

Sediment Sampling Special Studies

Community Advisory Group Meeting
August 20, 2015

Sediment Sampling Studies



- Phase 2 Scope outlines three sediment-related special studies:
 - **Baseline Surface Sediment**
 - **Downstream Deposition (2011 – 2013)**
 - **Elevation of Contamination (EoC), Residuals, Missed Inventory (2011)**
 - **Supplemental Engineering Data Collection (2010 - 2012)**
- Purpose - resolve uncertainty related to re-deposition, residuals, and better defining the dredge prisms

Baseline Sediment/Downstream Deposition



Are surface sediment concentrations similar or lower following dredging?

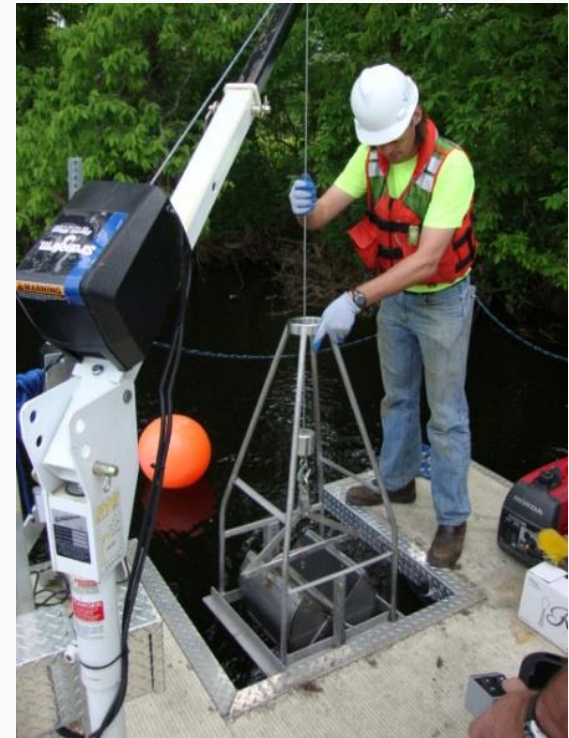
- Conducted in 2011 (RS 1), 2012 (RS 2), and 2013 (RS 3)
- Goals of the study:
 - Evaluate near surface sediment to understand potential impacts associated with dredging
 - Understand the pattern and magnitude of re-deposition of sediments
 - Collected baseline surface sediment data



Baseline Sediment/Downstream Deposition (cont.)



- Collected samples from the top 2 inches
- In general, samples were collected before dredging and after dredging
- Sediment traps were also deployed downstream of dredging operations

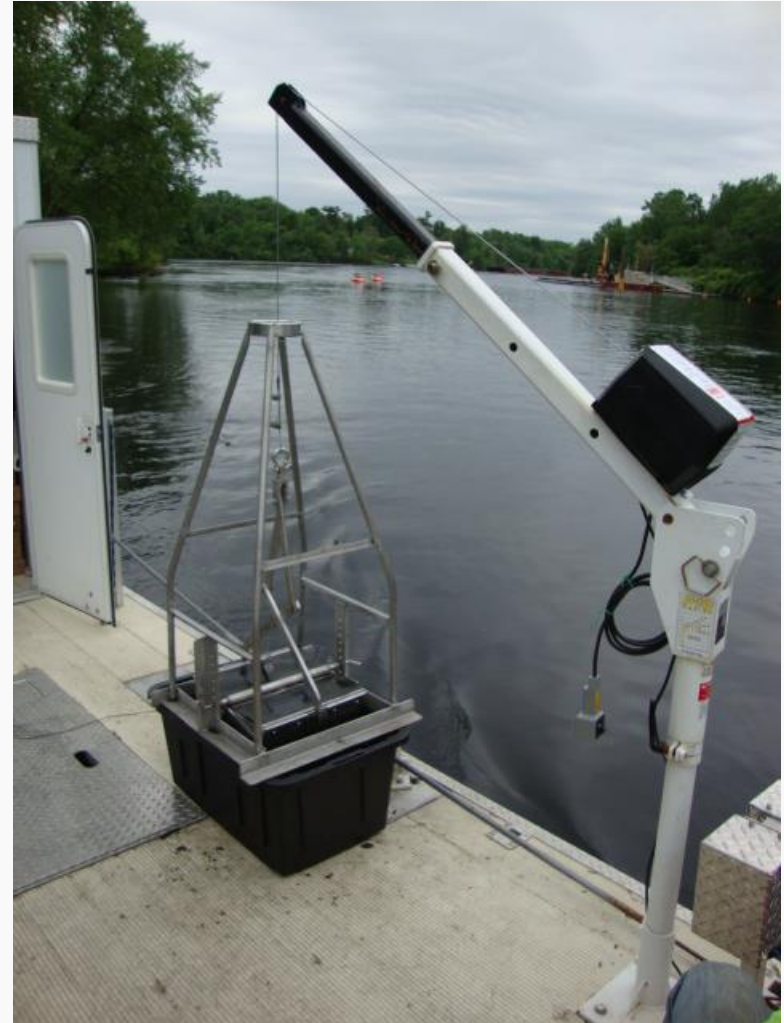


Baseline Sediment/Downstream Deposition (cont.)



