

Questions from the Hydrology Model Workshop

Questions from Hydrology Workshop at CSU-Pueblo on 11/29/2005

- 1. Question:** Is the model available from Hydrosphere--not for purchase, but to acquire the details on operations and the assumptions of this specific model?"

Answer: *Information on assumptions and operations included in the model are available in the Model Documentation posted at:*
http://www.usbr.gov/gp/eca0/model_documentation.pdf. *The model itself, is available for purchase from Hydrosphere for use. The source code would not be available but the model would be able to run scenarios with different assumptions for those parameters that are variable.*
- 2. Question:** Will Aurora follow the model in real life?

Answer: *The model is not something that is "followed". It provides an estimation of what we think will happen in real life based on the best information available at the time the model is developed. It provides estimates of changes that are used to identify the effects of the proposed actions.*
- 3. Question:** What are Aurora's exceptions to the modeled operations--that is to say, if they are to follow the model, are there certain sections in it they will not follow?

Answer: *As stated in Question #2, the model is not something that is "followed". The model provides an estimation of changes that will occur as a result of the proposed action and when certain assumptions are made. For instance, it is assumed that water rights are administered in accordance with Colorado's priority system. It is assumed that the Colorado State Engineer's Office administers the water rights and Reclamation does not independently verify that assumption.*
- 4. Question:** What about water quality issues?

Answer: *Water quality issues will be addressed and discussed in the EA. A Water Quality Technical Report is being prepared and the USGS is will be assisting Reclamation in reviewing the technical report. Information from the technical report will be used to write the water quality section of the environmental assessment.*
- 5. Question:** What about effects/impacts at La Junta and downstream?

Answer: *If there are anticipated water quality effects or other environmental impacts downstream of La Junta they will be identified in the EA. Because of the nature of Aurora's water rights, it is assumed that the same water quantity will be in the Arkansas River at La Junta. This assumption is due to the State administration of water rights and the fact that Aurora is only allowed to divert the historically consumed portion of their Rocky Ford water rights.*

Questions from Kevin Salter, State of Kansas by email to Will Tully on 11/30/05

1. Question: “Is the additional annual excess capacity contracts being considered for other entities as part of the cumulative impacts?”

Answer: The cumulative effects analysis assumes some level of additional excess capacity contracting because we do not think the program will go away. See Table 5-1 in the Hydrology Technical Report. The Pueblo Board of Water Works contract for up to 15kaf of storage, is included in the cumulative effects because the long-term contract has already been approved. Because we do not know from year to year what the one year contract requests will be, who they will be from or for what amount, the contracts are not “reasonably foreseeable” (pursuant to the National Environmental Policy Act) and therefore only a minimal level of analysis is included.

2. Question: “Will USBR use this same model for these additional excess capacity contracts?”

Answer: No, the model used to evaluate the temporary excess capacity contracts was specifically developed by Reclamation’s Technical Service Center to analyze the temporary nature of those contracts. It was developed to analyze the effects of temporary excess capacity contracts since there is not a current working model that is capable of analyzing the variety of requests received for temporary excess capacity contracts. It is a simpler spreadsheet model that looks primarily at anticipated changes in stream flow and reservoir storage as a result of the temporary excess capacity contracts and at fewer stations. As explained at the meeting, the Aurora-Hydrosphere Model was already in existence and being used for planning purposes when Aurora asked Reclamation for a long term contract in 2003. At that time Reclamation agreed to continue using the Hydrosphere model to predict effects of Aurora’s proposed contracts so long as it did not identify significant effects that should be analyzed on a daily time-step rather than the quarter monthly time-step of the Hydrosphere model. The SDS has its own model that is being developed by MWH. As we have done with the Aurora model, Reclamation is reviewing the results and assumptions of the MWH model to assure that the model output reasonably represents what we think will happen if one of the alternatives is constructed.

3. Question: “The presentation showed graphs of the Ark @ Wellsville and Ark above Pueblo. Are the impacts of the Aurora storage and exchange contracts greater during wet or dry periods? What is the magnitude of the greatest impacts?”

Answer: There is little effect during the very wettest and very driest periods. During very wet periods, Aurora's upper basin rights satisfy most of its demand. During the very dry period, there isn't sufficient exchange potential for Aurora to move water. Aside from that, generally speaking, the effects are greater during dry periods. We measure impacts as the difference between the No Action and Proposed Action. The greatest decrease found between the No Action and Proposed Action is an estimated decrease of 13% in May under dry conditions at the Moffat Street and Above Pueblo gages. See tables and graphs on pages 4-16 to 4-29 in the Hydrology Technical Report for more information on these impacts.

4. Question: “Is it an assumption that the Colorado Water Court decrees are being followed, or has there been specific examination of operations to confirm this?”

Answer: *Yes, we assume that the Department of Water Resources-Office of the State Engineer administers the various water rights decrees according to their priority including the administration of exchange priorities. We have not examined Colorado’s operations to verify that they are properly administering the water rights and do not plan on examining their operations. It would be impossible to model if we assumed anything other than proper administration of water rights.*

5. Question: “Were the terms and conditions on the excess capacity contracts previously issued to the City of Aurora abided by?”

Answer: Yes, to our knowledge, the City of Aurora has abided by the terms and conditions of the temporary excess capacity contracts previously issued to them.