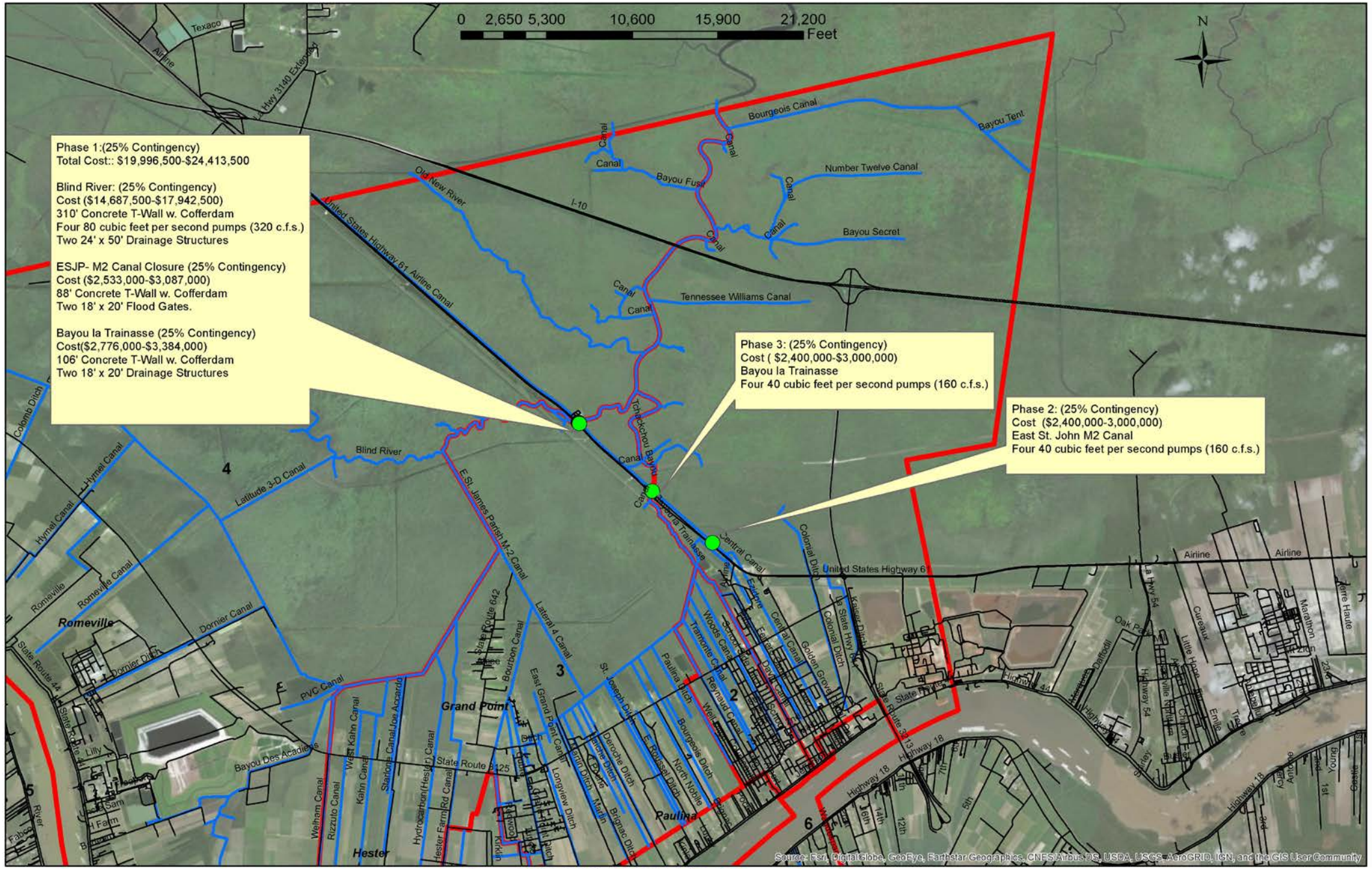
Airline Highway Backwater Protection

Blind River-Bayou Trainnasse-M2 Canal Gates & Pumps

Up to 6’ Protection NAVD 88



BKI BURK-KLEINPETER, INC.
ENGINEERS, ARCHITECTS, PLANNERS, ENVIRONMENTAL SCIENTISTS

Figure 1: Airline Backwater Protection System Phases 1, 2 & 3

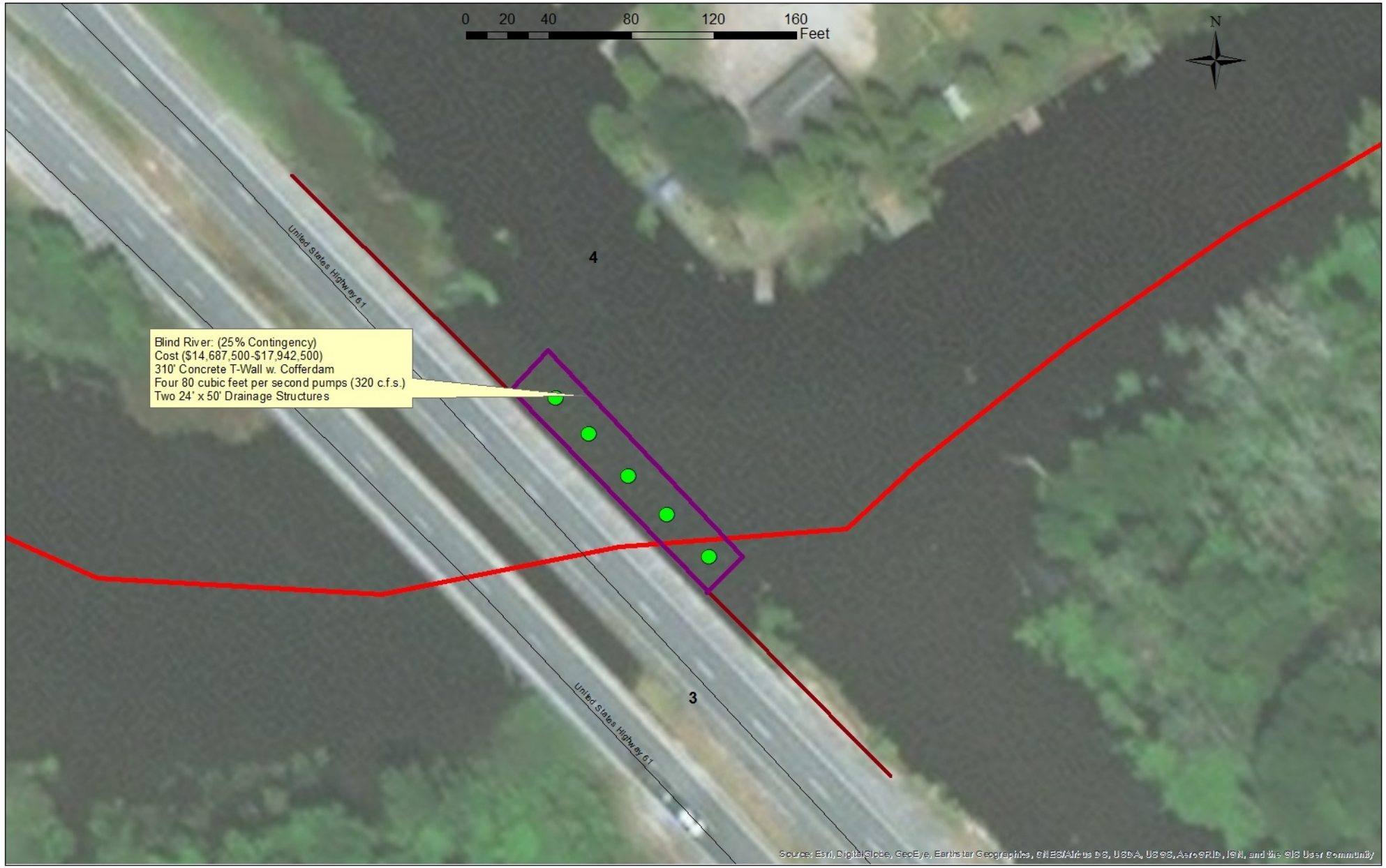


Figure 7: Page 35
Blind River Closure Structure

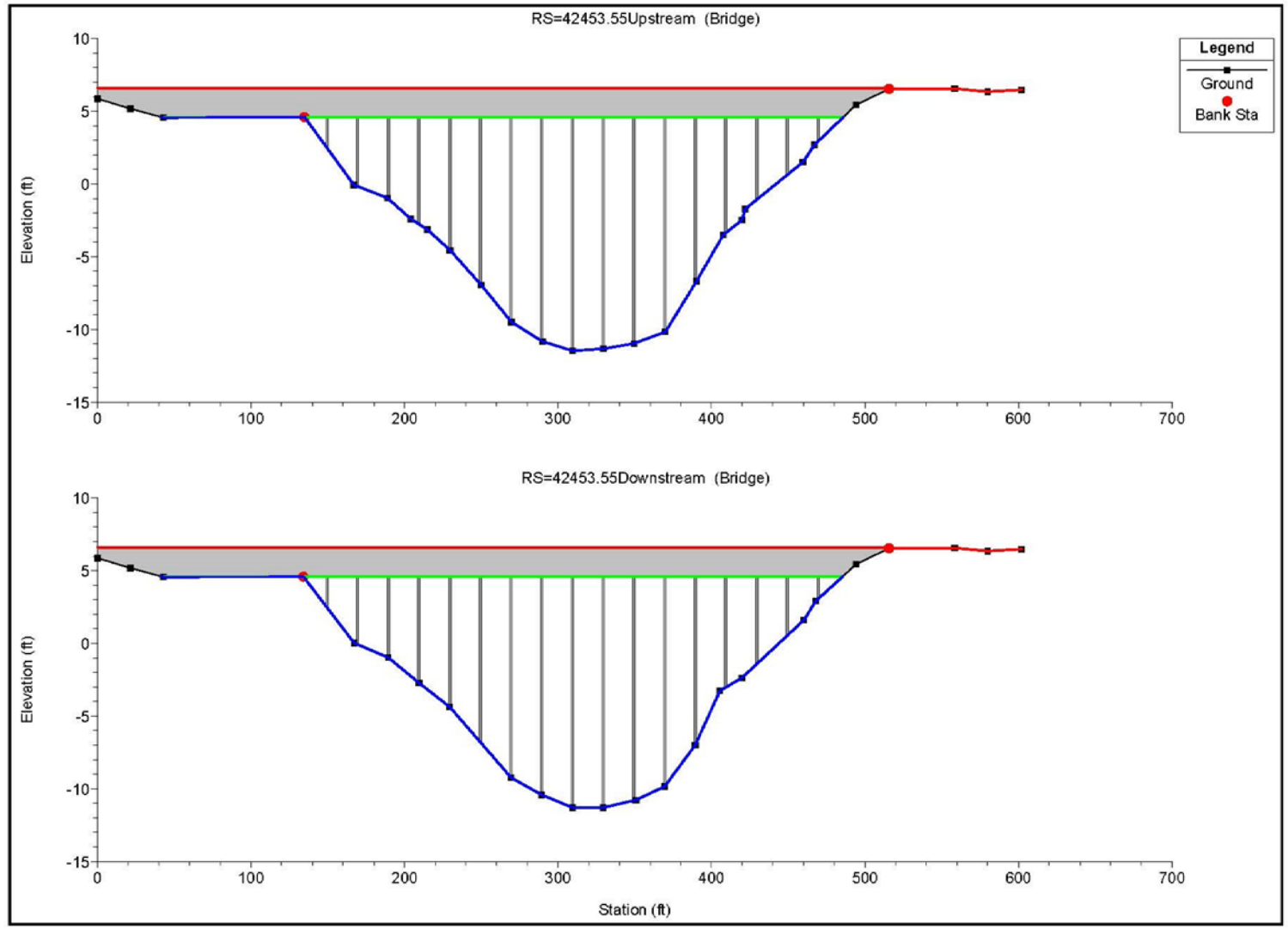
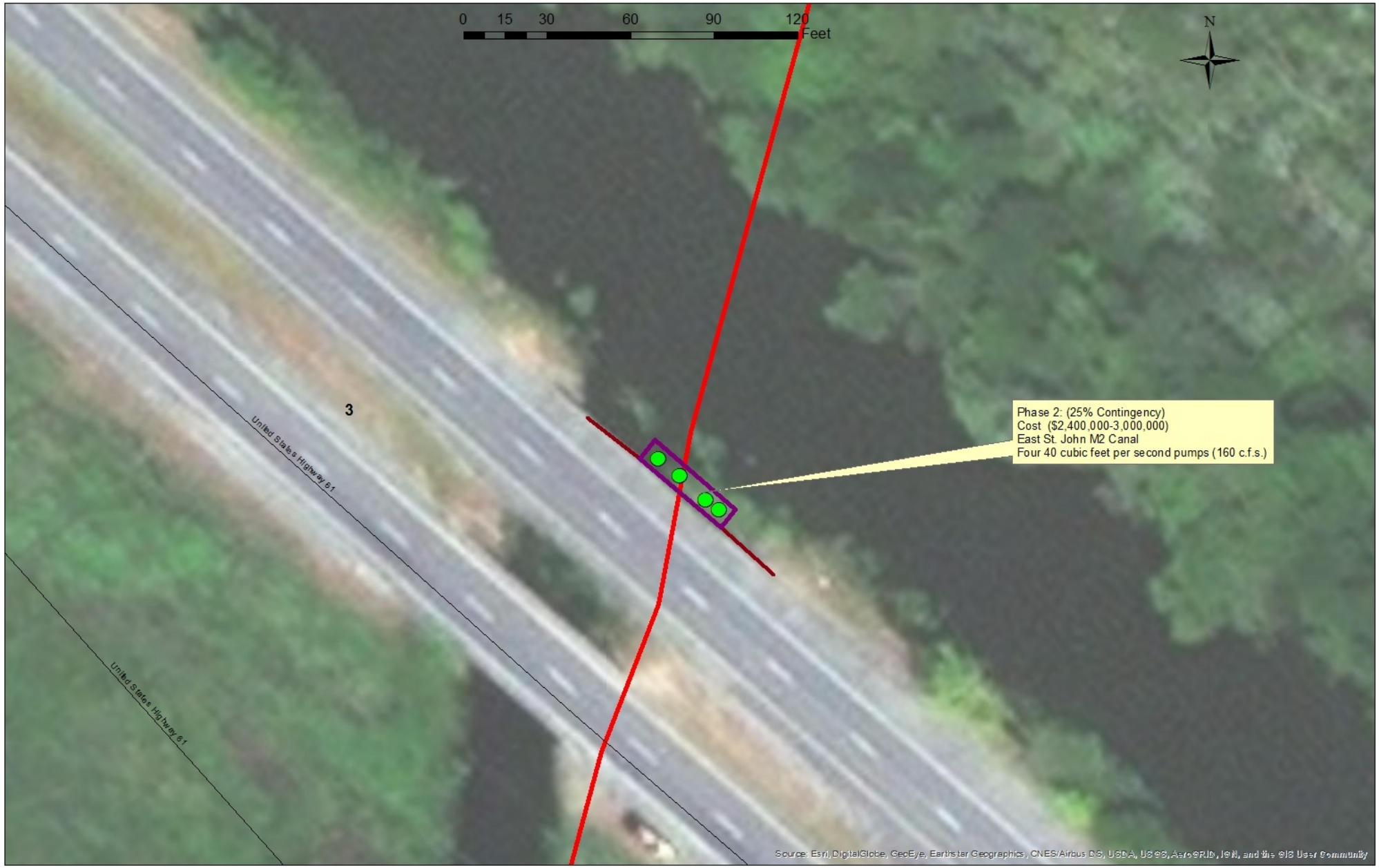


Figure 7A:
Blind River Cross Section



BKI BURK-KLEINPETER, INC.
ENGINEERS, ARCHITECTS, PLANNERS, ENVIRONMENTAL SCIENTISTS

Figure 8: Page 37
ESJP-M2 Canal Closure Structure

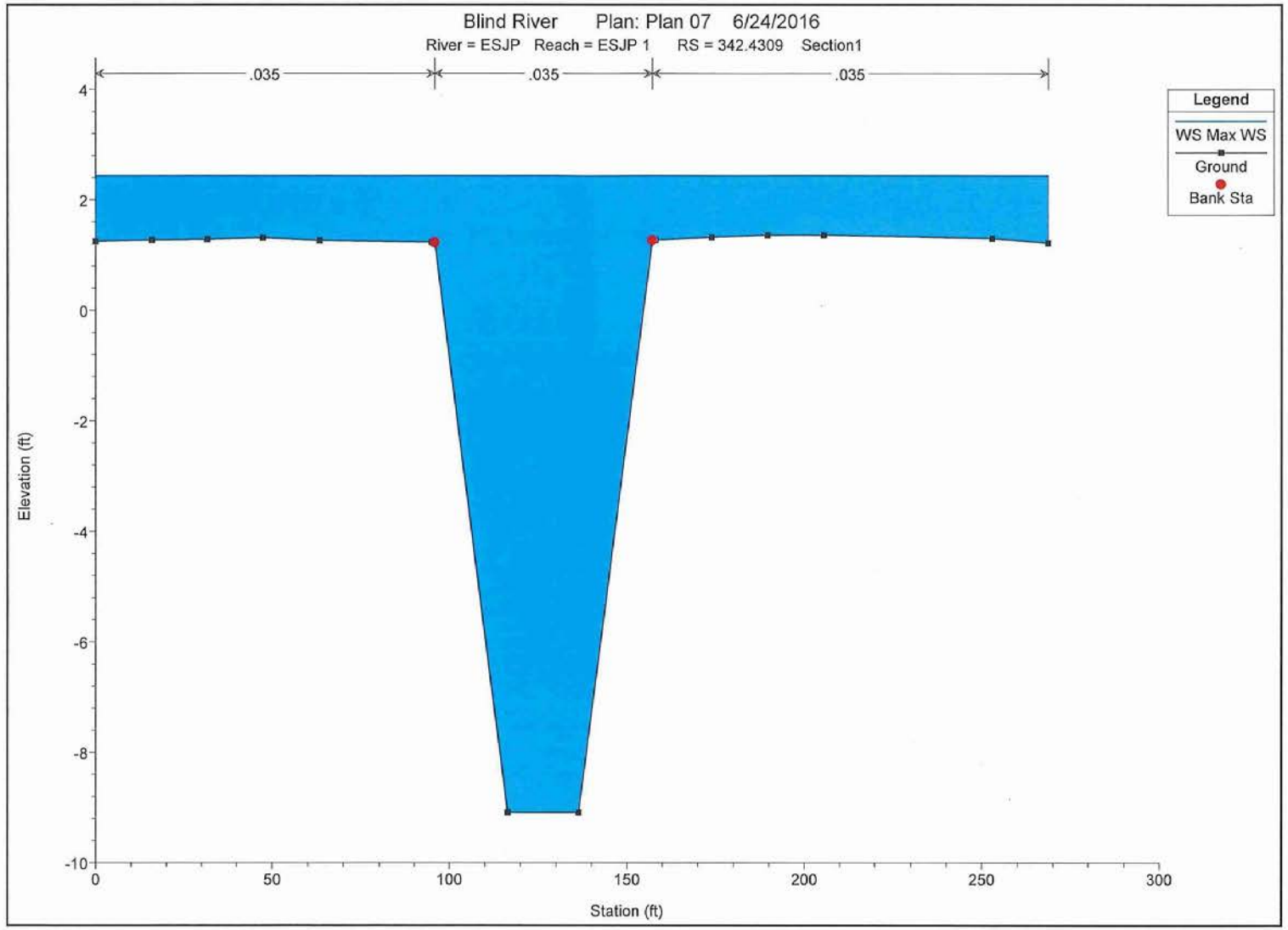


Figure 8A:
ESJP-M2 Cross Section

0 5 10 20 30 40
Feet
N
3
Phase 3: (25% Contingency)
Cost ($2,400,000-$3,000,000)
Bayou la Trainasse
Four 40 cubic feet per second pumps (160 c.f.s.)
United States Highway 61
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Date: May 2018

