

# LENOX WATER DEPARTMENT SOLARBEE PROJECT SUMMARY

I wanted to let you know of an exciting project the Lenox Water Department completed in May of 2020. The project involved the installation of 2 Solar Powered mixers in our 2 drinking water reservoirs. The mixers were installed on May 14, 2020, by Ixom Watercare Inc, formally Medora.

## **First a little background:**

Providing quality drinking water starts at the raw water source, which for Lenox are its two Reservoirs. On several occasions the Town has experienced a rash of taste and odor complaints in its drinking water, most recently in the spring of 2017. The Lenox Water Department has spent many hours troubleshooting and solving these taste and odor problems. The cause has specifically been traced back to the reservoirs unpredictable stratification cycles, the difficulty involved with keeping the intake building free of algal growth, and then subsequent decomposition of algal cells in the spring. These problems seem to be most noticeable after drought years, such as in the spring of 2017 after the drought in the summer/fall of 2016.

One solution to this problem was to install SolarBee mixers in both reservoirs to provide a constant mixing of the raw water. This constant mixing will help to:

- 1) avoid unpredictable stratification events
- 2) inhibit algal growth during droughts
- 3) avoid taste and odors caused by organisms decomposing the dead algal cells

## **What are SolarBees:**

The SolarBees are a floating, circulatory, reservoir mixing system, solar powered system, which help to control vegetative growth, harmful algae blooms, and associated taste, odor and toxicity issues that are caused by stratification events. The system improves the overall water quality, pH, and oxygen fluctuations by continuously radially mixing the reservoirs. This improved water quality will help in treating the water once it gets into the Water Treatment Plant.

Here are a few videos explaining the process:

<https://www.medoraco.com/video/1924/lake-circulation-white-board>

<https://www.medoraco.com/video/1945/news-report-stafford-lake>

<https://www.medoraco.com/video/1944/news-report-2007-lake-houston>

The Lenox SolarBee system will be slightly different than the videos, in that our system, will have the Solar Panel on the shoreline.

The project was funded by MassDEP's Gap II Grant Program which was for Energy Efficiency and Clean Energy Projects at Drinking Water and Wastewater Facilities in Massachusetts. The initial project planning was started back in 2018 and is the culmination of coordinating with MassDEP to receive all necessary approvals. There are a few other SolarBee systems active in Massachusetts, but this will be the first in the Western Region of Massachusetts.

As part of the Gap II Grant program, public outreach is required, so what better way than to have an article about the project on the Town's website.

This is just a quick summary of the project. Please contact me if you would like to discuss the project further or plan a tour of the Lenox Water Treatment Plant and see the SolarBees in action.

Sincerely,

Bob Horn  
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Here are a few pictures of the SolarBees in the Lenox Reservoirs:



