

Talking points on proposed reduction in flow at Peachtree Creek for ACF teleconference on May 8, 2008

As requested by our letter of February 11, 2008, the Corps took steps to reduce releases from Buford Dam to achieve minimum flows at Peachtree Creek less than 750 through April 30, 2008. EPD is again asking the Corps to reduce flows from Buford Dam to maintain an instantaneous flow of no less than 650 cfs at Peachtree Creek through May 31, 2008.

This request is supported by the results of the modeling analysis presented with our February 11, 2008 letter that has been updated through May to show that no adverse water quality impacts would be expected if these reductions were continued through May 31, 2008. This request is also supported by the monitoring data we have collected during the reduced flows that confirm the results of our model. For our May request, we have also considered possible temperature and phosphorous effects in addition to the parameters evaluated for April. A summary of the results of these data has been provided to the Corps.

Georgia's Rules for Water Quality Control require a minimum daily average instream concentration of 5 mg/l for dissolved oxygen in the Chattahoochee River below Peachtree Creek. A footnote in the Rules indicates this standard applies when flows measured just upstream from Peachtree Creek are 750 cfs or greater. This is determined by subtracting the City of Atlanta water supply withdrawal from the reading at the USGS Atlanta gage. The City of Atlanta water supply intake is located downstream from this gage and the City of Atlanta wastewater discharge is just downstream from Peachtree Creek.

While the Rules require that a minimum dissolved oxygen concentration of 5 mg/l be maintained, they do not require a flow of 750 cfs to be maintained at all times. As long as the dissolved oxygen criteria can be met, flow at Peachtree Creek could be reduced below 750 cfs.

As we did for our previous request, EPD has once again done a careful analysis to determine if there could be potential water quality impacts associated with lowering flows at Peachtree Creek to 650 cfs. Water quality modeling was done using EPD's Riv1 hydrodynamic and water quality model for the Chattahoochee River between Buford Dam and West Point Lake. EPDRiv1 is the model EPD has used to develop waste load allocations for NPDES permitted discharges to the River. For our April request, the water quality parameters assessed included dissolved oxygen, ammonia toxicity, and whole effluent toxicity. For May, in addition to evaluating the same parameters we looked at in April, we also considered potential temperature and phosphorous effects.

In our modeling analysis for dissolved oxygen, we used the most current data set available, the 2007 data for wastewater discharges and water supply

withdrawals. During this time, NPDES permittees were only discharging at 88 percent of their permitted oxygen demand loading. With respect to tributary inflows, two different scenarios were used:

- One that used tributary watershed inflows at previously estimated 7Q10 streamflow rates; and
- A second that assumed a fifty percent reduction from the 7Q10 streamflow rates. This was done to assess the effect of a worsening drought

The model predicted that the in-stream water quality standard for dissolved oxygen could be protected under both scenarios. Therefore, the in-stream criteria for dissolved oxygen would be protected if flows were reduced to 550 cfs at Peachtree Creek. To validate model predictions, EPD monitored DO at the Capps Ferry Bridge crossing of the Chattahoochee River near the point where the model predicted DO concentrations would reach their lowest levels. The results of that monitoring indicate very close correlation between model predictions and actual concentrations. EPD is proposing to continue monitoring for DO at the Capps Ferry Bridge station.

In addition to evaluating the impact of reduced flows on dissolved oxygen levels, we also examined the possibility of ammonia and whole effluent toxicity effects.

For ammonia toxicity, ammonia concentrations from the water quality model were compared to toxicity levels that would be expected at different pH and temperature levels. While temperature values could be predicted by the model, pH could not. Therefore, since toxicity increases with increasing pH, it was assumed pH would occur in the high range and increase from 7.0 to 8.0, although it is very unlikely that pH levels in the River would ever actually reach pH 8. Our analysis showed that the predicted ammonia concentrations would be less than the toxic concentrations even in the unlikely event pH increased to 8.0. Therefore, we would not expect ammonia toxicity to occur if flows at Peachtree Creek were reduced to 650 cfs.

For our analysis of effluent toxicity, we reviewed the results of whole effluent toxicity tests required by NPDES permits for 10 facilities that discharge below Buford Dam. These tests showed that none of the effluents were toxic. We then extrapolated these results by using the flow conditions predicted by the model and found that none of the effluents would be toxic if flows at Peachtree Creek are reduced to 650 cfs.

We also considered the possible effects this reduction in flow would have on chlorophyll a levels in West Point Lake. Since all NPDES permits for major point source discharges to the River and its tributaries are phosphorous and flow-limited, and because these permittees are discharging well below permitted limits, no increases in phosphorous loading from point source discharges is expected. Non-point source loading under low flow conditions will actually

decrease because of reduced stormflow and groundwater contributions would be considered de minimus. Because there is no model available for West Point Lake, EPD cannot make credible predictions of phosphorous movement through the Lake or its effect on chlorophyll a concentrations. However, it should be noted that the proposed reduction in flow would represent only about 8% of total basin inflow to West Point using May 2007 hydrology and would therefore not be expected to significantly affect movement of nutrients through the Lake. While our analysis shows that the proposed flow reduction would not cause or contribute to chlorophyll a concentrations in West Point Lake, in an effort to address local concerns about possible chlorophyll a problems, EPD is proposing to install a continuous monitoring device at the LaGrange intake and analyze for chlorophyll a concentrations. Appropriate adjustments in the requested flow would be made if indicated by these data.

For May, we also considered the effect of reduced flows on water temperatures since May is the beginning of the period where rising temperatures would be expected to effect survival of trout in the designated trout waters below Buford Dam. Our assessment included temperature modeling on this segment of the River and consultation with the Wildlife Resources Division of the Georgia Department Natural Resources (WRD). The results of our assessment indicate that reduction in flows from 750 cfs to 650 cfs at Peachtree Creek through May 31, 2008 would not be expected to result in temperature increases that would endanger trout survival in the River above Bull Sluice Lake. Given the seasonal nature of the fishery below Morgan Falls Dam and the need to preserve as much cold-water storage in Lake Lanier to maintain the tailwater trout fishery and Buford Trout hatchery, WRD and EPD believe that the reduction in releases should proceed. As part of our efforts to employ adaptive management practices to prevent unacceptable fishery impacts, EPD and WRD will be evaluating the results of field measurements to determine when intervention would be necessary. Temperature modeling with the EPD Riv1 model will be used to guide the frequency and duration of cold-water releases that may be needed to address potential fishery impacts.

In addition to carefully evaluating potential water quality impacts, we have also considered whether any water supply intakes would be jeopardized by these reduced flows. Based on our analysis of river stages that would occur under flows down to 650 cfs, we have determined that all intakes would be protected.

We believe that the information we have presented adequately demonstrates that all downstream uses will be protected if flows from Buford Dam are reduced as requested. We respectfully request that the Corps proceed without further delay with the proposed reduction in flow. Because the opportunity to retain critically needed storage in the system could soon pass, any action to reduce flows needs to be taken immediately.