



2018 APPLIED RESEARCH PROPOSAL REVIEW – SESSOM CREEK SEDIMENT EXPORT

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SESSOM CREEK SEDIMENT EXPORT

- ▶ An examination of sediment export from the Sessom Creek watershed to the upper San Marcos River was suggested as part of the Applied Research Work Group from March 2017.
- ▶ Sediment deposition on Texas wild-rice is a reoccurring issue as noted within the EAHCP (EARIP, 2012; Earl and Wood, 2002)
- ▶ Sandbar removal has been unsuccessful
- ▶ Sediment removal conservation measures were recently rewritten to sediment prevention



SESSOM CREEK REQUEST FOR PROPOSALS

- ▶ Attachment 4 contains the prompt for the RFP

Primary tasks requested in RFP:

- 1.) *Conduct literature review of relevant suspended sediment data collection and data handling techniques*
- 2.) *Collect data on sediment/constituent loading*
- 3.) *Calculate sediment/constituent loading curves*
- 4.) *Conduct data analysis and examination of the factors that contribute to sediment exports*

SESSOM CREEK REQUEST FOR PROPOSALS

- ▶ The RFP was available for ~ 8 weeks.
- ▶ Distributed through EAHCP mailing list with approximately 230 recipients representing environmental consulting firms, academic researchers, environmental list-servs, and other relevant stakeholders.
- ▶ 4 proposals were received from a mix of:
 - Government
 - Academia
 - Private engineering firms

SESSOM CREEK PROPOSAL REVIEW

Receive redacted Scopes of Work for review: **Thursday, November 9**



Edwards Aquifer Habitat Conservation Plan

Science Committee

2018 Applied Research Proposal Review

Scopes of Work for:

Sessom Creek Sediment Export Study (HCP 160-17 TESS)

2018 Applied Research Proposal Review

November 9, 2017

Proposal 1

1 RFP SECTION 3: SPECIFICATIONS – SCOPE OF WORK DISCUSSION

1.1 Task 1: Methodology Development

The combined effects of highly-erodible soils and human influences on hydrology have resulted in sediment accumulation in the San Marcos River channel at its confluence with Sessom Creek. Once referred to as the Bobdog sediment accumulation, the accumulation at the confluence has been documented to increase in size (Engel and Curran 2006) following completion of flood control structures in adjacent Sink Creek and Purgatory Creek watersheds, despite record rainfall events occurring in 1998 (Earl and Wood 2002).

Compounding the San Marcos River's reduced sediment transport ability downstream of the confluence, a comparatively high sediment supply arises from the Sessom Creek watershed. The Sessom watershed sediment supply rate is higher in comparison to adjacent watersheds as a result of highly erodible soils and higher slope (Hartigan et al. 2017). In addition, Sessom Creek itself exhibits channel and bank erosion resulting from high peak flows (RPS Espey 2013) caused by high impervious cover in the watershed approaching 35% (MCWE 2017). Furthermore, construction occurring 1995-1997 at Texas State University (TSU, then, Southwest Texas State University, SWT) may have allowed initial island formation as a result of Best Management Practices being less stringent than those employed elsewhere in the watershed at the time (Earl and Wood 2002) or than would be employed today.

Much of the existing development in the Sessom Creek watershed occurred before flood detention and water quality basins were required, thus storm runoff rates are unlikely to change in the foreseeable future.


Allowing for increased flow levels to naturally erode and disperse accumulated sediments at the San Marcos River confluence does not appear to be a viable option in resolving the issue. Therefore, primary recent focus has been on sediment source management in the Sessom Creek watershed. A number of strategies and structures are proposed to be constructed that are designed to capture and/or reduce sediment transport out of the Sessom Creek watershed (WQPP 2017). The previous studies identified the Sessom Creek reach upstream of N. LBJ Drive as the primary source of supply and is evidenced by significant widening and down cutting which has exposed an existing wastewater line (Figure 1). The City of San Marcos is developing construction plans to relocate the existing exposed wastewater line in Sessom Creek along with the construction of Erosion Sites 9 and 10 (plans prepared by RPS). A stream restoration option upstream of N. LBJ Drive is also under consideration to significantly reduce sediment supply and restore habitat in the upper reaches of Sessom Creek.

The purpose of this proposed scope of work is to describe a data collection program that quantifies the sediment amounts before and after construction of the proposed sediment management measures. Before measures to reduce sediment export can be designed, the amount of sediment, sediment sources and proportion that is bedload and suspended load needs to be determined.

SESSOM CREEK PROPOSAL REVIEW

- Receive redacted Scopes of Work for review: **Thursday, November 9**
- Please complete proposal review form and return by **Monday, November 27**

EAHCP Staff Attachment 5 November 1, 2017

 Submitted by:

Sessom Creek Sediment Export Study

Offeror Number:

Please provide your advice as to whether this proposal should proceed based on scientific merit, proposed methodology, and data analysis protocol. Submit one form per offeror, per proposal. Return completed forms to ktolman@edwardsaquifer.org.

Scientific Merit - Does the proposal adequately address the question?

Methodology

Data Analysis Protocol

Proceed?

2018 APPLIED RESEARCH TIMELINE

- ▶ November 9th: Science Committee will receive redacted Scopes of Work for review
- ▶ November 27th: Science Committee deadline for submitting review forms
- ▶ December 22nd: Finish internal RFP scoring
- ▶ Dec. 22nd – Jan. 23rd: Notify contract recipient and non-recipients
- ▶ January 23rd: EAA Committee
- ▶ February 13th: EAA Board meeting
- ▶ March 1st: Contract starts