Phase 1

Phase 1: Airline Highway Backwater Protection Study

St. James Parish - Backwater Protection

Blind River - Airline Highway

Total Summary

Description	Estimated Quantity (Q)	Units	Unit Cost (UC)	Cost (Q*UC)	Contingency (25%)	Total Cost
East St. James M2 Canal Structure						
Concrete T- Wall Including Cofferdam	88	L.F.	$12,000	$1,056,000	$264,000	$1,320,000
Flood Gate (18' Height)	40	L.F.	$29,000	$1,160,000	$290,000	$1,450,000
Pump Station (160 cfs)	0	C.F.S.	$15,000	$0	$0	$0
Engineering/Permits	1	EACH	$277,000	$277,000	$0	$277,000
Survey	1	EACH	$5,000	$5,000	$0	$5,000
Geotechnical Report	1	EACH	$5,000	$5,000	$0	$5,000
Testing	1	EACH	$5,000	$5,000	$0	$5,000
Construction Administration	1	EACH	$5,000	$5,000	$0	$5,000
Resident Inspection	1	EACH	$20,000	$20,000	$0	$20,000
				$2,533,000	Total	**$3,087,000**
Bayou la Trainasse Structure						
Concrete T- Wall Including Cofferdam	106	L.F.	$12,000	$1,272,000	$318,000	$1,590,000
Flood Gate (18' Height)	40	L.F.	$29,000	$1,160,000	$290,000	$1,450,000
Pump Station (160 cfs)	0	C.F.S.	$15,000	$0	$0	$0
Engineering/Permits	1	EACH	$304,000	$304,000	$0	$304,000
Survey	1	EACH	$5,000	$5,000	$0	$5,000
Geotechnical Report	1	EACH	$5,000	$5,000	$0	$5,000
Testing	1	EACH	$5,000	$5,000	$0	$5,000
Construction Administration	1	EACH	$5,000	$5,000	$0	$5,000
Resident Inspection	1	EACH	$20,000	$20,000	$0	$20,000
				$2,776,000		**$3,384,000**
Blind River Structure						
Concrete T- Wall Including Cofferdam	310	L.F.	$12,000	$3,720,000	$930,000	$4,650,000
Flood Gate (25'-29" Height)	100	L.F.	$45,000	$4,500,000	$1,125,000	$5,625,000
Pump Station (320 cfs)	320	C.F.S.	$15,000	$4,800,000	$1,200,000	$6,000,000
Engineering/Permits	1	EACH	$1,627,500	$1,627,500	$0	$1,627,500
Survey	1	EACH	$5,000	$5,000	$0	$5,000
Geotechnical Report	1	EACH	$5,000	$5,000	$0	$5,000
Testing	1	EACH	$5,000	$5,000	$0	$5,000
Construction Administration	1	EACH	$5,000	$5,000	$0	$5,000
Resident Inspection	1	EACH	$20,000	$20,000	$0	$20,000
				$14,687,500		**$17,942,500**
(Total Summary)				**W. 25% Contingency**	**Total Summary**	**$24,413,500**
				W.O. 25% Contingency	**Total Summary**	**$19,996,500**

Date: May 2018

TABLE 3

Phase 2: Airline Highway Backwater Protection Study

St. James Parish - Backwater Protection
Blind River - Airline Highway
Total Summary

Description	Estimated Quantity (Q)	Units	Unit Cost (UC)	Cost (Q*UC)	Contingency (25%)	Total Cost
East St. James M2 Canal Structure						
Pump Station (160 cfs)	160	C.F.S.	$15,000	$2,400,000	$600,000	$3,000,000
					Total	**$3,000,000**
(Total Summary)				**W. 25% Contingency**	**Total Summary**	**$3,000,000**
				W.O. 25% Contingency	**Total Summary**	**$2,400,000**

Date: May 2018

TABLE 4

Phase 3: Airline Highway Backwater Protection Study

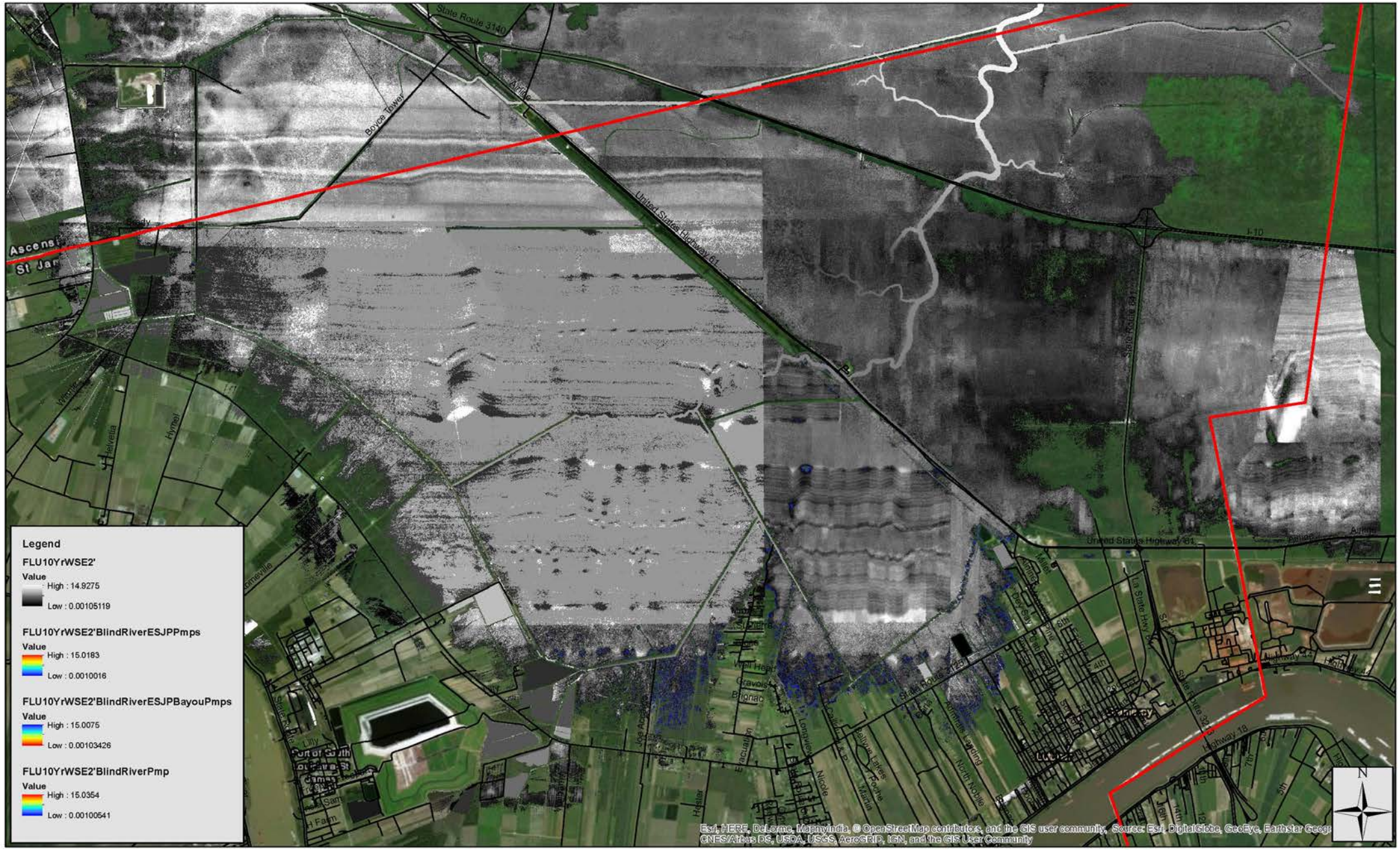
St. James Parish - Backwater Protection
Blind River - Airline Highway
Total Summary

Description	Estimated Quantity (Q)	Units	Unit Cost (UC)	Cost (Q*UC)	Contingency (25%)	Total Cost
Bayou Ia Trainasse Structure						
Pump Station (160 cfs)	160	C.F.S.	$15,000	$2,400,000	$600,000	$3,000,000
						$3,000,000
(Total Summary)				**W. 25% Contingency**	**Total Summary**	**$3,000,000**
				W.O. 25% Contingency	**Total Summary**	**$2,400,000**

Date: September 2018

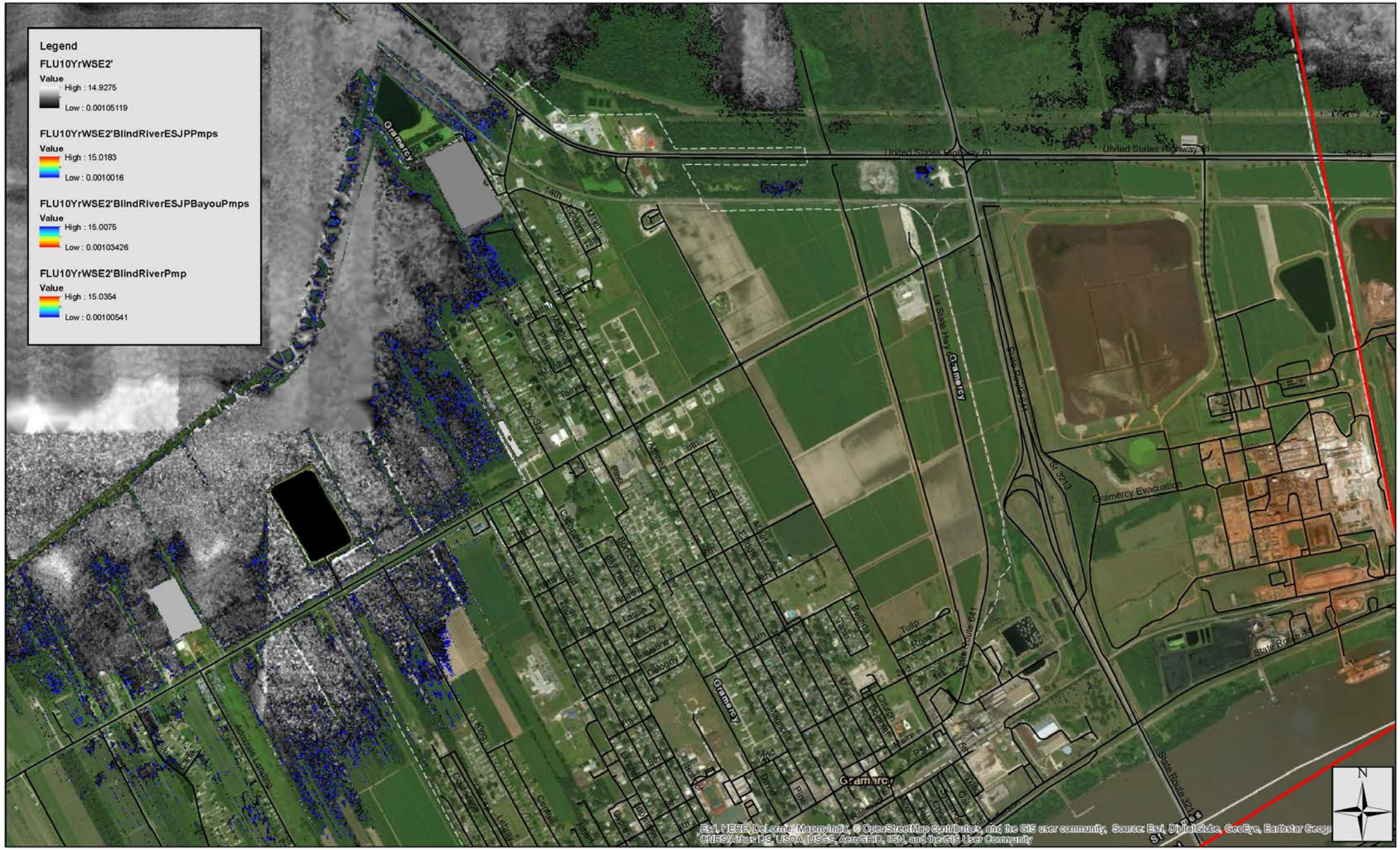
				Phase1,2,3,W. - 25% Contingency Grand Total		**$28,004,500**
Aquadam (2.65 Miles)				**Phase1,2,3,W.O. - 25% Contingency Grand Total**		**$24,796,500**
Aquadam (3')	2.65	Miles	$500,000	$1,325,000	$331,250	$1,656,250
						$1,656,250
	280 Survey Shots Every 50'					
				Phase1,2,3,Aquadam W. - 25% Contingency Grand Total		**$29,660,750**
				Phase1,2,3,Aquadam W.O. - 25% Contingency Grand Total		**$26,121,500**
Other Options						
Sheet Pile Wall 3' above 6' below = 9' x 14021'	126189	S.F.	$55.00	$6,940,395	$1,735,098.75	**$8,675,494**
HESCO Baskets 2'x2'x2' Sand Filled Baskets	14021	Ft.	$26.22	$367,630.62	$91,907.66	**$459,538**
HESCO Baskets 3'x3'x3' Sand Filled Baskets	14021	Ft.	$28.00	$392,588.00	$98,147.00	**$490,735**
HESCO Baskets 4'x3'x3' Sand Filled Baskets	14021	Ft.	$33.66	$471,946.86	$117,986.72	**$589,934**

$36,679,994	**$28,464,038**	**$25,164,130.62**
$28,495,235	**$25,189,088.00**	
$28,594,434	**$25,268,446.86**	



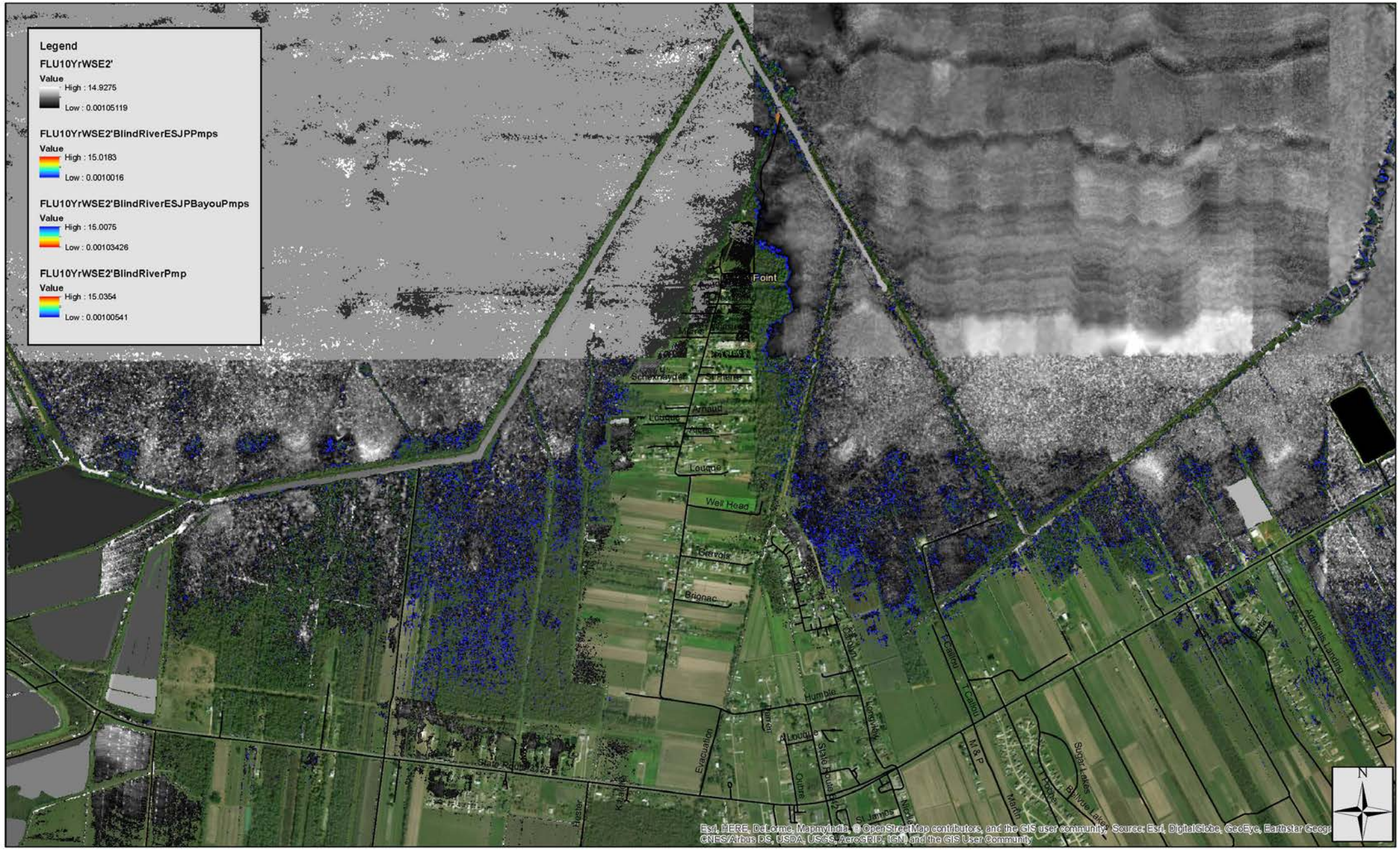
BURK-KLEINPETER, INC.
ENGINEERS, ARCHITECTS, PLANNERS, ENVIRONMENTAL SCIENTISTS

10Yr Rain Event- 8.8"/24hrs., 2' Lake W.S.E.
No Pump, Blind River Pump 320 c.f.s.,
Blind River 320 c.f.s., ESJP 160 c.f.s. Pumps
Blind River 320 c.f.s., ESJP 160 c.f.s. Bayou 160 c.f.s.Pumps



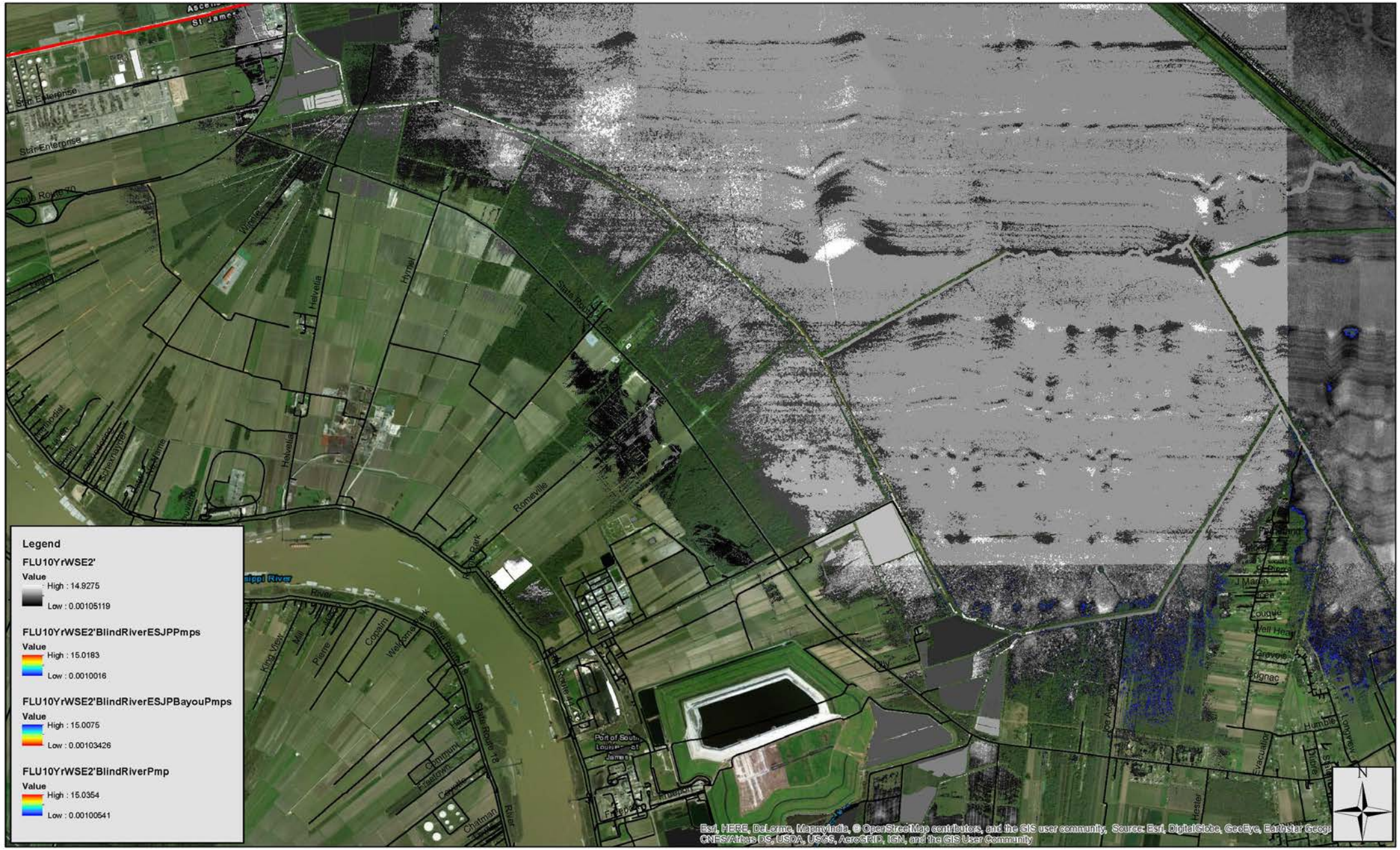
BKI BURK-KLEINPETER, INC.
ENGINEERS, ARCHITECTS, PLANNERS, ENVIRONMENTAL SCIENTISTS

10Yr Rain Event- 8.8"/24hrs., 2' Lake W.S.E.
No Pump, Blind River Pump 320 c.f.s.,
Blind River 320 c.f.s., ESJP 160 c.f.s. Pumps
Blind River 320 c.f.s., ESJP 160 c.f.s. Bayou 160 c.f.s.Pumps



