AUTHORIZATION TO DISCHARGE UNDER THE
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provisions of the federal Clean Water Act, as amended, 33 U.S.C. §§1251 et seq., and the Massachusetts Clean Waters Act, as amended, Mass. Gen. Laws. ch. 21, §§26-53, the

City of Worcester
Department of Public Works

and is authorized to discharge from all new or existing separate storm sewers: **existing Separate Storm Sewer Outfalls which are listed in Attachment A (93 major outfalls) and all other known outfalls (170 minor outfalls)**

to receiving waters (in the BLACKSTONE RIVER BASIN) named: **Beaver Brook, Blackstone River, Broad Meadow Brook, Coal Mine Brook, Coes Pond, Curtis Pond, Fitzgerald Brook, Indian Lake, Kendrick Brook, Kettle Brook, Lake Quinsigamond, Leesville Pond, Middle River, Mill Brook, Mill Brook Tributary, Tatnuck Brook, Patch Reservoir, Poor Farm Brook, Smiths Pond, Weasel Brook and Williams Millpond** in accordance with effluent limitations, monitoring requirements and other conditions set forth herein.

This permit shall become effective thirty (30) days after the date of signature.

This permit and the authorization to discharge expire at midnight, five years from the effective date.

This permit consists of **21** pages and **Attachment A** in Part I including wet and dry weather monitoring requirements, etc., and 35 pages in Part II including General Conditions and Definitions.

Signed this 30 day of September, 1998

Director
Office of Ecosystem Protection
Environmental Protection Agency
Region I
Boston, MA

Director, Division of
Watershed Management
Department of Environmental
Protection
Commonwealth of Massachusetts
Boston, MA

PART I. MUNICIPAL SEPARATE STORM SEWER SYSTEM

A. DISCHARGES THROUGH THE MUNICIPAL SEPARATE STORM SEWER SYSTEM AUTHORIZED UNDER THIS PERMIT

1. Permit Area. This permit covers all areas within the corporate boundary of the City of Worcester served by, or otherwise contributing to discharges from new or existing separate storm sewers owned or operated by the Department of Public Works, the "permittee".

2. Authorized Discharges. This permit authorizes all storm water discharges to waters of the United States from all existing or new outfalls owned or operated by the permittee (existing outfalls are identified in Attachment A). This permit also authorizes the discharge of storm water commingled with flows contributed by process wastewater, non-process wastewater, or storm water associated with industrial activity provided such discharges are authorized under separate NPDES permits and in compliance with applicable Federal, State and local regulations.

   Storm water discharges related to industrial activity which are not under the jurisdiction of the storm water program are authorized. The permittee shall provide in the annual report (Part I.E.) to EPA and MA DEP a review of all new separate storm sewer outfalls that are activated and of all existing outfalls which are de-activated.

3. Limitations on Coverage. The following discharges are not authorized by this permit:

   a. Discharges of non-storm water or storm water associated with industrial activity through outfalls listed in Attachment A are not authorized under this permit except where such discharges are:

      I. authorized by a separate NPDES permit; or

      ii. identified by and in compliance with Part B.2.g of this permit.

B. STORM WATER POLLUTION PREVENTION & MANAGEMENT PROGRAMS

The permittee is required to continue to develop, implement and revise as necessary, a storm water pollution prevention and management program designed to reduce, to the maximum extent practicable, the discharge of pollutants from the Municipal Separate Storm Sewer System (MS4). The permittee may implement Storm Water Management Program (SWMP) elements through participation with other public agencies or private entities in cooperative efforts satisfying the requirements of this permit in lieu of creating duplicate program elements. Either cumulatively, or separately, the permittee's storm water pollution prevention and management programs shall satisfy the requirements of Part I.B.1-7. below for all portions of the MS4.

1. POLLUTION PREVENTION REQUIREMENTS The permittee shall develop and implement the following pollution prevention measures:

a. Development The permittee, in cooperation with the agency with jurisdiction over land use, shall include requirements to consider water quality impacts of new development and significant re-development. The permittee shall ensure that development activities conform to applicable state and local regulations, guidance and policies relative to the discharge of storm water into the MS4. The goals of these requirements shall be to limit increases in the discharge of pollutants into the MS4 from new development and to reduce the discharge of pollutants into the MS4 from existing sources due to re-development.

b. Used Motor Vehicle Fluids The permittee shall describe educational activities, public information activities and other appropriate activities to facilitate the proper management, including recycling, reuse and disposal, of used motor vehicle fluids. The permittee shall coordinate with appropriate public agencies or private agencies where necessary. Such activities shall be readily available to all private residents and be publicized and promoted on a regular basis (at least annually).

c. Household Hazardous Waste (HHW) The permittee shall coordinate with the appropriate public agency or private entities to ensure the implementation of a program to collect household hazardous waste materials (including paint, solvents, pesticides, herbicides, and other hazardous materials) for recycle, reuse, or proper disposal. Such program shall be readily

available to all private residents and be publicized and promoted on a regular basis (at least annually).

2. STORM WATER MANAGEMENT PROGRAM REQUIREMENTS: The permittee shall continue to implement the current elements of its' Storm Water Management Program (SWMP) which was described in the May 11, 1993 Part II application in accordance with Section 402(p)(3)(B) of the Clean Water Act (CWA or "the Act"), including any updates.

