



Final Programmatic Report Narrative

Instructions: Save this document on your computer and complete the narrative in the format provided. The final narrative should not exceed ten (10) pages; do not delete the text provided below. Once complete, upload this document into the on-line final programmatic report task as instructed.

The Town of Mamaroneck, Westchester County, NY is pleased to submit this final narrative for the National Fish and Wildlife Foundation LISFF Grant Program (Project ID 2010-0071-038) dated May 29, 2012.

1. Summary of Accomplishments

In four to five sentences, provide a brief summary of the project's key accomplishments and outcomes that were observed or measured.

This past year, the Town of Mamaroneck took another step forward in its efforts to reduce storm water pollution runoff and to improve water quality in water bodies ultimately leading into the Long Island Sound. Upon receiving the award of NFWF Legacy Grant Project ID 2010-0071-038, the Town was able to solicit material purchase bids to retrofit 69 existing Town storm water catch basins with debris screens and filters. The basins identified and selected were those containing direct discharge into open water tributaries leading into the Long Island Sound. The Town used a combination of field inspections and infrastructure mapping to streamline the selection process to a few targeted zones within the given watersheds leading to the Sound (see attached map). Models selected were for both "curb inlet" type drains and conventional "frame and grate" drains. Favorable bid results allowed the Town to purchase models from two of the industry leading material supply vendors; Fabco Industries, Inc. and Kristar Enterprises, Inc.

Installations of Kristar Enterprises' "Flow Gard Plus" catch basin insert filters were performed by the Town's Highway Department in mid-November of 2011. Field representatives from Kristar assisted the work crew for all 24 of the basins modified.

In October of 2011, representatives from Fabco Industries similarly assisted the Town Highway Department in the preparation and installation of their "Storm Sack" catch basin filter product. Continuing through the fall of 2011 and into February of 2012, the Town Highway Department crew completed the installation of all 45 of the Fabco Industry's products.

The Town Engineering and Highway staff continued to inspect and monitor the installations throughout the winter and spring months leading up to the first servicing performed during the week of May 21st 2012. The Town Engineer maintained an inspection diary for the project and captured photos for all phases of work (see attached photos).

2. Project Activities & Outcomes

Activities

- Describe and quantify (using the approved metrics referenced in your grant agreement) the primary activities conducted during this grant.

During the fall and winter of 2011, the Town Highway Department performed an initial "Vactor" servicing of all of the 69 proposed catch basins scheduled for modification with filters. Over duration of 5 days, approximately 30 cubic yards of catch basin waste was removed and disposed of by the Town's service contractor. During this time, the Town Engineer took records of the existing conditions of the drainage structures and a list of preparatory work was established. The Town proceeding to procure materials for said work.

Upon servicing and inspecting the drains, a masonry crew from the Town Highway Department spent 21 working days performing various degrees of repair work ranging from simple brick pointing up to full catch basin reconstruction. Castings that were found to be defective were also replaced in kind.

The Town Highway Department performed all of the catch basin filter installations over a period of 10 working days with assistance from representatives of both Fabco Industries and Kristar Enterprises. During the Week of May 21st, 2012, the Town Highway Department serviced all of the catch basin filters. For the 69 baskets installed in the Town of Mamaroneck, 5.93 cubic yards of wet debris (estimated at 3.63 tons in situ) was captured and disposed of.

- Briefly explain discrepancies between the activities conducted during the grant and the activities agreed upon in your grant agreement.

As part of the NFWF/LISFF Grant Application Process, the Town submitted various estimated degrees of measurable metrics such as material costs, in kind “matching costs” and calendar time for engineering/design, procurement of materials, preparation work, filter installations etc. During the post award follow through work, we were able to compare our actual findings to those initially submitted on our application narrative. Our expectations were close for the most part. The following comparison to key items was made:

Estimated Measurable Work Task

Actual Outcome Observed

- | | |
|--|--|
| - Engineering & Design – 21 days | 28 calendar days |
| - Bid Letting & Selection – 28 days | 35 calendar days |
| - Materials Procurement – 28 days | Delivery taken as needed |
| - Road Drain Preparation – 10 days | 10 working days |
| - Catch Basin Filter Installs – 10-15 days | 10 working days – 7 per day avg. installed |
| - Inspection & Monitoring – Continuous | Continuous |
| - Number of filters purchased/installed – 50 total | 69 filters actually purchased |

Estimated Measurable Cost

Actual Outcome Observed

- | | |
|---|---------------------------------------|
| - “In kind” Salary Match - \$67,765 | \$50,865 in Town labor |
| - “In kind” Equipment Match - \$14,338 | \$12,231 in Town equipment |
| - “In kind” Contract Services - \$500 | \$15,853 actual contract expenditures |
| - “In kind” supplies/materials - \$63,000 | \$56,028 material/supply purchases |

Outcomes

- Describe and quantify progress towards achieving the project outcomes described in your grant agreement. (Quantify using the approved metrics referenced in your grant agreement or by using more relevant metrics not included in the application.)

