



Neponset River Watershed 2004 - 2009 Action Plan

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Contents

Introduction	1	Neponset Watershed Priority Action Items	19
Common Action Plan for all Boston Harbor South Watersheds	3	Sewer Systems: General	19
Sewer System Maintenance and Improvements: General	3	Sewer Systems: Illicit Connections	20
Sewer Systems: Illicit Connections to Storm Drains	3	Sewer Systems: Infiltration and Inflow (I/I)	20
Sewer Systems: Inflow and Infiltration (I/I)	3	Sewer Systems: Exfiltration	20
Sewer Systems: Exfiltration	4	Sewer Systems: Sewer Extensions and Capacity Expansions	20
Sewer Systems: Sewer Extensions and Capacity Expansion	5	Sewer Systems: Sanitary Sewer Overflows (SSOs)	21
Stormwater Management and Groundwater Recharge	5	Stormwater Management and Groundwater Recharge	21
Septic Management	7	Septic Systems	22
Management of Landscaped Areas	7	Management of Landscaped Areas	23
Water Supply and Streamflows	8	Water Supply	24
Riverine Habitat	10	Riverine Habitat	25
Public Access to Waterways	11	Public Access to Waterways	27
Watershed Assessment	11	Watershed Assessment	27
Boating Initiatives	11	Changes to 303(d) List as Proposed by NepRWA	28
Innovative Strategies: Financing	11		
Innovative Strategies: Regional Collaboration	12		
Innovative Strategies: Adapting to Local Conditions	13		

Introduction

The 2004 Boston Harbor South Watersheds Action Plan was produced under a contract between the Massachusetts Executive Office of Environmental Affairs and the Neponset River Watershed Association (NepRWA). NepRWA collaborated in its work with the Urban Harbors Institute of the University of Massachusetts Boston, the Boston Harbor Association, the Fore River Watershed Association, the Weir River Watershed Association and the Back River Watershed Association.

In addition, a volunteer Advisory Committee provided invaluable assistance in the design, development and review of the action plan. Advisory Committee members included David Colton, Director of the Milton Department of Public Works; Wes Dripps of the University of Massachusetts, Boston; Margo Clerkin, Conservation Agent of Hull; and Nan Crossland, Executive Director of the Dedham-Westwood Water District. Finally, there was considerable public participation in the preparation of this report, including interviews with at least three stakeholders in each of the four watersheds and Boston, as well as through a series of open public meetings.

This report spells out a comprehensive set of responses needed to remedy problems identified in its companion document the “Boston Harbor South Watersheds Assessment Report.” It covers the four individual watersheds that discharge into Boston Harbor from south of the City of Boston — the Neponset, Weir, Fore and Back River Watersheds — plus those portions of the City of Boston which border the Harbor itself south of the Charles River, hereinafter referred to as “Boston Inner Harbor Watershed”.

This document does not cover the two major watersheds contributing to the Harbor from the north of Boston — the Charles and Mystic

River Watersheds. Therefore, it is not the purpose of this action plan to recommend steps needed to restore receiving water quality in the Boston Harbor itself, but rather to recommend actions needed to restore the environmental health of the individual watersheds from their headwaters to the points at which they discharge into the Harbor.

Since MWRA began pumping sewage from Deer Island to its outfall pipe in Massachusetts Bay, most of the pollution in the Harbor itself comes from the contributions of the various rivers discharging into the Harbor along with Combined Sewage Overflows (CSOs) from the City of Boston. MWRA data indicate that it is the Charles and Mystic Rivers, and not the rivers covered in this report, which are the largest contributors to the Harbor’s pollution. In any case, the measures recommended here, while not specifically designed to restore the Boston Harbor, would undoubtedly benefit the Harbor significantly if implemented.

The recommendations presented here are based not only on the experience of the authors, but also on the advice and comment of state agency staff, municipal officials and considerable public input.

In each watershed, the recommendations are intended to protect or restore the following broad natural resource values:

- Water Quality;
- Watershed Hydrology and Water Supply;
- Physical Habitat; and
- Open Space and Outdoor Recreation

While the Boston Inner Harbor, Neponset, Fore Back and Weir Watersheds, are each unique, they also have many watershed

management issues in common. In the interest of simplicity, those actions that apply generally to all the watersheds have been consolidated here into a "Common Action Plan." The action plan is organized around a basic set of "issues" affecting the study area. Specific action recommendations are provided for each issue area. Please note however that the "issues" are not listed in order of priority.

"Priority Action Items" for each individual watershed are detailed in the individual watershed chapters. Some of the actions in these individual chapters are unique to that watershed. Others are taken from the Common Action Plan but are of particularly high priority for the watershed in question. The individual watershed chapters also include information on specific sites where a problem needs to be addressed within each of the watershed.

Common Action Plan for all Boston Harbor South Watersheds

Sewer System Maintenance and Improvements: General

Recommended Action for state government:

- Project selection criteria under the Wastewater State Revolving Fund (SRF) should be strengthened to ensure that priority is given to unmet operation and maintenance needs. The authors recognize and appreciate that the SRF is already moving in this direction.

Sewer Systems: Illicit Connections to Storm Drains

Illegal connections are a major problem for water quality, and their detection and elimination are essential for proper stormwater management (see “Stormwater Management,” below). Detection and elimination are required activities under Phase II of the federal stormwater management program.

Recommended Actions for Government

- Cities and towns must fulfill their responsibilities under Phase II Stormwater rules regarding illegal connections (including public outreach). Each community should establish a timetable for detection and remediation. The state and federal governments need to hold municipalities accountable for fulfilling their Stormwater Phase II requirements.

Recommended Actions for Citizen Groups

- Citizen groups should help towns identify illegal connections. This requires significant shoreline survey work. Citizen water quality monitoring, during both wet and dry weather, also provides an important source of ongoing reconnaissance to identify potential problems.

Sewer Systems: Inflow and Infiltration (I/I)

Inflow consists primarily of private individuals illegally diverting stormwater from their property into public sewers. Inflow creates very high flows over short periods, thus contributing to Sanitary Sewer Overflows (SSO's) and greatly increasing the marginal cost of wastewater treatment (since treatment capacity is designed for times of maximum flow). In addition, ground water draining into broken sewer pipes as infiltration plays a major role in preventing adequate groundwater recharge and reducing instream flows.

Recommended Actions for MWRA

- MWRA should expand the Grant/Loan Program for both infiltration and inflow (I/I) remediation for communities using MWRA sewers. While this has short-term costs to ratepayers, in the long term it will save money by reducing the amount of water that has to be treated at Deer Island as well as by increasing the amount of clean groundwater available for public use.
- MWRA should require towns to “use or lose” funds from the

program within three to five years, so as not to tie up funds which other communities could use.

- MWRA should also help educate the public on the role played by I/I (as well as illicit connections, discussed above) in creating sanitary sewer overflows during storms and in reducing seasonal river flows, as well as on the long-term cost savings from reducing I/I.

Recommended Actions for State Government

- DEP should complete and publish Sewer System Operation & Maintenance Guidelines. DEP should also require at least four to one remediation of I/I for new development and redevelopment, particularly in stressed basins or wherever surcharging has occurred.
- Develop and disseminate model bylaws/program guidance for establishing municipal 4:1 I/I remediation programs for those municipal hookups that don't require a DEP sewer extension permit.
- DEP should research and report on how towns are progressing on I/I identification and remediation.
- The state should also fund a study of mandatory inspection and remediation of I/I problems on private property at time of sale.

