

Attachment 7

Prioritization Status: Done, Completed or In-Progress						
	Status	Report Category	Recommendation	Fiscal Impacts	Implementation Strategy	Comments
1	Done	Hydrologic Model	Don't use the term "verification" when describing model runs with changing parameters.	None	Use the correct terminology in future discussions and reports.	EAA should draft a multi-year modeling plan that outlines future modeling efforts that will effect/be utilized by the EAHCP. This plan should be comprehensive to all models.
10	Done	Ecological Model	Develop an ecosystem-based conceptual model.	None	N/A	Already Done - 2010 EARIP Influence Diagrams: facilitated by Jean Cochrane
16	Done	Ecological Model	Develop a conceptual model that shows how water quality and quantity, other biota and restoration and mitigation activities are expected to interact with the indicator species.	None	N/A	Already Done - 2010 EARIP Influence Diagrams: facilitated by Jean Cochrane
19	Done	Ecological Model	In developing the fountain darter model, pay attention to movement, density dependence and other topics.	None	N/A	These studies were conducted through the Applied Research Program and results were incorporated into the Ecological Model
12	Done	Ecological Model	Include intermediate products in the development of the fountain darter model.	None	N/A	These analyses were performed as the first steps in the Eco Model development.
22	Done	Ecological Model	Use the habitat suitability analyses for the fountain darter as "back-up" to individual-based modeling.	None	N/A	*Conducting this exercise would not answer questions for Phase II, the model does that. *Implementing this recommendation would be taking steps backwards.
23	Done	Ecological Model	Revisit the estimation fountain darter suitability curves.	None	N/A	*These curves are the first step in creating the Ecological Model. If to be used for the development of the Ecological Model, we are past that point. *If the Fountain Darter module fails or does not calibrate, then suitability curves should be revisited.
35	Done	Applied Research	Conduct a follow-up fountain darter movement study.	None	N/A	A Fountain Darter movement study was conducted in 2014. NAS did not have the benefit of seeing these results prior to putting forth this recommendation.
36	Done	Applied Research	Increase transparency in prioritizing and funding research projects.	None	N/A	*In 2014 and 2015, EAHCP staff modified the Applied Research prioritization process to be more transparent, solicit additional proposals from new proposers, solicit more input from the Science Committee on the technical merits of proposals, solicit key elements from the Science Committee to be included in the RFP's, and generally increase the role of the Science Committee in the process.

