

KK RIVER PROJECT IMPLEMENTATION PHASE (PHASE V)

UPDATE 1

by USEPA and WDNR
August 10, 2009

SUMMARY

- **Phase V of the project is carried out under the Great Lakes Legacy Act.**
- **Dredging Started on June 1, 2009**
- **US EPA - Great Lakes National Program Office is the project administrator. CH2M Hill is the contractor for the overall project with EPA. Ryba Marine is the dredging subcontractor to CH2M Hill**
- **WDNR is the project sponsor**
- **US Army Corps of Engineers, City of Milwaukee/Port of Milwaukee, US Coast Guard, Business Improvement District #35, and Milwaukee Metropolitan Sewerage District, are providing support and assistance to the project**

DREDGING EQUIPMENT AND PROCESSES

- **An environmental bucket is used for dredging. A regular clamshell bucket will only be used when difficulties of using an environmental bucket are encountered**
- **Dredged sediment is transported by material barges to the Milwaukee confined disposal facility (CDF) on Jones Island**
- **Sediment is unloaded from barge to CDF at the offloading area**
- **An air bubble system is deployed at the downstream limit of the project area, Kinnickinnic Avenue (STH32), to minimize transport of suspended sediment outside of the project area**
- **Turbidity is continuously monitored upstream and downstream to ensure dredging activity will not cause significant amount of sediment migration out of the project area**
- **shoreline protection is needed for dredging**

