



Wastewater Treatment

Water Treatment

Water Storage

Lake Livingston

Recreation Facilities

LiDAR Acquisition and Flow Assessment for Middle Trinity



Trinity River Authority of Texas



Scope

- To collect site-specific field data and analyze river characteristics at 3 locations to determine system responses to adopted SB3 standards.

Tasks

Task	% Complete	Budget
Data Archive Structure	 70	\$7,500.00
Collect field data at 3 sites	 40	\$34,000.00
Data processing and modeling	 15	\$53,100.00
Data analysis and reporting	0	\$17,400.00
		\$ 112, 000.00

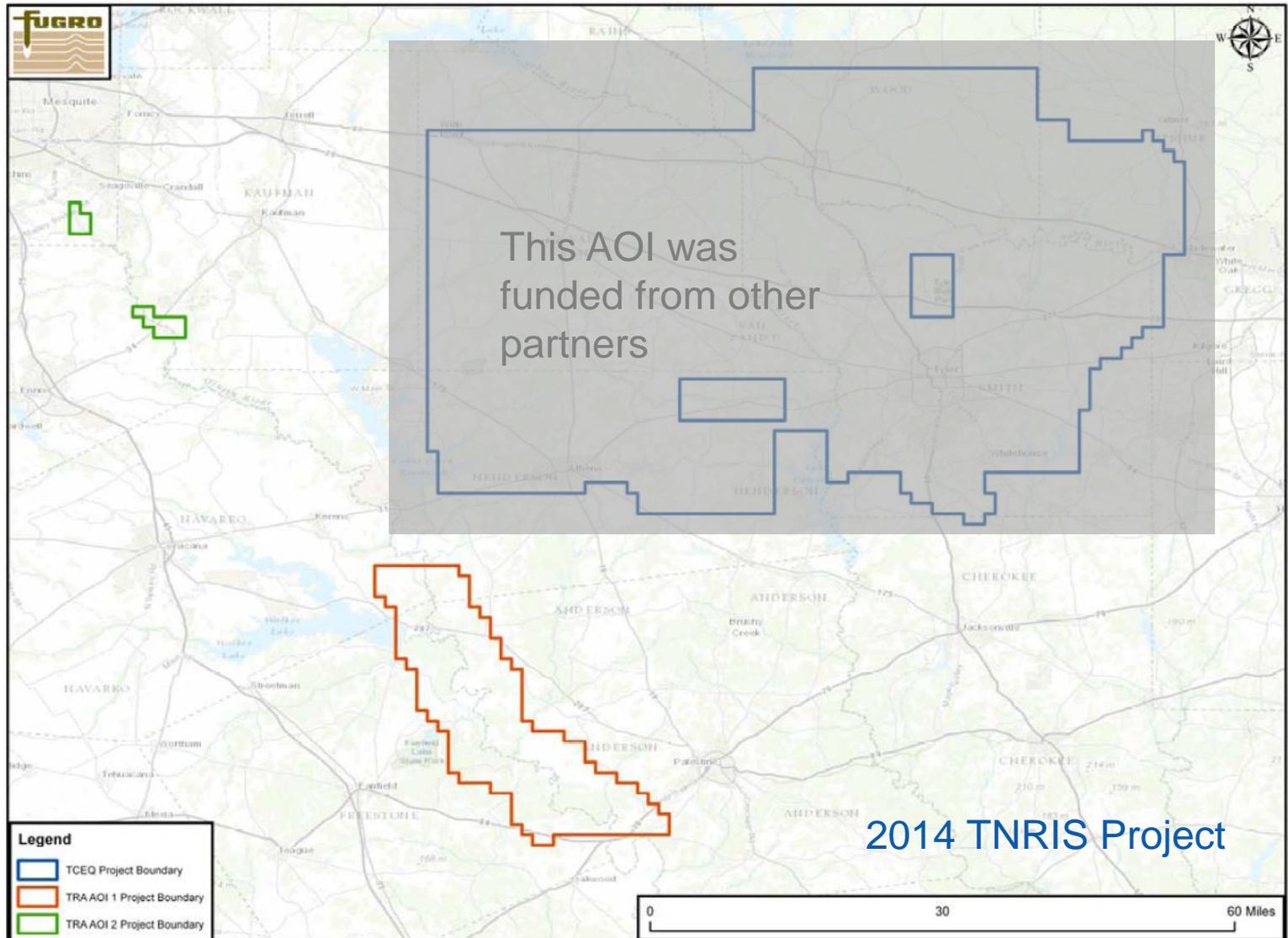


Larger Budget Picture

• BBEST Portion	\$ 112,000.00
• LiDAR – TRA	\$ 64,000.00*
• LiDAR – TRWD	\$ 26,000.00*
• TRA In-Kind	<u>\$ 10,000.00</u>
	\$ 212,000.00

