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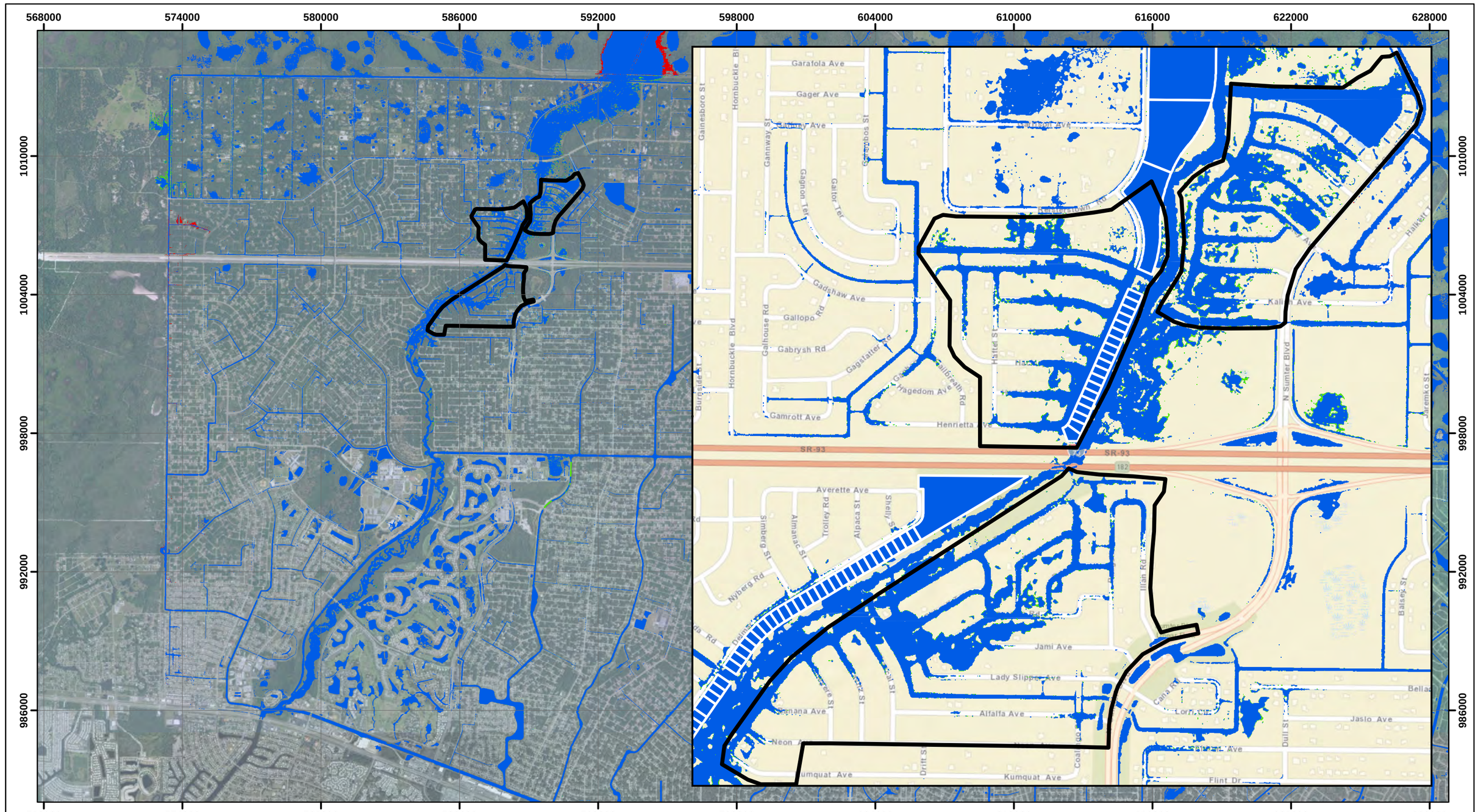


Area of Flooding
Decreased Flooding
Increased Flooding

0 4,000 8,000
Feet

N

FIGURE 1

Big Slough Flood Reduction Study

1-DAY 2.33-YEAR EVENT FLOOD REDUCTION - SCENARIO 6A

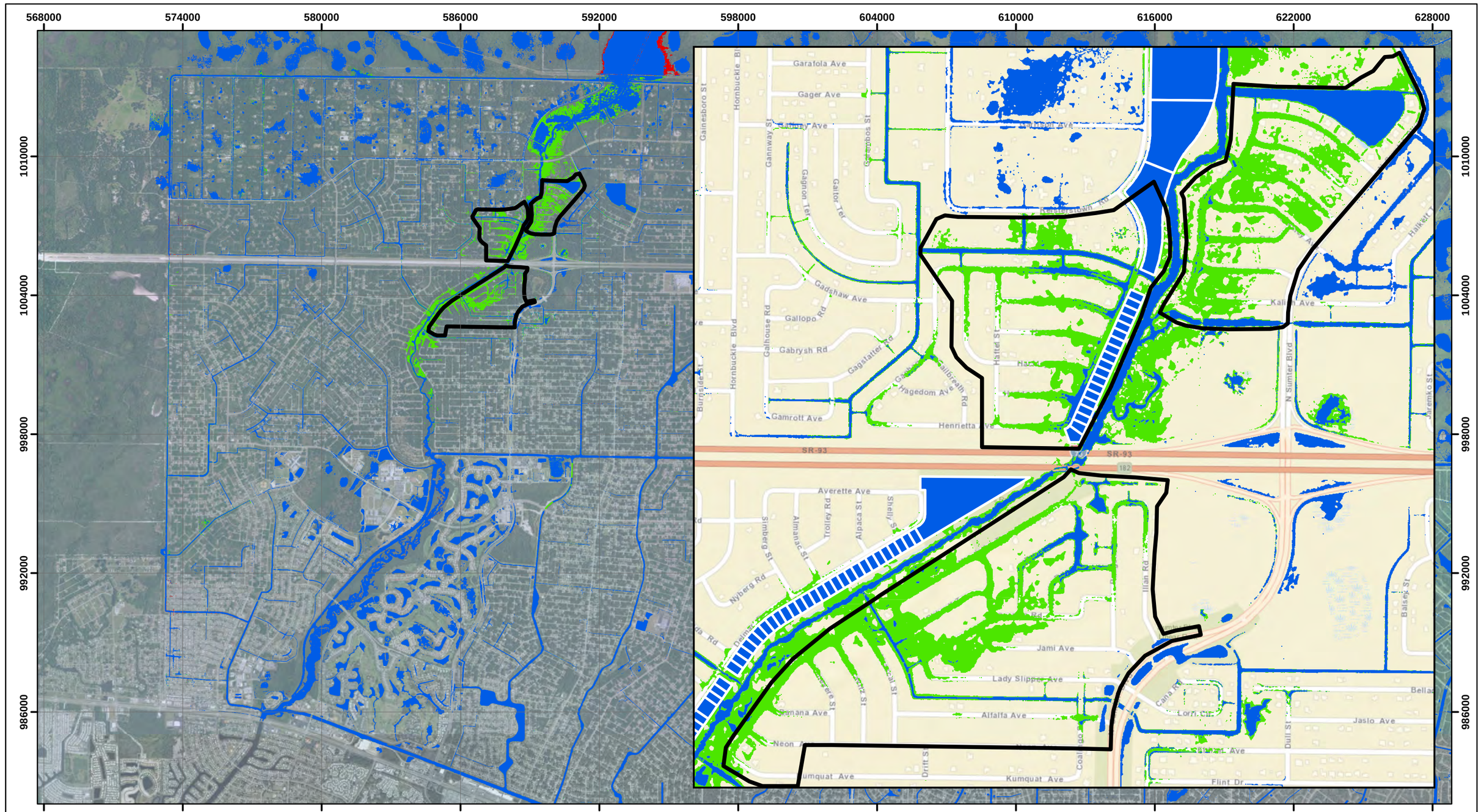
1 inch = 4,000 feet

DELOACHes

Notes:

Project: 16-00400-00	**Date:** 8/18/2017	**Author:** DAD
Projection: Projection: NAD83 StatePlane Florida West HARN		

