APPENDIX VI

FACT SHEET:

CITY OF CHARLOTTE NPDES MUNICIPAL STORMWATER PERMIT

DIVISION OF ENVIRONMENTAL MANAGEMENT

FACT SHEET

MUNICIPAL SEPARATE STORM SEWER SYSTEM STORMWATER PERMIT
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
PERMIT TO DISCHARGE STORMWATER

Application No. NCS000240 **Date: August 31 1993**

TABLE OF CONTENTS

Page

Municipal Permit Information 2
Background Information 2
Location of Discharge 2
Receiving Waters 3
Description of Permit Coverage 3
Coverage Under This Permit 3
Scope of Permit Coverage 4
Urban Stormwater Quality 5
Pollutants of Concern 5
Management Alternatives 5
Proposed Discharge Controls and Limits 5
Monitoring and Reporting Requirements 5
Effective Date of Proposed Control Programs 7
Basis for Proposed Stormwater Management Programs 7
General 7
Coverage 9
Permit Conditions 10
Monitoring and Reporting 10
The Administrative Record 11
State Contact 11
Proposed Schedule for Permit Issuance 11
Procedure for the Formulation of Final Determinations 11
Comment Period 11
Public Meeting 12
Appeal Hearing 12
Issuance of a Permit When no Hearing is Held 12

1. MUNICIPAL PERMIT INFORMATION

Background Information

Stormwater is surface water runoff that results from precipitation events. As stormwater flows across land surfaces it picks up and carries with it significant amounts of pollutants. The stormwater flow eventually reaches surface waters where the pollutants it carries may be introduced to the receiving waters. These pollutant loads can cause significant water quality impairment in these waters. Some of the major influences on the potential stormwater pollution threat in a given area are the types of activities and the level of development and built-upon surfaces in the area. Built-upon surfaces prevent precipitation from infiltrating into the soil surface and therefore increase the amount of precipitation that becomes stormwater runoff. In addition, the activities associated with built-upon areas also generate increased levels of various pollutants. These pollutants tend to be concentrated in various locations on the built-upon surfaces and thus made readily available for transport by stormwater flows.

In urban and urbanizing areas, the affects of increased built-upon area and highly intensive urban activities create an environment where significant stormwater pollutant sources may exist. Section 402(p) of the Clean Water Act (CWA) and related federal regulations (40 CFR 122.26) recognize the pollutant contribution of heavily urbanized areas and require NPDES permits and stormwater quality management programs for stormwater discharges from certain municipal separate storm sewer systems (MS4s). A separate storm sewer system is a conveyance or system of conveyances which are designed or used to collect or convey stormwater runoff which is not part of a combined sewer system or treatment works. This can include, but is not limited to, municipal streets, catch basins, curbs, gutters, ditches, man-made channels or storm drains that convey stormwater runoff and ultimately discharge to waters of the State.

The provisions of this permit require that pollutants discharged from the MS4 are reduced to the maximum extent practical. The cities involved in municipal NPDES stormwater permit coverage are responsible for reviewing pollutant sources and activities throughout the municipal area and developing and implementing a comprehensive stormwater quality management program (SWQMP) to control pollutants discharged to, and ultimately from, their storm sewer system.

Location of Discharge

The discharge covered by the permit is located within the jurisdictional area of the City of Charlotte, Mecklenburg County, North Carolina. Areas adjacent to surrounding or interconnected with the City may also be covered by this permit as appropriate. A location map is included as Attachment 1 of this NPDES permit Fact Sheet.

Receiving Waters

Discharge from the City of Charlotte's municipal storm sewer system enters the waters of two major river basins in North Carolina. The majority of the discharge enters the Catawba River Basin and a small portion entering the Yadkin River Basin. The following table lists five major stream segments that receive stormwater discharge from the City's storm sewer system:

Stream Segment	River Basin
Long Creek	Catawba River Basin
Sugar Creek	Catawba River Basin
Steele Creek	Catawba River Basin
Back Creek	Yadkin-Pee Dee River Basin
Mallard Creek	Yadkin-Pee Dee River Basin

Individual outfalls from the storm sewer system may discharge to tributaries of these creeks. The surface water classification of the waters receiving discharge from Charlotte's municipal storm sewer system are Class C, B or WS-IV. These surface water classifications are defined in the North Carolina Administrative Code 15A NCAC 2B .0200.

