

Appendix 4

Description of Project Flows

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The project is operated as a strict run of river facility. The project is required to discharge an instantaneous flow of 207 cfs or inflow to the project area whichever is less.

The average annual run-off in the Nashua River basin is about 24 inches or nearly 60 percent of annual precipitation. This amount of a run-off rate of between 1.7 and 1.8cfs per square mile of drainage area, results in a total average flow at Nashua, from the net drainage area of 414 square miles, of about 720 cfs. Though precipitation is not uniformly distributed throughout the year, the melting winter snow cover results in about 40 percent of the annual run-off during the spring months – March, April and May. Flows are usually lowest during July, August and September.

The U.S. Geological Survey has recorded flows on the Nashua River at East Pepperell, Massachusetts (net drainage area equals 316 square miles) continuously since 1935. The long-term average at this station is 557 cfs. Average monthly and maximum and minimum flows at the station site are listed in exhibit 1-C. The peak discharge at the gauge was 20,900 cfs on 20 March 1936. The minimum flow was 1.1 cfs on 13 August 1939. A flow duration curve for the period of record (1936-1977) is shown in exhibit 1-C.

There have been no changes in the regulatory status of the project since 1984 nor have there been any agency comments noting deficiencies in the project's compliance with various conditions contained in the documents related to the FERC exemption and agency review of the project.