

**FINAL COMPREHENSIVE WASTEWATER  
MANAGEMENT PLAN /  
ENVIRONMENTAL IMPACT REPORT**

**FOR**

**TOWN OF WESTMINSTER,  
MASSACHUSETTS**

**EOEA FILE NUMBER 13919**

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## EXECUTIVE SUMMARY

The Town of Westminster Final Comprehensive Wastewater Management Plan (CWMP) / Environmental Impact Report (EIR) provides supplemental data and analysis to augment the Draft CWMP, and presents revised conclusions and recommendations for the Town. The Town of Westminster initiated the CWMP process in 2003 with a desire to develop a plan that meets the wastewater management needs of the Town while also supporting its overall goals. A significant goal addressed in the CWMP is the need for a method to reserve the limited hydraulic and treatment capacities of the existing municipal sewer system for the areas of Town that currently face critical wastewater needs, which are recommended for sewer extensions, while preventing secondary growth development from connecting to the sewer system and depleting the remaining capacity. This goal is further reinforced by the need to maximize local groundwater recharge through on-site wastewater management systems and minimize sewer system transfers within sub-basins of the Nashua River Watershed.

The Draft CWMP was submitted to the Massachusetts Environmental Policy Act (MEPA) Office for review as an Expanded Environmental Notification Form (EENF) in November 2006. The Draft CWMP/EENF inventoried the Town's wastewater management systems, assessed the ability of those existing systems to meet the Town's goals and needs, and evaluated possible alternatives to those systems. The approved plan of study also included a limited evaluation of the Town's water supply and stormwater management systems.

The Draft CWMP presented a cost-effective integrated plan for wastewater management that met the most goals of the Town, produced environmental benefits, and minimized environmental impact. During the extended review period, the Secretary of Environmental Affairs received comments on the Draft and issued a Certificate on that report in December 2006 requiring the preparation of an EIR. However, the Secretary permitted Westminster to file a Single EIR, per MEPA regulations. Since that time, the Town of Westminster and S E A Consultants Inc. (S E A) have worked with several state agencies, including the Massachusetts Department of Environmental Protection (MassDEP), the Natural Heritage & Endangered Species Program (NHESP), the Massachusetts Historical Commission (MHC), and the MEPA Unit to clarify the additional data requirements and resolve the outstanding analysis issues. This Final CWMP/EIR presents the collaborative conclusions of that additional data and analysis.

Consistent with MEPA regulations governing Environmental Impact Reports, this Final CWMP together with the Draft CWMP submitted in November 2006 are considered the complete filing for the planning project. In all cases, any revised or updated data and analysis presented in this report is considered to supersede previously presented or outdated data and analysis. In any cases that this report does not address prior analysis or data, the previously presented material is considered relevant.

### Report Organization

The Secretary's Certificate (attached to this report as Appendix B) includes a scope of work for the Final CWMP, "intended to identify additional analysis and information necessary to complete MEPA review and ensure that impacts and issues are fully analyzed." This Final CWMP addresses the Scope contained in the Certificate and concludes with responses to the comments received on the Draft CWMP. The report generally follows the order that the Scope is presented in the Certificate.

## Final CWMP Recommendations

### *Wastewater Management*

- Revise the Intermunicipal Agreement (IMA) with the City of Fitchburg by 2008 to increase the allowable wastewater discharge to the City for treatment to accommodate the sewer expansion plan. S E A assumed a total cost of approximately \$410,000 associated with revising the IMA. Refer to Section 2.1.9 of the Final CWMP for more detail regarding the IMA.
- Provide a targeted expansion of the municipal sewer system to eleven (11) areas of Town, consisting of five (5) phases of sewer expansion over the planning period. Refer to Section 2.1.1 of the Final CWMP for more detail regarding the sewer expansion plan.

Phases 1 through 4 of the sewer expansion plan consist of extending sewer to eight (8) well-defined areas of Town that contain mainly residential development in need of improved wastewater management. Phase 5 consists of two (2) undeveloped industrial-zoned areas and one (1) municipal parcel planned for affordable housing development, where sewer service was deemed a high priority. The Phase 5 areas already have access to the sewer system and only require a sewer connection during development, but should be included as part of the overall plan.

Phases 1 through 4 consist of approximately 550 current and future properties. The estimated wastewater flow from Phases 1 through 4 is approximately 105,000 gallons per day (gpd) (including I/I) on an average day, which is roughly 77-percent of the current average day flow in the existing sewer system. The Phase 5 areas have the potential to contribute an additional 91,000 gpd (including I/I) to the sewer system on an average day. The exact amount of flow and timeline for this phase is less certain since these areas are dependent on development plans that may be subject to change.

The sewer expansion plan is proposed through five phases with construction beginning by 2009, and each phase having an estimated construction duration of 2-years. The construction of phases 1 through 4 is expected to be completed by 2021. Phase 5 would proceed as development occurs.

The opinions of probable project cost (April 2007, ENR 7865) for complete design, construction, administration, and contingency for each proposed phase of sewer expansion are provided as follows: Phase 1 is \$4.02 million, Phase 2 is \$2.68 million, Phase 3 is \$2.42 million, and Phase 4 is \$2.23 million for a total of \$11.35 million. The Phase 5 areas have access to the municipal sewer system; however, the extent of sewerage required within these areas once they are developed is not known at this time. Also, the developers would be responsible for extending the sewer system; therefore, opinions of cost were not developed for Phase 5.

The proposed plan - Phases 1 through 4 includes approximately 52,500 linear feet (9.9 miles) of sewer pipe, 3,600 linear feet of force main, 342 grinder pumps, 3 minor pump stations, 1 major pump station, and a rehabilitation of the existing pump station at the golf course on Ellis Road.

- Upgrade several components of the existing sewer system prior to implementing the phased sewer expansion plan. The Whitman River Pump Station and the Narrows Road Pump Station are two of these components, where existing sewer flows have reached or exceeded current pumping capacity. The third component, the Fitchburg interceptor, carries flow from Westminster into Fitchburg. It has enough capacity to handle current sewer flow and future connections, but not flow from the phased sewer expansion plan. Refer to Section 8.4.2 of the Draft CWMP for more detail regarding the upgrades.

These upgrades, referred to as Phase A, are recommended to begin in 2008 and are anticipated to take 2-years to complete. The Phase A improvements are scheduled to be complete prior to any service connections from the sewer expansion areas. The opinion of probable project cost (April 2007, ENR 7865) for complete design, construction, administration, and contingency for Phase A is \$3.27 million.

- Implement a regulation to prevent sewer expansion to areas outside of those contained in the plan. Besides preventing growth that is not desired by the community, this plan would preserve sewer system capacity for future connections already committed to by the Town and for the phased expansion plan identified in this CWMP. It is recommended that Westminster draft a proposed sewer district management regulation, either a Management District or a Sewer District By-Law, and submit it for approval at the spring 2008 Town Meeting. If an approving vote is not received, it should be revised as necessary and resubmitted for approval at the fall 2008 Town Meeting. Refer to Section 2.1.8 of the Final CWMP for more detail regarding the management regulation.
- Develop and implement an infiltration and inflow (I/I) investigation program targeted towards locating suspected inflow sources. The program goal is to locate and eliminate substantial I/I sources within the next three years (2008 to 2011). The Town should develop an investigation program in 2008, conduct the work in 2009, and remove located I/I sources in 2010. The Town should align the schedule of this work so that it is conducted prior to completing the recommended Phase 1 sewer system improvements. Refer to Section 2.1.6 of the Final CWMP for more detail regarding the recommended program.
- Evaluate the current sewer rates to determine if an immediate rate increase is needed to compensate for the recent increase to the Fitchburg sewer rates. Refer to Section 2.1.9.3 of the Final CWMP for more detail regarding the sewer rates. A full water and sewer rate study is recommended in Section 2.2.3 of the Final CWMP.
- The Board of Health regulations should be modified to allow the use of shared or cluster wastewater management systems as an option for proposed cluster development instead of leaving sewer as the only alternative. Cluster systems would be regulated under Title 5 of the State Environmental Code or the state groundwater discharge program, depending on design flow. This would protect capacity in the municipal sewer system and facilitate development goals presented in the Westminster Draft Master Plan. The regulations could still maintain provisions that prohibit construction of individual on-site systems on adjacent lots and/or easements. Refer to Section 8.2.3 of the Draft CWMP for more detail regarding recommendations to “Board of Health Operations and Regulations.”
- The Board of Health should develop and implement an on-site wastewater management plan between 2008 and 2010 to assist residents with maintenance of on-site subsurface disposal systems. This recommendation consists of adding a second phase to the on-site wastewater management plan that was recommended in the Draft CWMP. Refer to Section 2.1.9.5 of the Final CWMP for more detail regarding the management regulation.
- The following plan serves as a guideline for implementing the key recommendations related to wastewater management in the Town of Westminster.

### Wastewater Management Implementation Plan

Recommendation		Approval / Town Meeting Appropriation	Completion Year
Revise Intermunicipal Agreement with Fitchburg		N/A	2008
Administrative Options	Sewer Management Regulation (Management District / Sewer District By-Law)	2008	2008 (Fall Meeting)
	On-Site Wastewater Management Plan	N/A	2010
Phase A Improvements		2008	2010
Phase 1 Sewer – 20,000 l.f. of sewer main and 212 current and potential lots.		2009	2011
Phase 2 Sewer - 13,400 l.f. of sewer main and 148 current and potential lots.		2011	2013
Phase 3 Sewer - 13,000 l.f. of sewer main and 120 current and potential lots.		2015	2017
Phase 4 Sewer - 6,200 l.f. of sewer main and 73 current and potential lots.		2019	2021
Phase 5 Sewer – Municipal Housing Parcel and Undeveloped, Industrial-Zoned Land.		N/A	Uncertain

N/A – Not Applicable

- Refer to Section 8.2.3 of the Draft CWMP for other recommendations related to wastewater management not included in this report.

#### *Water Supply*

- Westminster should continue to implement effective water conservation and demand management measures as outlined in the Water Demand Management and Conservation Plan included in the Final CWMP. The Draft CWMP reported that the Town implements programs and makes efforts to reduce overall water consumption in the Town water system, and recent water use trends and annual statistical reporting reveal the benefits of these efforts. Enhanced water conservation programs will help to preserve the Town’s supply and reduce impacts to stressed sub-basins in the Nashua River Watershed. Specific recommendations include: public education, leak detection, metering/maintenance, rates/pricing, residential water use strategies, public sector water use strategies, industrial and commercial water use strategies, and water supply management. The CWMP recommends that future water conservation programs should include all residences and businesses in Town, not just those connected to the municipal water system. Refer to Section 2.2.3 of the Final CWMP for more detail regarding the Water Demand Management and Conservation Plan. This plan expands on the water conservation plan provided in Section 5.9.1 of the Draft CWMP.
- The planned construction of the regional water treatment facility and the water supply IMA with the City of Fitchburg incorporated Westminster’s long term water supply needs; consequently, obtaining additional supply from the regional treatment facility should be the preferred water supply option for the Town within the planning period of this report. The Town should continue to own and protect its

potential municipal water supply well site for water supply needs in the distant future. Refer to Section 2.2.2 of the Final CWMP for more detail regarding future water supply.

- Refer to Section 8.2.1 of the Draft CWMP for other recommendations related to water supply not included in this report.

### *Stormwater Management*

- The CWMP recommends non-structural stormwater management approaches as a relatively simple method of improving town-wide stormwater conditions and as a means to fulfill the Town's obligations under the National Pollutant Discharge Elimination System (NPDES) Phase II program.
- The CWMP identifies preferred stormwater management systems for use in Town in residential, commercial, industrial, and municipal applications that are the most beneficial and cost effective for improving stormwater conditions in specific areas.
- The CWMP recommends various administrative options and local regulations that can improve stormwater management and water quality in Town.
- Refer to the "Stormwater Management Recommendations" portion of the Executive Summary in the Draft CWMP and Section 8.2.2 of the Draft CWMP for more detail regarding the previous recommendations related to stormwater management.
- Partridge Pond is listed on the "Massachusetts Year 2006 Integrated List of Waters, Proposed listing of the condition of Massachusetts' waters pursuant to Sections 303(d) and 305(b) of the Clean Water Act." Partridge Pond should be a focus for implementation of non-structural stormwater management approaches and existing storm drains that discharge to the pond should be considered for the addition of stormwater treatment systems, where practical. More detail regarding impacts to Partridge Pond is provided in Section 2.1.5 of the Final CWMP.

# 1. Sewer System History

This section of the Final Comprehensive Wastewater Management Plan (CWMP) provides a detailed discussion of the history of sewer construction in the Town of Westminster, as required by the Scope outlined in the Secretary's Certificate on the Draft CWMP/Expanded ENF (EENF). The section expands upon the sewer system history narrative provided in Section 2.2.1 of the Draft CWMP and discusses impacts of the past sewer system construction.

## 1.1 Planning and Construction

In 1971, the Massachusetts Water Resources Commission (WRC) Division of Water Pollution Control determined that Round Meadow Pond in Westminster was being polluted by development in the Town Center through wastewater discharges to storm drains that discharge to the pond. The WRC issued an order and a schedule to the Town to abate the discharge of inadequately treated wastes into waters of the Commonwealth.

The Town did not have a sewer system at this time; therefore, sanitary sewers were investigated as a potential solution. *A Report on Wastewater Collection and Disposal Facilities* was prepared by S E A Consultants Inc. (S E A) in 1975 to "develop a water pollution abatement program for the (Town)," which included "the immediate serving of known sources of pollution and a long range solution for serving the remainder of the Town." The report proposed a phased sewer program with the priority areas consisting of Town Center and the Wyman Pond area to improve water quality in Round Meadow Pond and Wyman Pond. The report concluded that it was not economically feasible at that time to provide sewers to the Wyman Pond area. It also cited a Nashua River Basin Plan that prohibited new discharges into the Whitman River, regardless of quality, which effectively eliminated in-town treatment as an option. Consequently, the report recommended establishing an agreement with the City of Fitchburg to discharge wastewater to that City's treatment facilities. This could be accomplished with an interceptor sewer connecting Town Center to the West Fitchburg Treatment Facility.

An *Environmental Assessment Report* was prepared by S E A in 1977 to evaluate the environmental impact of the project proposed in the prior report and to comply with the facilities planning requirements of the Water Pollution Control Act Amendments of 1972. This report was necessary to gain EPA approval and subsequently become eligible for state and federal funding for sewer system design and construction. The environmental assessment report identified that without the proposed project, there would generally be negative impacts to drinking water supplies and other surface waters in Town and public health hazards in densely developed areas from lack of adequate wastewater management systems. With the proposed project, the report identified that environmental impacts would be mainly beneficial. Negative impacts could include those during construction and increased water consumption by sewer users once the concern of a failing on-site system is eliminated. Construction impacts would be primarily from silt runoff to receiving waters.

The Town selected DuFresne-Henry, Inc. to evaluate the recommended plan prepared by S E A and investigate other options that may be available. DuFresne-Henry, Inc. prepared a *Facilities Planning Report for Wastewater Collection and Treatment Facilities* in 1980 (revised 1982) that followed the recommendations made by S E A. It concluded that a regional solution was appropriate to address the existing problem areas due to site limitations. The report concluded that transporting wastewater from the Town Center area to the West Fitchburg Wastewater Treatment Facility was the optimal solution.

The original sewer system in Westminster was constructed in 1982 by the Wachusett Mountain Ski Area, which was expanding and in need of service. The ski area connected to the Fitchburg sewer system and installed sewers along Route 2A, Depot Road, Narrows Road, Stone Hill Road, East Road, Gatehouse

Road, and Mile Hill Road. The Whitman River Pump Station was installed to convey wastewater over the Whitman River to Fitchburg. A pump station at Narrows Road was also installed to convey wastewater over Route 2. Under an agreement with the Town, the sewers eventually became the property of Westminster, and services could then be connected. This extension heads from north to south along the eastern side of Westminster. Refer to Figure 2-1 of the Draft CWMP for a map of the sewer system.

In 1983 Anderson-Nichols & Company, Inc. prepared a *Wyman Pond Restoration Feasibility Study* for the Massachusetts Department of Environmental Protection (MassDEP, but at that time called the Division of Environmental Quality Engineering or DEQE) Division of Water Pollution Control to establish a comprehensive program for restoring and maintaining the water quality of Wyman Pond. Among other measures, Anderson-Nichols recommended reduction of on-site wastewater discharges by providing pressure sewers to the high-density shoreline development. These sewers would connect to the existing sewer on East Road and Gatehouse Road.

In 1984, the Town extended the recently built interceptor sewer along Route 2A to provide sewer service to the Town Center, as recommended in the 1975 S E A report. Under the same project, a limited amount of sewers were constructed along the eastern side of Wyman Pond to serve residential areas as recommended in both the S E A report and the Anderson-Nichols study. These projects received 50-percent funding under the Massachusetts Water Pollution Control Collection System grant program and the remainder was financed through betterment assessments. The Town Center sewers and the interceptor are shown on Figure 2-1 of the Draft CWMP.

Between 1989 and 1998, several small extensions to the sewer system were constructed by various users. These included an extension from Town Center, along West Main Street, and under Route 2 for SimplexGrinnell in 1989 (formerly Digital Equipment Corp.) and an extension along Route 31 (Fitchburg Road) for the Pinetree Power Station in 1991. The extension to Pinetree Power consists of a separate connection to the Fitchburg sewer system on Route 31, which has not been expanded since. It is shown on Figure 2-1 of the Draft CWMP, in the easternmost portion of Westminster.

In 1998, the Town expanded the sewer system further along West Main Street up to Route 2 to serve dense residential areas near Town Center. This project was initiated through a petition from the residents, which obtained support at Town Meeting. Half of the project was financed through increases in the general tax rate and the other half was financed through betterment assessments.

In 1999, the Town upgraded the original Whitman River Pump Station under an agreement that allowed SimplexGrinnell to discharge an additional amount of wastewater to the municipal sewer system. SimplexGrinnell funded the cost of the pump station upgrade. The design capacity of the pump station was increased from 200 gallons per minute (gpm) to 500 gpm, and has not been increased since.

The most recent sewer construction in Westminster was completed in 2001. The project consisted of four separate areas intended to provide sewer service to residential development in need of improved wastewater management. This project was initiated in order to meet the recommendations of the past studies and through a petition from the residents, which obtained support at Town Meeting. The project was submitted to the MassDEP Clean Water State Revolving Fund (CWSRF) for construction funding for calendar year 2002, but did not receive approval. The Town financed construction through both tax revenue and betterment assessments. The CY 2002 Project Evaluation Form (PEF) identifies the project areas as the Wyman Pond Area, the Ellis and Frog Hollow Road Area, the Scenic Drive Area, and the Main Street Extension Area. The Wyman Pond Area consists of residential development along the eastern side of Wyman Pond that did not receive sewer service in the 1984 sewer project. These areas were recommended for sewer service in the prior S E A report and the Anderson-Nichols study. The PEF indicates that the Ellis and Frog Hollow Road Area presents challenges to using on-site wastewater

management. The PEF cited lot size limitations, soil types, groundwater depth, and Board of Health records as factors. Also, the area is within close proximity to Meetinghouse Pond, a drinking water supply source for both Fitchburg and Westminster. The Scenic Drive Area faces many of the same limitations as the Ellis and Frog Hollow Road Area, according to the PEF. The Main Street Area consists of a very small portion of Main Street, at the edge of Town Center. It was recommended in past studies for sewer service, but was not included in the 1984 sewer project.

There have been no other sewer extension projects since 2001 and there have been no filings with MEPA or any other reports other than those detailed in this section. The CWMP was initiated in 2003 to conduct an extensive evaluation of wastewater need in Town, and to investigate alternative wastewater management options in detail. The recommendations relating to expanding the sewer system consist of a targeted sewer expansion plan for well-defined areas that exhibit critical wastewater need. Many of the areas are located around Wyman Pond and were recommended for sewer service in the 1975 S E A report. Extending sewers was identified as the most beneficial and feasible option available for these areas.

## **1.2 Environmental Impacts**

The past sewer construction projects have consisted of typical gravity sewers and manholes, pump stations with sewer force mains, and low pressure sewers with grinder pumps. The pump stations are mainly below grade and consist of small structures. Conventional construction methods were utilized and virtually all of the construction was within existing roadway rights of way. The construction methods consisted of trench excavation and cover for pipe installation and open excavation for structures and pump stations. The force mains that cross the Whitman River and Route 2 were attached to the existing bridge structures. The gravity sewer that crosses Route 2 near Town Center was installed through a pipe jacking approximately 200-feet in length. The bulk of the impacts from these projects were construction related. General construction impacts include roadway disturbance from sewer installation and traffic impacts. Impacts to nearby receiving waters include silt and sediment accumulation especially since some of the projects occurred prior to the advent of effective erosion control devices. The projects included some small sections of cross-country sewer where unpaved surfaces were disturbed and erosion likely occurred.

Westminster has maintained effective zoning regulations since before sewer construction occurred. Development impacts have been minimal from the projects. In-fill development is evident in some of the denser areas that received sewer service; however, there has not been much secondary growth. Water use has been relatively steady and several areas with sewer service still rely on private wells for water supply. There are a few large, industrial water users but residential water use has remained under 65 gallons per capita per day (gpcpd) for the past four years.