* Complete

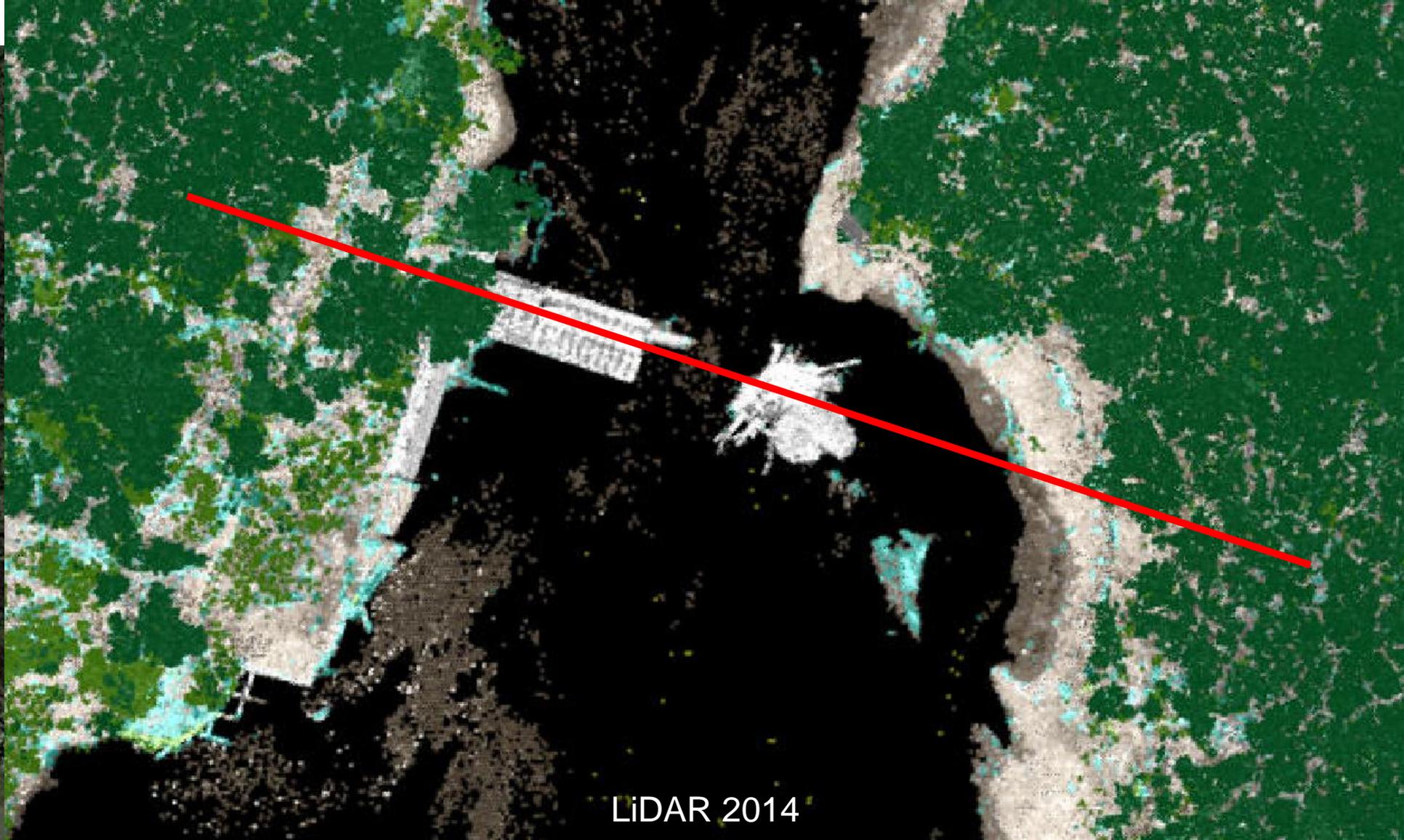
LiDAR Project Complete



2014 TNRIS Project



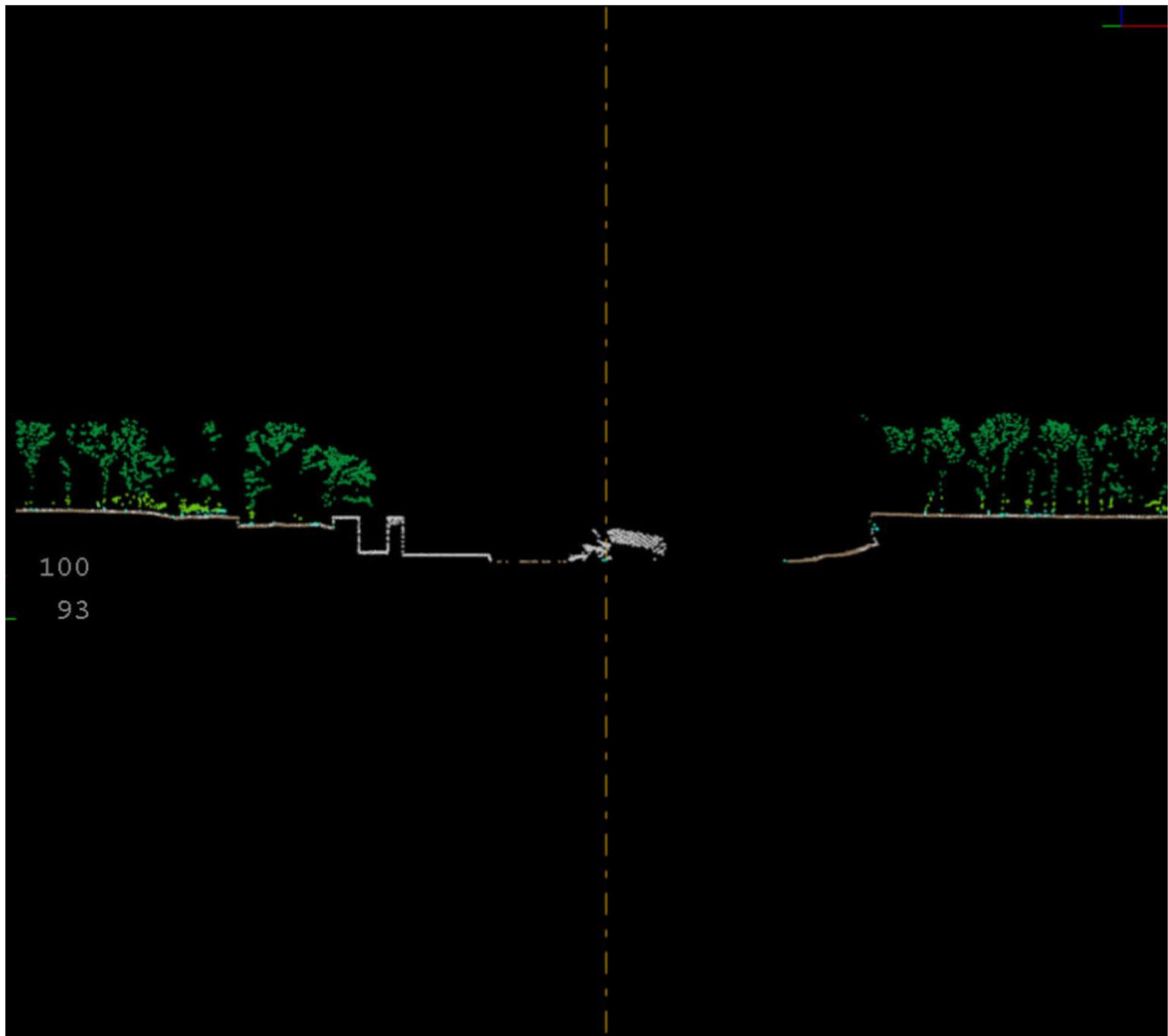
Example LiDAR
near RM 444



LiDAR 2014

Example LiDAR
near RM 444

Google earth





Task Update

- Task 1 – Data Archive Structure
 - Problem (condensed):
 - Multiple entities
 - Multiple instrumentation/methods
 - Multiple uses (ex. Survey data is WSP and XS)
 - Multiple sites
 - Multiple visits at each site
 - Data aggregation – (Topo & Bathymetry combined)
 - Multiple iterations of QA across multiple entities

Archive Process to Prevent:

