

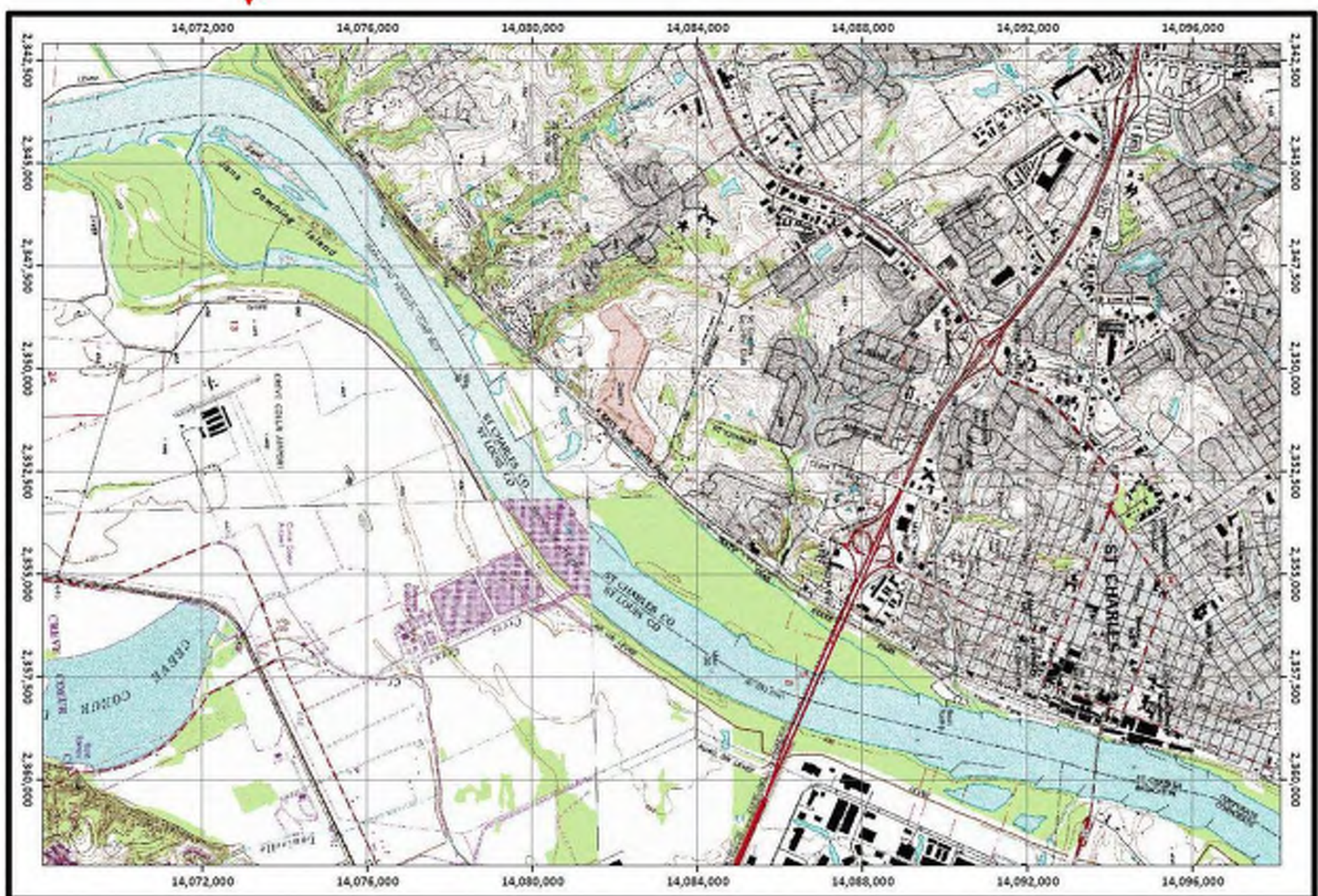
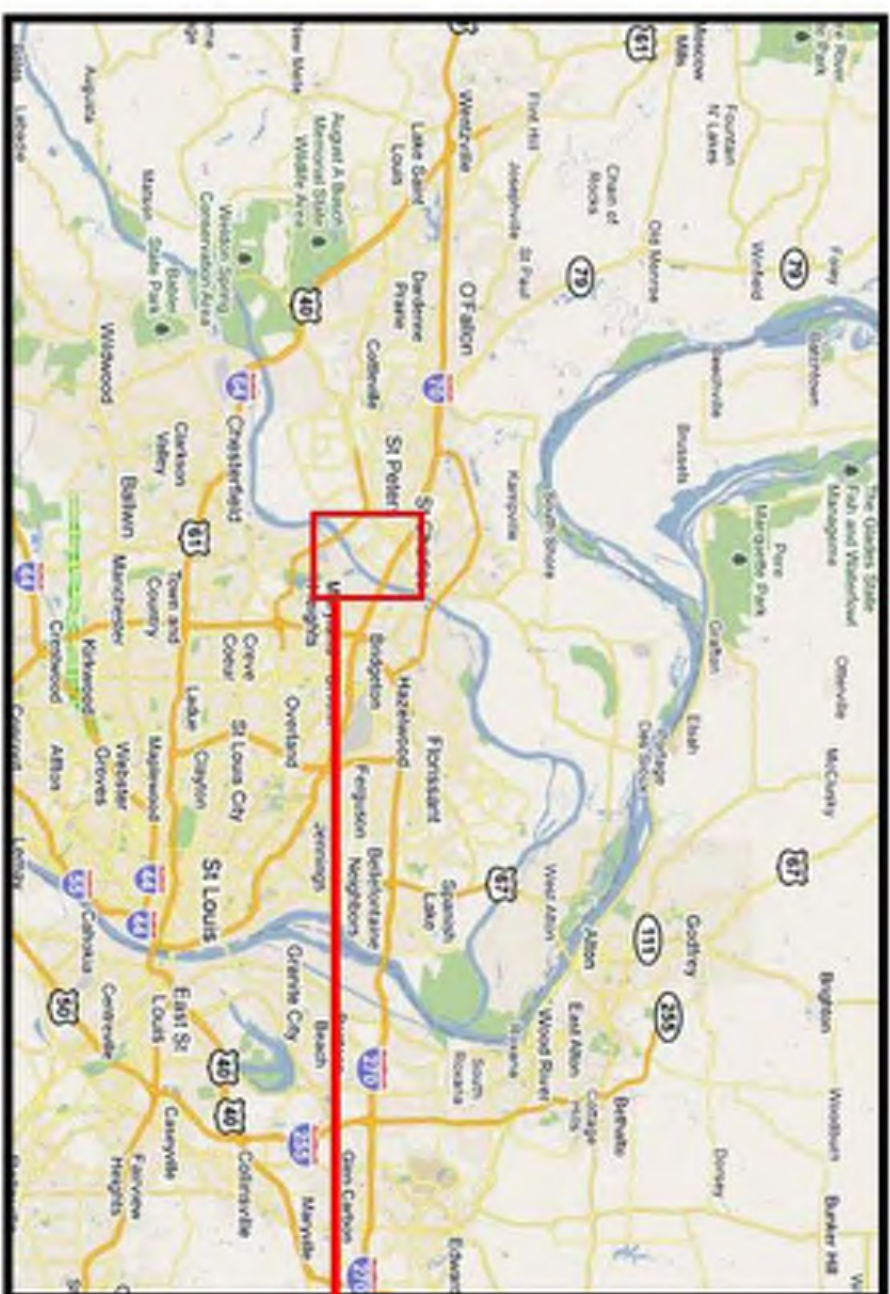
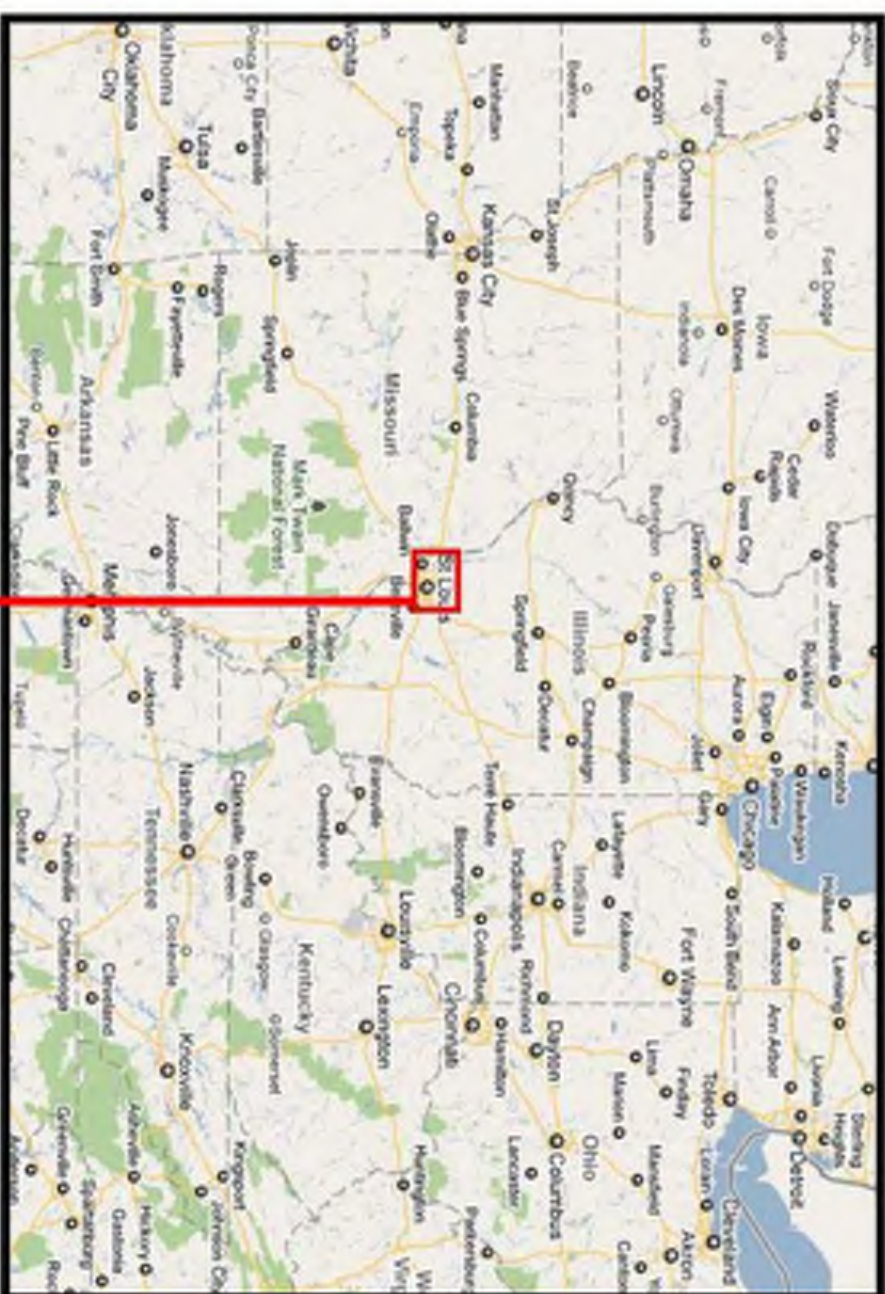


PLATE
NUMBER
1

LOCATION AND VICINITY MAP OF THE STUDY REACH

U.S. ARMY ENGINEER DIVISION
CORPS OF ENGINEERS
ST. LOUIS, MISSOURI

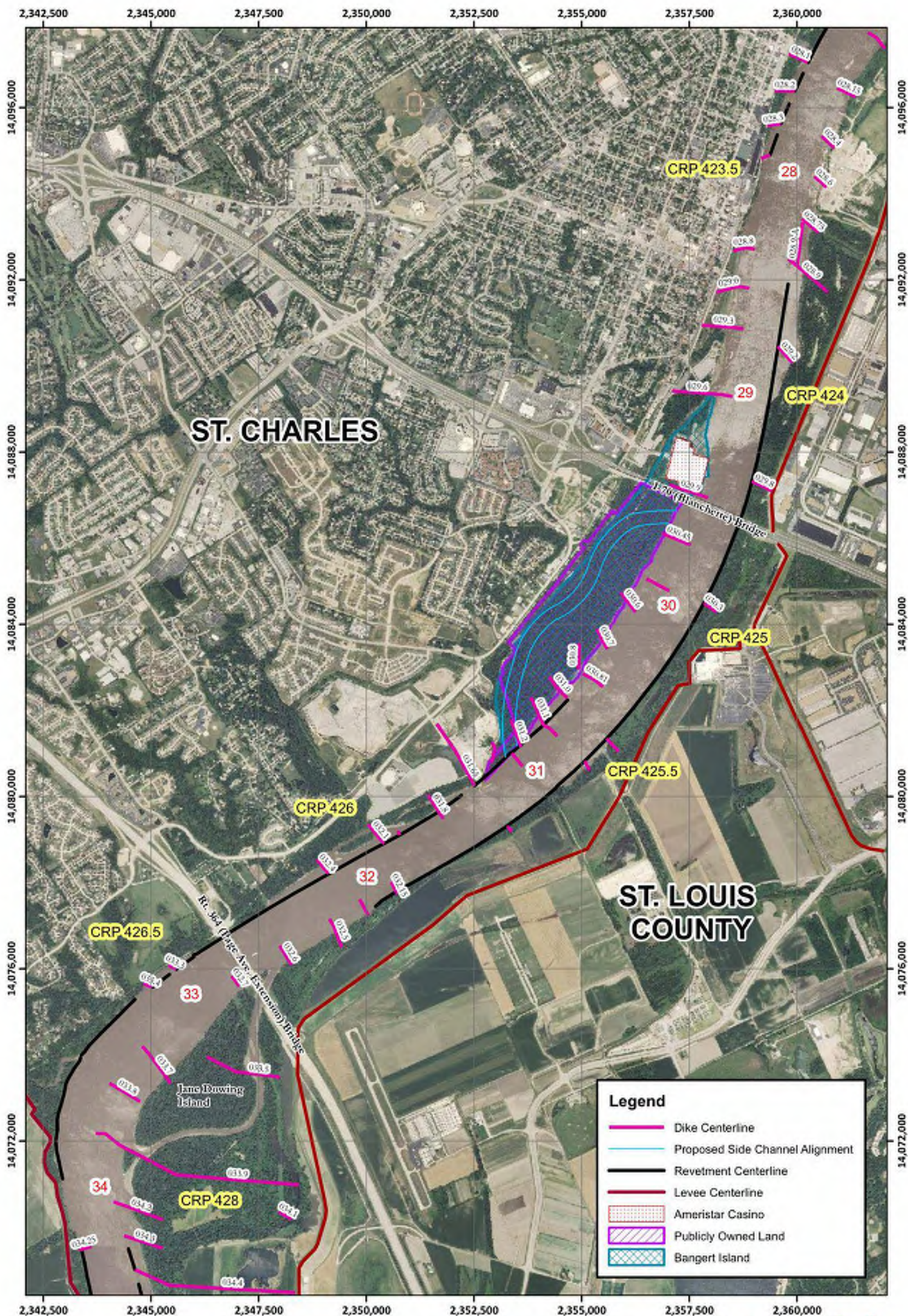
Bangert Island
HSR Model

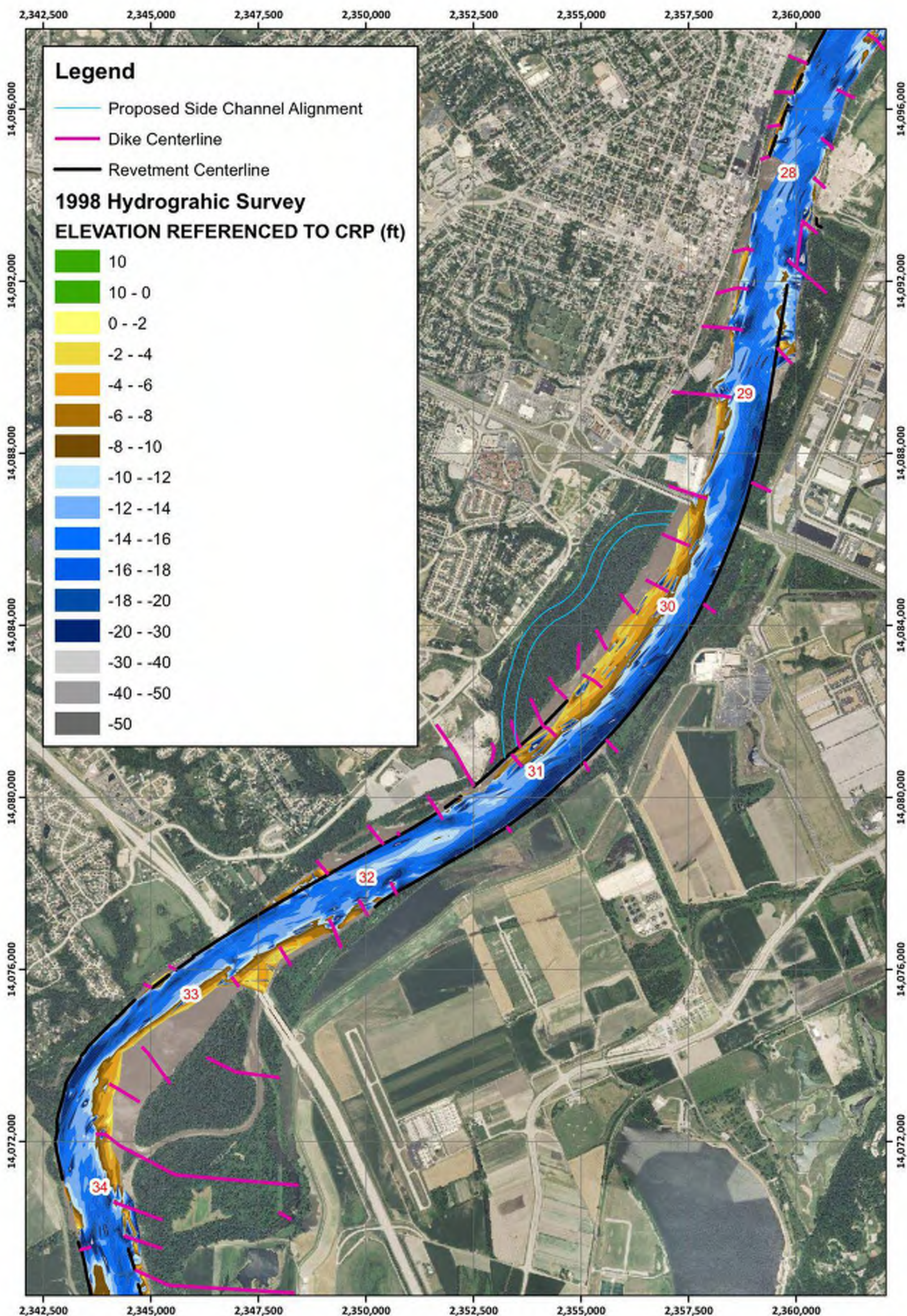
T. LAUTH	T. LAUTH	J. BROWN, PE.	A. COX
T. LAUTH	R. DAVINROY, PE.		

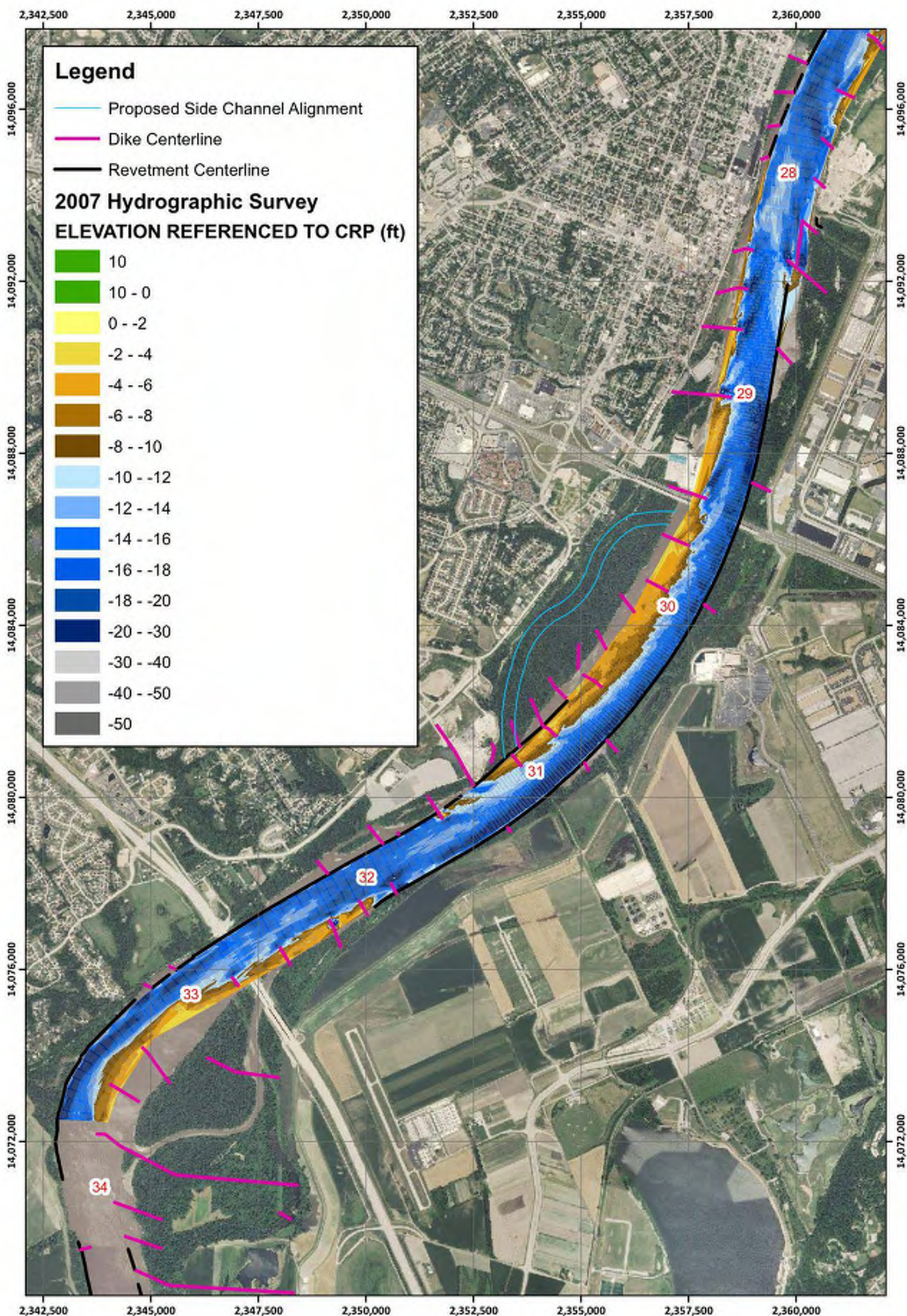


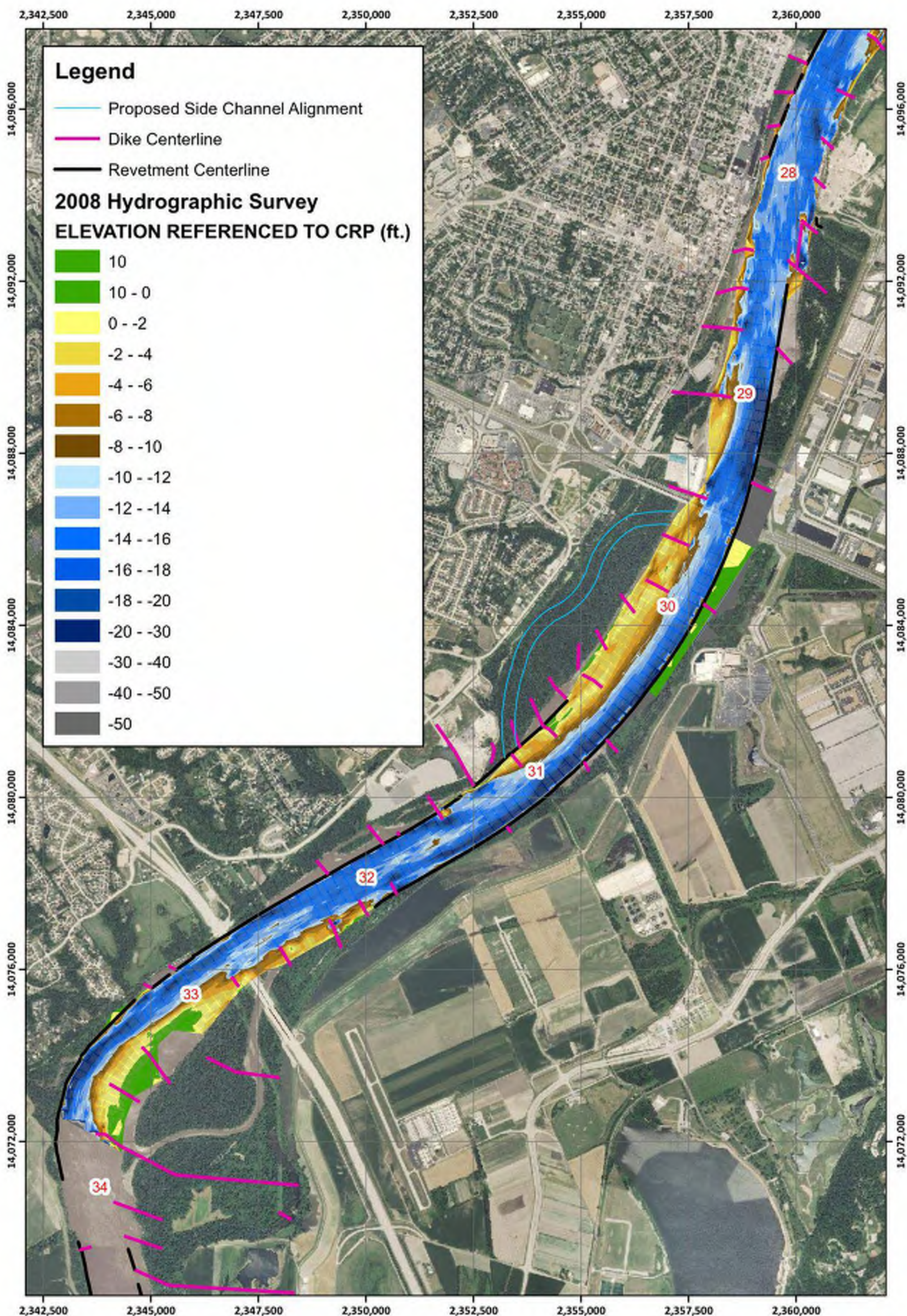
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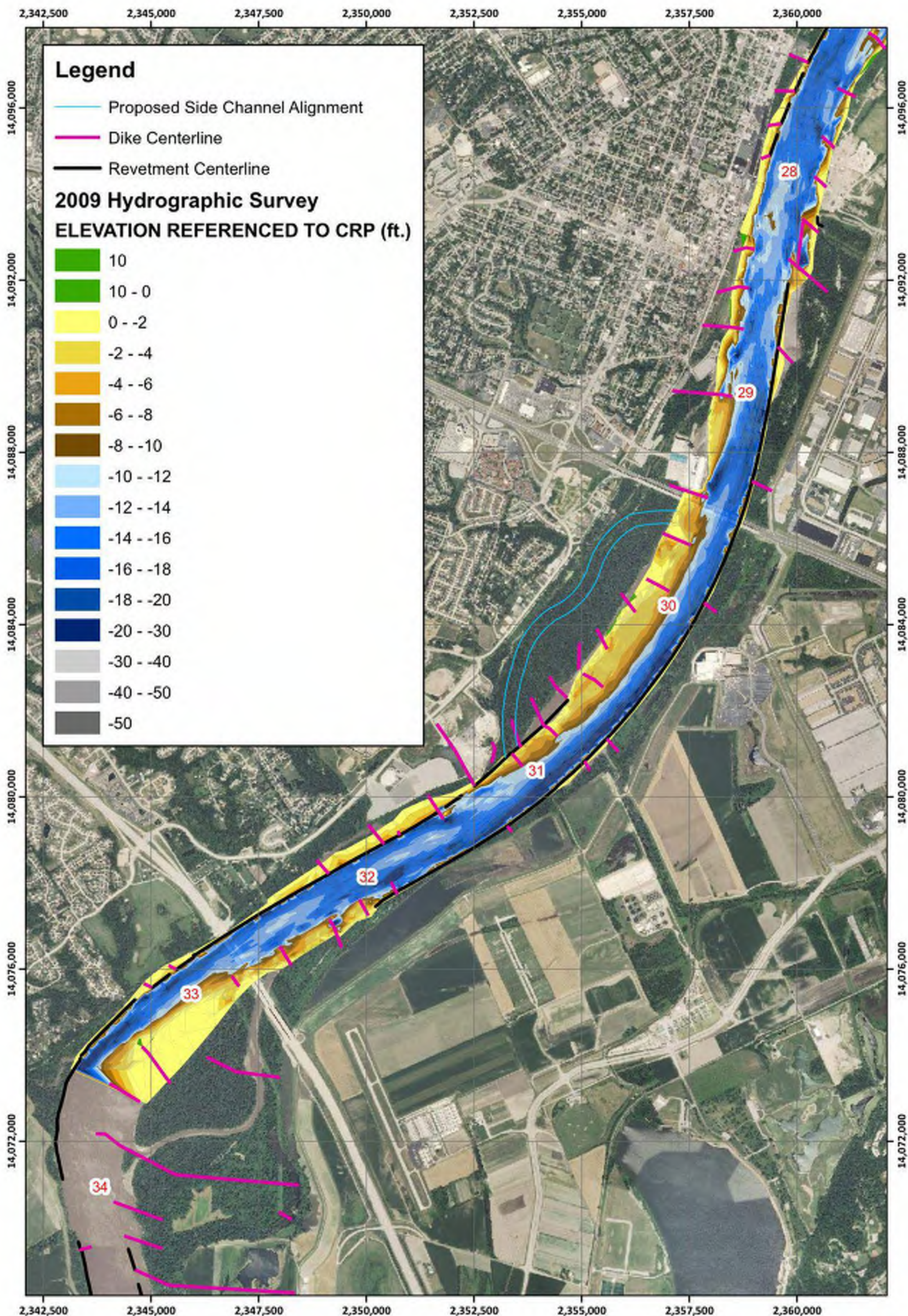
**US Army Corps
of Engineers**
St. Louis District

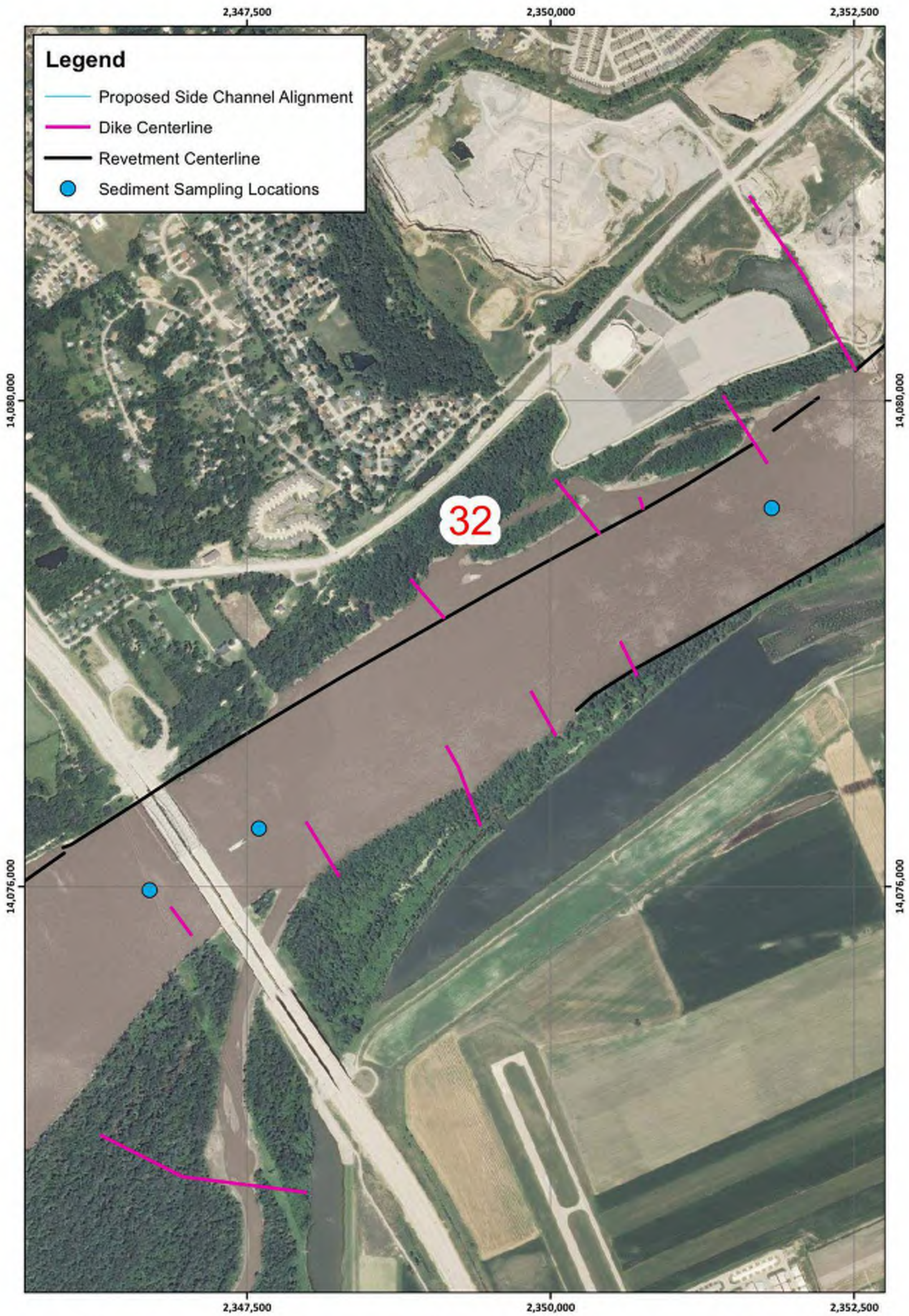










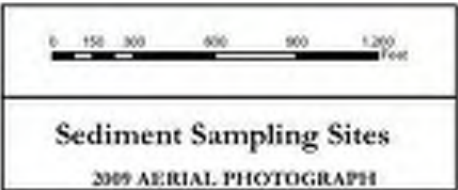


Legend

- Proposed Side Channel Alignment
- Dike Centerline
- Revetment Centerline
- Sediment Sampling Locations

32

PLATE
NUMBER
7

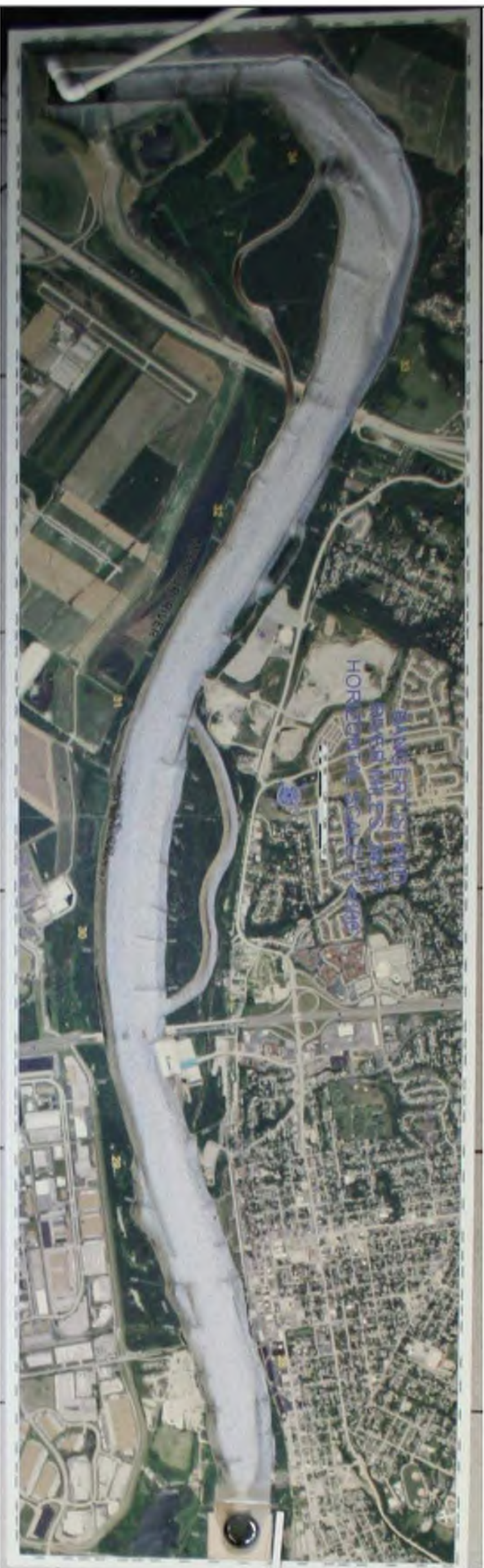


U.S. ARMY ENGINEER DIVISION CORPS OF ENGINEERS ST. LOUIS, MISSOURI	DESIGNED BY	T LAUTH	DATE	3/30/11
	DESIGNED BY	T LAUTH J BROWN, P.E.	DESIGNED BY	A COX
	CHECKED BY	T LAUTH	CHECKED BY	R DAVINBOY, P.E.
	PROJECT	Bangert Island HSR Model		