The past projects have provided several environmental benefits to the Town. The initial project in 1982 established the municipal sewer system and enabled future sewer extensions to serve areas in need of improved wastewater management and resource protection. The subsequent 1984 municipal project provided sewer service to the Town Center, the subject of the 1971 order by the WRC. It also provided service to some areas adjacent to Wyman Pond. These extensions were recommended nearly a decade earlier and were critical for improving the water quality of two key surface waters in Town. The 1998 and 2001 municipal projects were a continuation of the Town's goal to extend sewers to areas recommended in prior studies. These areas were established as a high priority for providing sewer service to eliminate public health threats and protect sensitive resources, including a nearby drinking water supply source.

### **1.3 Town-Wide Sewer Program**

The CWMP identifies that improved wastewater management is necessary to overcome physical site limitations or to protect sensitive resources, or a combination of both. Past projects have extended sewers to approximately one-third of the properties in Town for these reasons. Based on a review of Figure 2-1 in the Draft CWMP, it is evident that the past sewer extensions have been limited to the dense development along the Route 2 corridor and the Wyman Pond area.

The 1975 S E A report included a town-wide Sewerage System Master Plan that consisted of a conceptual design for extending sewers to most of the properties in Town. It also created six priority phases for providing sewers to the most critical areas of Town within the overall plan. Only portions of this sewer master plan were implemented and many portions of the priority areas still do not have sewer service today. The primary reason the Town has not moved forward with aggressive sewer construction is the funding limitations. The Town qualified for limited grant funding in the past. Given the financial status of the community, it has preferred to minimize betterment assessments, tax increases, and rate increases from sewer construction as much as possible.

Another reason the master plan is no longer a priority is the gradual shift in philosophy regarding wastewater management. Progressive sewer extensions are no longer deemed the singular solution for improving wastewater management in problematic areas. If constructed properly, the on-site wastewater management option is regarded as a viable, cost effective alternative and continual advances in on-site system technology have enabled a wider range of applications. Promoting in-basin groundwater recharge and minimizing basin stress condition also reinforces the benefits of this philosophy.

The CWMP concludes that on-site wastewater management options under Title 5 of the State Environmental Code are generally suitable for the existing development in the northern and southern portions of Town within the planning period of this report. And based on the current zoning regulations in Westminster, Title 5 management should be a suitable option beyond the planning period. Therefore, the sewerage system master plan is no longer considered a planning objective for the Town.

## **2. Final CWMP Recommendations**

Based on the Scope provided in the Secretary's Certificate on the Draft CWMP and the comments received, the Final CWMP provides additional data and analysis to ensure that impacts and issues are fully addressed. This section includes updated or modified recommendations as a result of that additional analysis.

### **2.1 Wastewater Management**

The additional information provided in this section regarding wastewater management recommendations in the Town of Westminster pertains to the sewer expansion plan proposed in the Draft CWMP. Refer to Section 8.2.3 of the Draft CWMP or the Executive Summary of the Final CWMP for other recommendations relating to wastewater management.

#### **2.1.1 Sewer Expansion Plan Description and Updated Schedule**

This section of the Final CWMP updates the sewer expansion plan description and project phasing, as required by the Scope outlined in the Secretary's Certificate on the Draft CWMP.

The sewer expansion project areas have not changed from those outlined in Section 8.3 of the Draft CWMP. The project consists of a targeted expansion of the municipal sewer system to eleven (11) areas of Town, consisting of five phases of sewer expansion over the planning period. The Draft CWMP identified these areas through a detailed needs analysis that solicited input from various parties with extensive knowledge of the Town, including a Citizens Advisory Committee (CAC). The analysis was also the focus of resident interaction through two workshops.

Phases 1 through 4 of the sewer expansion plan consist of extending sewer to eight (8) well-defined areas of Town that contain mainly residential development in need of improved wastewater management, as determined by the wastewater needs analysis conducted in the Draft CWMP. Phase 5 of the plan consists of two (2) undeveloped industrial-zoned areas and one (1) municipal parcel planned for affordable housing development, where sewer service was deemed a high priority. The Phase 5 areas already have access to the sewer system and only require a sewer connection during development, but should be included as part of the overall plan for planning purposes. Figure 8-1 of the Draft CWMP illustrates the various sewer phase areas and Section 8.2.3.2 of the Draft CWMP describes the individual areas of Town that make up the phases.

Phases 1 through 4 consist of 553 total lots. Of this total:

- 483 properties are currently developed, and
- 70 properties are undeveloped.

All but three of the properties are residential or zoned residential. The remaining are a commercial property and two undeveloped, commercial properties. Section 8.3.3 of the Draft CWMP provides details regarding the estimate of potential lots. It is factored entirely on in-fill development within the sewer phase areas, based on current zoning, pre-existing "grandfathered" parcels, and recent assessors mapping. Based on these details the proposed sewer expansion area in Phases 1 through 4 is approximately 87-percent developed. The sizes of the individual phase areas are as follows:

- Phase 1 Sewer – 212 current and potential lots.
- Phase 2 Sewer - 148 current and potential lots.
- Phase 3 Sewer - 120 current and potential lots.

- Phase 4 Sewer - 73 current and potential lots.
- Phase 5 Sewer – Municipal Housing Parcel and Undeveloped, Industrial-Zoned Land.

Refer to Table 8.3 of the Draft CWMP for more details on the lots in each phase. Portions of the undeveloped industrial-zoned areas in Phase 5 have development plans associated with them, but specific building details have not been decided yet. For the municipal housing parcel, the Town is currently working with a consultant to develop a plan for an affordable housing development. Refer to Section 8.3.3 of the Draft CWMP for more details on the Phase 5 planned development.

The expansion plan does not account for secondary growth impacts (i.e. nearby subdivision connecting to or extending the proposed sewer). The Town intends to restrict expansion of the sewer system outside the defined phase areas as recommended in Section 2.1.8 of the Final CWMP. The phase areas have been established on a lot by lot basis using assessors mapping. The primary goal of this CWMP is to provide improved wastewater management to portions of Town where on-site systems are a major concern and a cost burden. The limited capacity of the municipal sewer system must be protected to preserve service for these wastewater needs areas. Wastewater management under Title 5 or through package treatment with groundwater discharge should be utilized for new development in the proposed On-Site Wastewater Management Areas.

Three major components of the existing sewer system require upgrades prior to implementing the phased sewer expansion plan. The Whitman River Pump Station and the Narrows Road Pump Station are two of these components, where existing sewer flows have reached or exceeded current pumping capacity. The third component, the Fitchburg interceptor, carries flow from Westminster into Fitchburg. It has enough capacity to handle current sewer flow and future connections, but not flow from the phased sewer expansion plan. Refer to Section 8.4.2 of the Draft CWMP for more detail regarding the upgrades.

- These upgrades, referred to as Phase A, are recommended to begin in 2008 and are anticipated to take 2-years to complete. These upgrades have been delayed one-year from the schedule provided in the Draft CWMP based on the assumption that the Town will not have the agency and regulatory approvals needed to begin the project design until after the 2007 spring Town Meeting.

Table 2.1 summarizes the proposed sewer expansion schedule. The sewer expansion is proposed through a phased expansion plan with construction beginning by 2009, and each phase having an estimated construction duration of 2-years.

- The intent is to begin construction of Phase 1 while the Phase A improvements are underway, with no service connections occurring until the improvements are complete.
- Phase 2 is the next highest priority and is scheduled to occur as soon as Phase 1 is complete.
- Phases 3 and 4 are spaced out two years from the prior phases and another 2 years in between to allow time to accumulate funding, since the priority is not as high.

All phases have been delayed one-year from the schedule provided in the Draft CWMP based on the assumption that the Town will not have the agency and regulatory approvals needed to begin the initial recommended project until after the 2007 spring Town Meeting. Therefore, the initial project could not acquire Town Meeting approval until 2008. The construction of phases 1 through 4 is expected to be completed by 2021. Phase 5 would proceed as development occurs.

**Table 2.1  
Proposed Sewer Expansion Phasing  
and Construction Schedule**

<b>Phase</b>	<b>Area</b>	<b>Town Meeting Appropriation</b>	<b>Construction Completion Year</b>
A	Sewer System Capacity Improvements	2008	2010
1	Leino Park Area Lakewood Park Area Dawley Road Area	2009	2011
2	Lake Drive East Area Edro Isle Area	2011	2013
3	Bakers Grove Area East Wyman Area	2015	2017
4	Bacon Street Area	2019	2021
5	State Road East Industrial Area Eastern Westminster Area Municipal Housing Parcel (109-10)	N/A	Uncertain

N/A – Not Applicable.

The conceptual sewer designs for the expansion plan have not changed since the Draft CWMP. The proposed plan - Phases 1 through 4 includes approximately 52,500 linear feet (9.9 miles) of sewer pipe, 3,600 linear feet of force main, 342 grinder pumps, 3 minor pump stations, 1 major pump station, and a rehabilitation of the existing pump station at the golf course on Ellis Road. Refer to Table 8.2 of the Draft CWMP for quantities of sewer infrastructure within each individual phase. A detailed description of the sewer construction methods is provided in Section 2.1.2 of the Final CWMP.

## **2.1.2 Construction Details**

This section of the Final CWMP provides a detailed description of construction methods and construction period impacts for the sewer expansion plan, as required by the Scope outlined in the Secretary's Certificate on the Draft CWMP.

### **2.1.2.1 Construction Methods**

The section expands upon the description of construction methods included in Section 8.7.2 of the Draft CWMP.

The sewer construction proposed for the recommended expansion plan is similar in size and scope to the past sewer projects in Westminster, summarized in Section 1 of this report. Based on the conceptual designs detailed in Section 8.5 of the Draft CWMP, nearly all sewer and force main is proposed within existing roadway rights-of-way in Westminster. Most of the roadways are paved surfaces also. Minor easements are necessary to connect certain phased areas, as described further in this section.

The sewer projects for the Phase 1 through 4 areas of the plan consist of typical gravity sewers and manholes, pump stations with sewer force mains, and low pressure sewers with grinder pumps. The pump stations are mainly below grade and consist of small structures. Conventional construction

methods will be utilized in most cases, such as trench excavation and cover for pipe installation and open excavation for structures and pump stations. For Phase 5, the developer will determine the sewer construction methods necessary to extend the existing sewer system to the project area. Based on a review of the Phase 5 areas and their surroundings, it appears that small gravity sewer extensions are required to provide sewer service to these areas.

- All projects will include placement of erosion control devices prior to excavation. The locations, types of devices, and maintenance needs will be coordinated with the local Conservation Commission.
- Wetland resource areas and buffer zones thereto will be clearly marked as off-limits to construction equipment and materials storage.
- Given the dense nature of the project areas, equipment selection and excavation methods will focus on minimizing size and disturbance.
- Conventional construction methods involve the use of an excavator to excavate trenches at the depth necessary for sewer or structure installation, which can range from 4 to 10-feet under typical conditions. After sewer installation, the trench is backfilled with suitable material and compacted. The trench is stabilized and restored to existing or improved conditions. The site is cleaned and adjacent areas that are disturbed as a result of construction are restored.
- Clearing and grubbing is only anticipated for the minor cross-country portion needed to connect the Edro Isle Area described further within this section. These areas will be graded to minimize erosion and restored immediately after backfilling.
- Surface restoration will closely follow excavation to maintain access to residents and construction will be sequenced to avoid recreational areas during the summer months.
- Paved areas will be resurfaced weekly or more frequently depending on the type of road, and stockpiled materials that remain on site for more than a day will be covered to prevent erosion.
- Construction dewatering, where necessary, will be discharged to sediment capture areas and infiltrated to the maximum extent feasible.
- Construction equipment will include an excavator, a backhoe, a 10-wheeler for material transport, hand tools, compactors, rollers, and equipment trucks.
- Maintenance, repair, and fueling of equipment shall be confined to areas specifically designed for that purpose. These areas will have adequate waste disposal receptacles for liquid and solid waste. Waste oil shall be removed to designated waste oil collection areas for recycling. No potential pollutants shall be allowed to drain into catch basins, streams, or other water bodies.

Construction details for each individual project area within Phases 1 through 4 are described in the following narrative, based on the conceptual designs (Refer to Section 8.5 of the Draft CWMP for more details on the conceptual designs).

- Leino Park Area – A low pressure sewer system is recommended for this area. The system will connect to the existing gravity sewer at East Road. The area is small and dense, but topography of the area varies widely. There is not much relief from Wyman Pond; therefore, groundwater is shallow in much of the area. The low pressure sewer is recommended in order to minimize the number of pump stations and excavation below the groundwater table within the Leino Park Area. Either a bridge crossing or directional drilling will be selected during the design phase to connect the area across Wyman Pond to Leino Park Road. The Wyman Pond crossing will be either attached to the existing bridge in an insulated casing or installed through a casing constructed under the pond by means of trenchless directional drilling. The directional drilling method utilizes a drilling head to install the casing pipe from the ground surface, under the pond, to the other side. The preferred method will be selected based on minimizing environmental impacts. If directional drilling is utilized, a plan would be developed to prevent sedimentation of the pond and surrounding areas and to minimize and control

potential escape of bentonite clay slurry. The plan will be submitted to the local Conservation Commission for review and approval. The low pressure sewer will be installed in an excavated trench at an adequate depth to protect from frost. Grinder pumps will be installed below-grade in an excavation at each property. Conventional excavation depths should generally range from 4 to 6-feet. Excavated areas will be backfilled, compacted, stabilized, and restored. Paved roads will be restored with permanent trench pavement. Gravel roads will be graded and the surface will be improved as much as possible before fine grading the gravel surface.

- Lakewood Park Area - A low pressure sewer system is recommended for this area for the same reason as the Leino Park Area. The area contains varying topography and shallow groundwater. The low pressure sewer system will connect to the end of the existing gravity sewer system at East Road. This area does not need to cross Wyman Pond to connect to the existing sewer system and consists of the same conventional construction methods as detailed for the Leino Park Area.
- Dawley Road Area – Gravity sewer systems are proposed for this area with a short section of low pressure sewer needed to serve four homes. The topography of this area is challenging such that it requires three separate, small gravity sewer systems and one pump station. The pump station is small and will be located mainly below grade. During design, the pump station may be sited in the existing roadway right of way if there is adequate space, otherwise a small easement will be required from the abutting property owner. Conventional construction methods will be used. The excavation needed to install the pump station will be similar to that required for a manhole. The necessary trench excavation depth will not exceed 7 to 10-feet based on the conceptual designs.
- Lake Drive East Area - A low pressure sewer system is recommended for this area for similar reasons as the previous areas. There is varying topography within the area and the existing homes adjacent to the pond are well below street grade and would require pumping to discharge to a gravity sewer. The entire area will connect to the existing sewer pump station at the golf course on Ellis Road. Conventional construction methods will be used similar to other low pressure sewer projects detailed in this section. The existing pump station at the golf course will require an upgrade. It will likely require new pumps and possibly a new wet well, which involves similar construction methods as a manhole. The pump station structure should otherwise be adequate.
- Edro Isle Area – A low pressure sewer system is recommended for this area for the same reason as the Leino Park Area. The area contains varying topography and shallow groundwater. The low pressure sewer system will connect to the Leino Park Area at Parkwood Lane. An easement from three property owners will be required for a total length of approximately 1,500 feet to connect the system from Washington Drive to Parkwood Lane. The proposed low pressure sewer can be installed within existing access roadways and adjacent to property lines to access the Leino Park Area. Approximately 1,000 feet of this connection is cross-country sewer. Necessary easements are proposed along property lines, but the actual locations will be selected during the project design to avoid impacts to any environmental resources discovered during survey, such as vernal pools. The required excavation will likely be able to maintain sufficient offsets from resource areas and Wyman Pond. A portion of low pressure sewer along Patricia Road must be installed at grade, adjacent to the roadway in order to cross two culverts. There is not adequate separation between the top of the culverts and the roadway; therefore, the sewer pipe must be installed within a protective insulated pipe encasement. This area does not need to cross Wyman Pond at any location and otherwise consists of conventional construction methods as detailed for previous areas.
- Bakers Grove Area – A gravity sewer system is proposed for this area along Narrows Road that connects to the proposed gravity sewer for the East Wyman Area at East Road. A small pump station

is necessary at the connection point on Narrows Road to convey wastewater over the culvert at the outlet from Wyman Pond. Portions of the area adjacent to Wyman Pond, which are located at a lower elevation than Narrows Road, are proposed to be served by low pressure sewers that discharge to the proposed gravity sewer on Narrows Road. The low pressure sewer will serve approximately 19 homes. Conventional construction methods will be used. Approximately 300-feet of gravity sewer on Narrows Road must be installed at depths over 15-feet due to existing topography. The pump station force main that crosses the outlet from Wyman Pond must be installed at a shallow depth and either encased or consist of ductile iron pipe to withstand vehicle loads.

- East Wyman Area - Most of the area is proposed to be served by gravity sewers along East Road and Narrows Road that connect to the existing sewer system at the Narrows Road-Stone Hill Road intersection. Similar to the Bakers Grover Area, portions of the area adjacent to Wyman Pond that are low-lying are proposed to be served by low pressure sewers that discharge to proposed and existing gravity sewers along East Road. Conventional construction methods will be used and trench depth will be typical.
- Bacon Street Area – This area is proposed to be served by two separate gravity sewer systems. One system flows south from Overlook Road and North Common Road to a pump station on Bacon Street at Route 2, which connects to the existing sewer system on Bacon Street at Elliot Road. It may be determined during the design that this pump station is not necessary if gravity sewers will be allowed to be installed beneath the Route 2 overpass. The other sewer flows north on North Common Road to a small pump station at the Department of Public Works (DPW) facility, which pumps back up North Common Road to the other proposed gravity sewer. Approximately 300 to 400-feet of gravity sewer on Bacon Street will be required to be installed at depth greater than 10 to 15-feet due to existing topography. Conventional construction methods will be used.

#### 2.1.2.2 Construction Period Impacts

The section expands upon the description of construction impacts included in Sections 8.6 and 8.7 of the Draft CWMP. Using the detailed description of construction methods previously provided within this section, a summary of impacts is provided, including impacts from earth moving, impacts to vegetation, potential impacts from erosion and sedimentation, traffic impacts, and impacts to adjacent land uses.

A discussion of proposed mitigation measures for the anticipated impacts is provided in Section 3 of the Final CWMP.

##### 2.1.2.2.1 Earth Excavation

The proposed sewer expansion plan - Phases 1 through 4 includes approximately 52,500 linear feet (9.9 miles) of sewer pipe, 3,600 linear feet of force main, 342 grinder pumps, 3 minor pump stations, 1 major pump station, and a rehabilitation of the existing pump station at the golf course on Ellis Road. Assuming typical trench depth for each type of sewer pipe proposed, the sewer expansion plan will require approximately 42,000 cubic yards of trench excavation.

It is expected that most of the excavated soil will be suitable for reuse within the trench. Approximately 14,000 cubic yards of soil may have to be disposed of assuming that the following soil must be removed: soil displaced by the sewer pipe, soil removed to add pipe bedding and cover, and the soil removed to add road sub-base. Several of the project areas consist of sand and gravel due to their location near surface water bodies. The excess excavated soil should be easily useable as backfill for other projects, or could even be sold. There should be minor amounts of unsuitable soils, such as organic material, which must be disposed of at a proper location or used for landscaping applications. Excavation for manholes, grinder pumps, and pump stations will add approximately 1,200 cubic yards of soil excavation.

The impacts include roadway and site disturbance, pavement removal, and trench settlement. Prior to trench repaving or stabilizing, the impacts also include erosion and sedimentation from runoff across these areas. The proposed mitigation is discussed in Section 3.

#### **2.1.2.2.2**     *Earth Moving*

Excavated soils that must be removed and/or disposed of will require transportation off-site. The contractor will utilize trucks of various sizes to accomplish this. Assuming that approximately 14,000 cubic yards of soil may have to be disposed of and a typical 10-wheeler capacity of 10 cubic yards, there may be as many as 1,400 trips from the project site to transport excess soil.

The impacts from earth moving include dust and soil deposits within the project area and along access roads. Soil will likely be moved within project sites for backfilling and stockpiling. Stockpiling for extended durations will only be allowed at a site approved by the Town. The proposed mitigation is discussed in Section 3.

#### **2.1.2.2.3**     *Impacts to Vegetation*

There will be impacts to vegetation at locations where construction occurs outside the existing roadways. For the most part, this will include individual house service connections that will be installed from the roadway to the property line, installation of grinder pumps at the property line, installation of pump stations, and the cross country sewer connection. Service connections and grinder pumps will disturb the vegetation that typically occurs between the roadway and property line, which is a distance typically between 5 to 10 feet from the edge of pavement. This is usually grass, mulch, stone, or bare soil. Pump stations will be located as close to the roadway as possible and only in suitable areas. Some removal of substantial vegetation such as trees and brush will be required for the pump station installations. Assuming an average service trench length and a typical pump station site, the estimated disturbed area outside the roadway is approximately 3,000 square yards. The cross country sewer connection from the Edro Isle Area will disturb approximately 1,000 linear feet of vegetated area, or approximately 1,100 square yards of area. This site consists of forest and brush between residential lots.

The impacts from removal of vegetation include removal of native plants and trees, increased erosion, and sedimentation, and loss of natural buffer between properties. The proposed mitigation is discussed in Section 3.

