



Friends of Casco Bay
Casco BAYKEEPER®

Operating Plan
for
Friends of Casco Bay
FY17

April 1, 2016 – March 31, 2017

FOR INTERNAL USE ONLY

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I. Context for FY17 (April 1, 2016 – March 31, 2017) as We Roll Out of FY16

Last year, as FY15 (Friends of Casco Bay's 25th Anniversary year) began to draw to a close, we experienced a unique occurrence, one that defined a seminal shift in our focus internally and in our image externally. After almost 24 years on the job, Joe Payne, Friends of Casco Bay's first employee and our chief public advocate and spokesperson for the Bay, retired from being Casco Baykeeper. Within a six-week notice period, we rallied with an all-hands-on-deck response and gave him a grand send off, bestowed upon him the moniker *Casco Baykeeper, Emeritus*, created a fund for advocacy in his honor, reassigned a variety of Baykeeping duties, and put together a plan to define the next iteration of Baykeeping, along with a search process and time line. Executive Director Cathy Ramsdell was appointed as Interim Casco Baykeeper.

Building capacity in the Baykeeping Program is one of the six key goals in our **Strategic Plan 2013-2017**, so we used this transition year as an opportunity to look closely at what the next iteration of Baykeeping should look like vis a vis what the Bay needs and what makes sense for the organization. We explored optimal ways to redefine Baykeeping to best meet our mission, mesh with our organizational style and stay in harmony with Waterkeeper Alliance requirements. We explored and identified areas of focus and responsibility, as well as optimal skill sets to meet those challenges.

For the FY16 Operating Plan, we tried to narrow the scope of what we intended to accomplish, with what turned out to be seven unusual dynamics challenging our capacity:

- We were short a full-time, key staff person, Casco Baykeeper, in a program which was under capacity even before Joe's retirement.
- Many of us focused a significant portion of our time to redefining Baykeeping and conducting the search process.
- Our Executive Director was stretched to the limit, serving as both E.D. and Casco Baykeeper *Pro Tem* for a year, while designing, conducting, and successfully completing the search for a new Casco Baykeeper, with the help of a key Search Advisory Committee.
- Prior to Joe's retirement decision, veteran staff member, Peter Milholland, had been promised and was granted a well-deserved merit leave for three months during the summer of 2015.
- Staff stretched to meet additional assignments to cover some of the Baykeeping duties and Peter's areas of responsibilities.
- In August, the spouse of one of our staff members suffered critical brain injuries in a bicycle accident, and our staff member was granted as much medical-leave-related flex time as was necessary to see him through his recovery process.
- In December, it was determined that the E.D. had contracted mono and spent most of a 5-week period through the holidays out of the office recuperating.

Nevertheless, we were able to respond well to key opportunities, and we attended well to the elements in our Operating Plan. You will read the Highlights from our Strategic Plan below, as as you keep those in mind as you read through this plan, you will see we remain solidly on course. We are pleased with the outcomes of the year, and we are excited to launch the next one. In particular, we are delighted with the fruits of our search, which resulted in the hiring of Ivy

Frignoca as our 3rd Casco Baykeeper. She joined the staff officially on January 4, 2016, and has hit the ground running. All staff are playing significant roles in helping to bring her up to speed, and all staff seem newly energized by her commitment and immediate involvement. We are elated to have the transition behind us with the prospects of amazing new possibilities ahead.

In addition, the longevity of the staff in each of their positions continues to be a fundamentally important dynamic in working effectively – on many fronts.

This Document

This document contains our **FY17 Operating Plan** and a summary of the **FY17 budget highlights**. These elements support our **Strategic Plan 2013-2017**, which identifies 6 strategic goals, a vision for the future, and 3 areas of our work seen as particularly strategic in advancing our mission for a healthier Bay. These strategic elements are summarized below. This plan and those which have preceded it over the years serve as incredible sources of documentation of our work and the rationale behind it.

This **Operating Plan** is for internal use and contains detailed narrative generated by staff, specifically laying out the activities in which we will be engaged this year, April 2016 to March 2017, to make progress on the goals outlined in the Strategic Plan. The Operating Plan is in four sections: Program, Development, Technology and Capital Assets, and Administration. The contents of this plan are open for discussion among Board and Staff.

Following the plan is a summary of the highlights of the FY17 Budget, which is constructed to support this plan. **The FY17 Budget and Supplemental Schedule are separate documents and will accompany this plan.**

While the Strategic Plan is elegant in its brevity – 3 pages, the Operating Plan is the opposite; the devil, as they say, is in the details. The beauty of this detail for us at the Staff and Board levels is that the plan makes our intentions and rationale transparent, and we can all be on the same page in our messaging. Having a clear plan helps coordinate our use of resources, and it makes the search for resources – the details for our fundraising processes – markedly straightforward.

We engage in various assessment and planning activities throughout the year, and this year, with all the transitions afoot, January and February 2016 were packed with planning meetings to bring this plan to fruition. This document may read a bit like a patchwork quilt – you will hear the different voices of staff who write their sections following our meetings. The sections are then submitted to me, and I weave the pieces together, identify elements that need clarification or refinement, chase details for clarification in the budget, edit, reformat, and try to limit our commitments where possible (Staff are very ambitious!). There is always more to do than there is time, and work comes in over the transom unexpectedly everyday. The assessment and planning processes we undertake through the year help us get our annual plan as close to right as we are able.

There is the occurrence of repetition in this document, what with seven writers involved, and because this is for internal use only and because we have much to do, you will forgive us for not editing out the occasional repetition of information.

Our mission is to improve and protect the environmental health of the Bay and is supported by efforts in science, education, and advocacy – the three legs of the stool, so to speak. We conduct

our advocacy using a “work with” approach, based on common sense and decency, backed up by science and the law.

Much of the value of what we offer to the community lies in our continuing programmatic work, making that work and its implications understandable and relevant to people throughout our community and our state, empowering our neighbors to engage in activities that have a positive impact on the health of the Bay, strengthening our working relationships around the Bay and across the state, encouraging policy changes that make a difference in the health of the Bay, while we run our organization responsibly and professionally. We strive to be an organization that is both leading and learning.

In summary, in FY17, we will be tackling our goals in the following ways:

1. Advocating for standards and for behaviors that protect the health of the Bay, including launching our new Nabbing Nitrogen initiative
2. Communicating science through credible data collection and accessible presentations to educate our community, using various forms of outreach: presentations, events, meetings, print, special reports and our Bay Papers, along with web postings, e blasts, tweets, and other on line communications, as well as television, radio, and press conferences
3. Building and maintaining collaborations and partnerships that advance our mission – with the Board and volunteers, colleagues and scientists, interns, members and donors, policy makers, other water groups, Bay “users,” and other members of the public
4. Building and maintaining our ability and operating capacity to realize our operating plan, while responding to issues, threats, requests, and opportunities, as they arise, effectively and in a timely manner
5. Growing funding resources to better deliver our mission
6. Introducing our new Casco Baykeeper and through her significantly expanding our ability to go deep on Baykeeping issues

It takes a community to take care of a Bay, and an organization to lead that charge. It is a privilege to live in an area with such a relatively clean waterbody, and as the *Casco Baykeeper*, *Emeritus* used to say, “With every privilege comes a responsibility.”

Many thanks to Staff for your contributions, both individually and collaboratively – we truly could not do the work without each and all of you – and to all of you readers for your dedication to considering the contents of this plan along with the budget and discussions that will follow in the days ahead.

Respectfully submitted,

Cathy L Ramsdell, CPA, CGMA
Executive Director
Friends of Casco Bay

II. Highlights from the Strategic Plan 2013-2017

[Please see the Strategic Plan in its three-page entirety for more detail] informational

Strategic Goals highlighted in the Strategic Plan 2013-2017

1. Advocate for standards and controls on nitrogen and acidification
2. Advance the visibility, branding, educational outreach, political involvement, and recognition of our mission
3. Apply technology and scientific methods; build credibility; communicate and educate
4. Pursue collaborations and partnerships that advance our mission
5. Build capacity in Baykeeping and maintain capacity in organization and infrastructure
6. Grow funding consistent with our resources

Our Areas of Work from 2013 to 2017

Our vision for the organization for the next five years is further refined by focusing on three strategic areas of work: Baykeeping, Community, and the Organization. The agendas for these areas cross connect and intersect dynamically. It is imperative that we balance staffing, budget, time, and energy, to maintain mission focus and avoid mission creep.

Closing summation: We plan to remain programmatically effective, financially strong, and growing in visibility and perceived value to the community by doing the following: Stick to our mission. Stay science-based in advocacy and policy. Build knowledge, build relationships, communicate our brand, educate, and maintain our credibility. Harness and apply technology. Use the “work-with” approach and develop alternative approaches when this is ineffective. Invest in the human capital of the organization and assure orderly succession. Build financial strength. Increase public awareness of impacts to the Bay and best practices to improve and protect the health of the Bay.

III. FY17 Operating Plan

A. Programs

The employees of Friends of Casco Bay meet together regularly throughout the year to discuss our work, track progress, and assess opportunities. We work as an ensemble, and while we rely on each individual to expertly perform the duties for which they are employed, much of the art of running our organization efficiently and perhaps more importantly, effectively, comes from the insights and synergies of working together over an extended period of time. The sharing of expertise, experience, and inspiration are essential to setting direction together, whether staying the course in certain areas or shifting our focus to launch new initiatives.

Themed meetings, sometimes involving collaborative partners from outside the organization, range from reviewing aspects of our water quality monitoring program and other scientific work to content messaging, advocacy and legal positioning, education and outreach efforts, event planning, publication purpose and design, press releases, and web activity. The shared sense of rationale and understanding about why we are engaging in certain activities (and not others) is essential for outreach, for fundraising purposes, and for organizational harmony; we must continue to effectively and compellingly tell the story of what we are doing to improve and protect the Bay, the stories of *why* this work matters.

1. Water Quality and other Environmental Monitoring

This will be the 25th year of collecting data on the water quality of Casco Bay. We maintain and continue to add to one of the largest and most important long-term data sets on marine water quality in New England. The three main efforts this year will be maintaining the Citizen Stewards Monitoring Program, getting the Unattended Data Sonde Program out of pilot mode and into launch, and continuing a scaled down version of our Profiles Program.

a. Citizen Stewards Monitoring Program

Our volunteer citizen scientists are trained to collect data in surface water, whereas staff profiles, described below, focus on collecting data down through the water column. **In 2016**, the Citizen Stewards Monitoring Program will continue, on 10 sampling Saturdays between April and October, to collect data twice each day, in the morning and afternoon (at 7 a.m. and 3 p.m.) on those sampling dates, resulting in 20 sampling events.

It became clear through the year that a major source of funding for this program (Casco Bay Estuary Partnership) is likely shifting its focus. That, combined with our experience preparing and releasing in April the report *A Changing Casco Bay*, led us to do an in-depth assessment of the utility of the Citizen Stewards Program.

We decided that we need to:

- Continue the program, as it engages substantively many volunteers and provides a dataset, which is surface, synoptic (at the same time), and spatial (at sites all across the Bay), making up the basis for the Casco Bay Health Index
- Develop a better strategy to streamline our data entry process

- Perform quality assurance data checks on all Citizen Stewards data by December 31st
- Update our Health Index with 2015 data to create a presentation for our Annual Volunteer Appreciation and Members meeting in January, and continue to update the Health Index on an annual basis, using 5-year rolling data sets.

We will continue to have exploratory conversations about the utility of other data sets, and we continue our planning around the vulnerability of the funding for the Citizen Stewards Monitoring Program.

Data to be collected: Volunteers will continue to measure water temperature, salinity, Secchi depth, dissolved oxygen (DO), and pH, as well as ancillary data on weather conditions, air temperature, and any unusual sightings. Volunteers are trained according to our Quality Assurance Project Plan (QAPP) approved by EPA, which makes their data, after quality assurance checks by staff, scientifically defensible.

Measuring the acidity at **surface water sampling** sites by our volunteers has been part of our program from the beginning. Acidity levels in ocean water are changing as a result of the absorption of atmospheric carbon dioxide at the surface, an effect of greater carbon loading in the atmosphere (ocean acidification), and as a result of the decay of organic matter in productive, nearshore waters (coastal acidification). Acidity is likely further exacerbated by reductions in populations of calcifiers and of eelgrass due to green crab foraging.

Background: In 2011, we equipped and trained our volunteers to use **digital pH meters** to measure acidity levels, shifting from the colorimetric method we had used since 1991. Each year since, we assess the performance of individual meters for their precision and accuracy and replace electrodes and/or batteries as needed to assure the highest level of data possible in order to ensure the highest levels of precision of these instruments as well as the accuracy of the data collected. In 2015, our volunteers sampled surface water quality at 37 sites around the Bay.

In 2016, we will continue to monitor 37 sites with a couple of shifts in site locations. Two existing sites will be moved slightly to allow better access by volunteers, one will be discontinued, and one historically significant site will be reestablished. The sites being moved are Cove Road in the Harraseeket harbor which will be at Waterman's Dock, and Jordan Point which will now be at Little Flying Point. The site to be discontinued is Mariners Landing on Long Island, and the reestablished site is Cape Small harbor in Phippsburg.

Our ability to do this depends on the number of new and returning citizen scientists, as well as on their geographic locations. Recruitment efforts become more sophisticated each year, employing everything from word of mouth and local newspaper recruitment to internet links, our *Raisers Edge* integrated email marketing tool, Net Community, use of social media, and Survey Monkey scheduling.

In 2015, 69 returning Citizen Steward Water Quality Volunteers were recertified to sample during the 2015 season. In addition, 23 new volunteers joined the ranks.

After the completion of the 2015 season, nine recipients were recognized for their dedication to our Citizen Stewards Water Quality Monitoring Program: six volunteers achieved their fifth-year milestone (Michael Heskanen, David Brenneman, Lauren Leclerc, Stephen

Brezinski, Don Gower and Beth Howe), two volunteers received recognition for their tenth year of service (Will Everitt and Mac Passano), and one received their twentieth year milestone recognition (Darren McLellan).

In FY17, returning volunteers will brush up their skills during the annual Quality Assurance testing in March 2016; new recruits will begin training in April.

b. Profiles of the Water Column

Friends of Casco Bay Staff have been monitoring the water column by **Profile** sampling from surface to the bottom at ten stations around the Bay since 1991. **In 2016**, the program will shift to **sampling at only three of the ten sites**. These three sites are considered “sentinel sites,” a subset of the original ten sites that have been sampled consistently whenever weather or boat issues have been an impediment to sampling at all ten sites. Profile monitoring is conducted **monthly** by using a data sonde and collecting water samples while aboard the Baykeeper boat. As often as possible, students, other scientists, and volunteers accompany staff on these trips. Parameters measured include temperature, salinity, Secchi depth, dissolved oxygen (DO), chlorophyll fluorescence, pH, DIN, and Total Nitrogen (TN). at the surface at all three sites monthly. Data is collected in accordance with our QAPP.

The decision to move from monitoring at all ten sites to just the three sentinel sites was made after an analysis of historic profile data showed that monthly sampling was not sufficient to understand long-term trends. The question of the goal of our Water Column Profile monitoring program was addressed, and whether or not our current program achieved that goal. We revisited the overall value of the Profile program, and tried to assess if we could move forward with just the three sentinel sites. The Citizen Stewards program provides Friends of Casco Bay with the spatial distribution of sites necessary for an understanding of differences in water quality around the Bay. The new Unattended Sonde program (see below) will provide the frequency of data collection necessary to reveal trends over time in water quality. The original profile effort was only intended to provide a “check-up” of the sites sampled, to determine the health of the Bay, at those sites, at that time. By continuing to monitor at the three sentinel sites, we will continue that effort as well as staying abreast of any changes to the water column. If at any time we feel we need to revisit the original ten sites, we can do so. Additionally, the decision to sample at sentinel sites only allows Friends of Casco Bay to reallocate staff time to the Unattended Sonde Data Collection program.

c. Unattended Sonde Data Collection

In 2015, we initiated a pilot effort to collect data using an unattended data sonde. This was in response to our data analysis efforts over the course of the past few years, which led us to the conclusion that for some types of measurements, we may benefit from an increase in the frequency with which data is being collected. Analyses of twenty years of various aspects of our water quality profile data reveal that some long-term trends are difficult to determine with statistical confidence using data collected only once a month. This lack of confidence, statistically speaking, is due to the very significant variability inherent in coastal embayments and estuaries. Deploying an unattended sonde would provide us with far more data, which may prove more statistically powerful.

This project has an additional goal – to better understand existing conditions and seasonal changes in carbonate chemistry and acidification in seawater in Casco Bay. This will be done by obtaining measurements of the partial pressure of carbon dioxide (pCO₂).

In 2015, as a pilot project, we deployed one sonde at the Southern Maine Community College pier from May through October. The sonde ran unattended, chained and locked to a float at a depth of 0.2 meters, and collected measurements hourly. Measured parameters included water temperature, salinity, dissolved oxygen concentration and percent saturation, pH, and chlorophyll. Once a week, the sonde was checked for fouling, the data uploaded, and a water sample was collected for Total Alkalinity (TA) analysis. On a rotating basis every other week, the deployed sonde was replaced by a clean, fully charged and calibrated sonde. The rotation continued for the entire deployment. A weekly secchi depth measurement was taken, and water samples were collected for dissolved inorganic nutrient and total nitrogen analysis.

A LaMotte alkalinity test kit was used to determine TA. Our results will be compared to the results of lab analysis for TA conducted by colleagues who were also collecting samples at the pier.

The alkalinity data will be used with the pH data from the sonde, to calculate dissolved inorganic carbon, partial pressure of carbon dioxide, and aragonite saturation state. These five parameters will then provide us with a much deeper look at the carbonate chemistry of Casco Bay (at least at this site), and the current level of acidification and how that may vary with water temperature, salinity, and dissolved oxygen.

