Trinity-San Jacinto Draft Workplan Outline

1) Executive Summary
   a) The Workplan is a *plan* to achieve the goals and objectives identified by the T-SJ Stakeholder (BBASC) group, with the support of the T-SJ BBEST. The studies, surveys, and monitoring efforts identified *within* the Workplan is where the work will be performed to address these goals and objectives.
   b) The Workplan should be a strategic document in its scope. Beyond this level will get bogged down in detail
   c) Initial focus should be on identifying a strategy for developing the information *necessary* to meet the goals and objectives. This alone is a daunting task. Once accomplished, the focus can later be placed on the realities of who will fund, coordinate, and implement the overall workplan. That discussion will likely need to be incorporated into the Workplan document eventually as well.
   d) Per SAC guidance, information gathered pursuant to carrying out the Workplan will be used to address three (3) key activities:
      i) Verify assumptions and fill data gaps, collect data to test prediction that recommended flow will be protective.
      ii) Document activities and perform analyses to evaluate effectiveness of flow regimes in context of variability of parameters needed to create and test the flow regime. (Includes testing cause-effect relationship between flow and ecological response).
      iii) Reaffirm or revise the original flow regime recommendation. Includes an analysis of variability such that BBASC will be able to balance.
   e) The Workplan must be sufficient to support:
      i) Review & comment by others in advisory capacity.
      ii) Demonstrate the necessary magnitude of data and analyses required
      iii) Basis for very rough cost estimation

2) Overview of BBEST/BBASC Recommendation Reports
   a) BBEST
      i) Conditional
      ii) Regime
   b) BBASC
      i) Conditional
      ii) Revised Regime
   c) TCEQ Draft Rules and Standard

3) Workplan Charge

Section 11.02362 (p) In recognition of the importance of adaptive management, after submitting its recommendations regarding environmental flow standards and strategies to meet the environmental flow standards to the commission, each basin and bay area stakeholders committee, ***with the assistance of the pertinent basin and bay expert science team****, shall prepare and submit for approval by the advisory group a work plan. The work plan must:*

1. *establish a periodic review of the basin and bay environmental flow analyses and environmental flow regime recommendations, environmental flow standards, and strategies, to occur at least once every 10 years;*
2. *prescribe specific monitoring, studies, and activities; and*
3. *establish a schedule for continuing the validation or refinement of the basin and bay environmental flow analyses and environmental flow regime recommendations, the environmental flow standards adopted by the commission, and the strategies to achieve those standards.*

Section 11. 1471 (f) An environmental flow standard or environmental flow set-aside adopted under Subsection (a) may be altered by the commission in a rulemaking process undertaken in accordance with a schedule established by the commission. In establishing a schedule, the commission shall consider the applicable work plan approved by the advisory group under Section 11.02362 (p).

4) Rationale for necessity of further development of science and its application. (ex: The goal for the Trinity and San Jacinto River systems and the Galveston Bay system is the maintenance of a naturally functioning and sustainable ecosystem that supports a balance of ecological benefits and economic, recreational and educational uses.)

   a) Information gathered pursuant to carrying out the Workplan will be used to address three (3) key activities:
      i) Verify assumptions and fill data gaps, collect data to test prediction that recommended flow will be protective.
      ii) Document activities and perform analyses to evaluate effectiveness of flow regimes in context of variability of parameters needed to create and test the flow regime. (Includes testing cause-effect relationship between flow and ecological response).
         (1) "Calibration" and "Validation" of flows necessary for a sound ecological environment
            (a) What does calibration and validation consist of, and when is it considered successful?

(i) Central aspect is to confirm or refute that the recommended standards are protective of a sound ecological environment.
(ii) Successful when it can be confirmed that environmental response to flow is as predicted.
(iii) Important to identify the range or bounds of acceptable responses.
(iv) Capability to predict a number of conditions other than calibration conditions, be able to test those predictions, and report the accuracy of those predictions

iii) Reaffirm or revise the original flow regime recommendation. Includes an analysis of variability such that BBASC will be able to balance.
(1) Identification of flows necessary for a sound ecological environment
(a) Would different quantities of flow for different components of a flow regime be equally effective for maintaining a sound ecological environment?
(b) What is considered achievement, i.e. how will the BBASC/BBEST determine if standards and strategies are maintaining a sound ecological environment?
(i) Minimum Integrity Thresholds based on outer limits of "acceptable" range of variation?
1. Can "acceptable" be defined via studies of the boundaries beyond which a target indicator loses its natural ability to recover?

iv) Technical Objectives
(1) ex: Determine natural, historic, and current range of indicators associated with each discipline.)
(2) ex: Developing a data set that will facilitate periodic review and allow validation of standards and achievement strategies.

v) Overview on how the various indicators of components of the ecological system are anticipated to be integrated to achieve the goals and objectives.

vi) An ongoing baseline data set will likely be necessary
(1) Should be at level that one can isolate and separate effects of external factors including instream or freshwater flows
(2) Focus directly on standards and strategies
(3) Should strive to separate effects due to natural variation from variation caused by anthropogenic activities

5) Monitoring, Studies, and Activities (the level of specificity here is in question)
a) The process is essentially:
i) Identify data gaps
ii) Evaluate existing programs for their utility
iii) Specify near-term studies or surveys
iv) Specify long-term monitoring or studies

v) Specify if a model exists which might be validated or that a model needs to be developed
vi) Identify methodologies to be employed
vii) Identify geographic distribution

b) The above process will be applied to each of these ecological components:
   i) Instream:
      (1) Freshwater/Riparian Ecology,
      (2) Hydrology/Hydraulics,
      (3) Water Quality,
      (4) Geomorphology
   ii) Estuary
      (1) Estuarine Ecology
      (2) Nutrients/Sediments
      (3) Salinity
      (4) Benthic Macroinvertebrates/Oysters

6) Schedule
   A phased timeline should be developed, with review activities "to occur *at least* once every 10 years" per SB 3. BBASC/BBEST may specify shorter period, particularly to deal with critical uncertainties in flow recommendations.
   a) Periodic Review
      i) Integrate with 5-year SB 1 Regional Planning Cycle (Note: T-SJ BBEST already have formal direction from BBASC to do this, and should comply.)
   b) Continuing Validation and Refinement of Recommendations/Standards
      Anticipated to be a continuing process. As SAC notes, "it may take decades to gather information to fully assess success of recommendations protecting a sound ecological environment."

7) Summary and Conclusions