2. DESCRIPTION OF PERMIT COVERAGE

Coverage Under this Permit

The permit authorizes point source discharges of stormwater runoff from the city of Charlotte's MS4 in accordance with permit conditions and the city's approved SWQMP (Note: The SWQMP is an enforceable part of the NPDES permit). These discharges from the MS4 are, in general, to be composed only of stormwater runoff. Some incidental non-stormwater flows are allowed to enter the MS4 as long as these flows are not significantly impacting water quality. A list of these non-stormwater sources is contained in Part I, Section A of the permit and includes flow to the MS4 from: water line flushing, irrigation, springs, footing drains, street washing and fire fighting. In addition, some other discharges to the MS4 may be allowed as discussed below.

Non-stormwater discharges into the MS4, such as process and non-process wastewater discharge, may be allowed, but only if these discharges are covered by NPDES permits that are independent of the permit issued to the MS4. In addition, there are eleven categories of industries that are required by the CWA and federal regulations (40 CFR 122.26) to obtain NPDES stormwater permits for point source discharges of stormwater runoff from their sites. These specific facilities are responsible for the pollutants discharged through stormwater runoff from their site and are required to obtain independent NPDES stormwater discharge permits and to develop stormwater pollution prevention programs for their sites. Those industrial stormwater discharges that have been permitted independently under NPDES stormwater requirements are allowed to discharge stormwater through the MS4. Discharge of stormwater from these industrial areas into the MS4 without an appropriate NPDES permit and management program is not allowed.

The authorized discharges covered by this permit include all point source discharge locations (or outfalls) from the MS4. This includes all currently located outfalls from the system and new outfalls located or constructed after finalization of this permit. Permit conditions including the implementation of the SWQMP are required to control and reduce the pollutant loads associated with discharges from the MS4 outfalls. The area of physical coverage of the permit may be expected to change, not only due to new outfalls, but also due to expansion of the city's jurisdictional boundaries and potential interlocal agreements between city, county and other entities as determined necessary to address areas where pollutants are discharged to the municipal storm sewer system and subsequently to waters of the state.

Scope of Permit Coverage

The intent of municipal stormwater NPDES coverage, and requirements of the CWA, is to reduce pollutant discharge to the maximum extent practical. The ultimate goal being protection of the integrity and quality of the state's surface waters from potential impacts of runoff from urban areas. Accomplishment of this objective requires that a broad based approach be taken in developing stormwater permit conditions. The reasons for this approach are found in the nature of urban stormwater runoff. Stormwater runoff essentially begins as a diffuse or nonpoint source of pollution. Unlike other nonpoint sources, stormwater runoff in urban settings is, to a high degree, directed to stormwater conveyance systems (storm sewers) and is ultimately discharged as a point source which may be regulated under the NPDES stormwater program. Because of the large number of stormwater discharge points in an urban setting and the variability in stormwater flow, controlling these discharges like conventional wastewater point sources with end-of-pipe controls is not appropriate. Instead, the coverage for these discharges is necessarily based on a broader approach allowing a flexible means by which municipalities can develop comprehensive stormwater programs that are directed at sources of pollutants.

The comprehensive stormwater programs in the SWQMP, and the permit itself, are to be implemented throughout the entire jurisdictional area of the City of Charlotte. This coverage area may expand based on changes in the jurisdictional area of the city and/or interlocal or interagency agreements to provide stormwater management programs. Implementation of these programs is required to the extent that pollutant discharge to waters of the state must be controlled and reduced to the maximum extent practical. Ultimate permit conditions are tied to long term control of pollutants discharged from the municipal storm sewer system and reduction of pollutant loading from the system. In this context, the Division of Environmental Management, herin refered to as the Division, considers the municipal system to include discharges from public and private storm sewer networks within the city's jurisdictional control. The scope of this coverage recognizes that situations may exist where the municipality will not have complete authority for the storm sewer system and outfall (i.e. private systems). However, within the municipal jurisdiction, the city has authority through land use control, controls on discharge to waters, etc. to manage the pollutants introduced to, and ultimately discharged from, the system regardless of ownership of the specific segment of the sewer system.

