

North Saint Louis Riverfront HSR Model Study Read-Ahead

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Purpose

The U.S. Army Corps of Engineers, St. Louis District, conducted a sedimentation improvement study of the Mosenthein reach of the Middle Mississippi River between River Miles (RM) 190.00 and 180.00 near downtown St. Louis which passes through St. Louis County in Missouri and Madison County in Central Illinois. This study was funded by the Regulating Works Project of the U.S. Army Corps of Engineers, St. Louis District. The objective of the model study was to find a river engineering solution to reduce or eliminate the need for repetitive dredging and hazardous velocity issues between RM 183.50 – 181.00 while maintaining the environmental features within the reach. This HSR model will be used in conjunction with a numeric model being performed by MVS Hydrologic Engineering Section. The models will be evaluating what causes the dredging and cross current issues, as well as testing alternatives to find the safest and most efficient solution.

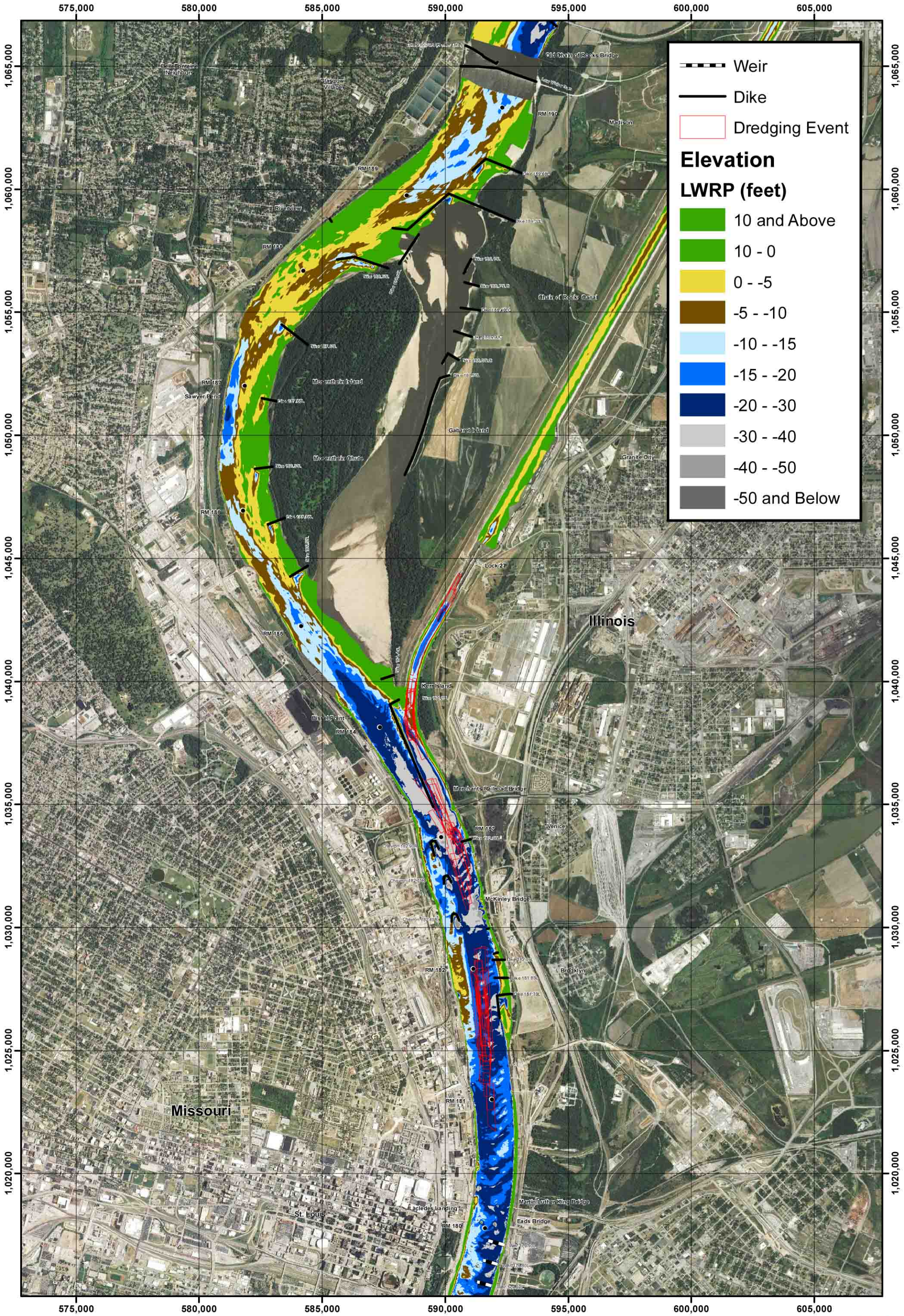
Goals

The goals of this study were to:

- i. Investigate and provide analysis on the existing flow mechanics causing the sedimentation problems as well as cross current and navigation in and out of the canal.
- ii. Evaluate a variety of remedial measures utilizing an HSR model with the objective of identifying the most effective and economical plan to reduce or eliminate sedimentation at RM 183.50 – 181.00. In order to determine the best alternative, three criteria were used to evaluate each alternative.
 - a. The alternative should have the potential to significantly reduce or eliminate sedimentation at RM 183.00 and RM 181.50.
 - b. The alternative should maintain the navigation channel requirements of at least 9 feet of depth and a minimum of 300 feet of width.
 - c. The final alternative will not significantly impact existing environmental features within the reach.
- iii. Communicate the model results and plans for improvements to all stakeholders and partners including; river industry personnel, Non-Governmental Organizations, and environmental agency personnel.