Path: C:\Users\Dave\Desktop\20170821 - Scenario Comparison\20170930 - Big Slough Compare Scenarios DeLoach.xlsx Landscape 11x17.mxd



Area of Flooding
Decreased Flooding
Increased Flooding

0 4,000 8,000
Feet

N

FIGURE 2

Big Slough Flood Reduction Study

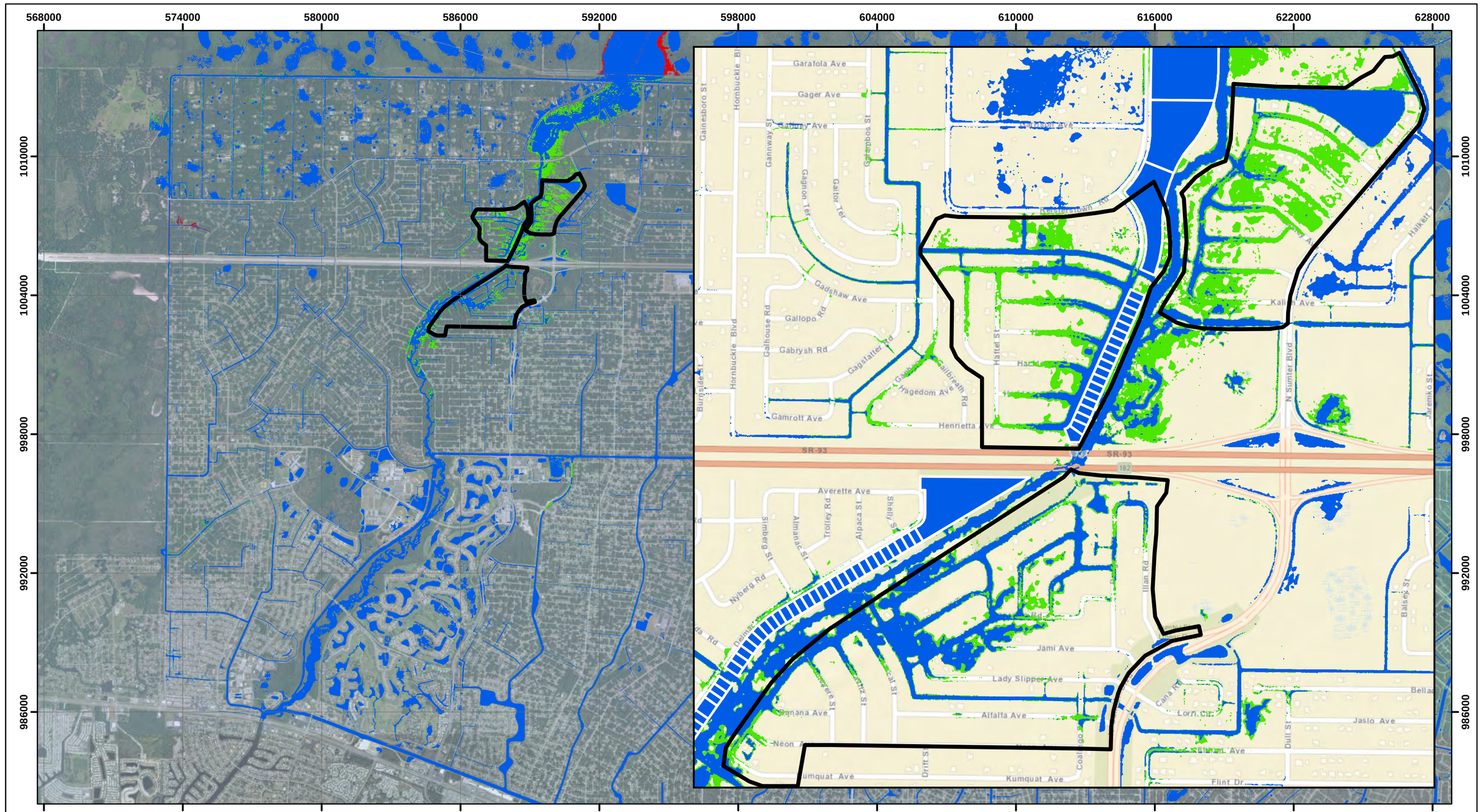
1-DAY 2.33-YEAR EVENT FLOOD REDUCTION - SCENARIO 6B

1 inch = 4,000 feet

DELOACHes

Notes:

Project: 16-00400-00	**Date:** 8/18/2017	**Author:** DAD
Projection: Projection: NAD83 StatePlane Florida West HARN		



Area of Flooding
Decreased Flooding
Increased Flooding

0 4,000 8,000
Feet

N

FIGURE 3

Big Slough Flood Reduction Study

1-DAY 2.33-YEAR EVENT FLOOD REDUCTION - SCENARIO 6C

1 inch = 4,000 feet

DELOACHes

Notes:

Project: 16-00400-00	**Date:** 8/18/2017	**Author:** DAD
Projection: Projection: NAD83 StatePlane Florida West HARN		

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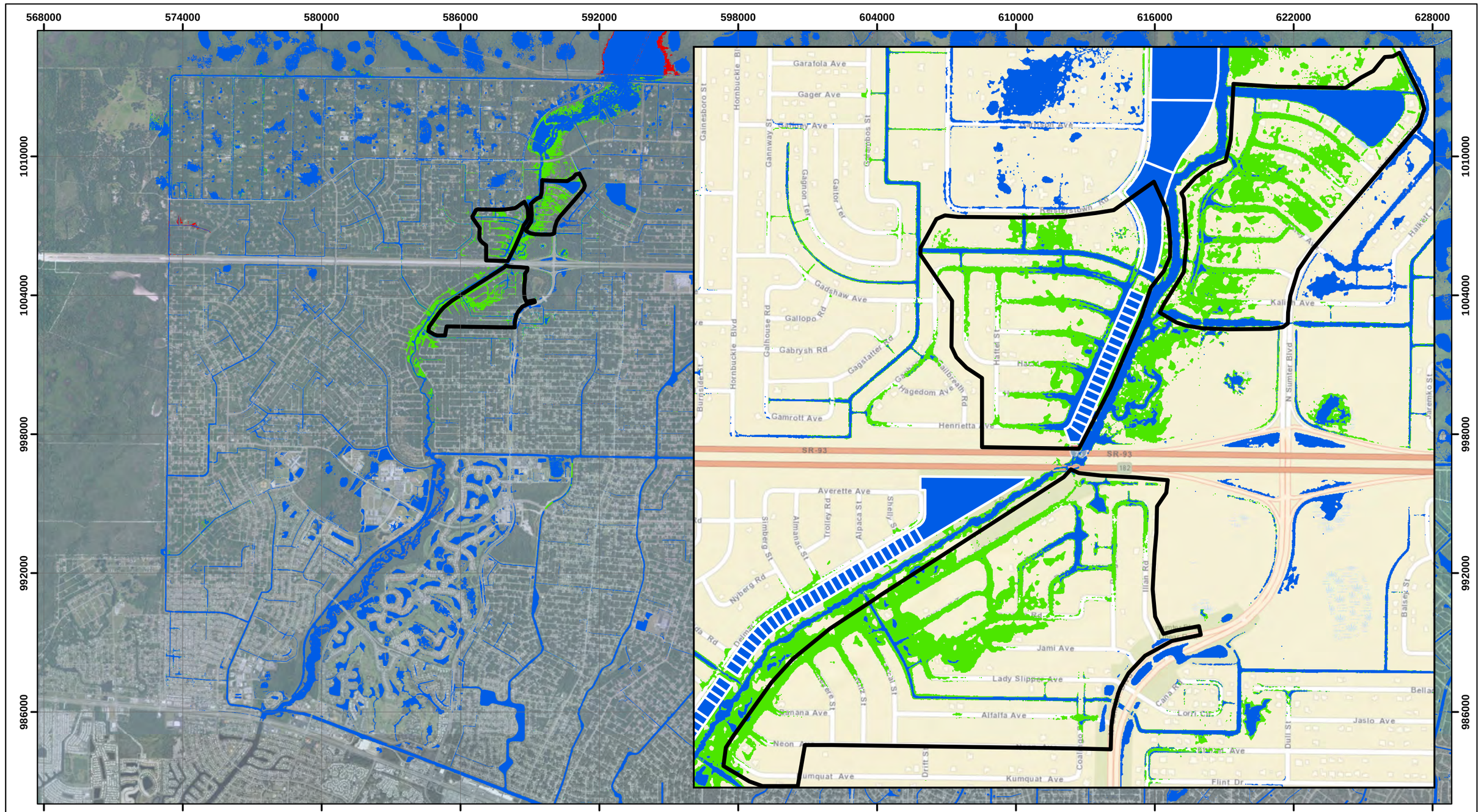

