



Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

Department of Environmental Protection

One Winter Street Boston, MA 02108 • 617-292-5500

DEVAL L. PATRICK
Governor

RICHARD K. SULLIVAN JR.
Secretary

TIMOTHY P. MURRAY
Lieutenant Governor

KENNETH L. KIMMELL
Commissioner

September 12, 2012

Jill R. Goldsmith, Town Manager
Town of Chatham
549 Main Street,
Chatham, MA 02633

Re: CWSRF – 3245

Dear Ms. Goldsmith:

I am pleased to inform you that MassDEP Municipal Services, in consultation with the Department of Housing and Community Development, has completed its review of the supplemental Clean Water State Revolving Fund Loan Application Addendum that Chatham submitted in support of the referenced CWSRF-financed project. The supplemental application was required to address each of the following five bold font items, pursuant to provisions of the statute. Determinations for each criterion are explained.

1. **CWMP:** Chatham has completed a Comprehensive Wastewater Management Plan (CWMP), with a specific focus on nutrient management. The CWMP has effectively and satisfactorily documented the flow regime that could be generated within the present zoning and wastewater bylaws and ordinances.
2. **Project Purpose:** Chatham has documented to program satisfaction that the project CWSRF – 3245, is intended to mitigate the impact of nutrient enrichment of the town's embayments. MassDEP concurs that 100% of the project purpose is nutrient management-related.
3. **Smart Growth Controls:** Chatham established Flow Neutral Regulations in 2005, which should limit unchecked increase in wastewater flow. Since the by-law does allow for variances on the case-specific basis, the SRF program has some concern that flow neutrality could be circumvented by the town, if variances are granted excessively, or freely. However, the Town has reported no variances issued since the by-law was approved at Town Meeting, suggesting that an appropriately high bar exists to limit the issuance of a variance.



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Clean Water State Revolving Fund Loan Application Addendum

Zero Percent Financing for Nutrient Management Projects

Applicant: Town of Chatham
Project Number: CWSRF - 3245
Project name: Collection System Improvements

Certification: To the best of my knowledge and belief the information provided on this form and the accompanying forms and attachments is true, correct and complete; and I am authorized to file this form on behalf of the applicant:

Authorized Borrower Representative (ABR): Jill R. Goldsmith, Town Manager

ABR Signature: *Jill R. Goldsmith*

ABR telephone: (908) 945-5105

ABR email address: jgoldsmith@chatham-ma.gov

Supporting Document checklist:

CWMP

- ✓ Include copy of MassDEP approval letter; or,
- ✓ Copy of the applicant's CWMP and draft and final EIR documents with a copy of the certificate for the CWMP including all attachments, e.g. comment letters issued by the Secretary of the Executive Office of Energy and Environmental Affairs;

Project Purpose: Provide a narrative explanation establishing that the project is primarily intended to remediate or prevent nutrient enrichment of surface waters or water supply sources, including:

- ✓ Specific reference to the applicant's CWMP, including page references; or,
- ✓ Specific reference to the applicant's nutrient management plan along with a copy of any such plan, and page references.
- ✓ A detailed estimate of the project flows and costs primarily intended to remediate or prevent nutrient enrichment and the project flows.

This information is available in alternate format. Call Michelle Waters-Ekanem, Diversity Director, at 617-292-5751, TDD# 1-866-539-7622 or 1-617-574-6868
MassDEP Website: www.mass.gov/dep

Printed on Recycled Paper

- ✓ A detailed estimate of the project costs not associated with remediating or preventing nutrient enrichment.
- ✓ Note: if an SRF loan has already been approved then allocate costs for the two items above based upon the loan amounts. Allocate supporting costs, e.g. engineering and contingency proportionately to the two items above.

Smart Growth Controls Provide a narrative explanation demonstrating that the applicant has established flow neutral land use controls¹ as provided in 314 CMR 44.04(3), including reference to the specific land use controls adopted to ensure such flow neutrality, and include:

- ✓ Authenticated copies of such land use controls or sewer use regulation. (this requirement applies to all users tributary to the waste water treatment plant regardless of what community the user may be located within;²)
- ✓ All pertinent maps and overlays;

Regional Water Resources Management Plan

If the applicant is subject to a regional water resources management plan, then the applicant must submit:

- ✓ A copy of such plan and a narrative explanation establishing that the applicant's project is consistent with such plan; and,
- ✓ A letter, certificate or other written determination from the regional planning agency deeming the project consistent with the regional water resources management plan; or,
- ✓ Borrower certification that it is not subject to a regional water resources management plan.