#### **2.1.2.2.4**     *Erosion and Sedimentation*

Since there is very little work proposed outside of roadways, much of the sedimentation will occur from runoff from rainfall passing over unpaved or unstabilized trenches, collecting sediment, and transporting it to receiving waters. These waters include nearby wetlands, streams, or surface waters, and every project area contains at least one. Sedimentation sources may also include soil stockpiles that are not adequately covered. Erosion may occur from pump station sites that have been disturbed and have not yet been stabilized or restored to the original conditions. It may also occur from the disturbed cross country sewer alignment prior to surface restoration.

The impacts from erosion and sedimentation include water quality impacts to nearby wetlands, streams, or surface waters from sediment, sediment accumulation in receiving waters and drain systems, and alteration to existing land forms. The proposed mitigation is discussed in Section 3.

#### **2.1.2.2.5**     *Traffic Impacts*

There will be impacts to traffic in all areas of the sewer expansion plan. The traffic impacts will occur from construction activities occurring in the roadway and truck traffic to and from the construction site.

The impacts will mainly occur in local roads within the project area and will be minimal. These roads are subject to very little vehicle trips that primarily occur for commuting purposes in the morning and evening, prior to and after daily construction. Phases 3 and 4 will cause traffic impacts to connector roads that include Narrows Road and Bacon Street. These roads are subject to more frequent vehicle trips that occur throughout the day. The proposed sewer system upgrades in Phase A will impact Narrows Road and Route 2A, a state roadway. The anticipated duration of work within Route 2A, based on the length of sewer replacement and related pump station upgrade work will be approximately 55 working days, or 11 weeks. During this time, there may be a lane shift in the roadway or travel in only one direction at a time.

The impacts will include slight to moderate traffic back-ups, increased traffic on alternate routes, and restricted access to certain areas. The proposed mitigation is discussed in Section 3.

#### **2.1.2.2.6      *Impacts to Adjacent Land Uses***

The sewer expansion plan is targeted to virtually all residential areas. There are some limited commercial areas within the project area for the Whitman River Pump Station upgrade and the Fitchburg Interceptor upgrade. The main impact to developed land uses within the project areas is a limited restriction of access to properties during construction.

The sewer expansion plan will be provided to specific residential areas that are substantially developed. These areas are zoned for future residential development only. Phases 1 through 4 consist of 553 total lots, of which 483 properties are currently developed. The Draft CWMP estimates that 70 undeveloped properties can be developed in the future as either “grandfathered” parcels or parcels that meet current zoning regulations. This represents approximately 13-percent of the total properties proposed to be served by sewer. Sewer expansion outside the areas proposed for sewer (sewer district) will be restricted by the Town through a regulation, as recommended in the CWMP. Potential growth and growth management are discussed further in Section 2.1.8 of the Final CWMP.

### **2.1.3 Permitting Requirements**

This section of the Final CWMP provides updates on the status of each state permit or agency action potentially required for the project, as required by the Scope outlined in the Secretary’s Certificate on the Draft CWMP. The section expands upon the regulatory plan included in Section 8.8 of the Draft CWMP.

The agency actions still required for the project consist of approval of the Final CWMP/EIR from MEPA and MassDEP. The Certificate on the Draft CWMP/EENF permitted Westminster to file a Single EIR “intended to identify additional analysis and information necessary to complete MEPA review and ensure that impacts and issues are fully analyzed.”

#### **Agency Actions**

1.        Submit this Single EIR / Final CWMP to MEPA for approval.
2.        Submit the Final CWMP to MassDEP for approval to allow application for funding under the Massachusetts SRF program, if desired by the Town.

The state and local permits still required for the project are outlined in the following summary and will be prepared during project design when an adequate level of detail is available for preparing the permits.

## State and Local Permits

1. Prepare a MassDEP sewer extension permit during the project design for each phase of the plan. The proposed length of sewer in each phase requires an extension permit.
2. Prepare a Notice of Intent under the Wetlands Protection Act and the Rivers Protection Act and submit to the Westminster Conservation Commission during the project design for each phase of the plan. The Notice of Intent will be prepared for all construction proposed within resource areas and the Order of Conditions obtained will be adhered to.
3. Prepare and submit an Access Permit to the Massachusetts Highway Department (MHD) during project design for construction occurring within state roadway layouts. The work consists of the Whitman River Pump Station and force main upgrade on State Road East (Route 2A), the Fitchburg interceptor upgrade (also on Route 2A), and the sewer connection for the Dawley Road Area on Leominster Street (Route 140). The permitting for any future sewer extension on Fitchburg Road (Route 31) would be the responsibility of the developer.
4. Building Codes – The proposed new and upgraded pump stations may consist of above-ground structures. For any proposed building structure, the project design will adhere to applicable state and local building codes.
5. Flood Plain Management - The upgraded Whitman River Pump Station and the Bakers Grove Area pump station consist of above-ground structures that may be located within the FEMA 100-year flood plain. If it is determined during project design that proposed pump station structures are within the 100-year flood plain, the design will adhere to applicable flood plain management policies, including storage volume replication.
6. Stormwater Management – A NPDES Construction General Permit will likely be required since the project will disturb greater than one-acre of land and discharge site stormwater to the Town's drainage system. This permit requires the preparation of a Stormwater Pollution Prevention Plan, which will be the obligation of the project contractor to prepare, and submittal of a Notice of Intent to EPA.
7. Dewatering – A NPDES General Permit for Construction Dewatering will likely be required and will be coordinated with the MassDEP and the Westminster Conservation Commission during preparation of the sewer extension permit and the Notice of Intent, respectively.
8. Other necessary permits may be identified during the project design based on the specific design details. For instance, if directional drilling under Wyman Pond for the Leino Park Area is proposed (detailed in the previous section), a Chapter 91 License would be required. No filing with the U.S. Army Corps of Engineers Regulatory Program is necessary for this water body.

The project does not propose wetland impacts or alteration to resource areas. There are no proposed discharges that include dredging, filling, and other activities that cause the loss of wetlands; therefore, it is expected that a 401 Water Quality Certification is not necessary. The assumed approval by the Westminster Conservation Commission under the Wetlands Protection Act should not necessitate further state review under the 401 Program.

Based on a review of the required and potentially required permits and the scope of the proposed projects, the sewer expansion plan is expected to receive the necessary approvals and meet performance standards needed to proceed with construction.

### 2.1.3.1 Rare Species

This section addresses the state-listed endangered aquatic plant identified in Westminster by the Natural Heritage and Endangered Species Program (NHESP) during a review of the Draft CWMP, and included in the Scope outlined in the Secretary's Certificate on the Draft CWMP.

The rare species is identified as a "Vascular Plant, (*Potamogeton confervoides*), Algae-like Pondweed" according to the "Rare Species Occurrence Lists by Town," updated August 2006. This list is available on the NHESP web site. Based on the "NHESP MA Priority Habitats for State Protected Rare Species" mapping layer available through the Massachusetts Geographic Information System (MassGIS), this species occurs in the southwestern corner of Town, near Upper Reservoir and Minott Pond. This mapping was last updated in December 2006. There are other areas of Westminster identified as having rare species present, but these areas are limited to the northernmost and southernmost parts of Town. The "NHESP MA Estimated Habitats of Rare Wildlife" mapping layer also shows that wildlife habitat areas are limited to the northernmost and southernmost parts of Town.

Several undeveloped parcels along Minott Road that are owned by the Town were considered in the Draft CWMP for construction of wastewater treatment and disposal systems. These sites are all within or near the area of the identified rare species. The evaluation process is detailed in Section 7.3 of the Draft CWMP. The initial screening process determined that none of the sites on Minott Road warranted site visits or continued consideration. Another site (A-24) on Ellis Road that is also near the area of the identified rare species was visited for further evaluation. It was determined that the site was not suitable for wastewater treatment and disposal due to the long distance from the identified wastewater needs areas, access issues, and site limitations. Under the Draft and Final CWMP, none of the parcels located near the area of the identified rare species are proposed for use.

Based on the MassGIS NHESP mapping, the proposed construction projects are not within or near any of the areas of identified rare species and wildlife habitat in Westminster. The following site inventory is provided to determine if there are any areas of the sewer expansion project that might constitute suitable habitat for rare species known to exist. Although the individual sewer phase projects are not near the habitat illustrated in the MassGIS mapping, there still remains potential for presence of rare species. Most of the proposed construction is within roadways and the identified species is an aquatic plant; therefore, only portions of the project that are located substantially off of existing roadways were considered in the inventory. Figure 2-1 of the Final CWMP, attached to the end of this chapter, provides the general location of the following sites:

- The Whitman River Pump Station Upgrade - the upgrade will require additional land to site a larger pump station with an above-ground structure. The project site will likely be near the Whitman River. During the preliminary design site selection process, the area will be assessed for presence of rare plant species before finalizing a site.
- The Wyman Pond crossing for the Leino Park Area – Phase 1 will involve a bridge crossing or directional drilling. During the project design, the pond front area will be assessed for presence of rare plant species before selecting the crossing location.
- The connection between the Edro Isle Area and the Leino Park Area will involve approximately 1,000-feet of cross-country sewer near Wyman Pond. During the preliminary design route selection process, the area will be assessed for presence of rare plant species before selecting a route.

The proposed installation of sewer mains, sewer services, grinder pumps, and small pump stations remain within existing roadways or within close proximity of the edges of roadway and are not expected to potentially impact rare species.

As stated in the Draft CWMP, the project design phase will include coordination with the NHESP to review the proposed work and identify any potential impacts to rare species. The NHESP will be involved during preliminary and final design and development of construction plans will be coordinated with their findings.

### **2.1.3.2 Historical/Archeological Resources**

This section addresses the consideration of potential historical and archeological resources within the sewer expansion plan project area as suggested by the Massachusetts Historical Commission (MHC) during a review of the Draft CWMP, and included in the Scope outlined in the Secretary's Certificate on the Draft CWMP.

For planning level purposes, the Draft CWMP relied on mapping available through MassGIS for identification of potential historical and archeological resources in Westminster. For design level research, the Town will consult with the MHC and utilize the "Inventory of Historic and Archeological Assets of the Commonwealth" to more accurately identify resources.

Although the proposed construction will consist of underground sewer and will occur mainly within existing roadways, there are a few proposed pump stations that could include above-ground structures. All attempts will be made to install pump stations within existing roadway rights of way. Once the project design for each phase of sewer expansion has generated adequate construction plans and details, the Town will provide this information to the MHC to determine what effect the project will have on identified resources. The design will include preparation of a Project Notification Form for submittal to the MHC as necessary, and will coordinate with the determination made by the MHC on the project.

### **2.1.4 Improvements to Fitchburg System**

Section 8.4 of the Draft CWMP summarizes the analysis of improvements to the municipal sewer system in Westminster that are necessary to accommodate wastewater flows resulting from the proposed sewer expansion plan. This analysis forms the basis for Phase A - Sewer System Capacity Improvements of the overall plan (refer to Table 2.1 of the Final CWMP). As detailed in Section 8.4.2.3 of the Draft CWMP, S E A also investigated the need for upgrades within the Fitchburg sewer system to accommodate additional sewer flow from Westminster. The Town met with the Fitchburg DPW in 2006 to discuss the subject of sewer system improvements in Fitchburg and the Intermunicipal Agreement for wastewater treatment between Westminster and Fitchburg.

At that meeting, S E A presented the analysis of upgrades to the Fitchburg sewer system for review by the Fitchburg DPW. This analysis identified the Fitchburg interceptor sewer as the only apparent sewer system capacity limitation in the City of Fitchburg. The Fitchburg DPW indicated that recent sewer system improvements have increased available sewer capacity in West Fitchburg, and that there are no other known sewer system capacity limitations, given the estimated wastewater flows presented in the CWMP. Also at that meeting, the Fitchburg wastewater treatment superintendent identified that there is adequate treatment capacity for the additional volume of wastewater proposed to be discharged to Fitchburg in the CWMP.

S E A also identified that the existing flume and flow meter located at the Montachusett Regional Vocational Technical School in Fitchburg will require replacement to increase its metering capacity. This meter measures flow discharging from the Whitman River Pump Station into the Fitchburg sewer system.

It consists of a flow totalizer located within a manhole that measures flow through a 12-inch Palmer-Bowlus flume. The size of this flume should be increased to 18-inches in order to accurately measure the future peak hourly flow estimated under the plan. This improvement was discussed with the City of Fitchburg at the meeting. The City did not identify concerns with the proposed improvement.

As detailed in the Draft CWMP, the Fitchburg interceptor was evaluated in 1996 and determined to have a limited capacity. The interceptor conveys wastewater flows from the discharge point of the Whitman River Pump Station into the Fitchburg sewer system, which discharges to the East Fitchburg Wastewater Treatment Facility. Earth Tech evaluated the interceptor in 1996 for a distance of approximately 9,500-feet from the discharge location of the Whitman River Pump Station into the City of Fitchburg. Earth Tech estimated that the interceptor has a maximum capacity of approximately 760 gpm, due to some limiting reaches of sewer. Based on estimates of wastewater flow in the CWMP, the Fitchburg interceptor capacity is expected to be exceeded in the future.

Based on information provided in the Earth Tech evaluation, it is recommended that approximately 1,200 linear feet of existing 8-inch sewer and 2,400 linear feet of existing 12-inch sewer within the Fitchburg interceptor be replaced with 18-inch sewer to achieve the required capacity. The remaining length of the interceptor has substantial capacity available. Refer to Section 2.1.9 of the Final CWMP for a discussion of costs for this improvement.

The project will likely consist of removal and replacement of the existing sewer pipe for the entire 3,600-foot length. Under this option, sewer by-pass pumping would be required. This option will be compared with installing new sewer and abandoning the existing sewer and will be coordinated with the City of Fitchburg prior to design.

### **2.1.5 Impacts to Partridge Pond**

This section provides detail regarding Partridge Pond's status as an impaired water body and how it relates to the Town's wastewater needs analysis, as included in the Scope outlined in the Secretary's Certificate on the Draft CWMP.

Partridge Pond is located in the southwest portion of Westminster and its surface area is approximately 25 acres. There is dense residential development located on the eastern and western sides of the pond and wetlands located on the northern and southern sides. The pond is listed on the "Massachusetts Year 2006 Integrated List of Waters, Proposed listing of the condition of Massachusetts' waters pursuant to Sections 303(d) and 305(b) of the Clean Water Act." The listing was prepared by the MassDEP Division of Watershed Management in April 2006. Partridge Pond is listed under Category 5 waters, which are water bodies requiring development of a Total Maximum Daily Load (TMDL). A TMDL is a calculation of the maximum amount of a pollutant that a water body can receive and still meet water quality standards. The pollutants listed as needing a TMDL are noxious aquatic plants and turbidity. Noxious aquatic plants refers to the excessive growth of plant species in or near a water body, affecting the water quality and habitat. Turbidity is a measure of the degree to which the water loses its transparency due to the presence of suspended particulates.

Noxious aquatic plants can occur from excessive nutrient loads entering the water body from malfunctioning on-site wastewater systems in the area. The abundance of nutrients causes excessive plant growth. Also nutrients from lawn fertilizers can discharge to the water body through stormwater runoff. Turbidity can be caused by sediments entering the water body from erosion, wastewater discharges, algal blooms, and stormwater runoff.

The Draft CWMP identified that on-site wastewater management in developed areas surrounding Partridge Pond is problematic and likely impacting water quality in the pond. The Draft CWMP investigated these areas on the eastern and western side of the pond for improved wastewater management. The Draft CWMP concluded that conditions impacting wastewater management along Lake Drive East on the eastern side are more severe than those along Lake Drive West on the western side. Refer to Sections 4.4.19 and 4.4.20 and also 7.10.1.3 and 7.10.2.3 of the Draft CWMP for more information.

The Lake Drive East area consists of mainly sand and gravel soils subject to rapid percolation rates. Lot sizes are very small (nearly  $\frac{3}{4}$  of the lots are less than 10,000 s.f. in size) and the entire area relies on private on-site wells for water supply. The existing development in the Lake Drive East area is immediately adjacent to Partridge Pond and the topography of the area is very steep, sloping towards the pond. Installing compliant Title 5 systems in this area is extremely difficult, evidenced by the number of existing tight tanks. The steep sloping topography and the soil conditions likely cause inadequately treated wastewater effluent to enter the pond, which contributes to the water quality impairments cited in the state's 303(d) list. The Draft CWMP concluded that a sewer extension to the Lake Drive East area is a high priority, and it was included in Phase 2 of the expansion plan.

The Lake Drive West area contains small lots, but not as many as the Lake Drive East area. The Draft CWMP identified that the majority of the lots appear to be of adequate size to facilitate Title 5 compliant upgrades. Board of Health files indicate that there are not any tight tanks in use within this area. The development density of this area is much less than that of the Lake Drive East area and the topography does not slope steeply toward Partridge Pond. The Draft CWMP concluded that as a whole, on-site wastewater management in the Lake Drive West area should not have significant impacts to Partridge Pond provided that individual systems are maintained and operated properly. The Title 5 management approach is expected to adequately serve the needs of the area for the planning period. However, the area is a priority for implementation of a town-administered on-site wastewater management plan to maintain compliant on-site systems and protect Partridge Pond from malfunctioning systems. I/A systems are a more expensive option for use in the needs area to overcome extreme circumstances, such as small lots. The Draft CWMP also prioritized the Lake Drive West area for analysis at the conclusion of the planning period to determine if conditions have worsened and if implementation of an alternative wastewater management approach is necessary.

In the Draft CWMP, the wastewater management needs analysis cited water quality impacts to Partridge Pond from the surrounding areas as a concern, based on the documented impacts to Wyman Pond from malfunctioning on-site systems. However, Partridge Pond water quality had not been studied in the past and there was no available water quality data. The results of the state's 303(d) list confirm the assumptions made in the needs analysis and support its conclusions. Inclusion of the Lake Drive East area in the sewer expansion plan supports both the water quality needs of Partridge Pond and the wastewater management needs of the area. Conditions in the Lake Drive West area are not overly severe for use of Title 5 management. This area will be revisited at the conclusion of the planning period to determine if an improved wastewater management method is required. The design of the low pressure sewer system serving the Lake Drive East area will include provisions for future extension to the Lake Drive West area.

### **2.1.6 Infiltration and Inflow Reduction**

This section provides details regarding the Town of Westminster's plans to reduce infiltration and inflow (I/I) within the municipal sewer system, as required in the Scope outlined in the Secretary's Certificate on the Draft CWMP. Other methods to reduce wastewater flow, such as water demand management and conservation, are discussed in Section 2.2 of the Final CWMP.

The Draft CWMP provides information regarding I/I within the Westminster municipal sewer system. The Town worked with a consultant in 2003 and 2004 to conduct I/I investigations. The consultant investigated areas of the sewer system for infiltration through direct observations, flow metering, and television inspection. These activities did not locate significant infiltration sources. The municipal sewer system is a relatively new system and it was concluded that infiltration levels are low. In order to verify this conclusion, S E A estimated infiltration in the system using overnight instantaneous flow recordings and MassDEP guidelines. The estimate is included within Section 2.3.2.3 of the Draft CWMP, and it indicates that infiltration levels in the sewer system are indeed low.

The work performed by the consultant in 2003 and 2004 also included smoke testing, flow metering, and system investigations to locate suspected inflow sources. These activities did not yield a significant number of inflow sources. However, the Westminster DPW Director has indicated that there are some suspected inflow sources within the sewer system based on the Town's observations of system response to wet weather.

The DPW intends to conduct more I/I investigations in the coming years that are focused on finding suspected inflow sources. The DPW understands that inflow is potentially placing strain on existing sewer pump stations by elevating peak flows during wet weather and increasing the cost to discharge wastewater to Fitchburg for treatment and disposal. After discussing the goals and plan for an I/I program with the DPW, S E A developed the following recommendations for the Town:

- Develop and implement an I/I investigation program targeted towards locating suspected inflow sources. The program goal is to locate and eliminate substantial I/I sources within the next three years (2008 to 2011).
- The program should focus on the oldest portions of the system and areas that were not investigated during the 2003/2004 work.
- The program should consider techniques that focus on locating inflow sources and should evaluate the effectiveness of the measures used during the 2003/2004 investigations in order to develop a work plan. Building inspections in conjunction with dye testing may be a better method to locate direct inflow connections.
- The Town should develop an investigation program in 2008, conduct the work in 2009, and remove located I/I sources in 2010. The Town should align the schedule of this work so that it is conducted prior to completing the recommended Phase 1 sewer system improvements.

### **2.1.7 Adjusted Wastewater Flow Estimates**

Implementing I/I reduction and water conservation plans would provide several benefits to the Town. The resulting decrease in water demand and wastewater flow would sustain capacity in the water and sewer systems and reduce the burden on operating equipment such as pump stations. It would also reduce the cost to Westminster to obtain water supply from Fitchburg and to discharge wastewater to Fitchburg for treatment and disposal. Another significant impact would be the reduction in water exported through the sewer system from sub-basins in Westminster to those in Fitchburg. I/I reduction and water conservation are effective measures for reducing water demand, reducing wastewater flow, and saving money.

This section of the CWMP adjusts the future wastewater flow estimates provided in Section 8.3.3 of the Draft CWMP based on the anticipated benefits of the Town's I/I reduction and water conservation plans,

as required in the Scope outlined in the Secretary’s Certificate on the Draft CWMP. These I/I reduction and water conservation plans are summarized in Section 2.1.6 and Section 2.2.3 of the Final CWMP, respectively.

