

**KITTERY WATER DISTRICT
BOULTER, FOLLY & MIDDLE PONDS
AND BELL MARSH RESERVOIR WATERSHEDS**

EXECUTIVE SUMMARY

The Kittery Water District provides drinking water to more than 4,800 residential and commercial customers from three ponds and a reservoir located in northwestern York. Sources include:

- Bell Marsh Reservoir, a 226-acre reservoir constructed in 1988 along Smelt Brook;
- Folly Pond, a 54-acre pond;
- Middle Pond, a 37-acre pond; and,
- Boulder Pond, a 102-acre pond.

Water from the Bell Marsh, Folly and Middle sources drains via a combination of pipes and overland flow into Boulder Pond, where it is withdrawn for treatment and distribution.

The Bell Marsh Reservoir has a 1,744-acre watershed located predominantly in York, with a small portion extending into South Berwick. The 2,325-acre watershed surrounding Folly, Middle and Boulder Ponds lies entirely within York. The Water District owns approximately 2,500 acres of land in the two watersheds. More than 99 percent of the two watersheds is currently undeveloped. Development of private land within the watersheds is controlled by a Watershed Protection District zone that limits development to agriculture, timber harvest or single-family development on large lots.

The reconnaissance of the watershed and shoreland areas did not identify any existing commercial or industrial activities or other specific land uses that handle or store materials that would pose a threat to water quality of the reservoir or ponds. Access to Folly, Middle and Boulder Ponds is limited to woods trails with locked gates. Bell Marsh Road does provide roadway access along the west side of Bell Marsh Reservoir. There is currently only limited residential development along Bell Marsh Road. However there is a potential for soil erosion from the gravel road surface and sparsely vegetated slopes between the road and the Reservoir, which could lead to degradation of water quality. Erodible soils have also been mapped along several shoreline sections of Folly, Middle and Boulder Ponds, though there is no development along these shorelines to increase erosion.

There are no permitted recreational uses on any of the Water District supply ponds. Access for recreational use is restricted by the remoteness of the ponds. Water quality data from Boulder Pond collected in the 1970s classify the pond as mesotrophic, which suggests a moderate susceptibility, should land uses change in the future. Water classification data have not been gathered from the other sources, however water quality entering the filtration plant has been good.

The watersheds are sparsely developed and future development is restricted by Water District ownership and zoning. Recreational uses are not permitted on the ponds and reservoir. Based on these factors, the overall susceptibility of the Water District water supplies is considered to be low.

SWAP RANKING AND RECOMMENDATIONS

The SWAP assessment factors indicate that overall susceptibility of the water quality in Folly, Middle and Boulter Ponds and the Bell Marsh Reservoir is low. This conclusion is based on the general conditions observed, including the density of development in the watersheds, the absence of activities that handle chemicals in the watersheds, and the prohibition of recreational uses of the water bodies. Specific factors considered in assessing the overall risk are summarized below.

KITTERY WATER DISTRICT SURFACE WATER ASSESSMENT

Zone	Measure	Findings	Risk Level
Watershed	Ambient Water Quality	Class GPA, in full compliance.	Low
	Existing Conditions	More than 99 percent of the land in the watersheds is undeveloped.	Low
	Future Development	Development pressure in the region is high. However 60 percent of the watershed is owned by KWD. Development on other land is restricted by zoning.	Low
	Overall		Low
Shoreland	Pond Classification	Mesotrophic (Boulter), Others unclassified	Low-Moderate
	Soils	Erosion observed along Bell Marsh Road. Erodible soils common on ponds.	Moderate
	Activities Posing a Threat	Shoreline owned by KWD and undeveloped.	Low
	Potential for Future Threats	Future shoreline development restricted by ownership and zoning.	Low
	Overall		Low-Moderate
Intake	Raw Water Quality	Recent pond quality is good.	Low
	Ownership/Control	Extensive Water District ownership.	Low
	Activities Posing a Threat	No recreational or threatening uses.	Low
	Potential for Future Threats	District ownership limits future development.	Low
	Overall		Low
Overall			Low

Recommendations

While the overall ranking for the susceptibility of Kittery Water District's supply ponds and reservoir is low, there are several additional actions that could be considered by the Water District and the Towns of York and South Berwick to provide added protection to source water quality.

- Planning and reconstruction of Bell Marsh Road should be done to provide maximum protection for the Reservoir. Improvements might include a stormwater drainage

system to include settling basins or other structures to control the quality of runoff into the reservoir.

- The Water District should work with the Town of South Berwick to raise awareness of the Bell Marsh Reservoir watershed and increase zoning controls on future development in the watershed.
- Signs might be erected along Bell Marsh Road for public education to alert motorists when they enter and leave the watershed.
- The Water District may want to plan for future acquisition of land within the watershed. Ownership is the most reliable means to prevent future development that may threaten the water supply.
- The Water District may consider collecting baseline water quality data to classify the trophic status of all of its sources. Period sampling could also be instituted to monitor possible changes in the future.

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Source Water Assessment Program
Drinking Water Program
Maine Department of Human Services
11 State House Station
Augusta, Maine 04333



prepared by

Drumlin Environmental, LLC
15 Franklin Street, P. O. Box 392
Portland, Maine 04112-0392
(207) 771-5546