

Legend

Dredge/Structures

- Disposal Sites - Current
- Disposal Sites - Approved but Inactive
- Disposal Sites - Proposed
- Dredge Area - Current
(Area routinely dredged - 1995 to 2003)
- Dredge Area - Proposed
- Structures Current
- Structures Proposed
- Proposed Tern Islands

Gravel Bed Survey

- Total acreage = 165 acres
- Gravel Beds

Mussel Survey (live - sum)

- 0
- 1 - 4
- 5 - 10
- 11 - 20
- 21 - 30
- 31 - 50
- 51 - 100

Mitigation Sites

- CoverType
- AG
 - BLH
 - MARSH

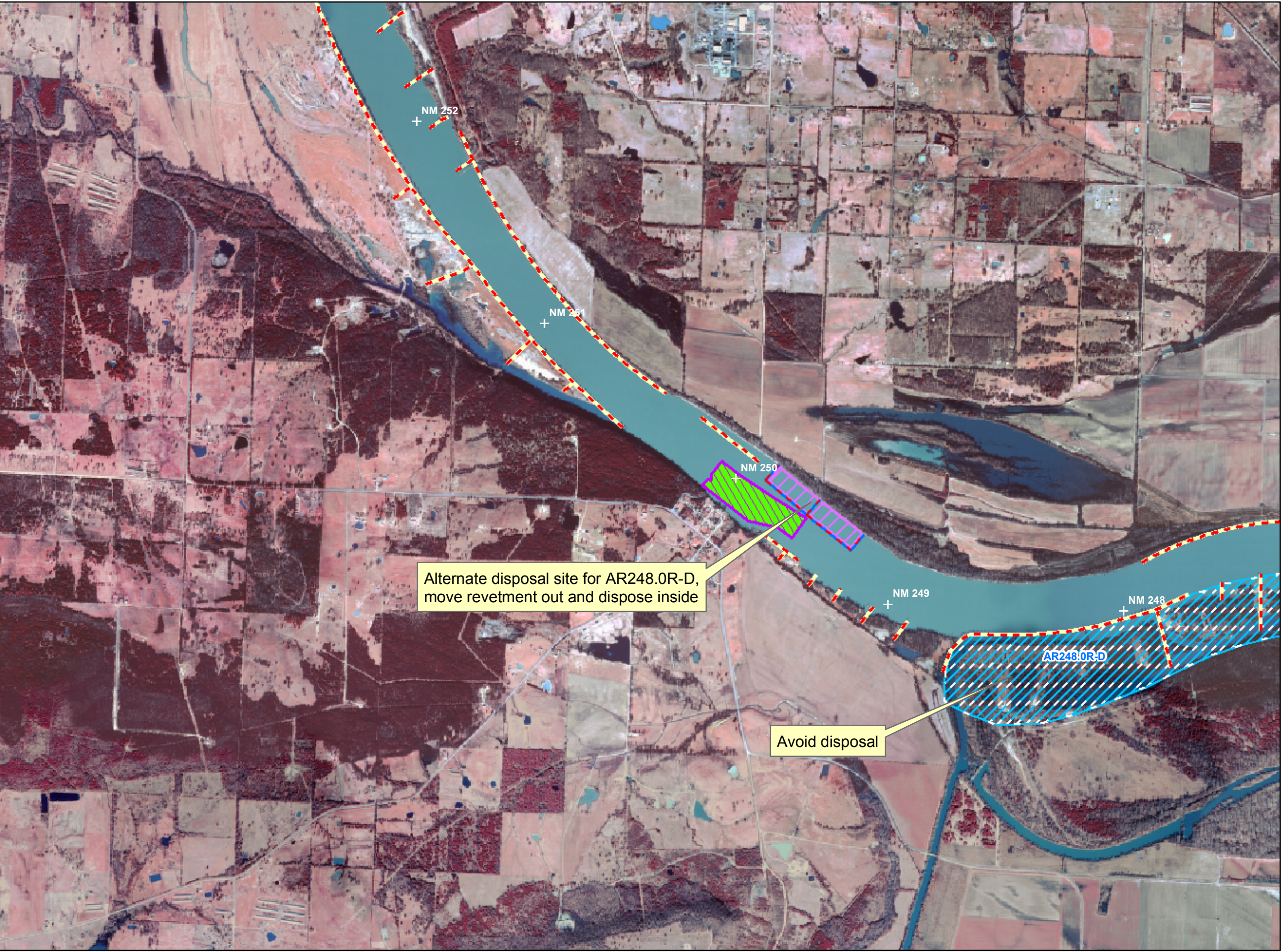
**Arkansas River
Navigation Study
JUNE 2005**

Map Sheet 51











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Legend

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-  Proposed Tern Islands

Gravel Bed Survey

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


-  Gravel Beds

Mussel Survey (live - sum)

-  0
-  1 - 4
-  5 - 10
-  11 - 20
-  21 - 30
-  31 - 50
-  51 - 100

Mitigation Sites

CoverType

-  AG
-  BLH
-  MARSH

**Arkansas River
Navigation Study
JUNE 2005**

Map Sheet 52



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USACE
LITTLE ROCK DISTRICT
TULSA DISTRICT



Legend

Dredge/Structures

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Mitigation Sites

- CoverType
- AG
 - BLH
 - MARSH

**Arkansas River
Navigation Study
JUNE 2005**

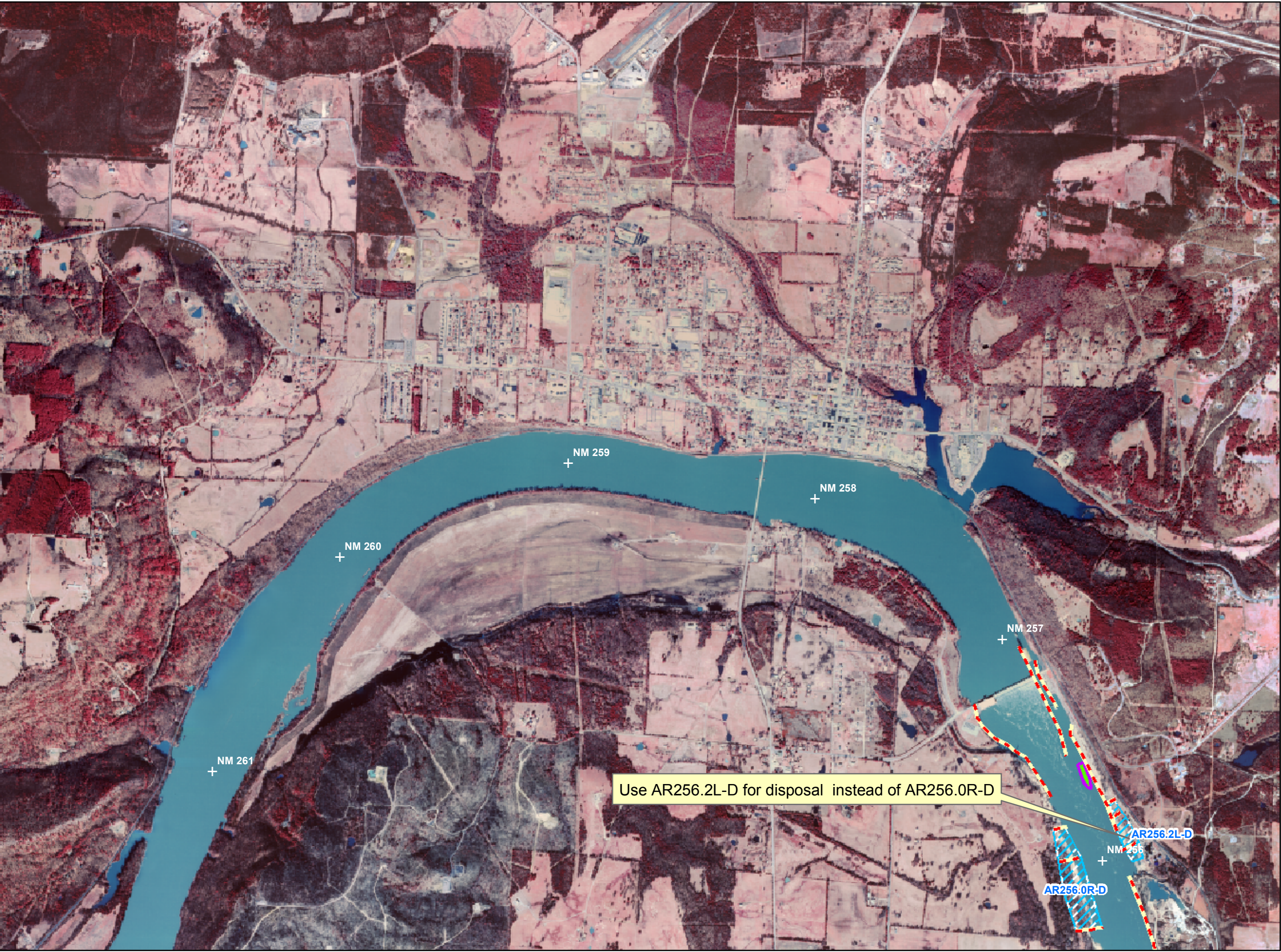
Map Sheet 53



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USACE
LITTLE ROCK DISTRICT
TULSA DISTRICT



Legend

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- Disposal Sites - Current
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Mitigation Sites

CoverType

- AG
- BLH
- MARSH

Arkansas River Navigation Study

JUNE 2005

Map Sheet 54









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USACE
LITTLE ROCK DISTRICT
TULSA DISTRICT




Legend

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


Gravel Bed Survey

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Mitigation Sites

- CoverType
-  AG
 -  BLH
 -  MARSH

**Arkansas River
Navigation Study
JUNE 2005**

Map Sheet 55



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Legend

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Mitigation Sites

CoverType

- AG
- BLH
- MARSH

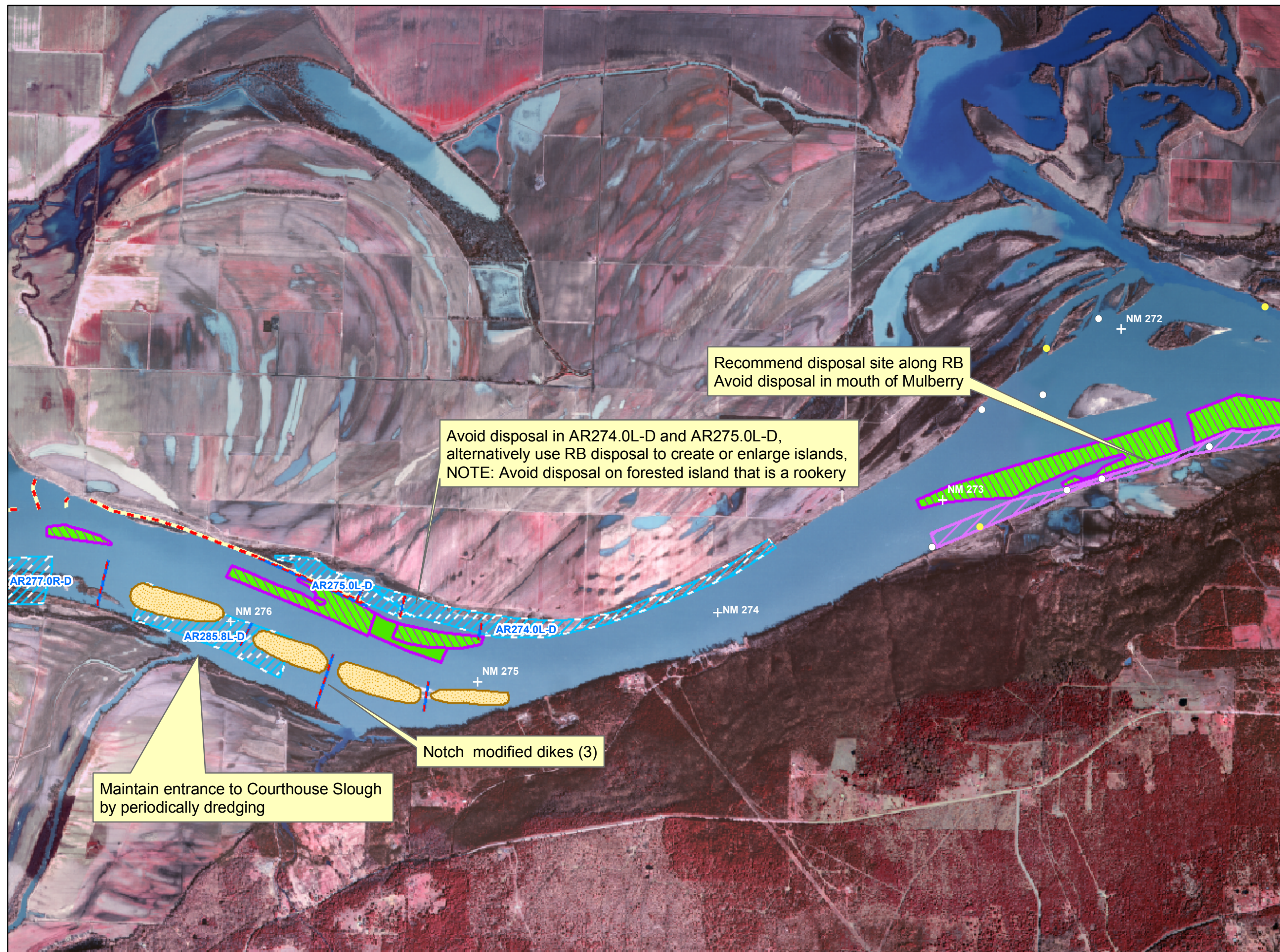
**Arkansas River
Navigation Study
JUNE 2005**