The 2006 *Water Conservation Standards* of the Commonwealth of Massachusetts establishes residential water use of 65 gpcpd as a standard for communities. From 2003 to 2006, residential water use was below 65 gpcpd in Westminster, based on data provided in the Town’s Water System Annual Statistical Reports. As the Town progresses with their water conservation plan, efforts placed on reducing residential water demand should maintain overall use below 65 gpcpd. Therefore, S E A is utilizing a residential water demand of 65 gpcpd and a household size of 2.73 persons from the 2000 U.S. Census to adjust estimated future residential wastewater flow in Westminster. This equates to approximately 180 gallons per day (gpd) per residence. This is less than the value utilized in the Draft CWMP, which was 200 gpd, and reflects the water conservation initiatives in Town.

The Draft CWMP based estimates of future I/I on recommended allowances provided in *TR-16 - Guides for the Design of Wastewater Treatment Works*. TR-16 suggests that the minimum allowance to be used for estimating I/I should be 250 gallons per day per inch diameter-mile of sewer length (gpd/in-mi); however, a rate of 200 gpd/in-mi is now considered reasonable for modern sewer systems. The Draft CWMP estimated existing I/I in the sewer system to be approximately 230 gpd/in-mi. This value is low as it reflects the recent construction of the sewer system relative to nearby communities. Given the Town’s plan to continue I/I investigation and reduction activities, S E A is assuming that future I/I in proposed sewers will be reduced by an additional 25-percent from the current I/I rate in the sewer system. Consequently, S E A utilized an I/I rate of 175 gpd/in-mi to estimate I/I occurring in proposed sewers.

The following table is an update to Table 8.3 of the Draft CWMP. It reflects the adjusted future wastewater flow estimates based on the Town’s I/I reduction and water conservation plans.

**Table 2.2**  
**Adjusted Sewer Expansion Details – Phases 1-4**

	<b>Phase 1</b>	<b>Phase 2</b>	<b>Phase 3</b>	<b>Phase 4</b>	<b>Total</b>
Total Number of Lots (Current and Potential)	212	148	120	73	553
Initial Residential Flow (gpd)	33,840	22,500	18,900	11,340	86,580
Future Residential Flow (gpd)	4,320	4,140	2,520	1,440	12,420
Initial Non-Residential Flow (gpd)	0	0	0	600	600
Future Additional Non-Residential Flow	0	0	1,000	0	1,000
Additional Flow due to I/I (gpd)	1,260	0	1,620	1,650	4,530
Initial Flow Including I/I (gpd)	35,100	22,500	20,520	13,590	91,710
<b>Total Flow Including I/I (gpd)</b>	<b>39,420</b>	<b>26,640</b>	<b>24,040</b>	<b>15,030</b>	<b>105,130</b>

The extent of the sewer expansion plan has not changed under the Final CWMP. Phases 1 through 4 of the plan propose to expand sewer service in Westminster to 483 developed parcels with the potential for 70 additional parcels. The total estimated average daily wastewater flow for Phases 1 through 4 of the plan is approximately 105,100 gpd. Of this amount, approximately 87,200 gpd is attributed to developed parcels, 13,400 gpd is attributed to potential development, and 4,500 gpd is attributed to I/I.

These adjusted estimates of wastewater flow are less than those provided in the Draft CWMP since they reflect the benefits of attainable I/I reduction and water conservation. In fact, the total estimated flow for Phases 1 through 4 of the plan has been reduced by approximately 10-percent from the estimates in the Draft CWMP.

There is some opportunity to adjust the estimates of future wastewater flow for Phase 5 of the expansion plan also. The majority of Phase 5 consists of undeveloped areas of Town that are designated for future industrial development. Industrial water use rates are less certain as they are related to land use and production goals and some broad assumptions were used in the Draft CWMP in cases where development plans were not available. Water use estimates included in available development plans take into account water conservation measures stipulated in building codes and existing local regulations. Therefore, the future wastewater flow estimates for industrial areas of Phase 5 were not adjusted. However, the flow from the Municipal Parcel (109-10) and the future I/I estimates for Phase 5 can take into account I/I reduction and water conservation plans. Using the reduced rates previously established (180 gpd per residence and 175 gpd/in-mi) results in a future flow of approximately 16,900 gpd and 1,750 gpd for the Municipal Parcel and for I/I in the Phase 5 areas, respectively.

The following table is an update to Table 8.4 of the Draft CWMP. It reflects the adjusted future wastewater flow estimates for Phase 5.

**Table 2.3  
Adjusted Sewer Expansion Details – Phase 5**

	<b>Area (acres)</b>	<b>Parcels</b>	<b>Future Flow (gpd)</b>
State Road East Industrial Area	336	6	68,675
Eastern Westminster Area	12.5	1	3,750
Municipal Housing Parcel (109-10)	16.9	1	16,920
Additional Flow due to I/I			1,750
<b>Total Flow Including I/I (gpd)</b>	<b>365.4</b>	<b>8</b>	<b>91,095</b>

The extent of the Phase 5 sewer expansion plan has not changed under the Final CWMP. The total estimated average daily wastewater flow for Phase 5 of the plan is approximately 91,100 gpd. Of this amount, approximately 72,400 gpd is attributed to future industrial development, 16,900 gpd is attributed to future residential development, and 1,750 gpd is attributed to I/I.

Section 8.4.1 of the Draft CWMP identifies a previously planned sewer extension and some planned development that will be connecting to the existing sewer system. The Draft CWMP includes the future wastewater flow estimates for these planned developments/extensions since it is important to account for all known current and future wastewater flow contributors when recommending key sewer system upgrades. The future wastewater flow estimates provided in Section 8.4.1 of the Draft CWMP can also be adjusted based on the anticipated benefits of the Town’s I/I reduction and water conservation plans.

The planned developments/extensions are detailed in Table 8.5 of the Draft CWMP and the preceding narrative. They are also explained further in the responses to the comments by the Nashua River Watershed Association (Section 4.3 of the Final CWMP).

- The future wastewater flow for the planned sewer extension along Village Inn Road was estimated by Earth Tech to be approximately 20,900 gpd based on Title 5 flow guidelines. Using Title 5 guidelines is conservative as it accounts for flow variations and does not reflect water conservation goals. S E A

investigated the actual water use of the commercial establishments within the sewer extension. The actual water use is approximately 11,600 gpd based on historical Westminster water consumption data and is substituted for the prior estimate.

- The proposed Mountain View Estates Chapter 40B development includes 136 units. A value of 200 gpd per unit was previously used to estimate future wastewater flow. The adjusted wastewater flow using a rate of 180 gpd per unit to reflect water conservation equates to approximately 24,500 gpd.
- The proposed Chapter 40B development at Adams Street and Main Street includes 24 housing units. A value of 200 gpd per unit was previously used to estimate future wastewater flow. The adjusted wastewater flow using a rate of 180 gpd per unit to reflect water conservation equates to approximately 4,300 gpd.
- A development consisting of approximately 60 senior or affordable housing units is proposed for the parcel recently acquired by the Town, located at 69 West Main Street. A value of 200 gpd per unit was previously used to estimate future wastewater flow. The adjusted wastewater flow using a rate of 180 gpd per unit to reflect water conservation equates to approximately 10,800 gpd.

The following table is an update to Table 8.5 of the Draft CWMP. It reflects the adjusted future wastewater flow estimates for all phases of the sewer expansion plan and the planned developments/extensions. This table summarizes current and future wastewater flow that will discharge to the Whitman River Pump Station. Since the Whitman River Pump Station pumps virtually all wastewater flow from Westminster to Fitchburg, the pump station must eventually have enough capacity to handle this flow. It should be noted that flow from the Eastern Westminster Area of Phase 5 does not discharge to the Whitman River Pump Station; consequently, this flow (including I/I) was not included in the table.

**Table 2.4  
Adjusted Future Wastewater Flow  
Whitman River Pump Station**

	<b>Estimated Flow (gpd)</b>
<b>Existing Sewer System Areas:</b>	
Current Average Daily Wastewater Flow (2005)	134,700
Future Average Daily Wastewater Flow (2005)	99,000
<b>Future Development/Sewer Extensions:</b>	
Village Inn Road Extension	11,600
Mountain View Estates	24,500
Adams Street and Main Street development	4,300
69 West Main Street	10,800
<b>Sewer Expansion Plan:</b>	
Phase 1 – Total Flow without I/I	38,160
Phase 2 – Total Flow without I/I	26,640
Phase 3 – Total Flow without I/I	22,420
Phase 4 – Total Flow without I/I	13,380
Phase 5 – Total Flow without I/I	85,600
<i>Total Average Daily Flow without I/I</i>	<i>471,100</i>
Peaking Factor from TR-16	4.2
Peak Hourly Wastewater Flow	1,978,620
Estimated Infiltration and Inflow (Current and Future)	37,300
<i>Peak Hourly Wastewater Flow with I/I</i>	<i>2,015,920</i>
<i>Flow Converted to Gallons per Minute</i>	<i>1,400</i>

As discussed in the Draft CWMP, the exact volume of wastewater flow that will discharge to the Whitman River Pump Station by the end of the 20-year planning period (2026) is uncertain, but it is not likely that it will equal the total flow listed in the table. Based on some reasonable assumptions, a likely range of wastewater flow to the pump station by the end of the planning period could be roughly 400,000 gpd to 471,100 gpd on an average daily basis. This equates to a peak hourly wastewater flow range of roughly 1,717,300 gpd (1,192 gpm) to 2,015,920 gpd (1,400 gpm), including I/I. Refer to the Draft CWMP for more detail.

These adjusted flow estimates do not alter the recommended upgrades to the Whitman River Pump Station and the Narrows Road Pump Station. To remain consistent, the estimated future wastewater flow to the Narrows Road Pump Station was also adjusted to reflect I/I reduction and water conservation plans.

The following table is an update to Table 8.6 of the Draft CWMP. It provides adjusted estimates of future wastewater flow to the Narrows Road Pump Station based on the same methodology used previously.

**Table 2.5**  
**Adjusted Future Wastewater Flow**  
**Narrows Road Pump Station**

	<b>Estimated Flow (gpd)</b>
<b>Future Development/Sewer Extensions:</b>	
Village Inn Road Extension	11,600
Mountain View Estates	24,500
<b>Sewer Expansion Plan:</b>	
Phase 1 – Flow from Leino Park Lakewood Park Areas	31,860
Phase 2 – Flow from Edro Isle Area	16,740
Phase 3 – All Flow	22,420
<i>Total Average Daily Flow without I/I</i>	<i>107,120</i>
Peaking Factor from TR-16	4.2
Peak Hourly Wastewater Flow	449,900
Future Infiltration and Inflow	1,600
<i>Future Peak Hourly Wastewater Flow with I/I</i>	<i>451,500</i>
<i>Future Flow Converted to Gallons per Minute</i>	<i>314</i>
<i>Existing Peak Flow in Gallons per Minute</i>	<i>370</i>
<hr/>	
<i>Total Existing and Future Flow in Gallons per Minute</i>	<i>684</i>

The adjusted estimate of peak hourly flow with I/I from current and future sewer users is approximately 684 gpm. This flow is anticipated to occur within the planning period, though some residential properties within Phases 1 through 3 may not connect to the sewer within the planning period. It is recommended that improvements be made immediately to the Narrows Road Pump Station to increase capacity to handle current and future flow. Refer to Section 8.4.2 of the Draft CWMP for more detail on the recommended sewer system upgrades.

### **2.1.8 Growth Management**

This section provides an analysis of potential growth resulting from the proposed sewer expansion plan and the impact of existing and proposed regulations on growth, as required in the Scope outlined in the Secretary’s Certificate on the Draft CWMP.

The Draft CWMP provided a detailed Wastewater Needs Analysis that considered build-out projections (and therefore wastewater capacity requirements) for the existing and proposed sewer service areas based on existing zoning. This build out analysis identified the total number of parcels within the proposed sewer area (Phases 1 – 5) as well as the existing service area, identified them as developed or undeveloped, and established the potential for in-filling and sub-dividing parcels on the basis of parcel area and frontage (according to existing zoning requirements). The analysis, therefore, has already fully quantified the maximum potential for growth within existing and proposed sewer service areas under existing zoning regulations in the Town. Full details of the analysis can be reviewed in Sections 1.2 and 8.3.3 of the Draft CWMP.

The potential for growth by virtue of home expansions is less easily quantifiable. The Town Planner and Building Department officials were interviewed to determine if data was available regarding building

trends over the past ten years (as measured by building permits issued) for sewer versus non-sewered properties. A street-by-street analysis of residential areas sewer within the past ten years concluded that 22 out of a possible 199 residents (approximately 11-percent) obtained permits for expanding the livable area of their homes. These permits represent approximately 10-percent of the total town-wide residential expansions of livable area during the same time period, based on permit value. In general, the Planning Board is of the opinion that access to sewer has not been a determining factor for individual homeowners when renovation or expansion is undertaken. The large lot zoning typical of Westminster makes expansion less problematic for non-sewered households. Based on the data provided, there was no statistically discernible increase in building permit activity associated with sewer extensions. Consequently, the Town believes that access to sewer is an insignificant contributor or growth catalyst, measured exclusively in terms of home expansion, and under the existing zoning and development pattern for the community. Access to sewer is a much more significant issue for new development subject to the Town's subdivision rules and regulations, and this has been addressed in the build-out analysis described above.

The Town's existing regulations, including sub-division rules and regulations, site plan review, Board of Health requirements, low impact development/stormwater management by-laws, and open space and recreation plans contain most of the growth management strategies currently employed by the Town. It is the intent of these regulations to allow development in the community to coincide with the Town's goals as expressed through their Master Plan and Community Development Plan. Specifically, the Town is interested in promoting denser development in their Town Center, where infrastructure already exists to serve both water and sewer needs, and which implements the principals of Smart Growth to provide incentive for development that does not promote sprawl.

The Town has recognized that some of these regulations require modifications in order that all of the agencies with jurisdiction over development are working cooperatively to achieve these goals. Specifically, the Town Planning Board and the Board of Health are in current discussion to rectify inconsistencies between the Planning Board's promotion of cluster subdivision design and the Board of Health's current regulation which prohibits common (shared) septic systems. Resolution of these inconsistencies is a recommendation of the Final CWMP. This is also perhaps the most important element of growth management strategies related to development outside of the proposed Sewer District. This strategy will allow the Town and developers to pursue more creative development scenarios whereby more open space can be preserved while allowing density incentives that can be accommodated by shared septic systems with groundwater discharge.

Additional growth strategies are also under development by both the Planning Board and the DPW. Chief among them is implementation of a Smart Growth Zoning Overlay District (MGL Ch. 40R) which will allow a more densely developed mixed-use district in the Town Center. The Town has specifically planned for several affordable housing developments within this district (and accounted for in the build out analysis – see Section 8.4.1 of the Draft CWMP) and envisions implementing the overlay within the next two years. The second, and very important component of the Town's long-term growth strategy, is institution of a Sewer District. The Sewer District will strictly define the areas of the Town to which sewer will be extended on the basis of need established in the CWMP, and preclude development from outside of the district from connecting to the system. This is a critical part of the Town's plan, as capacity limitations administratively through the Fitchburg IMA, and through physical infrastructure constraints, limit the Town's ability to arbitrarily expand access to the sewer system.

It has been recommended in the Draft CWMP that Westminster draft a proposed sewer district management regulation, either a Management District or a Sewer District By-Law, and submit it for approval at the spring 2008 Town Meeting. If an approving vote is not received, it should be revised as necessary and resubmitted for approval at the fall 2008 Town Meeting. Section 8.7.4 of the Draft CWMP

provides further detail regarding these growth management options. It is the Town's intent to have the Sewer District in place prior to the construction of the phased sewer program.

Comments on the Draft CWMP (specifically the Nashua River Watershed Association) requested further analysis of secondary growth impacts associated with expansion outside of the areas contained in the plan. The Town currently has a moratorium in place on all sewer connections until this plan is complete and the Town can implement the most important administrative controls, such as the Sewer District. Since it is the intent of the CWMP to limit sewer accessibility to the existing needs areas in the community, and implement by-laws and regulations that support the needs of development outside of the proposed District, the Town anticipates that extension of sewer outside of the District is unlikely. The sewer district regulations will include specific language regarding documentation associated with applications to join the district, which must include a needs analysis at least as rigorous as that undertaken for this CWMP. An evaluation of impacts due to the proposed sewer extension would have to be performed as part of the process.

## **2.1.9 Project Costs and Financing**

This section of the Final CWMP provides project cost details for the sewer expansion plan, including the recommended improvements. It also provides details regarding operation and maintenance costs from implementing the plan. The section provides information regarding the cost to revise the wastewater Intermunicipal Agreement (IMA) with Fitchburg to accommodate additional wastewater flow. A discussion of project financing and sewer rates is also provided. The section concludes with responses to comments from the MassDEP on operation and maintenance of low pressure sewer systems, as directed by the Secretary's Certificate.

### **2.1.9.1 Project Costs**

The Draft CWMP provided opinions of probable project cost as of October 2006, associated with an ENR Construction Cost Index (CCI) of 7883. The Final CWMP updates the project costs as of May 2007. From October 2006 to May 2007, the ENR CCI increased slightly to 7942 (0.7-percent). This is not considered a substantial change; therefore, no inflation adjustment is made in the Final CWMP. The cost information provided in this section is considered updated as of May 2007 (ENR CCI 7942).

The opinions of probable project cost have not changed since the Draft CWMP. Based on a review of the cost information in the Draft CWMP, S E A identified that costs for pipeline easements were not included for the small portion of cross-country low pressure sewer in Phase 2 (Edro Isle Area). This cost, which is explained in this section, has now been incorporated into the Phase 2 opinion of project cost. The opinions of probable cost for complete design, construction, administration, and contingency for each proposed phase of sewer expansion are provided as follows: Phase A is \$3.27 million, Phase 1 is \$4.02 million, Phase 2 is \$2.68 million, Phase 3 is \$2.42 million, and Phase 4 is \$2.23 million for a total of \$14.62 million. The Phase 5 areas have access to the municipal sewer system; however, the extent of sewerage required within these areas once they are developed is not known at this time. Also, the developers would be responsible for extending the sewer system and paying for the construction; therefore, opinions of cost were not developed for Phase 5.

Phase A consists of required sewer system improvements identified through analysis in the Draft CWMP. Three major components of the existing sewer system require upgrades prior to implementing the phased sewer expansion plan. The Whitman River Pump Station and the Narrows Road Pump Station are two of these components, where existing sewer flows have reached or exceeded current pumping capacity. The third component, the Fitchburg interceptor, carries flow from Westminster into Fitchburg. It has enough capacity to handle current sewer flow and future connections, but not flow from the phased sewer expansion plan. Details regarding these improvements are provided in Section 8.4.2 of the Draft CWMP.

Based on discussions with the Fitchburg DPW Commissioner, the Assistant City Engineer, and the Fitchburg wastewater treatment superintendent, there are no other known sewer system capacity limitations or treatment facility capacity and permit limitations in Fitchburg. In fact, recent improvements in Fitchburg have reduced sewer flows by a far greater amount than the proposed additional flow from Westminster. More detail regarding the Fitchburg sewer system is provided in Section 2.1.4 of the Final CWMP.

The proposed plan - Phases 1 through 4 includes approximately 52,500 linear feet (9.9 miles) of sewer pipe, 3,600 linear feet of force main, 342 grinder pumps, 3 minor pump stations, 1 major pump station, and a rehabilitation of the existing pump station at the golf course on Ellis Road.

Based on the conceptual designs provided in the Draft CWMP, Phase A and Phases 1 through 4 of the recommended plan will consist of upgrading three existing sewer pump stations in Town and adding four new pump stations. There will also be nearly ten miles of new sewer added to the existing system. Westminster sewer system operations costs consist of staffing costs and actual system operating and maintenance costs. In 2006, the total annual operations costs were approximately \$298,000. Based on discussions with the DPW Director, it is estimated that the full expansion plan may double the operations costs for the Town. In addition, the DPW Director estimates that some additional equipment may be necessary. Based on this assumption, it is estimated that the sewer system total annual operations costs would increase to approximately \$600,000 under the full expansion plan.

Under the proposed plan, some minor easements and a small pump station site must be acquired. The Draft CWMP provides detail regarding the assumptions and costs for the easements and the site. The opinion of cost for each proposed pump station developed in the Draft CWMP includes an assumption that a small easement will be required. An assumed cost of \$15,000 was included with the pump station for easement acquisition. Phase 2 includes a small portion of cross-country sewer. An assumed cost of \$30,000 is included with the Final CWMP opinion of probable cost for this phase for pipeline easement acquisition. This value reduces to approximately \$30 per linear foot of easement. The conceptual designs developed in the Draft CWMP assumed that a new site is likely needed for the upgraded Whitman River Pump Station due to its increased size. The opinion of probable cost for the upgrade includes a value of \$100,000 as an approximation of the cost to acquire a site for the new pump station, as detailed in Section 8.4.2.1 of the Draft CWMP.

