

SECTION 1

INTRODUCTION

The Town of Orleans has embarked on a multi-year, multi-phase process to determine if improved methods of wastewater management are needed, and if so, what those improved methods would entail and what they would cost. The process has been called Comprehensive Wastewater Management Planning, and the result will be a Comprehensive Wastewater Management Plan or CWMP. The CWMP process is being conducted in five phases, as follows:

Phase 1: Project Administration and Support

Phase 2: Data Review and Scoping

Phase 3: Needs Assessment

Phase 4: Development and Screening of Alternatives

Phase 5: Detailed Evaluation of Alternatives, Regulatory Filings and Development of Recommended Plan

Phase 1 includes activities that span all other phases. Phase 2 was completed in late 2005, allowing the start of technical work on later phases. The Needs Assessment Report (Phase 3) was issued in draft form in February 2007 and was the subject of a public meeting on February 26, 2007. In December 2007, the Alternatives Screening Report (Phase 4) was issued, and it was reviewed with the public at two meetings held on January 17, 2008. The alternative wastewater management plans identified in the Phase 4 Report were the subject of more detailed investigation in Phase 5. The Detailed Evaluation of Alternatives summarized that investigation and was released in May 2008. It was the subject of two public meetings held on May 22, 2008. Public input on that evaluation continued over the summer of 2008, culminating in the selection of a single wastewater plan (the Recommended Plan) in August 2008. The Recommended Plan was endorsed at a Special Town Meeting in October 2008. The Draft CWMP, dated April 2009, was a compilation of the three prior reports with a single new chapter describing the Recommended Plan. It was subject to review under the Massachusetts Environmental Policy Act (MEPA) in the spring and summer of 2009. This current report updates the Draft CWMP and

addresses MEPA comments. It is published as the combined Final CWMP and Single Environmental Impact Report (SEIR).

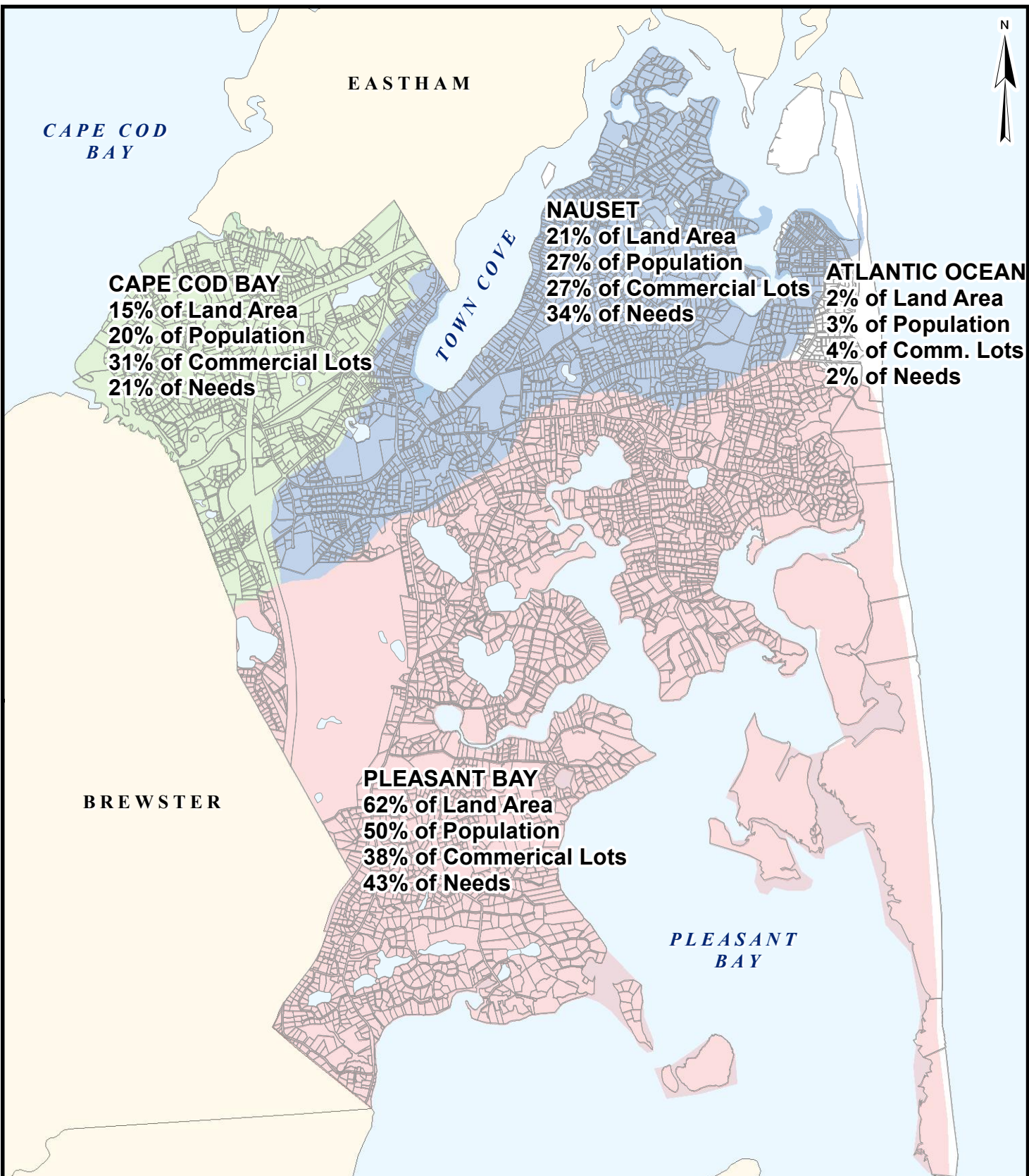
The Town has elected to call this process Comprehensive Wastewater Management Planning. Other related terms in use in the industry include Comprehensive Water Resources Planning and Integrated Water Resource Planning. The Town has chosen the CWMP title for consistency with Town Meeting appropriations, requests for proposals and engineering agreements. The Town's intention is to incorporate many of the broader aspects implicit in the alternative titles.

