APPENDIX E.7:
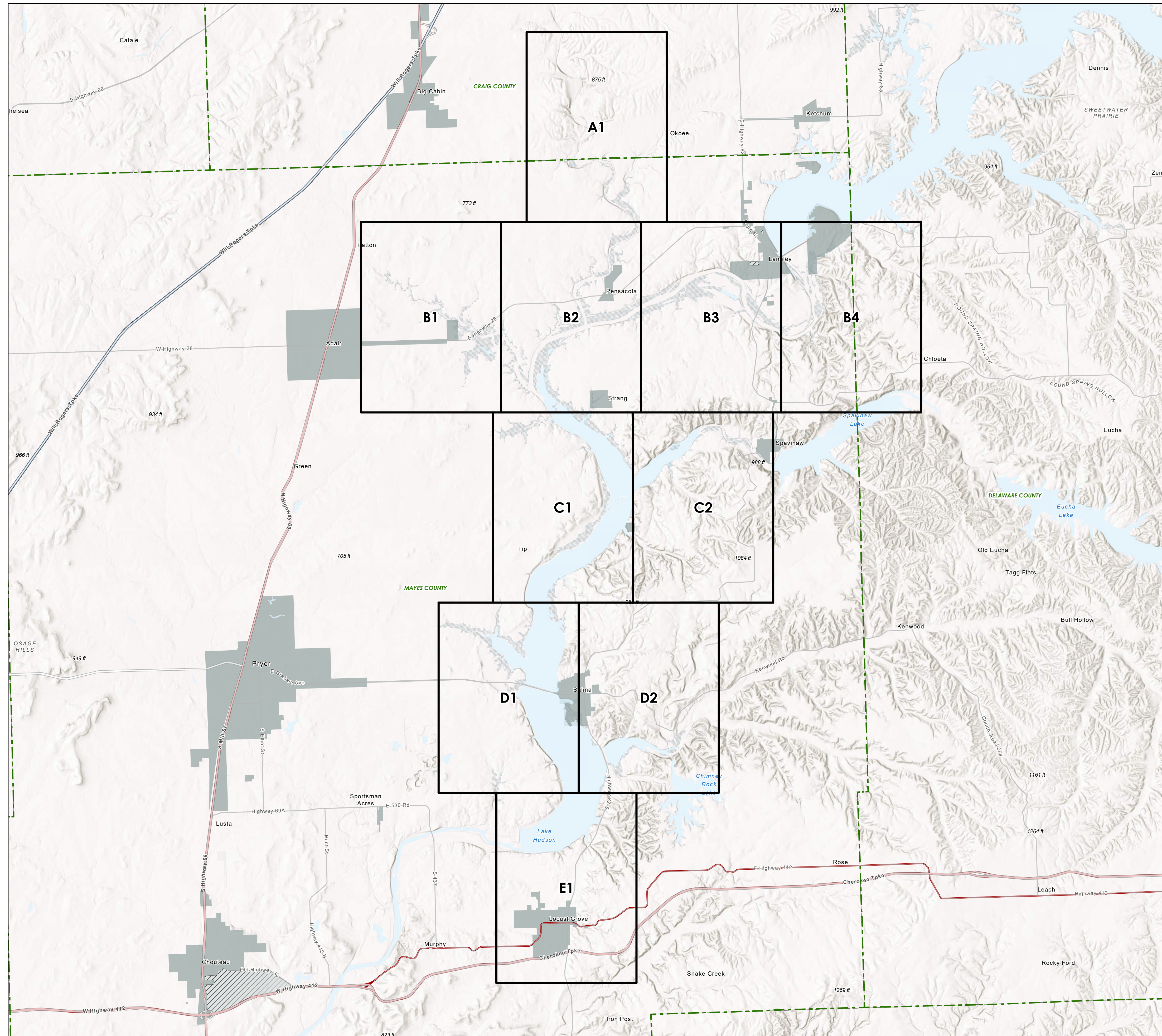## HISTORICAL STARTING STAGE INUNDATION MAPS

Downstream Model Results
Historical Overview Map

Pensacola Dam
GRAND RIVER DAM AUTHORITY
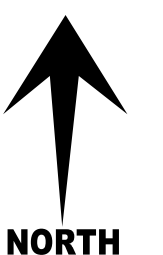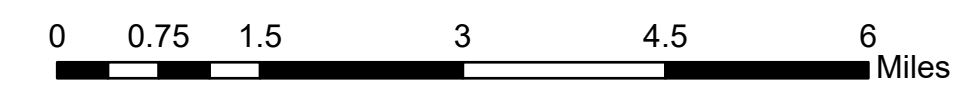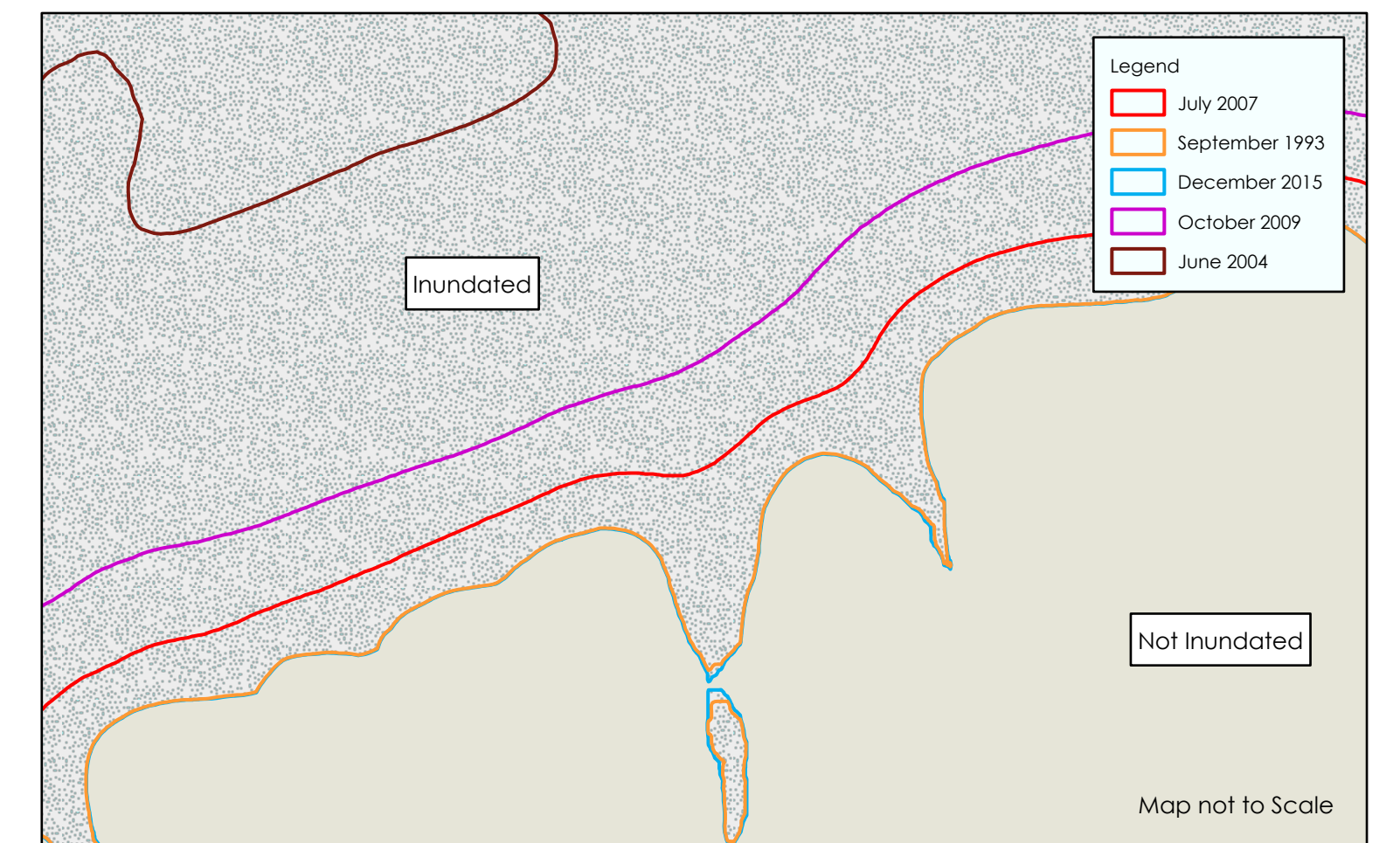Date: September 2022

Overview Map Legend

- 1:24,000-scale Map Sheet
- County Boundary
- Municipality
- Unincorporated

Road Class
- Interstate
- US Highway

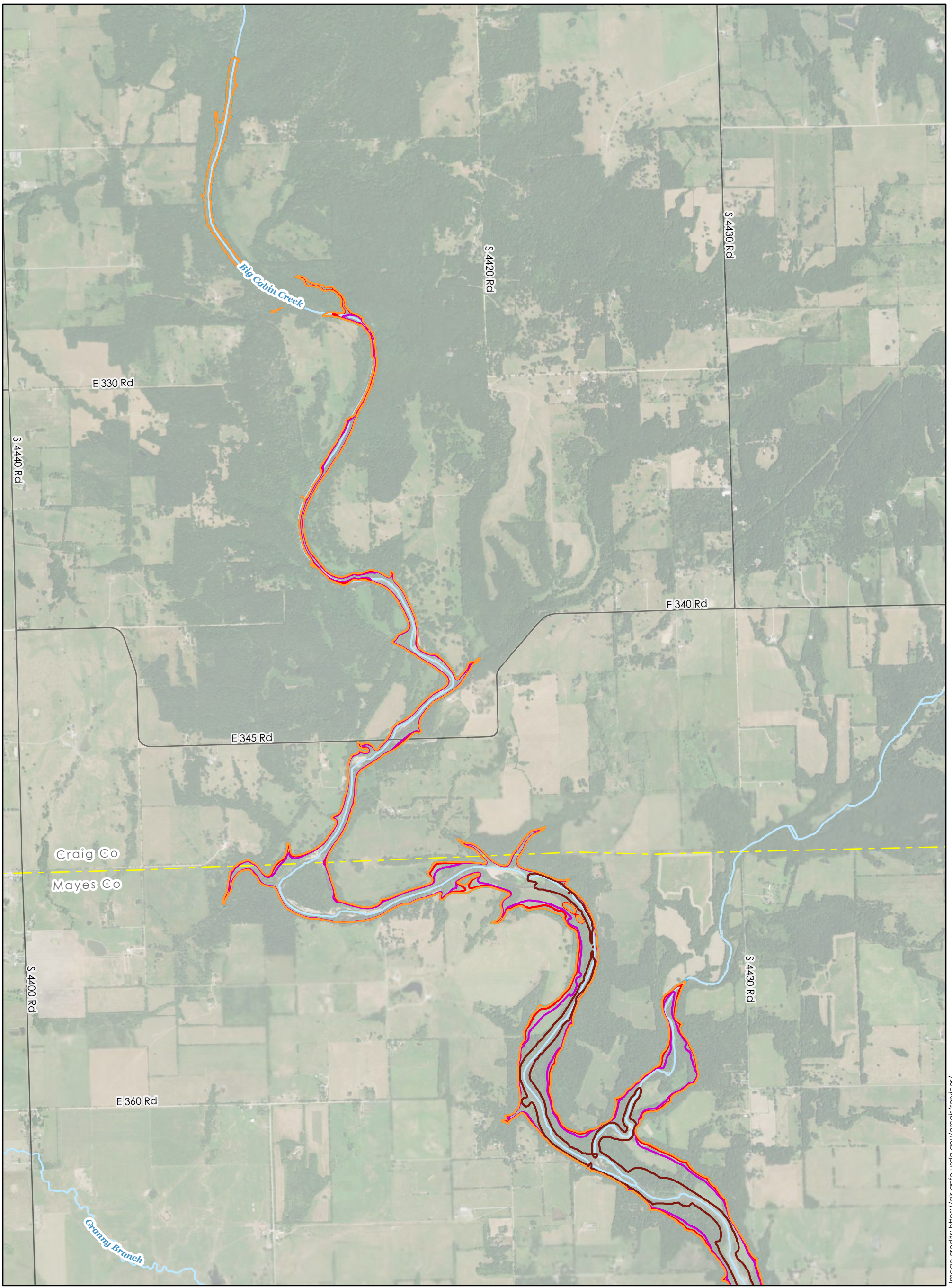### Inundation Scenario Mapping

Mapping shows the extent of inundation for historical flow events, using the historical starting stage at Pensacola Dam. Pensacola Dam stage during the inflow event is calculated by the Operations Model.

Legend
- July 2007
- September 1993
- December 2015
- October 2009
- June 2004

Inundated

Not Inundated

Map not to Scale

Map sheet labels: A1, B1, B2, B3, B4, C1, C2, D1, D2, E1

Place names: Catale, Chelsea, Big Cabin, Okoee, Ketchum, Dennis, SWEETWATER PRAIRIE, Zena, CRAIG COUNTY, Patton, Pensacola, Langley, Adair, Strang, Chloeta, Spavinaw, Spavinaw Lake, ROUND SPRING HOLLOW, Eucha, DELAWARE COUNTY, Eucha Lake, Green, Tip, Old Eucha, Tagg Flats, MAYES COUNTY, Pryor, Salina, Kenwood, Bull Hollow, OSAGE HILLS, Chimney Rock, Sportsman Acres, Lusta, Lake Hudson, Rose, Leach, Locust Grove, Cherokee Tpke, Murphy, Snake Creek, Rocky Ford, Chouteau, Iron Post, Dalton

Elevations: 875 ft, 992 ft, 964 ft, 773 ft, 934 ft, 966 ft, 705 ft, 988 ft, 1084 ft, 949 ft, 1161 ft, 1264 ft, 1269 ft, 823 ft

0   0.75   1.5   3   4.5   6 Miles

NORTH

Map Notes

Data Sources for Maps:

1. Base map images from https://gis.apfo.usda.gov/arcgis/services/NAIP/USDA_CONUS_PRIME/ImageServer, 2019.
2. Transportation network (major roads, local roads, and railroads) and county boundaries obtained from the Oklahoma Office of Geographic Information (http://okmaps.org/ogi/search.aspx).

Map Source: Esri, NASA, NGA, USGS, FEMA, Missouri Dept. of Conservation, Missouri DNR, Texas Parks & Wildlife, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, USDA

Image credits: https://gis.apfo.usda.gov/arcgis/services/NAIP/USDA_CONUS_PRIME/ImageServer, 2019

S 4430 Rd

S 4420 Rd

E 330 Rd

S 4440 Rd

Big Cabin Creek

E 340 Rd

E 345 Rd

Craig Co

Mayes Co

S 4400 Rd

S 4430 Rd

E 360 Rd

Granny Branch

B2   B2   B3

HISTORICAL INUNDATION SCENARIOS

NORTH

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

Feet

1 inch = 2,000 feet

A1

B1	B2	B3	B4
C1	C2
D1	D2
E1

Legend

MAX INUNDATION*
- July 2007
- September 1993
- December 2015
- October 2009
- June 2004

ROAD CLASS
- Interstate
- State Highway
- US Highway
- Major Collector

- Stream

BOUNDARY TYPE
- Project
- County
- Municipal

MAP NOTES

1. Simulations of historical inflow events use historical starting stage at Pensacola Dam. Stage at Pensacola Dam and Kerr Dam during the inflow event are calculated by the Operations Model.
2. See Overview Map for notes on data sources.