In 2016, Unattended Sonde Data Collection will progress from being a pilot project to a full monitoring program. We will begin with one station, most likely at the Chebeague Island Ferry pier on Cousins Island in Cumberland. Our plan is to use existing infrastructure for sonde deployment rather than maintain a buoy system. Two additional sites are planned, one in Portland Harbor and one in eastern Casco Bay. Deployment will be identical to the 2015 pilot project with the exception of the addition of the pCO₂ sensor. This sensor will take hourly measurements and will be deployed next to the data sonde. Collecting pCO₂ data replaces the TA sampling done in 2015. With measurements of pH collected by the sonde, coupled with the pCO₂ measurements, dissolved inorganic carbon, TA, and calcium carbonate saturation state can be calculated. This information will provide a solid basis for understanding the carbonate chemistry conditions in the Bay, and will provide insight into coastal ocean acidification.

d. Sediment pH

During 2016, we will measure sediment pH monthly or biweekly in a Freeport clam flat, as part of research conducted by Dr. Brian Beal of the University of Maine at Machias. He will compare the pH in the sediment of plots treated with crushed shell material to the pH of sediment in untreated plots, using our measurements.

Background: Our concerns about ocean acidification, inshore nitrogen pollution creating conditions for coastal acidification, and reports about “death by dissolution” of baby mollusks unable to survive in low pH conditions led us, in 2011, to begin looking closely at how to assess the **pH levels of sediments in clam flats in Casco Bay**.

During the summer of 2011, we investigated the feasibility of various methods for collecting data on the pH levels of sediments in clam flats. Low pH is one of many factors that can inhibit the ability of clam spat to grow and prosper. We collaborated with Dr. Mark Green at St. Joseph's College and Dr. Joe Salisbury at the University of New Hampshire (UNH), experts on the effects of ocean acidification on calcifiers' ability to develop, or not, in acidic conditions, to design a simple protocol for data collection. The development of this protocol turned out to be not simple, and it took most of the summer of 2011 for us to get the bugs out of the protocol before we could finally use it to collect data in a consistent manner from flat to flat.

In 2012, we improved the protocol by upgrading our pH electrode to an Accumet AP 115, which allowed us to take measurements directly on the mud surface. We identified 30 flats to be sampled, and we collected data on sediment pH, seawater pH, water temperature, and sediment oxidation reduction potential (ORP). Nitrogen pollution can have a cascading effect, eventually resulting in lowering the pH of marine sediments, and measuring ORP provides some indication of the degree of eutrophication or organic enrichment in the area.

We also collected sediment samples to be analyzed for percent carbon, percent nitrogen, and surface area, by Dr. Larry Mayer of the University of Maine Darling Center. ORP, percent carbon and percent nitrogen, together, can be used to determine the extent of organic enrichment of the sediment, which is important as we continue to investigate whether and how nitrogen pollution is the cause of coastal acidification.

Data was grouped by productive clam flats (actively being clammed) and flats which were not or were no longer productive. The data showed that average pH was lower at the sites located on nonproductive flats, and organic carbon and nitrogen concentrations were higher at sites located on nonproductive flats. This may be evidence of the effects of nitrogen pollution on the flats. More work needs to be done.

In 2013, we began to assess the critical question of whether or not measuring the pH of mud is the most efficacious way to measure the mud's acidity. A low carbonate saturation state is what actually drives the dissolution of calcifiers, and pH has been used as an affordable and relatively easy proxy for saturation state. To test the correlation between pH and carbonate saturation state, we measured both parameters concomitantly during the 2013 field work. We also improved our understanding of sediment pH temporal and spatial variability by focusing on just one clam flat ("site") but collecting much more data, visiting the flat seven times between June and September and sampling at a number of places throughout the intertidal zone. Recompence Cove clam flat in Freeport was selected as the study site. The stations were determined prior to the first monitoring event and marked with wooden stakes. Water temperature and salinity were measured, then sediment data was collected along two parallel transects running perpendicular to the waterline from the high intertidal to the low intertidal. These two transects were 5 meters apart and included 5 sampling points ("stations") each, with the samples and measurements being collected at the waterline edge of the outgoing tide. The stations were about 30 meters apart. Each station included 10 rounds of sediment measurements, including sediment pH, sediment temperature, and 3 rounds of sediment ORP. Sediment samples were collected at each site and analyzed for carbonate saturation state. Sampling frequency was twice per month in June, July, August, and once in

September. Dr. Green and Dr. Joe Salisbury are collaborating with us on this component of the project, and the laboratory analysis was done at no cost to Friends of Casco Bay.

In 2013, we also deployed live clam spat (baby clams) to assess the effect of low pH in the mud and to obtain visual evidence. The spat were provided by Dr. Brian Beal's shellfish hatchery at the Downeast Institute on Beals Island south of Jonesport. We developed and tested a clam spat exposure bioassay, using the hatchery-reared spat, deployed in mesh-covered PVC tubes on different parts of the flat, left on site for varying lengths of time (1, 3, and 7 days). After retrieval, the clam spat were examined and photographed using the Bowdoin College Scanning Electron Microscope to determine the extent of dissolution.

Again, pH was higher in the productive region of the flat and lower in the unproductive region. pH levels were similar between transects, and also showed a negative correlation with sediment temperature; higher sediment temperatures resulted in lower pH values. The clam spat bioassay was incomplete but did provide us with a good protocol to work with as well as a few images of "pitted" clams, indicating that dissolution may be taking place at the study site.

Our goal for 2014 was to collect strong visual evidence that clam dissolution is occurring in the sediment of Casco Bay. We refined our protocol for deploying clam spat and set up another round of spat deployment experiments. One to two-millimeter spat were purchased from the Beal hatchery and were deployed for one-week and two-week periods. Spat were retrieved after the appropriate time period by removal of the sediment and sieving with a one millimeter sieve. Measurements of sediment pH and temperature were taken during both deployment and retrieval. Retrieved spat were cleaned and preserved, and then imaged at the Southern Maine Community College Microscope Lab. Most of the spat showed evidence of pitting, regardless of deployment period. Photos of this evidence appear in our report *A Changing Casco Bay*, released in 2015.

Also in 2015, we presented our sediment pH monitoring protocol at the Maine Water Conference and at an international aquaculture conference. We set up trainings and informational presentations with interested groups statewide, and began sharing the methodology we use. These **trainings may continue in 2016**.

e. Sampling Runoff on the Bay

In 2014, we tried to assess the presence and amount of **pollutants in stormwater runoff** in the Presumpscot River plume (near the Fort Gorges profile site). We sampled during a dry-weather event, a moderate rain event, and a major rain event. The reason for this effort was to make public any evidence of pollution contents in runoff water on the Bay, water we characterize as "anything but fresh."

We had Katahdin Laboratory analyze the samples for bacteria, metals, organics, pesticides, nitrogen, suspended solids, and caffeine. A data sonde measured water temperature, salinity, dissolved oxygen, pH, and turbidity.

The only appreciable differences found in the samples from the three different events were increases in total suspended solids, bacteria, and nitrogen, with the highest results seen in samples collected following the major rain event.

There will be **no sampling** of runoff from the Presumpscot River in 2016.

f. Stormwater and Sediment Sampling

Through our historical Stormwater Sampling Program, Research Associate Mike Doan has collected stormwater from pipe outfalls, catch basins, and small streams, for analysis of various fertilizer and pesticide compounds. This data has been instrumental in effecting behavioral changes in residents of neighborhoods in which these compounds have been detected in the runoff.

We have eight years of stormwater sampling results from 22 sites all around Casco Bay. We detected the presence of specific pesticides, including fungicides and herbicides. (We have seen references linking these chemicals to cancer, reproductive problems and birth defects, and we will work to identify specific scientific sources and clarify whether they refer to work done in the field or laboratory, and whether the effects are on humans or other creatures). Our sampling has also revealed the presence of nitrogen and phosphorous, components of fertilizers, at all of the sampled sites; these nutrients can pollute drinking water wells, and when washed downstream, can cause algal blooms, degrade marine water quality, and create conditions (eutrophication) that worsen coastal acidification. Once they reach the Bay, certain pesticides (pyrethroids) can settle out in the sediments and threaten the health of marine life. These compounds are used in ornamental lawn care and for flea, tick, and mosquito control; however, once in the environment, they can negatively impact marine species, including larval lobsters. As Gary Fish of the Maine Board of Pesticides Control (MBPC) and recipient of a Friend of Casco Bay Award says, “A pesticide that will kill a bug can kill lobsters and crabs.”

We have collaborated with the MBPC and the University of Maine to do this work. In 2009, working with MBPC, samples were taken of both stormwater (at three locations) and sediments (at nine locations). In 2010, we sampled sediments at two sites for pyrethroids. In 2010, MBPC did sediment sampling themselves. During 2014, we added the results of the most recent MBPC sampling to our tables and maps, plotting both FOCB and MBPC data. The presentation of these data at BayScaping socials builds fast awareness among neighbors throughout our community and motivates resistance toward applying these compounds heedlessly.

In 2015, Mike assisted MBPC with both site selection and sampling for another round of sediment collection for analysis of pyrethroid compounds, with a particular focus on habitat for juvenile lobsters.

In 2016, we will sample stormwater sites for pesticides in the runoff, **if and only if** we receive funding assistance from the Maine Board of Pesticides Control for lab analysis of the samples. If funded, we would revisit and sample at six of our former stormwater monitoring sites to update our pesticide dataset, focusing on Portland, South Portland and Falmouth, returning to sites around Broad Cove, Capisic Pond, and the Falmouth Town Landing, as

well as visiting Mussel Cove, and a site just below the athletics fields at South Portland High School. We would follow MBPC's QAPP for sample collection.

g. Eelgrass

Eelgrass is essential in estuaries, providing a variety of key ecosystem functions, from nursery to filter to stabilizer to buffer. Dr. Hilary Neckles has been continuing efforts started by others to assess the health and stability (or lack thereof) of eelgrass beds in Casco Bay. Friends of Casco Bay has played various roles in supporting these efforts over the years. **In 2016**, we may be called on again to assist with some elements of field work; we will participate if funding is provided. We will continue to serve on a steering committee that discusses the work, regardless of whether we engage in the field work. Additionally, we may measure sediment pH in and near existing and extant eelgrass beds with Dr. Neckles and Bigelow Laboratory as part of a **Blue Carbon** initiative. This work would explore the value of eelgrass beds as carbon sinks, mitigating coastal ocean acidification.

h. New Meadows Region

The water quality of the New Meadows region of Casco Bay is severely degraded. In 1999, Friends of Casco Bay got involved with the New Meadows River Watershed Partnership, a then-active coalition of citizens, nonprofit organizations, and municipal, state, and federal officials concerned with the health of the New Meadows River. From 2009 to 2011, Friends participated in an effort to determine the feasibility of removing or modifying the causeway that impedes tidal flow between the New Meadows Lake and the upper New Meadows estuary, **one of the least healthy areas of Casco Bay**. Due to strong opposition from local quahog harvesters and abutting land owners about removing or modifying the causeway, the effort to restore tidal flow was tabled. In addition, significant changes in leadership in the coalition and the lack of a clear direction caused the coalition to meet very infrequently, now rarely. In spite of these setbacks, Friends continued to monitor the health of this embayment each year through our volunteer program and occasional staff-led projects. Starting in 2000, we deployed an unattended sonde to collect data for a three-week period in July at the upper New Meadows; after 13 years of collecting data, we decided in 2014 to discontinue this.

In early 2014, there seemed to be renewed interest in meeting as a coalition to discuss options. Many coalition participants agree that replacing the causeway with a bridge will be the most effective – albeit expensive – option to optimize flow. Some local residents disagree. Since the quahogs have been harvested out to a large degree, there is now less opposition from harvesters, and there is the possibility that water quality will continue to decline due to the lack of filtering by quahogs which are no longer there. One bad episode of a heat wave combined with resulting low dissolved oxygen in the water may produce another pogie die-off this summer.

In 2015, Friends of Casco Bay Staff participated in quarterly meetings with stakeholders to stay in touch about current issues in this region. **In 2016**, we will continue to participate in coalition meetings and highlight to all stakeholders the fragile nature of this challenged region. With our new Casco Baykeeper with us at the table, we may be able to shift the conversation over time. We need to do what we can to continue the efforts to improve the environmental health of the water in this region of the Bay.

i. Maine Coastal Observing Alliance

In December 2013, eight coastal citizen monitoring groups, from Casco Bay to Blue Hill, joined together to discuss the feasibility of conducting a pilot study in 2014, to look at worst-case water quality conditions in the mid-coast region of Maine. This survey of Maine's coastal water quality is the first undertaken since a 1996 Maine Department of Environmental Protection (DEP) examination of regional conditions coast-wide. This new effort is known as the Maine Coastal Observing Alliance (MCOA) and represents 7 conservation organizations who collected the data and 4 academic institutions who are offering guidance (Georges River Tidewater Association, Medomak River Land Trust, Rockport Conservation Commission, Damariscotta River Association, Maine Sea Grant, Gulf of Maine Research Institute, Friends of Casco Bay, Kennebec Estuary Land Trust, Sheepscot Valley Conservation Association, University of Maine Cooperative Extension, and University of Maine Darling Marine Center).

The 2014 pilot project was designed to project worst-case conditions of late summer, when water temperatures are highest, biological activity is greatest, and low pH and dissolved oxygen are most likely to occur. The study gathered data on pH, temperature, dissolved oxygen, nutrients (total nitrogen and phosphorus), chlorophyll, salinity, and turbidity in 8 coastal estuaries and embayments between Casco Bay and Blue Hill Bay.

Results of the study using the data collected showed that these estuaries were generally in a healthy state, in that they did not exhibit excessive nutrient loading or oxygen deficits. The **Harraseeket** estuary seemed closest to a state of some risk of eutrophication based on nutrient levels. The low pH of waters entering the estuaries at the seaward and landward ends are cause for concern, but it is unclear if these conditions are a result of human influence or natural processes of the watersheds and open Gulf of Maine

In 2015, Friends, continued to participate in MCOA meetings as the collaboration continued to develop. **In 2016**, MCOA members will continue to work to get funding to continue another season of data collection in all embayments. This work will continue only if funds become available. We will continue to participate in this effort to the extent it does not impede our current work plan.

j. Nabbing Nitrogen

In 2016, we will launch a “**Nabbing Nitrogen**” campaign that will educate the public about nitrogen, provide the Maine Department of Environmental Protection (DEP) with data needed to implement nitrogen standards, and provide a low-threshold way for scores of volunteers to assist us in data collection. We will recruit at least 100 new volunteers to take nitrogen samples on the same day at the same time by simply scooping surface water into collection jars. Our goals are to collect a significant amount of synoptic data, connect with users of the Bay, move the state forward on regulating nitrogen, and shine the public spotlight on an issue too few understand. We have heard from several community members that our 10-week Citizen Stewards Monitoring Program is too time intensive a commitment for them. This brand-new effort will recruit new volunteers, boaters, and fishermen, who cannot commit to the rigorous time requirements of our Citizen Stewards program, to join us in taking a regional snapshot of nitrogen levels.

Volunteers are required only to do a few things: sign up, receive the collection bottle, instructions & datasheet, fill the collection bottle, and take it to a drop-off location.

This initial effort will focus on the Fore River region of Casco Bay. Twelve of the one hundred sites have been pre-selected for the DEP's nitrogen model, and additional water samples for chlorophyll analysis will also be collected at these sites. Our Pumpout vessel will be used as a sampling platform for some of these sites, collecting samples along a transect running along the mid-channel of the river. Our Baykeeper boat will be employed as one of the drop-off points. We hope to be able to report out on this data collection in fall 2016. This effort is also a great way to focus on an area that has consistently displayed poor water quality. This may also serve as the pilot effort for future Nabbing events.

k. Microplastics

Increasingly, Friends of Casco Bay is concerned about the presence of microplastics in the marine environment. Microplastics are defined as being smaller than 5.0 mm, and may enter coastal waters through primary (manufactured at that size, like microbeads) or secondary (by degradation of larger plastic materials) vectors. Many marine organisms will ingest microplastics, and there are health implications throughout the food chain, as toxic contaminants have been found to adsorb to the plastic. **In 2016**, we will investigate the possibility of **sampling for microplastics** in Portland Harbor. Existing monitoring protocols and literature will be reviewed, and sampling may be undertaken if possible. This work will serve as the basis for building an educational effort and for continuing our policy and advocacy work on this issue in the Baykeeping program (to date, microbeads bill in the Maine legislature, green packaging ordinance in the city of Portland).

l. Murphy Water Quality Database

The platform for our water quality database, known as Murphy, written in DOS in 1994, needed upgrading for some time, and during 2010-11, the original software designer, Sarah Rose Werner, redesigned the database platform in the relational database program Microsoft "Access." This database is more user-friendly by being Windows-based. During 2012-13, she and Peter continued to debug the new program and migrated much of the historical data into the new database. The migration to the new platform enables us to have multiple users working on data at the same time and has the ability for us to export to other users and data access portals, potentially enhancing our collaborative efforts.

In the fall of 2014, we were fortunate to add an exceptional new member to our staff, Sara Biron, in the newly-created position of Database Assistant. Sara enters water quality data into Murphy (as well as fundraising data into Blackbaud Raisers Edge), assists with communications to members and volunteers, and helps host events for members and the community. Most significantly for the water quality monitoring program, Sara enters data collected by volunteer citizen scientists and is performing quality assurance checks on the data.

Our goals for 2016 are to:

- Continue to improve our data import and entry practices by better utilizing our Survey Monkey and Profile import functions in MURPHY2010.
- Develop screencast and written protocols to document data import practices and formatting.
- Stress to Citizen Stewards volunteers the importance of using the Survey.
- Monkey/online data entry form in a timely manner to speed up data entry.
- Perform Quality Assurance (QA) checks of data on a monthly basis.
- Complete all QA of 2016 data by 12/31/2016.
- Explore avenues for improving our skills to best utilize the full power of MS Access, including courses and tutorials.
- Explore the possibility of re-contracting with SarahRose Werner to import historical TN & DIN data and address current issues in the database that need fixing.

m. Mapping and statistics

Mike continues to expand and deepen our Geographic Information Systems (GIS) and JMP statistical analysis capabilities. This is crucial for analyzing our data and for making our data more accessible, understandable, and meaningful. **During 2016**, Mike will continue to look at the various datasets of water quality parameters we collect, to compare changes over time and to contrast geographical differences in water quality site-to-site and region-to-region in the Bay.