3. URBAN STORMWATER QUALITY

Pollutants of Concern

A wide range of land uses and activities can be expected to exist within a large urban area. All of these uses can potentially contribute pollutants to the municipal storm sewer system. With various levels and types of residential, commercial, industrial, institutional and construction activity ongoing in an urban area, it is often difficult to pinpoint specific pollutants or pollutant levels expected for individual urban activities or locations. However, it has been shown that urban development and the subsequent stormwater runoff from these areas represent a major cumulative source of pollution to surface waters. Table 1. indicates some of the major pollutant categories that are of primary concern in dealing with urban stormwater quality management. The table represents a general overview of expected categories of pollutants. Various additional pollutants may be present in a given area due to the activities ongoing within the area.

Management Alternatives

The Division and the U. S. Environmental Protection Agency (EPA) stress a source reduction/pollution prevention approach for stormwater quality management. This is essentially founded on the basis that the quality of stormwater discharged from the storm sewer system is dependent on the sources of pollutants available to be contributed to the system through stormwater runoff. Reducing the pollutant sources reduces the pollutant impact of storm sewer discharge. On a local level, this type of management program may consist of various components including, but not limited to, sedimentation and erosion control programs for disturbed areas, land use planning and ordinance controls in developing areas, municipal programs for recycling and hazardous waste collection, public education and training programs, spill failure/containment programs, and programs to detect and remove illicit connections to the storm sewer system. These types of Best Management Practices (BMPs) are considered to be the most efficient and effective methods from a cost and management standpoint. It is recognized, however, that in some situations, engineered stormwater control structures for stormwater management may be utilized. The municipalities involved in the NPDES stormwater program must evaluate the land uses and activities in their area to determine the most appropriate management practices to manage and control stormwater discharges.

4. PROPOSED DISCHARGE CONTROLS AND LIMITS

Provisions for controls and limitations can be found in the attached copy of Part I, Section A of the Draft Permit.

5. MONITORING AND REPORTING REQUIREMENTS

Provisions for monitoring and reporting requirements can be found in the attached copy of Part I, Section B of the Draft Permit.

Table 1. Categories of Pollutants Expected in Urban Stormwater Runoff

Sediment	• Sediment is often viewed as the largest pollutant load associated with stormwater runoff in an urban setting. The loadings have been shown to be exceptionally high in the case of construction activity. • Sediment is associated with numerous impacts in surface waters including increased turbidity, effects on aquatic and benthic habitat and reduction in capacity of impoundments. • A number of other pollutants often attach to, and are carried by, sediment particles.
Nutrients	• The nutrients most often identified in stormwater runoff are phosphorus and nitrogen. • In surface waters, these nutrient loads can lead to heavy algae growth, eutrophication (especially in impoundments) and low dissolved oxygen levels. • Nutrients are input into the urban system in a variety of ways including landscaping practices (commercial and home) and leaks from sanitary sewers and septic systems.
Organic Matter	• Various forms of organic matter may be carried by stormwater in urban areas. Decomposition of this material by organisms in surface waters results in depleted oxygen levels. • Low levels of dissolved oxygen severely impact water quality and life within surface waters. • Sources of organic matter include leaking septic systems, garbage, yard waste, etc.
Bacteria	• High bacterial levels may be found in stormwater runoff as a result of leaking sanitary systems, garbage, pet waste, etc. • The impacts of bacteria on surface waters may affect recreational uses and aquatic life as well as presenting possible health risks.
Oil and Grease	• Numerous activities in urban areas produce oil, grease and lubricating agents that are readily transported by stormwater. • The intensity of activities, including vehicle traffic, maintenance and fueling activities, leaks and spills and manufacturing processes within an urban setting contribute heavily to the level of these pollutants present in adjacent surface waters.
Toxic Substances	• Many toxic substances may potentially be associated with urban stormwater including metals, pesticides, herbicides and hydrocarbons. • Toxic compounds may affect biological systems, and accumulate in bottom sediments of surface waters.
Heavy Metals	• Heavy metals such as copper, lead, zinc, arsenic, chromium and cadmium may be typically found in urban stormwater runoff. • Metals in stormwater may be toxic to some aquatic life and may accumulate in aquatic animals. • Urban sources of metals in stormwater may include automobiles, paints, preservatives, motor oil and various urban activities.

