NPDES Storm water Permits are required for discharges from large municipal separate storm sewer (MSSS) systems and medium MSSS systems. The application requirements will be discussed below. The full text from which the following information is summarized can be found in the November 16, 1990 edition of the Federal Register.

A large MSSS System is one which is located in an incorporated place with a population of 250,000 or more. A medium MSSS system is one which is located in an incorporated place with a population greater than 100,000 but less than 250,000. Both population totals are to be determined from the latest Decennial Census. Additionally, counties with unincorporated urbanized areas and a population greater than 250,000, and counties with unincorporated urbanized area and a population greater than 100,000, but less than 250,000 must file a NPDES Storm water application.

With the exception of the permit application deadlines, the application requirements for both large and medium systems are identical. The application is composed of Parts 1 and 2. For large MSSS systems, Part 1 is due on November 18, 1991 and Part 2 is due on November 16, 1992. Medium MSSS systems must have Part 1 submitted by May 18, 1992, and Part 2 submitted by May 17, 1993. Where there is more than one MSSS within a geographic area, the different systems may be coapplicants to the same application.

**NPDES Municipal Stormwater Application. -- Part 1**

Part 1 of the application consists of the following sections, General Information, Legal Authority, Source Identification, Discharge Characterization, Management Programs, and Fiscal Resources.

I. General Information

The General Information section must contain the applicants' name, address, contact person's telephone number, ownership status, and status as a State or local government entity.

II. Legal Authority

This includes a description of existing legal authority to control discharges to the MSSS system. Should the applicant not have sufficient legal authority, the description will list the additional authorities needed as well as a schedule and commitment to gain the
III. Source Identification

The Source Identification section consists of two major parts. The first part is a description of the historic use of ordinances, or any other controls which limited discharges of non-storm water to any Publicly Owned Treatment Works (POTW) serving the same area as the MSSS system. The second consists of a USGS 7.5 minute topographic map encompassing the service boundaries of the MSSS plus one mile. EPA will also allow the use of aerial photographs of the appropriate scale in lieu of the topographic map. In conjunction with the map the following information shall be provided:

1. The location of known MSSS outfalls discharging to waters of the United States;

2. A description of the land use activities within the drainage area served by the MSSS. Each land use type shall be accompanied by an estimate of the population density, projected growth for a ten year period, and an estimate of the average runoff coefficient;

3. The location and a description of the activities of the facility of each currently operating or closed municipal landfill or other treatment, storage or disposal facility for municipal waste;

4. The location and NDPES permit number of any known discharge to the MSSS that has been issued a NPDES permit;

5. The location of major structural controls for storm water discharge;

6. The identification of publicly owned parks, recreational areas, and other open lands.

IV. Discharge Characterization

This section has four goals; to detect illicit connections, gather data to develop a sampling program, estimate annual pollutant loadings in discharges, and identification of receiving waters with known water quality impacts associated with storm water discharges. There are five components within the Discharge Characterization:

1. Monthly mean rain and snow fall estimates and monthly average number of storm events;
2. Existing quantitative data describing the volume and quality of discharges from the municipal storm sewer, including a description of the outfalls sampled, sampling procedures and analytical methods used;

3. A list of water bodies that receive discharges from the MSSS where pollutants from system discharges may accumulate and cause water degradation. Also include a description of known water quality impacts. This description shall provide details as to whether the receiving waters have been:

   A. Assessed and reported in section 305 (b) reports submitted by the State, the basis of the assessment (evaluated or monitored), a summary of the designated use support and attainment of Clean Water Act (CWA) goals (fishable and swimmable waters), and causes of nonsupport of designated uses;

   B. Listed under section 304 (1)(1)(A)(i), section 304 (1)(1)(A)(ii), or section 304 (1)(1)(B) of the CWA that is not expected to meet water quality standards or water quality goals;

   C. Listed in State Nonpoint Source Assessments required by section 319 (a) of the CWA that, without additional action to control nonpoint sources of pollution, cannot reasonably be expected to attain or maintain water quality standards due to storm sewers, construction, highway maintenance and runoff from municipal landfills, and municipal sludge adding significant pollution (or contributing to a violation of water quality standards);

   D. Identified and classified according to eutrophic condition of publicly owned lakes listed in State reports required under section 314 (a) of the CWA. The following descriptions should be included:

      a) Those publicly owned lakes for which uses are now to be impaired;

      b) The procedures, processes and methods to control the discharge of pollutants from the MSSS into these lakes;

      c) The methods and procedures restore to the quality of these lakes.
E. Designated estuaries under the National Estuary Program under section 320 of the CWA;

F. Unique Waters of Arizona;

G. Defined by the State or U.S. Fish and Wildlife Service's National Wetlands Inventory as wetlands;

H. Found to have pollutants in bottom sediments, fish tissue, or biosurvey data.

4. Field Screening

A field screening analysis is required which describes the results of sampling conducted during a field inspection at major outfalls covered in the permit application. At a minimum, a screening analysis shall include a narrative description, for each field screening point or major outfall, of visual observations made during dry weather periods. If any flow is observed, two grab samples shall be collected during a 24 hour period with a minimum period of four hours between samples. For all such samples, a narrative description shall be provided for:

