



## SEPTEMBER 8, 2016 MINUTES

Rockport Public Library

In attendance: Kim, Bob, Ted, Lora, Fred, Jamie, Brendan

This was a special focus meeting with Gartley & Dorsky

A. Draft report was provided in connection with the ongoing water quality feasibility study

Town of Rockport, Goodies Beach Stormwater treatment feasibility study  
(copy of draft to be submitted with minutes)

1. Water Quality Analysis (see page 7 below)

Town of Rockport  
Goodies Beach - Stormwater Treatment Feasibility  
Project # 16-083

**TOWN OF ROCKPORT  
GOODIES BEACH - STORMWATER TREATMENT FEASIBILITY  
WATER QUALITY ANALYSIS**

From all prior available data with same day observations (or samples), Enterococci observations at Goodies Beach were evaluated compared to those observed at the outlet pipe. Figure 4 contains all observations (to date) and depicts a lack of correlation between the levels of Enterococci at Goodies Beach and the adjacent stormwater outlet. Without a relationship between the outlet pipe concentrations and that of the beach, treatment is not a viable option. Reviewing the data in Table 1, two observations were removed (8/28/2012 & 6/11/2013) to identify a correlation and subsequent treatment objective. Figure 5 depicts a possible correlation (Equation 1) between the Goodies Beach and adjacent outlet pipe concentrations. As portrayed in Table 2, if the two aforementioned observations are statistical outliers, and Equation 1 is valid, then the treatment objective for the adjacent outlet pipe to maintain Enterococci levels below 104 MPN/100mL at Goodies Beach is two to three log or 99-99.9% removal.

**CORRELATION OF ENTEROCOCCI LEVELS (MPN/100mL) AT GOODIES BEACH TO OUTLET PIPE (ALL DATA)**

FIT WITH SUSPECT OUTLIERS:  $y = -0.0052x + 165.68$   
 $R^2 = 0.0054$

SUSPECT OUTLIERS

Figure 4. Correlation of Enterococci Levels at Goodies Beach to Outlet Pipe (All Data)

Due to a lack of correlation between Enterococci at Goodies Beach and that of the adjacent outlet pipe depicted in Figure 4, this study orchestrated sampling events to validate a correlation. In addition to determining treatment suitability of the source water, sampling was performed to quantify the water quality constituents identified in Table 3.

G&D

Page 7 of 20

2. Treatment options and potential to remove Enterococci

- Sedimentation - NO
- BMP filters - NO
- UV Disinfection with addition of cutting brush back and removal of foliage over beach - YES
- Ozonation - YES

3. Identification of storm drains causing the pollution and options to correct

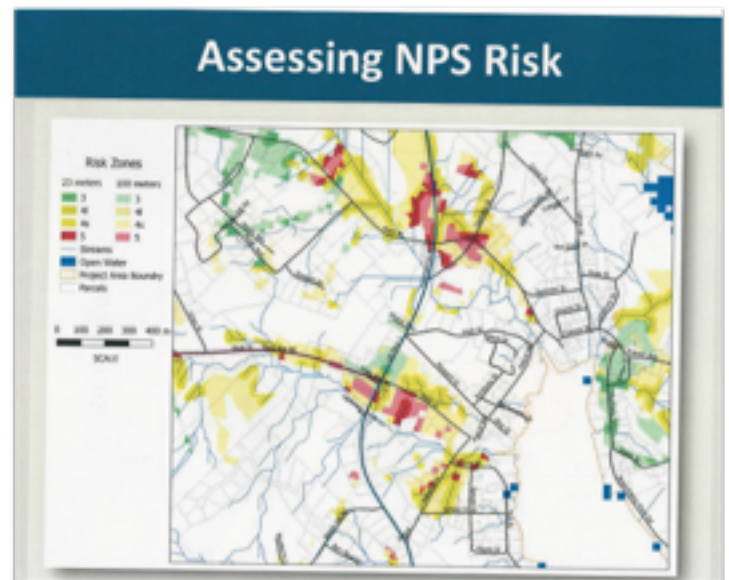
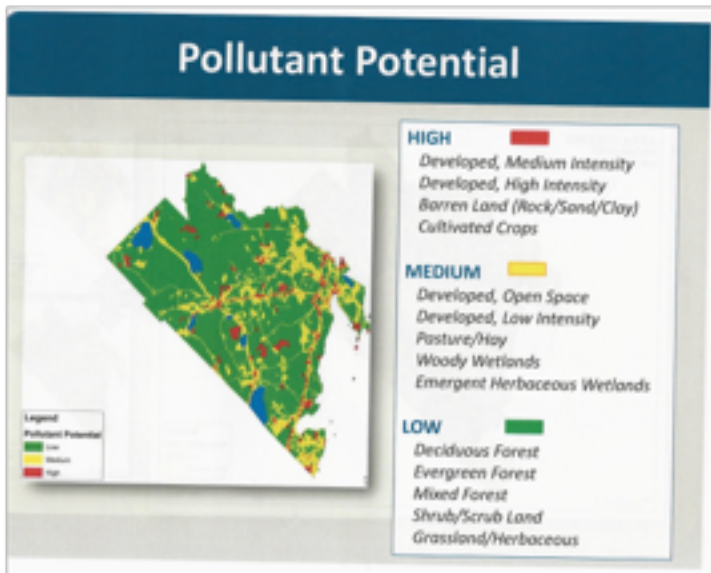
- Additional Pumping Station placement near Goodies Beach
- Redirect waste water from drain to camden water treatment plant
- a. how much water needs to be directed?
- b. what will the cost of this pilot program be?