6. EFFECTIVE DATE OF PROPOSED CONTROL PROGRAMS

The City of Charlotte's stormwater program - including permit conditions and the SWQMP - will be evaluated on the basis of program progress and results over the reporting periods throughout the life of the permit. As appropriate, the Division may specify compliance schedules for any and all components of the city's MS4 permit in order to achieve the level of implementation and progress deemed necessary by the Division to achieve water quality protection and meet the intent of the municipal permitting program. The Division will coordinate reviews with the city of Charlotte to assure a proper understanding of related city activities associated with the timing of various programs. During initial reviews, the Division will pay close attention to overall program progress, appropriateness of program development schedules and modifications in programs and program direction in response to monitoring efforts.

7. BASIS FOR PROPOSED STORMWATER MANAGEMENT PROGRAMS

General

The conditions of this permit and the city of Charlotte's SWQMP (which is an enforceable part of this permit) have been developed to achieve water quality protection in accordance with the provisions of the Clean Water Act. These provisions mandate that municipal storm sewer system NPDES permits include requirements to:

- effectively prohibit non-stormwater discharges into the storm sewer system; and
- control the discharge of pollutants from the storm sewer system to the maximum extent practicable.

If the Director of the Division determines that water quality problems exist that require water quality based controls or effluent limitations to protect the receiving waters, these requirements may be added as provisions of this permit or a subsequent reissuance of this permit. The proposed permit is based on considerations for appropriate stormwater management practices in an urban setting, and considerations as outlined in the following sections.

The assessment of stormwater management alternatives in the proposed permit is based on the intent of the NPDES municipal program to control pollutants discharged through the storm sewer system of heavily urbanized areas. The CWA, federal regulations and state permitting requirements recognized that control of stormwater flows from MS4s must be accomplished on a site specific basis. This necessitates that flexibility be allowed in the development of local programs so that local conditions, land uses, activities and existing programs are appropriately considered. In this context, the MS4 permit application process required that the city of Charlotte develop information characterizing their municipal storm sewer system and existing management programs including:

- o Mapping of the storm sewer system, outfall locations and land use within the city's jurisdiction.
- o Screening of outfalls to assess potential illicit connections.
- o Development of information describing existing and proposed legal authority for stormwater control programs.
- o Storm event sampling of representative outfalls to characterize the quality of stormwater discharge.
- o Review of existing programs, data and other information addressing stormwater quality management.

Stormwater Quality Management Program (SWQMP) - The information gathered above, and overall analysis of the city's storm sewer system, resulted in the city's development of a comprehensive SWQMP to control pollutants discharged through their storm sewer system. The SWQMP is a significant part of the proposed conditions for the NPDES permit for stormwater discharge from the city of Charlotte's MS4 and is an enforceable part of the permit.

The draft permit proposes that implementation of the city's SWQMP and best management practices along with appropriate monitoring, review and modification of the SWQMP will control pollutant discharges from the city's MS4 in conformance with section 402(p) of the Clean Water Act. The permit does not address specific water quality based controls or effluent limitations at this time for a number of reasons. First of all, the Clean Water Act and associated federal regulations do not require that these strict provisions be a part of municipal NPDES permits. In fact, the records from these federal actions indicate that in development of the NPDES stormwater permit requirements, it was recognized that MS4 permits would <u>not</u> necessarily be like other discharge permits and should be structured to allow flexibility for development of site-specific programs for stormwater management. In addition, the Division believes that it is not appropriate at this time to establish specific standards for stormwater discharges from MS4s due to the unique nature of each municipal system as well as the variability of stormwater flows.

