



EAHCP STRATEGIC ADAPTIVE MGMT



Presentation to EAHCP
Science Committee
August 9, 2018
Chad Furl Ph.D. P.E.

What is Strategic Adaptive Management ?

- ▶ SAMP is the formal transitional period between Phase I and Phase II of the EACHP.
- ▶ The requirements of SAMP are documented in the FMA and summarized in the attached white paper.
- ▶ Phase I 2013-2020 SAMP 2018-2021 Phase II 2020-2028

Conservation Measures
(habitat restoration &
springflow protection)



Biological Objectives
(flow rates, habitat
condition & WQ)



Biological Goals
(available habitat &
species population)

Why did the EARIP design an HCP with Phases and SAMP?

- ▶ Modeled springflow with all springflow protection measures did not achieve minimum daily springflows at Comal Springs.
 - ▶ 3 cfs short for 2 months of the Drought of Record
 - ▶ At that time, would have required additional 3% CPM in Stage V
- ▶ SAMP was built into FMA to allow for improved modeling and on the ground implementation of conservation measures, before expenditure of resources to address the 3 cfs shortfall.
- ▶ National Academy of Sciences





Strategic Adaptive Mgmt (2018 – 2020)

- Remodel Realized/Actual Implementation
- Does a Springflow Deficit Exist
- Establish Conservation Measure(s) to Achieve Biological Goals
- Facilitate Decisions and Approvals

Phase I (2013 – 2020)



- Habitat Restoration
- Springflow Protection
- Research, Modeling, Monitoring
- Refugia

Phase I and Phase II

Phase II (2020-2028)

- Continue or Expand Phase I Conservation Measures
- Implement Phase II Conservation Measure(s) if necessary

EAHCP Minimum Springflows and Modeled discharge (cfs)



Comal Springs	Required Minimum Springflows
Long-term	225 ¹
Daily	30 ¹ up to 6 months – 80cfs pulse

San Marcos Springs	Required Minimum Springflows
Long-term	140 ²
Daily	45 ² up to 6 months – 80cfs pulse

¹ EAHCP Table 4-2

² EAHCP Table 4-13

EAHCP Minimum Springflows and Modeled discharge (cfs)

Comal Springs	Required Minimum Springflows	Modeled Springflow during EARIP	EARIP Deficit
Long-term	225 ¹	196 ³	29
Daily	30 ¹ up to 6 months – 80cfs pulse	27 ³	3

San Marcos Springs	Required Minimum Springflows	Modeled Springflow during EARIP	EARIP Deficit
Long-term	140 ²	155 ⁴	-
Daily	45 ² up to 6 months – 80cfs pulse	51 ⁴	-

¹ EAHCP Table 4-2

² EAHCP Table 4-13

³ EAHCP Table 4-30

⁴ EAHCP Table 4-52



Use of the MODFLOW Model in SAMP

- ▶ The EAA will use their updated MODFLOW model to examine whether springflow shortfalls exist with implementation of springflow protection measures.
- ▶ Three types of model runs will be conducted with the updated EAA model:
 - ▶ Baseline Runs
 - ▶ Springflow CMs modeled exactly the same as EARIP only difference is updated model
 - ▶ SAMP Runs
 - ▶ Springflow CMs modeled as implemented through the first 5 years of the HCP
 - ▶ VISPO – geographical distribution and actual volume enrolled.
 - ▶ ASR – geographical distribution; new two tier system and trigger.
 - ▶ RWC – geographical distribution.
 - ▶ If needed: Phase I CMs + Phase II CM to achieve minimum springflows

EAHCP Minimum Springflows and Modeled discharge (cfs)

Comal Springs	Required Minimum Springflows	Modeled Springflow during EARIP	EARIP Deficit	Modeled Springflow Baseline Runs	Baseline Deficit
Long-term	225 ¹	196 ³	29	?	?
Daily	30 ¹ up to 6 months – 80cfs pulse	27 ³	3	29.7	0.3

San Marcos Springs	Required Minimum Springflows	Modeled Springflow during EARIP	EARIP Deficit	Modeled Springflow Baseline Runs	Baseline Deficit
Long-term	140 ²	155 ⁴	-	?	-
Daily	45 ² up to 6 months – 80cfs pulse	51 ⁴	-	48	-

¹ EAHCP Table 4-2

² EAHCP Table 4-13

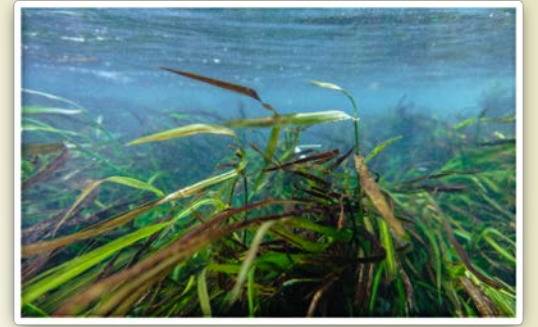
³ EAHCP Table 4-30

⁴ EAHCP Table 4-52

Baseline Runs



Additional Phase II CMs



- ▶ If a springflow deficit does exist for daily minimum flows
 1. Most likely at Comal
 2. In the magnitude of 1 or 2 cfs
- ▶ Therefore, a Phase II CM to achieve the daily minimums
 1. Likely to be small in scale
 2. Likely to be expansion of an existing Phase I CM:
 - a) EAA ASR forbearance
 - b) VISPO



Habitat Condition CMs and Biological Obj

- ▶ Does the current suite of restoration measures achieve the quality and quantity of habitat needed to achieve the Biological Goals?
- ▶ To date, with minor exceptions, restoration has been successful.
- ▶ Anticipate input from NAS on this topic; Report 3 due September 30.

Conservation Measures
(habitat restoration &
springflow protection)



Biological Objectives
(flow rates, habitat
condition & WQ)




Biological Goals
(available habitat &
species population)






SAMP and Phase II Funding

- 
- ▶ Costs associated with the SAMP transitional period would come from Program Admin budget
 1. Documentation of SAMP and production of a summary report
 2. Phase II Work Plan
 3. 3rd party review, if needed.

 - ▶ Implementation of Phase II CM: no budget identified
 - ▶ The most likely funding source would be the use of existing EAHCP funding, by utilizing savings or transferring costs between CMs.




Additional SAMP Info

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- ▶ We have an ITP – USFWS has already approved our plan
 - ▶ SAMP is self initiated
 - ▶ Is narrowly focused at this point on meeting the Springflow Objectives

 - ▶ **What SAMP is not:**
 1. A major renegotiation of the EARIP
 2. A whole scale change in springflow protection or biological strategy



SAMP Timeline

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- ▶ **2018: Modeling**
 - ▶ Conduct groundwater modeling.
 - ▶ Receive Report 3 from the National Academy of Sciences.
 - ▶ **2019: Decision – have the Objectives been met? establish Phase II CM**
 - ▶ Finalize groundwater modeling
 - ▶ If the Biological Objectives have not been met, Program Manager initiates SAMP.
 - ▶ Committees make decision - conservation measures to be expanded or added.
 - ▶ **2020: Finalize Phase II CM, if needed / Implementation**
 - ▶ Finalize approach for implementation of additional conservation measures.
 - ▶ Communicate all decisions to USFWS.
 - ▶ Begin implementation of additional conservation measures, if required.
 - ▶ **2021: Final Implementation**
 - ▶ By March, finalize implementation of additional conservation measures.