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the City of Brewer, and parts of Eddington, Holden and Orrington, with water obtained from Hatcase Pond, located in Dedham and Eddington. The Department serves about 9,000 people through 3,700 individual service connections, utilizing 20 miles of transmission mains and more than 40 miles of distribution lines.

The mission of the Brewer Water Department includes the following:

- To provide high quality drinking water to its customers.
- To provide continuous, uninterrupted service to its customers.
- To do so at the most reasonable cost possible.
- To hold the protection of Hatcase Pond, and its watershed, above all other considerations.

Hatcase Pond. Hatcase Pond has been the City's water supply since the 1950s. From the beginning, the Brewer Water District and now the Brewer Water Department, have realized the importance of protecting this 164 acre, pristine water supply. Today the Department owns over 300 acres of the 1,707 acres in the watershed, and has acquired conservation easements on an additional 1,091 acres. The remaining 300 acres are owned by approximately 15 different families, with the majority of the acreage located more than one-half mile from the pond.

The Department maintains an active monitoring program of all land use activities in the watershed with the goal of maintaining a high quality water supply for current and future customers. The Brewer Water Department is only one of ten public water utilities in Maine that has been granted a federal waiver (December, 1991) from the requirement for filtration. The waiver, in addition to saving rate payers a multi-million dollar investment in filtration facilities, recognizes the quality of the water and the Department's watershed protection activities.

The Department has a pump station located at one end of Hatcase Pond with a pumping capacity of 2.8 million gallons a day (MGD). The Brewer water system uses an average about 817,500 gallon per day. The maximum amount of water that can be sustainably withdrawn from Hatcase Pond is 4 MGD.

Water treatment. The Water Department's treatment plant is located in Eddington, about a mile from Hatcase Pond. The Department uses ozone gas, a powerful disinfectant, to provide primary disinfection. Chloramine, a combination of chlorine and ammonia, is used to provide a disinfectant residual in the distribution system. Ozone levels at the plant and chloramine residuals in the distribution system are constantly monitored to ensure that adequate disinfection has occurred, prior to delivery of the water to the customer. Since surface waters in Maine are naturally acidic, sodium carbonate (soda ash) is added to raise the PH and alkalinity of the water to make it less corrosive to metal pipes. The final treatment consists of the addition of fluoride to promote improved dental health.

The federal Safe Drinking Water Act directs the state, along with the Environmental Protection Agency (EPA), to establish and enforce minimum drinking water standards. These standards set limits on certain biological, radioactive, organic and inorganic substances sometimes found in drinking water. Two types of standards have been established. Primary drinking water standards set achievable levels of drinking water quality to protect public health. Secondary drinking water standards provide guidelines regarding the taste, odor, color, and other aesthetic aspects of drinking water that do not present a health risk. The Department's three plant operators continuously maintain and monitor the



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quality water possible. Brewer's drinking water continues to meet drinking water standards. In fact, Brewer is one of only 14 municipalities in Maine that have a drinking water filtration waiver from the federal government (12 of the 14 municipalities are located in Maine & Bangor is also one of the 14). The waiver is important because adding filtration would be extremely expensive.

In response to the requirements of the Safe Drinking Water Act, the Department is planning to add ultra-violet treatment to the water to treat for potential cryptosporidium.

Water storage. The Department owns three standpipes which collectively can store 2.8 million gallons of water. The newest standpipe is located in Brewer on Whiting Hill. The second standpipe is located off Levenseller Road in Holden, and the third is located in Eddington (the Eddington storage reservoir). The standpipes help maintain adequate water pressure throughout the system and allow the pumps at the water treatment plant to shut down for 11-12 hours each day. Brewer's water system is inter-connected with Bangor's water system at two locations so that either system can provide emergency back-up by opening gate valves that are normally in the closed position.

Distribution system. Brewer's water distribution system includes 20 miles of transmission mains and about 40 miles of distribution lines, most of which are ductile iron pipe. Pipe sizes throughout the system range from 20-inch transmission mains to ¾-inch service lines. Fire protection is provided throughout the service area by 430 fire hydrants which are located primarily in Brewer but also in Holden, Eddington and Orrington. These hydrants are color-coded by the amount of water they can deliver to assist the Fire Department in responding to fires.

Challenges. There are about 40 services that are subject to freezing, primarily in the North Main Street area. Many of these lines are shallow lines located over ledge that need to be insulated.