

Cumberland Stormwater Phase II

Annual Report

Permit Year 5 (June 2, 2007 - June 30th, 2008)

1. Public Education and Outreach

BMP Name

1a. Develop Education and Public Outreach Prioritization and Workplan

FUNCTION:

Ensure that education efforts are focused on highest impact behaviors and activities, are structured to be effective with their target audiences, are cost-effective, and are part of a longrange plan.

METHODOLOGY:

1. Assessment: Determine which demographic and geographic sectors are highest priority to educate based on an assessment of the impacts of different sectors within the regulated area on the waters of the state.

a. Residential assessment: This will be done through a study, such as a focus group study or other appropriate method, to determine, under current conditions, the activities residents are engaging in that contribute to polluted runoff, the programs and policies that will be most effective at changing residents' behaviors, and the ways of communicating to residents that will be most effective.

b. Non-residential assessment: The various non-residential activities and land uses in the urbanized area will be identified, characterized as to their impacts on polluted stormwater and prioritized according to the extent of their impact.

2. Resources for Implementation: Contact will be made with the various organizations which are either already providing environmental education in the Casco Bay region or are likely candidates to provide such activities. The purpose of this contact will be to ensure that the MS4's efforts are coordinated with other similar activities and to investigate the potential to partner with other organizations.

Methods to be considered for public education and outreach include, but are not limited to:

- Website*
- General Brochure*
- Targeted Brochures*
- Displays*
- Classroom Education*
- Broadcast Media*
- Targeted Presentations*
- Promotional Giveaways*
- Stormwater Trade Show*

MEASURABLE GOALS:

Year 1: Complete the residential assessment and non-residential assessment. Make initial contact with potential partner organizations.

Year 2: Use the results of the residential and non-residential assessments and the identification of potential partners to develop a Public Education and Outreach Workplan.

Year 3: Complete the implementation of Year 3 activities, as identified in the Public Education and Outreach Plan.

Year 4: Complete the implementation of Year 4 activities.

Year 5: Complete the implementation of Year 5 activities

x	Year 1	x	Year 2	x	Year 3	x	Year 4	x	Year 5
---	--------	---	--------	---	--------	---	--------	---	--------

Actions Completed During Permit Year 1

Responsible Party Brenda Zollitsch & Kathi Earley

Contact potential education partners

Through the ISWG, a presentation was made to the Board of Directors of the Casco Bay Estuary Project, which is made up of representatives of various potential partner organizations.

Municipal Employee Survey

The MS4 participated in the MEDEP municipal employee survey program. 269 surveys were completed by municipal employees.

Statewide Media Campaign

- a) The MS4, through the ISWG, participated in the Media Campaign Steering Committee activities.
- b) The MS4 sent a representative to the November 19, 2003 MEDEP planning meeting.
- c) Financial contribution: Cumberland contributed \$1017.52 to the statewide campaign. Residential Assessment

The MS4, through the Interlocal Stormwater Working Group (ISWG), collaborated with the MEDEP to conduct a series of focus groups assessing the public's awareness of stormwater issues and their behaviors that impact stormwater runoff. The focus groups provided valuable information for the development of a statewide media campaign. The ISWG coordinator participated in this activity. Cost: \$3,500 (for ISWG)

Actions Completed During Permit Year 2

Responsible Party- Adam Ogden

Mass Media

The Town of Cumberland participated in the Mass Media Campaign during Permit Year 2 by approving a contribution of \$20,000 which was paid through the Portland Area Comprehensive Transportation System (PACTS). The "Ducky" commercials will run in July 2005 in the Bangor area and in September 2005 in the Southern Maine area. In conjunction with this effort, each community contributed \$82.15 to provide match to a Maine Outdoor Heritage Fund Grant to upgrade the ThinkBlueMaine.org website with better content. The commercials identify the website as a place to visit for additional information on how individuals can prevent stormwater pollution.

Residential Assessment:

A half-time public education and outreach coordinator, Tamara Lee Pinard, was hired by the Interlocal Stormwater Working Group (ISWG) to act as a liaison between the MEDEP, the MS4s, and regional partner organizations. Her main responsibilities are to organize and implement the stormwater public education and outreach programs by working directly with each of the member municipalities to identify

and select target areas, BMPs, and local activities. She will also track and report progress as well as seek funding from outside sources for activities.

Non-Residential Assessment:

At the direction of MEDEP, non-residential activities will not be a focus of public education during Permit Years 3 - 5. These activities will be addressed by MEDEP through other regulatory programs, such as the Multi-sector General Permit for Industrial Activity.

Municipal Survey Results:

The MEDEP assisted the regulated communities by providing an evaluation of the mass media campaign and the municipal survey results. The Assessment of Maine's Stormwater Phase II & NPS Outreach Campaign 2003/2004 (by MEDEP) reported that the Think Blue Maine campaign successfully caught the attention and conveyed the message to 14.4% of Maine adults and approximately one third plan to take action to protect water quality. This is above average of recall for most marketing campaigns which aim for 5 - 10% recall.

The MEDEP Municipal Employee Survey for the Portland Interlocal Cluster (based on 2,329 returned surveys) concluded that 47% of respondents think that the water quality of local streams is good to excellent, 10% said it was poor, and 20% did not know. These results show that there is no strong perception of a problem by the public. The top three perceived pollution sources are:

1. Pesticides/Fertilizers
2. Petroleum
3. Industry/Roads

In general there is a poor understanding of what happens to stormwater, the difference between sanitary and storm sewers, and the concept of a watershed; therefore there is a huge need for education. The audience is assumed to be willing to be influenced by education efforts because nearly half of them already think they are doing something to help protect water quality. The results of this survey act as baseline data to evaluate the regulated communities level of effectiveness in the future.

Actions Completed During Permit Year 3

Responsible Party - Adam Ogden

Mass Media

According to the MEDEP's "2005 NPS & Stormwater Media Campaign Assessment (Omnibus Phone Survey)" there has been an increase in awareness and stewardship in Maine. The recollection of the ads is up by 10% from last year (24% surveyed recall the ad) and 35% of those surveyed will do something protective of stormwater. The Town of Cumberland participated in the Mass Media Campaign during Permit Year 3 by contributing \$850. The "Ducky" commercials are anticipated to air during June and July of Permit Year 4.

Responsible Party - Adam Ogden

EPA Award

On May 4, 2006 the ThinkBlueMaine Partnership (including the Interlocal Stormwater Working Group) was awarded with an EPA Environmental Merit Award in recognition of its exceptional work and commitment to the environment in 2005. An announcement regarding the EPA Award was posted on the Town of Cumberland's webpage. It recognized the efforts of the Public Works Director and provided a link to the ThinkBlueMaine.org website for more information.

Responsible Party - Tamara Lee Pinard (ISWG)

Public Education Program

Education Plan

ISWG Education Coordinator worked to pull together information about potential educational partnering opportunities; met with municipal representatives to identify the educational priorities. Based on the priorities, the Education Coordinator researched educational strategies for the focus areas of lawn care, pet waste and new development.

She developed pet waste, lawn care and new development outreach plans including budgets to carry out these initiatives through to the end of Permit Year 5 (which ends in June 2008).

The MEDEP reviewed and signed off on the Educational Plan in February 2006. The ISWG adopted a revised plan (reduced total number of YardScaping pilots) at the March 16, 2006 meeting.

Plan Implementation

The ISWG Educational Coordinator submitted two grant proposals to offset the financial contributions required from ISWG communities for the implementation of the educational plan. Stormwater 360 was denied; EPA Educational Grant is still pending.

Informal Surveys – Upon researching the process of developing and carrying out an informal survey, it was decided that a more formal, phone survey would better serve ISWG needs. The survey questions have been finalized and a database has been created in SurveyMonkey to record and analyze the collected information.

Displays – A community-based map of the major watersheds was created to be used as part of a stormwater educational display. A concept display was developed for YardScaping and watershed information. Both were approved by the ISWG at the May 18, 2006 meeting. The YardScaping Display was used at the Portland Flower Show, March 9-12, 2006.

YardScaping Socials – A presentation and handout materials were developed for use at the YardScaping pilots.

Multiple Press Releases were published during Permit Year 3:

July 31, 2005 - Portland Press Herald, Meredith Goad, "Low-Impact 'yardscaping' attracting fans."

August 7, 2005 - Portland Press Herald, Tom Atwell, "Grass versus groundcover."

April 2, 2006 - Portland Press Herald, Tom Atwell, "Keep Your Lawn Healthy and Be Kind to Environment at the Same Time."

May 1, 2006 - "Lush Lawns for Le\$\$" press release submitted to local papers throughout the State.

Responsible Party - ISWG Coordinator/ Casco Bay Estuary Project Manager

Other Activities

A presentation on the ISWG stormwater program was given to Casco Bay Estuary Partnership's State of the Bay Conference on November 3, 2005 as a means to contact potential education partners.

Actions Completed During Permit Year 4

Responsible Party - , Tamara Lee Pinard (ISWG), Adam Ogden

Broadcast Media

The MS4 contributed \$85,000 to the State-wide Public Education Media Campaign. The ducky ad ran for four weeks from the week of June 26, 2007 through July 17, 2007, for a total of 291 spots. The soil erosion radio ad ran for three weeks from the week of June 26, 2007 through the week of July 10, 2007, for a total of 717 spots.

Responsible Party - Adam Ogden

Public Education Program

Education Plan Implementation

Submitted one grant proposal to offset the financial contributions required from ISWG communities for the implementation of the educational plan. The ISWG received a \$48,000 grant from the Maine Efficient Delivery of Local and Regional Services.

Phone Survey- A phone survey was carried out to provide statistically significant data for the 13 ISWG communities. The survey was designed in order to guide educational efforts in regards to lawn care and pet waste practices. A complete survey report was developed in the fall/winter 2007. The following information has been summarized to date.

388 surveys were completed. Of these, 14% did not have a lawn; 18% hired a lawn care company; and 68% were lawn care do-it-yourselfers. When asked, “What would most encourage you to use more natural weed and bug control methods?” 52% - protect the health of kids and pets; 42% - protect water quality; 31% alternatives that are as effective; 28% knowing the alternatives. This information was utilized in the development of the brochure, accompanying handouts and website. It should be noted that individuals were able to select more than one option.

When asked, “On a scale of 1 to 6 where 1 = not important and 6 = very important, how important is it to you to have a perfect lawn?” For those who hired a lawn care company, 4-6 = 52.3% of the answers where do-it-yourselfers answered 4-6 = 34.5%. Not important (1) was 25.6% of the do-it-yourselfers but only 6.2% of those who hire a lawn care company. When asked, “Why do you like a maintained and manicured lawn” - Looks nice and enhances property values were the most popular answers with the breakdown as follows between do-it-yourselfers and those who hire a lawn care company: Looks nice 47.8%/64.8%; enhances property values 11.8%/24.6%. This information was also utilized in the development of the brochure, accompanying handouts and website. In addition, this helped to shape our presentation style for targeting neighborhoods where most residents hire lawn care companies.

When asked to give their best estimate of how many times a year the following are used, this was the results for do-it-yourselfers versus those who hire a lawn care company.

Lawn Care Company	Once	Twice	Three+	Never
Weed & Feed	19%	15%	19%	31%
Lawn fertilizer	22%	27%	33%	13%
Do-it-yourselfers				
Weed & Feed	21%	3%	4%	67%
Lawn fertilizer	24%	10%	5%	55%

This information helped to further refine our approach. An opportunity exists to get information to those hiring lawn care companies that they are paying for product that they do not need in order to have a nice lawn (i.e., research supports that in Maine, fertilization one time per year is generally more than adequate, depending on the soil test). This information would need to be conveyed on a one-on-one basis through homeowner association meetings or neighborhood socials.

Survey also covered pet waste practices. Of the 388 people surveyed, 37.8% (143) had dogs and of those, 66% walked their dogs. When asked, “On a scale of 1 to 6 where 1 = never and 6 = always, how often do you pick up their pet waste?” the replies were as follows: 1 (never) – 19%; 2 – 2.8%; 3 – 4.2%; 4 – 2.8%; 5 – 8.5% and 6 (always) – 62.4%. When asked, “Which of the following would most encourage you to clean up after your dog more often?” the replies were as follows: knowing it would protect water quality (29.3%); knowing it would protect public health (18.2%); free collection devices, such as a scooper or bags (16%); complaints of neighbors (12.7%); more disposal locations in parks or along trails (12.7%); and a monetary fine (11%). This was a series of questions that phone surveyors did not feel totally confident about. The qualitative feedback indicated that consideration of what will impact/change people’s behaviors will need to be explored in a more hands on assessment. It was determined that we acquired some baseline information that can be used for comparison, but that some trial and error assessment will be done on-site at parks and dog walking areas to determine what measures will be needed to effect behavior change.

Lastly, the survey covered outreach methods. When asked, “Where have you gotten information about local water quality issues?” multiple answers were accepted and no list of options was read. Newspapers were the overwhelming lead with 44.5% response followed by TV (28.2%), brochures (9.9%), Newsletter (7.2%), Word of mouth (6.7%), billing insert (6.2%), radio (5.9%), meetings (5.1%) and public events (4.7%).

The demographics of the 388 respondents were as follows: 87.5% own their home; 58.9% of the respondents were female; Age ranges were 18-24 (4%), 25-34 (5.8%), 35- 44 (15.4%), 45-54 (27.3%), 55 – 64 (21%), over 64 (25.2%); and education levels were some high school (4.3%), high school graduate (23.7%), some college/trade (24%), 4-yr college (26.9%), graduate or more (21.6%). Demographic information has been utilized in refined analysis of particular target audiences.

Targeted Pilot Program – Lawn Care YardScaping Support Materials - Worked in cooperation with MEDEP to determine the results from a lawn care focus group and utilize the information gleaned from the focus groups for the development of materials and approach. “Do You Want a Lush Green Lawn Safe for Kids and Pets” brochures developed, one for point of sale pilot and one for general YardScaping use. Supporting handouts, “Mow High,” “Aerate,” “Overseed,” “Why YardScape?,” “Organic Doesn’t Always Mean it’s Safe” (Paul Tukey – April 2006), “Know Your Soil” (Cooperative Extension), and “Pesticides & Your Health” (Healthy Communities Project) were developed or reproduction rights were attained. YardScaping website was launched under the Cumberland County Soil and Water Conservation District website (www.cumberlandswcd.org/yardscape.htm). “Safe for Kids and Pets” lawn flags were developed and produced along with an accompanying pledge to not apply pesticides or herbicides. “Why YardScape” and “Conservation Landscaping” displays were created. A number of presentations and supporting visual materials were prepared for use at the casual, neighborhood level through to more formal settings. Postcard and brochure were developed to recruit YardScaping social hosts.

Targeted Pilot Program – Lawn Care – Point of Sale - Four lawn care product associated businesses were recruited to participate in our point of sale pilot program in South Portland (Yerxa’s Lawn and Garden (sells and repairs lawn mowers & power tools); Drillen Hardware; Shopper’s True Value and Broadway Gardens). Ducky shelf tags were designed and produced. Store products were assessed to determine which would get the ducky shelf tag. Product lists were provided to all four stores along with informational display material. Most store employees were trained on organic lawn care practices.

Shopper’s True Value only included owners and supervisor staff in the employee training.

The training was well received and provided an opportunity to begin a dialogue about pesticides and herbicides – products most places were selling and promoting without understanding the dangers associated with their use. In order to promote the point of sale program, 8,924 brochures went out in South Portland tax bills and ads were run on a weekly basis throughout May and June in the local, “South Portland Sentry” newspaper that is delivered to every household in *South Portland and Cape Elizabeth*.

In addition, 50 “Do you want a lush green lawn safe for kids and pets?” posters that have a post it note tab with the YardScaping website on them were displayed at local eateries, Dr’s offices, health centers, etc. Brochures were also placed at key locations throughout South Portland. Twelve specific requests for soil test kits, four pledges/requests for lawn flags, five website survey questionnaires filled out and two requests for information came to the CCSWCD as a direct result of the tax insert.

A number of follow up phone calls and two follow up site visits occurred with all four stores in order to assess the success of the program, answer questions and provide additional support. Qualitative feedback from the stores has been positive. People came in with their tax bill brochures or the Sentry ad and were looking for guidance on organic lawn care. In addition, handouts have been taken at each store and most reported positive feedback regarding the handouts and information. Both Yerxa’s Lawn and Garden and Broadway Nurseries reported positive feedback from customers regarding the YardScaping brochures and handouts.

Drillen Hardware, specifically, has been the most successful site. They installed a YardScaping display at the end of one of their aisles that highlighted all of the products as well as the supporting handouts. They carried the YardScaping seed mix for the first time this year and sold out of it. They also substantially increased their sales for another Allen, Sterling & Lothrop low maintenance seed mix. Their location is in a part of South Portland that is closer to Cape Elizabeth. Their clientele had already been asking for more organic products and we have been able to educate the store owners regarding what is and isn’t safe, even if it is organic (i.e., rotenone is not safe!). This has been an extremely positive partnership and we look forward to continuing to build on the momentum that has been established.

Shopper’s True Value Hardware has not been as successful. Unlike Drillen, which is a classic hardware store with a fairly narrow focus of products, Shopper’s is more of the catch all store with everything from plumbing supplies, to tourist trinkets, to arts and crafts. This was the only store that did not include all of the employees in the organic lawn care training. The store owners have the brochure and handouts displayed, but the store is so jam packed with items, the brochure and handouts get a bit lost. In addition, they just don’t seem to have the space to clearly identify the ducky products – all lawn care and garden products are jammed into an area and it is often hard to find the price tag that matches the product due to the disorder. The store owners have not felt the pressing request for organic products so are not as inclined to change their offerings. They do stock and sell quite a bit of weed and feed. This store demonstrates the need to continue to work on many levels in order to educate people regarding organic lawn care options.

Targeted Pilot Program – Lawn Care – YardScaping Socials/Outreach - Entire host identification process was focused not only on finding key neighborhoods, but also key people within those neighborhoods. The goal was to get hosts who are not viewed by their neighborhoods as “environmentalist.” Worked to identify key neighborhoods in Portland and Falmouth, and also put the word out in Gorham, Westbrook, Windham and Cumberland. Have utilized Master Gardener contacts, gardening clubs, Interlocal Stormwater Working Group members and even college connections to try to set up socials. Attended the 2007 Master YardScapers training (2/27, 3/6 and 3/13) to share our materials and recruit hosts. Six Master YardScapers took the YardScaping pledge and received lawn flags.

It was determined that lawn care is very personal and while people are interested in learning more about what they can and should do, they are less inclined to want to have someone at their house to share that information. Took advantage of other opportunities to disseminate YardScaping information.

September 22 – 28th, 2006 – Fall YardScaping Display at the Cumberland Fair. Over 200 handouts (“Affordable and Easy Lawn Care Tips” and “Organic Doesn’t Always Mean Safe”) were taken in addition to over 60 soil test kits with supporting information. Eighty seven surveys were filled out at display booth and 42 of these were from the ISWG communities. Participants were asked to rank their awareness level about fall natural lawn care methods on a scale of 1 to 6 where “1” is not much and “6” is a great deal prior to and after the display. For the 42 surveys from the target communities, before display

awareness averaged 2.9 and after display awareness averaged 4.6. Thirty two of the surveys indicated a plan to change a lawn practice based on the information provided in the display. These changes ranged from mowing height, aeration, getting a soil test, fertilizing only in the fall or using natural alternatives to combat weeds.

December 13, 2006 – Presentation to the Casco Bay Estuary Partnership Board of Successes and Lessons Learned to date with the YardScaping pilot program in the Presumpscot River Watershed.

March 8 – 11th, 2007 - YardScaping Display in cooperation with MEDEP and the Board of Pesticide Control at the 2007 Portland Flower Show.

March 22, 2007 - The first social was held at New England Chiropractic in Westbrook, ME, as part of the office's Wellness series. The nature of the office set up resulted in more of a one on one interaction with people to help them troubleshoot their issues and provide them guidance specific to their individual needs rather than a formal workshop. The set up worked well. A display and support materials were left at the office for an additional month. What was telling about this experience was that while the audience was into healthy living and making better choices regarding their health, they were largely uninformed about the impacts of lawn chemicals.

April 14, 2007 - Gave a Conservation Landscaping presentation and set up a display booth as part of O'Donal's Nursery Organic Gardening Day. Approximately 75 people participated throughout the day and we had many good conversations regarding approaches to yard care. Brochure and handouts were taken by almost everyone we spoke to.

May 19, 2007 - Gave a YardScaping presentation and set up a display and materials for the Portland Stroudwater's Village Association's Annual Meeting. Approximately 40 people attended. The presentation was scheduled for 15 minutes and with questions and answers went almost 45 minutes. The information was very well received and seven surveys were filled out and three pledges were taken. In addition, calls have come in seeking additional information and one site visit and soil test has been completed to date.

May 19, 2007 - "Kid's Day America" display booth and hands-on kids' activities provided at Westbrook event from 12 – 3 pm. Over 400 community members attended the event. Many great conversations were had and we were able to get 9 people to sign lawn care pledges and 21 lawn care surveys filled out.

June 2 & 9, 2007 - A Master YardScaper from Freeport took it upon herself to organize the distribution of YardScaping information as part of the free clean up week at the Freeport's Transfer Station. Volunteers were organized to handout the ISWG "Do you want a lush green lawn safe for kids and pets" brochure along with the state, "Why YardScape" handout. Volunteers were provided with background information regarding organic lawn care practices and the nature of the transfer station effort allowed for some conversing time between volunteers and Freeport residents. Over 600 packets of information were distributed and feedback provided by the volunteers indicated that only a handful of people were not receptive to the information. The overall feeling about the effort was extremely positive.

Pilot Program – Lawn Care – Tracking – A database was created in Survey Monkey to manage the phone survey data.

Website survey was developed in Survey Monkey for website tracking. CCSWCD YardScaping website section was launched in mid April 2007. Surveys collected to date have been as follows:

- Nine surveys completed in April. Three were in response to the brochure in the tax bill, three to the ad in the Sentry and three were "other." Of these responses, all planned to change something about their lawn care and one had even canceled their lawn company.
- Thirteen surveys completed in May. Two were in response to the brochure in the tax bill, one to the ad in the Sentry, five to a brochure in a local store, one to the poster in the store, two through

the Town of Cumberland website, and one “other.” Of these responses, eleven indicated specific actions they planned to change regarding their lawn care and two planned to research it further.

- Six surveys completed in June. Four in response to a brochure in a local store, one through the City of Portland’s website and one “other.” Of these responses, five of the six indicated specific actions they planned to change regarding their lawn care and one was unsure.

Additional responses to the website have included: 1 request for soil test kit; 5 requests for information; and 2 pledges/requests for lawn flags.

YardScaping/Environmentally Friendly Lawn Care Press:

- 8/3/06 - “Is Your Lawn Chemical Free? Maybe it Should Be,” Forecaster – all four editions (Northern, Southern, Portland and Mid Coast).
- 8/21/2006 – “Going green? Pass on grass” Ann S. Kim, PPH, pg B1.
- 10/11/06 – “Back Cove garden to display ecologically sound plantings” Melanie Creamer, PPH, pg B7.
- 3/4/07 – “Writer lays out how to keep lawns and their users healthy” Tom Atwell, MST, pg G3 (overview of Paul Tukey’s, Organic Lawn Care Manual).
- 3/8/07 – “Do green lawns make green water?” John Richardson, PPH, pg B1 (new phosphorus fertilizer bill).
- 3/9/07 – “Restricting phosphorus is clearly good for lakes.” PPH, pg A8 (new phosphorus fertilizer bill).
- 3/10/07 – “The grass of home gets greener” John Richardson, PPH, pg B1 (Portland Flower show article highlighting environmentally friendly lawn care as a hot topic).
- 4/18/07 – “Two Good Ideas: Rain barrels, rain gardens” Tom Atwell, MST, pg G3.

Other Activities

Watershed Maps - Community based watershed maps were developed for all thirteen communities. The maps have been utilized in local presentations to provide place based information regarding watersheds as background for talking about lawn care and potential impacts to water quality. Accompanying display was fine-tuned and is available for use.

Actions Completed During Permit Year 5

Responsible Party - ISWG Public Education and, Tamara Lee Pinard and Adam Ogden

Local education activities by the CCSWCD on behalf of the Interlocal Stormwater Working Group

Media activities

- The MS4s contributed toward the ads during permit year 4 and 5.
- The ducky stormwater television ad ran for three weeks from the week of July 23, 2007 to August 6, 2007 for a total of 173 spots in the Portland market. Total Adults 35-64 Reach %/Frequency = 99%/6.2

YardScaping Material Development

- Revised fact sheets – mow high, aerate and overseed.
- New fact sheets – non chemical control of grubs; non chemical control of ants; new fertilizer recommendations from Cooperative Extension regional effort; compost tea; topdressing; water wisely and lawn care calendar.

- Researched and developed support materials on compost; compost tea; tick management; non chemical control of grubs and ants; rotenone; and local landscapers who provide non chemical grub control.
- Developed stream lined lawn facts for Gorham Methodist Church Social Concerns Committee. They formatted for use in Sunday bulletin, “Turf Tid Bits.” These are now completed and available for distribution to other churches.
- Developed two door hangers – one for lawn care company users and one for do-it-yourself lawn care.
- Developed compost tea kits with detailed instruction sheet.
- Developed YardScaping stickers for promotion of YardScaping and for use on compost tea kits.
- “Mow High,” “Aerate,” “Overseed” fact sheets and “Why YardScape” brochures were distributed to the 14 ISWG communities in late summer/early fall of 2007 for use at local libraries or public offices.
- “Why YardScape” display boards were distributed to the 14 ISWG communities in March 2008 for use at local libraries or public offices.
- Worked with State YardScaping effort to flesh out the wording and graphics for a YardScaping bookmark with six easy steps to a healthy lawn. “Six Easy Steps to a Healthy Lawn” YardScaping bookmarks were distributed to the 14 ISWG communities in June 2008 for use at local libraries or public offices.

Specific requests for information/assistance

- Provided YardScaping information for Condo Association on the Fore River in Portland.
- Worked with sites in Westbrook and Windham to carry out and analyze soil test results. Both sites were provided with recommendations for further work. The Westbrook site was “adopted” as a demonstration site so that staff could implement the YardScaping recommendations and assess the results.
- The Westbrook site was aerated, topdressed with ½” of compost and overseeded with a low maintenance grass seed in the spring of 2008. It is anticipated that additional work will be required and the site will be monitored for progress over the next year.

Grants

- Developed concepts for and wrote the work plans for two regionalization grants – one focused on meeting the education minimum control measures and the other on urban impaired streams. Unfortunately, the grant program for the efficient delivery of regional services was dissolved as part of the State of Maine budget cuts.
- Researched grant opportunities to support the YardScaping program and the anticipated permit year one of the new five year permit planning requirements.
- Prepared and submitted comments regarding the remaining \$350 K of Julie N oil spill remediation funds.

