Avoid disposal in AR242.2L-D at entrance to Hartman Lake, utilize AR241.8R-D and AR244.0R-D if needed, deepen notch in modified revetment.

243.8L - Notch revetment and dike at u/s end to Hartman lake to allow flow-through and fish passage.

Utilize two downstream cells for disposal if needed and notch two existing upper dikes for fish passage and access.
Alternate disposal site for AR248.0R-D, move revetment out and dispose inside.
Utilize area inside closed revetment at 254.1L for disposal.

Notch dikes (5-10) on left and right bank up and downstream.
Use AR256.2L-D for disposal instead of AR256.0R-D.
Recommend disposal site along RB
Avoid disposal in mouth of Mulberry

Avoid disposal in AR274.0L-D and AR275.0L-D,
alternatively use RB disposal to create or enlarge islands,
NOTE: Avoid disposal on forested island that is a rookery

Maintain entrance to Courthouse Slough
by periodically dredging

Notch modified dikes (3)
Avoid backwater disposal in 277.0R-D, place disposal on land and d/s along bottom end to extend island.

At AR279.5L-D, avoid disposal in aquatic areas, utilize land within disposal area and AR280.0R-D.

Notch modified revetment at 279L and 280.2L to maintain high value for backwater area.

Utilize AR280.0R-D for disposal and construction of string of slands, notch modified dikes (4) to create and maintain backwater channel.
Utilize AR280.0R-D for disposal and construction of string of slands, notch modified dikes (4) to create and maintain backwater channel.

Place disposal on lower end of disposal area on existing sand bars, construct islands where feasible, avoid disposal from 283.2-283.5L.

283.9L - Notch modified revetment in upper cell (High priority)

280.8L - Notch modified dikes (3)

*Existing tern island, avoid disposal in AR282.7R-D, utilize LB and create/enlarge islands for terns

Recommend constructing new disposal at 284R

*Utilize disposal behind dikes on LB first to create islands and maintain any gravel in-stream, use exposed sand areas on RB for disposal if needed.
Utilize disposal behind dikes on LB first to create islands and maintain any gravel in-stream, use exposed sand areas on RB for disposal if needed.

Recommended alternate disposal site

Avoid disposal in AR289.0L-D and place dredged gravel along right bank downstream and extend downstream gravel bar at 289.7R

Extend disposal area to 286.2L dike, place disposal behind dikes on LB from 286.2-285.6L to create islands and maintain gravel in-stream, notch modified (2) and existing (2) dikes
Avoid disposal at 289.0L-D and place dredged gravel along right bank downstream and extend downstream gravel bar at 289.7R.

Avoid disposal at 292.3L-D.

Utilize land within cells at AR291.0 R-D.

Legend

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

Structures
- 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

Cover Type
- AG
- BLH
- MARSH

Arkansas River Navigation Study
JUNE 2005

Map Sheet 61
1:24,000
Notch revetment at 305.7 and 306R
New Dikes - designed to maintain variable habitat (J-hook)

Arkansas River Navigation Study
JUNE 2005

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
Cover Type
- AG
- BLH
- MARSH

Map Sheet 65
1:24,000
New & existing dikes
LD recommend J-hook design
Avoid disposal - protect mussel bed

Legend
Dredge/Structures
- Disposal Sites - Current
- Disposal Sites - Approved but Inactive
- 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
Cover Type
- AG
- BLH
- MARSH

Arkansas River Navigation Study
JUNE 2005
Map Sheet 70
1:24,000
aquatic disposal; create HQ marsh; variable depth 6-in - 2 ft; mussels will be protected from impacts resulting from disposal
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.

Aquatic disposal will only occur if mussels won't be impacted; create HQ marsh; variable depth 1 - 2 ft.

Mitigation Sites

Cover Type
AG
BLH
MARSH

Arkansas River Navigation Study
JUNE 2005

Legend

Dredge/Structures
Disposal Sites - Current
Disposal Sites - Proposed
Disposal Sites - Approved but Inactive
Dredge Area - Current
Disposal Sites - Proposed
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

Map Sheet 72

1:24,000
expand island, design to avoid impacts to mussels; height of disposal will be 1 - 2 ft below water surface
Add to existing island

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
Cover Type
- AG
- BLH
- MARSH

Arkansas River
Navigation Study
JUNE 2005

Map Sheet 75

1:24,000
Construct 3 - 10 acre islands protected with riprap for terms

aquatic area converted to terrestrial

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)

Mitigation Sites
Cover Type
AG
BLH
MARSH

Arkansas River Navigation Study
JUNE 2005

Map Sheet 76
1:24,000
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
Cover Type
- AG
- BLH
- MARSH

Arkansas River Navigation Study
JUNE 2005

Map Sheet 77
1:24,000
Relocate gravel to dike field on left descending bank at 360.6.
Relocate downstream between rm 360 - 361; monitor & adapt as needed.
1st priority avoid designated site, move disposal to outside of lock guide wall, armored protection; notch 1 dike

alternative disposal site for 367.5 - create tern island/w riprap
Relocate gravel downstream to rm 373; monitor & adapt as needed
Relocate gravel downstream to rm 373; monitor & adapt as needed

Arkansas River Navigation Study
JUNE 2005
Map Sheet 81

Legend
Dredge/Structures
Disposal Sites - Current
Disposal Sites - Approved but Inactive
Disposal Sites - Proposed
Dredge Area - Current
(Areas 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
Cover Type
AG
BLH
MARSH

1:24,000
dredge upper end of oxbow; maintain upper/lower openings
Arkansas River Navigation Study
JUNE 2005

Map Sheet 83

1:24,000

Legend
Dredge/Structures
- - - Disposal Sites - Current
- - - Disposal Sites - Approved but Inactive
- - - Disposal Sites - Proposed
- - - Dredge Area - Current
- - - (Areas routinely dredged - 1965 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
Cover Type
AG
BLH
MARSH

Usace LITTLE ROCK DISTRICT
TULSA DISTRICT

NM 383
NM 384
NM 385
NM 386
NM 387
NM 388
Notch dikes, create tern island in middle cell

1st priority dispose in terrestrial cell, notch internal & lower end dikes;
2nd priority dispose in dike cell above and below bridge.

Relocate gravel to dike fields created on
Right descending bank at rm 392.1-393.0;
monitor & adapt as needed
Notch added dikes to avoid fill, design to minimize fill (J-hook)

Relocate gravel to dike fields on left descending bank at rm 393.8; monitor & adapt as necessary
Relocate gravel upstream to rm 403.5 - 404; monitor & adapt as necessary

dredge upper/lower end Okay oxbow install culvert structure
Dredge Upper/lower end Tullahassee Loop; rework culvert structure

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
Cover Type
- AG
- BLH
- MARSH

Arkansas River Navigation Study
JUNE 2005

Map Sheet 87

1:24,000
Relocate gravel to rm 417-418.5; monitor & adapt as needed.