The Division feels that the most economically and environmentally feasible alternatives for stormwater management are Best Management Practices (BMPs). In the case of stormwater discharges from MS4s, this approach has been taken through the programs established in the SWQMP. These programs are established on a local level and reflect local priorities, principals, practices and authorities that will be most effective in managing stormwater discharges. In using this approach, the Division has recognized the provisions of the Clean Water Act, along with previous experiences which indicate that BMPs can effectively reduce pollutant discharges. It should be noted that federal regulations - 40 CFR Part 122.44(k)(2) - authorize the use of best management practices (BMPs) for pollutant reduction when the permitting agency finds that numeric limits are infeasible.

In developing the draft NPDES permit conditions, consideration has been given to the usefulness of engineered treatment alternatives for stormwater management. The Division recognizes that in some situations these methods may be the best alternatives available on a small scale. On a broad basis, however, these methods would not appear to be an answer to stormwater pollutant problems throughout the municipal area. The large number of discharge (outfall) locations associated with

the municipal storm sewer system, along with the intermittent high flow conditions associated with stormwater discharges, do not allow efficient design or integration of end-of-pipe treatment methods on a system scale. This leads to permit conditions in the form of comprehensive stormwater quality management programs implemented on a jurisdiction-wide basis to control sources of pollution to the storm sewer system rather that targeting treatment methods prior to discharge.

Coverage

A wide range of land use activities occur in urban areas, and all of these activities potentially discharge stormwater and pollutants associated with stormwater to the municipal storm sewer system. To effectively reduce the discharge of pollutants, the municipal SWQMP involves the development and implementation of comprehensive programs that address stormwater management and source reduction/pollution prevention for a variety of land use activities including: residential, commercial, industrial, institutional and construction areas. The draft permit proposes that the city of Charlotte's stormwater management programs be implemented over the entire jurisdictional area of the city rather than only in those areas where the city owns the storm sewer system. This requirement is based on the Division's interpretation of the intent of the Clean Water Act in addressing stormwater flows from urban areas, the emphasis of which is to reduce pollutant discharge from the storm sewer system in order to achieve water quality benefits in adjacent surface waters.

The Division's position is that limiting the NPDES permit and stormwater management programs to those areas of the storm sewer system under public ownership does not appropriately address the potential stormwater pollutant sources present in the municipal area. In municipal areas such as the city of Charlotte, it would be impossible to attempt to obtain water quality benefits in receiving streams by addressing only those storm sewer system segments owned by the municipality. Excluding private areas would produce a fragmented stormwater management program that would not only be ineffective, but would also be difficult to administer on the local level. It is apparent that privately owned storm sewer systems collect and convey pollutants to surface waters either through interconnection with the MS4 or directly, regardless of the ownership of these systems. Local governments have authorities in these private areas that allow them to administer programs consistent with the intent of the SWQMP.

At a minimum, the city has authority over land use activities and pollutants that may be discharged in areas under their jurisdiction. Although they may not have ownership in these areas, the city can use these legal authorities to control the pollutant contribution from these areas. The SWQMP and the proposed permit allow flexibility for the city to deal with stormwater problems, including those in private areas, according to the best alternatives available in any given situation. In some situations the city may determine that the most efficient and effective method of controlling pollutant discharge in a area is to consider options for obtaining ownership or operational responsibility for storm sewer systems in a specific area. This permit does not direct the city to obtain these more specific authorities, but allows flexibility for other control alternatives to be utilized to control stormwater runoff in the context of the city's authorities. It is anticipated that total program

coverage may vary depending on the available authorities of the municipality. For example, the city may have areas where general land use and police powers afford the opportunity to control inputs of pollutants to storm sewer systems, but because the systems are privately owned, the city decides that maintenance responsibilities do not apply and are not necessary. Other situations may dictate that the city review pollution potential and consider options for obtaining ownership and/or maintenance responsibilities to assure reduction of pollutants to storm sewer systems and ultimately waters of the state.