Mike spent a considerable amount of time in 2013-14 analyzing data sets and reviewing those analyses with staff, to determine what to use in the report, ***A Changing in Casco Bay***. During that process, we continued to add to the list of ways we would like to review data sets, beyond what is included in the report, in order to determine not only what the data have to tell us, but also what might be the most optimal data sets going forward depending on what questions we want to answer. Our exploratory conversations will continue; in the meantime, Mike will maintain **annual** updates of the **Casco Bay Health Index**, as well as produce other data analyses and briefings.

Maps, tables, graphs, and other visual depictions are fundamental to the effectiveness of our presentations, our web-based outreach and education, and our assessment of data for making decisions about the direction of our programs. We benefitted greatly during 2014 from the assistance of graphic design services, and we will continue to avail ourselves of these services as we identify the products that could most benefit. **In 2016**, Mike and Sarah Lyman, Development and Communications Assistant, with the assistance of an invaluable designer who has been lending his skills pro bono, will be working together to upload onto our website an interactive map of the Bay with our water quality data, anecdotal information about areas of the Bay, and other attributes, such as video pop-ups.

2. Baykeeping

a. Casco Baykeeper

Last year's plan had 3 parts for staffing our Baykeeping Program while in transition, and we completed all of those: Cathy assigned various Baykeeping tasks and duties to other staff (and the Board appointed her as Casco Baykeeper *Pro Tem*), we hosted a series of conversations with Staff, Board, and invited Guests, including Joe in the first, to redefine Baykeeping in its next iteration, and Cathy formed a search advisory committee, which assisted with the search design and selection process.

We hired our third Casco Baykeeper, Ivy Frignoca, who came aboard full time January 4, 2016. **In FY17**, we will build upon the new direction set for the Baykeeper, internally integrate her fully into the staff of Friends of Casco Bay, and externally integrate her into the networks within which we work.

- Staff will work with Ivy on the issues identified below.
- Ivy will connect with people through social media postings, op eds and other news articles, and outerwear with visible Baykeeper insignia.
- Ivy will work with other staff to identify various people to meet, establish a meet and greet plan, and identify key conferences – such as the Fishermen’s Forum and the Waterkeeper Alliance Conference – to attend for the purposes of establishing relationships and networking.

b. Oil Spills

As noted last year, we remain concerned about the Port of Portland’s decreasing ability to respond to oil spills. With less oil being transported into the port, there is less funding generated per barrel of oil going into the Surface Fund for oil spill preparedness, training, equipment, and response. As oil terminals downsize their staff and people retire, there are fewer people left with institutional memory, experience, and long term training. In addition, the Maine Department of Environmental Protection (DEP) has had staff turnover in its oil spill response division, with an irreplaceable loss in expertise and institutional memory. Both the Maine Department of Marine Resources (DMR) and Department of Inland Fisheries & Wildlife (IF&W) have lost staffers who acted as liaisons and natural resource trustees in oil spills.

Our concern about the Port’s decreased ability to handle spills is heightened by a bill that was pending before the legislature, **LD 1494 and its amendment**, which was to eliminate any reporting and any penalties or fines for many oil spills less than 10 gallons if the discharger removed the spill in accordance with the rules and order of the board or commissioner of the DEP. We strongly opposed the bill as amended, and our Casco Baykeeper worked hard and successfully to help defeat it (voted down in Environment and Natural Resources Committee of the Maine Legislature on 18, 2016). We supported keeping the current law in place, which operates by rewarding good behavior. Existing law provides that people who report a discharge within two hours and remove it are not subject to fines or civil penalties. It allows the State, with its trained personnel and proper equipment, to swiftly clean spills to protect our water resources.

To address the Port’s decreased preparedness to respond to oil spills, in fiscal 2017, we will continue to strengthen our relationship with the new **Coast Guard** command. We met with Captain Baroody and his team at our office this January, and we will tour the Coast Guard facility early in the fiscal year. We will participate in incident planning exercises later in the year and will continue to identify and evolve our role and the role of our volunteers in oil spill response preparedness. We also will continue to monitor the Marine Spill Response Corporation (MSRC), an Oil Spill Response Organization (OSRO). As noted last year, MSRC recently re-signed a lease so its *Maine Responder* oil spill response vessel will likely make Portland its home port for another next decade. But because of cost, all terminals except Portland Pipeline have pulled out of membership with MSRC.

We need to pursue an update on an effort began in 2014, to rewrite and digitize the **Area Contingency Plan** (ACP). A digitized ACP was to incorporate hot links to more efficiently provide responders with greater information resources.

Ivy will be monitoring the federal lawsuit filed by Portland Pipeline Company against the City of South Portland, challenging its **Clear Skies Ordinance**. The ordinance bans the loading of crude oil into tankers on the City's waterfront and effectively blocks the company from reversing the flow of its South Portland-to-Montreal pipeline. The City passed this Ordinance under its local police power to protect public health and carry forth its development plan, which includes a balance of commercial and residential uses in the vicinity of the pipeline. If the Court upholds the ordinance, it will eliminate the risk of tar sands spills into the Bay.

To be better prepared for spills, we will continue to be involved in **Area Committee meetings**. Joe served, at the request of the Coast Guard Captain of the Port, on the Maine/New Hampshire Area Committee on Oil Spill Preparedness and the Local Spill Management Team. Joe's term as a Governor's appointee to the Maine Oil Spill Advisory Committee (MOSAC) ran through the end of 2014, after which MOSAC became inactive. In this political climate, we do not believe we can effectively push for a renewed MOSAC. Instead, Ivy will participate in the Area Committee, the Oil Spill Seminar, and other oil spill preparedness venues to substitute for the loss of MOSAC. Peter Milholland has attended past Oil Spill Seminars and is also a member of the Maine/New Hampshire Area Committee. He will continue to serve as our point person for oil spill "Volunteer Coordinator" in the "Planning Section" as it relates to the Maine/New Hampshire Area Contingency Plan, specifically for the Casco Bay region.

There continues to be a critical need for a fine scale **circulation model** for Casco Bay, which will predict oil spill trajectories, as well as provide insight on the fate of other pollutants and larval transport, but funding regionally continues to be an issue. This remains one of the most important data needs for our Bay. We will continue to build momentum for this with other organizations, including Casco Bay Estuary Partnership (CBEP), US Fish & Wildlife, and Bigelow Laboratory for Ocean Sciences.

c. Dredging

Our **working waterfront** remains integral to Casco Bay's character, history, and economy. Oil tankers, cargo ships, and cruise ships, along with fishing boats, island ferries, and recreational craft use the shipping lanes of Portland Harbor. Every decade or two, silt that accumulates in the channel from stormwater runoff must be excavated and relocated to comply with federal law, which requires that the shipping lane be maintained at a depth of 35 feet at mean low tide to ensure that oil tankers and other large vessels do not run aground and spill their loads into the Bay.

The federal ship channel was dredged in 1998-99 and again in early 2014. Last year's plan detailed Friends of Casco Bay's role in the planning and oversight of those dredging operations. We supported both dredges to ensure the safe and efficient movement of ocean-going vessels but advocated for environmentally-protective measures. For example, we advocated for and achieved the successful relocation of lobsters prior to dredging, and the Army Corps of Engineers now requires that relocating marine resources be addressed in the dredge permit application.

Last year, we noted the growing need for dredging around the 20 or so commercial piers that dot the waterfront on both sides of the port and are not in the federal channel. Sediments flowing off city streets and out of the Combined Sewer Overflows from rain and snow melt have made many areas around the piers too shallow for vessels to tie up at low tide. Small vessels may even run aground on “sand bars” at low tide. Dredging would allow bigger, fully-laden ships to tie up at docks. The problem is that the sediments that have accumulated along the shoreline can contain decades of “legacy contaminants” from old factories and shipyards, as well as from modern-day urban runoff.

Our testing in 2004 of marine sediments at 20 locations in the Fore River and Portland Harbor found toxic levels of polycyclic aromatic hydrocarbons (PAHs) in 19 of the 20 sites sampled (3 of these sites showed truly alarming levels). In large amounts, PAHs threaten the health of marine life, including lobsters, crabs, and other bottom-dwelling invertebrates.

As noted last year, although wharf owners may not have caused the contamination, under the Submerged Lands Act, they bear the costs of testing accumulated sediments for toxics and paying to dredge and relocate them.

In FY16, Cathy Ramsdell served on the Portland Harbor Non-federal Dredge Committee. From her work in this regard, we report two important developments. (1) The Portland Harbor Commission received a Brownfield assessment grant from EPA; this will fund important work to document and address sediment contamination in the harbor. (2) The City advertised a request for proposals (RFP) seeking consulting services for design and permitting for a Portland Harbor Confined Aquatic Disposal (CAD) cell. In order to have environmental interests represented in the selection process, Cathy was asked to serve on the selection committee, and a consulting firm has been engaged, which cited a key environmentally-sensitive form of boring sediments for testing the potential site locations, a good outcome.

We would prefer NOT to keep these contaminated sediments in the ocean, but removing them and transporting them to proper landfills is cost prohibitive for wharf owners. Several years ago, Casco Baykeeper Joe Payne raised the idea of using a CAD cell to dispose of the contaminated waterfront sediments. Essentially, a CAD cell consists of digging a deep hole beneath the Bay, placing contaminated dredge spoils in it, and placing clean fill on top to ensure the contaminated soil stays in place. Tests have found that the mud in CAD cells stays put.

Our position remains that using a CAD cell to move mud and contaminants and sequester them away from the shoreline is the only affordable compromise that will improve the health of the harbor. Our first priority is always going to be protecting the water quality of Casco Bay, but we view CAD cells as a practical solution to a difficult problem. Cathy and Ivy will work together to advocate for the best siting and design of a CAD cell in the harbor.

Also consistent with last year’s plan, we began to develop a Bay Paper (see Communications section elsewhere in this plan) to help educate the community about the complex issues of dredging, and to help ensure that area lobstermen, other harvesters, and members of the public have an opportunity to deepen their understanding of what is afoot. We will work this year to finish the Baypaper and further develop a public education plan regarding the CAD cell.

Peter continues to follow the dredging and dam removal issues in the Royal River. Ivy will work with Peter, and she will gather and review the relevant legal documents, especially those that indicate the requirement of fish passage, so we can develop our position and support the advocacy work of the Royal River Conservation Trust and other nonprofit organizations that have taken leadership roles in pushing for dam removal, and more recently, with indications that the town of Yarmouth is no longer considering removal, for fish passage over the dams.

We continue to monitor proposals to dredge other areas of Casco Bay, including the Chebeague Island ferry docks.

d. Nitrogen Standard and Coastal Acidification

Reducing the amount of nitrogen entering Casco Bay is a critical element of our campaign to limit coastal acidification and noxious algal blooms in the Bay.

In FY16, we continued our public education campaign - including releasing our report, *A Changing Casco Bay*, revising a Bay Paper on nitrogen, conducting our Bayscaping programs and numerous public talks – to educate the public about the impacts of too much nitrogen in our bay. Ivy worked with us on this issue prior to becoming a member of our staff. She will continue to be a lead advocate in this area.

First, Ivy, working with a small stakeholder group and Cathy, has organized and will be instrumental in convening the Maine Ocean and Coastal Acidification Coalition. This volunteer coalition will (1) implement some recommendations of the Ocean Acidification Study Commission authorized by the 126th Legislature and (2) coordinate the work of governmental agencies, academic institutions, aquaculturists, nonprofit organizations and citizens who are studying and experimenting with ways to reduce the impacts of – or help adapt to – ocean and coastal acidification. This volunteer effort became necessary when the state's own Department of Marine Resources testified against creating a legislatively approved council to oversee and coordinate ocean acidification work in Maine. Ivy is also assisting with efforts to support a bond bill that could provide additional funds for Friends of Casco Bay to purchase equipment for our research to help determine the causes of coastal acidification.

Ivy will work with Mike to push for publication of nutrient criteria, and in the interim, push for implementation of more stringent nitrogen limits in waste discharge permits. By way of background, a Legislative Resolve authored by Friends of Casco Bay passed in 2007, called for the Maine DEP to establish nitrogen criteria and limits in coastal waters. Under the current administration, the final adoption of nutrient criteria has languished. Phosphorus criteria for fresh water still has not been finalized despite about 15 years of work and draft criteria that EPA approved several years ago. So while we push to convince DEP regulators to set protective nitrogen criteria, which to us means 0.38 – 0.40 milligrams of Total Nitrogen per liter of seawater, we know we must strongly advocate for DEP to enforce lower limits in permits now, and not wait until criteria are adopted.

Ivy and Mike will review all draft Maine Pollutant Discharge Elimination System (MEPDES)/Waste Discharge Licenses to determine the condition of the receiving waters, the competing sources of nitrogen entering the water, whether there are impairments to water quality, and whether stricter nitrogen limits must be set in new or renewed licenses to meet water quality standards.

We suspect that most sewage treatment plants can meet a 3.8 ml/L standard outside their mixing zones. We have done some sampling in these zones, and DEP currently is working on models to test this. We would encourage the treatment plants to incorporate improvements to upgrade nitrogen filtration when they do their next facilities upgrade. We proposed that DEP direct a modeling analyst to conduct CORMIX modeling studies around sewage treatment plant outfalls to confirm our expectation that most could meet a standard of .38 ml/ of Total Nitrogen beyond their mixing zones. Our Nabbing Nitrogen effort will also result in data which will be useful to the modelers.

We will suggest scheduling a briefing with the Environmental Funders Network (steered by Maine Philanthropy Center) on the issues of Coastal and Ocean Acidification.

Through our presentations and Bay Papers, we will continue to educate the public about the issue of Coastal Acidification and what can be done to combat it, particularly by limiting nitrogen pollution.

Mary has been leading a Casco Bay Curriculum a teacher workshop that focuses on Climate Change curriculum training for educators, one of the recommendations of the Ocean Acidification Study Commission in January 2015.

e. CSO's and the City of Portland

Friends of Casco Bay helped influence the DEP and the City of Portland to get serious about eliminating combined sewer overflows (CSO's), and in FY08, we helped get a \$61 million dollar bond commitment passed by the City Council to fund Tier II of the CSO Abatement Program. We encouraged the City to have stakeholder meetings on CSOs. During FY12, consultants to the City on the design of Tier III recommended a 30-year time horizon. Action by FOCB staff, members, and supporters convinced the City Council to vote instead for a 15-year timeframe. A further \$169 million in funding was committed to meeting the goals of Tier III.

Cathy attended the stakeholder meetings held by the City and continued to make it clear that not meeting deadlines will cause a reaction from us, up to and including legal action. The stakeholder meetings were to be convened quarterly, but there has been significant turnover of key municipal personnel during 2015, and during that process, the meetings were not convened. Ivy has attended one stakeholder meeting with Cathy, and Ivy and Cathy will meet with the City Manager and other key City personnel to discuss proposed changes to the City's current plans to eliminate more CSOs. Ivy will review the original consent decree and all subsequent licenses and enforcement actions to help shape our future advocacy with respect to eliminating CSOs in Portland. Ivy and Cathy hope to formulate an action plan to recommend depending on the terms the City proposes.

Joe and Cathy sat on a committee to plan a strategy for implementing an equitable stormwater utility fee that spreads the cost of improvements beyond water rate-payers to all stormwater system users. A key milestone was reached on January 21, 2015, when the City Council voted unanimously to implement the recommended fee structure. The first bills under this new utility went out in early 2016. The City has been working to make consumers see how they can reduce their bills by adopting "green" practices, such as replacing hardtop with permeable pavement and recycling stormwater runoff to rain gardens.

We will continue to push the City to implement more low impact development (LID) or green infrastructure practices throughout Portland. We will work directly with City officials, as well as independently, to conduct outreach efforts to encourage residents to reduce nitrogen pollution (see Bayscaping section for references to our work with municipalities and citizens' groups exploring pesticide and fertilizer ordinances).

f. Monitoring Draft Discharge Permits

Ivy will monitor all draft discharge permits in the Casco Bay watershed. In Maine, under a delegation agreement with the US Environmental Protection Agency (EPA), Maine DEP issues waste water discharge permits under the Clean Water Act. EPA, however, reserved its authority to administer the part of the discharge permits that deals with cooling waters. Under the delegation agreement, this reservation of authority should have been temporary. Instead, it has continued with the result that there is often no review of the pollution caused by cooling waters.

Power plants, such as Wyman Station on Cousins Island, draw water into the facility to absorb heat from the process of creating steam to generate electricity. This warmer water is then discharged back into the Bay. It is these waters that are known as cooling waters.

We care deeply about the use of cooling waters because in the act of drawing water in to a power plant, many marine organisms get sucked in and die. Also, the warmer water discharged back into the bay raises the overall temperature in the discharge area and can negatively impact habitat.

In 2013, we hired the law firm Super Law Group to engage Reed Super, a specialist on Clean Water Act compliance, to help us draft comments to the Maine DEP regarding an application for a permit renewal to discharge heated effluent (cooling waters) from Wyman Station. The Super Law Group worked with Ivy, in her capacity as staff attorney at the Conservation Law Foundation (CLF). The Super Law Group drafted our comments on the need to comply with the cooling water provisions of the Clean Water Act, and Ivy drafted comments for CLF on the need to study the impact of cooling waters on Casco Bay at a time when overall bay temperatures were rising. Ivy used our data on temperature in her comments.