The attached plates show the hydrographic surveys of the reach. The plates are as follows:

1. 2010 Hydrographic Survey
2. 2013 Hydrographic Survey
3. 2014 Hydrographic Survey



Weir
 Dike
 Dredging Event

Elevation

LWRP (feet)

- 10 and Above
- 10 - 0
- 0 - -5
- 5 - -10
- 10 - -15
- 15 - -20
- 20 - -30
- 30 - -40
- 40 - -50
- 50 and Below

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Hydrographic Survey
 2010
2012 NAIP Aerial Photograph

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	DRAWN BY I. Nguyen	REVIEWED BY A. Cox	CHECKED BY B. Krischel
Mississippi River Basin St. Louis District North St. Louis Riverfront HSR Model	SUBMITTED BY I. Nguyen	APPROVED BY R. Davinroy, P.E.	
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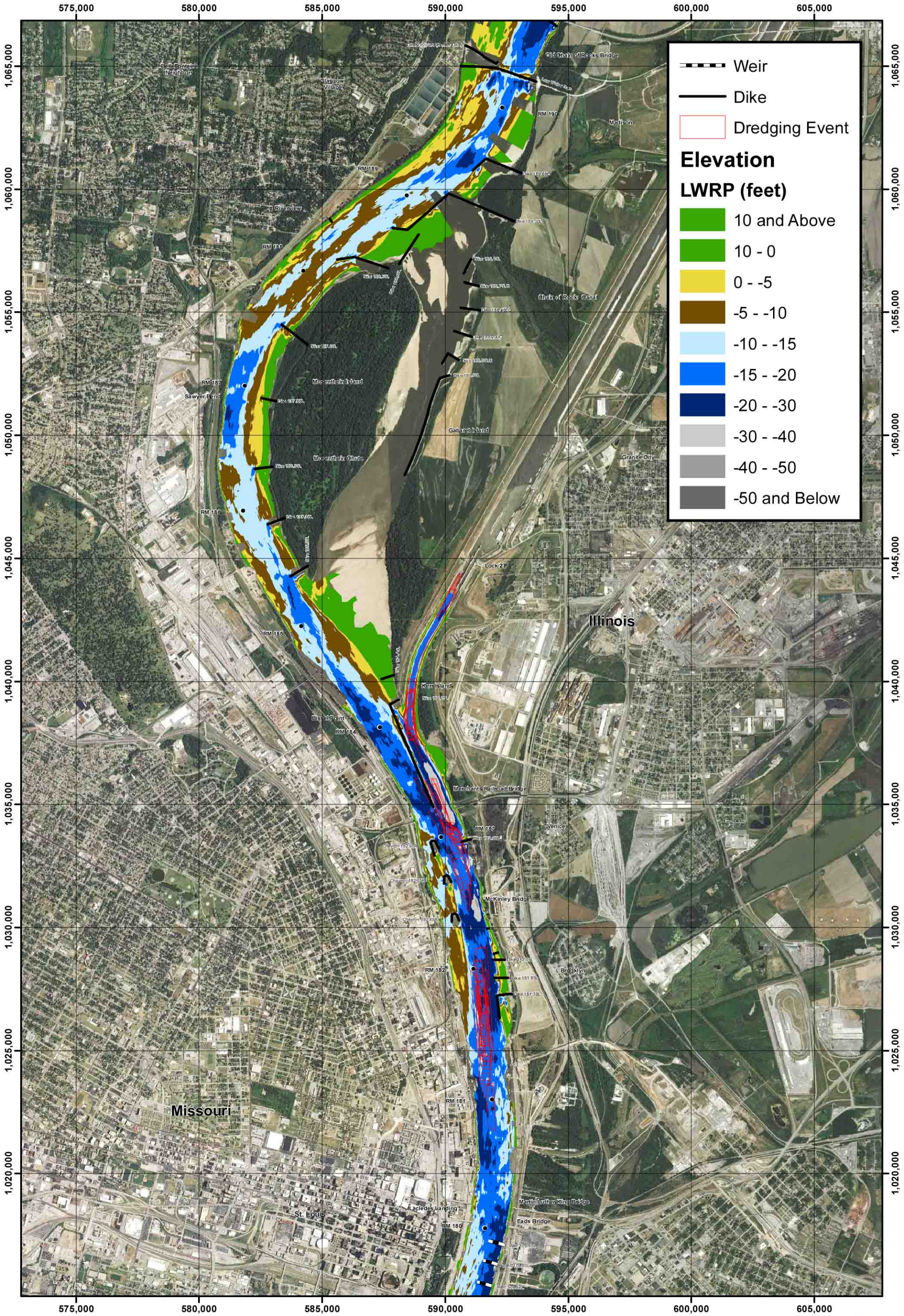
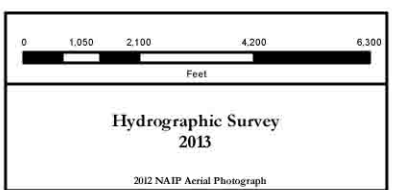