PENSACOLA DAM
DOWNSTREAM HYDRAULIC MODEL
GRAND RIVER DAM AUTHORITY

MAP: A1

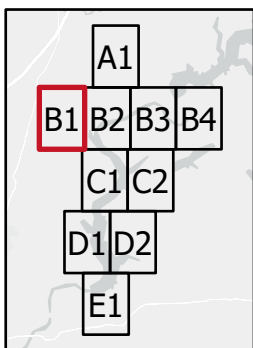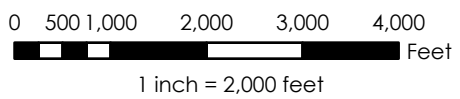CRAIG, DELAWARE, AND MAYES COUNTIES, OKLAHOMA

FERC No. 1494

September 2022

E 370 Rd

Rock Creek

E 390 Rd

Adair 28

E 410 Rd

N 436 Rd

Armstrong Branch

E 420 Rd

B2

C1

HISTORICAL INUNDATION SCENARIOS

A1		
B1	B2	B3	B4
C1	C2
D1	D2
E1

NORTH

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

1 inch = 2,000 feet

Legend

MAX INUNDATION*
- July 2007
- September 1993
- December 2015
- October 2009
- June 2004

ROAD CLASS
- Interstate
- State Highway
- US Highway
- Major Collector

- Stream

BOUNDARY TYPE
- Project
- County
- Municipal

MAP NOTES

1. Simulations of historical inflow events use historical starting stage at Pensacola Dam. Stage at Pensacola Dam and Kerr Dam during the inflow event are calculated by the Operations Model.
2. See Overview Map for notes on data sources.

PENSACOLA DAM
DOWNSTREAM HYDRAULIC MODEL

GRAND RIVER DAM AUTHORITY

MAP: B1

CRAIG, DELAWARE, AND MAYES
COUNTIES, OKLAHOMA

FERC No. 1494

September 2022

HISTORICAL INUNDATION SCENARIOS

NORTH

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

1 inch = 2,000 feet

A1
B1 B2 B3 B4
C1 C2
D1 D2
E1

Legend

MAX INUNDATION*
- July 2007
- September 1993
- December 2015
- October 2009
- June 2004

ROAD CLASS
- Interstate
- State Highway
- US Highway
- Major Collector
- Stream

BOUNDARY TYPE
- Project
- County
- Municipal

MAP NOTES
1. Simulations of historical inflow events use historical starting stage at Pensacola Dam. Stage at Pensacola Dam and Kerr Dam during the inflow event are calculated by the Operations Model.
2. See Overview Map for notes on data sources.

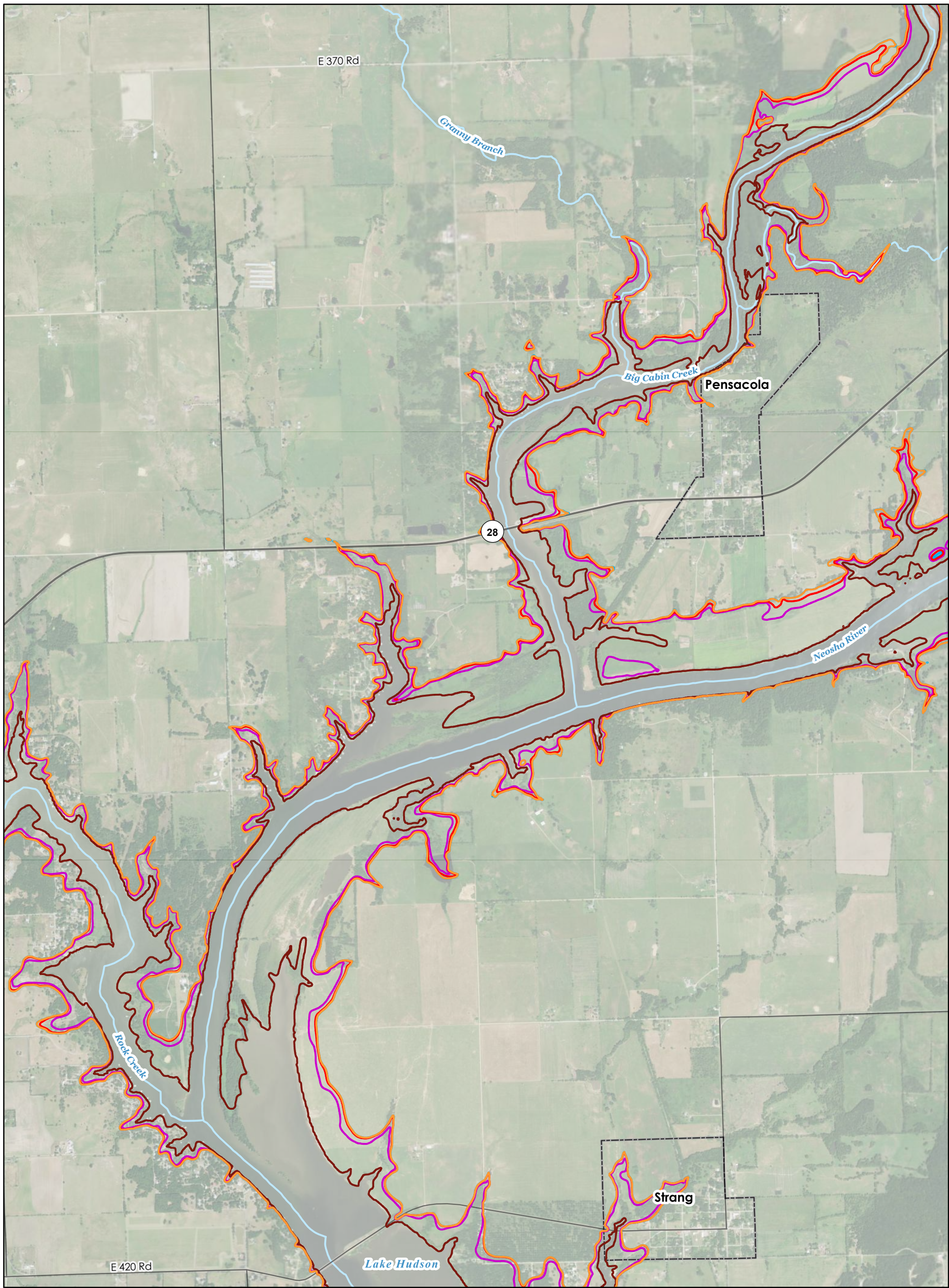**PENSACOLA DAM**
DOWNSTREAM HYDRAULIC MODEL
GRAND RIVER DAM AUTHORITY

MAP: B2

CRAIG, DELAWARE, AND MAYES COUNTIES, OKLAHOMA
FERC No. 1494
September 2022

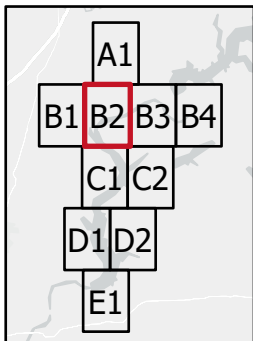Image credits: https://gis.apfo.usda.gov/arcgis/services/NAIP/USDA_CONUS_PRIME/ImageServer, 2019

Pensacola

Strang

Granny Branch

Big Cabin Creek

Neosho River

Rock Creek

Lake Hudson

E 370 Rd

E 420 Rd

28

A1

28

Elm Creek

_Grand Lake O'
the Cherokees_

Langley

B2

Langley

Neosho River

B4

82

E 400 Rd

Spavinaw

20

C2

C2

Image credits: https://gis.apfo.usda.gov/arcgis/services/
NAIP/USDA_CONUS_PRIME/ImageServer, 2019

HISTORICAL INUNDATION SCENARIOS

A1	
B1 B2 B3 B4	
C1 C2	
D1 D2	
E1	

NORTH

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

1 inch = 2,000 feet

Legend

MAX INUNDATION*
- July 2007
- September 1993
- December 2015
- October 2009
- June 2004

ROAD CLASS
- Interstate
- State Highway
- US Highway
- Major Collector

- Stream

BOUNDARY TYPE
- Project
- County
- Municipal

MAP NOTES
1. Simulations of historical inflow events use historical starting stage at Pensacola Dam. Stage at Pensacola Dam and Kerr Dam during the inflow event are calculated by the Operations Model.
2. See Overview Map for notes on data sources.

PENSACOLA DAM
DOWNSTREAM HYDRAULIC MODEL
GRAND RIVER DAM AUTHORITY

MAP: B3

CRAIG, DELAWARE, AND MAYES
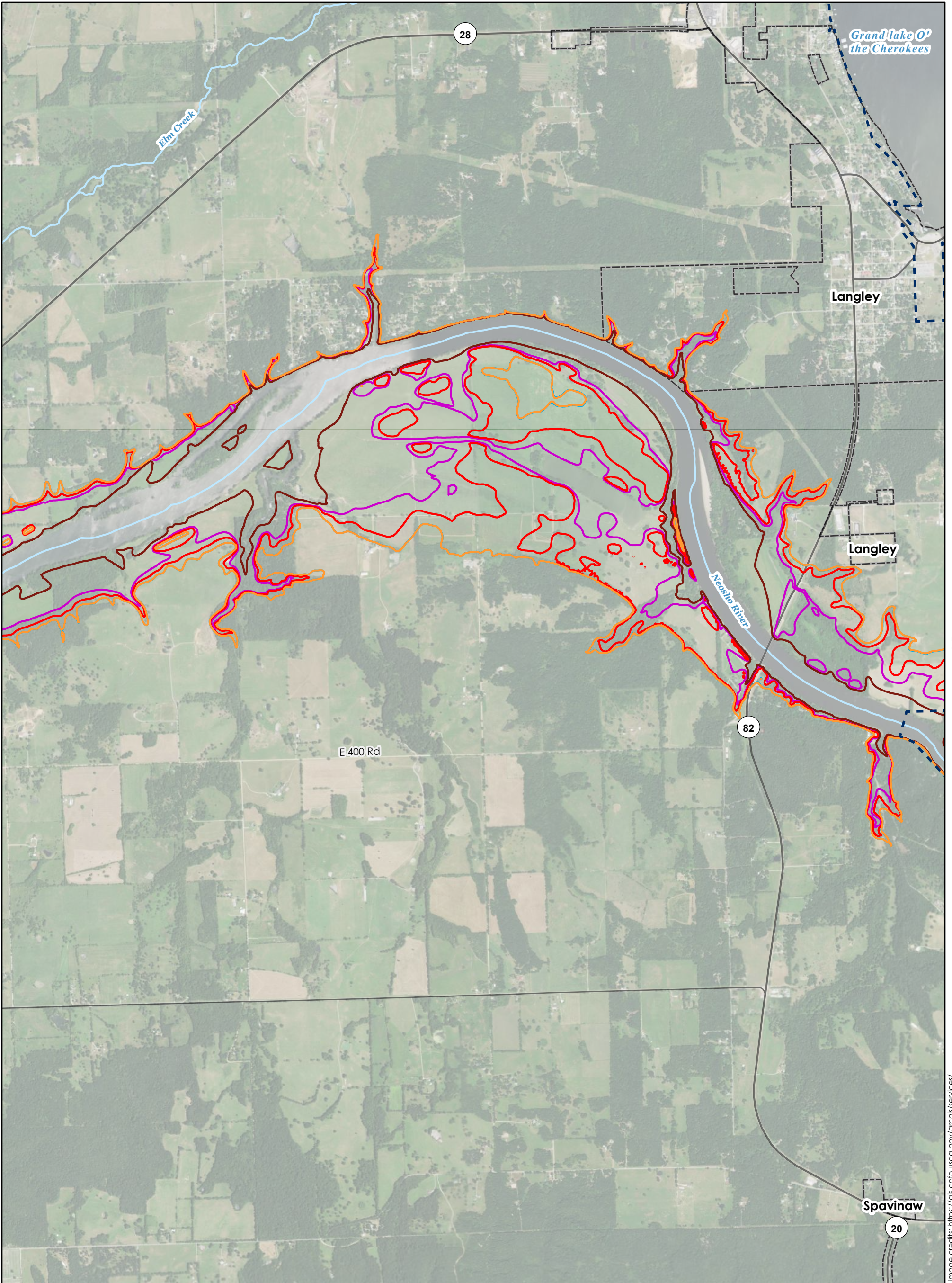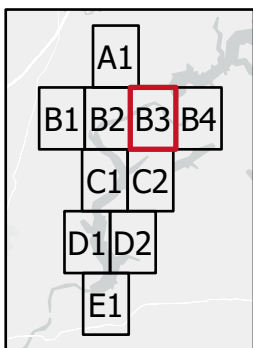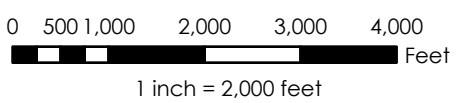COUNTIES, OKLAHOMA
FERC No. 1494
September 2022

Grand lake O' the Cherokees

Pensacola Dam

Disney

Langley

B3

Neosho River

Mayes Co

Delaware Co

Summerfield Creek

Spavinaw Creek

28

20

HISTORICAL INUNDATION SCENARIOS

| A1 |
B1	B2	B3	B4
C1	C2
D1	D2
E1

NORTH

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

1 inch = 2,000 feet

MAX INUNDATION*
- July 2007
- September 1993
- December 2015
- October 2009
- June 2004

Legend

ROAD CLASS
- Interstate
- State Highway
- US Highway
- Major Collector

- Stream

BOUNDARY TYPE
- Project
- County
- Municipal

MAP NOTES
1. Simulations of historical inflow events use historical starting stage at Pensacola Dam. Stage at Pensacola Dam and Kerr Dam during the inflow event are calculated by the Operations Model.
2. See Overview Map for notes on data sources.

PENSACOLA DAM
DOWNSTREAM HYDRAULIC MODEL
GRAND RIVER DAM AUTHORITY

MAP: B4

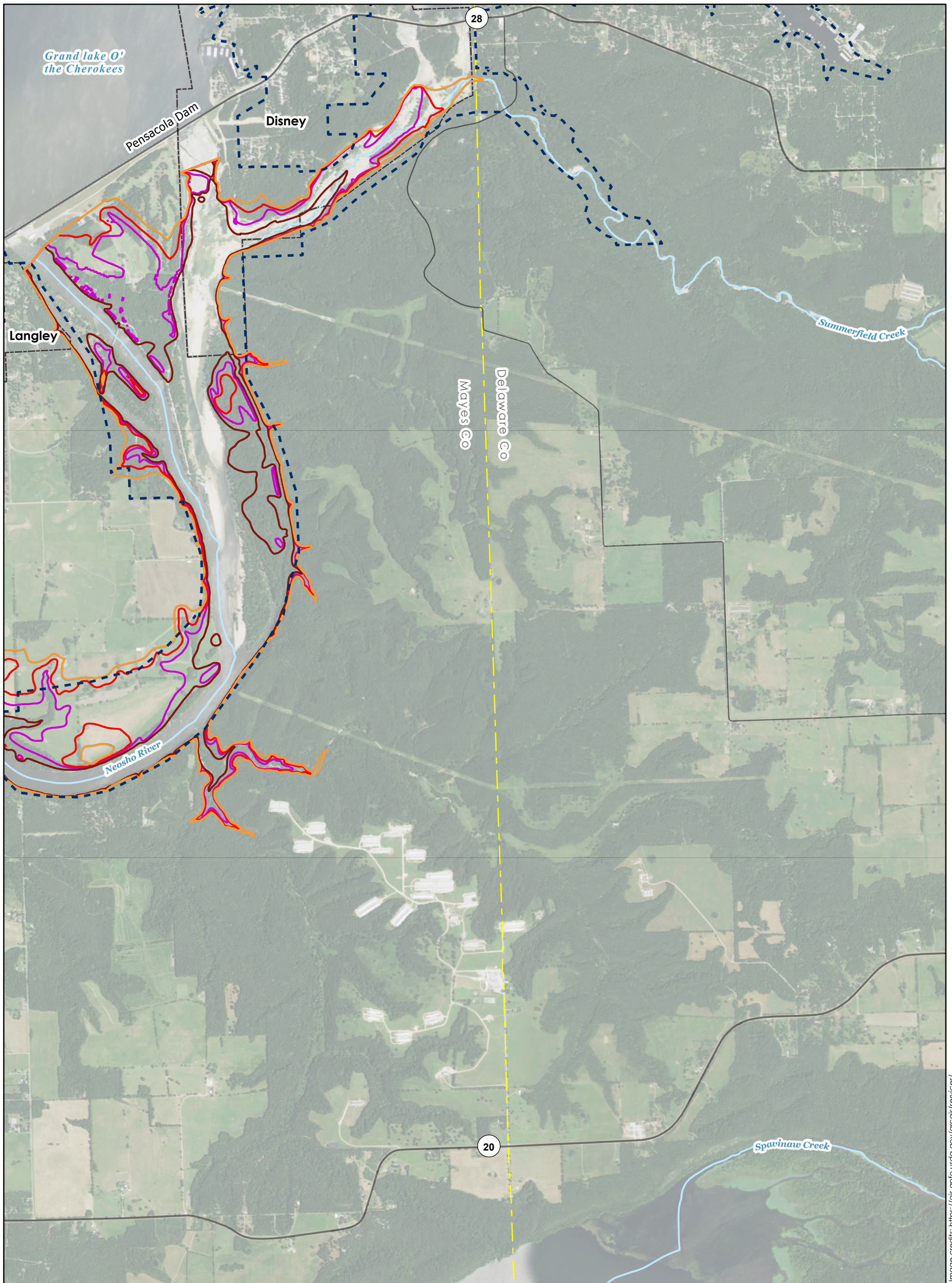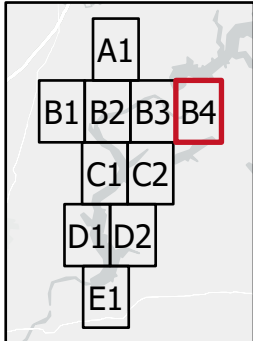CRAIG, DELAWARE, AND MAYES COUNTIES, OKLAHOMA
FERC No. 1494
September 2022

B1 B2 B2

Benge Branch

E 430 Rd

E 440 Rd

N 440 Rd

Lake Hudson

E 4675 Rd

Hoot Owl

C2

Wolf Creek

D1 D1 D2

Image credits: https://gis.apfo.usda.gov/arcgis/services/
NAIP/USDA_CONUS_PRIME/ImageServer, 2019

Spavinaw Creek

Spavinaw

C1

Hoot Owl

20

D2 D2

HISTORICAL INUNDATION SCENARIOS

NORTH

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

1 inch = 2,000 feet

A1
B1 B2 B3 B4
C1 C2
D1 D2
E1

Legend

MAX INUNDATION*
- July 2007
- September 1993
- December 2015
- October 2009
- June 2004

ROAD CLASS
- Interstate
- State Highway
- US Highway
- Major Collector

- Stream

BOUNDARY TYPE
- Project
- County
- Municipal

MAP NOTES

1. Simulations of historical inflow events use historical starting stage at Pensacola Dam. Stage at Pensacola Dam and Kerr Dam during the inflow event are calculated by the Operations Model.
2. See Overview Map for notes on data sources.