Attachment 7

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).	None	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.	None	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.
5	Continual	Hydrologic Model	Do not compare results from MODFLOW and FEFLOW.	None	*EAA will not perform a head to head comparison of model results, but will rather utilize each model for specific purposes. *There has been much discussion by the IC and Stakeholders as to the purpose of having two models. Many have publically supported the use of both since they are now close to ready for utilization.	*Calibration of the models is not sufficient for a head to head comparison . *EAA should draft a multi-year modeling plan that outlines future modeling efforts that will effect/be utilized by the EAHCP. This plan should be comprehensive to all models.
2	Continual	Hydrologic Model	Consider MODFLOW as a work in progress and not a final product.	Funding is allocated in the EAA operational budget	Continue to update the MODFLOW model as additional data/information is realized.	*EAA has been committed to an iterative modeling process since the creation of the MODFLOW model; continuously improving and updating the model. The next iteration could be Modflow USG. *EAA should draft a multi-year modeling plan that outlines future modeling efforts that will effect/be utilized by the EAHCP. This plan should be comprehensive to all models.
11	Continual	Ecological Model	Improve the habitat suitability analyses for Texas wild rice.	Funding is allocated in the CoSM/TXSTATE work plan budget	Field Verification and Observation	*TWR has been extremely successful to date; therefore additional TWR work is not needed at this point. *The Meadows Center has been collecting this information as Applied Research imbedded in their TWR restoration work. Habitat suitability has taken the form of applied verification in the field.
21	Continual	Ecological Model	Test the robustness of the current habitat suitability analysis for Texas wild-rice.	Funding is allocated in the CoSM/TXSTATE work plan budget	Field Verification and Observation	*TWR has been extremely successful to date; therefore additional TWR work is not needed at this point. *The Meadows Center has been collecting this information as Applied Research imbedded in their TWR restoration work. Habitat suitability has taken the form of applied verification in the field.
26	Continual	Biological Monitoring	Continue monitoring index reaches.	Funding is allocated in the Biological Monitoring work plan budget	Implement the Biological Monitoring work plan	This is already part of the Bio Monitoring work plan and program. Recommend to establish a Biological Monitoring Work Group to do a holistic review of the biological monitoring program and its integration with the water quality monitoring program.
3	In Progress	Hydrologic Model	Continue development and testing of the Hydrological Simulation Program (HSPF) for estimating recharge.	Funding is allocated in the EAA operational budget	Conduct comparison between Puente method, HSPF, and other estimations.	*EAA has been committed to an iterative modeling process since the creation of the HSPF models; continuously improving and updating the models. *Refinement of Recharge Estimates are a goal of the EAA strategic plan. *EAA should draft a multi-year modeling plan that outlines future modeling efforts that will effect/be utilized by the EAHCP. This plan should be comprehensive to all models. *Recharge is a major source of uncertainty.
4	In Progress	Hydrologic Model	Quantitatively assess model uncertainty.	Funding is allocated in the EAA operational budget	Have technical consultants conduct uncertainty analysis. EAA is already working on a Scope of Work for this evaluation.	This is already included in Model development by EAA staff. However there is merit to having a 3rd party perform this analysis. The Work Group unanimously recommended the EAA to perform this analysis (6/26).
6	In Progress	Hydrologic Model	Move toward a single model.	None	N/A	*There seems to be support for this from both the technical perspective and political perspective. *Participants in the workshop noted that a Cost/Benefit analysis of one model vs two should be conducted.
13	In Progress	Ecological Model	Develop a phased strategy for testing individual components in the submerged aquatic vegetation (SAV) model.	Funding is allocated in the Ecological Modeling work plan budget	Conduct Analysis	The Eco Model Team is already planning to perform this verification.

