

1.0 INTRODUCTION

The **Comprehensive Wastewater Management Planning (CWMP) Process** is the methodology through which current wastewater management needs are determined, and future wastewater management alternatives are developed to meet such needs. Through careful comparison of alternatives, a final plan is adopted to guide the stakeholder(s) in the selection and implementation of the most cost-effective and environmentally sound wastewater management plan. The adopted plan must comply with regulatory requirements and provide for sound wastewater management over an appropriate planning period (typically twenty years).

The planning process is outlined in the *Guide to Comprehensive Wastewater Management Planning - January 1996*, developed by the Commonwealth of Massachusetts, Executive Office of Environmental Affairs, Department of Environmental Protection (MassDEP). Figure 1-1 provides an illustration of this process.

A. PURPOSE AND SCOPE

The current project consists of the first two phases of the CWMP process:

- Phase I - Existing and Projected Conditions and Needs Analysis
- Phase II - Development and Screening of Alternatives

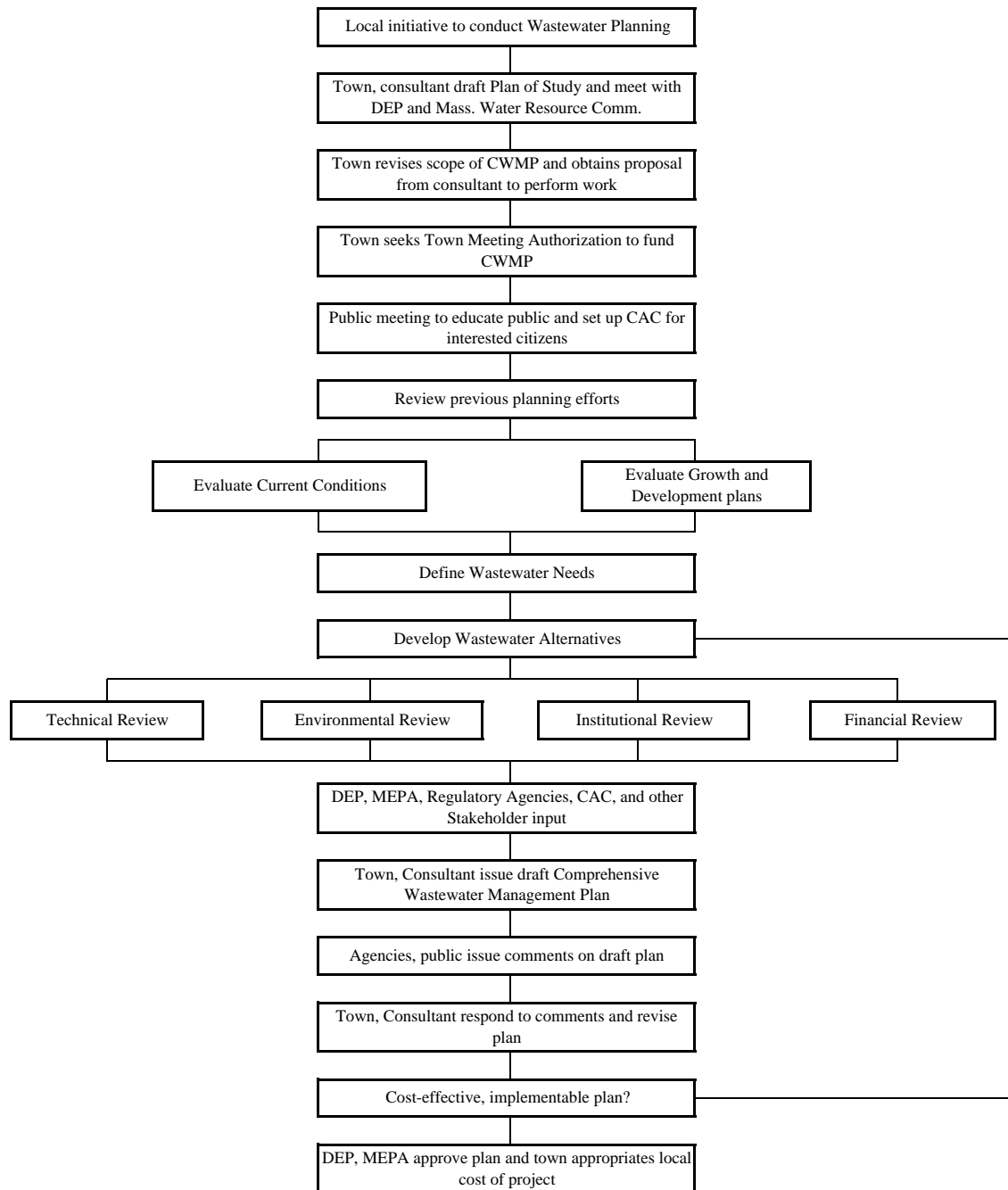
This report comprises Phase I. Once this phase is complete, the next phase – Phase II - will evaluate a number of alternatives to provide a 20-year solution to the wastewater collection, treatment and disposal needs of the Town of Oxford. Included in this Phase will be conceptual evaluation of potential collection and treatment systems, effluent and residual disposal options, and facility siting that will best serve the needs of the Town.

Upon completion of the first two phases of the CWMP process, the Town may choose to continue with the last two phases – Phases III and IV. The Phase III report provides an in-depth evaluation of wastewater management alternatives, ranks the alternatives, and presents the top-ranked alternatives in a Recommended Plan. Phase IV updates the text of the Phase III report with public comments received on the report.

B. PLANNING AREA AND PERIOD

The planning area for the proposed Scope of Work includes two focus areas developed from the previous planning study that Fay, Spofford & Thorndike (FST) prepared, and an additional focus area designated by Town officials based upon the density of development and businesses in the center of Town. The focus areas of this study are the North, Central, and South areas of Town. The two areas previously evaluated in 1997 were the North and South sections of the Town. The Town evaluated the North Area due to its proximity to major highways and a condominium development at Thayer Pond Village, and the South Area due to the presence of an Industrial Park. Pressure from both developers and residents resulted in the Board of Selectmen's establishment of the North Oxford Sewer Study (NOSS) Committee. This committee was charged with development of a priority plan for sewers in North Oxford.

Figure 1-1
Comprehensive Wastewater Management Planning
Town of Oxford, MA



In South Oxford the Industrial Park has continued to grow and expand, resulting in the selection of this area of Town as a focus area. Town officials have discussed the need for sewers in the Central Area of Town, due to the density of development and businesses along Main Street. There is also an Administrative Consent Order for a failed septic system at the Sun Bridge Care and Rehabilitation Complex in the Central Area. Figures 1-2, 1-3 and 1-4 present the three focus areas.

The Town is located within two major drainage basins – the French River and the Blackstone River - with the primary watershed being the French River Basin, which encompasses approximately 95% of the Town. The planning period will be 20 years, with a design year of 2030. We will prepare the CWMP in accordance with DEP's *Guide to Comprehensive Wastewater Management Planning* and Massachusetts Environmental Protection Agency (MEPA) regulations.

C. BACKGROUND INFORMATION

1. Sewer System

Oxford's municipal wastewater collection system serves limited areas of the Town and is available to about 13% of the Town's population. The system is located in the North Focus Area and a small portion of the Central Focus Area, and delivers wastewater to the Town of Auburn for eventual treatment at the Upper Blackstone Water Pollution Abatement District Wastewater Treatment Facility (UBWPAD WWTF) located in Millbury, MA.

The Oxford-Rochdale Sewer District (ORSD) owns, operates and maintains approximately 14 miles of sewers and 4 pump stations within the district (northwest corner of Oxford and southern part of Leicester). This system serves approximately 3% of the Town of Oxford's population.

Chapter 2 of this report presents more detailed information about the Town of Oxford's and the ORSD's collection systems.