Area of Flooding
Decreased Flooding
Increased Flooding

0 4,000 8,000
Feet

N

FIGURE 4

Big Slough Flood Reduction Study

1-DAY 2.33-YEAR EVENT FLOOD REDUCTION - SCENARIO 6D

1 inch = 4,000 feet

DELOACHes

Notes:

Project: 16-00400-00	**Date:** 8/18/2017	**Author:** DAD
Projection: Projection: NAD83 StatePlane Florida West HARN		

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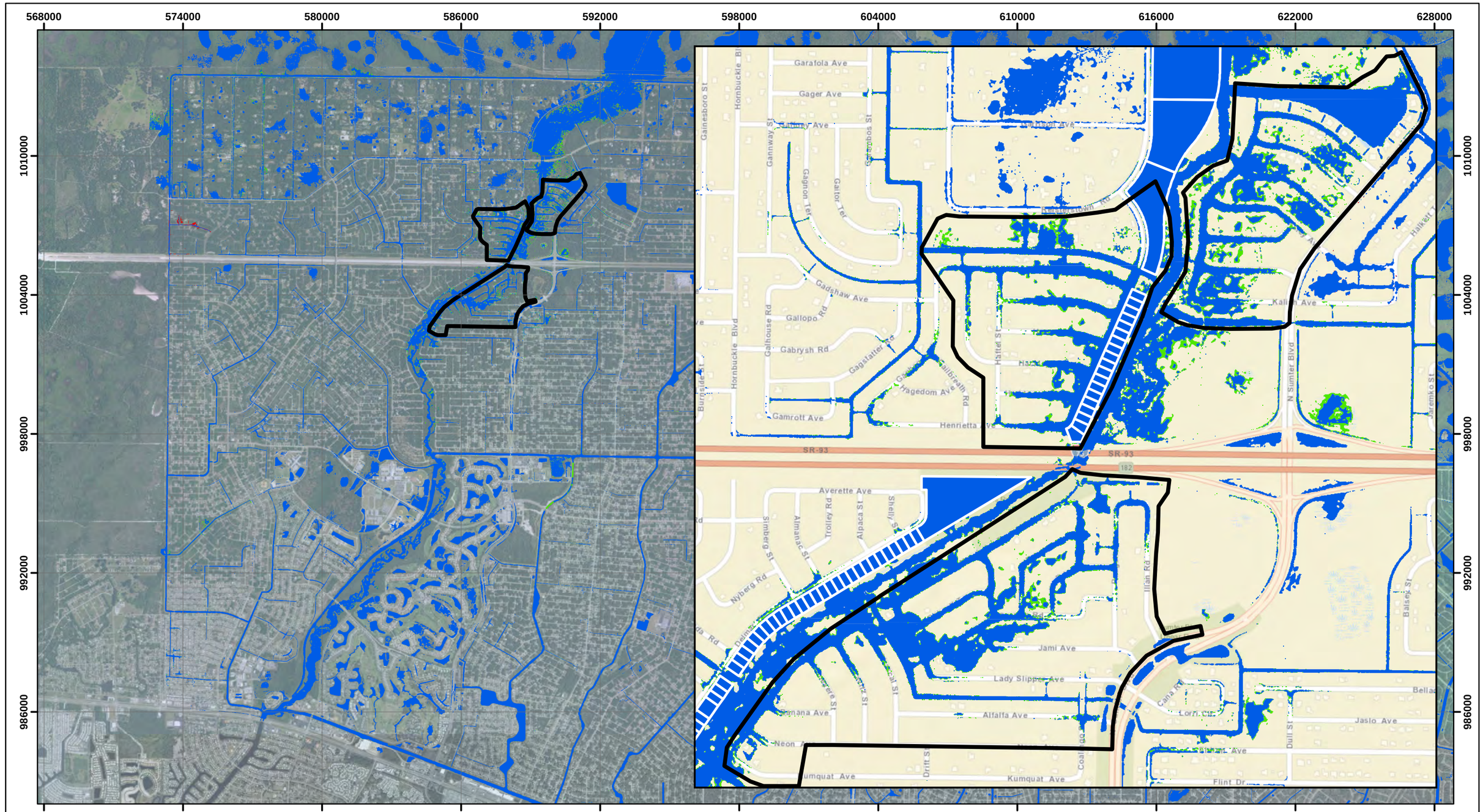


Area of Flooding
Decreased Flooding
Increased Flooding

0 4,000 8,000
Feet

N

FIGURE 5

Big Slough Flood Reduction Study

1-DAY 2.33-YEAR EVENT FLOOD REDUCTION - SCENARIO 6E

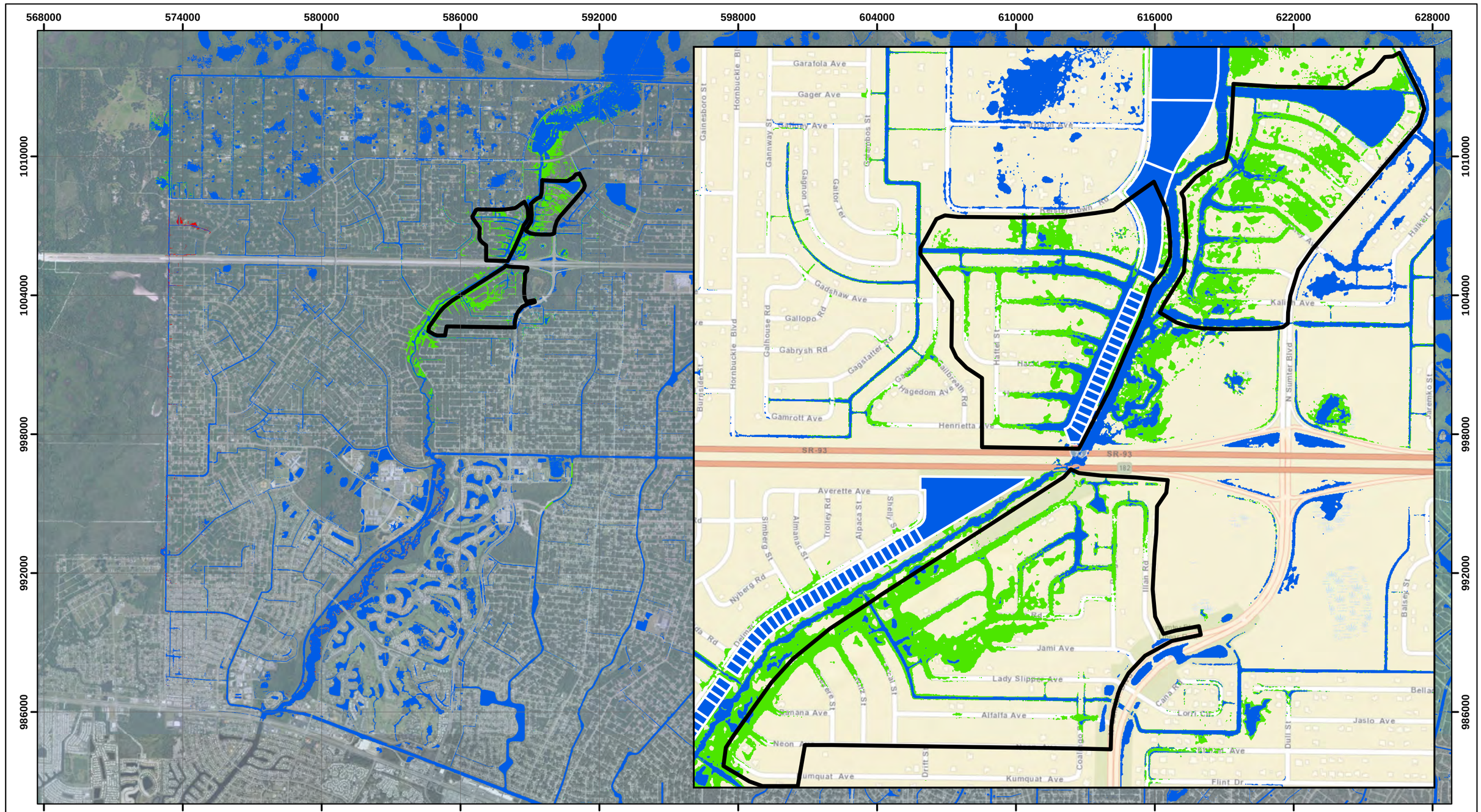
1 inch = 4,000 feet

DELOACHes

Notes:

Project: 16-00400-00	**Date:** 8/18/2017	**Author:** DAD
Projection: Projection: NAD83 StatePlane Florida West HARN		

Path: C:\Users\Dave\Desktop\20170821 - Scenario Comparison\20170930 - Big Slough Compare Scenarios DeLoach.xlsx Landscape 11x17.mxd



Area of Flooding
Decreased Flooding
Increased Flooding

0 4,000 8,000
Feet

N

FIGURE 6

Big Slough Flood Reduction Study

1-DAY 2.33-YEAR EVENT FLOOD REDUCTION - SCENARIO 6F

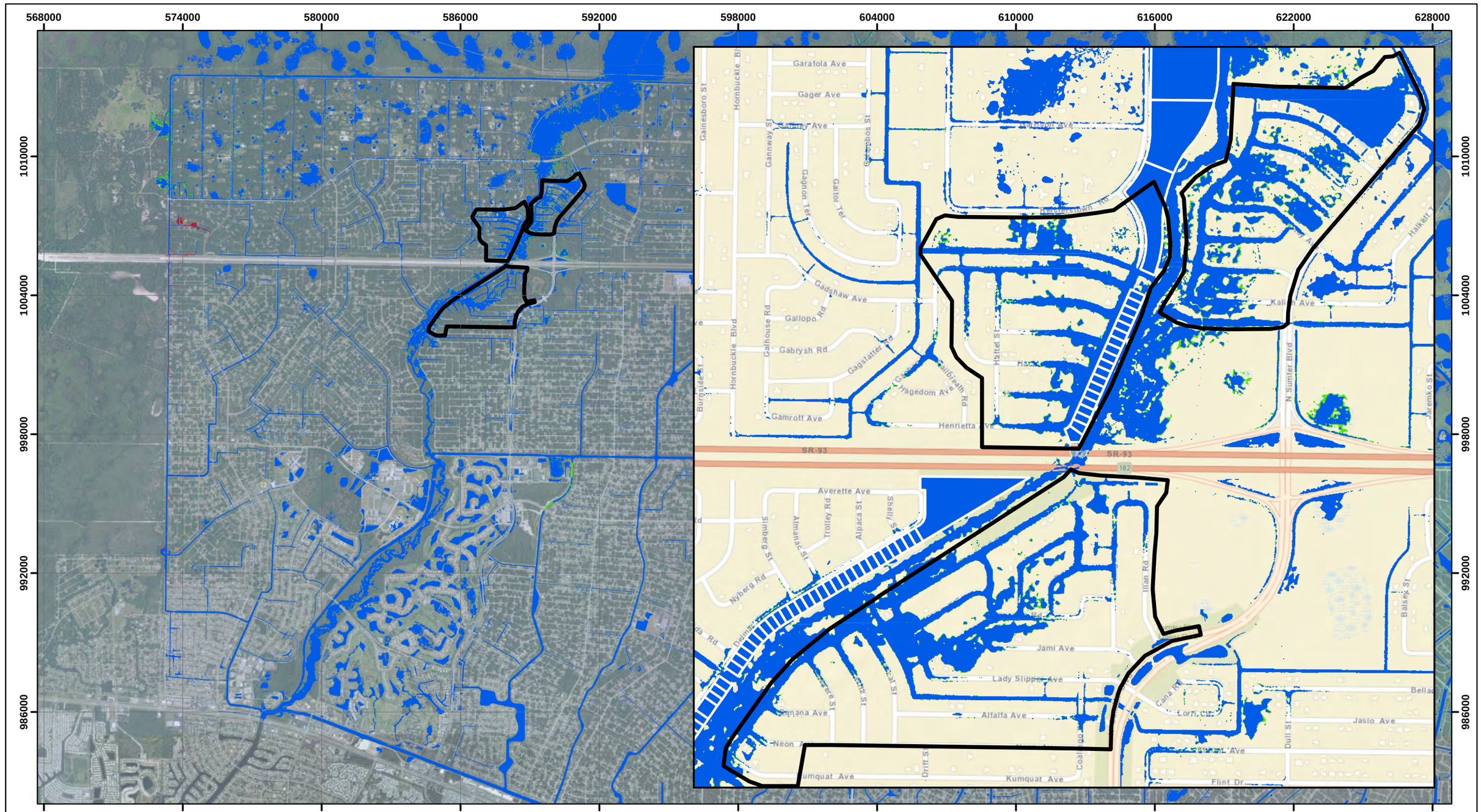
1 inch = 4,000 feet

DELOACHes

Notes:

Project: 16-00400-00	**Date:** 8/18/2017	**Author:** DAD
Projection: Projection: NAD83 StatePlane Florida West HARN		

Path: C:\Users\Dave\Desktop\20170821 - Scenario Comparison\20170930 - Big Slough Compare Scenarios DeLoach.xlsx Landscape 11x17.mxd



Area of Flooding
Decreased Flooding
Increased Flooding

0 4,000 8,000
Feet

N

FIGURE 7

Big Slough Flood Reduction Study

1-DAY 2.33-YEAR EVENT FLOOD REDUCTION - SCENARIO 6G

1 inch = 4,000 feet

DELOACHes

Notes:

Project: 16-00400-00	**Date:** 8/18/2017	**Author:** DAD
Projection: Projection: NAD83 StatePlane Florida West HARN		

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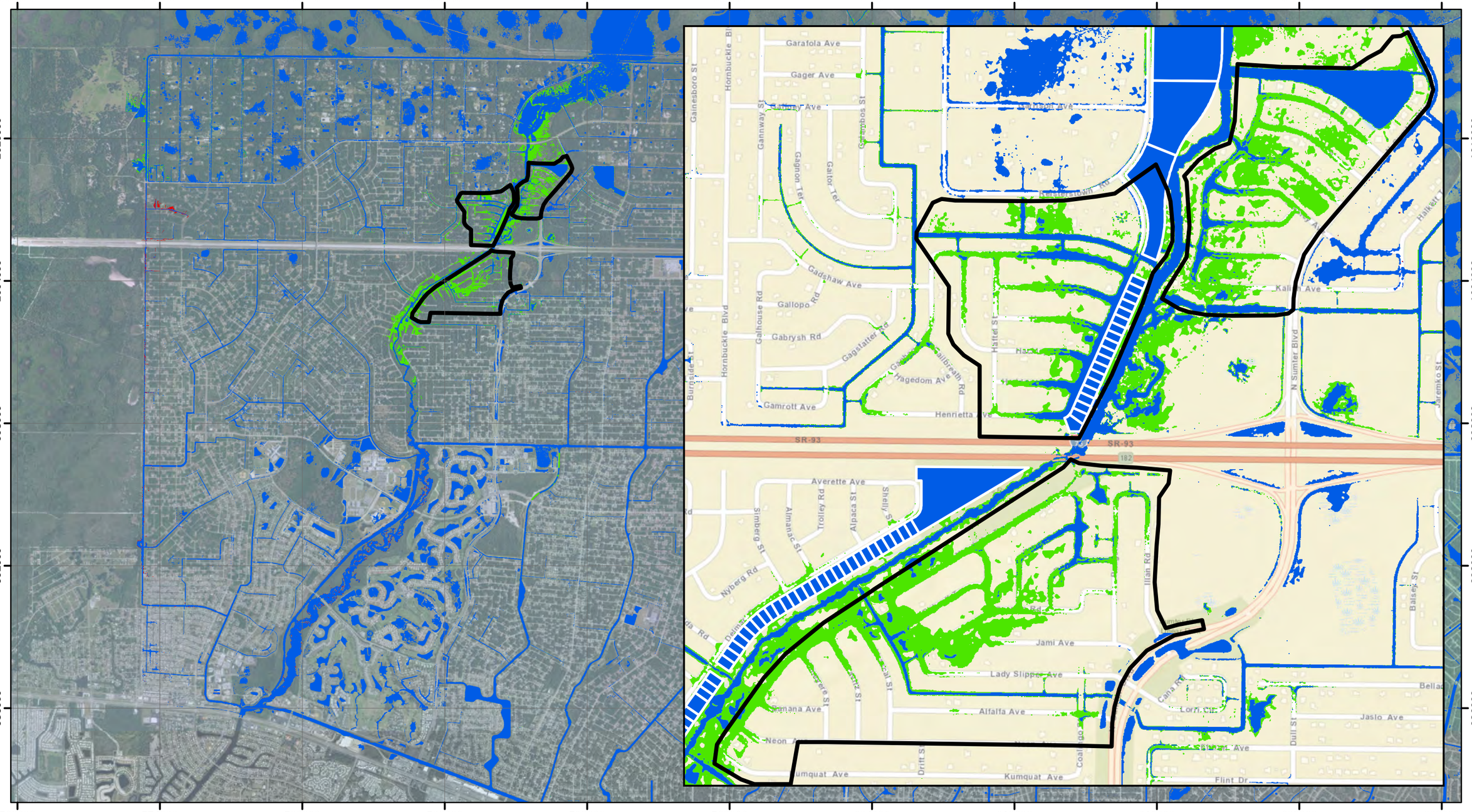
1010000 1004000 998000 992000 986000



