Andrew Sutherland

From: Browning, Keith T. [KBrowning@ouc.com]
Sent: Monday, January 04, 2016 2:38 PM
To: Andrew Sutherland
Cc: Sonny Hall; Bradshaw, Debbie; McMahon, George, Ph.D (George.McMahon@arcadis.com); Merriam, Chip
Subject: UORB HSPF Model Review Comments

Andrew,

OUC appreciates the opportunity to comment on the Upper Ocklawaha River Basin (UORB) HSPF surface water model report dated July 16, 2015. We look forward to working with district staff in helping to ensure that the best science and currently accepted processes are used in this model. OUC has reviewed the model documentation and engaged Dr. George F. McMahon, Ph.D., PE, D.WRE, PH, ENV SP to review the HSPF model construction as well as supporting documentation. Based on our initial review, OUC offers the following comments:

1) The north shore wetlands have recently (1998?) been removed from agricultural service and have been re-flooded in phases. Future changes to the operation of the wetlands are expected. Moving water from Lake Apopka to the wetlands will change the net evaporation and add seepage to groundwater. Are the wetlands represented in a reasonable way that resembles how they operated in the past, how they are currently operated, how they will be operated in the future, and the effect those operations will have on lake levels?

2) How do simulated water levels compare to observed water levels in the north shore wetlands? How do simulated flows inflows to and outflows from the north Shore wetlands compare to observed values?

3) Clarification is needed regarding how permitted surface water withdrawals are simulated. Please describe how these withdrawal scenarios are developed? Please provide a graph showing typical withdrawal patterns comparing monthly withdrawals to permitted capacities. If there are special circumstances, please show how those circumstances affect simulated withdrawals.

4) The HSPF model schematic shown in Figure 14 (p. 40) should be expanded to show more detail on impervious area and pervious area connectivity, conveyance and water control structures – designating components by HSPF model element names. In particular, the interaction between Lake Apopka, the AB Canal and the NSRA is unclear from the map (Figure 13) and schematic (Figure 14) provided in the report. A profile schematic might also be helpful, showing relative elevations of normal pool levels, lake bottoms, weirs and control structure elevations, and subsurface zones in the model relative to Upper and Lower Floridan Aquifers.

5) The x-axis in Figure 56 should show historical years modeled as opposed to future years to avoid the suggestion of a forecast.

6) The recharge map of the Upper Ocklawaha River Basin shown in Figure 16 should describe where the water recharges or discharges to. The discharge rates should be listed in addition to recharge rates. The source of this information should also be described.

7) Please provide a better explanation of how the upper Floridan aquifer level under the lakes is simulated, which ECFT model scenario was used, and why that ECFT scenario was chosen.

We sincerely hope that these comments prove helpful and may provide additional comments as this process moves forward.
If you have any questions please let me know.

Thank you for your consideration,

Keith Browning, PE
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