




Informal Discussion on Scope of Work for an EAHCP Data Management System

February 3, 2016





Presentation Outline

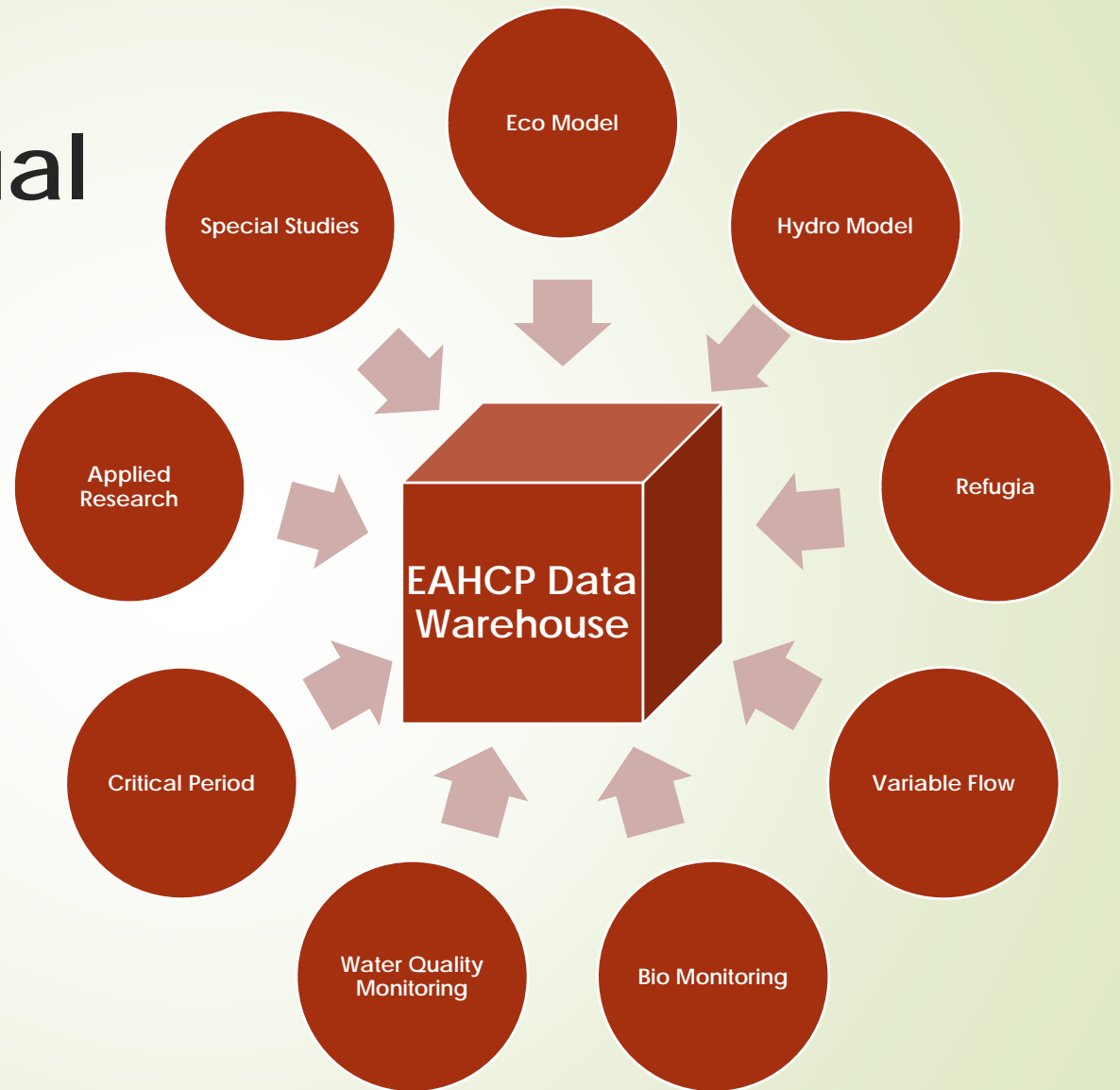
- Goals of EAHCP Database
 - Description
 - Scope Development
 - Scope of Work Tasks
 - Timeline
 - Questions for the Committee
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EAHCP Data Management Goals

- *1) provide security for the data collected in support of the EAHCP and its administrative record,*
- *2) provide a quality-assured and quality-controlled database for all EAHCP data,*
- *3) provide a complete and integrated source of data for both planned and ad hoc analyses.*