PENSACOLA DAM
DOWNSTREAM HYDRAULIC MODEL
GRAND RIVER DAM AUTHORITY

MAP: C2

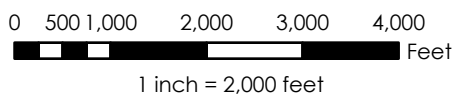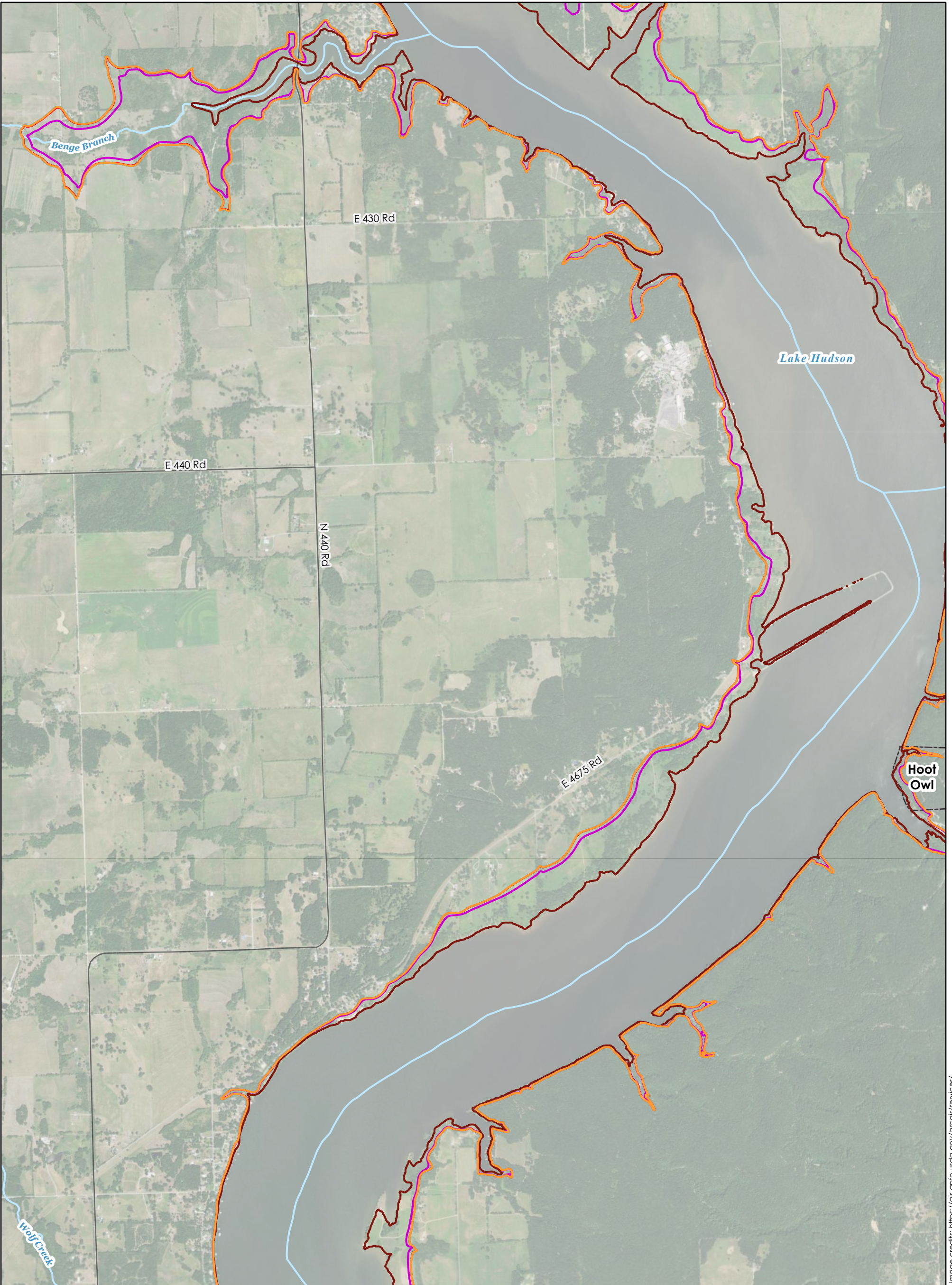CRAIG, DELAWARE, AND MAYES COUNTIES, OKLAHOMA

FERC No. 1494
September 2022

C1 C1

Wolf Creek

Lake Hudson

N 438 Rd

Sulphur Creek

20

Chapel Branch

S 438 Rd

Salina

D2

Lake Hudson

E 520 Rd

E1 E1

HISTORICAL INUNDATION SCENARIOS

A1

B1	B2	B3	B4

C1	C2

D1	D2

E1

NORTH

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

1 inch = 2,000 feet

Legend

MAX INUNDATION*
- ▭ July 2007
- ▭ September 1993
- ▭ December 2015
- ▭ October 2009
- ▭ June 2004

ROAD CLASS
- Interstate
- State Highway
- US Highway
- Major Collector

- Stream

BOUNDARY TYPE
- Project
- County
- Municipal

MAP NOTES

1. Simulations of historical inflow events use historical starting stage at Pensacola Dam. Stage at Pensacola Dam and Kerr Dam during the inflow event are calculated by the Operations Model.
2. See Overview Map for notes on data sources.

PENSACOLA DAM
DOWNSTREAM HYDRAULIC MODEL

GRAND RIVER DAM AUTHORITY

MAP: D1

CRAIG, DELAWARE, AND MAYES COUNTIES, OKLAHOMA

FERC No. 1494

September 2022

C1

C2

C2
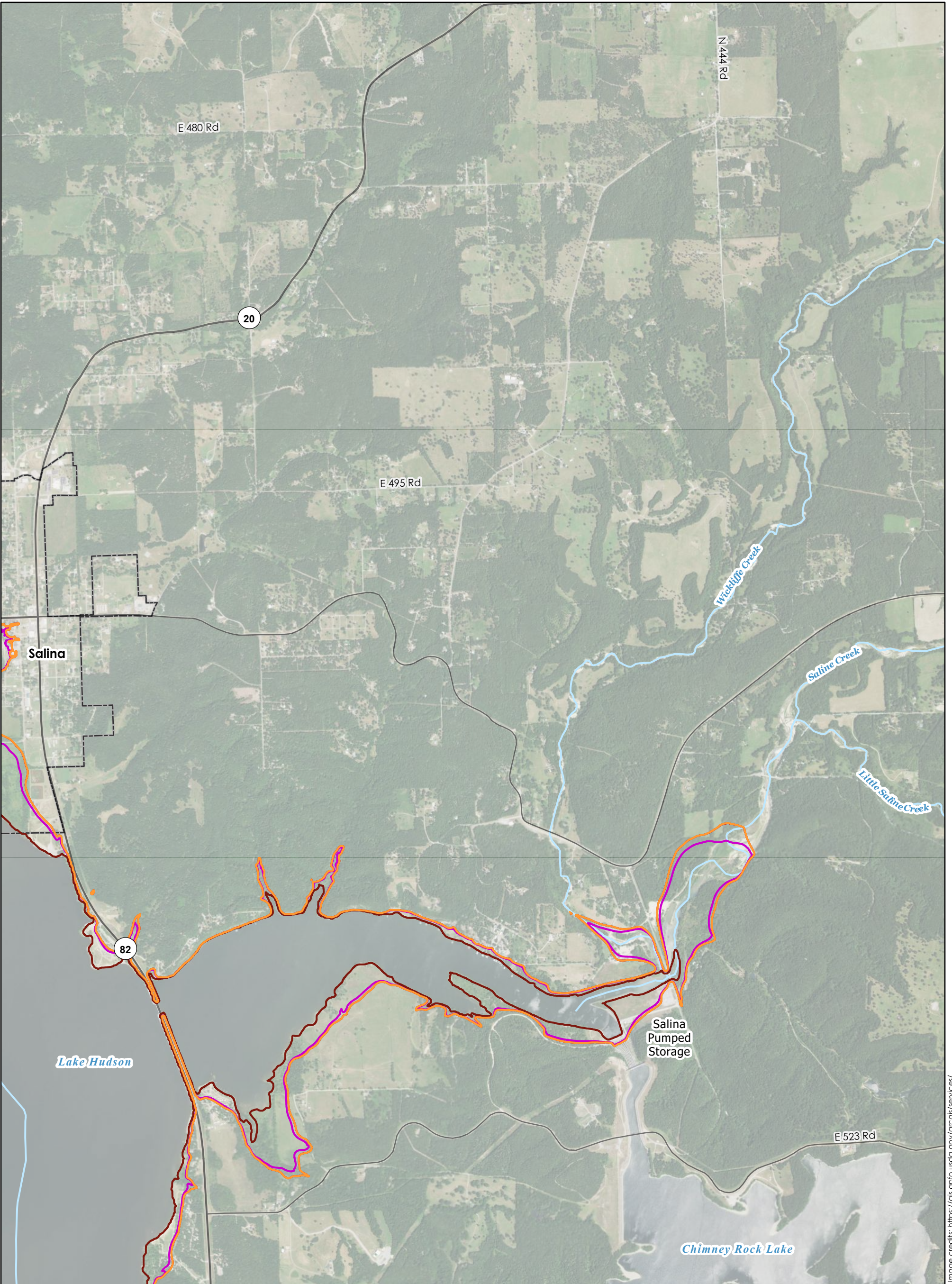
E 480 Rd

N 444 Rd

20

E 495 Rd

Wickliffe Creek

Saline Creek

D1

Salina

Little Saline Creek

82

Salina
Pumped
Storage

Lake Hudson

E 523 Rd

Chimney Rock Lake

E1

HISTORICAL
INUDATION SCENARIOS
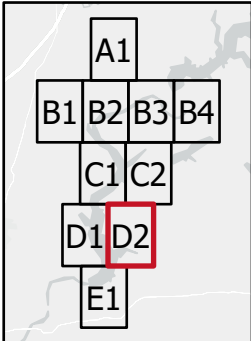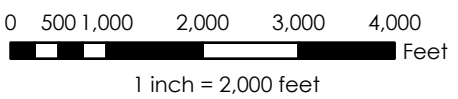
NORTH

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

Feet

1 inch = 2,000 feet

| A1 |
B1	B2	B3	B4
C1	C2
D1	D2
E1

Legend

MAX INUNDATION*
- July 2007
- September 1993
- December 2015
- October 2009
- June 2004

ROAD CLASS
- Interstate
- State Highway
- US Highway
- Major Collector

BOUNDARY TYPE
- Project
- County
- Municipal

- Stream

MAP NOTES

1. Simulations of historical inflow events use historical starting stage at Pensacola Dam. Stage at Pensacola Dam and Kerr Dam during the inflow event are calculated by the Operations Model.
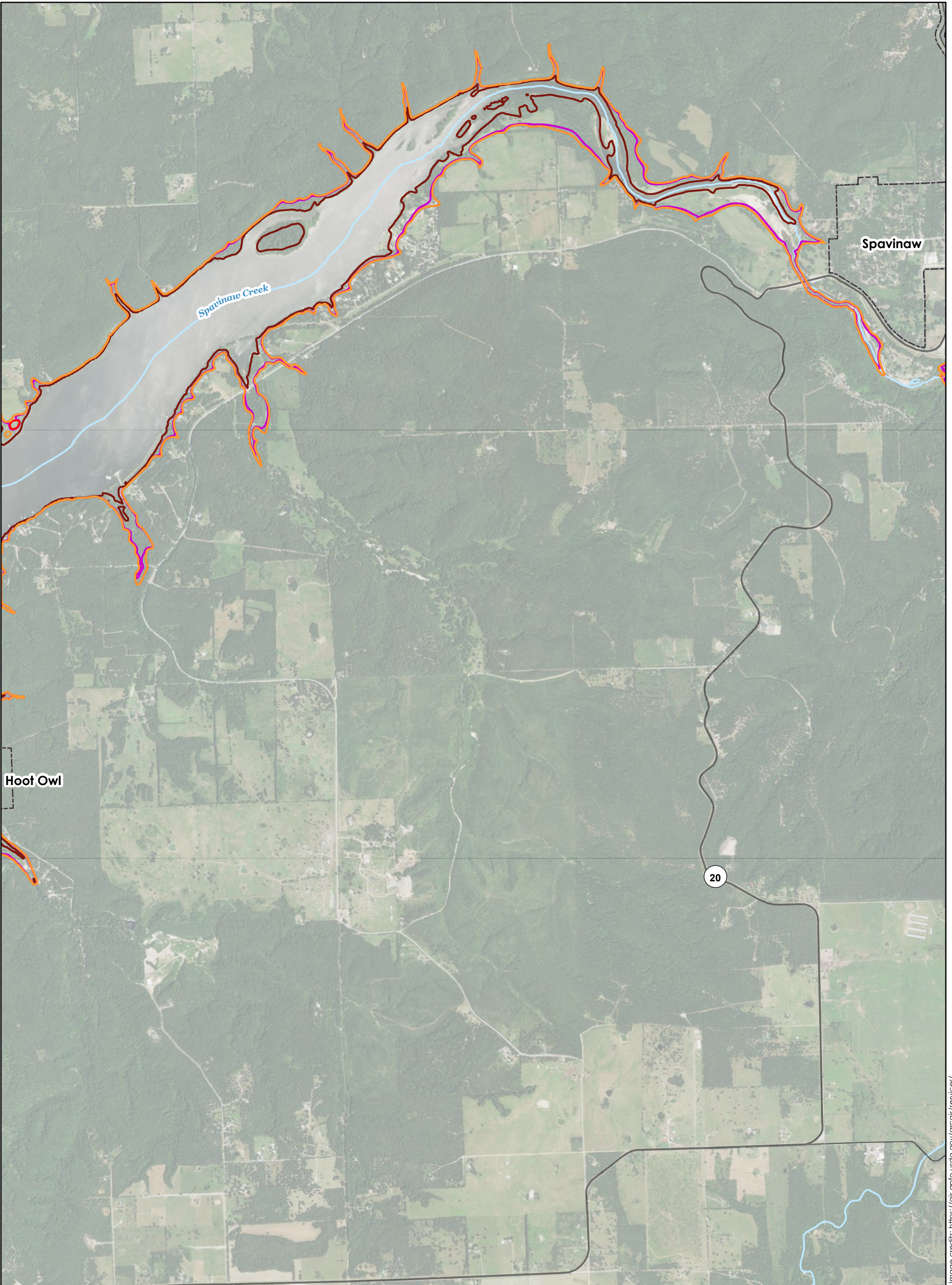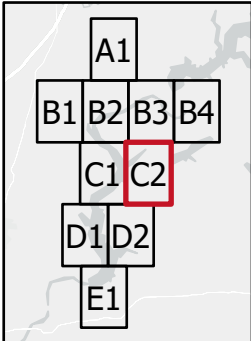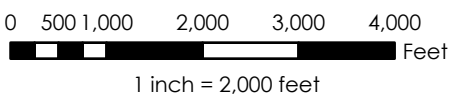2. See Overview Map for notes on data sources.