#### 2.1.9.2 Wastewater Intermunicipal Agreement

There is a cost associated with revising the wastewater Intermunicipal Agreement (IMA) with Fitchburg to accommodate additional wastewater flow. The 1998 amended IMA currently has a discharge limit of 250,000 gpd at the Route 2A meter and a discharge limit of 70,000 gpd at the Route 31 meter. During the September 2006 meeting with the City of Fitchburg, it was discussed that analyses conducted in the Draft CWMP indicate that wastewater flows through the Route 31 metering station are not expected to exceed 5,000 gpd within the planning period. The Fitchburg DPW suggested that a revised IMA could reduce the discharge limit at Route 31 from 70,000 gpd to 10,000 gpd. Consequently, the revised IMA could then increase the discharge limit at Route 2A by the same amount (60,000 gpd) to 310,000 gpd. This "trade" would keep the overall discharge limit to the City at 320,000 gpd, but provide more discharge allowance at Route 2A, where the majority of the wastewater from Westminster discharges. Refer to Section 8.4.3 of the Draft CWMP for more detail on the IMA and the discussions with Fitchburg.

Based on the adjusted estimates of future wastewater flow in Table 2.4 of the Final CWMP, Westminster may discharge up to 508,000 gpd of wastewater (including I/I) through the Route 2A meter to Fitchburg for treatment by the end of the planning period. Based on an adjusted discharge limit at the Route 2A

meter of 310,000 gpd, as described previously, Westminster would still require an additional allowance from Fitchburg of approximately 200,000 gpd by the end of the planning period.

Therefore, a revised IMA should provide a “trade” of 60,000 gpd between the meter locations and also increase the Route 2A discharge limit by an additional 200,000 gpd to achieve the desired allowances. This would result in a discharge limit at the Route 31 meter of 10,000 gpd and a discharge limit at the Route 2A meter of 510,000 gpd for a total of 520,000 gpd.

Westminster must negotiate an overall increase of 200,000 gpd to the 1998 amended IMA. The 1998 IMA indicates that the Town could increase allowable flows to Fitchburg at a rate of 1:1 for each gallon of I/I removed from the Fitchburg system via repairs or rehabilitation recommended by the I/I study and funded by the Town of Westminster. The Fitchburg DPW indicated that the I/I study is not expected to be complete for some time; however, there are enough findings currently to provide a plan to allow Westminster to increase the permitted discharge limits of the IMA through financing equivalent I/I removal in Fitchburg.

The Fitchburg DPW Commissioner has indicated that in the past, the City has charged developers a cost of \$2.00 per gallon at a rate of 2:1 for each gallon of wastewater flow the proposed development is expected to discharge to the City sewer system. This is done to assist the City in financing I/I removal from the sewer system to offset development. Therefore, for the purposes of approximating a cost to revise the IMA, S E A assumed a cost of \$2.00 per gallon to remove I/I; however, the rate provided in the 1998 IMA is a more favorable 1:1 ratio. Consequently, if Westminster seeks to increase the overall discharge limit in the IMA by 200,000 gpd, the assumed cost would be \$400,000. There will also be administrative and legal fees associated with revising an agreement. S E A assumed a cost of approximately \$10,000 for this effort, for a total cost of approximately \$410,000.

The Westminster Department of Public Works sent a letter to the City of Fitchburg Mayor on May 11, 2007 to initiate the process of revising the IMA. The letter, attached to the Final CWMP as Appendix C, requests an increase of 200,000 gpd to the allowable wastewater discharge limit, based on the previous calculations. The letter cites the mechanism for increasing the discharge limit provided in the current IMA and requests a response from the City of Fitchburg to advance the process. Westminster had not received a response as of the filing of this Final CWMP and intends to further pursue the matter with Fitchburg.

S E A recommends that the Westminster DPW work with Town Counsel and the City of Fitchburg to develop a schedule to revise the IMA. It is recommended that the revised IMA be complete by spring of 2008 before the Phase A improvements are scheduled to begin.

### 2.1.9.3 Financing

The DPW anticipates that the Town will utilize a cost sharing method for the proposed sewer expansion plan that has been used for the past expansion projects. This consists of assessing betterments for 50-percent of the sewer expansion capital cost and paying for the remaining half through general taxes. Based on Section 8.9 of the Draft CWMP, the estimated average betterment would be approximately \$10,200 per user for Phases 1 through 4, based on the opinions of probable cost including grinder pumps, but not including connection fees and the cost to install individual sewer services. The opinion of cost to the Town for 50-percent of the sewer expansion plan is approximately \$5.68 million, not including the Phase A improvements or the cost to revise the IMA.

The Phase A improvements represent an additional cost to the Town of \$3.27 million and the assumed cost to revise the IMA is approximately \$410,000. The total opinion of cost for Phase A, Phases 1 through 4, and the IMA revision is approximately \$9.36 million.

As summarized in Section 8.9 of the Draft CWMP, there are no outside funding options currently available to Westminster that appear desirable. The DPW indicated that Westminster will likely issue a bond to finance these costs, based on the Town's favorable bond rating. General taxes would then be used to pay the bond. The DPW also indicated that the sewer department has been accumulating some reserve funds in anticipation of the sewer improvement projects. The DPW will likely use some of these funds to pay for the costs to revise the IMA and for a portion of the Phase A improvements. However, the DPW is not certain as to the exact amount to be used at this time.

The increased sewer system operations costs will be recovered through sewer rates. The entire proposed sewer expansion plan will nearly double the number of existing sewer users in Westminster and the DPW Director estimates that the full expansion plan may double the operations costs for the Town; consequently, it is expected that increased operations costs will be adequately offset by the additional rate revenue from new users.

Since sewer rates are not expected to be significantly affected by increased operations costs, the remaining factors impacting rates in Westminster are inflation and the rate to discharge wastewater to the Fitchburg sewer system. As per the IMA, Fitchburg charges Westminster the current residential sewer user rate to discharge to the City sewer system. Effective July 1, 2007, Fitchburg's residential rate increases from \$1.75 per hundred cubic feet (hcf) to \$2.60 per hcf. The following table summarizes the historical residential sewer rate in Fitchburg:

**Table 2.6  
Residential Sewer Rate  
Fitchburg, MA**

Year	Rate (per hcf)
Circa 1987	\$0.85
August 2002	\$1.15
May 2004	\$1.30
June 2005	\$1.45
June 2006	\$1.55
March 2007	\$1.75
July 2007	\$2.60

The historical sewer rate increases in Fitchburg have been generally consistent with the exception of the most recent increase. The Fitchburg Sewer Department has indicated that the Sewer Commission acknowledges that this is a large increase and that rates may decrease next year, but this rate is necessary at this time to pay for sewer system improvements and increased operations costs.

The Westminster sewer rate is based on the water rate as follows: the Town charges \$75 for the first 20,000 gallons of metered water use and \$5 for each additional 1,000 gallons. Sewer use is based on the equivalent of 115-percent of the water bill, which equates to: \$86.25 for the first 20,000 gallons of water use and \$5.75 for each additional 1,000 gallons. In terms of cubic feet, the sewer rate is \$3.23 per hcf for water use up to 26.74 hcf and \$4.30 per hcf over that amount.

Table 2.7 compares current sewer rates for various communities near Westminster. Similar to the MWRA Advisory Board Annual Water and Sewer Rate Survey, the comparison is based on the cost for annual residential use of 120 hcf, or approximately 90,000 gallons.

**Table 2.7  
Residential Sewer Rate Comparison  
Various Communities**

Community	Sewer Charge
Leominster	\$204.00
Fitchburg	\$312.00
Gardner	\$450.00
<i>Westminster</i>	<i>\$458.50</i>
Lunenburg	\$600.00
Ayer	\$615.60

Sewer charge is based on residential use of 120 hcf per year.

The typical residential sewer cost in Westminster is similar to the typical cost in the City of Gardner, which is near the middle of the range of costs in this comparison. According to the DPW, rates in Westminster have remained the same for about 10-years. In the meantime, rates in Fitchburg have continued to increase in small increments until the most recent increase. It would require a detailed analysis of rate revenue and expenses to identify the most beneficial sewer rate increase for Westminster at this time. However, for the purposes of this analysis, S E A is assuming that Westminster would increase the sewer rate by the same amount of the most recent Fitchburg increase (\$0.85 per hcf). This would increase Westminster sewer rates to: \$4.08 per hcf for water use up to 26.74 hcf and \$5.15 per hcf over that amount. Based on annual residential use of 120 hcf (approximately 90,000 gallons) the adjusted rate translates to an annual sewer cost of \$560.78. This amount is still less than the typical residential sewer use cost in both Lunenburg and Ayer.

The DPW is aware that the new rate assessed by Fitchburg will significantly increase the cost to discharge wastewater to the City. S E A recommends that the Town conduct a sewer rate study and evaluate a rate increase. Section 2.2.3 of the Final CWMP provides details regarding a recommended water and sewer rate study. This is discussed under “Item 4.0 Pricing” in the *Water Demand Management and Conservation Plan*.

#### 2.1.9.4 Low Pressure Sewer Operation and Maintenance

The existing grinder pumps in Westminster were installed in 2001 and are manufactured by E-One. The Town has indicated that these pumps have generally performed well and that this type is preferred for future use. The typical E-One outdoor grinder pump is activated automatically and only operates for short periods. Based on information from the manufacturer’s web site, the typical annual energy consumption is approximately \$15 to \$20 per year, or equivalent to a 40-watt light bulb. The pump and motor design promotes long life and low maintenance and the motor does not need periodic oil changes as required by oil-filled submersible motors. The large pump size dramatically reduces inflow velocity for less wear and no clogging. In addition, the level sensors do not require preventative maintenance, the stainless steel components and piping are resistant to corrosion, and main line flushing is not required in a properly designed system. The typical time between service calls for this type of grinder pump is eight to ten years.

The proposed low pressure sewer systems and grinder pumps will be designed based on the manufacturer's design guidelines and standards. A typical residential grinder pump unit contains a 70-gallon wet well, with a high level alarm and a temperature alarm. These systems do not have back-up power; however, the wet well storage is generally sufficient for short term power outages. The existing and proposed pumps include a transfer switch and a connection for back-up power supply from a generator. The DPW owns a mobile generator intended to provide power to units during extended power outages. The DPW would operate individual pumps as needed to prevent overflows. The DPW indicated that it has not had to use this generator with the existing pumps in Town. Special units are available for installation in areas prone to frequent flooding; however, it is not anticipated that these will be necessary in the sewer expansion areas. The grinder pump wet well is factory tested for water tightness and the low pressure sewers are tested for leakage during construction.

The existing grinder pumps in Town are owned and maintained by the individual property owners and the low pressure sewers are owned and maintained by the DPW. The Town prefers that proposed grinder pumps also be owned and maintained by the individual property owners. The DPW currently provides a list of approved, certified contractors to residents seeking grinder pump inspection or maintenance. The DPW also maintains spare parts for use in conducting emergency repairs to the pumps. Since the Town prefers that proposed grinder pumps be owned and maintained by the individual property owners, the Town will require that homeowners seeking a connection to low pressure sewer specify the grinder pump ownership and maintenance arrangement in their deeds prior to connecting. Upon completion of the low pressure sewer construction in the phased sewer expansion plan, the Town will consider an annual grinder pump inspection program. The program will likely be conducted by a certified contractor and the cost may be assessed directly to the users. As part of the sewer expansion plan, the project design consultant will work with the Town to develop a manual of operational and maintenance requirements for the grinder pumps to provide to each owner. The Town will periodically include maintenance reminders with the sewer bills to encourage regular pump maintenance.

#### 2.1.9.5 On-Site Wastewater Management Plan

At a CAC meeting held on May 22, 2007, the committee expressed an interest in developing a component of the recommended on-site wastewater management plan that would assist residents with maintenance of on-site subsurface disposal systems. The CWMP recommends that a large portion of Town continue to use on-site systems as a wastewater management solution. Therefore, the CAC understands the importance of also providing wastewater management assistance to those without sewer service.

This component would add a second phase to the on-site wastewater management plan that was recommended in the Draft CWMP. Refer to Section 8.2.3 of the Draft CWMP for more detail regarding recommendations to "Board of Health Operations and Regulations." The first phase should be initiated in 2008 and consists of developing a database that tracks septic tank pumping in Town and identifies systems that are overdue for pumping. The Board would provide notice to owners recommending that their system be pumped with additional information on preventative maintenance for their system.

Based on the success of this phase, the Board should evaluate a second phase consisting of a town-administered on-site wastewater management plan for implementation by 2010. This second phase would assist owners with septage pumping to ensure regular maintenance of on-site systems. The Town could consider either partially or wholly subsidizing septage pumping costs or performing the pumping with Town personnel and equipment. An annual user fee could be established to finance this service. If the Town performed the septage pumping, it would allow the Board of Health or Town personnel an opportunity to inspect systems while on-site. The inspections would serve to gradually locate failing systems in Town. Information regarding various options for local management of on-site systems is detailed in Section 7.5.1.3 of the Draft CWMP.

Any plan that is implemented by the Board of Health should focus on the needs areas proposed for sewer expansion identified in this CWMP until such time that municipal sewer can be extended to those areas. As recommended by the CAC, the first phase of the on-site wastewater management plan should be initiated in 2008 and the second phase should be developed and implemented by 2010 to assist owners in maintaining their on-site subsurface disposal systems. The Town should evaluate options for the second phase prior to implementation, including funding methods. Guidance for an on-site wastewater management plan is provided on the MassDEP web site at the following link: <http://www.mass.gov/dep/water/wastewater/csmphl.htm>. The “Local Septic Management Plan” described at this location is most similar to the recommendations of the CWMP.

## **2.2 Water Supply**

The additional information provided in this section regarding water supply recommendations in the Town of Westminster pertains to the Scope provided in the Secretary’s Certificate on the Draft CWMP. Refer to Section 8.2.3 of the Draft CWMP or the Executive Summary of the Final CWMP for other recommendations relating to water supply.

### **2.2.1 Existing and Potential Water Supply Sources**

Figure 2-2 of the Final CWMP, attached to the end of this chapter, depicts all existing and potential public surface and groundwater supply sources located within the Town of Westminster. Section 3.2 of the Draft CWMP details all public water supplies within the Town of Westminster. This section of the Final CWMP provides supplemental information. Prior to describing these water supply sources, the following definition is provided from the Massachusetts Drinking Water Regulations (310 CMR 22.00) for background:

As stated in 310 CMR 22.02, a Public Water System means a system for the provision to the public of piped water for human consumption if such system has at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days of the year. Such term includes (1) any collection, treatment, storage and distribution facilities under control of the operator of such a system and used primarily in connection with such system, and (2) any collection or pretreatment storage facilities not under such control which are used primarily in connection with such system. A public water system is either a “community water system” or a “non-community water system.”

(a) Community water system means a public water system which serves at least 15 service connections used by year-round residents or regularly serves at least 25 year-round residents.

(b) Non-community water system means a public water system that is not a community water system.

1. Non-transient non-community water system or “NTNC” means a public water system that is not a community water system and that regularly serves at least 25 of the same persons or more approximately four or more days per week, more that six months or 180 days per year, such as a workplace providing water to its employees.

2. Transient non-community water system or “TNC” means a public water system that is not a community water system or a non-transient non-community water system but is a public water system which serves water to 25 different persons at least 60 days of the year. Some examples of these types of systems are: restaurants, motels, camp grounds, parks, golf courses, ski areas and community centers.

There are privately-owned public water supplies in Town as follows: In the northern portion of Westminister, there are two TNC groundwater supply wells that serve the Woods at Westminister golf course. In the central portion of Westminister, along Route 2, there are three NTNC groundwater supply wells that serve Ranor Incorporated. Just south of these three wells, there is an inactive TNC groundwater supply well that served the Shore Bible Camp. In the eastern portion of Westminister, there is a TNC groundwater supply well that serves the Leominster State Forest. In the southern portion of Westminister, there are two NTNC groundwater supply wells that serve the Wachusett Mountain Ski Area.

There are municipal-owned public water supplies in Town as follows: In the south-central portion of Westminister, there is an emergency surface water supply source on the west side of Meetinghouse Pond for the Town of Westminister. There is a surface water supply source on the east side of Meetinghouse Pond for the City of Fitchburg. This source supplies the Hager Park Regional Water Filtration Facility. In the southern portion of Westminister, there is a surface water supply source on Mare Meadow Reservoir that provides supplemental supply to Meetinghouse Pond. This source is operated by Fitchburg. Also in the southern portion of Westminister, there is a surface water supply source on Wachusett Lake. This source is operated by Fitchburg; however, it is currently not in use. The City of Fitchburg is considering constructing a pipeline to connect this source to the Hager Park Regional Water Filtration Facility.

There are approximately 1,570 residences within the Town of Westminister that utilize on-site water supply wells for drinking water, as of January 2005. This comprises just over 60-percent of the residences in Town, with the remaining residences connected to the municipal water system.

There is a potential municipal water supply well site in the southeastern portion of Westminister, adjacent to Wyman Pond. Refer to Section 3.2.4 of the Draft CWMP for further details regarding the potential well site. The potential well site is favorable based on previous analyses; however, installing this well would require significant water system improvements. The well site lies within the Flag Brook Sub-Basin, which is highly stressed and may make permitting difficult. Generally, the permitting process for a new groundwater source would take approximately five to seven years in its entirety to gain approval. Section 8.2.1 of the Draft CWMP recommends that the Town compare this alternative for increasing water supply with the option of increasing the amount of water supply purchased from the City of Fitchburg.

### **2.2.2 Future Water Supply**

Permitting, developing, and constructing a new groundwater supply well, including necessary water system upgrades is a major undertaking for Westminister. Whereas revising the current intermunicipal agreement (IMA) with the City of Fitchburg to allow increased water supply for the Town is a relatively simple process. The agreement already provides for Westminister the right to obtain a maximum daily flow up to 1,500,000 gpd or 1.5 million gallons per day (mgd) in the future as “Reserve Capacity.” Based on the projected water demand summarized in Table 5.4 of the Draft CWMP, maximum daily water demand in Westminister is estimated to remain well within the “Reserve Capacity” amount by the end of the planning period. The planned construction of the regional water treatment facility and the IMA incorporated Westminister’s long term water supply needs; consequently, obtaining additional supply from the regional treatment facility should be the preferred water supply option for the Town. The Town should continue to own and protect the potential municipal water supply well site for future water supply needs beyond the planning period of this report.

### **2.2.3 Water Demand Management and Conservation Plan**

This section of the Final CWMP provides a preliminary water demand management plan and an expanded water conservation plan, as recommended in comments on the Draft CWMP and in the Scope provided in

the Secretary's Certificate on the Draft CWMP. These plans expand on the water conservation plan provided in Section 5.9.1 of the Draft CWMP. The Draft CWMP identified that the Town implements effective programs and makes efforts to reduce overall water consumption in the Town water system. In 2005, a significant water system leak was located and some issues with the Town's water meters and billing program were resolved. These improvements resulted in a reduction of unaccounted-for water from 15-percent in 2005 to 2-percent in 2006, based on annual statistical report data. Residential water consumption was below 60 gpcpd in 2005 and 2006, and has remained below 65 gpcpd from 2003 to 2006. In addition, average day demand in the Westminster water system was reduced nearly 25-percent from 2005 to 2006, which was the lowest it has been since 2000. Maximum day demand in the Westminster water system was reduced approximately 25-percent from 2004 to 2005 and remained approximately the same from 2005 to 2006. Recent water demand and use patterns in the Westminster water system reflect effective demand management and conservation practices. Consequently, this section presents targeted strategies that are expected to have the most benefit and that are reasonable for the Town of Westminster to implement for additional benefit and to sustain the current water use characteristics in the Town water system.

S E A acknowledges that the Westminster DPW has limited staff and resources to implement all of the recommendations in this water demand management and conservation plan, let alone all of the CWMP recommendations. Also, the previous summary shows that the Town has made efforts towards conservation/demand reduction, which have achieved measurable results. Therefore, we recommend that the DPW view this plan as a set of recommendations that the Town should strive to work towards and that the DPW should carefully evaluate which recommendations would be most beneficial for immediate implementation. The Town can obtain funding assistance to implement water conservation measures from the MassDEP annual Water Conservation Grant Program for public water systems. The proponent must match 25-percent of the requested grant amount and in-kind services are eligible as a match. The projects can include public education programs, water audits, leak detection, rebate programs, by-law implementation, and meter calibration or repair. Consulting services are generally an eligible cost under the grant program.

The preliminary water demand management plan and expanded water conservation plan are provided as a single plan in this section which incorporates demand management and conservation recommendations. The plan is based primarily on the 2006 Massachusetts *Water Conservation Standards* and directly follows the format of the standards. These standards can be accessed on the Massachusetts Water Resources Commission website for more detail regarding particular aspects. The website is located at the following address: [http://www.mass.gov/envir/mwrc/pdf/Conservation\\_Standards.pdf](http://www.mass.gov/envir/mwrc/pdf/Conservation_Standards.pdf).

## 1.0 Comprehensive Study

### 1.1 Drought Management Plan

**Massachusetts Standard** - Develop a current drought management plan that follows American Water Works Association Drought Management Planning guidance (AWWA, 1992). Develop strategies appropriate to the system to reduce daily and seasonal peak demands and develop contingency plans to ameliorate the impacts of drought, seasonal shortages, and other non-emergency water supply shortfalls.

**Current Standing** – Westminster currently has a simplified drought management plan in which full water bans are enforced during a drought or emergency period.

