GSLA WATER LEVEL COMMITTEE REPORT – AUGUST 30, 2015 *(A Report Prepared by Dave Smail, GSLA Vice-President and Chair of the GSLA Water Level Committee)*

EDITOR'S NOTE: This report was prepared in response to a member's inquiry concerning the drop in water level in the Great Sacandaga during the month of August, 2015. The GSLA recognizes that the low water level is a concern and has decided to reformat the original response into report form and share the product with our membership.

Determining the daily release of water from the Great Sacandaga Lake, which meets the requirements of the Federal Energy Regulating Commission - Offer of Settlement is a complex process which takes into account the varied needs of many lake stakeholders.

Spring and summer this year, with the exception of the month of June, have been very dry. The flow into the Great Sacandaga Lake is significantly below the historical average. As a result, the Hudson River-Black River Regulating District (HRBRRD) has not been able to maintain the lake level at or above the target elevation since the beginning of August. This situation causes some lakeside owners to reposition docks and boats into deeper water every three to five days.

The HRBRRD scheduled the mean daily release rate from the Great Sacandaga Lake for the month of August at 1567 cubic feet per second (CFS) to maintain the minimum instantaneous flow of 350 CFS on the Sacandaga River and provide 4,000 CFS for eight hours a day for whitewater activities below the Stewarts Bridge Dam.

Most people believe the Regulating District makes releases from the lake to maintain the lake level at or near the Settlement Target Elevation. This is only partly true. In fact, the license (Federal Energy Regulating Commission - Offer of Settlement) under which the Hudson River – Black River Regulating District operates the Conklingville Dam, requires the district to make releases from the lake to maintain minimum instantaneous flow on the Sacandaga River below the Stewarts Bridge Dam and the Hudson River below the confluence of the Sacandaga and Hudson Rivers. In addition, the Offer of Settlement sets minimum and maximum daily average flows for the Sacandaga River below the Stewarts Bridge Dam and the Hudson River below the confluence of the Sacandaga and Hudson Rivers. Each of these limits varies depending upon the current lake level and where it is compared to four curves that are drawn on the Year-to-Date curve for the Great Sacandaga Lake. I have included the four curves on the **Great Sacandaga Lake Surface Elevations –Graphic II**.

Level Curve 1 is considered the bottom of the available storage level and the Regulating District cannot lower the lake level below without prior approval.

Level Curve 2 represents the top of the buffer storage. The buffer storage between Level 1 and 2 is primarily reserved to augment flows on the Hudson and Sacandaga Rivers for water quality, and to provide whitewater flows.

Level Curve 3 represents the top of the conservation storage and is known as the Target Elevation.

Level Curve 4 is the top of the spillway at 771 feet.

Whitewater Season Requirements

The Offer of Settlement establishes requirements for releases during the whitewater season. From June 1st through September 23rd, daily releases of approximately 4000 cubic feet per second must be made during the

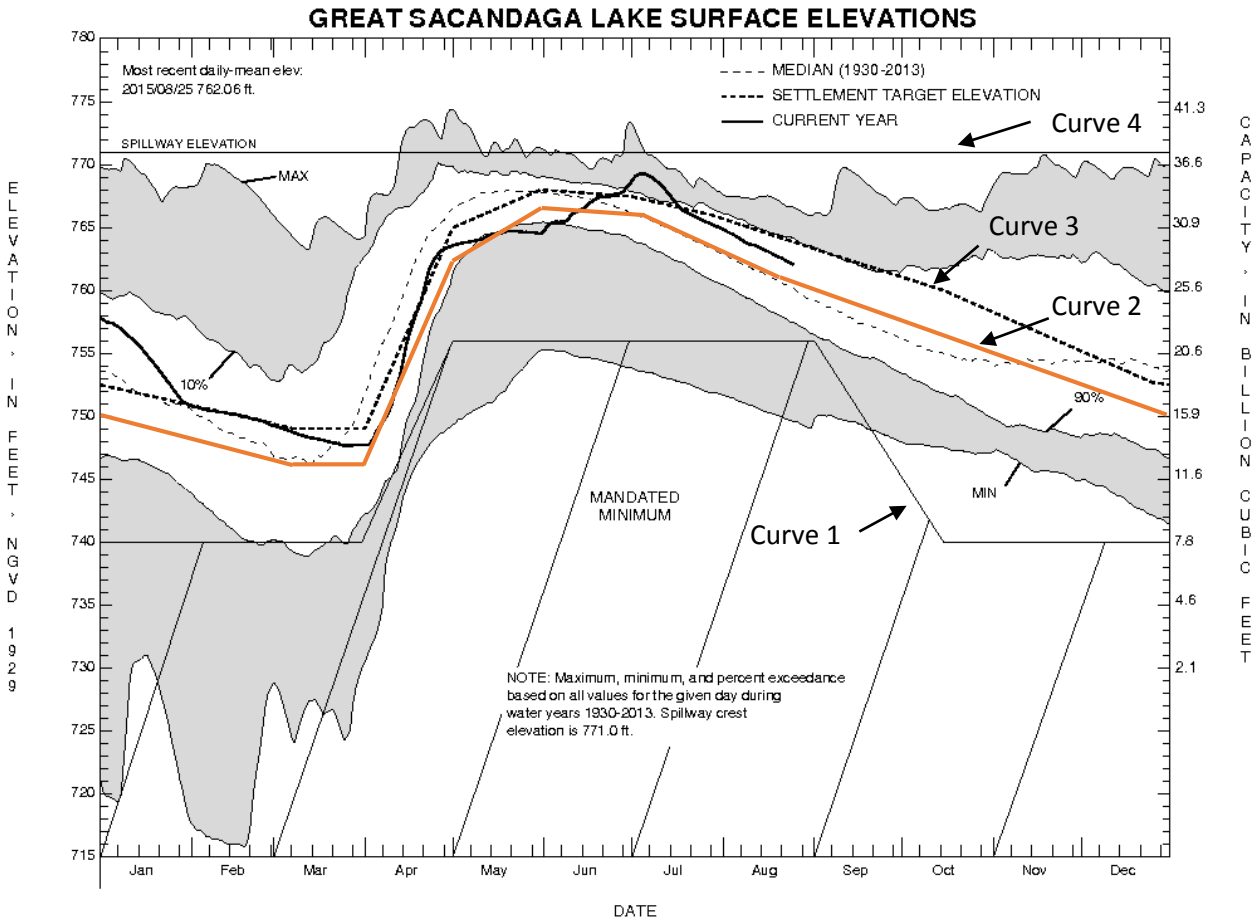
core whitewater hours of 11:00 am to 2:00 pm. The minimum number of hours of whitewater releases vary depending upon the lake level and day of the week as shown in **Graphic I** below.