Attachment 7

14	In Progress	Ecological Model	Make the Applied Research program more robust with quantitative projections of Comal Springs riffle beetle (CSRB) habitat.	Funding is allocated in the Applied Research work plan budget	In 2015 and 2016, the Applied Research Program is focusing on the Comal Springs riffle beetle.	However, the CSRB is no longer a module in the Eco Model, therefore the data collected will only be utilized if the CSRB is added to the model at some point in the future.
17	In Progress	Ecological Model	Ensure proper interpretation of the ongoing effort to build an individual-based model for fountain darter.	Funding is allocated in the Ecological Modeling work plan budget	N/A	The Eco Modeling team already plans to conduct verification testing.
37	In Progress	Applied Research	Increase competition and collaboration with outside scientific experts.	None	N/A	*For 2016 Applied Research solicitations, EAHCP staff referenced literature cited reports and bibliographies of researchers that performed similar research or are familiar with the EAHCP Covered Species, EAHCP staff will reach out to these identified researchers and ensure they are aware of the EAHCP research projects. * Additionally, for 2016 research solicitations, EAHCP staff will utilize numerous posting boards.
40	In Progress	Applied Research	Increase transparency of research results.	TBD - depends on method utilized for formatting, storage and access/dissemination.	*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. *This recommendation seems to lead one to believe that there is a lack of transparency in the research process or that data generated through the EAHCP is not made available to other entities. However, all reports, results and data are posted on the EAHCP website and provided to any requestor. *The NAS RRWG discussed that 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.
<b>Prioritization Status: Yes to be Implemented w/ no budget impact</b>						
	Status	Report Category	Recommendation	Fiscal Impacts	Implementation Strategy	Comments
7	Yes	Hydrologic Model	Display error bars on MODFLOW data.	Funding is allocated in the EAA operational budget	These error bars will be established by the Uncertainty Analysis being conducted by EAA	*The error bars will be most useful on the acct of forbearance. *EAA has a multi-year modeling plan that outlines future modeling efforts that will effect/be utilized by the EAHCP. This plan should be comprehensive to all models.
20	Yes	Ecological Model	Clarify the goal of the submerged aquatic vegetation (SAV) model.	None	Require the Eco Modeling team to provide a clear and concise goal of the SAV model.	
38	Yes	Applied Research	Remove Literature Review tasks	None - if any, could result in cost savings.	Request literature reviews with the proposal, rather than as a deliverable of the contract.	*Thus far Literature Review has been conducted by all selected contractors and represents a very minor expense. Proposers should do their background work (literature review) prior to submitting, but what is the harm in requesting to see their lit review if selected. *As most of the Applied Research in the HCP has been conducted or determined to not be needed, and new projects and topics are recommended for research by NAS and the Science Committee, a Applied Research work group should be formed to review completed research and establish a new research plan moving forward. *In Table 7.1, applied research funding ends in 2019; with identified additional research needs and continuing unknowns, the Implementing Committee might should consider extending applied research funding through the duration of the ITP. This additional funding would need to be reallocated from another HCP activity to applied research. *Additionally, it is recommended that a scientific Ph. D be added to the HCP staff to assist with workgroup facilitation, analysis and resulting implementation. Additionally, this staff person could assist in review of the research proposals, selecting contractors, and facilitating the research prioritization process and QA/QC of research conductance.
39	Yes - as allowed for by the FMA	Applied Research	Offer longer-term projects.	None - the Applied Research budget is capped at \$450,000 annually	The FMA and budgeting cycle should be explored to identify opportunities to create multiple year research projects. Recommended as a critical component by the Work Group	*The Science Committee has echoed the same recommendation for longer and on-going studies. However, that remains a challenge within the current planning and budgeting framework. *The NAS RRWG supported this as an important step in increasing the number of potential bidders to projects. All opportunities to implement this recommendation should be explored.

Attachment 7

8	Future Goal	Hydrologic Model	Include conduits in the development of the Hydrologic Model.	Funding is allocated in the EAA operational budget	Will require additional hydrologic research and data collection.	*Workshop participants generally supported modeling of conduits; however, many cautioned about the limited modeling capabilities to achieve this and the lack of data needed. *EAA has a multi-year modeling plan that outlines future modeling efforts that will effect/be utilized by the EAHCP. This plan should be comprehensive to all models.
9	Future Goal	Hydrologic Model	Move toward making predictions on a daily time scale.	Funding is allocated in the EAA operational budget	Will require additional hydrologic research and data collection.	*This would require outside consultation and expertise if established. *EAA has a multi-year modeling plan that outlines future modeling efforts that will effect/be utilized by the EAHCP. This plan should be comprehensive to all models.

**Prioritization Status: Yes or TBD w/ budget impact**

	Status	Report Category	Recommendation	Fiscal Impacts	Implementation Strategy	Comments
62	TBD	Overarching Issues	A comprehensive information management plan.	Significant - initial setup of a comprehensive data management plan would likely require engaging a consultant and require purchase of additional software/hardware. <b>Currently, there is no identified budget for this activity.</b>	*Develop a data management plan. *Utilize a data manager (consultant or staff) to establish a required data format for contractors to adhere to and reformat/organize existing data.	*It is recommended that a Director 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.	Significant - this analysis would be performed by a contractor. <b>Currently, there is no identified budget for this activity.</b>	Develop a detailed list of questions that the Science Committee believes can be answered by analyzing existing data.	*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) to facilitate a Science Committee discussion to explore what, if any, questions should be answered by additional data analysis.