Recommended Actions for Municipalities

- The MWRA Infiltration & Inflow Task Force has identified many Best Management Practices that should be adopted by towns to identify, prioritize and remediate I/I. These recommendations should be implemented by municipalities (even in towns not using MWRA sewers).
- Municipalities should also increase public education about I/I, especially on the relationship of I/I to SSOs, and on how I/I reduction ultimately lowers water and sewer bills.
- Municipalities should adopt bylaws for new development and significant redevelopment requiring developers to remediate current I/I problems at a four to one ratio at a minimum for each

additional gallon of water they will add to the sewer system (so-called "Wastewater Banking").

- Municipalities should also inspect new sewer extensions and connections for leakage before granting occupancy and/or other permits.

Recommended Actions for Citizen Groups

- Citizen groups should help provide citizen education on I/I. They should also research and publicize reports on how municipalities are doing in remediating I/I.
- Regarding the proposals discussed above regarding I/I rules for new developments and for sales of homes, citizen groups can assist by studying the issues involved and developing model rules for implementing them.

Sewer Systems: Exfiltration

Exfiltration is another cause of the discharge of raw sewage into waterways. Sewage from leaking sewer pipes can reach surface waters directly or be carried there by storm sewers.

Recommended Actions for state government

- DEP should complete and publish Sewer System Operation & Maintenance Guidelines.
- The state should re-establish the Volunteer Water Quality Monitoring Grants Program to provide support for citizen action on this problem.

Recommended Actions for Municipalities

- Municipalities should identify possible exfiltration through checking storm drains and other surface water discharge locations during dry weather (as they are required to do to identify illegal connections under federal Phase II Stormwater rules - see "Sewer Systems: Illicit Connections," above).
- The same measures that municipalities should take to remediate

infiltration of sewers (see above) will also generally prevent exfiltration and should be implemented by municipalities.

Recommended Actions for Citizen Groups

- Citizen groups should assist by conducting shoreline surveys and water quality monitoring.

Sewer Systems: Sewer Extensions and Capacity Expansion

Sewer extensions for new development can create or exacerbate low flow problems where wastewater is being discharged outside the watershed (e.g., to Boston Harbor). They can also create SSO problems by increasing the flows directed to existing lines downstream. Where existing homes are on septic systems and those systems fail, there is often pressure to connect to, or even extend, nearby sewer mains. Finally groundwater levels may be further depleted if sewer authorities increase the capacity of sewer pipes to carry excess flows that are caused by a failure to address the root causes of infiltration and inflow.

Recommended Actions for MWRA, State and Municipal Officials

- The state, along with local and regional sewer authorities, should deny sewer extensions that will exacerbate SSOs, surcharging or low streamflows without first dealing with their core causes. Infiltration and inflow, as well as illegal connections, should be remediated before sewer extensions or expansion of sewer collection system capacity is considered, especially where MWRA or state financing is involved.
- Wherever a community is experiencing SSOs or surcharges, as well as in stressed basins, new development should be required to mitigate any new proposed flow to the sewer system by remediating I/I at a four to one ratio, measured by annual daily average (and not peak) flow.
- DEP should consider sewer extensions and expansions as a substitute for decentralized wastewater treatment systems only as a last resort. Because onsite sewage systems (such

as package treatment plants, community onsite systems, and individual septic systems) do much more to recharge local groundwater supplies than do sewer systems (especially where most sewerage leaves the watershed entirely and is discharged directly into Boston Harbor at Deer Island), on-site systems should be the preferred method of wastewater treatment for family homes where lot sizes permit. See “Septic Management,” below, on how costs of septic systems can compare favorably to sewer hookups.

Stormwater Management and Groundwater Recharge

Inadequate stormwater treatment is a major cause of water pollution in Boston Harbor and its tributaries. Uncontrolled runoff, especially from streets, parking lots, roofs, and other “impervious” surfaces, also diverts water that would naturally recharge (replenish) groundwater supplies. Groundwater is essential to adequate water supplies as well as surface water streamflow levels (see Section 5, below). In addition, uncontrolled runoff can cause flooding.

Stormwater treatment is regulated under DEP’s Stormwater Management Guidelines for projects subject to the Wetlands Protection Act and Water Quality Certification rules. Implementation of the Guidelines by conservation commissions is somewhat uneven, particularly in regard to groundwater recharge criteria. Furthermore, the Guidelines may not be adequate to restore water quality because of their overemphasis on total suspended solids and lack of attention to other pollutants such as bacteria, nutrients and metals. Stormwater management outside wetland resource areas is covered by a patchwork of zoning and other rules, which vary greatly in stringency from town to town.

Recommended Actions for state and federal government

- DEP should conduct a regional study to identify specific sites that are most in need of/conducive to stormwater retrofits;
- DEP should develop an improved stormwater guidance (especially on how to handle bacteria, metals and nutrients);
- DEP and EPA should mandate municipal stormwater bylaws

with requirements as stringent as those outlined in DEP's Stormwater Management Guidelines; these bylaws should apply to all stormwater, not just that being discharged to wetlands or waterways (such bylaws are currently being developed in the North and South River Watersheds and could serve as a model);

- Financial assistance should be given by state and federal authorities for municipal implementation of federal Stormwater II mandates, including public outreach;
- NPDES Stormwater Phase II regulations should be strictly enforced;
- DEP and EPA should increase staffing for technical assistance to municipalities (including municipal boards), especially regarding the relationship of new development to groundwater recharge and water supply; and
- DEP and EPA should provide additional funding for demonstration (pilot) projects on stormwater treatment.

Recommended Actions for municipal government

- Implement all NPDES Stormwater Phase II requirements, including those pertaining to SSOs, illegal connections, public participation and education, mapping and management of municipal facilities;
- Adopt zoning bylaws allowing, encouraging, or requiring "low impact development" (LID) for new construction and major reconstruction projects. Some LID techniques are:
 - use of stormwater retention swales rather than curbs in subdivisions,
 - using Best Management Practices (BMPs) to mimic predevelopment hydrographs,
 - reduction of required road widths in subdivisions,
 - "decentralizing" subdivision stormwater management so that stormwater retention and groundwater recharge occur on individual lots to the maximum feasible extent,

- "disconnecting" impervious surfaces; i.e., directing roof and driveway runoff to lawns or swales and not to driveways, streets and stormdrains,
- use of bioretention cells that emphasize plant uptake of pollutants, refiltration, and sediment removal,
- use of numerous swales, buffer strips, and other BMP's that incorporate biological treatment functionality in addition to simple settling;

- Require mitigation of current off-site stormwater problems at a two or three to one ratio for every cubic yard of runoff proposed for discharge to surface waters;
- Establish dedicated fee-based revenue sources to support stormwater work;
- Adopt bylaws requiring stormwater management in areas outside wetlands as stringent as those required under DEP's Stormwater Guidelines;
- Retrofit locations with poor stormwater management systems;
- Increase efforts to educate the public on the need to properly manage stormwater in partnership with private and nonprofit groups; and
- Adopt and enforce bylaws requiring owners to clean up after their pets, and posting of "mutt mitts" in public parks.
- See also "Collaborative Strategies," below

Recommended Actions for Citizens and Regional Alliances

- Collaborative efforts on creation of public education materials that can be "localized" by or for municipalities to meet their needs;
- Conducting demonstration (pilot) projects regarding optimal stormwater treatment methods;
- Drafting of model bylaws;
- Helping identify and prioritize stormwater retrofit projects;

- Maximizing use of available grant funds;
- Preparing an analysis of the application of stormwater utilities to reduce stormwater management costs; and
- Public outreach on stormwater prevention and on maintenance and repair of stormwater management systems.

