementation is available.

Storm Drains, Sewers, Utilities, etc. - Storm drains are being added to the base mapping and databases as part of the Study. Sewer and water systems were compiled digitally in the past and will be added to the base mapping in the future. The Town has no plan to add other utilities to our base mapping at this time.

Parks, Recreation Areas, and Open Lands - Parks and recreation areas will be identified on the base mapping as part of the Study within the areas where land uses are to be defined. Other areas will be added to the mapping in the future.

Soils Information - Soils information that includes hydrologic soil groups will be added to the base mapping for the entire Town.

Recommended Action:

The Town is responsive to our original comment. EPA should agree on a schedule for completion of the GIS system, review the relevant data "themes", or layers to ensure that they are being adequately depicted and documented, and agree on a cycle for updating the map in the future. We note that the Town is planning on doing several items in the future (hazardous material sites, NPDES permit holders, some land use mapping, and parks). The Town should provide a time frame for completing this information. The Town has no plans to add other utilities at this time. While not urgent, nor absolutely critical, it is very beneficial to have most utilities located on a single mapping resource so that future retrofit inventories, or redevelopment projects have a true picture of what constraints are present at a given location.

2. Original Comment: *Manage urban waterfowl with a focused effort on reforestation or at least maintaining native vegetation along wetlands and waterways.*

Needham's Response: None evident.

Recommended Action:

Since this was one of our highest priority recommendations, the Town should provide a detailed plan to manage urban waterfowl within the Town's limits. The plan should be specific with respect to plan actions, provide budget and time frame for implementation.

3. Original Comment: *Encourage/require disconnection of impervious surfaces such as roof leaders from storm drains, where appropriate.*

Needham's Response: None evident.

Recommended Action:

Since this was one of our highest priority recommendations, the Town should provide a specific plan to make it a policy to achieve wide-spread disconnection of rooftops and other directly connected impervious surfaces in the Town. While the original recommendation is simple

enough, the implementation of such a recommendation requires a comprehensive program, if voluntary, or an ordinance modification, if a mandate. The Town should decide based on available resources, existing zoning and land use density how to approach this issue.

The Town might consider responding to our original comment by submitting a plan of action that would include a program for a voluntary disconnection approach, and/or a mandatory approach; a schedule; and methods for measuring success. For example, in a voluntary approach, the Town would need to have a public education campaign most likely coupled with an incentive to encourage rooftop or non-rooftop disconnections (such as a free rain barrel, - refer to the Toronto, Canada example, or a publication citing the benefits of disconnection, and techniques/methods for doing it). The Town might appoint a staff person to answer questions from homeowners or businesses on how to do a disconnection. The Town might proffer a goal of 50 disconnected rooftops per year, and this would be part of a stormwater management report to EPA on a periodic basis. In a mandatory disconnection program, the Town will need to pass an ordinance to make directly connected roof leaders illegal and give property owners a time limit to complete disconnections. We're not suggesting that the Town be required to do this to address our recommendation, but we are suggesting that a mandatory program would need to entail these provisions. We suggest the Town work with its consultant to develop the most appropriate approach and provide EPA with a detailed plan of action.

4. Original Comment: *Review effectiveness of various stormwater BMPs and provide guidance on acceptable stormwater BMPs (e.g., use bioretention in parking lots).*

Needham's Response: None evident.

Recommended Action:

Since this was one of our highest priority recommendations, the Town should submit a plan of action to limit the use of less effective practices for stormwater control. The traditional oil/water separator, for example, has limited capability to remove nutrients or bacteria, two of the target pollutants for a cleaner Charles River. The Town should submit a list of acceptable stormwater treatment practices to EPA that it intends to allow in new development and redevelopment projects. This can follow the MA DEP stormwater Policy Manual, with perhaps a few practices excluded. CWP can assist in developing such a list either on behalf of EPA or the Town.

5. Original Comment: *Adopt and enforce erosion and sediment control standards for development and redevelopment sites. The ordinance should include guidance on when measures are required, necessary components of an erosion control plan submittal, acceptable control practices, and inspection and maintenance schedules.*

Needham's Response: All projects under the jurisdiction of the Planning Board are reviewed by the DPW, through the Town Engineer, for adequacy of erosion and sediment control. Projects under the jurisdiction of the Conservation Commission are reviewed by the Town Engineer at the request of the Commission. The Town Engineer ensures that proper controls are in place based on the Town's Standard Construction Specifications (March 1995).