 RM_444_Working1_TRA.xlsx

 444_RiverMiles_v1.xlsx

 RM444_Test_CrossSections.xlsx

 444_Test_DeleteThisOne.xlsx

 RM444_Final_v1.xlsx

 RM444_Final_v1USE THIS ONE.xlsx

 RM444_Final_v1NO_Use THIS ONE NOW.xlsx

 RM444_Final_v1NO_Use THIS ONE NOW v2.xlsx

 RM444_REVISDFinal_v1_THIS IS THE FINAL FINAL.xlsx

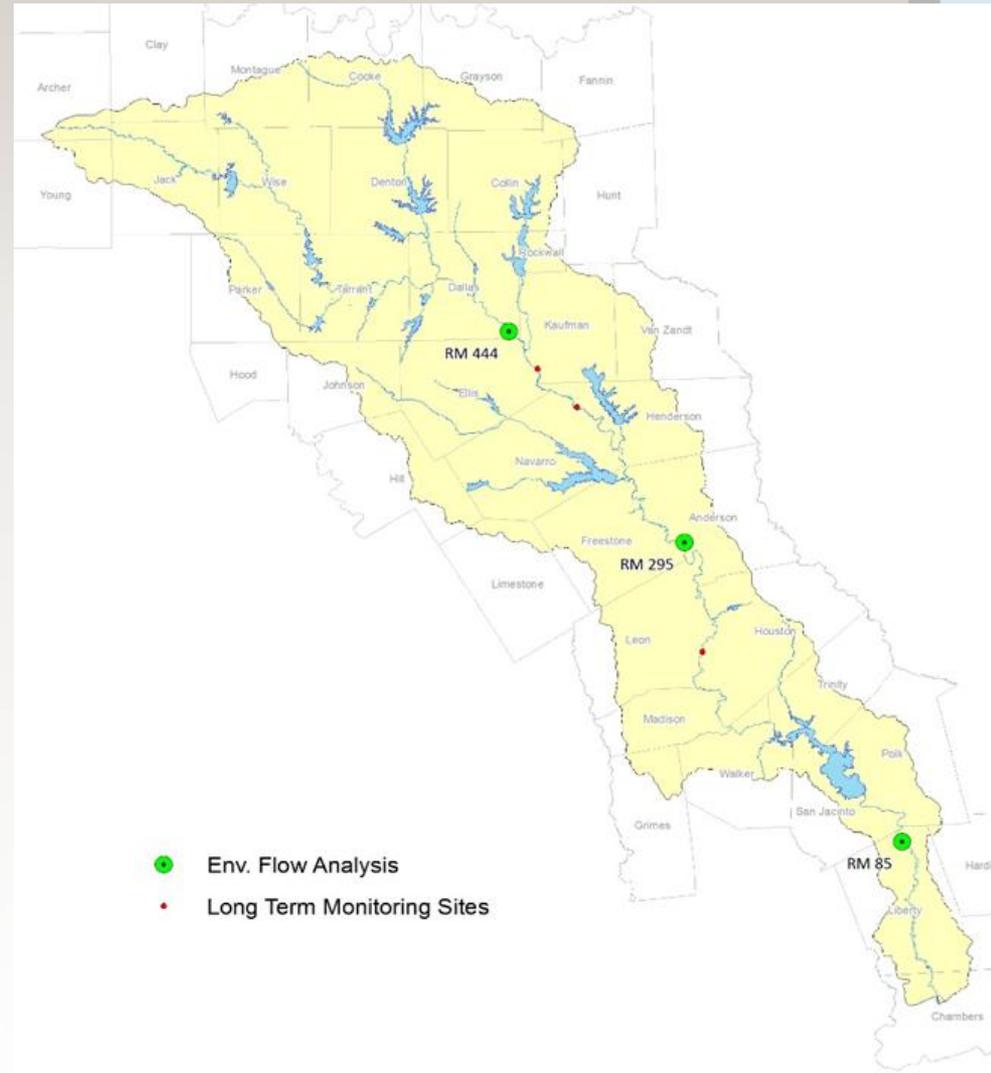
 RM444_REVISDFINAL_FINAL_v1_CORRECTED_THIS_IS_I_DO NOT CHANGE.xlsx

 RM444_IGNORE EVERY OTHER FILE EXCEPT THIS ONE_v8.xlsx

 RM444_I HAVE NO IDEA WHAT FILE IS CURRENT.xlsx



- Task 2 – Collect Field Data
 - RM 444 – Complete
 - RM 085 – Winter 2014
 - RM 295 – Spring 2015





Field Data Review



Hardened Bench Marks

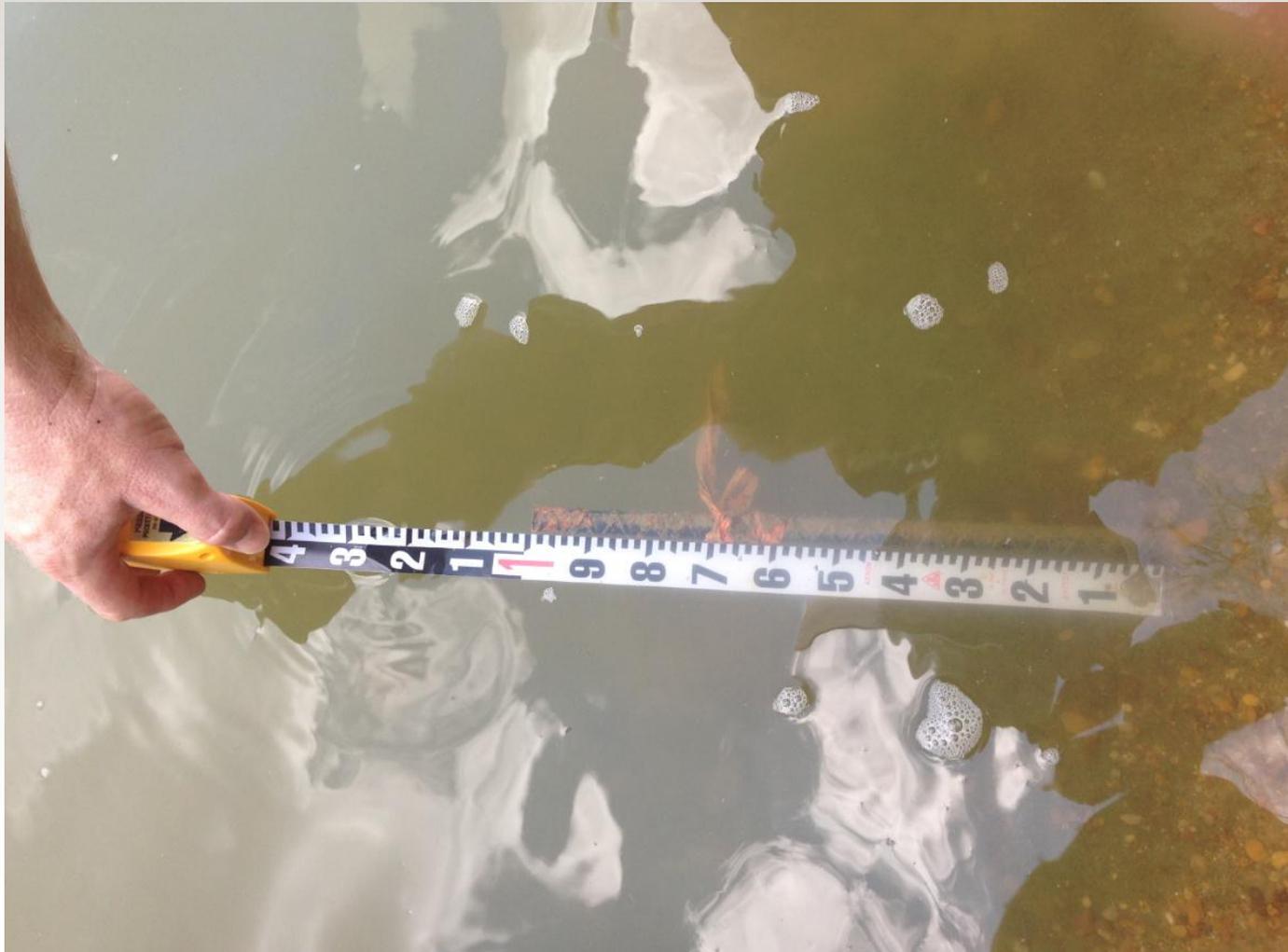
(LB and RB at Each XS)