Map Sheet 56



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Legend

Dredge/Structures

- Disposal Sites - Current
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Mitigation Sites

CoverType

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- BLH
- MARSH

Arkansas River Navigation Study JUNE 2005

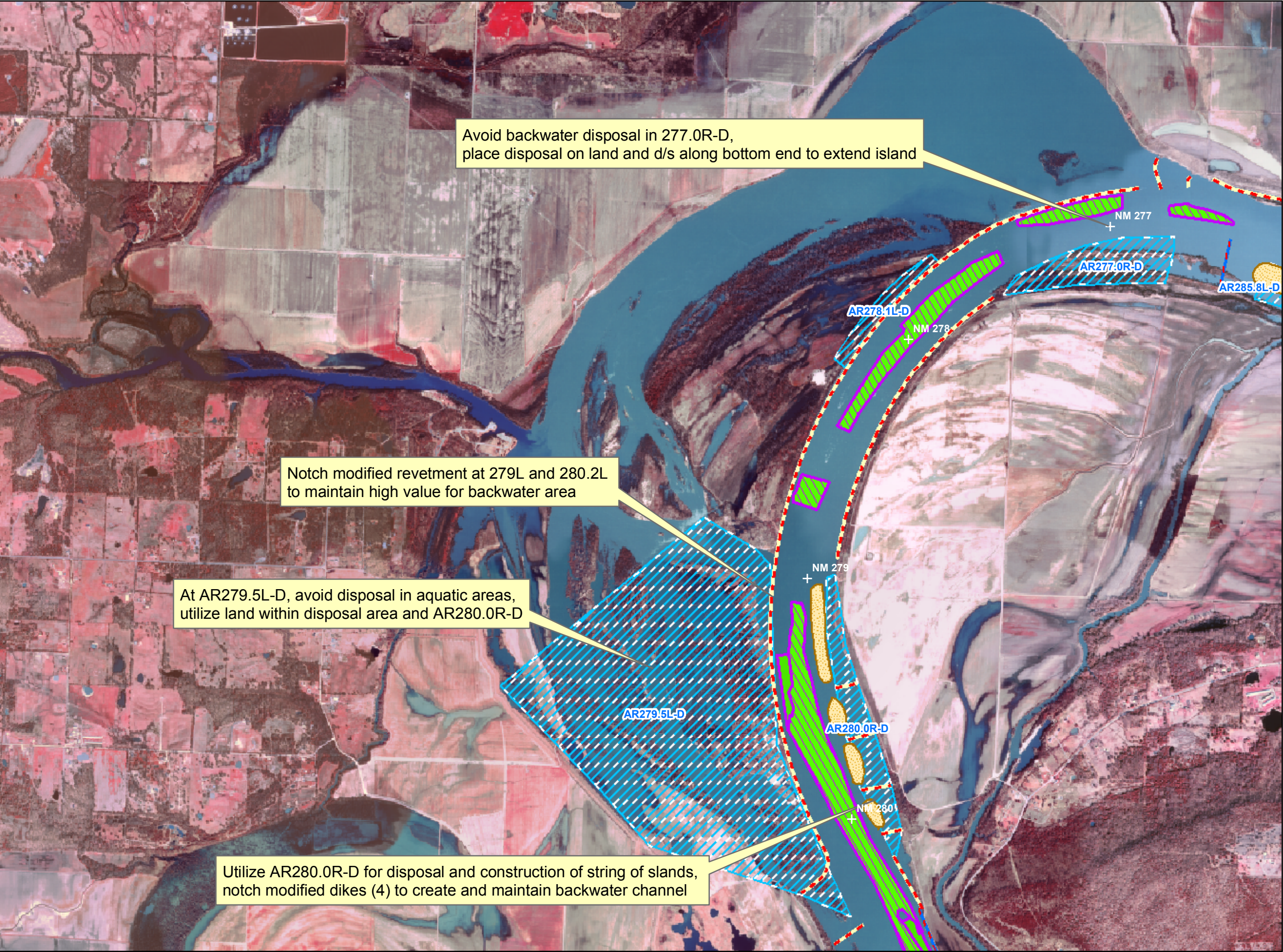
Map Sheet 57



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USACE
LITTLE ROCK DISTRICT
TULSA DISTRICT



Legend

Dredge/Structures

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Mitigation Sites

- CoverType
- AG
 - BLH
 - MARSH

**Arkansas River
Navigation Study
JUNE 2005**

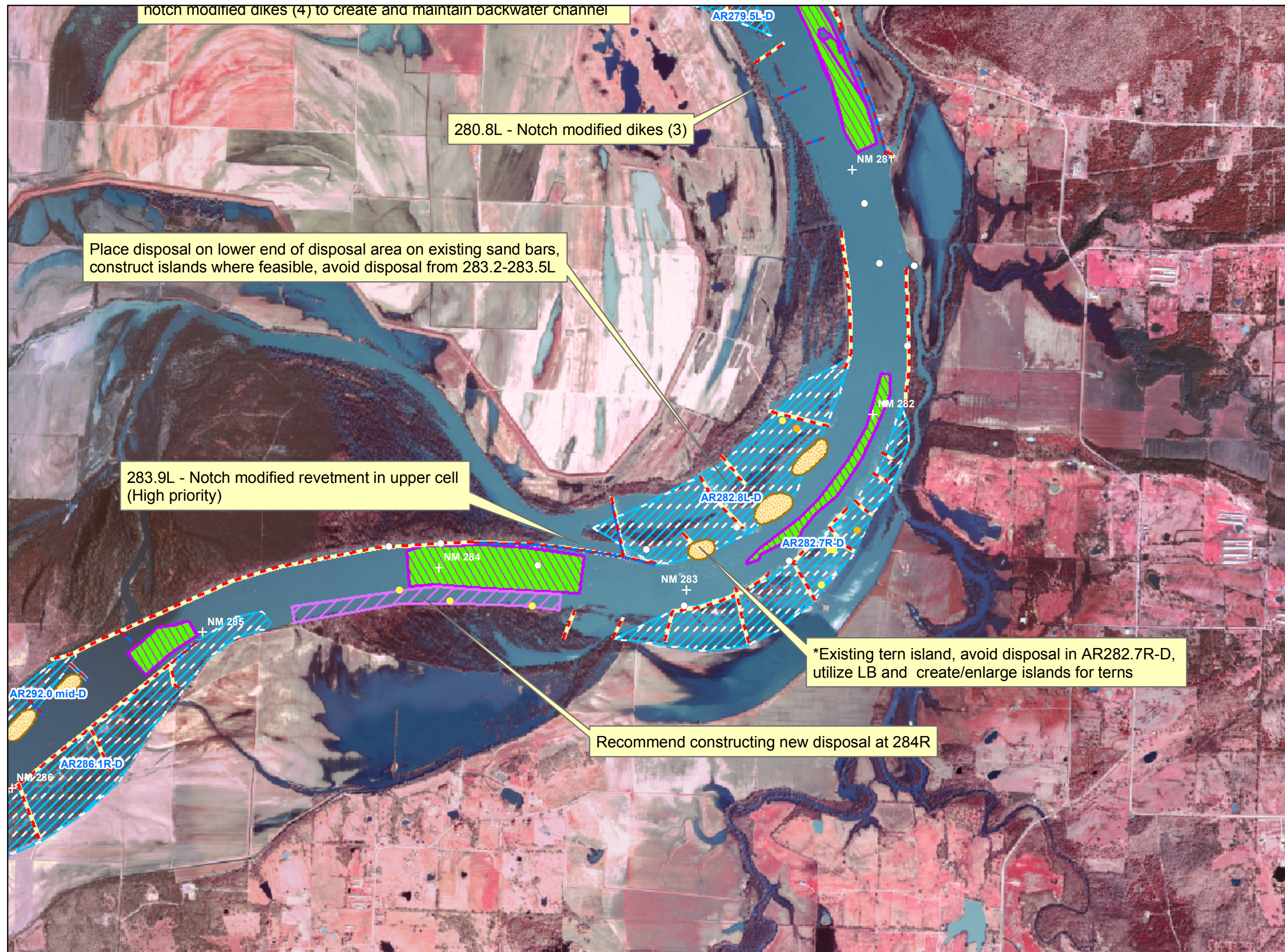
Map Sheet 58



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USACE
LITTLE ROCK DISTRICT
TULSA DISTRICT



Legend

Dredge/Structures

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Mitigation Sites

CoverType

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- BLH
- MARSH

Arkansas River Navigation Study JUNE 2005

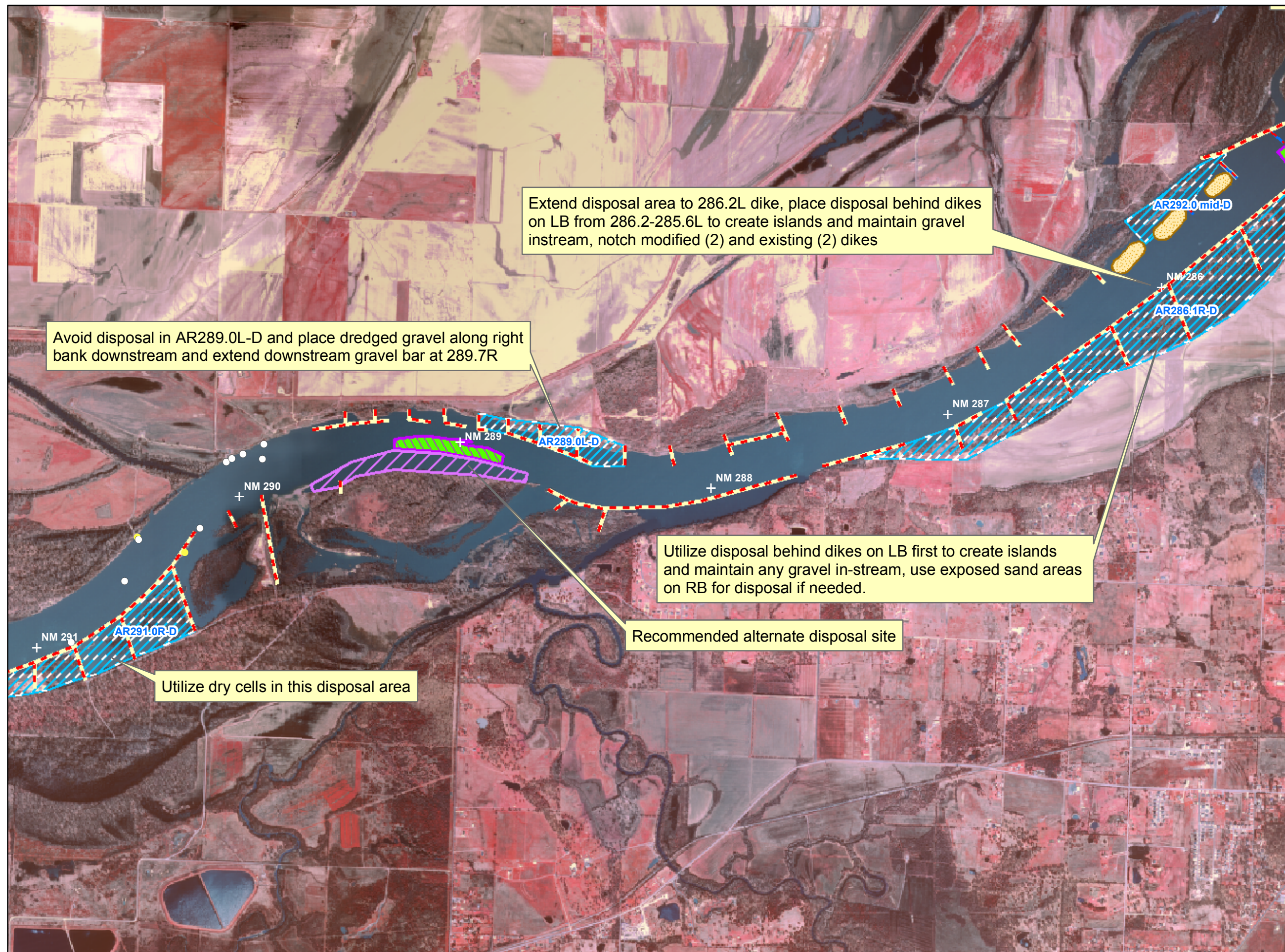
Map Sheet 59



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USACE
LITTLE ROCK DISTRICT
TULSA DISTRICT



Legend

Dredge/Structures

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Mitigation Sites

CoverType

- AG
- BLH
- MARSH

Arkansas River Navigation Study JUNE 2005

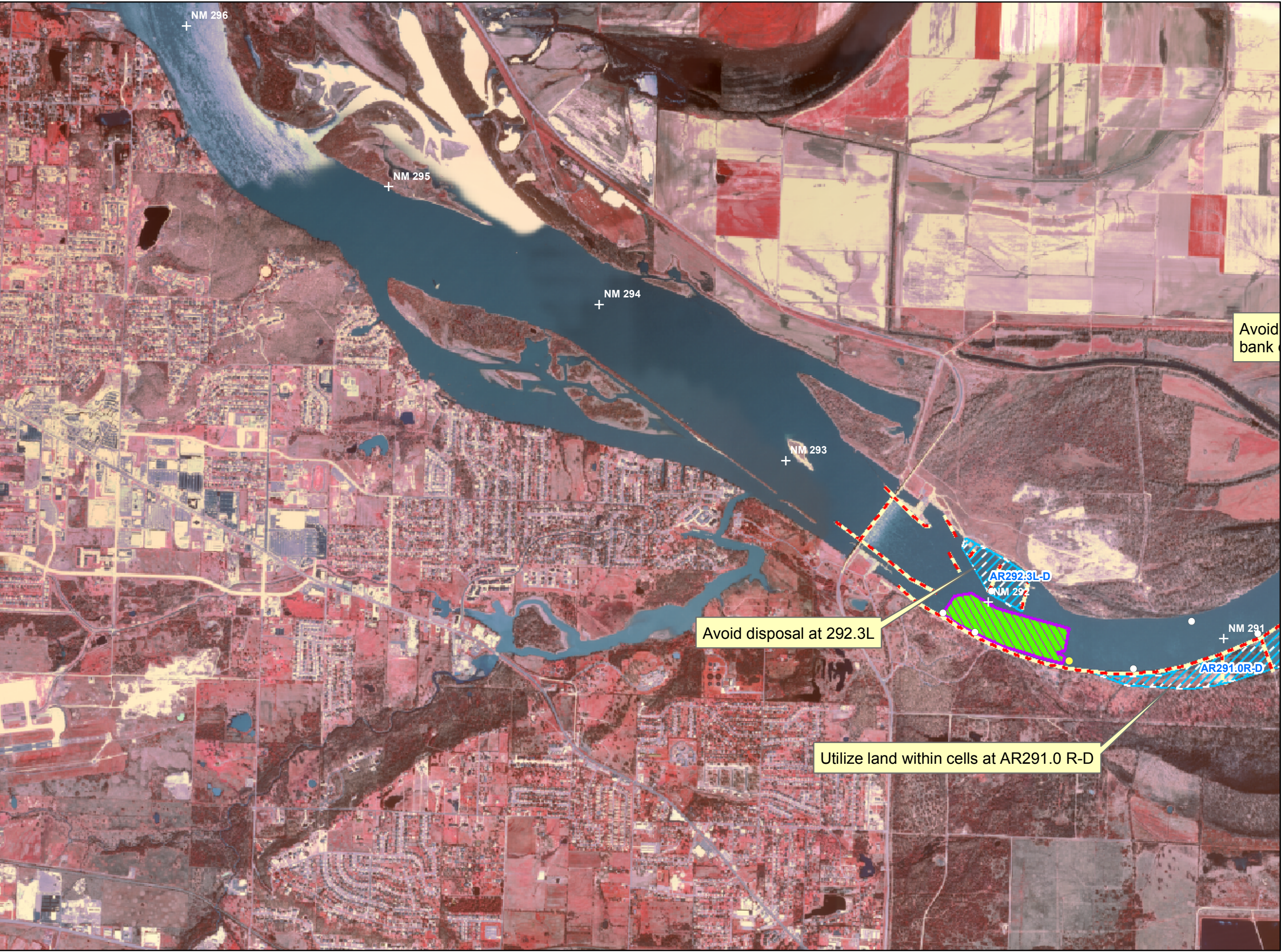
Map Sheet 60



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USACE
LITTLE ROCK DISTRICT
TULSA DISTRICT



Legend

Dredge/Structures

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Mitigation Sites

- CoverType
- AG
 - BLH
 - MARSH

**Arkansas River
Navigation Study
JUNE 2005**

Map Sheet 61











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Legend