Area of Flooding
Decreased Flooding
Increased Flooding

0 4,000 8,000
Feet

N

FIGURE 8

Big Slough Flood Reduction Study

1-DAY 2.33-YEAR EVENT FLOOD REDUCTION - SCENARIO 6H

1 inch = 4,000 feet

DELOACHes

Notes:

Project: 16-00400-00	**Date:** 8/18/2017	**Author:** DAD
Projection: Projection: NAD83 StatePlane Florida West HARN		

Path: C:\Users\Dave\Desktop\20170821 - Scenario Comparison\20170930 - Big Slough Compare Scenarios DeLoach.xlsx Landscape 11x17.mxd

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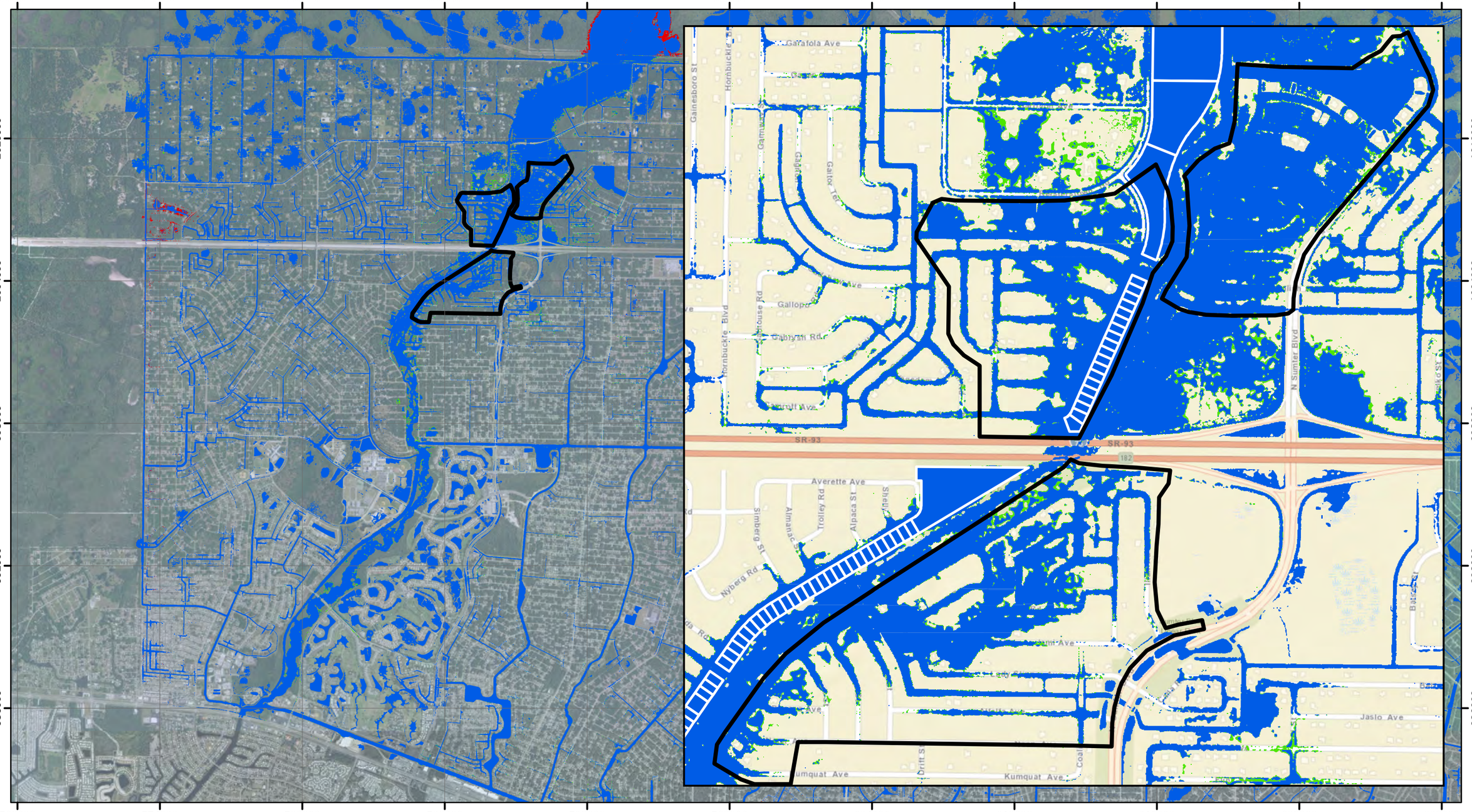
1010000 1004000 998000 992000 986000