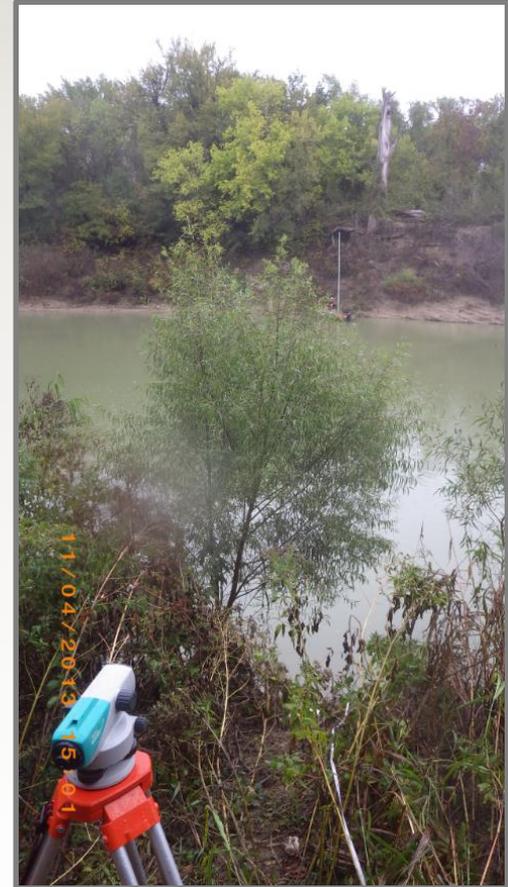
Sediment Samples



Installation/Monitoring of Bank Pins



XS and WSP Surveying



RTK GPS Data Collection



Riparian Survey



Pressure Transducer Installation



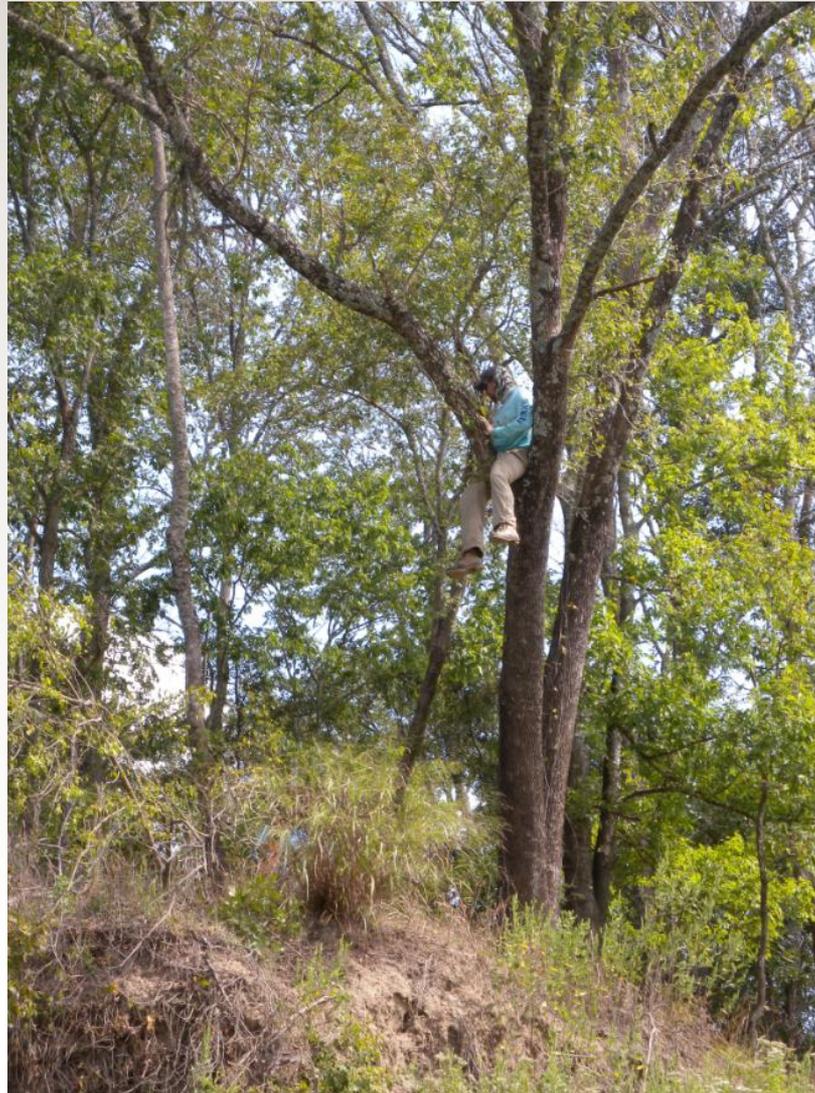