YardScaping/Environmentally Friendly Lawn Care Press

- Wrote and submitted Fall YardScaping article, “Autumn is no time to start abandoning your lawn” to all community newspapers. It was published in the November 1, 2007 Windham Independent with a color photo of 10 month old Payson Plummer playing on her safe, healthy lawn.
- “YardScaping in 13 Southern Maine Communities,” Nonpoint Source Times, Volume 17, Issue 1, Winter 2007/ 2008.
- “To Cut Down on Lake Pollution, Please Do Park on the Grass,” John Richardson, Portland Press

Herald, May 8, 2008.

- “Ecological Landscaping Demo Kicks Off in Portland’s Back Cove”, June 2008, Portland Press Herald.

Training / Sharing of information/ Statewide Coordination

- July 19, 2007 – Paul Tukey Safe Lawns Training for municipal officials held in Scarborough, Adam Ogden.
- October 18, 2007 - Statewide Roundtable, Adam Ogden.
- October 23, 2007 - EPA webcast re: reporting of stormwater.
- November 7, 2007 - State YardScaping partnership meeting.
- November 14, 2007 - Watershed Manager’s Roundtable– Presented YardScaping effort and provided supporting materials to an audience of approximately 35 people.
- December 12, 2007 - Statewide Roundtable meeting to discuss the proposed post construction ordinance and the draft five year permit, Adam Ogden.
- February 22, 2008 - District Forum in Gray; audience – District employees from southern to midcoast Maine (16 total). Format provided opportunity to disseminate information about the YardScaping program and enlist other Districts to look into the program for implementation in their areas.
- March 19, 2008 - Maine Water Conference - Developed and presented presentation on the initial survey that was completed as part of the development of the healthy lawn care campaign.
- May, 2008 - Provided input for EPA News Notes article on the YardScaping program (article appeared in July 2008 EPA News Notes).
- June 10, 2008 - Participated in EPA site visit of the Casco Bay Estuary Partnership. Discussed ISWG cooperation and the YardScaping initiative.
- 2007-2008 - Maine Road-Stream Survey (Manual Implementation and Survey in Cumberland with Alex Abbott, US IFW to build an inventory of stream barriers and to use that data to rank and prioritize barrier removals) Adam Ogden
- November 2007 - Stream Value and Assessment – Adam Ogden
- November 2007 - Stream Protection Strategies and Restoration – Adam Ogden
- November 2007 - Stream Fisheries and Water Quality Issues – Fish Passage in Culverts – Adam Ogden
- November, 27 2007 - Maine Stream Conference – Adam Ogden
- 2007 -2008 - Assisted in field testing/developing the final survey protocols for the Maine Stream Barrier Survey and Assessments and facilitating meetings and continuing to advocate for greater statewide commitment to barrier inventory and removal work by assisting Alex Abbott USIFW, Adam Ogden
- January 2008 - Maine Barrier Outreach Meetings with US Fish and Wildlife Service, Gulf of Maine Coastal Program, to establish general discussion and outreach strategies and determine target audiences for outreach - Adam Ogden
- 2008 - Assisted Alex Abbott (USFWS, Gulf of Maine Coastal Program) in securing funding and production of Maine Stream Crossing Poster (Fish Passage Poster/Fact Sheet “Maine Stream Crossings, New designs to restore stream continuity”) – MDOT and Adam Ogden

Cooperative Efforts with the State YardScaping Partnership

- Back Cove Demonstration Project - provided assistance with grant writing and the installation of over 600 perennials, shrubs and trees for the establishment of four demonstration landscapes at Back Cove in Portland. The demonstration landscapes were created in response to the need to provide a publicly accessible demonstration that showcases appropriate plantings for both urban and rural settings in a beautiful, homeowner-doable way in order to convince people that they can reduce their impact on the environment while still retaining a look that is appealing. The City of Portland has provided a 2.5 acre site on the Southeast side of Back Cove. This area provides 100's of visitors every day who walk the existing trails that run next to the proposed demonstration site. In order to improve interaction with the demonstration site, new trails wind through the new gardens and instructive signage will show people how they can reproduce the results in their own yards. The project generated press coverage both in the Portland Press Herald newspaper and on television.
- The State YardScaping project at Back Cove trail will result in the volunteers maintaining the new gardens for the City. The project is a true collaboration between the State YardScaping partnership, and the volunteers involved with the program have agreed to adopt these public gardens to ensure they are kept up and represent the City and the Yardscaping program in the most positive light. The City of Portland will provide top soil, compost and/or bark mulch, as needed, for the volunteer workers to accomplish the necessary maintenance.
- Worked with the State YardScaping effort, Board of Pesticide Control, University of Maine Cooperative Extension and the Friends of Casco Bay to carry out February 12, 2008 "Go Green to Get Green" training of over 130 landscapers in the Greater Portland area. Feedback from attendants conveyed that the training was well received (survey sent out 2 weeks after the training resulted in 38 total respondents). Highlights of survey questions and answers are as follows:

Q: The one big "take home" message from the "Go Green" conference for me was:

A: (a sampling):

- That being good to the environment doesn't mean losing out on business.
- There are better ways to grow a lawn without the use of pesticides.
- You do not need a lot of NPK to have healthy turf.
- It's not hard to implement these "eco-friendly" practices at our homes and for clients.
- Almost never a need for pesticides, and surprisingly, many soils may not need fertilizers.

Q: Do you think your company or agency will add a low input or natural lawn or yard care service to its operation within the next three years?

A: 65% said yes.

Q: Based on what you now know about fertilizers/herbicides/insecticides/fungicides as potential pollutants, do you intend to change the amount, frequency or timing of fertilizer applications performed or offered by your organization?

A: 68%, 44%, 44% and 39% said yes, respectively

Q: Are you interested in learning more about low input or natural lawn or yard care practices?

A: 90% said yes.

Q: Do you think more emphasis should be given to homeowner and consumer education regarding low input and natural lawn or yard care?

A: 95% said yes.

- In addition, a tangible result was seen in the advertising material of the largest lawn care companies in Maine. The ISWG YardScaping program has tracked lawn care company advertising over the last three years and it was clear that the promotions in the spring of 2008 put more emphasis on healthy lawn care options and services. The companies that changed their advertising tactics were present at the “Go Green to Get Green” training.

YardScaping Events

A variety of event/educational settings were tested this permit year. Displays, handouts and hands-on activities were all refined in the course of this effort to provide better interaction with the target audience. Each event is listed with date(s), location, audience, display materials/presentations as well as anecdotal and quantitative information, as available, regarding the success of the effort and lessons learned.

- June 23, 2007 - location Windham Summerfest; audience – primarily Windham residents. Over 250 community members visited our booth. A number of good conversations were had. Set up of the event put all the info booths together and off from other focal points of the festival. Ducks were given away as part of "Which soil is healthier?" game, but kids just rushed the booth to play the educational game and get free ducks - parents weren't always in tow. Approximately 50 brochures & accompanying handouts (Mow High/Aerate/Overseed) were taken. Four people signed the lawn care pledge and 29 lawn care surveys were filled out.
- June 27, 2007 - LL Bean Wellness Fair display booth. Over 1000 employees visited our booth. A number of good conversations were had. Many great conversations; lots of advice provided regarding nonchemical approach to ant control; approximately 100 brochures and accompanying handouts (Mow High/Aerate/Overseed) were taken. Seventy two people signed the lawn care pledge and 77 lawn care surveys were filled out.
- July 28, 2007 – location Gorham Days; audience – primarily Gorham residents; total contact ~30 people; provided information table with lawn care handouts. Utilized large print pictures and slogans instead of poster board. Learning from our experience at Windham Summerfest, we did not have duckies at the booth, which did decrease the overall traffic to the booth. However, the people who did come to the booth were interested in the material and the conversations were more substantial. Approximately 30 copies of brochures and handouts were distributed. Two people signed the lawn care pledge and eight lawn care surveys were filled out.
- August 24, 2007 – Walmart YardScaping Display from noon to 5 pm. The display was at the request of an employee who was impressed with our effort. Unfortunately, it was not the best location within Walmart and did not result in a successful outreach effort.
- November 7, 8, 14, 27 and 28, 2007 – location City of Portland Council District Meetings (6 – 8 pm); audience – Portland residents (~ 35 people at each meeting); we provided Portland staff with a YardScaping sound bite and a display and supporting handouts were set up. At three of the meetings, the sound bite was delivered by Portland staff; and at two of the meetings the sound bite was delivered by CCSWCD personnel. The sentiment was that the message was better received when delivered by someone other than Portland staff, but meeting participants reviewed the display and took informational material regardless of who delivered the message.
- March 3, 2008 – location Saco; audience - Saco Conservation Commission (12 people); Presented poster board; gave out brochures and handouts; discussed the feasibility of YardScaping Social; provided information on the effect of pesticides. Information was well received. This was a good use of staff time and a good format for getting the word out at the local level.
- March 5-9, 2008 – location Portland Flower Show; audience – southern Maine (contact with 800+ people); Event hosted by MBPC, MDEP, CCSWCD and UMCoopExt; Assisted with booth set up, provided pertinent Mow High and Overseed handouts, and participated in the development of

bookmarks and a questionnaire that were used at the show. This was a good use of staff time, working cooperatively to reach a large subset of people, many in our target audience. This was a good format to increase the visibility of YardScaping and the bookmarks proved a useful tool to get people into the booth and talking about lawn care practices.

- March 29, 2008 - location Gorham Methodist Church; audience - Social Concerns Committee (5 people); provided background information on YardScaping effort and principles. The information was well received; the committee is planning to promote YardScaping at their property (12 acres). The Committee worked cooperatively with us to develop “turf tid bits,” which were distributed in their Sunday program from mid-April to mid-May. Information was well received. This was a good use of staff time and a good format for getting the word out at the local level. The “turf tid bits” could easily be promoted for use through other churches.
- March 26 – 30, 2008 – Downeast Home and Garden Show; audience – drew from all around Southern Maine (contact with 200+ people). Provided information table with a poster board, lawn care handouts, bookmarks, duckies and compost tea kits. The City of Portland arranged for us to share space with ecoMaine and Riverside Recycling. The audience was a good one. The combination of all the material available at our booth between YardScaping, recycling and composting was a little overwhelming, but the added exposure for YardScaping was worthwhile. Building on cooperative arrangements such as this provides cost effective avenues for getting the word out.
- April 22, 2008 – Earth Day celebration at First Parish Congregational Church in Saco; audience – drew from Saco, Biddeford, Old Orchard Beach, Scarborough and other non-MS4 communities (total contact ~75 people). This was a good use of staff time and a great format for getting the word out at the local level. While the participants were there to support Earth Day, there were still many who admitted to using products on their lawns. The venue provided a good audience to promote YardScaping and continue to build supporters.
- May 17, 2008 – location Westbrook Riverbank Park – Kid’s Day America event; audience – mostly Westbrook residents, but also drew people from surrounding communities (total contact ~ 100+ people). Supplied information booth with poster board, lawn care handouts, bookmarks and duckies. Trial run of “mud buddies,” which are homemade chia pets. Mud buddies proved to be a great hands-on activity for kids that provided a good chunk of time to talk to parents about lawn care practices. Information was well received. This was a good use of staff time and a good format for getting the word out at the local level.
- May 22, 2008 – location Sebago Lake Rotary Club meeting in Windham; audience – Windham, Standish and Raymond residents (total contact ~ 18 people). Served as a guest speaker for the club. Talk was short (15 min with 15 min for Q/A), but the information was well received and the audience was comprised of community business leaders. All 30 prepared folders of information were taken and discussion after the talk focused on setting up future engagements to speak to local realtors and residential developers.
- June 17, 2008 – location Paul Tukey Safe Lawns Presentation at Gray High School (total count -50+ people); provided information table with a poster board, lawn care handouts, bookmarks, duckies and compost tea kits, which Paul highlighted as part of his talk. Partnering with Paul continues to be successful. The audience was receptive and a lot of informational handouts were taken.

YardScaping Website (www.cumberlandswcd.org/yardscape)

- Website was updated to include newly developed materials such as the fact sheets and lawn care calendar.
- Many of the ISWG communities installed a duck on their website to connect to the YardScaping website.

In January 2008, a website counter was added to track website hits and provide descriptive statistics regarding first time visitors (based on the assumption that people do not clean out their “cookies”), total website visits, page downloads and the source of the website hit (i.e, came from a link on another site, a Google search, typed in directly, etc.).

- From January through June 2008, there were 413 first time visitors to the website and 482 total website visits.
- Time was not invested to explore all sources of website hits, but from a preliminary investigation it was clear that hits were coming from municipal sites (Portland and Cumberland, specifically) and the State YardScaping site.
- There was a noticeable spike in website hits after the Portland Flower Show where over 1000 bookmarks were distributed to show attendees. This is particularly notable because the bookmark highlighted the State YardScaping website, so two hits were required to reach our site (the ducky is provided on the State YardScaping website to highlight the link to our YardScaping site).

Point of Sale

The pilot began in 2007 by enlisting four local hardware and garden stores from one community to participate in the program by allowing their staff to be trained on YardScaping principles; tagging products in the store with ducky tags; making pledge cards and ducky flags available for their customers; and making a store representative available for regular check ins with CCSWCD staff. In 2008, the program was refined and expanded to twelve stores in nine communities including three major nurseries in six locations for a total of sixteen stores/nurseries in ten communities (nine of which are MS4 communities).

Lesson learned from the 2007 Point of Sale season, which straddled permit years four and five, resulted in the following revisions to the pilot program:

- Required an end cap display (one central location to highlight YardScaping information and products) for participating stores.
- Provided more opportunities at the store to educate shoppers on the various aspects of YardScaping. This resulted in the development of seven shelf talkers (fertilizer, soil test, lawn mower tune up, overseed, etc. – 7 total).
- Developed outdoor store signage to better highlight the store as a YardScaping program participant.
- Developed a standardized packet of information and support materials for each store.
- Worked with the Maine Board of Pesticide Control to further develop and refine a product list.
- Developed door hangers and distributed them to target neighborhoods in the pilot communities.

Point of Sale in-store promotional efforts:

- March 15- 17, 2008 – location Estabrook’s in Yarmouth; audience – mostly Yarmouth residents (contact with 50+ people); provided information table with a poster board, lawn care handouts, bookmarks and duckies. The location was great, but March proved to be too early to be in a nursery – not enough traffic to make the staff time worthwhile. Mother’s Day weekend or closer to that timeframe would work better. It is good to have a booth and staffing at nurseries to provide another avenue for increasing the visibility of YardScaping. Important to work with nurseries to determine their busiest weekends and arrange for booth space on those days.
- March 22, 2008 - Easter egg hunt – location Estabrook’s in Yarmouth; audience – mostly Yarmouth residents; at the request of Estabrook’s, we provided 100 YardScaping bookmarks to be handed out to egg hunt participants. The store had a display area set up for YardScaping.

- April 19, 2008 – location O'Donal's Nursery Organic Gardening Day; audience – drew people from surrounding communities (Scarborough, Gorham, Westbrook, Windham); total contact ~50 people; provided information table with a poster board, lawn care handouts, bookmarks and duckies. The location was great, but April proved to be too early for this cold spring. Paul Tukey was a draw and that proved to be the peak of people for the day. Worthwhile to set up for a high profile talk, but otherwise should stick to Mother's Day weekend or closer to that timeframe to ensure more contact time with target audience. It is good to have a booth and staffing at nurseries to provide another avenue for increasing the visibility of YardScaping. It will be important to work with nurseries to determine their busiest weekends to ensure the highest traffic.
- May 1, 2008 – Estabrook's Color Spot Grand Opening in Scarborough; audience drew from Scarborough and surrounding communities (total contact ~ 20 people). Since it was such a cold spring, it was still too early to have much traffic at the grand opening of this nursery. It is good to have a booth and staffing at nurseries to provide another avenue for increasing the visibility of YardScaping. It will be important to work with nurseries to determine their busiest weekends to ensure the highest traffic.
- May 17, 2008 – location Windham Blue Seal; audience – Windham, Westbrook and Gorham residents (total contact 16 people); taught a lawn care class at the store. Location was very successful. Blue Seal promoted the class both on their sign with, "Organic Lawn Care class May 17th" as well as an advertisement in the local paper. The information was very well received. This was a good use of staff time and more store classes will be explored for incorporation into the point of sale effort.

Over the two year pilot where the program worked with four stores in one community in the first year and a total of sixteen stores/nurseries in ten communities in the second year, the most important lesson learned is that there was no need to shy away from more quantitative tracking mechanisms. Since the program was so new, our instinct was to tread lightly. Project staff did not want to ask too much from stores that have a history of selling a lot of chemical fertilizers and pesticides for lawn care. This was the right approach and great anecdotal and some quantitative information was generated from the first two years of implementation. This information was enough to demonstrate that the program has been successful. New products that were stocked on YardScaping end caps sold; stores that fully embraced the program and had the most YardScaping endorsed products saw the best results; but even the stores who merely did the end cap with YardScaping information sheets, but didn't have a lot to offer in terms of products saw that the information generated questions from shoppers. Phone calls were received and website hits were generated from people who shared that they heard about the program from their local hardware store.

Feedback from stores after the second year of the pilot, which straddled permit year five and year one of the new permit, highlighted the need to do more promotion. The store representatives noticed that the ducky ads did not run in the spring/summer of 2008 and store representatives felt those ads would have helped the program. Every store agreed to provide 10-15% off to customers who brought in a YardScaping coupon. This coupon will serve the dual purpose of providing a quantitative tracking tool and promotion for the program and store. Almost every store representative still felt that more detailed product lists were needed so that they could order more of the products that are being recommended. The tracking of products still needs to be fleshed out with stores and product tracking is targeted for exploration with existing program stores during the fall of 2008 (year one of the new five year permit). It was also felt that a parallel YardScaping four step program would really help. The ISWG YardScaping program developed a lawn care calendar during the year five permit cycle that will provide a basis for building a YardScaping four step program. The YardScaping four step can then be promoted with a flashy sign to make the end cap display stand out even more. Another thought to further highlight the program is to create a triangular sign that can hang over the YardScaping endcap.

It is the goal of the ISWG YardScaping program to institute the recommended changes to this program in

the existing sixteen stores/nurseries in ten communities before expanding the program out to additional communities. This is a great program and it is important to put additional quality control, promotional and tracking efforts into place to ensure the continued success of this program as it expands to other communities.

Adult/Community Education

- Fleshed out class description, agenda, detailed instructor notes and talking points; packet of materials and evaluation form for Adult Education classes.
- Taught first round (Fall 2007 pilot) of Adult Education classes as follows: South Portland – 9/15 (5 students); Windham – 9/18 (17 students); Westbrook – 9/20 (18 students); Falmouth – 9/27 (5 students).
- Lessons learned: the classes were very well received. People liked the informal presentation style; greatly appreciated the packets of information; and appreciated the ability to get their specific questions answered. Many class attendants took extra folders of materials to hand out to their friends and neighbors. Class discussions brought to light that even if attendants were not using weed and feed, they were still using a lot of fertilizer and chemicals on their lawns.
- The instructors identified areas of improvement as follows: refine handout materials to make them clearer and incorporate more visuals to assist with demonstrating key points.

Fall 2007 YardScape class statistics from the completed evaluation forms:

- Eight of the class participants documented on the evaluation that they use weed and feed and six indicated that they were going to stop.

Table 1. Fall 2007 YardScape class statistics		
Lawn Care Practice	Number of people planning to implement *	Number of projected behavior change implementation based percentages from follow up
Set mower to a height of 3"	20 (95%)	20
Never remove more than 1/3 of leaf blade at a time.	25 (96%)	24
Leave grass clippings on the lawn.	13 (81%)	12
Sharpen mower blades	18 (95%)	18
Aerate	33 (89%)	20
Topdress with ½ inch of compost	35 (88%)	18
Spread more grass seed to renew lawn	31 (89%)	26
Use low-maintenance grass seed mix	33 (92%)	25
Get a soil test	32 (86%)	4
Use compost tea	31 (74%)	11

*Percentages are based on the total number of responses less the number of people already implementing the lawn care practice.

- Taught second round of Adult Education classes as follows (spring 2008): South Portland - 2/9/08 (five students), Yarmouth 3/4/08 (1 student), Biddeford 3/6/08 (5 students), Westbrook 3/13/08 (19 Students), Portland 3/18/08 (17 Students), Windham 3/27/08 (18 students), Cumberland 3/27/08 (8 students); OOB/Saco 4/3/08 (4 students), Freeport 4/8/08 (5 students), Gorham 4/12/08 (8 students) & Cape Elizabeth 5/7/08 (12 students).

- Lessons learned: the classes continued to be very well received. The instructors identified areas of improvement as follows: refine more of the handout materials and create easily transportable and appealing visuals to assist with demonstrating key points.

Spring 2008 YardScape class anecdotal information: the Cape Elizabeth class was extremely well received. CCSWCD received a phone call from Cape Elizabeth community programs explaining that they received a number of phone calls extolling the value of the class. In addition, friends and neighbors of class participants called CCSWCD requesting door hangers that they could distribute in their neighborhoods. One resident from the neighborhood across from Portland Headlight wrote a cover letter to accompany with the door hanger that she handed out to the approximately 75 houses in her neighborhood. It was great to follow the connection from attendance in the class, to discussions with friends to taking the initiative to further educate an entire neighborhood.

Spring 2008 YardScape class statistics from completed evaluation forms

- Ten of the class participants documented on the evaluation that they use weed and feed and nine indicated that they were going to stop.

Table 2. Spring 2008 YardScape class statistics		
Lawn Care Practice	Number of people planning to implement	Number of projected behavior change implementation based percentages from follow up
Set mower to a height of 3"	16 (84%)	16
Leave grass clippings on the lawn.	6 (55%)	6
Sharpen mower blades	7 (78%)	7
Aerate	20 (83%)	12
Topdress with ½ inch of compost	26 (87%)	14
Spread more grass seed to renew lawn	23 (96%)	20
Use low-maintenance grass seed mix	26 (93%)	20
Get a soil test	26 (90%)	3
Use compost tea	23 (77%)	9

*Percentages are based on the total number of responses less the number of people already implementing the lawn care practice.

Table 3. YardScape Adult Education Classes follow up phone call statistics		
Lawn Care Practice	Number of people planning to implement.	Number of people who actually implemented
Set mower to a height of 3"	16	16 (100%)
Never remove more than 1/3 of leaf blade at a time.	19	18 (95%)
Leave grass clippings on the lawn.	10	9 (90%)
Sharpen mower blades	12	12 (100%)
Aerate	25	15 (60%)
Topdress with ½ inch of compost	23	12 (52%)
Spread more grass seed to renew lawn	20	17 (85%)
Use low-maintenance grass seed mix	22	17 (77%)
Get a soil test	23	3 (13%)
Use compost tea	25	9 (36%)

Given the low response (13%) of people who actually implemented the practice of taking a soil test and using compost tea (36%), an additional round of phone calls is planned to delve further into what would help people to make this change.

The final lesson learned with Adult/Community Education is that there is a lot of coordination among the various Community Education programs. Therefore, it is now possible to have one class held in Cumberland that is advertised in the Falmouth, Yarmouth, Cumberland and Freeport program flyers. This increases the cost effectiveness during the building stage of this program.

ISWG Yard Scaping Program

Overarching program – the goal now is to focus on getting the word out – building volunteer networks to disseminate information; finding cooperative efforts that provide cost-effective avenues for promotion; establishing relationships with news organizations – print, radio and television to better utilize donated space and time.

- Events – Goal is to review each opportunity on a case by case basis. Work to date has created great visuals, handouts and good methods for working with the target audience in many different settings.
- Website – The goal is to keep updating the website to keep it current. Volunteer tracking systems and follow up surveys will be established and monitored.
- Point of sale – successful program that can be refined to provide more documentation of the success that is being achieved. The goal is to put additional quality control, promotional and tracking efforts into place to ensure the continued success of this program as it expands to other communities.
- Adult Education – continues to be a great avenue for getting detailed information out about the program in a way that builds local support for the program. Goal is to continue to build on this effort to increase class participation. In addition, continue to recruit local stewards to promote the program in their neighborhoods.

Compost Bins

- The Town of Cumberland offered compost bins to resident for \$30 each.

Animal Carcass Disposal

- The Town developed and posted information about *Animal Carcass Disposal* booklet for its website link “Disposal of Animal Carcasses” and printed brochures and handouts for residents and farmers. The options include burial, composting and incineration, the preferred method being composting. At some point a resident or farmer must bury a horse or other large animal. This information booklet and web site information was developed in an effort to prevent contamination of groundwater, wells and other resources resulting from the improper disposal of carcasses from domestic and livestock activities.
- The State of Maine Department of Agriculture in coordination with the Town conducted training and provided technical resources and guidance for site selection and plan development to the Town to help residents prepare for either routine or a catastrophic loss.

Responsible Party - Adam Ogden

Cumberland County Outstanding Conservation Partners Award

The Town of Cumberland Public Works Department was awarded the “Outstanding Public Works Award” recognizing the departments’ stewardship by the Cumberland County Soil and Conservation District at the District’s Annual Meeting in the Spring of 2008.

BMP Name

1b. Optional - Classroom Education

FUNCTION:

Provide information to students for use in their current and future activities and to bring into their homes. Provide framework for involvement of students in other aspects of the Phase II program, such as monitoring, clean-up, and restoration.

METHODOLOGY:

Work with schools, non-profits and government agencies to develop curriculum, materials, and activities for school stormwater programs.

MEASURABLE GOALS:

Years 1 and 2

x	Year 1	x	Year 2	Year 3	Year 4	Year 5
---	--------	---	--------	--------	--------	--------

Actions Completed During Permit Year 1

Responsible Party - CCSWCD

Education Program

Levels of involvement at each school varied, some had just one lesson, or participated in just one program, others participated in a grant project or long term environmental unit.

Portland - Riverton School, Longfellow Elementary School, Deering High School

South Portland - Small School

Windham - REAL School, Windham Middle School

Gorham - Gorham Middle School

New Gloucester - Dunn School
Cape Elizabeth - Cape Elizabeth Middle School
Cumberland - Greely High School
Freeport - Freeport High School, Mast Landing School
Standish - Bonny Eagle High School
Yarmouth - Yarmouth Elementary School
Falmouth - Lunt School
Westbrook - Westcott Junior. High

Actions Completed During Permit Year 2

Responsible Party - CCSWCD and Public Works

Education Program

The Town through the ISWG, participated in the “It’s All Connected” grade-school education program. One visit to the Chebeague Island School was conducted for 14 students. This program was funded by the Casco Bay Estuary Partnership.

The Portland Water District conducts monthly classes from October to May, with Greely Middle School Students on water related issues. This past year they conducted lessons with eight different sixth grade classes (about 8 hours per month). Topics covered included stormwater management, non-point source pollution, and water quality testing, many of which involved hands on lessons.