BKI BURK-KLEINPETER, INC.
ENGINEERS, ARCHITECTS, PLANNERS, ENVIRONMENTAL SCIENTISTS

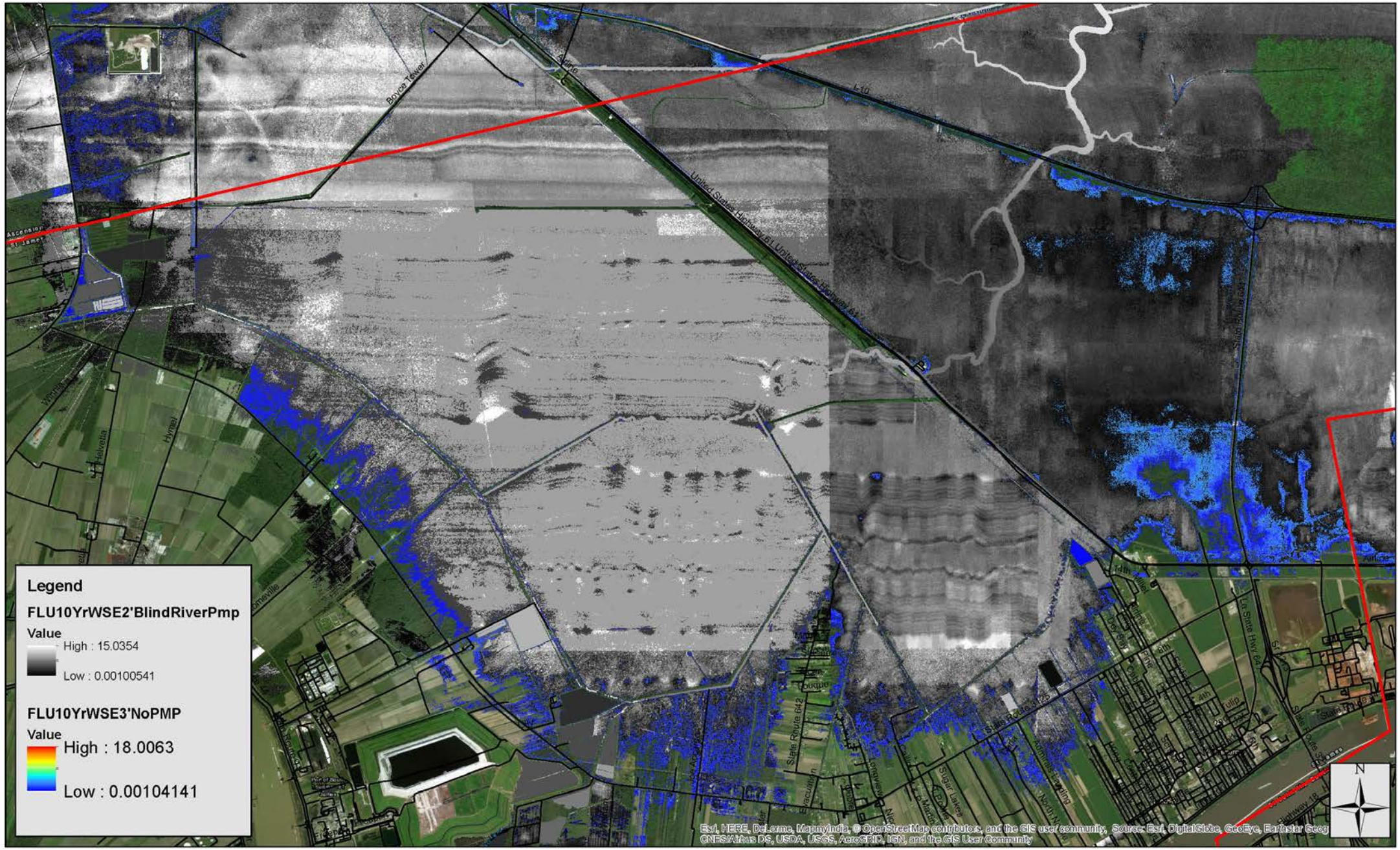
10Yr Rain Event- 8.8"/24hrs., 2' Lake W.S.E.
No Pump, Blind River Pump 320 c.f.s.,
Blind River 320 c.f.s., ESJP 160 c.f.s. Pumps
Blind River 320 c.f.s., ESJP 160 c.f.s. Bayou 160 c.f.s.Pumps



BKI BURK-KLEINPETER, INC.
ENGINEERS, ARCHITECTS, PLANNERS, ENVIRONMENTAL SCIENTISTS

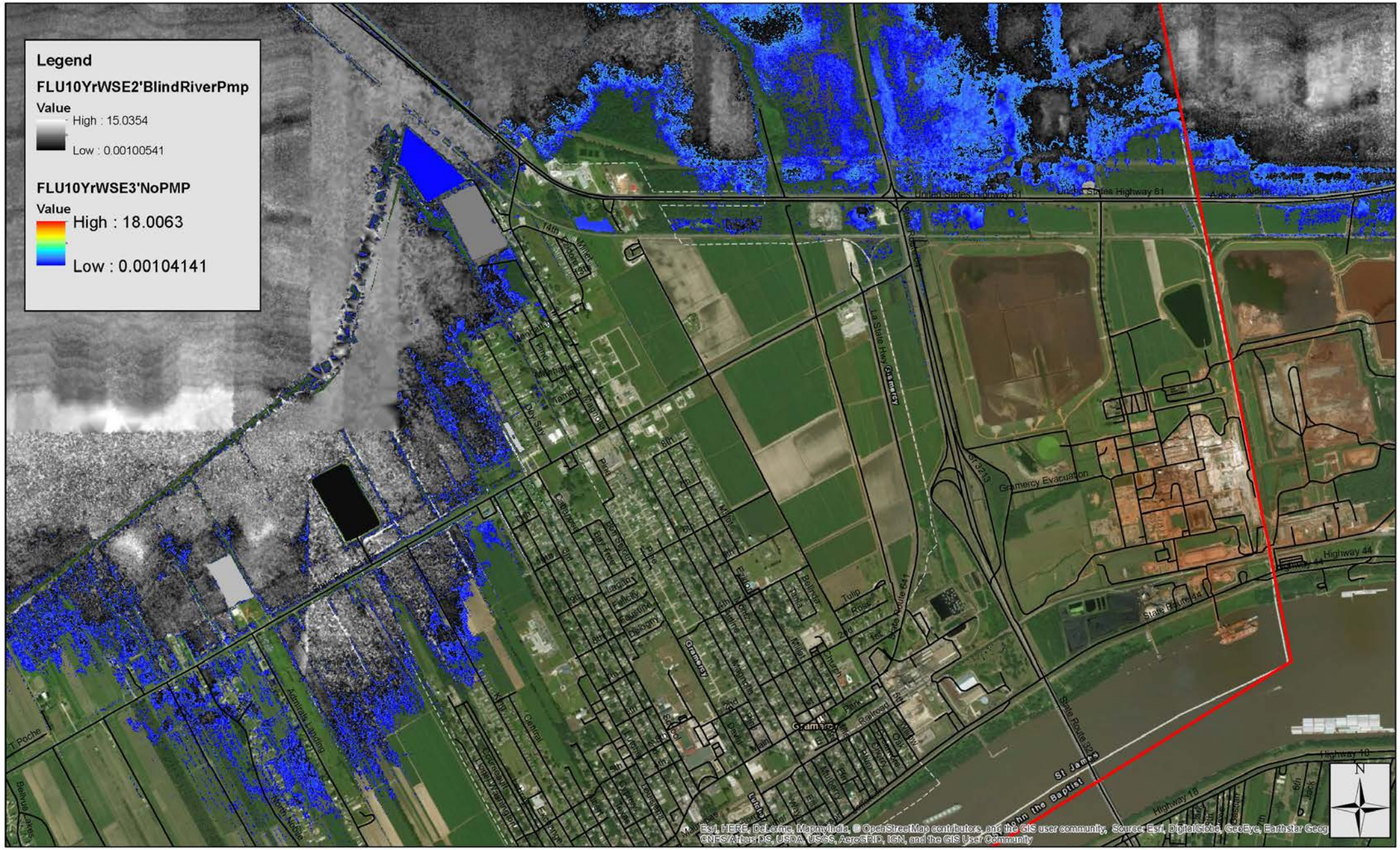
10Yr Rain Event- 8.8"/24hrs., 2' Lake W.S.E.
No Pump, Blind River Pump 320 c.f.s.,
Blind River 320 c.f.s., ESJP 160 c.f.s. Pumps
Blind River 320 c.f.s., ESJP 160 c.f.s. Bayou 160 c.f.s.Pumps

10 Year Event 8.8”/24 hr. 3’ NAVD88 Lake Water Surface Elevation



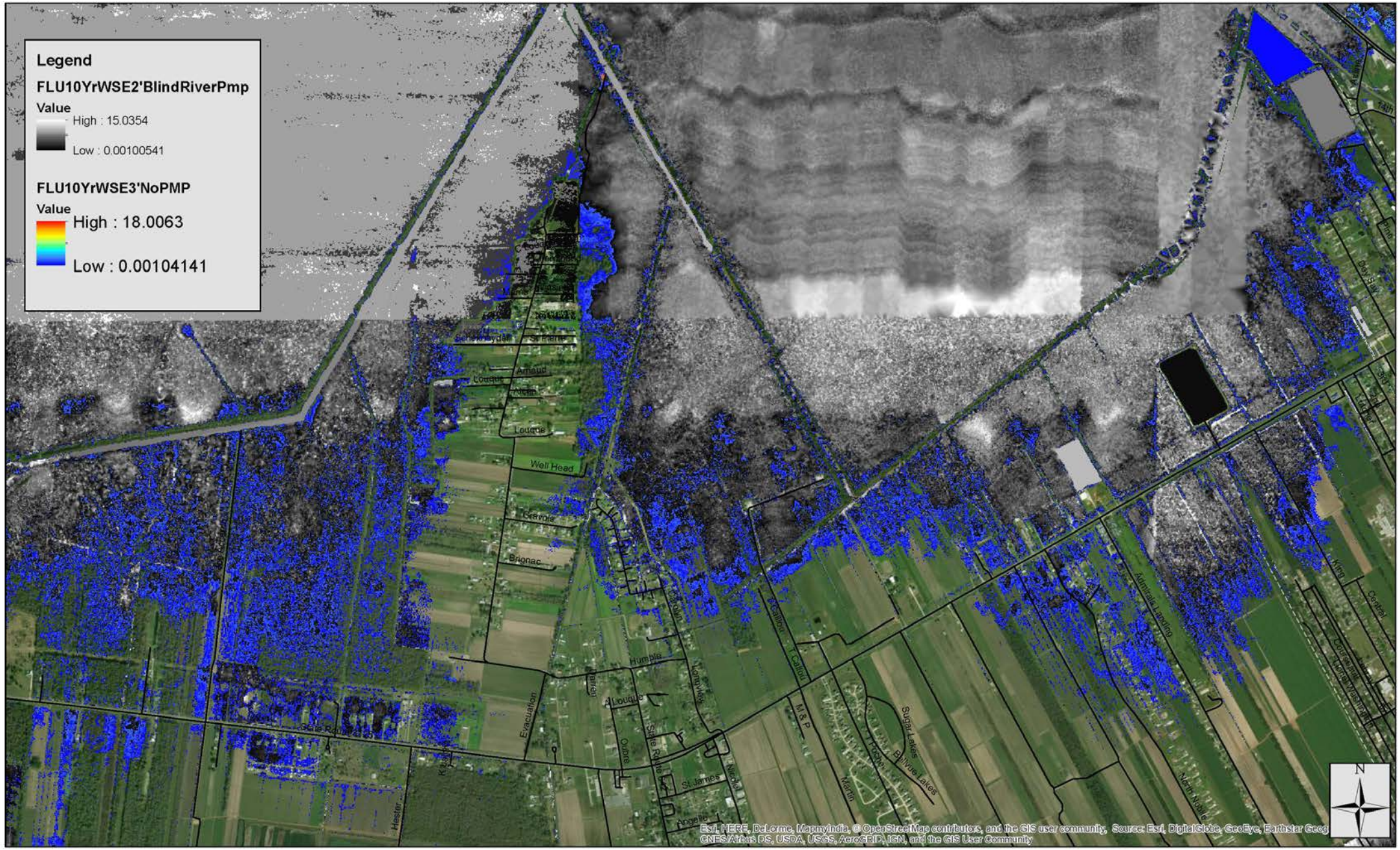
10Yr Rain Event, 8.8"/24hrs. 2' Lake W.S.E.
Blind River Pump 320 c.f.s.,
No Pump 3' Lake W.S.E.

BKI BURK-KLEINPETER, INC.
ENGINEERS, ARCHITECTS, PLANNERS, ENVIRONMENTAL SCIENTISTS



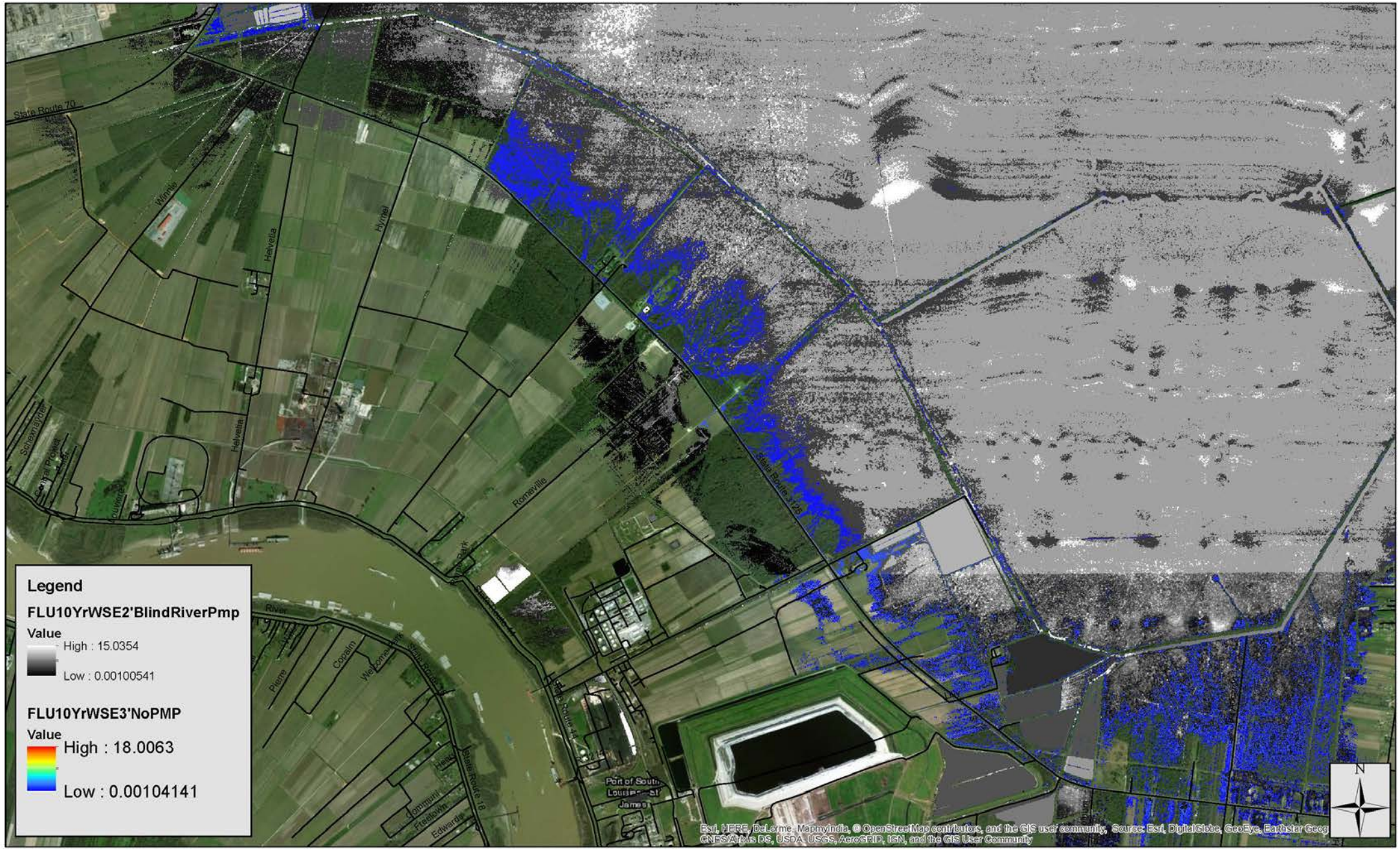
10Yr Rain Event, 8.8"/24hrs. 2' Lake W.S.E.
Blind River Pump 320 c.f.s.,
No Pump 3' Lake W.S.E.

BKI BURK-KLEINPETER, INC.
ENGINEERS, ARCHITECTS, PLANNERS, ENVIRONMENTAL SCIENTISTS



10Yr Rain Event, 8.8"/24hrs. 2' Lake W.S.E.
Blind River Pump 320 c.f.s.,
No Pump 3' Lake W.S.E.

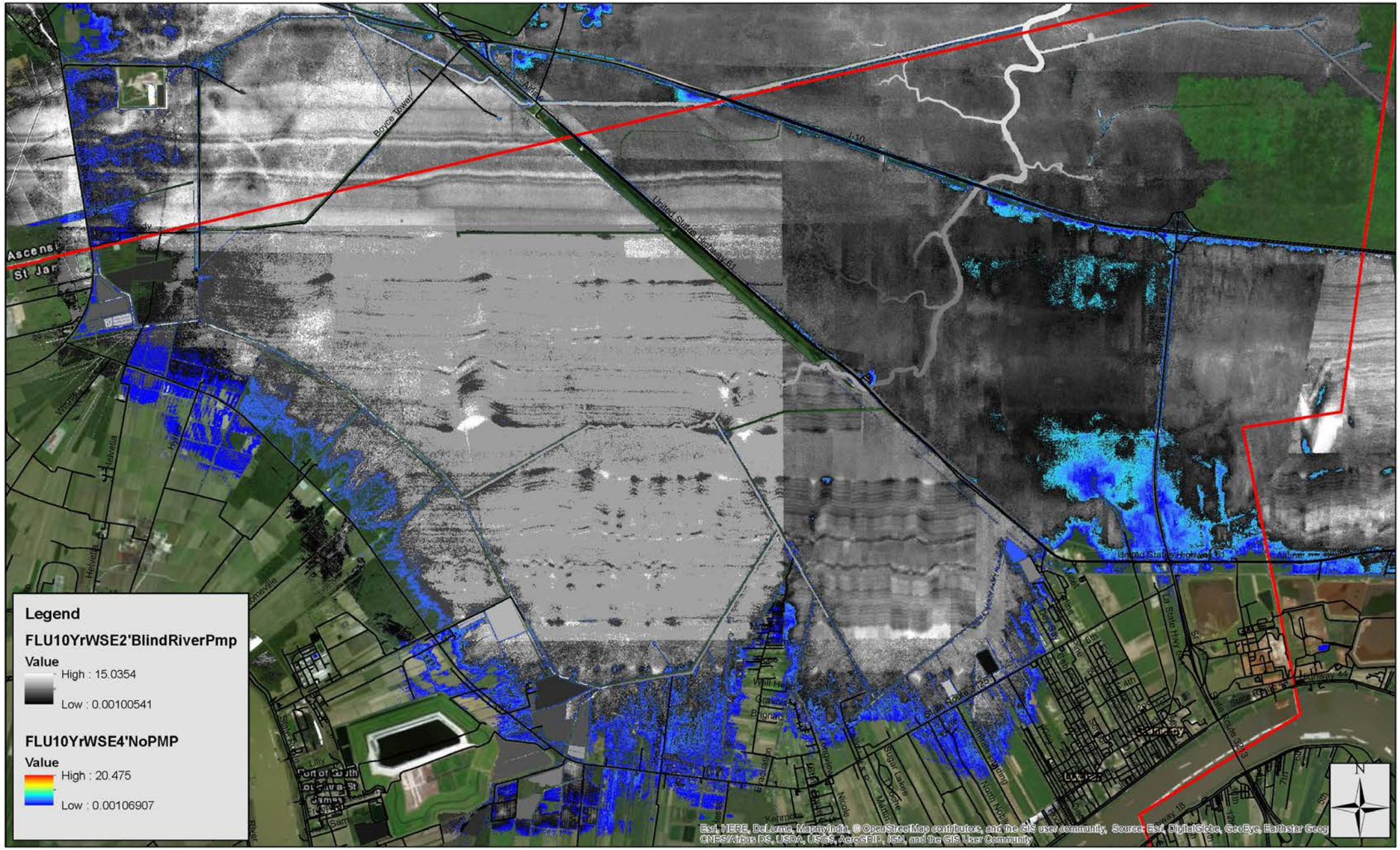
BKI BURK-KLEINPETER, INC.
ENGINEERS, ARCHITECTS, PLANNERS, ENVIRONMENTAL SCIENTISTS



10Yr Rain Event, 8.8"/24hrs. 2' Lake W.S.E.
Blind River Pump 320 c.f.s.,
No Pump 3' Lake W.S.E.