Flow and Bathymetry



Photographic Data Collection



Automated Game Camera Installation





Task 3 – Data Processing and Modeling

High Flow Event: August 16-19, 2014

































COVERT

08.18.2014 13:11:42

23

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9

Remote1



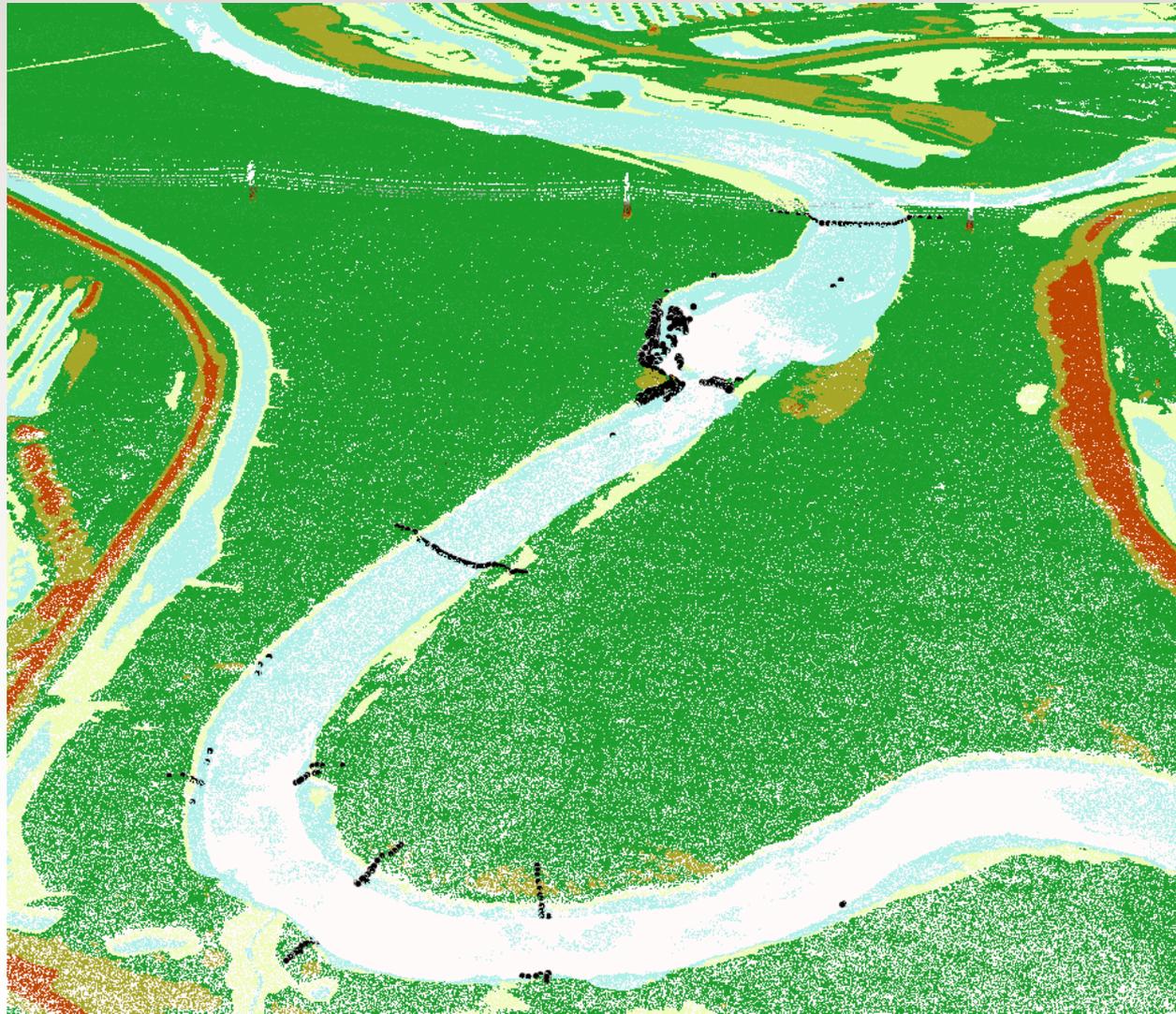




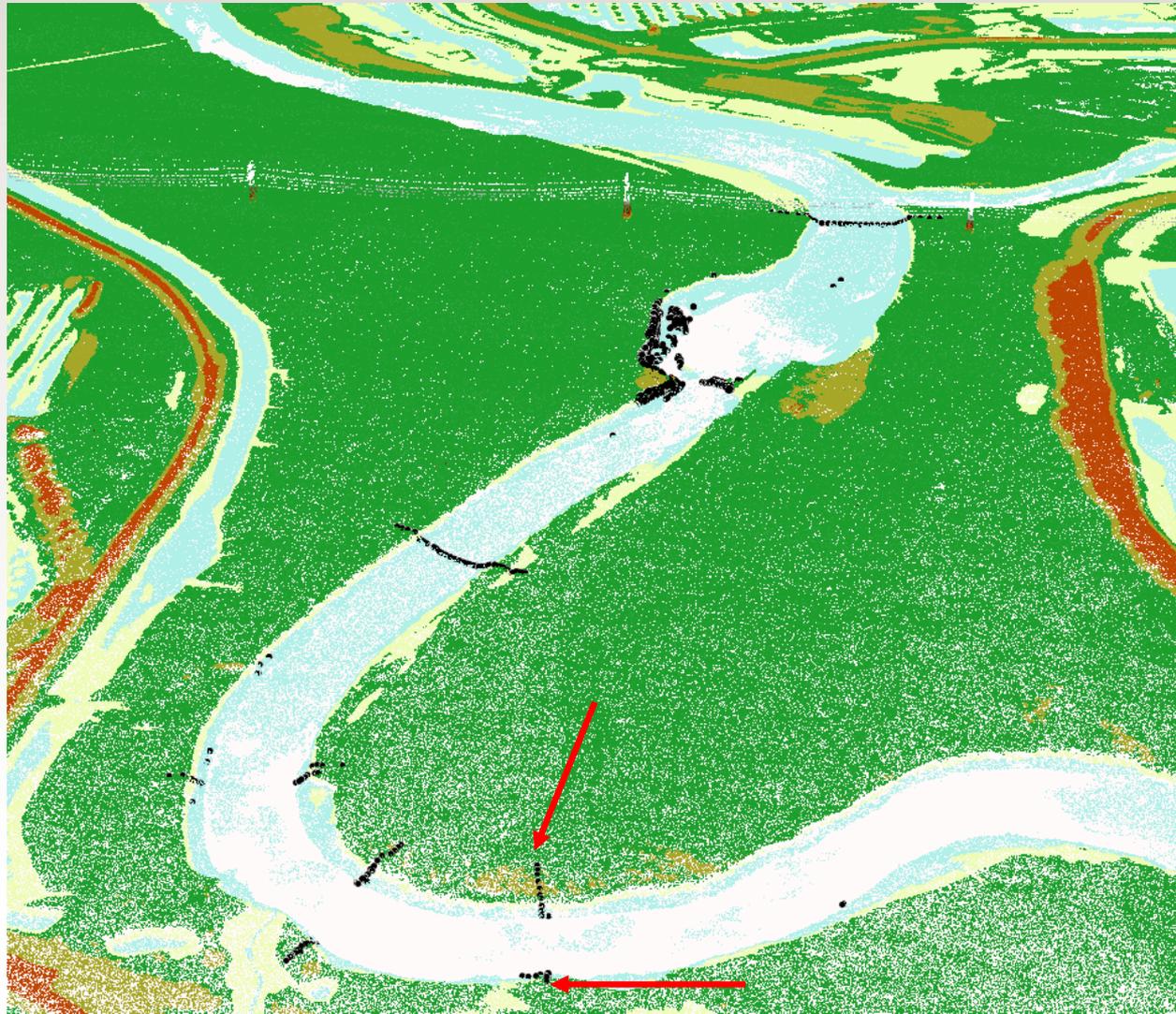




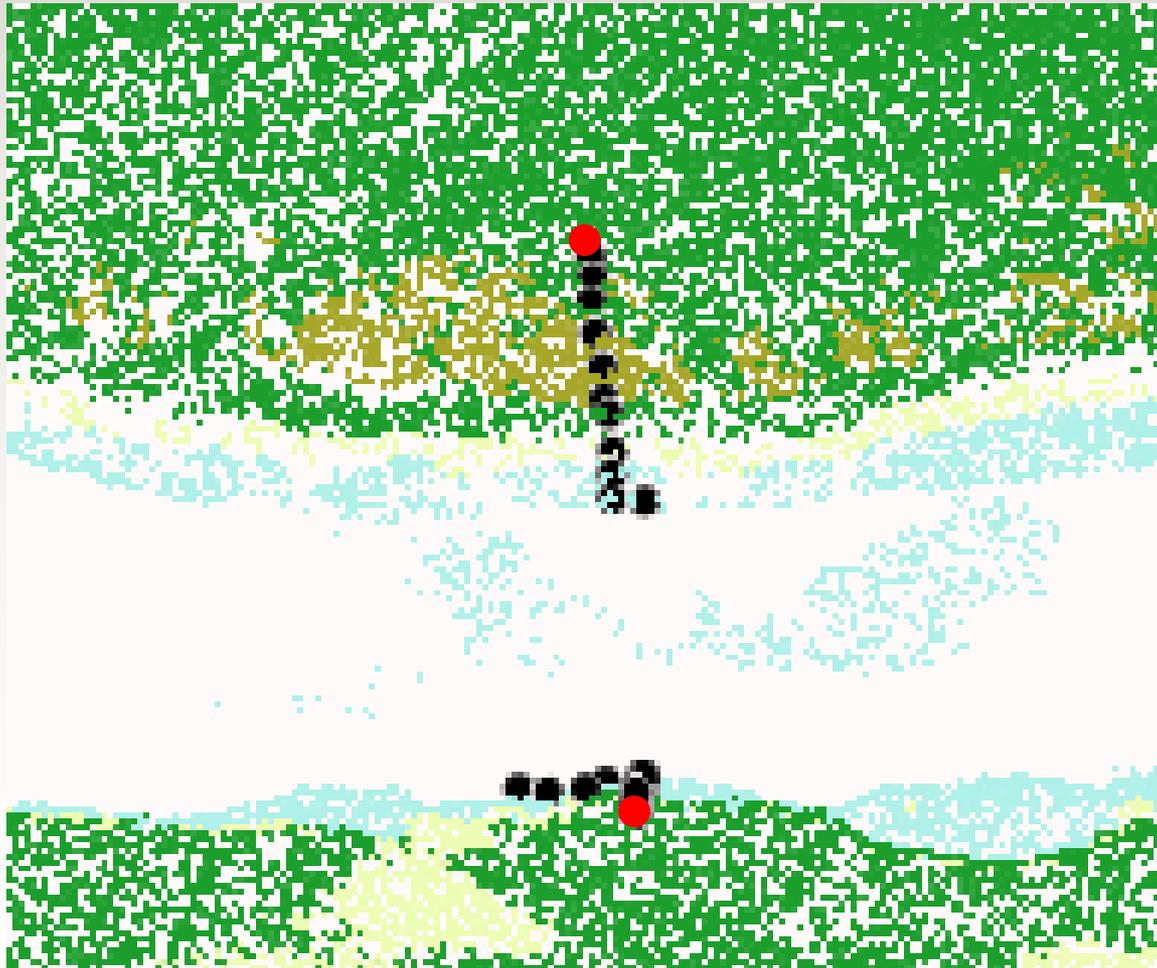
LiDAR & Survey Overlay