Septic Management

Properly operating septic systems do a good job of protecting ground and surface waters from harmful pollution. They also recharge groundwater at a local level, as opposed to sewer systems that take water from the subwatersheds and discharge it directly (via MWRA and other sewers) into Boston Harbor or Massachusetts Bay. For these reasons, properly designed and maintained septic systems or other decentralized approaches to wastewater treatment are the environmentally preferable method of sewage disposal. Regular pumping of septic systems costs less than half as much as MWRA sewer rates and decreases municipal water supply costs by helping to recharge groundwater. [Note that there are essentially no septic systems in the Boston Inner Harbor Watershed.]

Recommended Actions for State Government

- DEP should mandate regular tank pumpouts by septic owners;
- The state should increase aid to municipalities and citizen groups for the septic-related activities described directly below.

Recommended Actions for municipalities and citizen groups

- Increase citizen awareness of the need to regularly pump out septic tanks;
- Develop a model database to be used by municipalities that links Board of Health data bases on individual pump-outs to “reminder letters” when another pump-out is due;
- Create by-laws requiring pump-outs of septic tanks every two years;
- Enforce more rigorously current septic hauler Title 5 annual

licensing requirements to ensure they accurately report to the Board of Health the condition of each septic system they pump;

- Increase local enforcement against owners of septic systems which are known to the Board of Health to be in need of repair or replacement;
- Establish a small fee on the water bills of septic users to cover the costs of basic education and enforcement activities; and
- Create municipal “septic utilities” (or at least a pilot project) to:
 - maximize regular pumping of all septic systems,
 - decrease septic pumping costs,
 - “insure” septic owners for the costs of major repairs and replacement,
 - increase municipal government awareness of septic system failures, and/or
 - establish a dedicated revenue source (grants or loans) for septic repair and replacement.

See also “Sewer System Extensions,” above

Management of Landscaped Areas

Stormwater runoff from lawns, etc. is a primary source of excessive nutrients from fertilizers, suspended solids, bacteria from animal wastes, and sedimentation. The issue is particularly serious for waterfront property owners, whose runoff goes directly into surface waters and whose land use practices (e.g., lack of a naturally vegetated buffer strip of land along the shore) can be dramatically harmful to wildlife habitat both along as well as within streams and ponds. It is also an issue for other public and private landowners whose polluted runoff ends up in surface waters via stormdrains, road drainage ditches, etc.

Recommended Actions for Federal, State and Municipal

Government

- Educate the public and take other actions (described below) to stop excessive and wasteful use of fertilizers, pesticides and irrigation water on lawns, golf courses, and gardens;
- Use government owned properties as demonstration sites for responsible landscape management practices;
- Authorize the Massachusetts Soil Conservation Service to identify maximum permissible levels of fertilization for each municipality;
- Better educate state licensed pesticide professionals, with greater enforcement when warranted;
- Educate waterfront property owners and take other actions (described below) to preserve or restore naturally vegetated buffer strips along waterways. Such buffers can consist of attractive, native ornamental plants that reduce runoff and bank erosion while protecting wildlife habitat and providing shade to reduce water temperatures;
- Use wetland and waterways regulations and local wetland bylaws to maximize retention of naturally vegetated buffer strips along waterways;
- Amend state wetland regulations or local bylaws to ban impervious surfaces, lawns, trails, or anything else that destroys a natural vegetated buffer directly adjacent to rivers, streams, ponds and vegetated wetlands;
- Abide by sound land management practices for public lands, including restoration of naturally vegetated buffers strips along banks;
- Promote environmentally sound alternatives to large lawns;
- Provide state and federal grant funds for restorative work and for ongoing public education programs on landscape management and restoration;
- Create local bylaws forbidding subdivision covenants that require ecologically unsound turf lawn maintenance practices; and

- Create municipal zoning bylaws or other incentives which will limit environmentally damaging practices for new development; e.g.:
 - limiting tree cutting and/or lawn sizes,
 - forbidding construction site preparation prior to zoning board approval,
 - limiting removal of topsoil from properties under development.

Recommended Actions for Citizen Groups

- Identify bufferless riverfront areas for restoration and collaborate with government and landowners to protect and restore naturally vegetated areas;
- Educate homeowners (especially waterfront homeowners), golf courses, and lawn care companies on proper lawn and garden practices and organize lawn care courses for new homeowners; and
- Give awards, certifications, or other recognition to lawn care businesses, golf courses, etc. that practice ecologically sound management of manicured landscapes.

See also “Stormwater Management and Groundwater Recharge,” above.

Water Supply and Streamflows

The negative impacts of reduced instream flow include curtailment of recreational activities, increased concentration of bacterial and nutrient pollutants, increased risk of human exposure to contaminated river-bottom sediments, and a substantial reduction in the area and quality of aquatic habitats with resulting depletion of fish and other aquatic life. Causes of low instream flow include excessive use of water drawn from the watersheds, especially in summer months; interbasin transfer, especially via the MWRA sewer system; manipulation of water levels in impoundments; lack of adequate groundwater recharge due to impervious surfaces, and, most importantly, poor stormwater

management and sewer infiltration and inflow.

The Massachusetts DEP recently issued new Water Management Act Guidance with mandatory water conservation measures for communities in watersheds or subwatersheds designated as “stressed” by EOE. Unfortunately, most of the watersheds covered in this report are “unassessed” and stress levels assigned by EOE to those portions that are assessed are not based on all available relevant data.

Recommended Actions for Federal Government

- USGS should develop a ground and surface water model for each watershed to aid in predicting impacts and evaluating remediation of water withdrawals and other major water-related activities requiring a federal, state, or local permit; and
- USGS should operate more stream gauges in the Fore, Weir and Back River watersheds.

Recommended Actions for State Government

- Provide funding for more stream gauges in the Fore, Weir, and Back River Watersheds;
- Use other currently available environmental indicators to establish “stress” classification in unassessed areas;
- Set stricter water conservation standards for municipalities in low stressed and unassessed basins;
- Annually audit water supply statistical reports and impose penalties for inaccuracies;
- Ensure that all relevant permitting decisions (insofar as permissible by statute) contribute to restoration of the natural watershed hydrology;
- Consider the cumulative effects on the basin of each new well proposal, including existing but unutilized withdrawal authorizations;
- Issue habitat-based, site-specific and seasonally adjusted stream flow thresholds (to replace Aquatic Base Flow targets);

- Provide technical assistance to public water suppliers regarding water supply conservation, mitigation techniques and watershed hydrology;
- Coordinate mutual municipal assistance in water emergencies to avoid excessive capital investments in redundant infrastructure for individual towns, and
- Convene a dialogue with dam owners regarding the coordination of water release practices to ensure minimum daily summer flows, especially in times of drought.