- Conclusions:

- Baseline PCB concentrations tended to be close to but lower than nearby historical surface samples
- Both pre-dredging and post-dredging samples show similar concentrations
- Re-deposition occurred in the immediate area of the activity and significantly decreased downstream
- Baseline data will be compared surface sediment data collected long term monitoring



Confirm that inventory was not missed

- Conducted in 2011
- Goals of the study:
 - Study sediment concentrations following first pass of dredging
 - Determine the accuracy of Phase 2 design process in finding the Elevation of Contamination (EoC)
 - Potential to improve the design process using Adaptive Management



EoC, Residuals, Missed Inventory



- Collected 85 cores
 - Cores were collected inside dredge areas in RS1
 - Collected on same location as design cores (i.e. offset from residual cores)
- Results compared to design criteria to determine if EoC was properly achieved

EoC, Residuals, Missed Inventory



Design Cores and DoC Surface (CU 37)



Residual Cores and First Pass Results (CU 37)



EoC, Residuals, Missed Inventory



- Conclusions:
 - The design prisms are reasonably accurate
 - Most cores accurately captured the proper design depth
 - Some areas showed residuals in the top 6” following the first pass of dredging (inventory not present)
 - Residuals expected in some areas due to disturbances during dredging
 - No changes to the dredge depth approach were needed
 - The study confirmed the importance of the second pass



Supplemental Engineering Data Collection (SEDCC)



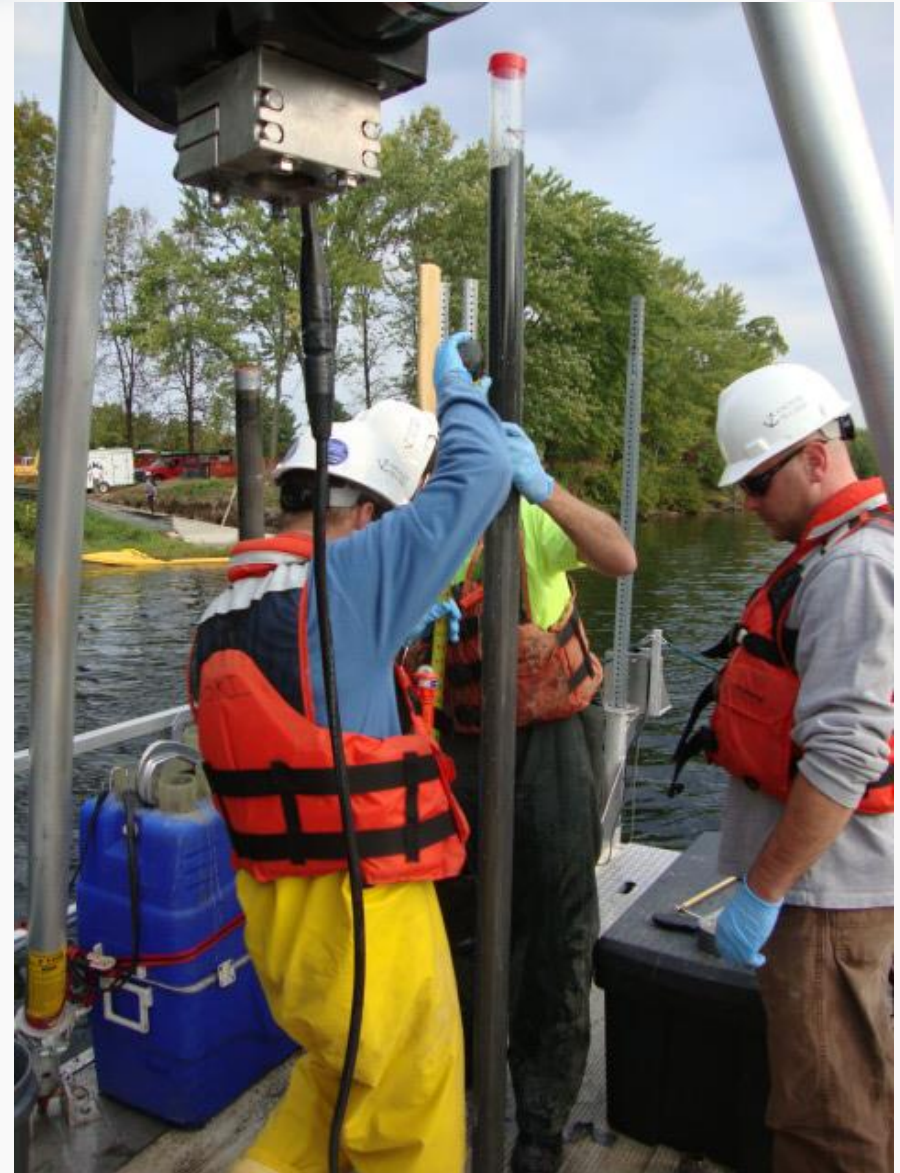
- Conducted in Phase 2: 2010 (RS 1), 2011 (RS 2) and 2012 (RS 3)
- Study Summary:
 - Improved our ability to refine the dredge prisms
 - Overall improvement to the coring program
 - Improve recovery
 - Increase number of attempts
 - Used core catchers
 - Sonic drilling
 - Used elevation instead of depth



SEDC Program



- Cores were located both inside and nearby dredge areas
 - 476 locations in river section 1 in 2010
 - 518 locations in river section 2 in 2011
 - 409 locations in river section 3 in 2012
- Targeted low confidence areas and data gaps



SEDC Program



- Conclusions:
 - Some changes were made to sample collection methods to improve sample recovery
 - In all areas the majority of the SEDC cores improved the confidence in the design (i.e. more accurate dredge cut line development)
 - The dredge prisms were adjusted using the SEDC data (several acres added)



Questions?