Enforcement

- ✓ Provide Borrower's statement that the applicant is not currently subject to a MassDEP enforcement order, administrative consent order or unilateral administrative order or enforcement action by the United States Environmental Protection Agency due a violation of a nutrient-related total maximum daily load standard or other nutrient based standard or otherwise subject to a state or federal court order relative to the proposed project.

Please note: Any applicant unable to address each of the highlighted elements within this addendum is, per statute, ineligible to receive a zero percent interest rate financing. Although ineligible for zero percent interest, those projects will maintain eligibility for the standard CWSRF rate of 2%.

¹ Such land use controls include lawfully adopted bylaws, ordinances, and regulations.

² In the case of a zoning or general bylaw, the submitted bylaw shall have been reviewed and approved by the Massachusetts Attorney General as required by M.G.L. c. 40, § 32, or pursuant to Chapter 831 of the Act of 1977, as amended. In the case of any other land use controls, the city or town clerk must authenticate such copies.



1 Introduction and CWMP Approvals

The Town of Chatham (Town) completed a Comprehensive Wastewater Management Planning (CWMP) Project on July 17, 2009 after receipt of the Executive Office of Energy and Environmental Affairs (EOEEA) certificate (attached in Appendix A). The Project also received a CWMP Approval letter from MassDEP on February 14, 2012 which is attached in Appendix B.

The Town applied to the State Revolving Fund (SRF) in August 2008 and was listed on the 2009 Intended Use Plan (IUP) as No. CWSRF-3245. The Town applied for a 0% loan as allowed by the 2009 Environmental Bond Bill (also known as the O'Leary Bill) but MassDEP has not been able to provide the 0% loan to date because the regulations were not in place. MassDEP has provided funding for the Collection System Project and told the Town to apply for the 0% interest rate once the regulations are finalized. The Town is now filing for that 0% interest rate with this Loan Application Addendum.

2 Project Purpose

The Collection System Improvements Project is completely intended to remediate the existing nutrient enrichment of the town's surface waters. Nitrogen Total Maximum Daily Loads (TMDLs) were established for the four estuaries that surround Chatham. The TMDLs were developed by MassDEP and approved by USEPA. They are very stringent and were incorporated into the CWMP as the overriding wastewater issue in the CWMP. The full CWMP is provided on a compact disc (CD) as attached in Appendix C along with a paper copy of the Executive Summary and additional excerpts.

Figure 1 of the Executive Summary (Appendix C) illustrates the large quantities of wastewater nitrogen (existing septic system discharges) that needs to be removed from the watersheds of the four estuaries to meet the nitrogen TMDL. Based on this stringent TMDL requirement and subsequent engineering and fiscal evaluations; the Town decided to move forward to extend sewers to large portions of the Town to collect existing wastewater (septic system) flows, treat the wastewater, including advanced treatment for nitrogen removal, and then recharge the treated water at the Wastewater Treatment Facility (WWTF) in an area that can assimilate it.

The Collection System Improvements Project is the first implementation of a multi-year plan to extend sewers to large areas of the Town to meet the nitrogen TMDLs. This Project forms the backbone of the systematic sewer extension to meet the nitrogen TMDLs. The Phase I sewer extension and WWTF Upgrade is the portion of the plan that is needed to meet the nitrogen TMDLs and provides for sewer extension to approximately two-thirds of the Town's properties. The Phase I costs are summarized on page ES-13 of the Executive Summary.

The flows that will be collected during the Phase I program are discussed on page ES-10 and are detailed on pages 2-19 through 2-23 with references to tables 2-3 through 2-9, and on pages 9-27 through 9-31 with references to tables 9-5 and 9-7. This text and associated tables are attached as excerpts in Appendix C.

The basis of the flows is detailed in the text and tables referenced above. All of the Phase I sewer extension area (approximately two-thirds of the town) was identified to meet the nitrogen TMDLs. The flows and costs shown on Table 9-7 are to meet the nitrogen TMDLs. The Collection System Improvements Project (CWSRF-3245) is part of this Phase I sewer extension.