Orleans is blessed with significant access to marine resources, with frontage on Pleasant Bay, the Atlantic Ocean, Nauset Inlet and Cape Cod Bay. Whenever possible, this and prior reports present both town-wide data and information specific to the areas in town tributary to those water bodies. These major watersheds are the fundamental building blocks of this analysis; their geographic extent is shown in Figure 1-1.

This report consists of 12 sections and a number of supporting appendices. Following this introduction are the following sections:

- Section 2: A summary of existing conditions
- Section 3: Documentation of wastewater management needs
- Section 4: A description of expected future conditions
- Section 5: Identification and review of components of a wastewater plan
- Section 6: Description of three wastewater plans for more detailed review
- Section 7: The detailed evaluation of the three candidate wastewater plans
- Section 8: A comparison of the environmental aspects of the three plans
- Section 9: A review of the potential for regional wastewater facilities
- Section 10: A review of the potential for water reuse
- Section 11: The details of the Recommended Plan
- Section 12: Mitigation Measures and MEPA Draft Section 61 Findings

Many technical terms, abbreviations and acronyms are used throughout this report. Table 1-1 defines those that are most commonly used.



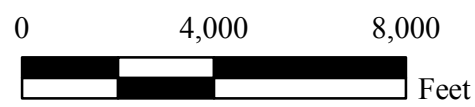
CAPE COD BAY
 15% of Land Area
 20% of Population
 31% of Commercial Lots
 21% of Needs

NAUSET
 21% of Land Area
 27% of Population
 27% of Commercial Lots
 34% of Needs

ATLANTIC OCEAN
 2% of Land Area
 3% of Population
 4% of Comm. Lots
 2% of Needs

PLEASANT BAY
 62% of Land Area
 50% of Population
 38% of Commercial Lots
 43% of Needs

BREWSTER



Source: Base data obtained from the Town of Orleans and MassGIS

Orleans CWMP

Major Watersheds

PROJ NO: 10645G | DATE: Dec 2010

FIGURE:



1-1

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**TABLE 1-1
LIST OF COMMONLY USED ACRONYMS AND ABBREVIATIONS**

ACEC	Area of Critical Environmental Concern
BOH	Board of Health
BOS	Board of Selectmen
CAC	Citizens Advisory Committee
CCC	Cape Cod Commission
"Current"	Covering the dates 2002 to 2005, applied to population, wastewater flow or nitrogen load conditions
CWMP	Comprehensive Wastewater Management Plan
DEIR	Draft Environmental Impact Report
DEP	Department of Environmental Protection (Massachusetts)
DRI	Developments of Regional Impact
EIR	Environmental Impact Report
ENF	Environmental Notification Form
EOEEA	Executive Office of Energy and Environmental Affairs
ESA	Environmentally Sensitive Area
FEIR	Final Environmental Impact Report
"Future"	Referring to population, wastewater flows or nitrogen loads, expected at Planning Horizon (2030)
GIS	Geographic Information System
gpd	Gallons Per Day
gpd/sf	Gallons Per Day Per Square Foot
I/A	Innovative and Alternative
I/I	Infiltration and Inflow
kg/day	Kilograms Per Day
lb/yr	Pounds Per Year
MEP	Massachusetts Estuaries Project
MEPA	Massachusetts Environmental Policy Act
mgd	Million Gallons Per Day
mg/l	Milligrams Per Liter
NHESP	Natural Heritage and Endangered Species Program
NRCS	Natural Resources Conservation Service
OBEGWPD	Orleans Brewster Eastham Groundwater Protection District
ORW	Outstanding Resource Water
PALS	Pond and Lake Stewards
ppm	Parts Per Million
SMAST	School of Marine Science and Technology, University of Massachusetts at Dartmouth
SRF	State Revolving Fund
TMDL	Total Maximum Daily Load
USEPA	U.S. Environmental Protection Agency
USGS	United States Geologic Survey
WMSC	Wastewater Management Steering Committee