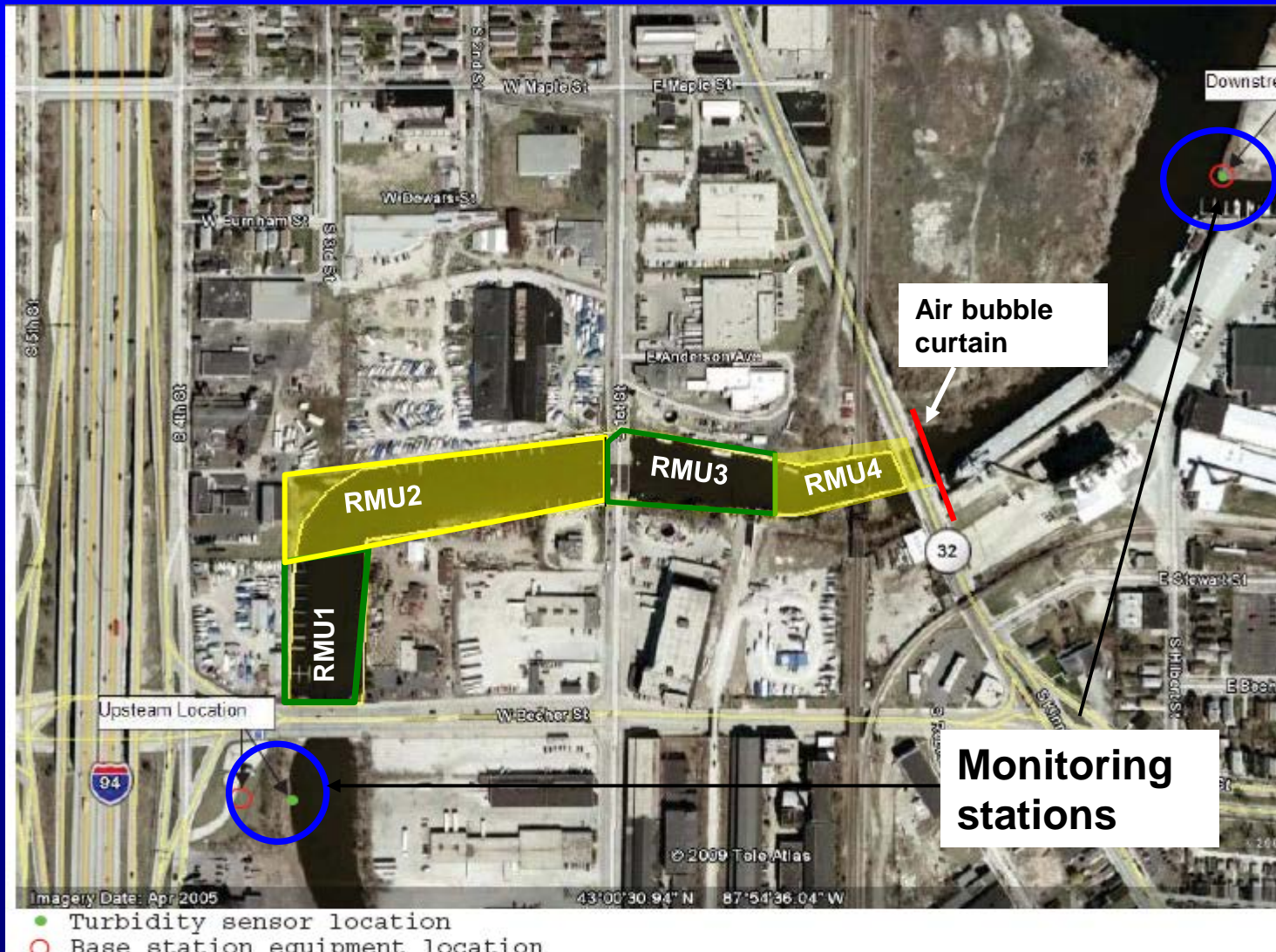
DREDGING PLAN

- **Dredging will be conducted in two passes due to the existing shallow water depth in the project area**
- **First, dredging will start from downstream near KK Ave and proceed to upstream near Becher Street to create a channel for loaded transport barges**
- **Secondly, dredging will start from upstream near Becher Street and proceed to downstream near KK Avenue**
- **During first pass a sunken boat will be removed**
- **Between first and second passes, a hot spot will be dredged**

DREDGING PLAN (cont'd)

- **Project area is divided into four remedial management units (RMU1 to RMU4). RMU1 is the most upstream area close to Becher Street while RMU4 is close to KK Avenue**
- **Upon completion of second pass of each RMU, sediment samples will be collected and analyzed for PCB and PAHs**
- **Based on sampling results, additional sediment may be dredged**
- **Upon completion of additional dredging clean materials may be placed to cover the sediment surface**

ILLUSTRATION OF RMUs AND LOCATIONS OF TURBIDITY MONITORING STATIONS AND THE AIR BUBBLE CURTAIN



DREDGING ACCOMPLISHED BY AUGUST 10, 2009

- **By July 20, first dredging pass was completed, the sunken boat was removed, and the hot spot was dredged. Second dredging pass has started.**
- **By August 2, approximately a total of 64,800 cubic yards of sediment have been dredged.**
- **Estimated project completion date is December 2009.**

FIRST BUCKET OF SEDIMENT BEING DREDGED ON JUNE 1, 2009



Photo source:
CH2M Hill



Photo source:
WDNR



Photo source:
CH2M Hill



Photo source:
CH2M Hill

BATHYMETRIC SURVEY



Photo source:
CH2M Hill



06/11/2009

Air bubble system

River flow

Photo source:
WDNR

CONSTRUCTION OF A CELL IN THE CDF FOR DISPOSAL OF DREDGED SEDIMENT FROM THE KK RIVER PROJECT AREA



Photo source:
CH2M Hill

INSTALLATION OF WATER COLLECTION SYSTEM AT THE CELL IN THE CDF FOR DISPOSAL OF DREDGED SEDIMENT FROM THE KK RIVER PROJECT AREA. WATER WILL BE TREATED BY MMSD OR ON SITE TREATMENT FACILITY IF NECESSARY DEPENDING UPON CONCENTRATIONS OF CONTAMINANT OF CONCERN IN THE DISCHARGE STREAM