Actions Completed During Permit Year 3

Responsible Party – CCSWCD, Public Works

Education Program

Although no actions were required to be completed during Permit Year 3, the Town of Cumberland participated in the “It’s All Connected” Stormwater Education Initiative that was funded by the Casco Bay Estuary Partnership. Through this initiative and the ISWG, a total of 1,523 students participated. Forty students from Greely High School in Cumberland participated in the lessons covering the following topics: “water quality parameters – define and discuss how affected by NPS pollution” and “water quality testing from local waterbodies”. The sessions were held on 1/9/06 and 1/27/06 with 20 students attending each session.

Actions Completed During Permit Year 4

Responsible Party – CCSWCD, Public Works

Education Program

Although no actions were required to be completed during Permit Year 4, the Town participated in the Regional Envirothon, which included focus on water resources. The Greely High School sent 12 students to the Envirothon.

Actions Completed During Permit Year 5

Responsible Party - Sarah Plummer, Education Coordinator CCSWCD, Public Works

Education Program

Schools Participating in CCSWCD Stormwater Education Activities for 2007-2008 School Year

Total Students: 3,701

Summary: Outreach efforts were made in the thirteen participating ISWG communities during the 2007-8 school year, with education taking place in all communities. Efforts to contact teachers, explain the offerings, and work with teachers' curriculum and district and statewide standards were a large part of activities conducted this year. All participating schools have expressed an interest in continuing and expanding their involvement in the 2008-9 school year, with the inclusion of Old Orchard Beach.

Biddeford

Total students: 71

Lesson topics: Build landscape models to learn about different types of buffers & impervious vs. pervious surfaces; Southern Maine Children's Water Festival*.

Schools: Biddeford Intermediate School, Biddeford Middle School

Cape Elizabeth

Total students: 38

Lesson topics: Build landscape models to learn about different types of buffers & impervious vs. pervious surfaces.

Schools: Cape Elizabeth Middle School

Cumberland

Total students: 10

Lesson topics: Regional Envirothon**.

Schools: Greely High School

Notes: Names of teachers at the North Yarmouth Memorial School were secured from the principal, and contact was initiated but not returned. Efforts to contact teachers at this school and/or Greely Middle School will be made in the fall of 2008.

Falmouth

Total students: 735

Lesson topics: Maine Harvest Lunch*** program participation and curriculum delivery.

Schools: Lunt & Plummer-Motz Schools

Notes: Efforts were made during the 2007-8 school year to bring additional classroom presentations into the Falmouth Schools. Teachers at Falmouth Middle School, in both grades 6 and 8, have expressed an interest in working together on water-related curricula this fall, and a schedule has been set.

Freeport

Total students: 36

Lesson topics: Amount of water in the world, conservation, & the water cycle; states of water.

Schools: Mast Landing School

Gorham

Total students: 1,625

Lesson topics: Planting buffers & vegetations' effect on water quality; Maine Harvest Lunch*** program and curriculum delivery.

Schools: Gorham Middle School, White Rock School, Narragansett School

Old Orchard Beach

Notes: Preliminary efforts to obtain contacts in schools were initiated. Old Orchard teachers will be contacted in the fall of 2008, and students will receive programming during the 2008-9 school year.

Portland

Total students: 263

Lesson topics: Life cycle of the Atlantic salmon, focusing on its sensitivity to pollution, and related life-cycle activity; Southern Maine Children's Water Festival*.

Schools: King Middle School, Lyseth Elementary School

Saco

Total students: 226

Lesson topics: Water quality field day included water quality sampling, macroinvertebrate, effectiveness of buffers, and ecology hike activities; Southern Maine Children's Water Festival*.

Schools: Saco Middle School

Scarborough

Total students: 205

Lesson topics: Hydropower stakeholder meeting; bioaccumulation from pesticide runoff in an aquatic food web; build landscape models to learn about different types of buffers & impervious vs. pervious surfaces; land use planning and its effect on water resources; Southern Maine Children's Water Festival*.

Schools: Scarborough Middle School

South Portland

Total students: 124

Lesson topics: Amount of water in the world, conservation, & the water cycle; where rivers begin, how they flow & building watershed models; stormwater sources & effects; build landscape models to learn about different types of buffers & impervious vs. pervious surfaces.

Schools: Kaler School

Westbrook

Total students: 94

Lesson topics: Water quality testing on the Presumpscot River; build landscape models to learn about different types of buffers and impervious vs. pervious surfaces; Regional Envirothon**.

Schools: Wescott Junior High School, Westbrook High School

Windham

Total students: 234

Lesson topics: Macroinvertebrates as indicators of water quality and activity.

Schools: Windham Middle School

Special notes: Sixth grade teachers also participated in training on water quality lessons they have received in the past. They were lent materials and carried out two of these lessons with their students. This will be used as a model in the future, as it enables the same information to be disseminated by teachers that have seen the lessons previously.

Yarmouth

Total students: 40

Lesson topics: Build landscape models to learn about different types of buffers and impervious vs. pervious surfaces; school yard pollution scavenger hunt and activities.

Schools: Yarmouth Elementary School

* The **Southern Maine Children's Water Festival** is a one-day event occurs that annually each May, drawing about 800 middle school students from all over Southern Maine to learn all about water. Students attend classroom presentations, a water-based stage show, "Dripial Pursuit" competitions, and tour many exhibits in the exhibit hall. Activities focus on non-point source pollution and ways in which students can be part of the solution.

** The **Envirothon** is an environmental competition conducted throughout Maine in the spring. High school students test their knowledge of natural resources and current environmental issues in an outdoor setting. Teams of three to five students are tested at five stations: Wildlife, Aquatics, Forestry, Soils, and a Current Natural Resources Issue. The top three teams at each regional competition compete in the State competition, with the advancement to a national competition for top-placing teams.

*** The **Maine Harvest Lunch** program emphasizes the importance of locally grown foods through both education and a school lunch menu consisting of all locally produced ingredients. Prior to the lunch, students learn about the importance of supporting a strong local food system through a curriculum unique to the program. The curriculum focuses on the benefits of local foods as well as the importance of conserving our natural resources.

BMP Name

1c. Optional - Displays

FUNCTION:

Raise public awareness in a highly visible manner.

METHODOLOGY:

Construct a display about stormwater runoff for use in municipal office lobbies, libraries, schools, and other public facilities. The display will be rotated amongst different public facilities.

MEASURABLE GOALS:

Year 1: Develop display and install in municipal office.

Years 2 - 5: This BMP has been modified from its original text. The watershed model that was purchased during Permit Year 1 is being used in implementing BMP 1b.

x	Year 1	Year 2	Year 3	Year 4	Year 5
---	--------	--------	--------	--------	--------

Actions Completed During Permit Year 1

Responsible Party - Brenda Zollitsch, Public Works

Watershed Educational Models

Through the ISWG, a grant proposal was submitted to the Wal-Mart Earthday Environmental Fund for the purchase of an Enviroscape watershed educational model.

The grant was awarded and the models have been purchased for use of the ISWG members.

Actions Completed During Permit Years 2, 3 & 4

Responsible Party

Watershed Educational Models

No action required to be completed during Permit Years 2, 3 & 4.

Actions Completed During Permit Year 5

Responsible Party - Public Services

The Town installed a Watershed Model Poster are displayed at the Municipal Building on Tuttle Road

BMP Name

Id. Optional - Website

FUNCTION:

Provide information over the Internet to interested residents.

METHODOLOGY:

Develop a website that contains information about the impacts of residents' activities on water quality and methods they can use to lessen those impacts. The website will also contain information on how to get involved with stormwater management efforts and will enable residents to provide feedback on programs already implemented or being planned.

MEASURABLE GOALS:

Year 1: Develop first phase of website with information about the status of the stormwater management program and ways for residents to get involved.

	Year 1		Year 2	X	Year 3		Year 4		Year 5
--	---------------	--	---------------	----------	---------------	--	---------------	--	---------------

Actions Completed During Permit Year 1

Responsible Party - Adam Ogden

Other media

Through the ISWG, the following media activities were performed:

- 1) An interview on stormwater management with Kathi Earley, Director of Engineering for the City of Portland, was produced and aired on public access television throughout the region.
- 2) An article on ISWG and stormwater management was printed in the American-Journal.
- 3) Article on ISWG and stormwater management was printed in the Cumberland County Soil and Water Conservation District newsletter.
- 4) Articles in the Portland Press Herald on the ISWG and stormwater management activities.

Actions Completed During Permit Year 2

Responsible Party - Adam Ogden

Other media

Through the ISWG, the following media activities were performed:

1) An interview on stormwater management with Kathi Earley, Director of Engineering for the City of Portland, was produced and aired on public access television throughout the region. This BMP will be completed in Permit Year 3 in conjunction with BMP 1a.

Actions Completed During Permit Year 3

Responsible Party - Adam Ogden

Other media

A link to the www.thinkbluemaine.org website was added to the Town of Cumberland's website under New/Upcoming as "Think Blue Maine Clean Water Campaign". This webpage notes the EPA Environmental Merit Award (as described in BMP 1a), briefly explains the ThinkBlueMaine Campaign, and points to the ThinkBlueMaine.org website for more information.

Actions Completed During Permit Year 4

Responsible Party - Adam Ogden

Other media

The Town of Cumberland has been advertising the Yardscaping Program on their home page. The notice includes a brochure describing how citizens can host Yardscaping

Socials (see BMP 1a also).

Actions Completed During Permit Year 5

Responsible Party - Adam Ogden

The Town created a link to the YardScaping Website (www.cumberlandswcd.org/yardscape)

The Town website was updated to include newly developed materials such as the fact sheets and lawn care calendar.

The Town installed a link on the website to connect to the Think Blue and YardScaping websites.

The Town of Cumberland has posted Septic System Inspections, How a Septic System Works, Disposal of Animal Carcasses, Clam Flat Closure Status and Shellfish Information on the website

The Town posts all public meetings, workshops and committee meetings on the website. The website calendar is searchable and archived listing all public meetings.

Town of Cumberland posts information on the Public Access Channel 2 on the website. The website lists the Live Cablecast Schedule and the cablecast replay schedule.

The Town has developed and maintained a Cumberland Stormwater Page identifying stormwater pollution as one of the leading causes of water quality problems in the State of Maine. The Stormwater webpage provides information on rain, snowmelt and stormwater runoff from lawns, driveways, parking lots, and roads. It describes information on pollutants such as gas and oil, excess fertilizer and pesticides, as well as pet waste, litter, and even food products that if spilled on the ground and left untreated can cause these pollutants to enter into Casco Bay.



The website has the following links:

- Think Blue - State of Maine
- Homeowner Stormwater Information
- Citizen's Pages
- Educator's Pages
- Storm Water Mapping Project – Urban Area
- Yardscaping Brochure
- Cumberland Annual Reports
- Composting Brochure
- Earth Machine Composters
- Disposal of Animal Carcasses
- Universal Waste
- Household Hazardous Waste
- Septic System Inspections
- Septic Systems – How they work

Public Participation/Involvement

BMP Name

2a. Public Notice

FUNCTION:

Ensure public awareness of events and activities.

METHODOLOGY:

Follow state and local public notice requirements when applicable.

MEASURABLE GOALS:

Years 1 - 5: Achieve 100% compliance with all applicable notice requirements.

x	Year 1	x	Year 2	x	Year 3	x	Year 4	x	Year 5
---	--------	---	--------	---	--------	---	--------	---	--------

Actions Completed During Permit Year 1

Responsible Party - Town Clerk

Public Notice Requirements

Any meetings held in which the Phase II program was on the agenda (planning board, council, etc.) were conducted in accordance with all applicable public notice requirements.

Actions Completed During Permit Year 2

Responsible Party - Town Clerk

Public Notice Requirements

Any meetings held in which the Phase II program was on the agenda (planning board, council, etc.) were conducted in accordance with all applicable public notice requirements.

Actions Completed During Permit Year 3

Responsible Party - Town Clerk

Public Notice Requirements

All meetings held in which the Phase II program was on the agenda (planning board, council, etc.) were conducted in accordance with all applicable public notice requirements.

Actions Completed During Permit Year 4

Responsible Party - Town Clerk, Town Staff

Public Notice Requirements

All meetings held in which the Phase II program was on the agenda (planning board, council, etc.) were conducted in accordance with all applicable public notice requirements.

Actions Completed During Permit Year 5

Responsible Party - Town Clerk, Town Staff

Ensured all public meetings that addressed stormwater meet FOIA requirements. Copies of public notices and announcements (i.e. newspaper ads, etc.) are on file and maintained by the Clerk. The Clerk maintains a list of public meetings that satisfy MCM's #1 and #2.

The Town advertised a Wharfing Out Permit Application - Verrill- April 11, 2008.

The Town Council held a public hearing (07-167) to consider and act on amendments to the Cumberland Shellfish Ordinance, including license allocations for 2008 on December 10th 2008.

The Town of Cumberland, Coastal Water Commission, held a Site Walk and Public Hearing on Wednesday, May 21, 2008, regarding the Verrill Pier Application for property located at 7 Broad Cove Way, Cumberland Foreside, Maine, Map U06B/Lot 20. The public was invited to attend. An agenda and information related to this application can be found on the Town's website at www.cumberlandmaine.com. The Town Council also meet to consider this application on Monday, May 26th, 2008, in the Town Council Chambers. The public was invited to attend.

The Town held several Workshops and Public Hearings on Sewer Program Administration and Fees (Creating an incentive for residents to connect to the sewer if they are on septic systems). The Town Council held public hearings on Conservation easements for Twin Brook to create Wetland Preservation as part of the site development of the recreation area..

Several Town Committees held public hearings: The Town Coastal Waters Commission had two meetings, Coastal Waters Commission - Verrill Site Walk - May 21, 2008, and a Wharfing Out Permit Application - Verrill- April 11, 2008.

The Comprehensive Plan Committee held regular meetings during the permit year. January 3, 2008 February 7, 2008 March 6, 2008 April 3, 2008 May 1, 2008 June 5, 2008 July 3, 2008

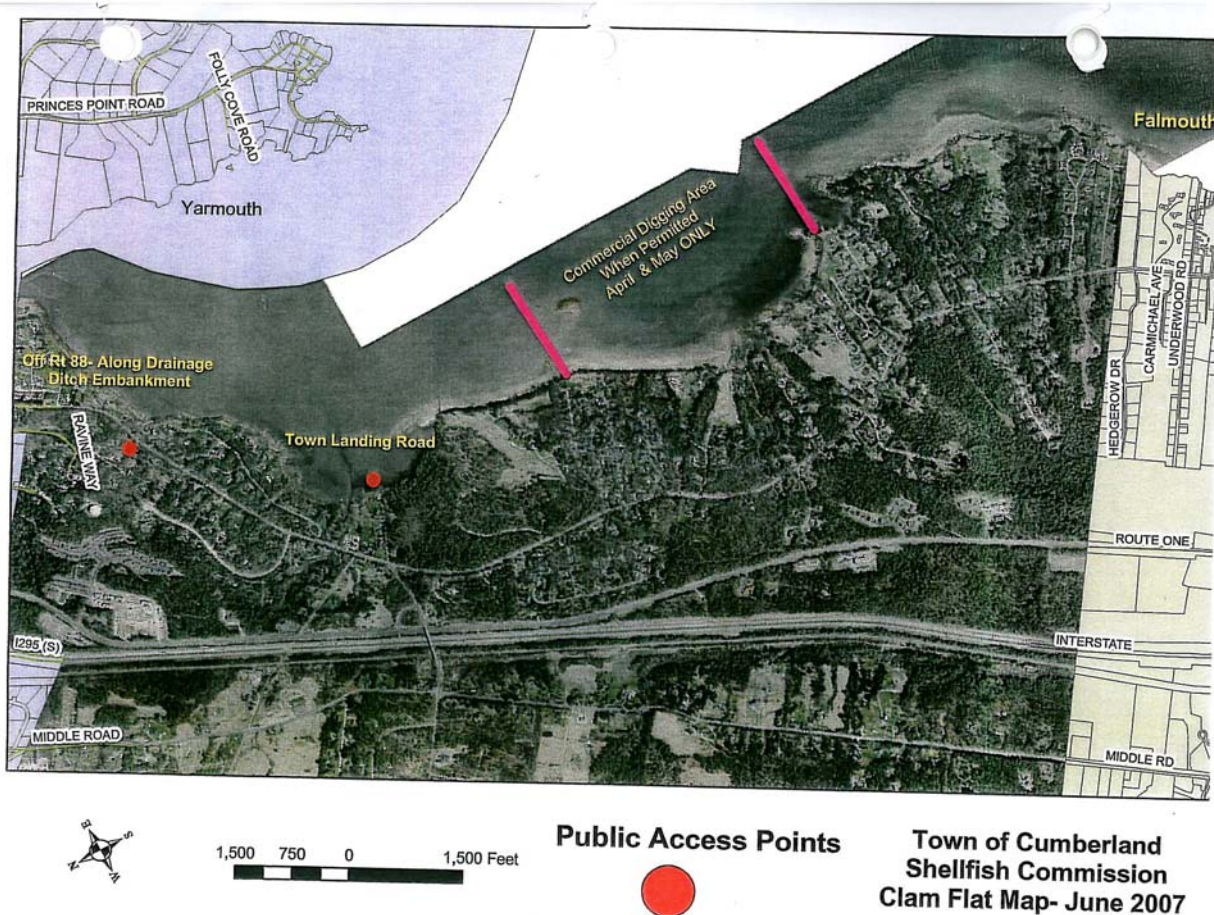
The Town established a "Cool Cities Committee" which compliments the Town's stormwater management planning. The first public meeting was held on June 12th, 2008. The Town of Cumberland Cool Cities Committee has been directed by the Town Council to explore and make recommendations for policies and initiatives related to the reduction of carbon emissions and energy conservation, and more specifically directs the committee to develop policies to:

- Reduce the Carbon Footprint and emissions for the Town of Cumberland
- Explore, inventory and recommend policies to the Town Council for energy savings and efficiencies.
- Work with surrounding communities to collaborate on regional energy savings and carbon reductions and emissions.

- Explore life-cycle costs for recommended policies or initiatives, including pay-back costs

Shellfish Conservation Committee

The Town's Shellfish Conservation Committee held nine public meetings during the permit year (7/26/2007, 8/23/2007, 9/13/2007, 10/25/2007, 11/29/2007, 1/24/2008, 3/5/2008, 3/27/2008). The agenda topics focused on Ordinance review, Update on clam flat open areas, Discussion re: access point improvements, Ordinance Changes & License Allocations, FAQ and Good to Know Info Sheet- washing etc., Utilization of Commercial Harvesters, Better Communication Process (Website Access Minutes- Agendas- Postings), Don Card – New State Shellfish Laws and State Small Harbor Improvement Program.



BMP Name

2b. Public Involvement Activities

FUNCTION:

Provide opportunities to build community support for the program through involvement with activities.

METHODOLOGY:

Assess the feasibility of providing opportunities for public participation in activities which may include, but not be limited to, the following:

- Storm drain stenciling

- *Stream clean-up and monitoring*
- *Lake/pond monitoring*
- *Buffer plantings*
- *Adopt-a-stream programs*
- *Coastal activities*
- *Stakeholder/citizen groups*

The assessment will identify the effectiveness of different activities in reducing polluted runoff, the likelihood of attracting participants, and the costs involved in conducting such public participation activities. The assessment may be done in conjunction with the development of the Public Education and Outreach Workplan.

MEASURABLE GOALS:

Years 1 - 5: Public Participation will be measured each year as it occurs.

x	Year 1	x	Year 2	x	Year 3	x	Year 4	x	Year 5
---	--------	---	--------	---	--------	---	--------	---	--------

Actions Completed During Permit Year 1

Responsible Party - Town Clerk

Public Notice Requirements

Public participation for Permit Year 1 is documented in BMP 1b, Classroom Education.

Actions Completed During Permit Year 2

Responsible Party - Adam Ogden

Permit Year 2 Activities

A meeting was held to discuss stenciling catch basins in Cumberland with the non-profit Friends of the Royal River. As a result of the meeting, stenciling may be incorporated into the public education program being developed under BMP 1a.

The Town worked with Val Halla Golf Course to improve buffers, and protect wildlife habitat. The Town also worked with the Audubon Society to reduce pet waste issues in Twin Brook Park. Currently the Town provides plastic baggies to Twin Brook Park users for cleaning up pet waste as well as a disposal receptacle. The dispenser has information on how to use the baggies and why to clean up pet waste. Recently the Town began setting aside areas near streams or on certain trails that are off limits as exercise areas for pets. Buffer cutting restrictions are being enforced along streams and wetlands in the Twin Brook area.

Actions Completed During Permit Year 3

Responsible Party- Adam Ogden

Permit Year 3 Activities

The Royal River Youth Conservation Corps stenciled approximately 183 storm drains in the Town of Cumberland in August 2005. The Town provided materials for stenciling such as paint, cones, flashing lights, etc. and suggested areas to be stenciled.

The Town of Cumberland is working with the Audubon Society to continue to protect habitat and buffers at Val Halla Golf Course. Val Halla has stopped mowing/trimming the tall native grass along the edges and banks of all water areas (ponds, streams, and rivers) as well as other environmentally sensitive areas. Val Halla also currently incorporates Integrated Pest Management (IPM) on a daily basis to combat

disease and insects by using mechanical controls (such as checking their reels daily to insure they are sharp and set right as to get a perfect cut) and limiting the amount of pesticides used. Pesticides are not used along the stream.

During Permit Year 3 approximately 50% of Twin Brook Park buffer areas have been designated as off-limits from pets to allow for the preservation of these areas.

The Town received an “Outstanding Conservation Leadership Award” from the Cumberland County Soil and Water Conservation District in April 2005.

An article titled “Interlocal GIS internship gets students mapping municipal stormwater systems” was published in the January/February 2006 issue of The Stormwater Journal for Surface Water Quality Professionals (Stormwater Magazine). The Town of Cumberland was cited as being one of seven communities from the Interlocal Stormwater Working Group who hired an intern during the summer of 2005 to perform mapping and outfall inspections (see BMP 3b for a description of intern training).

Two participants attended the Cumberland County Master Gardener’s Training on Pesticides and Yardscaping on May 19, 2006

Actions Completed During Permit Year 4

Responsible Party - Adam Ogden

Permit Year 4 Activities

The Royal River Youth Conservation Corps stenciled 137 storm drains on 14 streets and at four locations (three schools and Town Office building) on July 28, 2007. A press release was sent to the Forecaster for the July 19 edition.

The Town assisted the Presumpscot River Watch Group by purchasing a dissolved oxygen meter for them.

The Town supported the Casco Bay Estuary Partnership road/stream crossing inventory, and a Fish Passage Evaluation and Inventory for the Presumpscot River.

The Town has been working with Friends of Casco Bay to sample stormwater outfalls in the Wildwood Development. The sampling is part of a comprehensive program to identify locations where pesticides may discharge through stormwater outfalls to waterbodies in the Casco Bay Watershed. This sampling program complements the Yardscaping Public Education Program.

The Town also practices Integrated Pest Management at Cumberland Meadows to minimize use (and runoff) of pesticides.

Actions Completed During Permit Year 5

Responsible Party – Public Works, Adam Ogden

None of the 350 catch basins were stenciled during permit year 5. It is anticipated the stencil program will be incorporated into the Stormwater Program Management Plan in the next 5 year permit cycle.

Presumpscot River Watch (PRW) - The Town continues to partner with the Presumpscot River Watch Group and its Steering Committee, participated with East Branch Piscataqua River (EBPR) Watershed Survey which identified and prioritized nonpoint source (NPS) pollution sites in the watershed. The watershed survey indicates that the East Branch Piscataqua River EBPR is being adversely affected by adjacent land uses. Soil erosion was identified as the most commonly observed problem causing polluted runoff. The EBPR Watershed Report prepared by the Presumpscot River Watch (PRW), Forrest Bell, Fred Dillion and Tim Bennett, identified 73 sites that impact surface water quality and made recommendations to remediate the three most common problems associated with polluted runoff in the EBPR watershed - Erosion, Direct Flow to Streams and Culvert Problems. The recommendations and

action plan prepared by PRW may be integrated into Cumberland's Stormwater Program Management Plan (SPMP). A combination of Best Management Practices (BMP's), structural and non-structural will be required. Conservation practices to mitigate polluted runoff in the urban area may be incorporated in to the SPMP and focus on stormwater flow control and pollutant load reduction.

Gulf of Maine Coastal Program - The Town assisted in the development of and secured resources for funding the printing of the "Maine Stream Crossing Poster" through its partnership with the Maine Local Roads Center, MDOT. This poster was printed by MDOT, is posted online, and is available at the Town Hall. The US Fish and Wildlife Service's (USFWS's) Gulf of Maine Coastal Program was provided a booth at the APWA Highway Congress in Skowhegan to promote fish passage and the Gulf of Maine Coastal Program. Alex Abbott, USFWS, staffed the booth at the Highway Congress in June. The stream crossing inventory work (Fish Passage Evaluation and Inventory for the Presumpscot River) conducted in Cumberland by the Gulf of Maine Coastal Program, the Town and MDEP should be incorporated into the Town's Stormwater Program Management Plan.

Coastal Activities - The Town has been working with Friends of Casco Bay (FOCB) to sample stormwater outfalls in the Wildwood Development and a second site on Route 88 at Powell Road. The sampling is part of a comprehensive program to identify locations where pesticides may discharge through stormwater outfalls to waterbodies in the Casco Bay Watershed. This sampling program complements the Yardscaping Public Education Program.

The Town executed a Wetland Preservation Area Declaration of Covenants and Restrictions for Twin Brook Recreation Area. The deed was recorded on 12/17/2007 - Book 25688 Page 338.

The Town continues to practice Organic Lawn Care at Cumberland Meadows to minimize use of pesticides in the senior housing project.

The Town worked with Forrest Bell, Presumpscot River Watch, to facilitate a site visit by Joellen Zeh, manager, Audubon International (AI) in an attempt to assist the Val Halla Golf course with environmental improvements and attempt to get the course involved in the Audubon International's Cooperative Sanctuary Program (ACSP) in Maine. The AI offers is Site Assessment and Environmental Planning to provide guidance, as well as educational information.

The Town installed one pet waste station to provide pet waste baggies to users of the park area. Over 5000 bags are dispensed over the year. There are 15 receptacles located in the park area for disposal of wastes. The sign reads: "Dog Owner's be considerate, clean up behind you r dog, please take a bag:"

3. Illicit Discharge Detection and Elimination

BMP Name

3a. Dry Weather Discharge and Inspections

Observe and characterize dry-weather discharges from outfalls in order to identify possible illicit discharges.

1. Develop a schedule of inspections that includes; prioritize watersheds, establish a schedule of inspections (the higher the priority the more frequent the inspection).

a Inspections shall include field assessment for oils, color, foam, viscosity, turbidity, odor, surface scum, and flow rate. Samples will be taken and tested when suspicious characteristics are observed.

b. Field inspections will be done for coliform bacteria. Flows with suspicious characteristics will be sampled and tested

2. Assign and train inspection staff in proper procedures for field inspections and collections of samples including municipal staff, contractors, volunteers

MEASURABLE GOALS:

Year 1: Develop operating procedures for an inspection program, including designation of inspection staff, training procedures and a schedule of inspections for mapped areas based on the prioritization report.

