

C-W DROUGHT MANAGEMENT ADVISORY GROUP

2011 ANNUAL MEETING

Tuesday, May 10, 2011

SUMMARY

Member Organizations Present:

AbitibiBowater
Catawba River Water Treatment Plant
Charlotte-Mecklenburg Utilities
Chester Metropolitan District
City of Belmont
City of Camden
City of Hickory
City of Lenoir
City of Morganton
City of Mount Holly
City of Newton
City of Rock Hill
Duke Energy Carolinas, LLC
Invista
Lincoln County
Lugoff-Elgin Water Authority
NC DENR Division of Water Resources
Town of Granite Falls
Town of Mooresville
Town of Valdese
USGS
York County

Other Organizations Present:

Chester Sewer District
HDR
Kearns & West, Inc.
NC DENR Division of Public Water Supply
Lancaster County
SJWD Water District
Town of Fort Mill
York County

Introductions, Agenda Review, and Announcements

1. Ken Kearns opened the meeting, asked for introductions, and reviewed the agenda.

Low Inflow Protocol (LIP) Triggers

2. Ed Bruce, CW-DMAG coordinator, provided an LIP trigger update. The storage index is above target as of early May as a result of rainfall over the last two months; this has been the seasonal pattern every year since 2007 for the early May time period. The storage index has tended to dip below 75% of the target later in the summer for the past several years. The U.S. Drought Monitor shows the basin moving from a Stage 1 back to Stage 0 over the last three months.
3. Bruce reiterated that the four streamflow gages making up the LIP trigger are all tributary gages with long periods of record, and are not influenced by flow regulation. Streamflow has risen from Stage 2 to Stage 1, although the average of the last four months remains at about 70% of the historical average, and the last six months is about two-thirds of the historical average. One year ago, streamflows were well above average, but there was significant drop-off during the fall.
4. Bruce gave an update on groundwater conditions, first noting that Duke has been conducting a monthly comparison of the LIP groundwater stages instead of an annual average so as to capture the seasonality of groundwater readings. This was a recommendation of the LIP trigger evaluation. The two groundwater gages with useful periods of record are both currently in normal conditions. Bruce proposed using the newer gages, being installed as part of the Catawba-Wateree Water Management Group USGS groundwater gage installation project, when they have five years of record. It was noted that for all gages, there are readings captured in the regolith zone, which tends to have a quicker response time, and in bedrock, which is useful for long-term readings.

Duke Operations and Meteorological Update

5. George Galleher gave an update on Duke's system hydrological information. The 2011 system average rainfall through the end of April was 94% of the long-term average. The five-day rainfall forecast showed the upper part of the basin receiving as much as two inches but less than an inch in the lower basin. The forecast for the next two weeks is for above-average precipitation. Duke's contractor predicts 10 - 30% below average precipitation for the rest of May, 10 - 40% below-average precipitation through June, average probability for August, and below-average probability for September and October. NOAA forecasts an equal chance of above, below, or normal precipitation for May through the rest of the summer. More hurricanes are expected to hit land in 2011 than during the previous year, while La Niña is moving into a neutral phase. Overall the drought outlook has improved, especially from Charlotte and to the south. Galleher noted that streamflow gages, while trending towards median levels, are still below median levels despite recent rainfall. Galleher stated that soil moisture may be higher than normal in the upper part of the basin this summer.
6. It was noted that the Bridgewater Powerhouse work is continuing. Earlier there was some concern that the reservoir would not fill up after the winter drawdown, but it has already filled up, and in fact started spilling on May 3rd. Lineberger added that one of the benefits of replacing the powerhouse at Bridgewater is that Duke will be able to operate with a 50-foot drawdown instead of a 39-foot drawdown.

Residential Water Use

7. Ken Kearns provided an update on residential water use. He presented several slides with system rainfall and long-term averages from 1999 to 2011, plotted with a three-month rolling average to lessen the variability. He called attention to the different rainfall characteristics of each of the three droughts the basin experienced during this period.
8. Kearns displayed the per-meter residential water use charts through March 2011, based on the data provided by the water suppliers. He noted that he has also created charts showing individual water supplier data, but did not go through those at the meeting. He presented the chart with Duke's discretionary generation, which is a marker for flows and a significant regulating factor for maintaining storage during droughts.