Additional Recommended Actions for Municipalities

- Adopt and enforce Irrigation System Performance Standards (including night watering of lawns);
- Voluntarily comply with DEP’s water conservation requirements for highly stressed basins;
- Adopt bylaws allowing imposition of watering restrictions on private irrigation wells during periods of hydrological stress;
- Establish meaningful water conservation programs, and fund them through aggressively increasing block water rates; e.g., :
 - toilet replacement,
 - provision of rain barrels for roof runoff,
 - outreach and training on drought resistant plants,
 - elimination of discounts for second water meters;
- Conduct more frequent water billing so that consumers can immediately appreciate the cost of excessive summer water use; and
- Assess culverts to determine if they are barriers to fish passage and/or if they are appropriately sized for the stream.

Recommended Actions for Citizens and Regional Cooperatives

- Help educate the public, landowners, and municipal boards;

- Assist in coordination of municipal water sharing and dam water management practices; and
- Advocate for adequate water conservation funding at state and municipal levels.

Riverine Habitat

Riverine habitat has been greatly degraded in these watersheds due to pollution, low flows, contaminated sediments, invasive plant species, and destruction of natural vegetation along much of the shore that provides wildlife habitat and protects waterways from harmful sedimentation and runoff. Impoundments that no longer serve any useful purpose have eliminated or suppressed most anadromous fish runs in the watersheds. In addition to the recommendations below, the restoration of riverine habitats will require implementation of many of the other recommendations of this Action Plan. [Note that there are no surface streams in the Boston Inner Harbor Watershed.]

Recommended Actions for State Government

- Conduct ecological risk assessments of removing dams and/or creating fish passages;
- Prepare an inventory and ranking of potential riparian restoration sites, considering factors such as loss of buffer zone, channelization, bank armoring, channel erosion, daylighting and culverts set at wrong elevation or size;
- Assess areas of identified contaminated sediments in each watershed and develop Action Plans for dealing with them;
- Develop Open Space and Invasive Plant Inventories and Action Plans;
- Conduct regular fish and bug sampling to better assess aquatic ecological health;
- Designate appropriate stream segments as Cold Water Fisheries where such fisheries have in fact been identified in the field and fund continuous flow and temperature monitoring to support these designations;

- Allow offsite riverine habitat mitigation for new development/redevelopment along waterways; and
- Accelerate expenditure of existing Open Space Bond funds for habitat restoration projects.

Recommended Actions for Municipal Governments

- Restore vegetated riverine buffers and remove unnecessary channelization and riprap;
- Maximize use of available grant funds for restoration projects;
- Use wetland and waterways regulations and local wetland bylaws to minimize use of artificial bulkheads and riprap on banks and substitute bioengineered erosion techniques;
- Encourage removal of existing riprap or adding appropriate vegetation to it; and
- Require riverine habitat mitigation (offsite, if appropriate) for new development/redevelopment along waterways.

Recommended Actions for Citizen Groups

- Develop an educational plan and a volunteer network to help identify areas of invasive plant species;
- Conduct continuous flow and temperature monitoring to support recommended cold water fishery designations;
- Obtain state certification for identified “potential” vernal pool habitat, especially in protected wetland areas;
- Maximize use of grant funds for restoration projects; and
- Coordinate volunteers for pulling up water chestnuts and other nuisance aquatic vegetation and removing floating debris.

Public Access to Waterways.

Public access to navigable and potentially swimmable waters is limited in these Watersheds. Public access along the shore is also very limited.

Recommended Actions for State and Municipal Governments

- Expand public waterfront walkways and parks on public property, as well as on private property through Chapter 91 licensing and other incentives;
- Develop shoreline access plans at a parcel level of detail;
- Expand public amenities, handicapped access, and public programs in waterfront areas;
- Connect waterfront walkways to transit and other public lands;
- Prepare an inventory of potential boat launch and canoe launch sites and an action plan for their development;
- Expand the number of public boat ramps, canoe launching areas, water shuttles and other water-related activities; and
- Restore amenities and water quality at public beaches.

Recommended Actions for Citizen Groups:

- Identify locations for public boat launch areas;
- Advocate for public access under Chapter 91; and
- Advocate for waterfront open space acquisition.

Watershed Assessment

As of October 2002, the majority of streams, ponds and estuaries in these watersheds were wholly or partially “unassessed” by DEP, particularly in watersheds other than the Neponset. See DEP’s “Boston Harbor 1999 Water Quality Assessment Report”, October, 2002 for a full list of unassessed water bodies. Obtaining basic scientific data about the condition of our waterways is critical to the development of comprehensive action plans for the watersheds.

Recommended Actions for Federal, State and Municipal Governments

- Provide more federal and state funding to assess all designated uses of the water bodies in these watersheds, including aquatic

life, fish consumption, shellfishing, primary & secondary contact recreation, and aesthetic uses.

Recommended Actions for Citizens and All Levels of Government

- Organize ongoing, volunteer-based, monitoring programs throughout the study area that operate under the auspices of DEP/EPA approved QAPPs.

Boating Initiatives

Recommended Actions for Citizen Groups and All Levels of Government

- Conduct an assessment of current and potential boat pump out facilities and develop an action plan to ensure that these facilities are sufficient;
- Conduct ongoing boater education campaigns;
- Give the U.S. Coast Guard the authority to enforce ballast water requirements; and
- Ensure safe vessel maintenance practices at local marinas and boat yards through a combination of ongoing education and enforcement.

Innovative Strategies: Financing

Many of the specific action items recommended in this Action Plan will without question require more funding to implement. Discussions during the preparation of this Plan turned again and again to the fact that most of the problems outlined here are the result of inadequate funding, unreliable funding streams, and decades of deferred maintenance. Both federal and state funding have declined steadily in the face of inflation over the last few decades, and have fallen precipitously in the last few years. Government agencies at all levels and particularly municipalities will need financial help for these recommended actions to be implemented within a reasonable time

such as encouraging water conservation). In addition, local governments need to demand mitigation of water and sewer problems from developers who wish to avail themselves of these public services.

Recommended Action for State and Federal Governments

- Sewer maintenance and improvement should be treated as highway construction and maintenance are today, with a dedicated user fee-based funding source. Just as federal fees from the retail sale of gasoline are placed in a Trust Fund to pay for highway maintenance, dedicated water-related user fees should pay for the tremendous backlog of maintenance needed for wastewater infrastructure. For example, user fees could be placed on water-based products such as bottled water, soft drinks, etc.; and
- It is essential that funding and staffing at environmental agencies be restored to at least to Massachusetts Fiscal Year 2002 levels. More state and federal technical assistance as well as grant money is needed if municipalities are to fulfill their watershed responsibilities, many of which are mandated by federal and state government.