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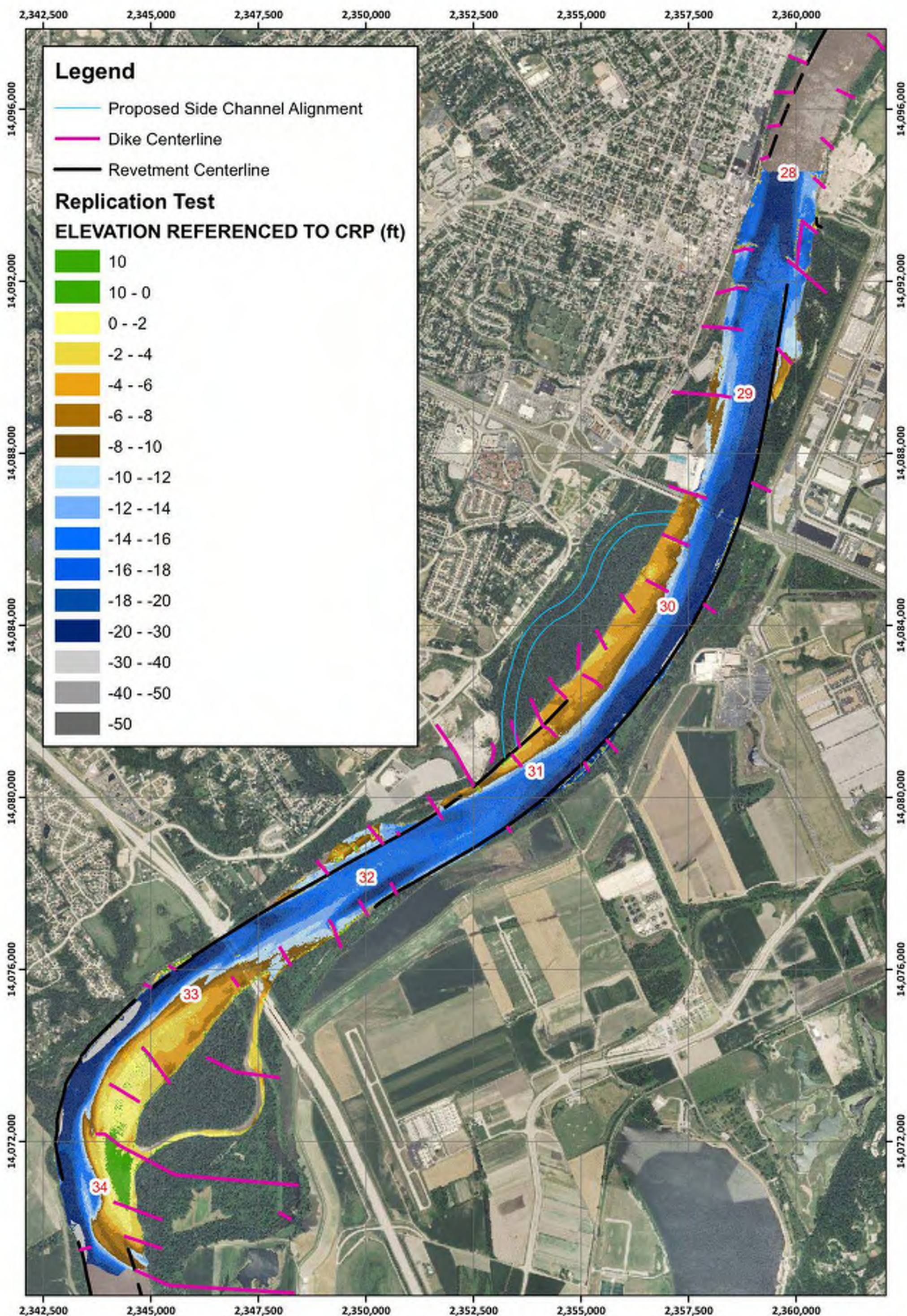
DESIGNED BY T LAUTH		CHECKED BY T LAUTH	
DRAWN BY T LAUTH		APPROVED BY J BROWN, P.E.	
CONSTRUCTED BY T LAUTH		REVIEWED BY R DAVINROY, P.E.	
PROJECT Bangert Island		DATE 6/27/11	

US ARMY ENGINEER DIVISION
 CORPS OF ENGINEERS
 ST. LOUIS, MISSOURI

Bangert Island
 HSR Model

Model Photograph

PLATE
 NUMBER
 8



Legend

- Proposed Side Channel Alignment
- Dike Centerline
- Revetment Centerline

Replication Test

ELEVATION REFERENCED TO CRP (ft)

- 10
- 10 - 0
- 0 - -2
- -2 - -4
- -4 - -6
- -6 - -8
- -8 - -10
- -10 - -12
- -12 - -14
- -14 - -16
- -16 - -18
- -18 - -20
- -20 - -30
- -30 - -40
- -40 - -50
- -50

PLATE
NUMBER
9

0 500 1,000 2,000 3,000 4,000 Feet

Replication Test Scan

2009 AERIAL PHOTOGRAPH

U.S. ARMY ENGINEER DIVISION CORPS OF ENGINEERS ST. LOUIS, MISSOURI		DESIGNED BY T. LAUTH	DATE 6/30/11
Bangert Island HSR Model		DESIGNED BY T. LAUTH J. BROWN, P.E.	DESIGNED BY A. COX
		DESIGNED BY T. LAUTH	DESIGNED BY R. DAVINBOY, P.E.
		DESIGNED BY Bangert Plans	DESIGNED BY 9/20/11



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St. Louis District



2,352,500

2,355,000

Legend

- Proposed Side Channel Alignment
- Dike Centerline
- Revetment Centerline

Replication Test Upstream LDV No Gate
NORMALIZED BY TRANSECT

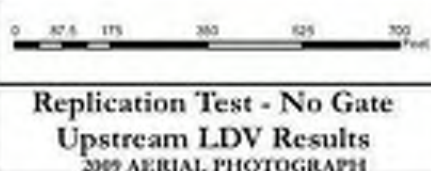
- ↗ 0.0 - 0.1
- ↗ 0.1 - 0.2
- ↗ 0.2 - 0.3
- ↗ 0.3 - 0.4
- ↗ 0.4 - 0.5
- ↗ 0.5 - 0.6
- ↗ 0.6 - 0.7
- ↗ 0.7 - 0.8
- ↗ 0.8 - 0.9
- ↗ 0.9 - 1.0

14,080,000

14,080,000

2,352,500

2,355,000

 PLATE
 NUMBER
 10

 U.S. ARMY ENGINEER DIVISION
 CORPS OF ENGINEERS
 ST. LOUIS, MISSOURI

 Bangert Island
 HSR Model

DESIGNED BY T LAUTH	DATE 7/4/11
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DESIGNED BY T LAUTH	DESIGNED BY R DAVINBOY, P.E.
PROJECT Bangert Phase	DATE 9/20/11


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2,357,500

Legend

- Proposed Side Channel Alignment
- Dike Centerline
- Revetment Centerline
- Bridge Piers

Replication Test Downstream LDV No Gate
NORMALIZED BY TRANSECT

- ↑ 0.0 - 0.1
- ↑ 0.1 - 0.2
- ↑ 0.2 - 0.3
- ↑ 0.3 - 0.4
- ↑ 0.4 - 0.5
- ↑ 0.5 - 0.6
- ↑ 0.6 - 0.7
- ↑ 0.7 - 0.8
- ↑ 0.8 - 0.9
- ↑ 0.9 - 1.0

14,088,000

14,088,000

2,357,500

PLATE
NUMBER
11

0 87.5 175 350 700 Feet

Replication Test - No Gate
Downstream LDV Results
 2009 AERIAL PHOTOGRAPH

 U.S. ARMY ENGINEER DIVISION
 CORPS OF ENGINEERS
 ST. LOUIS, MISSOURI

Bangert Island
HSR Model

DESIGNED BY

T LAUTH

DATE

7/4/11

CHECKED BY

T LAUTH

DESIGNED BY

J BROWN, P.E.

CHECKED BY

A COX

DESIGNED BY

T LAUTH

DESIGNED BY

R DAVINBOY, P.E.

CHECKED BY

Bangert Plans

DATE

9/20/11


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2,352,500

2,355,000

Legend

- Proposed Side Channel Alignment
- Dike Centerline
- Revetment Centerline

Replication Test Upstream LDV With Gate
NORMALIZED BY TRANSECT

- 0.0 - 0.1
- 0.1 - 0.2
- 0.2 - 0.3
- 0.3 - 0.4
- 0.4 - 0.5
- 0.5 - 0.6
- 0.6 - 0.7
- 0.7 - 0.8
- 0.8 - 0.9
- 0.9 - 1.0

14,080,000

14,080,000

2,352,500

2,355,000

12

PLATE
NUMBER

0 87.5 175 350 625 700 Feet

Replication Test - With Gate
Upstream LDV Results
 2009 AERIAL PHOTOGRAPH

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 ST. LOUIS, MISSOURI

Bangert Island
HSR Model

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2,357,500

Legend

- Proposed Side Channel Alignment
- Dike Centerline
- Revetment Centerline
- Bridge Piers

Replication Test Downstream LDV With Gate
NORMALIZED BY TRANSECT

- ↑ 0.0 - 0.1
- ↑ 0.1 - 0.2
- ↑ 0.2 - 0.3
- ↑ 0.3 - 0.4
- ↑ 0.4 - 0.5
- ↑ 0.5 - 0.6
- ↑ 0.6 - 0.7
- ↑ 0.7 - 0.8
- ↑ 0.8 - 0.9
- ↑ 0.9 - 1.0

14,088,000

14,088,000

2,357,500

PLATE
NUMBER
13

0 87.5 175 350 700 Feet

Replication Test - With Gate
Downstream LDV Results
 2009 AERIAL PHOTOGRAPH

U.S. ARMY ENGINEER DIVISION
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Bangert Island
 HSR Model

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DESIGNED BY T LAUTH	DESIGNED BY R DAVINBOY, P.E.
PROJECT Bangert Island	DATE 9/20/11



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US Army Corps
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 St. Louis District



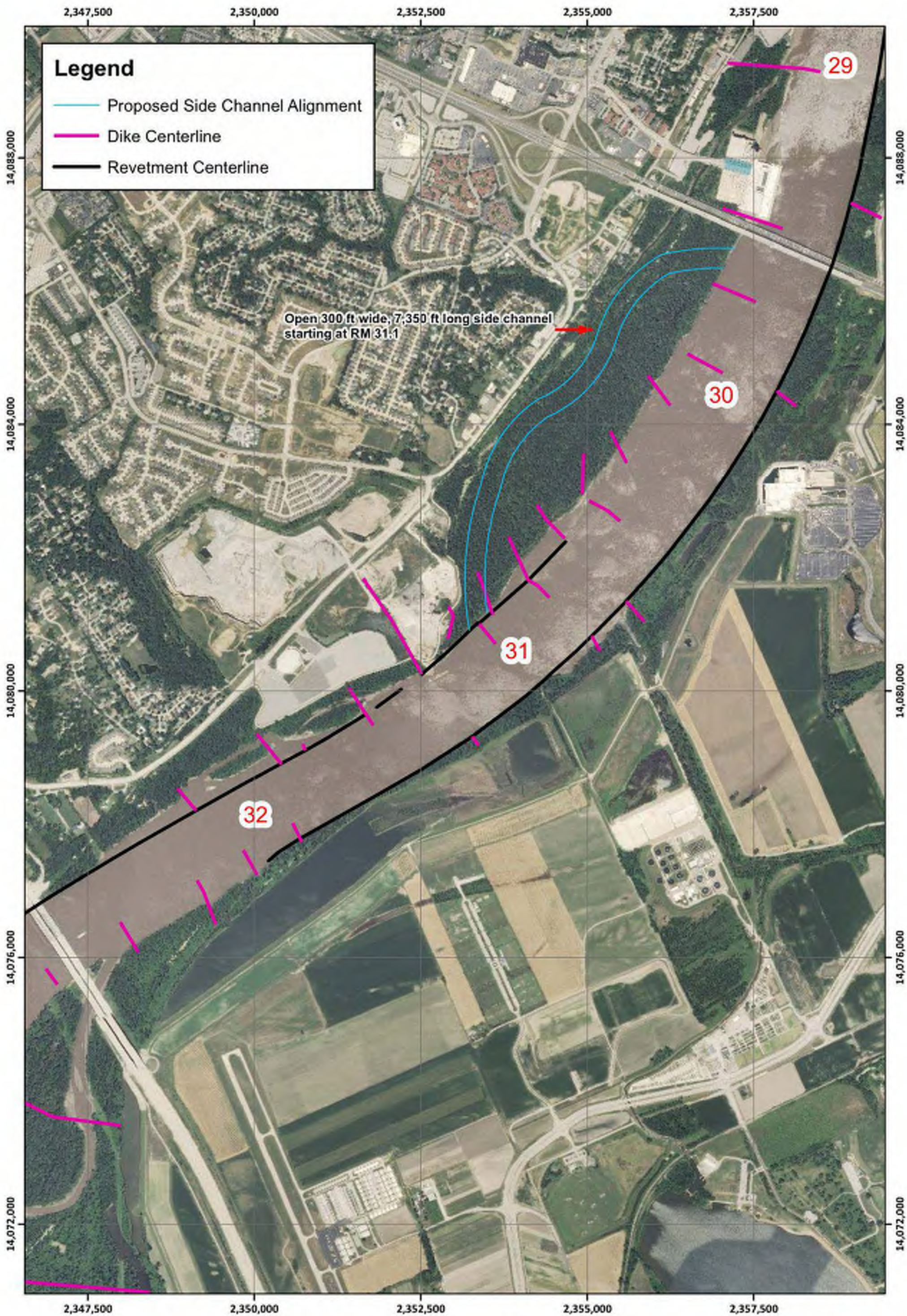


PLATE
NUMBER
14

0 300 600 1,200 1,800 2,400 Feet

Alternative 1: Definition

2009 AERIAL PHOTOGRAPH

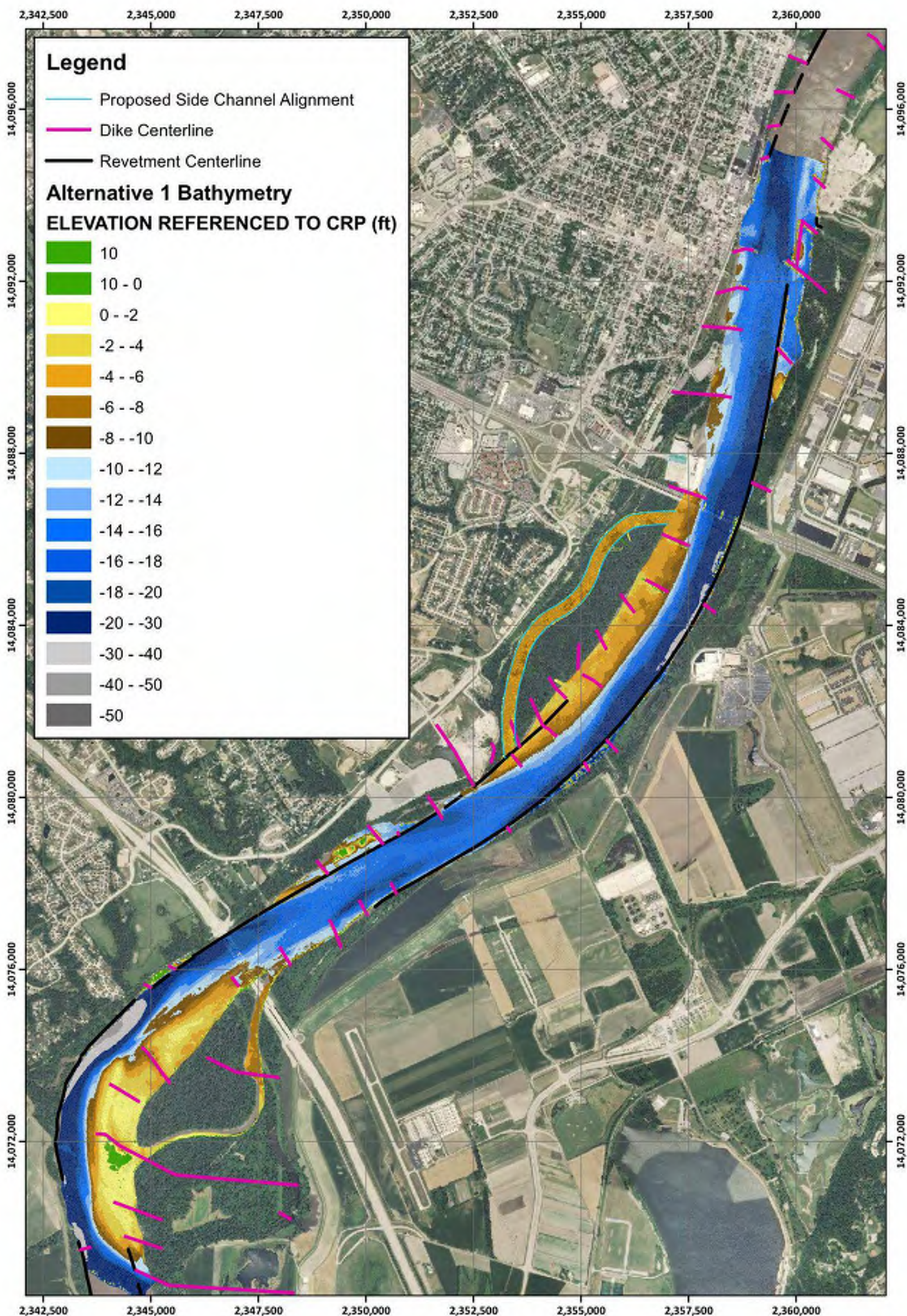
U.S. ARMY ENGINEER DIVISION CORPS OF ENGINEERS ST. LOUIS, MISSOURI	DESIGNED BY:		DATE:	
	T LAUTH		6/26/11	
Bangert Island HSR Model	DESIGNED BY:	DESIGNED BY:	DESIGNED BY:	
	T LAUTH	J BROWN, P.E.	A COX	
	DESIGNED BY:		DESIGNED BY:	
	T LAUTH		R DAVINBOY, P.E.	
PROJECT:		PROJECT:		
... Bangert Phase		9/20/11		



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2,352,500

2,355,000

Legend

— Proposed Side Channel Alignment

— Dike Centerline

— Revetment Centerline

**Alternative 1 Upstream LDV
NORMALIZED BY TRANSECT**

0.0 - 0.1

0.1 - 0.2

0.2 - 0.3

0.3 - 0.4

0.4 - 0.5

0.5 - 0.6

0.6 - 0.7

0.7 - 0.8

0.8 - 0.9

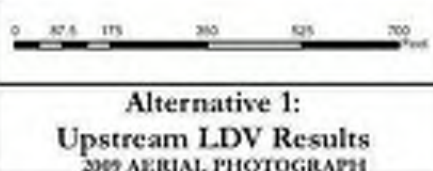
0.9 - 1.0

2,352,500

2,355,000

14,080,000

14,080,000

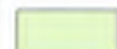
PLATE
NUMBER
16U.S. ARMY ENGINEER DIVISION
CORPS OF ENGINEERS
ST. LOUIS, MISSOURIBangert Island
HSR Model

DESIGNED BY: T LAUTH	DATE: 6/27/11
DESIGNED BY: T LAUTH	DESIGNED BY: J BROWN, P.E.
DESIGNED BY: T LAUTH	DESIGNED BY: R DAVINBOY, P.E.
PROJECT: Bangert Phase	DATE: 6/27/11

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RIVER
ENGINEERING CENTERUS Army Corps
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St. Louis District

2,357,500

Legend

-  Proposed Side Channel Alignment
-  Dike Centerline
-  Revetment Centerline
-  Bridge Piers

**Alternative 1 Downstream LDV
NORMALIZED BY TRANSECT**

-  0.0 - 0.1
-  0.1 - 0.2
-  0.2 - 0.3
-  0.3 - 0.4
-  0.4 - 0.5
-  0.5 - 0.6
-  0.6 - 0.7
-  0.7 - 0.8
-  0.8 - 0.9
-  0.9 - 1.0

14,088,000

14,088,000

2,357,500

PLATE
NUMBER
17

0 87.5 175 350 700 Feet

Alternative 1:
Downstream LDV Results
2009 AERIAL PHOTOGRAPH

U.S. ARMY ENGINEER DIVISION
CORPS OF ENGINEERS
ST. LOUIS, MISSOURI

Bangert Island
HSR Model

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T LAUTH

T LAUTH

Bangert Phase

DATE

6/27/11

J BROWN, P.E.

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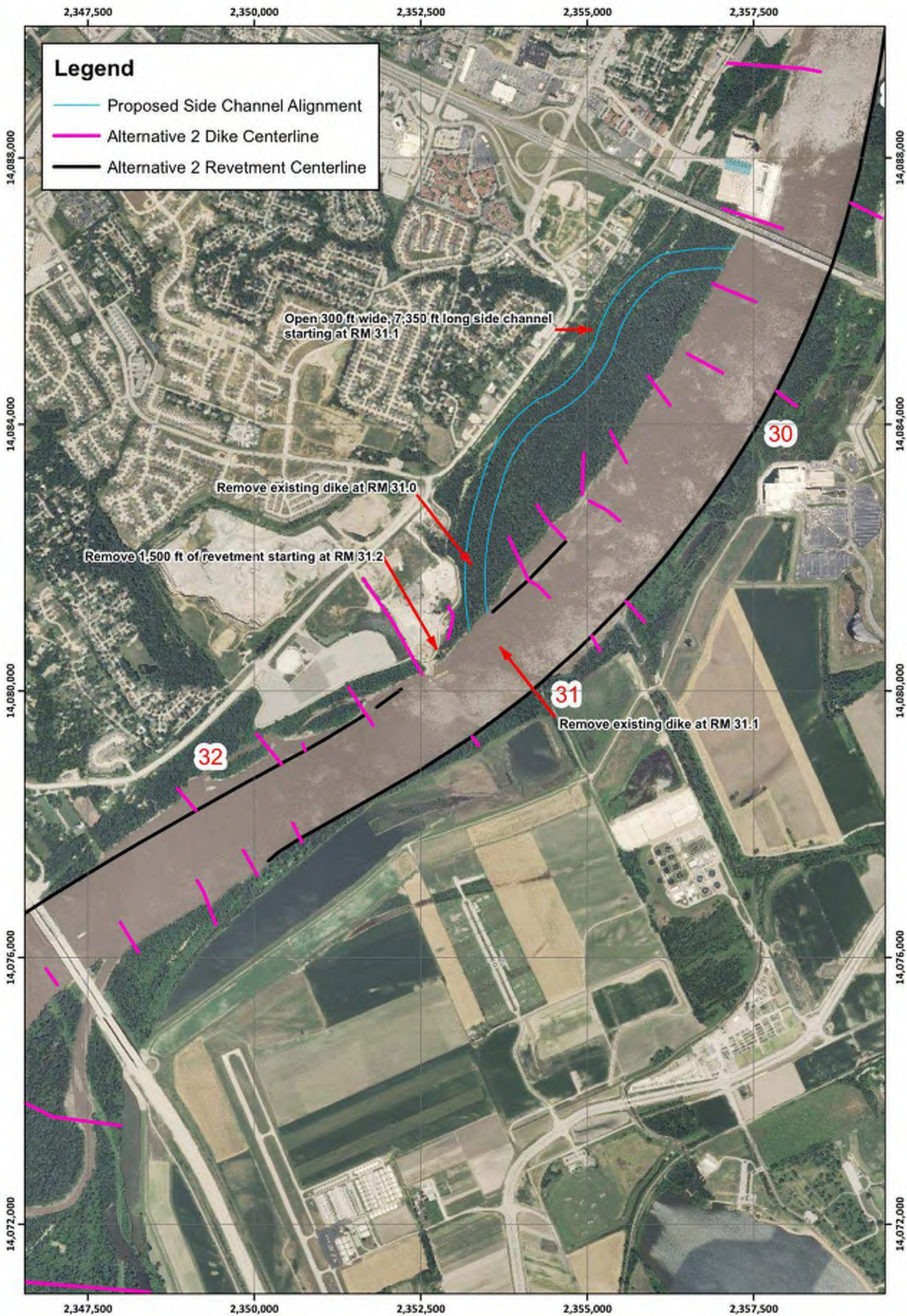
A COX

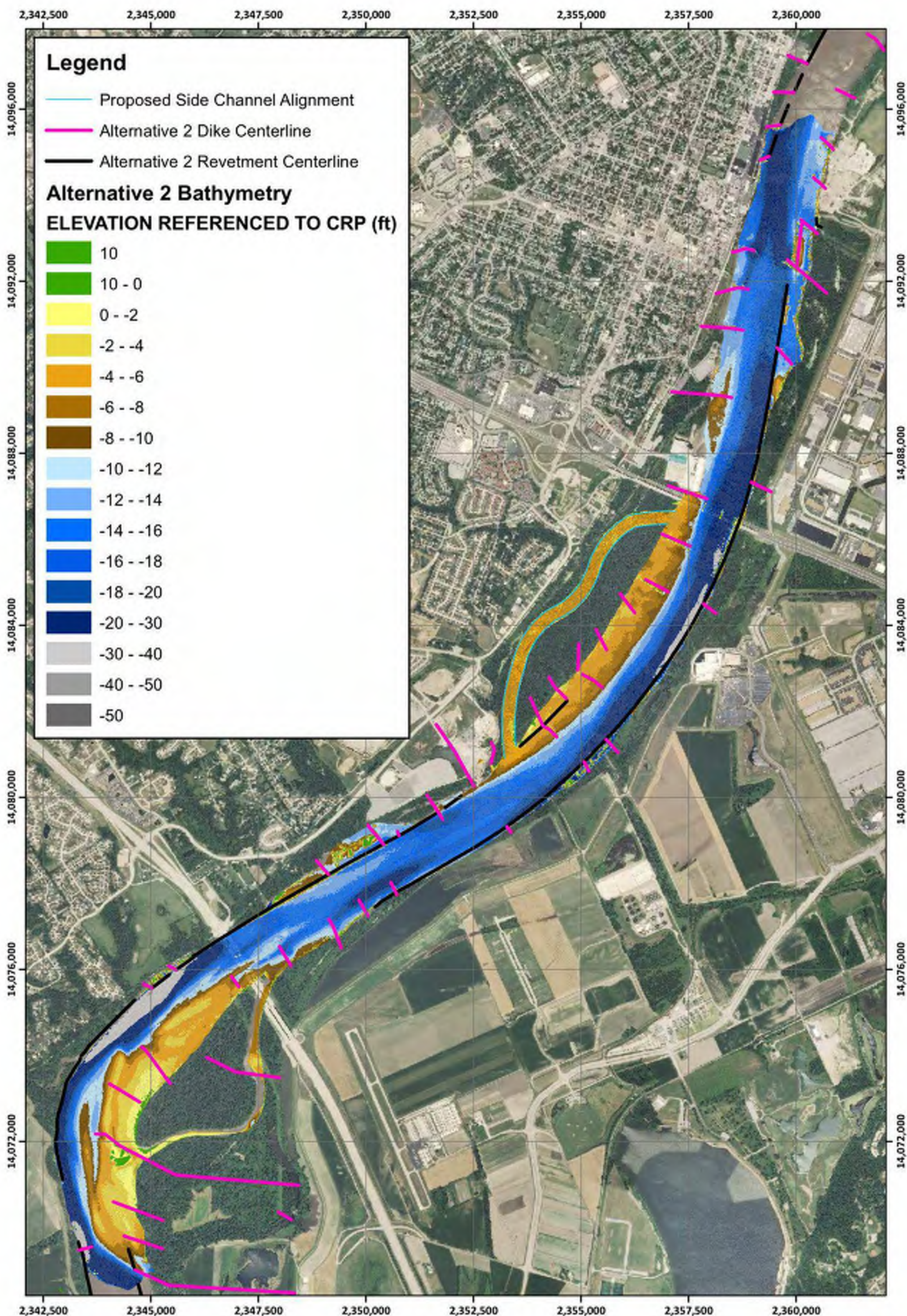


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St. Louis District







2,352,500

2,355,000

Legend

— Proposed Side Channel Alignment

— Alternative 2 Dike Centerline

— Alternative 2 Revetment Centerline

**Alternative 2 Upstream LDV
NORMALIZED BY TRANSECT**

0.0 - 0.1

0.1 - 0.2

0.2 - 0.3

0.3 - 0.4

0.4 - 0.5

0.5 - 0.6

0.6 - 0.7

0.7 - 0.8

0.8 - 0.9

0.9 - 1.0

2,352,500

2,355,000

14,080,000

14,080,000

PLATE
NUMBER
20

0 87.5 175 350 700 Feet

Alternative 2:
Upstream LDV Results
2009 AERIAL PHOTOGRAPHU.S. ARMY ENGINEER DIVISION
CORPS OF ENGINEERS
ST. LOUIS, MISSOURIBangert Island
HSR ModelDESIGNED BY
T. LAUTH

DATE: 6/30/11

DESIGNED BY
T. LAUTH

J. BROWN, P.E.

DESIGNED BY
A. COXDESIGNED BY
T. LAUTH

R. DAVINBOY, P.E.

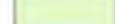
PROJECT
Bangert Phase

DATE: 9/20/11

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ENGINEERING CENTERUS Army Corps
of Engineers
St. Louis District

2,357,500

Legend

-  Proposed Side Channel Alignment
-  Alternative 2 Dike Centerline
-  Alternative 2 Revetment Centerline
-  Bridge Piers

**Alternative 2 Downstream LDV
NORMALIZED BY TRANSECT**

-  0.0 - 0.1
-  0.1 - 0.2
-  0.2 - 0.3
-  0.3 - 0.4
-  0.4 - 0.5
-  0.5 - 0.6
-  0.6 - 0.7
-  0.7 - 0.8
-  0.8 - 0.9
-  0.9 - 1.0

14,088,000

14,088,000

2,357,500

PLATE
NUMBER
21

0 87.5 175 350 700 Feet

**Alternative 2:
Downstream LDV Results**
2009 AERIAL PHOTOGRAPH

U.S. ARMY ENGINEER DIVISION
CORPS OF ENGINEERS
ST. LOUIS, MISSOURI

Bangert Island
HSR Model

DESIGNED BY

T LAUTH

CHECKED BY

T LAUTH

APPROVED BY

T LAUTH

DATE

6/30/11

DESIGNED BY

J BROWN, P.E.

CHECKED BY

A COX

APPROVED BY

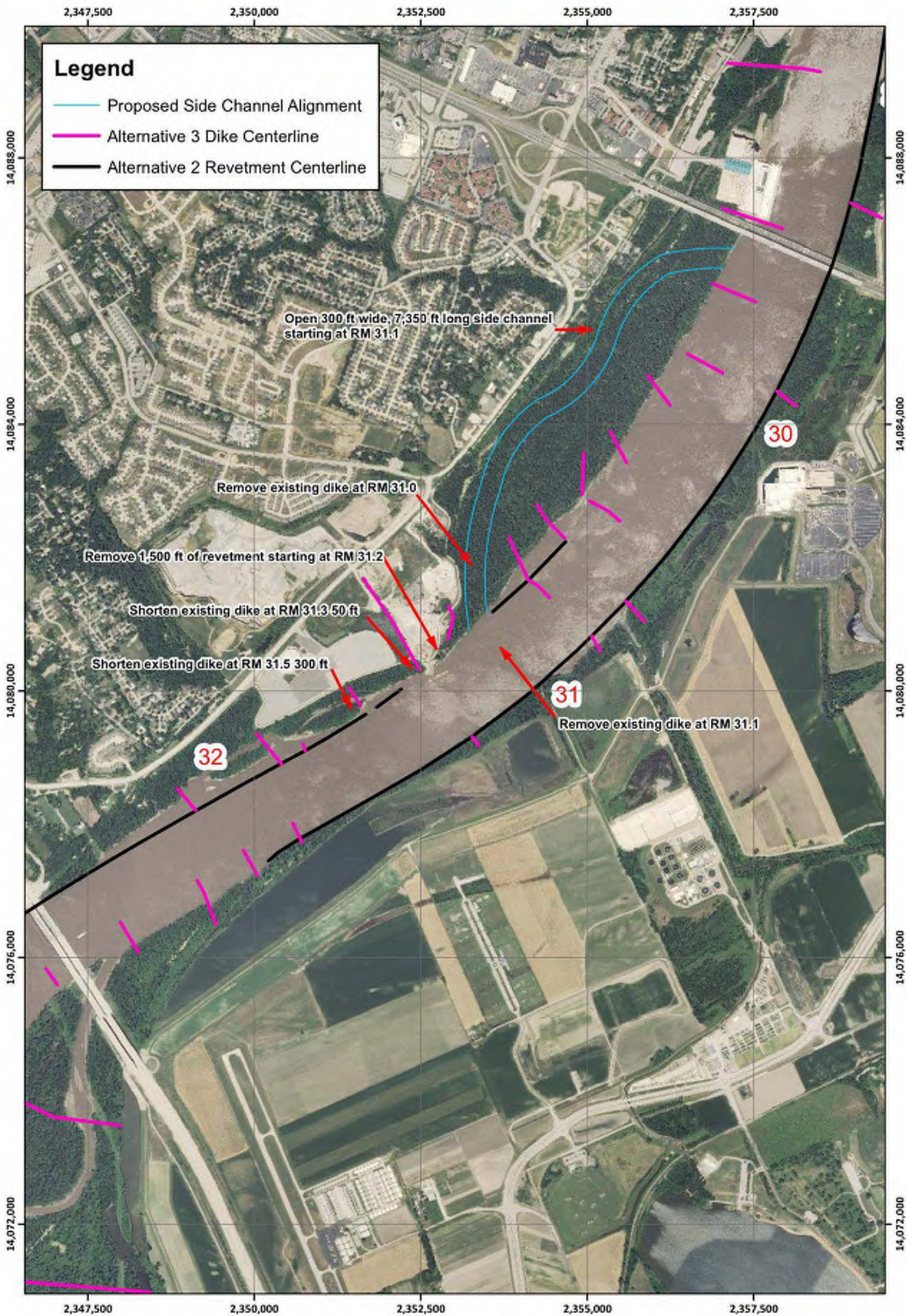
R DAVINBOY, P.E.