PENSACOLA DAM
DOWNSTREAM HYDRAULIC MODEL

GRAND RIVER DAM AUTHORITY

MAP: D2

CRAIG, DELAWARE, AND MAYES
COUNTIES, OKLAHOMA

FERC No. 1494

September 2022

Lake Hudson

Robert S. Kerr Dam
(Markham Ferry)

S 440 Rd

82

E 560 Rd

412A

Locust Grove

412

Image credits: https://gis.apfo.usda.gov/arcgis/services/
NAIP/USDA_CONUS_PRIME/ImageServer, 2019

HISTORICAL
INUNDATION SCENARIOS

NORTH

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

1 inch = 2,000 feet

	A1		
B1	B2	B3	B4
	C1	C2	
	D1	D2	
	E1		

Legend

MAX INUNDATION*
- July 2007
- September 1993
- December 2015
- October 2009
- June 2004

ROAD CLASS
- Interstate
- State Highway
- US Highway
- Major Collector
- Stream

BOUNDARY TYPE
- Project
- County
- Municipal

MAP NOTES

1. Simulations of historical inflow events use historical starting stage at Pensacola Dam. Stage at Pensacola Dam and Kerr Dam during the inflow event are calculated by the Operations Model.
2. See Overview Map for notes on data sources.

PENSACOLA DAM
DOWNSTREAM HYDRAULIC MODEL

GRAND RIVER DAM AUTHORITY

MAP: E1

CRAIG, DELAWARE, AND MAYES
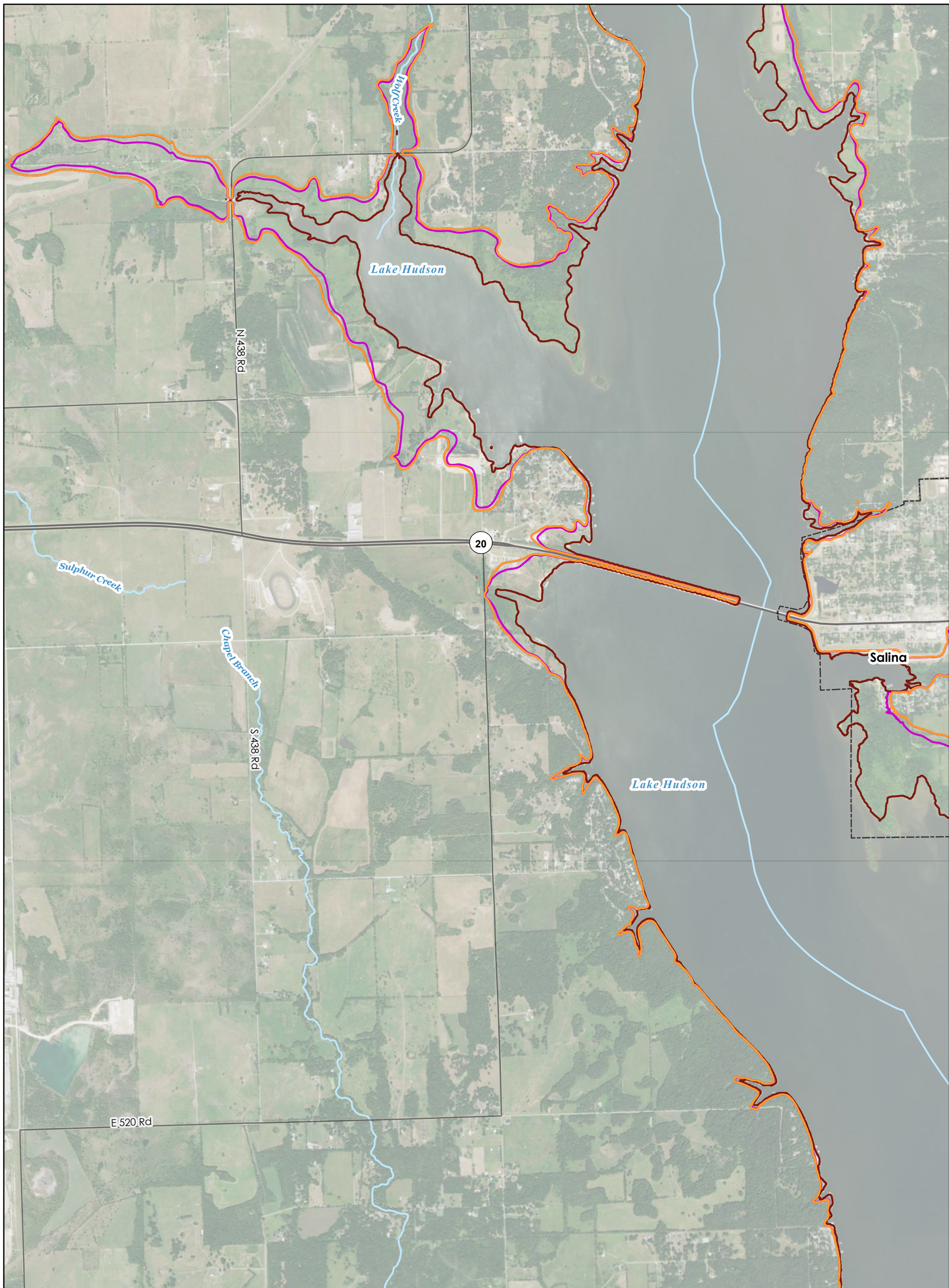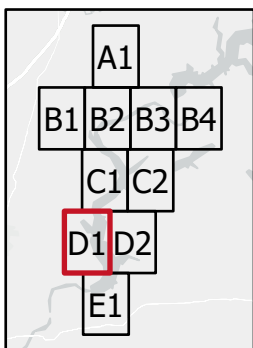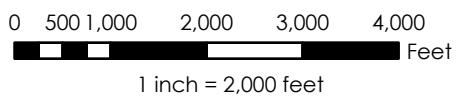COUNTIES, OKLAHOMA

FERC No. 1494

September 2022

APPENDIX F:
DURATION OF INUNDATION

River Mile	Pensacola Dam Starting Stage (ft, PD)											Anticipated Operational Range Duration Difference[1] (hours)	Extreme Hypothetical Range Duration Difference[2] (hours)
	El. 734.0 Duration (hours)	El. 742.0 Duration (hours)	El. 742.5 Duration (hours)	El. 743.0 Duration (hours)	El. 743.5 Duration (hours)	El. 744.0 Duration (hours)	El. 744.5 Duration (hours)	El. 745.0 Duration (hours)	El. 749.0 Duration (hours)	El. 753.0 Duration (hours)	El. 757.0 Duration (hours)		
77.000	Pensacola Dam												
76.880	0	0	0	0	0	0	0	0	0	0	0	0	0
76.463	0	0	0	0	0	0	0	0	0	0	0	0	0
76.414	N 4475 Rd. Bridge												
76.362	0	0	0	0	0	0	0	0	0	0	0	0	0
75.317	0	0	0	0	0	0	0	0	0	0	0	0	0
74.300	0	0	0	0	0	0	0	0	0	0	0	0	0
73.315	0	0	0	0	0	0	0	0	0	0	0	0	0
72.884	0	0	0	0	0	0	0	0	0	0	0	0	0
72.822	OK-82 Bridge												
72.772	0	0	0	0	0	0	0	0	0	0	0	0	0
71.645	0	0	0	0	0	0	0	0	0	0	0	0	0
70.910	0	0	0	0	0	0	0	0	0	0	0	0	0
69.686	0	0	0	0	0	0	0	0	0	0	0	0	0
68.685	0	0	0	0	0	0	0	0	0	0	0	0	0
67.715	0	0	0	0	0	0	0	0	0	0	0	0	0
66.855	0	0	0	0	0	0	0	0	0	0	0	0	0
66.780	Big Cabin Creek												
65.712	0	0	0	0	0	0	0	0	0	0	0	0	0
64.435	0	0	0	0	0	0	0	0	0	0	0	0	0
63.369	0	0	0	0	0	0	0	0	0	0	0	0	0
63.322	Strang Rd. Bridge												
63.299	0	0	0	0	0	0	0	0	0	0	0	0	0
62.325	0	0	0	0	0	0	0	0	0	0	0	0	0
61.308	0	0	0	0	0	0	0	0	0	0	0	0	0
60.263	0	0	0	0	0	0	0	0	0	0	0	0	0
60.200	Spavinaw Creek												
59.019	0	0	0	0	0	0	0	0	0	0	0	0	0
57.950	0	0	0	0	0	0	0	0	0	0	0	0	0
56.927	0	0	0	0	0	0	0	0	0	0	0	0	0
55.890	0	0	0	0	0	0	0	0	0	0	0	0	0
54.456	0	0	0	0	0	0	0	0	0	0	0	0	0
52.988	0	0	0	0	0	0	0	0	0	0	0	0	0
52.954	OK-20 Bridge												
52.922	0	0	0	0	0	0	0	0	0	0	0	0	0
50.500	Saline Creek												
50.396	0	0	0	0	0	0	0	0	0	0	0	0	0
49.110	0	0	0	0	0	0	0	0	0	0	0	0	0
48.118	0	0	0	0	0	0	0	0	0	0	0	0	0
47.186	0	0	0	0	0	0	0	0	0	0	0	0	0
47.120	Kerr Dam												

1. Max difference in duration from simulations with Pensacola Dam starting stages of EL 742.0 to 745.0 ft.
2. Max difference in duration from simulations with Pensacola Dam starting stages of EL 734.0 to 757.0 ft.

River Mile	Pensacola Dam Starting Stage (ft, PD)											Anticipated Operational Range Duration Difference[1] (hours)	Extreme Hypothetical Range Duration Difference[2] (hours)
	El. 734.0	El. 742.0	El. 742.5	El. 743.0	El. 743.5	El. 744.0	El. 744.5	El. 745.0	El. 749.0	El. 753.0	El. 757.0		
	Duration (hours)	Duration (hours)	Duration (hours)	Duration (hours)	Duration (hours)	Duration (hours)	Duration (hours)	Duration (hours)	Duration (hours)	Duration (hours)	Duration (hours)		
77.000	Pensacola Dam												
76.880	0	0	0	0	0	0	0	0	0	0	0	0	0
76.463	0	0	0	0	0	0	0	0	0	0	0	0	0
76.414	N 4475 Rd. Bridge												
76.362	0	0	0	0	0	0	0	0	0	0	0	0	0
75.317	0	0	0	0	0	0	0	0	0	0	0	0	0
74.300	0	0	0	0	0	0	0	0	0	0	0	0	0
73.315	0	0	0	0	0	0	0	0	0	0	0	0	0
72.884	0	0	0	0	0	0	0	0	0	0	0	0	0
72.822	OK-82 Bridge												
72.772	0	0	0	0	0	0	0	0	0	0	0	0	0
71.645	0	0	0	0	0	0	0	0	0	0	0	0	0
70.910	0	0	0	0	0	0	0	0	0	0	0	0	0
69.686	0	0	0	0	0	0	0	0	0	0	0	0	0
68.685	0	0	0	0	0	0	0	0	0	0	0	0	0
67.715	0	0	0	0	0	0	0	0	0	0	0	0	0
66.855	0	0	0	0	0	0	0	0	0	0	0	0	0
66.780	Big Cabin Creek												
65.712	0	0	0	0	0	0	0	0	0	0	0	0	0
64.435	0	0	0	0	0	0	0	0	0	0	0	0	0
63.369	0	0	0	0	0	0	0	0	0	0	0	0	0
63.322	Strang Rd. Bridge												
63.299	0	0	0	0	0	0	0	0	0	0	0	0	0
62.325	0	0	0	0	0	0	0	0	0	0	0	0	0
61.308	0	0	0	0	0	0	0	0	0	0	0	0	0
60.263	0	0	0	0	0	0	0	0	0	0	0	0	0
60.200	Spavinaw Creek												
59.019	0	0	0	0	0	0	0	0	0	0	0	0	0
57.950	0	0	0	0	0	0	0	0	0	0	0	0	0
56.927	0	0	0	0	0	0	0	0	0	0	0	0	0
55.890	0	0	0	0	0	0	0	0	0	0	0	0	0
54.456	0	0	0	0	0	0	0	0	0	0	0	0	0
52.988	0	0	0	0	0	0	0	0	0	0	0	0	0
52.954	OK-20 Bridge												
52.922	0	0	0	0	0	0	0	0	0	0	0	0	0
50.500	Saline Creek												
50.396	0	0	0	0	0	0	0	0	0	0	0	0	0
49.110	0	0	0	0	0	0	0	0	0	0	0	0	0
48.118	0	0	0	0	0	0	0	0	0	0	0	0	0
47.186	0	0	0	0	0	0	0	0	0	0	0	0	0
47.120	Kerr Dam												

1. Max difference in duration from simulations with Pensacola Dam starting stages of EL 742.0 to 745.0 ft.
2. Max difference in duration from simulations with Pensacola Dam starting stages of EL 734.0 to 757.0 ft.

River Mile	Pensacola Dam Starting Stage (ft, PD)											Anticipated Operational Range Duration Difference[1] (hours)	Extreme Hypothetical Range Duration Difference[2] (hours)
	El. 734.0 Duration (hours)	El. 742.0 Duration (hours)	El. 742.5 Duration (hours)	El. 743.0 Duration (hours)	El. 743.5 Duration (hours)	El. 744.0 Duration (hours)	El. 744.5 Duration (hours)	El. 745.0 Duration (hours)	El. 749.0 Duration (hours)	El. 753.0 Duration (hours)	El. 757.0 Duration (hours)		
77.000	Pensacola Dam												
76.880	0	0	0	0	0	0	0	0	0	0	0	0	0
76.463	0	0	0	0	0	0	0	0	0	0	0	0	0
76.414	N 4475 Rd. Bridge												
76.362	0	0	0	0	0	0	0	0	0	0	0	0	0
75.317	0	0	0	0	0	0	0	0	0	0	0	0	0
74.300	0	0	0	0	0	0	0	0	0	0	0	0	0
73.315	0	0	0	0	0	0	0	0	0	0	0	0	0
72.884	0	0	0	0	0	0	0	0	0	0	0	0	0
72.822	OK-82 Bridge												
72.772	0	0	0	0	0	0	0	0	0	0	0	0	0
71.645	0	0	0	0	0	0	0	0	0	0	0	0	0
70.910	0	0	0	0	0	0	0	0	0	0	0	0	0
69.686	0	0	0	0	0	0	0	0	0	0	0	0	0
68.685	0	0	0	0	0	0	0	0	0	0	0	0	0
67.715	0	0	0	0	0	0	0	0	0	0	0	0	0
66.855	0	0	0	0	0	0	0	0	0	0	0	0	0
66.780	Big Cabin Creek												
65.712	0	0	0	0	0	0	0	0	0	0	0	0	0
64.435	0	0	0	0	0	0	0	0	0	0	0	0	0
63.369	0	0	0	0	0	0	0	0	0	0	0	0	0
63.322	Strang Rd. Bridge												
63.299	0	0	0	0	0	0	0	0	0	0	0	0	0
62.325	0	0	0	0	0	0	0	0	0	0	0	0	0
61.308	0	0	0	0	0	0	0	0	0	0	0	0	0
60.263	0	0	0	0	0	0	0	0	0	0	0	0	0
60.200	Spavinaw Creek												
59.019	0	0	0	0	0	0	0	0	0	0	0	0	0
57.950	0	0	0	0	0	0	0	0	0	0	0	0	0
56.927	0	0	0	0	0	0	0	0	0	0	0	0	0
55.890	0	0	0	0	0	0	0	0	0	0	0	0	0
54.456	0	0	0	0	0	0	0	0	0	0	0	0	0
52.988	0	0	0	0	0	0	0	0	0	0	0	0	0
52.954	OK-20 Bridge												
52.922	0	0	0	0	0	0	0	0	0	0	0	0	0
50.500	Saline Creek												
50.396	0	0	0	0	0	0	0	0	0	0	0	0	0
49.110	0	0	0	0	0	0	0	0	0	0	0	0	0
48.118	0	0	0	0	0	0	0	0	0	0	0	0	0
47.186	0	0	0	0	0	0	0	0	0	0	0	0	0
47.120	Kerr Dam												

1. Max difference in duration from simulations with Pensacola Dam starting stages of EL 742.0 to 745.0 ft.
2. Max difference in duration from simulations with Pensacola Dam starting stages of EL 734.0 to 757.0 ft.

