Andover Water Treatment Plant

Virtual Tour

Welcome!

At the Andover Water Treatment Plant, we make water safe to drink for the 33,200 residents of Andover, and our neighboring community, North Reading.

Here, you'll learn about the process of treating water and how we get the water out to homes, schools and businesses.

Where does Andover get its water?

If you said Haggetts Pond, Fish Brook & the Merrimack River… you're right!

- The primary source of drinking water for Andover is Haggetts Pond.
- The Town's residents, schools and businesses use more water than Haggetts Pond holds, so the supply is supplemented with water from Fish Brook and the Merrimack River.

Haggetts Pond – Andover’s primary source of drinking water

- Raw, untreated water is brought from the pond into the plant by pumps.
- Water coming into the plant passes through screens to remove things like sticks, leaves and fish.

This photo shows one screen (the red structure on the left)
and raw water pumps in the background.

- After passing through the screens, water is pumped to the ozone building for preliminary treatment.
- Ozone gas is good at breaking things down. It is mixed with the raw water to help make it taste better and get rid of some of the naturally-occurring color.
- Ozone gas also provides initial disinfection of water.

This photo shows one of the ozone generators, located inside the Ozone Building.

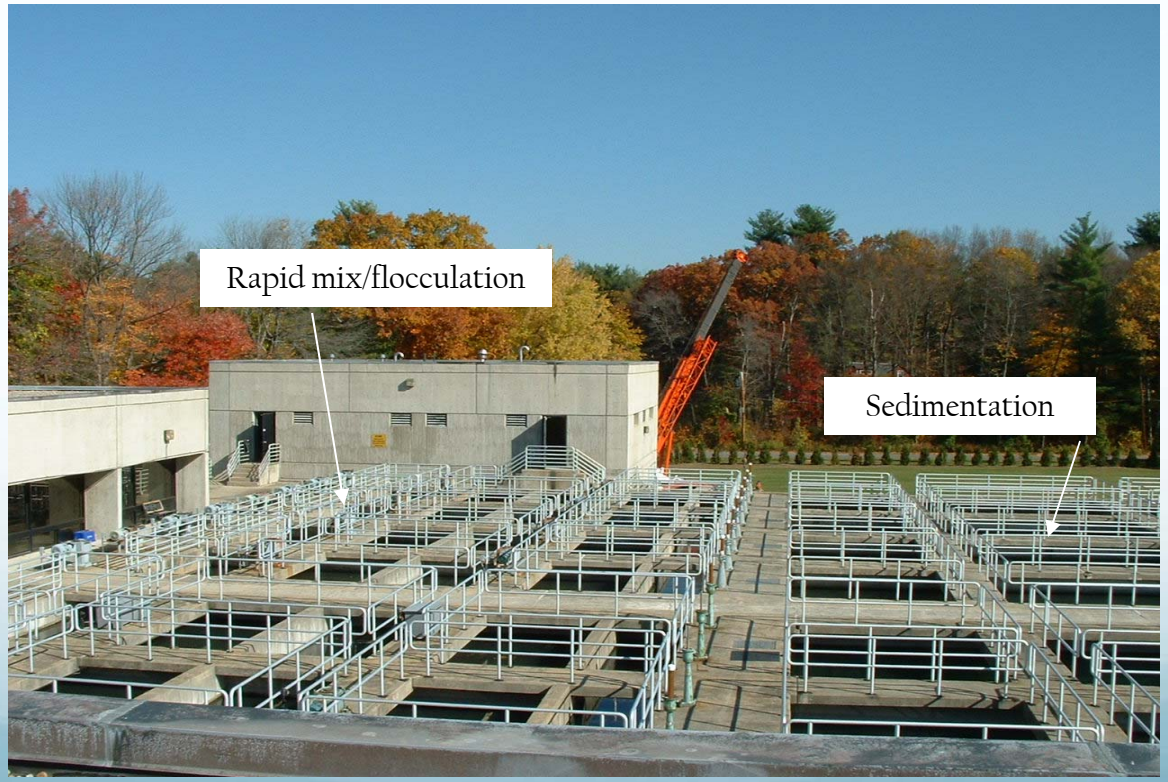
The inside of the ozone building. Ozone generators are on the right, and the nitrogen boost and cooling equipment is in the background.

Where do we get the ozone we use to treat water?

- We make the ozone gas here at the treatment plant using electricity and liquid oxygen.
- All the equipment that you saw in the last photo is used to make ozone from oxygen.

Liquid oxygen storage tank and vaporizers.