Year 2 - 5: Implement inspections in accordance the operating procedures developed in Year 1

x	Year 1	x	Year 2	x	Year 3	x	Year 4	x	Year 5
---	--------	---	--------	---	--------	---	--------	---	--------

Actions Completed During Permit Year 1

Responsible Party - Adam Ogden

Dry-weather monitoring

Due to the delay in implementing the EPA IDDE training until April, the development of operating procedures for an inspection program (including designation of inspection staff, training procedures and a schedule of inspections for mapped areas based on the prioritization report) was started by the IDDE subcommittee and will be completed in Permit Year 2.

Actions Completed During Permit Year 2

Responsible Party - Adam Ogden

Dry-weather inspections

The ISWG, with funding from the Casco Bay Estuary Partnership, developed a Manual of Guidelines and Standard Operating Procedures (SOP) for Stormwater Phase II communities through a contract with Aquarion Engineering Services (Aquarion) of Portland, Maine. The SOP manual contains an inspection form to be used by municipal staff for dry weather discharge inspections in Permit Year 3. Currently, the Town has hired an intern to complete dry weather inspections at outfalls as weather permits during Permit Year 3. Public Works employees also perform opportunistic inspections, which are addressed as they are observed or they are turned over to the responsible party.

Actions Completed During Permit Year 3

Responsible Party - Adam Ogden

Dry-weather inspections

The Town of Cumberland hired an intern to document storm drain outfall characteristics and perform dry weather inspections (see BMP 3c.) in Permit Year 3. As a result of performing inspections of the 31 outfalls in the urbanized area, no traces of illicit discharges or anomalies were discovered. Other beneficial effects resulting from the 2005 outfall monitoring activity included the documentation of repair needs and the recommendation to the Portland Water District to test for Total Residual Chlorine (TRC) for their non-stormwater outfall.

Actions Completed During Permit Year 4

Responsible Party - Adam Ogden

Dry-weather inspections

No dry weather inspections were completed this year due to increased workload from Patriot's Day storm. However, the Town and the Friends of Casco Bay have been conducting sampling for nutrient / fertilizers pollution; pesticides; and fecal bacteria in the Wildwood neighborhood watershed and outfall.

Actions Completed During Permit Year 5

Responsible Party - Public Services, Adam Ogden

Dry-weather inspections

No dry-weather outfall inspections or characterizations were completed, due to staffing reductions and reorganizations in the department. Dry weather inspections will be incorporated into the Stormwater Program Management Plan during the next 5 year permit cycle.

However, two collaborative programs were conducted that included analytical sampling and wet-weather inspections in cooperation with: 1) the Friends of Casco Bay (FOCB) and 2) the Maine Department of Marine Resources (DMR). The following section summarizes those two program activities. Stormwater sampling activities were conducted by the FOCB and the DMR on stormwater runoff the coastal drainage area flowing to Broad Cove, Cumberland Foreside. The DMR conducted water sampling of the growing area in addition to the stormwater sampling.

Friends of Casco Bay

Friends of Casco Bay (FOCB) is a leading environmental organization working to improve and protect the environmental health of Casco Bay. The Town of Cumberland has forged a strategic alliance with FOCB, their researchers and environmental colleagues at the Maine DEP, the Maine Board of Pesticides Control (MBPC) and the Maine Department of Marine Resources (DMR), as well other groups and concerned citizens.

The Town chose to work with Friends of Casco Bay because they are:

- Locally-focused: They are the only organization whose sole focus is protecting Casco Bay.
- Science-based: The positions they take are backed up by data collected by trained staff and EPA-certified volunteers.
- Pragmatic: they are results-oriented, striving for measurable outcomes that protect the environment.
- Collaborative: They know that protecting the Bay is a group effort, so they work closely with scientists, government officials, businesses, residents, and other partners.

Since 2001, FOCB sampled stormwater at nineteen sites around the Bay to detect the presence of pesticides, bacteria, and nutrients. The stormwater sampling in 2001 showed that pesticides. In 2007, FOCB and the Town designed a sampling program to gather additional data to characterize stormwater runoff first at the Wildwood outfall and secondly to expand the program to a stream crossing on Route 88, both on Cumberland Foreside.

Cumberland's Water Quality Monitoring Program is designed to collect baseline data on pesticides, fecal bacteria and fertilizers. Two sampling sites have been established: first in 2007 at an outfall in the Wildwood neighborhood, then in 2008 at a stream crossing site on Route 88. Both sites capture runoff into Broad Cove. This sampling project monitors for pesticides, fertilizers, and nutrients in stormwater. The Wildwood site samples stormwater from a residential neighborhood outfall; the stream crossing site on Route 88 captures runoff from Urban Residential, Commercial, and Interstate Route 95.

The Wildwood site is a storm water outfall that drains directly into Broad Cove from a residential area, and samples are taken from the mouth of the pipe. The Powell Road site is a stream outfall which drains under Route 88 thru an open bottom box culvert directly into Broad Cove from an urban residential area, and samples are taken from the stream just above the culvert. These sites were strongly recommended by the Town of Cumberland when asked about appropriate sampling locations for this project. These two drainages represent the watershed drainage to Broad Cove.

The Town of Cumberland's water quality program goal is to assess the potential for pesticide contamination problems and to collect water samples where threats are highest.

The following analyses are completed at Katahdin Analytical Services:

Analysis	Description
----------	-------------

EPA 350.1 – Ammonia – N	Ammonia Nitrogen – Automated Phenate
E351.2 – TKN	Total Kjeldahl Nitrogen
E353.2 – NOX	Nitrate+Nitrite
SM4500-ORTHO-PHOS	Phosphate-Ortho as P
EM FECAL MF – SM 9222D	Fecal Coliforms – Membrane filtration
PP-METALS-SW846	Priority Pollutant Metals
SW8082	GC PCB's
SW8270PAH	SW8270 PAH LIST

The following analyses for pesticides are completed at the University of Maine at Orono Food Chemical Safety Laboratory on behalf of the Maine Board of Pesticide Control. The samples are analyzed by the laboratory for the most commonly applied lawn and landscape pesticides: 2,4,5-T, 2,4-D, 2,4-DB, Dalapon, Dicamba, Dicloroprop, Dinoseb, MCPA, MCPP, Silvex, 2,4-Dichlorophenylacetic Acid, and Diazinon.

The Friends of Casco Bay (FOCB), one of the organizations affiliated with YardScaping, has taken surface water runoff samples at the Wildwood and Powell Road sites where identified lawn and landscape pesticides are applied to residential and business properties within the Broad Cove watershed. Samples are taken following major precipitation event with greater than ½ inch of rain. The samples are analyzed by a laboratory with an EPA approved quality assurance project plan for the most commonly applied lawn and landscape pesticides including: 2,4-D, dicamba, MCPP, diazinon, carbaryl and synthetic pyrethroids. Reliable samples are taken, using established protocols for sampling, sample handling and sample analysis.

Mike Doan, Research Assistant, FOCB is responsible for collecting and documenting representative samples and maintaining chain-of-custody until the samples are officially transferred to the laboratory. The laboratory analyzes the samples and transmits the results to the FOCB's project manager and BPC's water quality specialist. For this project, two labs have been utilized (Katahdin Analytical Services and the Maine Board of Pesticides Lab) these laboratories will continue to be the main facilities used.

The Town of Cumberland, with assistance from FOCB, is taking a comprehensive approach to reducing stormwater pollution. The Town's Water Quality Monitoring Program collects stormwater samples to monitor the problem. Cumberland used the modular Quality Assurance Project Plan (QAPP) developed by FOCB to make the data collected scientifically defensible. The modular QAPP is available for organizations, so others can learn from our experience. Additional details are spelled out in Maine Board of Pesticide Control (BPC) standard operating procedures (SOPs) and in the laboratory's SOP. These specific SOPs can be viewed at http://www.yardscaping.org/demo/water_quality.htm. SOPs are prepared for all routine and ongoing activities that affect the overall quality and defensibility of analytical data.

The stormwater sample collection methods are based on a quality assurance project plan designed by the Maine Board of Pesticides Control and FOCB. Sampling is preformed by Mike Daon during heavy rain events preceded by dry weather. The samples are collected as close as possible to the "first flush," the period early in a storm event when soil and other particles first begin to move with the stormwater runoff.

This monitoring plan, like FOCB's other sampling programs, aims to achieve Environmental Protection Agency certification as a Quality Assurance Project Plan, ensuring that the data collected will be usable by regulators and researchers.

The results of the sampling found:

Pesticides: The pesticide 2, 4-D was found in water samples from the storms. This water soluble compound, used in Weed'N' Feed to kill dandelions, is readily transported in stormwater runoff.

Fecal bacteria: Extremely high levels of fecal bacteria were found in the samples. High bacteria levels in coastal waters may cause clam flats to be closed to harvesting and beaches closed to swimming.

Fertilizers: Nitrogen and phosphorus were found in water samples from the storms. These nutrients, once they enter the Bay, can contribute to an explosion of nuisance algae and deplete dissolved oxygen in the water. Fertilizers are a primary source of nitrogen and phosphorus.

Nutrient Pollution

Recognizing the impact of nutrients on our coastal waters, the Town and FOCB staff began sampling for nutrients in 2007.

The threat of nitrogen pollution in Maine's waters is not theoretical. FOCB has collected many water samples in the Bay that show nitrogen at levels of concern, according to EPA and NOAA guidelines. Negative impacts include a "rise of slime" seen in increased algae smothering clam flats, increased numbers of jellyfish, red tides, and murky waters choking out eelgrass beds.

To combat the problem, the Town and FOCB are collecting more water quality data from sites where nitrogen enters Broad Cove and ultimately the Bay. Stormwater contains nitrogen, which can lead to nitrogen pollution. FOCB is supporting the implementation of legislation passed in 2007 to establish nutrient standards for Maine's coastal waters.

The evidence of nitrogen pollution is growing. In the ocean, overdosing on nitrogen threatens the health, ecology, and diversity of marine life. Too much nitrogen results in green mudflats, red tides, fish kills, marine mammal deaths, and clam flat closures.

Pesticides

Stormwater sampling by FOCB in nine coastal Towns has found at least five different kinds of pesticides flowing into the Bay. Studies have linked pesticides to health risks in adults, children, pets, birds, butterflies, and marine organisms.

The Town and FOCB are monitoring water quality in stormwater runoff to identify pesticide pollution flowing into Broad Cove. In 2007 and 2008, samples from two outfalls bordering Broad Cove found detectable levels of Dicamba, 2,4-D, and MCPA, herbicides commonly found in Weed'n'Feed.

The results show that stormwater carries toxic pesticides and fertilizers from nonpoint sources, such as roads and lawns downstream to Casco Bay.

FOCB and the Town are working to protect Casco Bay from toxic pesticides by reducing the use of pesticides and fertilizers through our Yardscaping and BayScaping Programs. Both programs seek to spread "grassroots" ethic for low-impact yard care, by encouraging homeowners, businesses, and municipalities to use Bay-friendly plants and lawn care methods.

Summary of the Town/FOCB's Stormwater Program Data

The stormwater sampling since 2001 showed that pesticides are entering Broad Cove and ultimately the Casco Bay waters. The samples collected show:

- **2, 4-D:** banned in five countries, this herbicide is toxic to aquatic invertebrates and has the potential to harm birds.
- **Dicamba:** found in surface and groundwater throughout the U.S., this herbicide is toxic to fish and zooplankton.
- **MCPA:** along with 2, 4-D, this herbicide is in the same family of chemicals as Agent Orange and is highly toxic to bay shrimp.

Friends of Casco Bay BayScaping Project Data
Stormwater Pesticide and Nutrient Analysis 2001 - Cumberland

Parameter	Chlorpyrifos	Diazinon	2,4-D	Dicamba	MCP	NO ₃ -N	NH ₄ -N	PO ₄ -P
Units	ug/l	ug/l	ug/l	ug/l	ug/l	mg/l	mg/l	mg/l
6/2/2001	ND	ND	10.7	3.8	2.9	0.242	0.402	0.142
ND = none detected at listed limit. ug/l = micrograms per liter or parts per billion (ppb). mg/l = milligrams per liter or parts per million. Method(s): Chlorpyrifos and Diazinon - solid phase extraction (SPE) using 500mg tC18 eluted with ethyl acetate and quantified by GC/MSD 2,4-D, Dicamba and MCP extracted with SPE and quantified by HPLC/PDA ref: J.Liq.Chrom.&Rel.Technol, 21(12), 1871-1882 (1998)								

The following parameters were not included in analysis in Cumberland in 2001, however: Pendamethalin, Permethrin, Triclopyr, Propiconazole and Clopyralid were detected at the Falmouth sample locations.

The data collected is critical for work with citizens, businesses, other ISWG municipalities, and decision-makers around the Bay.

Stormwater collected since 2007 in Cumberland (Wildwood and Powell Road) has shown the presence of:

- The pesticides MCP, 2,4-D, and Dicamba. The pesticide 2, 4-D is a commonly used herbicide for the control of broadleaf weeds. It is the primary ingredient in most 'weed and feed' lawn applications. It is water soluble and does not bind well to soil and is often detected in groundwater and stormwater runoff.
- High counts of fecal coliform. High bacterial levels in marine waters can cause clam flats to be closed to harvesting.
- Elevated concentrations of the nutrients, nitrogen and phosphorous, components of fertilizers.

The first storm sampling at Wildwood (WW) occurred on May 11, 2007. Analysis results from that storm revealed no positive detection for pesticides, slightly elevated concentrations of nutrients and ammonia. Fecal coliform bacteria counts were reported at 90 CFU/100ml.

The second storm event sampling at Wildwood (WW) occurred on July 6, 2007. Analysis results showed positive results for the pesticide 2,4-D and slightly lower concentrations of nutrients and ammonia. Fecal coliform bacteria counts were reported at 10,000 CFU/100ml.

The third storm event sampling at Wildwood (WW) occurred on August 6th 2008. Analysis for pesticides is not complete as of the writing of the report and is in process. Concentrations for nutrients were slightly lower than the previous sampling event and ammonia was not detected above the laboratory Practical Quantitation Limit therefore reported as not detected. Total Kjeldahl Nitrogen was reported at 0.32 mg/L. Therefore Total Nitrogen was 0.392 mg/L. Fecal coliform bacteria counts were reported at 6,780 CFU/100ml.

The first Powell Road (PR) sampling occurred on August 6th 2008. Analysis for pesticides is not complete as of the writing of the report (UMO will forward the results when completed). Concentrations for nutrients were: Nitrate +Nitrate as Nitrogen was reported at 0.24 mg/L, Ammonia and Ortho-Phosphate as P were not above the laboratory Practical Quantitation Limit and therefore reported as not detected. Total Kjeldahl Nitrogen was reported at 0.48 mg/L. Total Nitrogen was therefore 0.72 mg/L. Fecal coliform bacteria counts were reported at 1,010 CFU/100ml.

The table below shows the detected parameters in samples for the 2007 and 2008 at Wildwood and Powell Road:

Summary of Cumberland Stormwater Analytical Results 2007- 2008 – DETECTS ONLY

Wildwood (WW) Powell Road (PR) Sites

Site	Sample ID	Parameter	Date	Method	Q	Value	Units
WW	SA2250-1	NITRATE+NITRITE AS N	05/11/2007	E353.2		0.97	mg/L
WW	SA2250-1	NITROGEN-AMMONIA AS N	05/11/2007	EPA 350.1		0.61	mg/L
WW	SA2250-1	PHOSPHATE, ORTHO AS P	05/11/2007	EPA 365.2		0.13	mg/L
WW	SA3464-1	NITRATE+NITRITE AS N	07/06/2007	E353.2		0.53	mg/L
WW	SA3464-1	NITROGEN-AMMONIA AS N	07/06/2007	EPA 350.1		0.20	mg/L
WW	SA3464-1	PHOSPHATE, ORTHO AS P	07/06/2007	EPA 365.2		0.10	mg/L
WW	SB4305-11	NITRATE+NITRITE AS N	08/06/2008	E353.2		0.092	mg/L
WW	SB4305-11	NITROGEN-AMMONIA AS N	08/06/2008	EPA 350.1	<U	0.10	mg/L
WW	SB4305-9	PHOSPHATE, ORTHO AS P	08/06/2008	SM4500		0.078	mg/L
WW	SB4305-11	Total Kjeldahl Nitrogen	08/06/2008	E351.2		0.32	mg/L
PR	SB4305-7	NITRATE+NITRITE AS N	08/06/2008	E353.2		0.24	mg/L
PR	SB4305-7	NITROGEN-AMMONIA AS N	08/06/2008	EPA 350.1	<U	0.10	mg/L
PR	SB4305-6	PHOSPHATE, ORTHO AS P	08/06/2008	SM4500	<U	0.050	mg/L
PR	SB4305-7	Total Kjeldahl Nitrogen	08/06/2008	E351.2		0.48	mg/L
WW	SA2250-1	Fecal Coliform	05/11/2007	SM 9222D		90	CFUs/100mL
WW	SA3464-1	Fecal Coliform	07/06/2007	SM 9222D	>	10,000	CFUs/100mL
WW	SB4305-16	Fecal Coliform	08/06/2008	SM 9222D		6,780	CFUs/100mL
PR	SB4305-5	Fecal Coliform	08/06/2008	SM 9222D		1,010	CFUs/100mL
WW	SA3464-1	2,4-D	07/06/2007	8151A	J	1.1	ug/L

WW=Wildwood

PR=Powell Road

Data Qualifiers:

U - indicates the compound was analyzed for but not detected above the laboratory Practical Quantitation Limit

J - Estimated value. This analyte was detected in the sample at a concentration less than the laboratory Practical Quantitation Limit (PQL), but above the Method Detection Limit (MDL).



Stormwater Sampling Outfall Location - Wildwood Neighborhood, Cumberland Foreside

Cumberland Stormwater Analytical Results
2007-2008 – FULL DATA SET for Parameters Tested
Wildwood and Powell Road

Site	Parameter	Date	Method	Q	Value	Units
WW	2,4,5-T	05/11/2007	8151A	<	3.0	ug/L
WW	2,4-D	05/11/2007	8151A	<	3.0	ug/L
WW	2,4-DB	05/11/2007	8151A	<	3.0	ug/L
WW	DALAPON	05/11/2007	8151A	<	5.0	ug/L
WW	DICAMBA	05/11/2007	8151A	<	3.0	ug/L
WW	DICHLOROPROP	05/11/2007	8151A	<	3.0	ug/L
WW	DINOSEB	05/11/2007	8151A	<	5.0	ug/L
WW	MCPA	05/11/2007	8151A	<	150	ug/L
WW	MCPP	05/11/2007	8151A	<	100	ug/L
WW	SILVEX	05/11/2007	8151A	<	3.0	ug/L
WW	2,4-DICHLOROPHENYLACETIC ACID	05/11/2007	8151A		59	%
WW	NITRATE+NITRITE AS N	05/11/2007	E353.2		0.97	mg/L
WW	NITROGEN-AMMONIA AS N	05/11/2007	EPA 350.1		0.61	mg/L
WW	PHOSPHATE, ORTHO AS P	05/11/2007	EPA 365.2		0.13	mg/L
WW	Fecal Coliform	05/11/2007	SM 9222D		90	CFUs/100mL

WW	2,4,5-T	07/06/2007	8151A	<	3.0	ug/L
WW	2,4-D	07/06/2007	8151A	J	1.1	ug/L
WW	2,4-DB	07/06/2007	8151A	<	3.0	ug/L
WW	DALAPON	07/06/2007	8151A	<	5.0	ug/L
WW	DICAMBA	07/06/2007	8151A	<	3.0	ug/L
WW	DICHLOROPROP	07/06/2007	8151A	<	3.0	ug/L
WW	DINOSEB	07/06/2007	8151A	<	5.0	ug/L
WW	MCPA	07/06/2007	8151A	<	150	ug/L
WW	MCPP	07/06/2007	8151A	<	100	ug/L
WW	SILVEX	07/06/2007	8151A	<	3.0	ug/L
WW	2,4-DICHLOROPHENYLACETIC ACID	07/06/2007	8151A		95	%
WW	NITRATE+NITRITE AS N	07/06/2007	E353.2		0.53	mg/L
WW	NITROGEN-AMMONIA AS N	07/06/2007	EPA 350.1		0.20	mg/L
WW	PHOSPHATE, ORTHO AS P	07/06/2007	EPA 365.2		0.10	mg/L
WW	Fecal Coliform	07/06/2007	SM 9222D	>	10,000	CFUs/100mL

WW	ANTIMONY	08/06/2008	6010B	<	0.008	mg/L
WW	ARSENIC	08/06/2008	6010B	<	0.008	mg/L
WW	BERYLLIUM	08/06/2008	6010B	<	0.0050	mg/L
WW	CADMIUM	08/06/2008	6010B	<	0.0100	mg/L
WW	CHROMIUM	08/06/2008	6010B	<	0.0150	mg/L
WW	COPPER	08/06/2008	6010B	<	0.0250	mg/L
WW	LEAD	08/06/2008	6010B	<	0.005	mg/L
WW	NICKEL	08/06/2008	6010B	<	0.0400	mg/L
WW	SELENIUM	08/06/2008	6010B	<	0.010	mg/L
WW	SILVER	08/06/2008	6010B	<	0.0150	mg/L
WW	THALLIUM	08/06/2008	6010B	<	0.015	mg/L
WW	ZINC	08/06/2008	6010B	<	0.0250	mg/L
WW	MERCURY	08/06/2008	SW846 7470	<	0.20	ug/L
WW	Total Kjeldahl Nitrogen	08/06/2008	E351.2		0.32	mg/L
WW	NITRATE+NITRITE AS N	08/06/2008	E353.2		0.092	mg/L
WW	NITROGEN-AMMONIA AS N	08/06/2008	EPA 350.1	<	0.10	mg/L
WW	AROCLOR-1016	08/06/2008	8082	<	0.50	ug/L
WW	AROCLOR-1221	08/06/2008	8082	<	0.50	ug/L
WW	AROCLOR-1232	08/06/2008	8082	<	0.50	ug/L
WW	AROCLOR-1242	08/06/2008	8082	<	0.50	ug/L
WW	AROCLOR-1248	08/06/2008	8082	<	0.50	ug/L

WW	AROCLOR-1254	08/06/2008	8082	<	0.50	ug/L
WW	AROCLOR-1260	08/06/2008	8082	<	0.50	ug/L
WW	2,4,5,6-TETRACHLORO-META-XYLENE	08/06/2008	8082		71	%
WW	DECACHLOROBIPHENYL	08/06/2008	8082		79	%
WW	AROCLOR-1016	08/06/2008	8082	<	0.50	ug/L
WW	AROCLOR-1221	08/06/2008	8082	<	0.50	ug/L
WW	AROCLOR-1232	08/06/2008	8082	<	0.50	ug/L
WW	AROCLOR-1242	08/06/2008	8082	<	0.50	ug/L
WW	AROCLOR-1248	08/06/2008	8082	<	0.50	ug/L
WW	AROCLOR-1254	08/06/2008	8082	<	0.50	ug/L
WW	AROCLOR-1260	08/06/2008	8082	<	0.50	ug/L
WW	2,4,5,6-TETRACHLORO-META-XYLENE	08/06/2008	8082		84	%
WW	DECACHLOROBIPHENYL	08/06/2008	8082		75	%
WW	2-METHYLNAPHTHALENE	08/06/2008	8270B	<	9	ug/L
WW	ACENAPHTHENE	08/06/2008	8270B	<	9	ug/L
WW	ACENAPHTHYLENE	08/06/2008	8270B	<	9	ug/L
WW	ANTHRACENE	08/06/2008	8270B	<	9	ug/L
WW	BENZO(A)ANTHRACENE	08/06/2008	8270B	<	9	ug/L
WW	BENZO(A)PYRENE	08/06/2008	8270B	<	9	ug/L
WW	BENZO(B)FLUORANTHENE	08/06/2008	8270B	<	9	ug/L
WW	BENZO(K)FLUORANTHENE	08/06/2008	8270B	<	9	ug/L
WW	BENZO[G,H,I]PERYLENE	08/06/2008	8270B	<	9	ug/L
WW	CHRYSENE	08/06/2008	8270B	<	9	ug/L
WW	DIBENZO(A,H)ANTHRACENE	08/06/2008	8270B	<	9	ug/L
WW	FLUORANTHENE	08/06/2008	8270B	<	9	ug/L
WW	FLUORENE	08/06/2008	8270B	<	9	ug/L
WW	INDENO(1,2,3-CD)PYRENE	08/06/2008	8270B	<	9	ug/L
WW	NAPHTHALENE	08/06/2008	8270B	<	9	ug/L
WW	PHENANTHRENE	08/06/2008	8270B	<	9	ug/L
WW	PYRENE	08/06/2008	8270B	<	9	ug/L
WW	2-FLUOROBIPHENYL	08/06/2008	8270B		60	%
WW	NITROBENZENE-D5	08/06/2008	8270B		50	%
WW	TERPHENYL-D14	08/06/2008	8270B		79	%
WW	2-METHYLNAPHTHALENE	08/06/2008	8270B	<	9	ug/L
WW	ACENAPHTHENE	08/06/2008	8270B	<	9	ug/L
WW	ACENAPHTHYLENE	08/06/2008	8270B	<	9	ug/L
WW	ANTHRACENE	08/06/2008	8270B	<	9	ug/L
WW	BENZO(A)ANTHRACENE	08/06/2008	8270B	<	9	ug/L
WW	BENZO(A)PYRENE	08/06/2008	8270B	<	9	ug/L
WW	BENZO(B)FLUORANTHENE	08/06/2008	8270B	<	9	ug/L
WW	BENZO(K)FLUORANTHENE	08/06/2008	8270B	<	9	ug/L
WW	BENZO[G,H,I]PERYLENE	08/06/2008	8270B	<	9	ug/L
WW	CHRYSENE	08/06/2008	8270B	<	9	ug/L
WW	DIBENZO(A,H)ANTHRACENE	08/06/2008	8270B	<	9	ug/L
WW	FLUORANTHENE	08/06/2008	8270B	<	9	ug/L
WW	FLUORENE	08/06/2008	8270B	<	9	ug/L
WW	INDENO(1,2,3-CD)PYRENE	08/06/2008	8270B	<	9	ug/L
WW	NAPHTHALENE	08/06/2008	8270B	<	9	ug/L
WW	PHENANTHRENE	08/06/2008	8270B	<	9	ug/L
WW	PYRENE	08/06/2008	8270B	<	9	ug/L
WW	2-FLUOROBIPHENYL	08/06/2008	8270B		64	%
WW	NITROBENZENE-D5	08/06/2008	8270B		53	%
WW	TERPHENYL-D14	08/06/2008	8270B		99	%
WW	Fecal Coliform	08/06/2008	SM 9222D		6,780	CFUs/100mL
PR	AROCLOR-1016	08/06/2008	8082	<	0.50	ug/L
PR	AROCLOR-1221	08/06/2008	8082	<	0.50	ug/L
PR	AROCLOR-1232	08/06/2008	8082	<	0.50	ug/L
PR	AROCLOR-1242	08/06/2008	8082	<	0.50	ug/L