The basis of the buildout land-use and the future wastewater flows all relate to the Flow Neutral regulation that was adopted by Town Meeting in May 2005 to prevent more wastewater flow after the sewer is installed than what was allowed before the sewer was installed. This regulation is discussed in the following section.

The SRF loan has already been approved, and all of the Collection System Improvements Project (CWSRF-3245) is for nitrogen removal.

3 Smart Growth Controls

The Town adopted (at the 2005 Annual Town Meeting) their Flow Neutral Regulation, Article II (Appendix D), which limits wastewater flows to the amount allowed under Title 5 and local Board of Health regulations as of the town meeting vote. This component has been an integral part of the CWMP to address public concerns that the expansion of the sewer would lead to "uncontrolled" growth and increased sewage flow. The goal of the regulation (passed well in advance of the CWMP approval) is to make the CWMP flow neutral; and its passage sent a clear message to the Town's residents that the CWMP is flow neutral. The flow potential that a property has before the sewer goes in is the same as the flow potential after the sewer goes in.

4 Regional Water Resources Management Plan

The Chatham CWMP was submitted to the Cape Cod Commission (CCC) as a Development of Regional Impact (DRI). As such, it was subject to detailed review and comment to determine compliance with regional water resource management plans. The DRI review determined that the CWMP was consistent with the regional plans and policies. The approval letter from CCC is attached in Appendix E.

5 Enforcement

The development of the CWMP was prompted by the issuance of an Administrative Consent Order (ACO). This ACO was not issued for a nutrient related infraction; it was issued due to lapse of time associated with renewal of an effluent discharge permit in 1987. The Town is currently in discussions with MADEP staff over the lifting of the ACO due to Chatham completing the CWMP and the initial implementation. The following table summarizes the main components of the ACO.

Type of Action	Subject	Reference Number	Section & Page	Compliance Deadline(s)
Administrative Consent Order	Lapse of time on effluent discharge permit renewal, leading to completion of CWMP and wastewater and treatment disposal needs	ACO-SE98-1002	IV, pp 4-8	Unknown at this time

The Town states clearly that "The applicant is not currently subject to a MassDEP enforcement order due to violation of a nutrient-related TMDL standard or other nutrient based standard."

Appendix D

**Article 11, Regulations of Sewer Flow
(Flow Neutral Bylaw)**

May 2005



Julie S. Smith, CMC

TOWN CLERK
549 Main Street
Chatham, Massachusetts
02633



Paula A. Tobin
A True Copy, ATTEST:
Chatham Town Clerk

TO WHOM IT MAY CONCERN:

I, Julie S. Smith, duly appointed Clerk of the Town of Chatham, hereby certify that the May 9, 2005 Annual Town Meeting adopted Article 21 follows:

Article 21 - Town of Chatham Rules and Regulations of the Sewer Department

To see if the Town will vote to amend the "Town of Chatham Rules and Regulations of the Sewer Department" adopted under Article 33 of the May 11, 2004 Annual Town Meeting, as set forth below:

Add the following:

**Article II
Regulation of Sewer Flow**

Section 1. Existing Structures.

Any structure in existence on May 10, 2005 regardless of its flow, may maintain that flow. No person shall modify an existing structure or change its use so as to increase its sewage flow. Design criteria contained in 310 CMR 15.203, and any Board of Health Regulation modifying such, shall be used to determine whether a proposed modification or change in use shall constitute an increase in sewage flow. Expansion or modification of existing structures, which may result in increased flow, shall not be allowed unless the increase is in compliance with the Board of Health's Regulations in effect on May 10, 2005, or a variance pursuant to Section 5 below is first obtained; except as currently allowed under Part #1 of the Town of Chatham "Sewer Bank" Allocation & Permit Policy for properties connected to the sewer as of May 10, 2005.

Section 2. Determination of Present Sewage Flow.

Sewage flow to the municipal sewer shall be determined using provisions set forth in 310 CMR 15.203: System Sewage Flow Design Criteria, and any local Board of Health Regulation modifying such in effect on May 10, 2005. The owner of any property shall, upon reasonable notice and request, allow an inspection of a property for a determination of flow by an agent of the Board of Health, except that in lieu of this inspection, the owner of the property may submit a floor plan with sufficient detail to account for all outside structure dimensions. This floor plan must bear the signature of approval of a Certified Septic System Inspector.

Section 3. Undeveloped Parcels.