Graphic I

Table 5.5.1-1 Sacandaga River Whitewater Demand Schedule					
June 1st – June 22nd Weekends only		June 23rd – September 8th Daily		September 9th – September 23rd Weekends only	
GSL Level	**Whitewater Hours**	**GSL Level**	**Whitewater Hours**	**GSL Level**	**Whitewater Hours**
1.00 – 1.19	None	1.00 – 1.19	None	1.00 – 1.19	None
1.20	4 Hours	1.20	5 Hours	1.20	3 Hours
2.00	5 Hours	2.00	7 Hours	2.35	3 Hours
2.75 and above	6 Hours	2.35 and above	8 Hours	3.00 and above	6 Hours

As of August 26th, during the month of August, 2015 the lake level has been above a level of 2.35, and was at 2.50, which requires a minimum eight hours of whitewater releases. A review of the USGS website shows that the flows on the Sacandaga River below the Stewarts Bridge Dam have met these requirements.

Graphic II



History of the Lake

The history of the lake helps explain why the lake levels change. During the late nineteenth and early twentieth centuries Albany, Rensselaer, Troy and other towns and villages on the Hudson River were flooded during the spring. Low flows on the Hudson River during the summer interrupted river traffic and caused health problems such as typhoid fever. In the 1920's, the Hudson River Regulating District was formed and the Sacandaga River was dammed to store spring runoff and augment river flow during the summer.

At that time, the releases from the Great Sacandaga Lake were determined by the Regulating District's Chief Engineer. The mean lake level curve for 1930 to 2013 is shown on **Graphic II**. You will note that although the current lake level is more than two feet below the target elevation, it is about three feet above the historical mean level for August 26th.

In the late 1980's, the federal government decided to relicense the hydro projects in the Northeast. Several groups fought to have the Conklingville Dam be brought under this relicensing. The Offer of Settlement took more than ten years to develop and was signed in 2000.

Permit holders, businesses on the lake and groups such as the GSLA negotiated for longer boating seasons by keeping the lake level higher during the summer and early fall, better fishing by less drawdown during the winter and installation of better screens that reduced the fish killed by the hydro plant. The downstream representatives wanted the implementation of aggressive water storage which maximizes the amount of electrical power being produced by the downstream hydro projects, and whitewater companies wanted scheduled releases from the lake. The technical requirements for calculating required releases from the lake is based upon historical precipitation within the watershed. During periods of normal precipitation the Regulating District can maintain the lake level at or near the Target Elevation by maximizing the release when the lake is above the target and minimizing the release when the level is below the Target Elevation.

Conclusion

Since the implementation of the Offer of Settlement we have seen much longer boating seasons. In the recent past, boaters in Mayfield were asked to remove their boats from the lake by mid-August. Currently, we are boating well into October; however, during droughts, maintaining required flows on the Sacandaga and Hudson Rivers can result in lake levels several feet below the target elevation. Actually, the Regulating District Chief Engineer reported that if the Regulating District had not been following the aggressive water storage requirements of the Offer of Settlement during the current watershed drought conditions, the lake would be several feet below the current level.

The Offer of Settlement was negotiated to respond to the needs of many different stakeholder groups which rely on the Great Sacandaga Lake. Because they are based on what may be competing needs, the determination of the daily water release rate is complex. The Great Sacandaga Lake Association hopes that our committee reports help to improve understanding of the process!