Area of Flooding
Decreased Flooding
Increased Flooding

0 4,000 8,000
Feet

N

FIGURE 9

Big Slough Flood Reduction Study

1-DAY 10-YEAR EVENT FLOOD REDUCTION - SCENARIO 6A

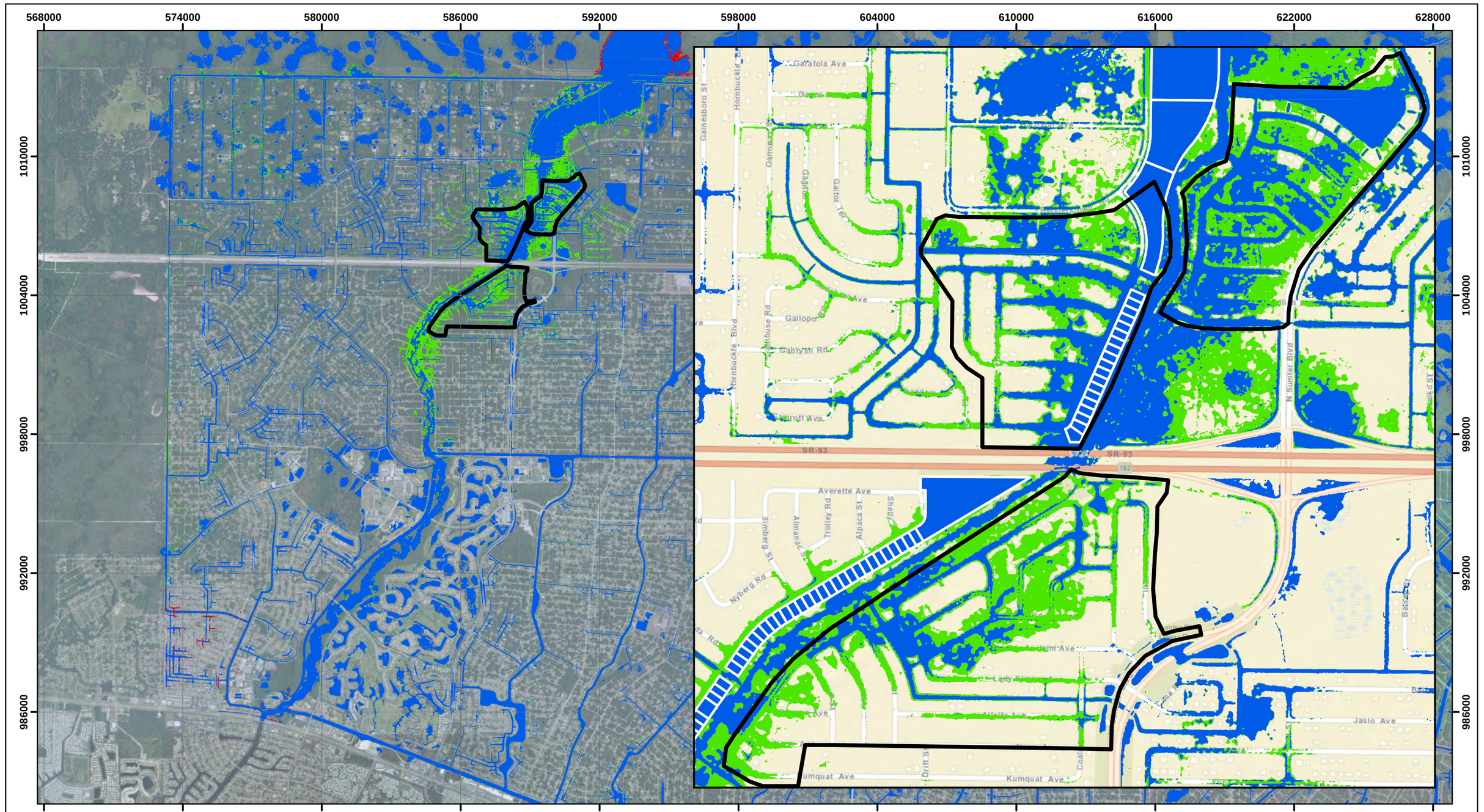
1 inch = 4,000 feet

DELOACHes

Notes:

Project: 16-00400-00	**Date:** 8/18/2017	**Author:** DAD
Projection: Projection: NAD83 StatePlane Florida West HARN		

Path: C:\Users\Dave\Desktop\20170821 - Scenario Comparison\20170930 - Big Slough Compare Scenarios DeLoach.xlsx Landscape 11x17.mxd



Area of Flooding
Decreased Flooding
Increased Flooding

0 4,000 8,000
Feet

N

FIGURE 10

Big Slough Flood Reduction Study

1-DAY 10-YEAR EVENT FLOOD REDUCTION - SCENARIO 6B

1 inch = 4,000 feet

DELOACHes

Notes:

Project: 16-00400-00	**Date:** 8/18/2017	**Author:** DAD
Projection: Projection: NAD83 StatePlane Florida West HARN		

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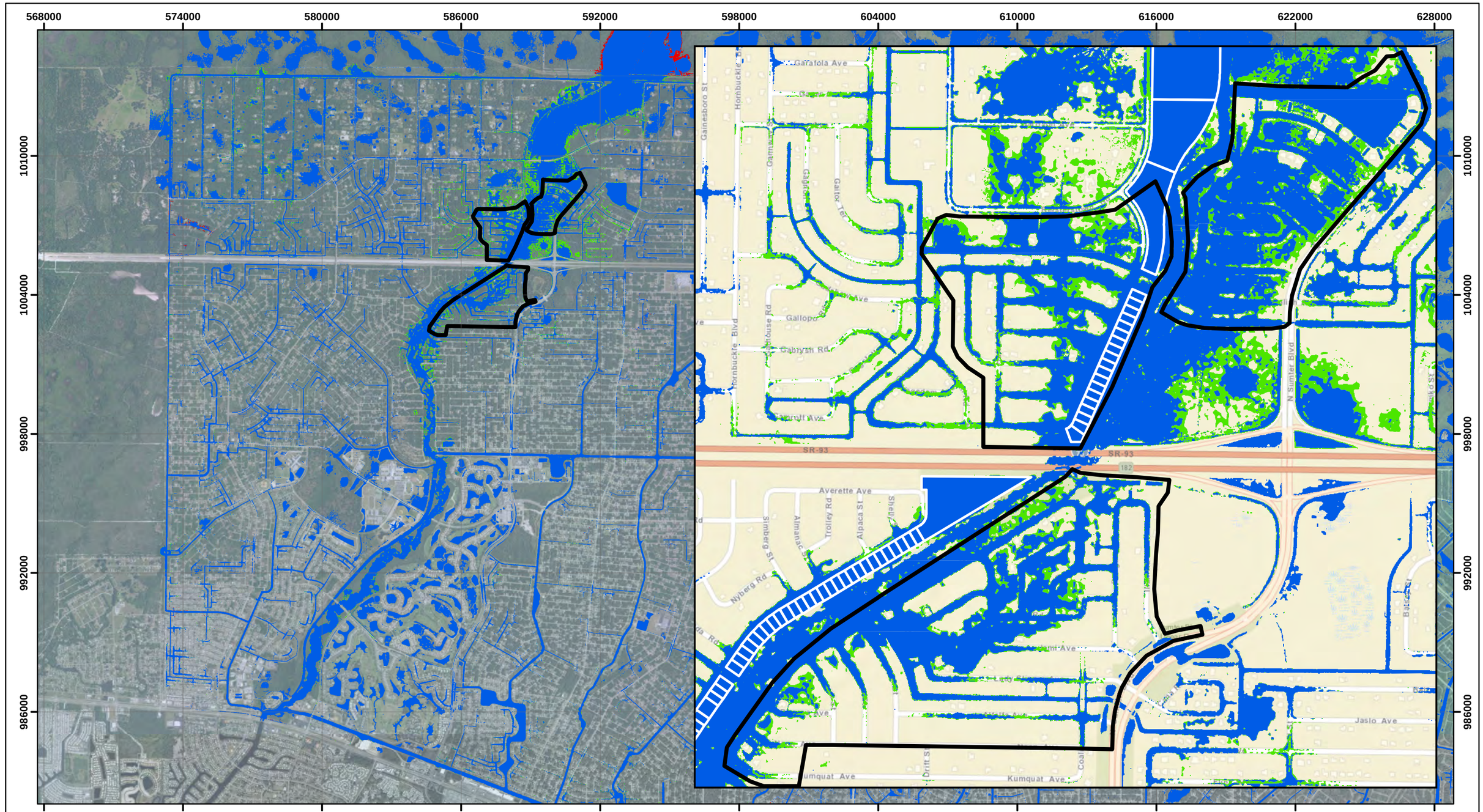

Area of Flooding
Decreased Flooding
Increased Flooding

0 4,000 8,000
Feet

N

FIGURE 11

Big Slough Flood Reduction Study

1-DAY 10-YEAR EVENT FLOOD REDUCTION - SCENARIO 6C

1 inch = 4,000 feet

DELOACHes

Notes:

Project: 16-00400-00	**Date:** 8/18/2017	**Author:** DAD
Projection: Projection: NAD83 StatePlane Florida West HARN		