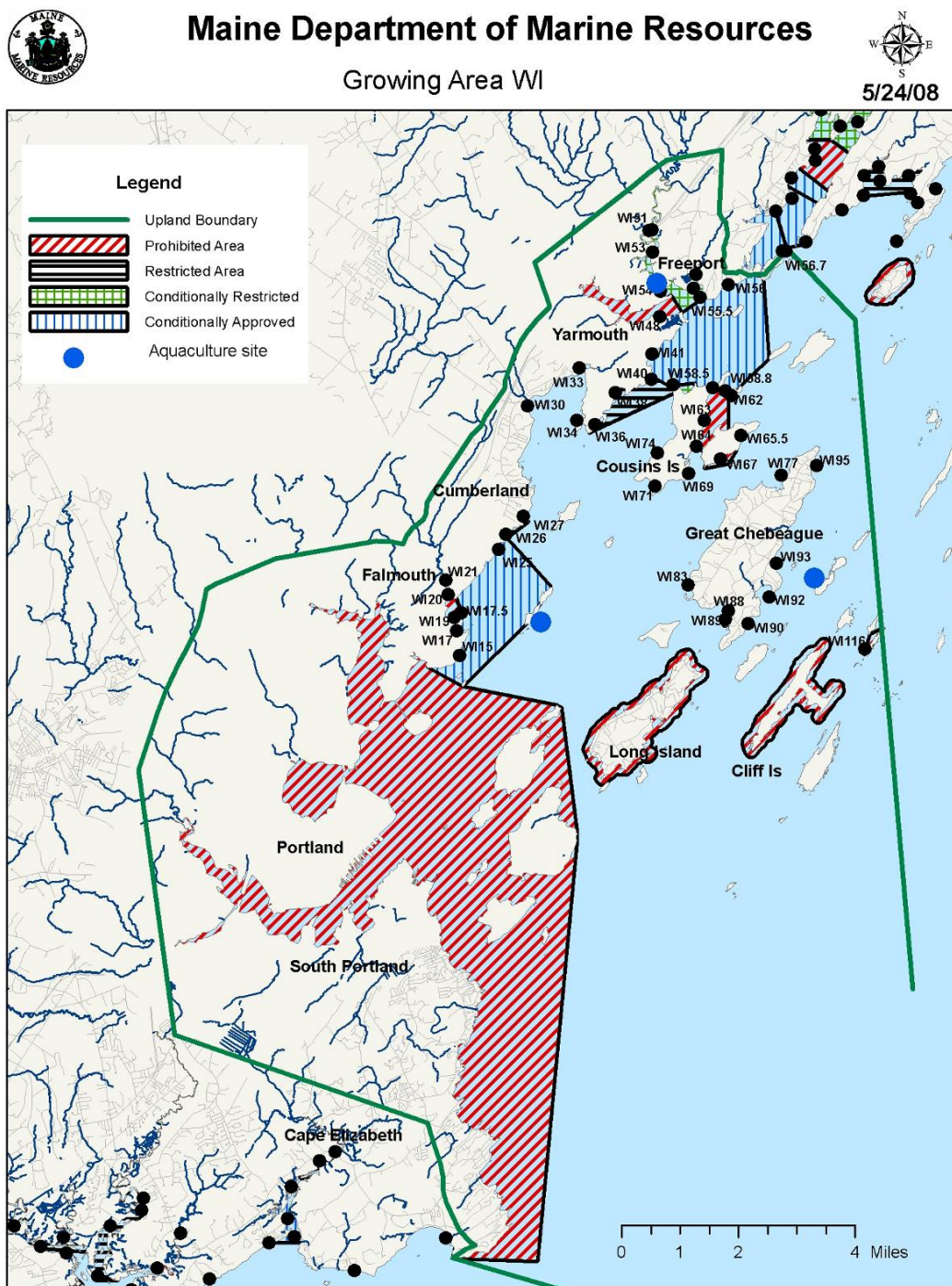
PR	AROCLOR-1248	08/06/2008	8082	<	0.50	ug/L
PR	AROCLOR-1254	08/06/2008	8082	<	0.50	ug/L
PR	AROCLOR-1260	08/06/2008	8082	<	0.50	ug/L
PR	2,4,5,6-TETRACHLORO-META-XYLENE	08/06/2008	8082		64	%
PR	DECACHLOROBIPHENYL	08/06/2008	8082		84	%
PR	AROCLOR-1016	08/06/2008	8082	<	0.50	ug/L
PR	AROCLOR-1221	08/06/2008	8082	<	0.50	ug/L
PR	AROCLOR-1232	08/06/2008	8082	<	0.50	ug/L
PR	AROCLOR-1242	08/06/2008	8082	<	0.50	ug/L
PR	AROCLOR-1248	08/06/2008	8082	<	0.50	ug/L
PR	AROCLOR-1254	08/06/2008	8082	<	0.50	ug/L
PR	AROCLOR-1260	08/06/2008	8082	<	0.50	ug/L
PR	2,4,5,6-TETRACHLORO-META-XYLENE	08/06/2008	8082		73	%
PR	DECACHLOROBIPHENYL	08/06/2008	8082		69	%
PR	2-METHYLNAPHTHALENE	08/06/2008	8270B	<	9	ug/L
PR	ACENAPHTHENE	08/06/2008	8270B	<	9	ug/L
PR	ACENAPHTHYLENE	08/06/2008	8270B	<	9	ug/L
PR	ANTHRACENE	08/06/2008	8270B	<	9	ug/L
PR	BENZO(A)ANTHRACENE	08/06/2008	8270B	<	9	ug/L
PR	BENZO(A)PYRENE	08/06/2008	8270B	<	9	ug/L
PR	BENZO(B)FLUORANTHENE	08/06/2008	8270B	<	9	ug/L
PR	BENZO(K)FLUORANTHENE	08/06/2008	8270B	<	9	ug/L
PR	BENZO[G,H,I]PERYLENE	08/06/2008	8270B	<	9	ug/L
PR	CHRYSENE	08/06/2008	8270B	<	9	ug/L
PR	DIBENZO(A,H)ANTHRACENE	08/06/2008	8270B	<	9	ug/L
PR	FLUORANTHENE	08/06/2008	8270B	<	9	ug/L
PR	FLUORENE	08/06/2008	8270B	<	9	ug/L
PR	INDENO(1,2,3-CD)PYRENE	08/06/2008	8270B	<	9	ug/L
PR	NAPHTHALENE	08/06/2008	8270B	<	9	ug/L
PR	PHENANTHRENE	08/06/2008	8270B	<	9	ug/L
PR	PYRENE	08/06/2008	8270B	<	9	ug/L
PR	2-FLUOROBIPHENYL	08/06/2008	8270B		68	%
PR	NITROBENZENE-D5	08/06/2008	8270B		59	%
PR	TERPHENYL-D14	08/06/2008	8270B		85	%
PR	2-METHYLNAPHTHALENE	08/06/2008	8270B	<	9	ug/L
PR	ACENAPHTHENE	08/06/2008	8270B	<	9	ug/L
PR	ACENAPHTHYLENE	08/06/2008	8270B	<	9	ug/L
PR	ANTHRACENE	08/06/2008	8270B	<	9	ug/L
PR	BENZO(A)ANTHRACENE	08/06/2008	8270B	<	9	ug/L
PR	BENZO(A)PYRENE	08/06/2008	8270B	<	9	ug/L
PR	BENZO(B)FLUORANTHENE	08/06/2008	8270B	<	9	ug/L
PR	BENZO(K)FLUORANTHENE	08/06/2008	8270B	<	9	ug/L
PR	BENZO[G,H,I]PERYLENE	08/06/2008	8270B	<	9	ug/L
PR	CHRYSENE	08/06/2008	8270B	<	9	ug/L
PR	DIBENZO(A,H)ANTHRACENE	08/06/2008	8270B	<	9	ug/L
PR	FLUORANTHENE	08/06/2008	8270B	<	9	ug/L
PR	FLUORENE	08/06/2008	8270B	<	9	ug/L
PR	INDENO(1,2,3-CD)PYRENE	08/06/2008	8270B	<	9	ug/L
PR	NAPHTHALENE	08/06/2008	8270B	<	9	ug/L
PR	PHENANTHRENE	08/06/2008	8270B	<	9	ug/L
PR	PYRENE	08/06/2008	8270B	<	9	ug/L
PR	2-FLUOROBIPHENYL	08/06/2008	8270B		65	%
PR	NITROBENZENE-D5	08/06/2008	8270B		62	%
PR	TERPHENYL-D14	08/06/2008	8270B		76	%
PR	Fecal Coliform	08/06/2008	SM 9222D		1,010	CFUs/100mL
PR	PHOSPHATE, ORTHO AS P	08/06/2008	SM4500	<	0.050	mg/L
PR	Total Kjeldahl Nitrogen	08/06/2008	E351.2		0.48	mg/L
PR	NITRATE+NITRITE AS N	08/06/2008	E353.2		0.24	mg/L
PR	NITROGEN-AMMONIA AS N	08/06/2008	EPA 350.1	<	0.10	mg/L

PR	ANTIMONY	08/06/2008	6010B	<	0.008	mg/L
PR	ARSENIC	08/06/2008	6010B	<	0.008	mg/L
PR	BERYLLIUM	08/06/2008	6010B	<	0.0050	mg/L
PR	CADMIUM	08/06/2008	6010B	<	0.0100	mg/L
PR	CHROMIUM	08/06/2008	6010B	<	0.0150	mg/L
PR	COPPER	08/06/2008	6010B	<	0.0250	mg/L
PR	LEAD	08/06/2008	6010B	<	0.005	mg/L
PR	NICKEL	08/06/2008	6010B	<	0.0400	mg/L
PR	SELENIUM	08/06/2008	6010B	<	0.010	mg/L
PR	SILVER	08/06/2008	6010B	<	0.0150	mg/L
PR	THALLIUM	08/06/2008	6010B	<	0.015	mg/L
PR	ZINC	08/06/2008	6010B	<	0.0250	mg/L
PR	MERCURY	08/06/2008	SW846 7470	<	0.20	ug/L

Cumberland Shellfish Growing Area (GROWING AREA WI)

The Town of Cumberland has developed an ongoing relationship with the Maine Department of Marine Resources (DMR). The DMR has provided Shoreline Survey Training Courses to the Town's Staff to augment existing resources within the DMR. The DMR has worked to develop training and to provide ongoing assistance to provide basic knowledge of pollution source identification and how to appropriately document actual and potential pollution sources in order to protect the public health. The intent of this cooperation is to assist in resource protection efforts to provide more essential local knowledge to recognize and report actual and potential problems before they become public health issues that may impact shellfish areas in the long term. The following section summarizes the results of the efforts, sanitary surveys and water quality assessments in the growing area during permit year 5, but it represents much more than that. This cooperation has been the catalyst to developing improved data collection protocols and prioritization techniques for targeting potential pollution sources and reducing non-point source pollution to the growing area. The credit for this work goes to the Maine Department of Marine Resources, Public Health Division, and its staff. The Town would not have been able to meet its water quality sampling and survey goals without the help of Amy M. Fitzpatrick, Director, DMR. Complete data, reports and annual reviews are available for from the DMR.

Figure 1 Growing Area WI with Active Stations and Aquaculture Sites Town of Cumberland



Cumberland Summary

Cumberland is part of Growing Area WI (between McKenney Pt, Cape Elizabeth, and Staples Pt, Freeport. It includes Cape Elizabeth, South Portland, Portland, Falmouth, Cumberland, Yarmouth, Long Island, Great Chebeague Island and part of Freeport) See Figure 1 above - Growing Area WI; a detailed boundary description can be found in DMR central files. The growing area includes the rocky coast of Cape Elizabeth, all of Portland Harbor, narrow beaches along the Falmouth and Cumberland shore, the Cousins and Royal Rivers in Yarmouth, and numerous islands in Casco Bay including, but not limited to, Great Chebeague Island, Cousins Island, Littlejohn Island and Long Island.

Cumberland has three approved sites in Growing Area WI. The major sources of pollution in Growing Area WI are Wastewater Treatment Plants (WWTP) other towns and cities, which are located in the large prohibited area around Portland Harbor. There is also the Yarmouth WWTP in the Royal River and the Sea Meadows Community WWTP on the east side of Cousins Island. There are numerous overboard discharges (OBDs) in Growing Area WI, all of which are located in prohibited areas (Figure 2), and none of the discharges were removed in 2007.

The DMR noted two significant changes in Growing Area WI. One change was the extension of the Yarmouth WWTP outfall out to mid-channel in the Royal River. The second change was the extension of the Sea Meadows Community WWTP outfall and the release of effluent only on outgoing tides.

Station WI 27.5 on Sturdivant Island was deactivated in August 2007. This island is located near the Cumberland mainland and water quality is monitored by stations on the mainland.

Current Shellfish Growing Area Classification(s)

Shellfish growing area WI currently has areas classified as:

Approved

- Great and Little Chebeague Islands, Chebeague (7 Stations)
- Cousins and Littlejohn Islands, Yarmouth (4 Stations)
- Cumberland and Sturdivant Island, Cumberland (3 Stations)**
- Winslow Park, Freeport (1 Station)

Conditionally Approved

- Falmouth Foreside, Falmouth (4 Stations) (seasonal marina area)
- Outside Cousins River, Yarmouth and Freeport (4 Stations) (conditional on Yarmouth WWTP)

Conditionally Restricted

- Cousins River, Yarmouth and Freeport (6 Stations) (conditional on Yarmouth WWTP)
- Cousins Island, Yarmouth (1 Station) (conditional on Yarmouth WWTP)

Restricted

- Mussel Cove, Falmouth (3 Stations) (non-point pollution)
- Princes Point, Yarmouth (5 Stations) (malfunctioning septic/poor water quality)

Prohibited

- Cape Elizabeth/Portland Area/Casco Bay (overboard discharges/WWTP outfalls)
- Underwood Road, Falmouth (1 Station) (non-point pollution)
- Bennet Cove, Chebeague (1 Station) (overboard discharge)
- Bates Island, Chebeague (1 Station) (straight pipe)
- Long Island, Town of Long Island (4 Stations) (improper septic systems/OBDs)
- Royal River, Yarmouth (1 Station) (WWTP outfall)
- Cousins and Littlejohn Islands, Yarmouth (5 Stations) (OBDs/WWTP outfall)

Closures in the Cumberland area can be seen by visiting the DMR website to view Legal Notices:

MDMR Regulation 95.03 L, Closed Area No. 14, Royal River, Cousins River, Cousins Island, Littlejohn Island (Yarmouth and Freeport)

http://www.maine.gov/dmr/rm/public_health/closures/closedarea.htm

Activity During Review Period

In August 2007:

- Station WI 27.5 on Sturdivant Island was also deactivated. This island is located near the Cumberland mainland and water quality is monitored by stations on the mainland.

In March 2008:

- Broad Cove station, WI 33, in Cumberland and Yarmouth, was reclassified from prohibited to approved 3/19/08. Additional sampling and an updated survey indicated that water quality met approved standards and no pollution sources are present. An addendum can be found in the DMR central files.

Review of Water Quality (DMR)

Table 1 displays the geomeans and 90th percentile (P90s) for all active stations in Cumberland (WI027.00, WI027.50, WI030.00, WI033.00 and WI034.00) near Cumberland/Broad Cove; the table includes year round geomeans and P90 scores for conditional stations. The data represents the DMR's evaluation of the 30 most recent data points randomly collected throughout the year between 2001 and 2007. These standards fluctuate yearly as a result of the DMR transition from an Most Probable Number (MPN) fecal coliform test method to a membrane filtration (MF) method and are dependent on the number of sample analyzed by MPN versus MF. The total number of data points used in the calculations is displayed in the COUNT column and includes both MPN and MF values. The number of data points, analyzed by MF, are displayed in the MFCNT column. This fluctuating standard will cease when all 30 data points have been analyzed by the MF method. A key to the water quality table headers can be found below the table.

Water quality meets approved standards at all approved stations in Cumberland's growing area. Water quality meets restricted standards at all restricted stations in Cumberland's growing area.

Table 1 Geomean and P90-Year Round Data Analysis for all Active Stations in Growing Area WI

STATION	CLASS	CNT	MFCNT	GM	SDV	MAX	P90	APPD_STD	RESTR_STD
WI027.00	A	30	8	5.5	0.46	150	21.4	43	255
WI027.50	A	30	6	3.8	0.37	210	11.6	45	266
WI030.00	A	30	8	5.5	0.52	114	25.5	43	255
WI033.00	R	30	8	6.5	0.47	93	25.8	43	255
WI034.00	R	30	7	3.4	0.32	93	8.8	44	260

Station = water quality monitoring station

Class = classification assigned to the station; prohibited (P), restricted (R), conditionally restricted (CR), conditionally approved (CA) and approved (A).

Count = the number of samples evaluated for classification, must be a minimum of 30.

MFCNT = the number of samples evaluated with the MTec method (included in the total Count column)

Geo_Mean = means the antilog (base 10) of the arithmetic mean of the sample result logarithm (base 10).

SDV = standard deviation

Max = maximum score of the 30 data points in the count column

P90 = 90th percentile

APPD_STD = the 90th percentile, at or below which the station would meet approved criteria in the absence of pollution sources or poisonous and deleterious substances.

RESTR_STD = the 90th percentile, at or below which the station would meet restricted criteria.

Table 2 shows that all stations in Cumberland that were active at the beginning of 2007, and remained active throughout the year and were sampled six times in the open status using a systematic random sampling strategy.

Table 2 Sample Counts for Open and Closed Status at Stations in Growing Area WI

Station	Class	Closed Status	Open Status	Comments
WI027.00	A		6	
WI027.50	A		3	Deactivated 8/15/07
WI030.00	A		6	
WI033.00	R		6	
WI034.00	R		6	

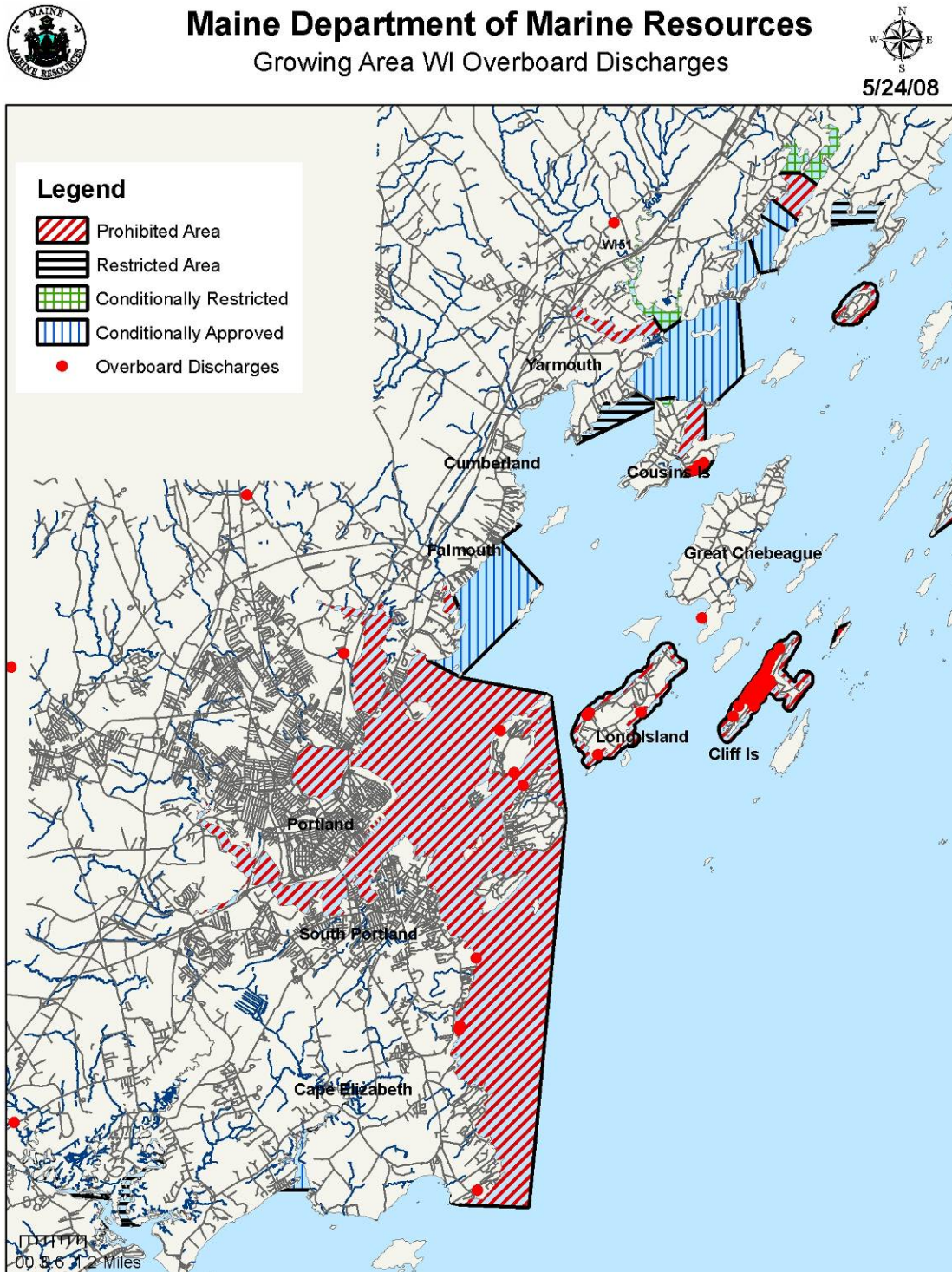
Evaluation of New Pollution Sources

The majority of the shoreline in Cumberland's growing area (DMR Growing Area WI) appeared to be fully developed at the time of the last sanitary survey report. However, some shoreline properties are now being redeveloped or split to create new house lots. There are several major commercial developments that are planned or under construction on U. S. Route One (Cumberland Business Park - Rockwood Condominium Phases 1 thru 4, Dentist Office, Lucinda's, SHP Management, Toddle Inn Day Care, SEAFax, Cumberland Foreside Village, etc.). There are several new or currently developing subdivisions that are located on Route 88 (Mary Lane, Meaves Way, Huber property), Cumberland Foreside. Additional homes, construction and expansions are planned and can be expected on Cumberland Foreside. Infrastructure improvements can be expected along Route 88 (Pedestrian/Bike Ways and shoulder widening). Non-point source pollution can be expected to increase from these activities.

Overboard Discharges:

There are no known overboard discharges in Cumberland's growing area (Figure 2). All of the known discharges are located in prohibited areas in adjacent towns.

Figure 2 Licensed Residential Overboard Discharges in Cumberland and Growing Area WI



Department of Marine Resources (DMR) Storm Water sampling

Falmouth, Cumberland and Yarmouth shores have steep slopes down to open beaches. Runoff from the uplands flows down through grass gullies and partial culvert pipes to the beach, where it mixes with ocean water. The majority of the houses are connected to the Town sewer system, so runoff is non-point in origin. In 2007, Friends of Casco Bay and the Town of Cumberland collaborated on a storm water runoff project and concluded that non-point sources are a threat to the shellfish resources in Cumberland. See 2007 Cumberland Stormwater Report impact on Growing Area WI below for more information.

On 9/11/07, DMR collected samples from various sites in growing area WI. It was raining heavily when collecting the stormwater (WIF) samples and scores were high. There was moderate runoff on 9/17/07, and yet many of the drainages had no flow. See Table 3 for sampling data at WIF sites 5, 6, 7, 8 and 9 that drain from Cumberland watersheds onto open beaches along the Cumberland mainland. Water quality stations along the Cumberland mainland meet approved standards and do not appear to be impacted by non-point pollution. See Figure 3 for storm water sample locations.

Table 3 Storm Water Samples Collected 9/11/07 & 9/17/07 in Growing Area WI

WIF#	DMR ID #	Location	Fc/100ml Mf score 9/11/07	Flow gal/min	Fc/100ml Mf score 9/17/07	Flow gal/min
5	WIF0007.00	Spruce La culvert	1700	5		
6	WIF0017.00	Longmeadow Rd gully	1700	100	200	1
7	WIF0034.00	Wildwood Rd gully			Dry	
8	WIF0040.00	Town Landing Rd N.gully	1700	100		
9	WIG0005.00	Princes Pt marsh stream	1700	tidal		

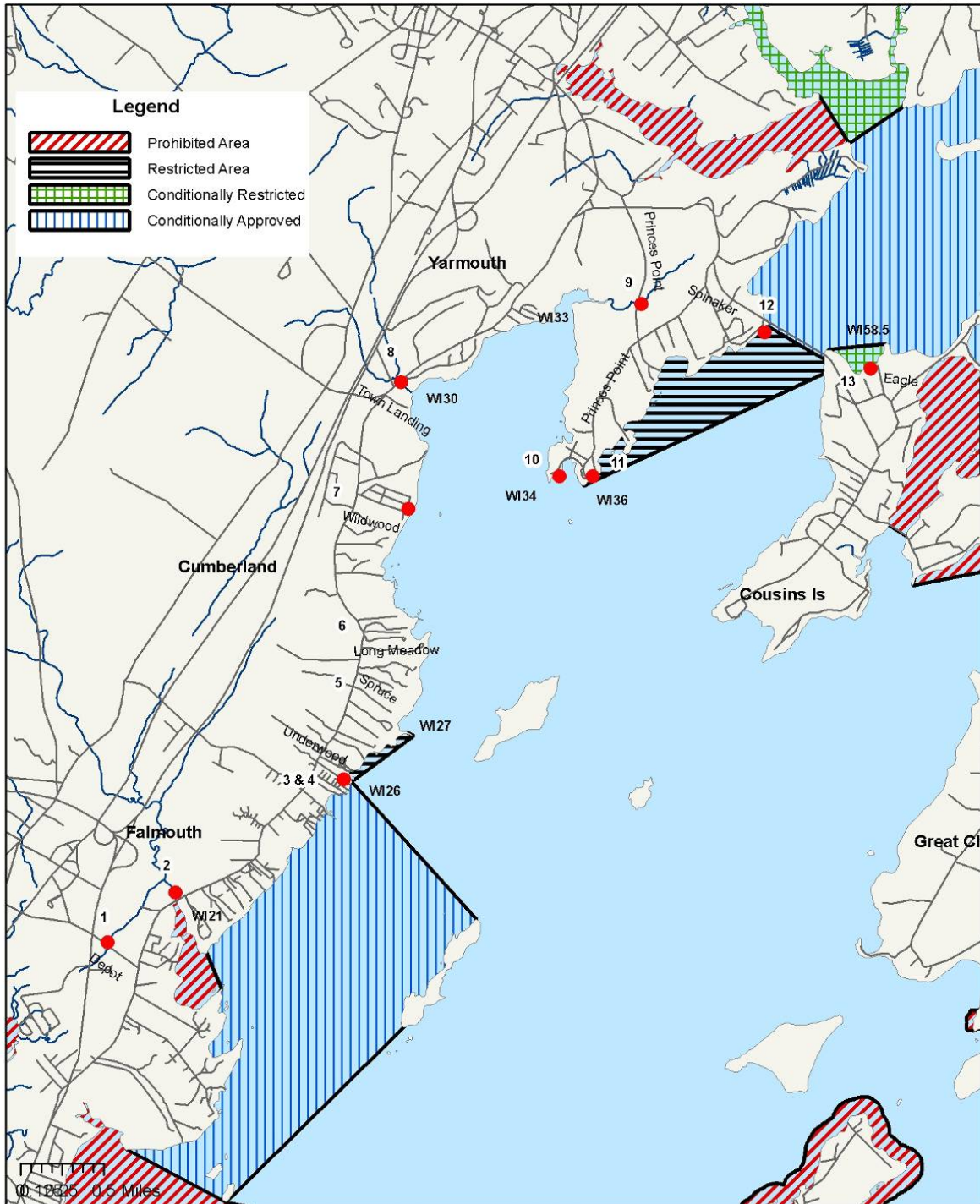
Note: Fecal Coliforms per 100 ml (fc/100ml), Mf score = Membrane Filtration score

2007 was the first year that streams in growing area WI were sampled as part of the annual survey review by DMR. Only streams that were easily accessible and flowing on the day of the survey were sampled. This was a baseline assessment and DMR indicates that additional stream assessments need to be done in 2008 and beyond.