**Prioritization Status: Yes/No to be Implemented and Prioritized by the Water Quality Work Group**

	Status	Report Category	Recommendation	Fiscal Impacts	Implementation Strategy	Comments
28	Yes	Biological and Water Quality Monitoring	Increase coordination and integration of the biological monitoring and water quality monitoring programs.	None	Create a Water Quality monitoring work group and a Biological monitoring work group to develop a strategy to implement this recommendation.	It is recommended that a Director of Refugia and Covered Species Programs be added to the HCP staff to assist with this workgroup facilitation, analysis and resulting implementation.
29	Yes - ask the Water Quality work group for concurrence	Water Quality Monitoring	Enhance nutrient sampling.	<b>Currently, there is no identified budget for this activity.</b> For this sampling to be added, another component of equal or greater cost would need to be dropped.	Create a Water Quality monitoring work group to develop a strategy to implement this recommendation.	*As several years of data have been collected under the HCP Water Quality program and much has been learned, it is time to take a step back and revisit the Water Quality monitoring program from a holistic approach. It is recommended that a work group be formed to consider all NAS Water Quality monitoring recommendations and look for needed modifications based on data collected. *Additionally it is recommended that a Director of Refugia and Covered Species Programs be added to the HCP staff to assist with this workgroup facilitation, analysis and resulting implementation.
30	Yes - ask the Water Quality work group for concurrence	Water Quality Monitoring	Conduct additional residential herbicide, residential chemicals, and personal care product testing.	<b>Currently, there is no identified budget for this activity.</b> For this sampling to be added, another component of equal or greater cost would need to be dropped.	Create a Water Quality monitoring work group to develop a strategy to implement this recommendation.	*As several years of data have been collected under the HCP water quality monitoring program and much has been learned, it is time to take a step back and revisit the water quality monitoring program from a holistic approach. It is recommended that a work group be formed to consider all NAS water quality monitoring recommendations and look for needed modifications based on data collected. *Additionally it is recommended that a Director of Refugia and Covered Species Programs be added to the HCP staff to assist with this workgroup facilitation, analysis and resulting implementation.

**Prioritization Status: Yes/No to be Implemented and Prioritized by the BioMonitoring Work Group**

	Status	Report Category	Recommendation	Fiscal Impacts	Implementation Strategy	Comments
28	Yes	Biological and Water Quality Monitoring	Increase coordination and integration of the biological monitoring and water quality monitoring programs.	None	Create a Water Quality monitoring work group and a Biological monitoring work group to develop a strategy to implement this recommendation.	It is recommended that a Director of Refugia and Covered Species Programs be added to the HCP staff to assist with this workgroup facilitation, analysis and resulting implementation.

Attachment 7

31	TBD	Biological Monitoring	Provide a clear mechanism to scale results to the entire spring and reach system.	<b>Currently, there is no identified budget for this activity.</b> For this sampling to be added, another component of equal or greater cost would need to be dropped.	Create a Biological monitoring work group to develop a strategy to implement this recommendation.	*The NAS RRWG discussed that the purpose of expanding the index reaches to representative reaches (system wide representation) has not been determined. If this is considered, a rationale as to why a system wide representation is needed for ITP compliance should be developed. *The Biological Goals and Objectives are tied to the previously identified reaches, not the entire river system. * NAS themselves comments that this is necessary only if desired.
32	No - ask the Biological Monitoring work group for concurrence	Biological Monitoring	Increase the frequency of sampling in Comal Springs system.	<b>Currently, there is no identified budget for this activity.</b> For this sampling to be added, another component of equal or greater cost would need to be dropped.	Create a Biological monitoring work group to develop a strategy to implement this recommendation.	*Originally, the Variable Flow sampling was conducted 4 times a year. It has since been reduced to twice a year as it was determined there was no additional advantage to sampling a higher frequency. *The NAS RRWG discussed the consistency in data sets and lack of variability in most parameters, leading to the questioning of why implementation of this recommendation would be needed.