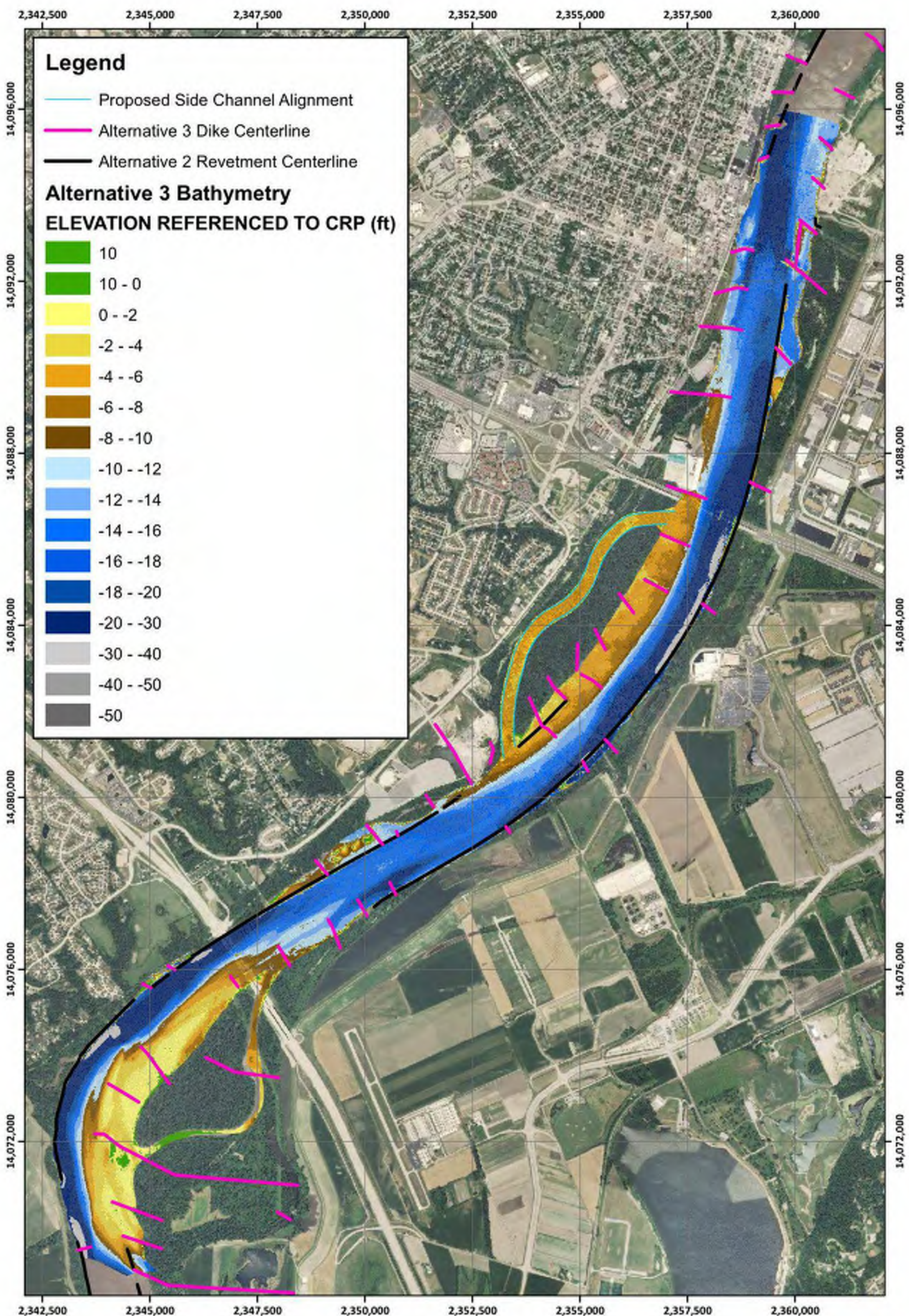


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St. Louis District







2,352,500

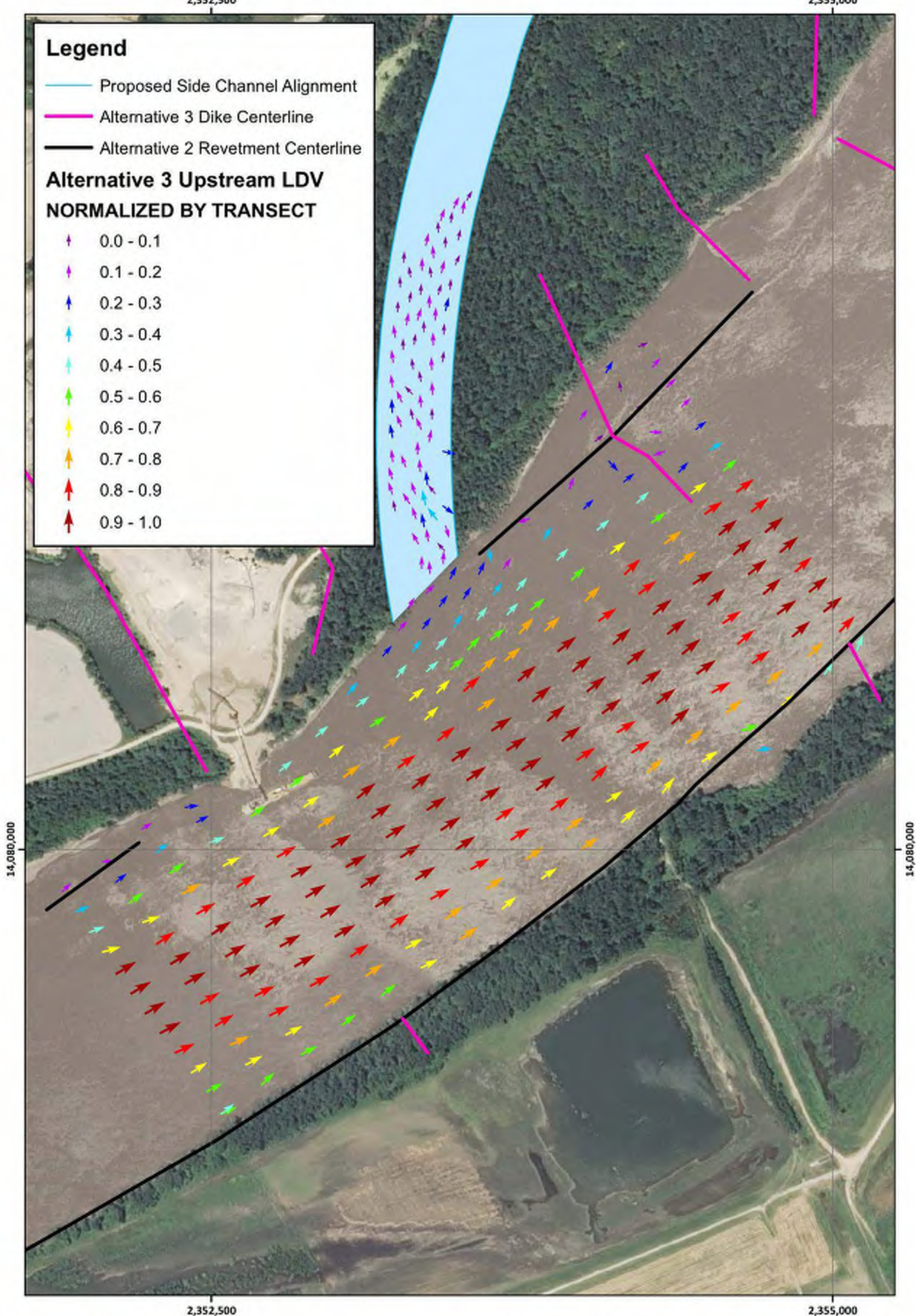
2,355,000

Legend

- Proposed Side Channel Alignment
- Alternative 3 Dike Centerline
- Alternative 2 Revetment Centerline

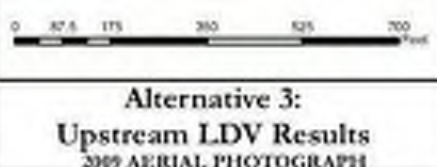
**Alternative 3 Upstream LDV
NORMALIZED BY TRANSECT**

- ↑ 0.0 - 0.1
- ↑ 0.1 - 0.2
- ↑ 0.2 - 0.3
- ↑ 0.3 - 0.4
- ↑ 0.4 - 0.5
- ↑ 0.5 - 0.6
- ↑ 0.6 - 0.7
- ↑ 0.7 - 0.8
- ↑ 0.8 - 0.9
- ↑ 0.9 - 1.0



2,352,500

2,355,000

PLATE
NUMBER
24
 U.S. ARMY ENGINEER DIVISION
 CORPS OF ENGINEERS
 ST. LOUIS, MISSOURI

 Bangert Island
 HSR Model

DESIGNED BY T LAUTH	DATE 7/6/11
DESIGNED BY T LAUTH	DESIGNED BY J BROWN, P.E.
DESIGNED BY T LAUTH	DESIGNED BY R DAVINBOY, P.E.
PROJECT Bangert Phase	DATE 9/20/11


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2,357,500

Legend

-  Proposed Side Channel Alignment
-  Alternative 3 Dike Centerline
-  Alternative 2 Revetment Centerline
-  Bridge Piers

**Alternative 3 Downstream LDV
NORMALIZED BY TRANSECT**

-  0.0 - 0.1
-  0.1 - 0.2
-  0.2 - 0.3
-  0.3 - 0.4
-  0.4 - 0.5
-  0.5 - 0.6
-  0.6 - 0.7
-  0.7 - 0.8
-  0.8 - 0.9
-  0.9 - 1.0

14,088,000

14,088,000

2,357,500

PLATE
NUMBER
25

0 87.5 175 350 700 Feet

Alternative 3:
Downstream LDV Results
2009 AERIAL PHOTOGRAPH

U.S. ARMY ENGINEER DIVISION
CORPS OF ENGINEERS
ST. LOUIS, MISSOURI

Bangert Island
HSR Model

DESIGNED BY

T LAUTH

CHECKED BY

T LAUTH

APPROVED BY

T LAUTH

DATE

7/6/11

DESIGNED BY

J BROWN, P.E.

CHECKED BY

A COX

APPROVED BY

R DAVINBOY, P.E.

DATE

9/26/11

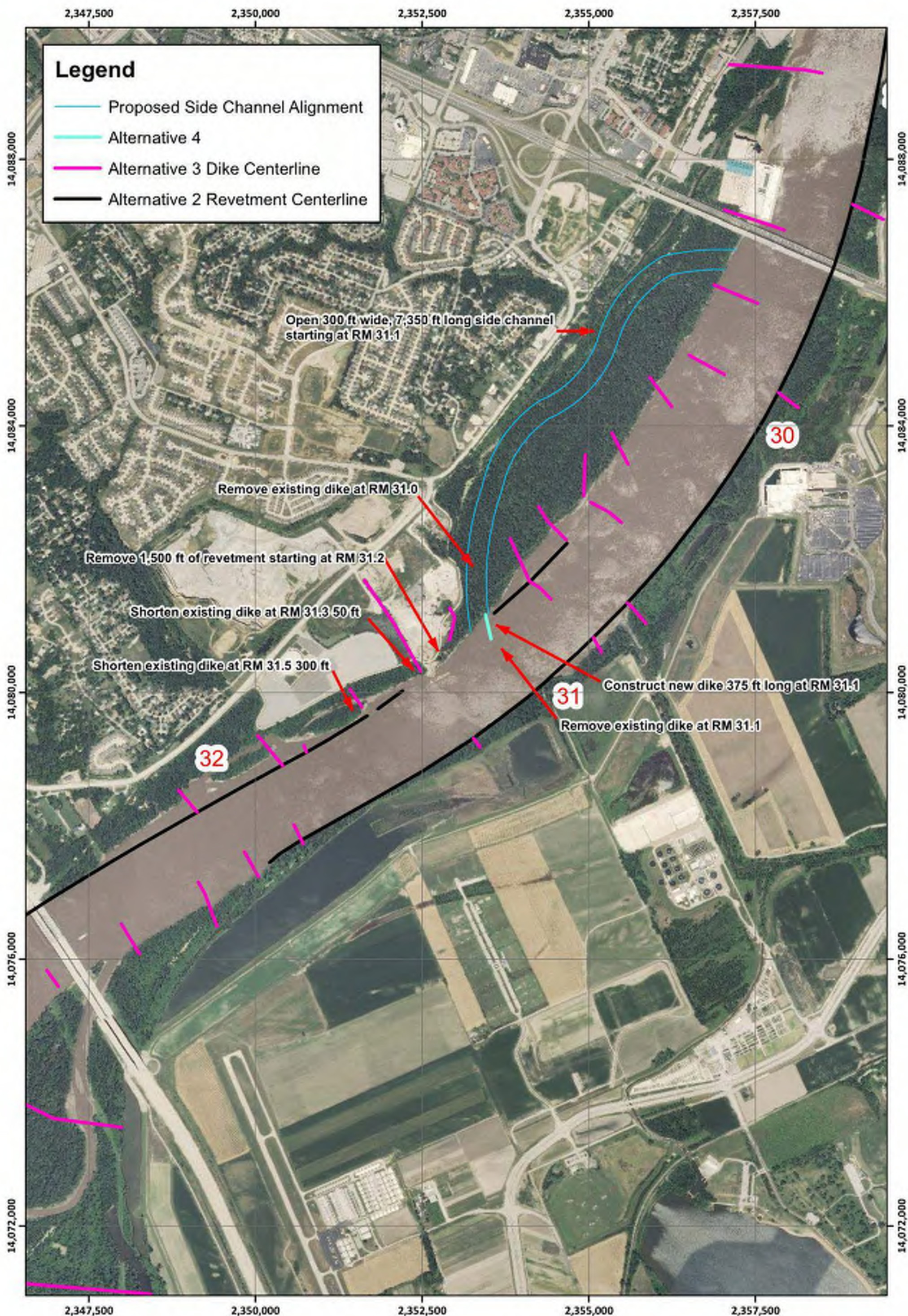
Bangert Plans

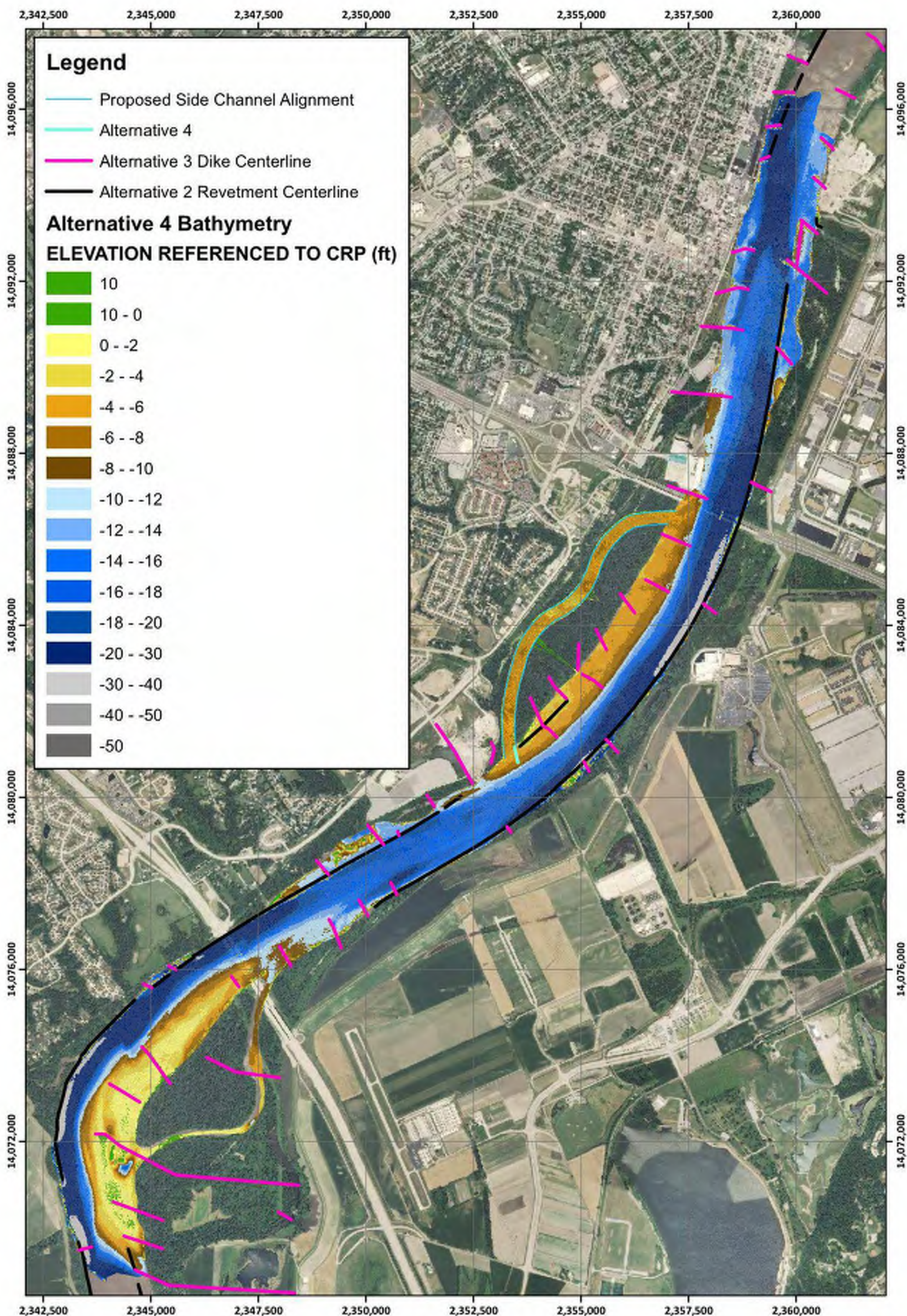


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St. Louis District







2,352,500

2,355,000

Legend

- Proposed Side Channel Alignment
- Alternative 4
- Alternative 3 Dike Centerline
- Alternative 2 Revetment Centerline

Alternative 4 Upstream LDV
NORMALIZED BY TRANSECT

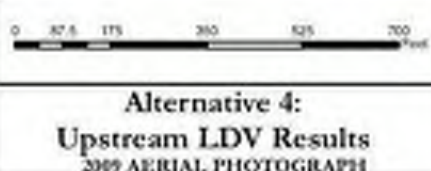
- 0.0 - 0.1
- 0.1 - 0.2
- 0.2 - 0.3
- 0.3 - 0.4
- 0.4 - 0.5
- 0.5 - 0.6
- 0.6 - 0.7
- 0.7 - 0.8
- 0.8 - 0.9
- 0.9 - 1.0

14,080,000

14,080,000

2,352,500

2,355,000

PLATE
NUMBER
28
 U.S. ARMY ENGINEER DIVISION
 CORPS OF ENGINEERS
 ST. LOUIS, MISSOURI

 Bangert Island
 HSR Model

DESIGNED BY T LAUTH	DATE 7/8/11
DESIGNED BY T LAUTH	DESIGNED BY J BROWN, P.E.
DESIGNED BY T LAUTH	DESIGNED BY R DAVINBOY, P.E.
PROJECT Bangert Phase	DATE 9/20/11


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 US Army Corps
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 St. Louis District


2,357,500

Legend

- Proposed Side Channel Alignment
- Alternative 4
- Alternative 3 Dike Centerline
- Alternative 2 Revetment Centerline
- Bridge Piers

**Alternative 4 Downstream LDV
NORMALIZED BY TRANSECT**

- 0.0 - 0.1
- 0.1 - 0.2
- 0.2 - 0.3
- 0.3 - 0.4
- 0.4 - 0.5
- 0.5 - 0.6
- 0.6 - 0.7
- 0.7 - 0.8
- 0.8 - 0.9
- 0.9 - 1.0

14,088,000

14,088,000

2,357,500

PLATE
NUMBER
29

0 87.5 175 262 349 437 524 611 698 785 872 959 1046 1133 1220 1307 1394 1481 1568 1655 1742 1829 1916 2003 2090 2177 2264 2351 2438 2525 2612 2699 2786 2873 2960 3047 3134 3221 3308 3395 3482 3569 3656 3743 3830 3917 4004 4091 4178 4265 4352 4439 4526 4613 4700 4787 4874 4961 5048 5135 5222 5309 5396 5483 5570 5657 5744 5831 5918 6005 6092 6179 6266 6353 6440 6527 6614 6701 6788 6875 6962 7049 7136 7223 7310 7397 7484 7571 7658 7745 7832 7919 8006 8093 8180 8267 8354 8441 8528 8615 8702 8789 8876 8963 9050 9137 9224 9311 9398 9485 9572 9659 9746 9833 9920 10007 10094 10181 10268 10355 10442 10529 10616 10703 10790 10877 10964 11051 11138 11225 11312 11399 11486 11573 11660 11747 11834 11921 12008 12095 12182 12269 12356 12443 12530 12617 12704 12791 12878 12965 13052 13139 13226 13313 13400 13487 13574 13661 13748 13835 13922 14009 14096 14183 14270 14357 14444 14531 14618 14705 14792 14879 14966 15053 15140 15227 15314 15401 15488 15575 15662 15749 15836 15923 16010 16097 16184 16271 16358 16445 16532 16619 16706 16793 16880 16967 17054 17141 17228 17315 17402 17489 17576 17663 17750 17837 17924 18011 18098 18185 18272 18359 18446 18533 18620 18707 18794 18881 18968 19055 19142 19229 19316 19403 19490 19577 19664 19751 19838 19925 20012 20099 20186 20273 20360 20447 20534 20621 20708 20795 20882 20969 21056 21143 21230 21317 21404 21491 21578 21665 21752 21839 21926 22013 22100 22187 22274 22361 22448 22535 22622 22709 22796 22883 22970 23057 23144 23231 23318 23405 23492 23579 23666 23753 23840 23927 24014 24101 24188 24275 24362 24449 24536 24623 24710 24797 24884 24971 25058 25145 25232 25319 25406 25493 25580 25667 25754 25841 25928 26015 26102 26189 26276 26363 26450 26537 26624 26711 26798 26885 26972 27059 27146 27233 27320 27407 27494 27581 27668 27755 27842 27929 28016 28103 28190 28277 28364 28451 28538 28625 28712 28799 28886 28973 29060 29147 29234 29321 29408 29495 29582 29669 29756 29843 29930 30017 30104 30191 30278 30365 30452 30539 30626 30713 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88588 88675 88762 88849 88936 89023 89110 89197 89284 89371 89458 89545 89632 89719 89806 89893 89980 90067 90154 90241 90328 90415 90502 90589 90676 90763 90850 90937 91024 91111 91198 91285 91372 91459 91546 91633 91720 91807 91894 91981 92068 92155 92242 92329 92416 92503 92590 92677 92764 92851 92938 93025 93112 93199 93286 93373 93460 93547 93634 93721 93808 93895 93982 94069 94156 94243 94330 94417 94504 94591 94678 94765 94852 94939 95026 95113 95200 95287 95374 95461 95548 95635 95722 95809 95896 95983 96070 96157 96244 96331 96418 96505 96592 96679 96766 96853 96940 97027 97114 97201 97288 97375 97462 97549 97636 97723 97810 97897 97984 98071 98158 98245 98332 98419 98506 98593 98680 98767 98854 98941 99028 99115 99202 99289 99376 99463 99550 99637 99724 99811 99898 99985 100072 100159 100246 100333 100420 100507 100594 100681 100768 100855 100942 101029 101116 101203 101290 101377 101464 101551 101638 101725 101812 101899 101986 102073 102160 102247 102334 102421 102508 102595 102682 102769 102856 102943 103030 103117 103204 103291 103378 103465 103552 103639 103726 103813 103900 103987 104074 104161 104248 104335 104422 104509 104596 104683 104770 104857 104944 105031 105118 105205 105292 105379 105466 105553 105640 105727 105814 105901 105988 106075 106162 106249 106336 106423 106510 106597 106684 106771 106858 106945 107032 107119 107206 107293 107380 107467 107554 107641 107728 107815 107902 107989 108076 108163 108250 108337 108424 108511 108598 108685 108772 108859 108946 109033 109120 109207 109294 109381 109468 109555 109642 109729 109816 109903 110000

Alternative 4:
Downstream LDV Results
2009 AERIAL PHOTOGRAPH

U.S. ARMY ENGINEER DIVISION
CORPS OF ENGINEERS
ST. LOUIS, MISSOURI

Bangert Island
HSR Model

DESIGNED BY
T. LAUTH

DESIGNED BY
T. LAUTH

DESIGNED BY
T. LAUTH

7/8/11

J. BROWN, P.E.

R. DAVINBOY, P.E.

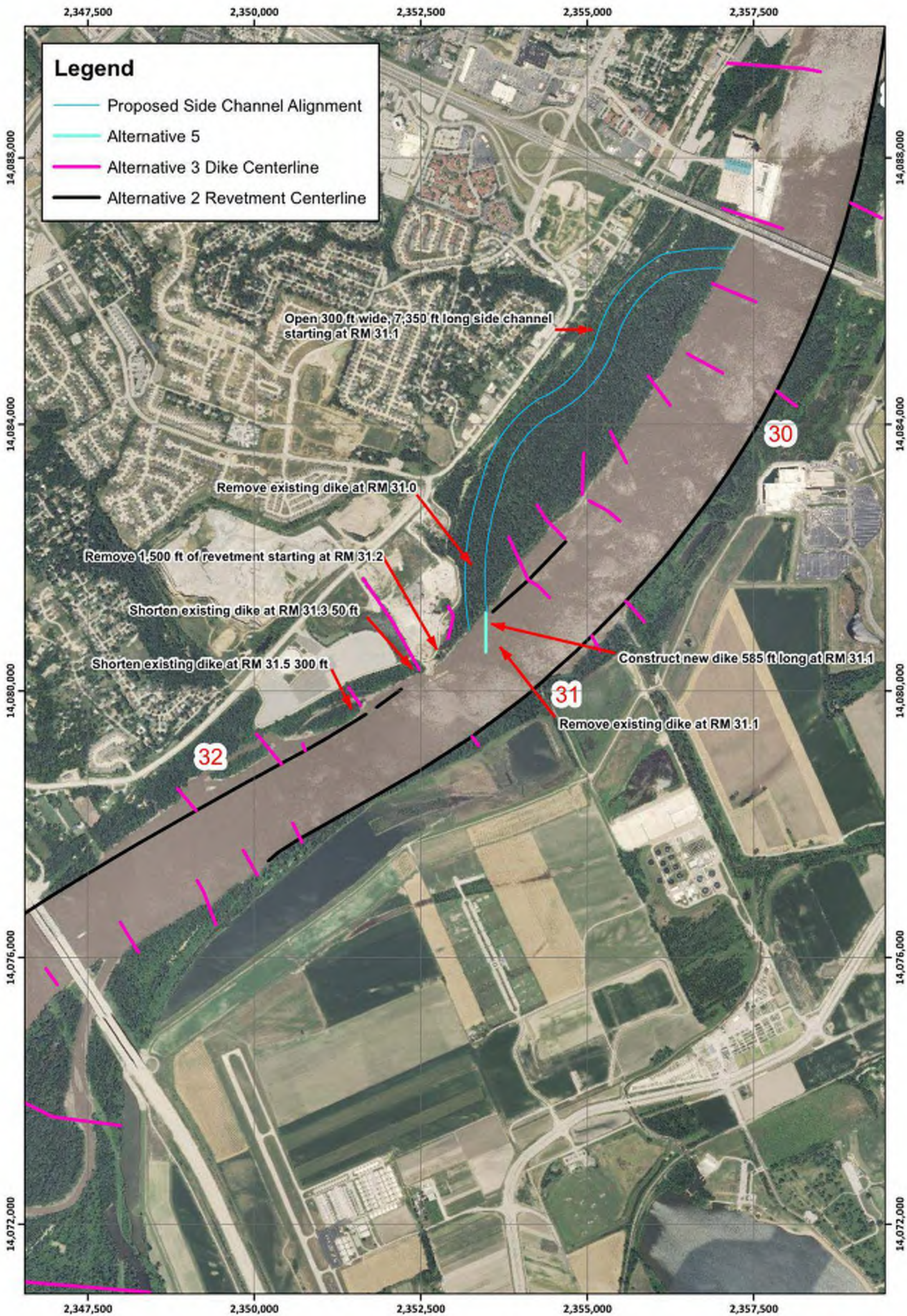
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RIVER
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US Army Corps
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St. Louis District





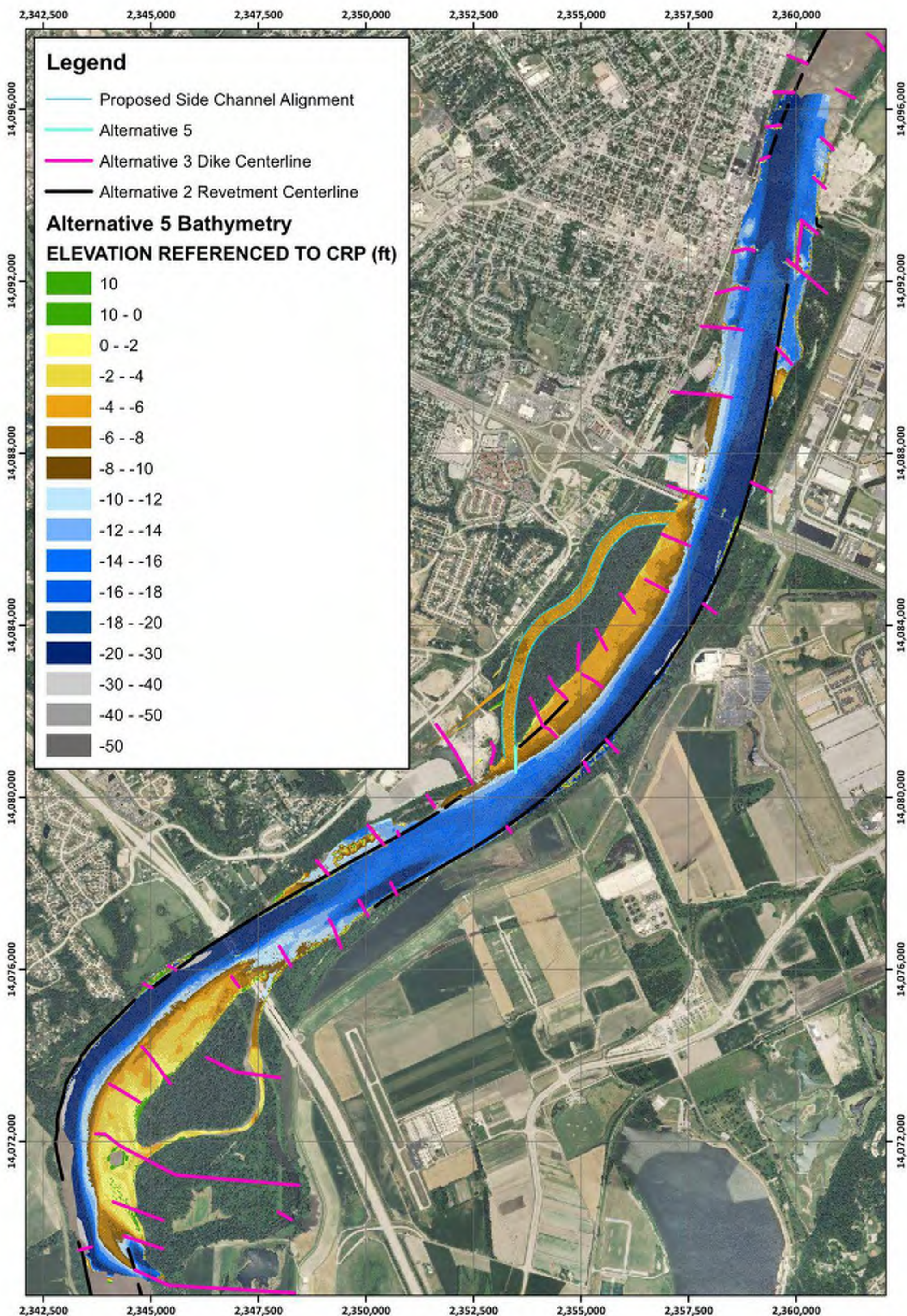


PLATE
NUMBER
31

0 500 1,000 2,000 3,000 4,000 Feet

Alternative 5: Bathymetry
2009 AERIAL PHOTOGRAPH

U.S. ARMY ENGINEER DIVISION
CORPS OF ENGINEERS
ST. LOUIS, MISSOURI

Bangert Island
HSR Model

DESIGNED BY T LAUTH	DATE 7/11/11
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DESIGNED BY T LAUTH	DESIGNED BY R DAVINBOY, P.E.
PROJECT Bangert Island	DATE 9/20/11



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St. Louis District



2,352,500

2,355,000

Legend

- Proposed Side Channel Alignment
- Alternative 5
- Alternative 3 Dike Centerline
- Alternative 2 Revetment Centerline

**Alternative 5 Upstream LDV
NORMALIZED BY TRANSECT**

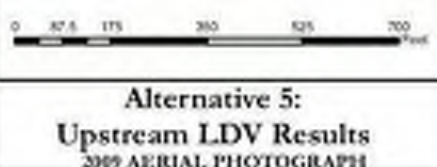
- 0.0 - 0.1
- 0.1 - 0.2
- 0.2 - 0.3
- 0.3 - 0.4
- 0.4 - 0.5
- 0.5 - 0.6
- 0.6 - 0.7
- 0.7 - 0.8
- 0.8 - 0.9
- 0.9 - 1.0

14,080,000

14,080,000

2,352,500

2,355,000

PLATE
NUMBER
32

U.S. ARMY ENGINEER DIVISION
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ST. LOUIS, MISSOURI

Bangert Island
HSR Model

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DESIGNED BY T LAUTH	DESIGNED BY J BROWN, P.E.
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DESIGNED BY T LAUTH	DESIGNED BY R DAVINBOY, P.E.
PROJECT Bangert Phase	DATE 9/20/11



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St. Louis District



2,357,500

Legend

- Proposed Side Channel Alignment
- Alternative 5
- Alternative 3 Dike Centerline
- Alternative 2 Revetment Centerline
- Bridge Piers

**Alternative 5 Downstream LDV
NORMALIZED BY TRANSECT**

- 0.0 - 0.1
- 0.1 - 0.2
- 0.2 - 0.3
- 0.3 - 0.4
- 0.4 - 0.5
- 0.5 - 0.6
- 0.6 - 0.7
- 0.7 - 0.8
- 0.8 - 0.9
- 0.9 - 1.0

14,088,000

14,088,000

2,357,500

PLATE
NUMBER
33

0 87.5 175 350 700 Feet

Alternative 5:
Downstream LDV Results
2009 AERIAL PHOTOGRAPH

U.S. ARMY ENGINEER DIVISION
CORPS OF ENGINEERS
ST. LOUIS, MISSOURI

Bangert Island
HSR Model

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T LAUTH

T LAUTH

T LAUTH

Bangert Plans

DATE: 7/11/11

J BROWN, P.E.

R DAVINBOY, P.E.

