

1.0 BACKGROUND AND SUMMARY OF PHASE I REPORT

A. BACKGROUND

In June 2008, the Town of Oxford, Massachusetts began the first phase of a Comprehensive Wastewater Management Plan (CWMP) to find a solution for the Town's wastewater disposal needs over the next twenty years. The Town completed the *Phase I – Needs Analysis Report* in February 2009, and is now undertaking *Phase II – Development and Screening of Alternatives*. Included in this Phase II is a conceptual evaluation of potential collection and treatment systems, effluent and residual disposal options, and facility siting that will best serve the Town's needs.

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. PHASE I REPORT SUMMARY

The *Phase I – Needs Analysis Report* identified existing conditions and projected future wastewater treatment needs for three focus areas within the Town of Oxford – the North, Central and South focus areas (Figure 1-1). The North and South focus areas have seen increased commercial/industrial development, and there has been significant residential development in the North focus area as well. The Central focus area has intense residential and business development, and contains a nursing/rehabilitation complex subject to a Consent Order because of a failed septic system.

Sewers are available to approximately 16% of the Town's population. About 13% of the residents are tributary to the Town of Auburn's sewer system. The wastewater from those connected to the Auburn sewer system is treated at the Upper Blackstone Water Pollution Abatement District Wastewater Treatment Facility (UBWPAD WWTF) in Millbury, MA. The other 3% belong to the Oxford-Rochdale Sewer District (ORSD), which includes the northwest corner of Oxford and the southern part of the neighboring town of Leicester, MA. There are no sewer areas in the Central and South focus areas, but a portion of the North focus area has sewers. The needs analysis only investigated the unsewered portions of the focus areas.

The needs analysis divided the three focus areas into 27 sub-areas, largely according to zoning, to obtain the most reliable results in assessing wastewater needs. The analysis followed a three-stage approach. The first stage included a rating criteria matrix that considered septic system operation and age, lot size, proximity to water bodies, presence of floodplains or Zone I or II aquifer recharge areas, and soil and groundwater characteristics. The second stage evaluated sub-areas on the basis of soil classification, and a combination of system age and lot size. The third stage was an overall review of the data, plus additional Board of Health information, and other sub-area characteristics that were used to supplement the first two stages and resolve conflicts, to arrive at a final determination of need.

Of the 27 sub-areas analyzed for wastewater needs, 17 areas required alternatives to conventional Title 5 septic systems. Figure 1-1 identifies the Needs Areas within the three focus areas.

In 2007, Oxford discharged about 46,300 gallons per day (gpd), on average, to the Town of Auburn, and 56,400 gpd to the ORSD Wastewater Treatment Plant (WWTP). For the year 2030 – the end of the 20-year planning period - the Phase I Report estimated an additional 118,000 gpd of wastewater flow from the currently sewerized areas in Oxford resulting from new connections to sewers. For the needs areas, the Phase I Report estimated 1.2 million gallons per day (MGD) of wastewater flow in 2030. This latter figure included about 130,000 gpd in infiltration/inflow (I/I) from new sewers.

