

COMBINED SEWER OVERFLOW ABATEMENT:

A LOCAL ISSUE OF NATIONAL IMPORTANCE

by

Brian W. Knowles

Thesis

Submitted in partial fulfillment of the requirements for the
Degree of Bachelor of Arts
in the Environmental Studies Department at Brown University

1982

PREFACE

The material herein is written in response to the widely shared opinion that the abatement of Rhode Island's primary source of municipal water pollution has taken an unnecessarily long time to resolve. The specific topic is the control of combined sewer overflows in the City of Providence, Rhode Island. Combined sewer overflows are the mechanisms by which large amounts of sanitary sewage and urban runoff are dumped, untreated into receiving waters causing serious water quality degradation. The paper examines one part of an ongoing water pollution control project to assess the degree of applicability that economic theory possesses in relation to the case study's management program. In the process of the comparison a critique of the use of economic theory as well as a critique of the combined sewer project emerges. The critique places the project within the context of the national water pollution program. Combined sewer overflow control is particularly interesting because of the government directive that requires municipalities to prove the water quality benefits that will result from combined sewer overflow control. The difficulty in measuring pollution abatement benefits, which is a requisite for qualifying for a substantial federal construction subsidy, highlights the dilemma municipalities face in trying to solve their local pollution problems while meeting federal guidelines.

At the crux of environmental economics is the use of benefit-cost or investment efficiency analysis to decide the course of action to be followed. The economic and environmental implications of using benefit-cost analysis for

public projects is examined, as is the interaction between efficiency criteria and the problems of equitable benefits redistribution.

The topical organization is as follows. The introduction describes the problem and reviews the reasons behind the delay in construction. It sets forth the framework of the issues that will be examined in depth and outlines the issues that will be addressed in passing.

Chapter two delves into the manner in which the sewage system evolved and details how the sewage system currently functions with emphasis on the systems's impact on the receiving water.

Chapter three outlines the major portions of federal legislation relevant to combined sewer overflows and reviews the management structure that the United States Environmental Protection agency has developed to carry out the legislative mandate.

Chapter four analyzes the decisions, since 1970, which have led to the current state of delay and disrepair.

Chapters five and six characterize the current state of affairs and examine the problems that have arisen in the course of water quality and benefit-cost analyses. Chapter six concludes by explaining why the Environmental Protection Agency's management program should have avoided the problems and reviews in depth the complexities of establishing a link between water pollution control and the protection of beneficial uses.

The purpose of the paper is to characterize a water pollution decision making process and to identify sources of friction that lead to a delay in the resolution of the problem. It is hoped that this paper will be of use to those who are interested in water pollution issues or the public decision mechanism.