

“A Boat Waste Oil Recovery Program for New Bedford Harbor”

s.319 Program Nonpoint Source Pollution Grant

Federal fiscal Year 2001

Administrative Summary

RESPONDENT

Dr. Joe Costa, Buzzards Bay Project & New Bedford Harbor Development Commission

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PROJECT TITLE -

“A Boat Waste Oil Recovery Program for New Bedford Harbor”

WATERSHED(S)/SUBWATERSHED(S) SERVED BY THIS PROJECT

Buzzards Bay Drainage Basin

PROJECT CATEGORIES -

Demonstration and Watershed Resource Restoration

AMOUNT OF FUNDING REQUESTED AND AMOUNT AND PERCENT OF MATCH FUNDING PROPOSED -

| | | Budget % |
|-----------------------|---------------------|----------|
| Federal Funds via DEP | <u>\$147,000.00</u> | 50% |
| Non-Federal Match | <u>\$148,000.00</u> | 50% |
| Total Project Budget | <u>\$295,000.00</u> | 100% |

PROJECT SUMMARY/OBJECTIVES -

- 1) Recover 30,000 gallons of fuel, oil, and hydrocarbons in the first year through the recycling and reclamation efforts, preventing this potential discharge to the marine environment.
- 2) Achieve 100% compliance of harbor oil vendors with Waste Oil Recycling permitting requirements.
- 3) Educate and achieve support from commercial vessel operators, marinas, and oil retailers.
- 4) Reduce USCG response to chronic small spills in New Bedford Harbor.
- 5) Implement an important recommendation in the Buzzards Bay Comprehensive Conservation and Management Plan.

PRINCIPAL CONTACT -

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Ron Maribett, 319 RFR Coordinator
Department of Environmental Protection
DEP- BRP 5th Floor
One Winter Street
Boston, MA 02108

April 27, 2000

Dear Mr. Maribett:

Enclosed please find ten copies of a proposal¹ prepared by the Buzzards Bay Project National Estuary Program, in cooperation with the City of New Bedford and the New Bedford Harbor Development Commission, in response to DEP's Request for Responses for the Section 319 Nonpoint Source Pollution Competitive Grant Program. This proposal is for the implementation of a "Boat Oil Recovery Program for New Bedford Harbor." We believe that the approval of our \$147,000 grant request will provide DEP with an important opportunity to advance the goals of the Massachusetts Watershed Initiative, the Nonpoint Source Pollution Program, and help implement a key recommendation in the Buzzards Bay Comprehensive Conservation and Management Plan (CCMP).

In the 1991 state and federally approved watershed plan, the Buzzards Bay CCMP, the reduction of accidental and intentional discharge of oil and other hydrocarbons was identified as a high priority. Since that time, the Buzzards Bay Project, Buzzards Bay Action Committee, the Coalition for Buzzards Bay, the USCG, and Buzzards Bay municipalities have all worked on a myriad of oil pollution related issues ranging from improved tanker pilotage in Buzzards Bay, NPDES compliance, improved training and coordination of municipal officials for first response to oil spills. Most recently, the Buzzards Bay Action Committee will disseminate free bilge socks to recreational boaters in Buzzards Bay.

¹The Buzzards Bay Project is committed toward achieving the 11% / 5% MBE / WBE "Fair share" goals for this grant by soliciting bids from SOMWBA certified businesses as outlined in proposal, subject to Massachusetts procurement laws and Executive Office of Environmental Affairs procurement policies. Since the Buzzards Bay Project is a unit of Massachusetts Coastal Zone Management within the Executive Office of Environmental Affairs, we have attached the agencies EEO/AA Policy Guidance Statement. DEP has the Commonwealth of Massachusetts Affirmative Action Plan on file. Commonwealth Terms and Conditions form does not apply to state agencies. Previous ISA's between DEP and BBP/MCZM are on file with DEP. Authorized signature verification form on file with DEP. All other required forms already on file.