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


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Mitigation Sites

CoverType

-  AG
-  BLH
-  MARSH

**Arkansas River
Navigation Study
JUNE 2005**

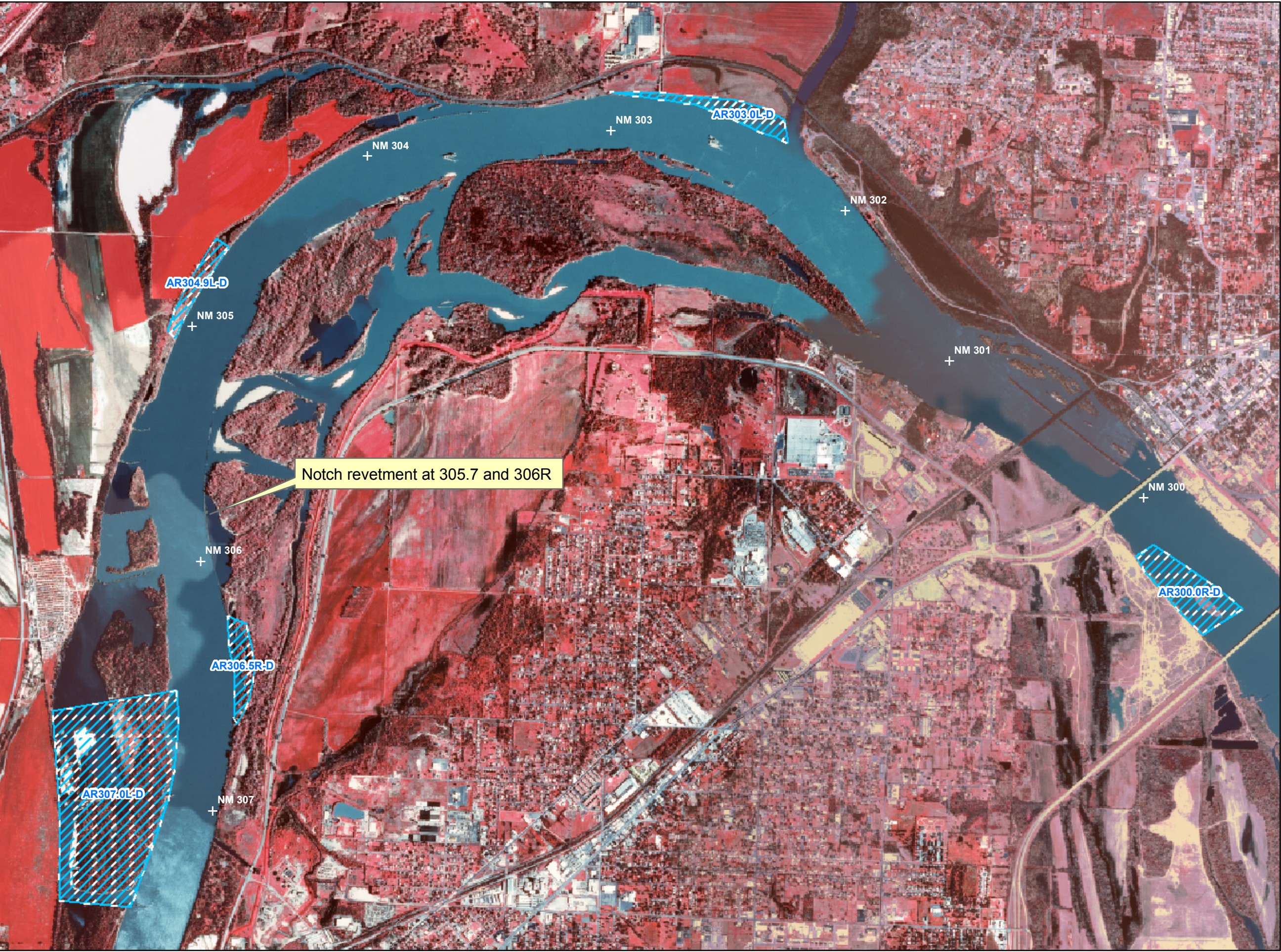
Map Sheet 62



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USACE
LITTLE ROCK DISTRICT
TULSA DISTRICT



Legend

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Mitigation Sites

- CoverType
- AG
 - BLH
 - MARSH

**Arkansas River
Navigation Study
JUNE 2005**

Map Sheet 63



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Legend

Dredge/Structures

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Mitigation Sites

- CoverType
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 - BLH
 - MARSH

**Arkansas River
Navigation Study
JUNE 2005**

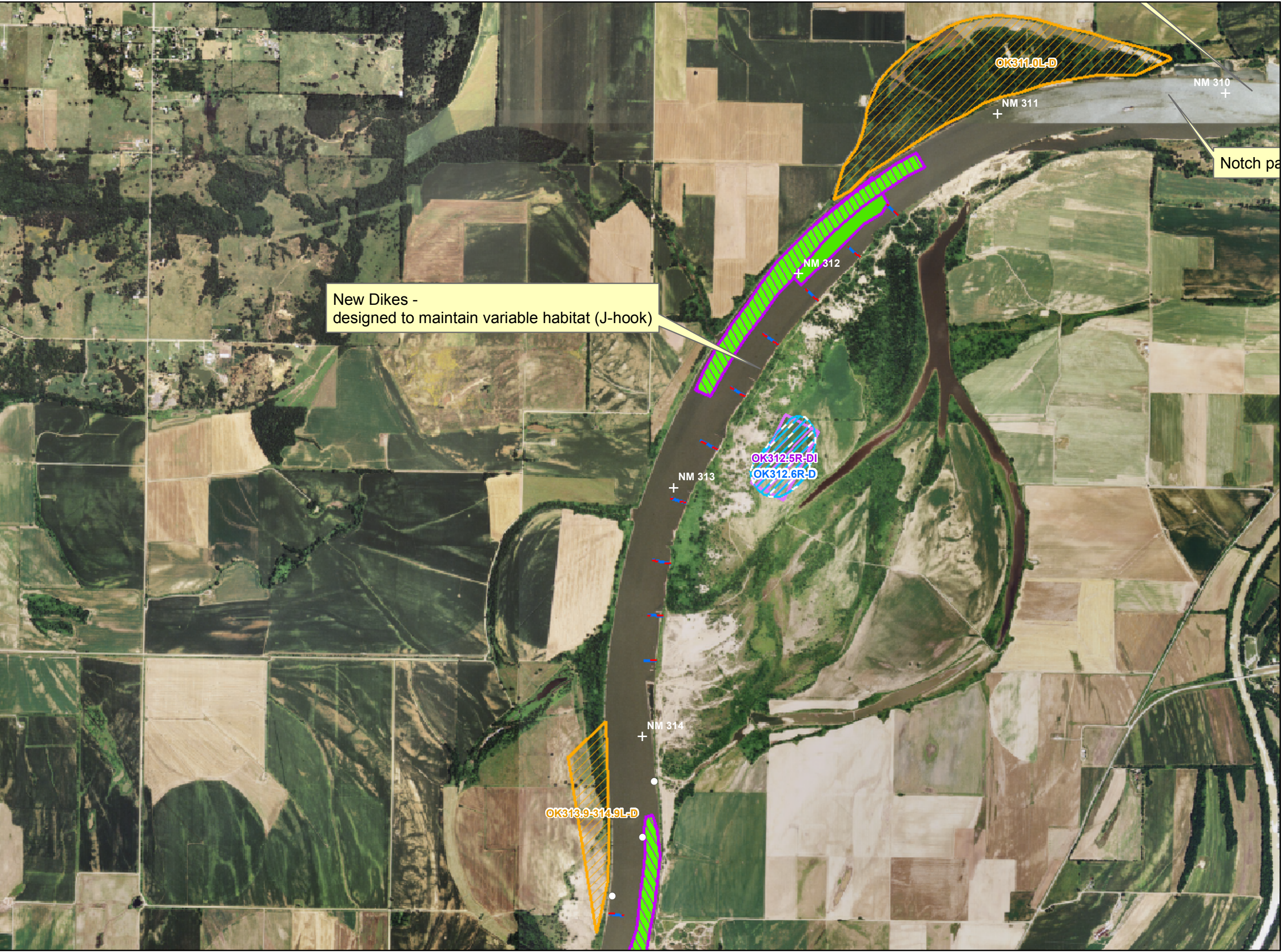
Map Sheet 64



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USACE
LITTLE ROCK DISTRICT
TULSA DISTRICT



Legend

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Mitigation Sites

CoverType

- AG
- BLH
- MARSH

Arkansas River Navigation Study

JUNE 2005

Map Sheet 65

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USACE
LITTLE ROCK DISTRICT
TULSA DISTRICT



Legend

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Mitigation Sites

- CoverType
- AG
 - BLH
 - MARSH

**Arkansas River
Navigation Study
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Map Sheet 66



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Legend

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Mitigation Sites

CoverType

- AG
- BLH
- MARSH

Arkansas River Navigation Study

JUNE 2005

Map Sheet 67

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USACE
LITTLE ROCK DISTRICT
TULSA DISTRICT



Legend