As a result of these team-effort comments, DEP did not renew the permit but instead undertook the study of the effects of thermal discharges on the Bay, as detailed in CLF's comments. In response to our comments, they could do nothing until they received delegated authority to enforce the cooling water provisions of the Clean Water Act. EPA, although it had the authority to impose requirements regarding cooling waters, has not been enforcing such provisions. Instead, EPA worked on publishing its final rule. EPA issued its final rule in August of 2014. Due to political battles between the State of Maine and EPA, the delegation of authority has not occurred.

EPA's website indicates they will begin enforcing cooling water requirements in 2016. Ivy will track this issue with respect to Wyman Station.

In January 2015, we commented on a discharge permit application by the developers of a residential hotel, Diamond Cove Homeowners Association, on Great Diamond Island. We raised several issues and pointed out that the State had mistakenly represented the area around Great Diamond Island as Class SC waters. Rather, we demonstrated that the waters around the island are Class SB, which requires more stringent protection. We also raised

several other issues in the draft permit regarding the impact on water quality of the proposed discharges. Almost all of the points we raised were endorsed by DEP in its response to the developer's attorney and the draft permit was altered accordingly.

In the year ahead, Ivy will track the renewal of the waste water discharge permit for the City of Portland's wastewater treatment plant, determine the updated status of the Wyman Station wastewater and Clean Air Act permits, and take steps to determine if we can exert pressure so the state can accept authority for compliance with the cooling water provisions of the Clean Water Act. Ivy will track every wastewater discharge permit application in the Casco Bay watershed and comment as needed. We expect that with Ivy on staff, we will no longer need to allocate sums for outside law firms to draft comment letters for us, and Cathy will explore with the Board whether they would prefer to un-designate net assets sequestered for that purpose.

g. Legislation

We resolve many issues through collaboration with other stakeholders, but some problems require legislation and the force of law. We lobby for laws that protect the Bay and try to block the passage of bad legislation. At the state level, we maximize our impact by being a member of the Environmental Priorities Coalition (EPC), a group of 31 nonprofit organizations with environmental missions and collectively over 100,000 members.

In addition to the issues we plan to work on, we regularly deal with dozens of other issues that come in "over the transom." We continue vigilantly to monitor legislative initiatives at the local and state levels. Ivy will continue this by reviewing the bills at the start of each legislative session and participating in the EPC with Cathy.

Ivy actively lobbied against LD 1494, a bill that would have rolled back environmental protections in place in the event of oil spills. She met with the Marine Caucus, a group of legislators with marine waters in their districts who sponsor and bills to protect our shores and ocean. She is working on the bond bill designed to provide funding for equipment to test for sources of coastal acidification, and she is tracking numerous other marine related bills.

h. Other Matters

In FY16, among other matters, we worked on:

On the local level:

- City of Portland ordinances: Plastic bags and polystyrene packaging

For over two years, Cathy worked with the City of Portland's Transportation/Sustainability Committee on proposals to regulate plastic bags and polystyrene. A long-time Portland resident herself, she worked as a member of the Green Packaging Task Force to craft ordinances that encourage consumers to convert to reusable bags and that require retailers to limit the use of polystyrene packaging. On June 15, 2014, the Portland City Council voted to put a surcharge on plastic bags and to prohibit the use of polystyrene packaging by restaurants and retailers. On April 15, 2015, local retailers will begin charging customers \$0.05 for each plastic or paper shopping bag they use to package purchased goods. The packaging ordinance, which also goes into effect on April 15, 2015, prohibits restaurants, cafeterias, coffee shops, food trucks, and other food service establishments from distributing

their products in polystyrene foam packaging. Since then, a number of towns around the Bay have been exploring enacting their own green packaging ordinances.

- Portland Stormwater Utility Fee

Portland City Council's passage of the proposed structure for applying stormwater fees to all users on January 21, 2015, was the result of many months of work to create an equitable fee structure. Cathy and Joe participated in these deliberations as community stakeholders, at the invitation of a member of the Portland City Council and Portland's Public Services Department. In 2014, we sent out three separate email alerts to our members and supporters to engage them in the process.

On the state level:

- Ocean Acidification bill

In the 2013-2014 Legislative session, we lobbied hard to get the ten-member Legislative Council to introduce an "emergency" bill to study the impact of Ocean Acidification on Maine marine resources during a session in which only emergency bills were heard. Then we testified and rallied our members to support this bill, which ultimately passed by a wide margin. Joe Payne was asked to serve on the 16-member Commission. He also served on the science subcommittee of the Commission to draft the report, which was issued in January 2015.

- Environmental Priorities Coalition (EPC) selected environmental bills

As an active member of the EPC, Friends supported bills that were vetted and selected by the 31-member coalition, which represents more than 100,000 Mainers. Cathy represents Friends on the Coalition and Ivy will join her.

- Microbeads

In January 2015, we sent an e-blast to our members and supporters about a bill to phase out the use of microbead plastics in personal care products and over-the-counter drugs. Cathy testified before the Environment and Natural Resources Committee (ENR) of the Legislature, and the ENR unanimously recommended the bill (LD 85) ought to pass. These tiny synthetic plastic particles, found in shaving cream, facial scrubs, cosmetics, and other beauty products, pass through water treatment facilities and into our rivers, lakes, streams, and coastal waters. Microbeads absorb toxic chemicals and are ingested by shellfish, causing a health risk to people who consume shellfish.

In FY17, we will continue to keep our eyes and ears on activities that may generate upcoming legislation.

Issues we will be following at the **local level**:

- Bans on Pesticides and Fertilizers

Increasingly, community activists and conservation commissions are contacting us to ask about how they can limit the use of lawn chemicals in their communities. Some are considering education and outreach; others are looking at passing ordinances to ban the use

of synthetic pesticides and fertilizers, on public property (as in Scarborough) and on private property (as in Ogunquit). This approach is gaining momentum; we responded to a backlash op-ed piece from a professional landscaper in the *Portland Press Herald*, and these activities led to the Maine Landscapers and Nursery Association (MELNA) invitation for Mary to participate in two recertification workshops on the topic for its members on April 1, and April 8, 2015 (see BayScaping section below).

At the **state level**:

- Weakening of snow dumping rules

Last winter, nearly twice-weekly snow storms resulted in huge piles of snow accumulated along the streets of Portland, and public works officials were stymied to find places to push it or enough land sites on which to dump it. Many wanted to dump the snow directly into the ocean, which requires a permit from DEP.

DEP had already proposed weakening the permit application from a site-specific application to a “general permit,” which would be much easier for a municipality to obtain. We have long opposed dumping polluted snow in the ocean and in stockpiling it within 20 feet of the ocean, a practice currently allowed by the state.

Last winter, Cathy worked with the City’s Public Works Department and DEP to ensure that the City sought alternative sites and resisted the temptation to try to dump snow into Casco Bay. The City partnered with the University of New England to open new snow dump sites with appropriate environmental controls in place, and DEP fast-tracked permit approval.

i. Emerging Issues – Seven Identified

There are several emerging issues that we will be looking into in the months ahead.

- **Leasing Clam Flats**

At present, Georgetown leases one plot, and Harpswell, Freeport, and Brunswick are considering leases under a statute passed by the Maine Legislature in 1905.

The Georgetown lease plot is part commercial enterprise and part research project. It is funded and monitored by the nonprofit Manomet, and is designed to evaluate aquaculture as a means of restoring the ecological and economic productivity to sub-productive areas. The lease plot is ravaged by green crabs. Under the lease, five long rows of nets in 70 patches spread across the exposed ocean bottom at the mouth of a 300-foot-wide cove. Beneath the netting, protected from the hungry crabs, tiny seed clams planted in May 2014 have been growing toward harvestable size.

Harpswell is looking at leasing 20% of its town-owned flats to itself for similar purposes. All shellfish diggers with licenses to operate in Harpswell would have access to the lease area. Other marine harvesters would not. In Freeport, researcher Dr. Brian Beal has been conducting research projects investigating effects of predation and acidification on clam populations along Freeport’s Harraseeket River. In research effort, he found after 9 months that 90 percent of the seeded clams had survived in one of the plots, plus a staggering 1,400 wild clams per square foot were taking refuge there, an estimate of 330,000 in the 12-by-20-foot plot. Outside the net, just a few feet away, there were just 0.4 clams per square foot.

Although this research seems promising from an ecological and economic perspective, many clambers and even state officials are skeptical of the need for and use of leases.

There are also unsettled legal questions surrounding the use of leases for aquaculture. Ivy will delve into the legal and resource management aspects of this issue and work with Cathy, Peter and Mike to develop our position with respect to clam flat leases.

- **Rockweed**

In Maine, rockweed is managed like a fishery. Under the state's first ever fishery's management plan for rockweed, the state will lease sectors to harvesters who will be licensed to exclusively harvest rockweed within their assigned sector, as long as the harvester follows rules established by the Maine Department of Marine Resources (DMR) regarding how to cut the rockweed.

There are several issues we will track. First, the plan's description regarding how sectors will be allocated is of concern. For example, it allows the applicant to define their sector (i.e. sectors are not predetermined), and the applicant's right to harvest the sector would renew automatically at the end of the lease term unless the applicant fails to follow harvesting rules. DMR is supposed to address these issues in major substantive rules, which Ivy will track.

Second, the plan's designation of no-cut conservation areas is flawed and inadequate and this fails to protect habitat for important marine species. Ivy will assess what may be done to push for stronger protections for critical habitat protection for species such as cod, pollock and juvenile lobsters that rely upon rockweed.

Third, the state awards licenses to harvest seaweed without landowner consent, unlike clam flat leases which require landowner permission. The licenses and the management plan clearly state that whether or not landowner permission is needed is a legal question that is unsettled and not covered by the license. A lawsuit to determine the answer to this question has been filed. Ivy will track the progress of this lawsuit. This issue is important because wild harvest of seaweed is an ever-increasing and lucrative business in Maine. We must ensure that proper rules are in place for sustainable seaweed harvesting in Casco Bay.

- **Plastics and Microplastics**

Plastics and microplastics in the ocean originate from a wide variety of sources. Often mistaken for food, they are consumed by a wide variety of marine life. Seabird, marine mammal and sea turtles deaths from plastics consumption are well documented. Plastic particles have been detected in the tissues of algae, as well as in the species of mussels and oysters we consume here in Maine. The durability of plastics and their attraction as an adherent substrate for toxic contaminants, such as PCB, PAHs, DDT, and PDBEs (fire retardants), make them particularly pernicious. Macroplastics in the ocean become microplastics over time, and microplastics can originate from microbeads added to personal care products, as well as microfleece fibers, which enter wastewater from our homes.

In Blue Hill, Maine, the Marine and Environmental Research Institute (MERI) developed a method to measure microplastics in seawater, which they are sharing with other research groups around the country. In 2014, MERI developed a study to measure microplastic fragments in Maine seafood. They found surprisingly large numbers of microplastic

fragments in oysters and mussels. Oysters had the highest number of fragments, averaging 177 pieces per animal. These numbers show microplastics may pose a serious health threat to the animals themselves as well as to seafood consumers.

Very little is known about the distribution of and sources of plastics and microplastics in Casco Bay. We know of one sample showing 17 particles per liter of seawater.

Staff are engaging in a series of meetings with a variety of colleagues, including a former researcher from MERI, and the office of the New York/New Jersey Baykeeper which just released their plastics study, and others, to help develop a sampling protocol for us to use to look at plastics in Casco Bay. In addition, Ivy is researching the recently passed federal law that bans the use of intentionally-added microbeads in rinse-off cosmetics, and we will be weighing what other legislative measures might be taken to reduce the presence of plastics and microplastics in marine waters.

- **Aquaculture**

We predict that we are likely to see continued growth of various aquaculture ventures around Casco Bay. We will watch closely for signs of any activities which may threaten the health of the Bay and respond accordingly.

- **Cargo Containers in the Port**

Worldwide at any given moment, there are approximately 5 to 6 million shipping containers in oceanic transit. Thousands of containers are lost at sea every year, often due to rough seas, inadequate or faulty securing mechanisms, and failure to weigh all containers at the time of loading. These lost containers can pose potentially severe ecological, economic, and navigational safety consequences. In the upcoming year, Ivy will look at the seeming increase in cargo containers being transported in Casco Bay, to determine whether this may be an issue we need to be concerned about.

- **Regional Ocean Planning**

Pursuant to a Presidential Executive Order in 2010, the Northeast Regional Planning Body (RPB) is responsible for developing New England's ocean plan. The Northeast RPB includes representatives from the six New England states, ten federally recognized tribes, ten federal agencies, and the New England Fishery Management Council. The RPB has no authority to create new regulations. Its mandate is to create a plan and oversee its implementation. It has developed goals and objectives and hopes to publish a plan in 2016. We will look at the goals, objectives, and draft plan to see if it is properly protective of Casco Bay, and what if any comment we should make regarding the plan.

- **Climate Change and Sea Level Rise**

Climate change will continue to have local impacts, with chaotic weather patterns, storm surges and erosion effects, and extremes in temperatures, winds and precipitation. We will continue to assess whether and how we can participate or respond to local adaptation efforts.

3. BayScaping

With nitrogen and ocean acidification identified as critical threats to the health of Casco Bay, our BayScaping messaging is as important as ever.

Increasingly, community activists, municipal officials, and conservation commissions are contacting us to ask about how they can limit the use of lawn chemicals in their communities. Some are considering education and outreach; others are looking at passing ordinances to ban the use of synthetic pesticides and fertilizers, on public property (as in Scarborough) and on private property (as in Ogunquit). This approach began to gain even more momentum after we responded to a backlash from op-ed pieces we submitted to the *Portland Press Herald*. These activities have led to valuable dialogue with the landscaping/pesticide applicator industry.

A staple of our BayScaping outreach has been our neighborhood socials. BayScaping presentations incorporate the dynamic relationship between coastal acidification and nitrogen pollution from fertilizer runoff. At these socials, our staff and volunteers share our data with residents in our communities, explain the harmful effects of lawn care chemicals, describe the dynamics of nitrogen pollution, and suggest Bay-friendly alternatives. We have found that providing evidence of pesticide use in a particular neighborhood (the results of stormwater and sediment collection and analysis) is one of the most compelling ways to inspire behavioral change.

Our BayScaping program relies heavily on peer pressure. Whenever possible, we take photographs of the neighborhood before the social to incorporate photos of “best practices” in yard care, to use in the PowerPoint presentation. Participants immediately recognize the positive steps that their neighbors are taking, actions they can emulate.

During FY16, our staff, assisted by volunteers and Board members, educated more than 1,855 people about BayScaping through presentations and exhibits at community events all around Casco Bay, as well at all our events and other staff presentations. (See appendix on “Where we have been” for more details.)

During FY16, we:

- Created new BayScaping yard signs.
- Reprinted 1,000 copies of our two BayScaping fact sheets; in less than a year, we had nearly run out of the first printing of 1,000 each.
- Promoted our two BayScaping fact sheets and added another: *What is your lawn doing to Casco Bay?*
- Delivered 12 BayScaping formal presentations to more than 550 people, where we continued to integrate our nitrogen pollution and coastal acidification messages into our presentations.
- Shared our Bayscaping tabling materials with another 1,285 participants at community events.
- Collaborated with grassroots (no pun intended) community groups (in South Portland, Portland, Falmouth, and elsewhere), municipal officials, Toxics Action Center, and

neighborhood associations, to explain the connections between lawn care practices and water quality in the Bay.

- Expanded our involvement in discussions about next steps to reduce the use of fertilizers and pesticides by increasing publicity about their impact on the marine environment. Our work on BayScaping and sampling for the presence of pesticides was cited 11 times, including.
 - July 2 *Portland Press Herald* Cathy Ramsdell's letter to the editor lauding Scott Eldredge and John Bochert of Eldredge Lumber & Hardware, for their Maine Voices column on June 23 ("Protecting waterways both moral imperative and good business").
 - Our pesticides sampling was cited in September 11 *Portland Press Herald* Maine Voices: "Portland must approve proposal to ban synthetic pesticides, fertilizers"
- Worked not only with those who would ban pesticides and fertilizers, but also with professional lawn care providers. We were invited to speak at a pesticides recertification workshop for 51 landscapers with Maine Landscapers and Nursery Association (MELNA) to address public interest in banning lawn chemicals. We were the only environmental organization that participated, though other environmental organizations also were invited.
- Presented to 31 arborists and landscapers on April 8 at the Pesticide Application Recertification Workshop for Maine Arborists Association (MAA). Dialogue continues with both these industry groups, MELNA and MAA.
- Met with Maine Board of Pesticides Control (MBPC) Board of Directors to encourage them to increase MBPC's community outreach, to favorable response. The board has since listed many of the suggestions in a work plan for the staff.
- Served on a planning committee for ideas for Beyond Pesticides 34th annual Pesticides Forum, to be held here in Maine.

In FY17, we will work in three areas:

Education

- Continue to spread the BayScaping ethic through strategic media releases, op-eds, social media, emails, newsletters, and interviews, if and when possible.
- Promote BayScaping presentations, where we continue to integrate our nitrogen pollution and coastal acidification messages into our presentations. Whenever possible, we will tag team with an experienced gardener such as a Master Gardener, who can answer practical lawn care questions, such as how to deal with grubs and crabgrass.
- Share our BayScaping message at all our community outreach tabling events.
- Plan a *Champions for the Bay* event specifically for those who want to learn more about BayScaping and who may be interested in assisting with presentations. Target date would be March or April 2017. We will survey potential participants, such as Amy Witt (Cumberland County Cooperative Extension Master Gardener trainer), Master Gardeners Pat Ianni and Kim Payne, who have done presentations for us, and others who have expressed interest on our Volunteer application forms.
- We will develop talking points for this event and for other venues regarding our position on local ordinances, considerations in limiting pesticides and fertilizers, how to approach one's neighbors on the topic of spraying pesticides and other lawn chemical applications.