The current SWMP does not adequately address all the required elements described on Pages 5-11 below. The EPA sent a letter to the City of Worcester on June 6, 1997 specifying which portions of the current SWMP needed more description, effort, or clarification. The items included were the illicit connection program, a discussion of the City's indebtedness and funding for storm water programs, geographic mapping, reevaluation of wet weather sampling locations, construction area oversight, and public education. The City submitted a letter addressing these concerns on March 25, 1998. Although most issues were discussed, there is still some detail and proposed effort that is insufficient.

In particular, the sampling plan proposes grab samples at five different outfalls, three times per year. In order to get a sense of any trend and how parameter concentrations change over time during storm events, the permittee must conduct composite sampling or a series of grab samples for the summer sampling event at each of the five outfalls, as described later. In Section C. below, this permit includes minimum expectations for outfall monitoring and instream monitoring during wet weather. Instream monitoring could provide information on both the pollutant concentration peaks as well as the pollutant loading increases that occur as a result of storm events.

More detail and effort is needed for the catch basin cleaning and inspection program, as shown on Page 6. This last issue was not raised in the letter of June 6, 1997, but this program was found to be deficient upon further review.

Within **120** days after the effective date of this permit, the permittee shall submit a written description of all additional measures it will take, relative to items mentioned above, to satisfy the requirements of this permit and the goals of the proposed SWMP. **This submittal will include the entire SWMP effort, including all the original items as included in Worcester's Part II application.** This

shall be submitted to the EPA the MA DEP at the addresses in Section G. Unless disapproved by EPA or the MA DEP within 60 days after its submittal, the SWMP shall be deemed approved. The permittee shall respond to all written comments by EPA and the MA DEP and shall make all changes to the SWMP required for its approval. As noted later, compliance with the SWMP shall occur no later than 180 days after the effective date of the permit or no later than EPA and DEP's approval of the SWMP. This SWMP shall be displayed at a convenient location accessible to the public.

The Controls and activities identified in the SWMP shall clearly identify goals, a description of the controls or activities, and a description of the roles and responsibilities of other entities' areas of applicability on a system, jurisdiction, or specific area basis.

The permittee will specifically address how it will have input on any portions of the SWMP which may not be under its direct control (i.e. Mass Highway Department's maintenance of interstate highway) and how it will cooperate with such entities to achieve the goals of the SWMP.

If, during the life of this permit, EPA and the DEP determine that the permittee cannot substantively operate these programs to effectively reduce pollutants to the MS4, then the permit may be modified to designate one or more agencies that administer these programs as co-permittees. These entities would then be responsible for applicable permit conditions and requirements. Alternatively, one or more entities may be required to apply for and obtain an individual storm water permit for their discharges. The SWMP, and all approved updates, are hereby incorporated by reference and shall be implemented in a manner consistent with the following requirements:

a. Statutory Requirements: SWMPs shall include controls necessary to reduce the discharge of pollutants from the MS4 to the Maximum Extent Practicable,"MEP". Controls may consist of a combination of best management practices, control techniques, system design and engineering methods, and such other provisions as the permittee, the Director or the State determines appropriate. The various components of the SWMP, taken as a whole (rather than individually), shall be sufficient to meet this "MEP" standard. The SWMPs shall be updated as necessary to ensure conformance with the requirements of CWA § 402(p)(3)(B). In implementing the SWMP, the permittee

is required to select measures or activities intended to meet these requirements:

No discharge of toxics in toxic amounts.

No discharge of pollutants in quantities that would cause a violation of State water quality standards.

No discharge of either a visible oil sheen, foam, or floating solids, in other than trace amounts, at any time.

No discharge of suspended or settleable solids in concentrations or combinations that would impair the uses of the class of receiving waters.

b. Structural Controls: The permittee shall operate and maintain any storm water structural controls, for which it is the owner or operator, in a manner so as to reduce the discharge of pollutants to the MEP. Each catch basin shall be cleaned at least every other year as described in the SWMP.

The cleaning program must include the recording and inputting of all activities in an automated database for all catch basins, including the date of cleaning, the location of each catch basin, and an estimate of how full the catch basin was when it was cleaned. For those catch basins which are found to be more than approximately 50% full, a follow up inspection will be conducted within 3 - 6 months and cleaning schedules modified as appropriate.

During the life of this permit, the permittee shall conduct a structural control demonstration. Within 180 days after the effective date of the permit, the permittee shall submit a demonstration proposal and schedule to the EPA and MA DEP. Unless disapproved by the EPA or the MA DEP within 30 days after its submittal, the proposed demonstration project shall be deemed approved.

The permittee can reference the MA DEP document titled, Stormwater Management, Volume 1: Stormwater Policy Handbook and Stormwater Management, Volume II: Stormwater BMP Handbook. This provides an overview of storm water controls, including ranges of removal for typical storm water pollutants. This proposal shall measure the removal efficiency of a particular structural control in the MS4 area for several pollutants with influent and effluent sampling during the life of this permit.

c. Areas of New Development and Significant Redevelopment: The permittee and/or cooperating agencies shall develop, implement, and enforce controls to minimize the discharge of pollutants to the separate storm sewer system from areas of new development and significant re-development during and after construction. The permittee and/or cooperating agencies shall ensure development activities conform to applicable state and local regulations, guidance and policies. The permittee and/or cooperating agencies shall consider water quantity and water quality impacts related to development and significant redevelopment. The permittee and/or cooperating agencies shall conform to the policy of the MA DEP titled **Performance Standards and Guidelines for Stormwater Management in Massachusetts.**

d. Roadways: The permittee shall coordinate with appropriate agencies to implement measures to ensure that roadways and highways are operated and maintained in a manner so as to minimize the discharge of pollutants to the separate storm sewer system (including discharges related to deicing and sanding activities and snow removal and disposal).