4. Identify costs for treatment options

- UV equipment estimate \$56,000
- Options include: State Funded Help, DEP Grants 319 & 604b, Land Bureau & outside Grant Money: qualifications necessary to apply for some of these funds require the need to create a Rockport Town wide Watershed Management Plan
- Negative aspect of aligning with the DEP puts Rockport Harbor on the impaired list

5. Non Point Source Watershed Management Plan Action

- Assessment Approach outlined by Bob Kennedy (copy to be submitted with minutes to town)



**CHRONOLOGY OF EFFORTS TO IDENTIFY AND MANAGE CONTAMINATION AT GOODIE'S BEACH**

June 2, 2009

Maine Healthy Beaches initiated seasonal bacteria monitoring at Goodie's beach; this effort is ongoing. (Excessive bacteria levels persist.)

June 17 - September, 2010

Maine Healthy Beaches conducted supplemental bacteria sampling at Goodie's Beach and selected site in and around Rockport Harbor as a means to identify possible sources of contamination; results were inconclusive.

Summer (various dates), 2011

Rockport Conservation Commission (RCC) conducted bacteria sampling at selected sites in the harbor and in the Goodie's Beach drainage area; levels are excessive at several sites.

Date uncertain (need to check with Scott Bickford)

Forty seven homes in the drainage area were inspected for plumbing or sewer violations by the Code Enforcement Officer; all were found to be compliant.

October 28, 2011

Bob Kennedy submitted a report titled 'Water Quality Investigations: Rockport Harbor and Goodies Beach (2009-2011)' to the Town. The report is based on bacteria and related water quality data obtain during the period 2009-2011. These data indicate the Goodie's Beach drainage area as the primary source of bacterial contamination at Goodie's Beach.

March 17, 2012

Supplemental bacteria samples were collected at several sites in and around the inner harbor, Lily Pond Stream and the lower reaches of the Goose River following a storm event; consistent with earlier observations, highest levels are at sites off Goodie's Beach and the adjacent drain pipe.

August 28, 2012

The Goose River and the drainage pipe adjacent to Goodie's Beach are included in US EPA survey of PPCPs (pharmaceutical and personal care products) at several coastal sites. Concentrations of some PPCPs in drainage water from the Goodie's Beach pipe are among the highest in the survey.

March 4, 2013

RCC developed protocol for issuing bacteria-related health advisories at Goodie's Beach based on precipitation measurements. (The Harbor Master installed a rain gage and continues to follow this protocol.)

June 25, 2013

US EPA collects samples for PPCPs at selected site in the area draining to Goodie's Beach.

September 5, 2013

US EPA (Region I) issued a Notice of Violation (NOV) of the Clean Water Act via a letter to the Town of Rockport. The letter references data indicating the presence of PPCPs at multiple sites, including the drainage pipe located adjacent to Goodie's Beach.

Date Unknown

The Town of Rockport responded to the NOV (content of the response unknown).

Date Unknown

DPW performed video inspections of sewer lines located in the Goodie's Beach drainage as part of its regularly-scheduled inspection of gravity sewers. No faults are identified.

October 31, 2013

DPW performed a smoke injection test of storm drains located in the Goodie's Beach drainage. No inappropriate connections are identified.

June 25-26, 2014

RCC collected samples at three sites during a rain event; mDNA (mitochondrial DNA) analyses

August, 2014

A questionnaire concerning the use of selected PPCPs was sent to 37 households in the Goodie's Beach drainage. Only one household indicated use of one of the two PPCPs included in the questionnaire.

November 24, 2014

Bob Kennedy presented an overview of water quality efforts at a Select Board workshop, and recommended that the Town commission a feasibility study of alternative engineering solutions to reduce or eliminate storm water impacts. Identified as possible general approaches to be considered were (1) take no action and continue to issue advisories as appropriate; (2) relocate the drain to deeper water; (3) collect storm water and treat as sewage; (4) treat storm water off site and; (5) treat storm water on site.

October 2, 2015

DPW conducted video inspections of 4 homes (6 Pine Street; 86 Pascal Ave; 6 Pleasant Street and 10 Pleasant Street). Two of the properties (10 Pleasant Street and 86 Pascal Ave) were found to have leaks or potential leaks.