**Prioritization Status: Yes/No to be Implemented and Prioritized by the Applied Research Work Group**

	Status	Report Category	Recommendation	Fiscal Impacts	Implementation Strategy	Comments
18	Yes	Ecological Model	Develop a much deeper understanding of the CSR.B.	The Applied Research budget is capped at \$450,000 annually through 2019, allowing for approximately 4-5 research studies annually.	Utilize the Applied Research work group to establish a prioritized research plan for the remainder of Phase I.	The workshop participants generally supported more CSR.B research. However, there was discussion about if the CSR.B should be used as an indicator species, as it is assumed the CSR.B simply retreats into subterranean habitat.
27	Yes	Biological Monitoring	Develop quantitative sampling methods for the CSR.B.	The Applied Research budget is capped at \$450,000 annually through 2019, allowing for approximately 4-5 research studies annually.	Utilize the Applied Research work group to establish a prioritized research plan for the remainder of Phase I.	*The Science Committee has been discussing this topic at recent meetings. This recommendation should complement their discussions. *Workshop participants generally supported establishment of new methods. *This research would specifically look at methods other than use of the "cotton lure"; but also could be designed to include an "Optimization Study" for the cotton lure. *This research could also be used to determine the composition of the biofilm; or if already established by other researchers, could determine the utilization of the biofilm by the CSR.B.
41	TBD	Applied Research	Fountain Darter: Conduct additional studies on movement, preferably allowing for Lagrangian tracks to be estimated.	The Applied Research budget is capped at \$450,000 annually through 2019, allowing for approximately 4-5 research studies annually.	Utilize the Applied Research work group to establish a prioritized research plan for the remainder of Phase I.	Applies to Applied Research Recommendations 41-58 *As most of the Applied Research in the HCP has been conducted or determined to not be needed, and new projects and topics are recommended for research by NAS and the Science Committee, a Applied Research work group should be formed to review completed research and establish a new research plan moving forward.
42	TBD	Applied Research	Fountain Darter: Confront the persistent lack of a relationship found between flow and fountain darter metrics...it is critical to refine the relationship at low to moderate flows and also at high flows (scour events).	The Applied Research budget is capped at \$450,000 annually through 2019, allowing for approximately 4-5 research studies annually.	Utilize the Applied Research work group to establish a prioritized research plan for the remainder of Phase I.	*In Table 7.1, applied research funding ends in 2019; with identified additional research needs and continuing unknowns, the Implementing Committee might should consider extending applied research funding through the duration of the ITP. This additional funding would need to be reallocated from another HCP activity to applied research. *Additionally, it is recommended that a scientific Ph. D be added to the HCP staff to assist with workgroup facilitation, analysis and resulting implementation. Additionally, this staff person could assist in review of the research proposals, selecting contractors, and facilitating the research prioritization process and QA/QC of research conductance.
43	TBD	Applied Research	Fountain Darter: Obtain measurements related to individual fountain darter health that go beyond the densities and lengths of individuals measured in the current bio monitoring.	The Applied Research budget is capped at \$450,000 annually through 2019, allowing for approximately 4-5 research studies annually.	Utilize the Applied Research work group to establish a prioritized research plan for the remainder of Phase I.	
44	TBD	Applied Research	Submerged Aquatic Vegetation: Supply data on SAV growth, dispersal, and recolonization for those SAV species that are the best habitat for the fountain darter.	The Applied Research budget is capped at \$450,000 annually through 2019, allowing for approximately 4-5 research studies annually.	Utilize the Applied Research work group to establish a prioritized research plan for the remainder of Phase I.	