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Mitigation Sites

- CoverType
- AG
 - BLH
 - MARSH

**Arkansas River
Navigation Study
JUNE 2005**

Map Sheet 68











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Legend

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Mitigation Sites

- CoverType
-  AG
 -  BLH
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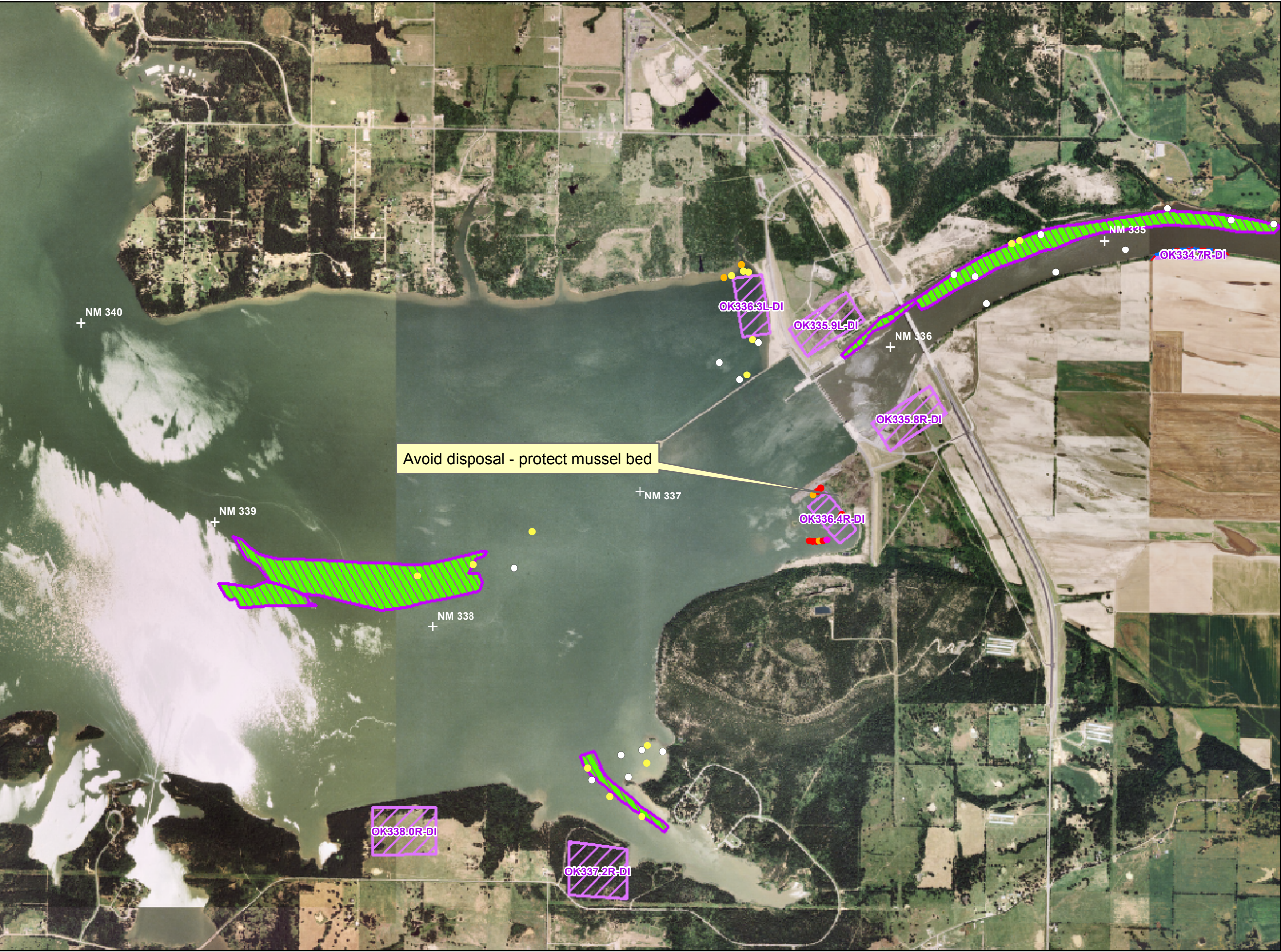
**Arkansas River
Navigation Study
JUNE 2005**

Map Sheet 69



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Legend

Dredge/Structures

- Disposal Sites - Current
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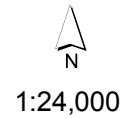
- 0
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Mitigation Sites

- CoverType
- AG
 - BLH
 - MARSH

**Arkansas River
Navigation Study
JUNE 2005**

Map Sheet 70





NM 343

aquatic disposal; create HQ marsh;
variable depth 6-in - 2 ft;
mussels will be protected from impacts resulting from disposal

OKSBC0.4L-DI

Legend

Dredge/Structures

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Mitigation Sites

CoverType

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- BLH
- MARSH

Arkansas River Navigation Study JUNE 2005

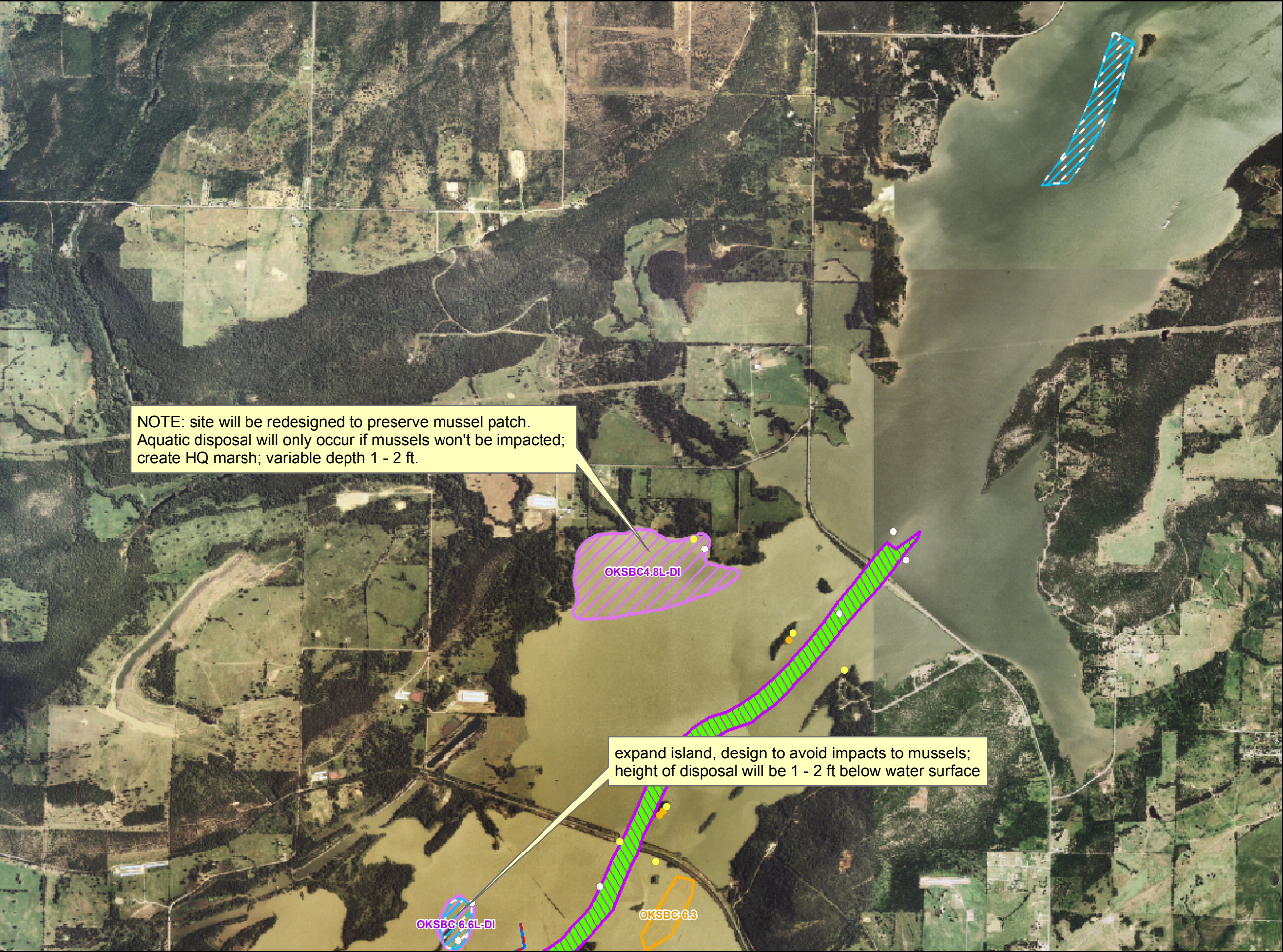
Map Sheet 71



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USACE
LITTLE ROCK DISTRICT
TULSA DISTRICT



NOTE: site will be redesigned to preserve mussel patch. Aquatic disposal will only occur if mussels won't be impacted; create HQ marsh; variable depth 1 - 2 ft.

expand island, design to avoid impacts to mussels; height of disposal will be 1 - 2 ft below water surface

Legend

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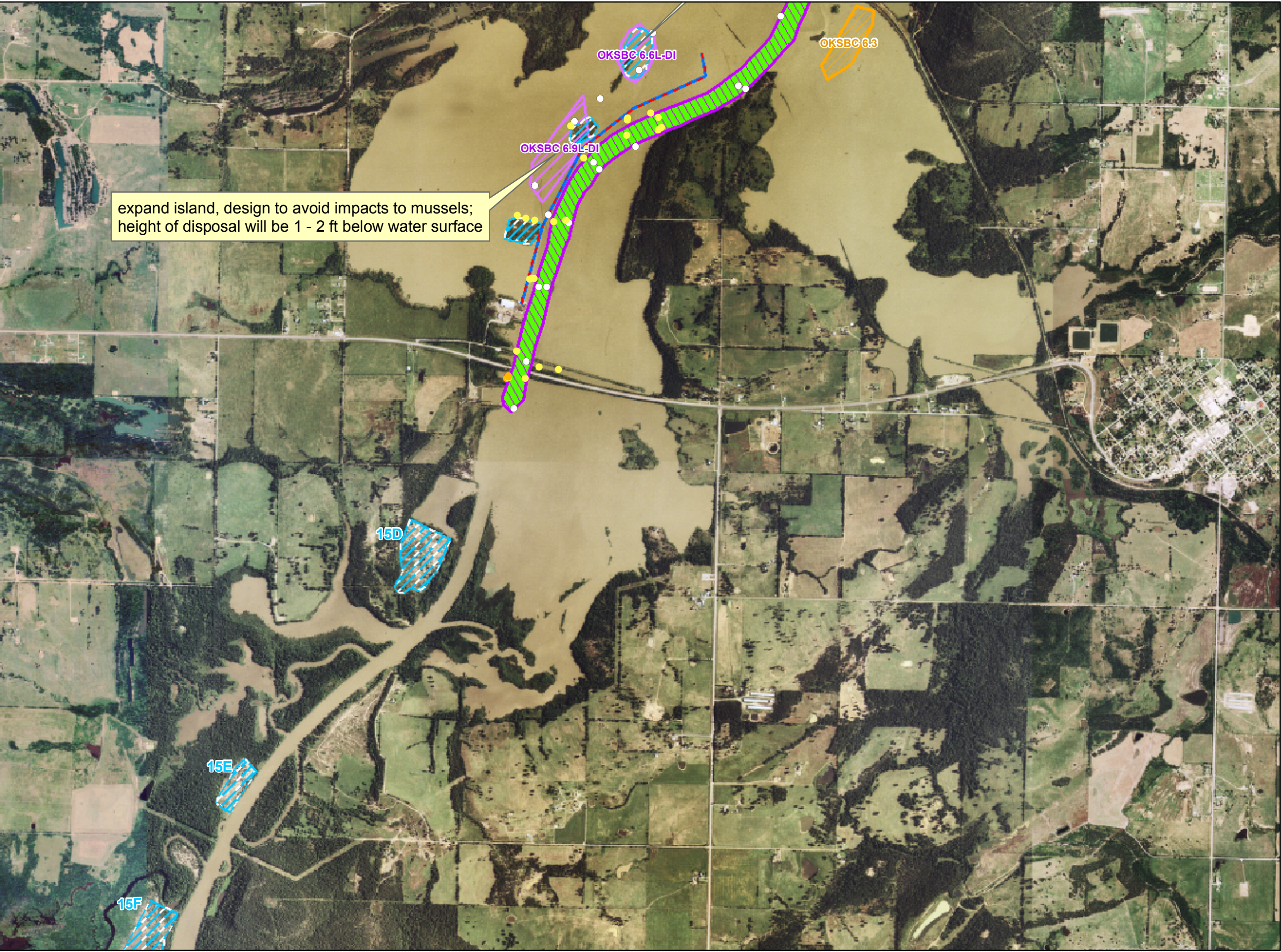
**Arkansas River
Navigation Study
JUNE 2005**

