

## HYDROLOGY REPORT

The drainage area of the Salmon Falls River at the Berwick Bridge is about 223 square miles. The area within the immediate vicinity of the bridge is highly developed with commercial, industrial, and residential land use. The remaining contributing area consists of rural land with about 10-15% wetland area. The area is generally flat with moderate hills and minimal mountainous terrain.

### Summary

Drainage Area	223 mi <sup>2</sup>
Q <sub>1.1</sub>	1985 ft <sup>3</sup> / s
Q <sub>10</sub>	5894 ft <sup>3</sup> / s
Q <sub>50</sub>	8110 ft <sup>3</sup> / s
Q <sub>100</sub>	9114 ft <sup>3</sup> / s
Q <sub>500</sub>	11493 ft <sup>3</sup> / s

Reported By: CSH (MaineDOT)

Date: 8/12/2011

## **HYDRAULIC REPORT**

The Salmon Falls River originates in Wakefield, NH with Pike Brook. Pike Brook flows south and becomes Branch River. It then enters Northeast Pond and Milton Pond in Milton, NH on the Maine/New Hampshire border. It exits Milton Pond as the Salmon Falls River. The river follows the Maine/New Hampshire border until it combines with the Cocheco River near Dover, NH and Elliot, ME to become the Piscataqua River.

Several major flooding events have occurred in Somersworth, NH since 1896. The 100 year flood is approximately 3 feet above the existing bottom flange at the point of minimum vertical under clearance. A complete hydraulic analysis was not performed because the face of the abutments remain in the same location, channel alterations are not anticipated, and 1.3 feet of additional freeboard will be achieved by replacing the existing girders with shallower ones.

## HYDRAULIC REPORT

### Summary

		Existing Structure	Recommended Structure		
		110' Single Span Steel	110' Single Span Steel		
Total Area of Waterway Opening	ft <sup>2</sup>	1296	1458		
Headwater elevation @ Q <sub>10</sub>	ft	172.5	172.5	From FIS (1982)	
Headwater elevation @ Q <sub>50</sub>	ft	174.0	174.0	(Assumed no change)	
Headwater elevation @ Q <sub>100</sub>	ft	174.8	174.8	(Assumed no change)	
Headwater elevation @ Q <sub>500</sub>	ft	177.8	177.8	(Assumed no change)	
Freeboard @ Q <sub>50</sub>	ft	-1.9	-0.6		
Freeboard @ Q <sub>100</sub>	ft	-2.7	-1.4		
Flood Of Record					

Reported By: JAW

Date: 5/18/2012

Note: All elevations based on FIS, 1982, adjusted to North American Vertical Datum (NAVD) of 1988.