**Draft Outline for the Environmental Flows Workshop #2**

Background

The Environmental Flows workshop held in February 2015 resulted in establishing an end of water year storage target (EOWYST) for Navajo Reservoir. Consensus was reached on a target reservoir elevation of 6,063 feet (with an option to lower the elevation to 6,050 feet in some years). The volume of water in excess of the target elevation is deemed "available water" that can be released from Navajo Dam (given the release constraints of the dam). This has resulted in a process replacing the "decision tree" of the Flow Recommendations with a more flexible way to utilize available water. The previous decision tree was perceived as a ridged pathway resulting in frequent low-magnitude spring releases. In spring 2015, the SJRIP decided to not release available water (at the time determined to be a 1-week spring peak release) in favor of holding that water in the reservoir for a future higher magnitude release (3 or 4-week) in 2016 or 2017.

Outstanding tasks from the first workshop included: (1) determining how to "use" available water; (2) evaluating the existing Flow Recommendations; and (3) revising the existing Flow Recommendations as necessary. The presumptive purpose of an Environmental Flows Workshop #2 is to make progress in completing these tasks.

Previous integration efforts identified the inability of the 2,500 cfs and 5,000 cfs flow target in achieving their expected responses and the dearth of releases that met high flow targets (8,000 cfs and 10,000 cfs) making interpretation of those flow targets ambiguous (Miller 2006). Additionally, Miller (2006) called for investigating means to obtain higher spring flows (8,000 and 10,000 cfs) on a more frequent basis. As detailed during the first Environmental Flows workshop, implementation of the EOWYST would likely result in having more frequent years of high flow releases at the cost of reduced frequency of low-magnitude releases.

Substantial investigation on flow-fish and flow-habitat relationships have been conducted during SJRIP annual monitoring reports, published integration efforts, and ancillary investigations. Given these previous analyses, it may not be particularly instructive to conduct additional, extensive analyses at this time given that monitoring data were not necessarily collected with addressing questions that could be identified during a workshop brainstorming session in mind. Rather, a useful starting point for further discussion would be to have the sub-group, during a two-day workshop, review these existing relationships to ensure workshop participants are in agreement of the "knowns" and "unknowns" of the San Juan River's flow regime. Given that the 1999 Flow Recommendations have largely not been attained due to long-term dry hydrological conditions, our ability to adequately assess those Flow Recommendations and make appropriate revisions appears limited. A more productive path forward in determining how to use available water would be to prioritize one or two flow hypotheses to test over the near-term future in an experimental framework (e.g., more frequent high flow releases or elevated base flows). Reaching agreement on the prioritized flow releases would be the second task of the sub-group during the pre-workshop meeting. Finally, the sub-group would determine the monitoring protocols necessary to explicitly test flow-related hypotheses. These prospective analyses would likely be more informative than retrospective analyses of existing data because much of these data were not collected with addressing specific hypotheses in mind.

The goal of this pre-workshop meeting would be to use the expertise within the sub-group to reach an understanding on the current state of knowledge regarding flow in the San Juan River, devise the near-term future flow release priorities, and brainstorm the appropriate monitoring protocols to assess these flow priorities. The results of these proposed tests of hypotheses would inform any potential revisions to the existing Flow Recommendations.

Sketch of the Environmental Flows Workshop #2:
During the pre-workshop meeting we will complete objectives 1) and 2) and begin discussion on objectives 3) and 4). Objectives 3) and 4) will be completed during the full workshop.

1. Based on existing analyses, reach an understanding on the current state of knowledge regarding flow and flow relationships in the San Juan River. Identify analyses that could be conducted using previously collected data. Identify gaps in existing monitoring data to evaluate intended objective of specific flow targets.
2. Reach an understanding about why flow targets were not met, what we could have done to meet flow targets, and what we can do in the future to meet flow targets, even during drought conditions.
3. Come to agreement on flow release priorities using the 1999 Flow Recommendations and the Environmental Flows Workshop #1 summary as well as how we implement them.
4. Identify hypotheses behind flow release priorities. Identify what will need to be in place to test specific flow hypotheses (e.g., monitoring protocols, habitat restoration, and experimental designs).

Literature cited

Miller, W.J. 2006. San Juan River Standardized Monitoring Program Five Year Integration Report. San Juan River Basin Recovery Implementation Program, Albuquerque, NM. 83 pgs.