Our grant request to DEP for an oil recovery facility will address one major remaining source identified in the CCMP, the accidental and sometimes intentional dumping of tens or hundreds of thousands of oil by commercial vessels via bilge water. The net environmental benefit of funding this initiative will be the prevention of 100,000 gallons of oil and hydrocarbons from entering the coastal environment. This will be accomplished by eliminating imposing oil disposal costs to an economically disadvantaged fishing industry. It will also be achieved and will result in oil distributors and marine service operators in complying with state hazardous waste reporting requirements, and by educating commercial fishermen about the importance of minimizing their discharge of oil in the environment..

Our initiative is supported by the New Bedford Harbor Development Council, the City of New Bedford, and the US Coast Guard. This grant will help implement three major tasks: 1) Construct a bilge-water-oil separation facility in New Bedford Harbor, 2) implement of oil recover recycling program to provide easy disposal of boat engine waste oil, 3) put in place a multi-lingual outreach program and education program to assist fishermen and other commercial boat operators, and 4) provide training and assistance to oil retailers to come into compliance with waste oil reporting requirements and state toxics use reduction goals.

Match for our work will be provided principally by HDC, the City of New Bedford, and MET through cash, construction, and the operation and maintenance of the reclamation facility.

Please note that this 319 grant will be awarded to the Buzzards Bay Project. Funds for the construction of the facility will be awarded to either the Harbor Development Commission or the City of New Bedford depending upon the precise location of the facility. We recognize that DEP would not finalize any award under this grant request until all final arrangements and commitments are fully negotiated.

If you have any questions regarding this proposal, please do not hesitate to call me.

Sincerely,

Joseph E. Costa, Ph.D.
Executive Director

Project Background

The Buzzards Bay Project National Estuary Program, a unit of Massachusetts Coastal Zone Management, completed a Comprehensive Conservation and Management Plan (CCMP) in 1991 for Buzzards Bay. This document outlines a plan of action to restore and protect water quality and living resources in the bay. Important goals and objectives identified in the CCMP include the need to reduce the amount of petroleum hydrocarbons and toxics entering Buzzards Bay. This proposal is meant to address these goals.

In the Buzzards Bay Comprehensive Conservation and Management Plan (CCMP)², the following was written about waste oil from commercial boats:

“Commercial fishing vessels, which operate mostly out of New Bedford but also Westport, usually have their engine oil changed (10-120 gallons per boat) after practically every trip. It is believed that the inconvenience and the expense (about 30 cents per gallon) of safely disposing of waste oil have resulted in a number of boat operators blatantly dumping oil into the Bay or offshore waters. Although this is illegal, it is difficult to document violations and hence take enforcement actions against the appropriate fishing boats.”

In the early 1990s, the fleet was estimated to use 1,000,000 gallons of engine lubricating oil annually. At the time, the Buzzards Bay Project had estimated that perhaps as much as 500,000 gallons was illegally dumped in the harbor, Buzzards Bay, or out at sea. The primary mechanism of this dumping was believed to be via draining the engine block into the bilge compartment, and once out at sea, turning on bilge pumps to dump out the oil and water mixture.

Bilge compartments also receive oil from fueling accidents, leakage from crankshafts, and engine leaks. Thus, even without intentional dumping of oil into bilges, bilge compartments may contain sizable amounts of hydrocarbons that are dumped whenever bilge pumps are turned on. These hydrocarbons often account for the oil sheens seen in many urban harbors and at sea. According to the Coast Guard (see the attached letter of support), they have been responding to one or two of these “mystery oil sheens” in New Bedford Harbor each week. When these spills are tracked to the source vessel, the operator may face tens of thousands of dollars in cleanup costs and fines. These Coast Guard responses cost the taxpayer, and places increased burdens on limited resources.

In 1992, a consultant³ to the City of New Bedford, HMM Associates Inc., conducted a survey of commercial and recreational boaters on a wide range of problems including waste oil collection. In that report, the following was written:

²The Buzzards Bay CCMP was the state’s first coastal watershed management plan. It was approved by the US EPA and adopted as Commonwealth of Massachusetts policy in 1991.

