

## CHAPTER ONE

### INTRODUCTION/OVERVIEW

#### Purpose/Objectives

As an agency designated by the State to conduct water quality management planning under Section 208 of the Federal Water Pollution Control Act, the Sussex County Board of Chosen Freeholders has developed and adopted the Sussex County 208 Water Quality Management Plan, which was certified by the Governor in 1979. The Sussex County planning area consists of all land within county boundaries as well as the portions of Morris County which lie in the Musconetcong Drainage Basin (Jefferson, Roxbury, Mt. Arlington and Netcong).

The Management Plan formulated for Sussex County has placed high priority on the protection and management of groundwater, especially existing and potential high yielding aquifers, since over 90% of area residents currently rely on and will continue to rely on groundwater for their water supplies. Accordingly, this manual is intended to carry out the recommendations of the Plan

- by identifying critical areas in need of management and protection,\*
- by identifying the existing and potential problems which are specific to the planning area,
- by offering to municipal decision makers and professional staffs a regional groundwater management strategy,
- by outlining specific methodologies and practices which can be incorporated into municipal master plans and zoning ordinances for the purpose of managing groundwater, and
- by designing a framework for implementing groundwater management at the municipal level including recommended land use types and residential densities.

#### Target Groups

Prerequisite to achieving the above, it is imperative that the importance of groundwater management and planning in Sussex County be recognized by all agencies and persons involved with current planning activities as well as future growth. These agencies and persons therefore become the "target groups" of this manual and include municipal governing bodies, planning and zoning boards and staffs, boards of health and health officials, environmental commissions, homeowners and private entrepreneurs (industrial and commercial).

Both groundwater quality and quantity are of major concern when designing a comprehensive management approach to groundwater systems.

\*Note: Ideally all groundwater should be managed and protected but for the purpose of this manual, those groundwater sources that have the potential of supplying large amounts of high quality water and are highly susceptible to degradation will be termed "critical".

The recent drought of 1980-81 which seriously impacted the region, has awakened residents to the finiteness of water resources. People can no longer take water quality and availability for granted just as they can no longer assume finite energy resources. We must begin to realize that we are on the eve of an age where conservation and protection of water must govern our attitudes and thought processes.

Groundwater is susceptible to contamination from a variety of sources and once degraded is extremely difficult, if possible at all, to rehabilitate. The natural hydrologic system; the system by which water precipitates from the atmosphere in one form or another and returns after interacting with terrestrial systems, operates in a delicate balance. By interfering with or preventing these interactions, man's activities can jeopardize a resource vital to his survival.

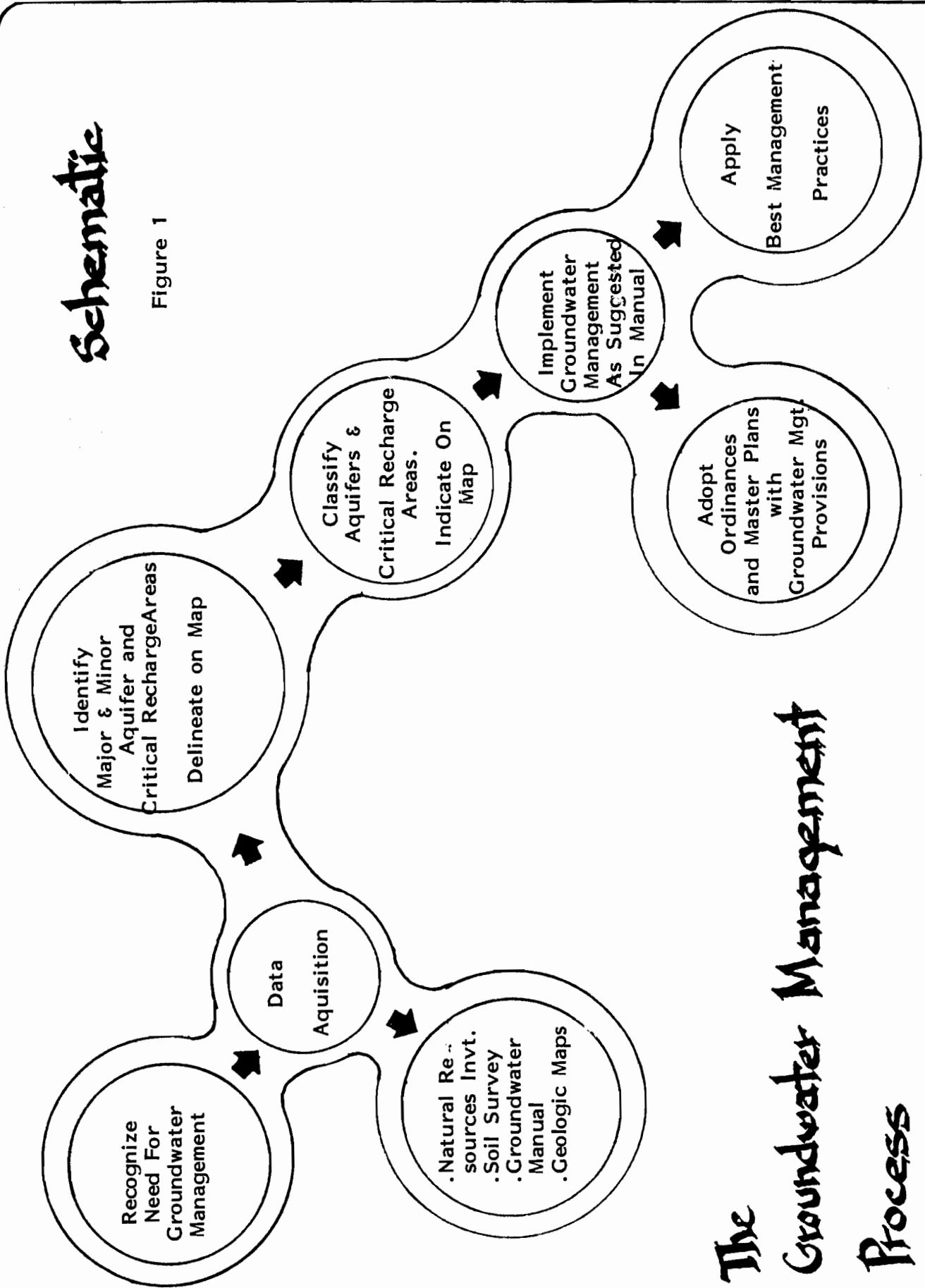
Therefore, in addition to identifying the problems in Sussex County, the purpose of this manual is to provide a working guide which outlines a methodical approach to groundwater resource management specifically tailored to Sussex County. It should be considered as a "tool" intended to aid municipal decision makers and other interested parties in planning for their present and future needs.

#### Manual Use

The manual is divided into three parts - 1) background information, 2) problem identification, and 3) implementation methodologies and practices. Although all sections should be reviewed to obtain a comprehensive understanding of the concepts and methods, the actual "meat" of the manual is presented in the implementation phase. This "working segment" of the manual includes recommendations for best management practices, determination of suitable land use densities and land use types, and groundwater-based regulation guidelines. Figure 1 outlines the sequence and components involved in the process.

# Schematic

Figure 1



# The Groundwater Management Process