2010 Annual Water Use Reporting and 2011 Reporting Requirements

9. Kevin Mosteller summarized HDR's 2010 Annual Water Use Report for the basin. This was the fifth year of collecting data. DMAG members had also previously received a technical memo on this report. The report's purpose each year is to compare current water use to what was projected in 2006 for the current year. It is important to track the correlation between predicted and actual water use because the model had estimated when potential problems with meeting water needs in the basin might arise. Water use increased from 2009 to 2010, likely due to the drought restrictions being lifted and the economy improving. In 2010, the basin's net water withdrawals were within 1% of what was estimated in the 2006 Water Supply Study.
10. Mosteller stated that the report also evaluates categories of water use. These percentages have stayed about the same since 2006 (residential water use is about 64% of total use). It was noted that only the municipal intakes that are included in the evaluation are those owned by public water supply members of the Water Management Group. In the future, another category could be created for the unaccounted-for intakes.

LIP Evaluation for 2007-2009 Drought

11. Mike Benchich presented the study HDR conducted to evaluate how well the LIP functioned in practice. Water use decreased to within target levels for the majority of the time during the drought. HDR estimates that for the 22 months the LIP was in use, 36 million gallons of water a day were saved on average. Water suppliers did not meet the LIP reduction goals during only four of the 22 months. The amount of reaction time after the declaration of a new LIP stage, before new restrictions were implemented across the basin, decreased as the water suppliers gained experience in meeting the requests.
12. After water restrictions were lifted in January of 2009, water use remained low. HDR has not found a clear indication that modified/tiered water rates have added a downward pressure on water use, although this may be because use was already as low as it could reasonably go, due to the drought restrictions. Ingrained habits and new devices purchased to meet the water use restrictions during the drought may be contributing to continued water conservation.
13. HDR's recommendations for improving the efficiency of the LIP include establishing a data clearinghouse to replace email requests for information, and perhaps the development of individual plans by the largest non-residential users in each jurisdiction. Another suggestion is to evaluate the use of drought rates.

Catawba-Wateree Water Management Group

14. Barry Gullet gave an update on the Water Management Group's (WMG) activities. All of the eligible water systems are now members of the WMG. Last year the WMG decided to

undergo an annual financial audit and hired a CPA firm to conduct it. Their audit for the 2009 year was clean and the 2010 audit results are expected soon. The WMG has a website where meeting minutes are posted, as well as their five-year strategic operating plan <http://www.catawbawatereewmg.org/>. One of the group's first projects was to expand the network of groundwater monitoring wells, as the basin originally had only three to use as triggers in LIP. The WMG partnered with USGS, and ten wells are now up and running. Gullet also described a safe yield research project that the WMG received grant money to conduct, as well as several other projects they have undertaken, including smart irrigation controllers and benchmarking on water demand and conservation practices. One of their main projects at the moment is the basin water supply management plan. The first phase of this has been completed, and Phase 2 is underway using a team of consultants, who are working on finding sources of outside funding. The WMG intends for this study to have practical applications throughout the basin. Gullet concluded by noting that the WMG holds an open meeting every other month, and the WMG board meets on the other months.

Catawba-Wateree Relicensing Update

15. Mark Oakley reported on the status of a new license for Catawba-Wateree. There are two remaining issues that must be resolved before FERC can grant Duke the New License: the South Carolina water quality certification, which is under dispute in court, and the biological opinion on the short-nosed sturgeon, which is being developed by the National Marine Fisheries Service. Duke does not have an estimate for when FERC will issue the license, but Duke is currently implementing components of the Relicensing Agreement that don't require approval from the New License.

Communicating and Charting LIP Conditions

16. Kearns described the progress made since it was suggested on a CW-DMAG call that the Group consider ways of better communicating how the LIP works. Kearns is working on a written backgrounder on the LIP to be distributed with press reports. He also provided several different examples of graphical representations of the LIP. The audience for these could be the CW-DMAG, City/County Councils/Commissions, the press, and the general public. The Group discussed their preferences and how different examples could be used. It was suggested that a more straightforward version be used for the press and public (the chart created by Oakley), and a version with additional details be used internally, and provided to others if desired. Benchich suggested using arrows to make Oakley's chart less static. After these are finalized, Duke and CW-DMAG may want to consider hiring a graphic designer to complete it. CW-DMAG agreed that it would be useful if the chart were embedded and attached in the monthly emails.
17. It was noted that the Catawba-Wateree Water Users Association is no longer active.