









# NAS Report - Implementation Plan March 18, 2015

56	TBD	Applied Research	Comal Springs riffle beetle: Understand the life stages of the CSRBB.		Identify life history information important to better understanding how the populations, or portions of them, respond to changing habitat conditions related to flow or sedimentation.	Science	No	No	No	TBD	TBD	Yes	Yes	TBD - there is funding through 2019, but that would not cover all projects recommended.	Utilize the Applied Research work group to establish a research plan for the remainder of Phase I and possibly Phase II.	
57	TBD	Applied Research	Comal Springs riffle beetle: Determine its status as an indicator species.		Better assessment of how well the CSRBB acts as an indicator species for the other listed species will be critical for more comprehensive management of all threatened or endangered species that are not currently being monitored.	Science	No	No	No	TBD	TBD	Yes	Yes	TBD - there is funding through 2019, but that would not cover all projects recommended.	Utilize the Applied Research work group to establish a research plan for the remainder of Phase I and possibly Phase II.	
58	TBD	Applied Research	Determine the effects from phosphorus sources, cycling, and availability on the productivity of the ecosystems.		In addition to the physical impacts of low flow, there could be very important indirect effects of low flow on the overall productivity and food web dynamics of the spring/river ecosystems due to nutrients.	Science	No	No	No	TBD	TBD	Yes	Yes	TBD - there is funding through 2019, but that would not cover all projects recommended.	Utilize the Applied Research work group to establish a research plan for the remainder of Phase I and possibly Phase II.	
59	No	Applied Research	Develop a general conceptual model for the Comal and San Marcos springs ecosystem.	130:1	Project partners should be tasked with the development of a general conceptual model for the Comal and San Marcos System.	Science	No	No	No	No	No	Yes	Yes	Yes	N/A	*Already Done for Species - 2010 EARIP Influence Diagrams: facilitated by Jean Cochrane. *Models for each system could be extrapolated from these influence diagrams or created if needed. But first, the need and goal should be identified as it relates to compliance with the ITP.
60	Done	Overarching Issues	Future scenario planning: Think how possible worst case scenarios would impact both modeling and HCP implementation (provided 5 scenarios; pgs. 137-139).	136:21	The five scenarios are the following: 1. Increased exempt pumping, 2. Drought conditions exceed Drought of Record, 3. Mismatch between conservation triggers and hydrologic changes, 4. Climate change, 5. Bragg litigation, and 6. Whooping Crane ESA issues	Policy	No	No	No	No	No	Yes	No	Yes	N/A	During the EARIP planning process, these topics were discussed, deliberated on, and decisions were already made regarding these topics.
61	Done	Overarching Issues	Conduct performance-based monitoring of the minimization/mitigation measures.	135: 5	The minimization and mitigation measures should be monitored for their performance.	Policy	Yes - demonstrate the completion of mitigation and resulting achievement of the Biological Objectives and Goals.	Yes	No	Yes	No	Yes	Yes	Yes - no impact	EAHCP staff has already begun to develop a tracking matrix of all M&M measures, how to measure success/completion and their status (% completion as measured against the Biological Goals)	This matrix should be completed late-summer 2015.
62	TBD	Overarching Issues	A comprehensive information management plan.	134:15	A comprehensive information management plan would ensure both internal and external access to relevant data over both the short and long-term, facilitate data analyses and syntheses across multiple data types and sources, buffer against the potential turnover of key personnel, and increase t.	Science / Policy	No	No	No	TBD	TBD	Yes	Yes	TBD - depends on method utilized for dissemination; no budget is currently identified for this exercise.	*Develop a data management plan. *Utilize a data manager (consultant or staff) or staff scientific Ph. D to establish a required data format for contractors to adhere to, reformat and organize existing data.	*It is recommended that a scientific Ph. D be added to the HCP staff to assist with the creation and implementation of a data management plan, if determined it is needed to achieve compliance. *The purpose of data generated within the EAHCP is for the purpose of building the Eco Model or providing information to the Implementing Committee to make decisions. The purpose is not to ensure the data is in a usable format for another program/entity to utilize. If it is not in a usable format for a requesting program/entity to use, it should be the responsibility of the requestor to format for their purposes.
63	TBD	Overarching Issues	Conduct rigorous statistical data analysis.	135:15	The recommendation for a more formal and rigorous statistical analyses of laboratory and field data such as summary statistics, variance of means etc..	Science / Policy	No	TBD	No	TBD	TBD	Yes	Yes	TBD - depends on method utilized for analysis. Currently, there is no budget for this exercise.	*At the June 2015 SC meeting, the SC will deliberate what/if any additional information can be gained to further compliance with the ITP from additional data analysis.	*Before implementation of this recommendation, the Science Committee should be utilized to identify questions that should be answered through the additional data analysis. These questions should be directly tied to achieving compliance or furthering accomplishment of the Biological Goals. *Utilize a data manager (consultant or staff) or staff scientific Ph. D to facilitate a Science Committee discussion to explore what, if any, questions should be answered by additional data analysis.
64	No	Overarching Issues	Increase project integration.	132 -133	1. Develop an overall conceptual model of the Edwards system. 2. Develop a unified data management system. 3. Convene an annual Science Meeting to discuss all relevant topics.	Science/Policy	No	No	No	No	No	Yes	Yes	Yes	*Two of the specific recommendations identified (conceptual model and data integration) have been addressed in other sections of this implementation plan. *The third recommendation to hold a Annual Science meeting may be covered by the proposed Bio Monitoring, Water Quality and Applied Research work groups.	*A EAHCP Conceptual Model was created by EAHCP staff and shared with Implementing Committee in 2014. *The Annual Science meeting covering the Edwards Aquifer appears to be a good idea. But not sure it is the EAHCP that should host, rather the EAHCP should be a participant.

**Column Definitions**

<b>Required for Compliance:</b>	Is implementation of this recommendation required to maintain compliance with the ITP or HCP
<b>Supports Achieving Biological Objectives or Goals</b>	Will implementation of a recommendation contribute to achieving the Biological Objectives or Goals.
<b>Fatal Flaw of Program</b>	1. Does a recommendation correct a wrong direction, decision or approach that prevents the permitted from achieving the Biological Objectives or Biological Goals in the HCP. 2. Does a recommendation correct a wrong direction, decision or approach that would cause the Permittees to exceed the Take levels identified in the ITP.
<b>Immediate Implementation</b>	Within the next year
<b>Delayed Implementation</b>	2-5 year implementation schedule
<b>Operationally Feasible</b>	Can the technical and physical elements of a recommendation be implemented based on the current level of knowledge, understanding and resources.
<b>Politically Feasible</b>	Has there been an expression historically by the Permittees as to the political nature or controversial nature of the recommendation
<b>Fiscally Feasible</b>	Are there funds available for implementation of the recommendation.
<b>Implementation Strategy</b>	How will the recommendation be implemented

Hydrological Model
Ecological Model
Bio and WQ Monitoring
Applied Research
Overarching Issues