Map Sheet 72



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expand island, design to avoid impacts to mussels;
height of disposal will be 1 - 2 ft below water surface

Legend

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


Gravel Bed Survey

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Mussel Survey (live - sum)

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Mitigation Sites

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**Arkansas River
Navigation Study
JUNE 2005**

Map Sheet 73











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Legend

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Gravel Bed Survey




Total acreage = 165 acres

-  Gravel Beds

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Mitigation Sites

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-  AG
 -  BLH
 -  MARSH

**Arkansas River
Navigation Study
JUNE 2005**

Map Sheet 74











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Legend

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


Gravel Bed Survey

- Total acreage = 165 acres
-  Gravel Beds

Mussel Survey (live - sum)

-  0
-  1 - 4
-  5 - 10
-  11 - 20
-  21 - 30
-  31 - 50
-  51 - 100

Mitigation Sites

- CoverType
-  AG
 -  BLH
 -  MARSH

**Arkansas River
Navigation Study
JUNE 2005**

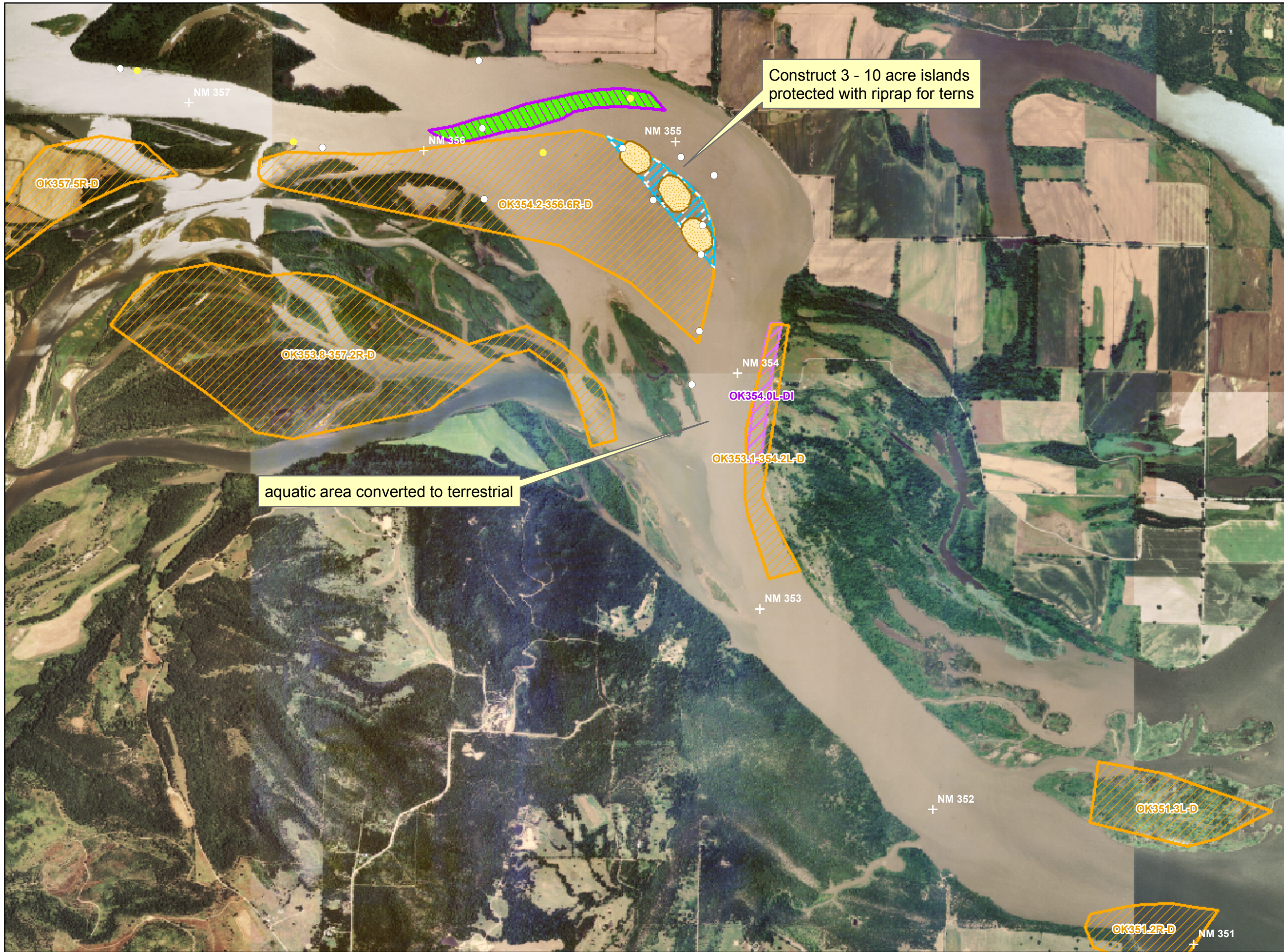
Map Sheet 75



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USACE
LITTLE ROCK DISTRICT
TULSA DISTRICT



Legend

Dredge/Structures

- Disposal Sites - Current
- Disposal Sites - Approved but Inactive
- Disposal Sites - Proposed
- Dredge Area - Current
(Area routinely dredged - 1995 to 2003)
- Dredge Area - Proposed
- Structures Current
- Structures Proposed
- Proposed Tern Islands

Gravel Bed Survey

- Total acreage = 165 acres
- Gravel Beds

Mussel Survey (live - sum)

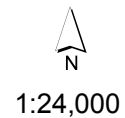
- 0
- 1 - 4
- 5 - 10
- 11 - 20
- 21 - 30
- 31 - 50
- 51 - 100

Mitigation Sites

- CoverType
- AG
 - BLH
 - MARSH

**Arkansas River
Navigation Study
JUNE 2005**

Map Sheet 76





Legend

Dredge/Structures

- Disposal Sites - Current
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- 51 - 100

Mitigation Sites

- CoverType
- AG
 - BLH
 - MARSH

**Arkansas River
Navigation Study
JUNE 2005**

Map Sheet 77





Legend

Dredge/Structures

- Disposal Sites - Current
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- 51 - 100

Mitigation Sites

- CoverType
- AG
 - BLH
 - MARSH

**Arkansas River
Navigation Study
JUNE 2005**

Map Sheet 78



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





USACE
LITTLE ROCK DISTRICT
TULSA DISTRICT



Legend

Dredge/Structures

-  Disposal Sites - Current
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-  Structures Proposed
-  Proposed Tern Islands

Gravel Bed Survey

Total acreage = 165 acres




-  Gravel Beds

Mussel Survey (live - sum)

-  0
-  1 - 4
-  5 - 10
-  11 - 20
-  21 - 30
-  31 - 50
-  51 - 100

Mitigation Sites

CoverType

-  AG
-  BLH
-  MARSH

**Arkansas River
Navigation Study
JUNE 2005**

Map Sheet 79



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USACE
LITTLE ROCK DISTRICT
TULSA DISTRICT



- Legend**
- Dredge/Structures**
- Disposal Sites - Current
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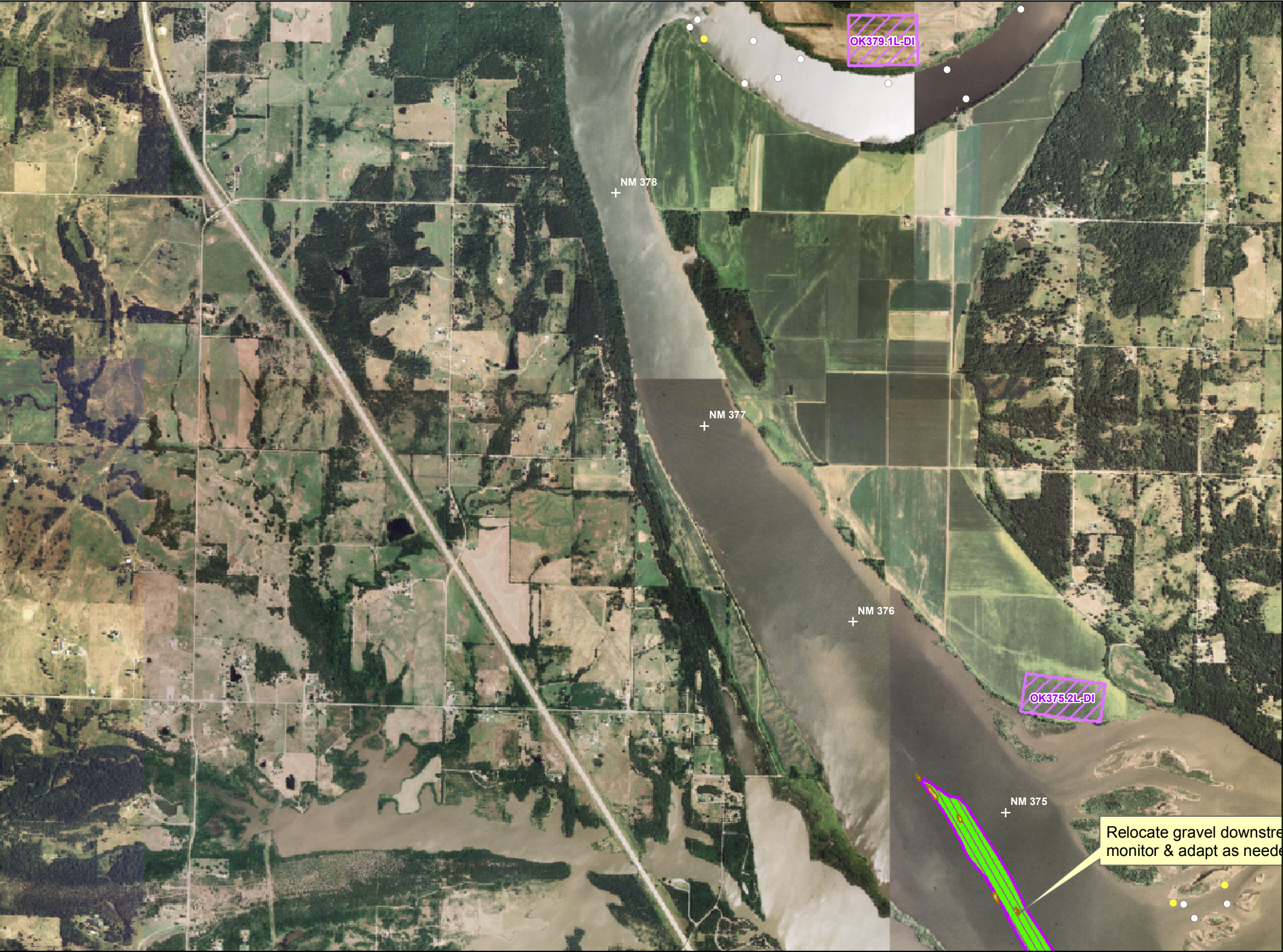
- Mitigation Sites**
- CoverType
- AG
 - BLH
 - MARSH

**Arkansas River
Navigation Study
JUNE 2005**

Map Sheet 80

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Legend

Dredge/Structures

- Disposal Sites - Current
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(Area routinely dredged - 1995 to 2003)
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Mitigation Sites