Recommended Action:

The Town seems to not understand that the recommendation is to develop and pass a separate erosion and sediment control ordinance or modify an existing code. We acknowledge that the Town's March 1995 Standard Construction Specifications may contain specific standards for erosion and sediment control practices, but we have not reviewed those documents as they were not made available to us during our interviews with Town staff in early 1999. We recommend that the Town provide EPA with documentation that the March 1995 Standards contain specific performance criteria for E&SC devices, and include maintenance measures, inspection provisions and enforcement actions. Alternatively the Town can provide EPA with an outline for a proposed E&SC ordinance and a schedule for adopting such an ordinance. A draft model ordinance can be downloaded from www.stormwatercenter.net. This site has been developed by CWP on behalf of EPA, Office of Water, for use by communities who are implementing stormwater programs in accordance with the NPDES, Phase II rules.

6. Original Comment: *An erosion control plan should be required on the site plan used in the plan review process. The plan should include among other things, location and type of controls being used, supporting design calculations, limits of disturbance, required buffers and setbacks, and construction schedule. The plan designer should then be required to inspect and certify installation of the erosion and sediment controls.*

Needham's Response: No specific response provided.

Recommended Action:

Since this was one of our highest priority recommendations, the Town should provide specifics on what standards and procedures will be required for E&SC plans. We recommend that the Town provide EPA with an outline for proposed E&SC plan review requirements and a schedule for adopting such requirements. We suggest the Town work with its consultant to develop the most appropriate approach (which can certainly rely on existing standards and procedures from other jurisdictions) and provide EPA with a detailed plan of action. CWP can help provide assistance on where to find existing E&SC manuals and how to modify this for local application.

7. Original Comment: *Require development and redevelopment projects throughout the whole Town, not just in resource areas, to meet the Stormwater Management Standards set forth in the MA DEP Stormwater Management Policy, or some comparable set of guidelines.*

Needham's Response: As stated previously, the Town is currently in the process of completing a Stormwater Master Plan/Non-point Pollution Study (the Study) funded through the SRF program. Included in this project is dry weather sampling of all the Town's stormwater discharges, wet weather sampling of selected outfalls, investigation of opportunities for stormwater quality structural BMPs, and development of a Stormwater Master Plan/Capital Improvement Plan. Through this effort, opportunities for retrofit of existing stormwater facilities and implementation of new stormwater BMPs will be investigated and potential solutions recommended to a conceptual level of detail.

The DPW, working with the Planning Board, enforces DEP Stormwater regulations in all areas of Town that are within watersheds that discharge directly to the Charles River in accordance with the MOU signed by the Town. The DPW also enforces the provisions of the MOU through the Town's Subdivision Regulations for development and redevelopment projects and stormwater connection permits for projects that may not require approval of the Planning Board. In addition to the DPW and the Planning Board, the Conservation Commission enforces the DEP Stormwater regulations in all areas within their jurisdiction.

Recommended Action:

We acknowledge that the Town is developing a Master Plan for stormwater management and according to the second paragraph, they acknowledge that they enforce DEP stormwater regulations "in all areas of the Town that are within watersheds that discharge directly to the Charles River." However, the intent of the comment is to regulate stormwater for all areas, not just direct discharges to the Charles River. We recommend that the Town provide EPA with an outline for proposed stormwater plan review requirements and a schedule for adopting such requirements. We suggest the Town work with its consultant to develop the most appropriate approach (which can rely on the existing MA DEP Stormwater Management Policy) and provide EPA with a detailed plan of action for implementation.

8. Original Comment: *Consider outreach programs that target behavioral attitudes*

towards pet waste management, lawn care, and septic maintenance. Combine municipal pollution prevention practices with public education initiatives.

Needham's Response: The Town intends to continue its outreach programs through Hazardous Waste Days and cable TV spots.

Recommended Action:

We acknowledge the Town's current public outreach programs, but suggest that these do not address the intent of our original recommendation to address pollutant sources from pet waste, lawns and septic systems.