River Mile	Pensacola Dam Starting Stage (ft, PD)											Anticipated Operational Range Duration Difference[1] (hours)	Extreme Hypothetical Range Duration Difference[2] (hours)
	El. 734.0 Duration (hours)	El. 742.0 Duration (hours)	El. 742.5 Duration (hours)	El. 743.0 Duration (hours)	El. 743.5 Duration (hours)	El. 744.0 Duration (hours)	El. 744.5 Duration (hours)	El. 745.0 Duration (hours)	El. 749.0 Duration (hours)	El. 753.0 Duration (hours)	El. 757.0 Duration (hours)		
77.000	Pensacola Dam												
76.880	0	0	0	0	0	0	0	0	0	0	0	0	0
76.463	0	0	0	0	0	0	0	0	0	0	0	0	0
76.414	N 4475 Rd. Bridge												
76.362	0	0	0	0	0	0	0	0	0	0	0	0	0
75.317	0	0	0	0	0	0	0	0	0	0	0	0	0
74.300	0	0	0	0	0	0	0	0	0	0	0	0	0
73.315	0	0	0	0	0	0	0	0	0	0	0	0	0
72.884	0	0	0	0	0	0	0	0	0	0	0	0	0
72.822	OK-82 Bridge												
72.772	0	0	0	0	0	0	0	0	0	0	0	0	0
71.645	0	0	0	0	0	0	0	0	0	0	0	0	0
70.910	0	0	0	0	0	0	0	0	0	0	0	0	0
69.686	0	0	0	0	0	0	0	0	0	0	0	0	0
68.685	0	0	0	0	0	0	0	0	0	0	0	0	0
67.715	0	0	0	0	0	0	0	0	0	0	0	0	0
66.855	0	0	0	0	0	0	0	0	0	0	0	0	0
66.780	Big Cabin Creek												
65.712	0	0	0	0	0	0	0	0	0	0	0	0	0
64.435	0	0	0	0	0	0	0	0	0	0	0	0	0
63.369	0	0	0	0	0	0	0	0	0	0	0	0	0
63.322	Strang Rd. Bridge												
63.299	0	0	0	0	0	0	0	0	0	0	0	0	0
62.325	0	0	0	0	0	0	0	0	0	0	0	0	0
61.308	0	0	0	0	0	0	0	0	0	0	0	0	0
60.263	0	0	0	0	0	0	0	0	0	0	0	0	0
60.200	Spavinaw Creek												
59.019	0	0	0	0	0	0	0	0	0	0	0	0	0
57.950	0	0	0	0	0	0	0	0	0	0	0	0	0
56.927	0	0	0	0	0	0	0	0	0	0	0	0	0
55.890	0	0	0	0	0	0	0	0	0	0	0	0	0
54.456	0	0	0	0	0	0	0	0	0	0	0	0	0
52.988	0	0	0	0	0	0	0	0	0	0	0	0	0
52.954	OK-20 Bridge												
52.922	0	0	0	0	0	0	0	0	0	0	0	0	0
50.500	Saline Creek												
50.396	0	0	0	0	0	0	0	0	0	0	0	0	0
49.110	0	0	0	0	0	0	0	0	0	0	0	0	0
48.118	0	0	0	0	0	0	0	0	0	0	0	0	0
47.186	0	0	0	0	0	0	0	0	0	0	0	0	0
47.120	Kerr Dam												

1. Max difference in duration from simulations with Pensacola Dam starting stages of EL 742.0 to 745.0 ft.
2. Max difference in duration from simulations with Pensacola Dam starting stages of EL 734.0 to 757.0 ft.

River Mile	Pensacola Dam Starting Stage (ft, PD)											Anticipated Operational Range Duration Difference[1] (hours)	Extreme Hypothetical Range Duration Difference[2] (hours)
	El. 734.0 Duration (hours)	El. 742.0 Duration (hours)	El. 742.5 Duration (hours)	El. 743.0 Duration (hours)	El. 743.5 Duration (hours)	El. 744.0 Duration (hours)	El. 744.5 Duration (hours)	El. 745.0 Duration (hours)	El. 749.0 Duration (hours)	El. 753.0 Duration (hours)	El. 757.0 Duration (hours)		
77.000	Pensacola Dam												
76.880	0	0	0	0	0	0	0	0	0	0	0	0	0
76.463	0	0	0	0	0	0	0	0	0	0	0	0	0
76.414	N 4475 Rd. Bridge												
76.362	0	0	0	0	0	0	0	0	0	0	0	0	0
75.317	0	0	0	0	0	0	0	0	0	0	0	0	0
74.300	0	0	0	0	0	0	0	0	0	0	0	0	0
73.315	0	0	0	0	0	0	0	0	0	0	0	0	0
72.884	0	0	0	0	0	0	0	0	0	0	0	0	0
72.822	OK-82 Bridge												
72.772	0	0	0	0	0	0	0	0	0	0	0	0	0
71.645	0	0	0	0	0	0	0	0	0	0	0	0	0
70.910	0	0	0	0	0	0	0	0	0	0	0	0	0
69.686	0	0	0	0	0	0	0	0	0	0	0	0	0
68.685	0	0	0	0	0	0	0	0	0	0	0	0	0
67.715	0	0	0	0	0	0	0	0	0	0	0	0	0
66.855	0	0	0	0	0	0	0	0	0	0	0	0	0
66.780	Big Cabin Creek												
65.712	0	0	0	0	0	0	0	0	0	0	0	0	0
64.435	0	0	0	0	0	0	0	0	0	0	0	0	0
63.369	0	0	0	0	0	0	0	0	0	0	0	0	0
63.322	Strang Rd. Bridge												
63.299	0	0	0	0	0	0	0	0	0	0	0	0	0
62.325	0	0	0	0	0	0	0	0	0	0	0	0	0
61.308	0	0	0	0	0	0	0	0	0	0	0	0	0
60.263	0	0	0	0	0	0	0	0	0	0	0	0	0
60.200	Spavinaw Creek												
59.019	0	0	0	0	0	0	0	0	0	0	0	0	0
57.950	0	0	0	0	0	0	0	0	0	0	0	0	0
56.927	0	0	0	0	0	0	0	0	0	0	0	0	0
55.890	0	0	0	0	0	0	0	0	0	0	0	0	0
54.456	0	0	0	0	0	0	0	0	0	0	0	0	0
52.988	0	0	0	0	0	0	0	0	0	0	0	0	0
52.954	OK-20 Bridge												
52.922	0	0	0	0	0	0	0	0	0	0	0	0	0
50.500	Saline Creek												
50.396	0	0	0	0	0	0	0	0	0	0	0	0	0
49.110	0	0	0	0	0	0	0	0	0	0	0	0	0
48.118	0	0	0	0	0	0	0	0	0	0	0	0	0
47.186	0	0	0	0	0	0	0	0	0	0	0	0	0
47.120	Kerr Dam												

1. Max difference in duration from simulations with Pensacola Dam starting stages of EL 742.0 to 745.0 ft.
2. Max difference in duration from simulations with Pensacola Dam starting stages of EL 734.0 to 757.0 ft.

River Mile	Pensacola Dam Starting Stage (ft, PD)											Anticipated Operational Range Duration Difference[1] (hours)	Extreme Hypothetical Range Duration Difference[2] (hours)
	El. 734.0	El. 742.0	El. 742.5	El. 743.0	El. 743.5	El. 744.0	El. 744.5	El. 745.0	El. 749.0	El. 753.0	El. 757.0		
	Duration (hours)	Duration (hours)	Duration (hours)	Duration (hours)	Duration (hours)	Duration (hours)	Duration (hours)	Duration (hours)	Duration (hours)	Duration (hours)	Duration (hours)		
77.000	Pensacola Dam												
76.880	0	0	0	0	0	0	0	0	0	0	0	0	0
76.463	0	0	0	0	0	0	0	0	0	0	0	0	0
76.414	N 4475 Rd. Bridge												
76.362	0	0	0	0	0	0	0	0	0	0	0	0	0
75.317	0	0	0	0	0	0	0	0	0	0	0	0	0
74.300	0	0	0	0	0	0	0	0	0	0	0	0	0
73.315	9	11	13	13	14	14	14	14	16	17	19	3	10
72.884	16	17	17	17	18	18	17	17	19	20	22	1	6
72.822	OK-82 Bridge												
72.772	19	21	20	21	21	21	21	21	23	23	40	1	21
71.645	19	21	20	21	21	21	21	21	23	23	41	1	22
70.910	14	16	16	16	17	17	16	16	18	19	21	1	7
69.686	14	15	15	16	16	16	16	16	18	19	21	1	7
68.685	0	0	0	0	0	0	0	0	0	0	0	0	0
67.715	0	0	0	0	0	0	0	0	0	0	0	0	0
66.855	0	0	0	0	0	0	0	0	0	0	0	0	0
66.780	Big Cabin Creek												
65.712	0	0	0	0	0	0	0	0	0	0	0	0	0
64.435	0	0	0	0	0	0	0	0	0	0	0	0	0
63.369	0	0	0	0	0	0	0	0	0	0	0	0	0
63.322	Strang Rd. Bridge												
63.299	0	0	0	0	0	0	0	0	0	0	0	0	0
62.325	0	0	0	0	0	0	0	0	0	0	0	0	0
61.308	0	0	0	0	0	0	0	0	0	0	0	0	0
60.263	0	0	0	0	0	0	0	0	0	0	0	0	0
60.200	Spavinaw Creek												
59.019	0	0	0	0	0	0	0	0	0	0	0	0	0
57.950	0	0	0	0	0	0	0	0	0	0	0	0	0
56.927	0	0	0	0	0	0	0	0	0	0	0	0	0
55.890	0	0	0	0	0	0	0	0	0	0	0	0	0
54.456	0	0	0	0	0	0	0	0	0	0	0	0	0
52.988	0	0	0	0	0	0	0	0	0	0	0	0	0
52.954	OK-20 Bridge												
52.922	0	0	0	0	0	0	0	0	0	0	0	0	0
50.500	Saline Creek												
50.396	0	0	0	0	0	0	0	0	0	0	0	0	0
49.110	0	0	0	0	0	0	0	0	0	0	0	0	0
48.118	0	0	0	0	0	0	0	0	0	0	0	0	0
47.186	0	0	0	0	0	0	0	0	0	0	0	0	0
47.120	Kerr Dam												

1. Max difference in duration from simulations with Pensacola Dam starting stages of EL 742.0 to 745.0 ft.
2. Max difference in duration from simulations with Pensacola Dam starting stages of EL 734.0 to 757.0 ft.

River Mile	Pensacola Dam Starting Stage (ft, PD)					Max Duration Difference* (hours)
	Sep 1993 (21 year)	Jun 2004 (1 year)	Jul 2007 (4 year)	Oct 2009 (3 year)	Dec 2015 (15 year)	
	Duration (hours)	Duration (hours)	Duration (hours)	Duration (hours)	Duration (hours)	
77.000	Pensacola Dam					
76.880	0	0	0	0	0	0
76.463	0	0	0	0	0	0
76.414	N 4475 Rd. Bridge					
76.362	0	0	0	0	0	0
75.317	0	0	0	0	0	0
74.300	0	0	0	0	0	0
73.315	0	0	0	0	0	0
72.884	0	0	0	0	0	0
72.822	OK-82 Bridge					
72.772	0	0	0	0	0	0
71.645	0	0	0	0	0	0
70.910	0	0	0	0	0	0
69.686	0	0	0	0	0	0
68.685	0	0	0	0	0	0
67.715	0	0	0	0	0	0
66.855	0	0	0	0	0	0
66.780	Big Cabin Creek					
65.712	0	0	0	0	0	0
64.435	0	0	0	0	0	0
63.369	0	0	0	0	0	0
63.322	Strang Rd. Bridge					
63.299	0	0	0	0	0	0
62.325	0	0	0	0	0	0
61.308	0	0	0	0	0	0
60.263	0	0	0	0	0	0
60.200	Spavinaw Creek					
59.019	0	0	0	0	0	0
57.950	0	0	0	0	0	0
56.927	0	0	0	0	0	0
55.890	0	0	0	0	0	0
54.456	0	0	0	0	0	0
52.988	0	0	0	0	0	0
52.954	OK-20 Bridge					
52.922	0	0	0	0	0	0
50.500	Saline Creek					
50.396	0	0	0	0	0	0
49.110	0	0	0	0	0	0
48.118	0	0	0	0	0	0
47.186	0	0	0	0	0	0
47.120	Kerr Dam					

* Max difference in duration from simulations with historical starting stages.