Recommended Action for Municipal Government

- Water and sewer user fees must be raised to adequately reflect the real costs of these services, especially the costs of addressing deferred sewer maintenance, and the environmental costs of surface and ground water shortages;
- User fee based revenue streams must be created to provide consistent funding for municipal stormwater management and septic system maintenance responsibilities;
- Broaden the “conventional” view of water and sewer infrastructure. Traditionally sewer and water authorities view their roles purely in terms of “pumps and pipes,” ignoring larger questions of watershed management and maintaining their “watershed infrastructure.” In the coming century, where water resources will be increasingly constrained, water and sewer authorities must view their roles more holistically; and
- To minimize fee increases, local governments should do much more on the “demand side” to reduce public water and sewer use (see the many action items on this subject, above,

Innovative Strategies: Regional Collaboration

Recommended Action for Government and Citizens

- Municipalities, with assistance from citizen groups, should take advantage of economies of scale by collaborating on things like:
 - water quality monitoring and testing,
 - public education (e.g., stormwater and water conservation),
 - pilot projects (e.g., development of a “septic utility”),
 - joint purchases of equipment and bidding for services (e.g., vacuum trucks, sewer leak detection equipment),
 - training of town boards (e.g., re/ NPDES Stormwater PhaseII),
 - development of model Bylaws,
 - development of model BMPS (e.g., for sewer pipe installation);
- Improve state interagency coordination of state watershed-related activities (which has deteriorated badly since the abandonment of EOEAs watershed initiative);
- Institutionalize communication and cooperation between towns, water suppliers and citizen groups in each watershed; and
- Joint lobbying effort on state and especially federal funding by municipalities, citizens, nonprofits, and the private sector.

Innovative Strategies: Adapting to Local Conditions

Recommended Action for Government and Citizens

- “Fine tune” materials produced collaboratively (see above) to reflect local conditions (municipal government and/or citizen groups);
- Identify the locations of the most pressing local problems (municipal governments and citizen groups); and
- Establish citizen/advocate committees for each town to strengthen the constituency for sound watershed management and make their voices heard (citizen groups).

Neponset River Watershed Priority Action Items

The following Neponset River Watershed Priority Action Items for 2004 – 2009 are meant to address the key problems identified in the 2004 Neponset River Watershed Assessment (which is part of the larger “Boston Harbor South Watersheds 2004 Assessment”). These Action Items represent localized priorities for the Neponset River Watershed and are meant to be read in conjunction with, and to augment, the “Common Action Plan for All Boston Harbor South Watersheds.”

Priority action items for the Neponset River Watershed mainly revolve around the issues of water quality and water quantity (which in turn affect habitat, recreational opportunities, etc.). The larger issue of growth management, which has a profound impact on water quality and quantity, is largely beyond the scope of this document. However, there are a number of action items that are closely related to growth, such as minimization of impervious surfaces for new development, improved stormwater management, and wastewater improvements that will increase groundwater recharge.

Finally, priority action items are correlated to priority locations whenever appropriate, in so far as available information allows. There are, however, undoubtedly additional locations where specific problems are as bad or worse than those identified in this document. Thus the identity of priority locations for the implementation of priority action items is likely to change as more information becomes available.

Sewer Systems: General

Despite the issuance of a Bacteria (fecal coliform) Total Maximum Daily Load (TMDL) covering the entire Neponset River Watershed in 2002, bacteria and nutrient levels remain perhaps the most serious problems in

the watershed. Based on the extent of these problems, all of the sewer system problems discussed below can undoubtedly be found in many of the watershed’s municipalities. It is often difficult to know, however, which sewer-related problems are causing the bacteria problem without significant investigative work. Actions needed to address bacteria are thoroughly discussed in the “Common Action Plan.” Priority action items and locations within the Neponset River Watershed are listed below.

Priority Action Item for State, Municipalities and Citizen Groups

- Execute the basin-wide implementation strategy relating to sewer systems contained in the 2002 TMDL for Bacteria in the Neponset River Basin.

Priority sites for investigation and remediation of bacterial problems from unknown sewage sources:

- Beaver Meadow Brook (Canton/Stoughton); severe wet weather bacteria problem
- East Branch (Canton); wet weather bacteria problem
- Middle Mainstem (Boston, Canton, Dedham, Milton, Norwood, Westwood); wet weather bacteria problem
- Pecunit Brook (Canton); wet weather bacteria problem combined with high nutrients
- Ponkapoag Brook (Canton/Randolph); wet weather bacteria problem combined with high nutrients

- Purgatory Brook (Norwood/Westwood); wet weather bacteria problem combined with high nutrients
- Steep Hill Brook (Stoughton/Sharon); wet weather bacteria problem combined with high nutrients
- Traphole Brook (Norwood/Walpole/Sharon); wet weather bacteria problem combined with high nutrients.

- The state should fund a project to assess existing municipal I/I “banking” programs and provide outreach/technical assistance to improve their efforts; and
- The state should study the feasibility of private infiltration/inflow removal programs at the state and/or municipal level and provide outreach and technical assistance to implement them.

Sewer Systems: Illicit Connections

Priority action for State, Municipalities and NepRWA

- Execution of the basin-wide implementation strategy relating to illicit discharge detection and elimination contained in the 2002 TMDL for Bacteria in the Neponset River Basin. The TMDL states: “A comprehensive program is needed to ensure illicit sources are identified and that appropriate actions will be taken to eliminate them. NepRWA has been successful in carrying out such monitoring, identifying sources, and, in some case(s), mobilizing the responsible municipality to begin to take corrective action.” US EPA’s recent Stormwater II regulations for municipalities also mandate illicit discharge detection and elimination. This effort needs to be implemented in all cities and towns in the watershed.

Sewer Systems: Exfiltration

Priority Actions

- Execution of the basin-wide implementation strategy relating to leaking sewer pipes contained in the 2002 TMDL for Bacteria in the Neponset River Basin. The TMDL gives primary responsibility to municipalities;
- EPA and DEP should follow up on 308 letters issued to Norwood and Milton;
- Norwood should continue the Meadow Brook investigation and remediation; and
- Milton should continue Unquity Brook investigations.

Sewer Systems: Infiltration and Inflow (I/I)

Priority Actions

- Execution of the basin-wide implementation strategy relating to leaking sewer pipes contained in the 2002 TMDL for Bacteria in the Neponset River Basin. The TMDL gives primary responsibility to municipalities;
- The state and municipalities within the Watershed should establish/maintain 4:1 mitigation banking for new development;

Priority sites in the Neponset River Watershed with known exfiltration problems

- Meadow Brook (Norwood); severe dry and wet weather bacteria with high nutrients

Sewer Systems: Sewer Extensions and Capacity Expansions

Priority Actions

- 4:1 mitigation of infiltration and inflow for all sewer extensions based on both peak and annual flow;

- Sewer extensions used as wastewater alternative of last resort; and
- Focus on source reduction (infiltration and inflow) rather than capacity increases to remediate SSOs and surcharging.

Sewer Systems: Sanitary Sewer Overflows (SSOs)

Sanitary sewer overflows during storm events are a major cause of bacterial (as well as nutrient pollution) of surface waters in the Neponset River Watershed. The Clean Water Act requires local sewer authorities to report SSOs, with MA DEP and USEPA then issuing letters requiring remedial action. In the Neponset Watershed, such letters have been issued to Milton and Norwood, but little or no follow-up action has been taken by DEP or EPA.

Priority Actions for State and Federal Governements

- DEP should produce a GIS data layer identifying locations of SSOs and then meet with sewer authorities and interested citizens to make sure the maps are accurate and complete. DEP and EPA should consistently follow up with towns that have SSOs to ensure that remediation plans with timetables are adopted. Enforcement action should be initiated if towns are unresponsive. Sewer extensions should be barred in any such community that does not have an SSO remediation plan; and
- EPA and DEP should follow up on 308 letters issued to Norwood and Milton.