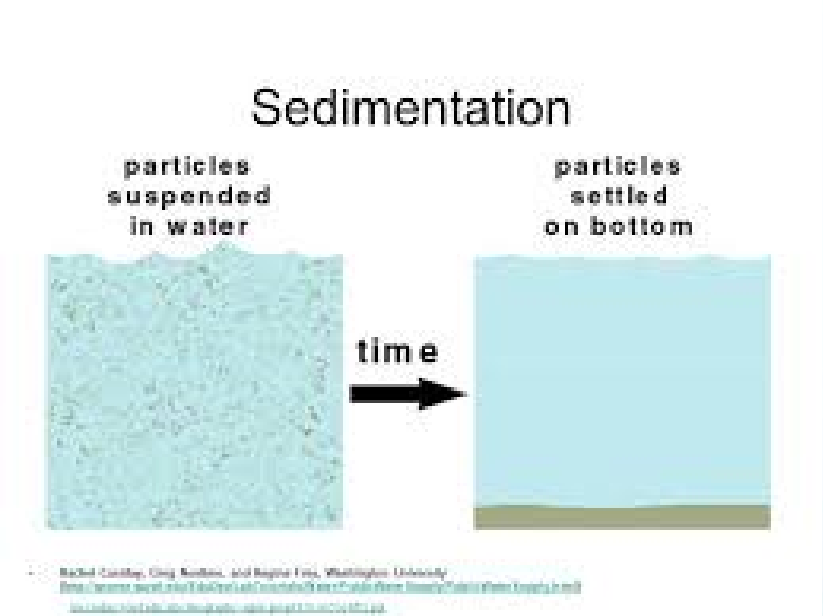
- Once the water from the pond has been swirled together with ozone, it flows into basins to be mixed with chemicals for further treatment.
- These basins are called rapid mix/flocculation and sedimentation basins.



- In the rapid mix/flocculation basins, chemicals are mixed with the water at different speeds.
- The chemicals that were added attach to the contaminants in the water and the mixing action causes the particles to stick together. The clumps that are formed are called floc.

This is a close up of a rapid mix basin. These are the mixers that stir that water in the basin to help the particles of contaminants stick together.

- In the sedimentation basins, the water is not mixed and is moving at a slower rate. The floc becomes heavier, sinks to the bottom and settles out.
- This settled material is sent to the municipal sewer.



This is one of the many sedimentation basins at the water treatment plant.

- After most of the particles have been allowed to settle out, the water flows inside the water treatment building to the filters.

- Water flows by gravity through the filters to remove any remaining particles.
- There are eight filters, each with 48 inches of activated carbon.
- Carbon has a greater surface area and is able to collect the remaining particles that did not settle out in the basins.

- After being filtered, the water flows into a clearwell, where chlorine and fluoride are added.
- Water stays here for a period of time for chlorine to do its final disinfection.

The clearwell provides time for the final stage of disinfection of filtered water, before the “finished water” is sent to the distribution system.

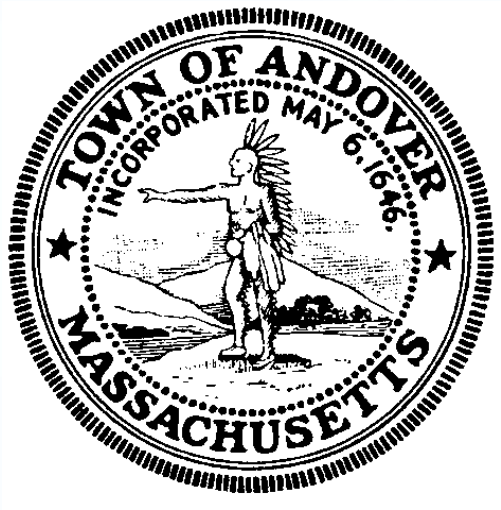
- As water leaves the clearwell and enters the distribution system, the pH is adjusted for corrosion control purposes.
- Now water can now be provided to homes and businesses!
- Water that is not being used travels to large storage tanks to provide pressure to water mains.

These are the pumps used to deliver “finished water” to the distribution system

Did you know there are 250 miles of underground pipes in Andover?
The pipes vary in size and are between 4 and 24 inches in diameter.

- To make sure that the water we produce is safe and healthy, the treatment plant has a laboratory to perform tests on the water at different stages of treatment. Staff monitor the treatment processes and also perform tests for things like bacteria, viruses and metals in the water.

We test the water before, during, and after the treatment process…and even after the water leaves the plant and is out in the distribution system to make sure that Andover water is clean and safe to drink.



Thank you for taking part of the virtual tour of the Andover Water Treatment Plant.

Please be sure to read our annual Water Quality Report to learn how we protect your drinking water source, and how you can help conserve water!