- CoverType
- AG
 - BLH
 - MARSH

**Arkansas River
Navigation Study
JUNE 2005**

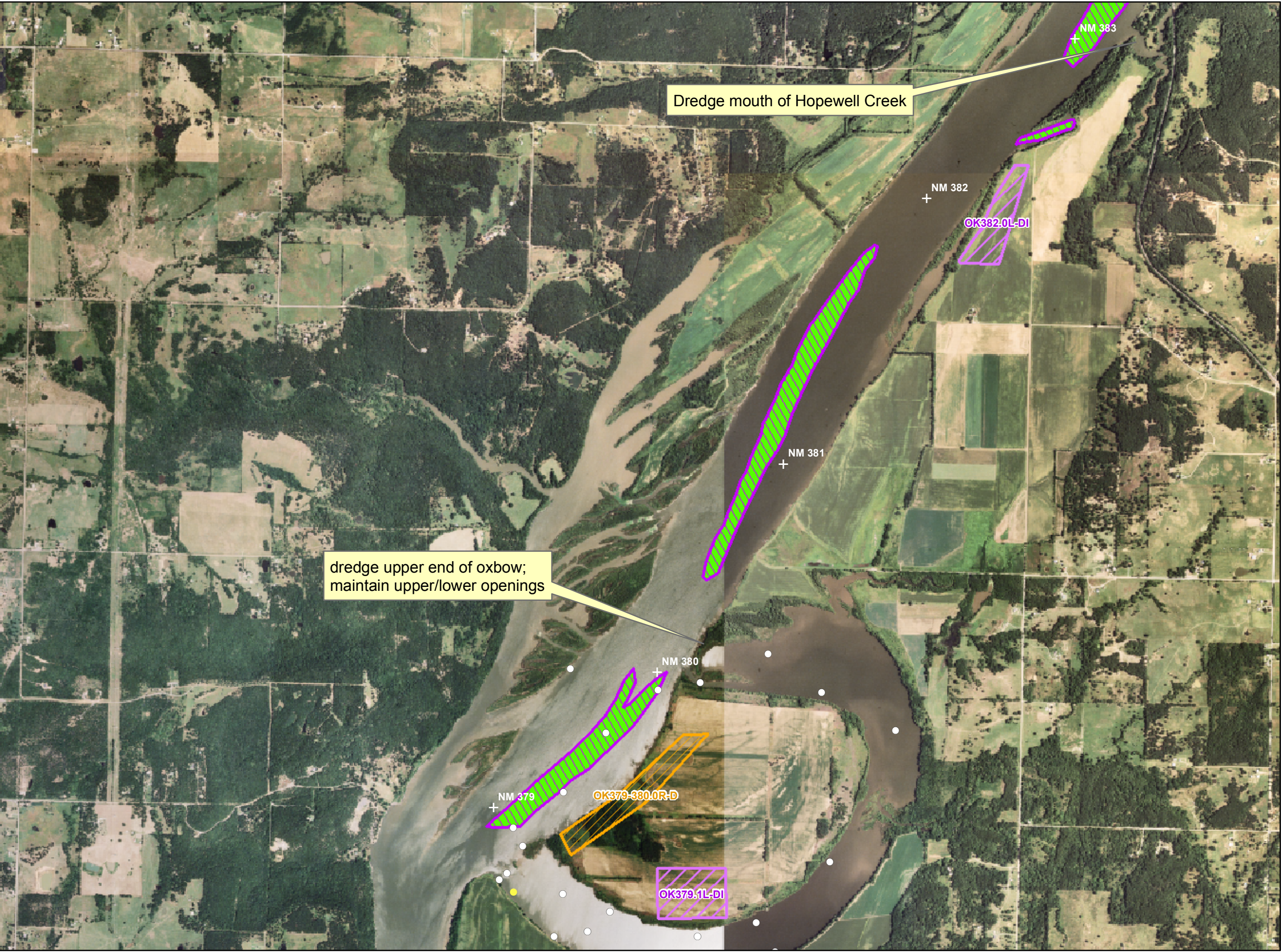
Map Sheet 81



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Relocate gravel downstream
monitor & adapt as needed





Legend

Dredge/Structures

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Mitigation Sites

- CoverType
- AG
 - BLH
 - MARSH

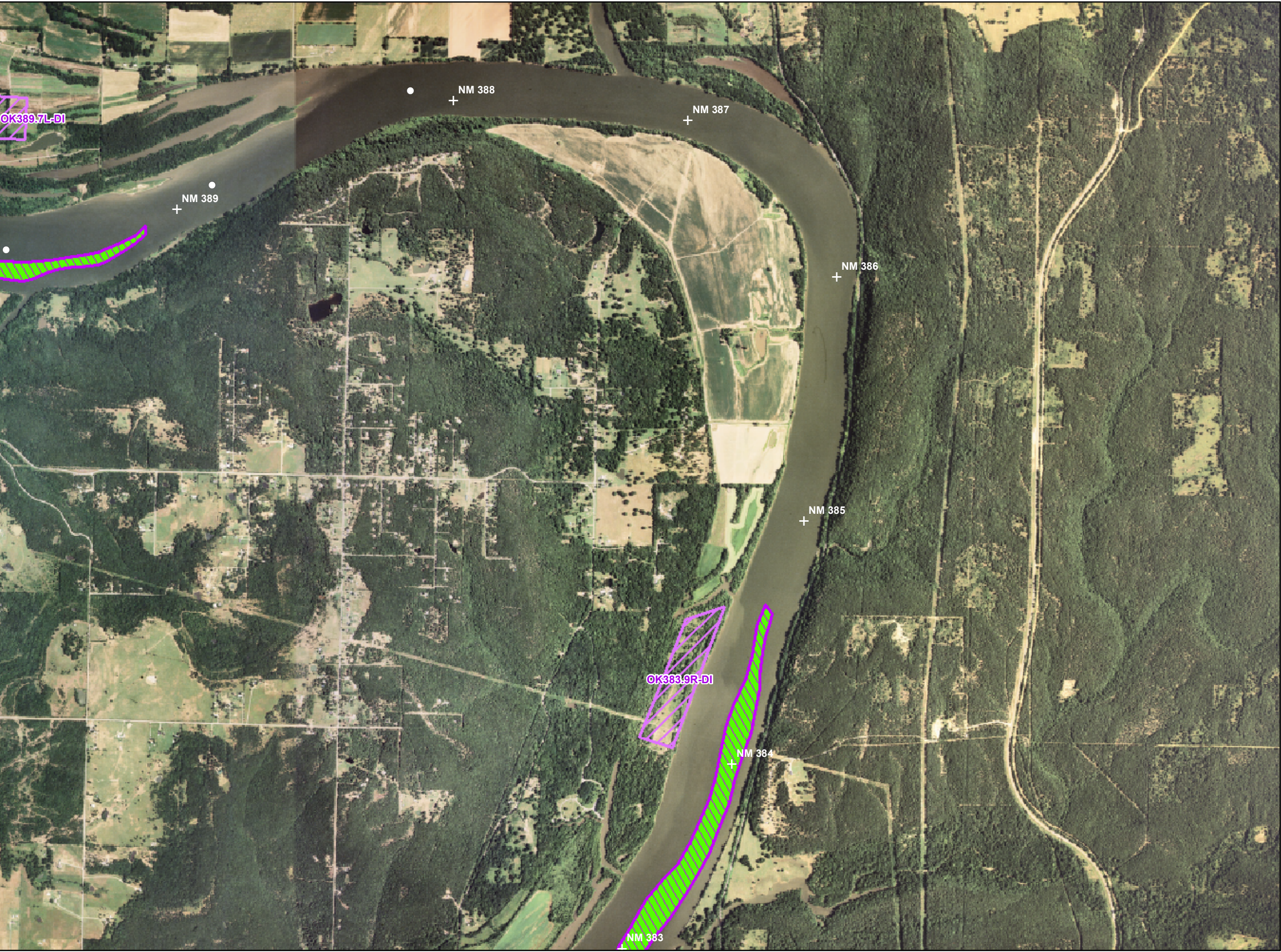
**Arkansas River
Navigation Study
JUNE 2005**

Map Sheet 82











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Legend

Dredge/Structures

-  Disposal Sites - Current
-  Disposal Sites - Approved but Inactive
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(Area routinely dredged - 1995 to 2003)
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-  1 - 4
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Mitigation Sites

- CoverType
-  AG
 -  BLH
 -  MARSH

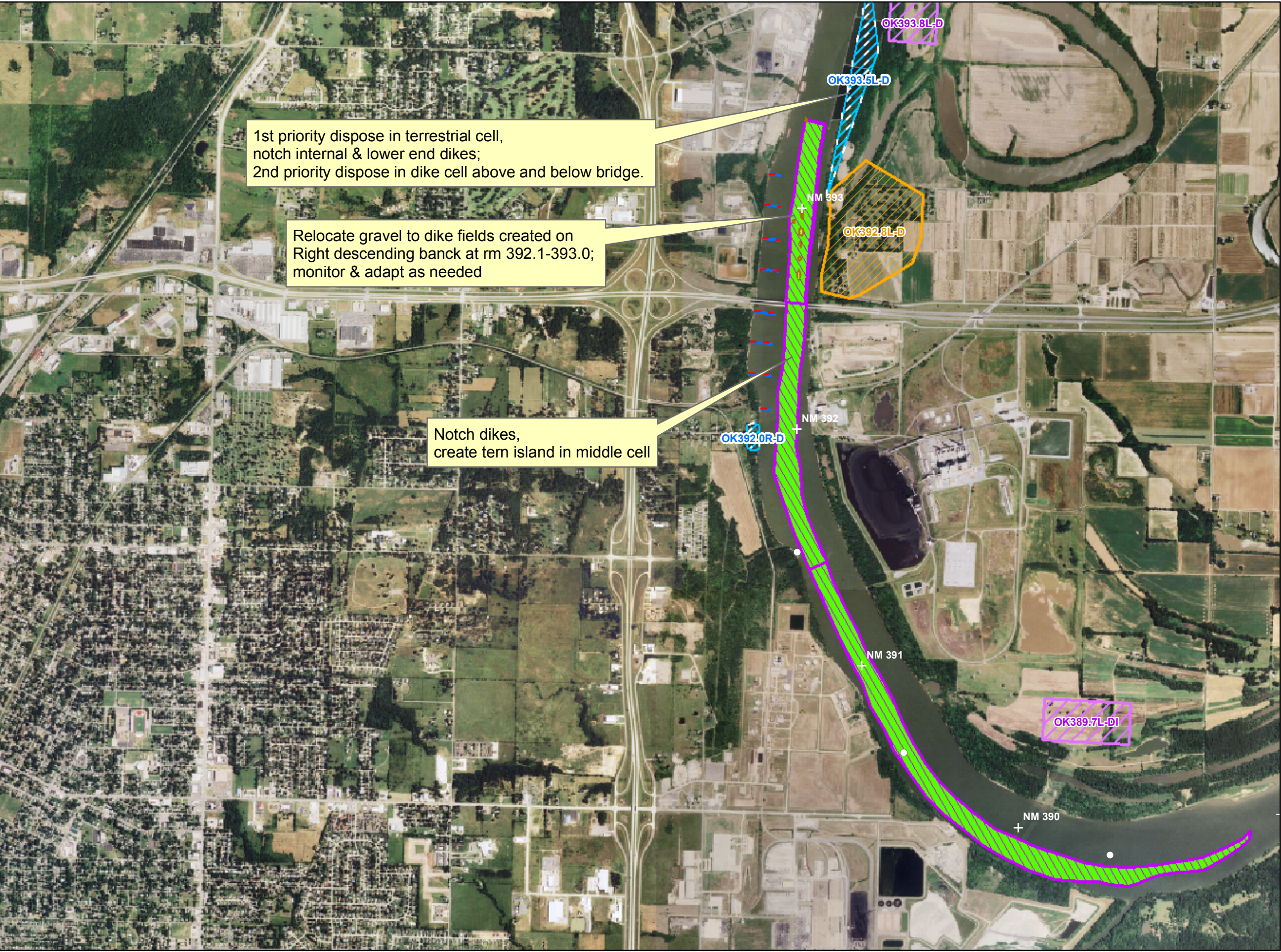
**Arkansas River
Navigation Study
JUNE 2005**

Map Sheet 83



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Legend

Dredge/Structures

- Disposal Sites - Current
- Disposal Sites - Approved but Inactive
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- Dredge Area - Current (Area routinely dredged - 1995 to 2003)
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Mitigation Sites