Conceptual diagram




BIO MONITORING, PARTIAL DATA OVERVIEW

Sampling Component	System	Date	Format
Standard Operating Procedures	Comal and San Marcos	2015	Report - pdf
Aquatic Vegetation Maps	Comal and San Marcos	2001 - 2015	GIS files
TWR Maps	Comal and San Marcos	2001 - 2015	GIS files
TWR Physical Observations	Comal and San Marcos	2001 - 2015	Excel files
Fixed Station Photography	Comal and San Marcos	2001 - 2015	Photos organized by date
Fountain Darter Dropnetting	Comal and San Marcos	2001 - 2015	Access Database
Fountain Darter Dipnetting			
Timed surveys	Comal and San Marcos	2001 - 2015	Access Database
Randomly selected - 50 sites	Comal and San Marcos	2006 - 2015	Access Database
Fixed station - 50 sites	Comal and San Marcos	2013 - 2015	Access Database
Fountain Darter Visual observations	Comal	2001 - 2015	Excel files
Fish Community Data	Comal and San Marcos	2013 - 2015	Excel files
Macroinvertebrate Sampling	Comal and San Marcos	2013 - 2015	Access Database
Salamander Visual Observations	Comal and San Marcos	2001 - 2015	Excel files
Comal Invertebrate Drift Nets	Comal	2003 - 2015	Excel files
Comal Springs Riffle Beetle lure	Comal	2004 - 2015	Access Database
Comal Springs Riffle Beetle Quadrat sampling	Comal	2001 - 2003	Excel files
Predation Study	Comal and San Marcos	2001 - 2015	Excel files
Water Quality Grab Samples	Comal and San Marcos	2001 - 2015	Access Database
Temperature Tidbits	Comal and San Marcos	2001 - 2015	Excel files
Landa Lake Flow Partitioning Data	Comal	2013 - 2015	Excel file
Spring Run Flow Measurements (Cross-sections)	Comal	2003 - 2015	Excel file
Master Naturalist Data	Comal	2006 - 2015	Excel file
Annual Reports	Comal and San Marcos	2001 - 2015	Report - pdf



The EAHCP database WILL BE:

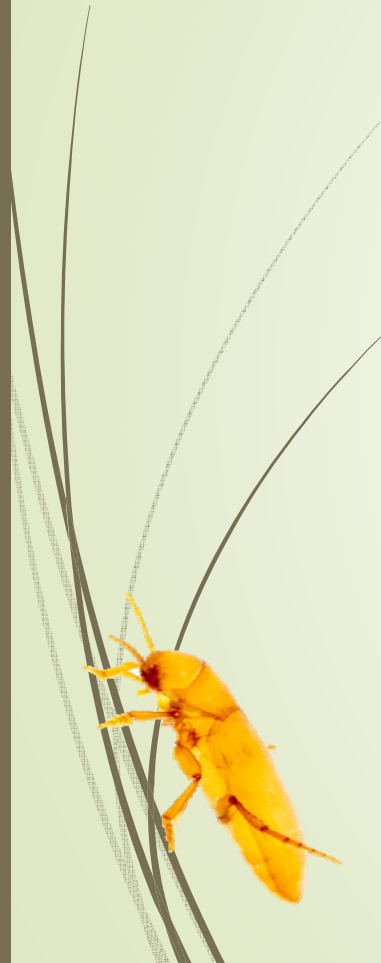
- ▶ Meant for storing, securing, and providing access to data collected for the **development**, and the **implementation** of the EAHCP.
 - ▶ Cloud-based
 - ▶ MS SQL Platform
 - ▶ EAA IT-supported
 - ▶ Linked with other EAA datasets
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The EAHCP database WILL NOT BE:

- ▶ Not meant for storing data managed or collected by other agencies.



Scope development overview

- ▶ Science and Implementing Committees
 - ▶ Long-term Ecological Research Network, National Environmental Observations Network, the Consortium of Universities for the Advancement of Hydrological Sciences
 - ▶ Ecological Society of America listserv (ECOLOG)
 - ▶ Common themes: No pre-packaged modules *per se*; however MS Access, SQL commonly used
 - ▶ USGS - Austin
 - ▶ *NAS Report 1*
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Questions for Consideration

Scope of Work

- *Is there anything missing from the SOW framework?*
 - ❖ *Inventory the data – Managing changes in data collection methods over time?*
 - ❖ *Preparing a system design/data management plan–How to establish relationships between datasets?*
 - ❖ *Construct the system - How to ensure compatibility with other database systems?*
 - ❖ *Migrate the data – How to ensure error free data transfer?*
 - ❖ *Perform system testing – How do you measure performance?*
 - ❖ *Provide training – What is needed for back-end administrators and front-end users?*