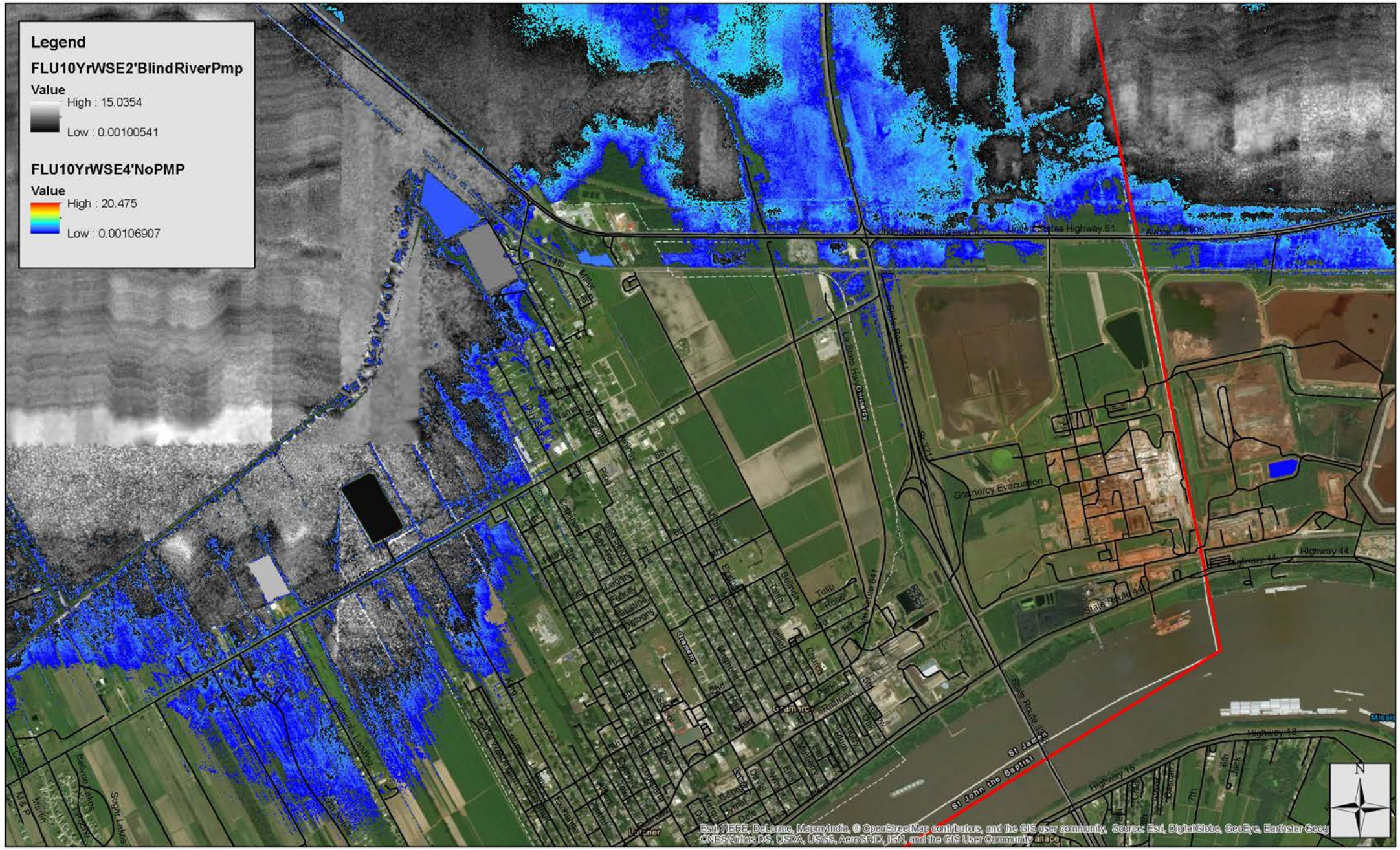
BURK-KLEINPETER, INC.
ENGINEERS, ARCHITECTS, PLANNERS, ENVIRONMENTAL SCIENTISTS

10 Year Event 8.8”/24 hr. 4’ NAVD88 Lake Water Surface Elevation



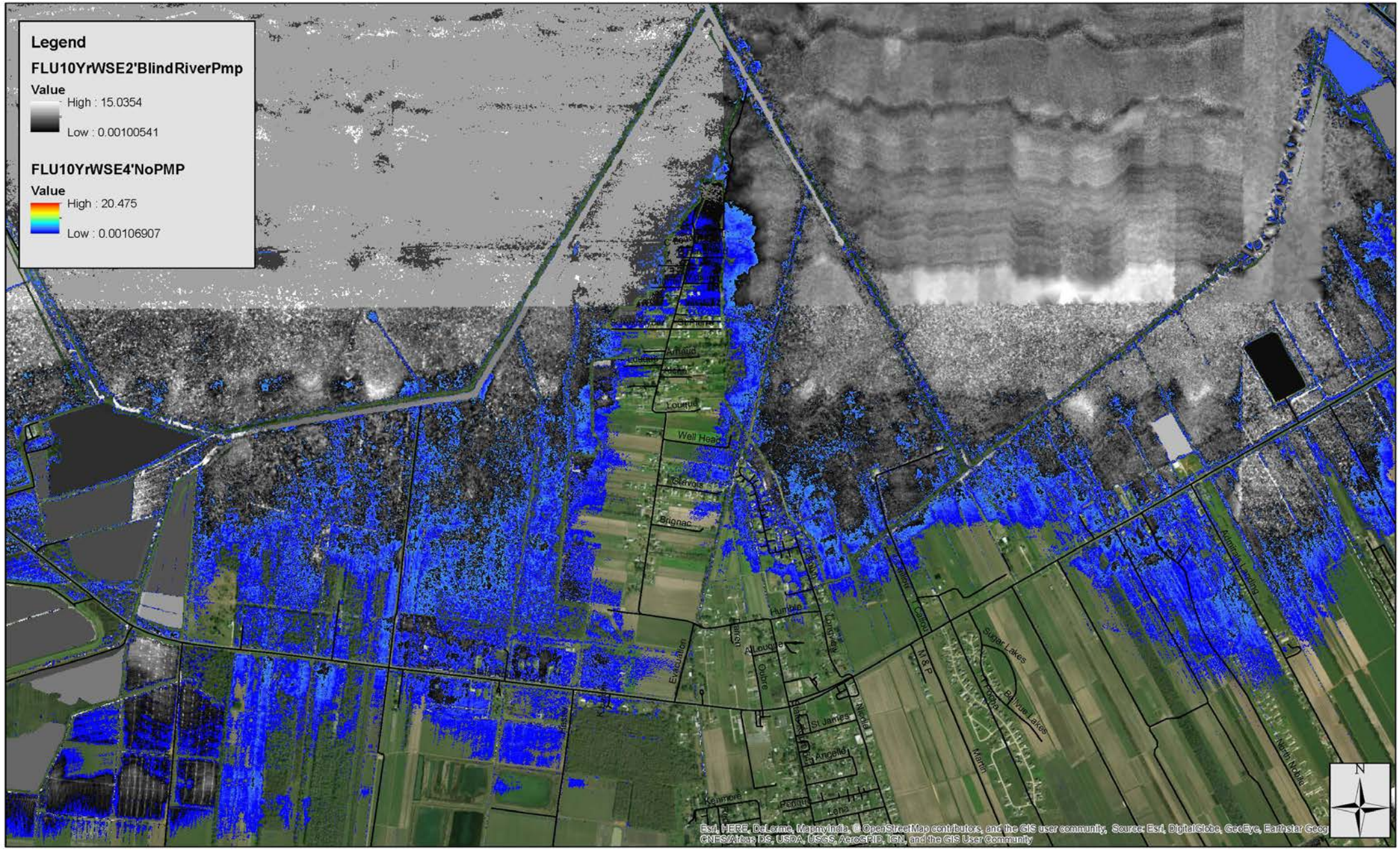
10Yr Rain Event 8.8"/24hrs., 2' Lake W.S.E.
Blind River Pump 320 c.f.s.,
No Pump 4' Lake W.S.E.

BKI BURK-KLEINPETER, INC.
ENGINEERS, ARCHITECTS, PLANNERS, ENVIRONMENTAL SCIENTISTS



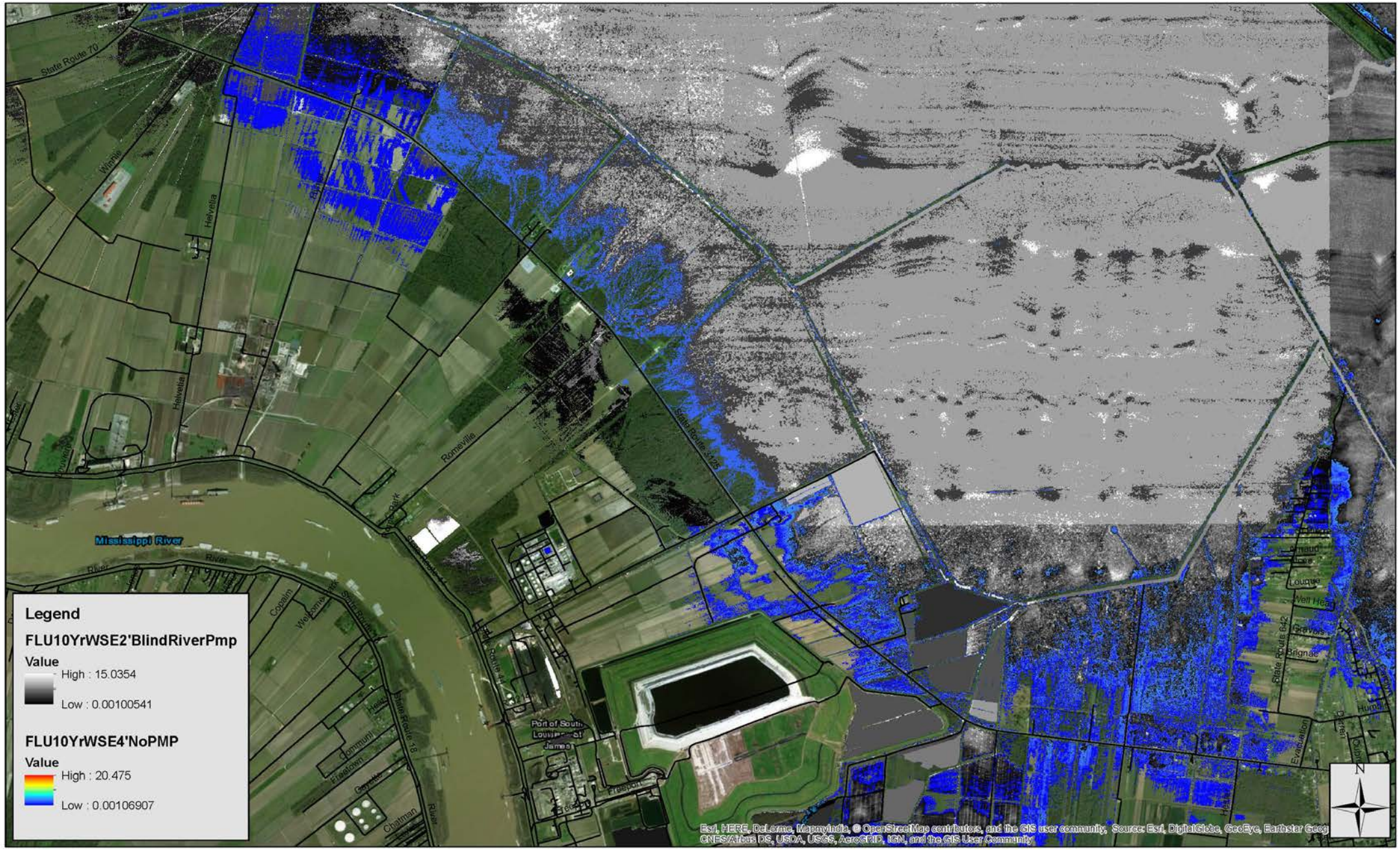
10Yr Rain Event 8.8"/24hrs., 2' Lake W.S.E.
Blind River Pump 320 c.f.s.,
No Pump 4' Lake W.S.E.

BKI BURK-KLEINPETER, INC.
ENGINEERS, ARCHITECTS, PLANNERS, ENVIRONMENTAL SCIENTISTS



10Yr Rain Event 8.8"/24hrs., 2' Lake W.S.E.
Blind River Pump 320 c.f.s.,
No Pump 4' Lake W.S.E.

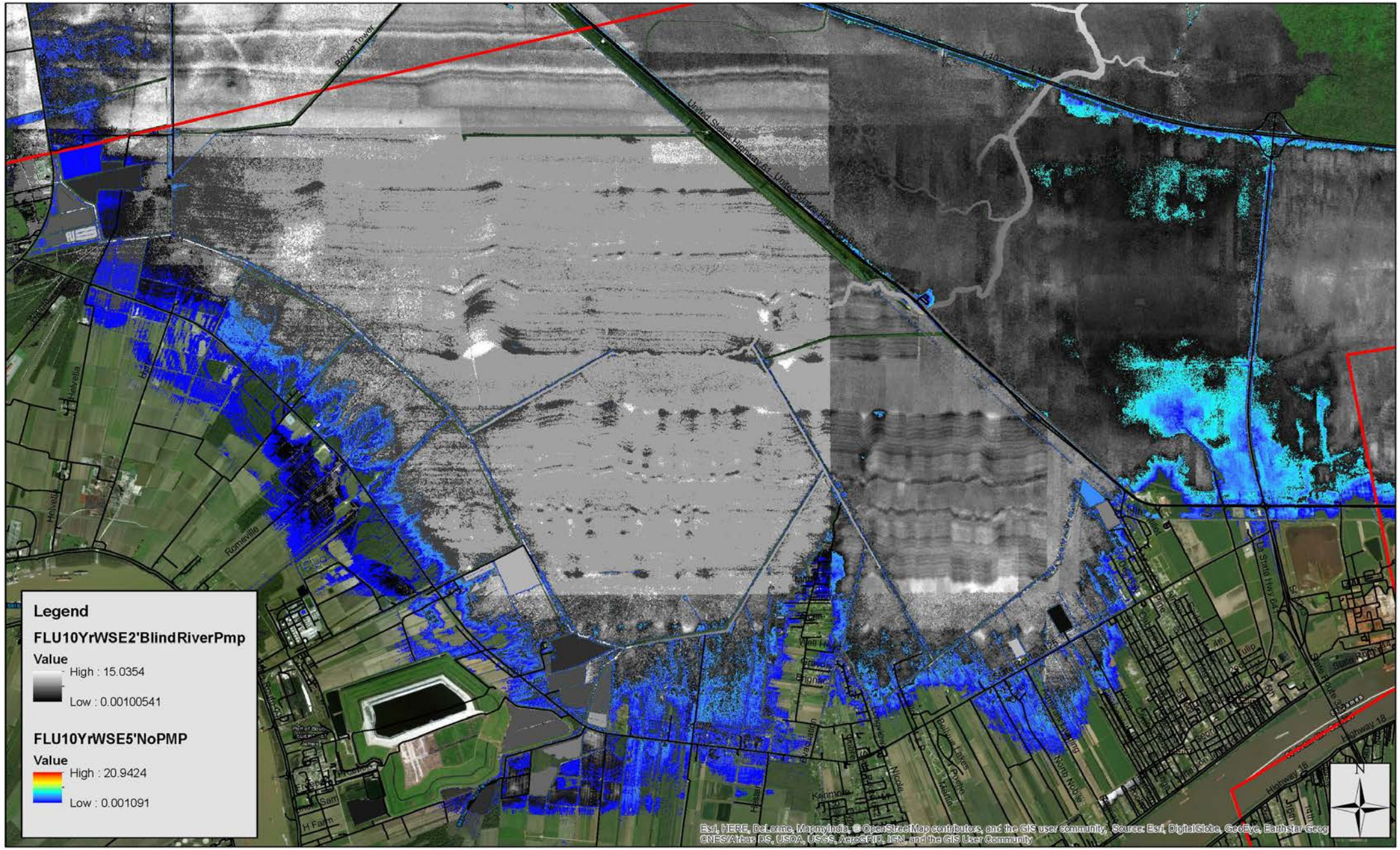
BKI BURK-KLEINPETER, INC.
ENGINEERS, ARCHITECTS, PLANNERS, ENVIRONMENTAL SCIENTISTS



10Yr Rain Event 8.8"/24hrs., 2' Lake W.S.E.
Blind River Pump 320 c.f.s.,
No Pump 4' Lake W.S.E.

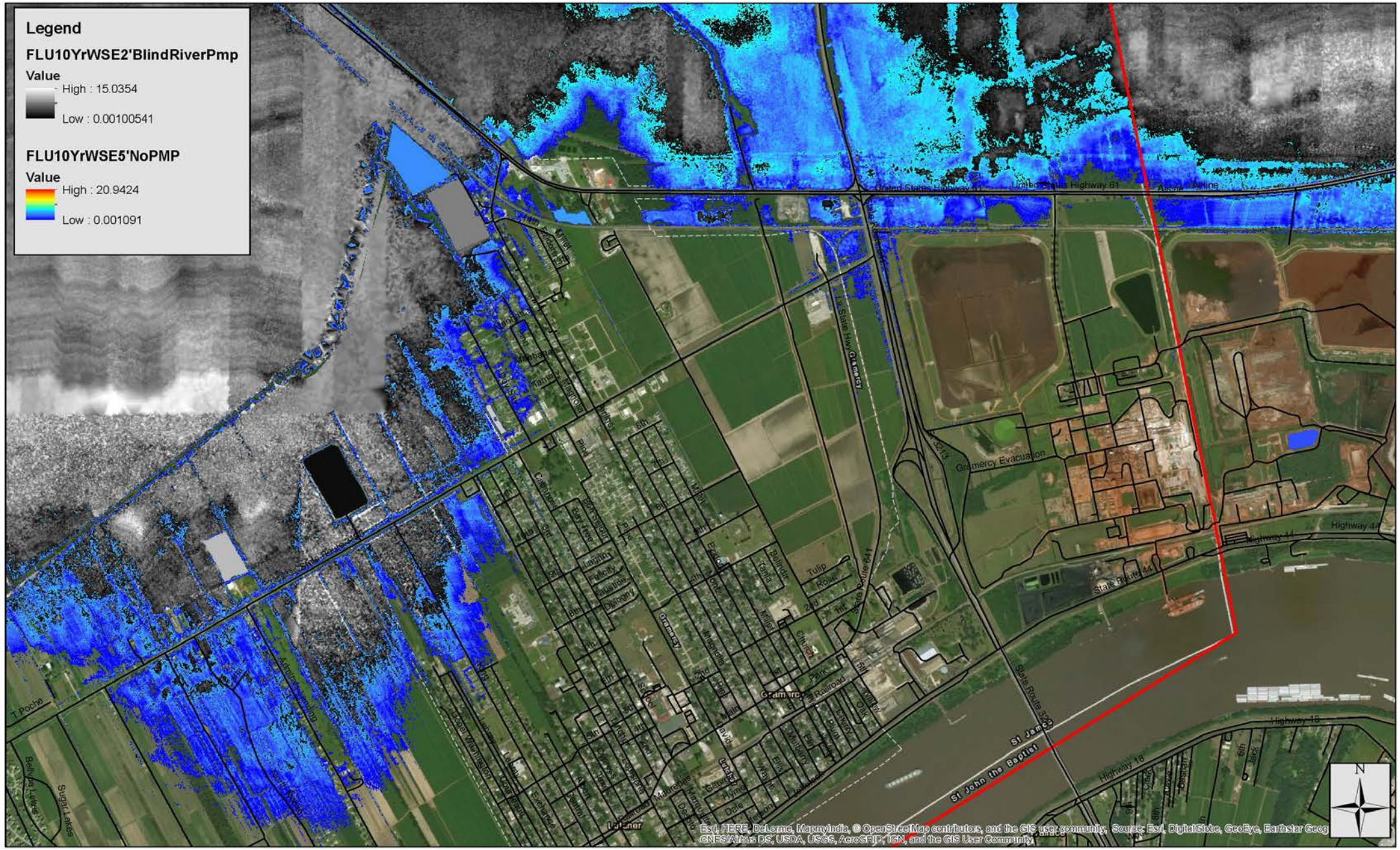
BKI BURK-KLEINPETER, INC.
ENGINEERS, ARCHITECTS, PLANNERS, ENVIRONMENTAL SCIENTISTS