Priority Actions for Local Authorities

- Execution of the basin-wide implementation strategy relating to SSOs contained in the 2002 TMDL for Bacteria in the Neponset River Basin. The TMDL gives primary responsibility to municipalities;
- Local authorities should help identify SSO locations and ensure that solutions are implemented in a timely fashion; and
- Local authorities should also educate the public about SSOs

and their causes.

Priority Actions for Citizen Groups

- Citizen groups should help locate SSOs and should educate the public about SSOs and their causes. They should also organize locally to pressure for SSO remediation and, as a last resort, file Clean Water Act citizen lawsuits to mandate appropriate action.

Priority locations for SSO remediation:

These areas have been found by NepRWA in 2001 - 2003 to violate Massachusetts Water Quality Standards (MA DEP, 1996) for bacteria for “Class B” waters (not designated as bathing beaches):

- Hawes Brook (Norwood); violates bacteria criterion > 25% of time in wet and dry weather:
- Pequit Brook (Canton, Randolph); violates bacteria criterion > 50% of time in wet weather and > 25% in dry weather*;
- Pine Tree Brook (Milton); violates bacteria criterion 10 – 25% of the time in wet weather*; and
- Unquity Brook (Milton); Violates bacteria criterion > 50% of time in wet weather*; among highest nutrient levels in the watershed.

Stormwater Management and Groundwater Recharge

This is a critical issue in the Neponset River Watershed from a water quality and groundwater recharge perspective. Significant runoff from impervious surfaces are almost certain to exist in all watershed stream segments in urbanized areas and near major transportation corridors and shopping centers.

Priority Actions

- State and federally funded volunteer-based water quality testing (using cash and in-kind support from municipal, state,

and private sources) should be expanded to support Phase II activities through annual outfall inspection and mitigation, collaborative education and public participation efforts;

- The state should require implementation of town-wide bylaws under Phase II with emphasis on recharge that applies to both new development and redevelopment;
- The state should undertake an evaluation of current Phase II bylaws and provide outreach and technical assistance to towns to improve the bylaws and their administration;
- The state should undertake a watershed-wide assessment of potential public and private stormwater retrofit sites;
- The state and federal governments should increase availability of grant funds for remediation, and municipalities and citizen groups should maximize use of available grant funds;
- The state should undertake a feasibility study for the creation of stormwater utilities at the municipal level in the Neponset River Watershed;
- The state or federal government should undertake an effort to produce a model bylaw for low impact development, followed by outreach and technical assistance to towns;
- There should be a collaborative multi-town, state, and citizen group effort to implement the educational/public participation aspects of Phase II more effectively; and
- Regarding nutrients, the state should produce a Watershed Based Plan or a TMDL.

Priority sites for remediation of runoff from impervious surfaces

- East Branch mainstem (Canton); violates bacteria criterion > 25% of time in wet weather*];
- Estuary (Boston, Milton, Quincy); violates bacteria criterion > 50% of time in wet weather and > 25% in dry weather*; among highest nutrient levels in the watershed;

- Germany Brook (Norwood/Westwood); violates bacteria criterion > 50% of time in wet weather and > 25% in dry weather*; among highest nutrient levels in the watershed;
- Hawes Brook (Norwood); violates bacteria criterion > 25% of time in wet and dry weather*; trash and debris from runoff;
- Lower Mainstem (Boston, Milton); violates bacteria criterion > 50% of time in wet weather*; among highest nutrient levels;
- Middle Neponset mainstem (Boston, Canton, Dedham, Milton, Norwood, Westwood); violates bacteria criterion > 25% of time in wet weather*; trash and debris from runoff;
- Mother Brook (Boston, Dedham); violates bacteria criterion > 25% of time in wet and dry weather*; among highest nutrient levels in the watershed; trash and debris from runoff;
- Pequit Brook (Canton, Randolph); violates bacteria criterion > 50% of time in wet weather and > 25% in dry weather*];
- Pine Tree Brook (Milton); violates bacteria standard 10 – 25% of time in wet weather*; and
- Unquity Brook (Milton); violates bacteria criterion > 50% of time in wet weather and > 25% in dry weather*; among highest nutrient levels in the watershed; trash and debris from runoff.

* Found by NepRWA in 2001 - 2003 to violate Massachusetts Water Quality Standards (MA DEP, 1996) for bacteria for “Class B” waters (not designated as bathing beaches)

Priority Sites for remediation of runoff of fertilizers, animal wastes, and organic material from lawns, parks, golf courses, etc.(Partial List)

- See “Management of Landscaped Areas”, below

Septic Management

As stated in the “Common Action Plan,” septic systems effectively recharge groundwater at a local level, as opposed to sewer systems

that take water from the Neponset Watershed and discharge it directly (via MWRA) into Massachusetts Bay. For this reason, septic systems and other decentralized approaches to wastewater treatment are the environmentally preferable method of sewage disposal in the Watershed.

Priority Actions

- DEP should consider sewer extensions and expansions only as a last resort as a substitute for decentralized wastewater treatment systems. Septic should be the preferred method of wastewater treatment for family homes where lot sizes permit; and
- Septic utilities should be considered in every town where a significant percentage of the population uses septic systems. The Neponset River Watershed Association (NepRWA) is currently working with the Town of Walpole to examine possible implementation of a septic utility concept which could:
 - maximize regular pumping of all septic systems,
 - decrease septic pumping costs,
 - “insure” septic owners for the costs of major repairs and replacement,
 - increase municipal awareness of septic system failures, and/or
 - establish a dedicated revenue source (grants or loans) for septic repair and replacement.

Priority Sites for Remediation

- Unquity Brook (Milton); failed septic systems specifically suspected near headwaters

Other Priority Sites. The following Neponset River Watershed towns are at least 30% on septic systems, and thus priority sites for

septic-related action items:

- Canton; 30% septic;
- Foxboro; 95% septic;
- Medfield; 67% septic;
- Sharon; 98% septic;
- Stoughton; 36% septic; and
- Walpole; 36% septic [NepRWA and Town of Walpole now working on citizen education and possible development of a septic utility].

Management of Landscaped Areas

Priority Actions

- Pursuant to Phase II stormwater rules, a multi-town, state and private collaboration should be established to achieve effective public education and public participation on methods to limit stormwater runoff from lawns, etc.

Priority sites for remediation of runoff of fertilizers, animal wastes and organic material from lawns, parks, golf courses etc.

- Germany Brook (Norwood and Westwood); violates bacteria standard > 50% of time in wet weather and > 25% in dry weather*; among highest nutrient levels in the watershed;
- Ponkapoag Brook (Canton and Randolph); violates bacteria standard > 25% of time in wet weather*; among highest nutrient levels in the watershed;
- Steep Hill Brook (Stoughton and Sharon); violates bacteria standard > 25% of time in wet weather*; among highest nutrient levels in the watershed; and
- Unquity Brook (Milton); violates bacteria standard > 50% of time in wet weather and > 25% of time in dry weather*; among

highest nutrient levels in the watershed.