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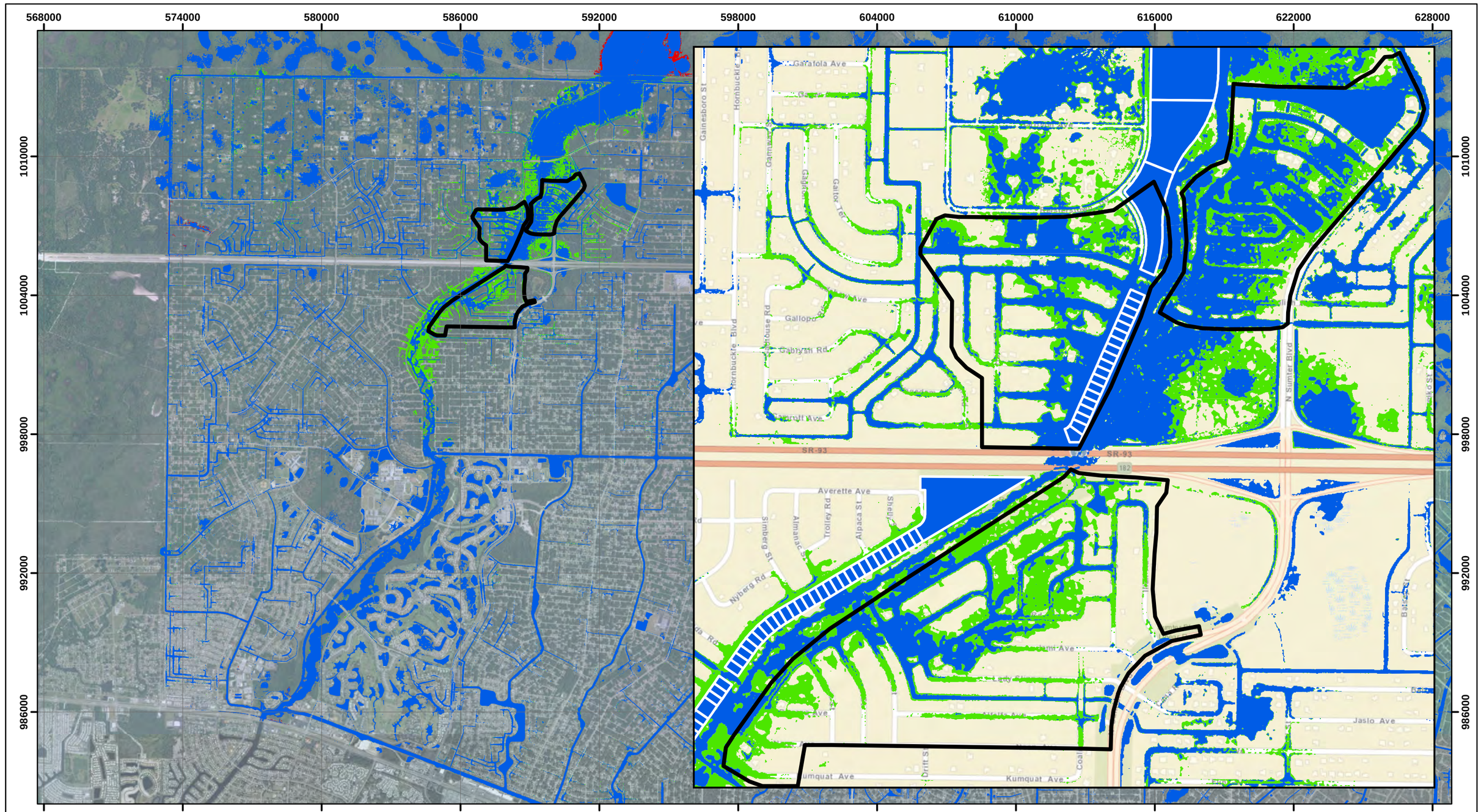

Area of Flooding
Decreased Flooding
Increased Flooding

0 4,000 8,000
Feet

N

FIGURE 12

Big Slough Flood Reduction Study

1-DAY 10-YEAR EVENT FLOOD REDUCTION - SCENARIO 6D

1 inch = 4,000 feet

DELOACHes

Notes:

Project: 16-00400-00	**Date:** 8/18/2017	**Author:** DAD
Projection: Projection: NAD83 StatePlane Florida West HARN		

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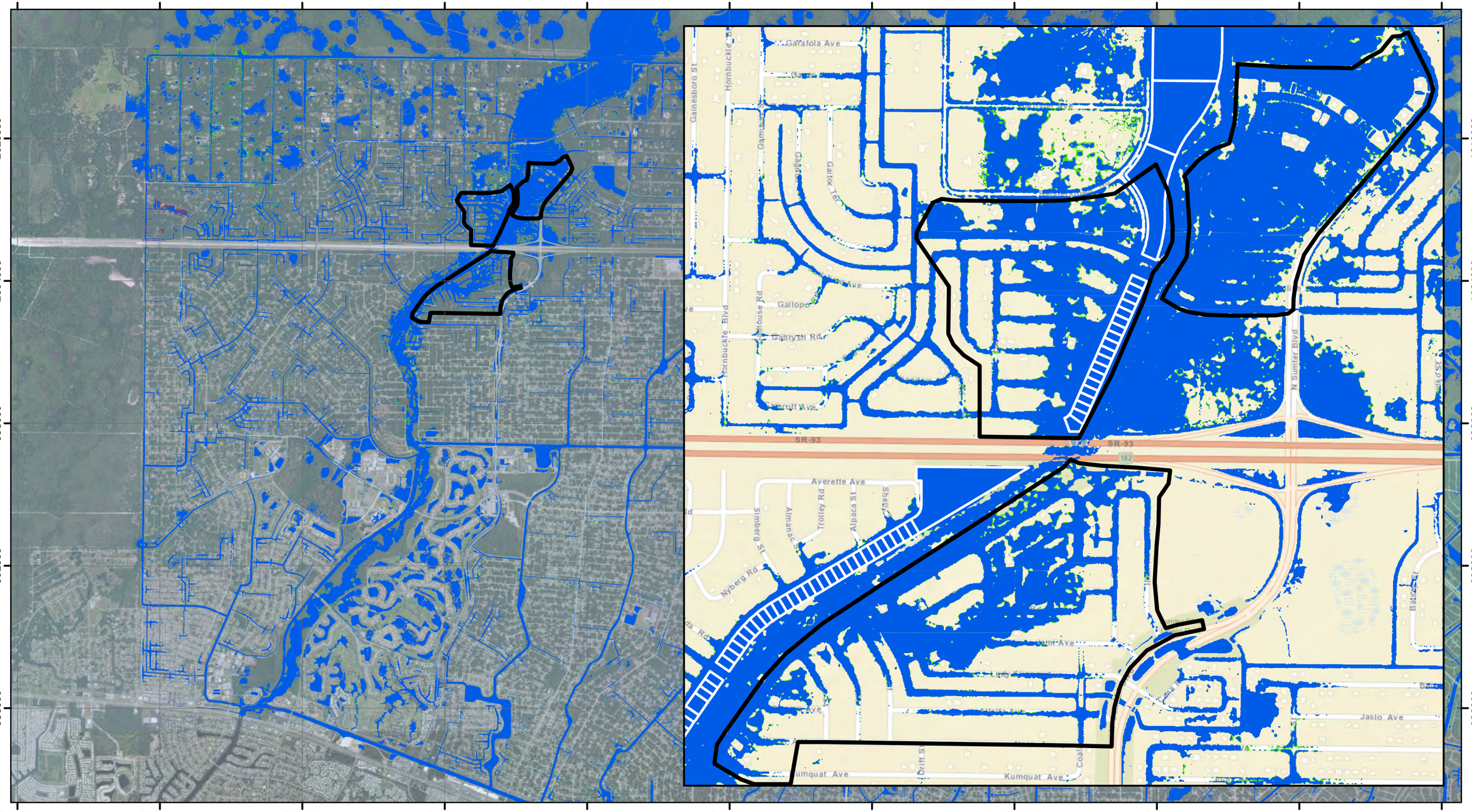
1010000 1004000 998000 992000 986000



Area of Flooding
Decreased Flooding
Increased Flooding

0 4,000 8,000
Feet

N

FIGURE 13

Big Slough Flood Reduction Study

1-DAY 10-YEAR EVENT FLOOD REDUCTION - SCENARIO 6E

1 inch = 4,000 feet

DELOACHes

Notes:

Project: 16-00400-00	**Date:** 8/18/2017	**Author:** DAD
Projection: Projection: NAD83 StatePlane Florida West HARN		

Path: C:\Users\Dave\Desktop\20170821 - Scenario Comparison\20170930 - Big Slough Compare Scenarios DeLoach.xlsx Landscape 11x17.mxd