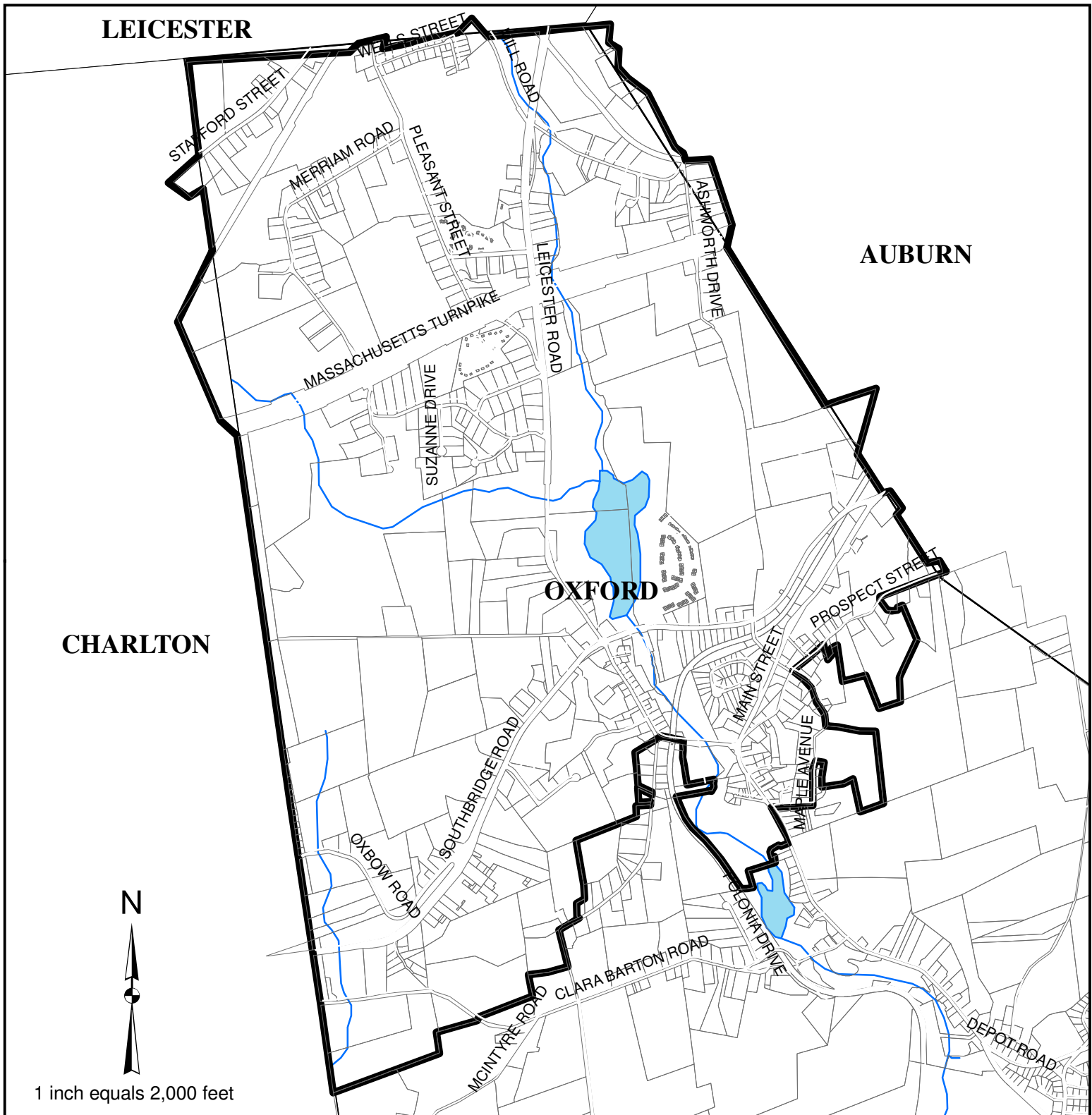
2. Wastewater Treatment Plants (WWTPs)

2.1 Oxford-Rochdale WWTP






The Oxford-Rochdale WWTP was originally designed as a 0.18 million-gallon-per-day (MGD) treatment facility. It was upgraded in 1995 as part of an enforcement order by MassDEP and doubled its capacity to a 0.368 MGD facility. The facility is currently designed to treat an average daily flow of 0.50 MGD and discharges effluent to the French River. Approximately 295 Oxford residents within the ORSD discharge wastewater to this WWTP.