- Continue to press Maine Board of Pesticides Control to renew its commitment to public engagement, which has fallen off dramatically in recent years.
- Continue to work with municipalities and community groups as they develop restrictions on lawn care chemicals.
- Work with Beyond Pesticides before and after its Maine Pesticides Forum, to share recent national data that is pertinent to Maine.

Advocacy

- Fight against LD 1543, *An Act to Create Stability in the Control of Pesticides*, which would prohibit municipalities from instituting their own ordinances or policies restricting pesticides.

Research (See Monitoring section for more details.)

Our goal is to collect and plot newly collected pesticides data in Casco Bay to keep our information fresh, relevant, and motivating.

- Develop a plan to test for the presence of pesticides in stormwater runoff into the Bay, in order to update our work from 2001-2009. In that period, we sampled 36 sites and found detects at 14 sites. Our historical chart with detects has taught us that localized data can be very motivating, inspiring behavior changes.
- Assist Maine Board of Pesticides Control with its sediment sampling for pyrethroids.
- Assemble and assess data about the impact of pyrethroids on lobsters.

4. Casco Bay Curriculum

Since education and collaboration are ways we engage the community to help us improve and protect the health of the Bay, the Casco Bay Curriculum is THE way we are able to get data about the Bay directly into the hands of local teachers in a form that will engage the next generation of stewards.

In FY15, we revamped the entire curriculum to make it more accessible and more relevant to issues confronting Casco Bay and beyond. Now called ***Casco Bay Through Time***, we focus on the effects of climate change happening in Casco Bay and in the Gulf of Maine. We streamlined the number of activities, retaining some of the original activities that relate to defining the Estuary.

Because of its emphasis on climate change, we believe this curriculum is appropriate for a broad grade range, from at least 4th through 8th grades. The inclusion of current articles from popular and scientific media makes the material relevant to students in high school and beyond. These readings not only are useful background information for teachers, but the in-depth, timely, local and national news and scientific articles can also help teachers meet the growing demand (through Common Core Education Standards) to provide students with more non-fiction reading.

We offered three-day Summer Institutes for teachers in 2010, 2011, and 2012. We decided not to offer another teacher course for the time being, as these require considerable time and effort, not only to prepare the course and materials, but also to recruit teachers to participate.

Outline for *Casco Bay Through Time*

Section 1. What is an estuary? [activities define Casco Bay and its uses over time]

Section 2. How will climate change impact the Maine coast?

1. Rising sea level: King Tides as a preview of Portland's future
2. Warming water: Invasive Species: *Attack of the Green Crabs*
3. Disappearing eelgrass: Compare eelgrass distribution maps over time and explore importance of eelgrass ecosystem
4. Fractured food web: Winners and Losers in the Gulf of Maine Bingo
5. Ocean acidification: Demonstration using dry ice to show how carbon dioxide changes pH and discuss implications for marine life

Section 3. What can you do?

1. Everyday solutions around your home and community: Take the pledge!
2. Storm drain stenciling/Design a door hanger
3. Pollution sources in watershed: *Sleuth out pollution* worksheet

Section 4. Background readings/resources, including *A Changing Casco Bay* report

In FY16, we:

- Shared the curriculum with educators as they requested it.
- Initiated a conversation with Southern Maine Community College (SMCC) Continuing Education Department about co-sponsoring a teacher course.
- Continued to refine the curriculum as the opportunity arose, adding new data and anecdotal evidence about impacts of climate change on Casco Bay and beyond.

In FY17, we will:

- **Design a short course for up to 20 educators** of grades 4 through 8, with the focus on informational and classroom activities that illustrate the local impact of climate change. We envision meeting for an evening Dine and Discuss in late October 2016, to introduce the curriculum, provide several weeks for teachers to test out the materials in their classroom, and reconvene in mid-January 2017 (with a snow date) to discuss how things worked in the classroom and to show student work. Teachers will receive Continuing Education Units (CEUs), incorporating their hours in our workshops and in class preparation and instruction time.

We plan to collaborate with SMCC Continuing Education Department, which has agreed already to offer CEUs, include the course in 2016 Fall course catalog for Continuing Education, print promotional flyers, handle registration, provide a classroom free of charge, and print handouts.

We will provide the instructor (Mary Cerullo), provide the curriculum on a thumb drive, select and purchase relevant children's literature, advertise to educators and past participants, and provide refreshments. A course fee, as yet undetermined, will cover the cost of materials to be distributed to the participants.

Besides incorporating several aspects of the Next Generation Science Standards, the course will address some elements in Language Arts in Common Core, such as using literature in the content area and reading non-fiction.

- **Consider how best to post the curriculum to our website**, including classroom work by teachers.
- **Investigate opportunities to share** elements of the curriculum and activities with families and other teachers.

5. Pumpout Program

Our Pumpout Program continues to play multiple and essential roles – the direct reduction of sewage discharges into the Bay, the education of boaters through the program’s ambassadorial function, and liaison between DEP and those marinas whose pumpout facilities are in out-of-service mode. The effectiveness of this program hinges in large part on the boating and mechanical skills, as well as the character of the person who fills this position. Our Pumpout Coordinator and Captain Jim Splude, an exceptional ambassador on the Bay, will return in 2016, his seventh season with us. Customers and dock wranglers around the Bay respect and welcome Jim, who continues to provide excellent service and good cheer everywhere he goes on the water.

The costs Pumpout Program come very close to break-even because of reimbursements and dedicated funding. The DEP reimburses us for 75% of the costs of running the program, fees for service contribute some support, and the City of South Portland Water Resources Division and the Portland Water District through CBEP make modest contributions to support the program. [During 2008, the Board concluded that the program should continue on the condition that it is financially self-sustaining and can be adequately staffed.]

Thanks to our work in this program, Casco Bay was awarded the first No Discharge Area status in Maine in 2006. Since then, many other regions along the coast of Maine have attained No Discharge Area status. In order to attain this designation, regions have to have a requisite number of pumpout stations, and, in order to meet the spirit of the law, as well as the letter, these stations need to be operational and accessible at all tides. We will continue to notify DEP when stations are nonoperational.

6. Volunteers

We will continue to recruit volunteers for a wide variety of activities, most notably, the Citizen Stewards Water Quality Monitoring Program, as well as for other field work, such as our Nabbing Nitrogen (see Monitoring section for more detail), coastal cleanups, office tasks, and events. We’ll use various methods for this recruitment, including word-of-mouth, our website, displays, email, and social media.

Volunteer Appreciation Celebration and Annual Members Meeting Event

Each year we celebrate the work of all of our volunteers, including our Board, and take care of the legal business of Annual Meeting as expeditiously as possible. [See section on Events and Community-based Educational Outreach.]

Internships

We accept applications from many college and high school students each year for our summer internship positions. Typically, we invite two bright students to work with us during

the summer in non-paid internships. The positions vary between 20 and 40 hours per week for roughly 8-10 weeks, beginning in late May and ending mid-August. In addition, we offer semester-long fall and spring internships to aspiring college juniors and seniors. Since 2011, Friends of Casco Bay has fostered a wonderful relationship with the University of New England (UNE), to provide students with real-world marine science and marine policy experiences. To date, we have hosted five UNE students to work with our research, development, advocacy and outreach staff. These experiences have been rewarding for staff as well as students. Our philosophy for all of our internships is to engage these students in all aspects of our operations at Friends of Casco Bay, while also engaging them in some projects that will foster growth in their main area of interest. Our goal is for them to understand how a small environmental non-profit works in the larger arena of environmental advocacy, using hands-on science and community engagement.

In addition, Ivy Frignoca will be contacting the USM Law School to recruit a student intern who will help her to “build the files” on key issues we are tackling.

Blue Mussel Surveys

The objective for the 2013 Blue Mussel (*Mytilus edulis*) Survey in Casco Bay was to engage volunteers in hands-on field research to determine presence or absence of Blue Mussel beds and relative percent cover of existing beds as identified by the Maine Department of Marine Resources (DMR). This project evolved from discussions with some of our members who stated that they had been noticing a complete loss of blue mussel beds from areas where they had been abundant historically. Of the 70 mussel beds in Casco Bay identified by DMR, 30 were visited between 2013 and the fall of 2015. Of those 30 sites, only 7 areas had mussels and those areas were sparsely covered.

In 2015, our goal was to continue this effort by soliciting volunteers from Maine Island Trail Association (MITA) and other boating clubs to help ground-truth the remaining mussel beds. Despite a gallant recruitment effort, few volunteers actually followed through on their pledge to assist, either due to weather constraints or time available to commit to the project.

We were so blessed to have the assistance of Friends of Casco Bay Board member Ann Thayer, who offered to be the coordinator of this project as part of her Master Naturalist work. In 2015, Ann was the primary contact for this project, due to Peter’s leave of absence from May–August. Ann solicited volunteers, oversaw data input, and performed her own site reconnaissance to sites not yet visited by volunteers. She also was the point person for several media interviews about dwindling mussel populations in Casco Bay.

In FY17, we will discontinue this effort in terms of determining presence or absence of existing mussel beds due to the challenges of volunteer recruitment and follow through. Instead, we will fold the results of this effort in with our overall messaging about the health of Casco Bay.

Storm Drain Stenciling

Unfortunately, storm drains are a tempting place for residents to dump dangerous pollutants. Substances commonly thrown down our storm drains include used motor oil, antifreeze, hypodermic needles, cigarette butts, pet waste, and yard waste. We launched our storm drain stenciling as a creative, hands-on way to build greater awareness about the need to reduce

pollution in our communities. Our Storm Drain Stenciling Program inspires volunteers to “take to the streets” to paint “Do not dump” messages next to storm drains in towns around the Bay. We provide stenciling kits and easy-to-use instructions to help groups organize stenciling events to educate their communities about their connection to the Bay and help reduce the amount of pollution and waste dumped into storm drains.

There are a number of benefits from this low-cost, easy-to-manage volunteer recruitment activity:

- community engagement
- hands-on activities that help the health of the Bay
- team building activities
- educational components

Storm drain stenciling is one of our major ambassadorial efforts. Audiences for this activity include schools and after-school programs, neighborhood groups, Scouts, Summer Camps, and somewhat surprisingly, businesses for Corporate Days of Service.

In 2015, we had three school groups, one bank, and two neighborhood associations request our kits and training material. More than 187 storm drains were stenciled by 54 volunteers. We put group leaders in touch with those city stormwater coordinators who helped with the choice of streets to cover and often provided in-school lessons.

In FY17, we will maintain and restock our five stenciling kits and nine stencils. We will replace older stencils with five new, stronger and easier to clean stencils. We will schedule and coordinate their use to allow each group to keep kit(s) for about a week. Peter Milholland and Sarah Lyman will respond to volunteers’ inquiries and will cover the logistics for use of our storm drain stenciling kits.

We will lend our kits to student and youth groups as they request them, offering our “how to” DVD of *Surfer Steve* and a compilation of curriculum activities specially developed to complement this community project. We also will provide and encourage use of our informational door hangers, which explain to neighbors why the volunteers are doing this service learning project. Before volunteers embark on their project, we put them in touch with public officials in their community, such as the stormwater coordinator, to ensure adequate safety measures are taken. We also provide information on how to engage parent volunteers and the news media in their project.

We will provide staff support to corporate groups that use the kits as a Day of Service activity. We will help those groups select areas to be stenciled, accompany them on their route, and visit the various teams to restock kits and hand out refreshments. We will take photos of stenciling groups holding our banner “Casco Bay belongs to all of us!” to be used on social media, in their company or community newsletters, and for newspaper press releases.

Coastal Cleanups

Coastal cleanups have been a core component of Friends of Casco Bay volunteer opportunities. From island cleanups to trash removal at heavily used urban shores, Friends of Casco Bay has been a leader in this form of community engagement.

In FY16, Friends coordinated three cleanups on the Bay, assisted by 49 volunteers from organizations such as WCSH 6, Patagonia, the Via Agency, and TD Bank. These efforts resulted in the removal of over 795 pounds of trash from the shoreline.

In FY17, we have a cleanup scheduled around World Oceans Day, June 8th, in the eastern end of the Bay, to promote more visibility in that region of Casco Bay. We will also participate in Coastweek, by hosting a cleanup in the greater Portland area on September 24th. In addition, we will continue to work with corporations looking to do days of service with employees.

Champions for the Bay

Our Champions for the Bay Program leverages our data and our scientific expertise to build a community of Champions for the Bay. We have been and will continue to develop messages—both with and for—key community members and incorporate these into “Bay Papers.” [See the Bay Papers section under Events and Community-based Educational Outreach for more information.]

We have been working to put our Bay Papers into the hands of community members to empower them to be spokespeople for stewardship efforts. In July 2014, Friends of Casco Bay presented a Champions for the Bay workshop. About 60 of our closest supporters—board members, volunteers, and other friends—participated in training in how to use and disseminate our Bay Papers. Feedback from this event was positive, but we learned that going forward it will be more effective to focus our Champions for the Bay efforts on a single topic.

In FY17, we will continue to use Bay Papers as the foundation of our Champions for the Bay Program, making sure that Champions past and present receive copies of new and revised Bay Papers. In addition, we will start planning an event specifically for those who want to learn more about BayScaping [see the BayScaping section]. As we inspire Champions, we will be building a network that will help lead the charge in moving our issues forward, while better connecting us with their friends, family, colleagues, and neighbors.

Other Group’s Events

Throughout the year, Friends of Casco Bay is asked to participate in various events, such as the Cumberland County Soil and Water Conservation District’s Green Neighborhood Festival, TD Bank’s Earth Day Community Service Projects, or the Walking the Working Waterfront event, a part of the Old Port Festival. While we try to accommodate as many requests as possible, capacity to attend these events can be challenging. **In FY17**, we will plan to train volunteers to assist staff and board members to represent Friends of Casco Bay whenever possible.

7. Events and Community-based Educational Outreach

In addition to advocacy and research, educational outreach is our third tool for achieving our mission to improve and protect the environmental health of Casco Bay. We have a variety of methods for accomplishing this: the Baykeeping Speaker series, our Bay Papers, other

publications, online communications, media cultivation, and community events – both events we host and those in which we participate with our community partners.

Despite the fact that we were short-staffed for much of the year, Staff and Board members continued to engage in an impressive number of community outreach events. **In FY16**, we reached over 3,200 people in person through presentations and at community events.

Staff members work closely with a number of other organizations, serving on boards and advisory committees or volunteering at events and conferences. We partner with, among others, Environmental Priorities Coalition, Maine Association of Nonprofits, Casco Bay Estuary Partnership, Waterfront Alliance, Cooperative Extension, Cumberland County Soil & Water Conservation District, Southern Maine Community College, Gulf of Maine Marine Education Association, and many more. All of these efforts lead to greater visibility for our mission and the organization, expanding our audiences and promoting more speaking opportunities.

Whenever possible, we will strive to incorporate stories, a proven way to engage a variety of audiences, into all of our communications, including in our PowerPoint presentations, remarks at house parties and community gatherings, and in our publications and social media outreach.

a. Our events

As a community organization, people look to us to use the shared value of protecting the health of the Bay to bring people together. This gives us the opportunity to engage directly with people who care about the Bay and our work.

Our FY16 events included:

- Release of our report *A Changing Casco Bay*, April 18, 2015
Cathy Ramsdell, Mike Doan, Bud Higgins, Jennifer Fox, Rick Frantz, and Joan Benoit Samuelson spoke about our report on the health of Casco Bay. Several members of print, TV, and radio news media attended this media event at the Visitors Center at Ocean Gateway, resulting in coverage in at least 22 news outlets. Because it was carried by AP, it appeared in far-flung publications, such as in San Francisco, CA, Albany, NY, and Greenwich, CT.
- House Party on Peaks Island, August 10, 2015
About 40-50 guests were expected at the home of Cheryl & Bud Higgins: 75 people, including many new members, attended. Many donated at the major donor level. These new members promise to be long-time donors, reaping benefits to the organization for years to come.
- Eighth Annual Wild & Scenic Film Festival, November 7, 2015
We again hosted a sold-out crowd at USM's Abromson Center. Staff secured media sponsors, in-kind sponsors, and cash sponsors, as well as items for the raffle. Board members assisted with some of these tasks, and helped host the event.
- Donor Appreciation Event, December 3, 2015
Our incoming Casco Baykeeper Ivy Frignoca was introduced to 104 guests at the Cumberland Club. This successful and enjoyable event has continued to grow each

year, leading us to contemplate how best to accommodate and celebrate our elite donors.

- **Volunteer Appreciation & Members Annual Meeting, January 27, 2016**
About 170 members and volunteers attended this year; 9 water quality monitors were recognized for achieving milestones in service, ranging from 5 to 20 years. This event provides the opportunity for us to thank those who roll up their sleeves and work the hardest for the Bay alongside our staff, including our Board, our water quality volunteers, other volunteers, and our community partners, family, friends, and colleagues. The event was held at the Harraseeket Inn in Freeport. It was the ideal location for such a large crowd. We had expected a good turnout because we had promoted the event widely as an opportunity to meet our new Baykeeper and to hear about the updated Casco Bay Health Index. Turnout exceeded expectations. The elegant facility, hospitable staff, and convenient location for those who live in the eastern end of Casco Bay made having the event there worth the additional cost (still lower than the Harraseeket's standard fees, thanks to Joan Benoit Samuelson's entrée to management).

In FY16, we recruited the talents of professional photographer Kevin Morris. He accompanied our staff to events and on trips around the Bay at extremely low and in some cases, no, cost. His images have vastly improved our website and publications, as well as our photo submission to Scene & Heard, *Maine Sunday Telegram's* "society pages."

In FY17, we will be looking for other ways to engage our members, particularly events geared for new or younger members.