Permit Conditions

In evaluating the stormwater management program for the city of Charlotte and developing the draft permit, the Division has given consideration to the need for flexibility in total program coverage. This flexibility allows for the location, targeting and control of stormwater pollutant sources throughout the municipal area and potentially surrounding areas as appropriate according to local authorities and programs. The ultimate condition of the permit is that pollutants discharged from Charlotte's MS4 must be reduced to the maximum extent practical. In order to meet this condition, Charlotte is required to develop and implement the provisions of their SWQMP which includes various components aimed at addressing specific needs and priorities of Charlotte's stormwater program. The SWQMP is an enforceable part of the draft permit and includes components to address stormwater management through education and outreach programs; pollutant reduction from commercial, residential and construction areas; detection and removal of illicit connections; review, control and inspection of industrial and waste treatment or disposal facilities; and operation and maintenance of facilities as necessary. Additional provisions of the draft permit require that adequate and appropriate legal authorities and financial assurances be developed and maintained by the city to administer the stormwater management programs, and that the city continue to assess the extent of their storm sewer system including outfalls, drainage areas and pollutant load characterization.

Monitoring and Reporting

In support of the city's stormwater management program, the draft permit requires that appropriate monitoring and reporting activities are undertaken to assess the progress and results of the local programs. Various monitoring efforts are proposed by the city and may be specific to certain components of the stormwater program as well as inclusive of the overall stormwater program. These efforts include monitoring, sampling, inspections, maintenance, enforcement and program implementation components. The city will develop and submit reports on their stormwater management program at least on an annual basis and may be requested to submit additional reporting information throughout the year as deemed necessary by the Division to assess the status and results of the city's program. Specific reporting and monitoring conditions can be found in the attached copy of Part I Section C of the Draft Permit.

8. THE ADMINISTRATIVE RECORD

The administrative record, including application information, draft permit, fact sheet, public notice, comments received and additional information is available by writing to:

N. C. Division of Environmental Management
Water Quality Section
Stormwater Group
P. O. Box 29535
Raleigh, North Carolina 27626-0535

The above information is available for review and copying between the hours of 8:00 AM and 5:00 PM Monday through Friday at:

Archdale Building, 6th Floor
Water Quality Section
Stormwater Group
512 North Salisbury Street
Raleigh, North Carolina

Copies will be provided at a charge of 10 cents per page.

9. STATE CONTACT

Additional information concerning the permit application and draft permit may be obtained at the above address or by contacting Bradley Bennett at (919) 733-5083.

10. PROPOSED SCHEDULE FOR PERMIT ISSUANCE

Draft Permit Sent to Public Notice - September 1, 1993

Permit Scheduled to be Issued - October 15, 1993

11. PROCEDURE FOR THE FORMULATION OF FINAL DETERMINATIONS

a. Comment Period

The *Division of Environmental Management proposes to issue an NPDES* Stormwater Permit for the above described stormwater discharge subject to the outlined limitations, management practices, and special conditions. These determinations are tentative and are open to comment from the public.

Interested persons are invited to submit written comments on the permit application or on the Division of Environmental Management's proposed determinations to the following address:

DIVISION OF ENVIRONMENTAL MANAGEMENT
WATER QUALITY SECTION, STORMWATER GROUP
P.O. BOX 29535
RALEIGH, NORTH CAROLINA 27626-0535
Attn. Bradley Bennett

All comments received within thirty days following the date of public notice will be considered in the formulation of final determinations with regard to this application.

b. Public Meeting

The Director of the Division of Environmental Management may hold a public meeting if there is a significant degree of public interest in a proposed permit. Public notice of such a meeting will be circulated in newspapers in the geographic area of the discharge and to those on the Division of Environmental Management's mailing list at least thirty days prior to the meeting.