³ The study was funded in part with grants from the Buzzards Bay Project and Massachusetts Coastal Zone Management.

“It is also well known that over 400 commercial fishing vessels using the Inner Harbor generate waste oil from operation of vessels and equipment. Although there are existing waste oil collection facilities within the Inner Harbor, there is concern that these facilities and services are not well utilized by the fleet, and that waste oil generated from marine use is not being properly collected and disposed of while vessels are at berth. Proper waste oil collection, storage, and management practices must be identified and implemented with the fleet to ensure proper waste handling disposal, and to assist in maintaining and improving existing water quality conditions in the Inner Harbor.”

The report also stated *“the improper disposal of waste oil is the most significant water quality issue facing New Bedford Harbor.”* HMM Associates Inc. identified the New Bedford Seafood Cooperative as the largest seller and recycler of engine oil in New Bedford Harbor, and noted that the Cooperative was providing a free engine oil recycling service, but only to its customers. Several years after the report was written, however, the New Bedford Seafood Cooperative dissolved. After the dissolution of the Cooperative it is believed that oil recycling also declined.

The HMM report went on to recommend specific actions. These are excerpted below.

“To address this [oil recycling] issue it is recommended that the following actions be considered for implementation:

- 1) Adopt local regulations requiring oil-free bilges in commercial vessels.*
- 2) Create economic incentives for vessel operators to recycle oil.*
- 3) Establish a private commercial service to pump-out waste oil from commercial vessels on a fee basis.*
- 4) Establish an enforcement and compliance program.*
- 5) Establish Manifest and Chain-of-Custody Procedure for purchase and return of oil.*
- 6) Establish Best Management Practices Plan for waste oil collection and disposal at marine docking facilities.*
- 7) Increase Public awareness and educate commercial and recreational boaters.*
- 8) Establish Oil Barrel Labeling Program.”*

Little was done to implement these recommendations. In 1999, the Buzzards Bay Project, CZM, the Buzzards Bay Action Committee, the New Bedford Harbor Development Commission, the City of New Bedford, and the Coalition for Buzzards Bay reconvened a workgroup to reassess the problem, and reconsider what actions needed to be done. Subsequently, Massachusetts DEP and the US Coast Guard have met with members of this workgroup.

Scope of the problem

After every extended trip (fishing trips may last one to two weeks) or after 200 to 400 hours of operation, fishing vessels replace their engine oils, which range from 10-150 gallons depending on the size of the engine. There have been sizeable reductions in the size of the fishing fleet since the late 1980s and early 1990s, and the number of days these vessels have been allowed at sea has been reduced due to declining stocks. There are probably about 400 fishing vessels currently based in all of Buzzards Bay, and most of these are found in New Bedford Harbor. With fleet reductions and reductions in time at sea, it is estimated that these vessels use approximately 300,000 gallons of lubricating engine oil.

It is believed that today, many more fishing vessels are recycling oil than in 1990 when the CCMP was written, since most of the fuel operators on the harbor now take back used oil for free (or at least incorporated into the price of the oil sold). However, it has been suggested that some of the commercial vessel operators are purchasing cheaper engine oil from land based and in some cases out-of-state distributors who are not accepting recycled oil. In the past, the HDC has found buckets or barrels of oil on public docks or dumped in dumpsters which has resulted in disposal costs to the City. Anecdotal information suggests that some vessel operators set the automatic switches on bilge pumps so that oil in the bilge compartment is not accidentally discharged in the harbor. The frequent appearance of oil sheens that the Coast Guard must respond to is a symptom that these accidental bilge compartment discharges remain a problem.

