

Hyannis Water System addressing PFAS in the drinking water supply

Challenges, progress and costs

STEEP Webinar, February 3, 2021

Hyannis Water System

- Owned by the Town of Barnstable
- Managed by the DPW Water Supply Division
- Contract operator is Suez, responsible for water system operations and maintenance.
- Hyannis Water Board has water supply division oversight

Hyannis Water System

- Serves approximately 18,000 residents, visitors and commercial entities in Hyannis, Hyannis Port and West Hyannis Port
- Largest commercial area on Cape Cod
- Summer demand approx. 5.5 MGD
- Winter demand approx. 2.5 MGD
- Available are 11 operational wells

Relevant event #1: 2009 - 2010

- Silent Spring sampling of public water supply wells for emerging contaminants.
- PFAS found at one half of the health based guideline values established by the US EPA, (0.2 ug/l).

Actions taken:

- Public presentations of the test results.
- Discussions with Town leadership relative to water quality and the need for sewer system expansion.

Relevant event #2: 2013 - 2015

- UCMR-3 sampling (EPA required) in November 2013 and May 2014 for unregulated, emerging contaminants.
- Test results came available late 2014, resulting in the shutdown of 3 wells.

Actions taken:

- Installed activated carbon filters on 2 wells.
- Cost \$744,000, leased equipment, seasonal use.

Filter Construction at Mary Dunn Road







Experience for college interns



Relevant event #3: May 2016

- US EPA lowers and combines the health advisory for PFOA and PFOS from 0.2 ug/l each down to 0.07 ug/l combined.

Actions taken:

- Multiple rounds of distribution system sampling till the PFOA and PFOS levels were below the new Health Advisory.
- Public notifications to customers about the issue.

May 2016

- Handed out bottled water for 3 weeks, cost \$270,000
- Issued a state of water supply conservation
- Constructed a pipe manifold to blend water, cost \$100,000
- Installed water interconnection with COMM water system, cost \$770,000
- Installed water interconnection with Yarmouth water system, cost \$540,000

Interconnection with the COMM water system



Yarmouth interconnect



May 2016

- Installed another activated carbon filtration unit, cost \$540,000
- Started a treatment plant feasibility study for Maher wells, cost \$15,700
- Accelerated the new well exploration program, cost \$891,000
- Reactivated the Straightway well # 1, cost \$216,000
- Installed filter building enclosures, cost \$1,113,000

Another carbon filtration unit at Mary Dunn



Filter building enclosures under construction



Filter building enclosures

Completed



Relevant event #4: June 2018

- MassDEP announcement of an ORSG for 5 PFAS compounds combined at 0.07 ug/l.

Actions taken:

- Sampled repeatedly all wells and water distribution system entry points.
- Increased water purchases, adjusted pumping sequences and flow rates and blended sources, cost \$750,000.
- Pilot testing and design of the Maher Filtration plant, cost \$469,000

Relevant event #5: April 2019

- MassDEP announcement of a future MCL for 6 PFAS compounds combined at 0.02 ug/l.

Actions taken:

- Sampled repeatedly all wells and distribution system sample points.
- Accelerated the design and construction of the Maher Filtration Plant, 12 Million dollars.
- Initiated the purchase, design and construction of interim activated carbon filtration units on the remaining wells. Cost 3 Million dollars.

Maher Filtration Plant

ground breaking ceremony



Maher Filtration Plant

Completed construction



Interim Carbon Filters

Construction



PFAS financial impact on the Hyannis Water System

- 22 M already spent
- Another 36 M needed
- Water rate increase of 7.0 % proposed for FY22
- Town Council established 2 water stabilization funds to help keep the rates down, using 1 Million per year
- PFAS sampling & testing \$100,000 per year
- Over 1 Million dollars in water purchases per year
- \$20,000 per carbon exchange, approximately 4 per year per filter unit

PFAS legal impacts on the Hyannis Water System

- Lawsuit filed against Barnstable County, the owner of the fire training academy. The lawsuit was settled out of court with a negotiated settlement.
- Lawsuit filed and pending against the manufacturer's of PFOS/PFOA (3M).

PFAS operational issues

- Coal based activated carbon works best for our water system
- pH spikes after new carbon is placed in filters
- PFAS sampling for process control and regulatory compliance
- Filters are setup in a lead/lag configuration to ensure PFAS removal
- No PFAS detects in water entering the distribution system

Drinking water in Hyannis is safe