10 Year Event 8.8”/24 hr. 5’ NAVD88 Lake Water Surface Elevation



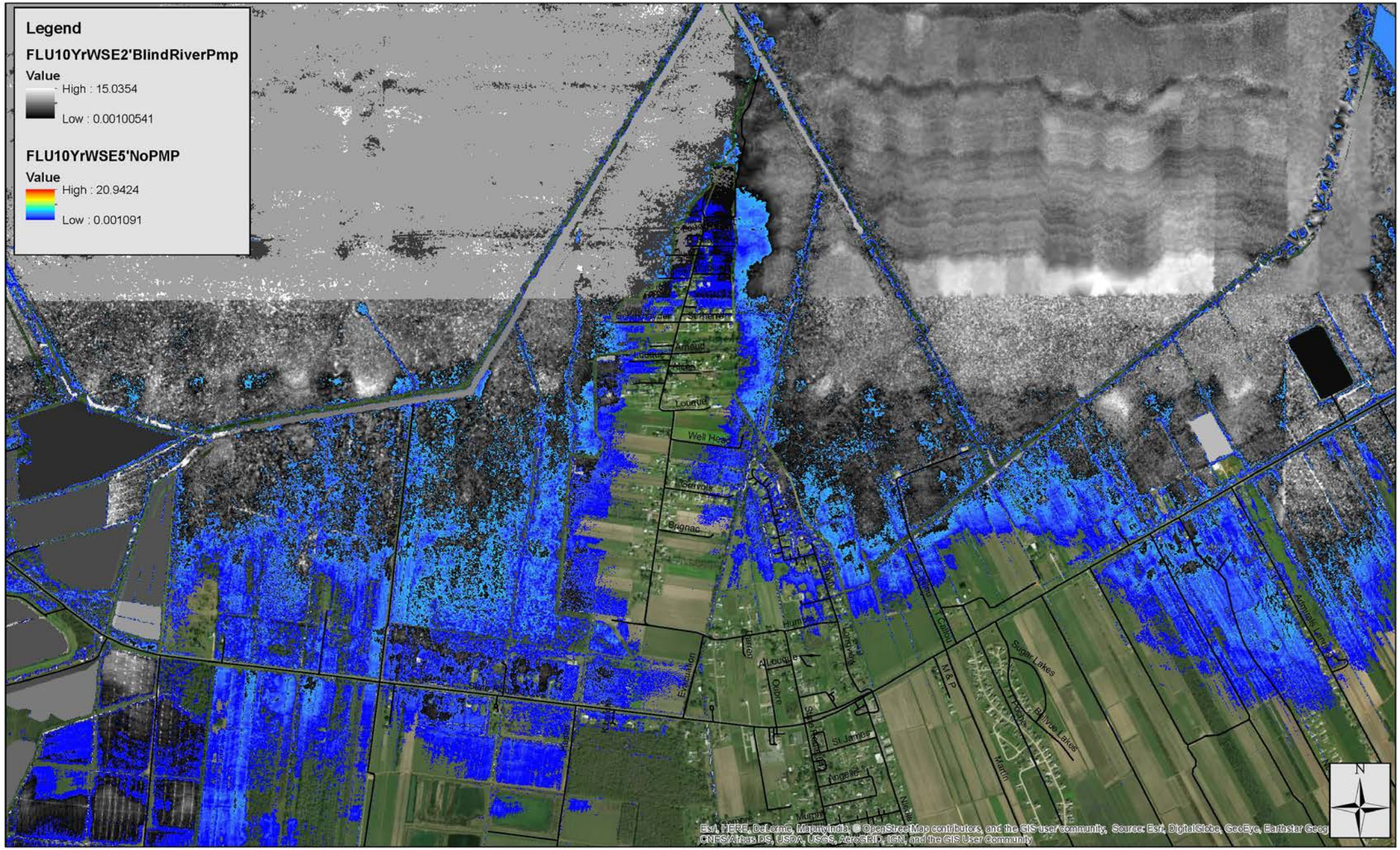
10Yr Rain Event 8.8"/24hrs. 2' Lake W.S.E.
Blind River Pump 320 c.f.s.,
No Pump 5' Lake W.S.E.

BKI BURK-KLEINPETER, INC.
ENGINEERS, ARCHITECTS, PLANNERS, ENVIRONMENTAL SCIENTISTS



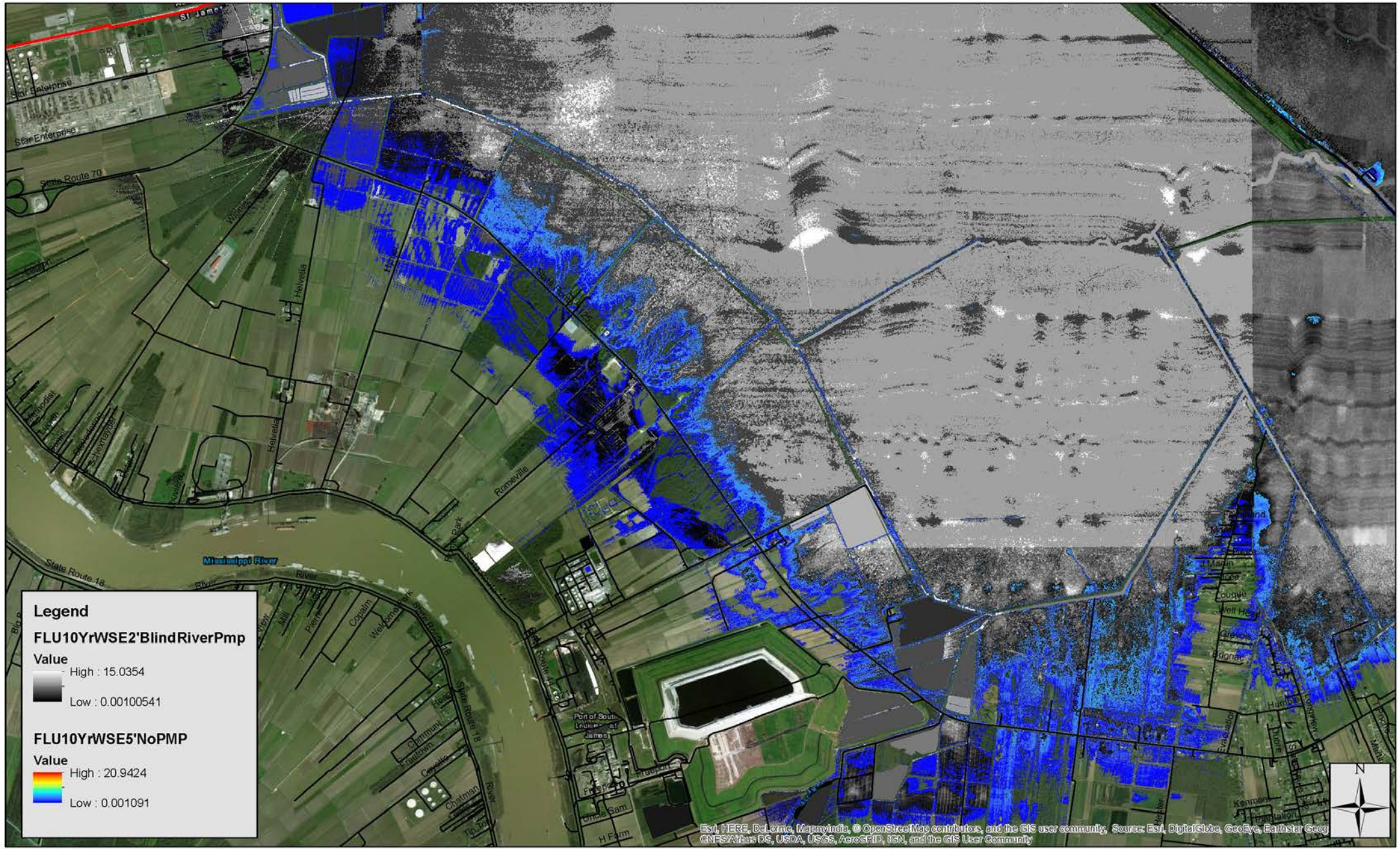
10Yr Rain Event 8.8"/24hrs. 2' Lake W.S.E.
Blind River Pump 320 c.f.s.,
No Pump 5' Lake W.S.E.

BKI BURK-KLEINPETER, INC.
ENGINEERS, ARCHITECTS, PLANNERS, ENVIRONMENTAL SCIENTISTS



10Yr Rain Event 8.8"/24hrs. 2' Lake W.S.E.
Blind River Pump 320 c.f.s.,
No Pump 5' Lake W.S.E.

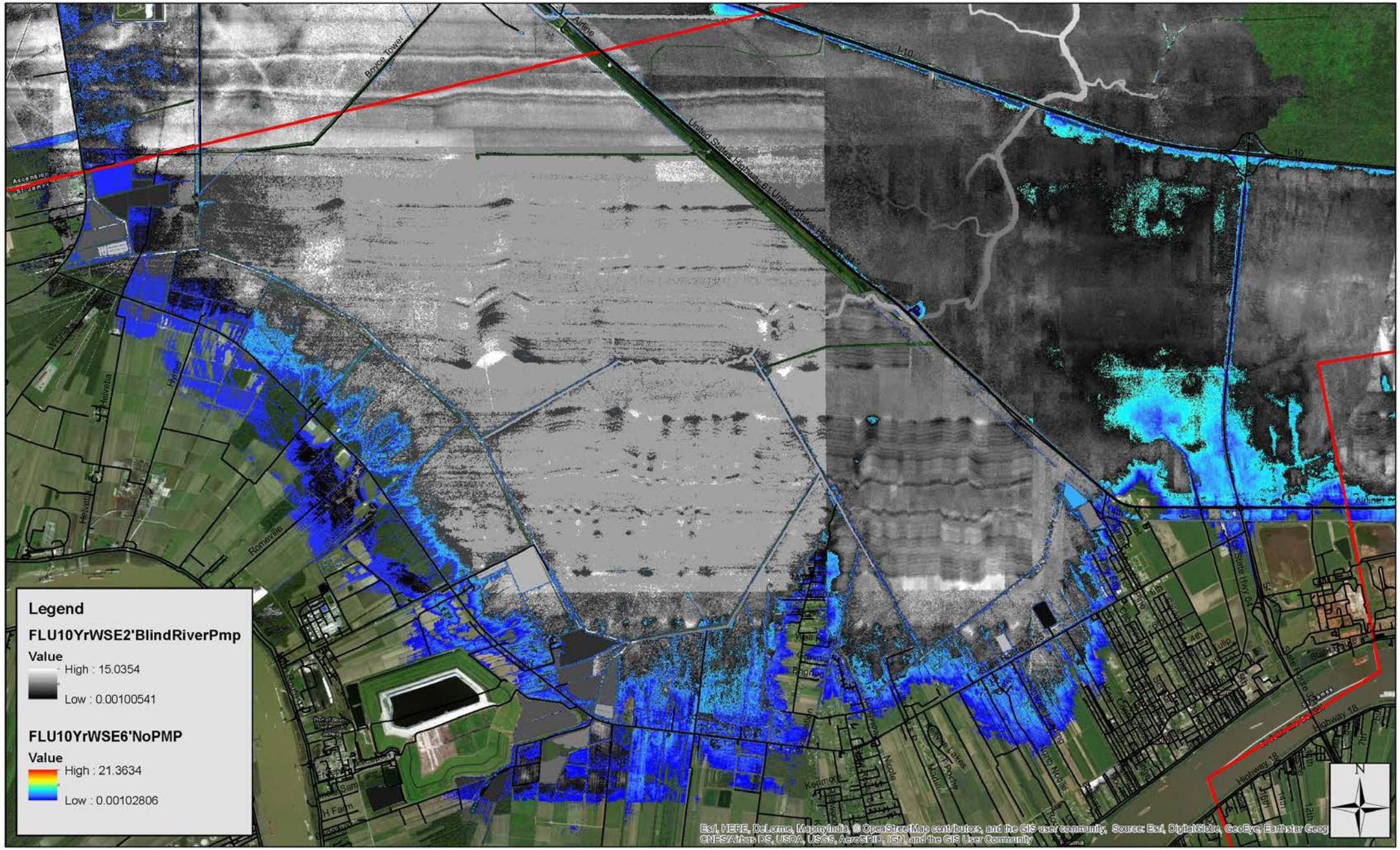
BKI BURK-KLEINPETER, INC.
ENGINEERS, ARCHITECTS, PLANNERS, ENVIRONMENTAL SCIENTISTS



10Yr Rain Event 8.8"/24hrs. 2' Lake W.S.E.
Blind River Pump 320 c.f.s.,
No Pump 5' Lake W.S.E.

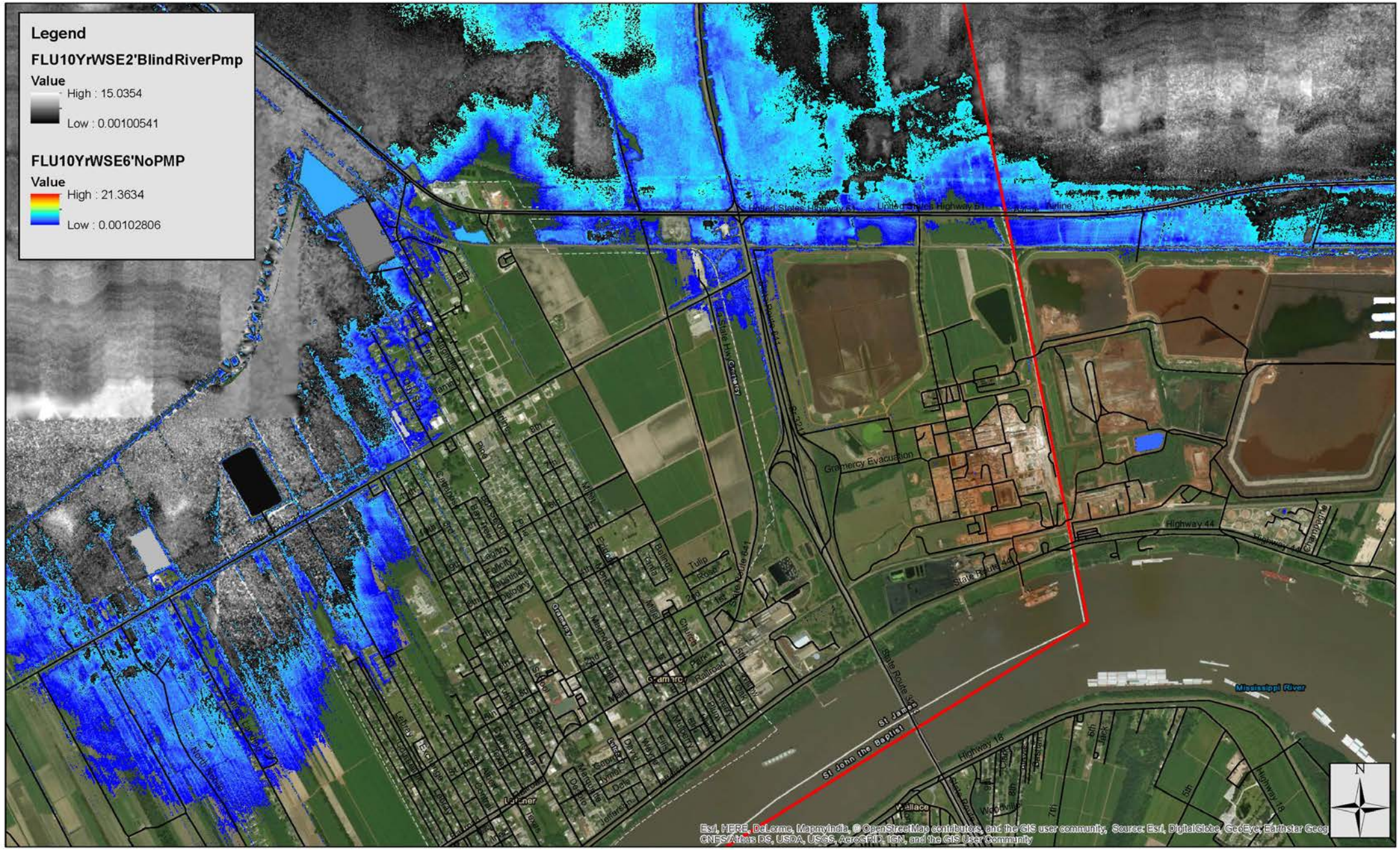
BURK-KLEINPETER, INC.
ENGINEERS, ARCHITECTS, PLANNERS, ENVIRONMENTAL SCIENTISTS

10 Year Event 8.8”/24 hr. 6’ NAVD88 Lake Water Surface Elevation



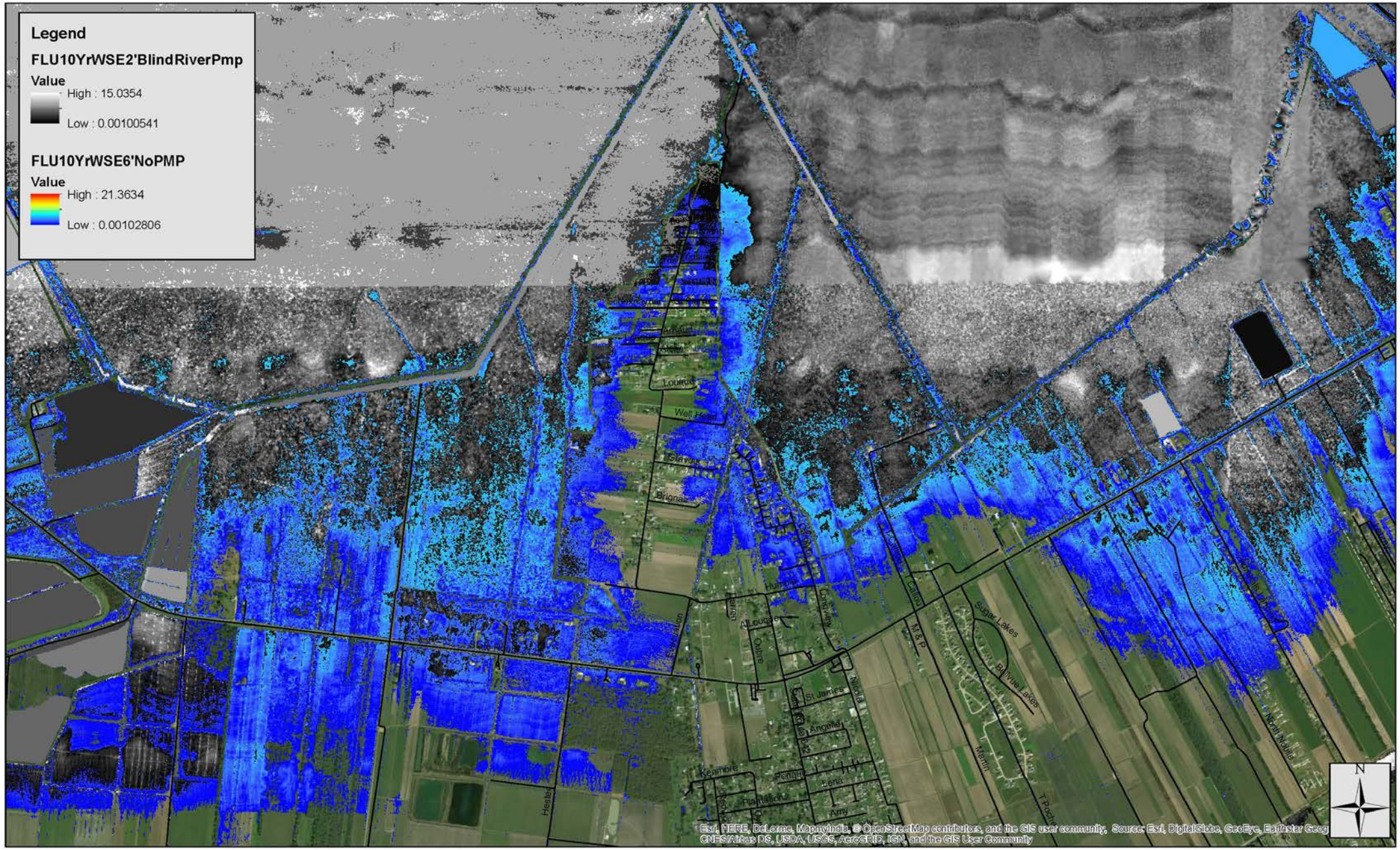
10Yr Rain Event 8.8"/24hrs. 2' Lake W.S.E.
Blind River Pump 320 c.f.s.,
No Pump 6' Lake W.S.E.