APPENDIX G:
ANTICIPATED OPERATIONS ANALYSIS

APPENDIX G.1:
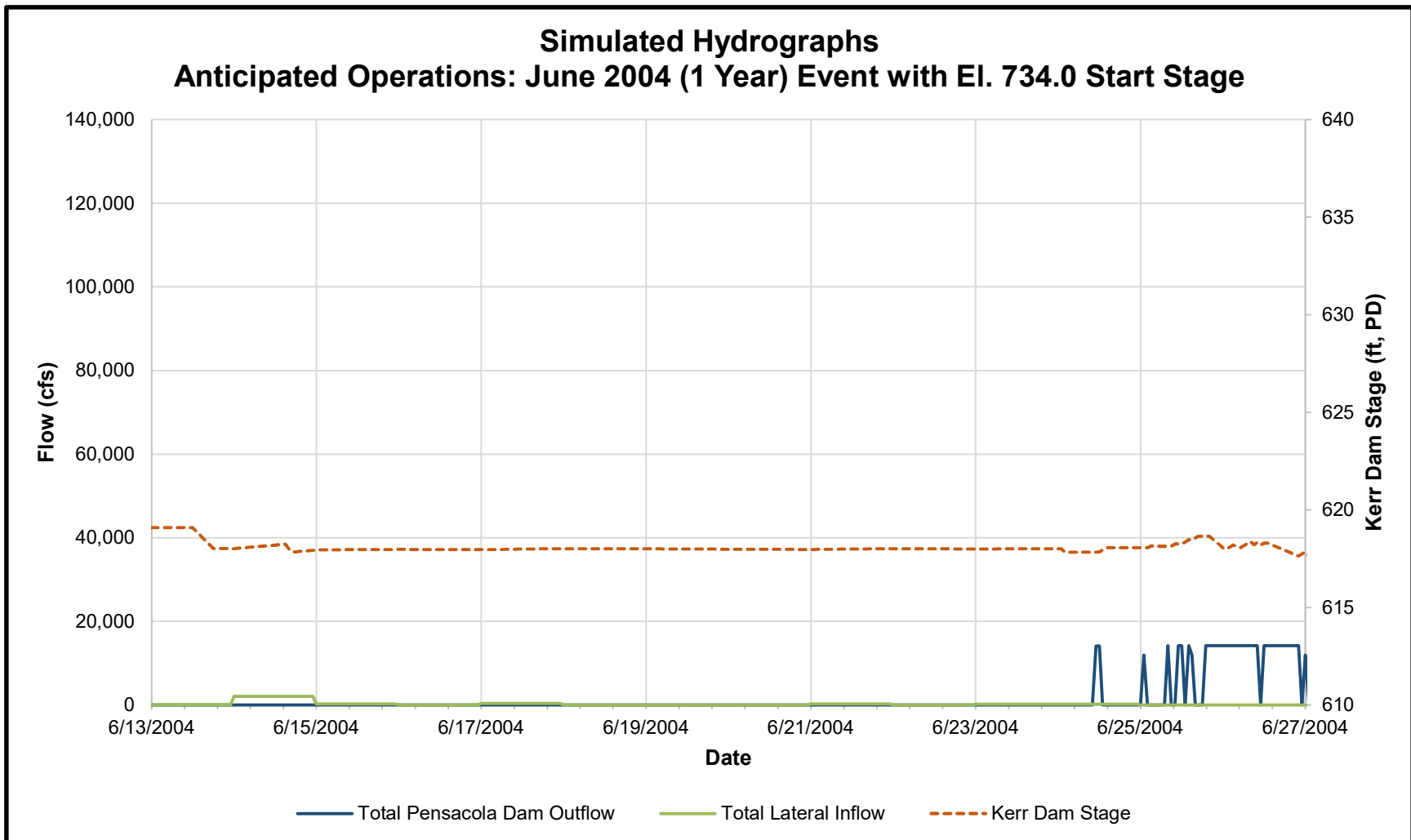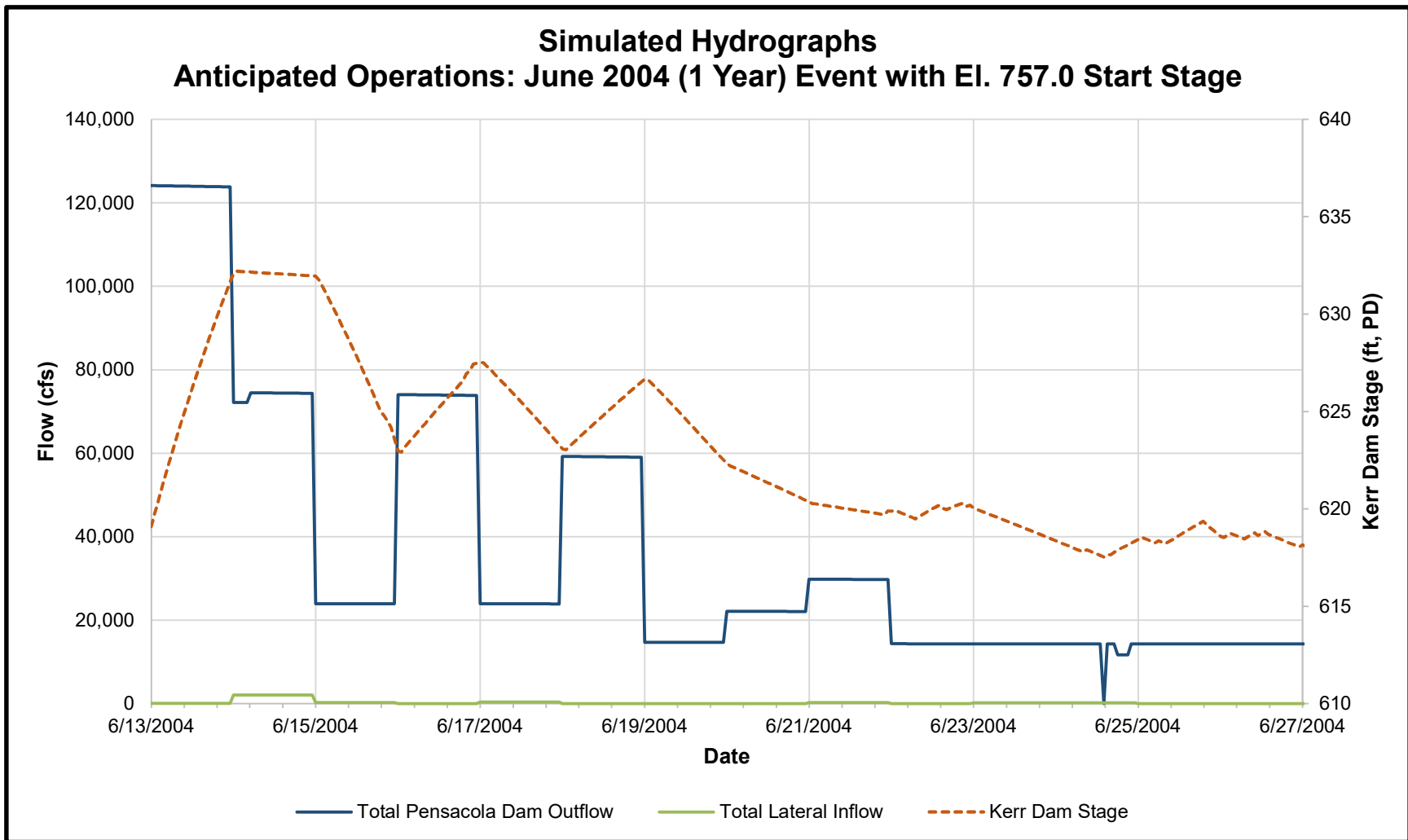## ANTICIPATED OPERATIONS ANALYSIS
SIMULATED HYDROGRAPHS

Figure G.1. Simulated hydrograph for Anticipated Operations for the June 2004 (1 year) event with El. 734.0 starting stage at Pensacola Dam.

Notes: 1. The solid blue and green lines are plotted against the left y-axis and represent the Total Pensacola Dam Outflow and Total Lateral Inflow respectively.

2. The dashed line is plotted against the right y-axis and represents the stage at Kerr Dam.

Figure G.2. Simulated hydrograph for Anticipated Operations for the June 2004 (1 year) event with El. 757.0 starting stage at Pensacola Dam.

Notes: 1. *The solid blue and green lines are plotted against the left y-axis and represent the Total Pensacola Dam Outflow and Total Lateral Inflow respectively.*

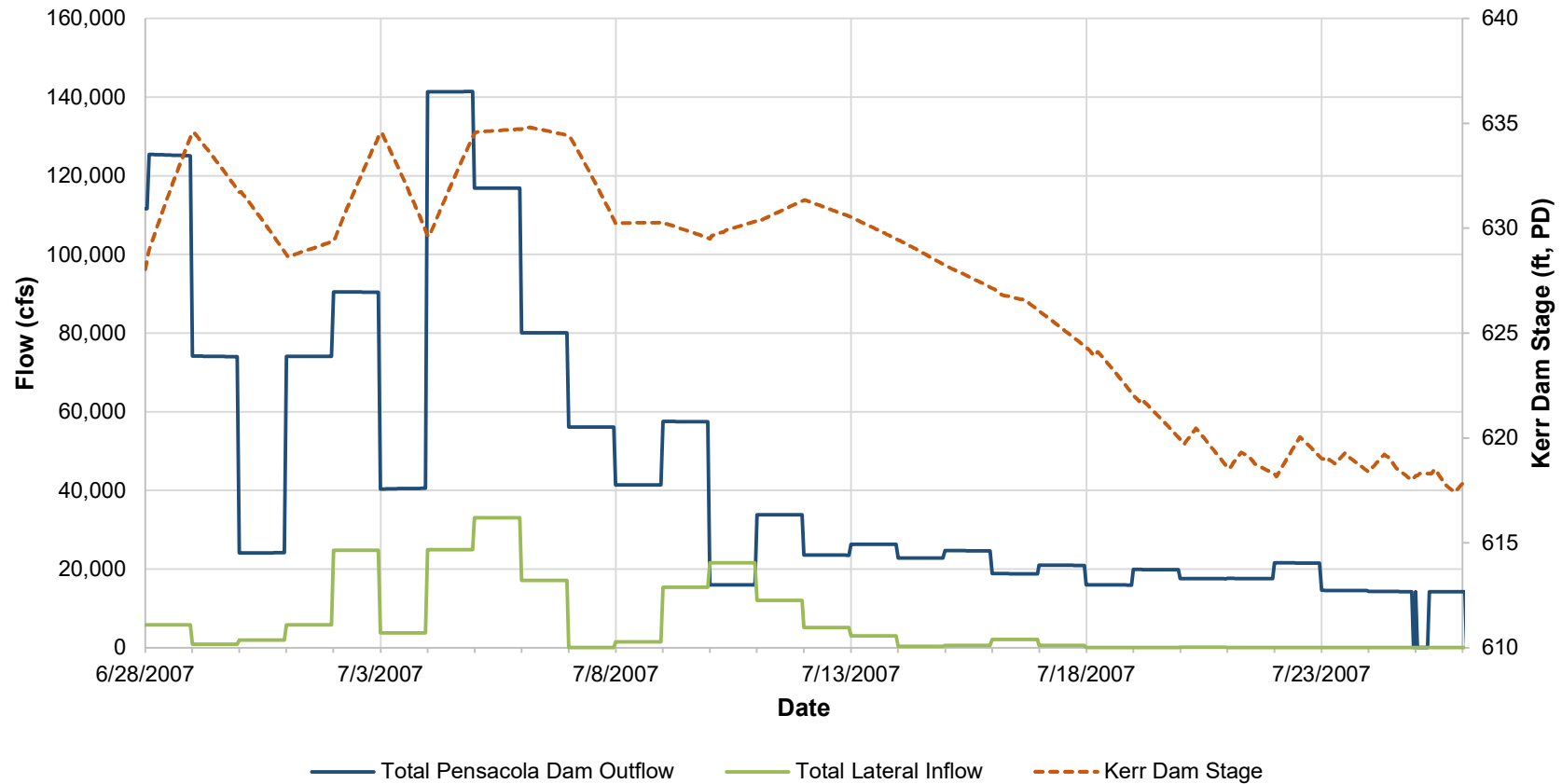2. *The dashed line is plotted against the right y-axis and represents the stage at Kerr Dam.*

Figure G.3. Simulated hydrograph for Baseline Operations for the July 2007 (4 year) event with OM Period of Record starting stage at Pensacola Dam.

Notes: 1. The solid blue and green lines are plotted against the left y-axis and represent the Total Pensacola Dam Outflow and Total Lateral Inflow respectively.

2. The dashed line is plotted against the right y-axis and represents the stage at Kerr Dam.
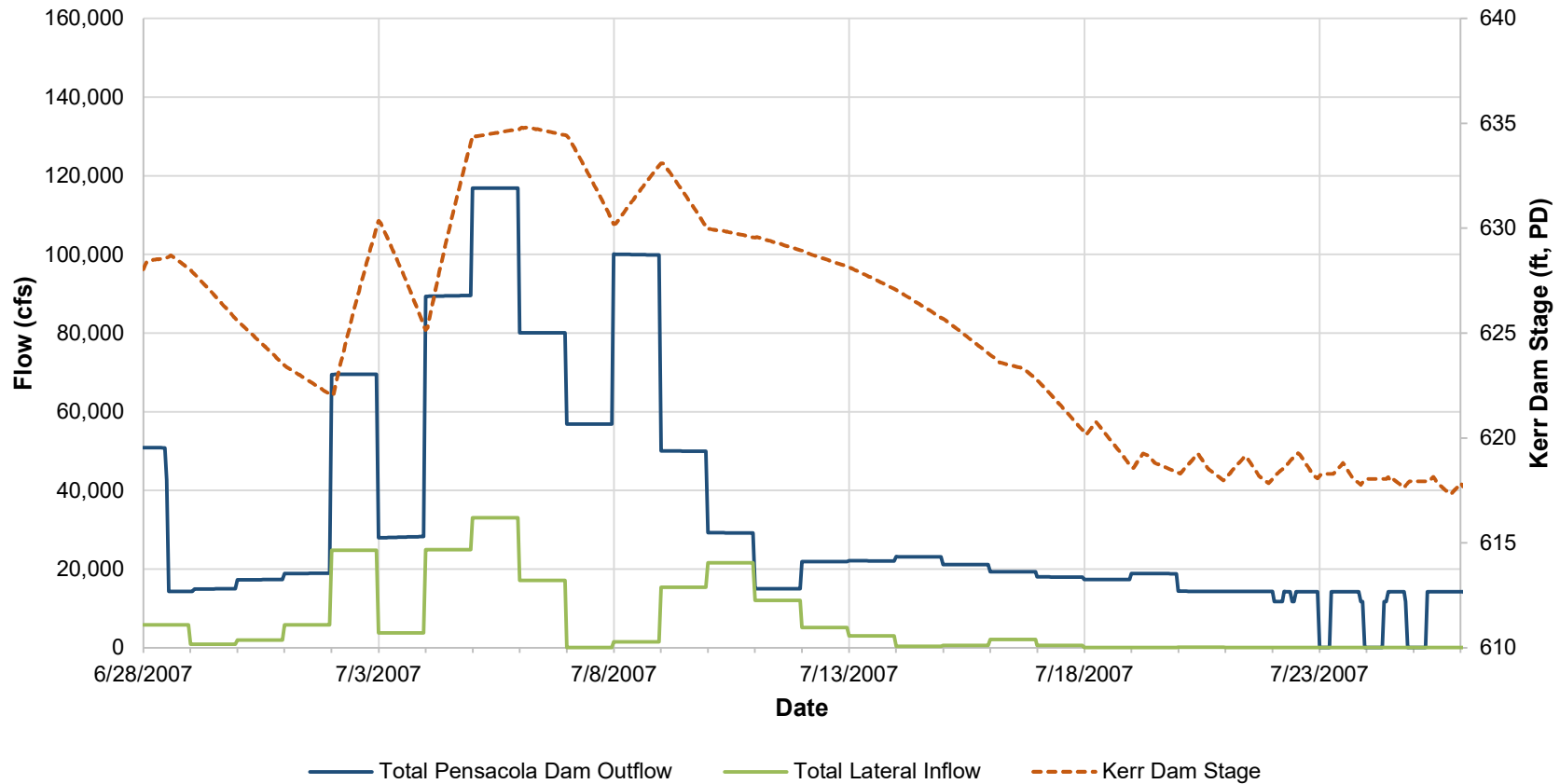
Figure G.4. Simulated hydrograph for Anticipated Operations for the July 2007 (4 year) event with OM Period of Record starting stage at Pensacola Dam.

Notes: 1. *The solid blue and green lines are plotted against the left y-axis and represent the Total Pensacola Dam Outflow and Total Lateral Inflow respectively.*

2. *The dashed line is plotted against the right y-axis and represents the stage at Kerr Dam.*

Figure G.5. Simulated hydrograph for Anticipated Operations for the 100-year event with El. 734.0 starting stage at Pensacola Dam.

