SECTION 9
POTENTIAL FOR REGIONALIZATION

9.1 INTRODUCTION

Regional wastewater facilities may offer cost savings, particularly for small towns that are faced with relatively high costs for wastewater treatment, or have limited land for local disposal facilities.

The principal reason for regional cost savings is "economies of scale"; that is, the cost to treat a gallon of wastewater decreases with increasing plant size. As flows increase at a wastewater treatment facility, some costs (such as chemicals or sludge disposal) increase in direct proportion to the flow. Other costs, such as labor, do not increase in proportion to flow. If two or more towns participate in a regional facility, they can share those "fixed costs" and save money over separate individual plants.

Transport costs are the principal factor offsetting these economies of scale. Any town must weigh the cost to build a pipeline to a regional facility against the costs savings attributable to joint treatment.

Towns the size of Orleans and its neighbors are prime candidates for regionalization. This section of the report identifies several regionalization opportunities and summarizes a detailed analysis that has demonstrated potential cost savings and that evaluates advantages and disadvantages of the viable options.

9.2 REGIONALIZATION OPTIONS

Orleans and Eastham share the watersheds of the Nauset System, Rock Harbor and Boat Meadow. Both Towns have responsibility for controlling nitrogen to meet the needs as documented in published MEP studies or as projected by MEP staff.

The watershed of Pleasant Bay includes lands in Orleans, Brewster, Harwich and Chatham, and all four of these towns have responsibility to comply with nitrogen-based TMDLs adopted by EPA and DEP in 2007.

Orleans and Brewster also share the watershed of Namskaket Marsh. Draft MEP reports indicate that nitrogen loads to that system are well below thresholds, so no nitrogen control needs exist in that watershed.

Given this sharing of watersheds, there are two logical regionalization opportunities, as follows:

A. A regional wastewater treatment and disposal facility in or near South Orleans shared by Orleans and Brewster. This option is a simple expansion of Plan 3. It could also serve easterly areas in Harwich and the northern neighborhoods of Chatham.

B. A regional wastewater treatment and disposal facility in the northerly part of Orleans to serve both Orleans and Eastham. This option could be an expansion of either Plan 1 or Plan 2 at the Tri-Town site.

These hypothetical regional wastewater facilities would receive wastewater generated both in Orleans and in the neighboring towns. Some degree of public sewers would be needed in Eastham and Brewster to allow elimination of septic systems in those two towns proportional to the nitrogen control needs in the respective watersheds.

These options involve the installation of public sewers in Brewster and Eastham, and the associated pipelines to transport the collected wastewater to the regional treatment facility. It is also possible for Orleans to remove Brewster's and Eastham's shares of the watershed nitrogen loads by expanding the proposed Orleans sewer system. In essence, Orleans could eliminate more Orleans septic systems to offset Brewster and Eastham nitrogen loads, and have those two Towns pay for that expansion. If Options A or B, as described above, make economic sense, then it would be prudent to see if an expansion of the wastewater system in Orleans could be accomplished for lower cost. If costs are less, and the Towns can agree on an appropriate cost

sharing formula, then regionalization could occur without the construction of public wastewater facilities in either Brewster or Eastham. This approach has been termed "nutrient trading".

9.3 EVALUATION OF OPTIONS

As an adjunct to the Orleans CWMP, regionalization options were evaluated to see if they make economic, environmental and political sense. As the Town of Orleans developed the Recommended Plan described in Section 11 of this report, a parallel study of regionalization opportunities took place, including the following steps:

- Estimating wastewater flows in the portions of Eastham and Brewster that are tributary to coastal systems with nitrogen control needs;
- Identifying prospective sites in Brewster and Eastham where these Towns could address their needs on their own;
- Estimating costs for both local and regional solutions;
- Developing cost-sharing formulas; and
- Evaluating non-financial issues.

This evaluation was completed in December 2009, and the full report is included in Appendix K. The principal conclusions are as follows:

1. Compared with each Town building its own separate wastewater facilities, two-town and three-town regional solutions may offer 6% to 9% capital cost savings and 18% to 25% O&M cost savings.
2. There are many ways to allocate these savings to the individual Towns. Two example allocation formulas yield significantly different results. Determination of the best approach will require detailed discussion among Town officials.
3. Regionalization discussions among the three Towns should start as soon as possible, and should also cover upgrading or replacement of the Tri-Town Septage Treatment Facility.