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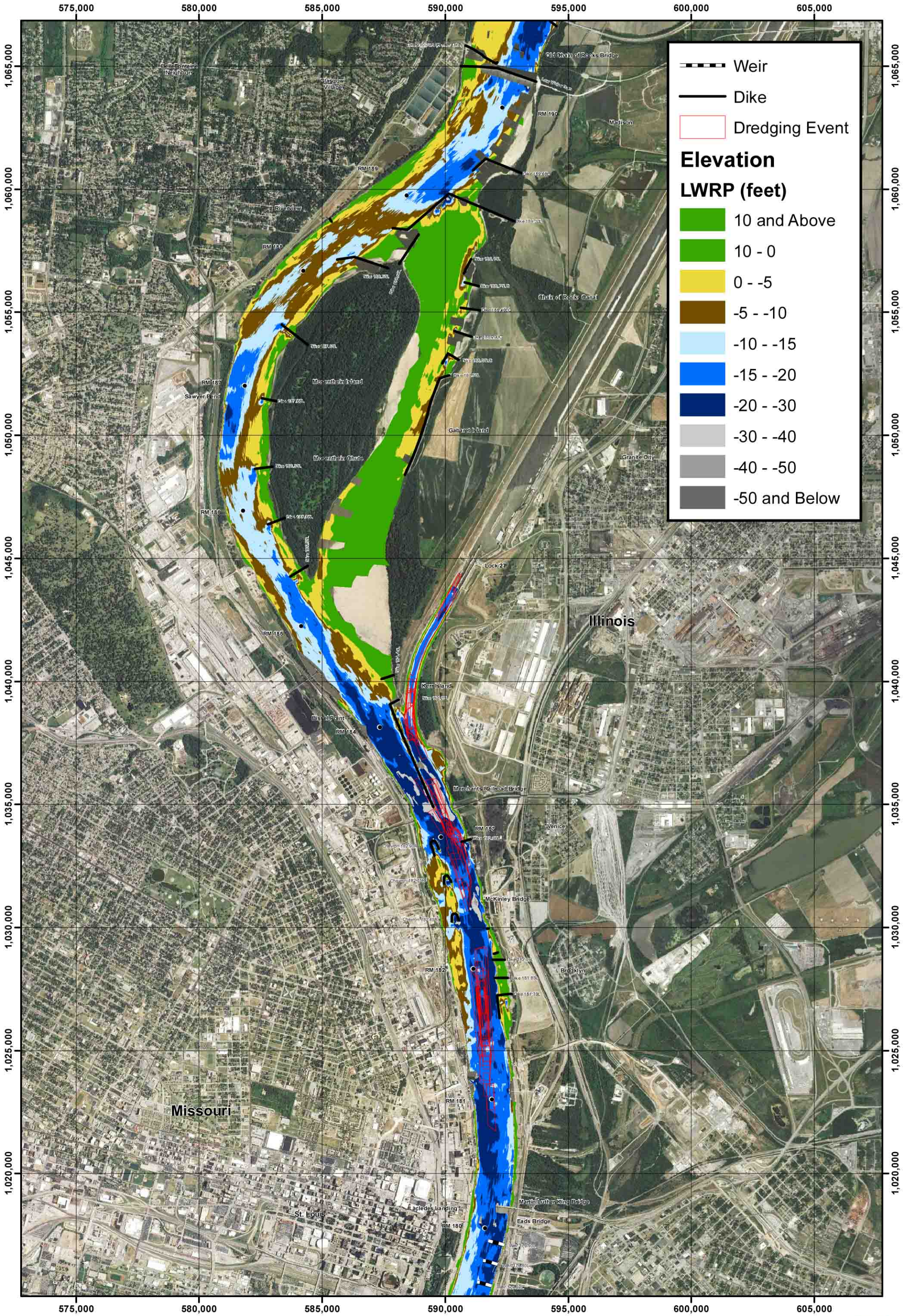
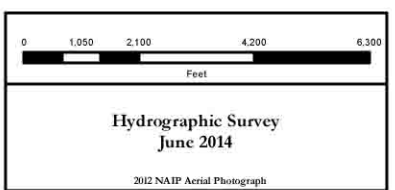


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