**Recommendation** – It is recommended that Westminster develop a more detailed drought management plan by 2008. This can be integrated into the Water System Master Planning

effort currently underway that is discussed in this section. Westminster obtains water supply from the City of Fitchburg, and the City is currently in the process of developing its own drought management plan. Therefore, Westminster should model its drought management plan on the one being developed by Fitchburg. The plan should follow the following format based on the MassDEP drought management planning guidance:

- Stage I Voluntary Conservation
- Stage II Off-Peak Watering Only and/or  
Outside water use is limited to between \*\*\* and \*\*\* (name particular hours).
- Stage III Outside Water Usage is Limited to 1-Day per Week and/or  
Outside water use restricted to hand held hose for flower or vegetable garden watering only. No lawn watering, car washing (excluding commercial car washing), pool filling allowed.
- Stage IV Mandatory Ban on Outside Water Use  
All outside use of water is forbidden and subject to penalties in accordance with law for violation of this restriction.

## 1.2 Integrated Planning

**Massachusetts Standard** - Infrastructure planning evaluations within communities should include water supply, wastewater, and stormwater with greater emphasis on the issue that is most problematic. Planning should either follow: a) the MassDEP guidance for Integrated Plans; or b) the Water Resources Commission guidance for a Local Water Resources Management Plan. The plans should be updated periodically. Specific principles that should be considered include the following:

- Stormwater
- Wastewater
- Infiltration and Inflow
- Water Supply

**Current Standing** – Westminster is in the final stages of completing the CWMP, which incorporates wastewater management, water supply, and stormwater management aspects. The CWMP will also serve as the Town’s Local Water Resources Management Plan. In addition, the Town is currently working with a consultant to update its prior Water System Master Plan. This plan will investigate water supply, demand, and infrastructure improvements.

**Recommendation** – It is recommended that the Water System Master Plan incorporate water conservations strategies presented within this Water Demand Management and Conservation Plan.

## 2.0 System Water Audits and Leak Detection

### 2.1 Leak Detection

**Massachusetts Standard** - Conduct a complete, system-wide leak detection survey every two (2)

years unless:

- The results of the Annual Statistical Report (ASR) water audit indicates that leakage constitutes a small portion of the system's unaccounted-for water; or
- The volume of leaks detected through the most current leak detection survey (conducted within the previous two years) indicates insignificant leakage.

**Current Standing** – The Westminster Water Department maintains an annual leak detection program, in which approximately 10-percent of the water system is surveyed for leaks each year. Leaks are repaired upon discovery. The Town has worked with the Massachusetts Rural Water Association (MassRWA) to implement leak detection surveys, but has cited that the large amount of asbestos cement water main in the municipal water system has made locating leaks problematic. The most recent leak detection did not locate any leaks and the amount of unaccounted-for water in the Westminster water system attributed to leakage was low in 2006, based on the ASR.

**Recommendation** – It is recommended that Westminster perform a full leak detection survey from 2008 to 2009. The survey should cover half of the water system each year to meet the standard for a complete survey every two years. Based on the amount of leaks discovered, the Town should then evaluate the frequency of leak detection that is required going forward. This should be done using the guidelines provided in the 2006 *Water Conservation Standards*. Available funding assistance should be considered for this work, as detailed at the beginning of this section.

## 2.2 Penalties and/or Fines

**Massachusetts Standard** - Establish penalties and/or fines for stealing water. Those with authority to set and enforce penalties for theft of public water (including but not limited to municipal Water Commissioners, Town Selectmen and public water suppliers; not including private water suppliers) develop a new bylaw/ordinance or amend existing bylaws/ordinances to establish a penalty by providing authority to levy a significant fine and/or penalty, that may be enforced criminally or non-criminally.

**Current Standing** – Westminster does not have any restrictions or fines established specifically for the stealing of water from the Town water system. The fire department can issue fines for tampering with a fire hydrant.

**Recommendation** – It is recommended that Westminster establish a fine directed specifically to stealing water from the Town water system. The regulation should be considered for implementation in 2008.

## 2.3 Field Surveys and Water Audits

**Massachusetts Standard** - Conduct an ASR water audit on an annual basis using the MassDEP Water Audit Guidance Document (<http://www.mass.gov/dep/water/approvals/wmgforms.htm#audit>).

**Current Standing** – Westminster does not currently conduct annual water audits. The Town has acknowledged that there has been water accounting issues due to the existing meter inaccuracies and the billing program problems. As described in Section 3.0, the Town is in the process of replacing all meters and the billing program. When this is complete, the Town intends to perform an audit to

better account for and track usage. This will also help the Town to complete their ASR more accurately.

**Recommendation** – It is recommended that the Town also work with the largest water users in Town to encourage water conservation through private water audits. Refer to the water audit recommendation in Section 7.0.

### 3.0 Metering

#### 3.1 Ensure 100-Percent Metering

**Massachusetts Standard** - Ensure 100-percent metering of all water uses, including all indoor water use at all municipal facilities (schools, school athletic fields, etc.).

**Current Standing** - Approximately 97-percent of the water system is metered, including all municipal buildings. The remaining 3-percent consist of broken residential meters. There currently is an on-going meter replacement program in the Town that replaces existing meters with new, remote-read meters. Westminster is replacing approximately 1,300 meters per year and it is anticipated that the program will be completed by the mid-2008.

Westminster also provides and operates meters on hydrants for contractors if water is needed during construction projects in Town.

**Recommendation** – It is recommended that the Town complete the meter replacement program as planned.

#### 3.2 Properly Size Water Meters

**Massachusetts Standard** - Properly size water service lines and meters to handle required water volumes and ensure a high level of metering accuracy.

**Current Standing** – Westminster will replace oversized meters with properly sized meters if requested by a large consumer. The DPW has acknowledged that some large users may have oversized meters and has begun contacting these users to evaluate the required meter size. The DPW is also investigating a regulation that would transfer ownership of large meters to the user. These meters would then be tested according to AWWA guidelines and the testing costs would be assessed to the owner.

**Recommendation** – It is recommended that the Town of Westminster develop and implement a plan in 2008 to downsize all oversized meters for large users. In addition, the Town should transfer ownership of large meters to the users and establish a regulation that requires annual testing of the meters by the owner.

### 4.0 Pricing

#### 4.1 Rate Study

**Massachusetts Standard** - Perform a rate evaluation every three to five years to adjust costs as needed. Full cost pricing shall be utilized which factors all costs including operations, maintenance, capital, and indirect costs (such as environmental impacts, and watershed protection) into prices. Full cost pricing can take the form of any rate structure so long as

all costs are recovered through prices.

**Current Standing** – Westminster has a full cost, increasing block rate structure; however, it has not been revised for approximately 10-years. The Town currently bills residential users for water on a semi-annual basis and commercial/industrial users are billed quarterly. The Town charges all users \$75 for the first 20,000 gallons and \$5 for each additional 1,000 gallons. The Town charges the equivalent of 115% of the water bill for sewer use. The water department and sewer department share billing costs.

**Recommendation** – It is recommended that the Town conduct a rate evaluation to determine if current revenues meet current and projected water expenses. The Town has indicated that they would prefer to review rates once the meter installation is complete and the new reading/billing program has collected a sufficient amount of data. The evaluation should be completed at least 6-months after the Town has completed installing remote read meters to acquire metering data. The rate study should consider the recommended sewer expansion plan and the impacts of construction cost and operations and maintenance expenses.

It is also recommended that the Town consider increasing the billing frequency for residential users. The DPW has limited resources; therefore, the Town should first evaluate the improvements to efficiency from having a remote read meter system in place before making this decision.

A sewer rate study is currently a higher priority due to the recent increase to the Fitchburg sewer rates. The Town should consider an interim study to evaluate an immediate sewer rate increase. Refer to Section 2.1.9.3 of the Final CWMP for detail regarding sewer rates.

## 5.0 Residential

### 5.1 Promote Low Flow Devices

**Massachusetts Standard** - Promote Water Efficient Household Appliances - Water Efficient Household Appliances (especially clothes washers) provide an opportunity for significant water (and energy) savings.

**Current Standing** – The Draft CWMP indicated that the Town currently makes water savings devices available to customers for purchase.

**Recommendation** – Westminster should consider a residential water conservation program that would make low flow devices available for discount to residents. This could be coordinated with a local supplier to be available for a particular promotional period. The program should evaluate the devices that are expected to provide the most benefit and those most desirable for use by residents. In addition, the Town should make educational literature available regarding installing water savings devices and their potential savings, as recommended in the Draft CWMP. Available funding assistance should be considered for this work, as detailed at the beginning of this section.

### 5.2 Residential Water Audit Program

**Massachusetts Standard** - Provide Residential Water Audits - Communities and water suppliers should consider providing free or low cost residential water audits to customers, targeting

the largest users first. A residential water audit should include the following components at a minimum:

- Inspection of toilets, showers, faucets, clothes washers, dishwashers, water filters, water softeners, evaporative coolers, spa/hot tub, etc. for leaks, flow rate, presence of water saving retrofit devices, and efficient use of fixtures and appliances by residents. Audits should include a payback analysis showing homeowners how reductions in water costs justify the investment in the recommended upgrades. A sample worksheet for residential water audits is included in the Handbook of Water Use and Conservation (Vickers, 2001).

**Current Standing** – Westminster does not provide regular water audit services to residential customers. The DPW indicated that they do review water meter data and use trends for inconsistencies that indicate a potential residential leak. The DPW contacts the user to resolve the problem.

**Recommendation** – It is recommended that the Town expand their current practice with a water audit program available to residents. The program should monitor water use trends in Town and target residents whose water use patterns indicate excessive use or dramatic fluctuations. The program should focus on water losses, conservation, and reduction in overall water costs to the residential customer.

## 6.0 Public Sector

### 6.1 Moisture Sensors on Public Lawns and Fields

**Massachusetts Standard** - Outdoor Water Use - Adopt outdoor water use strategies as per recommendations in Section 9.0 on Lawn and Landscape.

**Current Standing** – Westminster has water meters in place for all public buildings and has installed low flow devices in public buildings. The Town also has meters in place for recreational fields with irrigation systems. The Town is currently working on metering irrigation systems for cemeteries. Irrigation systems for municipal fields are controlled either manually or by timers.

**Recommendation** – In 2008, the Town should identify a large, municipal recreational field with an irrigation system for a pilot program. The Town should install a moisture sensor on this irrigation system and evaluate the reduction in water use in the system from previous years. Based on the effectiveness, the Town could extend the program to other municipal irrigation systems.

## 7.0 Industrial, Commercial, and Institutional

### 7.1 Large User Water Audits

**Massachusetts Standard** - Carry out a water audit to determine the location and amount of water used for heating, cooling, processing, sanitary use, and outdoor use (see Appendix H of Standards for sample ICI water audit). Use the findings from the audit as the basis for actions to conserve water such as:

- Recycling and reusing cooling waters to achieve greatest water use efficiency/closed loop cooling.
- Using non-potable water (in conformance with the plumbing code and MassDEP regulations to assure safe drinking water and to avoid cross-connections).

- Using heat-sensitive valves to control cooling equipment.
- Replacing water cooling with air cooling (where possible within air quality standards).
- Installing or retrofitting efficient sanitary water devices, performing scheduled meter maintenance and calibration, and xeriscaping.

**Current Standing** – Westminster has successfully worked with large users in the past in promoting water conservation. The Town enforces plumbing codes to new and renovated buildings.

**Recommendation** – It is recommended that the Town contact the largest commercial and/or industrial customers in Town to promote water conservation as recommended in Section 2.3. Large commercial and industrial users should develop their own water policies addressing conservation, leak detection and repair, maintenance, and education. These users should install water savings devices and fixtures and conduct a water audit to determine additional means to reduce consumption. Technical assistance is available at the state level through the Massachusetts Office of Technical Assistance (OTA), a non-regulatory branch of the Executive Office of Environmental Affairs (EOEA) that helps manufacturers and industrial facilities, municipalities, schools and hospitals, households and others improve water use efficiency, reduce wastewater discharge, and implement other effective water conservation measures.

## 8.0 Agriculture

There are no substantial agricultural users of the Town water system.

## 9.0 Lawn and Landscape

### 9.1 LID By-Laws

**Massachusetts Standard** - Establish policies, regulations, or bylaws/ordinances that ensure that land use and development practices preserve natural vegetation, preserve or restore a site's natural hydrology (by using techniques such as LID), and use low water-use/drought-resistant landscaping techniques, to the maximum extent practicable.

**Current Standing** – Westminster recently implemented LID by-laws promoting proper land use, minimal irrigation, and minimal land clearing.

**Recommendation** – It is recommended that Westminster continue to promote the current LID by-laws.

### 9.2 Water Supply Management

**Massachusetts Standard** - Abide by water restrictions and other conservation measures implemented by the municipality or water supplier.

**Current Standing** – Westminster obtains water supply from the City of Fitchburg and therefore, adheres to the water use restrictions established by the City.

**Recommendation** – It is recommended that the Town continue to adhere to and enforce these restrictions.

### 9.3 Rain Barrel Project

**Massachusetts Standard** - Minimize Use of Potable Water and Groundwater for Lawn Irrigation - Where technology and regulations allow, use collected rainwater or treated wastewater to help meet outdoor water demand, whenever possible. Communities should strive to avoid application of potable drinking water for lawn irrigation purposes. Additionally, use of other groundwater sources for lawn irrigation, such as private irrigation wells, should be minimized or avoided.

**Current Standing** – The Town regulates outdoor water use as described in this section.

**Recommendation** – It is recommended the Town consider a rain barrel program for residents. The DPW could work with a rain barrel manufacturer to provide barrels at a discounted rate over a specific period of time or promotional period. The Town would not be responsible for purchase or maintenance; rather it would establish the relationship with the manufacturer and promote the offer. The rain barrel manufacturer would be completely responsible for providing the product and responding to consumer questions.

### 10.0 Public Education and Outreach

**Massachusetts Standard** - Water suppliers and the state should consider using social marketing to help build public support for water conservation. Social marketing is a valuable technique that can help persuade people to use water and land in an environmentally-responsible manner.

**Current Standing** – Westminster currently uses bill stuffers as educational material to promote and market water conservation to residential customers. Information regarding water use is also provided through notices in municipal buildings. The Town's annual consumer confidence report also provides information regarding the water system and conservation tips.

**Recommendation** – The Town should continue this practice and evaluate other means to target the public. This practice should target all residents and businesses, not just the users of the municipal water system.

### **3. Mitigation**

This section of the Final CWMP provides a discussion of mitigation measures in the form of Proposed Section 61 Findings and expands upon the draft Section 61 Findings provided in Section 8.7 of the Draft CWMP.

#### **3.1 Proposed Section 61 Findings**

The following Proposed Section 61 Findings are prepared for all state permits and contain a clear commitment to mitigation, an estimate of the individual costs of the proposed mitigation, identification of the parties responsible for implementing the mitigation, and a schedule for implementation.

The proposed sewer expansion consists of extending sewer through four phases to eight well-defined areas of Town that contain mainly residential development in need of improved wastewater management. It also includes a fifth phase that will allow sewer extensions to two undeveloped industrial-zoned areas and one municipal parcel planned for affordable housing development, where sewer service was deemed a high priority. Phases 1 through 4 of the plan consist of 483 properties that are currently developed, and 70 undeveloped properties. These phases include approximately 52,500 linear feet (9.9 miles) of sewer pipe, 3,600 linear feet of force main, 342 grinder pumps, 3 minor pump stations, 1 major pump station, and a rehabilitation of an existing pump station. Upgrades to the municipal sewer system are proposed prior to implementing the expansion plan. The upgrades include two existing Westminster sewer pump stations and a section of the Fitchburg interceptor sewer.

These findings serve to describe any impacts of the project and certify that all feasible measures have been undertaken to either avoid or minimize these impacts.

##### **3.1.1 Project Schedule**

Refer to Section 2.1.1 of the Final CWMP for more details on the proposed project schedule. Westminster is currently working with the City of Fitchburg to revise the current IMA for wastewater treatment to accommodate the proposed sewer expansion plan. The Town intends to complete this task by 2008.

The Town is submitting this Final CWMP/EIR to MEPA in July 2007 and anticipates approval by August 2007, which will allow the Town to move forward with implementing its recommendations. The Town will then coordinate with the MassDEP for approval of the overall plan to allow funding to proceed if the Town seeks State Revolving Loan Funds to finance the sewer construction.

The Final CWMP recommends that the Town prepare a sewer district management regulation and submit it for Town Meeting approval in spring 2008 with a goal to implement the approved regulation by spring 2009.

The Phase A – sewer system upgrades are recommended prior to initiating the sewer expansion plan projects. These upgrades are recommended to begin in 2008 and are anticipated to take 2-years to complete, including project design.

Phase 1 of the sewer expansion plan is recommended to begin by 2009, and is anticipated to take 2-years to complete, including project design. Phase 2 of the sewer expansion plan is recommended to begin by 2011, and is anticipated to take 2-years to complete, including project design. Phase 3 of the sewer expansion plan is recommended to begin by 2015, and is anticipated to take 2-years to complete,

including project design. Phase 4 of the sewer expansion plan is recommended to begin by 2019, and is anticipated to take 2-years to complete, including project design.

### **3.1.2 History of MEPA Review**

The Draft CWMP was submitted to the MEPA Office for review as an Expanded Environmental Notification Form in November 2006. During the extended review period, the Secretary of Environmental Affairs received comments on the Draft and issued a Certificate on that report in December 2006 requiring the preparation of an EIR. However, the Secretary permitted Westminster to file a Single EIR, per MEPA regulations.

The Secretary's Certificate (attached to this report as Appendix B) includes a scope of work for the Final CWMP, "intended to identify additional analysis and information necessary to complete MEPA review and ensure that impacts and issues are fully analyzed." This Final CWMP/EIR addresses the Scope contained in the Certificate and concludes with responses to the comments received on the Draft CWMP.

### **3.1.3 Intent of These Section 61 Findings**

These expanded Section 61 Findings have been prepared to comply with the Town of Westminster's responsibilities under Massachusetts General Law Chapter 30, Section 61. These expanded Section 61 Findings describe measures to avoid, minimize and/or mitigate identified impacts to the maximum extent practicable, and discuss an implementation schedule to ensure that mitigation measures will be implemented at the appropriate times.

### **3.1.4 Discussion of Mitigation Measures and Implementation Schedule**

The following narrative summarizes proposed mitigation measures for the expected construction impacts identified in Section 2.1.2.2 of the Final CWMP.

#### **3.1.4.1 Mitigation Measures**

##### Air Pollution

Impacts to air quality during construction will be mitigated to the maximum extent through various measures incorporated into the project design. To reduce dust during construction activities, open cuts and exposed areas shall be backfilled and stabilized as soon as each segment of pipe is installed, and at the same time, non-backfill material shall be removed from the site and transported to an appropriate disposal location; any stockpiled material that must remain on-site for more than 24-hours shall be covered with mulch, vegetative covers, or adhesives to capture dust. Exposed surfaces will be wetted and stabilized to minimize dust generation. All trucks for transportation of construction material will be fully covered and street sweeping will occur as needed.

All motor vehicles and construction equipment shall comply with all pertinent local, state, and federal regulations regarding exhaust emissions. Construction equipment not in use and trucks that are idling while waiting to load or unload material will be turned off.

##### Water Pollution

Impacts to water bodies will be mitigated through the use of Best Management Practices (BMPs) for construction projects. Activities will also be coordinated with the Town's local NPDES Phase II Stormwater Management Plan and the Conservation Commission. Erosion and sedimentation control measures shall be installed and functional before excavation operations begin and shall be properly

maintained throughout the construction period. Staked and entrenched straw bales and/or silt fence shall be installed along wetland resource areas to prevent erosion into streams and wetlands. All control measures shall be checked weekly and after each rainfall.

Excavated material shall be placed on the upslope side of the trench to permit any erosion from the material to be captured by the trench. Grading activities shall be avoided during periods of high rainfall. Construction shall be staged in sections. Areas disturbed for each section shall be stabilized immediately upon completion of the section. Stabilization shall be accomplished by temporarily or permanently protecting the disturbed soil surface from rainfall impacts and run-off and/or repaving cuts in roadways or sidewalks.

Construction dewatering from open cuts and trenches shall be routed through appropriately designed sediment basins or traps and discharged through a pipe or lined channel to a stream or other surface water body (under an applicable construction dewatering permit), unless such dewatering can be handled in another manner not requiring discharge to a water body.

Maintenance, repair, and fueling of equipment shall be confined to areas specifically designed for that purpose. These areas will have adequate waste disposal receptacles for liquid and solid waste. Waste oil shall be removed to designated waste oil collection areas for recycling. No potential pollutants shall be allowed to drain into catch basins, streams, or other water bodies.

When using fertilizer to establish areas of new vegetation for soil stabilization, mulches shall be used to prevent fertilizer nutrients from washing off the vegetated areas. Fertilizer shall not be applied if there is likelihood of a significant rainstorm. Fertilizer shall not be applied unless there is adequate protection of surface water, groundwater, and pipeline systems.

#### Excessive Noise

The project will include measures to minimize noise from construction activities. The project will occur during daytime hours (7:00 AM to 3:00 PM), excluding weekends. Construction equipment will have appropriate mufflers to minimize noise and idle equipment will be shut off. Noisy construction operations will be sequenced to occur at times of the day expected to have the least impact and less noisy operations will be selected whenever possible.

