

**City of San Marcos/Texas State University
2015 Work Plan**

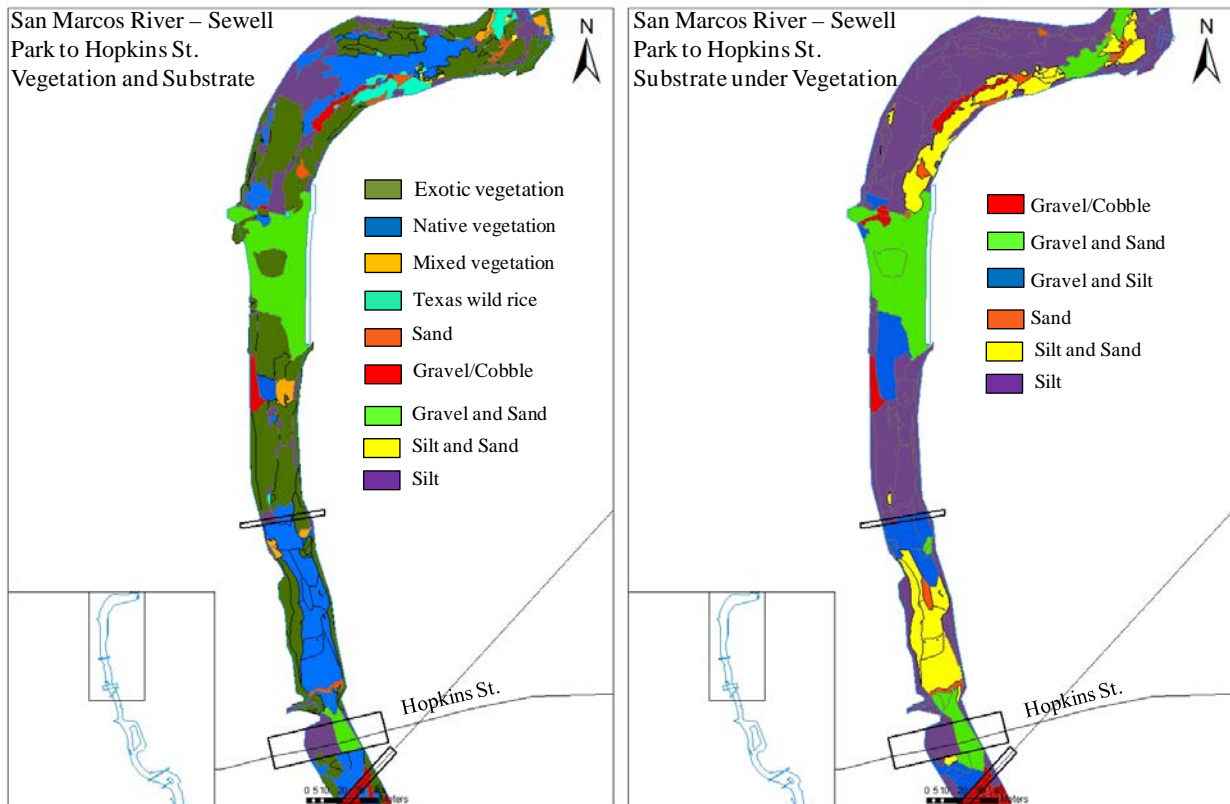
5.3.6/5.4.4 Sediment Removal

The City of San Marcos and Texas State University are partnering to implement an ongoing program of sediment removal from the river bottom at various locations from Spring Lake to IH-35.

Long-term Objective: Initial removal of targeted fine sediments and then maintenance removal of accumulations of sediment for the purpose of optimizing quality of riverine habitat.

Assumptions: FY 2015 sediment removal efforts and budget target a practical restoration effort that is integrated with other Work Plan efforts and minimizes potential negative impacts on the aquatic ecosystem and Covered Species habitats.

Hardy et al. (2011b) estimated 21,645 m² (12,749 m³) of fine sediment in the San Marcos River between City Park and Rio Vista Falls. As illustrated in figure below, a high correlation can be observed between the distribution of silt and non-native vegetation. The reasons for this correlation are unknown. This correlation will be used to target areas with fine sediment accumulation and associated non-native vegetation for simultaneous removal. Native replanting is addressed in Measure 5.7.1.



Attachment 6

Target 2015/Performance Measure: Successful removal of 1000 m² (and associate volumes) of fine silt and associated non-native vegetation. The 2015 target goal was adjusted based the amount of time required to accomplish this measure.

Methods: Removal of non-native vegetation prior to sediment removal is covered under Work Plan elements 5.3.8, 5.4.3, and 5.4.12. As specified in the HCP, hydrosuction will be used to remove accumulations of sediment. Divers will be trained on equipment operations, diving safety protocols, and recognition of all stages of listed species from larval to adult as part of the 2014 work plan.

Divers will fin the area proposed for sediment removal, remove all vegetation and then scan the area for the presence of listed species and other biota. In addition, placement of stakes around the area prior to vegetation removal will keep divers within designated area. One diver floats on surface to relay information to the dredge operator, one worker will be stationed by the discharge point to monitor operations and answer public questions. Disposal of removed sediment will be at the Texas State University Composting Center or Animal Shelter compost site.

Permits: Prior to work beginning in 2015, the COSM and TxState will submit the completed turbidity study to TPWD to obtain the required sand & gravel permit covering the entire upper reach from Spring Lake to IH-35.

Monitoring: Turbidity will be monitored during and after all removal efforts. In addition, colonization of vegetation, macroinvertebrates, and fish will be monitored in all treatment areas and compared to the reference site for each reach. After targeted depth of fine sediment removal has been achieved, the bed elevation will be measured from existing benchmarks and the sediment composition delineated (i.e., sand, gravel, etc). Bed elevation and substrate composition will then be monitored at each location before and after the recreation season. Measure success will be determined by the volume of sediment removed.

Allocated funds for 2015 from Table 7.1: \$ 25,000

Remainder of initial funding:

\$500,000 (initial) - \$151,800 (2013) & \$150,000 (2014) = \$198,200 remaining

Estimated Budget: ~~\$223,200~~ **\$219,450 (\$3,750 transferred to 5.4.6)**

This project was awarded \$500,000 in 2013. Due to permit restrictions and the physical and temporal limitations of this project, it was not possible to expend the entire \$500,000 in 2013/14. Therefore, only \$151,800 from \$500,000 budget was requested for 2013 and \$150,000 in 2014, leaving \$198,200 for 2015.

5.4.6 Sessom Creek Sand Bar Removal

Long-term Objective: Remove the necessary amount of sediment in the channel at Sessom Creek confluence and in Sewell Park necessary to maintain optimal conditions for listed species in the San Marcos River.

Target 2014/Performance Measure: Removal of the islands at confluence and in Sewell Park in accordance to the recommendations from the 2013 study results.

Methods: The specific methodology will follow the recommendations contained in the 2013 work plan study results but will include the use of a backhoe or excavator operating from outside the boundary of the ordinary high water mark. The sediment will be hauled to an off-site location. The sand bar removal activity will have sufficient containment measures so the activity results in no more than incidental fallback the large grain size of the sandbar prevents use of hydrosuction.

This action could not be accomplished in 2014 due to flows remaining below 120 cfs and the need for a TPWD Sand & Gravel permit.

Monitoring: Not Applicable. Measures of success include increased coverage of Texas Wild Rice as well as no uprooting of Sewell Park stands due to flow regime changes upon completion of island removal/modification.

Allocated funds for 2015 from Table 7.1: \$ 0

Budget Requested: \$ 3,750 (Transferred from 5.3.6/5.4.4)