6.0 SUMMARY AND RECOMMENDED FUTURE ACTION

A. SUMMARY OF WASTEWATER NEEDS

Chapter 4 of this report identified 17 areas in the Town of Oxford that will require alternatives to conventional Title 5 septic systems to meet long-term wastewater management needs. These areas are shown on Figures 4-8 through 4-10, and Tables 4-4 through 4-6 summarize the additional wastewater flows anticipated from these 17 areas and the existing sewered areas in 2030. Phase II of the CWMP will investigate alternatives for handling the wastewater needs of these areas and the entire Town.

B. PROPOSED SCOPE FOR PHASE II CWMP

PHASE II of the CWMP involves development and screening of alternatives for managing the future wastewater needs of the Town. The scope for this work is as follows:

1. Screening of Sites for Treatment and/or Disposal within Oxford

The siting analysis presented in this phase is intended to evaluate potential sites within Oxford for future wastewater treatment facilities that will serve the Town.

1.1 Criteria Development

The Engineer will develop site-screening criteria to evaluate the identified sites. The criteria will be based primarily on engineering and environmental considerations, as well as regulatory requirements. Human constraints of the area will also be considered. The Engineer will use the following siting criteria to screen potential sites for in-town centralized and satellite treatment of wastewater: (1) parcel size; (2) presence of floodplains; (3) depth to groundwater; (4) soil permeability; (5) wellhead recharge/Zone I/Zone II areas; (6) wetlands; (7) distance from surface water; (8) existing land use; (9) land availability; and (10) sensitive receptors.

1.2 Site Identification

The investigation will identify potential sites for ground and/or surface water discharge of treated effluent. The principal criteria used to select potential sites will be based upon the land area needed for ground and/or surface water discharge. The Engineer will consult Town records and officials during the site identification process.

1.3 Preliminary Site Screening

The Engineer will perform preliminary screening of the sites identified above, utilizing existing information as much as possible to identify, screen, and rank potential sites prior to the collection of field data. The potential sites will be screened through the development of a method to rank the sites and to reduce the list of potential sites. The Engineer will conduct detailed environmental and engineering analyses on the remaining sites. No more than a total of four sites shall be selected for detailed investigation.

a. Environmentally Sensitive Areas

The investigation will assess environmentally sensitive areas such as wetlands, flood plains, shallow depth to groundwater, wellhead recharge/Zone Is/Zone IIs, surface waters, sensitive habitats and existing land use on each site. The proximity of each site to these areas and the impacts of siting wastewater facilities there will be assessed. The Engineer will describe characteristics of the groundwater at each site, and will assess the effect of the project on groundwater quality. Based upon groundwater investigations at the site, the study will identify the surface waters potentially receiving flow from land application on the site, and will describe each surface water body in terms of existing conditions, use, and water quality issues. There will be an assessment of impacts on surface waters from the wastewater discharge to determine if a higher level of treatment is necessary at any site. The Engineer will investigate the area potentially affected by the activity, including downstream surface waters receiving groundwater from the site, for the presence of sensitive natural resources and receptors. This investigation will include: review of resource maps; discussion with State, local and Federal agency personnel; field reconnaissance; and review of readily available information. From windshield surveys, existing maps, and discussions with appropriate local planning officials, the Engineer will assess the current and future land use at each site.

b. Archaeological and Historic Resources

By review of existing information, including the Massachusetts Historical Atlas/Register, the Engineer will evaluate the potential for impacts to significant historic and archaeological resources at each site.

c. MCP Phase I Site Assessment

The Engineer will perform preliminary investigations to determine if the screened sites contain hazardous materials. A preliminary review of the "Master List of All Sites and Locations" prepared by MassDEP will be the basis of this assessment.

d. Soil Suitability and Geologic Evaluation

The Engineer will assess soil permeability and geologic conditions at each site using existing data and maps such as surficial geology maps and soil survey reports to determine if the site has soil permeability high enough to properly treat wastewater effluent.

e. Sensitive Receptors

The investigation will identify sensitive receptors such as developed residential areas, schools, hospitals or commercial parcels within 500 feet of each site. There will be an assessment of the potential impacts of odor, noise, traffic and visual aesthetics of construction and operation of the wastewater facilities to be located on each site in relation to the identified sensitive receptors.

1.4 Identification of Feasible Sites Based on Screening Analysis

The Engineer will identify the feasible site or sites to accommodate the recommended wastewater facilities upon completion of the detailed screening described in the previous tasks. There will be a summary of the results of the screening process and the reasons for selecting the proposed site/sites.