October 25, 2015

Bob Kennedy recommended (email to Mike Young and Rick Bates dated 25 October) that the sewer connections for 10 additional properties be inspected by video or other means

### Review comments – Stormwater treatment feasibility report (draft)

#### General comments

- Readers without technical familiarity will find the mass balance discussion confusing and potentially distracting. Environmental conditions in the harbor, as they relate to the issues at Goodie's Beach, are less about the average condition and more about episodic events and the location of sources relative to the location of effects. The mass balance approach employed here would seem more appropriately described as a mass loading calculation. Missing is any discussion of the effects of dilution, mixing, tidal flushing, or non-conservative behavior, all of which will influence the relative impacts of inputs from various sources.
- The report suggests that "...further efforts in sustainable watershed management within the town will be more effective at lowering Enterococci levels at Goodie's Beach than treating the adjacent surface water runoff" (page 11). There are insufficient data to support...or to refute this statement. While it is clear that streams other than the drainage adjacent to the beach discharge runoff waters with high bacterial levels, we do not have the data to parse their relative impacts on water quality at Goodie's Beach. What is demonstrable is the correspondence between observed levels at the beach and those in the discharge adjacent to the beach, and the lack of a relationship between bacteria levels at the beach and salinity. The latter (inverse) relationship would be expected if river-borne bacteria were the primary source of observed levels at the beach. Instead, it would appear that the very high levels of bacteria in drainage water obscure any impact due to river discharges. [*Understanding the relative impacts of various inputs may be important when evaluating costs associated with various management initiatives. This cannot be done using a simple mass balance approach, but will require geo-referenced field data, possibly including tracer dye, and a dynamic circulation model. The Rockport Conservation Commission or RCC performed a preliminary salinity mapping effort in June 2012 as a means to track freshwater inputs.*]
- The Select Board engaged in a general discussion of stormwater management options at Goodie's Beach during its November 2014 water quality workshop. These options included (1) take no action but continue to post advisories as appropriate, (2) relocate the drain to deeper water, (3) collect and treat runoff as sewage, (4) treat runoff onsite, and (5) treat runoff offsite. The need for this feasibility study was based on the recognition that there would be multiple means to address each option. In order for the Town to select an appropriate ameliorative action...and effectively defend that selection...the feasibility study should provide a robust discussion of all options, even if deemed, *a priori*, to be infeasible. This report fails to provide such a robust discussion.

- The report rightly suggests (page 20) that the Town develop a watershed management plan. An ongoing effort, funded under Maine's Coastal Communities Grant Program and implemented by the Town, RCC and Knox County Emergency Management Agency, involves the use of readily-available geospatial data and the use of common GIS tools to identify and map potential sources of non-point source (NPS) pollution in Rockport. The results of this effort will provide a sound base from which to build a watershed management plan.
- An important objective of the feasibility study was to generate the data needed to effectively revisit discussions with Camden relative to treating runoff from PA-3 and PA-4 as sewage...especially anticipated flow volumes. Such information is provided in the report (page 15-16) and, following recent discussions during a meeting with the Town and the RCC, a pilot program to evaluate doing so is included in the Next Steps section (page 20). Additional design information would be useful (e.g., lift station pump rates/volumes, what are useful performances metrics, etc.).
- The Notice of Violation (NOV) was based on high levels of fecal indicator bacteria as well as unacceptable levels of pharmaceuticals and personal care products (PPCPs). The report does not address issues related to PPCPs. *[Based, in part, on PPCP data, the RCC recommended that the sewer connections of four homes in the Goodie's Beach drainage area be inspected by the Town using inline video imaging. The connections of two of the homes were subsequently found to have structural damage. To date, no actions have been taken. The RCC later recommended that an additional ten home be similarly inspected. The results of such inspections, if they have occurred, are unknown. The contamination referenced in the NOV has two possible source components – leaked septic waste and wash-off of surface deposited waste. The Town needs to address both components.]*

#### Specific comments

- The report suggests (page 2) that "...the level of Enterococci could be trending lower with the infrastructure management and maintenance the Town has increased in recent years." Without debating if such a trend exists, it should be noted that the Town has implemented no such increase in infrastructure management or maintenance efforts specifically related to bacterial or other contamination at Goodie's Beach.
- Bacteria data are not normally distributed and should be transformed prior to analyses using parametric statistical procedures (as in Figures 4 & 5)...however, the merits of deleting outlier value and the conclusions drawn in this case would be little changed.
- Results obtained using the statistical model incorporated in Stream Stats for estimating flows have unknown uncertainties for drainage areas having areas outside of those included in the model development dataset. While this limitation is pointed out for

Questions still on the table as we await the final draft report from Gartley & Dorskey

- Briefly describe current WQ issues at Goodie's Beach and the ongoing feasibility study
- Describe the technical specifics of a proposed pilot project to capture storm water for treatment
- Describe modeled flow characteristics of the drainage basin (how much water are we talking about?)
- Indicate the time-frame/duration of the pilot project
- Indicate anticipated costs (for both Rockport and Camden)
- Describe how the pilot project will be evaluated