FY17 Friends of Casco Bay events

- **Nabbing Nitrogen, July 9th, 2016**
This special outreach event will mobilize volunteers in a Bay-wide day of action to learn more about nitrogen levels in Casco Bay and to provide volunteer opportunities for people who may not be able to devote ten Saturdays to our Citizen Stewards Program. We envision that more than 100 volunteers will collect water samples at sites around the Fore River in Portland and South Portland and bring them to designated collection sites to be sent to a lab to analyze for Total Nitrogen. We will use this day of action—and the results—to increase our visibility, provide an opportunity for public education about Nitrogen, expand our cadre of volunteers, connect with boaters and other key users of the Bay, and shine the public spotlight on an issue too few understand. If this pilot event is successful, we may repeat this effort in the years ahead, in other areas of the Bay. We have already undertaken extensive discussions on logistics, planning for before, during, and after the event. We will organize a press conference and extensive publicity to recruit volunteers and to educate the public. This event will provide many avenues for Board involvement. We will design plans for following up with the volunteers for releasing the data and results. [See detail in Monitoring section.]
- **Champions for Casco Bay event, date to be determined (tbd)**
As an organization, we strive to both lead and learn. Our Champions for the Bay event on July 23, 2014, provided a useful model for how to continue to engage targeted audiences. We will continue to use this model for a similar event in FY17 or early

FY18, most likely a Champions event that focuses on a single issue, BayScaping, as described above.

- House parties, two date(s) tbd
House parties are crucial for garnering new members and for helping us deepen relationships with donors. These also lead to many of our speaking engagements. We continually track possible venues for future use and evaluate all opportunities as they arise. We are discussing hosting two house parties this year; dates and locations to be determined.
- Ninth Annual Wild & Scenic Film Festival, November 12, 2016
This event will build on our past success. We have decided to start the event one hour earlier to better accommodate families. Doors will open at 3, films will begin at or before 4, and we will end the event by 7 p.m. making it easier for folks to have dinner plans following the event.
- Donor Appreciation Event, date(s) tbd
We are considering how best to offer this increasingly popular event. Restricted parking and limited space for guests inside at the Cumberland Club created some challenges last December. We are discussing whether or not to continue to hold the event at the Cumberland Club, which has a certain “panache.” Ideas include limiting the number of guests or offering two different events for donors who give at different levels. Although the Cumberland Club has been reserved for Thursday, December 1, 2016, we are weighing all options. Venues we may consider: Cumberland Club, DiMillo's, Portland Club, Woodfords Club, Harraseeket Inn, Ocean Gateway, Dockside, Royal River Grill.
- Volunteer Appreciation & Members Annual Meeting, date late January 2017 tbd
- An event idea we will explore this year, and perhaps host next year, would be Fish Camp for Adults. A different kind of house party/fundraiser, this would be hosted by Mr. & Mrs. Fish using fun ocean-themed and team-building activities normally reserved for younger audiences.

b. Speaking engagements

There is steady demand in the community for our presentations, many of which we service through our Baykeeping Speakers Bureau. **In FY16**, we gave 38 presentations to more than 1,830 people directly. Several of these were broadcast on TV and radio, and reported in the media, reaching a significantly larger audience.

Friends of Casco Bay's strengths include making scientific data understandable and identifying what we in the community can do differently to motivate people to change habits in ways that will have positive impacts on the health of the Bay. People want to do the right thing. These events provide an opportunity for us to bring our data and science into the community in a personal and easily understandable form. This builds knowledge about the issues, informs people about what they should and shouldn't do that can protect the health of the Bay, strengthens our relationship with attendees, promotes a sense of shared ownership of the Bay and its health, and increases the credibility, visibility, and relevance of the organization.

Mike Doan and Cathy Ramsdell presented several programs on Friends of Casco Bay's work, especially on Coastal and Ocean Acidification, of special note at Casco Bay Estuary

Partnership's State of the Bay conference. Peter Milholland presented on water quality to a variety of audiences, including the Woodfords Club. Ivy Frignoca and Mary Cerullo presented to Portland Water District Trustees. Mary Cerullo, Pat Ianni, and other volunteers gave several BayScaping presentations and distributed BayScaping materials at several community events (see BayScaping section). In addition and not included in our metrics, Cathy Ramsdell once again led several types of workshops on fiscal management of non-profit organizations for the Maine Association of NonProfits.

In FY17, we will continue to promote our **Speakers Bureau** and respond to requests from community members. We will also make presentations at our house parties and similar events. We will continue to keep a log of all presentations given, along with the number of attendees (see appendix section *Where We Have Been*). Now that we are fully staffed, we will seek out speaking opportunities more vigorously.

We have many presentation topics to offer. We will brainstorm as a staff to create engaging titles and descriptions for the following:

- Nabbing Nitrogen
- Ocean Acidification
- Plastics in the Marine Environment (Ivy Frignoca will present on Microbeads & Microplastics on March 3 at Fishermen's Forum in Rockland)
- BayScaping
- *A Changing Casco Bay*: our report, our data and the Health Index (Mary is presenting this to the residents of Piper Shores retirement community on March 3)
- Friends of Casco Bay, general organization overview (given recently at Portland Water District and Woodfords Club)

c. Community events

In FY16, we were invited speakers at Casco Bay Estuary Partnership's State of the Bay conference, Ocean Acidification conferences, Yarmouth Village Improvement Association, Water Quality training for SMCC students, BayScaping workshops (see BayScaping section), testimony on state bills and local ordinances, and at press conferences on Portland's plastic bags ordinances and the release of NRCM's report on Sustainable Portland. [See Appendix "FY16 Where we have been" for more details.] Note that staff members also presented an additional 14 programs to approximately 500 people in the first quarter of calendar year 2015, which were not included in the metrics for FY16.

Staff and board members participated in other groups' community events to reach another 800 people through exhibits at Waynflete State of the Oceans Event, Green Neighbor Family Fest, Reverb concert on the Portland Waterfront, Allagash 20th Anniversary celebration, Patagonia Store, Otto's Pizza, Greenfest, and Vegetarian Food Festival.

Cathy Ramsdell was featured in an exhibit at the Portland Public Library's Lewis Gallery: *Staying the Course: Working Women of Portland's Waterfront*, from August 7 to September 28. The exhibit, using photographs and maps from Maine Maritime Museum's collection,

explored the diverse roles and stories of historical and contemporary women in maritime commerce in Portland.

In FY17, staff members have committed already to having exhibiting at 6 upcoming Community Events. [See Appendix “FY17 Where we have been.”]

d. Conferences

In FY16, Friends of Casco Bay was involved in a number of conferences in a variety of roles, including the Maine Landscaping and Nursery Association pesticides recertification workshop, Maine Arborists Association conference, Waterkeeper Conference held in in Boulder, Colorado, June 10-14, 2015, and the National Marine Educators Association conference held in Newport, RI, June 29-July 2, 2015.

FY17 Conferences

Mary Cerullo and other staff members will attend the Beyond Pesticides Forum in Portland, Maine, on April 15-16, 2016. Cathy Ramsdell and Ivy Frignoca will attend the Waterkeeper Alliance conference on June 1-5 in Wilmington, NC. We will be on the lookout for other conferences that will help us learn more and share our work, from Baykeeping to plastics sampling to innovations in social media.

(a) Staff and Board events

These special times contribute to our esprit de corps and help us remember why we are working to protect our Bay all year long. We try to include our seasonal Pumpout Coordinator Jim Splude as often as he is able.

FY17 Staff and Board events

- March 31, New Year’s: We celebrate the end of one fiscal year and the start of the new one. Board members are welcome to join the staff for snacks and drinks at Andy’s Old Port Pub on Thursday, March 31, 2016, from 3-5 p.m.
- May 17 Board meeting: Tour of the Working Waterfront: After a brief regular meeting if needed, Waterfront Coordinator Bill Needleman will give us a walking tour along the waterfront of Portland, providing invaluable perspective on the history and future of the wharves, our local economy, and the impacts of climate change
- June 21: Board and Staff Social
- Summer, Staff Day on the Bay: Staff only day, as we board the RV Payne to explore different parts of Casco Bay, but the adventure always includes stops for lunch and ice cream
- December, tbd: Holiday celebration: Staff leave the office to share and meal and an activity, which in the past has included museum visits, gallery touring, bowling.

e. Bay Papers

Bay Papers are a tool for encouraging our supporters to speak knowledgably with their friends, colleagues, and neighbors about key issues impacting Casco Bay. Each paper begins with an engaging question, explains why the issue is a problem for the Bay, and suggests to the listener or reader what we can do about the problem. Bay Papers are a very useful device

for educating our community about the Bay and our work, for speaking with one voice about the issues, for promoting advocacy, and for creating more ambassadors around the Bay who understand what we as an organization and what we as a community need to understand about our relationship to this special resource. As completed, each Bay Paper is posted to our website and print versions are available at our events. Before FY16, we had created five Bay Papers (CSOs, ocean and coastal acidification, nitrogen, and snow dumping).

In FY16, we:

- Revised our Nitrogen Pollution Bay paper.
- Created a new Bay Paper on the *Health Index* in conjunction with the release of the report *A Changing Casco Bay*
- Created a new Bay Paper titled *You Can Make a Difference in the Health of Casco Bay* in conjunction with the release of the report *A Changing Casco Bay*.
- Created a new Bay Paper titled *What is your lawn doing to Casco Bay?* to encourage limiting the use of fertilizers and pesticides.

Throughout FY16, our limited capacity meant that we spent less time developing new or revising old Bay Papers topics than we had planned. Some of our FY16 goals have been moved to FY17.

In FY17, we will be considering developing the following topics as new or revised Bay Papers: plastics in the marine environment, dredging, dumping snow directly into the ocean, what Friends of Casco Bay does and how we accomplish our mission, what is a Waterkeeper?, recreational boat discharges, oil spill preparedness, and our water quality monitoring program.

In FY17, we will:

- Prioritize our potential Bay Paper topics and create a production process outline, from topical idea to final product, including a timeline, to facilitate development.
- Solicit feedback from specific audiences we wish to reach (e.g. boaters, anglers, lobstermen, business owners).
- Experiment with leading into topics using stories, as well as the elevator speech type openings.
- Continue to use Bay Papers as the foundation of our Champions for the Bay campaigns, making sure that our Champions, past and present, receive copies of our new and revised Bay Papers.

f. Other Publications

We publish two print newsletter and two e-newsletters each year, as well as a printed Annual Report.

8. Media and Public Relations

The overall goal of our media and public relations strategy is stated in our strategic plan: *Our Community work will deliver the Baykeeper messages, seek broader visibility and recognition of our work, and increase the engagement of the public as members, board members, volunteers, friends, and advocates for the Bay.*

The mission of our Public Relations is to make Friends the “go to” organization when one thinks of Casco Bay. To that end, we cultivate our media relations by submitting releases, story ideas, photos, op-eds, and personal communications, while being available for interviews or simply to provide background information, with standing offers to take reporters out on the Bay to do stories that are not necessarily about us.

We cultivate the public’s attention with publications, email alerts on issues and events (“e-blasts”), letters, social media postings, presentations, and community events – both our own and others’ events, as described above.

a. Traditional Media

In FY17, we will continue to push our message out to various media connections. We will continue to seek opportunities to run feature stories on our work, as well as our staff, board, and volunteers. We will continue issuing press releases on anything newsworthy, from the appointment of new board and staff members, to program initiatives, findings in our data, funding successes, crucial partnerships, interesting or unusual collaborations, volunteer accomplishments, and hot issues. We also issue media advisories to encourage reporters to pursue story ideas and share Action alerts. We will continue to be very responsive when contacted by the media.

In FY16, we had more than 467 media mentions (articles, interviews, announcements, etc.), including 10 paid ads/sponsorships on MPBN radio and approximately 350 *pro bono* promos for our Film Festival on WCLZ radio.

We were mentioned in more than 55 media outlets, including letters to the editor and Maine Voices in *Portland Press Herald*. Besides the release of our report *A Changing Casco Bay*, stories that gained the greatest traction were interviews with Cathy Ramsdell regarding Portland’s plastic bag and polystyrene ordinances (including a column by Bill Nemitz), green slime, and our work on pesticide bans. The announcements of the Baykeeper search opening, closing, and hiring were well covered nationally. “Dirty Snow and Piles of Poo” was widely read in the *Working Waterfront*, as evidenced by the many mentions it received from colleagues! [See Appendix “Media Report FY16” for a complete list of media citations.]

In FY16, some of our media outreach efforts included:

- Hosting our own successful press conference with the release of the report *A Changing Casco Bay* on April 18, 2015.
- Announcing our new Baykeeper hire. Since January 2016, we have been working with our cadre of reporters, editors, and producers to put Ivy Frignoca in the public eye later this winter, when she is ready. Because our new Baykeeper did not start work until January 4, 2016, we did not pursue cultivating reporters at major publications to profile our new Baykeeper. Rather, we promised those who wanted to do an interview before her start date that we would set up a time later this year (which we have done).
- Cathy was interviewed at WMPG USM radio on Nonprofit Insider and Mary was interviewed with Love Maine Radio. We did not pursue trying to place Cathy on television and radio programs such as 207 and Maine Things Considered, partly due to

her covering two leadership positions for the organization. Also, we did not need to use these outlets as we have in the past to promote the Film Festival, as it sold out earlier than ever.

FY17 Media Opportunities:

- Press conferences: We will orchestrate a press conference prior to our July 9 Nabbing Nitrogen event, in May or June to allow time to recruit volunteers. We may also host a second press conference after lab results have been analyzed to release findings about nitrogen in the urban end of our Bay.
- Media cultivation with Baykeeper and staff: A key part of our outreach work is cultivating our media partners to help them understand and report on issues important to our mission. We provide background information on issues and keep media informed of our actions so that not only will they cover our activities and announcements, but when a crisis arises that impacts Casco Bay, they will also think to contact us. We will plan to invite selected members of the news media to accompany Ivy on a tour of the Bay to highlight issues of concern or promise. We will try to interest a high-profile “glossy magazine” in featuring the new Baykeeper or perhaps all three Baykeepers.
- Identify media opportunities: As we did this past year with several op-ed pieces in *Maine Voices* and letters to the editor, we will keep an eye out for opportunities to respond to calls to action on issues that are making the news or that are important to us. We will continue to submit op-eds that appeal to readers’ emotions, such as Cathy’s response to an op-ed on the use of lawn chemicals in 2015.
- Identify photo opportunities: We will continue to hire Kevin Morris to add to our library of photographs of the Bay and our events. We are asking him to attend our events whenever possible. We will continue to provide opportunities for news reporters and camera people to get out on our boats to film the Bay, even if it not for a story on us. This builds good will and usually ends up providing news people with ideas for stories that *do* involve us.
- USM Media Studies: Once again, we have team of seniors in the Media Studies Program who chose us for their capstone practicum course with a nonprofit. Four students are continuing the work that last year’s team began. They will interview and edit short vignettes about community members talking about aspects of the Bay. These pieces, 90-120 seconds long, will eventually dovetail with the four-minute interview of Cathy Ramsdell produced by last year’s team for “An Armchair Tour of Casco Bay.”
- Film Festival Media Sponsors: We have a new media sponsor, valued at over \$5,000, in Maine Media Collective, which publishes *Maine*, *Maine Home+Design*, and *Old Port*. We expect we will continue to have our 98.9 WCLZ media sponsor, which provided over \$27,000 of promotion for our Film Festival event last year, along with *Ocean Navigator* and *Yelp Maine*.

b. Online Communication Channels

We use online communications to connect with our public and extend the reach of our messaging. Our online communications support our mission by educating our followers, building visibility for our work, reflecting our organizational values, encouraging affection for the Bay, and allowing us to be responsive to our public. We also use our online

communications to highlight the work of our allies and partner organizations; this enhances our reputation in online communities. As a small nonprofit, we choose to place the highest priority on using our website and email communications in relation to other online outlets. Social media is powerful, but when implemented on a small scale, the power is overshadowed by other more traditional online campaigns.

Last year we had high ambition for the amount of time we could spend on online communications, including the frequency at which we could post. We will take FY17 as a year to track what we can accomplish now that we are at full capacity. We will review this at end of the year and set up more ambitious quantified goals for FY18.

FY17 goals of our online communications plan:

- Build and maintain audience by sharing valuable content on a regular basis
- Promote our other communication channels
- Advocacy and outreach: educate about our issues, get people to take action, such as signing petitions, celebrating advocacy wins, and thanking supporters
- Increase the affinity for the Bay: remind people how important Casco Bay is to our quality of life; it is our shared heritage.
- Increase visibility for our monitoring work
- Promote our Nabbing Nitrogen project
- Promote the Wild & Scenic Film Festival
- Promote the Volunteer Appreciation and Members' Annual Meeting
- Continue to introduce Ivy as the new Casco Baykeeper

In FY17, we will devote time to finding a new look for our **website** that takes full advantage of the large screens people sometimes use to access our site while allowing the same great experience on small, phone-sized screens. We will do research to find the right theme to create this look. The theme will allow for a better menu design, making it easier for visitors to find the information they are looking for. We will take advantage of Public Relations and Development Committee Meetings to help review the restructuring of the website menu. This year, with more capacity and specific interest, we will explore adding a new social media network, Instagram; it reaches a different (younger, more engaged) audience than our other social media platforms and has a low learning curve for basic use.

It is important to keep in mind that our online communications plan has to be both proactive and reactive. **In FY17**, we will:

- Aim to make our online communications more proactive and in alignment with the planning of our other communications.
- Create a process for setting realistic time frames for creating content.
- Create and maintain an online communications content calendar to plan posts weeks ahead; this saves time and will result in more content postings.
- Explore how paid online tools can support our work.
- Design campaigns and identify time periods where we share content to achieve a specific goal.

- Plan campaigns far ahead of when they are set to allow more time for creation and review.

The proactive plan we create this year will be used as a template for future years. Our reactive communications, in large part, depend on the availability of staff and the development of the best language to use in response – often in a very short time frame. We collaborate to ensure that reactive posts are appropriate in tone and in line with our other communications. We will learn from the “ads” we were able to place on Facebook this year, and we will continue to identify the right circumstances to utilize paid ads in social media.

Sarah Lyman’s ongoing and extensive research and training in current online communications best practices will continue to serve us well. We will keep up to date with the constantly changing world of online communications. We will monitor the effectiveness of each online communication tool we use and switch to more effective tools as they become available and understood.