Figure 3 DMR Stormwater Stream Sample Locations in Cumberland Growing Area WI



Maine Department of Marine Resources Growing Area WI Pollution Samples



Shoreline Survey Activity

Cumberland

In 1997, the properties on the outer islands in Cumberland, which are now part of the Town of Great Chebeague were inspected. The straight pipe on Bates Island was reported to the Code Enforcement Officer. In October 2002, all the properties on the Cumberland mainland shore were inspected. In August 2005, all the properties on Sturdivant Island were inspected. MDR has suggested that the Cumberland outer islands need to be re-surveyed in 2008-2009.

Aquaculture/Wet Storage Activity

PER 07

Original Date: 7/25/2007 Effective Date: 5/12/2008 Expiration Date: 12/31/2008

NOAA Chart: 13290

Description: Broad Cove Casco Bay Cumberland Cumberland County

Acreage: 0.01

Conditions:

Transfer/Renewal History:

Species Cultivated: oyster eastern / american (*Crassostrea virginica*)

Cultivation Technique(s): Tray Racks / Overwintering Cage

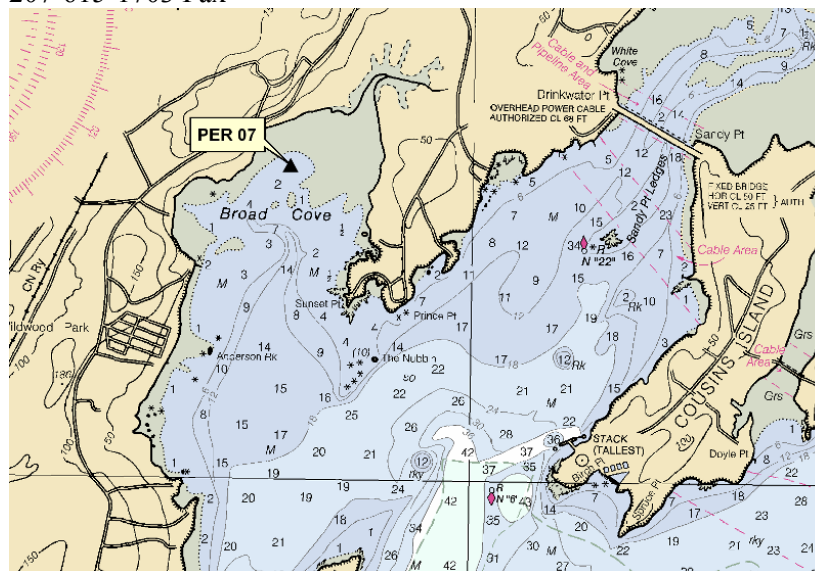
Perry, Nathaniel

Nate Perry

10 Pine Ridge Road

Cape Elizabeth, ME 04107

207-615-1703 Fax



Visit MDMR web site for maps:

<http://www.maine.gov/dmr/aquaculture/leaseinventory2006/documents/>

Growing Area Classification Changes Required

DMR has suggested no classification changes are required at this time.

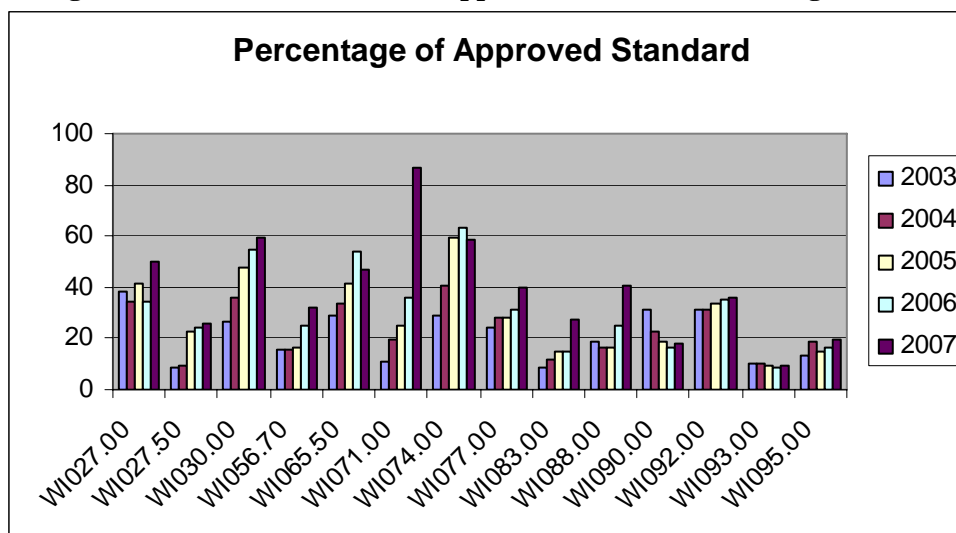
Discussion & Summary

Below is a P90 trend chart for approved stations in growing area WI, which shows the P90 as a percentage of the approved standard for each year's data set. DMR has switched from MPN fecal coliform test method to a membrane filtration (MF) fecal coliform test method. The precision of the MF method far exceeds that of MPN with a resulting lower P90 approved standard (MPN P90 49 versus MF P90 31). During the transition from MPN to MF data points, each year the approved standard will be lower than the previous year until all samples have been analyzed by the MF method. In order to show the trend of the P90 over the years, the calculated P90s are expressed as a percentage of the approved standard.

The chart shows that, over the past five years, water quality has declined at most approved stations, especially at Station WI 71 on the south end of Cousins Island. The new home owner in this cove has several dogs, which may be contributing non-point pollution and degrading the water quality. Other stations are probably being impacted by population growth. Additional stream and rainfall sampling should be conducted to further evaluate the potential pollution sources.

In conclusion, the major threat from storm water runoff to the resources in the Town of Cumberland appears to be non-point sources.

Figure 4 - P90 Trend Chart for Approved Stations in Growing Area WI



Cumberland Stations - DMR Sample Collection Results for 2007

Station	Date	Tide	Temp	Weather	Sal	Strat	ADV	Stat	CL	MFCOL Fc/100ml	WIND
WI027.00	01/03/07	HE	3	C	22	R	-	O	A	4	CL
WI027.00	03/07/07	F		-	30	R	-	O	A	<2.0	CL
WI027.00	04/30/07	HE	2	R	24	R	P	O	A	6	S
WI027.00	06/19/07	F	18	C	30	R	-	O	A	<2.0	S
WI027.00	08/14/07	H	20	-	30	R	-	O	A	50	NE
WI027.00	10/24/07	HE	13	O	31	R	P	O	A	10	CL
WI027.50	06/06/07	F	16	C	28	R	-	O	A	4	CL
WI027.50	07/23/07	E	18	P	30	R	-	O	A	<2.0	N
WI027.50	08/14/07	F	16	C	30	R	-	O	A	<2.0	N
WI030.00	01/03/07	HE	-1	C	26	R	N	O	A	<2.0	S
WI030.00	03/07/07	HF		-	30	R	-	O	A	<2.0	W
WI030.00	04/30/07	HE	4	R	22	R	P	O	A	15	SE
WI030.00	06/19/07	HF	18	C	30	R	-	O	A	<2.0	S
WI030.00	08/14/07	H	20	-	32	R	-	O	A	<2.0	NE
WI030.00	10/24/07	HE	13	O	31	R	P	O	A	114	CL
WI033.00	01/03/07	HE	-2	C	28	R	-	O	A	20	SW
WI033.00	03/07/07	HF		-	34	R	-	O	A	<2.0	W
WI033.00	04/30/07	HE	3	R	20	R	P	O	A	8	S
WI033.00	06/19/07	HF	24	C	28	R	-	O	A	<2.0	S
WI033.00	08/14/07	H	22	-	32	R	-	O	R	<2.0	NE
WI033.00	10/24/07	H	13	O	30	R	P	O	R	29	CL
WI034.00	01/03/07	HE	1	C	32	R	-	O	A	2	SW
WI034.00	03/07/07	HF		-	32	R	-	O	A	<2.0	W
WI034.00	04/30/07	E	2	R	28	R	P	O	A	<2.0	CL
WI034.00	06/19/07	HF	19	C	30	R	-	O	A	<2.0	CL
WI034.00	08/14/07	H	18	-	32	R	-	O	A	<2.0	NW
WI034.00	10/24/07	H	13	O	30	R	P	O	R	<2.0	CL

Note: Fecal Coliforms per 100 ml (fc/100ml), MFCOL = Membrane Filtration Score

Cumberland Growing Area Tabulated Data Report 2003 thru 2008

(See 2008 Run 5 North Falmouth to Yarmouth Sampling Stations map below for locations)

Maine DMR Shellfish Growing Area Classification Program Tabulated Data Report 2003 thru 2008							
GROWING AREA: WI (Stations WI027.00, WI030.00, WI033.00, WI034.00) Casco Bay							
DMR collects additional water samples during flood events, to document pollution sources and under other adverse conditions which may not be included in this tabulated data report. Refer to the Maine DMR for further information on these samples and explanation of current classifications in the growing area. These can be found at: http://www.maine.gov/dmr/rm/public_health/G_A_reports/index.htm							
Data Key Strategy: R = Random, E = Extra, A=Adverse Score: fecal coliform/100ml sea water sample							
Adversity: B = minimum 5 enclosed boats (i.e. not open skiffs) that might have a head; F= statewide flood closure, H = seasonal habitation of homes; M = marinas with 10 or more enclosed boats in the water; N = flowing streams, stormwater pipes, or overland runoff, P= rain or mixed precipitation anytime within past 2 days (i.e.thunderstorms, rainfall more than a drizzle); T = thawing snow and ice melt; S = sewage treatment plant malfunction or bypass events; W = Waterfowl (10 or more), domestic or wild animals (i.e., at the station or in close enough proximity to have a possible impact).							
STATION	DATE	STRATEGY	SCORE	METHOD	COLLECTOR	ADVERSITY	COMMENTS
WI027.00	10/9/2003	R	2.9	A1COL	TC		
WI027.00	5/13/2004	R	2.9	A1COL	TC		
WI027.00	6/3/2004	R	2.9	A1COL	TC		
WI027.00	7/1/2004	R	2.9	A1COL	TC		
WI027.00	7/29/2004	R	43	A1COL	TC		
WI027.00	9/16/2004	R	2.9	A1COL	LL		
WI027.00	5/19/2005	R	2.9	A1COL	CUMB		
WI027.00	6/16/2005	R	150	A1COL	CUMB	P	
WI027.00	8/24/2005	R	9.1	A1COL	CUMB		
WI027.00	9/13/2005	R	2.9	A1COL	CUMB		
WI027.00	11/14/2005	R	2.9	A1COL	CUMB		
WI027.00	11/29/2005	R	2.9	A1COL	CUMB		
WI027.00	12/5/2005	R	3.6	A1COL	CUMB		
WI027.00	1/30/2006	R	9.1	A1COL	LL		
WI027.00	2/15/2006	R	2.9	A1COL	LL		
WI027.00	3/22/2006	R	2.9	A1COL	JB		
WI027.00	4/25/2006	R	3.6	A1COL	JB		
WI027.00	8/8/2006	R	23	A1COL	JXK		
WI027.00	9/12/2006	R	2	MFCOL	FP	N	
WI027.00	12/11/2006	R	11	MFCOL	LL		
WI027.00	1/3/2007	R	4	MFCOL	EXT		
WI027.00	3/7/2007	R	1.9	MFCOL	FP		
WI027.00	4/30/2007	R	6	MFCOL	FP	P	
WI027.00	6/19/2007	R	1.9	MFCOL	LL		
WI027.00	8/14/2007	R	50	MFCOL	LL		
WI027.00	10/24/2007	R	10	MFCOL	LL	P	
WI027.00	2/6/2008	R	2	MFCOL	EXT	P	
WI027.00	4/8/2008	R	1.9	MFCOL	EXT		
WI027.00	6/4/2008	R	8	MFCOL	LL	P	
WI027.00	7/28/2008	R	32	MFCOL	MLP		
WI030.00	5/13/2004	R	2.9	A1COL	TC		
WI030.00	6/3/2004	R	3.6	A1COL	TC		
WI030.00	7/1/2004	R	23	A1COL	TC		
WI030.00	7/29/2004	R	43	A1COL	TC		

WI030.00	9/16/2004	R	2.9	A1COL	LL		
WI030.00	5/19/2005	R	2.9	A1COL	CUMB		
WI030.00	6/16/2005	R	93	A1COL	CUMB	P	
WI030.00	8/24/2005	R	2.9	A1COL	CUMB		
WI030.00	9/13/2005	R	2.9	A1COL	CUMB		
WI030.00	11/14/2005	R	2.9	A1COL	CUMB		
WI030.00	11/29/2005	R	7.3	A1COL	CUMB		
WI030.00	12/5/2005	R	2.9	A1COL	CUMB		
WI030.00	1/30/2006	R	9.1	A1COL	LL		
WI030.00	2/15/2006	R	2.9	A1COL	LL		
WI030.00	3/22/2006	R	2.9	A1COL	JB		
WI030.00	4/25/2006	R	2.9	A1COL	JB		
WI030.00	8/8/2006	R	15	A1COL	JXK		
WI030.00	9/12/2006	R	1.9	MFCOL	FP		
WI030.00	12/11/2006	R	1.9	MFCOL	LL		
WI030.00	1/3/2007	R	1.9	MFCOL	EXT	N	
WI030.00	3/7/2007	R	1.9	MFCOL	FP		
WI030.00	4/30/2007	R	15	MFCOL	FP	P	
WI030.00	6/19/2007	R	1.9	MFCOL	LL		
WI030.00	8/14/2007	R	1.9	MFCOL	LL		
WI030.00	10/24/2007	R	114	MFCOL	LL	P	
WI030.00	2/6/2008	R	1.9	MFCOL	EXT	P	
WI030.00	4/8/2008	R	1.9	MFCOL	EXT		
WI030.00	6/4/2008	R	11	MFCOL	LL	P	
WI030.00	7/28/2008	R	16	MFCOL	MLP		
WI033.00	5/13/2004	R	2.9	A1COL	YSC		
WI033.00	6/3/2004	R	9.1	A1COL	YSC		
WI033.00	7/1/2004	R	43	A1COL	YSC		
WI033.00	8/12/2004	R	3.6	A1COL	YSC	P	
WI033.00	9/16/2004	R	9.1	A1COL	YSC		
WI033.00	10/7/2004	R	2.9	A1COL	YSC		wind calm.
WI033.00	6/2/2005	R	3.6	A1COL	YSC		
WI033.00	6/16/2005	R	93	A1COL	YSC	P	
WI033.00	8/11/2005	R	2.9	A1COL	FSC		
WI033.00	9/15/2005	R	23	A1COL	YSC		
WI033.00	10/6/2005	R	7.3	A1COL	YSC		
WI033.00	12/14/2005	R	3	A1COL	LL		
WI033.00	3/8/2006	R	9.1	A1COL	KEM		tidal channel sample
WI033.00	4/26/2006	R	2.9	A1COL	LL		
WI033.00	5/10/2006	R	2.9	A1COL	YSC	P	
WI033.00	7/19/2006	R	9.1	A1COL	YSC		
WI033.00	10/11/2006	R	1.9	MFCOL	YSC		
WI033.00	10/24/2006	R	40	MFCOL	LL	P	
WI033.00	1/3/2007	R	20	MFCOL	EXT		
WI033.00	3/7/2007	R	1.9	MFCOL	FP		
WI033.00	4/30/2007	R	8	MFCOL	FP	P	
WI033.00	6/19/2007	R	1.9	MFCOL	LL		

WI033.00	8/14/2007	R	1.9	MFCOL	LL		
WI033.00	10/24/2007	R	29	MFCOL	LL	P	
WI033.00	2/6/2008	R	12	MFCOL	EXT	PW	geese all around cove
WI033.00	3/5/2008	E	1.9	MFCOL	LL	PTW	5 deer; 100 geese
WI033.00	4/8/2008	R	1.9	MFCOL	EXT		
WI033.00	6/4/2008	R	8	MFCOL	LL	P	
WI034.00	9/11/2003	R	2.9	A1COL	YSC		
WI034.00	10/9/2003	R	2.9	A1COL	YSC		
WI034.00	5/13/2004	R	3.6	A1COL	YSC		
WI034.00	6/3/2004	R	2.9	A1COL	YSC		
WI034.00	7/1/2004	R	93	A1COL	YSC		
WI034.00	8/12/2004	R	2.9	A1COL	YSC	P	
WI034.00	9/16/2004	R	2.9	A1COL	YSC		
WI034.00	10/7/2004	R	2.9	A1COL	YSC		wind calm.
WI034.00	6/2/2005	R	2.9	A1COL	YSC		
WI034.00	7/14/2005	R	2.9	A1COL	YSC		
WI034.00	8/11/2005	R	2.9	A1COL	FSC		
WI034.00	9/15/2005	R	3.6	A1COL	YSC		
WI034.00	10/6/2005	R	3.6	A1COL	YSC		
WI034.00	12/13/2005	R	2.9	A1COL	LL		
WI034.00	3/8/2006	R	2.9	A1COL	KEM		
WI034.00	4/26/2006	R	7.3	A1COL	LL		
WI034.00	5/10/2006	R	3.6	A1COL	YSC	P	
WI034.00	7/19/2006	R	2.9	A1COL	YSC		
WI034.00	8/2/2006	R	2.9	A1COL	YSC		
WI034.00	9/27/2006	R	1.9	MFCOL	YSC		
WI034.00	1/3/2007	R	2	MFCOL	EXT		
WI034.00	3/7/2007	R	1.9	MFCOL	FP		
WI034.00	4/30/2007	R	1.9	MFCOL	FP	P	
WI034.00	6/19/2007	R	1.9	MFCOL	LL		
WI034.00	8/14/2007	R	1.9	MFCOL	LL		
WI034.00	10/24/2007	R	1.9	MFCOL	LL	P	
WI034.00	2/6/2008	R	1.9	MFCOL	EXT	P	drizzle
WI034.00	4/8/2008	R	1.9	MFCOL	EXT		
WI034.00	6/4/2008	R	4	MFCOL	LL	P	
WI034.00	7/28/2008	R	2	MFCOL	MLP		

2008 DMR Run 5 North Falmouth to Yarmouth Sampling Stations



References for Growing Area Information

Public Health Division, Maine Department of Maine Resources

Marine Warden Activities

The Cumberland Police Department (Marine Resources) monitored the waters in Cumberland and responded to over 100 calls for service during the period from June 3, 2007 to June 30th 2008. The calls were directly related to activities relating to the clam flats and water resource issue on the coastal waters in Cumberland. The Department conducted shellfish checks, verified compliance with shellfish closures, checked licenses, posted notices, issued warnings, assisted shell fish harvesters and clam diggers, provided training, investigated complaints and assisted in the removal of a dead whale. The wardens also reported erosion and sedimentation issues to Public Services for correction where necessary.

The shores, flats and waters of Cumberland were closed on eight occasions because of pollution, due to stormwater runoff. The shores, flats and waters of Cumberland were closed by the DMR on August 31 2007 and on March 7, 2008 because of pollution and it was unlawful to dig, take or possess any clams, quahogs, oysters or mussels taken from the shores, flats and waters of Cumberland.

The Marine Resource Officers are active with the DMR and protect promote the resource and provide stewardship of the coastal waters.

BMP Name

3b. Employee Awareness Training on IDDE

FUNCTION:

Educate municipal employees so that they can recognize and report illicit discharges when they observe them.

METHODOLOGY:

Incorporate illicit discharge training into municipal employee training. Include training on:

- a) Impacts of non-stormwater discharges.*
- b) Indicators of illicit connections or illegal dumping.*
- c) Proper steps to take upon suspicion of illicit connections or illegal dumping.*

MEASURABLE GOALS:

Year 2: Develop training as part of program developed under Pollution Prevention/Good Housekeeping.

Year 3: Train 50% of appropriate municipal staff.

Year 4: Train other 50% of appropriate municipal staff.

	Year 1	x	Year 2	x	Year 3	x	Year 4	Year 5
--	---------------	----------	---------------	----------	---------------	----------	---------------	---------------

Actions Completed During Permit Year 1

Responsible Party

EPA training Adam Ogden

The MS4, through the ISWG, participated in the development and implementation of the EPA training program held on April 6, 2004. Cumberland sent Chris Logan to the training session on April 6, 2004.

Permit Year 1 consisted mostly of planning activities for education and outreach. The primary implementation activity was the Cold Climate Stormwater Conference. 1 to 5 evaluation forms were received from the 375 attendees. The average rating of the conference was 4.3 on a scale of 1 to 5, with 1

being “needs improvement” and 4 being “very good” and 5 being excellent. This indicates that the event was very effective.

Cold Climate Stormwater Conference

Cumberland, through the ISWG, was a partner in the development of the three-day “Stormwater Management for Cold Climates” conference, held in Portland, ME on November 3-5, 2003. Over 375 people attended the conference, with presenters from throughout the United States and Europe. The ISWG coordinator and Conservation District Manager both served on the conference executive committee.

Actions Completed During Permit Year 2

Responsible Party

Training Adam Ogden

The SOP Manual (see BMP 3a) will be used as the basis for training workshops to be held during Permit Year 3. These training sessions will be conducted by Aquarion and the Maine NEMO Program.

Actions Completed During Permit Year 3

Responsible Party

Training Adam Ogden

The Manual titled "Guidelines for Standard Operating Procedures for Stormwater Phase II Communities" was finalized September 2005. Trainings based on the Manual (Illicit Discharge Detection and Elimination and Pollution Prevention/Good Housekeeping) occurred during Permit Year 3. Five employees from Cumberland attended the training held June 8, 2005 and three employees attended the training held June 9, 2005. The Town of Cumberland hired a university student as an intern to perform mapping tasks during the summer of 2005. Prior to mapping, the intern attended a three-day workshop and training session. The training included a presentation on the overall impact of the NPDES Phase II program (providing information on the larger significance of the mapping project) and stormwater outfall inspection training on how to identify illicit discharges.

Actions Completed During Permit Year 4

Responsible Party

Training Adam Ogden

No training in IDDE was completed during Permit Year 4.

Actions Completed During Permit Year 5

Responsible Party – Public Services

Training

No training in IDDE was completed in Permit Year 5.

Several Public Services employees received training in Maintaining Gravel Roads, one employee attended the sweeper school, and personnel received training on Secondary Containers and Hazardous Communications Reviews.

BMP Name

3c. Mapping

FUNCTION:

Develop a map of the storm sewer system which does the following:

a) *Depicts the locations of all outfalls, catch basins, manholes, pipes, ditches and other structures in a manner which will enable municipal staff, contractors, and volunteers to quickly and easily locate these structures in the field for dry-weather discharge evaluations, catch basin cleaning, and maintenance activities.*

b) *Depicts the drainage areas for each outfall and associated drainage structures, land uses, and potential pollutant sources to facilitate the task of locating the source of suspected illicit discharges.*

METHODOLOGY:

Data collection and mapping will be done in the following format:

Option 1: Field data collection using GPS equipment and mapping done using GIS software.

Option 2: Field data collection using traditional survey and measuring equipment and mapping completed by placing field data on paper base maps by hand-drafting or CAD methods.

The following data will be collected for all pipe or conduit outfalls and locations where open ditches discharge into a surface waterbody or wetland:

a) *Location*

b) *Type, material, and size of conveyance, outfall or channelized flow (e.g. 24" concrete pipe);*

c) *The name of the immediate surface waterbody or wetland to which the stormwater runoff discharges; or if the outfall does not discharge directly to a named waterbody, the name of the nearest named waterbody to which the outfall eventually discharges.*

d) *An identification label for all outfalls.*

The following data will be collected for all catch basins, manholes, pipes, ditches and other structures.

a) *Location*

MEASURABLE GOALS:

Year 1: Initiate Mapping.

Year 2: Purchase ArcView, begin review of as-built drawings, field map outfalls and structures.

Year 3: Continue review of as-built drawings, field check structures, update systems as necessary.

Years 4 & 5: Maintain map as new systems are constructed.

x	Year 1	x	Year 2	x	Year 3	x	Year 4	x	Year 5
---	--------	---	--------	---	--------	---	--------	---	--------

Actions Completed During Permit Year 1

Responsible Party

Mapping N/A

The MS4 has not initiated mapping activities in Permit Year 1, due to the advisability of deferring mapping implementation until 1.) it has been determined if the Maine State Legislature will place an Environmental Bond on the ballot in November, 2004 with \$0.5 million for stormwater management; and 2.) the ASIST software GIS interface has been developed. Mapping activities will commence in Permit Year 2.

Actions Completed During Permit Year 2

Responsible Party

Mapping Adam Ogden

Cumberland paid for aerial flights over the Town in Spring of 2001. The Town set targets for ortho rectification in Permit Year 2. An intern was hired in early June 2005 to complete the catch basin and storm drain system mapping. The intern is reviewing existing as-built submittals and then field checking the data and entering information into ArcView 9.1 database. The Town is considering requiring geo-referenced electronic submittals of new components as they are constructed. These additions would be incorporated into the Town storm drain map as they become available.

Actions Completed During Permit Year 3

Responsible Party

Mapping Adam Ogden

The Town of Cumberland hired an intern to perform mapping of the stormwater system during Permit Year 3. The intern produced a document titled “Storm Water Mapping Project – Urban Area” in August 2005. The intern was successful in mapping 100% of the urbanized area. The entire known stormwater infrastructure within the urbanized area was inventoried and added to the Town’s GIS including condition assessment, type and size of structures, and additional attributes. The stormwater infrastructure that was inventoried included 31 outfalls, 40 drain manholes, 309 catch basins, 4 outlet control structures, 126 culverts, 280 storm drains, and 12 detention ponds. As a result of mapping, the Town has a series of bound maps showing the locations of these stormwater features within the urbanized area. The map book will be used to assist Town crews in locating and maintaining stormwater structures, as well as asset management, planning, and emergency response.

