



Town of Uxbridge – Comprehensive Wastewater Management Planning

Board of Selectmen Update No. 4

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Agenda

- Makeup of CWMP
- Needs Assessment (Phase I) Conclusions
- Alternatives Analysis (Phase II) Summary
- Recommended Plan (Phase III) Contents
- Progress Since Last Update
- Public Involvement / Public Participation



Comprehensive Wastewater Management Plan

Phase I – Needs Assessment

Phase II – Alternatives Evaluation

Phase III – Recommended Plan



Comprehensive Wastewater Management Plan

Phase I – Needs Assessment - This is the first phase of Comprehensive Wastewater Management Planning and it involves the initial assessment of the wastewater needs for the Town of Uxbridge.

Uxbridge's wastewater needs will be defined by identifying the Town goals for wastewater management, evaluating the existing conditions, reviewing regulatory requirements, developing projections of the future conditions, and then comparing these goals and conditions to the wastewater limitations in the Town.

Phase II – Alternatives Evaluation

Phase III – Recommended Plan



Comprehensive Wastewater Management Plan

Phase I – Needs Assessment

Phase II – Alternatives Evaluation - Once the needs are developed, alternative solutions will be identified. These solutions are then summarized and screened to retain only the most feasible ones. Feasible solutions (technical as well as management) are then grouped into alternative scenarios for detailed evaluation.

Phase III – Recommended Plan



Comprehensive Wastewater Management Plan

Phase I – Needs Assessment

Phase II – Alternatives Evaluation

Phase III – Recommended Plan – this will identify all recommendations from the Plan including what is required at the wastewater treatment facility to meet the new permit.



Needs Assessment

Conclusions:

- Analysis of the 3 study areas did not identify any concentrated areas where on-site wastewater disposal appears problematic. Based on the available data, no need for major sewer extensions in any of the Study Areas was found.
- The Uxbridge WWTF needs to be upgraded in order to provide the degree of treatment required by its new discharge permit.
- The Uxbridge WWTF is over 30 years and has not had any major upgrades since its construction. Much of the mechanical equipment, electrical equipment, instrumentation and control systems have reached the end of their useful life and need to be replaced for continued long-term reliable and cost-efficient service.



Alternative Analysis

- Available on the CWMP web site (Uxbridge DPW)

Chapter	Purpose
1. Introduction	General introductory information about the CWMP Project and Alternative Screening Analysis Report
2. Screening Approach and Criteria	Describes approach and criteria used for screening alternative treatment technologies and solutions
3. Environmental and Sustainability Considerations	Outlines environmental and sustainability considerations
4. Individual On-Site System and Cluster System Alternatives	Identifies and screens individual on-site system and cluster system alternatives
5. Alternatives for Centralized and Satellite Wastewater Treatment Facilities and Sites	Identifies and screens alternatives for centralized and satellite WW treatment technologies and sites
6. Treated Water Recharge Technologies and Alternative Sites	Identifies and screens treated water recharge technologies
7. Collection System Technologies	Identifies and screens collection system technologies
8. Flow and Loading Reduction Alternatives	Presents flow and loading reduction opportunities
9. Alternative Plan Identification and Future Evaluations	Identifies the alternatives recommended for further evaluation and outlines next steps to evaluate solutions for Town's WW needs



Collection System	On-Site & Cluster Systems	Centralized Treatment (Nutrient Removal Portion Only)	Treated Recharge
Gravity Sewers	Title 5	Multiple-stage processes for nutrient removal	Sand Infiltration Beds
Low Pressure Sewers	Recirculating Sand Filters	Multiple phase/cyclical aeration	Subsurface Infiltration
Septic Tank Effluent Sewers	Bioclere®	Membrane bioreactors	Spray Irrigation
Vacuum Sewers	Waterloo Biofilter®	Oxidation ditches	Well Injection
Combination	AdvanTex®	SBRs	Wick Well
	NITREX®	Multiple Sludge Processes	Drip Irrigation
	SeptiTech®	RBCs	Surface Water Discharge
	Singulair®	Denitrifying Filters	
	Orenco System Sand Filters	Biological Aerated Filters	
	JET Aerobic	Amphidrome System	
	Tight Tanks	IFAS	
	Waterless Toilets		

Alternatives Screening Analysis

Alternative Plan Identification and Future Evaluations Summary:

- No Action Alternative
- Alternatives Evaluated for Potential Future Needs (no current need identified)
- Alternatives Recommended for Further Evaluation



No Action Alternative

- Areas of the Town Which Utilize On-Site Wastewater Disposal
 - Continue to utilize on-site wastewater disposal
 - Feasible and cost-effective option
- Areas of the Town Serviced by Centralized Treatment
 - Cost of operating and maintaining existing equipment will rise as equipment continues to become obsolete and replacement parts become more difficult to obtain
 - Frequency of equipment failures will increase
 - Permit non-compliance causing degradation of water quality conditions in Blackstone river and exposing the Town to legal enforcement by MassDEP, USEPA and environmental groups.



Alternative Analysis

- Findings

Chapter	Approach
Individual On-Site System and Cluster System Alternatives	Alternatives Evaluated for Potential Future Need
Alternatives for Satellite Wastewater Treatment Facilities and Sites	Alternatives Evaluated for Potential Future Need
Treated Water Recharge Technologies and Alternative Sites	Alternatives Evaluated for Potential Future Need
Collection System Technologies	Alternatives Evaluated for Potential Future Need
Environmental and Sustainability Considerations	Technologies Recommended for Further Evaluation
Alternatives for Centralized Wastewater Treatment Facilities and Sites	Technologies Recommended for Further Evaluation
Flow and Loading Reduction Alternatives	Technologies Recommended for Further Evaluations



Alternatives Evaluated for Potential Future Need

- Technologies to be considered if a need is identified in the future due to remote concentrated development or another future issue.