A COX

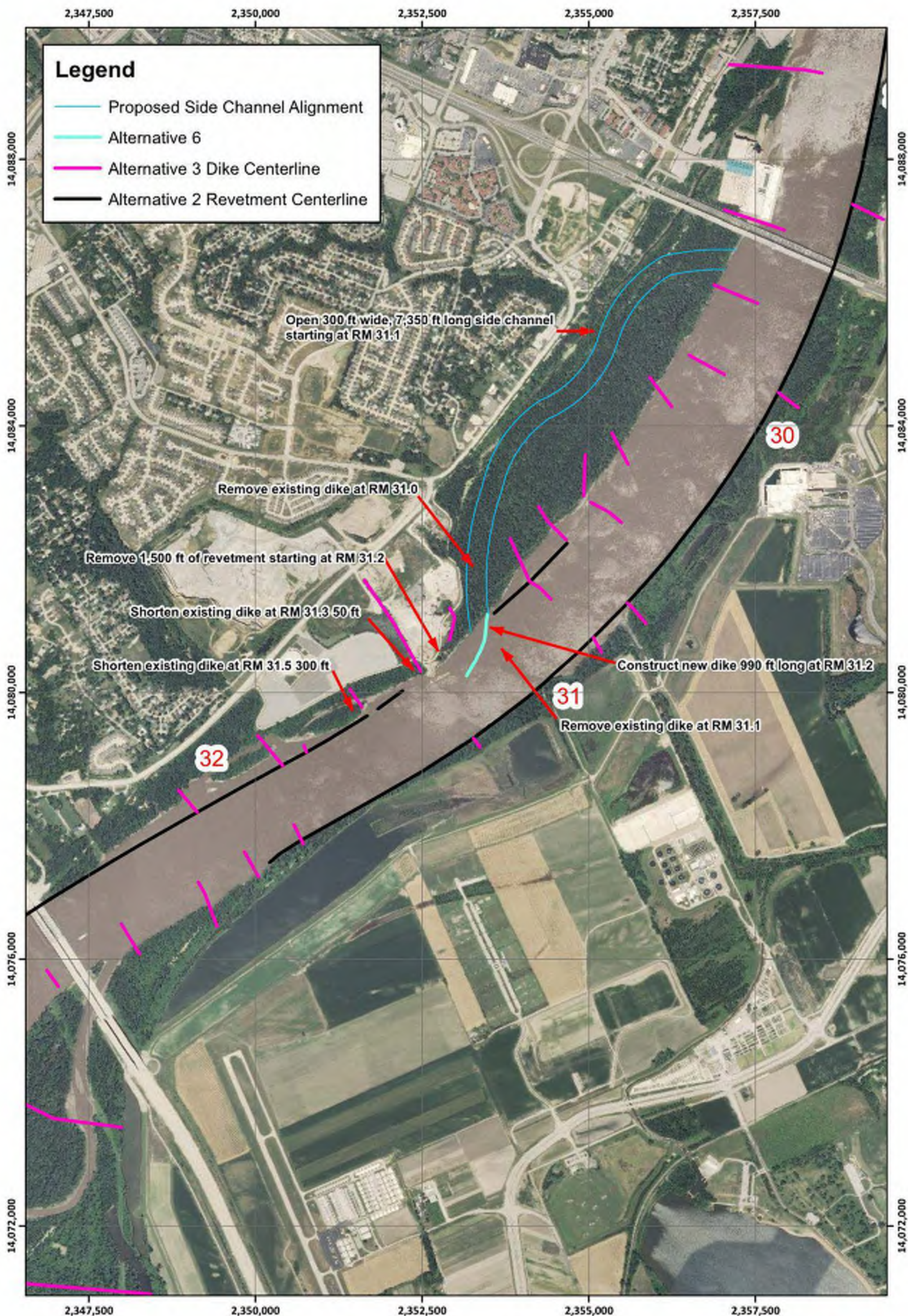
9/26/11

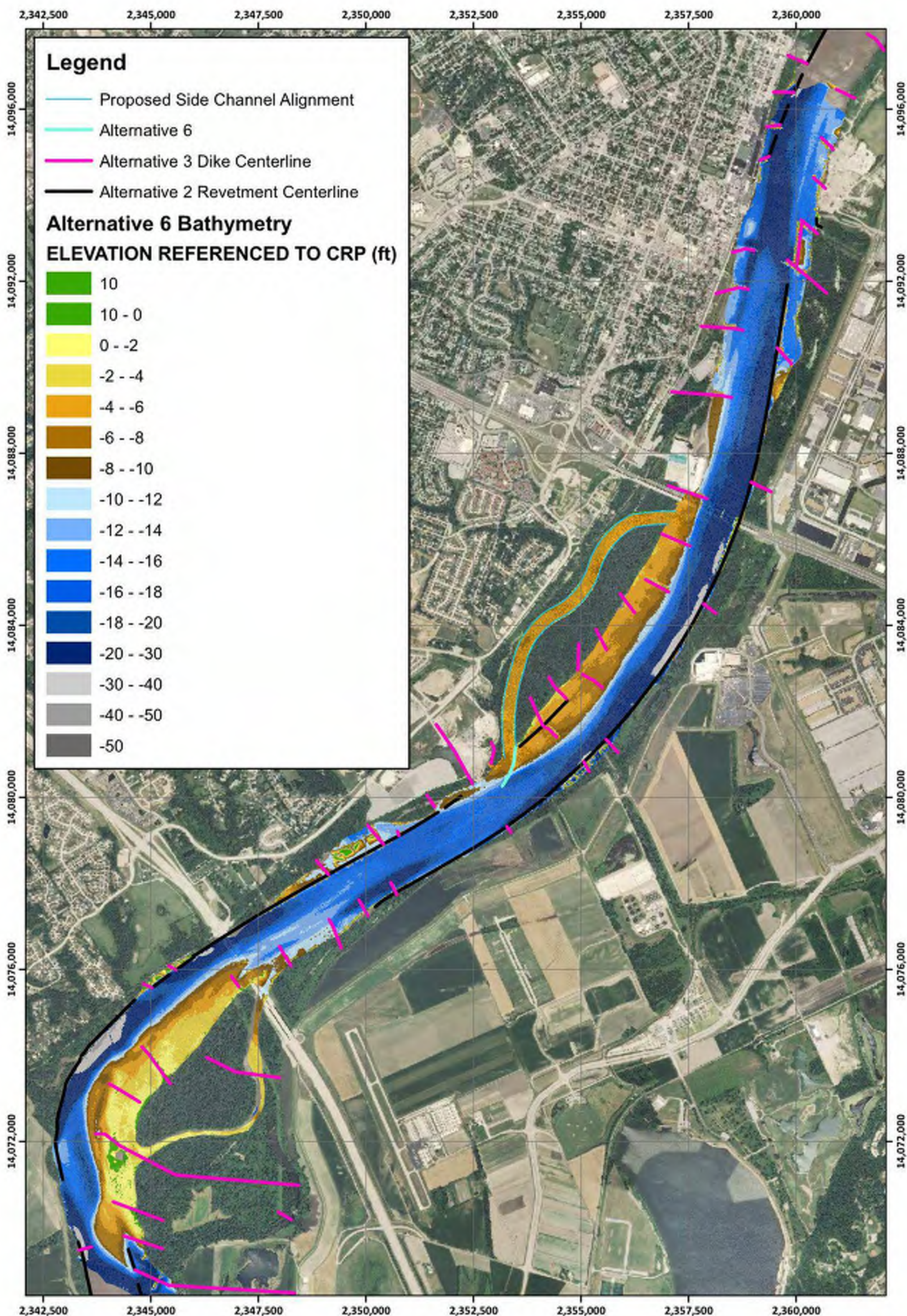


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RIVER
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US Army Corps
of Engineers
St. Louis District







2,352,500

2,355,000

Legend

- Proposed Side Channel Alignment
- Alternative 7
- Alternative 3 Dike Centerline
- Alternative 2 Revetment Centerline

**Alternative 6 Upstream LDV
NORMALIZED BY TRANSECT**

- 0.0 - 0.1
- 0.1 - 0.2
- 0.2 - 0.3
- 0.3 - 0.4
- 0.4 - 0.5
- 0.5 - 0.6
- 0.6 - 0.7
- 0.7 - 0.8
- 0.8 - 0.9
- 0.9 - 1.0

14,080,000

14,080,000

2,352,500

2,355,000

 PLATE
NUMBER
36

0 87.5 175 262.5 350 437.5 525 612.5 700 Feet

 Alternative 6:
Upstream LDV Results
2009 AERIAL PHOTOGRAPH

 U.S. ARMY ENGINEER DIVISION
CORPS OF ENGINEERS
ST. LOUIS, MISSOURI

 Bangert Island
HSR Model

DESIGNED BY T LAUTH	DATE 7/31/11
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DESIGNED BY T LAUTH	DESIGNED BY R DAVINBOY, P.E.
PROJECT Bangert Phase	DATE 9/20/11


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RIVER
ENGINEERING CENTER

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St. Louis District


2,357,500

Legend

- Proposed Side Channel Alignment
- Alternative 6
- Alternative 3 Dike Centerline
- Alternative 2 Revetment Centerline
- Bridge Piers

**Alternative 6 Downstream LDV
NORMALIZED BY TRANSECT**

- 0.0 - 0.1
- 0.1 - 0.2
- 0.2 - 0.3
- 0.3 - 0.4
- 0.4 - 0.5
- 0.5 - 0.6
- 0.6 - 0.7
- 0.7 - 0.8
- 0.8 - 0.9
- 0.9 - 1.0

14,088,000

14,088,000

2,357,500

PLATE
NUMBER
37

0 87.5 175 350 700 Feet

Alternative 6:
Downstream LDV Results
2009 AERIAL PHOTOGRAPH

U.S. ARMY ENGINEER DIVISION
CORPS OF ENGINEERS
ST. LOUIS, MISSOURI

Bangert Island
HSR Model

DESIGNED BY

T LAUTH

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CHECKED BY

T LAUTH

DESIGNED BY

J BROWN, P.E.

CHECKED BY

A COX

DESIGNED BY

T LAUTH

CHECKED BY

R DAVINBOY, P.E.

PROJECT

Bangert Island

DATE

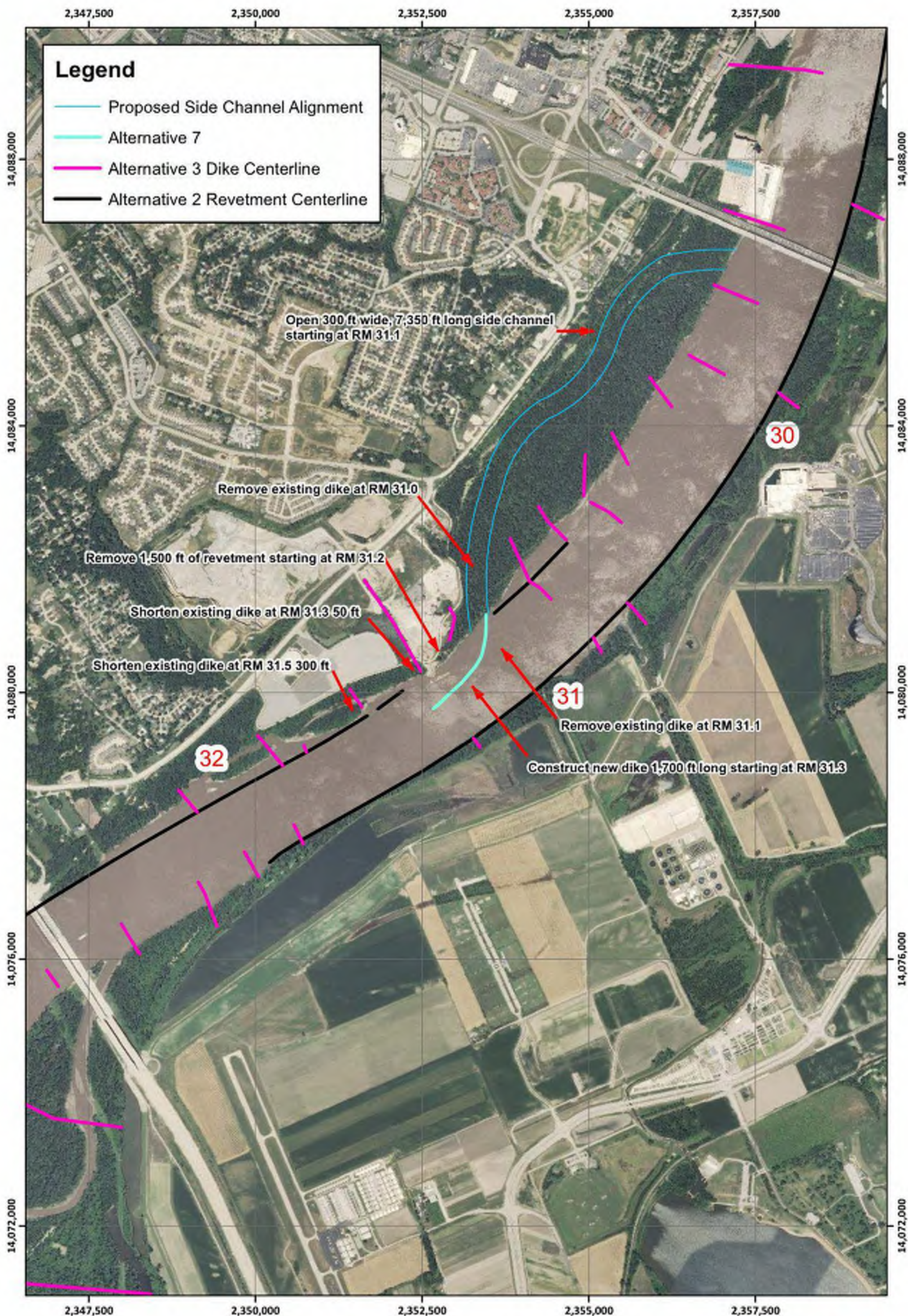
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US Army Corps
of Engineers
St. Louis District





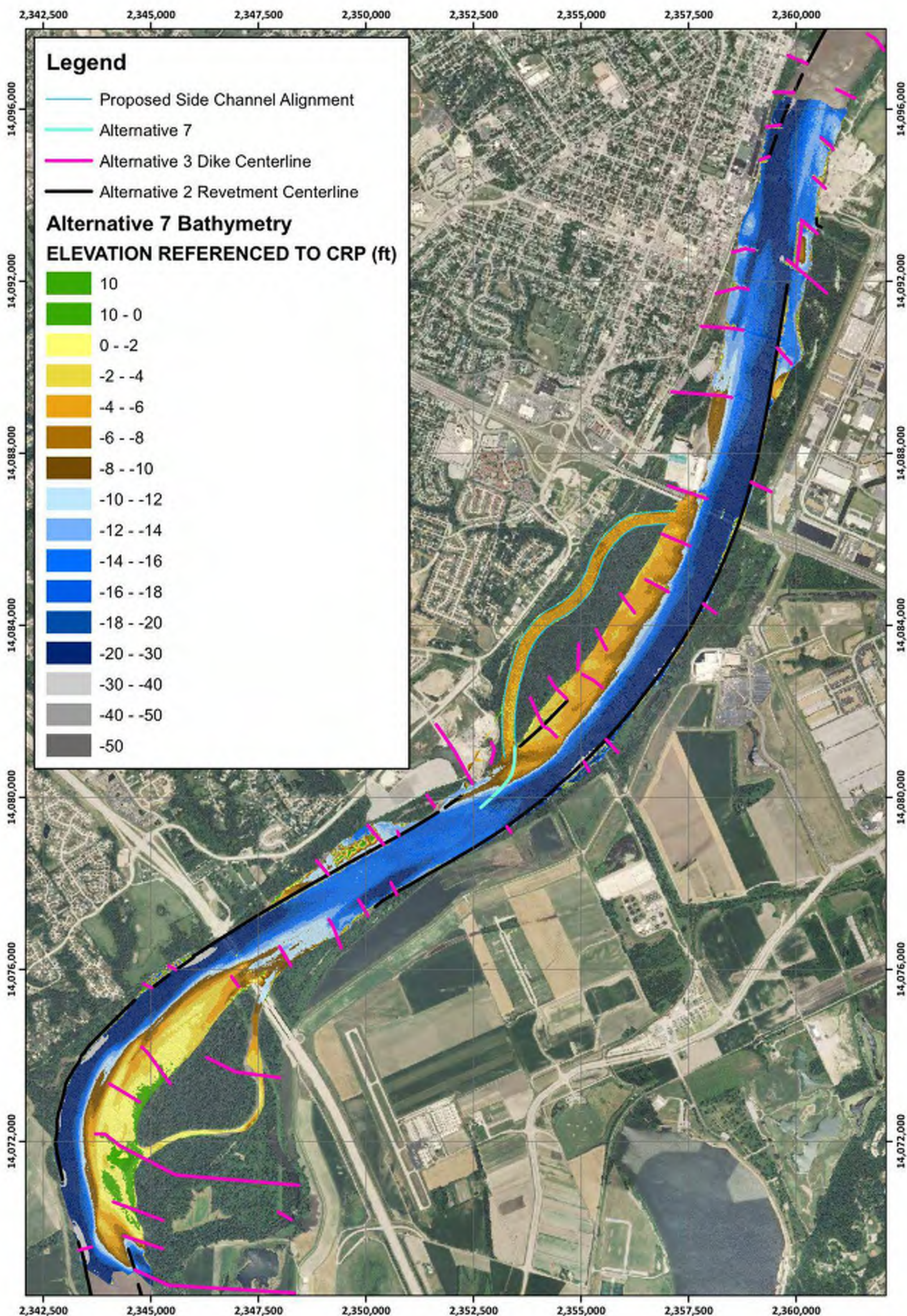
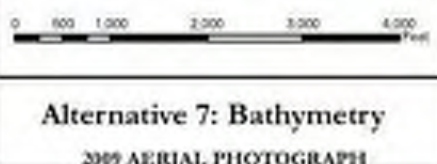


PLATE
NUMBER
39



U.S. ARMY ENGINEER DIVISION
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DESIGNED BY T. LAUTH	DESIGNED BY R. DAVINBOY, P.E.
PROJECT Bangert Island	PROJECT HSR Model



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2,352,500

2,355,000

Legend

- Proposed Side Channel Alignment
- Alternative 7
- Alternative 3 Dike Centerline
- Alternative 2 Revetment Centerline

**Alternative 7 Upstream LDV
NORMALIZED BY TRANSECT**

- 0.0 - 0.1
- 0.1 - 0.2
- 0.2 - 0.3
- 0.3 - 0.4
- 0.4 - 0.5
- 0.5 - 0.6
- 0.6 - 0.7
- 0.7 - 0.8
- 0.8 - 0.9
- 0.9 - 1.0

14,080,000

14,080,000

2,352,500

2,355,000

PLATE
NUMBER
40

U.S. ARMY ENGINEER DIVISION
CORPS OF ENGINEERS
ST. LOUIS, MISSOURI

Bangert Island
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US Army Corps
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St. Louis District



2,357,500

Legend

- Proposed Side Channel Alignment
- Alternative 7
- Alternative 3 Dike Centerline
- Alternative 2 Revetment Centerline
- Bridge Piers

**Alternative 7 Downstream LDV
NORMALIZED BY TRANSECT**

- 0.0 - 0.1
- 0.1 - 0.2
- 0.2 - 0.3
- 0.3 - 0.4
- 0.4 - 0.5
- 0.5 - 0.6
- 0.6 - 0.7
- 0.7 - 0.8
- 0.8 - 0.9
- 0.9 - 1.0

14,088,000

14,088,000

2,357,500

PLATE
NUMBER
41

0 87.5 175 350 700 Feet

Alternative 7:
Downstream LDV Results
2009 AERIAL PHOTOGRAPH

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ST. LOUIS, MISSOURI

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DATE

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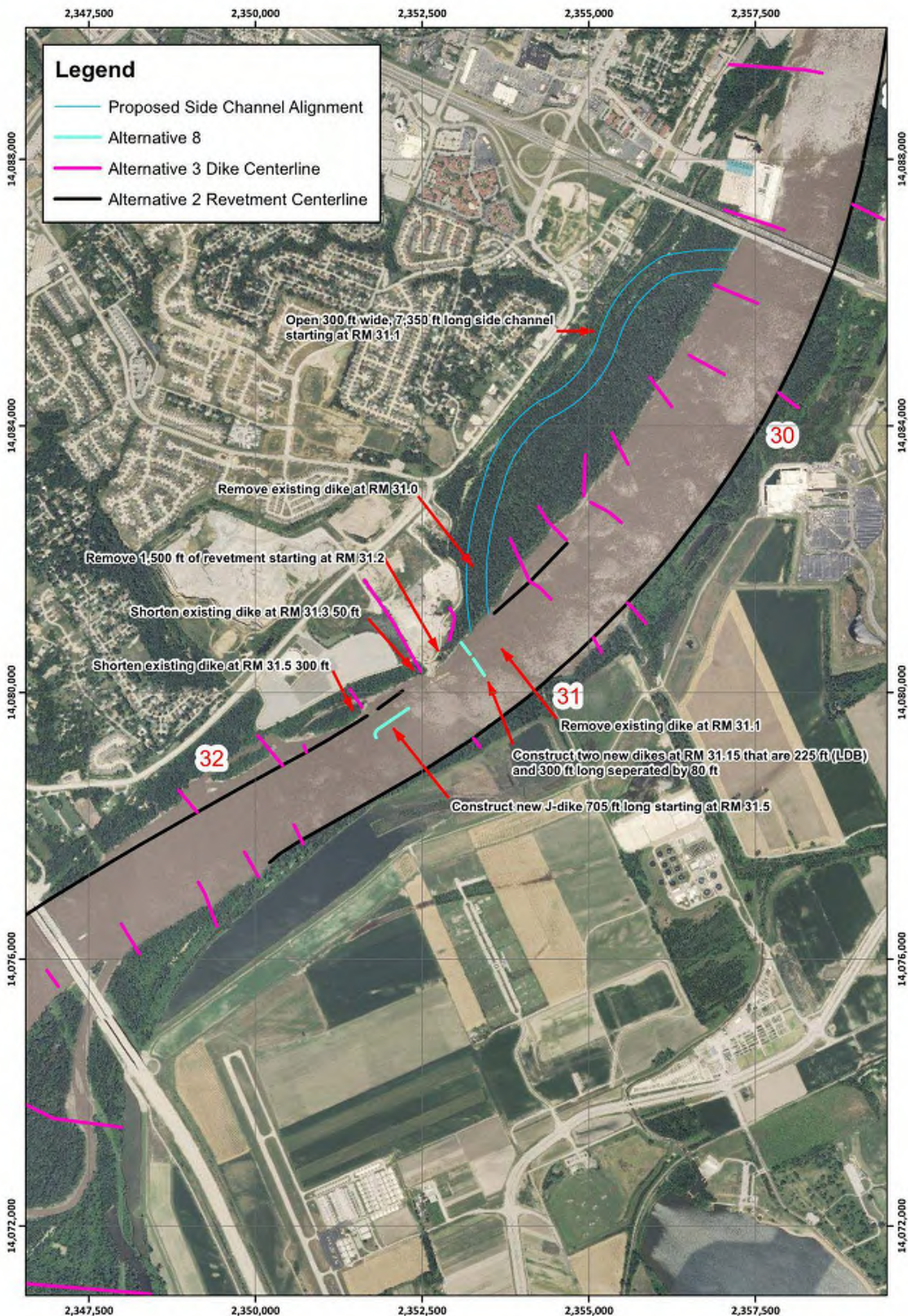
R. DAVINBOY, P.E.

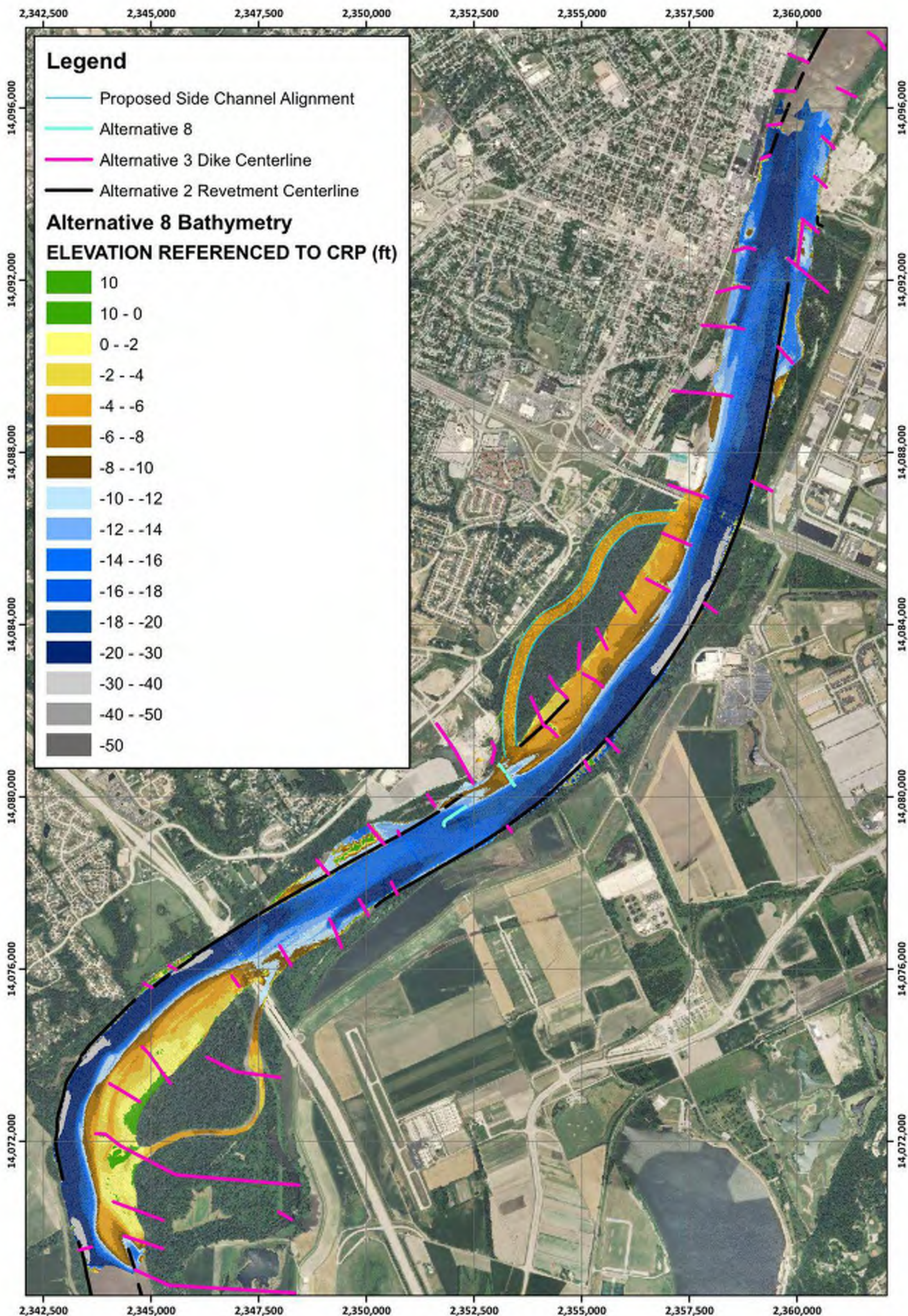


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ENGINEERING CENTER

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St. Louis District







2,352,500

2,355,000

Legend

- Proposed Side Channel Alignment
- Alternative 8
- Alternative 3 Dike Centerline
- Alternative 2 Revetment Centerline

Alternative 8 Upstream LDV
NORMALIZED BY TRANSECT

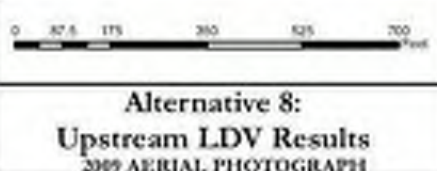
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- 0.1 - 0.2
- 0.2 - 0.3
- 0.3 - 0.4
- 0.4 - 0.5
- 0.5 - 0.6
- 0.6 - 0.7
- 0.7 - 0.8
- 0.8 - 0.9
- 0.9 - 1.0

14,080,000

14,080,000

2,352,500

2,355,000

 PLATE
 NUMBER
 44

 U.S. ARMY ENGINEER DIVISION
 CORPS OF ENGINEERS
 ST. LOUIS, MISSOURI

 Bangert Island
 HSR Model

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J BROWN, P.E.

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RIVER
 ENGINEERING CENTER

 US Army Corps
 of Engineers
 St. Louis District


2,357,500

Legend

- Proposed Side Channel Alignment
- Alternative 8
- Alternative 3 Dike Centerline
- Alternative 2 Revetment Centerline
- Bridge Piers

**Alternative 8 Downstream LDV
NORMALIZED BY TRANSECT**

- 0.0 - 0.1
- 0.1 - 0.2
- 0.2 - 0.3
- 0.3 - 0.4
- 0.4 - 0.5
- 0.5 - 0.6
- 0.6 - 0.7
- 0.7 - 0.8
- 0.8 - 0.9
- 0.9 - 1.0

14,088,000

14,088,000

2,357,500

PLATE
NUMBER
45

0 87.5 175 350 700 Feet

Alternative 8:
Downstream LDV Results
2009 AERIAL PHOTOGRAPH

U.S. ARMY ENGINEER DIVISION
CORPS OF ENGINEERS
ST. LOUIS, MISSOURI

Bangert Island
HSR Model

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J BROWN, P.E.

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A COX

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R DAVINBOY, P.E.

PROJECT

Bangert Island

DATE

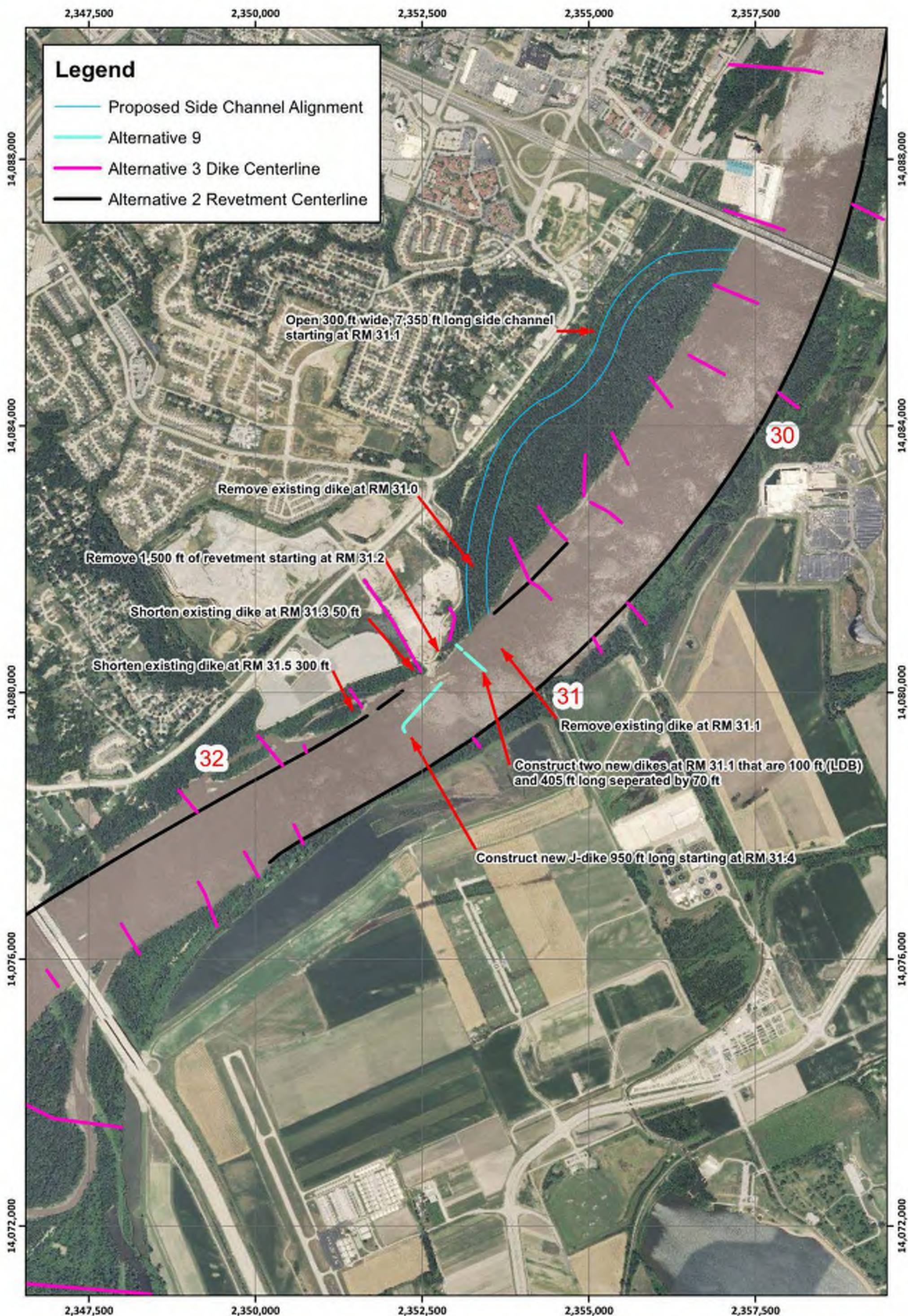
9/20/11

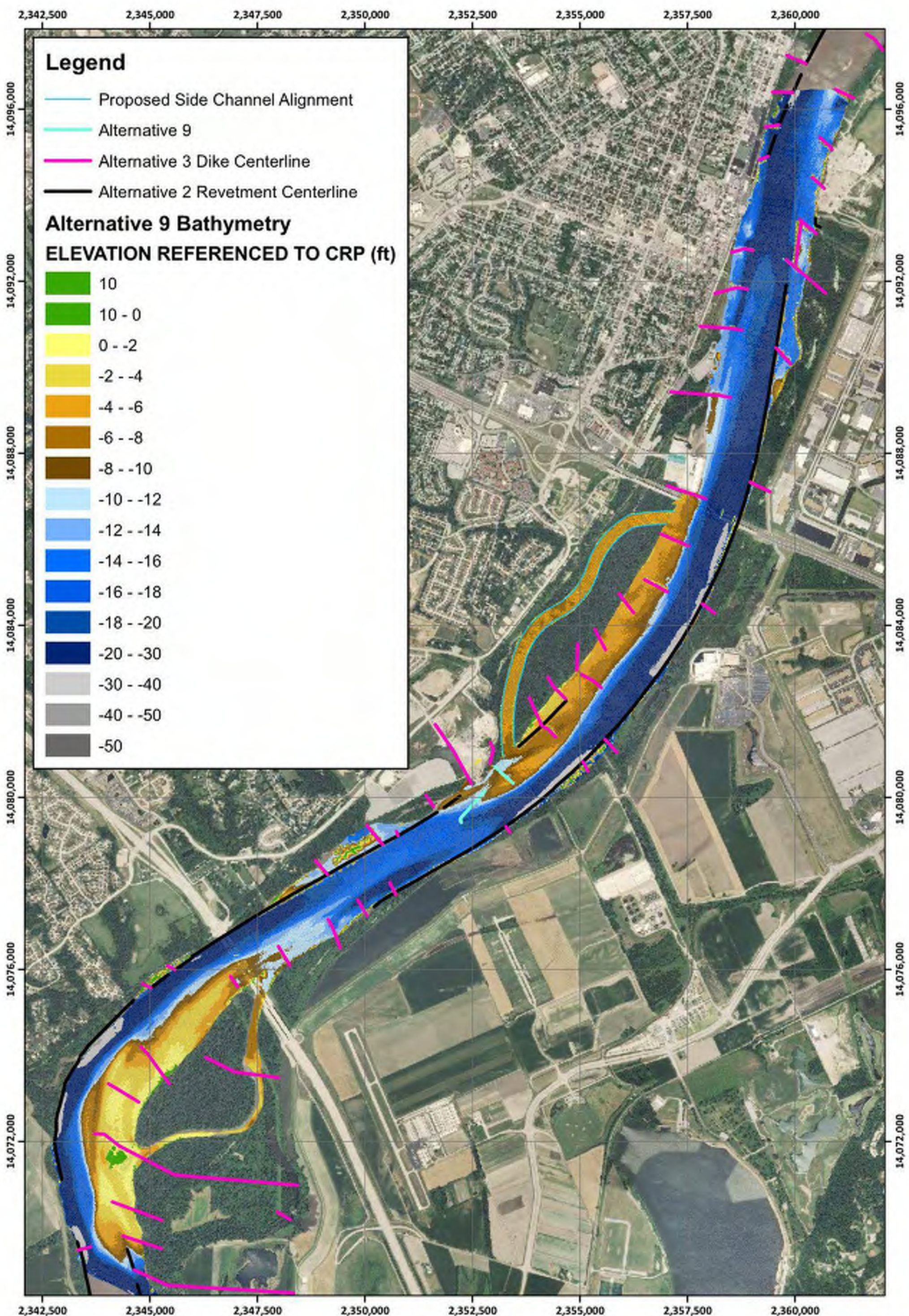


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RIVER
ENGINEERING CENTER

US Army Corps
of Engineers
St. Louis District







2,352,500

2,355,000

Legend

- Proposed Side Channel Alignment
- Alternative 9
- Alternative 3 Dike Centerline
- Alternative 2 Revetment Centerline

Alternative 9 Upstream LDV
NORMALIZED BY TRANSECT

- 0.0 - 0.1
- 0.1 - 0.2
- 0.2 - 0.3
- 0.3 - 0.4
- 0.4 - 0.5
- 0.5 - 0.6
- 0.6 - 0.7
- 0.7 - 0.8
- 0.8 - 0.9
- 0.9 - 1.0

14,080,000

14,080,000

2,352,500

2,355,000

 PLATE
 NUMBER
 48

 U.S. ARMY ENGINEER DIVISION
 CORPS OF ENGINEERS
 ST. LOUIS, MISSOURI

 Bangert Island
 HSR Model

DESIGNED BY T LAUTH	DATE 7/22/11
DESIGNED BY T LAUTH	DESIGNED BY J BROWN, P.E.
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PROJECT Bangert Phase	DATE 9/20/11


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RIVER
 ENGINEERING CENTER

 US Army Corps
 of Engineers
 St. Louis District


2,357,500

Legend

- Proposed Side Channel Alignment
- Alternative 9
- Alternative 3 Dike Centerline
- Alternative 2 Revetment Centerline
- Bridge Piers

**Alternative 9 Downstream LDV
NORMALIZED BY TRANSECT**

- 0.0 - 0.1
- 0.1 - 0.2
- 0.2 - 0.3
- 0.3 - 0.4
- 0.4 - 0.5
- 0.5 - 0.6
- 0.6 - 0.7
- 0.7 - 0.8
- 0.8 - 0.9
- 0.9 - 1.0

14,088,000

14,088,000

2,357,500

PLATE
NUMBER
49

0 87.5 175 350 525 700 Feet

Alternative 9:
Downstream LDV Results
2009 AERIAL PHOTOGRAPH

U.S. ARMY ENGINEER DIVISION
CORPS OF ENGINEERS
ST. LOUIS, MISSOURI

Bangert Island
HSR Model

DESIGNED BY

T LAUTH

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7/22/11

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J BROWN, P.E.

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A COX

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T LAUTH

CHECKED BY

R DAVINBOY, P.E.