Photo source:
CH2M Hill

CONDUCTING SHORELINE PROTECTION WORK FOR DREDGING AT THE KK RIVER PROJECT AREA



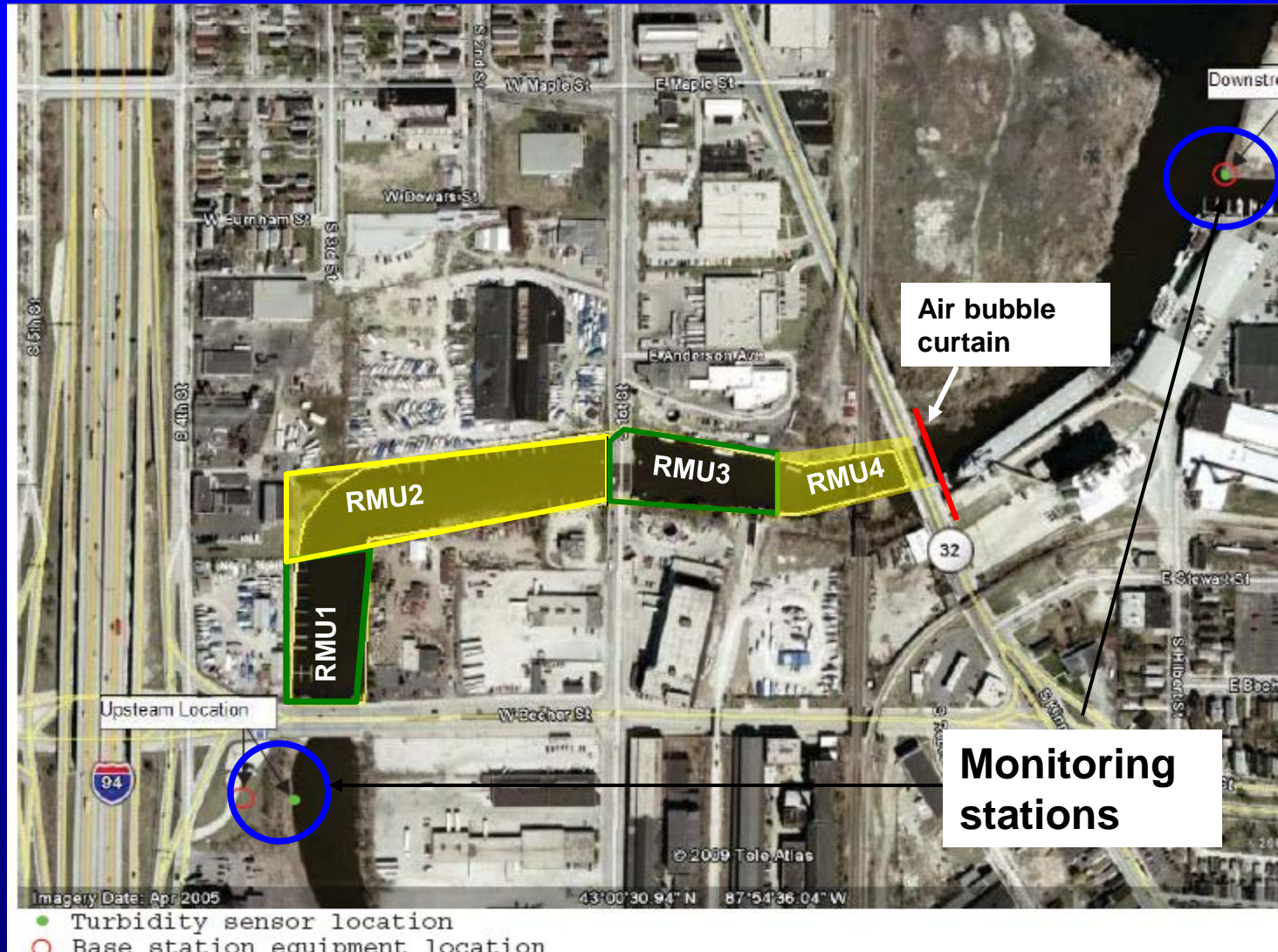
Photo source:
WDNR

KK RIVER PROJECT IMPLEMENTATION PHASE (PHASE V)