Actions Completed During Permit Year 4

Responsible Party

Mapping Adam Ogden

The Town’s GIS was updated to reflect revised drainage completed as part of the Blanchard Road reconstruction, Main Street and Tuttle Road drainage improvements.

Actions Completed During Permit Year 5

Responsible Party – Public Services

No GPS/GIS mapping update of the storm drain systems, per se, was completed during this Permit Year.

However, the Town surveyed a significant amount of road infrastructure for construction projects that will be incorporated in the GIS Data base during the next permit cycle. The 2005 Storm water infrastructure mapping project completed the Town’s requirements for the mapping and illicit discharge detection portion of NPDES Phase II permit. The mapping portion was completed three (3) years prior to the deadline established by the Town and mandated by the MDEP NPDES permit. However, future efforts to continually update the project will be taken. Features added in the course of construction operations will have attributes added to them through field verification or office as-built plans. The storm water infrastructure data collection is a work-in progress, and all steps towards keeping the GIS up to data will be taken. As new developments are built, new storm water structures become present. These structures will be captured using GPS and added to the existing project.

Stormwater hydraulic and hydrographic modeling/mapping was conducted throughout the Greely Road watershed areas which drains in to the Piscataqua River and the East Branch Piscataqua River (part of the Presumpscot watershed). This modeling has provided the basis of an action plan and capital improvements plan to upgrade problem storm drain systems, culverts and poor roadside drainage as part of the Town’s overall capitol improvement program. The modeling will allow the Town to develop a

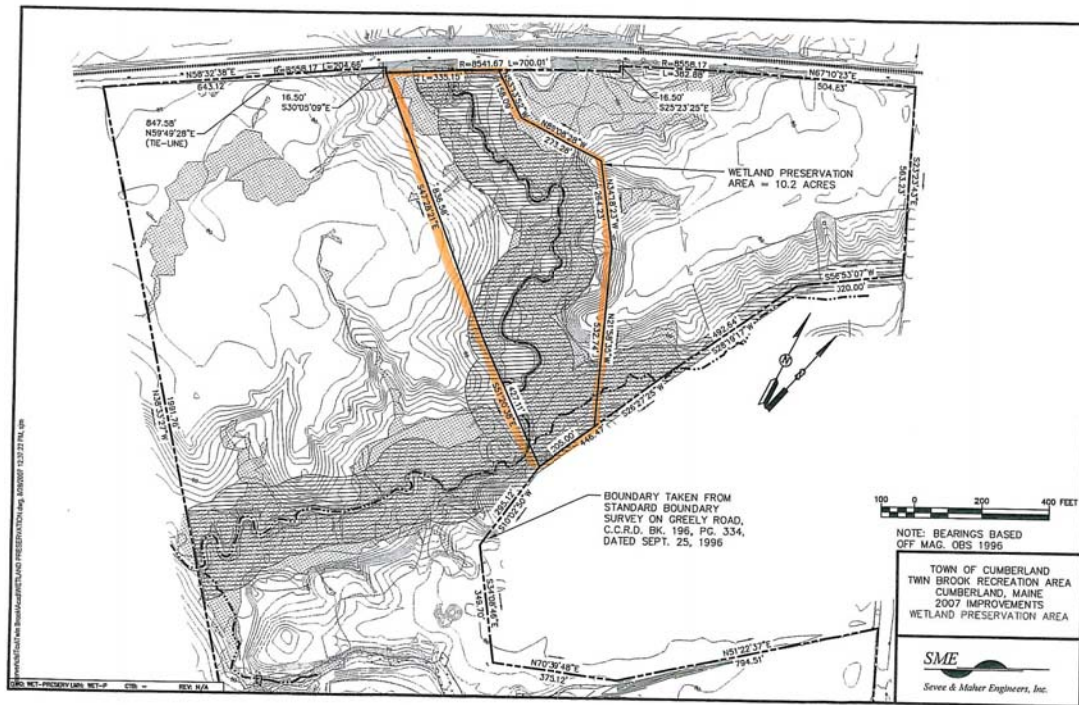
plan to reduce impacts from flooding and to mitigate soil and erosion problems associated with the stormwater flood damage to public infrastructure.

Survey, design and construction work for stormwater mitigation projects were initiated or completed for several projects (Greely Area Road, Val Halla Road, Skillins Road, Route 100, Range Road, Ledge Road, Old Town Landing, Powell Road and Route 88). The as-built information will be incorporated into the GIS mapping and stormwater mapping in the next permit cycle. (Val Halla Road, Phillips Street, Crystal Lane, Greely Road Bea Lane, Skillin Road, Twin Brook Recreation Area, and other smaller projects).

The Town constructed several mitigation projects to reduce the impacts of stormwater on receiving resources: The Town designed and constructed a stormwater outfall and slope stabilization project on the ocean at Wildwood and a stream crossing on Harris Road that incorporated fish passage. The project was funded in cooperation with FEMA and the State as part of the Town's request for mitigation funds resulting for the April 2007 "Patriot's Day" flooding. The two culverts under Harris Road (52" and 36") that drains an area in excess of 580 acres were washed away. These culverts had 34 instances of damage over the past 11 years. The Town received mitigation funds to replace the damaged road and culverts by installing a 10-foot by 6-foot by 50-foot long concrete box. This new design allowed for the incorporation of fish passage into the design. The natural stream bed flow line was reestablished. The cost of the mitigation project was \$90,000.

Resource mapping was conducted on the Twin Brook Recreation Area (248 acre facility) as part of the new building and field development of the area. The East Branch of the Piscataqua River (EBPR) flows through the center of the area, and a large tributary stream bisects the area from west to east. An easement/compensation area was identified and was set aside as part of the SLODA process (Maine Department of Environmental Protection Natural Resources Protection Act (Tier 2), Project Number L-20728-28-C-M, Dated July 13th 2007. The Town executed a Wetland Preservation Area Declaration of Covenants and Restrictions for Twin Brook Recreation Area. The deed was recorded on 12/17/2007 – in the Cumberland County Registry of Deeds, Book 25688 Page 338.

Wetland Preservation Area (10.2 Acres – Twin Brook Recreation Area)



The Town of Cumberland's mapping program inventoried storm water features and mapped the storm water infrastructure which was completed in 2005. The results of the inventory are in the table below.

Feature Type	Total
Outfalls	31
Drain Manholes	40
Catch Basins	309
Outlet Control Structures	4
Culverts	126
Storm Drains	280
Detention Ponds	12

BMP Name

3d. Ordinance Development

FUNCTION:

Provide legal authority for Illicit Discharge Detection and Elimination Program.

METHODOLOGY:

Develop an ordinance which bans non-stormwater discharges to the storm sewer system and provides appropriate and specific enforcement measures.

MEASURABLE GOALS:

Year 1: Initiate the ordinance development process.

Year 2: Complete the enactment of necessary ordinance(s).

x	Year 1	x	Year 2	Year 3	Year 4	Year 5
---	--------	---	--------	--------	--------	--------

Actions Completed During Permit Year 1

Responsible Party

Initiate Ordinance Development Adam Ogden

The MS4, through the ISWG, participated in the creation and facilitation of a statewide task force, in partnership with the Maine Municipal Association, to develop a model ordinance. The model ordinance has been completed and has been sent to all MS4's.

Task Force Members:

Roger Timmons, Dave Thomes, Suzanne Snowden, Albert Presgraves, Kathi Earley, Dan Jellis, Donna Larson, ISWG Coordinator

Non-residential assessment

The ISWG started developing a grant proposal for components of the non-residential assessment.

Actions Completed During Permit Year 2

Responsible Party

Initiate Ordinance Development Adam Ogden

The Town will begin ordinance implementation during Permit Year 3.

Actions Completed During Permit Year 3

Responsible Party

Ordinance Development Adam Ogden

The Town Sewer Use Ordinance expressly prohibits the discharge of pollutants into the public sewers including the storm drain system. The ordinance language currently reflects prohibition of pollutants into the sanitary sewers system, but can be supplemented to more appropriately address this Stormwater Phase II Ordinance requirement. The Town will review the Ordinance in Permit Year 4, and note any necessary adjustments.

Actions Completed During Permit Year 4

Responsible Party

Ordinance Development Town Clerk/Planner

Review of the Ordinance was delayed until Permit Year 5.

Actions Completed During Permit Year 5

Responsible Party

Ordinance Development Town Clerk/Planner

No Town ordinance implemented yet but the MMA draft has been circulated and will be implemented/adopted. Both Carla Nixon, Town Planner and William Longley, CEO, have attended some stormwaer meetings in regards to the pre and post construction ordinances and the model stormwater Ordinance.

The Town is reviewing the Model MMA Ordinance and will implement the ordinance in the next permit cycle.

BMP Name

3e. Prioritization

FUNCTION:

Prioritize drainage areas and supplemental Illicit Discharge Detection and Elimination practices based on:

1) Current land uses

2) Future land uses

3) Current condition of the receiving waters in order to:

1) Focus illicit discharge detection and elimination efforts where they will have the greatest effect; and 2) Utilize the most effective and economically practicable practices.

METHODOLOGY:

1. Develop preliminary map of drainage areas based on existing mapping data.

2. Assess current condition of receiving waters for each drainage area using existing data from the following sources:

2.1. DMR monitoring

2.2. MEDEP programs

2.3. Other sources, such as private, non-profit organizations

3. Characterize each watershed by current and/or future land use, as appropriate:

3.1. Residential on public sewer

3.2. Residential with septic systems

3.3. Commercial

3.4. Light industrial

3.5. Heavy industrial

3.6. Mixed residential/commercial/industrial

3.7. Age of buildings

3.8. Age of septic systems

3.9. Other

4. Prioritize drainage areas based on potential impacts from land uses and current condition of receiving waters.

5. Select supplemental detection and elimination practices for implementation, based on an assessment of their effectiveness and costs, as well as other factors, such as social and political acceptability.
6. Reassess prioritization and detection and elimination practices each year as new mapping and stormwater program data are obtained.

MEASURABLE GOALS:

Year 1: Complete the prioritization of drainage areas.

Year 2: Complete the selection of supplemental detection and elimination practices. Update prioritization of drainage areas as new mapping and program data are obtained.

Year 3: Implement selected supplemental detection and elimination practices. Update prioritization and work plan as new mapping and program data are obtained.

Year 4: Update prioritization and work plan as new mapping and program data are obtained.

Year 5: Update prioritization and work plan as new mapping and program data are obtained.

x	Year 1	x	Year 2	Year 3	Year 4	Year 5
---	--------	---	--------	--------	--------	--------

Actions Completed During Permit Year 1

Responsible Party

Prioritize Drainage Areas Adam Ogden

Due to the delay in implementing the EPA training, this task will be addressed in Permit Year 2.

Actions Completed During Permit Year 2

Responsible Party

Prioritize Drainage Areas Adam Ogden

Currently the urbanized area of Cumberland is being mapped by an intern. Prioritization of drainage areas will occur when the maps are complete and a better picture is obtained of what is occurring in the Town. The SOP Manual contains a prioritization procedure which the Town will review and may use.

Actions Completed During Permit Year 3

Responsible Party - Adam Ogden

Prioritize Drainage Areas

As a result of mapping there was minimal evidence of illicit discharges from the Town's 31 outfalls; however the Town is interested in attending a prioritization workshop that is planned for Permit Year 4. The workshop will be hosted by the ISWG and Edwards and Kelcey and will allow Stormwater Project Mangers to identify priority areas suspected of illicit discharges.

Actions Completed During Permit Year 4

Responsible Party - Adam Ogden

Prioritize Drainage Areas

No workshop was hosted by ISWG this permit year.

Actions Completed During Permit Year 5

Responsible Party - Adam Ogden

Prioritize Drainage Areas

No formal prioritization of watersheds occurred during this permit year. The Town has focused on two watersheds: the East Branch Piscataqua River Watershed which covers the majority of the Urban Area and the Coastal Watershed along Cumberland Foreside that drains to Broad Cove. The Town has focused on conducting Stream Surveys, Fish Passage and Stormwater Sampling projects in these two watershed and will identify the priority watershed as part of the next permit cycle and Stormwater Program Management Plan process. The Town has undertaken stormwater modeling of several areas in Cumberland Center to determine alternatives to mitigate the impacts of flooding in watershed areas. The information, outreach and coordination with stakeholders throughout the several watersheds (Piscataqua River and tributaries, East Branch Piscataqua River, Presumpscot tributaries and Coastal Drainages) is ongoing and will continue. The data collected and action plans/alternatives to mitigate impacts to resources are being developed as part of these projects. The projects will be incorporated into the SPMP and implemented as funds become available over the next permit cycle. There are two watersheds that have been mapped and studied during the permit cycle and will become the recommended priority watersheds for the next permit cycle. The Town intends to focus on the EBPR watershed and the Coastal Drainage watershed.

4. Construction Site Runoff Control

BMP Name

4a. Inspection

FUNCTION:

Ensure that projects are in compliance with the Maine Construction General Permit.

METHODOLOGY:

A program will be developed for Code Enforcement Officers, Building Officials, contracted parties, or others to perform inspections on a frequency sufficient to determine whether sites are in compliance with the MCGP. For sites that are not in compliance, the inspector(s) will provide site operators with notification of the need to come into compliance. Sites that are not brought into compliance with the MCGP within a reasonable period after receiving notification from the inspector(s) or after other measures taken by the MS4 will be reported to the MEDEP.

MEASURABLE GOALS:

Year 1: Develop inspection program.

Year 2: Implement inspection program for sites that have received building permits.

Year 3: Implement inspection program for non-building permit sites.

x	Year 1	x	Year 2	x	Year 3	x	Year 4	x	Year 5
---	--------	---	--------	---	--------	---	--------	---	--------

Actions Completed During Permit Year 1

Responsible Party

Implement Inspections Betty McInnes

The CCSWCD has initiated the development of a training program to be held in Permit Year 2 for municipal site inspectors.

Actions Completed During Permit Year 2

Responsible Party

Town Staff, Codes, Public Services, Planning and Third Party Construction Inspections Consultants

Third party inspections are completed at every construction site by Gorrill-Palmer or SYTDesign. Inspections are completed for erosion, proper silt fence installation and maintenance, and other erosion control devices if applicable. No enforcement actions have been required as a result of these inspections. These consultants send the reports to Adam Ogden, Bill Longley, Carla Nixon and Pam Bosarge.

Five contractors issued Notices of Intent for six sites in the Town. Five of the sites have been accepted and one was deficient. As stated above the Town does not currently complete these inspections. When Town officials are at sites, they look over the area for obvious soil and erosion control issues and refer them to the MEDEP as necessary.

Actions Completed During Permit Year 3

Responsible Party

Town Staff, Codes, Public Services, Planning and Third Party Construction Inspections Consultants

The Town of Cumberland continues to hire a third party to perform inspections at all construction sites as described in Permit Year 2. The Town primarily uses Gorrill-Palmer and SYTDesign to perform their inspections.

Five Notices of Intent for the MCGP were received by the MEDEP in Permit Year 3. Two of these projects have yet to start, one just started with no issues to date, one had was withdrawn, and one was complete. No issues were reported and MEDEP was not contacted.

Actions Completed During Permit Year 4

Responsible Party

Town Staff, Codes, Public Services, Planning and Third Party Construction Inspections Consultants

The Town of Cumberland continues to use third-party inspectors at all construction sites as described for previous years. Three Notices of Intent for the MCGP were reported by the MEDEP to be in effect in Permit Year 4. Two sites were not yet under construction as of August 2007. Construction began at the third site in July. Three other sites were under construction (likely the three NOIs from Permit Year 3 that had not begun construction). Three additional sites were also under construction. Of the seven sites under construction, two had sediment and erosion control issues identified by inspectors. The issues at one of the sites were corrected voluntarily by the contractor. The issues at the other site were not corrected until MEDEP was called for enforcement.

Actions Completed During Permit Year 5

Responsible Party

Town Staff, Codes, Public Services, Planning and Third Party Construction Inspections Consultants

The Town of Cumberland continues to use third-party inspectors at all construction sites as described for previous years. The firms used were Gorrill-Palmer Consulting Engineers, Inc. and OAK Engineers, LLC.

There were two referrals to MDEP. Two NOI for sites were filed for with the Town by developers: Castle Rock and Foreside Village. There were two sites that had sediment and erosion control issues identified by inspectors. One site was voluntarily corrected by the contractor. One site was not corrected until the MDEP was called for enforcement. There were 15- 20 sites under construction during this period. For all Town approved projects (i.e., Site Plan and Subdivision) the development has a “peer review” engineer that assists with the approval process and then completes inspections during all installations such as sewer, storm drain infrastructure, stormwater facilities (detention retention basins),

etc. Multiple inspections are completed for each new building project by the Town Code Enforcement Officer as required by Site Plan or Building Codes during these inspections a review of soil erosion and control measures is usually completed.

BMP Name

4b. Notification

FUNCTION:

Notify construction site developers and operators of the requirements for registration under the Maine Construction General Permit.

METHODOLOGY:

Construction site developers and operators will be made aware of this requirement through a notice on the building permit application or an addendum to the building permit application, such as a MEDEP fact sheet describing the requirement. Building permit applicants will be required to indicate on the building permit application whether they will be performing construction activities that will result in a land disturbance of greater than or equal to one acre.

An assessment will be done to determine methods (including ordinances) to notify parties disturbing greater than or equal to one acre who are not required to obtain building permits. The assessment will determine methods to track such project sites for inspection purposes, such as by requiring registration or a permit with the MS4, or by developing a system for MEDEP to provide MS4s with information on parties submitting NOIs under the Construction General Permit.

The assessment will also identify a measurement tool to determine the effectiveness of the notification method(s).

MEASURABLE GOALS:

Year 1: The building permit application form will be revised. An addendum will be developed, if needed. The revised form and addendum, if any, will be put into use. The assessment of methods to address non-building permit projects will be completed.

Year 2: Implement method(s) to notify non-building permit project developers.

x	Year 1	x	Year 2	Year 3	Year 4	Year 5
---	--------	---	--------	--------	--------	--------

Actions Completed During Permit Year 1

Responsible Party – Code Enforcement/Building Inspector, Planning

Provide Notice with Building Permits N/A of Construction NOI requirement The MS4 has developed and implemented a procedure for providing notice to building permit applicants of the requirement for submitting a Construction NOI to MEDEP if the applicant is disturbing one acre or greater. The procedure used is (select one of the following):

- a) Notice on building permit application form.
- b) Provision of MEDEP Construction General Permit Fact Sheet to building permit applicants.
- c) Other (describe)

Actions Completed During Permit Year 2

Responsible Party - Code Enforcement/Building Inspector, Planning

Provide Notice with Building Permits N/A of Construction NOI requirement The Town continues to notify contractors of the MCGP in the same ways as in Permit Year 1. In addition, the Planning Board checks all site plan review applications for MCGP criteria.

Actions Completed During Permit Years 3 and 4

Responsible Party - Code Enforcement/Building Inspector, Planning

Provide Notice with Building Permits N/A of Construction NOI requirement The Town continues to notify contractors by including a notice on the building permit application, distributing the MEDEP brochure titled “Comply with Maine Erosion and Sediment Control Law” to every applicant, and for contractors who are not aware of the MCGP education is provided as needed.

Actions Completed During Permit Year 5

Responsible Party - Code Enforcement/Building Inspector, Planning

Notices are provided with Building Permits. The Town includes the following language on the Building Permit Application Checklist and Permit: “Maine Construction General Permit: Effective 2-17-03 a “NOTICE OF INTENT” may be required if your construction will result in disturbance of greater than or equal to one acre. (To be filed with DEP).

The number of Construction NOI’s disturbing one acre or greater received by the Town was two (Castle Rock and Foreside Village).

The Number of the MEDEP brochure titled “Comply with Maine Erosion and Sediment Control Law” given to applicants, and for contractors who are not aware of the MCGP was 10 +.

BMP Name

4c. Regulation

FUNCTION:

Develop, implement, and enforce a program, or modify an existing program, to reduce pollutants in any stormwater runoff to the MS4 from construction activities that result in a land disturbance of greater than or equal to one acre.

METHODOLOGY:

The MS4 operator will rely on the MEDEP’s administration and enforcement of the Maine Construction General Permit (MCGP).

MEASURABLE GOALS:

x	Year 1	x	Year 2	x	Year 3	x	Year 4	x	Year 5
---	--------	---	--------	---	--------	---	--------	---	--------

Actions Completed During Permit Year 1

Responsible Party

Rely on the MCGP Adam Ogden

The Town relies on the MCGP to fulfill this BMP as described in BMPs 1a and 1b.

Actions Completed During Permit Year 2

Responsible Party

Rely on the MCGP Adam Ogden

The Town relies on the MCGP to fulfill this BMP as described in BMPs 1a and 1b.

Actions Completed During Permit Year 3

Responsible Party

Rely on the MCGP Adam Ogden

The Town relies on the MCGP to fulfill this BMP as described in BMPs 1a. and 1b. In addition, the Conservation Commission is proposing an ordinance that would include requirements for soil and erosion control in areas outside the Shoreland Zone.

Actions Completed During Permit Year 4

Responsible Party

Rely on the MCGP Adam Ogden

The Town implemented new requirements for sediment and erosion control. The Town is intending to implement a Contractor Licensing Program to ensure proper installation of sediment and erosion control devices on Town construction sites.

Actions Completed During Permit Year 5

Responsible Party – Codes, Public Services, Planning

The Town relies of the MCGP to fulfill this BMP

There were no known MCGP issues identified by the Code Officer.

Requirements for soil and erosion control in areas outside the Shoreland Zone or Urban Area are in accordance with site plan and subdivision approvals, local, state and or federal rules.

There were no new requirements for sediment and erosion control the Town implemented (i.e. Contractor Licensing Program) during this permit year.

The Town executed a Wetland Preservation Area Declaration of Covenants and Restrictions for Twin Brook Recreation Area. Project Number 1-20728-28-C-M, Dated July 13, 2007 relating to a 10.2 acre parcel of land south of Greely Road and East of the Maine Central Railroad.

5. Post-Construction Runoff Control

BMP Name

5a. Regulation and Enforcement

FUNCTION:

Develop a regulatory mechanism to ensure that new or redevelopment projects include appropriate structural and/or non-structural BMP's such as wet ponds, infiltration basins, and vegetated swales, or discharge into adequate buffer areas.

METHODOLOGY:

The municipality will develop (or revise), enact, administer and enforce an ordinance or other regulatory mechanism to address post-construction stormwater runoff from new development and redevelopment projects that disturb greater than or equal to one acre, including projects less than one acre that are part of a larger common plan of development or sale, that discharge into the MS4.

The ordinance or other regulatory mechanism will include the following:

- 1. Standards for water quality to be met by new development and redevelopment projects.*
- 2. Requirements for ensuring adequate long-term operation and maintenance of stormwater controls.*

3. Enforcement procedures.

4. Provisions allowing the use of a combination of structural and/or non-structural best management practices (BMPs) to meet the ordinance standards. In order to ensure effective and efficient implementation of the ordinance or other regulatory mechanism, its development is scheduled to occur subsequent to the planned revisions to the MEDEP Chapter 500 stormwater regulations, which are expected to be revised during Years 2 and 3.

The municipality will review any current municipal ordinance addressing post-construction stormwater management to determine whether the ordinance is in compliance with the General Permit. If the municipal ordinance is not in compliance with the General Permit, then a list of variances and/or deficiencies will be developed. Subsequent to the enactment of revisions to Chapter 500, the municipality will develop a new or revised ordinance or other regulatory mechanism, if necessary. The new or revised ordinance or other regulatory mechanism will be submitted to the municipal governing body for enactment and subsequent administration and enforcement.

MEASURABLE GOALS:

Year 1: Complete the review of current municipal ordinance.

Years 2 and 3: Complete the development of a new or revised ordinance or other regulatory mechanism, if necessary, provided that revisions to Chapter 500 have been completed.

Years 3 and 4: Submit the new or revised ordinance or other regulatory mechanism to the municipal governing body for enactment.

Years 4 and 5: Implement the administration and enforcement of the new or revised ordinance or other regulatory mechanism.

x	Year 1	x	Year 2	x	Year 3	x	Year 4	x	Year 5
----------	---------------	----------	---------------	----------	---------------	----------	---------------	----------	---------------

Actions Completed During Permit Year 1

Responsible Party

Regulation and Enforcement

The MS4, through the ISWG, participates in the MEDEP Stakeholder group for the Chapter 500 Stormwater Management Rule revisions. Participation consisted of sending representatives to stakeholder meetings and providing input to MEDEP representatives at ISWG meetings. Through the ISWG, the MS4 is tracking changes to the Rules. Updates are provided to the ISWG at monthly meetings. The draft Chapter 500 regulations have been changed again (since the January Chapter 500 Stakeholder meeting), and do incorporate a component of post construction runoff control requirements for new development and redevelopment. The draft regulations will be posted for public comment in August 2004.

To be consistent with the post construction requirements for the state regulations, the MS4 will postpone development of Post Construction requirements until the Chapter 500 regulations have been finalized.

Low-Impact Development Methods

The CBEP and the Maine Coastal Program (State Planning Office) worked with the MS4's of the ISWG on the exploration of opportunities to demonstrate the use of low impact development techniques on municipal building projects.

Participating Persons:

Kathi Earley, Todd Janeski, Karen Young

Actions Completed During Permit Year 2

Responsible Party

Chapter 500 Regulations Adam Ogden

The Chapter 500 Regulations continued to be tracked during Permit Year 2. The implementation of these rules is anticipated for October 2005. The Conservation Commission created a draft ordinance on how to improve soil erosion and sediment control in Cumberland. This is an attempt to reach building permit applicants that do not currently submit a soil erosion and sediment control plan and follow best management practices. The ordinance would apply to 1) the construction of the single family home, 2) the expansion of more than 200 square feet of building footprint on an existing home, and 3) all activities which involve filling, grading, excavation or other similar activities which result in unstable soil conditions.

Actions Completed During Permit Year 3

Responsible Party

Chapter 500 Regulations Adam Ogden

The Town of Cumberland, through the ISWG, provided testimony to the Maine legislature supporting particular elements of the revisions of Chapter 500 including the revision of the threshold for Chapter 500 regulation to 1-acre of disturbed soil, bringing it into alignment with the Stormwater Phase II required threshold. The revised Chapter 500 Regulations became effective on November 16, 2005; however there are two issues that need to be resolved. (1) Volume III BMPs Technical Design Manual, January 2006, conflicts with the Chapter 500 Appendices and (2) the MEDEP intended that the urban impaired stream standard (of Chapter 500) be triggered for redevelopment only if the project would adversely impact water quality; however the language in the urban impaired stream standard is more stringent than intended. It is anticipated that the Chapter 500 stakeholder group will reconvene to work on these issues in during Permit Year 4 with formal rulemaking to follow.