2.2 Upper Blackstone Water Pollution Abatement District WWTF

The UBWPAD WWTF is a 56 MGD facility that handles wastewater from several communities in the Worcester area. Oxford's municipal sewer system currently directs all of its flow, via the



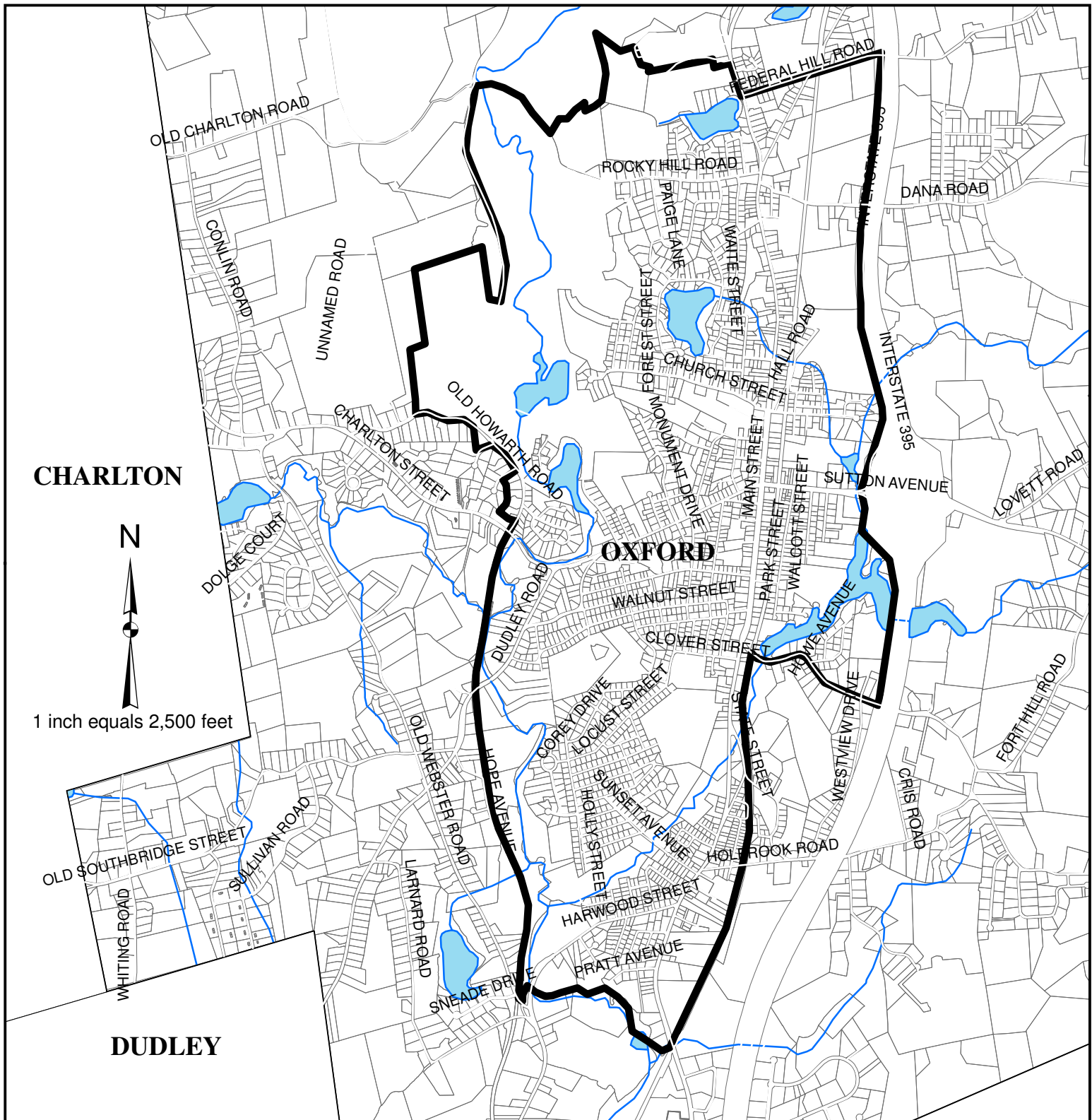
Legend

-  North Study Area
-  OXFORD
-  Parcels