Management

- *Is the timeframe feasible?*
- *How to keep the project affordable?*
- *How to manage scope creep?*
- *Contractor selection – what qualifications are important?*
- *What are the critical steps?*





Database environment and requirements

- ▶ **Front-end users:**
 - ❖ EAHCP team members and other EAA staff
- ▶ **Back-end users/Administrators:**
 - ❖ EAHCP database point-person
 - ❖ EAA Aquifer Data Management
 - ❖ EAA IT Department
- ▶ **System requirements include:**
 - ❖ Non-proprietary application,
 - ❖ MSSQL server database "back end",
 - ❖ Cloud-based server design,
 - ❖ Supports multiple concurrent users without seat limit,
 - ❖ Daily backups,
 - ❖ Works well with EAA existing systems,
 - ❖ Comprehensive quality control plan.



Scope of work – Task 1

Develop a data inventory

- ▶ The Contractor will work with EAA staff to develop an inventory of data of various types,
 - ▶ This will include data generated for the EARIP and EAHCP on the San Marcos and Comal Springs aquatic ecosystems,
 - ▶ The contractor will depend on EAHCP staff to gather data from available contractors.
- ▶ A deliverable of this step will be a report of data inputs and associated meta data, relations between data sets.




Scope of work – Task 2

Prepare a system design with a data management plan

- The Contractor will evaluate the data inventory and EAHCP requirements to design a system that performs the following:
 - ❖ Capture, view, transform, migrate, search documents and applications, perform & save *ad hoc* queries of data, export query results, import data, performs quality control, prepares reports of data.

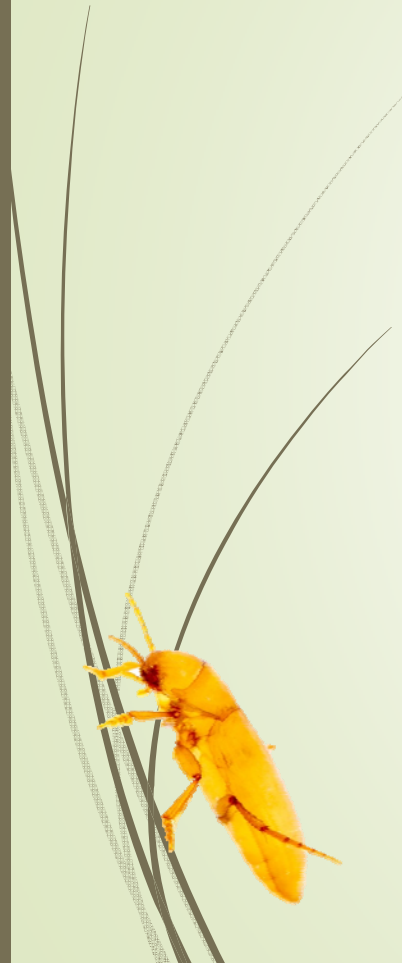
- The Contractor will prepare a data management plan of the system design that includes:
 - ❖ An entity relationship diagram,
 - ❖ Data migration plan,
 - ❖ Quality control measures,
 - ❖ Proposed user interfaces,
 - ❖ Summary of how the system design achieves the EAHCP requirements and user needs and functions.





Scope of work - Task 3

Construct the system

- ▶ The Contractor must perform all work according to the accepted plan including quality control and schedule considerations.
 - ▶ There must be monthly status meetings to:
 - ▶ Answer questions
 - ▶ Get direction
 - ▶ Report on progress
 - ▶ Forecast completion
 - ▶ Report on quality control steps undertaken
 - ▶ Enlist users to test functionality
 - ▶ Assess or secure acceptance of each system or component.
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Scope of work – Task 4

Migrate data into the system

- ▶ The Contractor will conduct the following:
 - ▶ migrate data identified in the data inventory according to the migration and quality control plan to ensure there are no entry or transcription errors,






Scope of work – Task 5

Perform system testing

- ▶ The Contractor will perform usability, completeness, and accuracy testing prior to delivery of the final product to the EAA, and
- ▶ Run quality control measures according the quality control plan.





Scope of work – Task 6

Training

- ▶ The Contractor will provide:
 - ▶ A user manual outlining how to perform necessary tasks in the system,
 - ▶ A data dictionary of all system fields and database structure,
 - ▶ Training for system administrators and users.





Next steps

- **Database timeline:**
 - NAS consultation - February 2016
 - RFP to post - February 2016
 - Contractor selection - March 2016
 - Project start date - April 2016
 - Project end date/final deliverables - December 2016



Questions

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