* Found by NepRWA in 2001 - 2003 to violate Massachusetts Water Quality Standards (MA DEP, 1996) for bacteria for “Class B” waters (not designated as bathing beaches)

Water Supply and Streamflow

The key limiting uses which would define “adequate” instream flow levels for the Neponset River include flows necessary to preserve recreation (canoeing) on the freshwater mainstem through Boston during the summer, flows needed to ensure adequate inundation of existing anadromous fishery spawning grounds at Lower Mills from April through July, and flows needed to sustain viable resident freshwater fisheries throughout the watershed during the dry summer months. Causes of low instream flow include excessive use of water drawn from the Neponset Watershed, especially in summer months (this includes water obtained from public water supplies and from the approximately 1,100 private wells in the watershed); interbasin transfer, especially via the MWRA sewer system; manipulation of water levels in impoundments; and, most importantly, poor stormwater management and sewer infiltration and inflow.

Although virtually every town in the watershed has experienced a water emergency and imposed some sort of water use restrictions to deal with it, little has been done comprehensively to reduce water use. The Massachusetts DEP is to be commended for its recent issuance of a Water Management Act Guidance, with mandatory water conservation measures for communities in watersheds or subwatersheds designated as “stressed” by EOE. Unfortunately, most of the Neponset Watershed is “unassessed” and the moderate to low stress levels EOE did set for portions of the watershed are, in our view, not reflective of the true levels of stress that the entire watershed is experiencing (see “2004 Neponset River Watershed Assessment.”

Priority Action for Federal Government

- Development by USGS of a ground and surface water model for the Neponset watershed to aid in predicting effects of water withdrawals and other major water-related activities requiring a federal, state or local permit, and to aid in evaluating restoration

alternatives.

Priority Actions for State Government

- Based on existing site specific data and DEP recommendations, reclassify all of the Neponset River Watershed as a “highly stressed basin,” thus subjecting it to the strictest state water conservation standards; alternatively, set stricter conservation standards for low stressed and unassessed basins;
- The state should establish a “Net Gain” standard for all permitting decisions effecting Neponset River Watershed water supply; and
- The state should commence a dialogue with dam owners regarding the coordination of water release practices to ensure minimum daily summer flows, especially in times of drought.

Priority Actions for Municipalities and Water Suppliers

- Adopt and enforce Irrigation System Performance Standards (including night watering of lawns) as described in “Options for Managing the Impact of Private Irrigation Wells and Surface Diversions on Wetlands, Waterways and Public Water Supplies”, June 30, 2003, prepared by NepRWA and Alexandra Dawson for the Westwood Conservation Commission and the MA Department of Fisheries, Wildlife and Environmental Law Enforcement;
- All municipalities and water suppliers need to dedicate meaningful funding to water conservation activities and effective outreach, which is achievable through a fee of \$10 to \$20 per year per service connection; and
- Towns should collaborate to maximize effectiveness in water conservation efforts.

Priority Action for Citizen Groups

- Complete pilot dam survey in East Branch of Neponset River and expand it to the entire basin.

Priority Sites for Streamflow Improvements

- Primary cause, excessive water withdrawals
 - Beaver Brook (Sharon); habitat constraints due to low base flows; substantial additional streamflow impacts expected from projected 22% increase in water withdrawals from 1995 to 2010;
 - Beaver Meadow Brook (Canton and Stoughton); habitat constraints due to low base flows;
 - Middle mainstem (Boston, Canton, Dedham, Milton, Norwood, Westwood); substantial streamflow impacts expected from projected 28% increase in water withdrawals from 1995 to 2010;
 - Mill Brook tributary of Mine Brook (Medfield and Dover); habitat constraints due to occasionally severe low flows; substantial streamflow impacts expected due to projected 99% increase in water withdrawals by 2010;
 - Purgatory Brook (Norwood, Westwood); substantial streamflow impacts expected due to projected 25% increase in water withdrawals from 1995 to 2010;
 - School Meadow Brook (Walpole, Sharon, Foxborough); substantial streamflow impacts expected due to projected 25% increase in water withdrawals from 1995 to 2010;
 - Unquity Brook (Milton); and
 - Upper mainstem (Canton, Foxborough, Norwood, Walpole); substantial streamflow impacts expected due to projected 69% increase in withdrawals from Neponset Reservoir.
- Primary cause: impoundments and channelization
 - Lower Neponset mainstem (Boston, Milton); channelization;
 - Massapoag Brook (Sharon and Canton); channelization in lower reaches; habitat constraints due to low base flows;

- Mother Brook (Boston, Dedham); channelization;
- Pinetree Brook (Milton); on DEP impaired waters list for habitat alterations; and
- Plantingfield/Purgatory Brook (Norwood, Westwood); channelization.

- Primary cause: water withdrawals and impoundments/channelization
 - East Branch (Canton); habitat constraints due to low flows; extreme high temperatures due to shallow impoundments;
 - Pequit Brook (Canton, Randolph); habitat constraints due to low base flows; and
 - Steep Hill Brook (Stoughton, Sharon); habitat constraints due to low base flows
- Primary cause: complex or unknown
 - Estuary (Boston, Milton, Quincy); degraded anadromous fish run due to low flows;
 - Mine Brook (Medfield and Walpole); severe low flows; and
 - Spring Meadow Brook (Walpole).

Riverine Habitat

Priority Actions for State Government

- Develop and implement a plan to fully or partially remove the Tileston & Hollingsworth (T&H) and Baker Dams from the lower Neponset River and remediate contaminated sediments. This would make the river navigable from Dorchester Bay to 17 miles inland of the Baker Dam, and would restore a great deal of the historic anadromous fish runs to the watershed;

- In the short term, fix the T&H Dam so as to minimize fluctuation of water levels beneath the dam;
- Implement to the maximum extent feasible EOEAs Neponset Wetlands Restoration Plan using available grant funds;
- Implement Neponset Salt Marsh Restoration Project immediately to avoid loss of federal funding;
- Designate Tubwreck Brook, Traphole Brook, the Mill Brook tributary of Hawes Brook, the Mill Brook tributary of Mine Brook, and the headwaters of Pine Tree Brook as Cold Water Fisheries in the state Surface Water Quality Standards; fund continuous flow and temperature monitoring to support these designations;
- Conduct ecological risk assessments of removing the other one hundred or so dams in the watershed and/or creating fish passages;
- Inventory riparian shoreline buffers and stream channels and culverts for restoration;
- Investigate and remediate the desiccation of the middle reach of Unquity Brook;
- Evaluate options to maintain/restore adequate flows in Beaver Brook and Mill/Mine Brook;
- Assess the extent and severity of contaminated sediments in the watershed and develop an Action Plan for dealing with them;
- Assess extent of invasive terrestrial and aquatic species and develop and Action Strategy;
- Develop a new open space needs and opportunities plan for the watershed as a whole; and
- Remediate contaminated sediments and abate eutrophication in Neponset Reservoir.

Priority Action for Citizen Groups

- Coordinate volunteers to annually pull up water chestnuts in

Ellis Pond (Norwood) and Clarks Pond (Walpole).