#### Material Transport / Traffic Impacts

Truck routing to the project areas will utilize connectors and major routes. No trucking will be allowed to approach the site using local roads and through neighborhoods unless necessary for access. Truck traffic will vary throughout the construction period, depending on the activity. It is expected that truck traffic will range on average between 4-10 trips daily, spread evenly throughout the day, and could reach 15 trips during major construction or pump station installations.

Police details will be stationed along the project site to coordinate traffic flow and assist in pedestrian direction. Truck routing and traffic management plans will be reviewed and coordinated with the Westminster DPW. For work in Route 2A, construction activities and traffic management will adhere to the permit issued by the MHD. Street sweeping will be performed as required and daily during all heavy trucking periods.

### Disposal of Excess Material

The project design will instruct the contractor to reuse suitable excavated material to the greatest extent feasible. Excess soil that cannot be reused on-site will be transported in covered trucks to an approved disposal site. If contaminated soils are encountered through subsurface exploration during the project design or during construction, they will be managed and disposed of at an approved facility according to MassDEP regulations.

### Environmental Resources

The project will not directly impact or encroach upon existing streams, lakes, ponds, or wetlands. If a directional drilling method is used to cross Wyman Pond, the drilling entry and exit points will be situated away from the banks of the pond. The pond will be protected through erosion and sedimentation controls. If pump station structures must be placed within flood plain, the project design will replicate the flood plain volume within the project site.

Wetland resource areas and buffer zones thereto will be clearly marked as off-limits to construction equipment and materials storage. Excavated material from utility trenches will not be placed between the trench and a wetland resource area. Trenches shall be promptly backfilled and stabilized to reduce the risk of erosion. Stockpiled soil shall be located away from streams and drainage ways so that runoff cannot carry sediment downstream.

### Vegetated Areas

Clearing and grubbing shall be held to a minimum as necessary for grading and equipment operation and construction shall be sequenced to minimize the exposure time of cleared surface areas. Soil will be stabilized with perennial vegetation as soon as possible after final grading. All cuts, fills, and disturbed areas adjacent to paved areas and roadways shall be stabilized with appropriate temporary or permanent vegetation.

### Adjacent Land Use

The project will not alter adjacent land use such as protected open space, parks, or recreational areas.

### Historic Resources

The proposed construction will consist of underground sewer and will occur mainly within existing roadways. The pipeline construction will not proceed onto private properties. There are a few proposed pump stations that may require an easement on private property; however, they would be located as close to the roadway as possible. The pump stations could include above-ground structures.

Once the project design for each phase of sewer expansion has generated adequate construction plans and details, the Town will provide this information to the MHC to determine what effect the project will have on identified resources. The design will include preparation of a Project Notification Form for submittal to the MHC as necessary, and will coordinate with the determination made by the MHC on the project.

#### **3.1.4.2 Implementation Schedule, Responsibility, and Costs**

The schedule for implementation of the previous mitigation measures will be to coordinate as necessary with approving authorities during the project design and implement the proposed measures at the beginning of each sewer construction project. The mitigation measures will remain in effect until each

individual construction project is completed. Refer to Section 3.1.1 of the Final CWMP for the project schedule for each phase of sewer expansion.

Table 3.1 summarizes the anticipated agency actions and permits potentially required for the sewer expansion plan based on Section 2.1.3 of the Final CWMP.

**Table 3.1  
Anticipated Permitting / Approvals Schedule**

<b>Permit / Approval</b>	<b>Review Agency</b>	<b>Applicable Threshold</b>	<b>Approximate Review Schedule</b>
Final CWMP / Single EIR	MEPA	Proposed Length of Sewer	2 months
Sewer Extension Permit	MassDEP	Sewer extension greater than 1,000 feet	60 – 120 days
Order of Conditions under the MA Wetlands Protection Act	Westminster Conservation Commission and MassDEP	Construction in buffer zone to resource area	45 - 60 days
Massachusetts Historical Commission Review	MHC	Construction near historical or archeological resources	30 days
MHD Access Permit	MHD	Construction within State Roadway Layouts	30 days
NPDES Construction General Permit	US EPA and MassDEP	1-acre of disturbed land and point source discharge to MS4	30 days
NPDES General Permit for Construction Dewatering	US EPA and MassDEP	Discharge of non-contaminated dewatering effluent	30 days
Chapter 91 License	MassDEP	Any activity located in, under, or over filled tidelands	up to 9 months

The Town and the contractor will be responsible for implementing the proposed mitigation measures for the projects. The contractor will coordinate with the Town of Westminster and other authorities such as MassDEP and MHD as necessary for implementation of the measures. It will be the responsibility of the Town to ensure that the contractor is carrying out the proposed mitigation measures. The construction projects will include the services of an engineering consultant and a resident engineer at the project sites, who will act on behalf of the Town to make sure that the contractor adheres to the project design and specifications. The resident engineer will monitor the mitigation measures implemented by the contractor and advise the Town if they are not adequate.

The opinions of probable project cost for complete design, construction, administration, and contingency for each proposed phase of sewer expansion are provided as follows: Phase A is \$3.27 million, Phase 1 is \$4.02 million, Phase 2 is \$2.68 million, Phase 3 is \$2.42 million, and Phase 4 is \$2.23 million for a total of \$14.62 million.

### **3.1.5 Summary of Impacts and Findings of Limitations of Impacts**

Section 2.1.2.2 of the Final CWMP summarizes the anticipated impacts of the sewer expansion plan, which are limited to insignificant ancillary impacts associated with sewer construction. The proposed mitigation measures summarized in this section are expected to prevent damage to the environment from those impacts. The proposed plan summarized in the Final CWMP is expected to provide the following environmental benefits:

- Improving wastewater management for areas of Town where current management methods are a threat to both the environment and public health and present a financial burden to owners.
- Protecting environmental resources and public health to the maximum extent possible both in Westminister and within the broader regions surrounding the Town.
- Minimizing impacts to the Nashua River Basin through management methods that provide recharge to local basins and minimize water withdrawals or exports.
- Protecting public water supplies and providing safe, reliable water to the residents and businesses of Westminister.
- Reducing potential streamflow depletion and preserving resources in the Nashua River through enhanced water conservation and demand management efforts.

## 4. Response to Comments

This section of the Final CWMP provides responses to each comment received on the Draft CWMP to the extent they are within MEPA jurisdiction. Each section contains the full text of a comment letter presented in italicized typeface. The text of the comment letters presented herein is interrupted as appropriate by responses to comments. Responses are presented in normal typeface.

### 4.1 Massachusetts Historical Commission

*November 28, 2006*

*Secretary Robert W. Golledge Jr.  
Executive Office of Environmental Affairs  
Attn: Nicolas Zavalas, MEPA Unit  
100 Cambridge Street, Suite 900  
Boston, MA 02114*

*RE: Westminster Draft Comprehensive Wastewater Management Plan (CWMP)  
MHC #RC.41035. **EOEA # 13919.***

*Staff of the Massachusetts Historical Commission have reviewed the Environmental Notification Form (ENF) and information submitted for the project referenced above. The project involves comprehensive assessment, analysis and evaluation of the Town of Westminster's current and future water supply, wastewater and stormwater management requirements, as well as recommendations for phased improvements and expansions in line with established state and town master development plans and environmental requirements.*

*On page 236, Section 8.6.2, under the Historical and Archeological Resources Section, MHC notes that project engineers and planners have made use of only the MassGIS database to determine the presence and location of significant historic and archaeological resources within the Town of Westminster. The data layer on MassGIS for State Register properties is obsolete, but consultation of the State Register of Historic Places is also not sufficient to identify significant historic and archaeological properties. As alternative project locations are identified, MHC invites project planners to consult the Inventory of Historic and Archaeological Assets of the Commonwealth to take into account identified properties.*

For planning level purposes, the Draft CWMP relied on mapping available through MassGIS for identification of potential historical and archeological resources in Westminster. For design level research, the Town will consult with the MHC and utilize the "Inventory of Historic and Archeological Assets of the Commonwealth" to more accurately identify resources, as detailed in Section 2.1.3.2 of this report.

*MHC proposes to review phased water supply, wastewater and stormwater management expansion and improvement as they are designed. A Project Notification Form (PNF), including a USGS topo map clearly locating the project area, and scaled project plans showing existing and proposed conditions, should be submitted for each phase of improvements or expansion projects. The submittal information to the MHC should occur as early as possible, once a feasible location and design has been selected. The submittal should not wait until final plans are developed (pg. 254). MHC review will assist to determine if any, as yet unidentified, historic and archaeological resources may be affected by project elements. For example, archaeological survey may be requested for project elements located in archaeologically sensitive areas.*

Once the project design for each phase of sewer expansion has generated adequate construction plans and details, the Town will provide this information to the MHC to determine what effect the project will have

on identified resources. The design will include preparation of a Project Notification Form for submittal to the MHC as necessary, and will coordinate with the determination made by the MHC on the project.

*Project planners should continue to consider feasible design and locational alternatives that meet the engineering requirements, while also seeking to avoid or minimize impacts to historic and archaeological properties and areas. Proposed above-ground construction should be designed to be compatible and sensitive to surroundings, and could incorporate vegetative screening to minimize visual effects. Placing sewers within existing streets assists to avoid adversely affecting archaeological sites. This approach is consistent with the town's goals outlined in the draft CWMP (pg. 5).*

Although the proposed construction will consist of underground sewer and will occur mainly within existing roadways, there are a few proposed pump stations that could include above-ground structures. The Town will coordinate with the MHC to avoid or minimize impacts.

*These comments are offered to assist in compliance with Section 106 of the National Historic Preservation Act of 1966, as amended (36 CFR 800), Massachusetts General Laws, Chapter 9, Sections 26-27C (950 CMR 71) and MEPA (301 CMR 11). If you have questions or require additional information please contact Jonathan K. Patton at this office.*

Sincerely,

*Brona Simon  
State Archaeologist  
Deputy Historic Preservation Officer  
Executive Director  
Massachusetts Historical Commission*

xc: *Ron Lyberger, DEP-BRP  
DEP-CERO  
Westminster Historical Commission  
Donna Brownell, W.E.S.T*

## **4.2 Water Resources Commission**

*December 15, 2006*

*Robert Golledge, Secretary  
Executive Office of Environmental Affairs  
Attention: Nicholas Zavalas, MEPA Office  
EOEA #13919  
100 Cambridge Street  
Boston, MA 02114*

*Dear Secretary Golledge:*

*Staff for the Water Resources Commission (WRC) has reviewed the Environmental Notification Form (ENF) and Draft Comprehensive Water Resources Management Plan (CWMP) submitted by the town of Westminster. The ENF states that the project may require review under the Interbasin Transfer Act (ITA) because Westminster receives a portion of its water supply from the Chicopee River Basin and wastewater improvements within the town will increase the capacity of Westminster's connection with the Fitchburg wastewater treatment plant, in the Nashua River Basin, where the Town's wastewater is treated and disposed.*

*We appreciate the Town and its consultants providing WRC Staff with the entire CWMP report, so we could thoroughly assess the situation and determine how the ITA applies to this project. From the information provided, it appears that the following conditions exist:*

- *Westminster currently obtains water supply and sewer service from Fitchburg.*
- *Fitchburg's water supply sources are mostly located in Westminster, but in two different river basins: the Nashua River basin and the Chicopee River basin. One of the Chicopee River basin sources, Mare Meadow Reservoir, is partially located in the town of Hubbardston. The other, Bickford Pond, is located in both Hubbardston and Princeton.*
- *Wastewater is discharged to the Nashua River through a treatment plant located within the town of Fitchburg.*

### **Wastewater Alternatives**

*Westminster is currently planning for future water supply and wastewater needs. The CWMP identifies several areas where a centralized (sewering) solution is necessary, as well as other areas where the continued use of on-site septic systems should provide adequate treatment for wastewater. The CWMP also recommends improvements to the connections between the Westminster and Fitchburg sewer systems that will increase the capacity of these systems to transport and accept increased sewer flows. These actions do not trigger the Interbasin Transfer Act because they do not cause the existing transfer from the Chicopee River basin water supply sources to be increased. The WRC considers any wastewater flow increase caused by this phase of the project to be a secondary transfer (i.e. the transfer from the Chicopee basin to the Nashua basin already exists).*

*From the information provided, it appears that none of the areas within Westminster that are proposed to be sewerred are in the Chicopee River Basin. Our understanding is that Chicopee River Basin portion of town is not currently sewerred, and the proposed plan will not change this. If in the future, there is a need to provide sewer service to this area, the ITA may be triggered at some level.*

The Town appreciates the clarification provided by the WRC on this issue, and will coordinate with the WRC if any future plans propose to provide sewer service to areas of the Town within the Chicopee or Millers River Basins.

### **Water Supply Alternatives**

*The CWMP discusses three major alternatives to meeting future demands:*

- *Water Conservation*
- *Development of a new well*
- *Increasing the amount of water supply obtained from the Fitchburg water supply system.*

*WRC Staff strongly recommends that Westminster maximize opportunities for water conservation. The CWMP makes many good recommendations, which we echo. The CWMP cites the 1992 Water Conservation Standards. These were updated and expanded in 2006. The website link cited in CWMP remains the same, however. We strongly recommend that the town review and comply with these standards, and where opportunities exist, go beyond the minimum required conservation standards.*

Section 2.2.3 of the Final CWMP summarizes enhanced water demand management and water conservation recommendations mainly based on the updated 2006 *Water Conservation Standards*.

*The CWMP also discusses development of a new water supply source within the Flag Brook subbasin of the Nashua River basin. The Nashua River Basin is, for the most part, classified as medium stressed. The CWMP rightly cautions that the development of this source will cause critical scrutiny by the permitting agencies. Before Westminster spends time and money on developing a*

source at this location, we suggest that they meet with all affected environmental agencies, including non-regulatory agencies, to discuss the challenges involved with developing a source here.

Another option discussed is increasing the amount of water Westminster obtains from the Fitchburg water supply system. The Intermunicipal Agreement (IMA) between the towns allows Westminster to obtain a maximum daily flow of up to 1.5 million gallons per day (mgd). The average day demand for Westminster from 2001 to 2004 was 0.37 mgd. It appears that Westminster could increase the amount of water supply obtained from Fitchburg under the terms of the IMA without triggering the ITA. If in the future, Westminster's demand on the Fitchburg system exceeds the terms of the IMA, ITA review may be necessary at some level, but only for the portion of water supply which originates in the Chicopee River Basin.

Section 2.2.2 of the Final CWMP recommends that the Fitchburg regional water treatment facility be the preferred water supply option for the Town within the planning period of this report. Projected water demand in Westminster is estimated to remain well within the "Reserve Capacity" amount of the IMA by the end of the planning period. The Town should continue to own and protect the potential municipal water supply well site for future water supply needs beyond the planning period of this report.

Thank you for the opportunity to comment. If you have any questions, you can contact me at 617-626-1012 or Michele Drury, DCR Office of Water Resources, at 617-626-1366.

Sincerely,

Kathleen M. Baskin, P.E.  
Executive Director

cc: Water Resources Commission

### **4.3 Nashua River Watershed Association**

12/19/2006

Secretary Robert W. Golledge, Jr.  
EOEA, Attn: MEPA Office  
Nicholas Zavolas, EOEA No, 13919  
100 Cambridge Street, Suite 900  
Boston MA 02114

Dear Secretary Golledge:

The Nashua River Watershed Association would like to offer the following comments on the Draft Comprehensive Wastewater Management Plan (CWMP) for the Town of Westminster and Environmental Notification Form (ENF).

The Association supports the stated goal of the Plan to seek to protect environmental resources and minimize impacts to the Nashua River Basin while supporting planning efforts within Westminster to maintain its rural character, preserve its agricultural heritage and open spaces assets, and limit sprawled growth.

#### Interbasin Water Transfer

We have reviewed the document and do not believe sufficient information has been provided to warrant a waiver from review by the Water Resources Commission (WRC) under the Interbasin Transfer Act. Based on the information provided, the regional environmental impacts and risks associated with the transfer of 80,000 gpd from the Chicopee sub basin to the Nashua Basin appear to outweigh the potential benefits to Westminster.

The WRC has reviewed the Draft CWMP and determined that the proposed plan does not trigger the Interbasin Transfer Act, and that “any wastewater flow increase caused by this phase of the project (is considered) to be a secondary transfer.” Refer to Section 4.2 of the Final CWMP.

#### Water Supply

*It is our understanding that based on future water use projections the Town may exceed the permitted daily water supply limit with the City of Fitchburg and the capacity of the pumping station. The Intermunicipal Agreement with Fitchburg would need to be revised if the supply limit is exceeded. The EIR needs to address possible impacts to the Fitchburg water supply system from any increase in the ITA limit. According to information provided, the agreement allows Westminster to increase permitted maximum daily flow up to 1.5 mgd in the future. This is a water supply increase of almost 75% more from the current permitted maximum flow (0.87 mgd).*

Section 2.2.2 of the Final CWMP recommends that the Fitchburg regional water treatment facility be the preferred water supply option for the Town within the planning period of this report.

The current IMA includes provisions for increased water supply that allows Westminster the ability to revise the agreement when the supply is needed. The IMA allows Westminster to initially obtain a maximum daily flow up to 870,000 gpd (0.87 mgd) as “Committed Capacity.” The IMA provides Westminster for the right to a maximum daily flow up to 1.5 mgd in the future as “Reserve Capacity.” Additional supply above this amount is referred to as “Excess Capacity” and is available to other communities besides Westminster. Projected water demand in Westminster is estimated to remain well within the “Reserve Capacity” amount of the IMA by the end of the planning period.

Planning and design of the Fitchburg water system and the regional treatment facility included provisions for providing future water supply to Westminster up to 1.5 mgd and the possibility for even more supply, referred to as “Excess Capacity.” The facility also has the potential for a future capacity expansion of another 3 mgd, according to Fitchburg. Fitchburg has indicated that there are no anticipated impacts to the water supply system if Westminster elects to increase the ITA capacity amount. In addition, Fitchburg has recently completed the Falulah Water Filtration Facility, which greatly reduces the volume of water supply required for Fitchburg from the regional facility that serves Westminster.

The Westminster Hager Park Pump Station will likely require an upgrade to meet maximum daily demand within the planning period. The Town will address this infrastructure need according to the recommendation in the Draft CWMP.

*We are concerned with the proposed Option #1, which recommends a new public water supply well, located within the Flag Brook sub basin (highly stressed) in the vicinity of Honey Bee Lane. Cumulative impacts from increased water withdrawals pose a risk to the hydrology of this sub basin. We recommend that the EIR include an evaluation quantifying the potential environmental and hydrologic impacts of developing a well in the Flag Brook sub basin. Impacts to aquatic life from low flows and variable flows in surface waters should be evaluated.*

The Draft CWMP summarized the likely permitting and infrastructure requirements in order to install a new municipal water supply well at the Honey Bee Lane site and acknowledged that it would be a significant task compared with increasing the IMA with Fitchburg. Consequently, Section 2.2.2 of the Final CWMP recommends that the Fitchburg regional treatment facility be the preferred water supply option for the Town within the planning period of this report. The Town should continue to own and protect the potential municipal water supply well site for future water supply needs beyond the planning period of this report.

If the Town chooses to pursue a municipal well at this site under a future plan, a detailed analysis of the potential environmental and hydrologic impacts will be prepared.

*We fully support the Plan's recommendation that the Town continue to enhance its water conservation programs to involve all residents, including those with private wells in order to preserve the Town's supply and reduce impacts to stressed basins in the Nashua River Watershed, We encourage the Town to address water conservation through:*

*Public education  
Leak detection  
Metering/maintenance  
Rates/pricing  
Residential water use strategies  
Public sector water use strategies  
Industrial and commercial water use strategies and  
Water supply management*

The Final CWMP further expands upon the water demand management and water conservation recommendations provided in the Draft CWMP. These recommendations are summarized in Section 2.2.3 of the Final CWMP and are mainly based on the updated 2006 *Water Conservation Standards*.

#### Wastewater

*The Association supports the principals outlined in EPA's January 2005 document "Decentralized Wastewater Treatment Systems: A Program Strategy". We encourage the adoption of practices that support EPA's principal that: "Integrated wastewater facility planning and management of water resources on a watershed level promotes sound and sustainable communities. The role of properly sited, designed, installed and managed decentralized systems that provide for recycling and reuse of treated wastewater for groundwater recharge, replenishment of aquifers and protection of groundwater and surface water, should be considered in planning".*

The Westminster DPW, Planning Board, and Board of Health are currently developing options that would allow the use of decentralized wastewater treatment systems while addressing the concerns of the Board of Health, as recommended in the Draft CWMP. This initiative will support the recent implementation of cluster zoning in Town, and allow decentralized wastewater management systems to be used for new developments that maintain local groundwater recharge and protect sensitive environmental resources. This will also provide a wastewater management option other than the municipal sewer system for developments that cannot utilize individual Title 5 systems.