- color
- turbidity
- presence of oil
- surface scum
- Any indication of the potential presence of non-storm water discharges

Additionally, a narrative description shall be included of the results of a field analysis to estimate the following parameters:

- pH
- total chlorine
- total copper
- total phenol
- detergents (or surfactants)
- flow rate

If the methods of field analysis are not approved within 40 CFR Part 136, then a description of the test used shall be submitted along with the manufacturer of the method, and the accuracy and range of the test. The applicant has the choice of sampling all major outfalls or selecting the outfalls to be sampled by the use of a grid system.
5. Characterization Plan

The purpose of the Characterization Plan is to provide information and a proposed program in order to substantiate the "Characterization of Data" section in Part 2 of the application. The Characterization Plan requires a description which includes: the location of outfalls or field screening points appropriate for representative data collection in the Characterization of Data section, a description of why the outfall or screening point is representative, the seasons during which sampling is intended, and a description of the sampling equipment.

V. Management Programs

The applicant shall provide a description of the existing management programs to control pollutants from the MSSS system. The description will provide information on currently implemented existing structural and source controls, and operation and maintenance measures for the structural controls. Also, controls established under State law as well as local requirements may be addressed. Within this section, a description of the existing program to identify illicit connections to the MSSS. This description should include inspection procedures and methods for detecting and preventing illicit discharges, and describe areas where this program has been implemented.

VI. Fiscal Resources

This part requires the applicant to include a description of the financial resources currently available to the municipality to complete Part 2 of the application. Items to be included in this description are overall indebtedness and assets, budget for existing storm water programs, and sources of funds for storm water programs.

NPDES Municipal Storm Water Application - Part 2

Part 2 of the application consists of the following major components: Demonstration of Legal Authority, Source Identification, Characterization of Data, Proposed Management Program, Assessment of Controls, Fiscal Analysis, and Legal Coordination of Applicants. An in depth discussion of these components is presented below.
I. Adequate Legal Authority

This section consists of the applicant demonstrating that operation is possible under legal authority established by statute, ordinance or series of contracts which enables the applicant to:

1. Control the contribution of pollutants to the MSSS by storm water discharged from sites of industrial activity;
2. Prohibit illicit discharges to the MSSS;
3. Control the discharge to a MSSS of spills, dumping or disposal of materials other than storm water;
4. Control through interagency agreements among coapplicants the contribution of pollutants from one portion of the MSSS to another portion of the MSSS;
5. Require compliance with conditions in ordinances, permits contracts or orders;
6. Carry out all inspection, surveillance and monitoring procedures necessary to determine compliance and noncompliance with permit conditions including the prohibition an illicit discharges to the MSSS.

II. Source Identification

The applicant will provide the location of any major outfall that discharges to waters of the United States that was not reported within Source Identification, Part 1 of the application. An inventory should be included which is organized by watershed of the name and address, and a description (ie: SIC codes) which best reflects the principal products or services provided by each facility which may discharge to the MSSS, storm water associated with industrial activity.

III. Characterization Data

Based upon information given in Part 1 of the application, the EPA shall designate between five and ten outfalls or field screening points as representative of the commercial, residential and industrial land use activities of the drainage area contributing to the system. If there are less than five outfalls, the EPA will designate all outfalls. Samples from those "designated outfalls" must be taken in accordance with 40 CFR 122.21(g)(7) and analyzed according to methods approved the applicant may use any suitable method but must provide a description of the method.
A. The information required is as follows:

1. For each designated outfall, samples shall be collected of storm water discharges from three storm events occurring at least one month apart. The applicant may request EPA allow exemptions to sampling three storm events when climatic conditions create good cause;

2. A narrative description shall be provided of the date and duration of the storm event(s) sampled, rainfall estimates of the storm event which generated the sampled discharge, and the duration between the storm event sampled and the end of the previous storm event;

3. Quantitative data shall be provided for: the organic pollutants listed on Table II; the pollutants listed in Table III of appendix D of 40 CFR part 122, and for the following pollutants:

- Total suspended solids (TSS)
- Total dissolved solids (TDS)
- COD
- BOD₅
- Oil and grease
- Fecal coliform
- Fecal Streptococcus
- pH
- Total kjeldahl nitrogen
- Nitrate plus nitrite
- Dissolved phosphorus
- Total ammonia plus organic nitrogen
- Total phosphorus

4. Additional quantitative data may be required by the EPA in order to substantiate sample representativeness.

B. From all identified municipal outfalls information is required for an estimate of the annual pollutant load and the event mean concentration of the cumulative discharges. Data should be presented for the following constitutes:

- BOD₅
- COD
- TSS
- dissolved solids
- total nitrogen
- total ammonia + organic nitrogen
- total phosphorus
- dissolved phosphorus
- cadmium
- copper
- lead
- zinc

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Estimates shall be accompanied by a description of the procedures for estimating constituent loads and concentrations, including any modeling, data analysis, and calculation methods.