Any estimate of boat engine oil recycling is complicated by the fact that it appears that none of the oil retailers appear to have obtained Waste Oil Recycling Permits, so there are no records as to how much of the 300,000 gallons of lubricating oil has been recovered and recycled, or even where it has been disposed. Moreover, in Massachusetts, waste oil may be considered hazardous waste, and in some instances, the fishing vessels may be considered generators. This raises some very complicated regulatory and policy issues as to how to correct this problem without interrupting the fishing fleet's ability to recycle and return their engine oil, and for not creating undue financial hardship to the vessel operators.

Estimates of how much oil is not recycled and potentially being dumped varies widely depending on what assumptions are made, but it may be in the range of 20-40% of that sold. Thus, perhaps as much as 60,000 to 120,000 gallons of engine waste oil may be dumped in coastal waters or at sea annually through direct dumping or through mixing of oil in the bilge water and pumping at sea.

One final important consideration in evaluating the scope of this problem and available solutions is the fact that the New Bedford Fishing Fleet is in dire economic conditions due to depleted fishing stocks, and that many fishermen are near their financial breaking point. Thus, any solution to this problem must minimize financial impact to the fishing vessel operators.

Project Goals

- 1) Recover 30,000 gallons of fuel, oil, and hydrocarbons in the first year through the recycling and reclamation efforts, preventing this potential discharge to the marine environment.
- 2) Achieve 100% compliance of harbor oil vendors with Waste Oil Recycling permitting requirements.
- 3) Educate and achieve support from commercial vessel operators, marinas, and oil retailers.
- 4) Reduce USCG response to chronic small spills in New Bedford Harbor.
- 5) Implement an important recommendation in the Buzzards Bay Comprehensive Conservation and Management Plan.

Project Evaluation

The effectiveness of this project will be evaluated based on the following:

- 1) the number of gallons of hydrocarbon collected through recycling and reclamation.

- 2) the percentage of oil sold that is recycled and accounted for
- 3) the percentage of oil retailers accepting oil, which have obtained Waste Oil Recycling permits
- 4) any bylaws or regulations adopted to facilitate oil recovery
- 5) the number of oil sheen incidents that the US Coast Guard must respond to annually

Strategy and Solutions

To solve the cumulative discharge of oil from hundreds of vessel sources, four major actions must be implemented and coordinated. First, the US Coast Guard has recommended an oil-water separator be constructed in New Bedford Harbor to treat contaminated bilge water. To ensure that this facility meets its goals and is used by the fishing fleet and other commercial vessels, it should treat bilge water at no expense to the fisherman in the case of accidental spills and normal leakage into the compartment.

Second, an oil recycling and recovery program and system needs to be put in place to ensure engine oil is never dumped into bilge compartments. This means that it must be easy for fishing vessels to drain the engine block and return the oil. Many vessels have installed quick-disconnects on the engine block drain. Other vessels still drain their engine block into buckets or barrels with hand cranks. The Buzzards Bay Project will commit to provide a grant to the City for \$5,000 to put in place a program to provide free retrofit and quick-disconnect valve installation on resident commercial vessels in the harbor. The Project and HDC will ascertain whether a mobile oil collection vessel needs to be provided. The oil reclamation facility will also have the ability to accept used oil. This 319 grant request includes funds for the first year costs for waste oil disposal from the recycling program.

Third, a multilingual outreach and education program will be implemented to work with area fisherman and commercial boat operators. The Buzzards Bay Project will hire a bilingual Waste Oil Recovery Program Coordinator on this grant to undertake this task.

Fourth, the planner will work with area fisherman and oil retailers to facilitate their compliance with the Waste Oil Disposal and Hazardous Waste regulations. EOE's Office of Technical has agreed to assist us in this regard. The City will consider and evaluate any ordinances or harbor requirements necessary to achieve the long-term goal of oil-free bilges.

Task 1

Construction of the oil reclamation and recycling facility

The HDC facility will be modeled after those recently constructed by the Texas General Land Office (TGLO). The TGLO completed construction on the first-ever bilge water reclamation facility located in Port Isabel in 1996. The Port Isabel-San Benito Navigation District and the TGLO cooperatively built this facility to provide a site for commercial fishing and recreational vessels to pump out their oily bilge water. Since completion, the facility has proved successful. In its first thirty-six months of operation, the facility collected more than 39,000 gallons of used motor oil from fishing vessels, with over 300,000 gallons of water cleaned and discharged. There is no charge to use

the facility, and the used oil collected is recycled by a local company .