The permittee shall conduct an investigation of the drainage from roadways that are owned or operated by other entities, primarily the Massachusetts Highway Department. Within 180 days after the effective date of the permit, **the permittee shall report to the EPA and the MA DEP, which of these roadway drainage systems are connected to the MS4.** The SWMP will also include a description of how the permittee will coordinate with such entities to assure that discharges to the MS4 through such drainage meets the requirements of the permit.

e. Flood Control Projects: The permittee shall ensure any flood management projects consider impacts on the water quality of receiving waters. The permittee shall also evaluate the feasibility of retro-fitting existing structural flood control devices to provide additional pollutant removal from storm water.

f. Pesticide, Herbicide, and Fertilizer Application: The permittee shall implement measures to reduce the discharge of pollutants to the MS4 related to the application and storage of pesticides, herbicides, and fertilizers applied by municipal or public agency employees or contractors to public right of ways, parks, and other municipal facilities. The permittee, in cooperation with the entity with jurisdiction over land use (e.g. Parks Department), shall implement

controls to reduce discharge of pollutants to the MS4 related to the application and distribution of pesticides, herbicides, and fertilizers by commercial and wholesale distributors and applicators and its own employees.

g. Authorized Non-Storm Water Discharges: Unless identified by either the permittee, the EPA, or the State as significant sources of pollutants to waters of the United States, the following non-storm water discharges are authorized to enter the MS4. As necessary, the permittee shall incorporate appropriate control measures in the SWMP to insure that these discharges are not significant sources of pollutants to waters of the United States.

(a) water line flushing;
(b) landscape irrigation;
(c) diverted stream flows;
(d) rising ground waters;
(e) uncontaminated ground water infiltration (as defined at 40 CFR 35.2005(20)) to separate storm sewers;
(f) uncontaminated pumped ground water;
(g) discharges from potable water sources;
(h) foundation drains;
(I) uncontaminated air conditioning or compressor condensate;
(j) irrigation water;
(k) uncontaminated springs;
(l) water from crawl space pumps;
(m) footing drains;
(n) lawn watering;
(o) non-commercial car washing;
(p) flows from riparian habitats and wetlands;
(q) swimming pool discharges which have been dechlorinated;
(r) street wash waters; and
(s) discharges or flows from emergency fire fighting activities.
(t) fire hydrant flushing
(u) building washdown water which does not contain detergents

h. Illicit Discharges and Improper Disposal: The permittee shall continue to implement its ongoing program to detect and remove (or require the discharger to the MS4 to remove or obtain a separate NPDES permit for) illicit discharges and improper disposal into the separate storm sewer.

1. The permittee shall effectively prohibit unpermitted, industrial storm water discharges which are required to have a federal storm water permit, to the MS4.

2. The permittee shall prohibit unpermitted discharges of dry and wet weather overflows from sanitary sewers into the MS4. The permittee shall identify and limit the infiltration of seepage from sanitary sewers into the MS4.

3. The permittee shall prohibit the discharge or disposal of used motor vehicle fluids, household hazardous wastes, grass clippings, leaf litter, and animal wastes into separate storm sewers. Public education programs for proper disposal of these materials shall be included in the SWMP and publicized at least annually and shall include material for non-English speaking residents.

4. The permittee shall require the elimination of illicit connections as expeditiously as possible and the immediate cessation of improper disposal practices upon identification of responsible parties. The permittee shall describe its procedure for the identification, costing and elimination of illicit discharges. This information shall be included in the annual report required under Part I.E. below. Where elimination of an illicit connection within thirty (30) days is not possible, the permittee shall establish a schedule for the expeditious removal of the discharge. In the interim, the permittee shall take all reasonable and prudent measures to minimize the discharge of pollutants to the MS4.

i. Spill Prevention and Response: The permittee shall implement procedures to prevent, contain, and respond to spills that may discharge into the MS4. The spill response procedures may include a combination of spill response actions by the permittee (and/or other public or private entities), and requirements for private entities through the permittee's sewer use ordinances. The discharges of materials resulting from spills is prohibited.

j. Industrial & High Risk Runoff: The permittee shall implement a program to identify, monitor, and control pollutants in storm water discharges to the MS4 from municipal landfills; hazardous waste treatment,

storage, disposal and recovery facilities and facilities that are subject to EPCRA Title III, Section 313; and any other industrial or commercial discharge the permittee determines is contributing a substantial pollutant loading to the MS4. A list of these facilities which discharge to the MS4 shall be

maintained and updated as necessary. This shall include industrial activities which are listed at 40 CFR §122.26(b)(14), which are required to obtain federal storm water permit coverage. The program shall include:

1. priorities and procedures for inspections and establishing and implementing control measures for such discharges;

2. a monitoring (or self-monitoring) program for facilities identified under this section, including the collection of quantitative data on the following constituents:

(a) any pollutants which the discharger may monitor for or are limited to in an existing NPDES permit for an identified facility;

(b) any information on discharges required under 40 CFR 122.21(g)(7)(iii) and (iv).