Attachment 7

45	TBD	Applied Research	Submerged Aquatic Vegetation: Determine if the fountain darters are using SAV for protection, to find food, and/or as a nursery area for young.	The Applied Research budget is capped at \$450,000 annually through 2019, allowing for approximately 4-5 research studies annually.	Utilize the Applied Research work group to establish a prioritized research plan for the remainder of Phase I.
46	TBD	Applied Research	Submerged Aquatic Vegetation: Determine why the fountain darters prefer bryophytes and filamentous algae, which are not vascular plants.	The Applied Research budget is capped at \$450,000 annually through 2019, allowing for approximately 4-5 research studies annually.	Utilize the Applied Research work group to establish a prioritized research plan for the remainder of Phase I.
47	TBD	Applied Research	Texas wild-rice: Focus studies on the restoration of this plant.	The Applied Research budget is capped at \$450,000 annually through 2019, allowing for approximately 4-5 research studies annually.	Utilize the Applied Research work group to establish a prioritized research plan for the remainder of Phase I.
48	TBD	Applied Research	Texas wild-rice: Focus studies on the restoration of this plant.	The Applied Research budget is capped at \$450,000 annually through 2019, allowing for approximately 4-5 research studies annually.	Utilize the Applied Research work group to establish a prioritized research plan for the remainder of Phase I.
49	TBD	Applied Research	Texas wild-rice: Focus studies on the restoration of this plant.	The Applied Research budget is capped at \$450,000 annually through 2019, allowing for approximately 4-5 research studies annually.	Utilize the Applied Research work group to establish a prioritized research plan for the remainder of Phase I.
50	TBD	Applied Research	Texas wild-rice: Focus studies on the restoration of this plant.	The Applied Research budget is capped at \$450,000 annually through 2019, allowing for approximately 4-5 research studies annually.	Utilize the Applied Research work group to establish a prioritized research plan for the remainder of Phase I.
51	TBD	Applied Research	Comal Springs riffle beetle: Understand the life history, life cycle and spatial distribution for better modeling of this species.	The Applied Research budget is capped at \$450,000 annually through 2019, allowing for approximately 4-5 research studies annually.	Utilize the Applied Research work group to establish a prioritized research plan for the remainder of Phase I.
52	TBD	Applied Research	Comal Springs riffle beetle: Understand the life stages of the CSRB.	The Applied Research budget is capped at \$450,000 annually through 2019, allowing for approximately 4-5 research studies annually.	Utilize the Applied Research work group to establish a prioritized research plan for the remainder of Phase I.
53	TBD	Applied Research	Comal Springs riffle beetle: Understand the life stages of the CSRB.	The Applied Research budget is capped at \$450,000 annually through 2019, allowing for approximately 4-5 research studies annually.	Utilize the Applied Research work group to establish a prioritized research plan for the remainder of Phase I.
54	TBD	Applied Research	Comal Springs riffle beetle: Understand the life stages of the CSRB.	The Applied Research budget is capped at \$450,000 annually through 2019, allowing for approximately 4-5 research studies annually.	Utilize the Applied Research work group to establish a prioritized research plan for the remainder of Phase I.

