



# **INPUT FROM ILLINOIS RIVER INSTREAM FLOW PILOT STUDY PUBLIC/STAKEHOLDER MEETING**

**Armory Municipal Center — Tahlequah, OK**

**January 21, 2016**

The Oklahoma Water Resources Board (OWRB), working in partnership with the US Army Corps of Engineers under their Planning Assistance to States program, held the second of a series of public meetings to present updates and gather information from the stakeholders on the Illinois River Instream Flow (ISF) Pilot Study. This was a follow-up to the meeting held in Tahlequah on January 21, 2015, as part of a series of public meetings to share information and obtain feedback on an ISF Pilot Study being conducted on the Upper Illinois River (including Barron Fork and Flint Creeks) above Lake Tenkiller in eastern Oklahoma. The meeting was attended by approximately 31 local residents and other key stakeholders.

The ISF Pilot Study was initiated in early spring of 2015. The pilot study is based on the recommendations of a statewide 25-member Instream Flow Advisory Group and the 2012 Oklahoma Comprehensive Water Plan (OCWP). The OCWP set forth a process to “ascertain the suitability and structure of an instream flow program for Oklahoma.” This pilot study is a key element of that process, as it will be used to assess the potential benefits and challenges that would be associated with an instream flow program, if Oklahoma were to implement such a program. The technical study team continues the data collection and modeling. As the technical study progresses, the OWRB and technical study experts will host a final stakeholder forum to provide the results of the technical phase of the study.

The focus of the meeting was to present the status and preliminary findings of the ongoing ISF Pilot Study. The pilot study presentations given during the meeting and the meeting agenda can be found on the OWRB Instream Flow Advisory Group webpage: [www.owrb.ok.gov/ISF](http://www.owrb.ok.gov/ISF). Information presented below summarizes the feedback received at the meeting and the responses provided by the study team.

## **PRESENTATIONS**

### **Derek Smithee Presentation**

Derek Smithee, Chief of the OWRB Water Quality Division, welcomed everyone, provided housekeeping notes, reviewed the meeting agenda and introduced the project team. He revisited the goals for the Instream Flow Pilot Study and the key components of the current phase of the project.

### **Key Issues**

- The Advisory Group identified the upper Illinois River above Tenkiller Reservoir including Baron Fork and Flint Creeks for the ISF Pilot Study consistent with the Oklahoma Comprehensive Water Plan recommendation.
- The Instream Flow Pilot Study was intended to answer some previously unanswered questions, such as economics, policy and legal issues associated with an instream flow program.
- Any policy recommendations must be rooted in science.

### **John Rehring Presentation**

John Rehring, Carollo Engineers, stated four goals for the meeting: 1- Recap feedback from 2015 public meeting; 2- Learn about Illinois River resource values; 3- Learn about 2015 Instream Flow fieldwork, and 4- Ask questions and look ahead to next steps. Mr. Rehring discussed the comments and recommendations received during the 2015 public stakeholder meeting. Mr. Rehring encouraged public to participate in tonight's meeting.

### **Key Issues**

- 2015 public meeting feedback was assessed and when practicable, incorporated to the Baseline Data Report.
- Public participation is a key in the study process: ask questions about the technical study and how it fits the overall pilot study, provide feedback on types of uses on the Upper Illinois River and tributaries above Lake Tenkiller. The comments can be provided to OWRB after the public meeting and information will be available to the public on OWRB's website.
- Future work will include re-engagement of the Instream Flow Advisory Group to assess study results; initiate policy dialogue to determine how the identified instream flow needs fit into upper Illinois River flow management, and assess applicability of the process to other streams in Oklahoma (recognizing that the flow values and results will differ between watersheds due to region-specific hydrologies and local priorities for water management).

### **Forrest Olson Presentation**

Forrest Olson, CH2M, Principal Investigator of the ISF Pilot Technical Study, provided updates on the ongoing technical studies, data collection and modeling using the Physical Habitat Simulation Model (PHABSIM). Mr. Olson discussed the project goals: the study would help define a conceptual framework and study process, and also develop a seasonal instream flow recommendations for the Illinois River including Barren Fork and Flint creeks. Mr. Olson discussed the overall hydrology and water uses in the study area: the types of flows and the frequency, the main water uses, groundwater and surface water interactions, and upstream flow augmentation in Arkansas. In addition, Mr. Olson provided information on the fisheries and recreational uses in the study area and the type of flow needs to support these. The model overview included a description of how depth and velocity data were measured and modeled. Mr. Olson explained the selection of the study sites for different reaches and data collection methods in different sites. He explained how the results would be utilized to model relationships between fish habitat and streamflow.