Notes: *1. The solid blue and green lines are plotted against the left y-axis and represent the Total Pensacola Dam Outflow and Total Lateral Inflow respectively.*

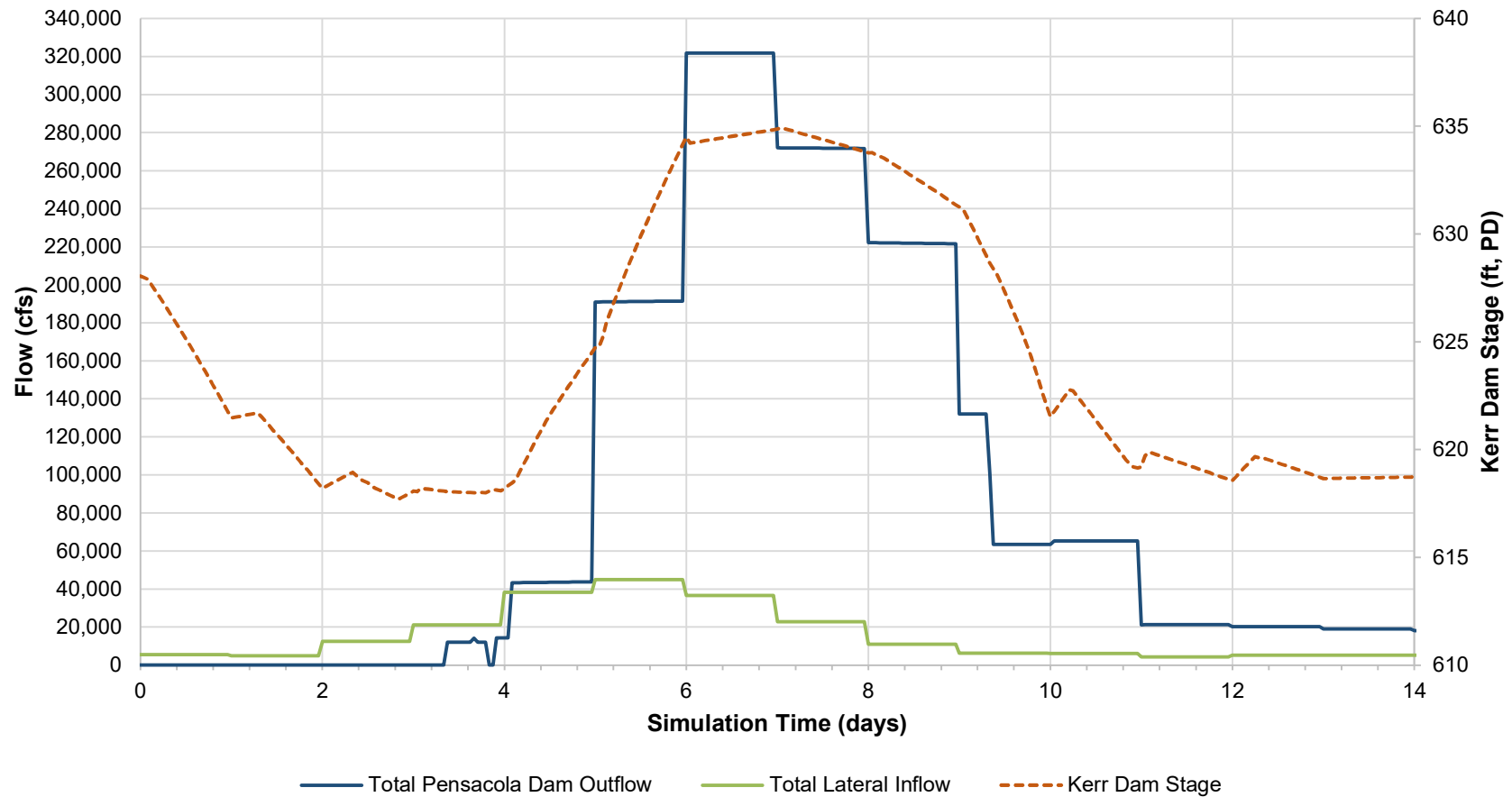   *2. The dashed line is plotted against the right y-axis and represents the stage at Kerr Dam.*
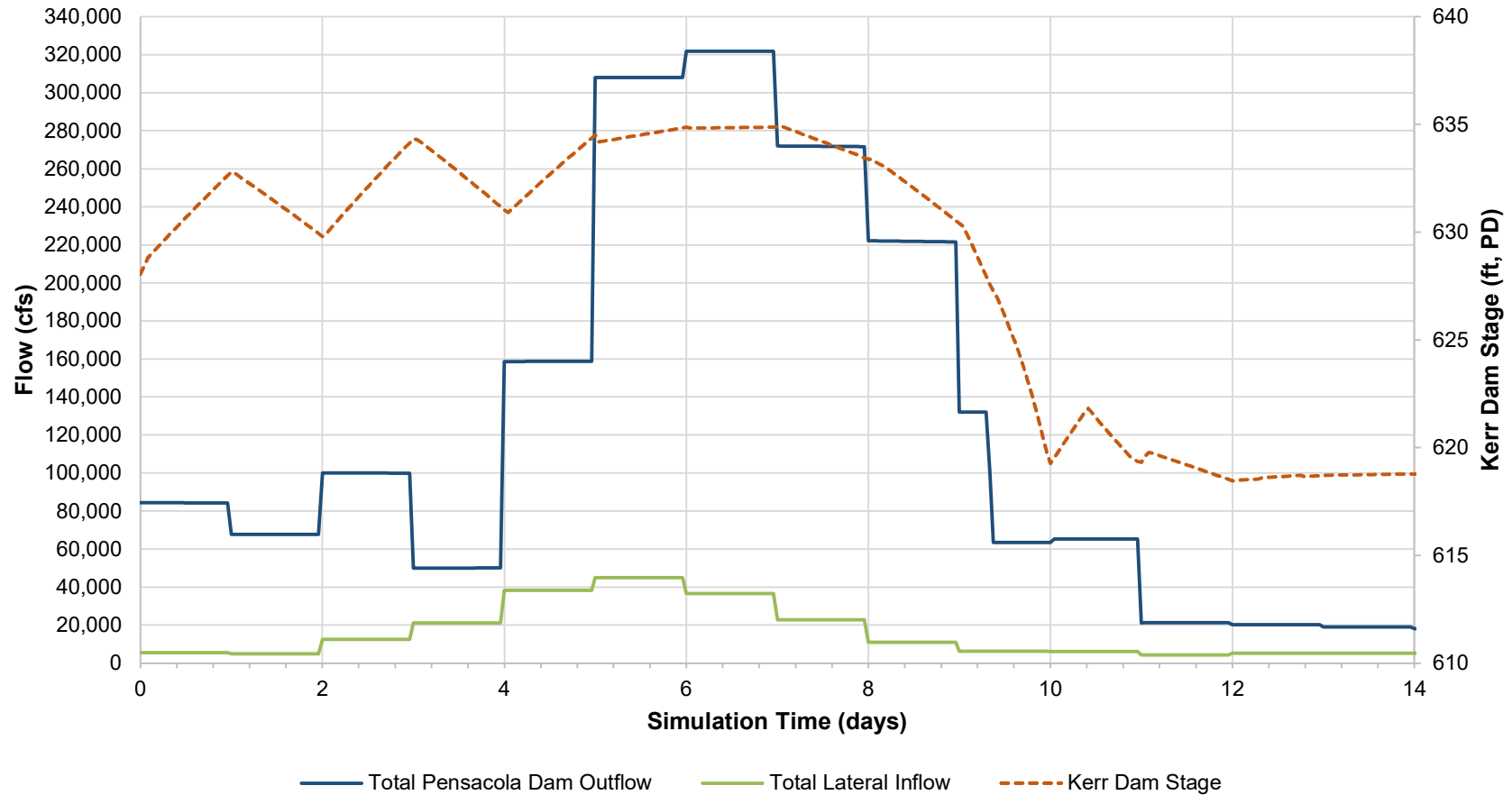
Figure G.6. Simulated hydrograph for Anticipated Operations for the 100-year event with El. 757.0 starting stage at Pensacola Dam.

Notes: 1. The solid blue and green lines are plotted against the left y-axis and represent the Total Pensacola Dam Outflow and Total Lateral Inflow respectively.

2. The dashed line is plotted against the right y-axis and represents the stage at Kerr Dam.

APPENDIX G.2:
ANTICIPATED OPERATIONS ANALYSIS
MAX WATER SURFACE ELEVATIONS

PENSACOLA DAM
GRAND RIVER DAM AUTHORITY

River Mile	Bed El. (ft, PD)	Baseline Operations					Anticipated Operations					Anticipated vs. Baseline[1]		
		Jun 2004, Start @ 734 ft	Jun 2004, Start @ 757 ft	July 2007, Period of Record	100-Year, Start @ 734 ft	100-Year, Start @ 757 ft	Jun 2004, Start @ 734 ft	Jun 2004, Start @ 757 ft	July 2007, Period of Record	100-Year, Start @ 734 ft	100-Year, Start @ 757 ft	Jun 2004 (1 year) Difference (ft)	July 2007 (4 year) Difference (ft)	100-Year Difference (ft)
		Max WSE (ft, PD)	Max WSE (ft, PD)	Max WSE (ft, PD)	Max WSE (ft, PD)	Max WSE (ft, PD)	Max WSE (ft, PD)	Max WSE (ft, PD)	Max WSE (ft, PD)	Max WSE (ft, PD)	Max WSE (ft, PD)			
77.000	Pensacola Dam													
76.880	608.88	623.14	642.63	643.30	656.34	656.35	623.46	642.63	643.29	656.34	656.35	0.32	-0.01	0.00
76.463	607.35	622.84	642.59	643.26	656.28	656.29	623.18	642.59	643.26	656.28	656.29	0.34	0.00	0.00
76.414	N 4475 Rd. Bridge													
76.362	607.61	622.54	642.57	643.24	656.24	656.25	622.90	642.57	643.23	656.24	656.25	0.36	-0.01	0.00
75.317	606.30	621.46	641.82	642.60	654.94	654.95	621.97	641.82	642.59	654.94	654.95	0.51	-0.01	0.00
74.300	605.42	620.92	640.20	641.28	652.68	652.69	621.44	640.20	641.27	652.68	652.69	0.52	-0.01	0.00
73.315	600.08	620.58	639.15	640.46	651.10	651.11	621.08	639.15	640.45	651.10	651.11	0.50	-0.01	0.00
72.884	606.92	620.29	638.36	639.86	650.34	650.35	620.78	638.36	639.85	650.34	650.35	0.49	-0.01	0.00
72.822	OK-82 Bridge													
72.772	604.91	620.20	638.12	639.68	649.64	649.66	620.69	638.12	639.67	649.65	649.66	0.49	-0.01	0.01
71.645	603.05	619.18	637.30	639.13	648.74	648.76	619.71	637.30	639.12	648.74	648.76	0.53	-0.01	0.00
70.910	601.50	619.09	636.03	638.19	647.48	647.50	619.46	636.03	638.18	647.48	647.50	0.37	-0.01	0.00
69.686	599.92	619.09	635.06	637.59	646.43	646.45	619.18	635.06	637.58	646.43	646.45	0.09	-0.01	0.00
68.685	597.81	619.09	634.14	636.94	644.60	644.63	619.09	634.14	636.93	644.60	644.63	0.00	-0.01	0.00
67.715	594.14	619.09	633.58	636.50	643.11	643.15	619.09	633.58	636.49	643.12	643.15	0.00	-0.01	0.01
66.855	592.57	619.09	633.23	636.20	642.00	642.04	619.09	633.23	636.19	642.01	642.04	0.00	-0.01	0.01
66.780	Big Cabin Creek													
65.712	590.99	619.09	632.99	635.82	640.58	640.62	619.09	632.99	635.81	640.59	640.62	0.00	-0.01	0.01
64.435	588.21	619.09	632.73	635.44	638.99	639.02	619.09	632.73	635.43	638.99	639.02	0.00	-0.01	0.00
63.369	585.72	619.09	632.52	635.12	638.03	638.06	619.09	632.52	635.11	638.03	638.06	0.00	-0.01	0.00
63.322	Strang Rd. Bridge													
63.299	587.89	619.09	632.51	635.04	637.08	637.13	619.09	632.51	635.04	637.08	637.13	0.00	0.00	0.00
62.325	582.59	619.09	632.54	635.11	637.19	637.24	619.09	632.54	635.11	637.19	637.24	0.00	0.00	0.00
61.308	584.75	619.09	632.50	635.06	636.69	636.74	619.09	632.50	635.05	636.69	636.74	0.00	-0.01	0.00
60.263	582.15	619.09	632.48	635.02	636.52	636.57	619.09	632.48	635.02	636.52	636.57	0.00	0.00	0.00
60.200	Spavinaw Creek													
59.019	582.85	619.09	632.42	634.96	636.17	636.21	619.09	632.42	634.95	636.17	636.21	0.00	-0.01	0.00
57.950	582.47	619.09	632.38	634.90	635.88	635.92	619.09	632.38	634.90	635.88	635.92	0.00	0.00	0.00
56.927	576.95	619.09	632.34	634.87	635.64	635.68	619.09	632.34	634.87	635.64	635.68	0.00	0.00	0.00
55.890	577.05	619.09	632.32	634.87	635.57	635.61	619.09	632.32	634.87	635.57	635.61	0.00	0.00	0.00
54.456	577.89	619.09	632.29	634.85	635.45	635.46	619.09	632.29	634.85	635.45	635.46	0.00	0.00	0.00
52.988	572.13	619.09	632.23	634.81	634.85	634.83	619.09	632.23	634.81	634.85	634.83	0.00	0.00	0.00

1 Max difference in Max WSEL for the simulated inflow event listed. Baseline operations max WSEL is subtracted from anticipated operations max WSEL to assess the impact of anticipated operations.

River Mile	Bed El. (ft, PD)	Baseline Operations					Anticipated Operations					Anticipated vs. Baseline[1]		
		Jun 2004, Start @ 734 ft	Jun 2004, Start @ 757 ft	July 2007, Period of Record	100-Year, Start @ 734 ft	100-Year, Start @ 757 ft	Jun 2004, Start @ 734 ft	Jun 2004, Start @ 757 ft	July 2007, Period of Record	100-Year, Start @ 734 ft	100-Year, Start @ 757 ft	Jun 2004 (1 year) Difference (ft)	July 2007 (4 year) Difference (ft)	100-Year Difference (ft)
		Max WSE (ft, PD)	Max WSE (ft, PD)	Max WSE (ft, PD)	Max WSE (ft, PD)	Max WSE (ft, PD)	Max WSE (ft, PD)	Max WSE (ft, PD)	Max WSE (ft, PD)	Max WSE (ft, PD)	Max WSE (ft, PD)			
52.954	OK-20 Bridge													
52.922	569.25	619.09	632.22	634.80	634.74	634.73	619.09	632.22	634.80	634.74	634.73	0.00	0.00	0.00
50.500	Saline Creek													
50.396	569.69	619.09	632.23	634.82	635.06	635.05	619.09	632.23	634.82	635.06	635.05	0.00	0.00	0.00
49.110	562.60	619.09	632.22	634.82	635.02	635.01	619.09	632.22	634.82	635.02	635.01	0.00	0.00	0.00
48.118	558.27	619.09	632.21	634.81	634.98	634.97	619.09	632.21	634.81	634.98	634.97	0.00	0.00	0.00
47.186	553.07	619.09	632.20	634.81	634.93	634.92	619.09	632.20	634.81	634.93	634.92	0.00	0.00	0.00
47.120	Kerr Dam													

1 Max difference in Max WSEL for the simulated inflow event listed. Baseline operations max WSEL
is subtracted from anticipated operations max WSEL to assess the impact of anticipated operations.