B. Development

The mission of the Development Office is to ensure Friends of Casco Bay's long-term success through developing and sustaining diverse funding sources. Key to this effort is the effectiveness with which we engage our community about issues impacting the Bay. Through cultivating our donors' appreciation and understanding of our work and increasing Friends of Casco Bay's name recognition in the community, our goal is to broaden the breadth and deepen the depth of our support. Relationship building is crucial to our work.

We recognize that our organization continues to operate in a challenging economic environment. The gap in income inequality among individuals in our community and across the country continues to widen. Government support will continue to diminish as government agencies are hamstrung by partisan politics and stagnating budgets. Meanwhile, corporate support is increasingly tied to quid pro quo agreements that Friends of Casco Bay does not always find agreeable.

Yet, the community values our work and there is capacity among individual donors, foundations, local businesses, and government agencies to support it.

We have detailed plans to continue to grow our individual and foundation income—and to buttress our government and corporate line items. The plans are donor-centered, focused on building long-term relationships, keeping in close contact with our supporters, and deepening their commitment to our work. In FY17, we will also explore ways to grow our volunteer involvement in our events, better involve new members in our mission, and build more connections to a younger demographic. In depth conversations on these ideas and issues will be conducted with the Board's Development/Public Relations Committee.

Our balance sheet remains strong, with plenty of working capital, no long-term debt, and three robust restricted funds to support our work: The Emeritus Fund for Advocacy, the Baykeeping Fund, and the Boats Fund. We strive to generate annual operating surpluses, at least before depreciation, a noncash expense.

Development staff, including the Executive Director, will continue to seek input and focus by collaborating with program staff, engaging the Development/Public Relations Committee, and conducting regular internal development meetings.

During FY17, we will endeavor to broaden and deepen our sources of funding. In order to meet our fundraising goals, our Development plan includes the following actions:

- We will work with our outreach staff and our Board to improve our art of **storytelling**. We will continue to improve the way we are speaking to specific audiences who already have a strong relationship with the Bay, for example, boaters, islanders, and business owners who depend on the Bay.
- All solicitations for membership renewals, annual fund appeals, and other special appeals will continue to be sent with **hand-written notes**, as is our standard policy and practice. We will continue to work with the Board on penning notes on all Annual Fund appeal letters and, as we began to do more frequently in FY14, our renewal letters.
- We will develop a direct mail piece for a **large acquisition mailing**, similar to the one we sent in FY16 to the list of registered boaters near Casco Bay. While this mailing will

not have a hand-written note, it will be of high quality, in full color with pre-printed notes.

- We will raise money for both **operating and capital** needs. We will solicit **unrestricted and restricted** support for specific projects and events that are in this operating plan.
- We will send out more proposals than in FY16. We reviewed Maine Philanthropy Center's updated Foundation Directory and have added potential funders to our plan. We will work to ensure we are meeting all appropriate deadlines. In FY16, we integrated our Foundation fundraising plan with our monthly renewal process, better ensuring that we meet request deadlines. We will continue this process in FY17.
- We will update boiler plate **proposals** for General Operating, Baykeeping, Environmental Monitoring (water quality, pesticides, plastics, eelgrass), Acidification/Clam Flat Monitoring, Nabbing Nitrogen, Casco Bay curriculum, capital needs (example: data sonde monitoring equipment and new photocopier), and other programmatic needs.
- We will explore ways to better recruit non-donors from our email lists.
- We will continue to harness the power of our Raiser's Edge database (REi), refining our reports and using the program to mine our contacts for **prospects**.
- We will continue to recruit smaller donors to become monthly donors, joining the **Calendar Islands Circle of Friends of Casco Bay**, a program that we began in FY14 and fully launched in FY16.
- **Special appeals** will again be designed as part of the Annual Fund appeal, to tailor asks to interests.
- We will continue to develop our **corporate solicitation** plan, including improvements in working with the Board to solicit more sponsorships for events, including our 9th annual Wild & Scenic Film Festival.
- We will continue our **boat donation program** with Maritime Funding Association of Maine, established to handle boat donations for the benefit of marine-related nonprofits in the state.
- We will continue to set up **visits** with major donors, as well as with corporate and foundation representatives. We will continue to use our new Baykeeper boat to deepen our relationships with supporters, inviting donors on tours, trips, and profiles with staff. We will contact the Board, as visits are set up, to garner intelligence and to see if and when Board members can accompany us.
- We will develop a reporting method to **reconcile** the database's records with our organizational accounting records in a more timely manner. Work on this began in FY15 but was delayed due to the Baykeeper search.
- Development staff will work closely with the rest of the staff to ensure that our data is up-to-date in the **database**. Our relatively new Database Assistant position (Sara Biron, hired in FY15) is critical to this goal.
- Development staff will work closely with our program and communications staff to ensure that our website and materials are up-to-date with respect to the projects for which we seek funding, while using the same language and stories we are using to describe our work. We will use an online tool called Slack, which the Development office began experimenting with in FY16, to internally help coordinate updating our materials and online communications.
- We will design and host a variety of **events** (see section on Events). We will organize two house parties to garner new members, increase our visibility, and deepen our

relationships with existing donors. We will explore how to improve our Donor Appreciation event—by either making it more exclusive and staying at the Cumberland Club or expanding it and holding it at a larger venue. Development staff will continue to lead the organizing of our film festival and our volunteer appreciation celebration/annual meeting.

- Our **Film Festival** will continue to be one of our signature events. Much of the solicitation of sponsorships has shifted from being done by the Board to being done by Staff. We will continue to evaluate the plusses and minuses of the event.
- We will continue working with individual **board members** to find the best ways to leverage their social capital and engage them in friend and resource building with us. Our data show that sending personal solicitation letters, hosting house parties, and inviting friends, colleagues, and family members to our events are excellent ways to garner new members and deepen relationships with existing donors.
- We will finish drafting our **gift acceptance policy** (we began working on this in earnest in FY15 but work was delayed due to the Baykeeper transition).
- We will continue to lay the groundwork for a **planned giving society**. In FY14, working with the Board, we developed a name for this: the Anchor Society.
- We will continue to track key Development **metrics**. We look at Development metrics at the close of each fiscal year to see how it compares to last one. We will report these metrics to Directors at the prescribed board meeting that focuses on development (tentatively scheduled for September 2016).

C. Technology and Capital Assets

In FY16, we:

- Continued upgrades in computer workstations, software, and other office tools.
- Made provisions to equip our Citizen Stewards Water Quality Monitoring Program with a more optimal number of water quality monitoring kits.
- Installed a new phone system.
- Enjoyed renovations and fresh paint in parts of the office, thanks to the maintenance staff at Southern Maine Community College (SMCC).
- Obtained updated office furniture, free of charge, from the storage facility of SMCC.
- Purchased a new outboard for the pumpout boat and had maintenance work performed on the hull of the Baykeeper boat, along with other key maintenance items on both vessels.

In FY17, we will:

- Improve the timeliness of getting the **water quality database** populated with data and continue to improve its functionality, including improvements to its structure, the importing of historical datasets on nitrogen not yet integrated. We will also develop more in-house expertise in using *Access* to facilitate the processes of data analysis.
- Continue upgrades in **computer workstations**, software, and other office tools.
- Investigate new options **sonde technology** as we expand our “fleet” of sonde technology.
- Investigate and buy a new photocopier.

We have learned that certain donors respond very favorably to making contributions for specific “hard assets” and so to that end, we will engage in specific campaigns designed to support our capital needs. This makes not funding depreciation in our operating budget slightly more justifiable, knowing we likely can raise funds outside of the normal operating revenues for specific “stuff” that helps us do our work.

D. Management and Administration

1. Staff

Staff at the beginning of FY17, with year when they joined the staff:

Cathy Ramsdell, CPA, CGMA, Executive Director	2003
Ivy Frignoca, Casco Baykeeper	2016
Mary Cerullo, Associate Director	1998
Peter Milholland, Citizen Stewards Coordinator and Boat Captain	1995
Mike Doan, Research Associate and Boat Operator	1997
Will Everitt, Director of Development	2006, 2010
Sarah Lyman, Development and Communications Assistant	2011
Sara Biron, Database Assistant	2014
Jeff Fetterer, Office Manager	2007
Jim Splude, Pumpout Coordinator and Boat Captain	2010

We are pleased to be fully staffed once again, and as mentioned in the introduction, there is an energized feeling in the building. We do not anticipate adding staff this year.

We will be redefining staff roles, tweaking job descriptions, and altering some job titles. There are capacity shifts happening around the building. For example, Ivy is able to do much of her own drafting of positions and testimony and the like, so Mary's Baykeeping support role, while not disappearing, certainly shifts. With Sara Biron well into her second year, we are discovering more and more of her talents and capabilities, and so we will continue to assign a wider variety of tasks to her as we deepen her responsibilities. More of Sarah Lyman's time will be going into our on line communications efforts, and she will continue to work with Cathy on exploring processes for project and product management. Peter is going to be called on for more boat captaining, as we get Ivy out on the water for more than profiles. And Cathy can fully turn her attention to being Executive Director.

We update our emergency succession plans annually, for use in the (we hope unlikely) event of an unplanned temporary absence of staff (each year during staff reviews). These plans identify the key roles and responsibilities of each staff person, the particular staff members who would fill in on certain responsibilities in their absence, and the activities so unique to that individual that in their temporary absence likely would just not be attended to. Having created and updated these plans made last year easier, with all of the various capacity constraining elements that were at play. We will also continue conversations about nonemergency succession planning.

Staff turnover continues to be exceptionally low. This is invaluable, as we are able to maintain momentum as we deepen our abilities to work together. We have assembled and retained an excellent team by maintaining a good benefits package and by running a fair and flexible workplace. In return, we expect a high quality of engagement, appreciation of the big picture and attention to detail. We provide professional development opportunities across the board, such as attending classes, workshops, seminars, and conferences.

Compensation was frozen in the FY09 / FY10 / FY11 budgets; when revenue goals were met, an accrued bonus that had been included in the budget was released and in two cases supplemented with additional funds. The FY12 budget contained a 3% increase in

compensation integrated into the numbers, not accrued, and this was greatly appreciated by staff. The FY13, FY14, and FY15 budgets each contained a 2% increase; in addition, a couple of modest adjustments were made during FY13 and FY15, for merit and for partial compensation in lieu of health insurance for those leaving the plan to join spousal coverage. The FY16 budget included a 3% increase.

The FY17 budget proposes a 2% increase, with 3 modest merit adjustments. Instead of a 3% increase across the board, the 1% difference would be used to fund the merit adjustments. Overall, this seems like a very modest in our intellectual capital, given the continued performance of the organization, especially in light of the successful results of this capacity-challenged year, and in light of the once-again projected operating surplus before depreciation (a noncash expense).

2. Financial Stability

Friends of Casco Bay has a strong balance sheet and three dedicated funds used to support operations: the Emeritus Fund for Advocacy, the Baykeeping Program Fund, and the Boats Fund, all housed at the Maine Community Foundation.

Monthly interim financial reports will continue to be prepared, and budget versus actual figures will be monitored closely with timing versus permanent differences addressed in the narrative.

3. Board

We will continue to engage **Board** members around policy issues, Bay Paper content, program efforts and accomplishments, board governance, events, and connections to community and resources, financial and otherwise.

At the end of FY17, as we put together a new operating plan, we will begin to consider ways to **refresh the Strategic Plan**, which we should plan to do late in 2017 or early in 2018.

IV. FY17 Operating Plan Summary

Monitoring:

- Continue Citizen Stewards Water Quality Monitoring
- Continue profiles but only at the 3 sentinel sites, including nitrogen grabs
- Deploy an unattended data sonde with PCO2 sensor and build out the program in the future only as funding allows
- Collect pH sediment data in collaboration with Dr. Brian Beal's research
- Conduct workshops for communities in how to assess the pH of your mud flats
- Sample stormwater for pesticide detections if funding allows
- Collaborate on eelgrass efforts, New Meadows Region meetings, Maine Coastal Observing Alliance
- Launch new Nabbing Nitrogen initiative
- Investigate methodologies for sampling for microplastics
- Maintain and refine water quality database input
- Analyze and map data

Baykeeping

- New Casco Baykeeper to introduce and orient
- Continue assessing oil spill preparedness in the Port; follow heavy oil issue(s) in South Portland
- Support and influence Nonfederal Dredge Committee activity re CAD cell in Portland Harbor
- Continue to push for Nitrogen standard with DEP
- Continue attending Portland Stakeholder meetings to track progress on CSO separation projects
- Monitor draft discharge permits and comment as appropriate
- Follow developments of local ordinances and state legislation; alert membership to issues and testify as appropriate
- Continue to help coordinate ocean acidification coordinating body for Maine
- Investigate a number of emerging issues

BayScaping

- Continue to offer Bayscaping presentations to groups
- Collaborate with other groups who are considering pesticide and fertilizer bans and ordinances
- Host a Champions for the Bay event focused on BayScaping and ordinances

Casco Bay Curriculum

- Curriculum now emphasizes Climate Change and Casco Bay
- Conduct a workshop with follow up

Pumpout Program

- Continue to offer pumpout services for 2016 season

Volunteers

- Recruit and care for volunteers at all levels: water quality, coastal clean ups, storm drain stenciling, Nabbing Nitrogen, office assistance, events
- Continue to recruit interns throughout the year

Events in FY17

- Nabbing Nitrogen

- Champions for the Bay on BayScaping
- Host 2 house parties
- 8th Wild and Scenic Film Festival, Nov 7
- Major Donor Appreciation Party
- Volunteer Appreciation and Members' Annual Meeting, late January 2017
- Continue our staff appreciation events
- Participate in events sponsored by others as appropriate

Media and Public Relations

- Continue to generate press releases and other media outreach, cultivate opportunities for larger media coverage, respond readily to inquiries from the media
- Continue development of our use of online communications channels
- Inspect and refine our processes for getting publications into production, including annual report, newsletters, bay papers

Development

- Continue cycles of membership mailings, annual appeals, proposal submissions
- Conduct large acquisition mailing
- Continue excellent maintenance of database , work on reconciliations with accounting, work up Planned Giving and other giving policies

Technology and Capital Assets

- Continue working on functionality of Murphy (water quality database)
- Continue computer workstation upgrade program
- Build data sonde program
- Obtain new photocopier by end of year

Management and Administration

- Maintain staff and financial stability and resiliency

V. FY17 Budget Highlights

The Operating Plan for FY17 describes our plan for improving and protecting the Bay for the year April 1, 2016, through March 31, 2017. The Operating Plan describes the work and the rationale for our efforts in four sections: Programs, Development, Technology and Capital Assets, and Administration.

A budget is the identification of the resources we believe it will take to accomplish our Operating Plan, and it represents a best guess at a point in time based on reasonable assumptions. Reality will prove to be different. The FY17 Budget is presented as a two-page summary with a Supplemental Schedule. These two documents are formed from a collection of detailed information, including a 400+ line item detailed budget, and supporting detailed worksheets on such areas as compensation, benefits, and estimated funds transfer calculations.

To meet the goals of our FY17 Operating Plan, expenses are budgeted at \$902,189, a 17% increase over the prior year estimated actual expenses. As usual, expenses include a \$12,000 contingency line item; if we do not have significant, unexpected expenditures, this expense line will help “absorb” some of the depreciation expense.

The Budget identifies \$902,452 in operating revenue from a robust variety of sources. While this is \$132,135 (17%) more than the amount raised for operations in FY16, it is important to note

that the FY17 budget utilizes an additional \$81,500 of funds which were raised during FY16 that are for use in FY17. We, in essence, raised \$851,817 in FY16, with \$81,500 for use in our next fiscal year. If we account for that, then we are looking at an increase in revenue for operations of \$50,635, an increase of 6%, a much more reasonable, contextualized growth rate.

In FY15 we incurred expenses related to the Baykeeper retirement, and funds were set aside to offset the annual costs into FY18.

This budget does not contain a line item Budgeted Contingency Transfer to Operations Not to Exceed. In the past this has reflected the potential use of accumulated surpluses from prior years, located in the Net Assets section of the Balance Sheet in the Board Designated Contingency Fund, to absorb an operating deficit, should one occur. The good news is that while budgeted many times as a “gap filler,” ranging from \$26,000 to \$45,000 each year, we never had to utilize it. Our goal is to achieve break even or better results in operations before depreciation each year, a noncash expense.

The beauty of having a fiscal year that ends on March 31 is that we can experience the results of (calendar) year-end giving, assess where we are in relation to where we thought we would be (an ongoing process, actually), and then together explore options to best meet our goals of delivering on our plan while striving to do better than break even.

The Budget to support the FY17 Operating Plan will be fodder for discussion at our upcoming March 7th Budget Workshop. The FY17 Budget highlights:

- Increase in base compensation, 3 merit increases, and maintenance of benefits – modest investment in the intellectual capital of the organization
- Increases in some Program expenses as we build our data sonde program and tackle Nabbing Nitrogen, improve our communications on line and in print, and host a Champions event, two house parties, a major donor thank you event, and the annual meeting/volunteer appreciation event
- Increases for rent, fuel, and monthly technical support costs
- 5% transfer from the Baykeeping Fund at Maine Community Foundation as the annual allotment in support of the Baykeeping Program
- Use of \$10k of the Boats Fund and \$10k of the Emeritus Fund for Advocacy to support the boat operations and advocacy efforts, respectively.
- Release of funds transferred in 2015 from the Baykeeping Fund to underwrite annual commitment to Emeritus retirement costs
- Release of \$81,500 in program funds raised in FY16 but slated for use in FY17
- Identification of capital items (data sonde program, new photocopier) for which we will raise funds in addition to the operation revenue needs identified in the operations section of the budget.