The HDC facility will be modeled after a facility constructed at Matagorda County Navigation District bilge facility shown in Figure 1. A conceptual design of the Texas facilities are shown in Figure 2. The cost of the Matagorda facility was less than \$100,000. Since construction, the operators of this facility have learned of many operational improvements, and these will be included in our designs. The BBP will obtain the scope, design, and site plans for the Matagorda Facility and use this as the basis for developing plans specific to a facility in New Bedford Harbor. The only addition to these plans will be the addition of the ability to directly accept used waste oil from engine blocks or barrels.



Figure 1. Matagorda County Navigation District bilge facility.

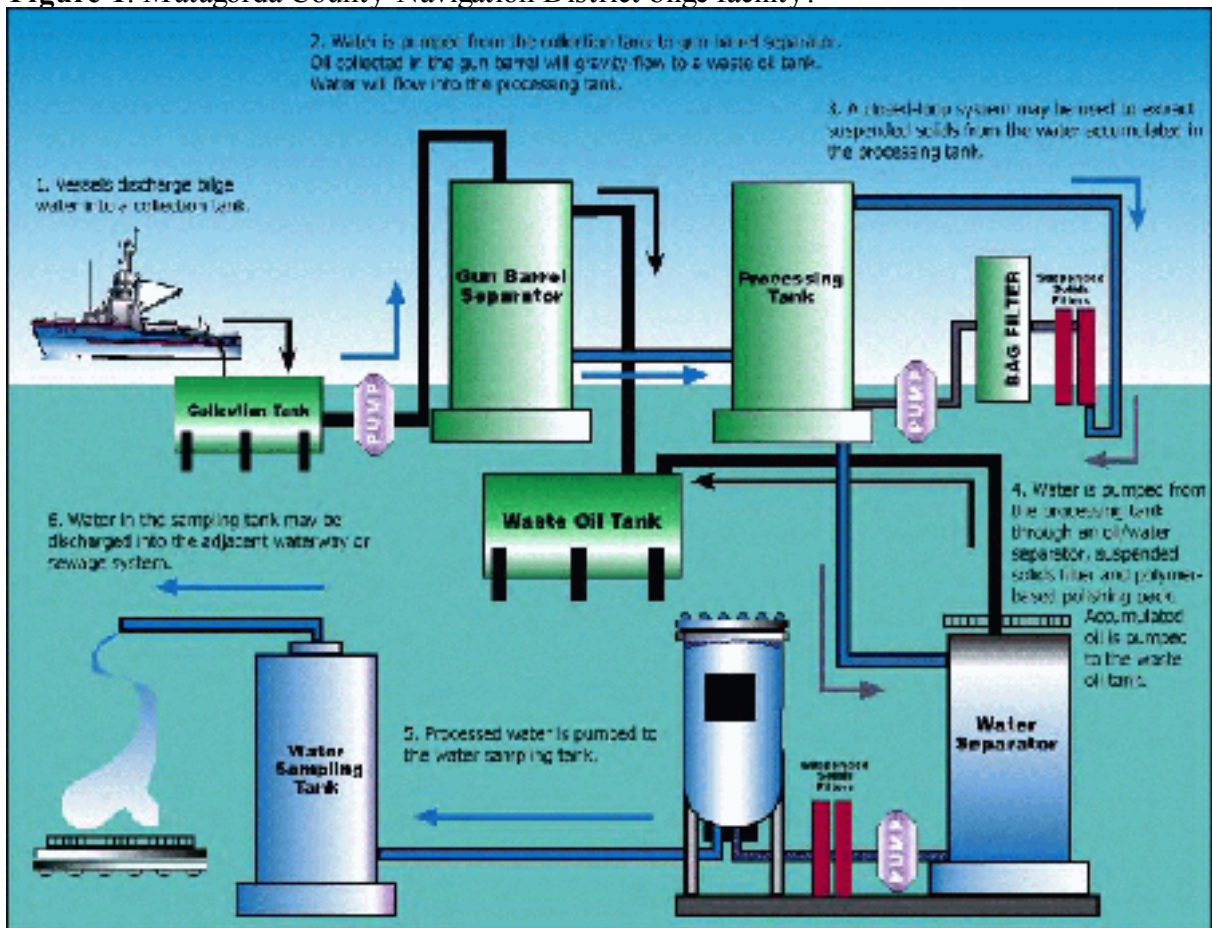


Figure 2. Conceptual design of a waste-oil reclamation facility for boats used in TX.

In discussing these types of facilities with the Coast Guard and DEP, it is agreed that it is far easier to connect to a sewer system than to obtain an NPDES permit to discharge bilgewater from the facility. There are no technical problems with discharging the estimated 5,000 gallons maximum daily seawater discharge to the New Bedford Wastewater Facility which is a 22 MGD plant, and the City's wastewater department will provide the connection as part of the match for this grant. The wastewater plant, as part of its in-kind match for this grant will provide all materials and labor for a sewer line connection, and assist in design review, for an estimated contribution of \$11,000 (see letter of support).

Task 2.

Operation and Maintenance of Facility

The facility is expected to be used to treat bilge water one or two times per day, as well as accept additional oil deposits. Our preliminary estimate is that the facility will require 20 HDC staff hours per week to operate and maintain. HDC will pay for the utilities for the facility. The DEP grant will pay for the first year costs of waste oil disposal (30,000 gallons @ \$0.33 gallon).

Task 3.

Waste Oil Recovery Program Coordination

The BBP will hire a Waste Oil Reclamation and Recycling Program Coordinator to detail to the HDC to help implement this grant. The BBP Director and HDC director will help oversee and coordinate the program. (The BBP Program is a soft-money organization dependent on outside grant funds).

Task 4.

Enhanced voluntary Recycling Program