PROJECT

Bangert Island

DATE

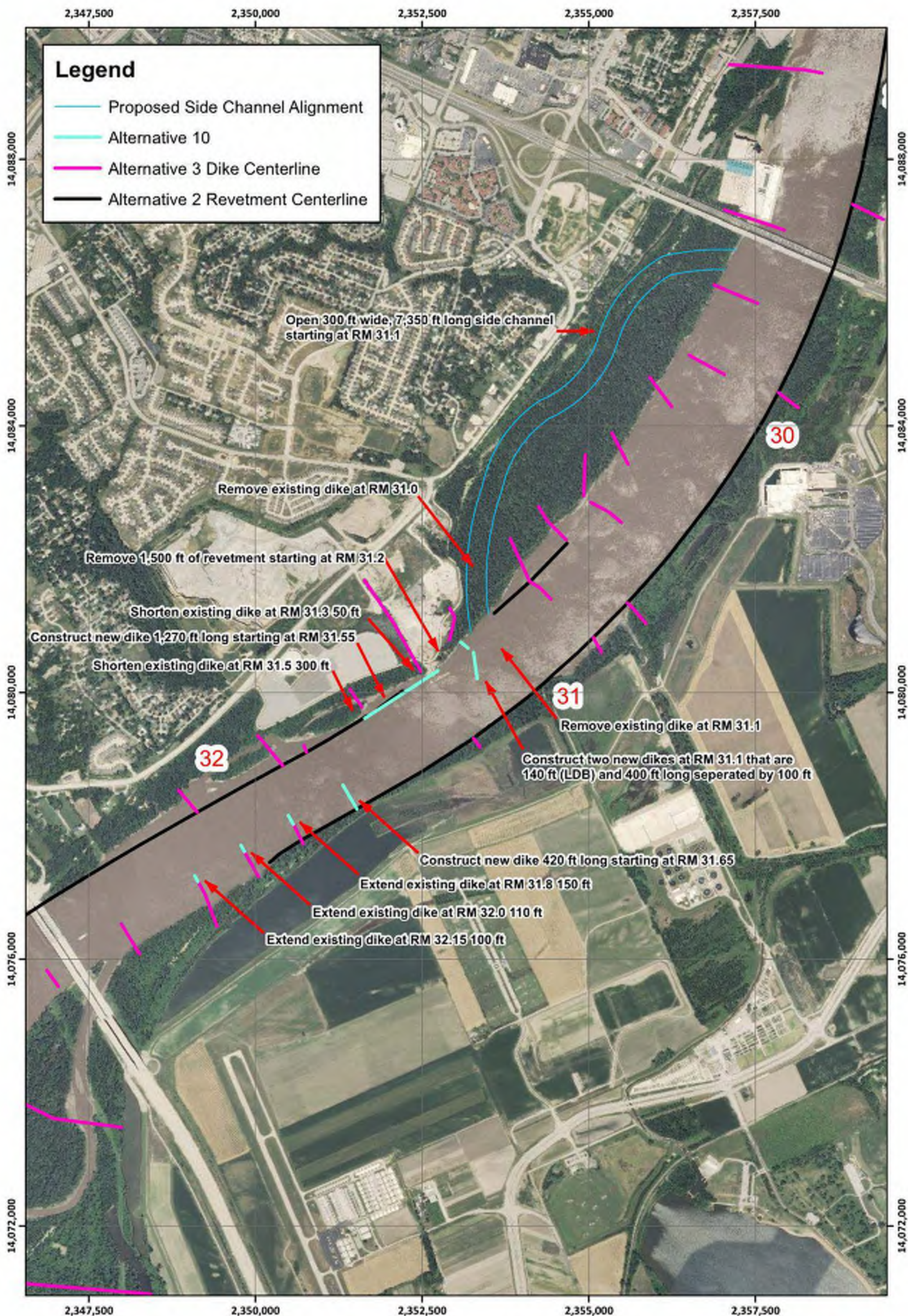
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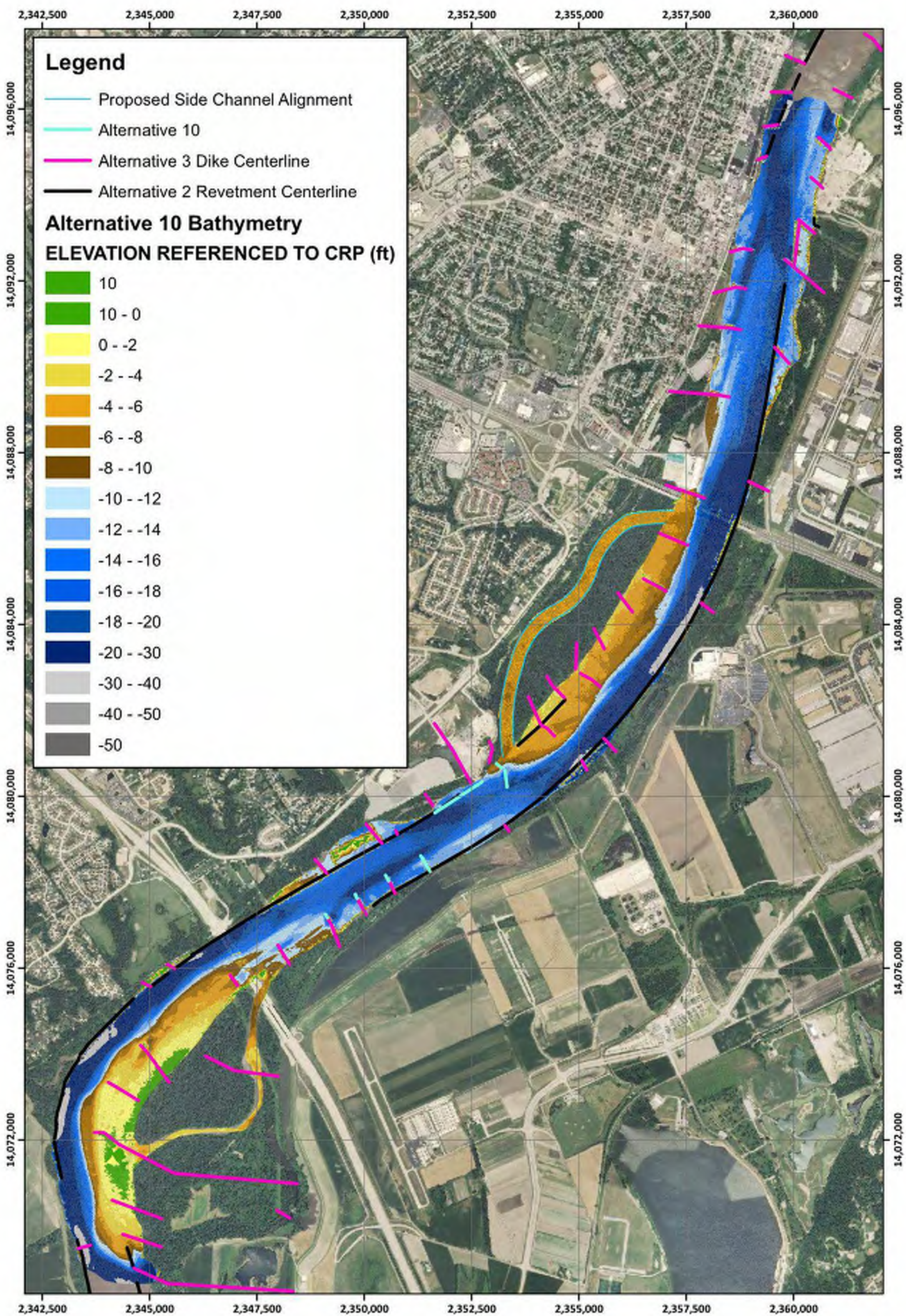


PLATE
NUMBER
51

0 500 1,000 2,000 3,000 4,000 Feet

Alternative 10: Bathymetry
2009 AERIAL PHOTOGRAPH

U.S. ARMY ENGINEER DIVISION
CORPS OF ENGINEERS
ST. LOUIS, MISSOURI

Bangert Island
HSR Model

DESIGNED BY T. LAUTH	DATE 7/25/11
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DESIGNED BY T. LAUTH	CHECKED BY R. DAVINBOY, P.E.
PROJECT Bangert Island	



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2,352,500

2,355,000

Legend

- Proposed Side Channel Alignment
- Alternative 10
- Alternative 3 Dike Centerline
- Alternative 2 Revetment Centerline

**Alternative 10 Upstream LDV
NORMALIZED BY TRANSECT**

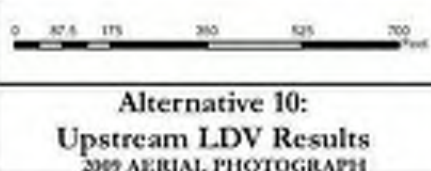
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- 0.1 - 0.2
- 0.2 - 0.3
- 0.3 - 0.4
- 0.4 - 0.5
- 0.5 - 0.6
- 0.6 - 0.7
- 0.7 - 0.8
- 0.8 - 0.9
- 0.9 - 1.0

14,080,000

14,080,000

2,352,500

2,355,000

 PLATE
NUMBER
52

 U.S. ARMY ENGINEER DIVISION
CORPS OF ENGINEERS
ST. LOUIS, MISSOURI

 Bangert Island
HSR Model

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PROJECT Bangert Phase	DATE 9/20/11


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St. Louis District


2,357,500

Legend

- Proposed Side Channel Alignment
- Alternative 10
- Alternative 3 Dike Centerline
- Alternative 2 Revetment Centerline
- Bridge Piers

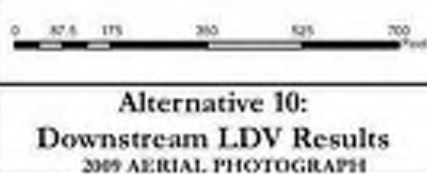
**Alternative 10 Downstream LDV
NORMALIZED BY TRANSECT**

- 0.0 - 0.1
- 0.1 - 0.2
- 0.2 - 0.3
- 0.3 - 0.4
- 0.4 - 0.5
- 0.5 - 0.6
- 0.6 - 0.7
- 0.7 - 0.8
- 0.8 - 0.9
- 0.9 - 1.0

14,088,000

14,088,000

2,357,500

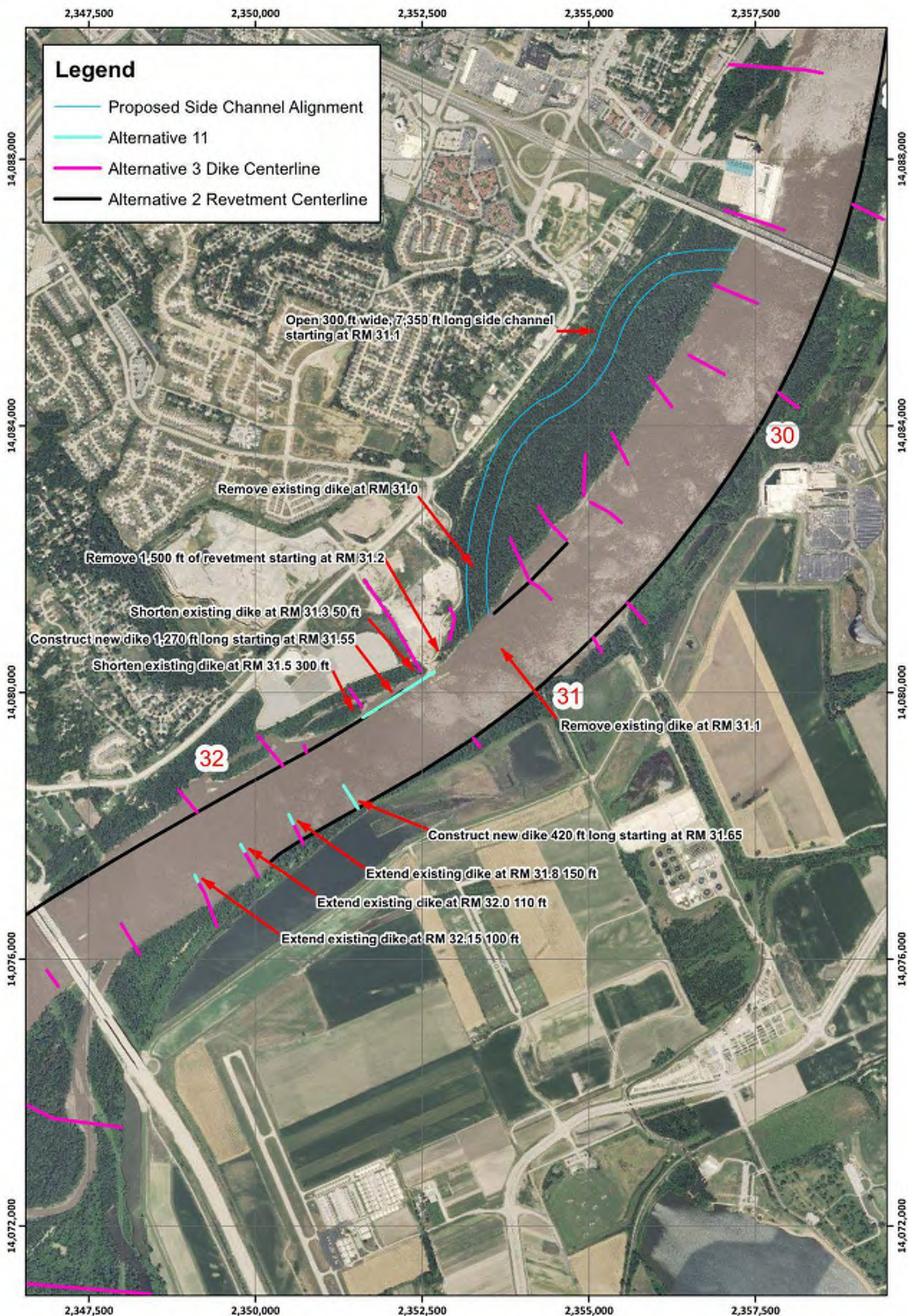
 PLATE
NUMBER
53

 U.S. ARMY ENGINEER DIVISION
CORPS OF ENGINEERS
ST. LOUIS, MISSOURI

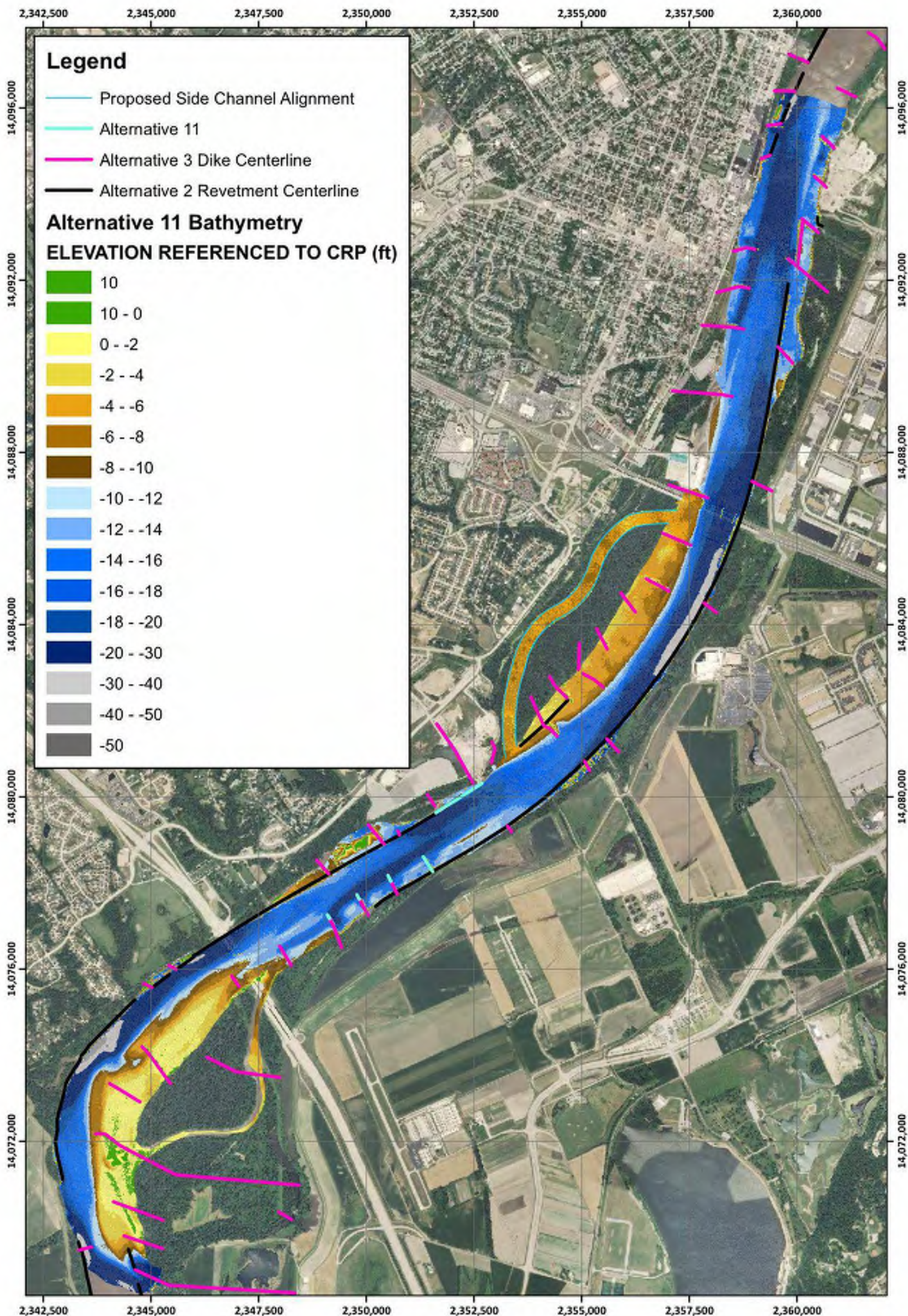
 Bangert Island
HSR Model

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PROJECT Bangert Island	DATE 9/26/11


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St. Louis District



2,352,500

2,355,000

Legend

- Proposed Side Channel Alignment
- Alternative 11
- Alternative 3 Dike Centerline
- Alternative 2 Revetment Centerline

**Alternative 11 Upstream LDV
NORMALIZED BY TRANSECT**

- 0.0 - 0.1
- 0.1 - 0.2
- 0.2 - 0.3
- 0.3 - 0.4
- 0.4 - 0.5
- 0.5 - 0.6
- 0.6 - 0.7
- 0.7 - 0.8
- 0.8 - 0.9
- 0.9 - 1.0

14,080,000

14,080,000

2,352,500

2,355,000

 PLATE
NUMBER
56

0 87.5 175 350 700 Feet

 Alternative 11:
Upstream LDV Results
2009 AERIAL PHOTOGRAPH

 U.S. ARMY ENGINEER DIVISION
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ST. LOUIS, MISSOURI

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T. LAUTH

T. LAUTH

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7/29/11

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St. Louis District


2,357,500

Legend

- Proposed Side Channel Alignment
- Alternative 11
- Alternative 3 Dike Centerline
- Alternative 2 Revetment Centerline
- Bridge Piers

**Alternative 11 Downstream LDV
NORMALIZED BY TRANSECT**

- 0.0 - 0.1
- 0.1 - 0.2
- 0.2 - 0.3
- 0.3 - 0.4
- 0.4 - 0.5
- 0.5 - 0.6
- 0.6 - 0.7
- 0.7 - 0.8
- 0.8 - 0.9
- 0.9 - 1.0

14,088,000

14,088,000

2,357,500

PLATE
NUMBER
57

0 87.5 175 350 700 Feet

**Alternative 11:
Downstream LDV Results**
2009 AERIAL PHOTOGRAPH

U.S. ARMY ENGINEER DIVISION
CORPS OF ENGINEERS
ST. LOUIS, MISSOURI

**Bangert Island
HSR Model**

DESIGNED BY

T. LAUTH

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T. LAUTH

APPROVED BY

T. LAUTH

DATE

7/29/11

DESIGNED BY

J. BROWN, P.E.

CHECKED BY

A. COX

APPROVED BY

R. DAVINBOY, P.E.

DATE

9/20/11

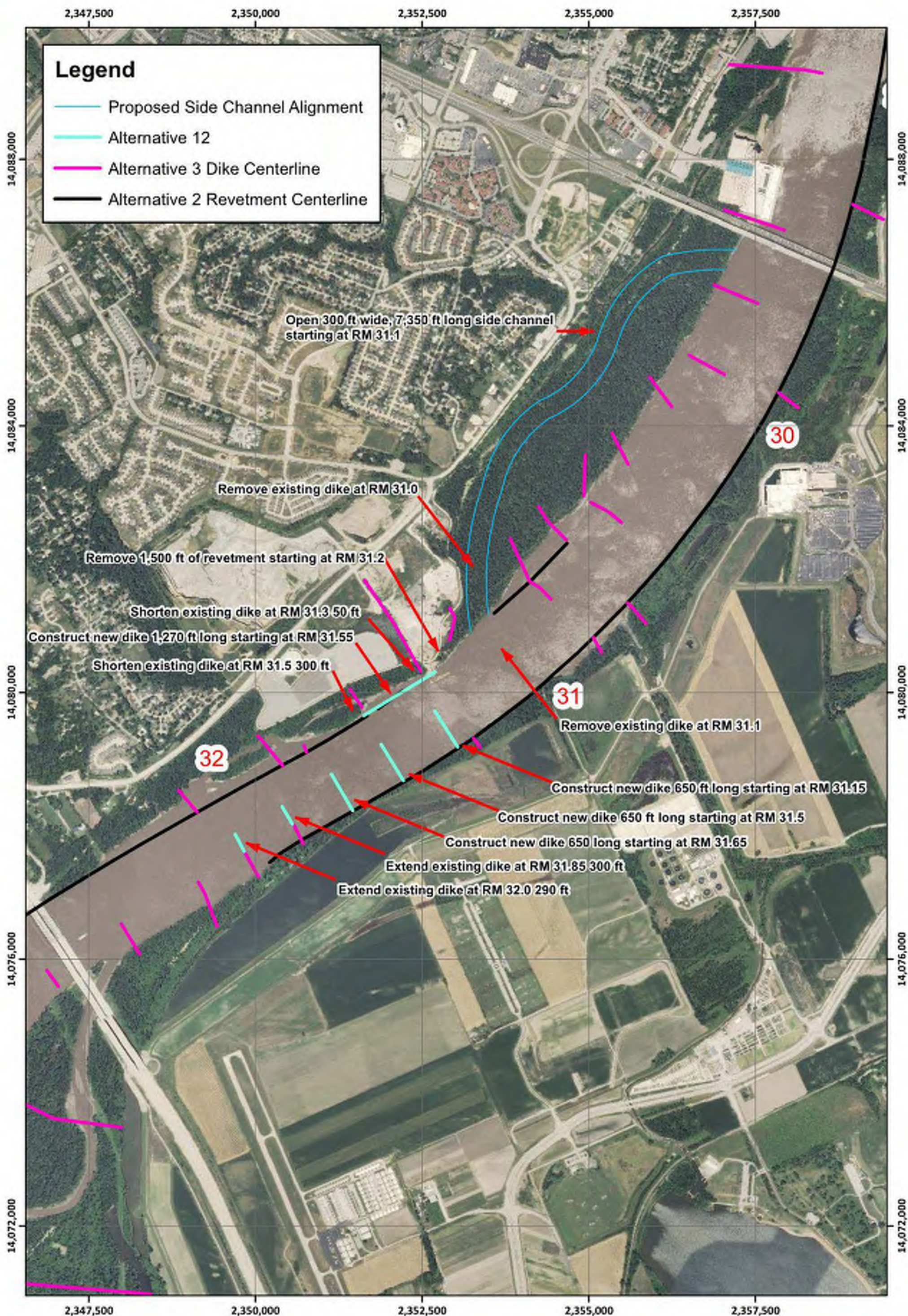
Bangert Plans



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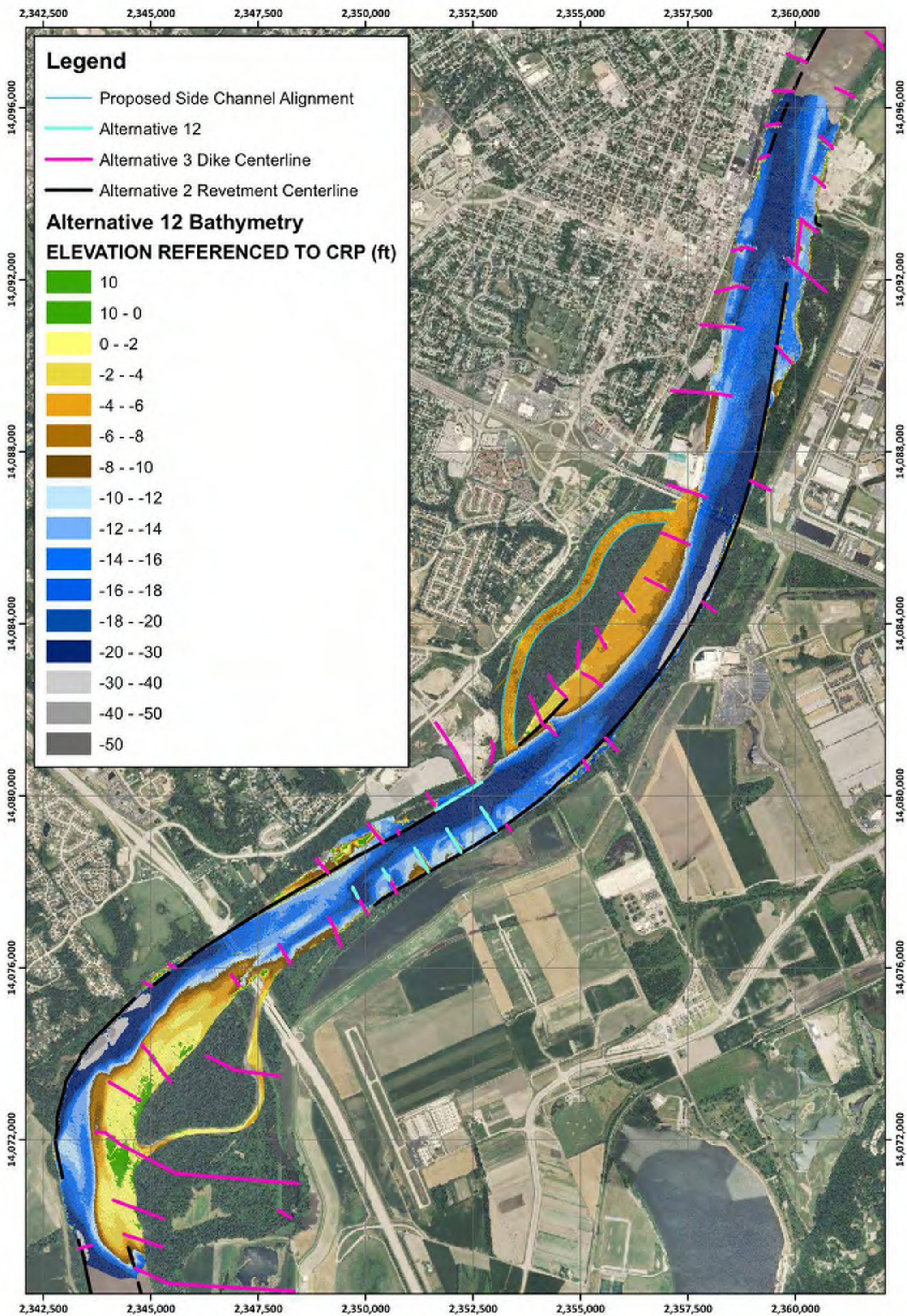
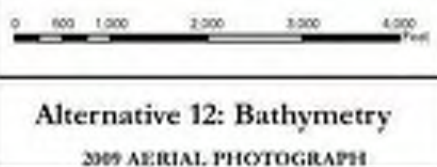


PLATE
NUMBER
59



U.S. ARMY ENGINEER DIVISION
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ST. LOUIS, MISSOURI

Bangert Island
HSR Model

DESIGNED BY T. LAUTH	DATE 8/1/11
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PROJECT Bangert Island	DATE 8/2/11



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2,352,500

2,355,000

Legend

- Proposed Side Channel Alignment
- Alternative 12
- Alternative 3 Dike Centerline
- Alternative 2 Revetment Centerline

**Alternative 12 Upstream LDV
NORMALIZED BY TRANSECT**

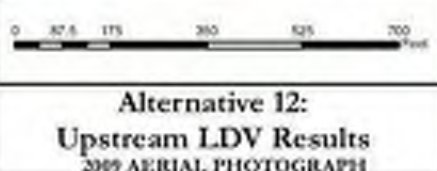
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- 0.3 - 0.4
- 0.4 - 0.5
- 0.5 - 0.6
- 0.6 - 0.7
- 0.7 - 0.8
- 0.8 - 0.9
- 0.9 - 1.0

14,080,000

14,080,000

2,352,500

2,355,000

 PLATE
NUMBER
60

 U.S. ARMY ENGINEER DIVISION
CORPS OF ENGINEERS
ST. LOUIS, MISSOURI

 Bangert Island
HSR Model

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PROJECT Bangert Phase	DATE 8/25/11


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2,357,500

Legend

- Proposed Side Channel Alignment
- Alternative 12
- Alternative 3 Dike Centerline
- Alternative 2 Revetment Centerline
- Bridge Piers

**Alternative 12 Downstream LDV
NORMALIZED BY TRANSECT**

- 0.0 - 0.1
- 0.1 - 0.2
- 0.2 - 0.3
- 0.3 - 0.4
- 0.4 - 0.5
- 0.5 - 0.6
- 0.6 - 0.7
- 0.7 - 0.8
- 0.8 - 0.9
- 0.9 - 1.0

14,088,000

14,088,000

2,357,500

PLATE
NUMBER
61

0 87.5 175 350 525 700 Feet

Alternative 12:
Downstream LDV Results
2009 AERIAL PHOTOGRAPH

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ST. LOUIS, MISSOURI

Bangert Island
HSR Model

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T. LAUTH

CHECKED BY

T. LAUTH

APPROVED BY

T. LAUTH

DATE

8/1/11

DESIGNED BY

J. BROWN, P.E.

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A. COX

APPROVED BY

R. DAVINBOY, P.E.

DATE

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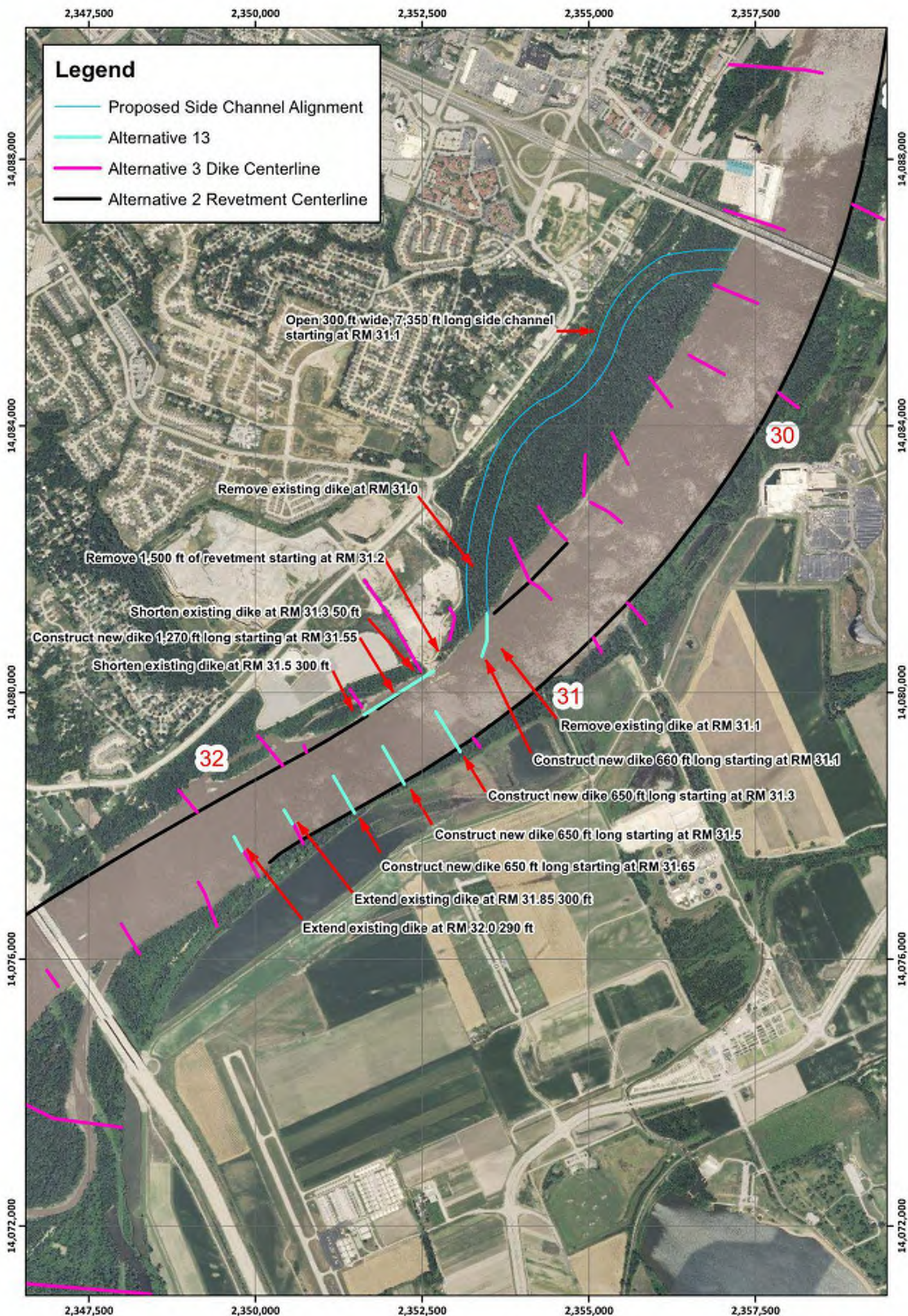
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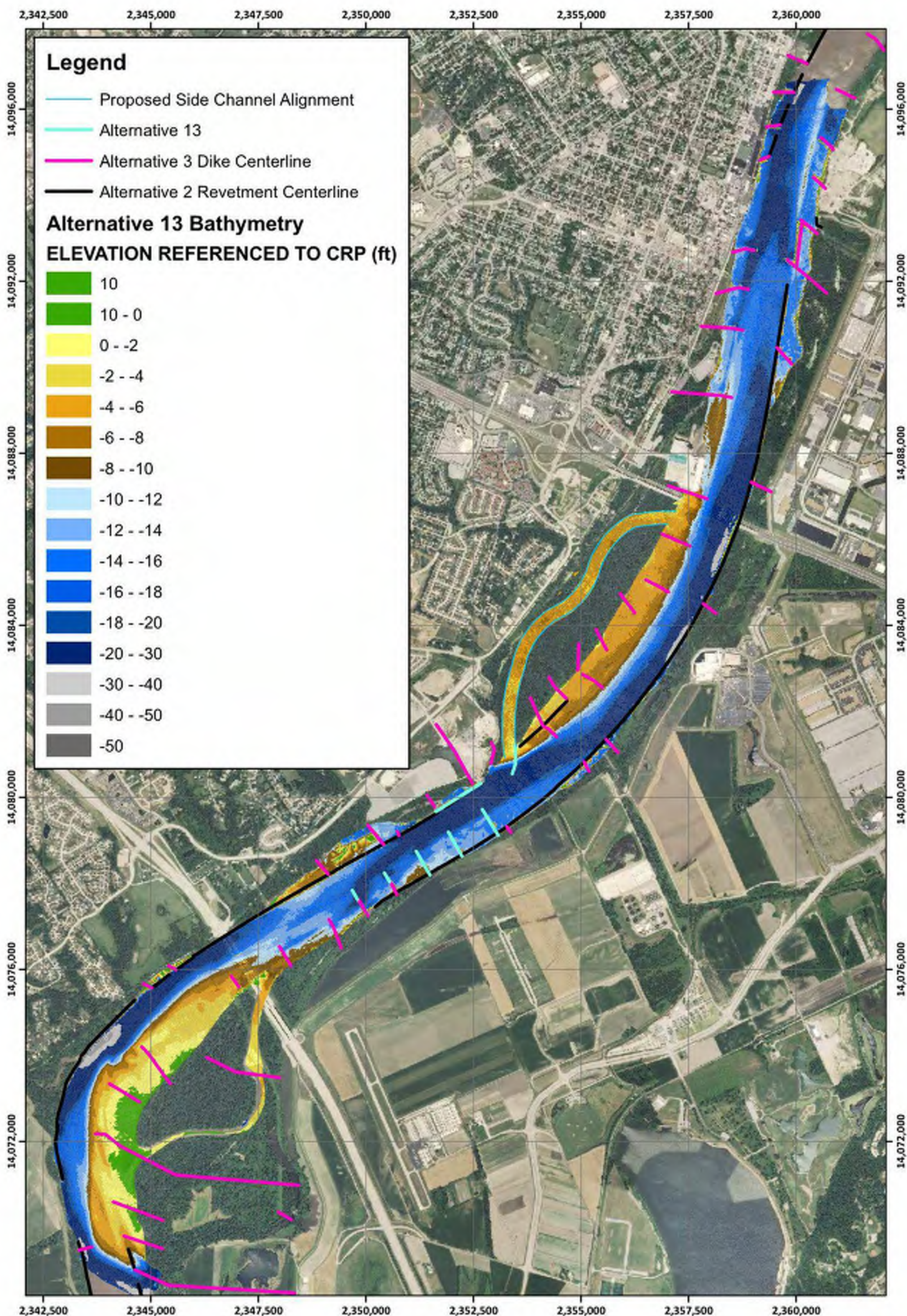
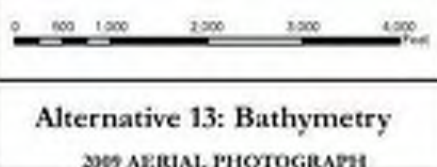


PLATE
NUMBER
63



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ST. LOUIS, MISSOURI

Bangert Island
HSR Model

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2,352,500

2,355,000

Legend

- Proposed Side Channel Alignment
- Alternative 13
- Alternative 3 Dike Centerline
- Alternative 2 Revetment Centerline

**Alternative 13 Upstream LDV
NORMALIZED BY TRANSECT**

- 0.0 - 0.1
- 0.1 - 0.2
- 0.2 - 0.3
- 0.3 - 0.4
- 0.4 - 0.5
- 0.5 - 0.6
- 0.6 - 0.7
- 0.7 - 0.8
- 0.8 - 0.9
- 0.9 - 1.0

14,080,000

14,080,000

2,352,500

2,355,000

 PLATE
NUMBER
64

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ST. LOUIS, MISSOURI

 Bangert Island
HSR Model

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T. LAUTH

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T. LAUTH

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T. LAUTH

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A. COX

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R. DAVINBOY, P.E.