A public outreach program requires specific attention to detail to be effective, and requires, at a minimum, an identification of target behaviors and educational topics, a budget for implementation of a program (including any staff assignments or new hires), methods for implementation (such as flyers, public service announcements, training, videos, etc), methods for measuring success in changing targeted behaviors (such as public attitude surveys), and a schedule. We recommend that the Town provide EPA with an outline of the proposed program, an approximate budget, and a schedule for implementation.

Medium Priority

9. Original Comment: *Develop better communication with the Conservation Commission so that efforts are not duplicated and communication paths are left open to increase the efficiency of both entity's operations.*

Needham's Response: The DPW currently works in the common interest of the Town's Conservation Commission though the Planning Board process. This occurs on all development throughout the Town including those areas within the jurisdiction of the Conservation Commission. All references to the jurisdiction or the Conservation Commission are typically incorporated into the Planning Board's approvals for all subdivisions and site developments and redevelopments. Regardless of this, specific measures are routinely required of the developers by the DPW to be incorporated into the design plans as they relate to either the Massachusetts Department of Environmental Protection's (DEP) Stormwater Regulations, the Environmental Protection Agency's (EPA) Memorandum of Understanding (MOU) signed by the Board of Selectmen or to impacts upon the Town's systems.

Recommended Action:

We acknowledge that the Town is being responsive to our original recommendation. This is a medium priority recommendation, and as such, probably does not warrant as specific a response at this time. However, the Town should be prepared to provide more specifics to address this comment in the near future. The Town should submit to EPA a copy of the current site plan (or development approval) review process with a narrative of how the process works and whether any modifications are warranted to address the recommendation of better communication.

10. Original Comment: *Look for retrofit and stream restoration opportunities. Include a retrofit line item in capital improvement programs. Encourage/require reductions in impervious cover along riparian corridors and strive to increase existing buffer widths.*

Needham's Response: As stated previously, the Town is currently in the process of completing a Stormwater Master Plan/Non-point Pollution Study (the Study) funded through the SRF program. Included in this project is dry weather sampling of all the Town's stormwater discharges, wet weather sampling of selected outfalls, investigation of opportunities for stormwater quality structural BMPs, and development of a Stormwater Master Plan/Capital Improvement Plan. Through this effort, opportunities for retrofit of existing stormwater facilities and implementation of new stormwater BMPs will be investigated and potential solutions recommended to a conceptual level of detail.

Recommended Action

The Town is attempting to be responsive to our original recommendation. This is a medium priority recommendation, and as such, probably does not warrant as specific a response at this time. However, the Town should be prepared to address this comment in the near future. Our recommendation is that EPA accept the Town's commitment to investigate retrofit opportunities as part of the development of their Stormwater Master Plan, but request a specific schedule for identifying retrofit sites, with a specific budget and schedule for implementation (meaning construction) of feasible sites. In addition, the Town should provide EPA with a specific action plan to address the recommendation of reducing impervious cover along riparian corridors and increasing buffer widths for new and re-development projects.

11. Original Comment: *Work with Needham Planning Board to review site design requirements to reduce impervious cover in new and redevelopment. Consider capping building footprint as a percent*

of total site area, minimizing road widths in low to medium density residential areas, and minimizing the amount and size of parking spaces.

Needham's Response: The Town's Zoning By-Laws and Subdivision Regulations require development standards be met for redevelopment and new development. Zoning dictates open space requirements and Subdivision Regulations define the construction requirements of the developments. Considering that the Town is currently nearly built out, the Town believes that current regulations are adequate to require appropriate land reclamation and reforestation.

Recommended Action

The Town feels that its current Subdivision Regulations and Zoning ordinance is adequate to address our original recommendation. This is a medium priority recommendation, and as such, probably does not warrant as specific a response at this time. However, the Town should be prepared to address this comment in the near future. Our recommendation is for the Town to provide EPA with specifics on how codes, ordinances, or design standards meet our recommendations, or how they could be amended to reduce impervious cover for new- and re-development projects (e.g., modifying street standards to allow narrow streets for residential projects). Our recommendation is for the Town to submit an analysis of its current codes, ordinances and design standards to EPA with specific items identified for modification (if necessary) in conjunction with a schedule for implementation. A tool the Town may find useful in conducting this analysis is the Code and Ordinance Worksheet (COW), available for downloading at www.cwp.org.