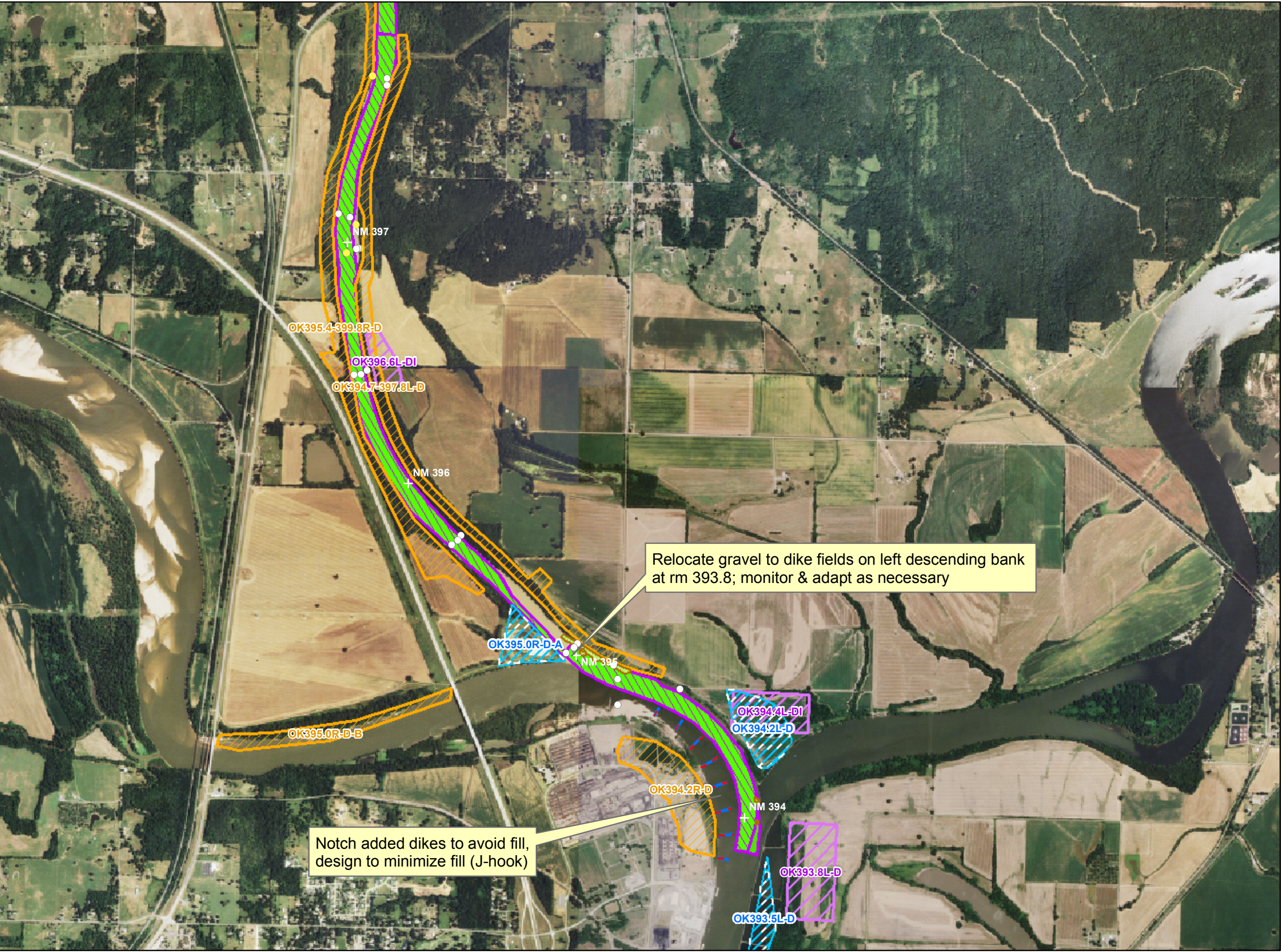
- CoverType
- AG
 - BLH
 - MARSH

**Arkansas River
Navigation Study
JUNE 2005**

Map Sheet 84

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Legend

Dredge/Structures

- Disposal Sites - Current
- Disposal Sites - Approved but Inactive
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- Dredge Area - Current
(Area routinely dredged - 1995 to 2003)
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Mitigation Sites

- CoverType
- AG
 - BLH
 - MARSH

**Arkansas River
Navigation Study
JUNE 2005**

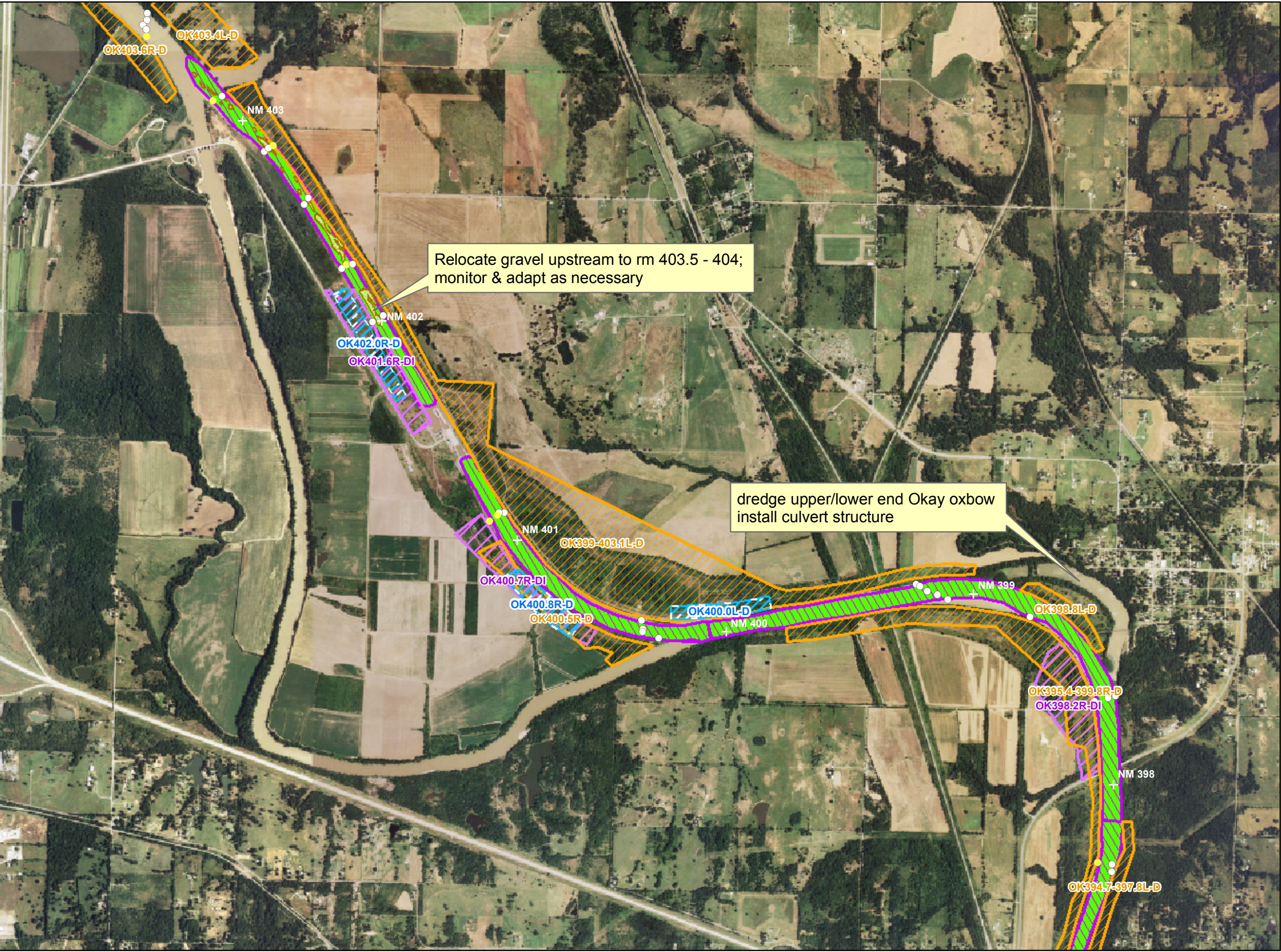
Map Sheet 85



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USACE
LITTLE ROCK DISTRICT
TULSA DISTRICT



Legend

Dredge/Structures

- Disposal Sites - Current
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Mitigation Sites

- CoverType
- AG
 - BLH
 - MARSH

**Arkansas River
Navigation Study
JUNE 2005**

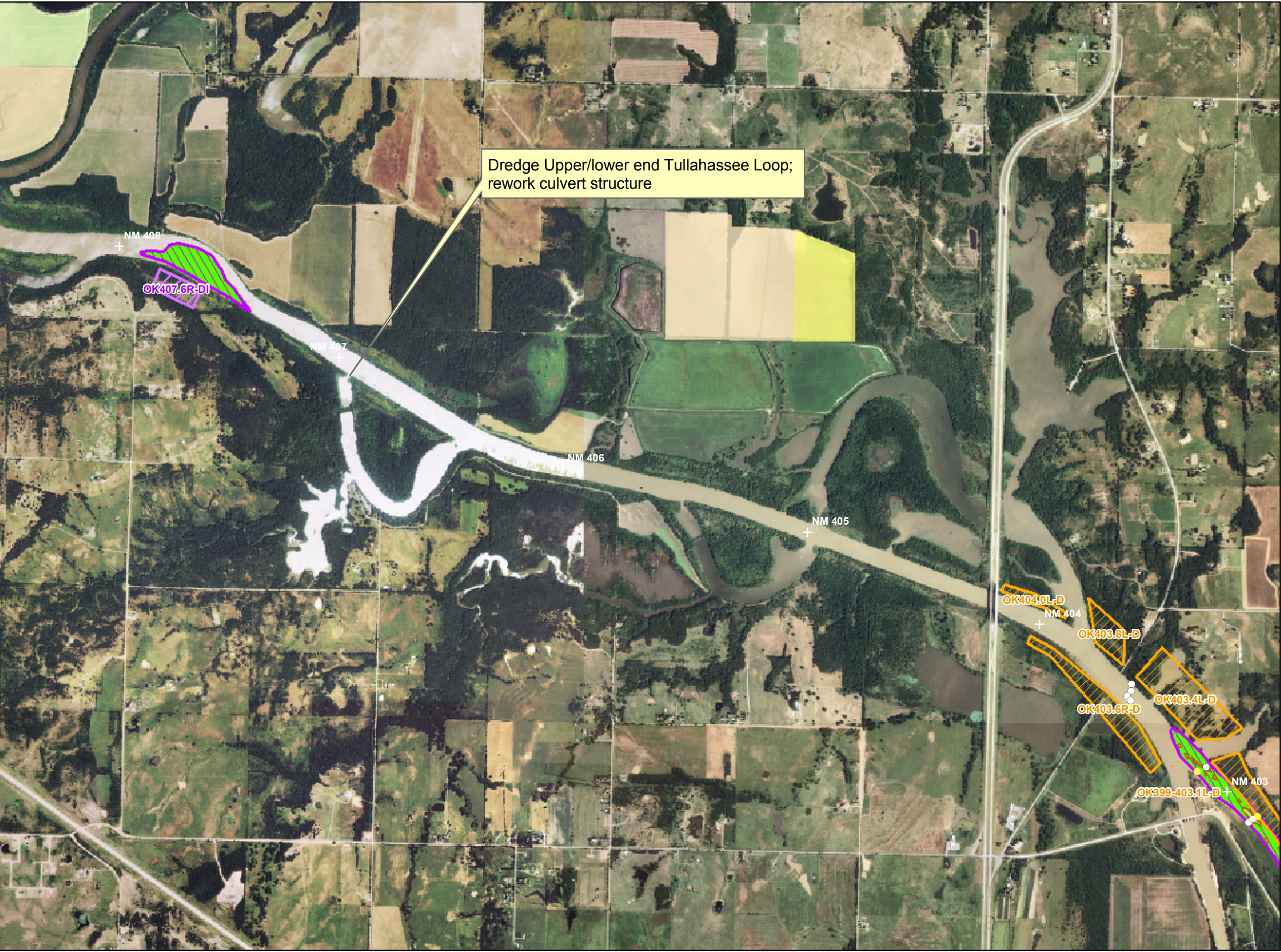
Map Sheet 86



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USACE
LITTLE ROCK DISTRICT
TULSA DISTRICT



Legend

Dredge/Structures

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Mitigation Sites

- CoverType
- AG
 - BLH
 - MARSH

**Arkansas River
Navigation Study
JUNE 2005**

Map Sheet 87



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





USACE
LITTLE ROCK DISTRICT
TULSA DISTRICT




Legend

Dredge/Structures

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-  51 - 100

Mitigation Sites

- CoverType
-  AG
 -  BLH
 -  MARSH

**Arkansas River
Navigation Study
JUNE 2005**

Map Sheet 88











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Legend

Dredge/Structures

-  Disposal Sites - Current
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Gravel Bed Survey

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Mussel Survey (live - sum)

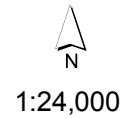
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-  1 - 4
-  5 - 10
-  11 - 20
-  21 - 30
-  31 - 50
-  51 - 100