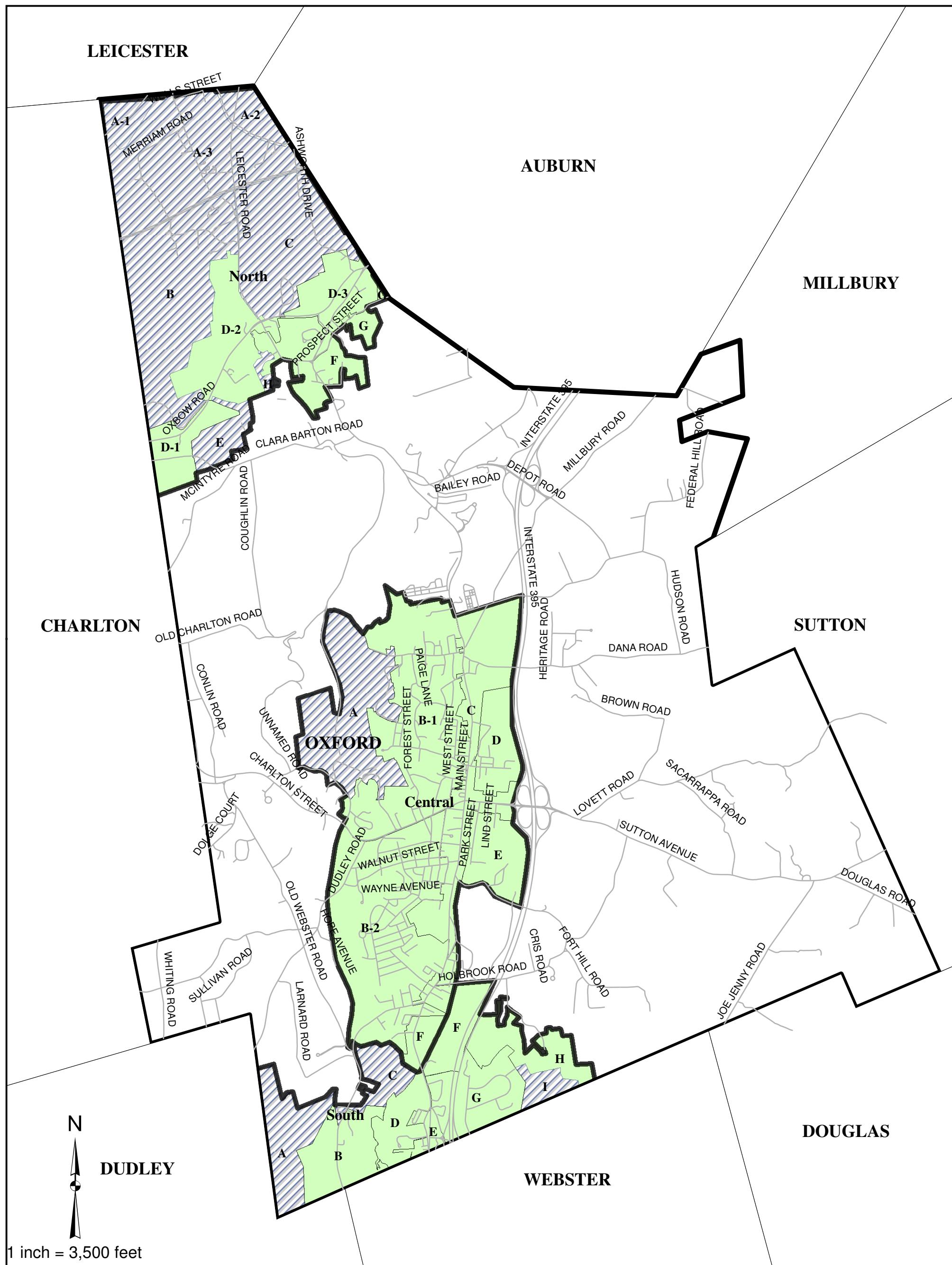
C. SCOPE OF PHASE II REPORT

This *Phase II – Development and Screening of Alternatives Report* for the Town of Oxford, Massachusetts focuses on treatment and disposal options for wastewater produced by the Town for the planning period 2010 to 2030. The major facets of the report include:

- Summary of Phase I Report.
- Waste minimization alternatives.
- Screening criteria for groundwater recharge using treated wastewater.
- Screening and selection of the most feasible sites for groundwater recharge using treated wastewater.
- Wastewater collection, treatment and disposal alternatives.
- Phase II public participation.
- Phase II summary, including sewer user impact analysis.
- Phase III scope.

Concerning treatment alternatives, this report investigates the following:

- Continued use of on-site septic systems in rural and suburban residential areas of the community.
- Treatment of additional wastewater from existing sewerized areas and needs areas in the North focus area at the ORSD WWTP and the UBWPAD WWTF.
- Groundwater recharge of a portion of treated wastewater from the ORSD WWTP, in consideration of added wastewater flow from the North focus area.



TOWN OF OXFORD, MASSACHUSETTS

FIGURE 1-1

WASTEWATER FOCUS AND NEEDS AREAS

FAY SPOFFORD & THORNDIKE - SEPTEMBER 2010

Legend

Focus Areas

Needs Areas

 No

Yes

- Treatment of additional wastewater flow from the needs areas in the North, Central and/or South focus areas at the Webster/Dudley Advanced WWTF (AWWTF) in Webster, MA.
- Treatment of additional wastewater flow at new onsite WWTFs with groundwater recharge within the Town of Oxford.

Regarding treatment alternatives with groundwater recharge, we anticipate conducting preliminary screening to identify up to four groundwater recharge sites, for which we will perform detailed investigations. These investigations will be limited to a desktop study.

D. PURPOSE OF PHASE II

The purpose of the Phase II report is to present the most viable options available for solving Oxford's wastewater needs. After comment from the public, municipal officials, and regulatory agencies, Fay, Spofford & Thorndike (FST) will make final recommendations as part of the Phase III Report.

Costs presented in this report are for comparative purposes only, and are based on costs incurred on similar projects in the region. They are not, however, site-specific. Once the final recommendations and more detailed information are known about the specific alternatives selected, FST will prepare more site-specific cost estimates.