The Town of Mamaroneck continued to monitor the effectiveness of the filters throughout the post install period leading up to the first servicing in May of 2012. During the monitoring phase, the Town was somewhat concerned with the effectiveness of surface waters being able to drain off of roadways during heavy rain events. Our inspections during such rain events did find that obstruction of flows to be a nonissue. The overflow features designed in the baskets did just what the manufacturers’ stated would happen. Water flowed through the top flanges while solids remained accumulated in the suspended basket. (Please refer to the attached manufacturers’ cut sheets for visual details).

During our inspections, the Town did get an opportunity to see what types of debris were being captured over the 3 to 5 month install service period. While sands, gravel and organic materials such as leaves and branches were noted, we did see that the targeted litter pollutants such as plastic bottles, paper product waste, beverage cans, cigarette butts, plastic bags and other similar materials were being captured.

- Briefly explain discrepancies between what actually happened compared to what was anticipated to happen.

The Town serviced all 69 catch basin filters using a combination of the Town's Vactor truck and a 6.5 horse power wet/dry shop vac. (Photos attached) A detailed and cumulative quantitative analysis was performed on the materials removed from the filters. On average, the Town removed approximately 2.6 cubic feet of debris material from each of the 45 Fabco Industries "grate inlet" baskets. Cumulatively this volume is equal to 117 cubic feet, 4.33 cubic yards and 875.2 U.S gallons. For the "curb inlet" style baskets purchase from Kristar Enterprises, the Town removed approximately an average of 1.8 cubic feet of solid debris per basket. Interpreting this figure for all 24 Kristar Enterprises' baskets this volume equates to 43.2 cubic feet, 1.6 cubic yards and 323.1 U.S. gallons. The Town collected debris from 3 baskets and filled a 55 gallon (7.35 cubic feet) plastic receptacle and determined its weight to be 334 pounds. From this analysis we calculated a wet debris density of 45.4 lb/cf. Using this figure, we estimated the total weight of debris captured by the 69 filters to be 7,260 lbs (3.63 tons).

Since the baskets were installed over time between November 2011 and February of 2012, the Town assumed that servicing them in May of 2012 did prove to be the right timeframe for the heavier filled baskets. Visual evidence showed that they were filled to an estimated 75 % capacity after a fall through winter season.

Our analysis of the pollutant contents did find a considerable measurable difference in litter captured in residential neighborhoods versus commercial areas. In reference to the attached map illustrating the targeted areas in the Town of Mamaroneck, the majority of paper waste, plastic wrappers, bottles, cans, coffee cups etc. were noticeably more prevalent in the "Pine Brook," "East Creek," and "Hommocks Marsh" tributaries to the Long Island Sound. The Town found that the majority of the baskets servicing the "Gardens Lake" and "Sheldrake River" tributaries had fewer hard pollutants. While a few "floatable" items were noted, the majority of debris captured was organic materials such as leaves, branches, and soil matters.

While our Highway Department does not have the ability to quantify the pollutants captured in the absorbent booms contained in each basket, the Town did make a list of all hard pollutants found in the majority of baskets. Through descriptive analysis, the Town found the following: newspapers, aluminum cans, plastic bottles, candy bar wrappers, coffee cups/lids, cigarette butts, aluminum foil, Styrofoam, CD-ROMs, cigarette lighters, paper waste, plastic shopping bags, glass bottles, tennis balls, clothing, rags and miscellaneous car parts. A few of the basins did have a higher amount of sand and gravels than most. These were noted adjacent to a gravel parking lot and on roads severely deteriorated. All of the basins had organic matter such as leaves, branches and plain muck.

- Provide any further information (such as unexpected outcomes) important for understanding project activities and outcome results.

The Town did assume that the Highway Department would need to service all of the baskets on average once a year. However after interpreting the results found during the week of May 21st, we found out that the servicing frequency may be shorter especially taking into account seasonal issues such as falling leaves.