BURK-KLEINPETER, INC.
ENGINEERS, ARCHITECTS, PLANNERS, ENVIRONMENTAL SCIENTISTS



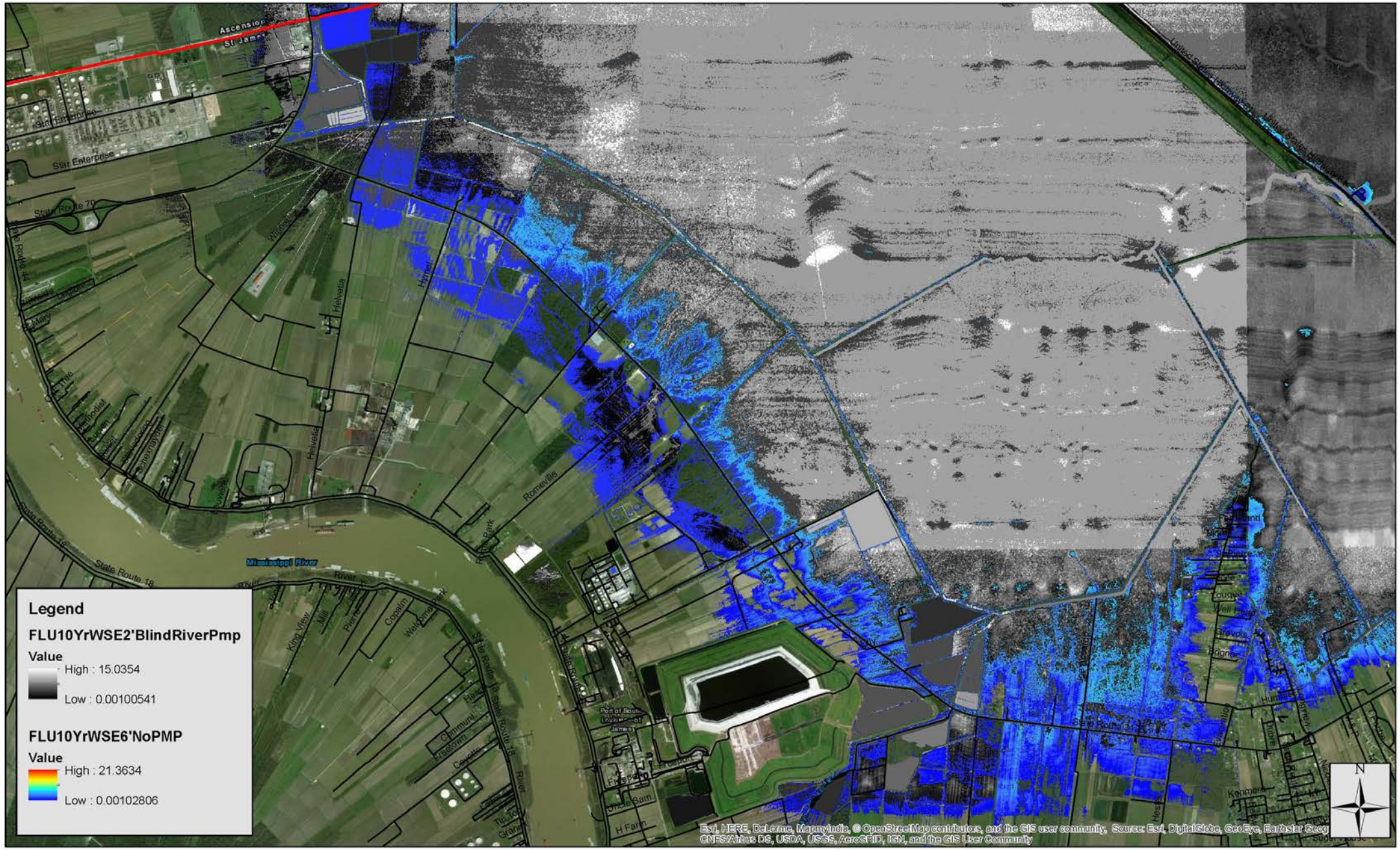
10Yr Rain Event 8.8"/24hrs. 2' Lake W.S.E.
Blind River Pump 320 c.f.s.,
No Pump 6' Lake W.S.E.

BKI BURK-KLEINPETER, INC.
ENGINEERS, ARCHITECTS, PLANNERS, ENVIRONMENTAL SCIENTISTS



10Yr Rain Event 8.8"/24hrs. 2' Lake W.S.E.
Blind River Pump 320 c.f.s.,
No Pump 6' Lake W.S.E.

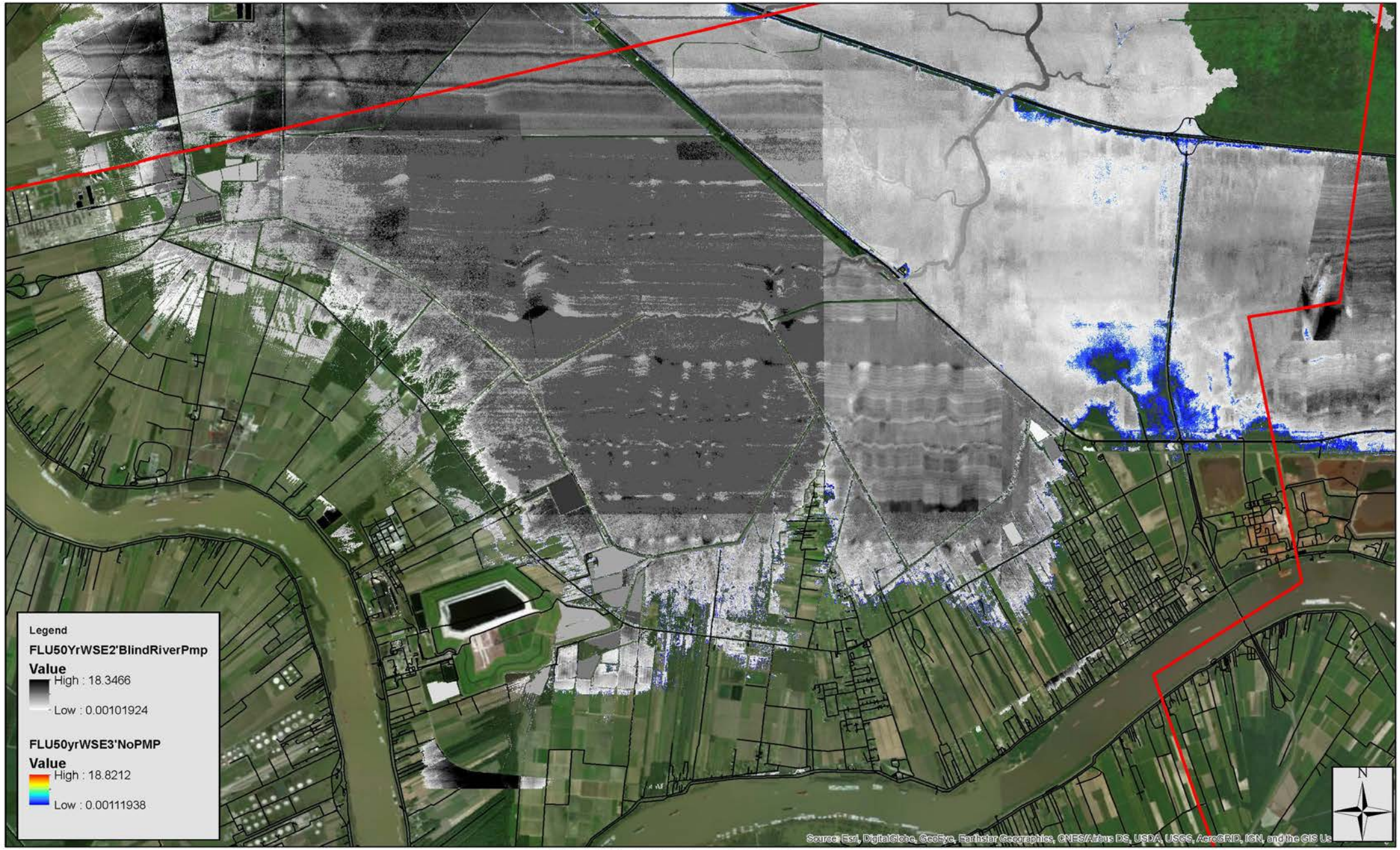
BKI BURK-KLEINPETER, INC.
ENGINEERS, ARCHITECTS, PLANNERS, ENVIRONMENTAL SCIENTISTS



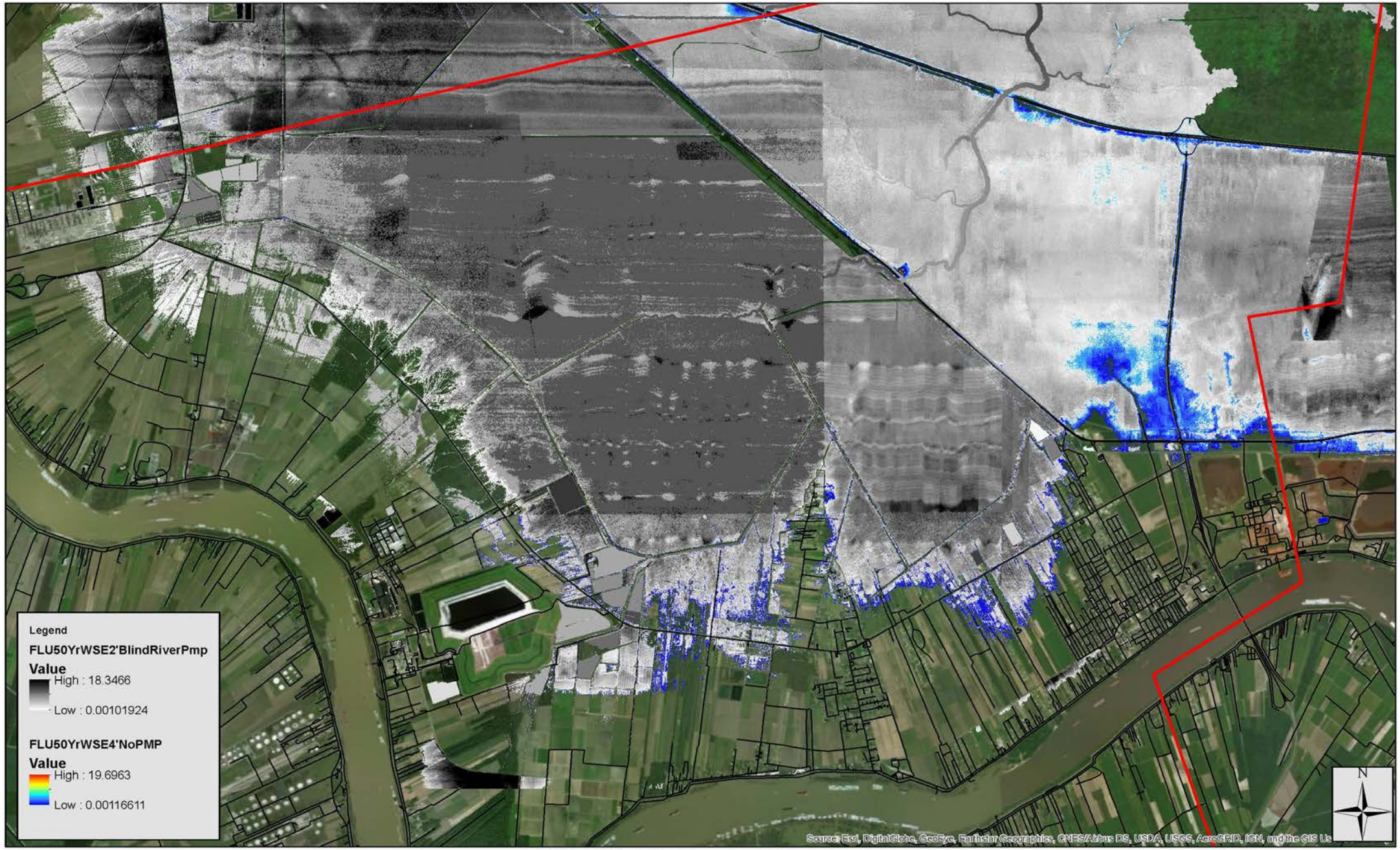
10Yr Rain Event 8.8"/24hrs. 2' Lake W.S.E.
Blind River Pump 320 c.f.s.,
No Pump 6' Lake W.S.E.

BKI BURK-KLEINPETER, INC.
ENGINEERS, ARCHITECTS, PLANNERS, ENVIRONMENTAL SCIENTISTS

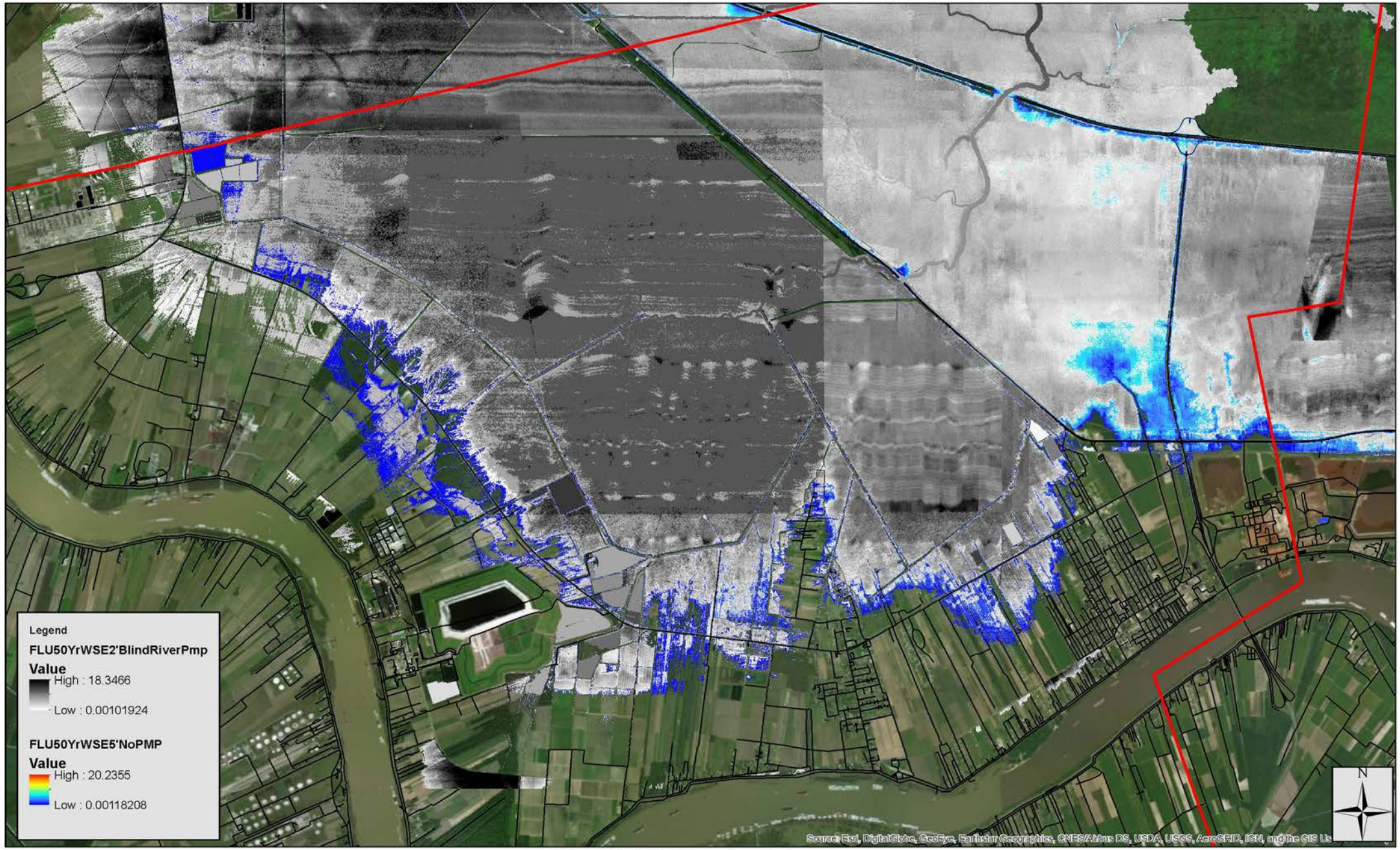
50 Year Event 11.3”/24 hr. 3’, 4’, 5’, & 6’ NAVD88
Lake Water Surface Elevations



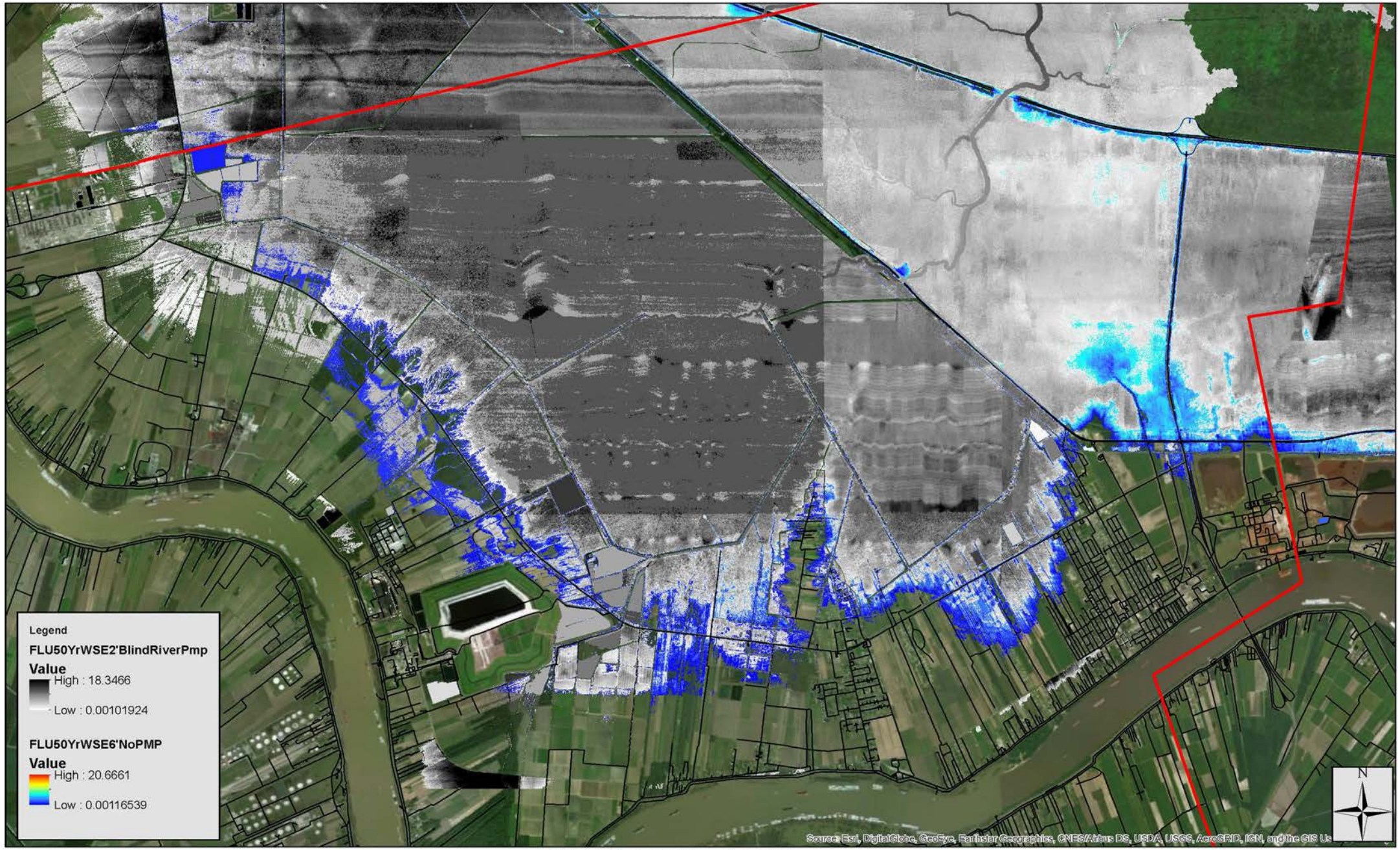
50Yr Rain Event, 11.3"/24hrs. 2' Lake W.S.E.
Blind River Pump 320 c.f.s.,
No Pump 3' Lake W.S.E.



50Yr Rain Event, 11.3"/24hrs. 2' Lake W.S.E.
Blind River Pump 320 c.f.s.,
No Pump 4' Lake W.S.E.