For the purpose of determining sewer flow, any existing lot, otherwise qualified, may be permitted for that sewage flow as determined under the Board of Health's Regulations in effect on May 10, 2005 or 310 CMR 15,000 et. Seq, whichever is less.

Section 4. Rebuilding because of fire, flood, storm or other acts of nature.

A property owner may rebuild a structure destroyed by fire, flood, storm or other acts of nature as a matter of right provided that the new structure does not exceed the sewage flow of the structure being replaced.

Section 5. Variances.

In the case of unusual and substantial hardship, not the result of acts or omissions of the landowner, the Board of the Water and Sewer Commissioners, after a public hearing of which notice has been given by publication and posting for a minimum of two weeks, may grant a variance to this part of the regulation, provided that sufficient capacity exists and such relief may be granted without substantially derogating from the intent or purpose of this regulation.

The new Article II, Regulations of Sewer Flow, shall be inserted in the Table of Contents and in the text of the Rules and Regulations after Article I, Definitions. The existing Article II and all following Articles shall be renumbered accordingly.

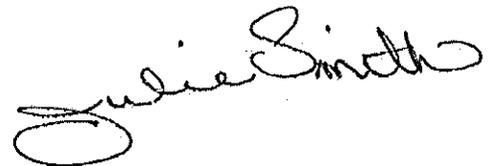
(Water and Sewer Commissioners)

MOTION: Sean Summers, Selectman, moved that the Town vote to amend the "Town of Chatham Rules and Regulations of the Sewer Department" adopted under Article 33 of the May 11, 2004 Annual Town Meeting as set forth above.

Board of Selectmen Recommendation: Approve 5-0-0

Finance Committee Recommendation: Against 2-3-1

VOTE: (After motion and successful vote to move the question): Voice. "So voted by a substantial majority, declared the Moderator."





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Zero Percent Financing for Nutrient Management Projects

Applicant: Town of Chatham
Project Number: CWSRF - 3245
Project name: Collection System Improvements

Certification: To the best of my knowledge and belief the information provided on this form and the accompanying forms and attachments is true, correct and complete; and I am authorized to file this form on behalf of the applicant:

Authorized Borrower Representative (ABR): Jill R. Goldsmith, Town Manager

ABR Signature: *Jill R. Goldsmith*

ABR telephone: (908) 945-5105

ABR email address: jgoldsmith@chatham-ma.gov

Supporting Document checklist:

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- ✓ Include copy of MassDEP approval letter; or,
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Appendix D

**Article 11, Regulations of Sewer Flow
(Flow Neutral Bylaw)**

May 2005



Julie S. Smith, CMC

TOWN CLERK
549 Main Street
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Paula A. Tobin
A True Copy, ATTEST:
Chatham Town Clerk

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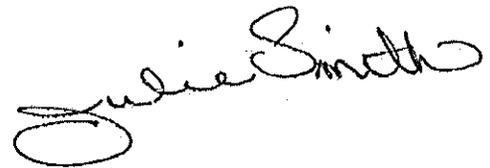
(Water and Sewer Commissioners)

MOTION: Sean Summers, Selectman, moved that the Town vote to amend the "Town of Chatham Rules and Regulations of the Sewer Department" adopted under Article 33 of the May 11, 2004 Annual Town Meeting as set forth above.

Board of Selectmen Recommendation: Approve 5-0-0

Finance Committee Recommendation: Against 2-3-1

VOTE: (After motion and successful vote to move the question): Voice. "So voted by a substantial majority, declared the Moderator."



TO: Steven McCurdy, Director SRF Program
CC: Jack Hamm
EC: Brian Dudley, Dave Burns
FROM: Jim McLaughlin
DATE: June 11, 2012
RE: CHATHAM CWMP NUTRIENT-BASED PROJECT REVIEW

PROPOSED PROJECT: Collection System Improvements, CWSRF-3245

PROJECT GOALS: To provide sewers to areas in Chatham identified as needing nutrient reduction to remediate excessive nitrogen levels in Chatham's southern embayments.

REVIEW SUMMARY: The proposed project qualifies as a "Nutrient Removal Project" as defined by the SRF regulations at 310 CMR 44.03. The project is *being undertaken by the Town of Chatham primarily to remediate nutrient enrichment of a surface water body to comply with effluent limitations established by an EPA-approved TMDL*, which is a defined condition of a "Nutrient Removal Project." The project and nutrient removal analysis are part of a larger CWMP that has undergone extensive public and Department review.