The primary focus of the Waste Oil Reclamation and Recycling Program Coordinator will be to encourage improved recycling of waste oil by fishing vessel operators and mechanics through training, one to one meetings, and guidance. This individual will prepare materials and flyers in several languages. We expect the individual in this job to be bilingual. Part of this task will involve assessing needs for additional mobile recovery services. This individual will also oversee with HDC the BBP \$5,000 grant to assist commercial vessels in modifying the oil compartments with quick disconnects and valves to facilitate easy oil removal. This portion of the work will be very hands on and involve visits to each commercial vessel in the harbor

Task 5.

Improved compliance with Hazardous Waste and Waste Oil regulations and reporting

The Program Coordinator will work with DEP and the EOE Office of Technical Assistance to help achieve 100% permitting compliance with Waste Oil Recycling permits and hazardous waste permitting requirements. This will be achieved through workshops and meetings with oil retailers, marina operators, and regulatory agencies. This work will be undertaken in a way not to prevent commercial vessels recycling their wastes. This aspect of the project will require carefully considered policy and regulatory decisions at the highest level within state regulatory agencies.

Task 6.

Reporting

The BBP will prepare all necessary reports in compliance with DEP's reporting requirements.

Outreach/Technology Transfer

The outreach component of this initiative is key for the success of our initiative. The most important component of our program is our collaboration and partnership with the City, HDC, and commercial vessel operators which have agreed to house the outreach and technical assistance staff and provide supervisory oversight in the field, and training. Because the information generated by this program will be on the BBP web site, our approach, outreach materials, and strategy will be available nationally.

This work will also compliment an initiative to begin this summer in which the Buzzards Bay Action Committee will provide free oil absorbing bilge socks to recreation boaters through Buzzards Bay (see attached press release). The combination of both these initiatives will garner national accolades for the DEP 319 program and the CZM CPR program which is funding the Action Committee's Initiative.