UPDATE 2

by USEPA and WDNR
August 31, 2009

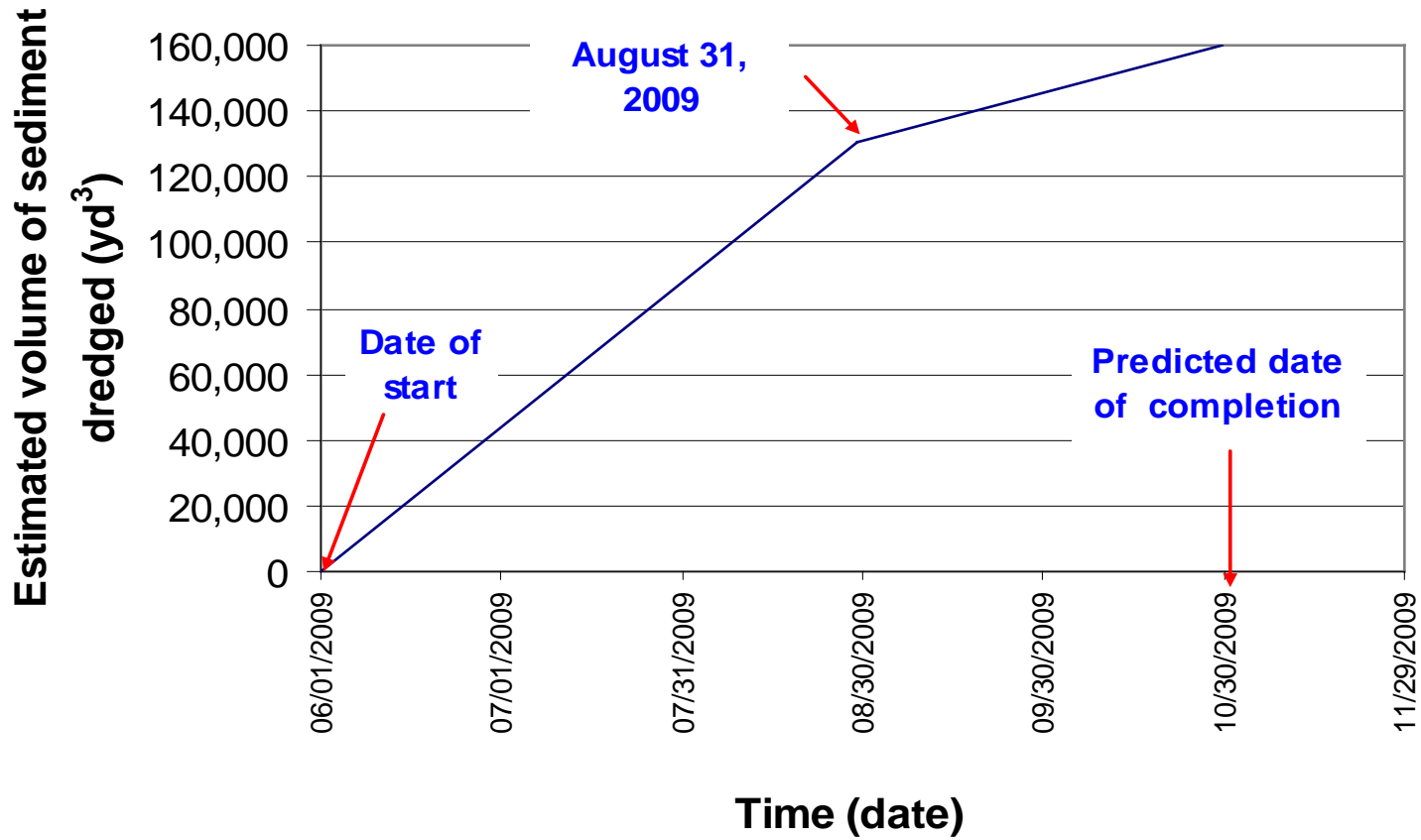
ILLUSTRATION OF RMUs AND LOCATIONS OF TURBIDITY MONITORING STATIONS AND THE AIR BUBBLE CURTAIN



DREDGING ACCOMPLISHED BY AUGUST 31, 2009

- **The second dredging pass was completed on August 26, 2009 except for a few areas that need special preparation work completed first**
- **Confirmation samples were collected from RMU1 and areas that need follow-up dredging (clean-up dredging) were defined on August 20, 2009 and subsequently the clean-up dredging was completed on Aug. 30, 2009**
- **Approximately a total of 130,433 cubic yards of sediment have been dredged**
- **It is predicted that the project will be completed by the end of October 2009**

Estimated volume of sediment dredged



PROJECT PICTURES (1/7)



08/11/2009

Photo source:
WDNR

PROJECT PICTURES (2/7)



08/11/2009

Photo source:
WDNR

PROJECT PICTURES (3/7)



08/11/2009

Photo source:
WDNR

PROJECT PICTURES (4/7)



Photo source:
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PROJECT PICTURES (5/7)



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PROJECT PICTURES (6/7)



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PROJECT PICTURES (7/7)



