



NH Department of Environmental Services

Beach Sampling Lean Event



1. **Background:** The NH Department of Environmental Services Beach Inspection Program works to protect public health by ensuring safe swimming for all of New Hampshire's public beaches. NHDES personnel (and volunteers at 20 locations) collect water samples from coastal and freshwater beaches to protect health by testing for fecal bacteria.

2. **Current Conditions:** NHDES began its beach sampling program in 2003 with 183 beaches. Since that time, the number of beaches sampled has grown to over 210 sites. This growth, coupled with increased occurrences of cyanobacteria blooms, have placed strains on time and personnel. In addition, beach sample results and the number of times a beach is resampled may either give the public a false sense of security or trigger unnecessary harm.

3. Goals:

- Develop a sampling schedule that concentrates on high-risk beaches based on historical results and concentrate resources towards these high risk beaches.
- Target limited resources to those beaches that have higher incidents of *e-coli* exceedances and higher public usage without increasing costs.
- Attempt to reduce overall staff time spent on freshwater beach sampling.
- Increase scientific defensibility of sampling to protect public health.
- Identify when staff resources should return to beaches to remove advisory.



Above Lean Team Members (l-r): Amanda McQuaid, Andrea Bejtlich, Dave Neils, Melanie Cofrin, Jocelyn Degler, David Smith, Meredith Collins, and Linda Magoon (behind the camera)



Above: Beach Sampler and NHDES intern Andrea Guernon collecting a sample at a freshwater beach in the summer of 2019.

4. Analysis:

- In current state, beach sampling program is under-staffed with one-full time program manager, one part-time VRAP person, and three summer interns.
- Beaches are re-sampled the day following a positive result, resulting in travel and planning challenges ("firefighting"), as the beach sampling is planned by region.
- Many beaches (approximately 90) historically come back "clean" >90% of the time but continue to be sampled annually.
- Program samples beaches that are privately owned, leaving less time for publicly-owned beaches, which is the focus of the program.
- Program has several points of contacts when advising of a positive "hit", resulting in additional and unnecessary effort to notify the beach contact person.
- Informal (back-and-forth emails) notification process prior to start of beach season.

5. Proposal:

- Create implementation plan using a phased-in approach.
- Implement Phase I changes to the program in the upcoming sampling year (2019).
- Review and re-assess in September 2019.
- Implement Phase II changes to program over winter 2019-2020 for the 2020 beach sampling season.

Event Sponsor: Ted Diers, Administrator, Watershed Management Bureau
Event Lead: Amanda McQuaid
Dates: February 14, February 22, and March 6, 2019

5. Proposal (Cont.):

- Create implantation plan using a phased-in approach.
- Implement Phase I changes to the program in the upcoming sampling year (2019).
- Review and re-assess in September 2019.
- Implement Phase II changes to program over winter 2019-2020 for the 2020 beach sampling season.

6. Results:

1. NHDES spent 35% more time sampling historically "dirty" beaches in 2019.
2. Reduced sampling size meant less travel, resulting in saving 2.5 hours/week in travel.
3. Historically "clean" beaches were willing to self-sample after being notified that NHDES was no longer sampling.
4. Concentrating on "dirty" beaches did not result in increased percentage of positive "hits" as would be expected. One theory is that this summer was drier and therefore less stormwater was entering surface waters.
5. NHDES is re-examining beach signage protocols this winter.

Below: Beach Sampler and NHDES Intern Danielle MacConnell collecting a sample at a coastal beach in the summer of 2017.