LiDAR & Survey Overlay

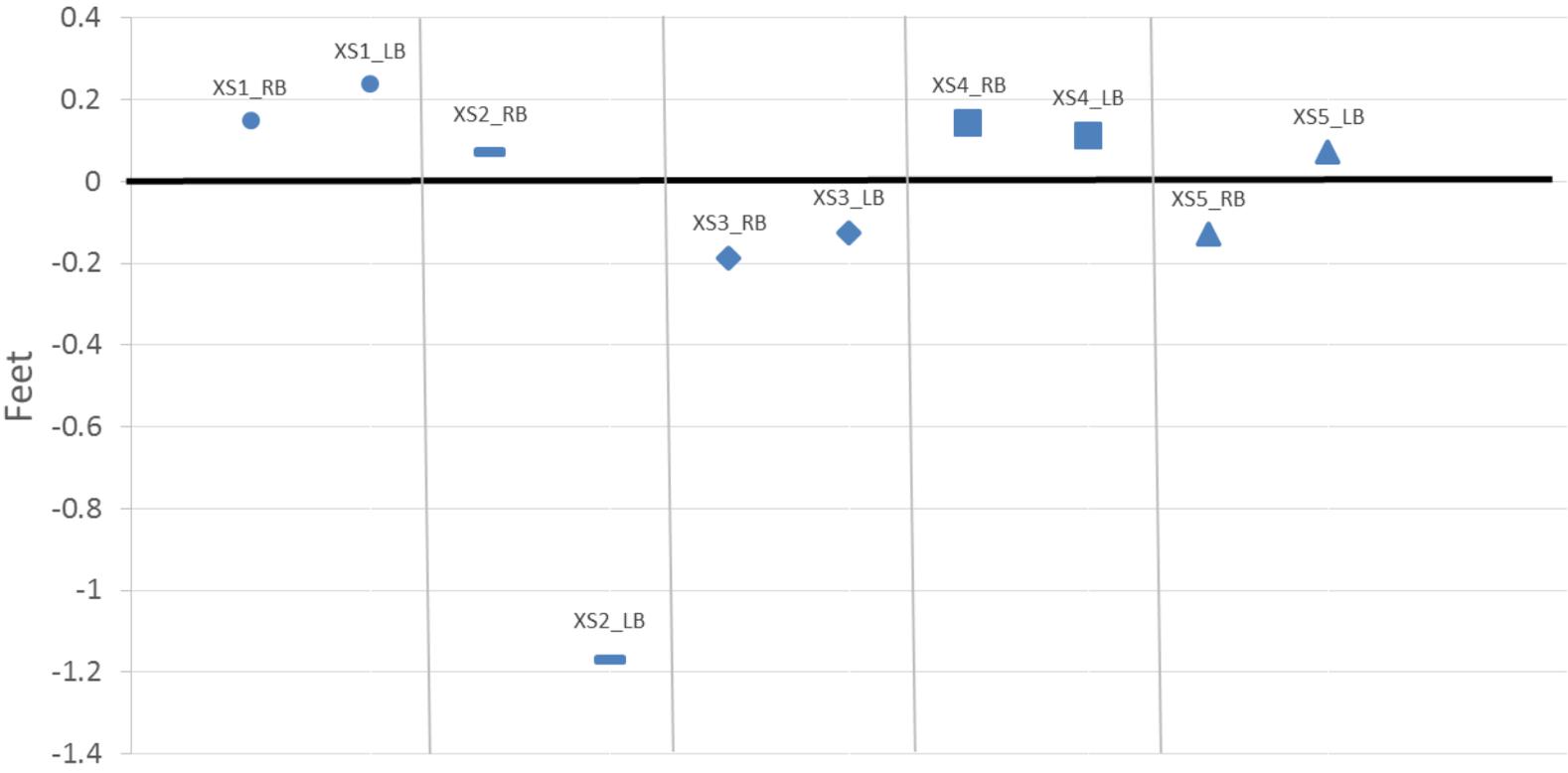


LiDAR & Survey Overlay

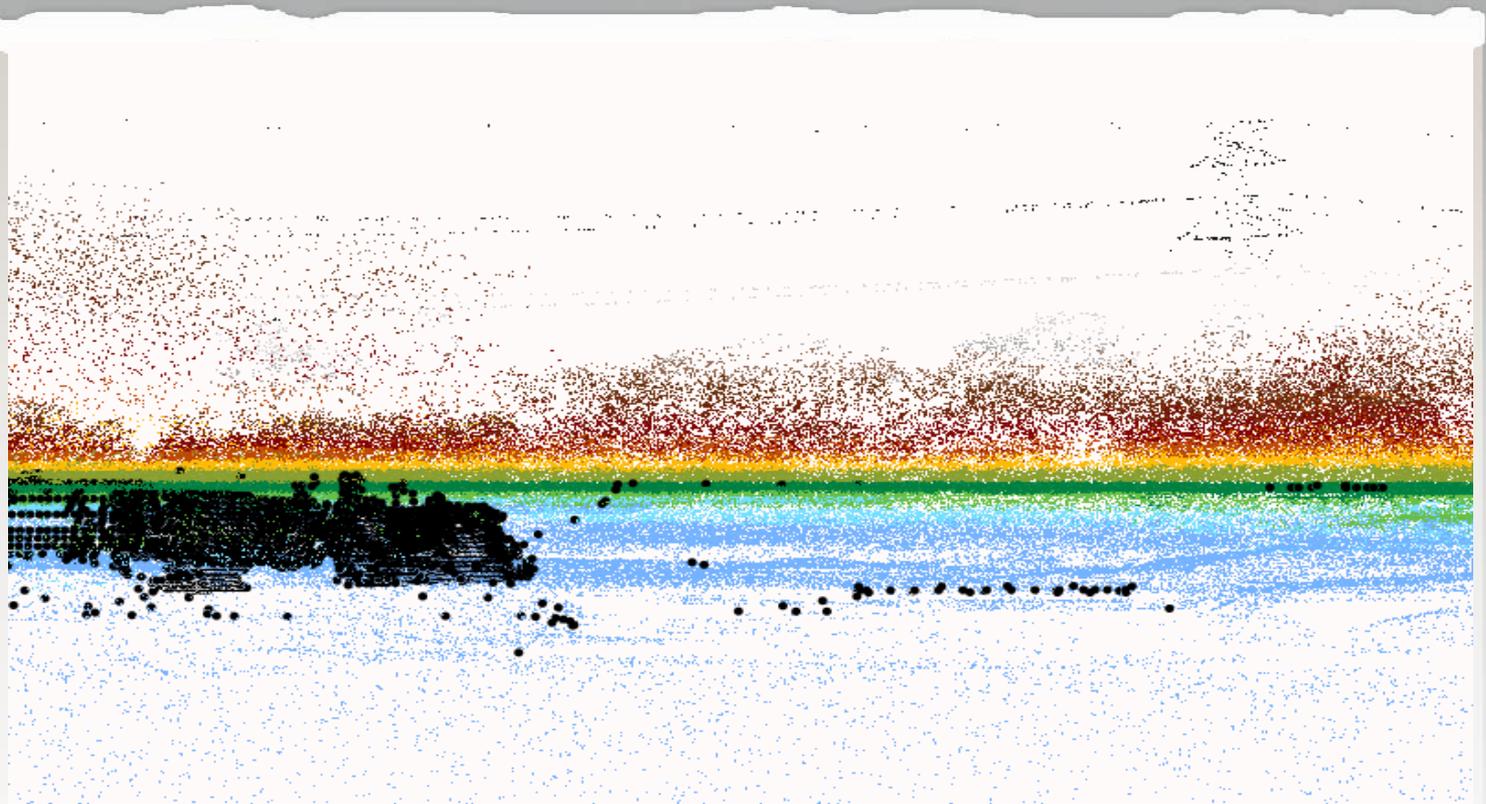


LiDAR QA

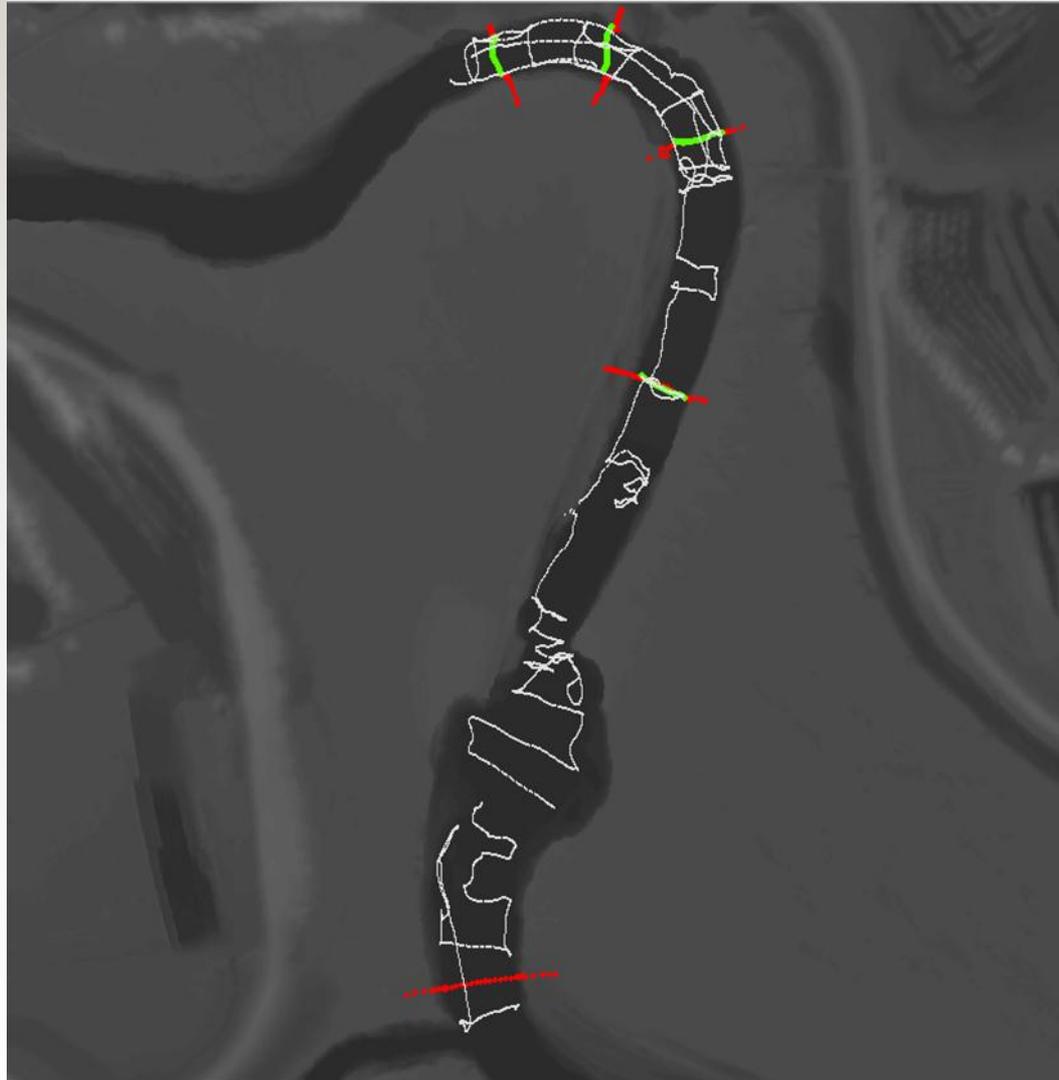
Elevation Delta (LiDAR and Field Survey)