(c) any pollutant the permittee has a reasonable expectation is discharged in substantial quantity from the facility to the separate storm sewer system

Data collected by the industrial facility to satisfy the monitoring requirements of an NPDES or State discharge permit may be used to satisfy this requirement. The permittee may require the industrial facility to conduct self-monitoring to satisfy this requirement.

3. Alternative Certification: In lieu of monitoring, the permittee may accept a certification from a facility stating that raw and waste materials, final and intermediate products, by-products, material handling equipment or activities, and/or loading/unloading operations are not expected to be exposed to storm water for the certification period. The permittee shall still reserve the right to conduct and shall consider conducting site inspections for these facilities during the life of this permit.

k. Construction Site Runoff: The permittee shall implement a program to reduce the discharge of pollutants from construction sites into the MS4, including:

1. requirements for the use and maintenance of appropriate structural and non-structural best management practices to reduce pollutants discharged to the MS4 during the time construction is underway;

2. procedures for site planning which incorporate considerations for potential short term and long term water quality impacts to the MS4 and minimizes these impacts;

3. prioritized inspections of construction sites and enforcement of control measures;

4. appropriate education and training measures for construction site operators;

5. notification to appropriate building permit applicants of their potential responsibilities under the NPDES permitting program for construction site runoff.

l. Public Education: The permittee shall implement a public education program including, but not limited to the following items. Cooperation should be sought with city and state agencies where necessary. This program shall also include material for non-English speaking residents.

1. A program to promote, publicize, and facilitate public reporting of the presence of illicit discharges or improper disposal of materials (e.g. floatables, industrial and commercial wastes, trash, used motor vehicle fluids, leaf litter, grass clippings, animal wastes, etc.) into the MS4 (e.g. curb inlet stenciling, citizen "streamwatch" groups, "hotlines" for reporting dumping, outreach materials included in billings, public access/government cable channels, etc.);

2. a program to promote, publicize, and facilitate the proper management and disposal of used oil and household hazardous wastes;

3. a program to promote, publicize, and facilitate the proper use, application, and disposal of

pesticides, herbicides, and fertilizers by the public and commercial and private applicators and distributors;

4. where applicable and feasible, the permittee should publicize those best management practices (including but not limited to the use of reformulated or redesigned products, substitution of less toxic materials, and improvements in housekeeping) used by the permittee that facilitate better use, application, and/or disposal of materials identified in 1.1 and 1.2 above.

2. Deadlines for Program Compliance. Except as provided in PART II, and Part I.B.7. compliance with the storm water management program shall be required within **180** days from the effective date of the permit.

3. Roles and Responsibilities of Permittee: The Storm Water Management Program shall clearly identify the roles and responsibilities of the permittee and any party impacting its efforts to comply with this permit.

4. Legal Authority: The permittee and/or cooperating agencies shall ensure that they have and maintain legal authority to control discharges to and from those portions of the MS4 which it owns or operates. This legal authority may be a combination of statute, ordinance, permit, contract, or an order to:

a. Control the contribution of pollutants to the MS4 by storm water discharges associated with industrial activity and the quality of storm water discharged from sites of industrial activity;

b. Prohibit illicit discharges to the MS4;

c. Control the discharge of spills and the dumping or disposal of materials other than storm water (e.g. industrial and commercial wastes, trash, used motor vehicle fluids, leaf litter, grass clippings, animal wastes, etc.) into the MS4;

d. Control through interagency or inter-jurisdictional agreements the contribution of pollutants from one portion of the MS4 to another;

e. Require compliance with conditions in ordinances, permits, contracts or orders; and

f. Carry out all inspection, surveillance and monitoring procedures necessary to determine compliance with permit conditions.

5. Storm Water Management Program Resources The permittee shall provide adequate finances, staff, equipment, and support capabilities to implement its SWMP.

6. Storm Water Management Program Review and Modification

a. Program Review: The permittee shall participate in an annual review of its current or modified SWMP in conjunction with preparation of the annual report required under Part I.E. This annual review shall include:

1. A review of the status of program implementation and compliance with program elements and other permit conditions as necessary;

2. An assessment of the effectiveness of controls established by the SWMP;

3. A review of monitoring data and any trends in estimated cumulative annual pollutant loadings;

4. An assessment of any SWMP modifications needed to comply with the CWA §402(p)(3)(B)(iii) requirement to reduce the discharge of pollutants to the maximum extent practicable (MEP).

5. An annual public informational meeting held within two months of submittal of the Annual report.

b. Program Modification: The permittee may modify the SWMP in accordance with the following procedures:

1. The approved SWMP shall not be modified by the permittee(s) without the prior approval of the Director, unless in accordance with items 2. or 3. below.

2. Modifications adding (but not subtracting or replacing) components, controls, or requirements to the approved SWMP may be made by the permittee at any time upon written notification to the Director.

3. Modifications replacing an ineffective or unfeasible BMP specifically identified in the SWMP with an alternative BMP may be requested at any time. Unless denied by the Director, the modification shall be deemed approved and shall be implemented by the permittee 60 days from submittal of the request. Such requests must include the following:

(a) an analysis of why the BMP is ineffective or infeasible (including cost prohibitive),

(b) expectations on the effectiveness of the replacement BMP, and

(c) an analysis of why the replacement BMP is expected to achieve the goals of the BMP to be replaced.