DESIGNED BY

R. DAVINBOY, P.E.


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ENGINEERING CENTER

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St. Louis District


2,357,500

Legend

- Proposed Side Channel Alignment
- Alternative 13
- Alternative 3 Dike Centerline
- Alternative 2 Revetment Centerline
- Bridge Piers

**Alternative 13 Downstream LDV
NORMALIZED BY TRANSECT**

- 0.0 - 0.1
- 0.1 - 0.2
- 0.2 - 0.3
- 0.3 - 0.4
- 0.4 - 0.5
- 0.5 - 0.6
- 0.6 - 0.7
- 0.7 - 0.8
- 0.8 - 0.9
- 0.9 - 1.0

14,088,000

14,088,000

2,357,500

PLATE
NUMBER
65

0 87.5 175 350 525 700 Feet

Alternative 13:
Downstream LDV Results
2009 AERIAL PHOTOGRAPH

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CORPS OF ENGINEERS
ST. LOUIS, MISSOURI

Bangert Island
HSR Model

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T. LAUTH

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T. LAUTH

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J. BROWN, P.E.

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A. COX

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T. LAUTH

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PROJECT

Bangert Island

DATE

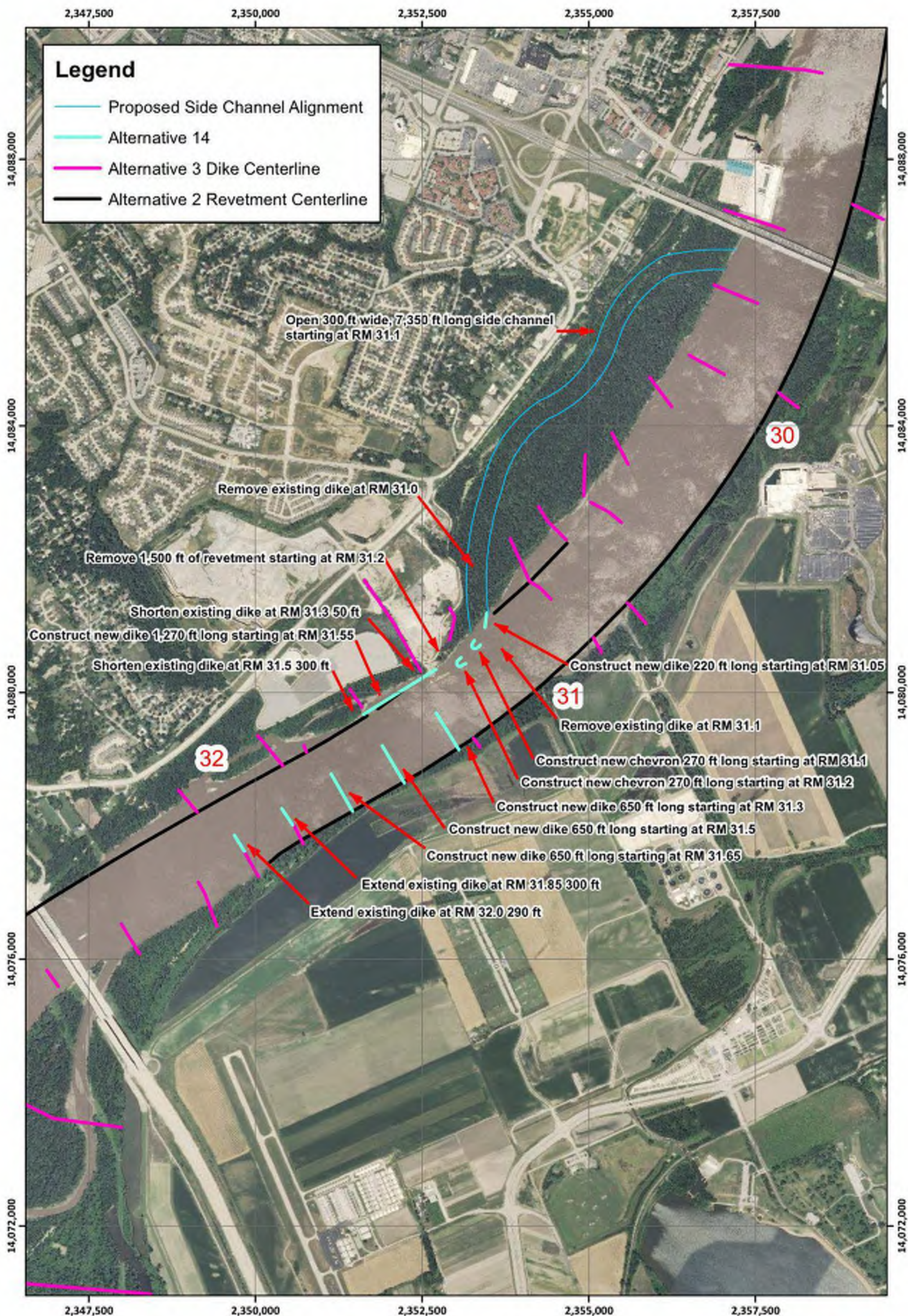
8/20/11

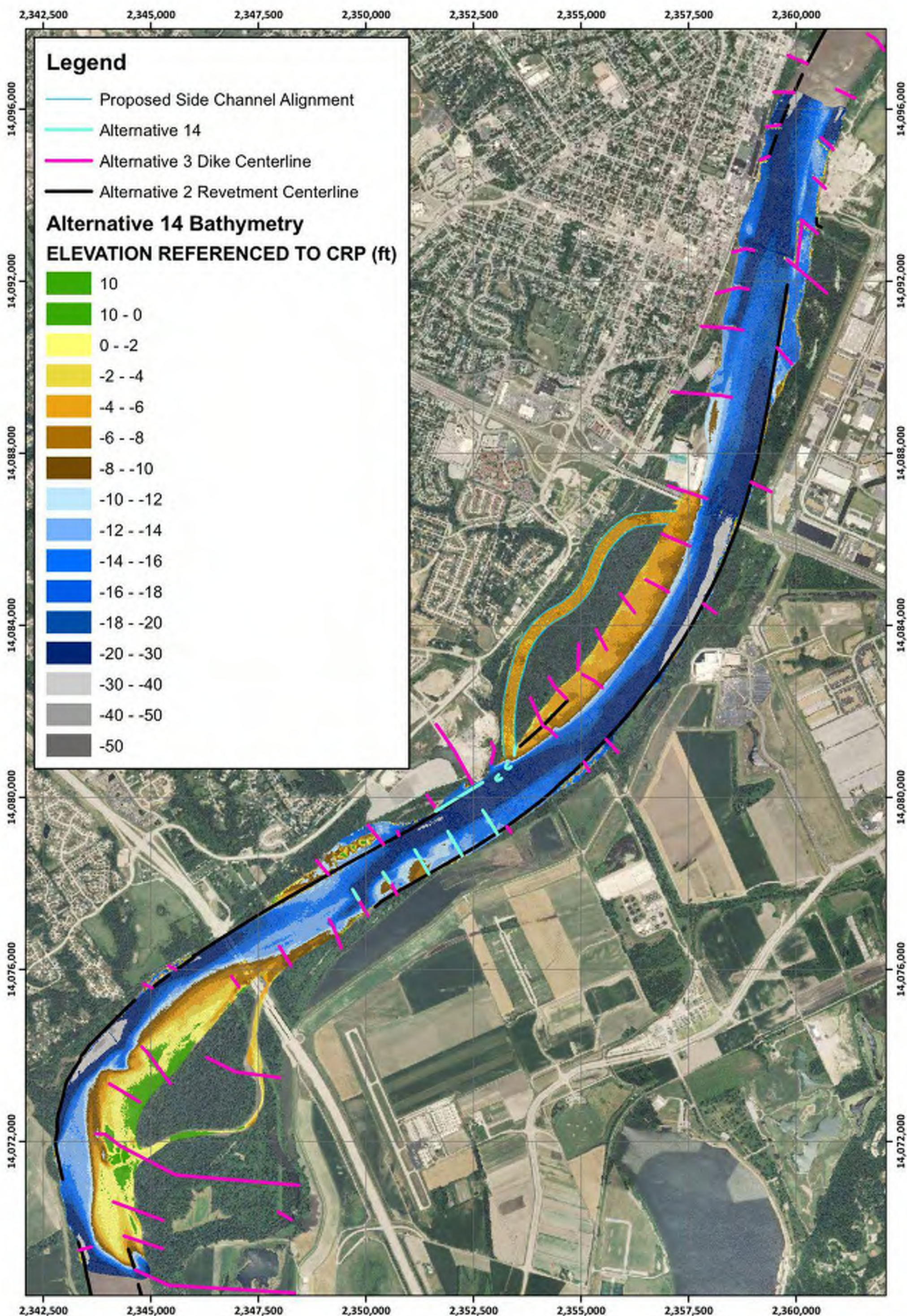


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of Engineers
St. Louis District







2,352,500

2,355,000

Legend

- Proposed Side Channel Alignment
- Alternative 14
- Alternative 3 Dike Centerline
- Alternative 2 Revetment Centerline

**Alternative 14 Upstream LDV
NORMALIZED BY TRANSECT**

- 0.0 - 0.1
- 0.1 - 0.2
- 0.2 - 0.3
- 0.3 - 0.4
- 0.4 - 0.5
- 0.5 - 0.6
- 0.6 - 0.7
- 0.7 - 0.8
- 0.8 - 0.9
- 0.9 - 1.0

14,080,000

14,080,000

2,352,500

2,355,000

PLATE
NUMBER
68

0 87.5 175 350 700 Feet

Alternative 14:
Upstream LDV Results
2009 AERIAL PHOTOGRAPH

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CORPS OF ENGINEERS
ST. LOUIS, MISSOURI

Bangert Island
HSR Model

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T LAUTH

T LAUTH

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DESIGNED BY

8/21/11

J BROWN, P.E.

R DAVINBOY, P.E.

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A COX



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St. Louis District



2,357,500

Legend

- Proposed Side Channel Alignment
- Alternative 14
- Alternative 3 Dike Centerline
- Alternative 2 Revetment Centerline
- Bridge Piers

**Alternative 14 Downstream LDV
NORMALIZED BY TRANSECT**

- 0.0 - 0.1
- 0.1 - 0.2
- 0.2 - 0.3
- 0.3 - 0.4
- 0.4 - 0.5
- 0.5 - 0.6
- 0.6 - 0.7
- 0.7 - 0.8
- 0.8 - 0.9
- 0.9 - 1.0

14,088,000

14,088,000

2,357,500

PLATE
NUMBER
69

0 87.5 175 350 525 700 Feet

Alternative 14:
Downstream LDV Results
2009 AERIAL PHOTOGRAPH

U.S. ARMY ENGINEER DIVISION
CORPS OF ENGINEERS
ST. LOUIS, MISSOURI

Bangert Island
HSR Model

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T LAUTH

CHECKED BY

T LAUTH

APPROVED BY

T LAUTH

DESIGNED BY

J BROWN, P.E.

CHECKED BY

A COX

APPROVED BY

R DAVINBOY, P.E.

DATE

8/21/11

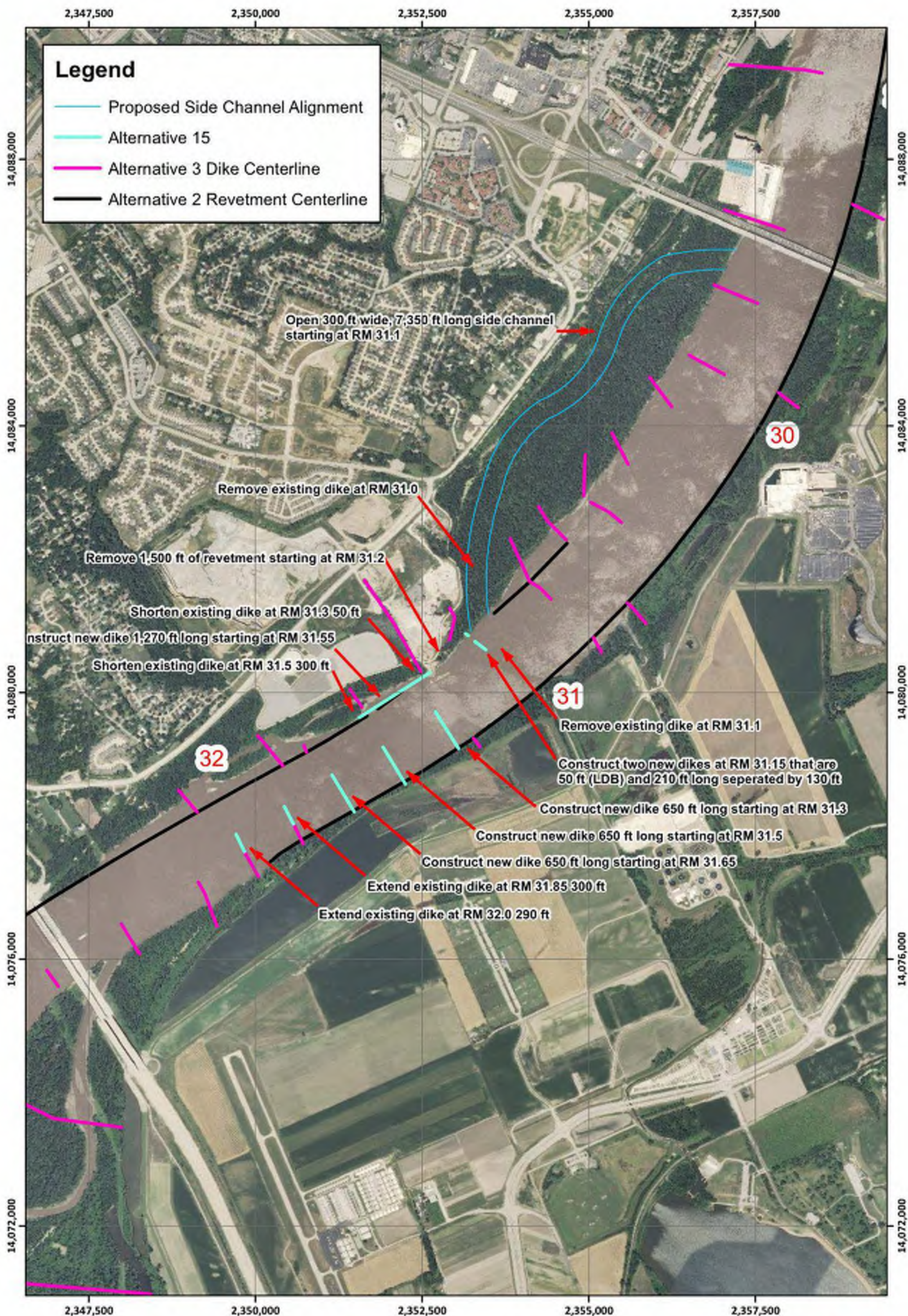
9/20/11

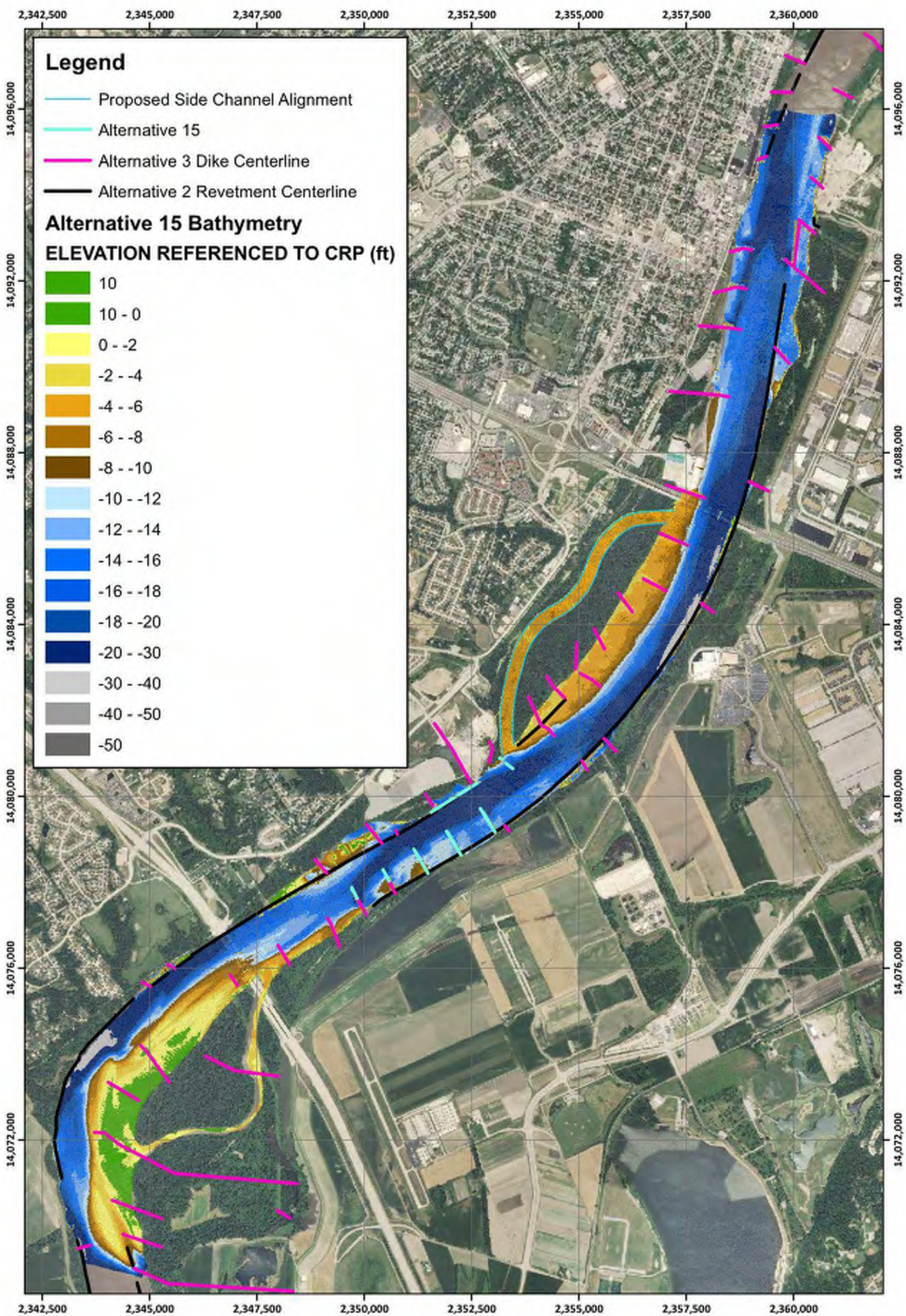


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ENGINEERING CENTER

US Army Corps
of Engineers
St. Louis District







2,352,500

2,355,000

Legend

- Proposed Side Channel Alignment
- Alternative 15
- Alternative 3 Dike Centerline
- Alternative 2 Revetment Centerline

**Alternative 15 Upstream LDV
NORMALIZED BY TRANSECT**

- 0.0 - 0.1
- 0.1 - 0.2
- 0.2 - 0.3
- 0.3 - 0.4
- 0.4 - 0.5
- 0.5 - 0.6
- 0.6 - 0.7
- 0.7 - 0.8
- 0.8 - 0.9
- 0.9 - 1.0

14,080,000

14,080,000

2,352,500

2,355,000

PLATE
NUMBER
72

0 87.5 175 350 700 Feet

Alternative 15:
Upstream LDV Results
2009 AERIAL PHOTOGRAPH

U.S. ARMY ENGINEER DIVISION
CORPS OF ENGINEERS
ST. LOUIS, MISSOURI

Bangert Island
HSR Model

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T LAUTH

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T LAUTH

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T LAUTH

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PROJECT
Bangert Phase

DATE: 9/25/11



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St. Louis District



2,357,500

Legend

- Proposed Side Channel Alignment
- Alternative 15
- Alternative 3 Dike Centerline
- Alternative 2 Revetment Centerline
- Bridge Piers

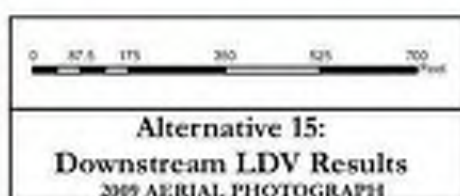
**Alternative 15 Downstream LDV
NORMALIZED BY TRANSECT**

- 0.0 - 0.1
- 0.1 - 0.2
- 0.2 - 0.3
- 0.3 - 0.4
- 0.4 - 0.5
- 0.5 - 0.6
- 0.6 - 0.7
- 0.7 - 0.8
- 0.8 - 0.9
- 0.9 - 1.0

14,088,000

14,088,000

2,357,500

 PLATE
NUMBER
73


U.S. ARMY ENGINEER DIVISION CORPS OF ENGINEERS ST. LOUIS, MISSOURI	DESIGNED BY:		DATE:	
	T LAUTH		9/25/11	
	CHECKED BY:	DESIGNED BY:		DATE:
	T LAUTH	J BROWN, P.E.		A COX
Bangert Island HSR Model	APPROVED BY:		DATE:	
	T LAUTH		R DAVINBOY, P.E.	
	PROJECT:		DATE:	
	Bangert Phase		9/25/11	


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RIVER
ENGINEERING CENTER

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St. Louis District


2,345,000 2,347,500 2,350,000 2,352,500 2,355,000

Legend

- Proposed Side Channel Alignment
- Alternative 16
- Alternative 3 Dike Centerline
- Alternative 2 Revetment Centerline

Open 300 ft wide, 7,350 ft long side channel starting at RM 31.1

Remove existing dike at RM 31.0

Construct new dike 320 ft long starting at RM 31.1

Remove 1,500 ft of revetment starting at RM 31.2

Shorten existing dike at RM 31.3 50 ft

Shorten existing dike at RM 31.5 300 ft

Construct new dike 350 ft long starting at RM 31.7

Construct new dike 350 ft long starting at RM 31.8

Construct new dike 350 ft long starting at RM 31.95

Construct new dike 350 ft long starting at RM 32.15

31

Remove existing dike

32

33

2,345,000 2,347,500 2,350,000 2,352,500 2,355,000

PLATE
NUMBER
74

0 300 600 1,200 1,800 2,400 Feet

Alternative 16: Definition

2009 AERIAL PHOTOGRAPH

U.S. ARMY ENGINEER DIVISION
CORPS OF ENGINEERS
ST. LOUIS, MISSOURI

Bangert Island
HSR Model

DESIGNED BY
T. LAUTH

DATE
9/24/11

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J. BROWN, P.E.

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A. COX

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T. LAUTH

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Bangert Plans

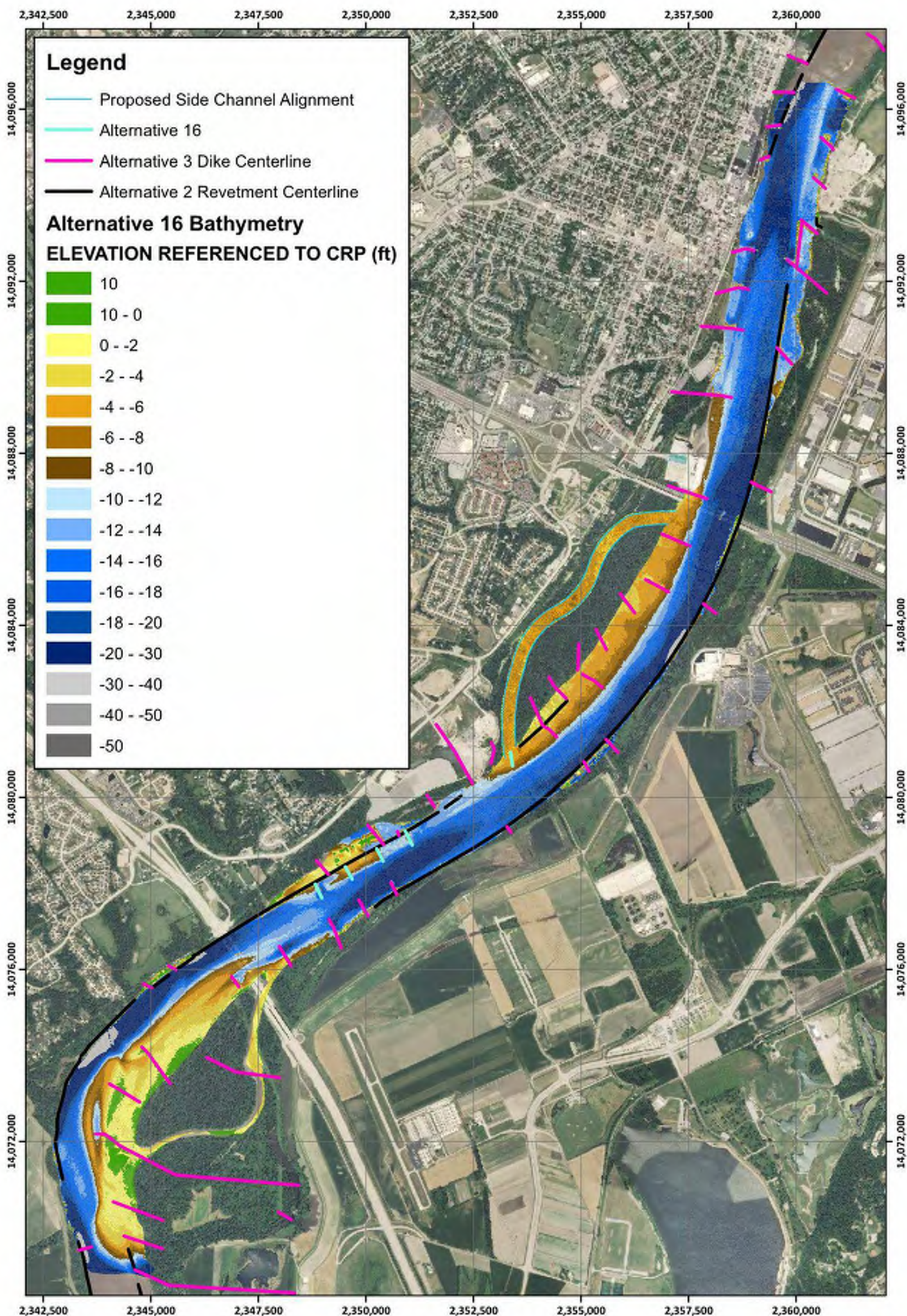
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St. Louis District





2,352,500

2,355,000

Legend

- Proposed Side Channel Alignment
- Alternative 16
- Alternative 3 Dike Centerline
- Alternative 2 Revetment Centerline

**Alternative 16 Upstream LDV
NORMALIZED BY TRANSECT**

- 0.0 - 0.1
- 0.1 - 0.2
- 0.2 - 0.3
- 0.3 - 0.4
- 0.4 - 0.5
- 0.5 - 0.6
- 0.6 - 0.7
- 0.7 - 0.8
- 0.8 - 0.9
- 0.9 - 1.0

14,080,000

14,080,000

2,352,500

2,355,000

PLATE
NUMBER
76

0 87.5 175 350 700 Feet

Alternative 16:
Upstream LDV Results
2009 AERIAL PHOTOGRAPH

U.S. ARMY ENGINEER DIVISION
CORPS OF ENGINEERS
ST. LOUIS, MISSOURI

Bangert Island
HSR Model

DESIGNED BY T LAUTH	DATE 9/25/11
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PROJECT Bangert Phase	DATE 9/25/11



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St. Louis District



2,357,500

Legend

- Proposed Side Channel Alignment
- Alternative 16
- Alternative 3 Dike Centerline
- Alternative 2 Revetment Centerline
- Bridge Piers

**Alternative 16 Downstream LDV
NORMALIZED BY TRANSECT**

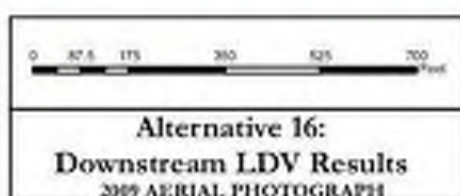
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- 0.1 - 0.2
- 0.2 - 0.3
- 0.3 - 0.4
- 0.4 - 0.5
- 0.5 - 0.6
- 0.6 - 0.7
- 0.7 - 0.8
- 0.8 - 0.9
- 0.9 - 1.0

14,088,000

14,088,000

2,357,500

PLATE
NUMBER
77



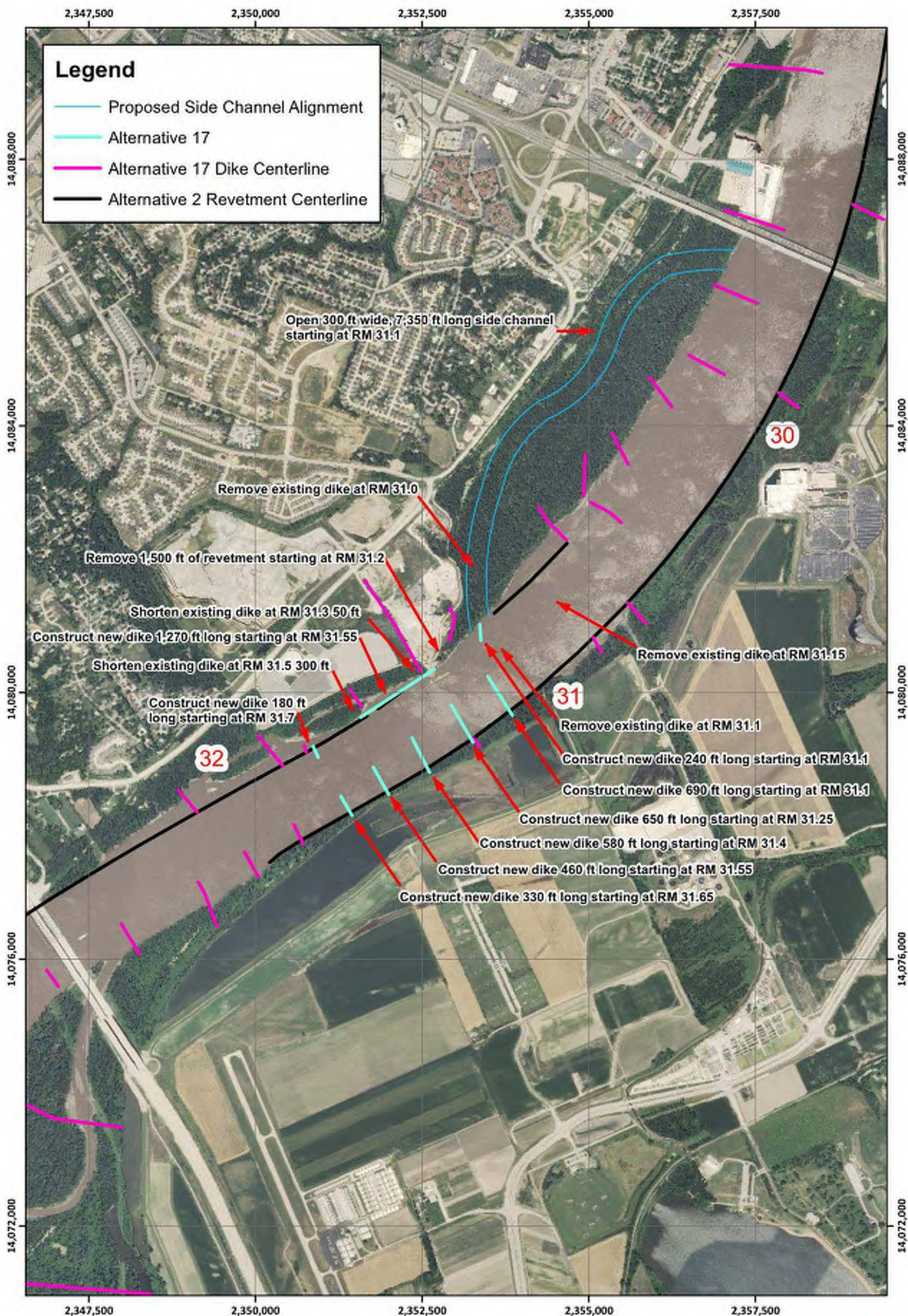
U.S. ARMY ENGINEER DIVISION CORPS OF ENGINEERS ST. LOUIS, MISSOURI	DESIGNED BY	T LAUTH	DATE	9/25/11
	REVIEWED BY	T LAUTH J BROWN, P.E.	DESIGNED BY	A COX
	APPROVED BY	T LAUTH	REVIEWED BY	R DAVINBOY, P.E.
	PROJECT	Bangert Island HSR Model		

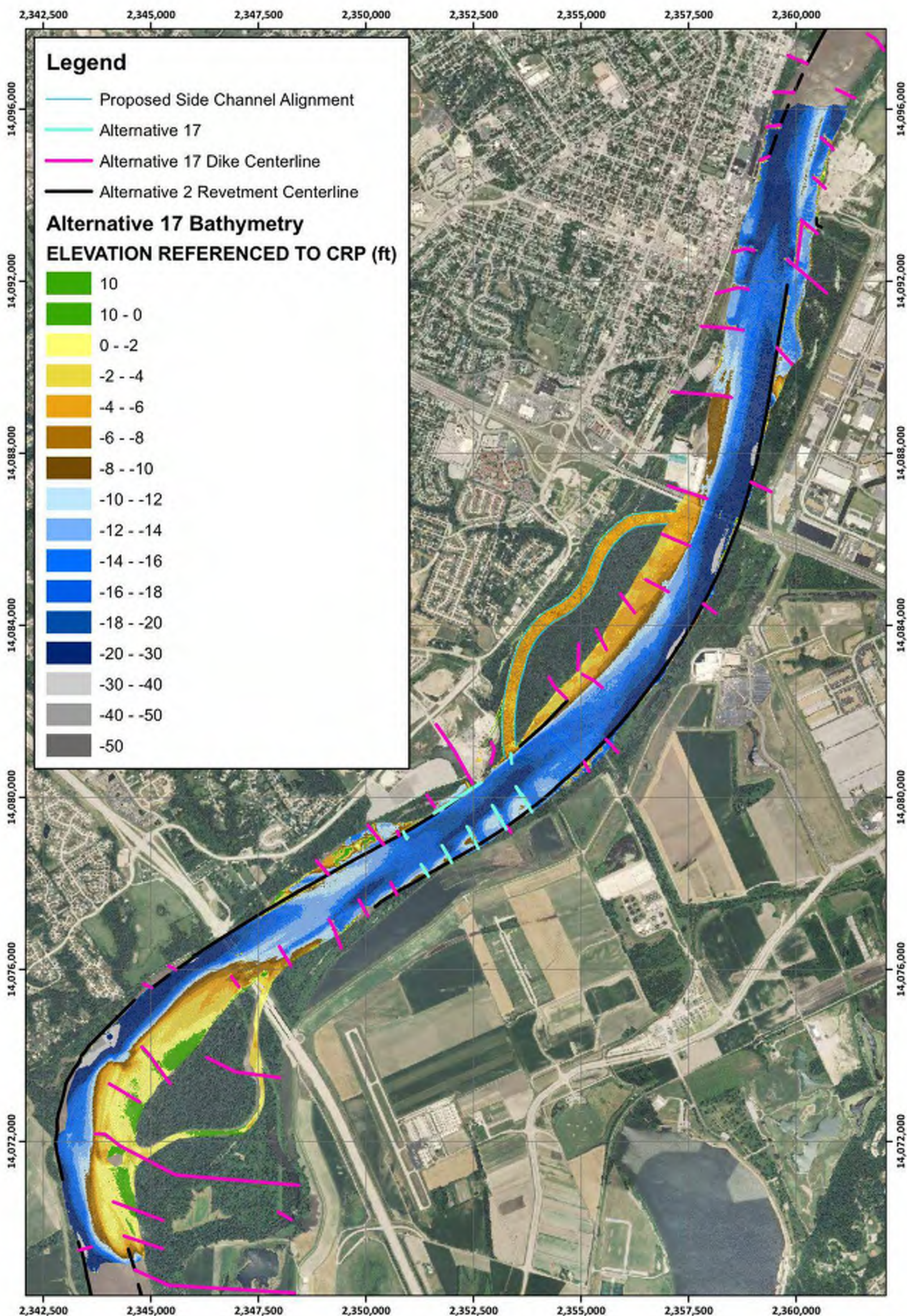


APPLIED
RIVER
ENGINEERING CENTER

US Army Corps
of Engineers
St. Louis District







2,352,500

2,355,000

Legend

- Proposed Side Channel Alignment
- Alternative 17
- Alternative 17 Dike Centerline
- Alternative 2 Revetment Centerline

**Alternative 17 Upstream LDV
NORMALIZED BY TRANSECT**

- 0.0 - 0.1
- 0.1 - 0.2
- 0.2 - 0.3
- 0.3 - 0.4
- 0.4 - 0.5
- 0.5 - 0.6
- 0.6 - 0.7
- 0.7 - 0.8
- 0.8 - 0.9
- 0.9 - 1.0

14,080,000

14,080,000

2,352,500

2,355,000

 PLATE
NUMBER
80

0 87.5 175 262.5 350 437.5 525 612.5 700 Feet

 Alternative 17:
Upstream LDV Results
2009 AERIAL PHOTOGRAPH

 U.S. ARMY ENGINEER DIVISION
CORPS OF ENGINEERS
ST. LOUIS, MISSOURI

 Bangert Island
HSR Model

DESIGNED BY

T LAUTH

CHECKED BY

T LAUTH

J BROWN, P.E.