The Town of Cumberland participated in activities to develop an approach for long-term maintenance of stormwater BMPs by attending discussion sessions at ISWG meetings, the development of a subcommittee and their participation in the March 15, 2006 statewide maintenance working group meeting, the development of a draft approach by the ISWG subcommittee on May 11, 2006, and the adoption of a proposed approach by the ISWG on May 18, 2006.

Actions Completed During Permit Year 4

Responsible Party

Chapter 500 Regulations Town Staff, Planning, Codes

The Maine Municipal Association (MMA) has hired Mr. Jim Katsiaficas (Perkins Thompson Associates) to draft a sample Post-Construction Ordinance for the Maine regulated MS4s. The Town's attorney reviewed the sample ordinance and had no significant comments. When the sample ordinance has been finalized, the Town will begin the process of adoption.

Actions Completed During Permit Year 5

Chapter 500 Regulations Town Staff, Planning, Codes

No new regulations or enforcement activities. The Town has started to review and staff Post-Construction Ordinance for the Maine regulated MS4s. The Town's attorney reviewed the sample ordinance and had no significant comments. When the MMA ordinance has been finalized, the Town will begin the process of adoption.

6. Pollution Prevention/Good Housekeeping

BMP Name

6a. Catch Basin Cleaning

FUNCTION:

Remove sand and sediment and associated pollutants from catch basins and other stormwater structures to reduce their discharge to waters of the state.

METHODOLOGY:

Develop and implement a program to evaluate and, if necessary, clean catch basins and other stormwater structures that accumulate sediment at least once a year and properly dispose of the removed sediments.

MEASURABLE GOALS:

Year 1: Develop and implement program. Clean catch basins and other structures as needed in accordance with the plan. Clean other stormwater structures as needed.

Years 2 - 5: Continue program.

x	Year 1	x	Year 2	x	Year 3	x	Year 4	x	Year 5
---	--------	---	--------	---	--------	---	--------	---	--------

Actions Completed During Permit Year 1

Responsible Party

Catch Basin Cleaning

The MS4 has developed and implemented a program to evaluate and, if necessary, clean catch basins and other stormwater structures that accumulate sediment at least once a year depending on needs.

Actions Completed During Permit Year 2

Responsible Party

Catch Basin Cleaning Adam Ogden

The Town maintains approximately 300 catch basins. One catch basin was cleaned this year by the Portland Water District. Less than one cubic yard of material was removed and stockpiled to be used as fill or for other beneficial uses. Usually three of the catch basins need to be cleaned on a yearly basis. The Town cleans the remaining catch basins usually once every two years if money is available for this task.

Actions Completed During Permit Year 3

Responsible Party

Catch Basin Cleaning Adam Ogden

The Town of Cumberland does not own catch basin cleaning equipment, and therefore has an equipment sharing agreement with the Town of Yarmouth PWD to use their catch cleaning truck and an agreement to contract with the Portland Water District to clean the catch basins. Typically the Town checks all catch basins and marks their location with paint. During Permit Year 3 all catch basins were checked during mapping.

Actions Completed During Permit Year 4

Responsible Party – Public Works

Catch Basin Cleaning

The Town cleaned 238 catch basins during Permit Year 4. Residues collected totaled 24.25 cubic yards from Town streets, and 5 cubic yards from school areas.

Actions Completed During Permit Year 5

Responsible Party – Public Services

Catch Basin Cleaning

The Town cleaned 269 catch basins during Permit Year 5 (Cumberland Foreside - 133, Cumberland Center - 83, MSAD 51 - 53). An additional 31 catch basins were cleaned this permit year. Residuals collected totaled 18 cubic yards. None of the 81 catch basins on State roads were cleaned by the Town. Catch basins added by new roads or construction will be added to the maintenance schedule next year.

BMP Name

6b. Maintenance of the MS4 Infrastructure

FUNCTION:

Ensure that the MS4 infrastructure functions in a sound manner in order to reduce the discharge of pollutants to waters of the state.

METHODOLOGY:

Develop and implement a program to evaluate and, if necessary, prioritize for repairing, retrofitting or upgrading the conveyances, structures and outfalls of the MS4. The program will include field evaluation procedures, an identification of who will perform the field evaluations, and a methodology for prioritizing repairs, retrofits or upgrades.

MEASURABLE GOALS:

Year 1: Develop the evaluation program.

Years 2 - 5: Implement program in areas for which mapping has been completed.

x	Year 1	x	Year 2	x	Year 3	x	Year 4	x	Year 5
---	--------	---	--------	---	--------	---	--------	---	--------

Actions Completed During Permit Year 1

Responsible Party – Adam Ogden, ISWG

Maintenance of the MS4 Infrastructure

The MS4, through the ISWG, is developing a grant proposal to develop Stormwater Standard Operating Procedures (SOP's) for municipal operations, including maintenance of the MS4 infrastructure. These SOP's will be made available to all members of the ISWG as well as any other MS4's in the state.

Actions Completed During Permit Year 2

Responsible Party - Adam Ogden

Maintenance of the MS4 Infrastructure

Catch basin cleaning is a major component of maintaining the storm drain system (See BMP 6a). Repairs to catch basins are made as necessary when identified during cleaning.

1. Road Reconstruction Projects: Storm drain systems are repaired as necessary during road reconstruction as identified during planning.

2. Work Order System: The Public Works Department uses a Work Order Database System to document O & M issues that are identified during daily work such as road construction, or that are a result of complaints by the public.

Actions Completed During Permit Year 3

Responsible Party – Adam Ogden

Maintenance of the MS4 Infrastructure

The mapping of the stormwater infrastructure (BMP 3c.) provided condition information that supplements the Town's Capital Improvement Plan (CIP) and Governmental Accounting Standards Board (GASB) 34, and provides a basis for asset management.

As part of the Town's five-year CIP, the Town prioritizes drainage projects based on a number of criteria including priority classification of the project as either mandatory, maintenance, improves efficiency, or new service.

During Permit Year 3, the following culvert lining was completed:

494 Range Road – 50 feet of 42-inch culvert liner pipe

97 Range Road – 76 feet of 36-inch culvert liner pipe

484 Range Road – 50 feet of 54-inch culvert liner pipe

68 Mill Road – 50 feet of 26-inch culvert liner pipe

Mill Road – 50 feet of 26-inch culvert liner pipe

Greely Road (at Val Halla Road) – 60 feet of 60-inch culvert liner

Middle Road (at Greely Road) – 50 feet of 30-inch culvert liner pipe

248 Middle Road – 50 feet of 40-inch culvert liner pipe

Middle Road – 103 feet of 48-inch culvert liner pipe

Middle Road – 90 feet, 40 feet, 45 feet, 50 feet - small sizes from 18 to 24 inch

Actions Completed During Permit Year 4

Responsible Party - Adam Ogden

Maintenance of the MS4 Infrastructure

In addition to catch basin cleaning and street sweeping, the Town completed culvert, ditching, and/or drainage projects in the following areas:

Bruce Hill Road Extension – ditching and culverts

Crystal Lane – culvert replacement

Forest Lake Road – ditching and culvert

Brookside Drive – underdrain installation

Town Office – reconstructed underdrain and stabilized site dumpster

Orchard Road – culvert replacement

Main Street and Tuttle Road – design and build

Skillin Road – Water line work

Blanchard Road – drainage improvements

Blackstrap Road – general improvements

Greely Road – ditching

Oak Ridge Road – ditching and culvert

Actions Completed During Permit Year 5

Responsible Party – Public Services, Adam Ogden

Maintenance of the MS4 Infrastructure

A residential building sewer was found to drain directly to a wetland. The cross connection that was discovered was removed. The owner connected the building drain to the sewer system on Tuttle Road.

The Town completed over \$460,000 of capital improvement projects (FEMA-1693-DR-ME) to repair and mitigate damage caused by the severe flooding storms of April 15-23 2007. Most notable was the installation of a concrete box culvert on Harris Road allowing for fish passage and the reconstruction of the storm drain outfall at Wildwood on Cumberland Foreside. Both of these projects will mitigate erosion and sedimentation problems to resources associated with future storm events. The Town repaired damage caused to its infrastructure and improved/stabilized sites to prevent future damage at various sites throughout the Town.

Town Projects included 30 repairs to drainage systems. The Public Services Department maintains a log of all calls (over 400) and tracks the description of the problem, date of call and the date the problem was corrected. The Town hires a majority of major repair and maintenance work to outside contractors.

The Town completed Road Stream Crossing projects with funding and in cooperation with the Cumberland County Soil and Water Conservation District, Presumpscot River Initiative Grant to eliminate sediment deposition, erosion, and other problems at the following locations:

Winn Road/Mill Brook, Range Road/Mill Brook, Tuttle Road/East Branch Piscataqua River Tributary, Harris Road/East Branch Piscataqua River tributary, Greely Road/ East Branch Piscataqua River Tributary, Blanchard Road/ East Branch Piscataqua River tributary, Mill Road/ Piscataqua River tributary, Skillin Road/Piscataqua River, Orchard Road/Piscataqua River tributary.

BMP Name

6c. Street Sweeping

FUNCTION:

Remove sand and sediment and associated pollutants from publicly owned roads and parking lots to reduce their discharge into the storm sewer system.

METHODOLOGY:

Develop and implement a program to sweep all publicly accepted paved streets and paved parking lots at least once a year as soon as possible after snowmelt.

MEASURABLE GOALS:

Year 1: Implement program on all publicly accepted paved streets and paved parking lots within the urbanized area.

Years 2 - 5: Continue program.

x	Year 1	x	Year 2	x	Year 3	x	Year 4	x	Year 5
---	--------	---	--------	---	--------	---	--------	---	--------

Actions Completed During Permit Year 1

Responsible Party

Street-sweeping Adam Ogden

The MS4 has developed and implemented a program to sweep all publicly accepted paved streets and paved parking lots at least once a year as soon as possible after snowmelt.

Street-sweeping activities took place in the following areas within the following periods:

Town wide April to May during Permit Year 1.

Actions Completed During Permit Year 2

Responsible Party

Street-sweeping Adam Ogden

The MS4 has developed and implemented a program to sweep all publicly accepted paved streets and paved parking lots at least once a year as soon as possible after snowmelt. Street-sweeping activities took place in the following areas within the following periods:

Town wide April to May during Permit Year 2. Street sweeping residual has decreased since the Town decided to use less sand. Approximately 400 yards of sand are collected and used as fill for road construction or other beneficial uses.

Actions Completed During Permit Year 3

Responsible Party

Street-sweeping Adam Ogden

The Town of Cumberland built a salt shed during Permit Year 3 which helped reduce the amount of salt runoff. For winter of 2005-2006, the Town used 378 yards of sand, 464 yards of salt, and 166.5 yards of sand/salt mix on public ways; 39.5 yards of sand on school walkways, 39 yards of salt on school entrances, and 2.5 yards of sand/salt on school parking lots; and 1 yard of sand and 8 yards of salt on Town Agency properties. A total of 418.5 yards of sand, 511 yards of salt, and 169 yards of sand/salt were used in Cumberland during Permit Year 3. As a result of street sweeping, approximately 250 yards of sand were collected and used as fill for road construction or other beneficial uses during Permit Year 3.

Actions Completed During Permit Year 4

Responsible Party- Adam Ogden

Street-sweeping

For 2006-2007 winter, the Town used 239 cubic yards of sand, 572 cubic yards of salt, and 432 cubic yards of sand/salt mix on public ways. As a result of the Street Sweeping Program, 184 cubic yards of sand were recovered and used as fill for road construction and other beneficial use.

Actions Completed During Permit Year 5

Street Sweeping

Public Services swept all roads within the Town. Public Services swept all municipal parking lots/paved area and the MSAD51 parking/paved areas. Sweeping operations recovered 952 cubic yards of sand from road and parking/paved areas. The Town used 366 cubic yards of straight sand, 1,537 cubic yards of sand/salt mix. The total sand used was 1,903 cubic yards of sand; approximately one half of the cubic yards spread during winter operations appear to have been recovered by sweeping operations (952 cubic yards out of 1903 cubic yards spread). The Town used 2,193 tons of road salt (approximately 2,200 cubic yards based on 0.972 US tons/cubic yard).

BMP Name

6d. Training - IDDE

FUNCTION:

Ensure that municipal staff have the necessary skills and knowledge to prevent and reduce stormwater pollution from municipal activities.

METHODOLOGY:

Develop an employee training program presenting methods to prevent and reduce stormwater pollution from activities such as park and open space maintenance, fleet and building maintenance, new construction and land disturbances, and stormwater system maintenance. The training program will use materials that are available from the EPA, the State or other organizations, or develop new materials, as necessary. Topics to be covered by the training program may include, but not be limited to:

- a) Maintenance activities, maintenance schedules, and long-term inspection procedures for structural and non-structural stormwater controls to reduce pollutants discharged from the separate storm sewers.*
- b) Controls for reducing or eliminating the discharge of pollutants into the separate storm sewers from streets, roads, highways, municipal parking lots, maintenance and storage yards, fleet or maintenance shops with outdoor storage areas, salt/sand storage locations, snow disposal areas, and waste transfer stations.*
- c) Procedures for disposing of waste removed from the separate storm sewers and areas listed above in accordance with all regulatory requirements (such as dredge spoil, accumulated sediments, floatables, and other debris). The training program may be done by the municipality or by a partner entity.*

MEASURABLE GOALS:

Year 1: Identify who will conduct the training program.

Year 2: Complete the development of the training program.

Year 3: Train 50% of appropriate municipal staff.

Year 4: Train the other 50% of appropriate municipal staff. Identify training entity for specialized training and develop specialized training program.

Year 5: Conduct specialized training of appropriate municipal staff.

x	Year 1	x	Year 2	x	Year 3	x	Year 4	x	Year 5
---	--------	---	--------	---	--------	---	--------	---	--------

Actions Completed During Permit Year 1

Responsible Party

Training Adam Ogden

The MS4, through the ISWG, has initiated contact with potential training partners, such as the Code Enforcement Training Program at SPO and the Local Roads Center at DOT.

Actions Completed During Permit Year 2

Responsible Party - Aquarion

IDDE Training

Pollution Prevention/Good Housekeeping training will be conducted during Permit Year 3 using the SOP Manual as a basis in conjunction with the IDDE Training (See BMP 3b).

Actions Completed During Permit Year 3

Responsible Party - Adam Ogden

Permit Year 3 Activities

Pollution Prevention/Good Housekeeping training was conducted in conjunction with the Illicit Discharge Detection and Elimination using the SOP Manual as a basis as described in BMP 3b.

Additional training included:

1/20/2006: Public Works Director attended a 6-hour training titled “Training on New Stormwater BMPs Design and Effectiveness”.

3/8/2006: Public Works Director attended a 6.5-hour training titled “Site Evaluation Refresher Course”.

3-21-2006: Public Works Director attended a 6.5-hour training titled “Subsurface Wastewater System Inspection Course”.

4/13/2006: Code Enforcement Officer attended a 7-hour training titled “Controlling Construction Site Runoff”.

Actions Completed During Permit Year 4

Responsible Party - Adam Ogden

Permit Year 4 Activities

1/22/2007: Town Planner attended a 2-hour training on the new Chapter 500 Regulations provided by Maine NEMO.

5/16/2007: Public Works Director attended Scarborough training on Stormwater Pollution Prevention Plans.

Actions Completed During Permit Year 5

Responsible Party – Town Staff

The following training was completed by the Code Enforcement Officer: New Local Plumbing Inspector Course, New Products Workshop, Controlling Construction Site Runoff, Wetland Identification Field Workshop, FEMA NIMS Training, Building Standards – Shoreland Zoning – Land Use, Municipal Code Enforcement Certification, natural Resources Identification and Regulation Workshop – Part 2, Shoreline Survey Basics Course.

The Director of Public Works completed the following training:

- 2007-2008 - Maine Road-Stream Survey (Manual Implementation and Survey in Cumberland with Alex Abbott, US IFW to build an inventory of stream barriers and to use that data to rank and prioritize barrier removals) Adam Ogden
- November 2007 - Stream Value and Assessment – Adam Ogden
- November 2007 - Stream Protection Strategies and Restoration – Adam Ogden
- November 2007 - Stream Fisheries and Water Quality Issues – Fish Passage in Culverts – Adam Ogden
- November 27 2007 - Maine Stream Conference – Adam Ogden
- 2007 -2008 - Assisted in field testing/developing the final survey protocols for the Maine Stream Barrier Survey and Assessments and facilitating meetings and continuing to advocate for greater

statewide commitment to barrier inventory and removal work by assisting Alex Abbott USIFW, Adam Ogden

- January 2008 - Maine Barrier Outreach Meetings with US Fish and Wildlife Service, Gulf of Maine Coastal Program, to establish general discussion and outreach strategies and determine target audiences for outreach Adam Ogden

The following are Certified Shellfish Wardens as required by the State of Maine:

- Chief Joseph Charron, Lt. Milton Calder, Sgt Thomas Burgess, Officer Charles Burnie, Reserve Officer Guy Watson.

The following Shellfish Wardens completed Shoreline Survey Basics Course, presented by the Maine DMR and US FDA in April 2008: Lt. Milton Calder and Officer Guy Watson

The Town has one Class 3B Commercial Master Applicator License (Turf) from the Board of Pesticide Control (Toby S. Young, Golf Course Superintendent).

BMP Name

6e. Watershed Management Coordination

FUNCTION:

Ensure that Phase II activities are consistent with other MS4's efforts within the watershed.

METHODOLOGY:

Participate in the Casco Bay Interlocal Stormwater Working Group and communicate with other MS4's.

MEASURABLE GOALS:

Years 1-5: Maintain active involvement.

x	Year 1	x	Year 2	x	Year 3	x	Year 4	x	Year 5
---	--------	---	--------	---	--------	---	--------	---	--------

Actions Completed During Permit Year 1

Responsible Party - Adam Ogden

Watershed Management Coordination

The MS4 participated in the Casco Bay Interlocal Stormwater Working Group and communicated with other MS4's. The ISWG met monthly throughout Permit Year 1 and several subcommittees met periodically between monthly meetings.

Actions Completed During Permit Year 2

Responsible Party - Adam Ogden

Watershed Management Coordination Adam Ogden

The Town of Cumberland participated in the Casco Bay Interlocal Stormwater Working Group and communicated with other MS4's. The ISWG met monthly throughout Permit Year 2.

Actions Completed During Permit Year 3

Responsible Party – Adam Ogden

Watershed Management Coordination

The Town of Cumberland participated in the Interlocal Stormwater Working Group and communicated with other MS4s. The ISWG met seven times during Permit Year 3; the Town of Cumberland attended six of these meetings.

Actions Completed During Permit Year 3

Responsible Party – Adam Ogden

Watershed Management Coordination

The Town of Cumberland participated in the Interlocal Stormwater Working Group (ISWG) and communicated with other MS4s. The ISWG met six times during Permit Year 4; the Town of Cumberland attended all of these meetings.

Actions Completed During Permit Year 5

Responsible Party – Adam Ogden

Watershed Management Coordination

The Town coordinates, shares information and resources and attends training with various local, State and Federal agencies to ensure that their efforts within the watershed are consistent by partnering with:

Watershed management coordination includes working with the following groups on a regular basis: ISWG, Friends of Casco Bay, Maine Department of Marine Resources, EBPR (Presumpscot River Watch), Gulf of Maine Program, Cumberland County Conservation Commission (CSWCD), Casco Bay Estuary Partnership, Maine Audubon, US Natural Resources Conservation Service, Maine Department of Agriculture, Portland Water District and other stakeholders

The Town participated in the Interlocal Stormwater Working Group (ISWG) represented by Adam Ogden, Director of Public Works (5 regular meetings) and Carla Nixon, Town Planner (1 regular meeting).

Carla Nixon, Town Planner attended a Stormwater Financing Workshop on June 12th 2008.

The Town has numerous Town Committees that meet periodically regarding watershed issues: Shellfish Conservation Committee, Coastal Waters Commission, Forest Lake Association, COOL Cities Committee, Lands and Conservation Commission, Comprehensive Plan Committee, Lands and Conservation Committee, Planning Board, and other stakeholders.

BMP Name

6f. Household Hazardous Waste Disposal

FUNCTION:

Provide a reasonable way for residents to properly dispose of hazardous materials in order to reduce the incentive to dump hazardous materials into the storm sewer system (or the sanitary sewer system).

METHODOLOGY:

Follow accepted industry and regulatory standards.

MEASURABLE GOALS:

Years 1 - 5: Continue with household hazardous waste collection.

x	Year 1	x	Year 2	x	Year 3	x	Year 4	x	Year 5
---	--------	---	--------	---	--------	---	--------	---	--------

Actions Completed During Permit Year 1

Responsible Party - Adam Ogden

Household Hazardous Waste Disposal

Actions Completed During Permit Year 2

Responsible Party - Adam Ogden

Household Hazardous Waste Disposal

The Towns of Cumberland, Falmouth, Freeport, and Yarmouth jointly held a household hazardous waste (HHW) disposal day in Yarmouth on September 11, 2004. Fifty-two vehicles representing seventy-seven households participated in the disposal day for the Town of Cumberland at a cost of \$3,560. Some of the materials collected consisted of asbestos containing material, aerosols, paint, nickel/cadmium batteries, solvents, pesticides, and mercury. The event was advertised on the local access television station.

The HHW disposal day for Permit Year 3 is scheduled for September 10, 2005. It should be noted that the Town of Cumberland participated in the household hazardous waste collection day during Permit Year 1, however it was not included as part of the Annual Report for Permit Year 1, nor was it included as a BMP in their Stormwater Management Plan.

Actions Completed During Permit Year 3

The Towns of Cumberland, Falmouth, Freeport, and Yarmouth held a regional Household Hazardous Waste (HHW) Collection Day in Yarmouth on September 10, 2005 from 9:00 a.m. to 1:00 p.m. For the Town of Cumberland, 103 vehicles representing 171 households (1 household \approx 10 gallons or 15 pounds of material) participated in the collection day. The Town of Cumberland spent a total of \$7,801 for the collection day. Another collection day was held July 16, 2005 for Chebeague Island. Information regarding the special collection of household hazardous waste was provided on the Town of Cumberland's website. The Town also produced a flyer describing what is and is not accepted and safety tips. The collection dates were also published on Channel 2. The collection was managed by Clean Harbors and accepted items such as oil-based paints, thinners, solvents, strippers; stains, varnishes and wood preservatives; adhesive glues and resins; waste gasoline, kerosene, motor oil, antifreeze, engine degreasers, brake and transmission fluids; poisons, insecticides, weed killers and herbicides; household cleaning products and metal polishes; swimming pool chemicals; fluorescent light bulbs; household batteries; hobby and photo supplies, and chemistry sets.

Actions Completed During Permit Year 4

Responsible Party- Adam Ogden

HHW Disposal Day and Universal Waste Collection Day

The Towns of Cumberland, Falmouth, Freeport, Pownal, and Yarmouth held a regional Household Hazardous Waste (HHW) Collection Day in Yarmouth on September 9, 2006 from 9:00 a.m. to 1:00 p.m. For the Town of Cumberland, 61 vehicles representing 112 households (1 household \approx 10 gallons or 15 pounds of material) participated in the collection day. The Town of Cumberland spent a total of \$5,330 for the collection day. Another collection day was held August 4, 2006 for Chebeague Island. Information regarding the special collection of household hazardous waste was provided on the Town of Cumberland's website. The Town also produced a flyer describing what is and is not accepted and safety tips. The collection dates were also published on Channel 2. The collections were managed by Clean Harbors and accepted items such as oil-based paints, thinners, solvents, strippers; stains, varnishes and wood preservatives; adhesive glues and resins; waste gasoline, kerosene, motor oil, antifreeze, engine degreasers, brake and transmission fluids; poisons, insecticides, weed killers and herbicides; household cleaning products and metal polishes; swimming pool chemicals; fluorescent light bulbs; household batteries; hobby and photo supplies, and chemistry sets. The Town also held Universal Waste Collection Days during Permit Year 4: On September 16, 2006 on the mainland; and on Chebeague Island on June 2,

2007. The Town collected televisions, computer monitors, fluorescent bulbs, and batteries. The Town spent \$1,690 on the September collection and \$1,602 on the June collection. The Town also contracts for regular disposal of their own universal wastes, has implemented single-source recycling to reduce waste generation and promote recycling; held bulky waste pick-up weeks on the mainland and the Island to minimize illegal dumping of bulky waste, and sold compost bins to promote composting.

Actions Completed During Permit Year 5

Responsible Party – Public Works, Adam Ogden

HHW Disposal Day and Universal Waste Collection

The Towns of Cumberland, Falmouth, Freeport, Pownal, and Yarmouth held a regional Household Hazardous Waste (HHW) Collection Day in Yarmouth on September 8, 2007 from 9:00 a.m. to 1:00 p.m. For the Town of Cumberland, 157 vehicles representing 269 households (1 household \approx 10 gallons or 15 pounds of material) participated in the collection day. The Town of Cumberland spent a total of \$13,192.78 for the collection day.

350 information packets were given out to participants at the HHW and Universal Waste collection days.

The regional HHW collection day totals for the five Towns was 400 cars \approx 655 households. The total number of cars was higher than in the past and the amount of material in each vehicle was higher as well.

The Town also produced a flyer describing what is and is not accepted and safety tips. The collection dates were also published on Channel 2. The collections were managed by Clean Harbors and accepted items such as oil-based paints, thinners, solvents, strippers; stains, varnishes and wood preservatives; adhesive glues and resins; waste gasoline, kerosene, motor oil, antifreeze, engine degreasers, brake and transmission fluids; poisons, insecticides, weed killers and herbicides; household cleaning products and metal polishes; swimming pool chemicals; fluorescent light bulbs; household batteries; hobby and photo supplies, and chemistry sets.

The Town of Cumberland held a Universal Waste Collection Day on October 6th 2007. This collection generated the following Universal Wastes for Recycling by RMG Enterprise, Inc.:

Quantity	Description
6116	Mixed Electronics
20	Lamps – 3 foot
229	Lamps – 4 foot
15	Lamps – 6 foot
45	Lamps – 8 Foot
2260	Batteries – Lead Acid
22	Mercury Devices
123	Lamps – Compact
94	Batteries – NiCd/NiMH

The Town's municipal operations generated the following Universal Wastes which were recycled thru Environ Services, Inc.:

Quantity	Description
18	Computer Monitors
11	CPU and Laptops
4	Computer Peripherals
11	Desktop Printing and Imaging Equipment
10	Small U-Lamps
9	Flood Lamps
5	Straight Tubes
103	Straight Fluorescent Tubes

The cost of the Universal Waste collection activities was \$1423.32 not including advertising and labor costs.

The Town held a Fall and Spring Bulky Waste Pick-Up during the following weeks: October 15th thru Oct 19 2007 and May 12th thru May 16th 2008.

Compost Bins

The Town sold 50 compost bins during this permit year.