4. Modification requests and/or notifications must be made in writing and signed in accordance with Part I.F.

c. Modifications required by the Permitting Authority: The permitting authority may require the permittee to modify the SWMP as needed to:

1. Address impacts on receiving water quality caused or contributed to by discharges from the MS4;

2. Include more stringent requirements necessary to comply with new State or Federal statutory or regulatory requirements; or

3. Include such other conditions deemed necessary by the Director to comply with the goals and requirements of the Clean Water Act.

Modifications requested by the Director shall be made in writing and set forth a time schedule for the permittee to develop the modification(s).

C. WET WEATHER MONITORING AND REPORTING REQUIREMENTS

1. Storm Event Discharges. The permittee shall implement a wet weather monitoring program for the MS4 to provide data necessary to assess the effectiveness and adequacy of control measures implemented under the SWMP; estimate annual cumulative pollutant loadings from the MS4; estimate event mean concentrations and seasonal pollutants in discharges from all major outfalls; identify and prioritize portions of the MS4 requiring additional controls, and identify water quality improvements or degradation.

The permittee is responsible for conducting any additional monitoring necessary to accurately characterize the quality and quantity of pollutants discharged from the MS4. Improvement in the quality of discharges from the MS4 will be assessed based on the

necessary monitoring information required by this section, along with any additional monitoring which is made available. There have been no effluent limits established for this draft permit. Numeric effluent limits may be established in the next permit to control impacts on water quality, to improve aesthetics, or for other reasons as necessary.

a. Representative Monitoring: The permittee shall monitor representative outfalls, internal sampling stations, and/or instream monitoring locations to characterize the quality of storm water discharges from the MS4. Within **90** days after the effective date of this permit, the permittee will submit its proposed sampling plan to the EPA and MA DEP for review. The permittee shall choose locations representing different land uses, with a focus on what it considers priority areas, such as an outfall in the vicinity of a public beach. The plan shall outline the parameters to be sampled, the frequency of sampling and reporting of results. This submittal shall also include any related monitoring which the permittee has done since its MS4 permit application was originally submitted. Unless disapproved by the EPA or MA DEP within **30** days after its submittal, the proposed sampling plan shall be deemed approved.

The sampling locations which the permittee submitted in its letter of March 25, 1998 to EPA appear to be adequate. These locations shall be monitored at least three times per year (spring, summer and fall) for all the parameters suggested, including cadmium and replacing oil & grease with Total Petroleum Hydrocarbons (TPH). The summer sampling event shall consist of composite samples, which shall be composed of, at a minimum, samples taken at hours 0 (pre-runoff), 4, 8, 12, 16 and 20. These samples shall be flow composited.

Instream sampling: This sampling is required as a supplement to the outfall monitoring as follows:

1) The mouth of the Mill Brook Conduit shall be grab sampled for fecal coliform during the spring and summer sampling seasons;

2) the high zinc load that was found during the Blackstone River Initiative (BRI) sampling from the Mill Brook conduit shall be investigated. Findings shall be reported in the annual report;

3) the two instream locations to be sampled are:

   a. Sampling station 00 from the BRI study; and

   b. A station downstream of where Beaver Brook and Tatnuck Brook completely mix, but above the Kettle Brook confluence

These two stations will be monitored during the spring and summer sampling events. The sampling parameters will be identical to those of the outfall sampling, with the addition of flow at station 00. Similar to the outfall monitoring, the summer sampling event shall

be conducted with composite samples. At station 00, flow can be determined from measuring the distance from a fixed point on the bridge to the water surface. The EPA will provide information on the relationship between this stage measurement and stream flows. The second sampling station can be flow composited using flow data derived from Station 00. For all instream sampling events, sampling shall be conducted during wet weather.

b. Alternate representative monitoring locations may be substituted for just cause during the term of the permit. Requests for approval of alternate monitoring locations shall be made to the Director in writing and include the rationale for the requested monitoring station relocation. Unless disapproved by the Director, use of an alternate monitoring location may commence thirty (30) days from the date of the request.

2. Storm Event Data: For Part I.C.1.a - Representative Monitoring only - quantitative data shall be collected to estimate pollutant loadings and event mean concentrations for each parameter sampled. In addition to the parameters which are to be sampled for in the sampling plan to be submitted, the permittee shall maintain records of the date and duration (in hours) of the storm event(s) sampled; rainfall measurements or estimates (in inches) of the storm event which generated the sampled runoff; the duration (in hours) between the storm event sampled and the end of the previous measurable (greater than 0.1 inch rainfall) storm event; an estimate of the total volume (in gallons) of the discharge sampled and a description of the presence and extent of floatable debris, oils, scum, foam, solids or grease in any storm water discharges or in the receiving waters.

3. Sample Type, Collection, and Analysis: The following requirements apply only to samples collected for Part C.1.a - Representative Monitoring.

a. For discharges from holding ponds or other impoundments with a retention period greater than 24 hours, (estimated by dividing the volume of the detention pond by the estimated volume of water

discharged during the 24 hours previous to the time that the sample is collected) a minimum of one grab sample may be taken.

b. Grab samples taken during the first two hours of discharge shall be used for the analysis of pH, temperature, Total Petroleum Hydrocarbons (TPH), fecal coliform and residual chlorine. For all other parameters, data shall be reported for flow weighted composite samples as described on Page 15.

c. All such samples shall be collected from the discharge resulting from a storm event that is greater than 0.25 inches in magnitude and that occurs at least 72 hours from the previously measurable (greater than 0.1 inch rainfall) storm event. Composite samples may be taken with a continuous sampler or as a combination of a minimum of three sample aliquots taken in each hour of discharge for the entire discharge or for the first three hours of the discharge, with each aliquot being separated by a minimum period of fifteen minutes.

d. Analysis and collection of samples shall be conducted in accordance with the methods specified at 40 CFR Part 136. Where an approved Part 136 method does not exist, any available method may be used.