DATE

9/27/11

DESIGNED BY

A COX

CHECKED BY

R DAVINBOY, P.E.

PROJECT

Bangert Phase

DATE

9/27/11


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ENGINEERING CENTER

 US Army Corps
of Engineers
St. Louis District


2,357,500

Legend

- Proposed Side Channel Alignment
- Alternative 17
- Alternative 17 Dike Centerline
- Alternative 2 Revetment Centerline
- Bridge Piers

**Alternative 17 Downstream LDV
NORMALIZED BY TRANSECT**

- 0.0 - 0.1
- 0.1 - 0.2
- 0.2 - 0.3
- 0.3 - 0.4
- 0.4 - 0.5
- 0.5 - 0.6
- 0.6 - 0.7
- 0.7 - 0.8
- 0.8 - 0.9
- 0.9 - 1.0

14,088,000

14,088,000

2,357,500

PLATE
NUMBER
81

0 87.5 175 350 525 700 Feet

Alternative 17:
Downstream LDV Results
2009 AERIAL PHOTOGRAPH

U.S. ARMY ENGINEER DIVISION
CORPS OF ENGINEERS
ST. LOUIS, MISSOURI

Bangert Island
HSR Model

DESIGNED BY

T. LAUTH

DATE

9/27/11

CHECKED BY

T. LAUTH

DESIGNED BY

J. BROWN, P.E.

CHECKED BY

A. COX

DESIGNED BY

T. LAUTH

CHECKED BY

R. DAVINBOY, P.E.

PROJECT

Bangert Island

DATE

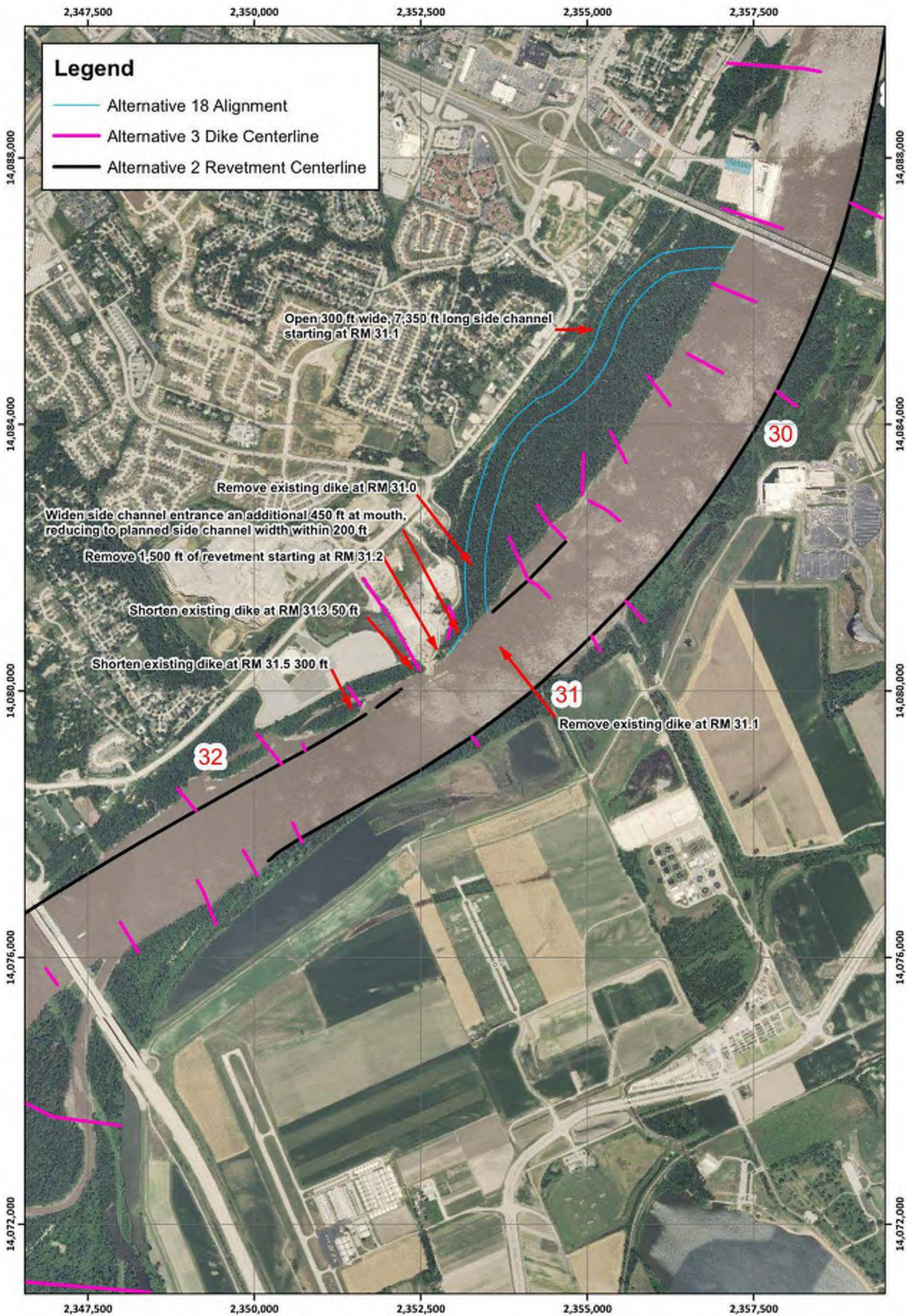
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St. Louis District





Legend

- Alternative 18 Alignment
- Alternative 3 Dike Centerline
- Alternative 2 Revetment Centerline

Open 300 ft wide, 7,350 ft long side channel starting at RM 31.1

Remove existing dike at RM 31.0

Widen side channel entrance an additional 450 ft at mouth, reducing to planned side channel width within 200 ft

Remove 1,500 ft of revetment starting at RM 31.2

Shorten existing dike at RM 31.3 50 ft

Shorten existing dike at RM 31.5 300 ft

Remove existing dike at RM 31.1

32

31

30

PLATE
NUMBER
82

0 300 600 1,200 1,800 2,400 Feet

Alternative 18: Definition

2009 AERIAL PHOTOGRAPH

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CORPS OF ENGINEERS
ST. LOUIS, MISSOURI

Bangert Island
HSR Model

DESIGNED BY
T. LAUTH

DESIGNED BY
T. LAUTH

DESIGNED BY
T. LAUTH

DATE
9/28/11

DESIGNED BY
J. BROWN, P.E.

DESIGNED BY
R. DAVINBOY, P.E.

DESIGNED BY
A. COX

DESIGNED BY
R. DAVINBOY, P.E.

DATE
9/28/11



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St. Louis District



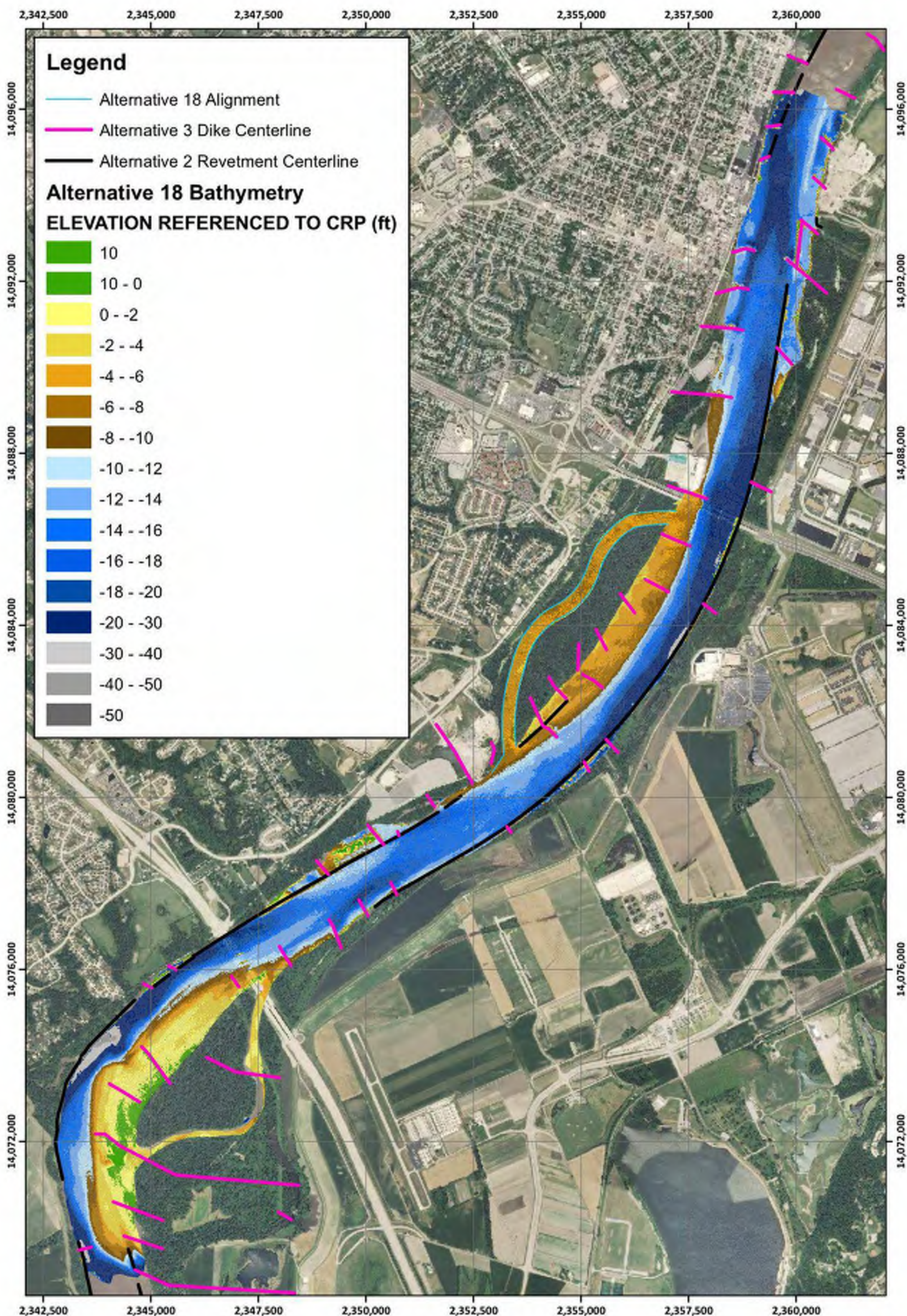


PLATE
NUMBER
83

Alternative 18: Bathymetry

2009 AERIAL PHOTOGRAPH

U.S. ARMY ENGINEER DIVISION
CORPS OF ENGINEERS
ST. LOUIS, MISSOURI

Bangert Island
HSR Model

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DESIGNED BY T. LAUTH	DESIGNED BY R. DAVINBOY, P.E.
PROJECT Bangert Island	PROJECT HSR Model



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2,352,500

2,355,000

Legend

Alternative 18 Alignment

Alternative 3 Dike Centerline

Alternative 2 Revetment Centerline

**Alternative 18 Upstream LDV
NORMALIZED BY TRANSECT**

0.0 - 0.1

0.1 - 0.2

0.2 - 0.3

0.3 - 0.4

0.4 - 0.5

0.5 - 0.6

0.6 - 0.7

0.7 - 0.8

0.8 - 0.9

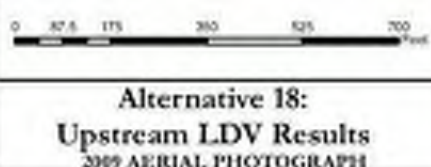
0.9 - 1.0

2,352,500

2,355,000

14,080,000

14,080,000

PLATE
NUMBER
84U.S. ARMY ENGINEER DIVISION
CORPS OF ENGINEERS
ST. LOUIS, MISSOURIBangert Island
HSR ModelDESIGNED BY
T. LAUTHDESIGNED BY
T. LAUTHDESIGNED BY
T. LAUTHDESIGNED BY
Bangert Plans

9/29/11

J. BROWN, P.E.

R. DAVINBOY, P.E.

9/29/11

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RIVER
ENGINEERING CENTERUS Army Corps
of Engineers
St. Louis District

2,357,500

Legend

Alternative 18 Alignment

Alternative 3 Dike Centerline

Alternative 2 Revetment Centerline

Bridge Piers

**Alternative 18 Downstream LDV
NORMALIZED BY TRANSECT**

0.0 - 0.1

0.1 - 0.2

0.2 - 0.3

0.3 - 0.4

0.4 - 0.5

0.5 - 0.6

0.6 - 0.7

0.7 - 0.8

0.8 - 0.9

0.9 - 1.0

14,088,000

14,088,000

2,357,500

PLATE
NUMBER
85U.S. ARMY ENGINEER DIVISION
CORPS OF ENGINEERS
ST. LOUIS, MISSOURIBangert Island
HSR Model

DESIGNED BY

T. LAUTH

T. LAUTH

T. LAUTH

Bangert Plans

DATE

9/29/11

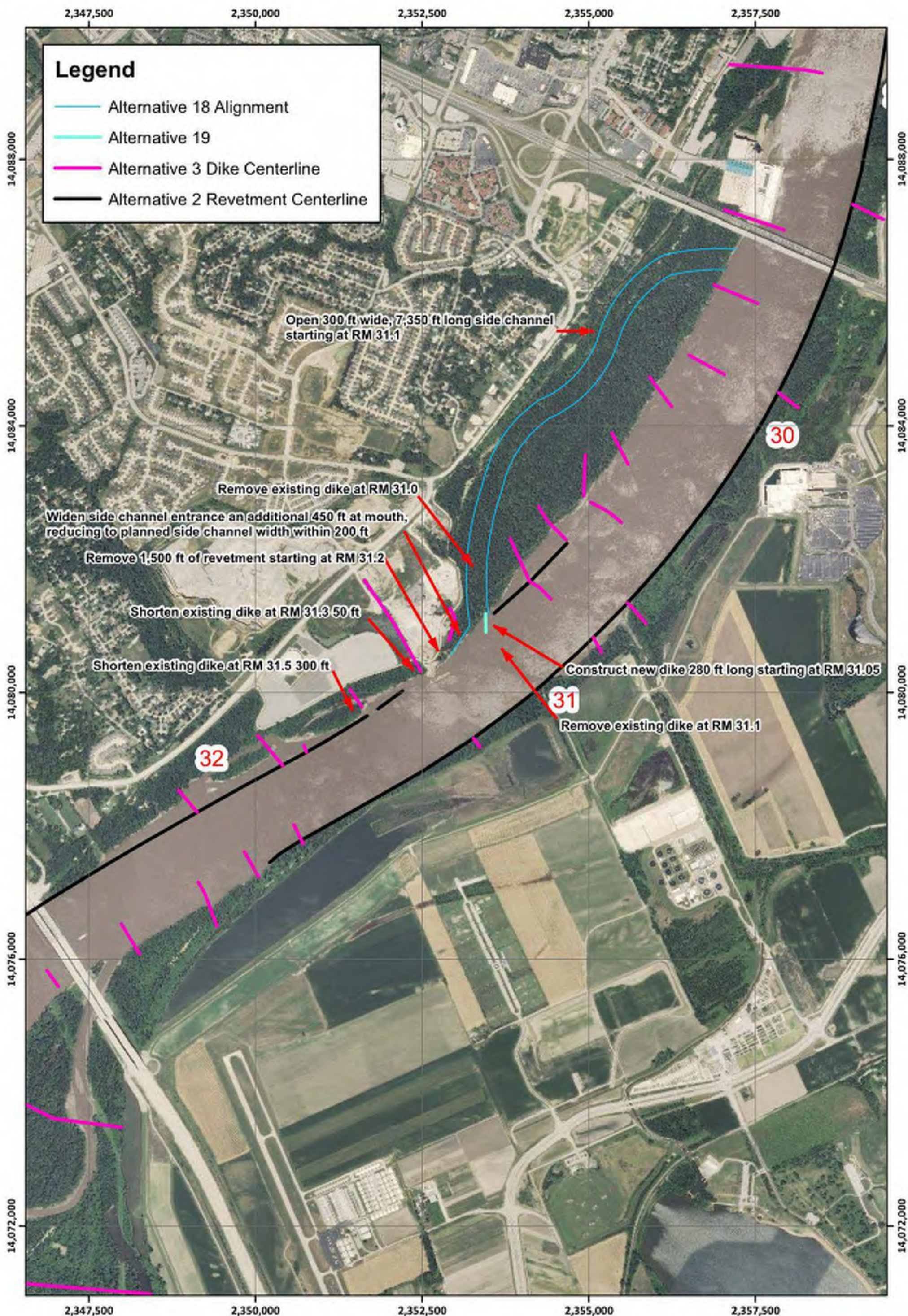
J. BROWN, P.E.

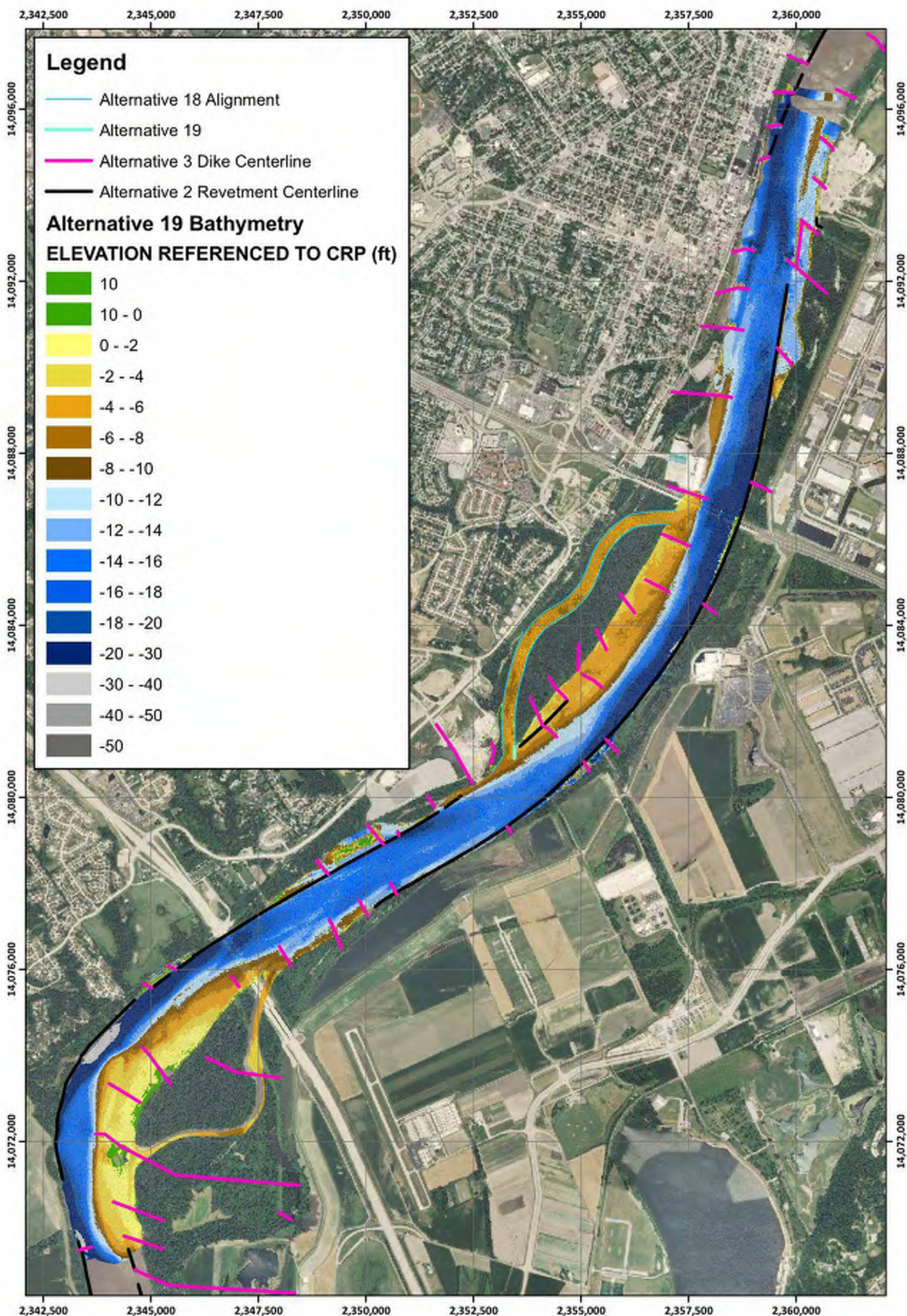
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R. DAVINBOY, P.E.

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St. Louis District





2,357,500

Legend

- Alternative 18 Alignment
- Alternative 19
- Alternative 3 Dike Centerline
- Alternative 2 Revetment Centerline
- Bridge Piers

Alternative 19 Downstream LDV NORMALIZED BY TRANSECT

- 0.0 - 0.1
- 0.1 - 0.2
- 0.2 - 0.3
- 0.3 - 0.4
- 0.4 - 0.5
- 0.5 - 0.6
- 0.6 - 0.7
- 0.7 - 0.8
- 0.8 - 0.9
- 0.9 - 1.0

14,088,000

14,088,000

2,357,500

PLATE
NUMBER
89

0 87.5 175 350 700 Feet

Alternative 19:
Downstream LDV Results
2009 AERIAL PHOTOGRAPH

U.S. ARMY ENGINEER DIVISION
CORPS OF ENGINEERS
ST. LOUIS, MISSOURI

Bangert Island
HSR Model

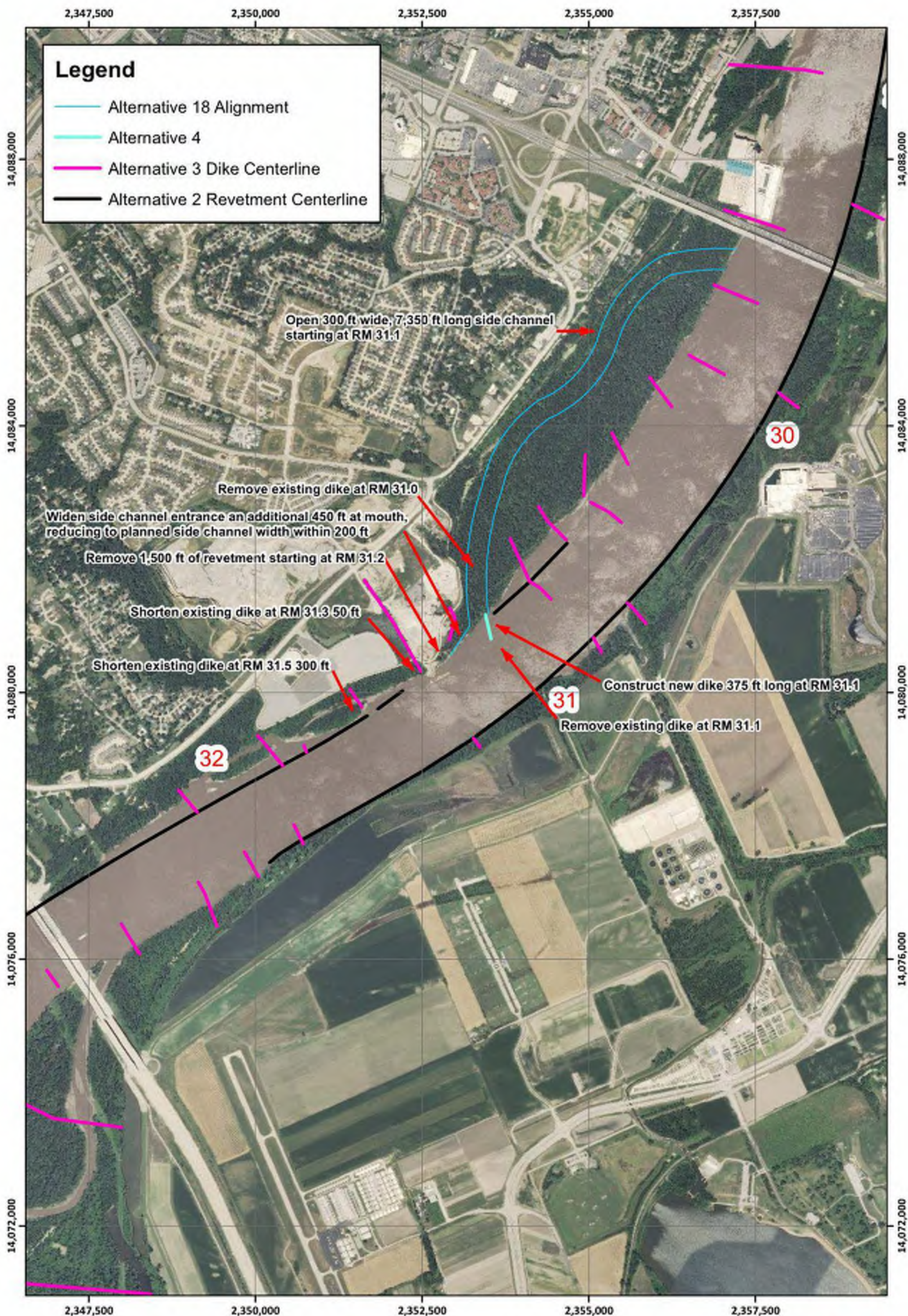
DESIGNED BY T LAUTH	DATE 9/29/11
DESIGNED BY T LAUTH	DESIGNED BY J BROWN, P.E.
DESIGNED BY T LAUTH	DESIGNED BY R DAVINBOY, P.E.
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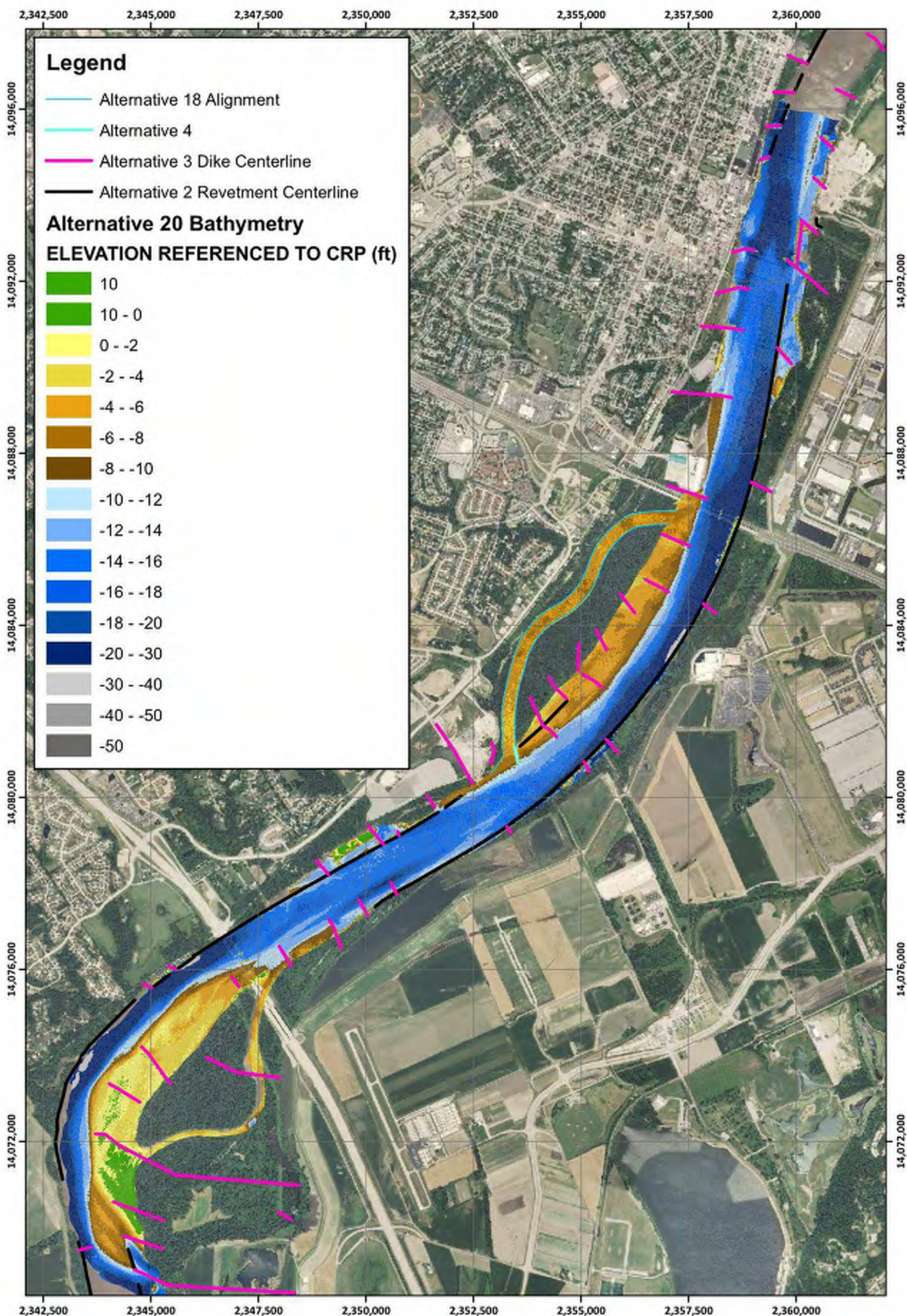
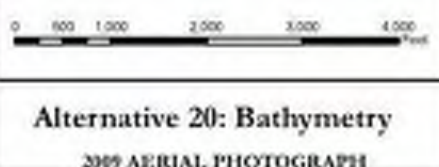


PLATE
NUMBER
91



U.S. ARMY ENGINEER DIVISION
CORPS OF ENGINEERS
ST. LOUIS, MISSOURI

**Bangert Island
HSR Model**

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DESIGNED BY T. LAUTH	DESIGNED BY R. DAVINBOY, P.E.
PROJECT Bangert Island	PROJECT HSR Model



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RIVER
ENGINEERING CENTER

**US Army Corps
of Engineers**
St. Louis District



2,352,500

2,355,000

Legend

- Alternative 18 Alignment
- Alternative 4
- Alternative 3 Dike Centerline
- Alternative 2 Revetment Centerline

**Alternative 20 Upstream LDV
NORMALIZED BY TRANSECT**

- 0.0 - 0.1
- 0.1 - 0.2
- 0.2 - 0.3
- 0.3 - 0.4
- 0.4 - 0.5
- 0.5 - 0.6
- 0.6 - 0.7
- 0.7 - 0.8
- 0.8 - 0.9
- 0.9 - 1.0

14,080,000

14,080,000

2,352,500

2,355,000

PLATE
NUMBER
92
 U.S. ARMY ENGINEER DIVISION
 CORPS OF ENGINEERS
 ST. LOUIS, MISSOURI

 Bangert Island
 HSR Model

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DESIGNED BY T LAUTH	DESIGNED BY R DAVINBOY, P.E.
PROJECT Bangert Phase	DATE 9/2/11


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RIVER
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 US Army Corps
 of Engineers
 St. Louis District


2,357,500

Legend

- Alternative 18 Alignment
- Alternative 4
- Alternative 3 Dike Centerline
- Alternative 2 Revetment Centerline
- Bridge Piers

**Alternative 20 Downstream LDV
NORMALIZED BY TRANSECT**

- 0.0 - 0.1
- 0.1 - 0.2
- 0.2 - 0.3
- 0.3 - 0.4
- 0.4 - 0.5
- 0.5 - 0.6
- 0.6 - 0.7
- 0.7 - 0.8
- 0.8 - 0.9
- 0.9 - 1.0

14,088,000

14,088,000

2,357,500

 PLATE
NUMBER
93

0 87.5 175 350 700 Feet

 Alternative 20:
Downstream LDV Results
2009 AERIAL PHOTOGRAPH

 U.S. ARMY ENGINEER DIVISION
CORPS OF ENGINEERS
ST. LOUIS, MISSOURI

 Bangert Island
HSR Model

 DESIGNED BY
T. LAUTH

T. LAUTH

T. LAUTH

Bangert Plans

DATE: 9/2/11

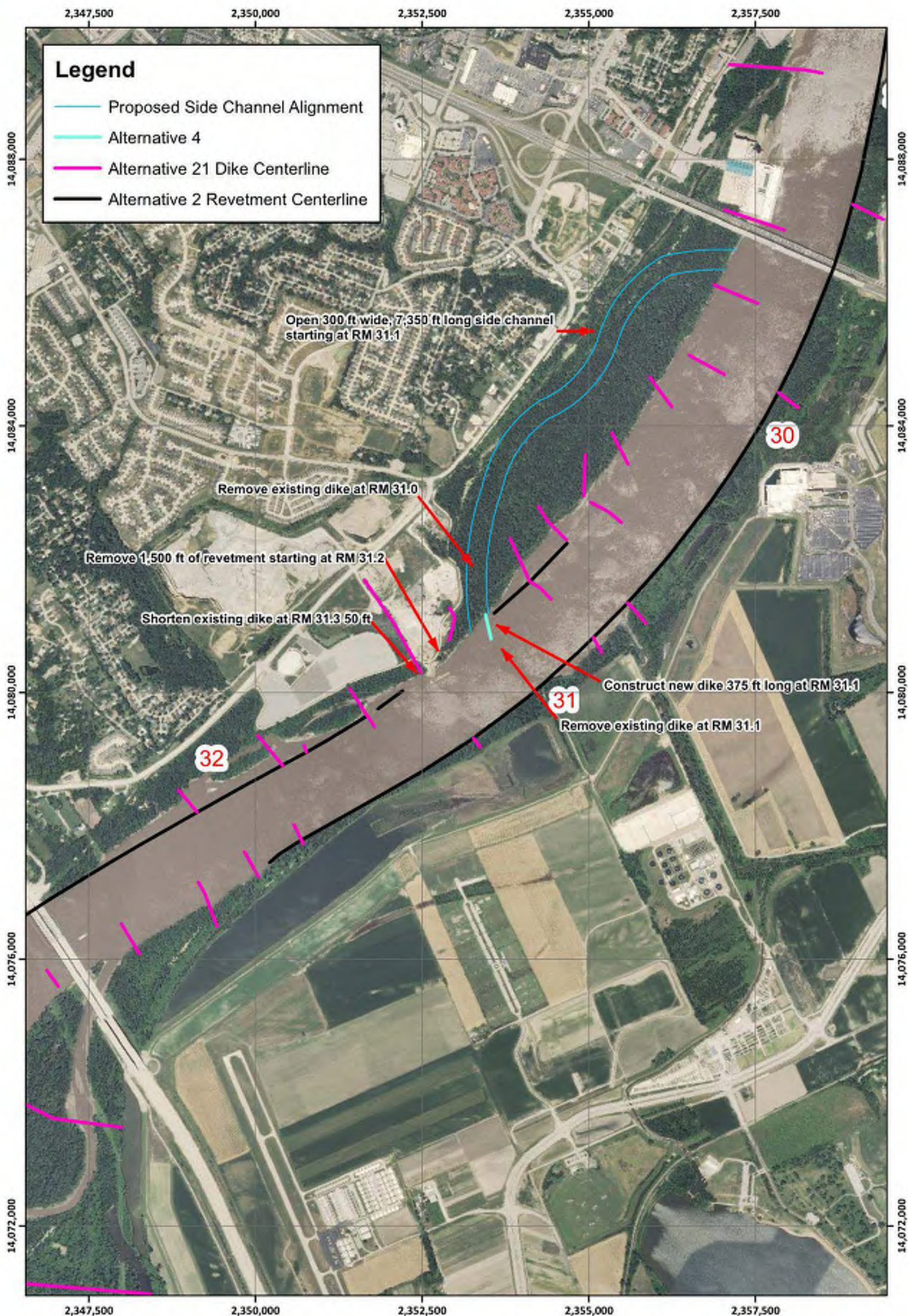
J. BROWN, P.E.