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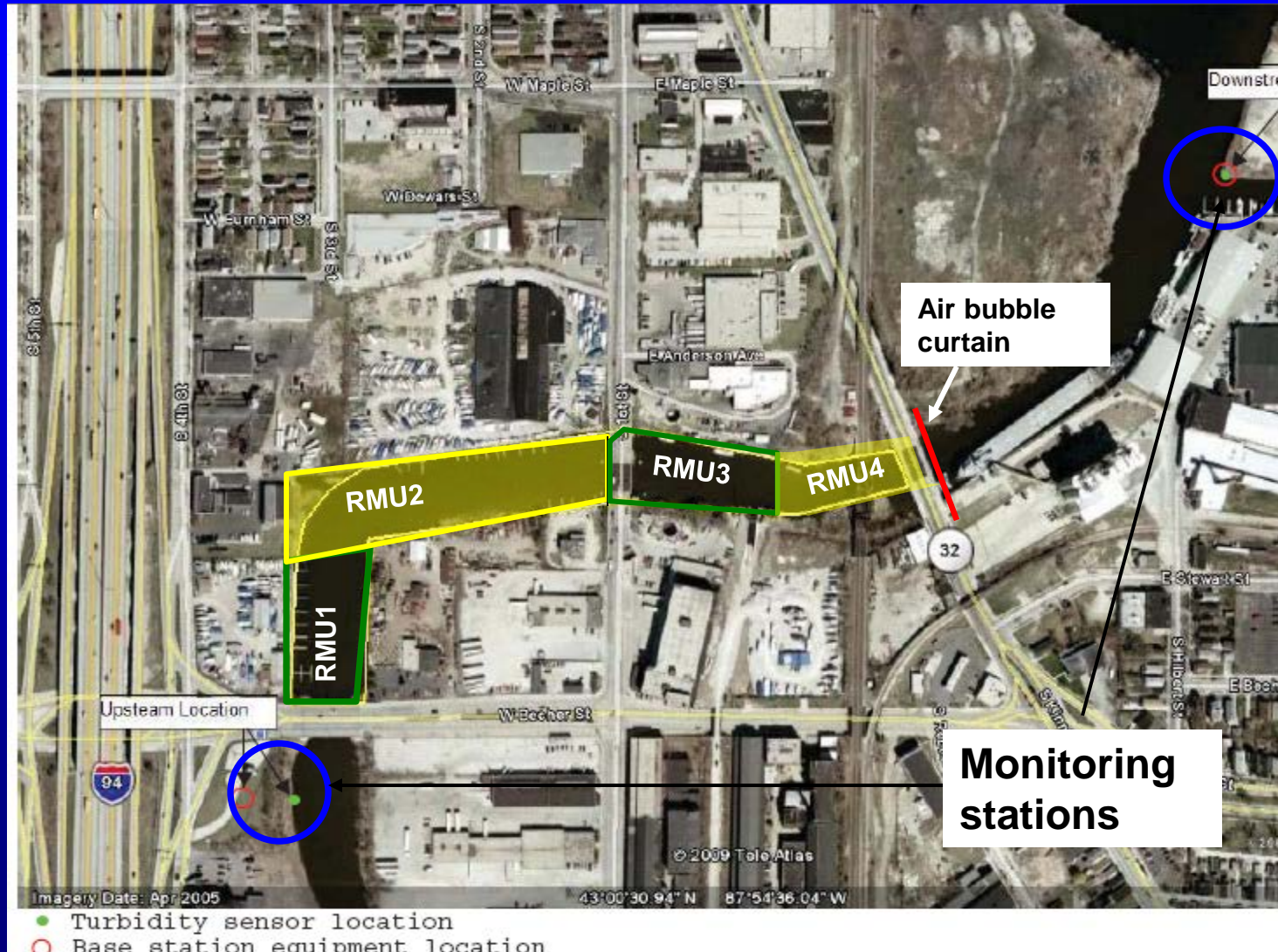
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UPDATE 3