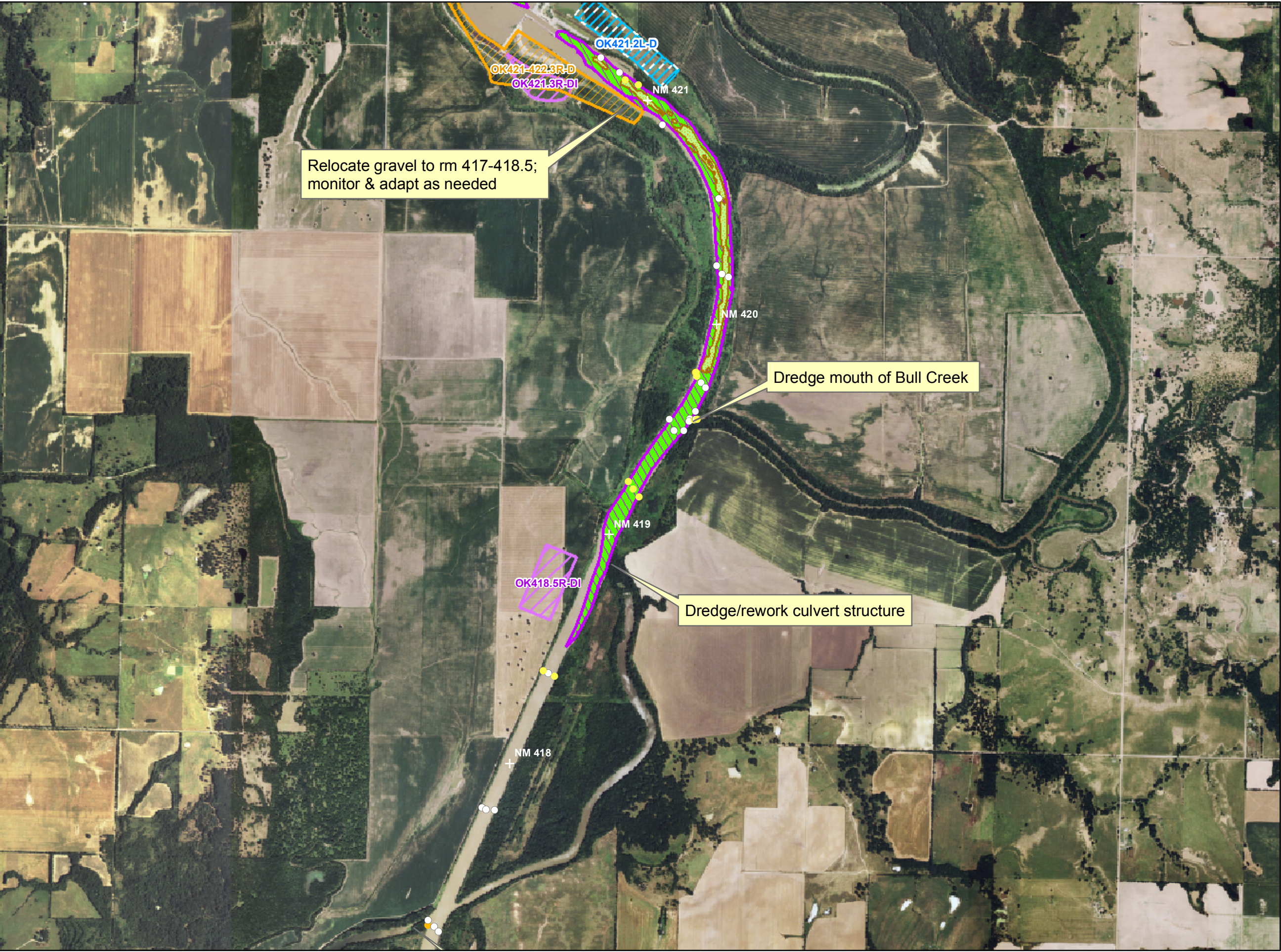
Mitigation Sites

- CoverType
-  AG
 -  BLH
 -  MARSH

**Arkansas River
Navigation Study
JUNE 2005**

Map Sheet 89





Legend

Dredge/Structures

- Disposal Sites - Current
- Disposal Sites - Approved but Inactive
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- Dredge Area - Current
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- 0
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Mitigation Sites

- CoverType
- AG
 - BLH
 - MARSH

**Arkansas River
Navigation Study
JUNE 2005**

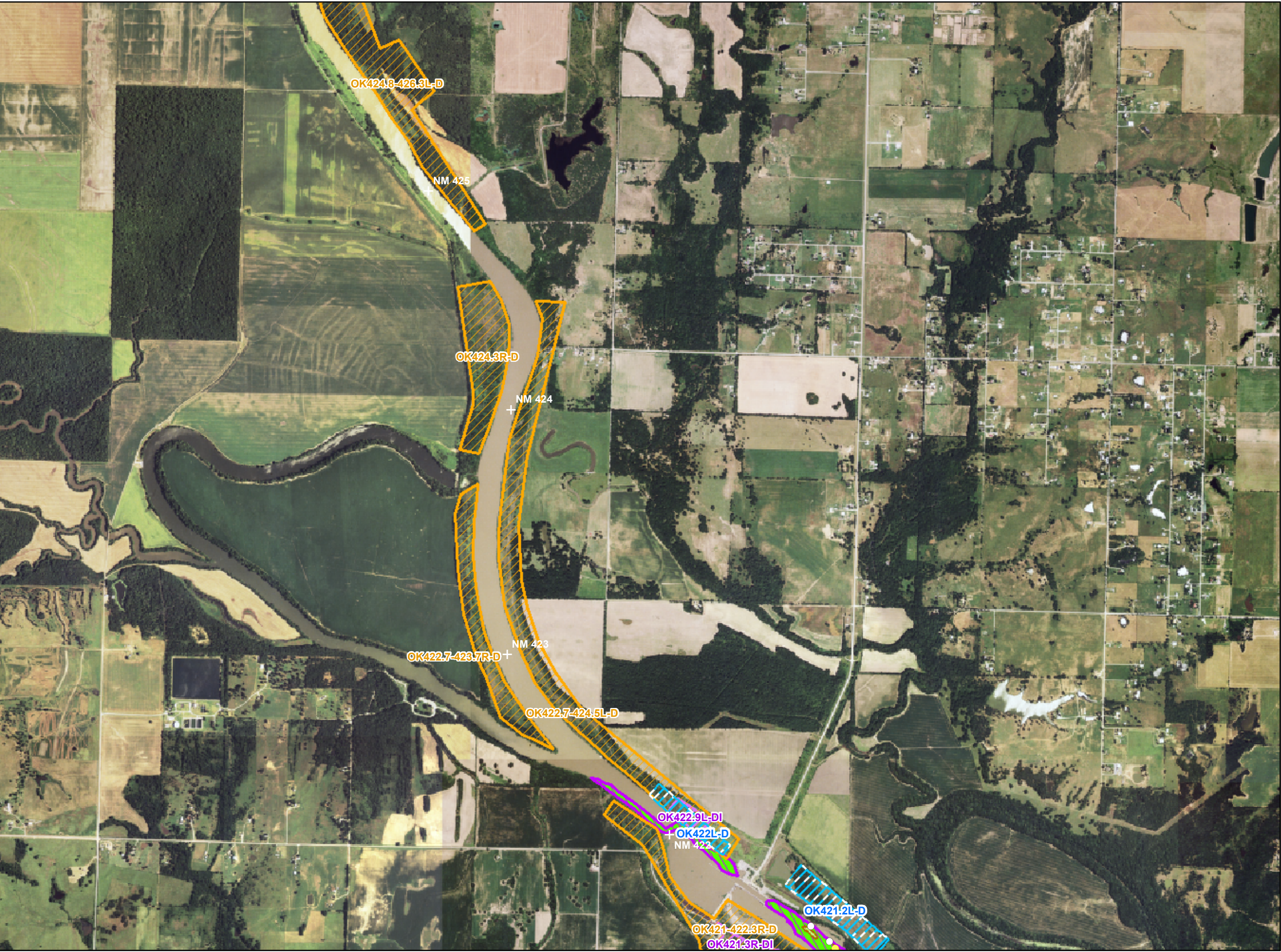
Map Sheet 90



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





USACE
LITTLE ROCK DISTRICT
TULSA DISTRICT



Legend

Dredge/Structures

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Gravel Bed Survey

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


-  Gravel Beds

Mussel Survey (live - sum)

-  0
-  1 - 4
-  5 - 10
-  11 - 20
-  21 - 30
-  31 - 50
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Mitigation Sites

CoverType

-  AG
-  BLH
-  MARSH

**Arkansas River
Navigation Study
JUNE 2005**

Map Sheet 91



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USACE
LITTLE ROCK DISTRICT
TULSA DISTRICT



Legend

Dredge/Structures

- Disposal Sites - Current
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Mitigation Sites

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- AG
 - BLH
 - MARSH

**Arkansas River
Navigation Study
JUNE 2005**

Map Sheet 92











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Legend

Dredge/Structures

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


Gravel Bed Survey

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-  1 - 4
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-  51 - 100

Mitigation Sites

- CoverType
-  AG
 -  BLH
 -  MARSH

**Arkansas River
Navigation Study
JUNE 2005**

Map Sheet 93



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Legend

Dredge/Structures

- Disposal Sites - Current
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**Arkansas River
Navigation Study
JUNE 2005**

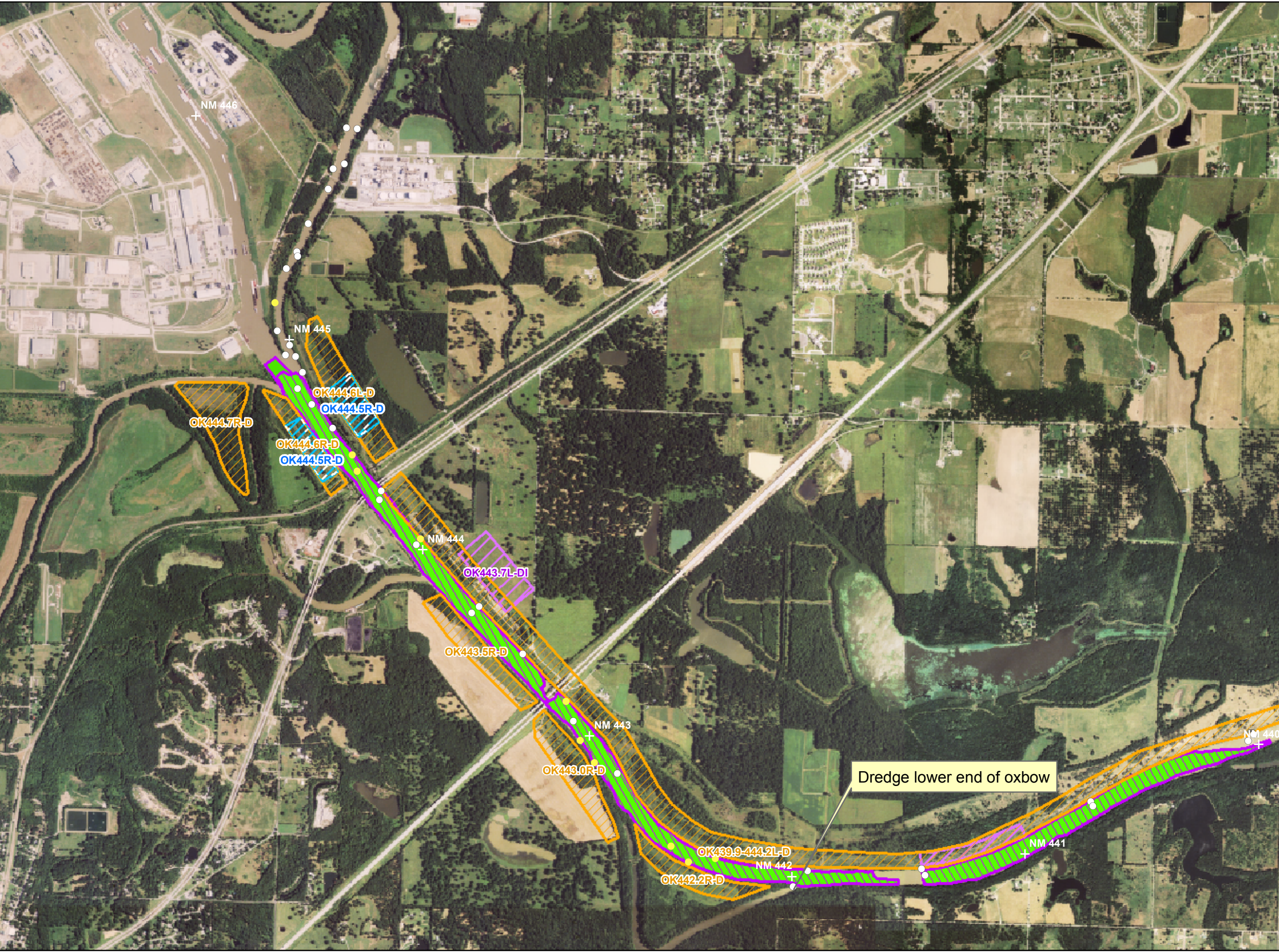
Map Sheet 94



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





USACE
LITTLE ROCK DISTRICT
TULSA DISTRICT




Legend

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Mitigation Sites

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-  AG
 -  BLH
 -  MARSH

**Arkansas River
Navigation Study
JUNE 2005**

Map Sheet 95



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