-  Stream, River
-  Water Bodies






Town of Oxford, MA Comprehensive Wastewater Management Plan Phase 1 - Needs Analysis

**FIGURE 1-2
NORTH STUDY AREA**





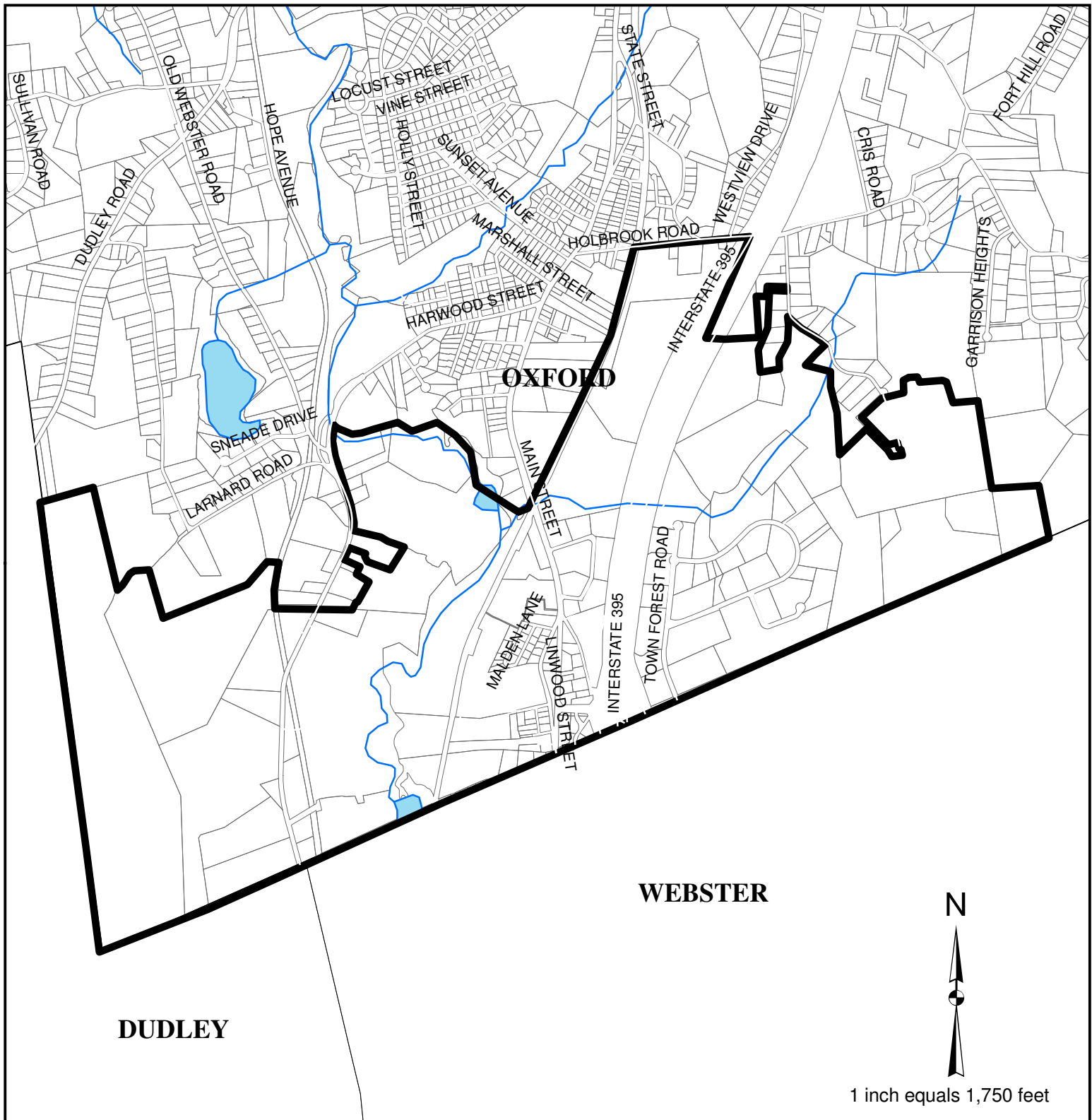
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-  Central Study Area
-  OXFORD
-  Parcels
-  Stream, River
-  Water Bodies