c. Appeal Hearing

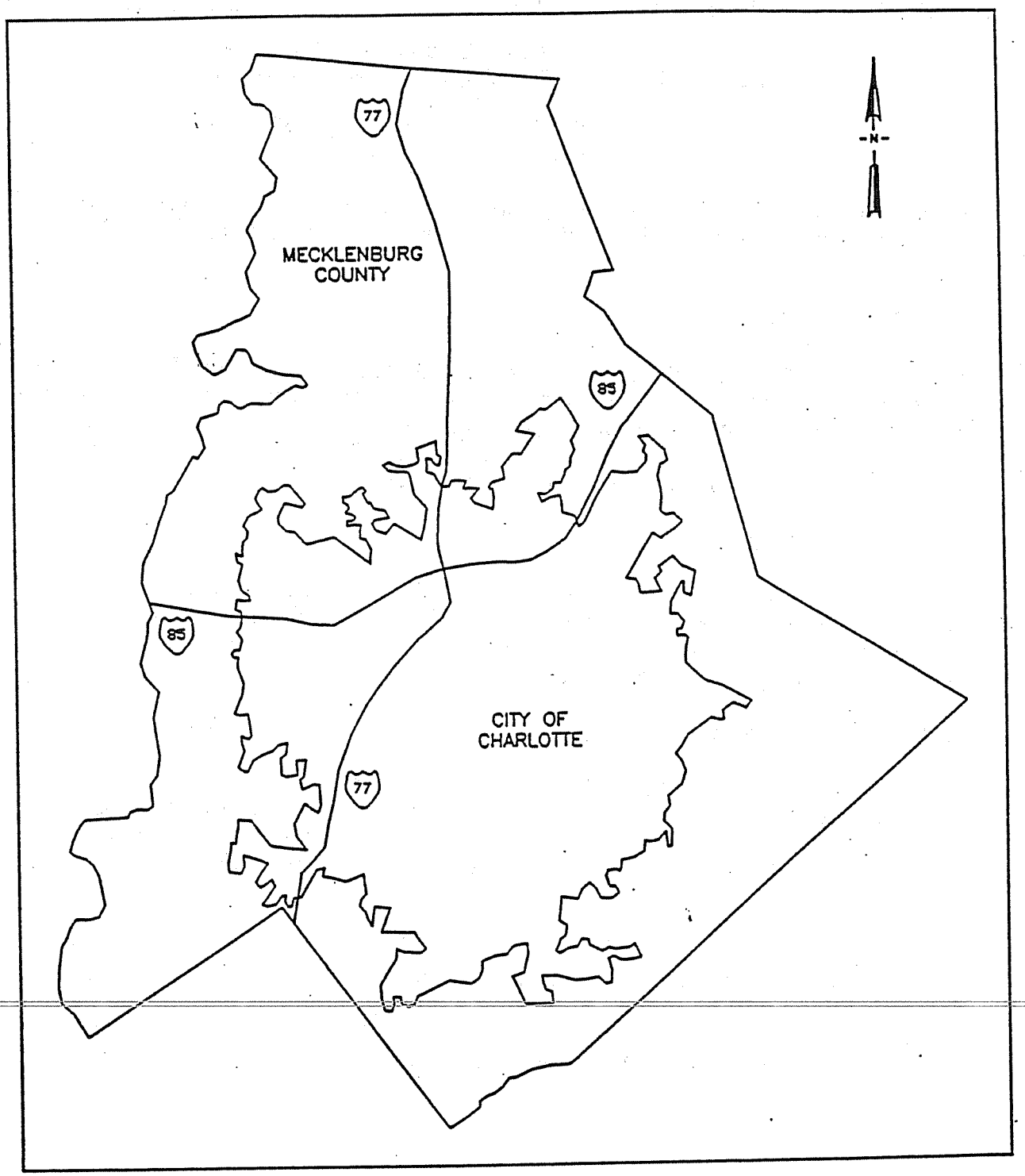
An applicant whose permit is denied, or is granted subject to conditions he deems unacceptable, shall have the right to a hearing before the Commission upon making written demand to the Office of Administrative Hearing within 30 days following issuance or denial of the permit.

d. Issuance of a permit when no hearing is held

If no public meeting or appeal hearing is held, after review of the comments received, and if the Division of Environmental Management's determinations are substantially unchanged, the permit will be issued and become effective immediately. This will be the final action of the Division of Environmental Management.

If a public meeting or appeal hearing is not held, but there have been substantial changes, public notice of the Division of Environmental Management's revised determinations will be made. Following a 30-day comment period, the permit will be issued and will become effective immediately. This will be the final action of the Division of Environmental Management unless a public meeting or appeal is granted.

ATTACHMENT 1



City of Charlotte Location Map.