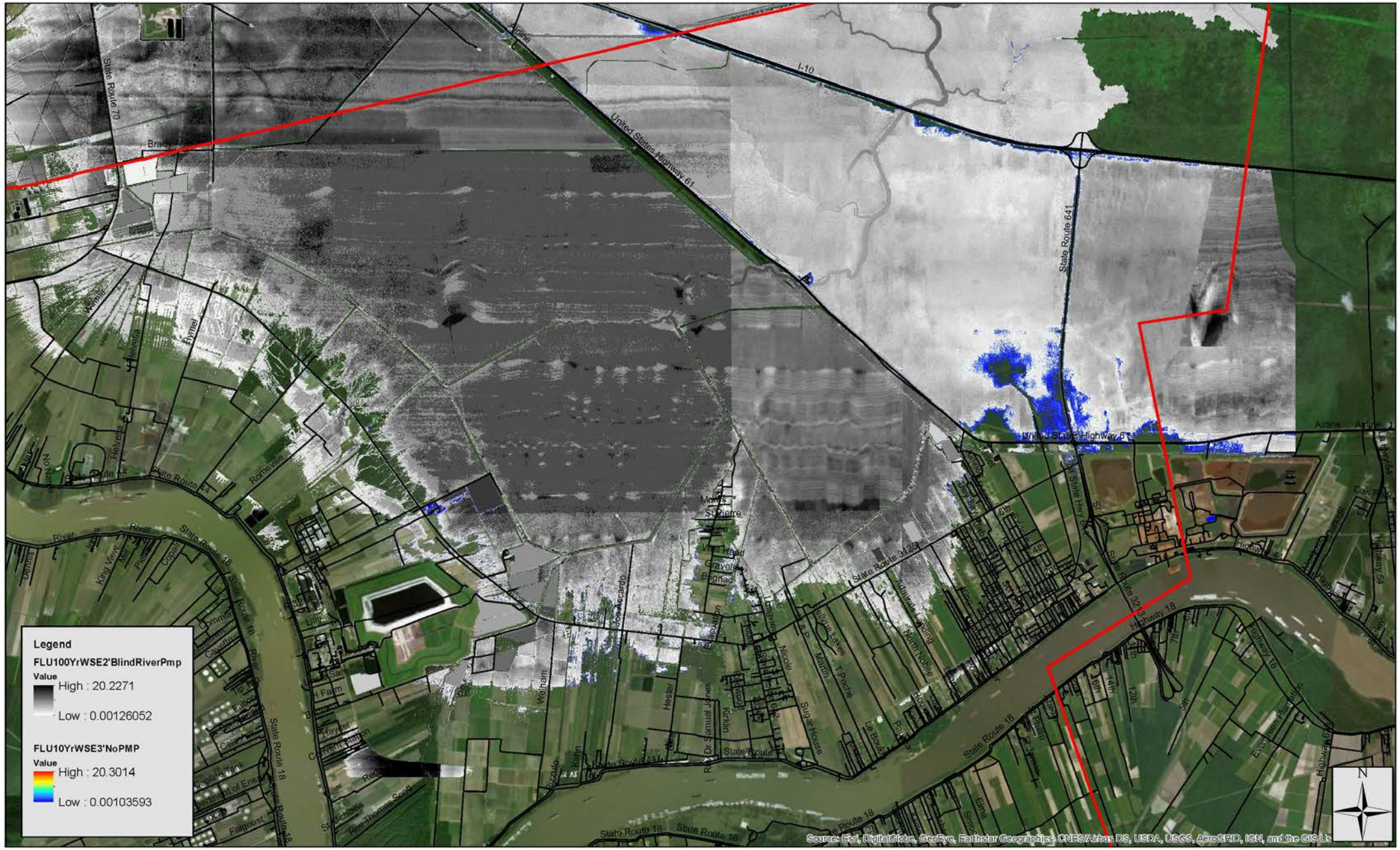


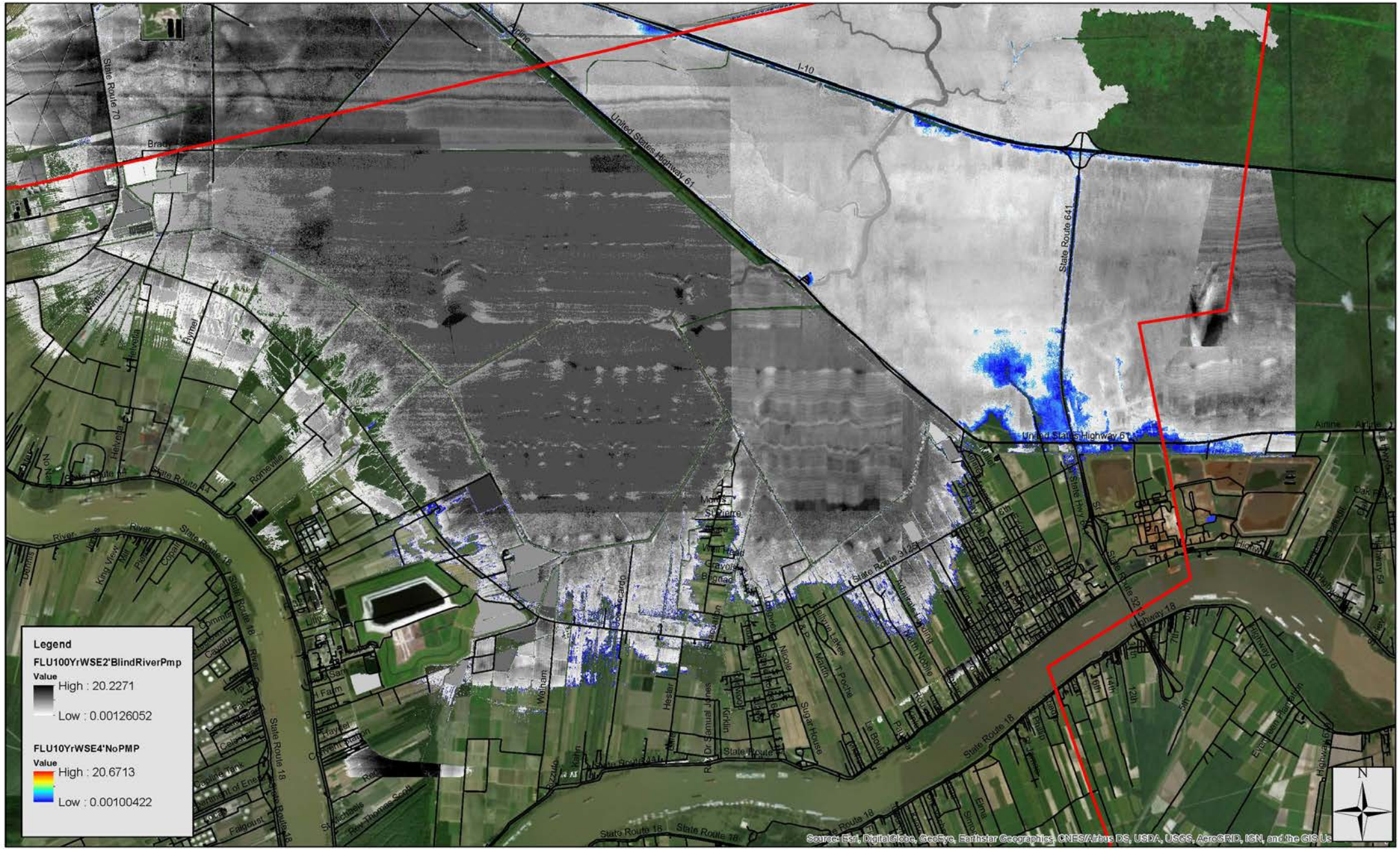
50Yr Rain Event, 11.3"/24hrs. 2' Lake W.S.E.
Blind River Pump 320 c.f.s.,
No Pump 5' Lake W.S.E.

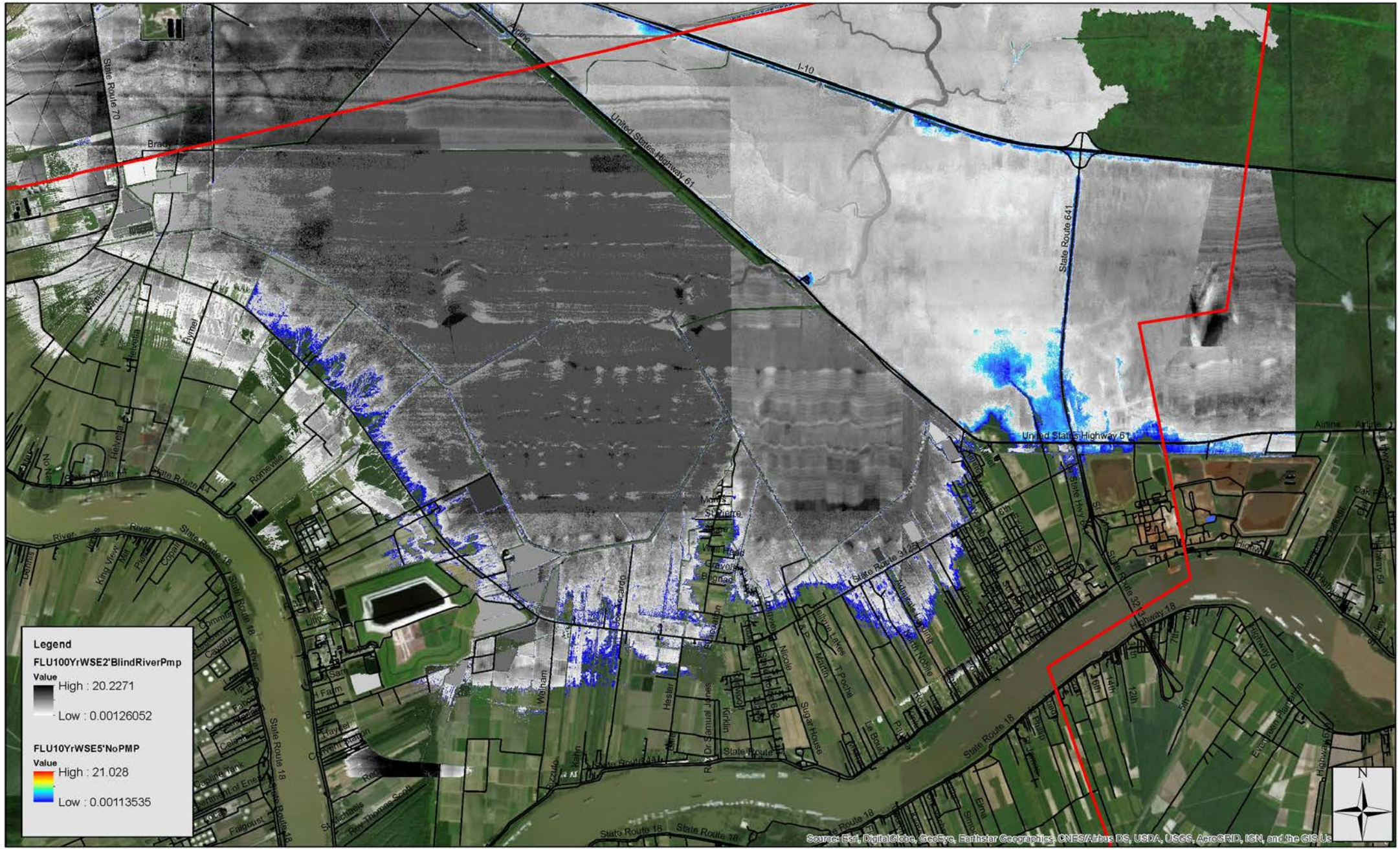


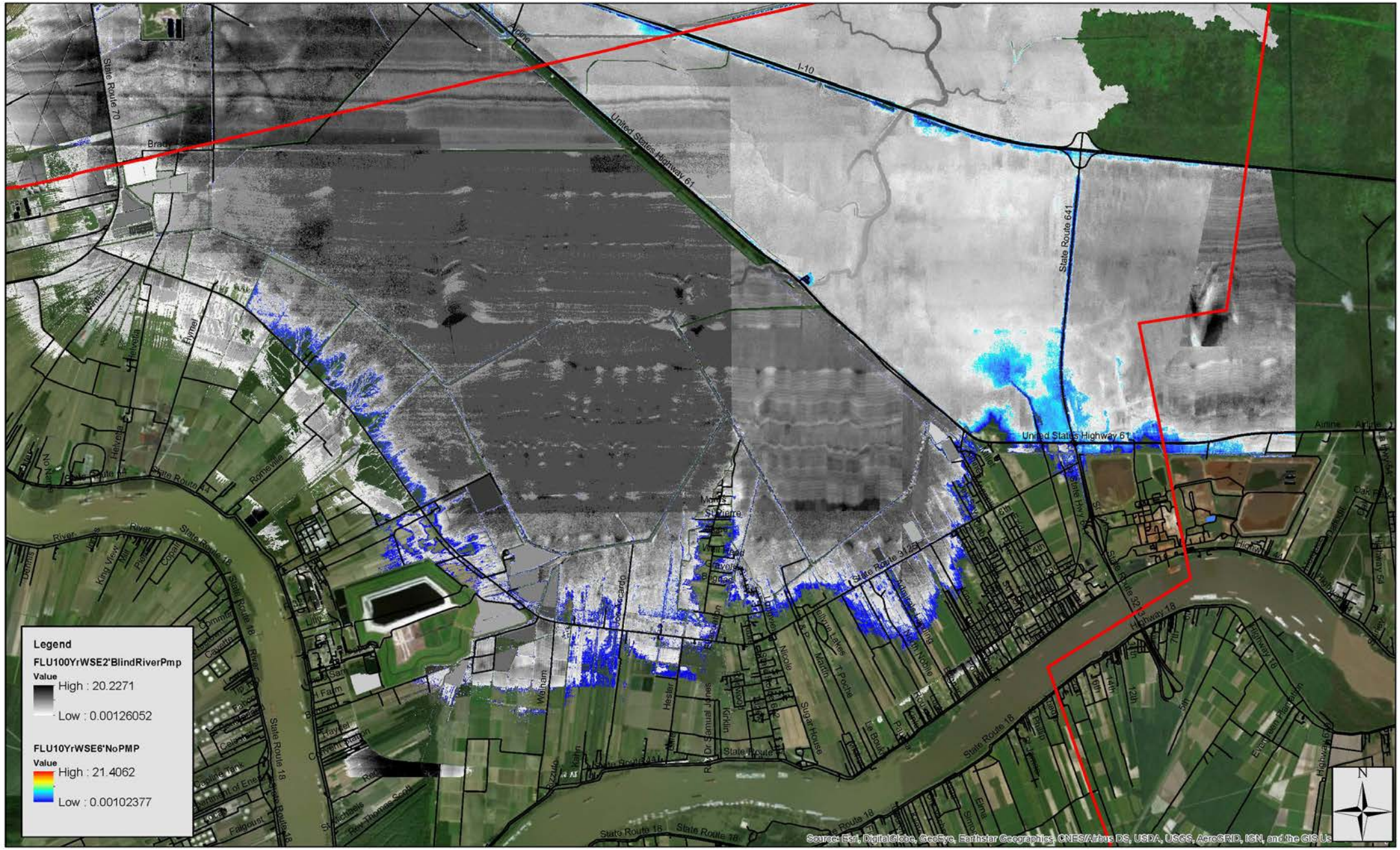
50Yr Rain Event, 11.3"/24hrs. 2' Lake W.S.E.
Blind River Pump 320 c.f.s.,
No Pump 6' Lake W.S.E.

100 Year Event 12.8”/24 hr. 3’ NAVD88 Lake Water Surface Elevation


Legend
FLU100YrWSE2'BlindRiverPmp
Value
High : 20.2271
Low : 0.00126052
FLU10YrWSE3'NoPMP
Value
High : 20.3014
Low : 0.00103593
N
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS Us

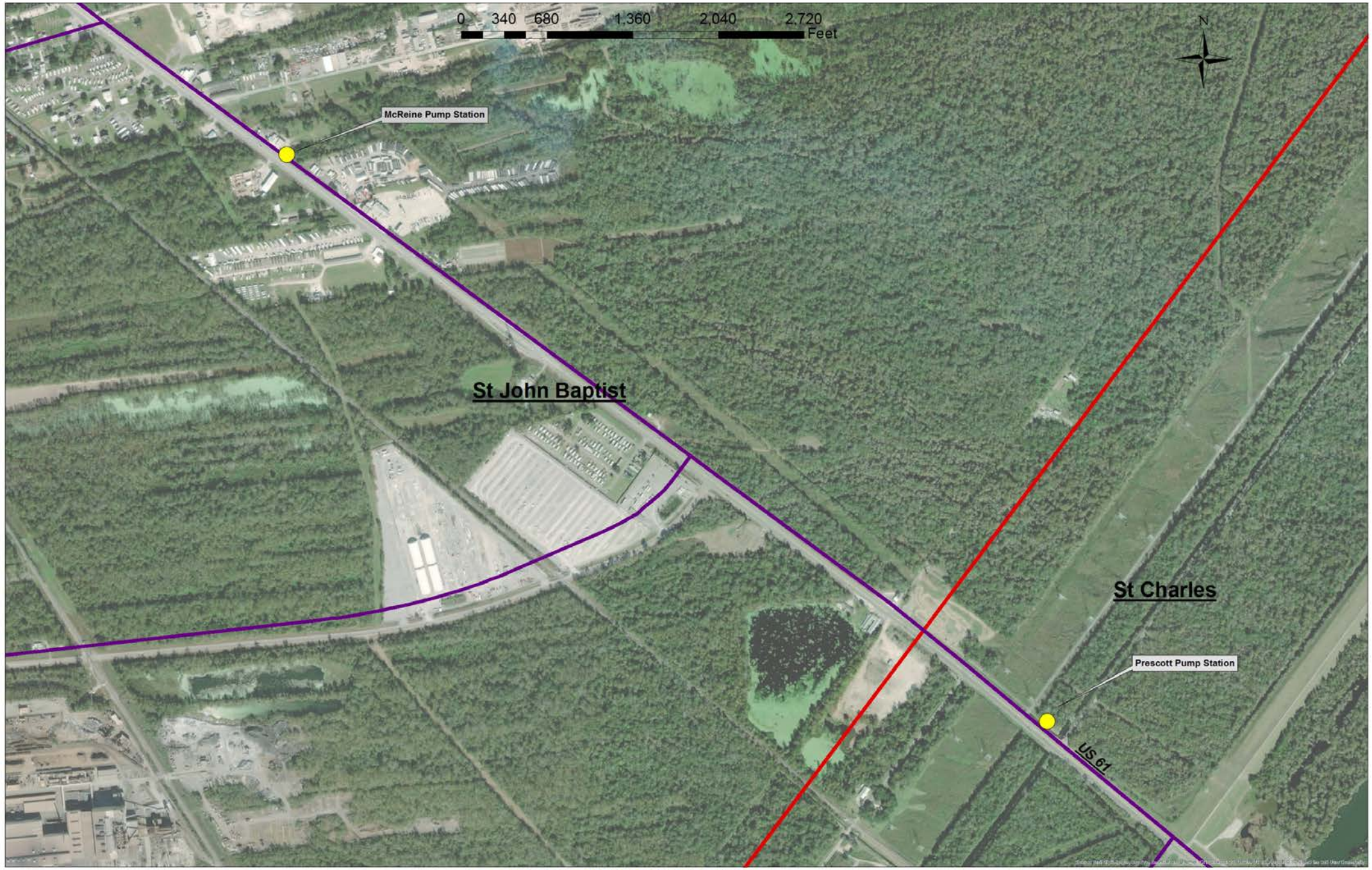

Legend
FLU100YrWSE2'BlindRiverPmp
Value
High : 20.2271
Low : 0.00126052
FLU10YrWSE4'NoPMP
Value
High : 20.6713
Low : 0.00100422
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS Us
N


Legend
FLU100YrWSE2'BlindRiverPmp
Value
High : 20.2271
Low : 0.00126052
FLU10YrWSE5'NoPMP
Value
High : 21.028
Low : 0.00113535
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS Us
N



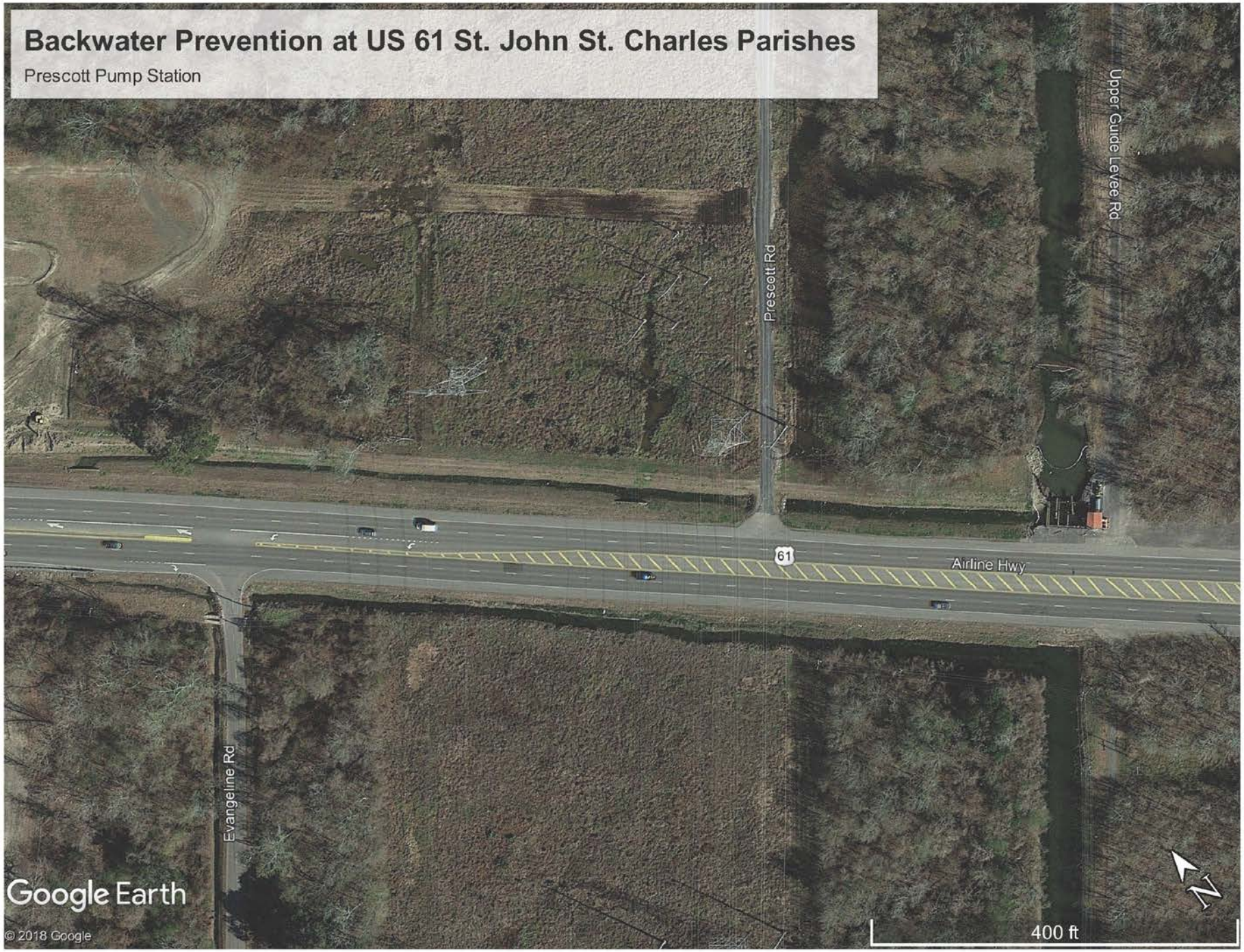
BKI BURK-KLEINPETER, INC.
ENGINEERS, ARCHITECTS, PLANNERS, ENVIRONMENTAL SCIENTISTS

100Yr Rain Event- 12.8"/24hrs., 2' Lake W.S.E.
Blind River Pump 320 c.f.s.,
No Pump 6' Lake W.S.E.