2. Identify and Discuss Alternatives for Wastewater Disposal

The investigation will present a screening of wastewater alternatives to determine the appropriate wastewater facilities that will meet the needs of Oxford. The identified alternatives will be those that provide the greatest environmental and cost benefit to Oxford.

2.1 Optimize Operation and Maintenance of Existing On-Site WWTFs and Collection System

The first alternative to be considered is the alternative of optimizing the performance of existing systems. For on-site systems, this alternative will include optimizing septage management plans, and continuing maintenance, repair and upgrade of on-site systems in the planning area. If necessary, there will also be an evaluation of any improvements required for the wastewater collection system. There will be a discussion of the potential effects on surface water quality, groundwater quality, and growth in the planning area, land use limitations and socioeconomic factors such as residential and industrial development and public health hazards, economic and legal impacts to the Town, and regulatory requirements of MassDEP/EPA.

2.2 Wastewater Collection, Treatment and Disposal Alternatives

In addition to optimizing existing facilities, the investigation will present a range of wastewater alternatives to address wastewater disposal problems in each of the areas of need. The analysis will consider the options where applicable as described in the paragraphs below:

a. Flow and Waste Reduction

The Engineer will review Oxford's existing water conservation program and additional conservation measures that could reduce the total volume of wastewater to collect, transport, treat and dispose. These measures may include volunteer or mandatory water conservation, or a commercial water reuse and recycling program. As the most promising of alternative flow reduction techniques are identified, the study will review the existing user fee schedule to formulate strategies and incentives to promote conservation.

b. Decentralized Facilities

There will be an evaluation of decentralized facilities for treatment and disposal of wastewater, including: (1) the use of on-site systems; (2) small, decentralized wastewater treatment plants; and (3) other systems that may preclude the need for centralized facilities.

c. Alternative Sewer Systems

The study will evaluate both gravity and low-pressure sewers.

d. Wastewater Treatment, Disposal and Land Application

The Engineer will evaluate a variety of wastewater treatment and effluent disposal options. In addition to investigating the feasibility of future discharges to the UBWPAD, Oxford-Rochdale, and Webster/Dudley WWTFs, there will be an evaluation of locating new treatment facilities within the Town. The study will determine the required land areas for wastewater treatment

facilities and effluent disposal, and water quality limits required for discharge of wastewater effluent by land application.

e. Water Reuse

In conjunction with Task 2.2 d, the investigation will consider reuse and land application of treated effluent. MassDEP has developed guidance on reuse of reclaimed water including water quality criteria and monitoring requirements, and the Engineer will utilize this guidance to identify and evaluate the potential for reuse opportunities for WWTF effluent. Reuse of treated effluent conserves the current water supply, avoids interbasin transfer issues, and helps recharge existing aquifers. Beneficial reuse of effluent such as for landscaping irrigation and groundwater recharge will be fully explored. The factors used to evaluate the feasibility of water reuse include: seasonal variation of demand, required infrastructure and costs, additional treatment required, permitting issues, and environmental benefits.

2.3 Alternative Technologies

There will be a discussion of the possible use of alternative technologies. Alternative technologies are wastewater treatment processes and techniques that provide for the reuse of wastewater, productively recycle wastewater constituents or otherwise eliminate the discharge of pollutants, or recover energy. The alternative technologies that will be discussed under this task or under Task 2.2 include: (1) land application of wastewater effluent and sludge; (2) aquifer recharge; and (3) innovative/alternative on-site systems.

2.4 Short List of Alternatives

The Engineer will develop a short list of alternatives to meet Oxford's long-term wastewater needs. A screening process will be used that will reject options that do not meet physical constraints of the planning area, such as climate, soils and topography, or if they are incompatible with air and water quality plans. The screening process will determine those alternatives that appear to provide the greatest environmental and cost benefit. The Engineer will perform a preliminary assessment of the major environmental, technical, financial and institutional considerations for each alternative to screen and short-list the alternatives. Factors will include reliability, complexity, ability to implement, and capital and operating costs. There will also be consideration of maintaining the water balance within the drainage sub-basins.

3. Public Participation

Throughout Phase II, the public participation program will continue. One or more meetings may be held with the Oxford CAC to review the various wastewater collection and disposal alternatives and identified sites for potential treatment facilities. In addition, there will be one public informational meeting with the Town of Oxford.

4. Preparation Of Written Report

At the conclusion of Phase II, the deliverable will be a report that summarizes the site identification and alternatives processes. The Engineer will submit a draft of the Phase II report

for the Town's review, and then will submit a final report to the Town, MassDEP and MEPA. Their comments plus Phase II findings will shape the scope of any future phases. The report will include a section on recommended scope and costs of future phases, with emphasis on Phase 3 – Alternatives Evaluation and Draft CWMP.