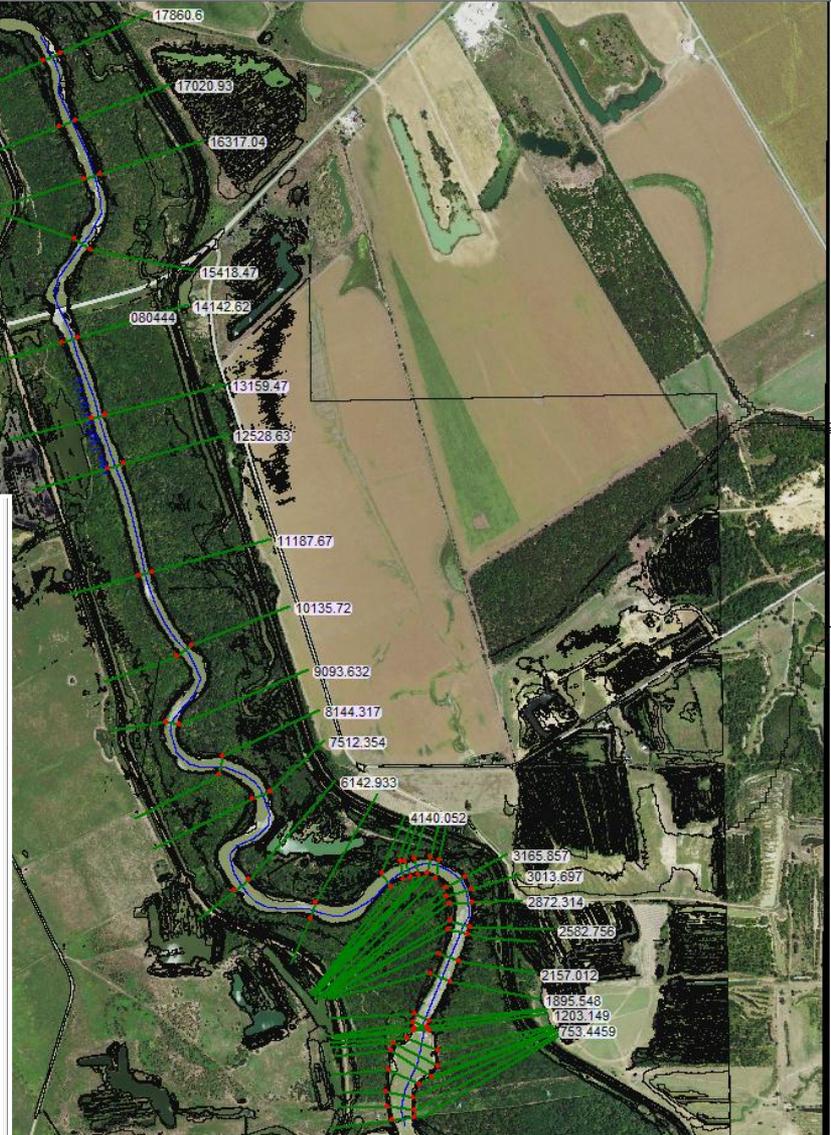
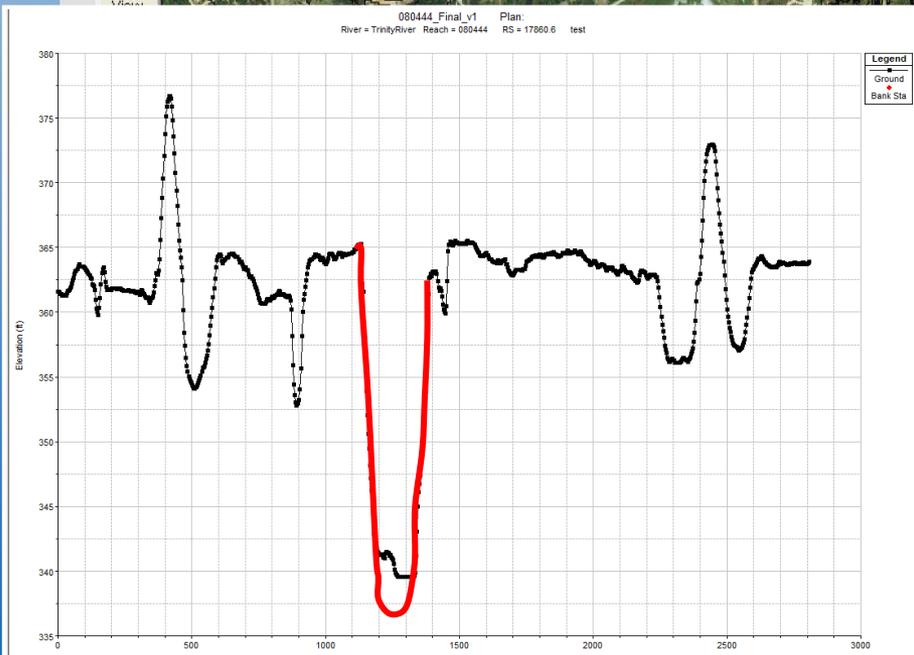
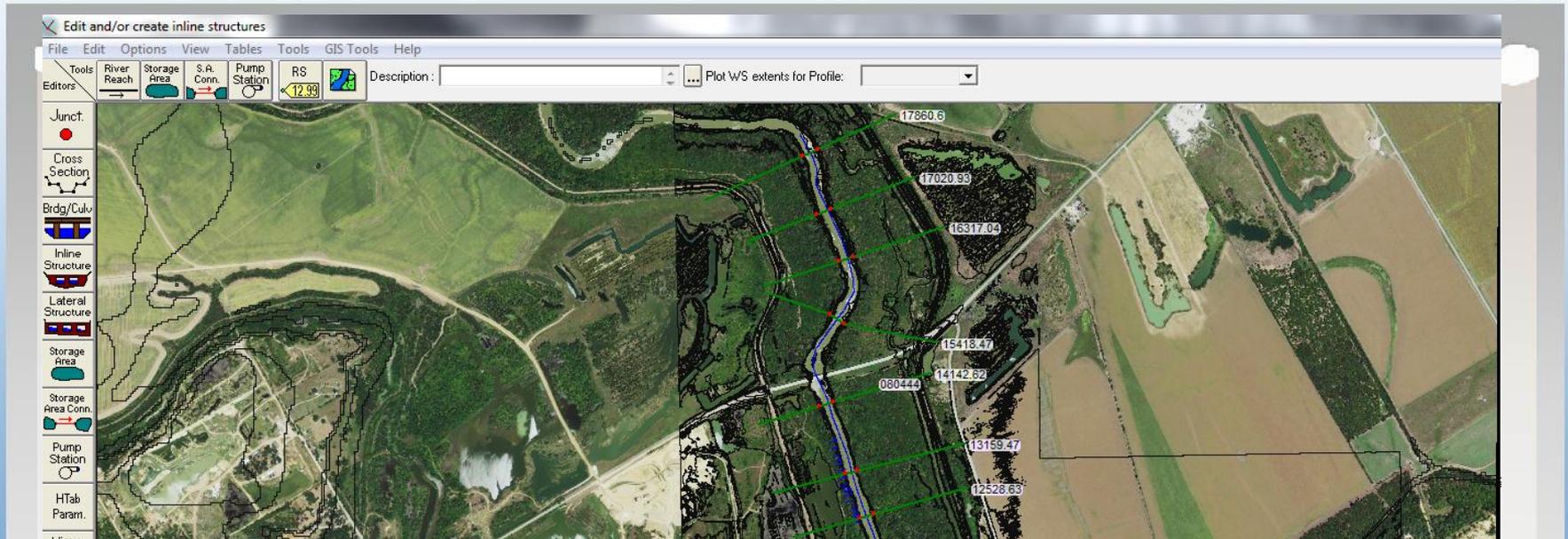




Data Aggregation and QA



RAS Model for RM444 is in Progress





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