Town of Oxford, MA Comprehensive Wastewater Management Plan Phase 1 - Needs Analysis

**FIGURE 1-3
CENTRAL STUDY AREA**





Legend

-  South Study Area
-  OXFORD
-  Parcels
-  Stream, River
-  Water Bodies

Town of Oxford, MA, Comprehensive Wastewater Management Plan Phase 1 - Needs Analysis

**FIGURE 1-4
SOUTH STUDY AREA**



Town of Auburn, to this facility, which amounted to about 46,000 gallons per day (gpd) in 2007. This facility discharges effluent to the Blackstone River.

Chapter 2 presents detailed information about each of the above facilities.

3. On-Site Septic Systems

Approximately 84% of the Town of Oxford's population is served by on-site septic systems. As discussed later in Chapter 2 of this report, the Town has experienced problems with these systems over the years in terms of negative impacts on surface water quality, particularly in the vicinity of Carbuncle and Barton Ponds.

4. Wastewater Issues

Critical wastewater issues concerning the Town of Oxford include:

- Inermunicipal Agreement with the Town of Auburn for the discharge of sewage to the UBWPAD WWTF. This agreement limits the Town's discharge to the UBWPAD WWTF to 100,000 gpd. Appendix A contains a copy of this agreement.
- Interbasin Transfer Limit. In April 2002, the Massachusetts Water Resources Commission (MWRC) issued a *Determination of Insignificance* that restricts the wastewater flow from the French River Basin in Oxford to the Blackstone River Basin in Auburn and Worcester to 84,000 gpd. Appendix B contains a copy of this document.
- While the average daily wastewater flow from Oxford to Auburn was in the vicinity of 46,000 gpd in 2007, recent readings in 2008 have indicated flows above 90,000 gpd. These flows may be related to infiltration/inflow (I/I) from an older development, which the Town will investigate. Even with existing flows on the order of 46,000 gpd, there is still limited capacity for sewer extensions that direct wastewater from Oxford to Auburn because of the Interbasin Transfer limit of 84,000 gpd. Further restricting the use of the public sewer collection system is the "permitted" flow from the Comprehensive Permit Site Development known as the Reserve at Ashworth Hill. This project was approved to discharge 46,400 gpd from Oxford to the Town of Auburn, and 27,500 gpd to the Oxford Rochdale WWTF. While these flows are based upon Title V of the State Sanitary Code, and are likely in excess of actual flows, the projected flows to Auburn represent a significant portion of the remaining flow allowed under the Interbasin Transfer limit.
- The Elderly Housing Complex in the Central Focus Area is subject to an Administrative Consent Order because of a failed septic system, and requires an alternative to this system.
- Current and future industrial users in the South Focus Area need an alternative to conventional Title 5 septic systems.

- Operation and maintenance of the wastewater collection system, pipelines and pumping stations.
- Funding for design and construction of municipal wastewater collection system extensions. The issuance of betterments will require a commitment from the majority of abutters on a particular sewer extension.