Additional Priority Locations for Habitat Improvements

- Primary problems, lack of riparian buffer and dumping of grass clippings by homeowners
 - Germany Brook (Norwood & Westwood);
 - Steep Hill Brook (Stoughton and Sharon); and
 - Unquity Brook (Milton) [see also “Primary problem: illegal dumping, below].
- Primary problem, sedimentation
 - Beaver Meadow Brook; (Canton and Stoughton); sedimentation in upper reaches;
 - Pequit Brook (Canton, Randolph);
 - Pinetree Brook (Milton); on DEP impaired waters list for habitat alterations [see also Primary problem: construction site erosion, below]; and
 - Traphole Brook (Norwood, Walpole, Sharon); severe sedimentation in lower reaches.
- Primary problem, illegal dumping
 - Hawes Brook (Norwood);
 - Lower Neponset mainstem (Boston, Milton); illegal disposal of sand-laden snow by Stop and Shop in Hyde Park;
 - Mother Brook (Boston, Dedham); and
 - Unquity Brook (Milton) [see also Primary problem: lack of riparian buffer and dumping of grass clippings].
- Primary problem: construction site erosion

- Pinetree Brook (Milton); on DEP impaired waters list for habitat alterations [see also Primary problem: sedimentation, above]; and
- Bird Pond (Walpole).

bacteria testing;

- Amend list of Category 4a Waters (“TMDL is Completed”) and Category 5 Waters (“Waters Requiring a TMDL”) in accordance with NepRWA’s May 24, 2004 comment letter on the proposed Massachusetts Year 2004 Integrated List of Waters (see next page); and
- Regarding nutrients in the Neponset River Watershed, develop a Watershed Based Plan or TMDL.

Public Access to Waterways

Priority Actions for State Government

- Create a public boat ramp in the Neponset Estuary;
- Develop a conceptual plan for a riparian trail system along the Neponset River above Paul’s Bridge;
- Complete Phase II for the Neponset River Reservation Master Plan (DCR);
- Implement NepRWAs conceptual plan for Quincy’s Riverwalk and DCRs Master Plan for Squantum Point;
- Improve canoe launch at Neponset St. in Canton, taking land by eminent domain if necessary;
- Develop a new open space needs and opportunities plan for the watershed as a whole; and
- Create a Neponset Valley Land Trust to assist local trusts and fill the many gaps where local trusts are absent.

Priority Action for Municipal Governments

- In lieu of state action, improve canoe launch at Neponset St. in Canton, taking land by eminent domain if necessary.

Watershed Assessment

Priority Action

- State, federal and municipal governments working with private funders should provide money to reestablish volunteer-based

Changes to 303d List as Proposed by NepRWA

NEPONSET RIVER WATERSHED ASSOCIATION

Page 1 of 4

499 Chapman Street, Suite 4100 B., Canton, MA 01028
 phone 781-515-8154 - fax 781-515-9971

May 26, 2004

Mr. Arthur Johnson
 Massachusetts Department of Environmental Protection
 Division of Watershed Management
 625 Main Street, Second Floor
 Worcester, MA 01608

Re: Proposed Massachusetts Year 2004 Integrated List of Waters

Dear Mr. Johnson:

As you know, the Neponset River Watershed Association (NepRWA) has conducted significant sampling of stream segments within the Neponset River Watershed. NepRWA data was cited extensively in your "Boston Harbor 1999 Water Quality Assessment Report", published in October, 2002. Data from NepRWA sampling done as late as 2003 was used in that Report.

We have now analyzed the results of our sampling from 2003 through March, 2004, most of which DEP has not yet seen (we have attached a copy of the Draft CMRW Final Report 2003 which contains full sampling results for each monitored stream segment). By comparing these sampling results to your "Proposed listing of the condition of Massachusetts' water pursuant to Sections 303(d) and 303(b) of the Clean Water Act", we have identified a number of stream segments that we feel should be added to either Category 4a Waters ("TMDL is Completed") or Category 3 Waters ("Water requiring a TMDL").

Proposed additions to Category 4a Waters (TMDL is completed for pathogens) based on MA Surface Water Quality Standard of 200 cfu/100 udl and on NepRWA sampling from 2003 through March, 2004:

- **Pecann Brook** - NepRWA sampling for fecal coliform found wet weather problems rendering the segment unusable more than 25% of the time and dry weather problems rendering it unusable more than 10% of the time.
- **Steep Hill Brook** - NepRWA sampling for fecal coliform found wet weather problems rendering the segment unusable more than 25% of the time.
- **Spring Brook** - NepRWA sampling for fecal coliform found wet weather problems rendering the segment unusable more than 10% of the time.

- **Beaver Brook** - NepRWA sampling for fecal coliform found wet weather problems rendering the segment unusable more than 10% of the time.
- **Tributor to Massachusetts Brook (segment 75-37)** - The DEP "Boston Harbor 1999 Water Quality Assessment Report" found that this segment supported primary and secondary contact recreation. However, based on EPA's correction to DEP's methodology for assessing wet weather pollution problems in the 1999 Assessment, Rice McVay of your office recently told us that DEP considers this segment as impaired for primary contact recreation due to wet weather fecal coliform problems.

Proposed additions to Category 3 Waters (Water requiring a TMDL) based on NepRWA sampling from 2003 through March, 2004:

- **Pollutant Exceeding TMDL** - Nutrients - In evaluating the stream segments listed below for nutrients, NepRWA considered the average percentage of samples where we found Total Nitrogen greater than 0.1 mg/L and Orthophosphates at or more than 0.08 mg/L; Orthophosphates from 0.01 to 0.08 mg/L were also factored in by assuming that two samples in this range were equal to one sample over 0.08 mg/L. These parameters were based on water quality thresholds in Daniel, Thomas and Lewis B. 1 report, "Water in Environmental Planning," 1978, W.H. Freeman & Company, New York.
 - **Pangloss Brook** - Nutrient problems found 50% of the time.
 - **Steep Hill Brook** - Nutrient problems found 55% of the time (DUE's "1999 Boston Harbor Watershed Assessment" also cited nutrients as a "known cause" for causing this brook to only partially supporting aquatic life).
 - **Blue Tree Brook** - Nutrient problems found 55% of the time.
 - **Tripole Brook** - Nutrient problems found 50% of the time.
 - **Pockanog Brook** - Nutrient problems found 30% of the time.
 - **Pecann Brook** - Nutrient problems found 48% of the time.
 - **Lower Mainstem** - Nutrient problems found 48% of the time.
 - **Mill Brook** - Nutrient problems found 48% of the time.
 - **Beaver Bl.** - Nutrient problems found 48% of the time.
 - **Nepnet Primary** - Nutrient problems found 46% of the time.
 - **Mill Brook** - Nutrient problems found 45% of the time.
 - **Middle Mainstem** - Nutrient problems found 36% of the time.
 - **Hawes Brook** - Nutrient problems found 30% of the time.
 - **Canal Brook** - Nutrient problems found 25% of the time.
 - **Spring Brook** - Nutrient problems found 23% of the time.
 - **School Meadow** - Nutrient problems found 22% of the time.
 - **Water Brook** - Nutrient problems found 15% of the time.
 - **Beaver Meadow** - Nutrient problems found 13% of the time.

Arthur Center, Dickson Drive, Ashburnham, Bedford, Shive, Hornoad, Quaker, Randolph, Shaver, Shaughey, W. York, Westwood

April 20, 2004, 11:30 AM EDT