4. Sampling Waiver. When a discharger is unable to collect samples required by Part I.C.1.a (Representative Monitoring) due to adverse climatic conditions, the discharger must submit in lieu of sampling data a description of why samples could not be collected, including available documentation of the event. Adverse climatic conditions which may prohibit the collection of samples include weather conditions that create dangerous conditions for personnel (such as local flooding, high winds, hurricane, tornadoes, electrical storms,etc.) or otherwise make the collection of a sample impracticable (drought, extended frozen conditions, etc.).

5. Wet Weather Screening Program: The permittee shall implement a program to identify, investigate, and address areas within their jurisdiction that may be contributing excessive levels of pollutants to the MS4. The wet weather screening program:

   a. Shall screen the MS4, in accordance with the procedures specified in the SWMP, at least once during the permit term.

   b. Shall specify the sampling and non-sampling techniques (such as observations or quantitative methods), to be used for initial screening and follow-up purposes. For samples collected for screening purposes only, sample collection and analysis need not conform to the requirements of 40 CFR Part 136 and are not subject to the requirements of Paragraphs 1, 2, and 3 above.

D. DRY WEATHER DISCHARGES

1. Dry Weather Screening Program: The permittee shall continue ongoing efforts to detect the presence of illicit connections and improper discharges to the MS4. All major outfalls identified in the Part I application and all other areas (but not necessarily all outfalls) of the MS4 must be screened at least once during the permit term. A schedule of inspections shall be identified to support activities undertaken in accordance with Part I.B.2.g. and may be in conjunction with any activities undertaken in accordance with Part I.C.. The schedule of inspections shall be included in the annual report Part I.E.

2. Screening Procedures: Screening methodology may be developed and/or modified based on experience gained during actual field screening activities and need not conform to the protocol at 40 CFR §122.26(d)(1)(iv)(D).

3. Follow-up on Dry Weather Screening Results: The permittee shall implement a program to locate and eliminate suspected sources of illicit connections and improper disposal identified during dry weather screening activities. Follow-up activities shall be prioritized on the basis of:

   a. magnitude and nature of the suspected discharge;

   b. sensitivity of the receiving water; and

   c. other relevant factors.

E. ANNUAL REPORT:

The permittee shall prepare an annual system-wide report to be submitted no later than April 1, 2000 and annually thereafter. The report shall include the following separate sections, with an overview for the entire MS4:

1. The status of implementing the storm water management program(s) (status of compliance with any schedules established under this permit shall be included in this section);

2. Proposed changes to the storm water management program(s);

3. Revisions, if necessary, to the assessments of controls and the fiscal analysis reported in the permit application under 40 CFR 122.26(d)(2)(iv) and (d)(2)(v);

4. An evaluation of all the authorized non-storm water discharges at Part I.B.2.g. and whether it was determined that any controls or restrictions are necessary for any of these and descriptions of such;

5. A summary of the data, including monitoring data, that is accumulated throughout the reporting year; a portion of this data shall be compared to National Urban Runoff Program (NURP) values, as was done in the Part II application and to ambient water quality criteria.

6. A revised list of all current separate storm sewer outfalls and their locations, reflecting changes of the previous year and justification for any new outfalls.

7. Annual expenditures for the reporting period, with a breakdown of the major elements of the storm water management program, and the budget for the year following each annual report;

8. A summary describing the number and nature of enforcement actions, inspections, and public education programs;

9. Identification of water quality improvements or degradation; and,

10. Update on the illicit connection program to include the total number of identified connections with an estimate of flow for each, total number of connections found in the reporting period to include how they were found (i.e. citizen complaint, routine inspection), number of connections corrected in the reporting period to include total estimated flow, and the financing required for such to include how the repairs were financed (i.e. by the permittee, costs provided to the permittee by the responsible party, repairs effected and financed by the responsible party). As an attachment to the report, the permittee should submit any existing tracking system information. Also include updates to schedules and a summary of activities conducted under Parts I.C. and I.D.

F. CERTIFICATION AND SIGNATURE OF REPORTS

All reports required by the permit and other information requested by the Director shall be signed and certified in accordance with the General Conditions - Part II of this permit.

G. REPORT SUBMISSION

1. All original, signed notifications and reports required herein, shall be submitted to the Director at the following address:

U.S. Environmental Protection Agency
Water Technical Unit (SEW)
P.O. Box 8127
Boston, MA 02114
Attn: George Papadopoulos, Permit Writer

2. Signed copies of all other notifications and reports shall be submitted to the State at:

Massachusetts Department of Environmental Protection
Division of Watershed Management
Watershed Planning and Permitting Section
627 Main Street
Worcester, Massachusetts 01608

H. RETENTION OF RECORDS

The permittee shall retain all records of all monitoring information, copies of all reports required by this permit and records of all other data required by or used to demonstrate compliance with this permit, until at least three years after coverage under this permit terminates. This period may be modified by alternative provisions of this permit or extended by request of the Director at any time. The permittee shall retain the latest approved version of the SWMP developed in accordance with Part I of this permit until at least three years after coverage under this permit terminates.

