MEMORANDUM

To: Board of Hudson River - Black River Regulating District

From: Robert S. Foltan, P.E., Chief Engineer

CC: File

Date: 06/30/2016 (for the July 12, 2016 Board Meeting)

Re: Black River Area Apportionment

The Board directed Regulating District staff to initiate an apportionment for the Black River Area inclusive of river regulation in the Black River, Moose River, and Beaver River from operation of the Stillwater, Sixth Lake, Old Forge, and Hawkinsville Dam, and to develop an apportionment schedule and assessment schedule for the purpose of generating revenue as provided by ECL § 15-2121.

Staff development of an apportionment includes the following effort:

- Identification of Benefit Derived
- Identification of Beneficiaries
- Proportion of Benefit – Methodology and Calculation
- Calculation of Apportionment

Identification of Benefit Derived

Regulating District staff concluded, for the purpose of a Black River Area apportionment, that the most direct and clearly defined benefit derived from the operation of dams and reservoirs is *river regulation*. River regulation, being broadly defined as flood protection and augmentation, is the product of daily dam and reservoir operation through the release and storage of water from Regulating District facilities.

Identification of Beneficiaries

Identification of beneficiaries is based on the recognition that *river regulation* is a benefit received directly and indirectly by real property along the rivers and by the greater community surrounding the rivers which avoid loss of public infrastructure (i.e., roads, bridges, water, sewer, etc.), or utilizes the flow of released water to facilitate and maintain continued public health and welfare, recreation, and commerce.

Recognizing that *river regulation* benefits are received by both the real properties abutting each river as well as the greater community, staff focused its attention on development of an apportionment among hydroelectric power developments and the counties that receive *river regulation* benefit. Staff has identified 30 hydroelectric power facilities and five counties within the jurisdictional territory that comprises the Black River Area (and through which the Black, Moose, and Beaver River flows) as the group of beneficiaries that derive *river regulation* benefits. An inventory of the 30 hydroelectric facilities which operate downstream of the Regulating District's reservoirs and dams are presented in Attachment A. The five counties that border the Black, Moose and Beaver River include Hamilton, Herkimer, Jefferson, Lewis, and Oneida. Attachment B includes key maps for the set of mapping of real properties abutting the rivers. A discussion of the statutory and legal basis for selection of the hydroelectric power facilities and the counties as beneficiaries is provided in a memorandum from General Counsel included as Attachment C.

Proportion of Benefit - Methodology and Calculation

Staff proposes a Proportion of Benefit methodology which reflects the proportion of benefit derived by the hydroelectric facilities, and the proportion of benefit derived by the counties, from river regulation.

Historically, the proportion of benefit derived by the hydroelectric facilities has been rooted in a mathematical ratio of site *available head* (height of water *available* to generate power at a site) to the total available head of all the hydroelectric facility sites apportioned. Staff recommends continuing this approach in the proposed Black River apportionment for the operating hydroelectric facilities. Each hydroelectric facility will be apportioned a percentage of the cost to operate the Regulating District based on a proportion of benefit derived by the mathematical ratio of *actual head* (height of water *actually* used to generate power at a dam site) to the total actual head used at all the hydroelectric facility dam sites apportioned. A unique difference

between the proposed proportion of benefit methodology and the current approach to proportioning benefit is the exclusion of sites at which available head is not used.

Whereas the existing proportion of benefit is used to distribute the cost of operation of the Regulating District among sites which have both *available head* and *head actually used*, the proposed proportion of benefit will exclude those sites which do not use the available head. As such, the portion of cost to operate the Regulating District which is currently covered by assessment of sites which do not use the available head will be covered by apportioning the cost among the counties which receive river regulation.

The proposed proportion of benefit attributed to the five Black River area counties (which receive river regulation benefit) is based on the concept that each county's proportion of derived benefit can be represented by the mathematical ratio of the *value of real property abutting each regulated river in a county* to the *total value of real property abutting to the regulated rivers in all five counties.*

In January 2016 a consulting engineer for the Regulating District, Ryan Biggs, Clark Davis Engineering & Surveying, conducted a graphic information system (GIS) mapping analysis of the real properties in the five counties that abut the rivers which are regulated. The mapping analysis, along with county real property tax information, forms the basis for the calculation of the proportion of benefit derived by the counties.

Calculation of the proposed proportion of benefit derived by the counties involves the following analysis:

- Generation of GIS map layers and an inventory of properties abutting the Beaver, Moose, and Black River
- Summation of the value of real property abutting the regulated rivers in each county
- Calculation of the relative proportion of benefit (the mathematical ratio of the *value of real property abutting each regulated river in a county* to the *total value of real property abutting the regulated rivers in all five counties.*

This proposed methodology is very similar to the methodology used in the Hudson River area in 2012 to establish a new apportionment of counties situated along the Hudson River.

Attachment D contains a summary of the proposed proportion of benefit derived by the hydroelectric facilities and the counties.

Calculation of Apportionment

The Proportion of Benefit calculated for each beneficiary, as detailed in the previous section of this memorandum, serves as the basis for the calculation of an Apportionment. The Apportionment, or percent of cost of operation to provide river regulation, represents the beneficiaries share of the estimated of total cost (approved budget less state share) to be distributed among the hydroelectric facilities and the counties.

As discussed previously, the calculation of the Proportion of Benefit attributed to hydroelectric facilities includes only sites which actually use head and excludes those sites (parcels of real property) which do not use the available head. Within the current apportionment 92.82% of the cost of operation for river regulation is distributed among the hydroelectric facilities which actually use available head. Currently, 7.18% of the cost of operation for river regulation is distributed among the parcels of real property which do not use available head. This distribution of cost (92.82% and 7.18%) will remain effective through the current three-year budget cycle ending June 30, 2018.

The proposed Apportionment will distribute 92.82% of the cost of operation (approved budget less state share) among the hydroelectric facilities which actually use available head, and will distribute 7.18% of the cost of operation (approved budget less state share), which is currently covered by assessment of parcels of real property which do not use available head, to the five counties which receive river regulation.

Attachment E contains a summary of the proposed apportionment of operating expense derived by the hydroelectric facilities and the counties.