The CWMP will use available data from previous studies and reports for the planning area to the fullest extent possible. A list of available reports is noted below.

5. Existing Reports, Regulations and Studies Available for Review

The following lists the reports, regulations and studies that contain information relevant to the current CWMP for the Town of Oxford:

- Feasibility Study for Sewerage of Areas in North and South Oxford by FST, October 1997.
- North Oxford Sewer Study by FST, November 2006.
- 310 CMR 15.000 – The State Environmental Code, Title 5: Standard Requirements for the Siting, Construction, Inspection, Upgrade and Expansion of On-Site Sewage Treatment and Disposal Systems and for the Transport and Disposal of Septage, Effective March 31, 1995.

D. ORGANIZATIONAL CONTEXT OF TOWN

The operation, maintenance and financing of the municipal wastewater collection and transmission facilities within the Town of Oxford are the responsibility of the Town, acting through its Board of Selectmen, with the Town Manager, Director of Public Works, and Town Engineer acting as the agents. The operation, maintenance and financing of the wastewater collection, transmission and treatment facilities within the ORSD are the responsibility of that district.

The Town of Oxford has an Intermunicipal Agreement with the Town of Auburn, Massachusetts for discharge of its wastewater from the north part of Oxford into the Town of Auburn's wastewater collection system. The combined Auburn/Oxford sewage is pumped from the Town of Auburn's primary pumping station located on Pinrock Road, which discharges to the UBWPAD WWTF located just over the Auburn town line in Millbury, MA. The terms and conditions under which the sewage is discharged between the Towns of Oxford and Auburn are described in the 2000 Intermunicipal Agreement.

For the existing on-site wastewater disposal systems within Oxford, the property owner is responsible for the planning, operation and financing. The Oxford Board of Health is the regulatory authority for these systems within the Town.

E. REGULATORY REQUIREMENTS

The preparation of this CWMP includes many initiatives, orders, regulations and permits that must be taken into account. Among these regulatory requirements and guidelines are the following:

1. Interbasin Transfer Limit

As described earlier, MWRC issued *Determination of Insignificance* to the Town of Oxford that limits the amount of wastewater discharged from the French River Basin in Oxford to the Blackstone River Basin to 84,000 gpd. In 2007, the average daily flow from Oxford measured at the metering manhole in Auburn was about 46,000 gpd. To date, flows in 2008 have been quite variable, exceeding 90,000 gpd on one occasion.

2. Guide to Comprehensive Wastewater Management Planning

The Commonwealth of Massachusetts, Executive Office of Environmental Affairs, Department of Environmental Protection, prepared a *Guide to Comprehensive Wastewater Management Planning* dated January 1996. Oxford's CWMP will be prepared in accordance with that document.

3. Stormwater Phase II Permit Regulations and Permit

As part of an effort to curb pollution resulting from stormwater runoff, the U.S. Environmental Protection Agency (EPA) has issued rulings requiring municipalities in urbanized areas to obtain National Pollutant Discharge Elimination System (NPDES) permits under the Clean Water Act. Phase I of these regulations, promulgated in November 1990, covered municipal separate storm sewer systems (MS4) serving populations over 100,000, construction sites above five acres and industrial activities. Phase II regulations have been issued covering systems serving populations under 100,000 that are located in urbanized areas. Phase II regulations take a "best management practice" approach and are composed of six minimum control measures including:

- Public education and outreach
- Public involvement and participation
- Illicit discharge detection and elimination
- Construction site stormwater runoff control
- Post-construction stormwater management
- Pollution prevention or "good housekeeping" for municipal operations

Oxford has obtained its NPDES Phase II Small MS4 General Permit and submits annual reports to MassDEP pertaining to this permit.

4. Other Permits

A variety of permitting requirements on the local, state and/or federal level may come into play as the Town explores future wastewater management options. Appendix C lists the various

permitting authorities and potential permits, and describes the approval process and approximate time frame for these permits. Permit requirements will vary according to the chosen wastewater management alternatives.