APPENDIX G.3:
ANTICIPATED OPERATIONS ANALYSIS
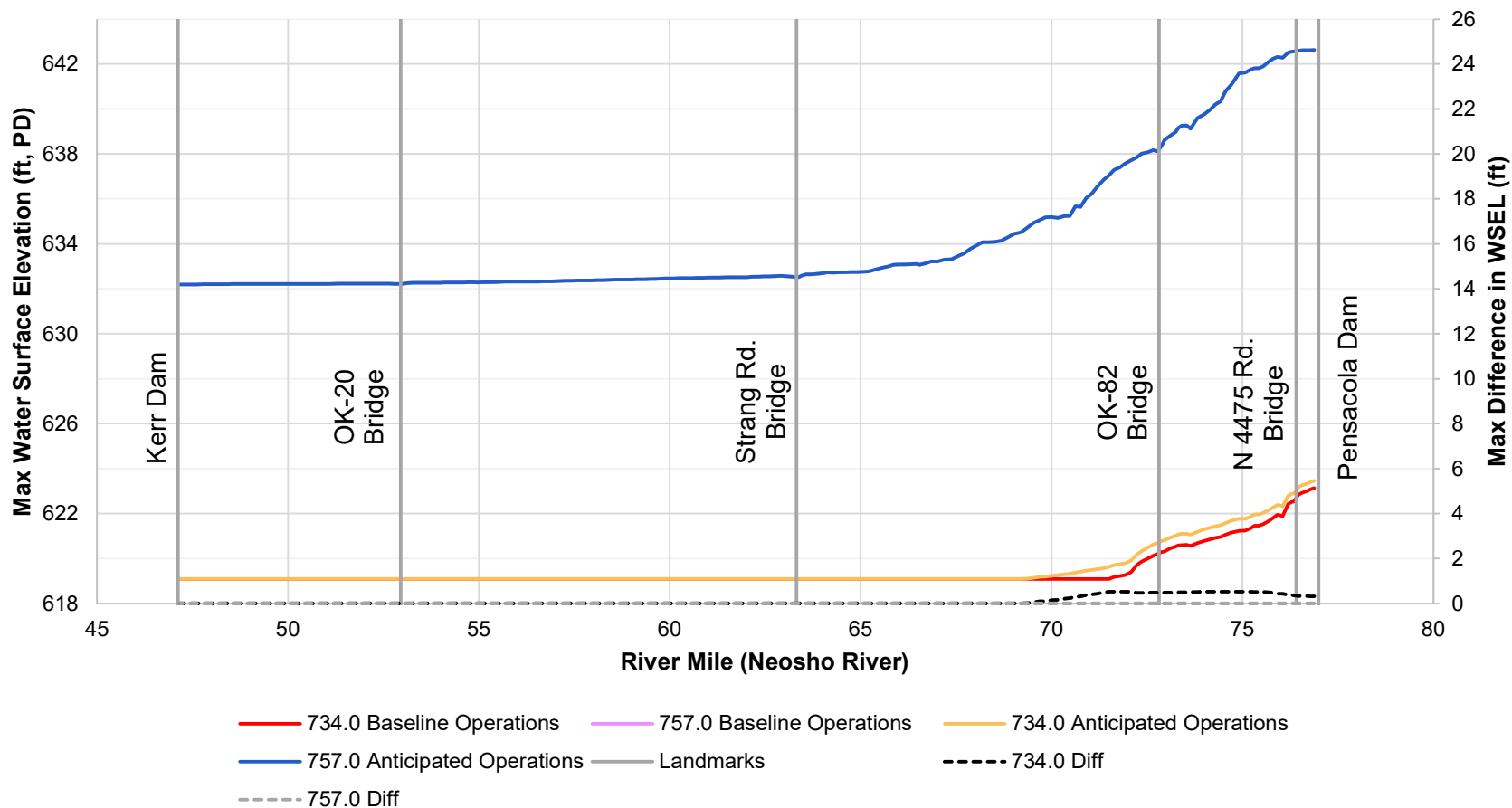WATER SURFACE ELEVATION PROFILES

Figure G.7. Water surface elevations for Baseline vs Anticipated Operations for the June 2004 (1 year) event downstream of Pensacola Dam along the Neosho River profile.

Notes: 1. The start of series' names refers to starting pool elevation at Pensacola Dam. For example, "734.0" means a starting pool of 734 ft PD.

2. The black dashed line plotted against the right y-axis represents the maximum difference in WSEL between baseline and anticipated operations at a starting elevation of 734 feet PD. The gray dashed line represents the maximum difference in WSEL between baseline and anticipated operations at a starting elevation of 757 feet PD.

3. Vertical and horizontal scales vary between plots based on the slope of the WSEL profiles and maximum differences displayed.

4. For portions of the reach where only the anticipated operations WSEL profile is visible, the WSEL profile for baseline operations is nearly identical.
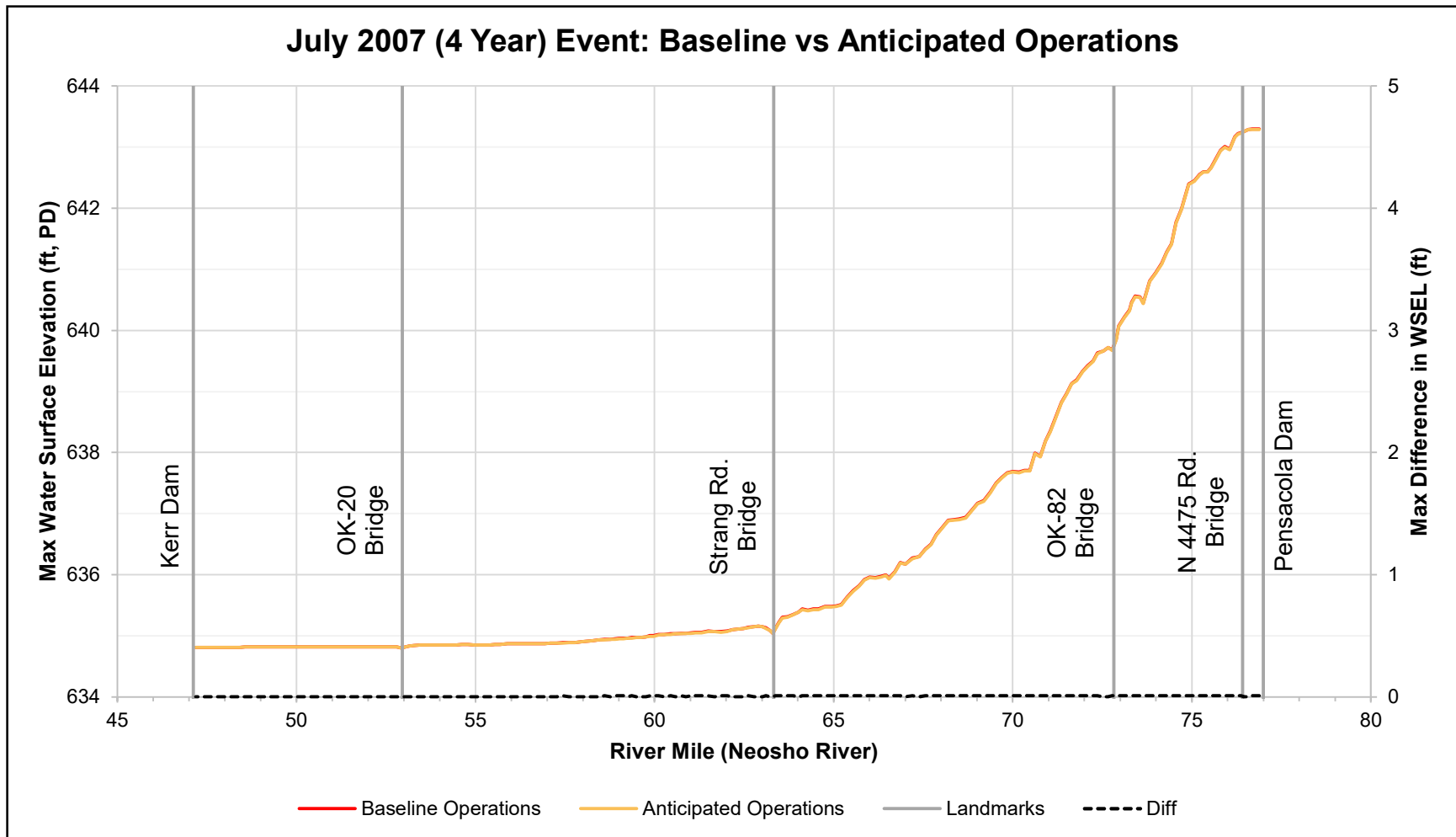
Figure G.8. Water surface elevations for Baseline vs Anticipated Operations for the July 2007 (4 year) event downstream of Pensacola Dam along the Neosho River profile.

Notes: 1. Both the baseline operations and anticipated operations simulations used their respective period of record stage as the simulation starting stage.

2. The black dashed line plotted against the right y-axis represents the maximum difference in WSEL between baseline and anticipated operations.

3. Vertical and horizontal scales vary between plots based on the slope of the WSEL profiles and maximum differences displayed.

4. For portions of the reach where only the anticipated operations WSEL profile is visible, the WSEL profile for baseline operations is nearly identical.
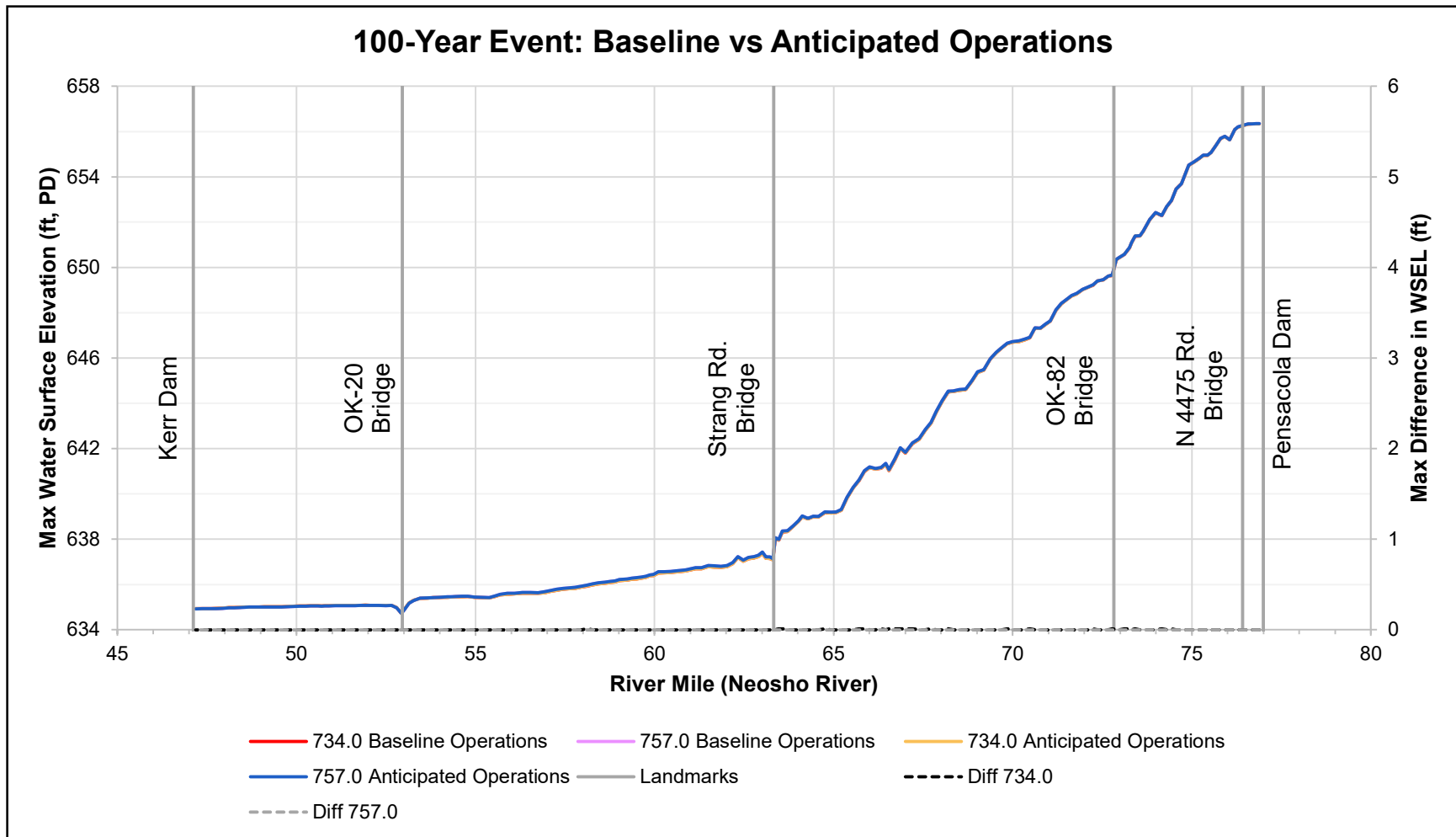
Figure G.9. Water surface elevations for Baseline vs Anticipated Operations for the 100-year event downstream of Pensacola Dam along the Neosho River profile.

Notes: 1. The start of series' names refers to starting pool elevation at Pensacola Dam. For example, "734.0" means a starting pool of 734 ft PD.

2. The black dashed line plotted against the right y-axis represents the maximum difference in WSEL between baseline and anticipated operations at a starting elevation of 734 feet PD. The gray dashed line represents the maximum difference in WSEL between baseline and anticipated operations at a starting elevation of 757 feet PD.

3. Vertical and horizontal scales vary between plots based on the slope of the WSEL profiles and maximum differences displayed.

4. For portions of the reach where only the anticipated operations WSEL profile is visible, the WSEL profile for baseline operations is nearly identical.

APPENDIX G.4:
ANTICIPATED OPERATIONS ANALYSIS
DURATION OF INUNDATION

PENSACOLA DAM **Table G.2**
GRAND RIVER DAM AUTHORITY DOWNSTREAM MODEL DURATIONS - BASELINE VS ANTICIPATED OPERATIONS

River Mile	Bed El. (ft, PD)	Baseline Operations					Anticipated Operations					Anticipated vs. Baseline[1]		
		Jun 2004, Start @ 734 ft	Jun 2004, Start @ 757 ft	July 2007, Period of Record	100-Year, Start @ 734 ft	100-Year, Start @ 757 ft	Jun 2004, Start @ 734 ft	Jun 2004, Start @ 757 ft	July 2007, Period of Record	100-Year, Start @ 734 ft	100-Year, Start @ 757 ft	Jun 2004 (1 year) Difference	July 2007 (4 year) Difference	100-Year Difference
		Duration (hours)	Duration (hours)	Duration (hours)	Duration (hours)	Duration (hours)	Duration (hours)	Duration (hours)	Duration (hours)	Duration (hours)	Duration (hours)	(hours)	(hours)	(hours)
77.000	Pensacola Dam													
76.880	608.88	0	0	0	0	0	0	0	0	0	0	0	0	0
76.463	607.35	0	0	0	0	0	0	0	0	0	0	0	0	0
76.414	N 4475 Rd. Bridge													
76.362	607.61	0	0	0	0	0	0	0	0	0	0	0	0	0
75.317	606.30	0	0	0	0	0	0	0	0	0	0	0	0	0
74.300	605.42	0	0	0	0	0	0	0	0	0	0	0	0	0
73.315	600.08	0	0	0	9	19	0	0	0	10	19	0	0	1
72.884	606.92	0	0	0	16	22	0	0	0	16	22	0	0	0
72.822	OK-82 Bridge													
72.772	604.91	0	0	0	19	40	0	0	0	20	40	0	0	1
71.645	603.05	0	0	0	19	41	0	0	0	20	41	0	0	1
70.910	601.50	0	0	0	14	21	0	0	0	14	21	0	0	0
69.686	599.92	0	0	0	14	21	0	0	0	14	21	0	0	0
68.685	597.81	0	0	0	0	0	0	0	0	0	0	0	0	0
67.715	594.14	0	0	0	0	0	0	0	0	0	0	0	0	0
66.855	592.57	0	0	0	0	0	0	0	0	0	0	0	0	0
66.780	Big Cabin Creek													
65.712	590.99	0	0	0	0	0	0	0	0	0	0	0	0	0
64.435	588.21	0	0	0	0	0	0	0	0	0	0	0	0	0
63.369	585.72	0	0	0	0	0	0	0	0	0	0	0	0	0
63.322	Strang Rd. Bridge													
63.299	587.89	0	0	0	0	0	0	0	0	0	0	0	0	0
62.325	582.59	0	0	0	0	0	0	0	0	0	0	0	0	0
61.308	584.75	0	0	0	0	0	0	0	0	0	0	0	0	0
60.263	582.15	0	0	0	0	0	0	0	0	0	0	0	0	0
60.200	Spavinaw Creek													
59.019	582.85	0	0	0	0	0	0	0	0	0	0	0	0	0
57.950	582.47	0	0	0	0	0	0	0	0	0	0	0	0	0
56.927	576.95	0	0	0	0	0	0	0	0	0	0	0	0	0
55.890	577.05	0	0	0	0	0	0	0	0	0	0	0	0	0
54.456	577.89	0	0	0	0	0	0	0	0	0	0	0	0	0
52.988	572.13	0	0	0	0	0	0	0	0	0	0	0	0	0
52.954	OK-20 Bridge													
52.922	569.25	0	0	0	0	0	0	0	0	0	0	0	0	0
50.500	Saline Creek													
50.396	569.69	0	0	0	0	0	0	0	0	0	0	0	0	0
49.110	562.60	0	0	0	0	0	0	0	0	0	0	0	0	0
48.118	558.27	0	0	0	0	0	0	0	0	0	0	0	0	0
47.186	553.07	0	0	0	0	0	0	0	0	0	0	0	0	0
47.120	Kerr Dam													

1. Max increase in duration for the simulated inflow event listed. Baseline operations duration
is subtracted from anticipated operations duration to assess the impact of anticipated operations.