CWMP LINKAGE: The CWMP/FEIR dated May, 2009, identifies areas needing nutrient reduction as determined by the TMDL, Massachusetts Estuaries Project, and earlier studies. A MEPA certificate (EOEEA #11510) for the CWMP/FEIR was issued on July 17, 2009. The proposed sewer installation travels east-west through areas identified as needing a high percentage of nutrient removal. The new sewer will provide the "backbone" of the collection system to fully service sewersheds in future projects. The CWMP was accepted by the Department by a letter dated February 14, 2012, signed by Brian Dudley.

TMDL: EPA approved a TMDL for nitrogen for Chatham's Southern Embayments on June 22, 2009. The TMDL calls for nitrogen reductions from 32% to 81% for nine of ten sub-embayments listed. Five of the areas need over 50% reduction.

<http://www.epa.gov/region1/eco/tmdl/pdfs/ma/ChathamSouthernEmbayments.pdf>

PEF: Chatham's consultant, Stearns & Wheler, submitted a Project Evaluation Form for a project titled, "WWTF and Collection Systems Improvement Project", which earned inclusion on the Department's 2009 IUP. The project identification number is CWSRF 3245. The WWTF was funded separately by federal funds and is not considered with this project.

MEP: Massachusetts Estuaries Project studies found at the following link:
<http://www.oceanscience.net/estuaries/Chatham.htm>

DETAILED PROJECT DESCRIPTION:

The project is the first step in a multi phase project for the Town of Chatham to expand their wastewater facilities to meet the needs of the Town to reduce nutrients as directed by an EPA-approved TMDL. The CWMP, FEIR and MEP reports have provided plans and approvals for the expansion of the existing WWTF and large scale expansion of the wastewater collection system in the Town of Chatham. The plan is a comprehensive strategy for wastewater and nitrogen management in Chatham for a 20-year period. The collection system improvements under this project initiate sewerage of the areas that have been identified as needing collection systems to remediate nutrient enrichment in water embayments in the recommended plan. The project includes expansion of the collection system backbone along Route 28 and sewer extensions along portions of George Ryder Road, Barn Hill Road, Vineyard Ave., Meadow View Road and other adjacent roads. The installed mainline will enable areas needing a high percentage of nutrient reduction to gain sewer service.

The project also includes 5 wastewater pump stations. The work consists of the construction of five (5) new wastewater pumping stations at Huckleberry Lane , George Ryder Road, Main Street/Lime Hill Road, Hardings Beach Road /Barn Hill Road, and Meadow View Road . Work will include providing and installing pumps, emergency generators, odor control, enclosure buildings, controls, site work, etc., in accordance with the Plans & Specifications. The project will be completed within 860 days from Notice to Proceed. The Main Street/Lime Hill Road, Barn Hill Road and Huckleberry Lane Road pump stations will be factory built, base mounted, automatic suction lift sewage pumping stations with pump discharge force main, fittings, valves, pump control panels and all miscellaneous appurtenances. The pump stations will each include two horizontal, self priming, centrifugal type, sewage pumps designed specifically for handling raw, unscreened domestic sanitary sewage. The Lime Hill Pumping Station will include a 10 Horse Power (HP) - 200 gallon per minute (GPM) pump at 1250 RPM and have a total dynamic head (TDH) of 32 feet. The Barn Hill Pumping Station will have a 40 HP-200 GPM -2090 RPM pump having a TDH of 109 feet. The Huckleberry Pump Station will have a 470 GPM – 30HP- 1330 RPM pump with a TDH of 77 feet. The Huckleberry Road and Barn Hill pump stations will each have a dual - media biofilter system for odor control.

The Meadow view road and George Ryder Road pumping stations will be factory built above ground, automatic, suction lift duplex sewage pumping stations including duplex suction lift sewage pumps, pump discharge force mains, fittings, valves, pump control panel and all miscellaneous appurtenances. Each of the two pump stations shall include two- horizontal, self priming, centrifugal sewage , v-belt drives, motors, piping, motor control panel, automatic liquid level control system and integral wiring.