R. DAVINBOY, P.E.

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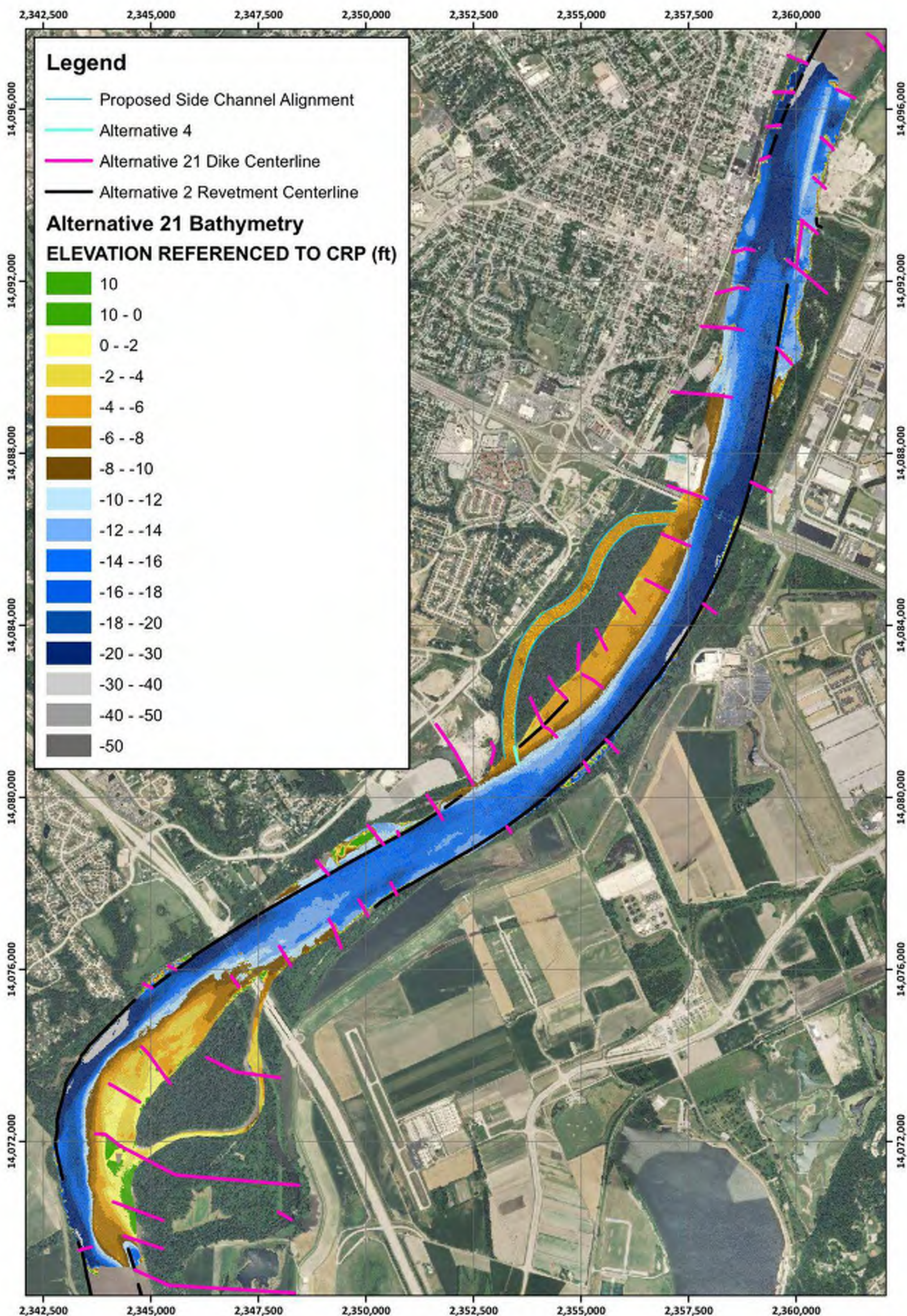


PLATE
NUMBER
95

0 500 1,000 2,000 3,000 4,000 Feet

Alternative 21: Bathymetry
2009 AERIAL PHOTOGRAPH

U.S. ARMY ENGINEER DIVISION
CORPS OF ENGINEERS
ST. LOUIS, MISSOURI

Bangert Island
HSR Model

DESIGNED BY T LAUTH	DATE 9/5/11
REVIEWED BY T LAUTH J BROWN, P.E.	DESIGNED BY A COX
CHECKED BY T LAUTH	REVIEWED BY R DAVINBOY, P.E.
PROJECT Bangert Phase	DATE 9/20/11



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US Army Corps
of Engineers
St. Louis District



2,352,500

2,355,000

Legend

- Proposed Side Channel Alignment
- Alternative 4
- Alternative 21 Dike Centerline
- Alternative 2 Revetment Centerline

**Alternative 21 Upstream LDV
NORMALIZED BY TRANSECT**

- 0.0 - 0.1
- 0.1 - 0.2
- 0.2 - 0.3
- 0.3 - 0.4
- 0.4 - 0.5
- 0.5 - 0.6
- 0.6 - 0.7
- 0.7 - 0.8
- 0.8 - 0.9
- 0.9 - 1.0

14,080,000

14,080,000

2,352,500

2,355,000

PLATE
NUMBER
96

0 87.5 175 350 700 Feet

Alternative 21:
Upstream LDV Results
2009 AERIAL PHOTOGRAPH

U.S. ARMY ENGINEER DIVISION
CORPS OF ENGINEERS
ST. LOUIS, MISSOURI

Bangert Island
HSR Model

DESIGNED BY

T. LAUTH

T. LAUTH

T. LAUTH

Bangert Phase

DATE

9/5/11

J. BROWN, P.E.

R. DAVINBOY, P.E.

9/20/11

A. COX



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ENGINEERING CENTER

US Army Corps
of Engineers
St. Louis District



2,357,500

Legend

- Proposed Side Channel Alignment
- Alternative 4
- Alternative 21 Dike Centerline
- Alternative 2 Revetment Centerline
- Bridge Piers

**Alternative 21 Downstream LDV
NORMALIZED BY TRANSECT**

- 0.0 - 0.1
- 0.1 - 0.2
- 0.2 - 0.3
- 0.3 - 0.4
- 0.4 - 0.5
- 0.5 - 0.6
- 0.6 - 0.7
- 0.7 - 0.8
- 0.8 - 0.9
- 0.9 - 1.0

14,088,000

14,088,000

2,357,500

PLATE
NUMBER
97

0 87.5 175 262.5 350 437.5 525 612.5 700 Feet

Alternative 21:
Downstream LDV Results
2009 AERIAL PHOTOGRAPH

U.S. ARMY ENGINEER DIVISION
CORPS OF ENGINEERS
ST. LOUIS, MISSOURI

Bangert Island
HSR Model

DESIGNED BY

T LAUTH

CHECKED BY

T LAUTH

APPROVED BY

T LAUTH

DATE

9/5/11

DESIGNED BY

J BROWN, P.E.

CHECKED BY

A COX

APPROVED BY

R DAVINBOY, P.E.

DATE

9/20/11

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St. Louis District



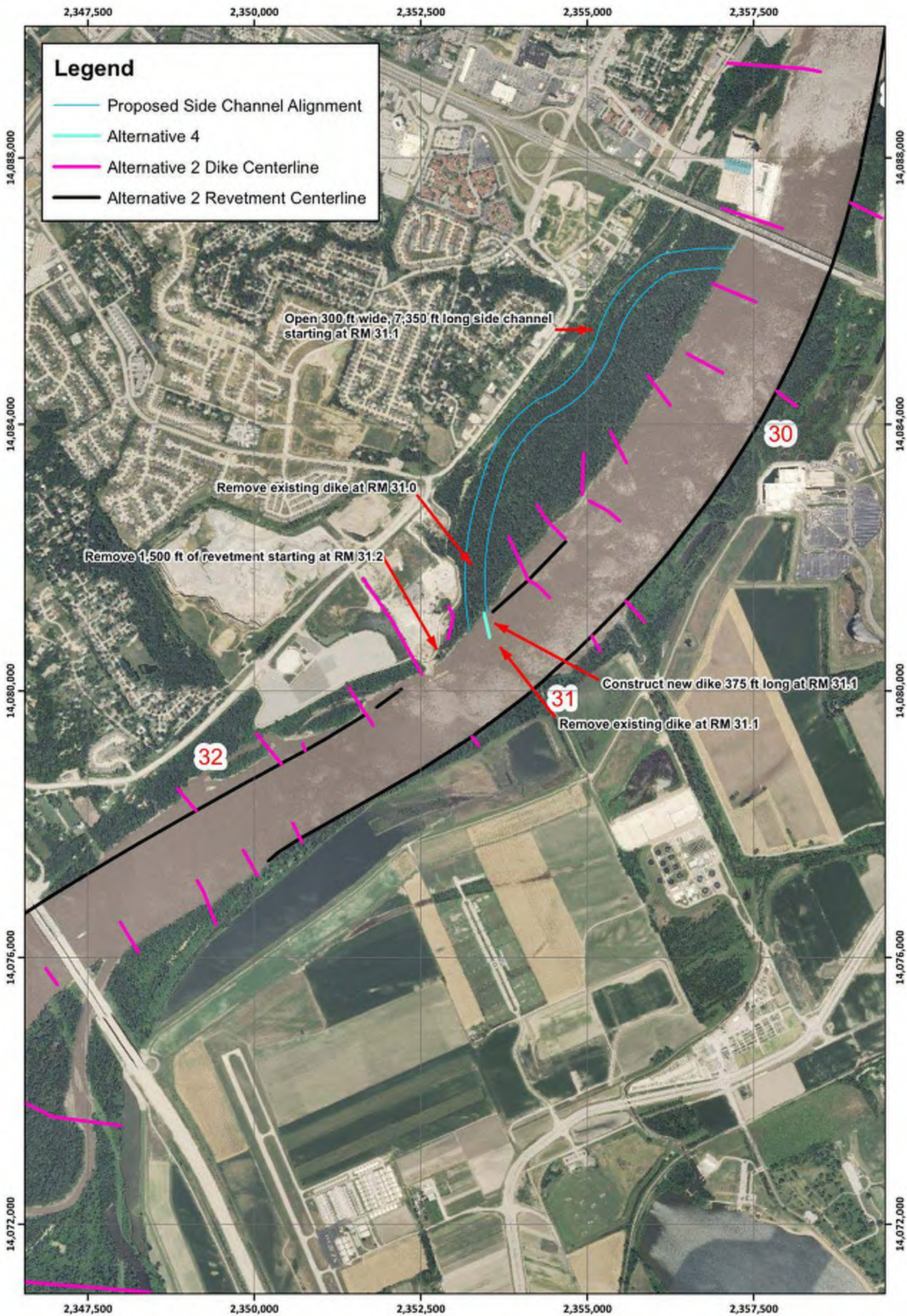


PLATE
NUMBER
98

0 300 600 1,200 1,800 2,400 Feet

Alternative 22: Definition

2009 AERIAL PHOTOGRAPH

U.S. ARMY ENGINEER DIVISION CORPS OF ENGINEERS ST. LOUIS, MISSOURI		DESIGNED BY T LAUTH	DATE 9/6/11
Bangert Island HSR Model		DESIGNED BY T LAUTH J BROWN, P.E.	DATE A COX
		DESIGNED BY T LAUTH	DATE R DAVINBOY, P.E.
		DESIGNED BY Bangert Plans	DATE 9/20/11



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RIVER
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St. Louis District

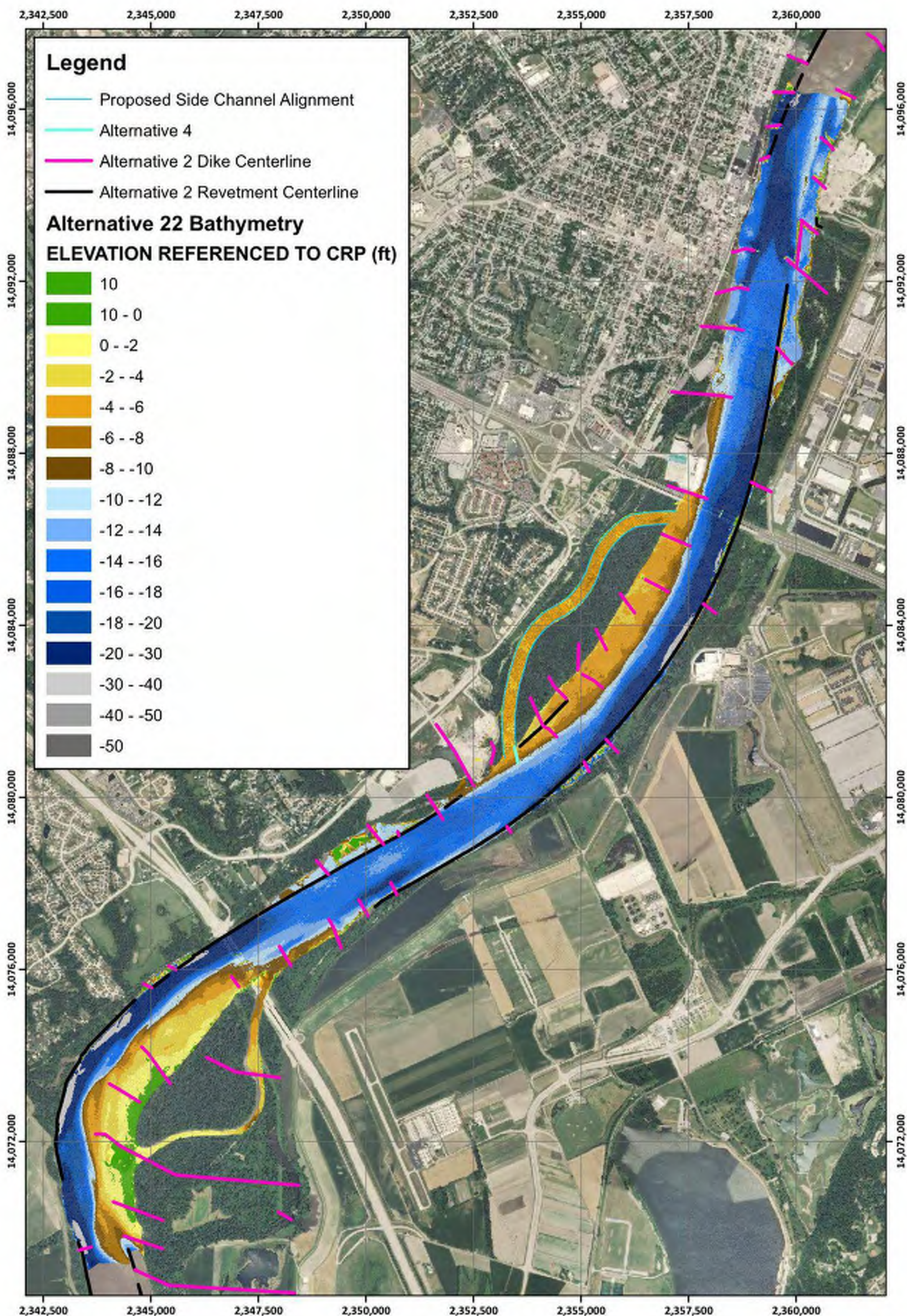
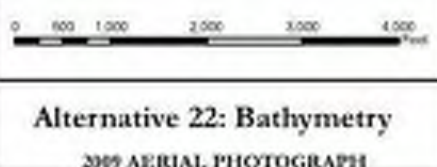


PLATE
NUMBER
99



U.S. ARMY ENGINEER DIVISION
CORPS OF ENGINEERS
ST. LOUIS, MISSOURI

**Bangert Island
HSR Model**

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CHECKED BY T LAUTH	DESIGNED BY J BROWN, P.E.
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PROJECT Bangert Phase	DATE 9/20/11



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**US Army Corps
of Engineers**
St. Louis District



2,352,500

2,355,000

Legend

- Proposed Side Channel Alignment
- Alternative 4
- Alternative 2 Dike Centerline
- Alternative 2 Revetment Centerline

**Alternative 22 Upstream LDV
NORMALIZED BY TRANSECT**

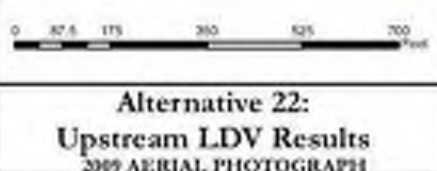
- 0.0 - 0.1
- 0.1 - 0.2
- 0.2 - 0.3
- 0.3 - 0.4
- 0.4 - 0.5
- 0.5 - 0.6
- 0.6 - 0.7
- 0.7 - 0.8
- 0.8 - 0.9
- 0.9 - 1.0

14,080,000

14,080,000

2,352,500

2,355,000

PLATE
NUMBER
100
 U.S. ARMY ENGINEER DIVISION
 CORPS OF ENGINEERS
 ST. LOUIS, MISSOURI

 Bangert Island
 HSR Model

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DESIGNED BY T LAUTH	DESIGNED BY J BROWN, P.E.
DESIGNED BY T LAUTH	DESIGNED BY R DAVINBOY, P.E.
PROJECT Bangert Phase	DATE 9/20/11


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RIVER
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 US Army Corps
 of Engineers
 St. Louis District


2,357,500

Legend

- Proposed Side Channel Alignment
- Alternative 4
- Alternative 2 Dike Centerline
- Alternative 2 Revetment Centerline
- Bridge Piers

**Alternative 22 Downstream LDV
NORMALIZED BY TRAVERSE**

- 0.0 - 0.1
- 0.1 - 0.2
- 0.2 - 0.3
- 0.3 - 0.4
- 0.4 - 0.5
- 0.5 - 0.6
- 0.6 - 0.7
- 0.7 - 0.8
- 0.8 - 0.9
- 0.9 - 1.0

14,088,000

14,088,000

2,357,500

PLATE
NUMBER
101

0 87.5 175 350 525 700 Feet

Alternative 22:
Downstream LDV Results
2009 AERIAL PHOTOGRAPH

U.S. ARMY ENGINEER DIVISION
CORPS OF ENGINEERS
ST. LOUIS, MISSOURI

Bangert Island
HSR Model

DESIGNED BY

T LAUTH

CHECKED BY

T LAUTH

APPROVED BY

T LAUTH

DATE

9/8/11

DESIGNED BY

J BROWN, P.E.

CHECKED BY

A COX

APPROVED BY

R DAVINBOY, P.E.

DATE

9/20/11

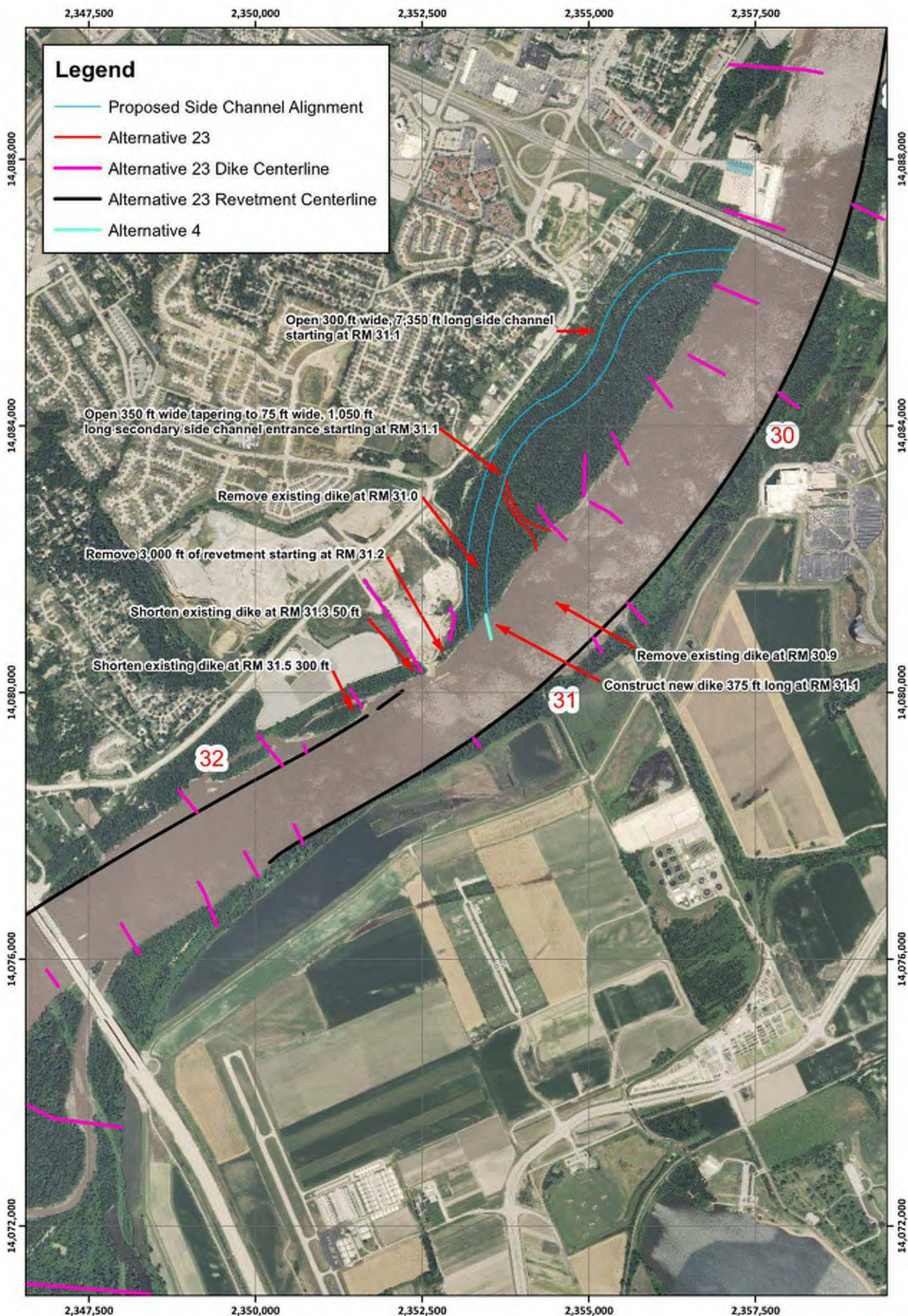
Bangert Plans

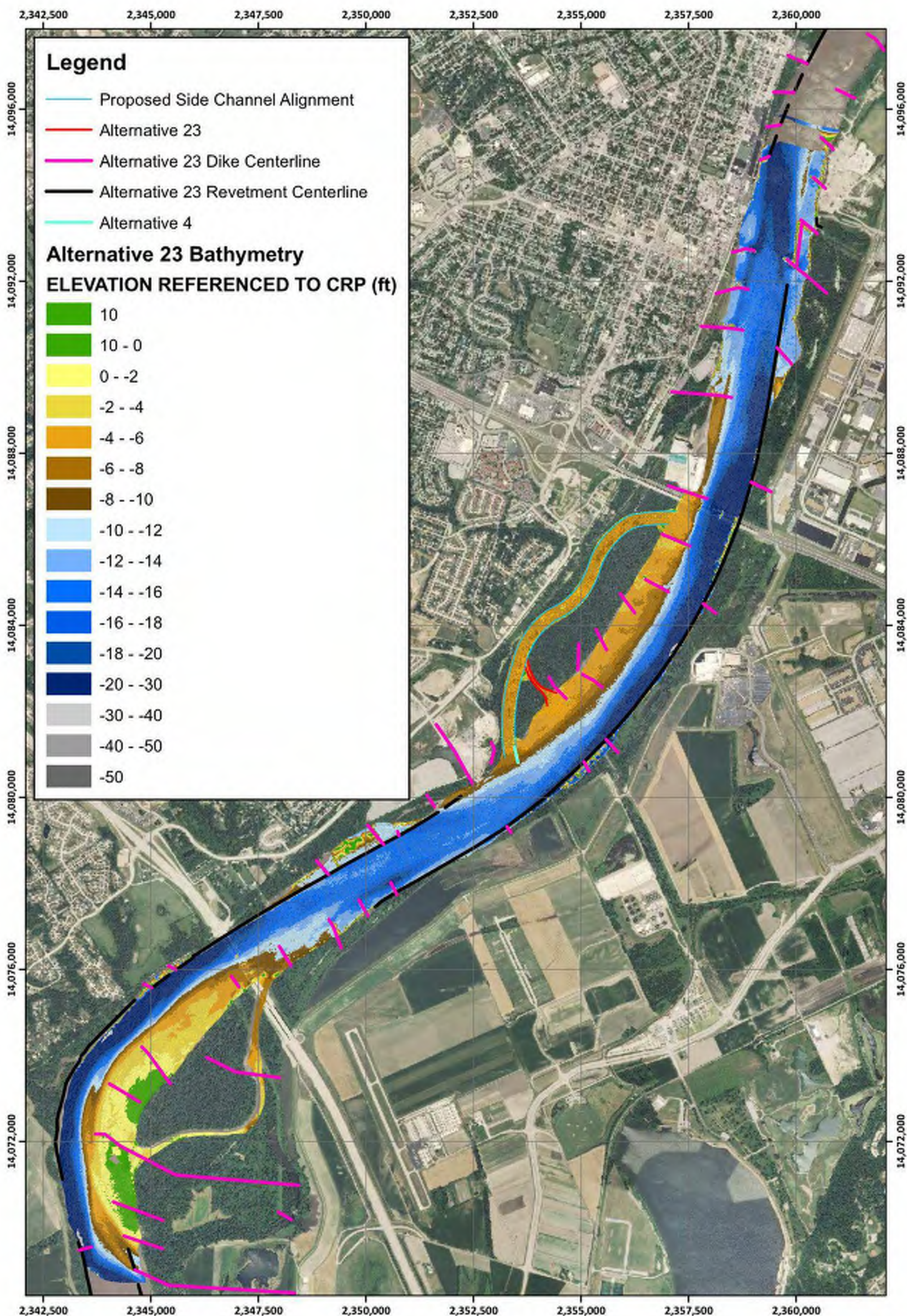


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RIVER
ENGINEERING CENTER

US Army Corps
of Engineers
St. Louis District







2,352,500

2,355,000

Legend

- Proposed Side Channel Alignment
- Alternative 23
- Alternative 23 Dike Centerline
- Alternative 23 Revetment Centerline
- Alternative 4

Alternative 23 Upstream LDV
NORMALIZED BY TRANSECT

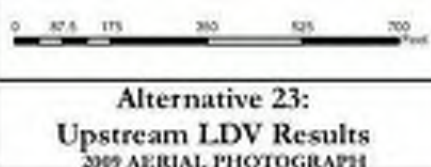
- 0.0 - 0.1
- 0.1 - 0.2
- 0.2 - 0.3
- 0.3 - 0.4
- 0.4 - 0.5
- 0.5 - 0.6
- 0.6 - 0.7
- 0.7 - 0.8
- 0.8 - 0.9
- 0.9 - 1.0

14,080,000

14,080,000

2,352,500

2,355,000

 PLATE
 NUMBER
 104

 U.S. ARMY ENGINEER DIVISION
 CORPS OF ENGINEERS
 ST. LOUIS, MISSOURI

 Bangert Island
 HSR Model

DESIGNED BY

T LAUTH

T LAUTH

T LAUTH

Bangert Phase

DATE: 9/26/11

J BROWN, P.E.

A COX

R DAVINBOY, P.E.

9/26/11


 APPLIED
RIVER
 ENGINEERING CENTER

 US Army Corps
 of Engineers
 St. Louis District


2,357,500

Legend

- Proposed Side Channel Alignment
- Alternative 23
- Alternative 23 Dike Centerline
- Alternative 23 Revetment Centerline
- Alternative 4
- Bridge Piers

Alternative 23 Downstream LDV NORMALIZED BY TRANSECT

- 0.0 - 0.1
- 0.1 - 0.2
- 0.2 - 0.3
- 0.3 - 0.4
- 0.4 - 0.5
- 0.5 - 0.6
- 0.6 - 0.7
- 0.7 - 0.8
- 0.8 - 0.9
- 0.9 - 1.0

14,088,000

14,088,000

2,357,500

PLATE
NUMBER
105

0 87.5 175 350 700 Feet

Alternative 23:
Downstream LDV Results
2009 AERIAL PHOTOGRAPH

U.S. ARMY ENGINEER DIVISION
CORPS OF ENGINEERS
ST. LOUIS, MISSOURI

Bangert Island
HSR Model

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T LAUTH

DATE

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T LAUTH

DESIGNED BY

J BROWN, P.E.

DESIGNED BY

T LAUTH

DESIGNED BY

R DAVINBOY, P.E.

DESIGNED BY

Bangert Plans

DESIGNED BY

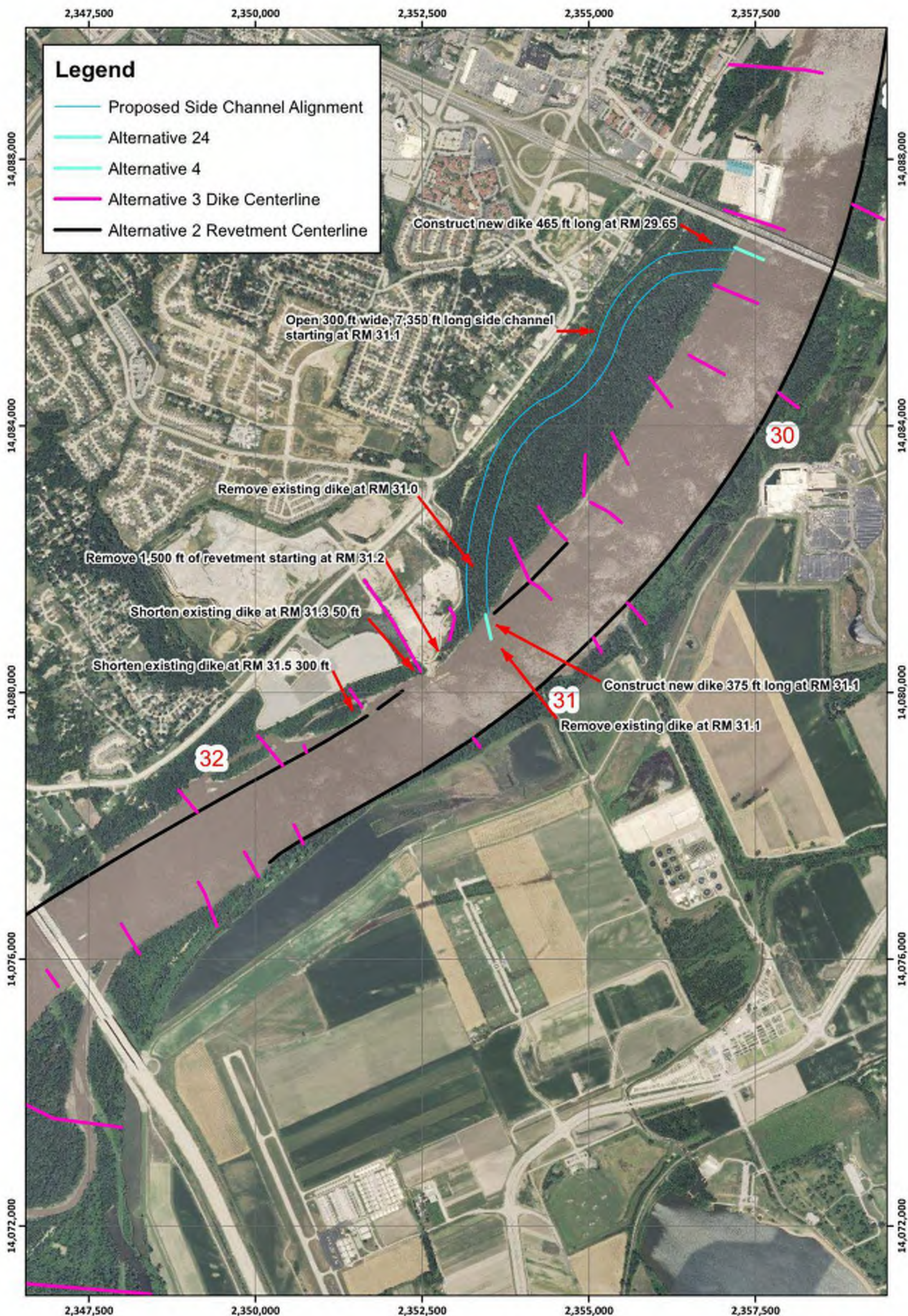
9/26/11

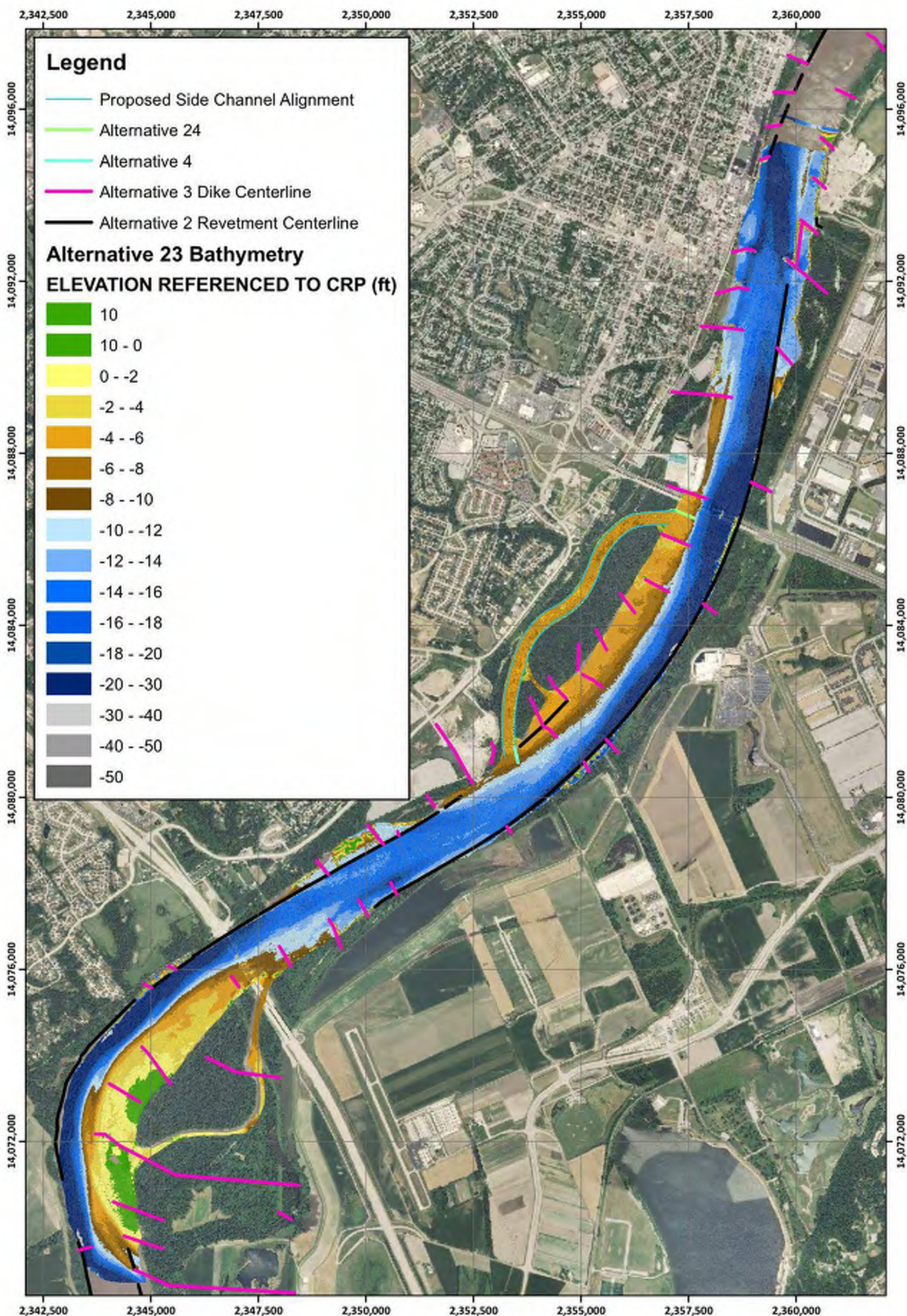


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RIVER
ENGINEERING CENTER

US Army Corps
of Engineers
St. Louis District







2,357,500

Legend

- Proposed Side Channel Alignment
- Alternative 24
- Alternative 4
- Alternative 3 Dike Centerline
- Alternative 2 Revetment Centerline
- Bridge Piers

Alternative 24 Downstream LDV
NORMALIZED BY TRAVERSE

- 0.0 - 0.1
- 0.1 - 0.2
- 0.2 - 0.3
- 0.3 - 0.4
- 0.4 - 0.5
- 0.5 - 0.6
- 0.6 - 0.7
- 0.7 - 0.8
- 0.8 - 0.9
- 0.9 - 1.0

14,088,000

14,088,000

2,357,500

 PLATE
 NUMBER
 108

0 87.5 175 262.5 350 437.5 525 612.5 700 Feet

 Alternative 24:
 Downstream LDV Results
 2009 AERIAL PHOTOGRAPH

 U.S. ARMY ENGINEER DIVISION
 CORPS OF ENGINEERS
 ST. LOUIS, MISSOURI

 Bangert Island
 HSR Model

 DESIGNED BY
 T. LAUTH

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Bangert Plans

 DATE
 9/17/11

J. BROWN, P.E.

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9/20/11


 APPLIED
RIVER
 ENGINEERING CENTER

 US Army Corps
 of Engineers
 St. Louis District