We will continue to monitor the accumulations of debris throughout the summer and fall months to determine the next service date and adjust maintenance operations and scheduling accordingly. We will also formalize and attempt to rank the locations in terms of volume captured and try to prioritize the filter inventory.

3. Lessons Learned

Describe the key lessons learned from this project, such as the least and most effective conservation practices or notable aspects of the project's methods, monitoring, or results. How could other conservation organizations adapt their projects to build upon some of these key lessons about what worked best and what did not?

1. *Prior to submitting our grant application, the Town gained some valuable information from the City of Norwalk's Engineering Department. In April of 2010, Stephen Altieri, Town Administrator, David Goessl, Town Engineer and Nancy Seligson, Town Councilwoman met with Mike Yeosock, Senior Engineer for the City of Norwalk to discuss Norwalk's storm water program and their experience with catch basin filters. The visit allowed for the Town, to see in person, applications of various types of filters installed in their road drains. Mike gave us a tour*

through 3 storm water shed districts in Norwalk and showed us sample filters and described how they work. He also described the types maintenance required, initial and operating costs, and installation methodologies.

Additionally, the Town evaluated literature from several leading vendors of storm water materials and had the opportunity to meet with sales persons to view products via live demonstrations. Firsthand knowledge gained from meeting the vendors and representatives from the City of Norwalk assisted us tremendously in preparing our grant and in turn seeing our vision become a reality.

2. *When the Town began the process of evaluating our drainage system to explore the possibility of installing the pre-manufactured filter devices, we found out that a significant undertaking would be necessary to either repair or modify the existing road drains. Communities wishing to adopt a program similar to the one that the Town initiated need to allocate enough financial and labor resources to perform the necessary preparatory measures. Our total combined expenditures made in purchasing masonry materials and utilizing outside Vector services to prepare the 69 drains were approximately 40% the total value of the filters purchase (Town labor not included). Therefore an expense contingency is recommended to cover additional costs that may be encountered.*
3. *Furthermore, any community wishing to take on a task such as ours and in the same time pledging “in kind” matching services in the form of labor, needs to understand that there will be an “opportunity cost” associated with allocating those resources. Our Highway Department has, in the recent year’s been stretched thin and has often been asked to “do more with less.” This project tested their abilities as they were able to complete the work within two of their busiest work seasons; leaf collection and snow removal.*

4. Dissemination

Briefly identify any dissemination of lessons learned or other project results to external audiences, such as the public or other conservation organizations.

The Town of Mamaroneck, through the undertaking of this project, has learned and adopted valuable resources and skill sets to continue and expand this program in future fiscal years. The Highway and Engineering Department personnel involved in this process now have the knowledge and capabilities to perform all facets of such work from the initial planning and engineering leading up to actual drain preparation, filter installation, monitoring and maintenance.

The Town also anticipates implementing a catch basin filter installation program to future subdivision and site plan projects for public matters appearing before the Town Planning Board. This practice is found to be a good complement to the Town’s existing code on “Erosion and Sediment Control.”

The Town Board of Mamaroneck, in three of their televised public hearings, made referenced to the project on March 17th, 2010, February 2nd 2011 and April 20th 2011. The topics of discussions ranged from the initial consideration for applying for the grant, grant contract signing and award of bids for filter materials from Fabco Industries & Kristar Enterprises.

5. Project Documents

Include in your final programmatic report, via the Uploads section of this task, the following:

- 2-10 representative photos from the project. Photos need to have a minimum resolution of 300 dpi and must be accompanied with a legend or caption describing the file name and content of the photos;

Attached are 3 files dated 5/25/12 containing photos of catch basin preparation work, filter installations, and initial filter cleaning.

- report publications, GIS data, brochures, videos, outreach tools, press releases, media coverage;

Attached is a map of the Town of Mamaroneck illustrating the LI Sound watershed tributaries targeted for storm water treatment with the catch basin filters. Also attached are three manufacturer’s specifications sheets from Kristar Enterprises and one from Fabco Industries identifying the products used in this project.

- any project deliverables per the terms of your grant agreement.

POSTING OF FINAL REPORT: *This report and attached project documents may be shared by the Foundation and any Funding Source for the Project via their respective websites. In the event that the Recipient intends to claim that its final report or project documents contains material that does not have to be posted on such websites because it is protected from disclosure by statutory or regulatory provisions, the Recipient shall clearly mark all such potentially protected materials as “PROTECTED” and provide an explanation and complete citation to the statutory or regulatory source for such protection.*