I. STATE PERMIT CONDITIONS

1. This Discharge Permit is issued jointly by the U. S. Environmental Protection Agency (EPA) and the Massachusetts Department of Environmental Protection under Federal and State law, respectively. As such, all the terms and conditions of this permit are hereby incorporated into and constitute a discharge permit issued by the Commissioner of the Massachusetts DEP pursuant to M.G.L. Chap. 21, §43.

2. Each Agency shall have the independent right to enforce the terms and conditions of this Permit. Any modification, suspension or revocation of this Permit shall be effective only with respect to the Agency taking such action, and shall not affect the validity or status of this Permit as issued by the other Agency, unless and until each Agency has concurred in writing with such modification, suspension or revocation. In the event any portion of this Permit is declared, invalid, illegal or otherwise issued in violation of State law such permit shall remain in full force and effect under Federal law as an NPDES Permit issued by the U.S. Environmental Protection Agency. In the event this Permit is declared invalid, illegal or otherwise issued in violation of Federal law, this Permit shall remain in full force and effect under State law as a Permit issued by the Commonwealth of Massachusetts.

TABLE OF CONTENTS

ATTACHMENT A

CITY OF WORCESTER
OUTFALL INFORMATION

OUTFALL ID	GRID	LOCATION	OUTFALL SIZE	RECEIVING
2	5F	MOUNTAIN ST WEST	48 inch storm drain	KENDRICK B
6	6F	ARARAT ST	48 inch storm drain	UNNAMED B
7	7F	BROOKS ST	24 inch storm drain	KENDRICK B
8	6D	GROVE ST	36 inch storm drain	UNNAMED B
10	8F	W BOYLSTON DR/HWY	15 inch storm drain	MILL BROOK
11	7F	NEW BOND ST	24 inch storm drain	MILL BROOK
12	7E	INDIAN HILL RD NEAR NASHOBA PL	18 inch storm drain	INDIAN LAK
16	7E	INDIAN LAKE RD	36 inch storm drain	INDIAN LAK
17	7E	SHOREHAM RD	42 inch storm drain	INDIAN LAK
27	10B	EDWIDGE ST	48 inch storm drain	UNNAMED B
32	10C	MOWER ST	42 inch storm drain	TATNUCK BI
38	10C	MAPLE LEAF RD	48 inch storm drain	TATNUCK BI
39	11D	CHANDLER ST	42 inch storm drain	OVERLAND
40	12D	BEAV BK PLAYGROUND	42 inch storm drain	BEAVER BRO
45	13D	BEAVER BROOK PKWY	60 inch storm drain	BEAVER BRO
46	12E	BEAVBK PLG/CHANDLER	48 inch storm drain	BEAVER BRO
56	12E	BEAVBK PLG/CHANDLER	15 inch storm drain	BEAVER BRO
58	13E	MID BEAV BK PLG	33 X 48 inch storm drain	BEAVER BRO
62	14D	LAKESIDE AVE	21 inch storm drain	COES POND
65	15D	STAFFORD ST	48 inch storm drain	CURTIS PON
68	14D	MILL/PARK/MAIN	21 inch storm drain	BEAVER BRO
69	14D	MILL/PARK/MAIN	12 inch storm drain	BEAVER BRO
70	14D	MAIN ST	24 inch storm drain	BEAVER BRO
72	13D	OLIVER ST/PARK AVE	24 X 36 inch storm drain	BEAVER BRO
74	14D	WEBSTER ST	18 inch storm drain	MIDDLE RIVI
75	15D	CAMBRIDGE ST	24 inch storm drain	MIDDLE RIVI
77	15D	LYMAN ST	24 inch storm drain	CURTIS PON
78	15C	MAIN ST/TOWN LINE	12 inch storm drain	UNNAMED P
80	16C	STAFFORD ST	39 inch storm drain	KETTLE BRO
81	16C	JAMES ST	36 inch storm drain	KETTLE BRO
84	16E	SOUTHBRIDGE ST	54 inch storm drain	OVERLAND
85	15D	HWY/RR/S OF RIVER	36 inch storm drain	MIDDLE RIVE