by USEPA and WDNR

October 22, 2009

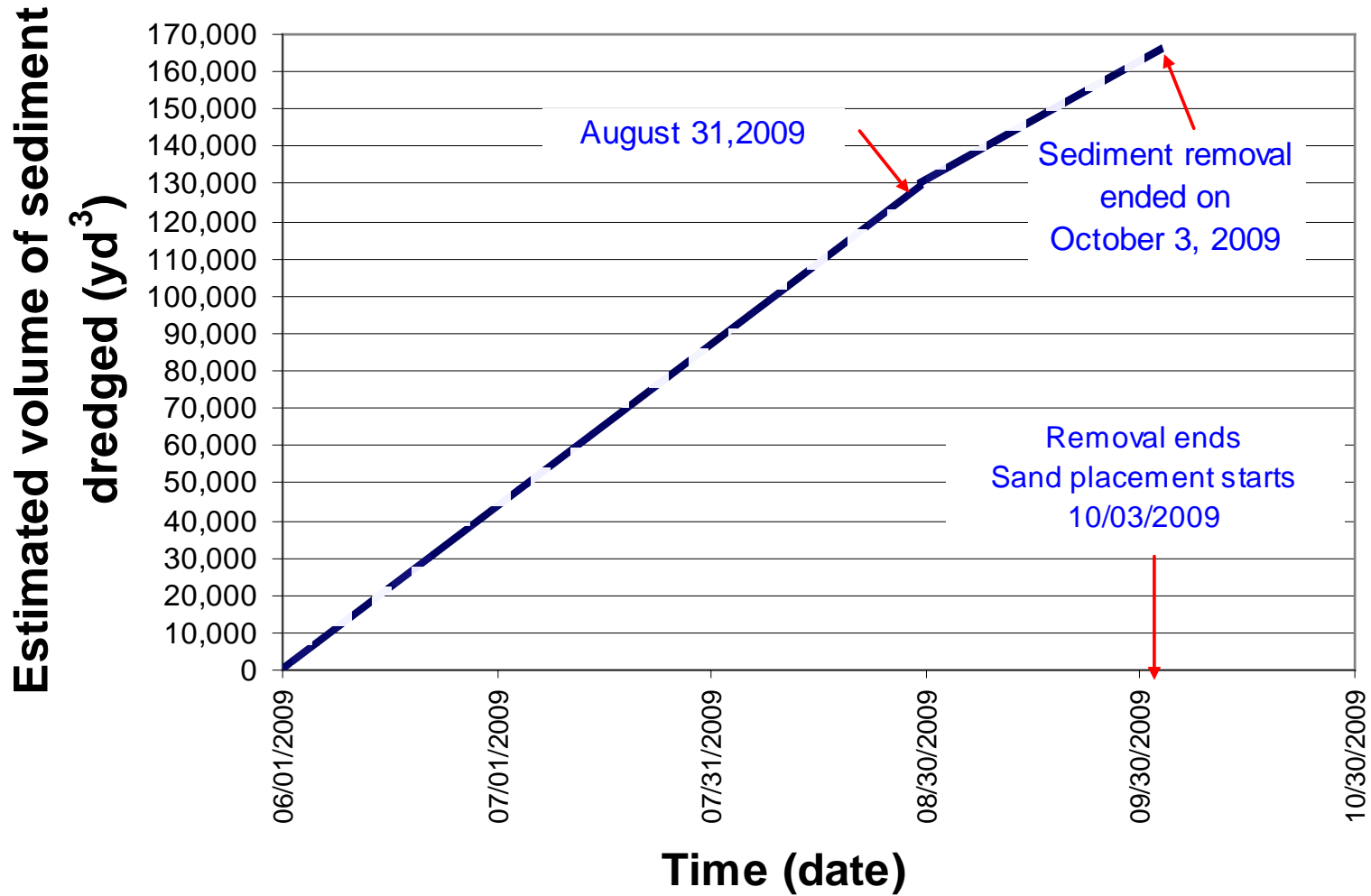
ILLUSTRATION OF RMUs AND LOCATIONS OF TURBIDITY MONITORING STATIONS AND THE AIR BUBBLE CURTAIN



DREDGING ACCOMPLISHED BY OCTOBER 22, 2009

- **Post remediation sediment cores were collected from 77 locations. Based on the evaluation of results, additional sediment in concentrations of PCBs and PAHs exceeding action levels were removed in the last dredging stage. Dredging was completed on October 3, 2009.**
- **Upon completion of sediment removal, operation of sand placement started. Clean sand varying in thickness of 6" to approximately 4 feet are being placed to dilute/cover sediment surface and to maintain side slope stability. Sanding operation is expected to complete by the end of October, 2009.**
- **Approximately a total of 167,000 cubic yards of sediment have been removed from the project area.**
- **A public event to celebrate the completion of sediment removal is scheduled at 12:00pm, November 2, 2009.**

Estimated volume of sediment dredged



PROJECT PICTURES (1/5) -

Last load of sediment being removed from the KK River project area



Photo source:
CH2M Hill

PROJECT PICTURES (2/5)-

Last load of sediment being removed from the KK River project area



Photo source:
CH2M Hill

**PROJECT PICTURES (3/5) -
Last load of sediment going into scow**



Photo source:
CH2M Hill

**PROJECT PICTURES (4/5)-
Last load of sediment going into scow**



Photo source:
CH2M Hill

PROJECT PICTURES (5/5) -Sand placement using a spreader



Photo source:
CH2M Hill