C. For all major outfalls identified in either the Source Identification of Part 2, or known to be outfalls of a MSSS discharging to waters of the United States (identified under Source Identification in Part 1) the seasonal pollutant load and the event mean concentration of a representative storm for any constituent detected in any sample which originates from a designated outfall.

D. Details of a proposed monitoring program for representative data collection for the term of the permit. The monitoring program should include the location of outfalls or field screening points to be sampled, justification as to the location's representativeness, the frequency of sampling, parameters to be sampled, and a description of the sampling equipment.

IV. Proposed Management Program

To reduce the discharge of pollutants to the maximum extent practicable, a proposed management program which covers the duration of the permit is required. Should there be coapplicants, separate programs may be submitted by each. The proposed program may impose control on a systemwide basis, a watershed basis, a jurisdiction basis, or on individual outfalls. The Proposed Management Program shall be based upon the following:

A. A description of structural and source control measures to reduce pollutants from commercial and residential areas, accompanied with an estimate of the expected reduction of pollutant loads and a proposed schedule for implementing such controls. The description should include the following items:

1. A description of maintenance activities and a maintenance schedule for structural controls to reduce pollutants (including floatables) in discharges;

2. A description of planning procedures including a comprehensive master plan to develop, implement and enforce controls to reduce the discharge of pollutants from the MSSS which receive discharges from areas of new development and significant redevelopment.
Such a plan shall address controls to reduce pollutants in discharges from the MSSS after construction is completed;

3. A description of practices for operating and maintaining public roadways and procedures for reducing the impact on receiving waters of discharges from the MSSS;

4. A description of procedures to assure that flood management projects assess the impacts on the water quality of receiving water bodies and that existing structural flood control devices have been evaluated to determine if retrofitting the device to provide additional pollutant removal from storm water is feasible;

5. A description of a program to monitor pollutants in runoff from operating or closed municipal landfills or other treatment, storage or disposal facilities for municipal waste, which shall identify priorities and procedures for inspections and, establishing and implementing control measures for such discharges;

6. A description of a program, including a schedule, to detect and remove illicit discharges and improper disposals into the system. The proposed program shall include:

   a) A description of a program, including inspections, to implement and enforce an ordinance or similar means to prevent illicit discharges to the MSSS.

   b) A description of procedures to conduct ongoing field screening activities during the life of the permit, including areas that will be evaluated by the field screening;

   c) A description of procedures to be followed to investigate portions of the MSSS which are indicated to have a reasonable potential of containing on illicit discharge or other sources of non-storm water. Any storm sewers that have been identified for an evaluation shall have their location included;

   d) A description of procedures to prevent, contain, and respond to spills that may discharge into the MSSS;
e) A description of a program to promote, publicize and facilitate public reporting of the presence of illicit discharges or water quality impacts associated with discharges from the MSSS;

f) A description of educational, public informational, or other appropriate activities to facilitate the proper management and disposal of used oil and toxic materials;

g) A description of controls to limit infiltration of seepage from municipal sanitary sewers to the MSSS where necessary.

C. A description of a program to monitor and control pollutants in storm water discharges to municipal systems from municipal landfills, hazardous waste treatment, disposal and recovery facilities, industrial facilities that are subject to section 313 of title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA), and industrial facilities that the municipal permit applicant determines are contributing a substantial pollutant loading to the MSSS. The program shall:

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

2. Describe a monitoring program for storm water discharges associated with the industrial facilities designated in C immediately above, to be implemented during the term of the permit, including the submission of quantitative data on the following constituents:

   a) any pollutants limited in effluent guidelines subcategories, where applicable;

   b) any pollutant listed in an existing NPDES permit for a facility;

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

   d) The following list of parameters: oil and grease, COD, pH, BOD₅, TSS, total phosphorus, total Kjeldahl nitrogen, nitrate plus nitrite nitrogen.
D. A description of a program to implement and maintain structural and non-structural best management practices (BMP's) to reduce pollutants in storm water runoff from construction sites to the MSSS. This description shall include the following:

1. A description of procedures for site planning which incorporate consideration of potential water quality impacts;
2. A description of requirements for nonstructural and structural BMP's;
3. A description of procedures for identifying priorities for inspecting sites and enforcing control measures which consider the nature of the construction activity, topography, and the characteristics of soils and receiving water quality;
4. A description of appropriate educational and training measures for construction site operators;

V. Assessment of Controls

The applicant should include estimated reductions in loadings of pollutants from discharges of municipal storm sewer constituents from the MSSS expected as the result of the municipal storm water quality management program. The assessment shall also identify known impacts of storm water controls on groundwater.

VI. Fiscal Analysis

For each year to be covered by the permit, a fiscal analysis of the necessary capital and, operation and maintenance expenditures necessary to accomplish the activities of the programs discussed under the Characterization Data and Proposed management Program of Part 2 of the application. Such analysis shall include a description of the sources of funds that are proposed to meet the necessary expenditures, including legal restrictions on the use of such funds.

VII. Legal Coordination of Applicants

Where more than one legal entity submits an application, the application shall contain a description of the roles and responsibilities of each legal entity and procedures to ensure effective coordination.