## Key Issues

- Main consumptive water use: mostly public supply for Tahlequah area and some irrigation
- Flow augmentation from Arkansas (Fayetteville area)
- Bank-full flows: 1.5-or 2-year recurrence flow: 10,000 –20,000 cfs for Illinois River at Tahlequah.
- Importance of secondary channels for fish, wildlife, and water quality and the importance of higher flows to maintain these channels
- 2015 floods: Affected data collection such that fish habitat model extrapolation limited to < 1,000 cfs for Illinois River, <150 cfs for Flint Creek. Upper Illinois River site above Flint Creek: insufficient data; site washed out.
- The current study will focus on modeling of fish habitat-flow relationships; the model does not provide answers. The results must be interpreted and then included with consideration of other important resource values.
- Final public/stakeholder meeting to present results of the technical studies.

## LARGE GROUP DISCUSSION

A summary of comments and questions provided by meeting participants is presented below. Comment responses were provided during the meeting and also presented below.

- When will the economic evaluation be performed?
  - Moderator response: That will be addressed with the policy assessment after the technical study has been completed.
- Why is upper Illinois River being studied and not the lower Illinois River that has regulated flows?
  - Moderator response: Consistent with Oklahoma Comprehensive Water Plan recommendations to conduct an Instream Flow Pilot Study in a Scenic River, the statewide Instream Flow Advisory Group explored how to further define whether and how an instream flow (ISF) program might be implemented in Oklahoma. To make sound policy recommendations, the Group acknowledged that the basis, specifics and consequences of an ISF program must be known and understood. The Advisory Group identified the upper Illinois River above Tenkiller Reservoir including Baron Fork and Flint Creeks as the best scenic-designated watershed to test the proposed ISF evaluation process. The Illinois was chosen because it has some discharges and has a broad existing dataset that should help reduce study costs. The group ultimately determined that an upper Illinois River study as the first watershed to be analyzed would be the best approach for initial testing of the proposed process.
- Has the study assessed flow vs. water temperature impacts and the relationship to dissolved oxygen (D.O.)?
  - Technical Study Team Lead response: Previous temperature modeling studies by OSU looked at temperature correlations with low flows in Flint and Barren Fork creeks and the Illinois River. These study results will be discussed in our technical report. Dissolved oxygen was not modeled but typically follows temperature (inversely).

- What if Arkansas Wastewater Treatment Plants (WWTP) located upstream of Illinois River start reusing their effluent? Will it affect flows and the study results?
  - Technical Study Lead response: The study team is not aware of effluent flow diversions from Arkansas and has not addressed those. However, if the Fayetteville area WWTPs stopped discharging their effluent and instead reused it, the flow/habitat relationship would be unchanged but there could be impacts on Illinois River stream flows, especially noticeable in the summer. Currently these discharges (from all Arkansas WWTPs) contribute about 30 cfs to the downstream flow of the Illinois River. The study team will look into this issue further.
- Does reuse/water for 2060 goals conflict with ISF goals?
  - OWRB response: No. Beneficially reusing water helps offset the need to make other fresh water uses and diversions, which can maintain instream flows.
- Who makes recommendations?
  - OWRB response: The technical study results will be taken back to the ISF Advisory Group for further direction on how to move forward with policy decisions.
  - Technical Study Lead response: The OWRB has ultimate authority for the state’s water allocations, but their decisions are informed by recommendations and input from other agencies, groups, and interested stakeholders following completion of the technical study.
- How do we address extreme flow values? Drought contingencies; flow ranges vs. “min.” flow value.
  - Technical Study Lead response: Instream flow standards are intended to protect or support conditions for those resources dependent on appropriate flow conditions (e.g. fish, recreation). Flows that provide these conditions vary over time – by season and by year-type. Instream flow standards are often conditioned to reflect the realities of extreme conditions such as droughts.
- Impacts of high precipitation in 2015?
  - Technical Study Lead response: The December 2015 floods altered the study sites and thereby limited the field data collection to only two flows rather than the desired three flows at the lower Illinois and Flint Creek sites. This means that the fish habitat model extrapolation will be limited to < 1,000 cfs for Illinois River, <150 cfs for Flint Creek – about half of what was targeted. The Upper Illinois River site above Flint Creek was washed out before adequate data could be collected for modeling that site.
- What is the peer review process?
  - Technical Study Lead response: All the study documents to date have been prepared in collaboration with the Technical Study Workgroup (TSWG). This includes the Study Plan and the Background Data Report. In addition, the key partner agencies have been indispensable in preparing and developing data for the reports and reviewing them. The TSWG will continue review of technical documents and will make recommendations on the flows after the PHABSIM modeling has been completed.

- Any forecasted shift in recreation use?
  - OWRB response: Maybe Ed Fite who is the Technical Study Workgroup member, could answer this question.
  - Ed Fite, The Oklahoma Scenic River Commission Chairman (TSWG member) response: There are more kayaks, less canoes, and about the same amount of rafts. Kayakers like faster water but can handle shallower water.
- This demonstrates how ISF needs change over time, but climate change will affect it too.
  - Technical Study Lead response: Future climate predictions prepared by OU were reviewed as part of the Baseline Data Report. The prediction is that average annual precipitation will increase in northeastern Oklahoma in the future (to year 2099). They were not able to predict changes in storm intensity or frequency.

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