12. Original Comment: *Regularly inspect BMPs and develop enforcement mechanisms for maintenance failure.*

Needham's Response: None evident.

Recommended Action

This is a medium priority recommendation, and as such, probably does not warrant as specific a response at this time, and none was provided. The Town should be prepared to address this comment in the near future. Our recommendation is for the Town to provide EPA with an action plan for implementation of a BMP inspection and enforcement program. We recommend that the Town estimate the number of BMPs that need inspection and/or enforcement action, set up a budget based on this need, document the Conservation Commission's current enforcement authority, develop a plan for enhanced enforcement (if needed), and provide EPA with a schedule for implementation.

13. Original Comment: *Implement stringent stormwater runoff controls at the Town's snow storage areas.*

Needham's Response: Melt from snow storage areas is currently handled by an extended detention basin located at the Town's landfill.

Recommended Action

The Town is attempting to be responsive to our original recommendation. This is a medium priority recommendation, and as such, probably does not warrant as specific a response at this time. However, the Town should be prepared to address this comment in the near future. We acknowledge that the Town has an extended detention basin to accommodate snow melt from the Town's landfill, we question whether or not this is a "stringent stormwater runoff control" and whether there are other snow storage areas that warrant controls. A specific response would include a complete listing of snow storage areas, a budget for implementing the recommendation (for both design, and construction) and a time frame for completing construction (if necessary).

Lowest Priority

14. Original Comment: *The Town should be aware of opportunities where reforestation might be accomplished in redevelopment areas and clearing limits required in new development areas. Redevelopment projects should be encouraged to create/restore as much natural area as possible. This will also require coordinating with the Conservation Commission in resource areas.*

Needham's Response: The Town's Zoning By-Laws and Subdivision Regulations require development standards be met for redevelopment and new development. Zoning dictates open space requirements and Subdivision Regulations define the construction requirements of the developments. Considering that the Town is currently nearly built out, the Town believes that current regulations are adequate to require appropriate land reclamation and reforestation.

The Conservation Commission has the authority to regulate development within wetland resource zones and is quite active in enforcing their authority.

Recommended Action

The Town feels that its current Subdivision Regulations and Zoning ordinance is adequate to address our original recommendation. This is a lowest priority recommendation, and as such, probably does not warrant as specific a response at this time. However, the Town should be

prepared to address this comment in the future. Our recommendation is for the Town to provide EPA with specifics on how codes, ordinances, or design standards meet our recommendations, or how they could be amended to foster more reforestation. Our recommendation is for the Town to submit an analysis of its current codes, ordinances and design standards to EPA with specific items identified for modification (if necessary) in conjunction with a schedule for implementation.

15. Original Comment: *Purchase of vacuum assisted sweeper (possibly in conjunction with other Towns) so that sweeping can be performed in tandem with traditional sweepers, especially on highly traveled, commercial, and industrial area roads. Also pursue purchase of vacuum cleaner for proprietary devices if the Town decides to install a significant number of these devices.*

Needham's Response: A vacuum sweeper would be a welcome addition to the Town's equipment inventory. The units, however, are quite expensive and funding is not currently available to purchase this equipment. Should funding become available, the Town will consider purchasing a vacuum sweeper and using it in tandem with our standard sweeper currently in use.

Recommended Action

We acknowledge the Town's response to our original comment and their concern of the cost with purchasing a new vacuum sweeper. This is a lowest priority recommendation, and as such, does not warrant a specific plan for implementation as this time. However, the Town should develop and submit an alternative plan for controlling fine particulate matter from commercial and residential streets. It is our recommendation that EPA revisit this issue with the Town within a reasonable time period, say a year after adoption of the MOU.

This concludes our point by point listing of recommended actions in response to Needham's proposed implementation of our original recommendations. We acknowledge that several of these items may require additional resources in terms of staff and dollars on the Town's part. We therefore suggest a phased in approach, concentrating on the highest priorities and working over time to the lowest priorities. We also acknowledge the Town's concerns regarding our original comments and their view that their current program was not adequately represented. However, in our review of Needham's letter of February 18, 2000 our greatest observation is that the Town has not accepted that many of their stormwater program elements do not go far enough towards the goal of minimizing stormwater runoff and pollutant load delivery to the Charles River.