DRAFT

Attachment 7

55	TBD	Applied Research	Comal Springs riffle beetle: Determine the representativeness of Cotton Lure sampling	The Applied Research budget is capped at \$450,000 annually through 2019, allowing for approximately 4-5 research studies annually.	Utilize the Applied Research work group to establish a prioritized research plan for the remainder of Phase I.	
56	TBD	Applied Research	Comal Springs riffle beetle: Understand the life stages of the CSRB.	The Applied Research budget is capped at \$450,000 annually through 2019, allowing for approximately 4-5 research studies annually.	Utilize the Applied Research work group to establish a prioritized research plan for the remainder of Phase I.	
57	TBD	Applied Research	Comal Springs riffle beetle: Determine its status as an indicator species.	The Applied Research budget is capped at \$450,000 annually through 2019, allowing for approximately 4-5 research studies annually.	Utilize the Applied Research work group to establish a prioritized research plan for the remainder of Phase I.	
58	TBD	Applied Research	Determine the effects from phosphorus sources, cycling, and availability on the productivity of the ecosystems.	The Applied Research budget is capped at \$450,000 annually through 2019, allowing for approximately 4-5 research studies annually.	Utilize the Applied Research work group to establish a prioritized research plan for the remainder of Phase I.	
15	TBD	Ecological Model	Include more field studies in the Applied Research program to assess silt impacts and critical life history and habitat assessment of the CSRB.	The Applied Research budget is capped at \$450,000 annually through 2019, allowing for approximately 4-5 research studies annually.	Utilize the Applied Research work group to establish a prioritized research plan for the remainder of Phase I.	However, the CSRB is no longer a module in the Eco Model, therefore the data collected will only be utilized if the CSRB is added to the model at some point in the future. Need to address the concerns related to siltation through Applied Research program
25	In Progress - consider next steps	Biological Monitoring	Measure the distribution of the CSRB.	The Applied Research budget is capped at \$450,000 annually through 2019, allowing for approximately 4-5 research studies annually.	Utilize the Applied Research work group to establish a prioritized research plan for the remainder of Phase I.	This study was conducted in 2014 by ZARA environmental as part of the Applied Research program. The study established a distribution during a low flow year, but did not establish a population estimate with confidence. This study could be expanded by conducting again during a normal flow year or attempting to establish a population estimate. It could be done through the 2016 Applied Research program.

**Prioritization Status: No, not recommended for Implementation**

	Status	Report Category	Recommendation	Fiscal Impacts	Implementation Strategy	Comments
24	No	Ecological Model	Add nutrient limitation to the submerged aquatic vegetation (SAV) model formulation.	No - no funding to conduct the extensive research that would be needed.	N/A	*Nutrients are not a limiting factor, except to algae (presence/absence). Algae is not in the Eco Model. *The SAV model is tied to Fountain Darter habitat, so therefore this is not necessary.
33	No	Biological Monitoring	Conduct special studies on the fountain darter.	No - the Bio Monitoring Budget is already maxed out. For this sampling to be added, another component would need to be dropped.	If this recommendation was implemented, it should be prioritized by the Science Committee as part of the regular Applied Research program.	*The purpose of expanding the index reaches to representative reaches (system wide representation) has not been determined. If this is considered, a rationale as to why a system wide representation is needed for ITP compliance should be developed. *The Biological Goals and Objectives are tied to the previously identified reaches, not the entire river system. * NAS themselves comments that this is necessary only if desired.
34	No	Biological Monitoring	Expand macro invertebrate surveys.	No - the Bio Monitoring Budget is already maxed out. For this sampling to be added, another component would need to be dropped.	Create a Biological monitoring work group to develop a strategy to implement this recommendation.	*The participants in the NAS Report #1 workshop supported this recommendation, but did not identify how it contributed to compliance or the Biological Goals. *Macroinvertebrate sampling is typically performed to monitor the health of an aquatic system; the health of the Comal and San Marcos system is being monitored by other components of the monitoring programs. *Macroinvertebrate sampling in the HCP was to originally performed to populate the Ecological model. That effort is now close to complete, and new data would not be generated in time to be used by the modeling team.
59	No	Applied Research	Develop a general conceptual model for the Comal and San Marcos springs ecosystem.	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.

Attachment 7

64	No	Overarching Issues	Increase project integration.	Yes	<p>*Two of the specific recommendations identified (conceptual model and data integration) have been addressed in other sections of this implementation plan.</p> <p>*The third recommendation to hold a Annual Science meeting may be covered by the proposed Bio Monitoring, Water Quality and Applied Research work groups.</p>	<p>*A EAHCP Conceptual Model was created by EAHCP staff and shared with Implementing Committee in 2014.</p> <p>*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.</p>
----	----	--------------------	-------------------------------	-----	--	---

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

DRAFT