VI. APPENDICES

Appendix A – FY16 Media Report

2015

April 5	KeepMEcurrent.com	Volunteers needed to monitor Casco Bay
April 9	WGME Ch 8	Portland bag fee has support, CLR
April 9	MPBN radio	Portland bag fee has support, CLR interviewed
April 13	PPH	Portland businesses to begin life without polystyrene, CLR quoted
April 14	PPH	Freeport considering plastic bag ban
April 14	NECN	Piece on plastic bags and polystyrene, CLR interviewed
April 14	WCSH 6	Piece on plastic bags and polystyrene, CLR interviewed
April 15	PPH	Bag fee in effect: will consumers alter behaviors? CLR
April 15	PPH	Bill Nemetz: Litter reduced now deal with slob, FOCB
April 20	Mainebiz	Cathy Pro Tem—Promotions, Bud Higgins, Appointments
April 24	Boothbay RegisterPC	Construction give \$15000 to 3 nonprofits (nominated)
May 2015	Points East	Interim Casco Baykeeper named
May 2015	Working Waterfront	Dirty Snow and Piles of Poo, CLR interviewed
April 28	The Forecaster	http://www.theforecaster.net/news/print/2015/04/28/casco-bay-study-links-ocean-acidity-shellfish-decl/230967
April 28	MPBN radio	http://news.mpbn.net/post/report-chemistry-maines-casco-bay-changing-rapidly
April 29	Portland Press Herald	http://www.pressherald.com/2015/04/28/casco-bay-healthy-but-threats-loom/
April 28	WCSH TV (6)	http://www.wcsh6.com/story/news/local/portland/2015/04/28/report-health-casco-bay-good/26522905/
April 28	WMTW (8)	also covered it briefly, but has not posted online.
April 29	Lewiston Sun Journal	http://www.sunjournal.com/news/maine/2015/04/29/casco-bay-study-links-ocean-acidity-shellfish-decline/1695354
April 29	BDN	Casco Bay study links ocean acidity, declining clam numbers
April 29	The Daily Climate	Report says chemistry of Casco Bay changing rapidly
April 29	Seafood.com	Report says chemistry of Casco Bay changing rapidly
April 29	myinforms.com	Report says chemistry of Casco Bay changing rapidly
April 29	NRCM	Report says chemistry of Casco Bay changing rapidly
April 30	OA news stream	A new report reveals the answer to “How healthy is CB?”
April 30	Regator (marine bio. blog)	A new report reveals the answer to “How healthy is CB?”
May 2	Maine Environmental News	Report says chemistry of Casco Bay changing rapidly
May 4	San Francisco SF Gate	(quotes MPBN story) http://www.sfgate.com/news/article/Report-says-chemistry-of-Casco-Bay-changing-6240170.php
May 4	Albany Times Union	Report says chemistry of Casco Bay changing rapidly
May 4	Greenwich Time	Report says chemistry of Casco Bay changing rapidly
May 4	WABI TV-5 (Bangor)	Report says chemistry of Casco Bay changing rapidly
May 4	Wopular	Report says chemistry of Casco Bay changing rapidly
May 2015	Harpwell Heritage Land Trust newsletter	Links to our report
May 5	The Working Waterfront online	CB health good, but bears watching, says Friends
May 6	The Working Waterfront online	Announcing lead story: CB report

May	City of South Portland newsletter	BayScaping talk on May 12
May 8	News from Protect South Portland	BayScaping talk on May 12
May 11	WMPG (USM)/Blunt Youth Radio	Will Everitt on plastics ban/our report
May 12	New England Boating	Report release
	West End News	Will Everitt on the report
May 13	The Working Waterfront online	Dog Poo, CLR interviewed
May 19	Portland Press Herald	Expanded Old Port Festival, our boat
May 20	Bangor Daily News (BDN)/Midcoast	Harpswell seeks funding to study clam decline
June 2015	Points East	What does the future hold for Casco Bay?
June	Yarmouth Pickup dog poop sign	Our logo
June 5	South Portland Sentry	A new view, JPayne referenced
June 7	St. Ansgar church bulletin	M Cerullo speaking at Ship Sunday
June 9	Portland Press Herald	S. Ptld group pitches city on pesticides ban
June 10	keepmecurrent.com	City leaders to move forward on pesticides ban
June 11	The Forecaster	SoPo city councilors embrace pesticides ban
June 12	BDN Portland	South Portland flits closer to pesticide ban
June 19	WMPG Community Radio	Cathy on Nonprofit Insider
July 2015	Maine. magazine	J Payne "50 Mainers Boldly Leading our State"
June 26	MPBN Radio	BK search
June 26	Portland Press Herald	BK Search
		http://www.pressherald.com/2015/06/26/maine-environmental-group-seeks-new-baykeeper/
June 26	Fosters Daily Democrat (NH)	BK Search
June 26	Greenfield Daily Report (IN)	BK Search
June 26	Washington Times	BK Search
		http://www.washingtontimes.com/news/2015/aug/16/friends-of-casco-bay-wrapping-up-search-for-new-ba/
June 26	Seattlepi.com	BK Search
June 26	AP	BK Search
June 27	WGME	BK Search
July 2	Portland Press Herald	CLR letter to editor re. pesticides/Eldredge
		http://www.pressherald.com/2015/07/02/letter-to-the-editor-kudos-to-chemical-free-lawn-care-professionals/
July 3	Blogpost of sailboat cruising in Norway	FOCB's work on green slime
July 11	NMEA Scuttlebutt	BK Search
July 15	keepmecurrent.com	S.Portland working on Pesticides Ban, Mary
July 2015	Harpswell Anchor	BK Search
July 2015	Harpswell Anchor	Fishermen, Scientists & Volunteers interpret the health of CB
July 16	Current	Pesticides ban plods forward
August 2015	Working Waterfront	BK Search ad
August 16	Portland Press Herald	Friends of Casco Bay wrapping up search for new Baykeeper
		http://www.pressherald.com/2015/08/16/friends-of-casco-bay-wrapping-up-search-for-new-baykeeper
August 30	Portland Press Herald	Deadline nears to apply for Casco baykeeper job
		http://www.pressherald.com/2015/08/30/deadline-nears-to-apply-for-casco-baykeeper-job/

August 30 San Francisco Chronicle Friends of Casco Bay closes applications for Casco Baykeeper

August 30 Washington Times Friends of Casco Bay closes applications for Casco Baykeeper

September 1 WCSH 6 Maine group done collecting submissions for new bay advocate
<http://www.wcsh6.com/story/news/local/2015/09/01/maine-group-done-collecting-submissions-new-bay-advocate/71515332>

September 1 WCLZ/WGAN ME Group Done Collecting Submissions For New Bay Advocate

September 9 EPA EPA Funds Coastal Observation System for Indicators of OA in Casco Bay

Sept 11 Sun Journal EPA Funds Coastal Observation System for Indicators of OA in Casco Bay
<http://www.sunjournal.com/news/news/2015/09/11/epa-funds-state-art-coastal-observation-system-indicators-ocean-acidification-casco-bay/1779508>

Sept 11 Portland Press Herald Maine Voices: Portland must approve proposal to ban synthetic pesticides, fertilizers
<http://www.pressherald.com/2015/09/11/maine-voices-portland-must-approve-proposal-to-ban-synthetic-pesticides-fertilizers/>

Sept 11 Just Marine News EPA Funds Coastal Observation System For Indicators Of Ocean Acidification In Casco Bay
<http://www.justmarinenews.com/epa-funds-coastal-observation-system-for-indicators-of-ocean-acidification-in-casco-bay/>

Aug 25 The Working Waterfront Kelp as the new kale, and a possible carbon fix
<http://www.islandinstitute.org/working-waterfront/kelp-new-kale-and-possible-carbon-fix>

October 2015 Ocean Navigator Film Festival full-page ad/ inside back cover

September 20 Maine Sun Telegram, Source Climate change becomes a matter of mental health, CLR interview
<http://www.pressherald.com/2015/09/20/climate-change-becomes-a-matter-of-mental-health>

September 17 Maine Sunday Telegram, Scene & Heard Casco Bay benefit

October 8 keepmecurrent.com Green slime on Willard Beach, M Doan interviewed

October 9 WMTW Green Slime, Mike Doan interviewed

Fall 2015 The Rhumb Line (ME Maritime Museum) CLR in Working Women of Portland's Waterfront
[October 16](#) [South Portland Sentry](#) [Bloom boom, M. Doan](#)

Oct 17 PPH Maine Voices When it rains, toxic runoff needn't pour into Casco Bay
<http://www.pressherald.com/2015/10/17/maine-voices-when-it-rains-toxic-runoff-neednt-pour-into-casco-bay/>

Oct 22 WCSH TV WCSH and FOCB Making A difference

Oct 23 nbcnews.com WCSH and FOCB Making A difference

Oct 25 MST/Sourcebook FF announcement on calendar

Oct. 27 MPBN Radio FF announcement

Oct. 27 MPBN Radio NRCM Portland sustainability report

Oct. 27 WCSH6 NRCM Portland sustainability report

Oct. 28 The Forecaster FF announcement

Oct. 28 Tri-Town Weekly Health of bay inspires short film (by Sam Wogan)

Oct. 28 CLZ Community Newsletter FF announcement

Oct 27-Nov 2 MPBN radio FF announcements (8)

Oct. - Nov 6 WCLZ radio FF ads (350)

Oct. 29 KeepMeCurrent.com FF announcement

October 30	The Forecaster	FF announcement
October 31	Press Herald	BK hired
November 1	Maine Sunday Telegram	FF announcement
November 2	Lewiston Sun Journal	FF announcement
November 3	Houston Chronicle	BK hired
November 3	WRAL.com (Raleigh, NC)	BK hired
November 5	PPH, Maine Today Mag	Things to Do: FF
November 6	Maine Today online	Things to Do: FF
November 6	The Forecaster	FOCB names new Baykeeper
November 7	BDN	Join FOCB, Gift Guide by Alex Steed
	http://steed.bangordailynews.com/2015/11/08/your-ultimate-2015-maine-holidaygift-guide/	
Nov 18	Portland Phoenix	Threat assessment: A scorecard on environmental protection in Maine, CLR quoted
	http://portlandphoenix.me/2015/11/18/features/threat-assessment-a-scorecard-on-environmental-protection-in-maine/	
November 24	Boothbay Register	New report released on region's coastal water quality

2016

January 13	Tri-Town Weekly	New Baykeeper Watching the Water
January 14	Times Record	FOCB Annual Meeting
January 17	Maine Sunday Telegram	Scene & Heard/ Donor Appreciation, Dec. 3
January 2016	The Sturgeon (WKA newsletter)	Photo of Ivy on the Bay
February 2	The Forecaster	New keeper promises proactive advocacy for CBay
February 8	Mainebiz, In Short	New FOCB board members
February 18	Pierce Atwood Community Service overview 2015	FOCB cited

Appendix B – FY16 Where We Have Been

Appendix C – Pumpout Metrics, 1999 – 2016

See attached documents that follow.

Where We Have Been

FY16		You may have seen us at these venues...		Speaking	to:	Exhibit	Staff in attendance
		Friends of Casco Bay Working with the Casco Bay Community					
04/01/15	South Portland	SMCC	Water Quality QA	Peter Milholland	3		
04/01/15	Portland	MELNA	BayScaping and panel discussion with landscapers	Mary Cerullo	51		
04/01/15	Portland	Waynflete	State of the Ocean	Mary Cerullo, FOCB exhibit		300	
04/08/15	Portland	ME Arborists Ass'n	BayScaping	Mary Cerullo	31		
04/09/15	Portland	NRCM Press Conference	Plastic bags ordinance	Cathy Ramsdell	14		Mary Cerullo
04/11/15	South Portland	SMCC	Water Quality training	Peter Milholland	14		
04/15/15	Cape Elizabeth	St. Albans Church Hall	BayScaping	Mary Cerullo	15		
04/17/15	Peaks Island	Peaks Is. Library Earth Day celebration	BayScaping	Mary Cerullo	20		
04/25/15	Portland	Green Neighborhood Fest	FOCB Exhibit /Storm drain stenciling demo	Mary Cerullo, Pat Ianni		150	
04/28/15	Portland	Ocean Gateway	Release of report A Changing Casco Bay	Cathy Ramsdell, Mike Doan, Bud Higgins, JB Samuelson, Jen Fox, Rick Frantz	20		Sarah Lyman, Will Everitt, Mary Cerullo
05/05/15	Yarmouth	Yarmouth Village Improvement Ass'n	OA	Mike Doan	30		
05/09/15	South Portland	SMCC	Water Quality training	Peter Milholland	8		
05/12/15	South Portland	Protect SoPo	BayScaping	Mary Cerullo	40		
06/06/15	Portland	Vegetarian Food Festival at East End Community School	Tabling	Sarah		200	
06/07/15	Portland	St. Ansgar Church	BayScaping	Mary	30		
06/26/15	Portland	Portland Waterfront	Reverb concert	Kim Anania		100	
06/08/15	South Portland	South Portland City Council workshop	BayScaping	Mary	110		
06/27/15	Portland	Allagash 20th Anniversary	Exhibit	Sarah Lyman, AJ Curran		5	
07/11/15	Peaks Island	PEAT "Garden Party"	BayScaping	Pat Ianni	34		
07/13/15	South Portland	South Portland City Council workshop	Testimony re. lawn chem ordinance	Mary	105		
07/21/15	Freeport	Presentation to Patagonia Store	Presentation on our WQMP	Will	6		
07/23/15	Kennebunkport	Goose Rks Beach Ass'n	BayScaping	Mary	30		
07/30/15	W. Bath	Birch Point Ass'n Annual Meeting	BayScaping	Lynne Holland, volunteer	20		
08/10/15	Peaks Island	Bud & Cheryl Higgins home	House Party fundraiser	Cathy Ramsdell, Mike Doan, Bud Higgins, Joan Samuelson	75		
08/17/15	Portland	Otto's Pizza	Exhibit	Althea McGirr, Dan Brazeau		30	
10/07/15	Portland	City Sustainability Comm	workshop on pesticides ordinance	Cathy Ramsdell	60		
10/13/15	Portland	Longfellow GardenClub	BayScaping	Pat Ianni	30		
10/13/15	South Portland	State of the Bay Conference	Presentation/Panel	Cathy Ramsdell	40		Sarah Lyman, Will Everitt, Sara Biron, Peter Milholland
10/13/15	South Portland	State of the Bay Conference	Presentation	Mike Doan	40		
10/27/15	Portland	Avesta housing	Speaker for NRCM Press conference to release Portland report	Cathy Ramsdell	14		Mary Cerullo
11/04/15	Portland	Portland Public Library	panelist for NRCM event on Portland..Connecting to Nature	Cathy Ramsdell	40		
11/07/16	Portland	USM	Wild & Scenic Film Festival	Cathy Ramsdell	530	530	
11/10/15	Portland	USM	Beyond Pesticides forum planning	Mary Cerullo	14		
11/23/15	Augusta	OA committee mtg		Cathy Ramsdell, Mike Doan	20		
12/03/15	Portland	Cumberland Club	Major Donor Appreciation	Cathy, Ivy	100		Will, Sara,Sarah, Peter, Mike
12/08/15	Portland	Maine Love radio	FOCB interview	Mary Cerullo	2		
12/08/15	South Portland	Turf Mgt class, SMCC	BayScaping	Mary Cerullo	14		
12/08/15	Damariscotta	OA monitoring committee		Mike Doan	12		
12/08/15	Augusta	ME Coastal Program	NOAA Special Projects proposal	Mike Doan	20		
12/08/15	Portland	ME Love radio	Interview	Mary Cerullo	3		
12/18/15	Hallowell	Dept. of Agriculture	Maine Bd of Pesticides Control	Mary Cerullo	24		
01/11/16	Portland	Portland Water District	Presentation to the Board	Ivy & Mary	11		
01/15/16	Portland	Woodford Club	About FOCB	Peter Milholland	30		
01/27/16	Freeport	Harraseeket Inn	Volunteer Celebration & Annual Meeting	Cathy, Peter, Mike, Ivy, Jack Thomas, Ward Graffam	170	170	Sarah, Sara, Jeff, Mary, Board
Totals					1830	1485	

Friends of Casco Bay - Pumpout Metrics

Year	Pumpout Coordinator	# of Pumpouts / Service Calls	Gallons of Sewage Diverted	# of Pumpout Customers	# of Pumpouts in 20 Gallon Increments	# of Flushes	Total \$ Billed	Notes
2015	Splude	535	13,640	105	462	44	\$5,280	measured in 20 gallon units
2014	Splude	570	18,000	115	622	64	\$7,180	measured in 20 gallon units
2013	Splude	637	12,740	100	448	42	\$5,110	measured in 20 gallon units
2012	Splude	340	6,810	106	532	47	\$6,055	measured in 20 gallon units
2011	Splude	405	10,400	122	529	37	\$6,035	measured in 20 gallon units
2010	Splude	294	8,280	120	417	38	\$4,335	measured in 20 gallon units
2009	Mattsson & Linnell	213	4,260	78	213	27	\$2,565	measured in 20 gallon units
2008	Mattsson & Linnell	332	7,160	100	335	34	\$2,185	measured in 20 gallon units
2007	Mattsson & Linnell	155	5,100	88	212	29	\$1,485	measured in 20 gallon units
2006	Mattsson & Linnell	203	4,060	73	203	40	\$2,380	measured in 20 gallon units
2005	Adibi	116	3,425					measured in 20 gallon units
2004	Saas	471	7,347					actual
2003	Saas	659	10,300					actual
2002	Saas	754	10,425					actual (est would equal 14,480 gallons)
2001	Madeira	1,126	16,125					actual (based on Palm Pilot information)
2000	Madeira	771	15,400					estimated
1999	McGivern	650	13,000					estimated
1998	McGivern	289	5,780					estimated (old estimate 4,500)
1997	Bertocci	215	4,300					estimated (old estimate 4,000)
1996	Hackett	160	3,200					estimated (old estimate 2,500)
1995	Hackett	51	1,020					estimated (operations 5 weeks 1st season)
		8,946	180,772					