Process	Options
Individual On Site System and Cluster System Alternatives	<ul style="list-style-type: none"> Conventional Title 5 septic systems I/A systems for size
Treated Water Recharge Technologies	<ul style="list-style-type: none"> Sand infiltration beds Subsurface leaching Spray irrigation Drip irrigation
Collection System Technologies	<ul style="list-style-type: none"> Gravity sewers and lift stations Pressure sewers with grinder pumps Vacuum sewers
Satellite Treatment Technologies	<ul style="list-style-type: none"> Suspended Growth Biological Treatment Attached Growth (Fixed Film) Biological Treatment Plant Based Wastewater Treatment Systems



Alternative Analysis

- Findings

Chapter	Approach
Individual On-Site System and Cluster System Alternatives	Alternatives Evaluated for Potential Future Need
Alternatives for Satellite Wastewater Treatment Facilities and Sites	Alternatives Evaluated for Potential Future Need
Treated Water Recharge Technologies and Alternative Sites	Alternatives Evaluated for Potential Future Need
Collection System Technologies	Alternatives Evaluated for Potential Future Need
Environmental and Sustainability Considerations	Technologies Recommended for Further Evaluation
Alternatives for Centralized Wastewater Treatment Facilities and Sites	Technologies Recommended for Further Evaluation
Flow and Loading Reduction Alternatives	Technologies Recommended for Further Evaluations



Environmental and Sustainability Considerations

The following are recommended for further evaluation:

- Water Conservation
- Energy Efficiency
- Energy Recovery
- Alternative Energy



Flow and Loading Reduction Alternatives

The following are recommended for further evaluation:

- Conduct further investigations on the recommendations of the I/I analysis
- Continue policies encouraging water conservation
- Proceed with Growth Neutral Controls (related to one funding option)



Centralized Treatment Alternatives Recommended for Further Evaluation

Process	Recommended Alternatives
Pump Stations	<ul style="list-style-type: none"> • Replacement of West River Pump Station
Preliminary Treatment	<ul style="list-style-type: none"> • Replacement of grinder and coarse bar screen with two fine screens and replacement of all mechanical equipment which is past its useful life
Secondary/Advanced Treatment	<ul style="list-style-type: none"> • MLE • IFAS • Biomag
Disinfection	<ul style="list-style-type: none"> • Chlorination • UV Disinfection
Post-Aeration	<ul style="list-style-type: none"> • Mechanical Post Aeration
Residuals Management	<ul style="list-style-type: none"> • Sludge thickening • Sludge dewatering
Odor Control	<ul style="list-style-type: none"> • Biofilter



Recommended Plan

- Currently under development
- Includes
 - Results of draft option development
 - Capital and O&M Costs
 - Financing Plan
 - Funding Options
 - Project schedule



Progress Since Last Update

- We have been and will continue to meet on an approximately monthly basis with the Department of Public Works and CWMP Advisory Group
- In December, we received comments from Mass DEP on the Phase I draft report
- Completed draft of Phase II Alternatives Evaluation; submitted to DEP
- Phase III of the CWMP is well underway



Public Involvement/ Public Participation

Event	Date
Board of Selectmen Meeting	March 24, 2014
Planning Board	June 11, 2014
Board of Selectmen Meeting	July 28, 2014
Board of Selectman Meeting (Phase I presentation)	November 10, 2014
Board of Selectman Meeting (Phase II presentation)	January 12, 2015
Board of Selectman Meeting	TBD

- The CWMP Advisory Group will continue the project
- Approval of the CWMP is critical to remain on schedule – public notification of this process is critical
- Web Site



Project Web Site

Uxbridge MASSACHUSETTS

HOME ABOUT UXBRIDGE DEPARTMENTS BOARDS & COMMITTEES FOR BUSINESS

Project Reference Documents
[Printer-Friendly Version](#)

TOWN RESOURCES

- Phone Directory
- Reports & Budgets
- Charter & Bylaws
- Town Meeting
- Town Calendar
- Minutes & Agendas
- Local Events

QUICK LINKS

- Donations
- Library
- Public Schools
- GIS Maps
- Cable Access
- Subscribe to E-Alerts
- Employment & Volunteer
- Zoning Map

Permit Documents

Name	Description
Consent Order	Consented to Interim discharge limits and reporting document
Final Discharge Permit	USEPA Final Discharge permit

Presentations

Title	Description
BOS Preliminary Study	Presentation to BOS outlining findings from Preliminary Study
BOS Update 2014-03-24	Presentation to BOS on Status of planning effort
Planning Board Update 2014-06-11	Presentation to Planning Board on Status of planning effort
BOS Update 2014-07-28	Presentation to BOS on Status of planning effort

CWMP Chapters

Name	Description
Needs Assessment	Draft - Uxbridge Needs Assessment Completed

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[Website Disclaimer](#)
[Virtual Towns & Schools Website](#)

http://www.uxbridge-ma.gov/Pages/UxbridgeMA_DPW/UxbridgeCWMP/ProjDocuments





www.ghd.com