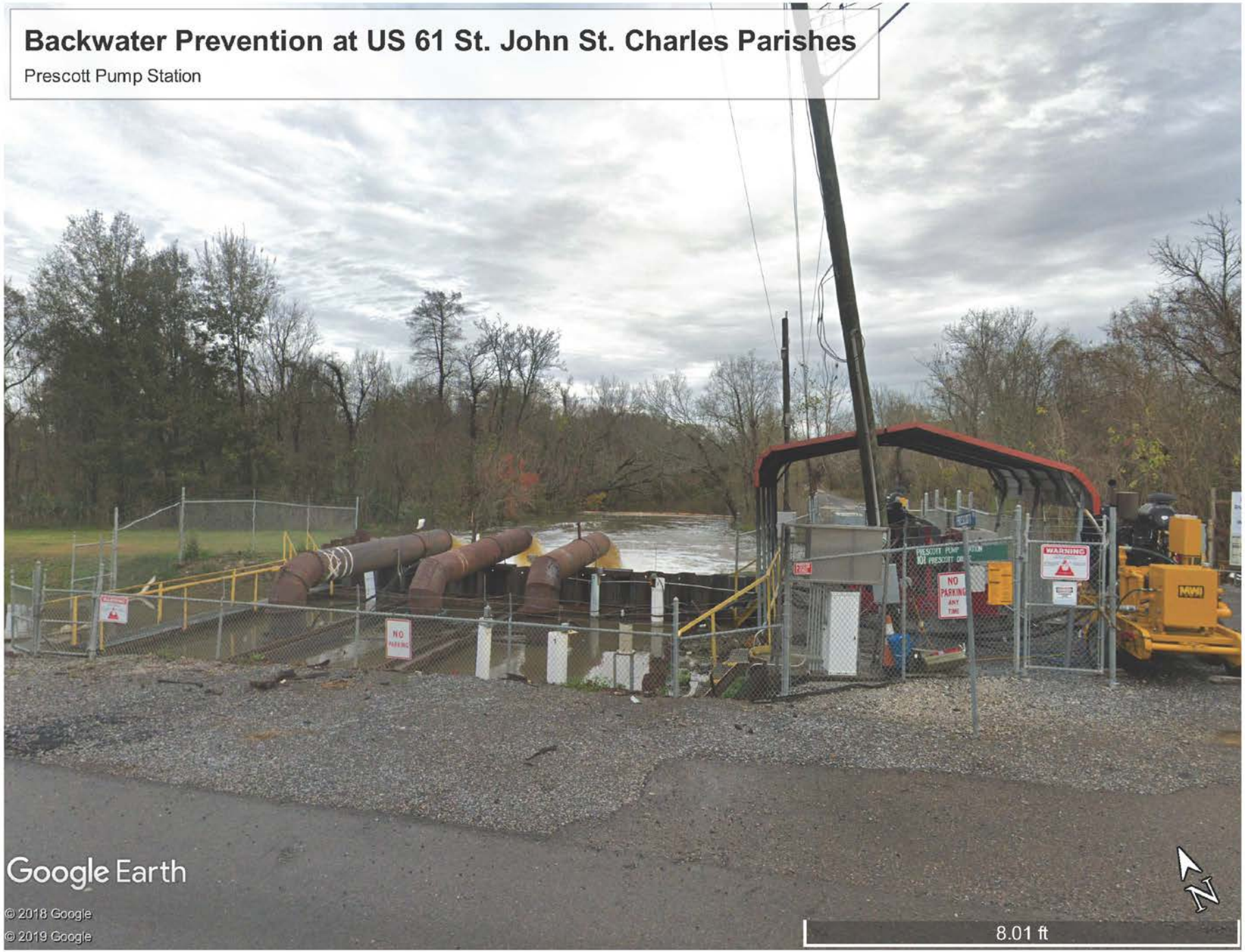
BKI BURK-KLEINPETER, INC.
ENGINEERS, ARCHITECTS, PLANNERS, ENVIRONMENTAL SCIENTISTS

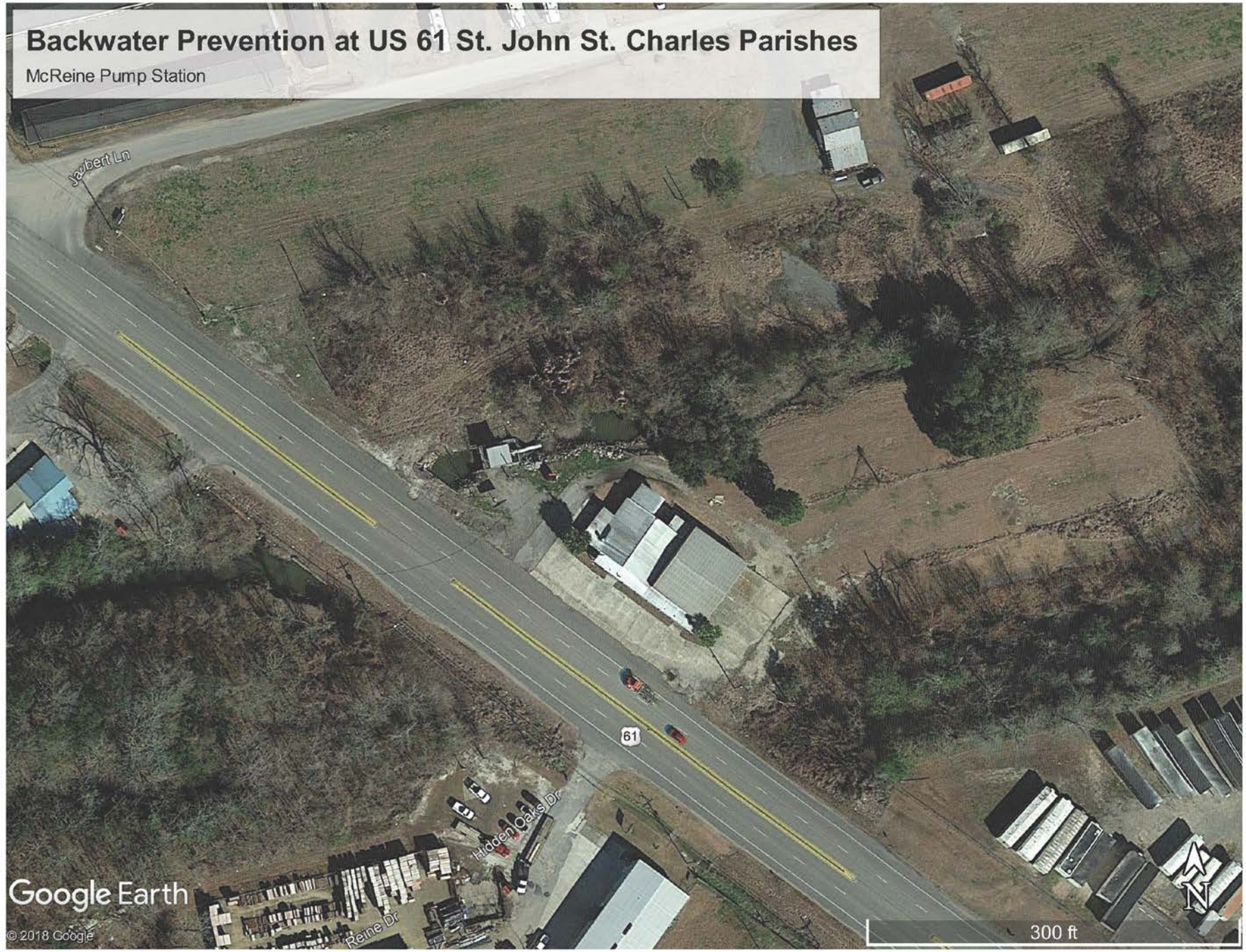
St John St. Charles Parishes:
Airline BackwaterProtection System


Backwater Prevention at US 61 St. John St. Charles Parishes
Prescott Pump Station
Upper Guide Levee Rd
Prescott Rd
61
Airline Hwy
Evangeline Rd
Google Earth
© 2018 Google
N
400 ft

Backwater Prevention at US 61 St. John St. Charles Parishes

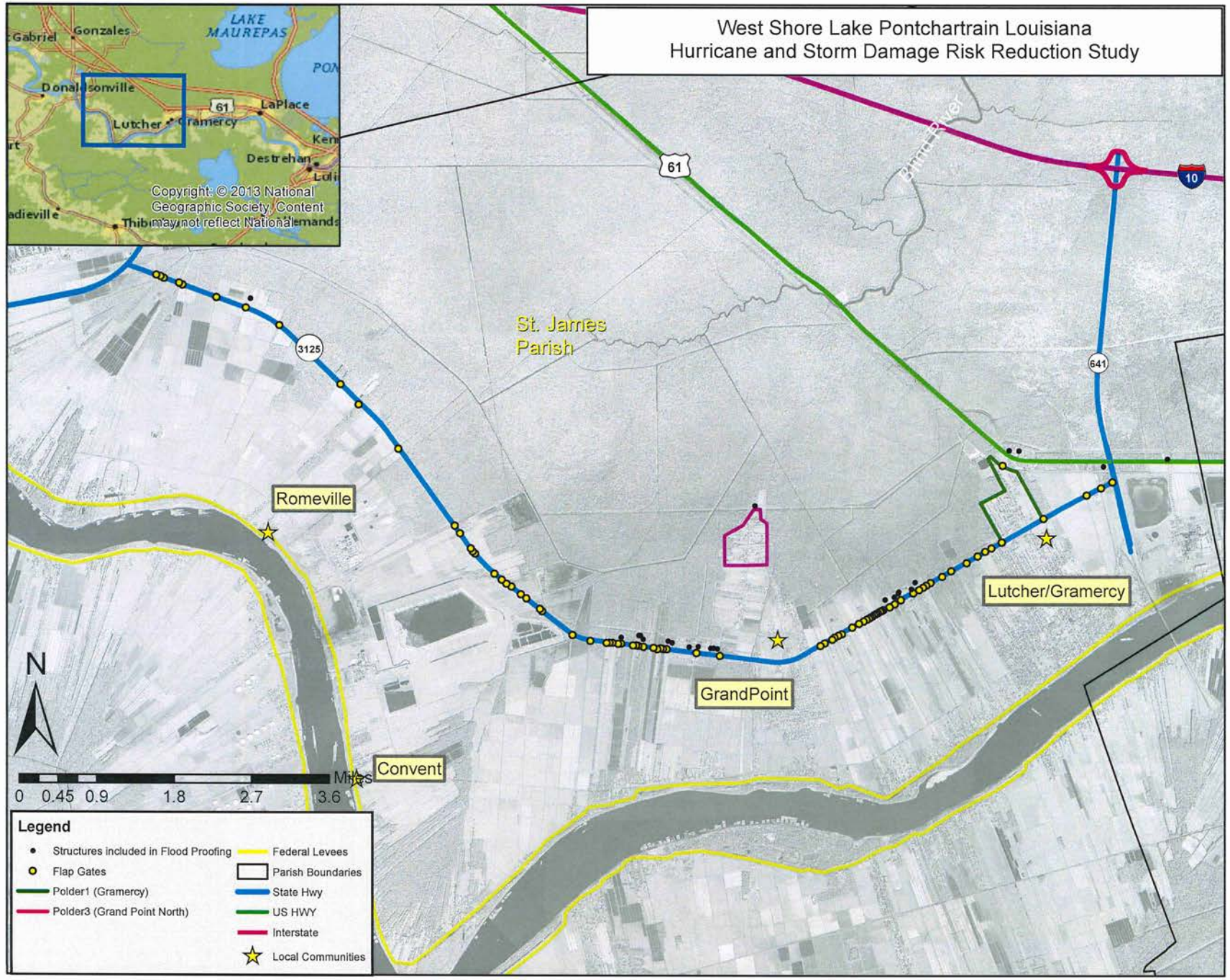
Prescott Pump Station

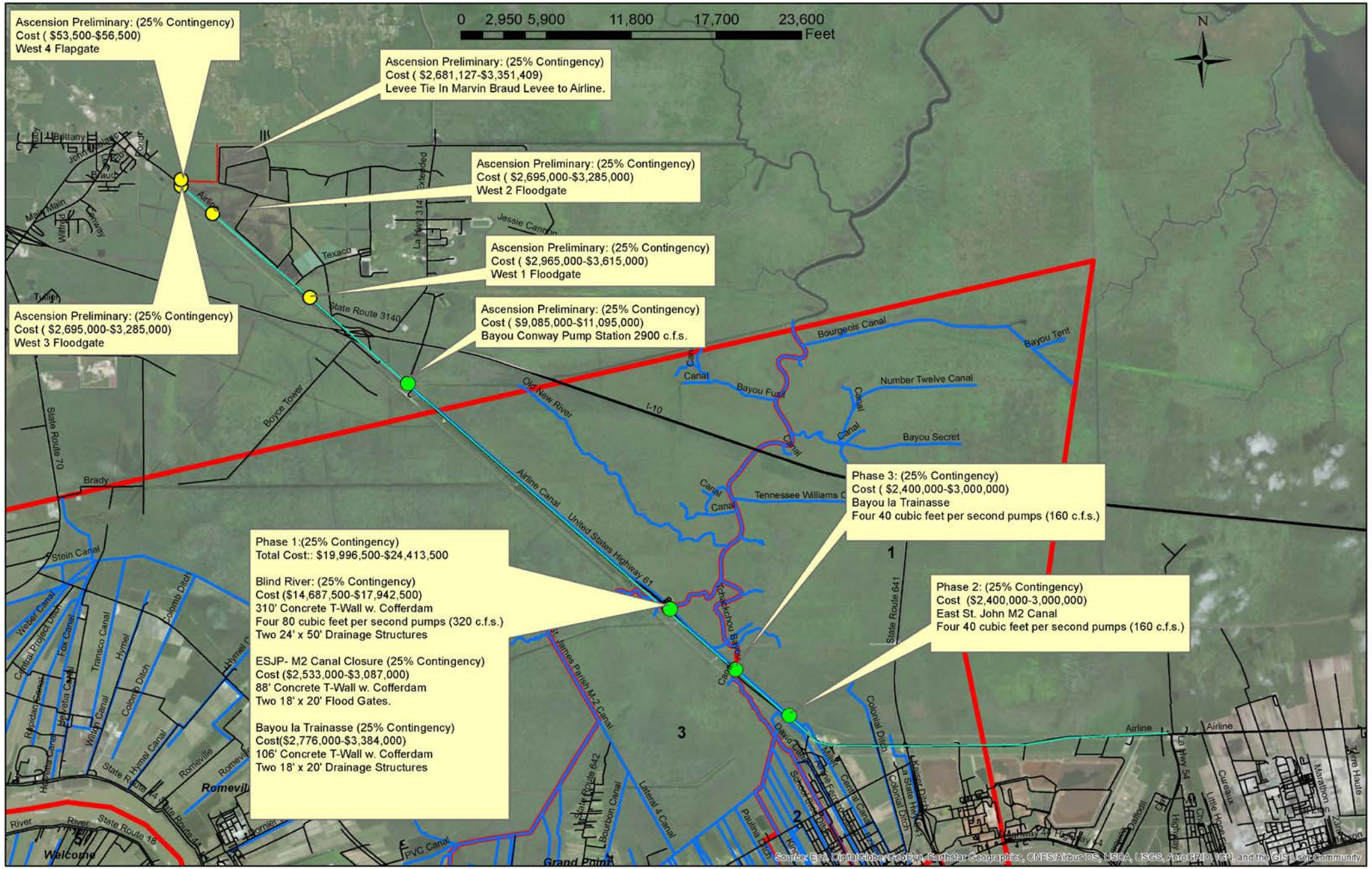



Backwater Prevention at US 61 St. John St. Charles Parishes
McReine Pump Station
Javibert Ln
61
Hidden Oaks Dr
Reine Dr
Google Earth
© 2018 Google
300 ft
N

Backwater Prevention at US 61 St. John St. Charles Parishes

McReine Pump Station


West Shore Lake Pontchartrain Louisiana
Hurricane and Storm Damage Risk Reduction Study
LAKE MAUREPAS
Gonzales
Donaldsonville
LaPlace
Lutcher
Gramercy
Destrehan
Copyright: © 2013 National Geographic Society, Content may not reflect National
61
10
3125
641
St. James Parish
Romeville
Lutcher/Gramercy
GrandPoint
Convent
N
0 0.45 0.9 1.8 2.7 3.6
Miles
Legend
Structures included in Flood Proofing
Flap Gates
Polder1 (Gramercy)
Polder3 (Grand Point North)
Federal Levees
Parish Boundaries
State Hwy
US HWY
Interstate
Local Communities


Ascension Preliminary: (25% Contingency)
Cost ($53,500-$56,500)
West 4 Flapgate
Ascension Preliminary: (25% Contingency)
Cost ($2,681,127-$3,351,409)
Levee Tie In Marvin Braud Levee to Airline.
Ascension Preliminary: (25% Contingency)
Cost ($2,695,000-$3,285,000)
West 2 Floodgate
Ascension Preliminary: (25% Contingency)
Cost ($2,965,000-$3,615,000)
West 1 Floodgate
Ascension Preliminary: (25% Contingency)
Cost ($2,695,000-$3,285,000)
West 3 Floodgate
Ascension Preliminary: (25% Contingency)
Cost ($9,085,000-$11,095,000)
Bayou Conway Pump Station 2900 c.f.s.
Phase 3: (25% Contingency)
Cost ($2,400,000-$3,000,000)
Bayou la Trainasse
Four 40 cubic feet per second pumps (160 c.f.s.)
Phase 2: (25% Contingency)
Cost ($2,400,000-3,000,000)
East St. John M2 Canal
Four 40 cubic feet per second pumps (160 c.f.s.)
Phase 1:(25% Contingency)
Total Cost:: $19,996,500-$24,413,500
Blind River: (25% Contingency)
Cost ($14,687,500-$17,942,500)
310' Concrete T-Wall w. Cofferdam
Four 80 cubic feet per second pumps (320 c.f.s.)
Two 24' x 50' Drainage Structures
ESJP- M2 Canal Closure (25% Contingency)
Cost ($2,533,000-$3,087,000)
88' Concrete T-Wall w. Cofferdam
Two 18' x 20' Flood Gates.
Bayou la Trainasse (25% Contingency)
Cost($2,776,000-$3,384,000)
106' Concrete T-Wall w. Cofferdam
Two 18' x 20' Drainage Structures
0 2,950 5,900 11,800 17,700 23,600
Feet
N
Airline
State Route 3140
Texaco
La Hwy 314 Extended
Jessie Cannon
Bourgeois Canal
Bayou Tent
Number Twelve Canal
Bayou Fusil
Bayou Secret
Old New River
I-10
Boyce Tower
State Route 70
Brady
Airline Canal
United States Highway 61
Tennessee Williams
Stein Canal
Weber Canal
Central Project Ditch
Fox Canal
Transco Canal
Hymel
Colomb Ditch
Rapidan Canal
Helvetia Canal
Welch Canal
State Route 44 Hymel Canal
Romeville
State Route 18
River
Welcome
PVC Canal
Idahachoux Bayou
James Parish M-2 Canal
State Route 642
Bourbon Canal
Lateral 4 Canal
David Canal
Miller Central Canal
Colonial Ditch
State Route 641
Paulina Ditch
School Board Ditch
Kraemer Ditch
Grand Point
Airline
La Hwy 54
Cureaux
Little Hope Ditch
Daffodil
Highway 44
Highway 54
Marathon Pipeline
Terre Haute
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community