CWMP REFERENCES:

Specific sections of the CWMP where the project is discussed are noted in the following text, received in an email from the consultant, Nate Weeks, on May 24, 2012:

“Here is the information that you requested with a bit of background and reference to the CWMP:

1. The 2009 CY PEF described the "WWTF and Collection System Improvements Project" estimated at total eligible cost of \$55,575. This project was approved in the 2009 IUP as SRF No. 3245
2. This project is described in the CWMP as the Initial Implementation Project (Phase 1 WWTF upgrade/expansion, and sewer extension to construct the "backbone" of the recommended collection system) and is detailed in the following locations:
 - Chapter 1, starting on page 1-17 provides discussion of the Initial Implementation Project
 - Figure 1-2 showing the initial implementation phase of the sewer implementation
 - Figure ES-4 illustrating initial sewer extension area and the properties that will be served
 - Executive Summary Text starting on page ES-14 discussing the phased implementation
3. The Initial Implementation is the first step of the Recommended Plan as detailed in the following locations
 - Figure 11-2 illustrating the implementation schedule for the 30-year implementation
 - Chapter 11, pages 11-1 to 11-7 discussing the Recommended Plan, its components, and its implementation
 - Tables 9-7 and 9-8 summarizing all of the areas (sewersheds) recommended for connection to the sewer to achieve TMDL goals and for the whole Town, respectively
 - Chapter 9, pages 9-27 to 9-33 summarizing the components of Alternatives 3 and 4 which combined to become the Recommended Plan
4. After the CWMP was completed and 2009 IUP released, the Town obtained very favorable loan and grant terms from USDA Rural Development Program for the Phase 1 WWTF upgrade/expansion, and that portion was removed from SRF funding
5. As a result the 2009 IUP SRF No. 3245 was modified to include only the Initial Implementation Sewer Extension that forms the "backbone" of the recommended collection system as illustrated in Figure ES-4 and 1-2. This backbone extends across the areas recommended for sewer extension to meet Nitrogen TMDLs. This modification resulted in the Project Approval Certificate (PAC) commitment for \$21,430,000

6. It is noted that sewer extension costs were only developed in the CWMP for the Phase 1 and Phase 2 areas and their component sewersheds (detailed on Tables 9-7 and 9-8) . They were not developed for this backbone area that cuts across multiple Phase I sewershed areas.

7. SRF Project No. 3245 funded the following Construction Contracts as well as the the related engineering, police detail, and support items:

- Chatham Sanitary Sewer Extension, Contract 2010-CWMP 2, Collection System Pumping Stations
- Chatham Sanitary Sewer Extension, Contract 2010-CWMP 3, Collection System Installation at Route 28
- Chatham Sanitary Sewer Extension, Contract 2010-CWMP 4, Collection System Installation at George Ryder Rd./Barn Hill/Vineyard Ave

8. The current loan amount for SRF Project No. 3245 is \$14,499,765 which is significantly less than the PAC amount. ”

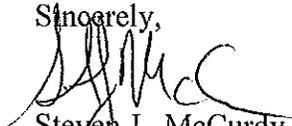
MassDEP expects Chatham will issue additional contracts for the construction of other sewer shed areas in the town. The SRF program will monitor the number of future wastewater variances issued, to measure the town's continued commitment to flow neutrality, when making judgments on the eligibility of those projects for the enhanced subsidy.

A stronger commitment to the principles of Smart Growth could be made, were a community to assign flow limits on a sewer shed basis, instead of a town-wide cap. The Regulations establish that for the purposes of 310 CMR 44:00, the watershed shall be the "planning area", including all parcels within a watershed that are subject to a local governmental unit's jurisdiction. However, in the case of Chatham, the entire town is proposed to be served by infrastructure and therefore a town-wide cap is sufficient.

4. **Regional Water Resources Management Plan:** Presently, there is no regional water resources management plan covering Chatham, so the provision that the project must be in compliance with such plan, is not applicable.
5. **Enforcement:** Chatham is not subject to any state or federal compliance or court order concerning the project, and therefore meets the threshold for this provision.

The program has evaluated the documentation presented and has determined that the effort of Chatham to address the requirements to obtain a zero percent interest Clean Water SRF loan is sufficient. Mass DEP Municipal Services will work with Chatham and the Water Pollution Abatement Trust to facilitate the financing. Congratulations.

Sincerely,



Steven J. McCurdy

Director, MassDEP Municipal Services

Cc: Susan Perez, Water Pollution Abatement Trust
Elaine Wijnja, DHCD