CITY OF WORCESTER
OUTFALL INFORMATION

OUTFALL ID	GRID	LOCATION	OUTFALL SIZE	RECEIVING WATER
86	16E	SOUTHBRIDGE ST	24 inch storm drain	OVERLAND FLOW TO MIDDLE RIVER
87	15E	CAMP ST	24 X 36 inch storm drain	MIDDLE RIVER
88	15E	SOUTHBRIDGE ST/HWY	18 inch storm drain	BLACKSTONE RIVER
90	16F	FALMOUTH ST NEAR RR	24 inch storm drain	BLACKSTONE RIVER
91	17F	WISER AVE NEAR RR	30 inch storm drain	OVERLAND FLOW TO BLACKSTONE RIVER
92	17F	AGRAND ST/WARMLAND	36 inch storm drain	OVERLAND FLOW TO BLACKSTONE RIVER
93	18F	SEWAGE TMT PLANT	36 inch storm drain	WORCESTER SEWAGE TREATMENT PLANT
94	16G	MILLBURY ST	42 inch storm drain	BLACKSTONE RIVER
95	17G	MILLBURY ST	21 inch storm drain	BLACKSTONE RIVER
108	14H	JOLMA ROAD	12 inch storm drain	UNNAMED BROOK TO QUINSIGAMOND LAKE
109	14H	BRANDY LANE	36 inch storm drain	UNNAMED BROOK TO QUINSIGAMOND LAKE
110	12H	AYRSHIRE/COBURN	60 inch storm drain	UNNAMED BROOK TO QUINSIGAMOND LAKE
114	11H	BELMONT/LAKE	36 inch storm drain	QUINSIGAMOND LAKE
115	11H	SHERBROOK/LAKE AVE	36 inch storm drain	QUINSIGAMOND LAKE
119	9H	PLANT ST	36 inch storm drain	COAL MINE BROOK
124	7F	W BOYLSTON ST/BOURNE ST	36 inch storm drain	MILL BROOK
125	7F	W BOYLSTON ST/SUMMERHILL ST	36 inch storm drain	MILL BROOK TRIB
128	7G	CONSTITUTION AVE	42 inch storm drain	POOR FARM BROOK
129	7H	PLANT/W BOYLSTON	30 inch storm drain	POOR FARM BROOK
130	7F	BROOKS ST	30 inch storm drain	KENDRICK BROOK
131	6G	CLARK ST	36 inch storm drain	POOR FARM BROOK
134	6F	W BOYLSTON ST	36 inch storm drain	KENDRICK BROOK
135	6F	EAMES ST	24 inch storm drain	KENDRICK BROOK
138	5F	HIGGINS ST	30 inch storm drain	KENDRICK BROOK
139	8F	NEPONSET/W BOYLSTON	12 inch storm drain	MILL BROOK
140	9F	W BOYLSTON TER/GOLD STAR	18 inch storm drain	MILL BROOK
141	9F	W BOYLSTON TER/GOLD STAR	24 inch storm drain	MILL BROOK
142	9F	GENNIE ST/DIST CTR	36 inch storm drain	MILL BROOK
143	9F	GENNIE ST/DIST CTR	66 inch storm drain	MILL BROOK
144	9F	GENNIE ST	15 inch storm drain	MILL BROOK
192	15F	PERRY/MILLBURY ST	12 inch storm drain	BLACKSTONE RIVER
194	15F	MAXWELL/MILLBURY ST	12 inch storm drain	BLACKSTONE RIVER

CITY OF WORCESTER
OUTFALL INFORMATION

OUTFALL ID	GRID	LOCATION	OUTFALL SIZE	RECEIVING WATER
202	8D	SALISBURY ST	36 inch storm drain	UNNAMED BROOK TO FLAGG ST SCHOOL
1007	13C	WILLIAMSBURG DR	60 inch storm drain	UNNAMED BROOK TO WILLIAMS MILLPOND
1008	15D	JACQUES ST	15 inch storm drain	MIDDLE RIVER
1012	17G	MILLBURY ST	12 inch storm drain	BLACKSTONE RIVER
1013	17G	MILLBURY ST	12 inch storm drain	BLACKSTONE RIVER
1014	18G	MILLBURY ST	12 inch storm drain	BLACKSTONE RIVER
1015	18G	MILLBURY ST	12 inch storm drain	BLACKSTONE RIVER
1016	16E	HOPE AVE/HWY	24 inch storm drain	LEESVILLE POND
1019	15E	MIDDLE RIV/HWY	12 inch storm drain	MIDDLE RIVER
1020	15E	MIDDLE RIV/HWY	12 inch storm drain	MIDDLE RIVER
1021	15E	MIDDLE RIV/HWY	48 inch storm drain	MIDDLE RIVER
1022	15E	MIDDLE RIV/HWY	48 inch storm drain	MIDDLE RIVER
1039	7F	STORES ST/SHORE RD	24 inch storm drain	DITCH TO MILL BROOK TRIB
1040	7F	STORES ST/SHORE DR	24 inch storm drain	DITCH TO MILL BROOK TRIB
1043	17H	ROUTE 20	12 inch storm drain	BROAD MEADOW BROOK
1045	8H	LAKE AVE	36 inch storm drain	QUINSIGAMOND LAKE
1046	9H	LAKE AVE	36 inch storm drain	QUINSIGAMOND LAKE
1048	15D	STAFFORD ST	30 inch storm drain	CURTIS POND
1049	17G	MILLBURY ST	12 inch storm drain	BLACKSTONE RIVER
1050	17G	MILLBURY ST	12 inch storm drain	BLACKSTONE RIVER
1051	8F	RT 190/WEST OF KENWOOD AVE	18 inch storm drain	MILL BROOK
1052	6F	HIGGINS ST	12 inch storm drain	KENDRICK BROOK
2003	16C	STAFFORD ST	30 inch storm drain	KETTLE BROOK
2004	16C	JAMES ST	12 inch storm drain	KETTLE BROOK
2006	17G	MILLBURY ST	30 inch storm drain	BLACKSTONE RIVER
3000	15G	DUNKIRK AND HAMPTON	60 inch storm drain	BROAD MEADOW BROOK
3001	5F	MOUNTAIN ST WEST	3.5 X 4 inch storm drain	KENDRICK BROOK
3002	10B	BAILEY ST AT AIRPORT DR	36 inch storm drain	UNNAMED BROOK TO TATNUCK BROOK
3003	6F	ARARAT ST	18 inch storm drain	UNNAMED BROOK TO KENDRICK BROOK