*Clarification is needed on the statement on page viii of the Executive Summary of the Plan regarding planned sewer extensions not included in the CWMP. The paragraph reads "Average daily wastewater flow in the Town sewer system was estimated in 2005 to be approximately 164,700 gallons per day including infiltration and inflow with the potential to reach approximately 330,000 gpd in the future from previously sewered areas, current commitments, and planned sewer extensions not included in this CWMP". Additional Information is needed on any planned sewer extensions not included in the CWMP.*

This statement on Page viii of the Executive Summary of the Draft CWMP is based on the detailed analysis of wastewater flow provided in Section 8.4.1 of the Draft CWMP. Table 8.5 in that section summarizes each component that makes up the various contributors of flow.

“Future Average Daily Wastewater Flow (2005)” consists of flow from unconnected properties within previously sewered areas of the Town, and is estimated to be 99,000 gpd. This estimate includes a

current commitment by the Town to allow additional wastewater flow from the Simplex Time Recorder Co.

The planned sewer extensions not included in the Draft CWMP are developments that were proposed or already under construction during the preparation of the Draft CWMP that would be connecting to the sewer system. Identified in Table 8.5 of the Draft CWMP as “Future Development/Sewer Extensions,” they are the Village Inn Road Extension, Mountain View Estates, the Adams Street and Main Street development, and 69 West Main Street.

The Village Inn Road Extension is a planned, permitted sewer extension to provide sewer to a hotel, gas station, and a small commercial building on Village Inn Road. Fitchburg is under agreement to construct this extension. Mountain View Estates is an approved Chapter 40B development off of East Road that elected to extend the municipal sewer system. The Adams Street and Main Street development is a planned Chapter 40B development in Town Center, which is already a sewered area. The 69 West Main Street site is a parcel owned by the Town and planned for future affordable housing. It is located near Town Center, in a currently sewered area.

This “Future Development/Sewer Extension” category was not a recommendation of the Draft CWMP, but it was necessary to include the estimated sewer flow from this category in the overall plan so that the recommended sewer system capacity upgrades (Phase A) adequately accommodated this flow.

*The CWMP recommends extending sewers to targeted areas adding 10.6 miles to the existing 17 miles. Expansion of the municipal sewer system is recommended for nine (9) areas; six (6) were classified as having a high priority. Densely developed residential and industrial areas located near the Town's critical surface water resources have been targeted for improved wastewater management. We recommend that the option of decentralized subsurface disposal systems be thoroughly evaluated in areas where site conditions limit environmental impacts to groundwater.*

The recommended sewer expansion plan is based on a wastewater needs analysis (Chapter 4 of the Draft CWMP) that identified areas of Westminster where conditions significantly limit the use of conventional on-site systems and Title 5 management of systems causes one or more of the following cumulative impacts: risks to public health, risks to nearby resources, and significant financial burden for property owners. The plan is targeted to these well defined areas. The wastewater alternatives analysis (Chapter 7 of the Draft CWMP) identified that Title 5 wastewater management is generally suitable outside of these areas under traditional zoning for the planning period of this report and that it meets the Town’s goals.

Therefore, a growth management option is recommended in order to prevent expansion of the sewer system beyond the existing and proposed sewer areas. This will eliminate secondary growth impacts and preserve the sewer system capacity for areas with current needs.

Section 7.8 of the Draft CWMP provides a detailed analysis of cluster (decentralized) wastewater management systems for use in the wastewater needs areas identified in that report. These systems were not suitable for use in those areas for obvious reasons (mainly lack of a suitable disposal site or proximity to drinking water supplies and environmental resources). However, cluster systems are certainly viable and a recommendation for future development such as Chapter 40B housing or cluster development where Title 5 management is not feasible due to housing layout or reduced lot size. Cluster systems are far easier to implement for new development than for existing, older development.

*We support the recommendation in the CWMP that the Board of Health regulations be modified to allow the use of cluster wastewater management systems as an option for proposed housing complexes and cluster developments instead of leaving sewer as the only alternative. We recommend that this option be given a high priority in the Plan.*

The Westminster DPW, Planning Board, and Board of Health are currently developing options that would allow the use of decentralized wastewater treatment systems while addressing the concerns of the Board of Health, as recommended in the Draft CWMP.

*We recommend that an EIR provide information on future increases pollutant loading to the North Nashua River if Westminster revises the Intermunicipal Agreement with the City of Fitchburg to increase the allowable wastewater discharge to the City for treatment.*

The Draft CWMP provided an analysis of pollutant load removal in Section 8.6.1. The pollutant load removal would occur within the phased sewer areas in the Nashua River Basin, which is a benefit to the environment. However, the nutrients and suspended solids that are reduced within those areas of Westminster would ultimately be transported to the East Fitchburg Wastewater Treatment Facility, which discharges to the North Nashua River. The pollutant loads in the wastewater would be reduced or removed by the wastewater treatment processes in the facility prior to discharge to the river.

Based on the Draft CWMP analysis, the Phase 1 through 4 sewer projects would reduce nitrogen loads to the project areas by approximately 6,400 pounds and phosphorous loads by approximately 1,900 pounds annually within the planning period. Similarly, the Phase 1 through 4 sewer projects are expected to remove total suspended solids loads from wastewater effluent by over 54,000 pounds annually. For the Phase 5 sewer project, average nutrient removal within the planning period is estimated to be approximately 3,500 pounds and 1,100 pounds annually for nitrogen and phosphorous, respectively. Total suspended solids removal within the planning period is estimated to be approximately 30,200 pounds annually. This yields a total removal within the planning period of 9,900 pounds of nitrogen, 3,000 pounds of phosphorous, and 84,200 pounds of total suspended solids for all phases of sewer expansion.

Under the recommended plan, the wastewater containing these pollutant loads would be transported to the East Fitchburg Wastewater Treatment Facility for treatment and disposal. This facility is permitted to discharge to the North Nashua River under the National Pollutant Discharge Elimination System (NPDES). The permit has discharge limitations for various effluent characteristics that cannot be exceeded without penalty. These characteristics include ammonia nitrogen, phosphorous, lead, copper, total suspended solids, and bacteria. The capacity of the East Fitchburg Wastewater Treatment Facility is 12.4 mgd. Under the recommended plan, Westminster proposes to increase wastewater flow to this facility by approximately 400,000 gpd, or 0.4 mgd over a 20-year planning period. This constitutes approximately 3-percent of the overall capacity of the facility.

S E A contacted the Fitchburg wastewater treatment facility operator to discuss potential impacts to the facility from the CWMP recommendations. The operator indicated that the plan would not impact normal operation of the facility and that the facility has adequate capacity to accommodate the additional wastewater flow. The operator also indicated that Fitchburg is constructing several improvements to the facility to improve performance. Therefore, no increases to pollutant loading to the North Nashua River are anticipated in the future per the NPDES permit effluent limitations and treatment facility capacity. Also, it is expected that the NPDES permit may require further pollutant reductions in the future, particularly total phosphorous.

The permit, including the discharge limitations can be viewed on the EPA web site at the following internet address: <http://www.epa.gov/NE/npdes/permits/eastfitchburgpermit.pdf>

*To address the goal of the CWMP to limit sprawled growth, we support the recommendation that an administrative management plan be developed to prevent sewer expansions to areas outside of those*

*contained in the Plan. To understand secondary impacts associated with sewer expansion, the EIR should contain information on potential impacts if expansion does occur outside of the areas contained in the Plan.*

The proposed Sewer District By-Law will establish a “sewer district” that consists of areas already sewered and the phased sewer expansion areas recommended within the CWMP. Within the planning period of this report, it is recommended that no sewer expansions are allowed outside this sewer district.

The Draft CWMP identified that there are many large parcels and undeveloped areas outside of the proposed sewer district. It was recognized that significant secondary growth could occur in Westminister from sewer expansion to these areas. Therefore, an administrative management plan is critical for the Town to manage resources and prevent sprawl. Refer to Section 2.1.8 of the Final CWMP for more detail regarding proposed growth management and an analysis of potential growth impacts.

*We appreciate the opportunity to provide comments on the Draft Westminister CWMP and Expanded ENF and anticipate reviewing the EIR when it is submitted.*

*Sincerely,*

*Kathryn Nelson, Water Monitoring Coordinator  
Nashua River Watershed Association*

*cc Michael Cunningham, SEA Consultants, Inc.*

#### **4.4 MA Department of Environmental Protection**

*December 22, 2006*

*Secretary Robert W. Gollidge, Jr.  
Executive Office of Environmental Affairs  
100 Cambridge Street, 9th Floor  
Boston, MA 02114*

*Attention: MEPA Unit -Nicholas Zavolas*

*Re: Expanded Environmental Notification Form (ENF)  
Draft Comprehensive Wastewater Management Plan  
Westminister  
EOEA# 13919*

*Dear Secretary Gollidge,*

*The Department of Environmental Protection's Central Regional Office has reviewed the Expanded ENF and Draft Comprehensive Wastewater Management Plan (CWMP) for the Town of Westminister and submits the following comments:*

*The plan proposes a \$14.6M sewer expansion program to construct 10.6 miles of new sewers in four phases by 2026. The proposed sewer expansion will increase the average daily wastewater flow from 330,000 (2005) to 541,000 gallons per day (gpd) by the end of the 20-year planning period.*

*The Town of Westminister currently operates 17 miles of sewers (all installed after 1980) consisting of 12.9 miles of gravity sewer ranging in size from 8 to 18 inches, six pump stations, and 2.5 miles of force main ranging in size from 3 to 6 inches, and 1.6 miles of low-pressure sewer ranging in size from 1.25 to 3 inches. The CWMP proposes to add 3.2 miles of new gravity sewer, 0.6 miles of force main, 6.7 miles of low-pressure sewer and 4 pump stations.*

*All wastewater would be conveyed to the Fitchburg municipal sewer system and ultimately to the City's Easterly Wastewater Treatment Facility (WWTF) for treatment and disposal. The Town obtains its water supply and sewer services through inter-municipal agreements with City of Fitchburg. The Town must modify its agreements for sewer service to allow for the additional flows from the expanded sewer service area.*

Planned revisions to the current wastewater Intermunicipal Agreement with Fitchburg are detailed in Section 2.1.9 of the Final CWMP.

*The CWMP study area contains a total of 25 square miles of the Town's 37.3 square miles excluding the existing sewer area, large wetlands, lands owned by Westminster Conservation Commission, and MassDCR protected forest and park land. The Wastewater Management Needs Analysis identified nine "Needs" areas, 13 suitable areas (zoned large lots) for on-site wastewater management, and three low-priority "Needs" areas preferred for continuous use of on-site wastewater management throughout the 20-year planning period.*

*Two of the original nine Needs areas subsequently dropped out, based on new information (conservation land, sewer, area modification), which left Leino Park, Lakewood Park, Edro Isle, Lake Drive East, East Wyman, Bakers Grove, and Bacon Street as high-priority sewer areas. Dawley Road area and a municipal housing parcel on Main Street were subsequently added as high-priority sewer areas. The nine recommended sewer areas are either densely developed, located near a surface water body with rapid percolation sandy soil, or both.*

*The CWMP notes that both the existing Whitman River pump station (rated at 500 gpm) and Narrows Road pump station (rated at 220 gpm) are operating at or near capacity. They need to be upgraded and their capacity needs to be increased before these pump stations can handle future flows.*

*Also, approximately 3,600 linear feet (lf) of existing sewer interceptor (1,200 lf of 8-inch and 2,400 lf of 12-inch) downstream in Fitchburg have limited available capacity (currently 760 gpm) to accommodate the proposed sewer expansion, and will also require upgrades. The CWMP estimates that the future peak hourly flow will be 1,480 gpm by 2026, and the needed sewer improvements will cost \$3.27M.*

*Fitchburg is presently proceeding with separation of its combined sewers to remove infiltration and inflow (I/I) and eliminate or reduce combined sewer overflows during storm events. The City's aging Easterly WWTF is in need of an upgrade to correct ongoing National Pollution Discharge Elimination System (NPDES) discharge permit violations.*

*The CWMP mentioned that in 1998 four lakes in Westminster (Greenwood Pond, Minott Pond South, Minott Pond and Wrights Reservoir) were placed on the state's 303(d) list of impaired waterways. It should be noted that Partridge Pond is also on the 2006 draft 303(d) list as an impaired water body.*

*Partridge Pond is located between two study areas, Lake Drive East and Lake Drive West. The Town proposes to sewer the Lake Drive East area in Phase II (2010-2012), but intends to continue on-site wastewater management in Lake Drive West area for the next 20 years. The final CWMP should discuss the impaired surface water body and whether or not the new identity may have any effect on the Town's recommended wastewater management plan.*

Section 2.1.5 of the Final CWMP provides detail regarding Partridge Pond's status as an impaired water body and how it relates to the Town's wastewater needs analysis and recommended plan.

*The proposed sewer service areas would serve 481 developed residential lots, of which 342 would be equipped with individual grinder pumps and connected to 35,500 lf (6.7 miles) of low-pressure sewers (LPS). In accordance with 314 CMR 7.00, grinder pumps serving individual residences are exempted from obtaining a sewer connection permit from the Department unless these will be owned and*

*maintained by the owner of the sewer system (i.e., Town of Westminster). It is important that as part of the final plan the Town develop an effective management program for the operation and maintenance of the proposed low-pressure sewer.*

The operation and maintenance program for the proposed low pressure sewer system is summarized in Section 2.1.9 of the Final CWMP, as directed by the Secretary's Certificate on the Draft CWMP. The relevant narrative is located at the end of that section.

*The final CWMP should discuss the factors that led to choosing low-pressure sewers instead of a conventional pumping system and should justify the recommended plan. For LPS, the CWMP should identify who will own and be responsible to operate and maintain the pumps, discuss minimum design standard (alarm system, wet well storage, backup power, special provision for systems within water supply protection zone, etc.), and the Town's management plan proposals (e.g., public education, inspections, replacement units, emergency responses/repairs, compliance and enforcement).*

Section 8.5 of the Draft CWMP summarizes the conceptual designs for the sewer expansion areas within the phased expansion plan. Section 2.1.2 of the Final CWMP provides more detail regarding the conceptual designs and also provides design methodology. Gravity sewer systems are the preferred sewer type, as operation and maintenance requirements are minimal. Sewer pump stations are less desirable, but necessary given the topography of this region. The existing Town sewer system consists of mainly gravity sewer. Since the existing system is primarily limited to the Town Center area, there are only seven municipal sewer pump stations. The existing system also contains a small amount of low pressure sewer.

Low pressure sewer is proposed for the following sewer expansion areas: the Leino Park Area, the Lakewood Park Area, the Lake Drive East Area, and the Edro Isle Area. There are also small portions of low pressure sewer that serve several homes within the Dawley Road Area, the Bakers Grove Area, and the East Wyman Area.

Challenging site conditions are the reasons that low pressure sewer is proposed for so many areas. These areas are small and dense, but topography varies widely within them. There is not much relief from adjacent surface waters in the low-lying portions of the areas; therefore, groundwater is very shallow. Several small pump stations would be required within each area and excavation for gravity sewers would be well below the groundwater table. All of these areas are situated at a lower elevation than the existing sewer system, so another pump station would be required to discharge from the areas to the sewer system. Many of the streets are unpaved and very narrow. The soil conditions in the areas consist of sand and gravel and would not be conducive to maintaining trench walls during deep excavations. In the Lake Drive East Area, the existing homes adjacent to the pond are well below street grade and would require pumping to discharge to a gravity sewer. Many of the pond-front homes in the other areas are below street grade also. These areas are quite challenging for sewer installation. Low pressure sewers have already been used in Town to serve areas adjacent to Wyman Pond since conventional methods were not practical.

The following pictures have been provided to assist in demonstrating the challenging conditions of these areas; however, a site visit is necessary to fully appreciate the limitations:



Lake Drive East Area – Looking from the roadway towards Partridge Pond



Leino Park Area – from roadway bridge looking across Wyman Pond to Old Oak Avenue

The existing grinder pumps in Town are owned and maintained by the individual property owners. The Town prefers that proposed grinder pumps also be owned and maintained by the individual property owners. A summary of general design standards and the operation and maintenance program for the proposed grinder pumps is provided in Section 2.1.9 of the Final CWMP, as directed by the Secretary's Certificate on the Draft CWMP. The relevant narrative is located at the end of that section.

*If each individual property is to be responsible for operating and maintaining a grinder pump, this arrangement shall be specified in the homeowners' deeds. The Town should inspect the pumps at least once a year and make sure the residents understand their responsibilities.*

Since the Town prefers that proposed grinder pumps be owned and maintained by the individual property owners, the Town will require that homeowners seeking a connection to low pressure sewer specify the grinder pump ownership and maintenance arrangement in their deeds prior to connecting. Upon completion of the low pressure sewer construction in the phased sewer expansion plan, the Town will consider a regular inspection program. The program will likely be conducted by a certified contractor and the cost may be assessed directly to the users. As part of the sewer expansion plan, the project design consultant will work with the Town to develop a manual of operational and maintenance requirements for the grinder pumps to provide to each owner. The Town will periodically include maintenance reminders with the sewer bills to encourage pump maintenance.

*The Town has imposed a sewer moratorium, which the CWMP recommends be continued until it has evaluated alternatives for wastewater management. Page 31 of the CWMP also discusses areas in need of odor control measures.*

*Chapter 3 of the CWMP discusses the existing water supply system. A map should be added showing all surface water and groundwater supply sources in Town. We also suggest that all major surface water bodies shown on CWMP maps be clearly labeled for ease in reference.*

Figure 2-2 of the Final CWMP displays surface and groundwater supply sources in Westminster. It also labels major surface water bodies in Town for reference. Section 2.2.1 of the Final CWMP describes the water supply sources displayed on the figure.

*Table 8.5 lists estimated wastewater flows (existing and future, with and without sewer expansion) for each phase of the proposed sewer expansion. The final CWMP should provide details of the estimated flows for each of the nine areas proposed for sewer expansion (seven "Needs" areas plus the Dawley Road area and Main Street municipal parcel).*

Table 8.5 of the Draft CWMP provides a detailed, comprehensive summary of estimated existing and future sewer flow in Westminster. The seven needs areas are contained within Phases 1 through 4 listed in the table. The Dawley Road area was included in Phase 1 of the plan based on priority (see Table 8.1 of the Draft CWMP). The Meetinghouse Road municipal parcel was included in Phase 5 of the plan (see Table 8.1). The 69 West Main Street parcel is also Town owned, but already in the existing sewer area. This parcel is listed separately in Table 8.5 of the Draft CWMP under the "Future Development" category.

Section 2.1.7 of the Final CWMP provides updated estimates of future sewer flow in Westminster taking into account I/I reduction and water conservation, as directed by the Secretary's Certificate on the Draft CWMP. Tables 2.2 and 2.4 of the Final CWMP are updated versions of Tables 8.3 and 8.5 of the Draft CWMP and are described in that section.

*MassDEP appreciates the opportunity to comment on the Draft CWMP for Westminster. If you have any questions regarding these comments, please contact me at (508) 767-2802.*

Sincerely,

Paul Anderson  
Deputy Regional Director  
Bureau of Resource Protection

cc: Martin Suuberg, Regional Director, CERO  
Commissioner's Office, MassDEP, Boston

## **4.5 Montachusett Regional Planning Commission**

December 22, 2006

**VIA FAX**  
(617)626-1181

Mr. Steven Pritchard  
Executive Office of Environmental Affairs  
100 Cambridge Street  
Suite 900  
Boston, MA 02114

ATTENTION: MEPA

Dear Mr. Pritchard:

*At the Montachusett Regional Planning Commission Meeting held on December 19, 2006, members discussed the Expanded Environmental Notification Form for the Draft Comprehensive Wastewater Management Plan for the Town of Westminster.*

*The MRPC voted unanimously that this Plan was in conformity with its regional goals of regional growth, environmental quality, individual opportunity and welfare, housing and economic development.*

Sincerely,

Laila Michaud  
Executive Director

C: Alicia Altieri, Westminster Town Planner

The Town appreciates the support of the Montachusett Regional Planning Commission.

## **4.6 Natural Heritage and Endangered Species Program**

MEPA provided an email containing comments from the Natural Heritage and Endangered Species Program (NHESP) on the Draft CWMP. The comments are reproduced as follows:

*We have reviewed the Westminster CWMP and offer the following comments. A state-listed aquatic plant (*Potamogeton confervoides*) occurs in southwestern Westminster in the Upper Reservoir and Mirror pond area. This rare plant occurrence is in the immediate vicinity of "WW Alternative Sites" A-23, A-24, A-25, A-26, A-27, and A-31 (ENF, Figure 7.3). The habitat requirements of this endangered plant should be taken into account in evaluating alternatives for wastewater treatment or water withdrawal.*

Section 2.1.3.1 of the Final CWMP addresses the concerns identified by the NHESP.

## Acknowledgements

The project team at S E A Consultants Inc. wishes to thank the Town of Westminster CWMP Citizens Advisory Committee for their hard work, knowledge, analysis, and insight on all the issues surrounding the management of water, wastewater, and stormwater in Westminster.

Marie Auger  
Daniel Ervin  
Edward Simoncini

Jeff Dauphanais  
William Foster

Lorraine Emerson  
Wyn Paiste

The project team also wishes to thank the unofficial Technical Advisory Group who provided valuable reviews of interim reports.

Alicia Altieri  
Elizabeth Swedberg

Preston Baker  
Joshua Hall

William Wintturi

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Appendix A  
*Final CWMP/EIR Distribution List*

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Appendix B

*MEPA Certificate on the Draft CWMP*

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Appendix C

*Letter to the City of Fitchburg regarding the IMA*