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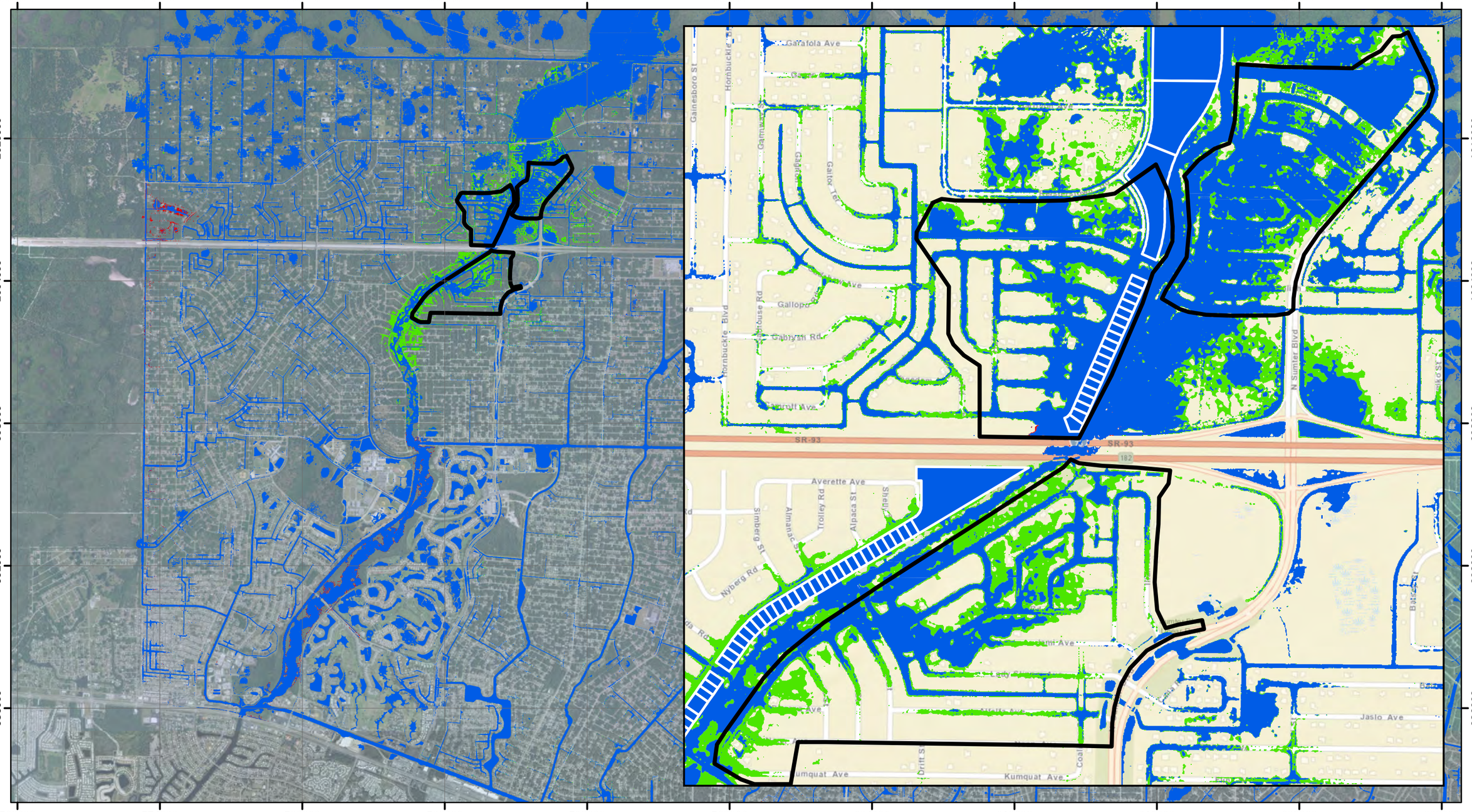

Area of Flooding
Decreased Flooding
Increased Flooding

0 4,000 8,000
Feet

N

FIGURE 14

Big Slough Flood Reduction Study

1-DAY 10-YEAR EVENT FLOOD REDUCTION - SCENARIO 6F

1 inch = 4,000 feet

DELOACHes

Notes:

Project: 16-00400-00	**Date:** 8/18/2017	**Author:** DAD
Projection: Projection: NAD83 StatePlane Florida West HARN		

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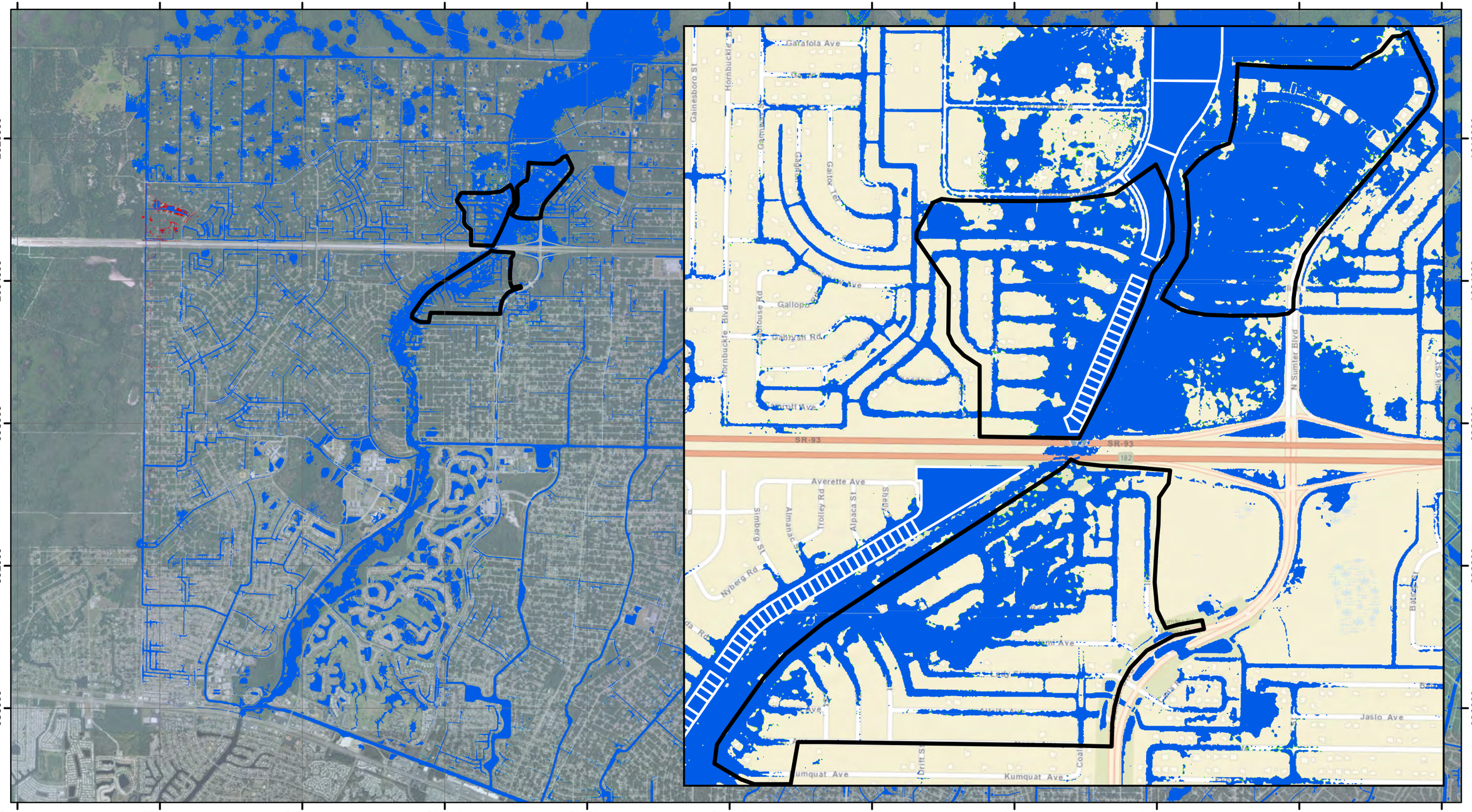
1010000 1004000 998000 992000 986000



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1010000 1004000 998000 992000 986000

Area of Flooding
Decreased Flooding
Increased Flooding

0 4,000 8,000
Feet

N

FIGURE 15

Big Slough Flood Reduction Study

1-DAY 10-YEAR EVENT FLOOD REDUCTION - SCENARIO 6G

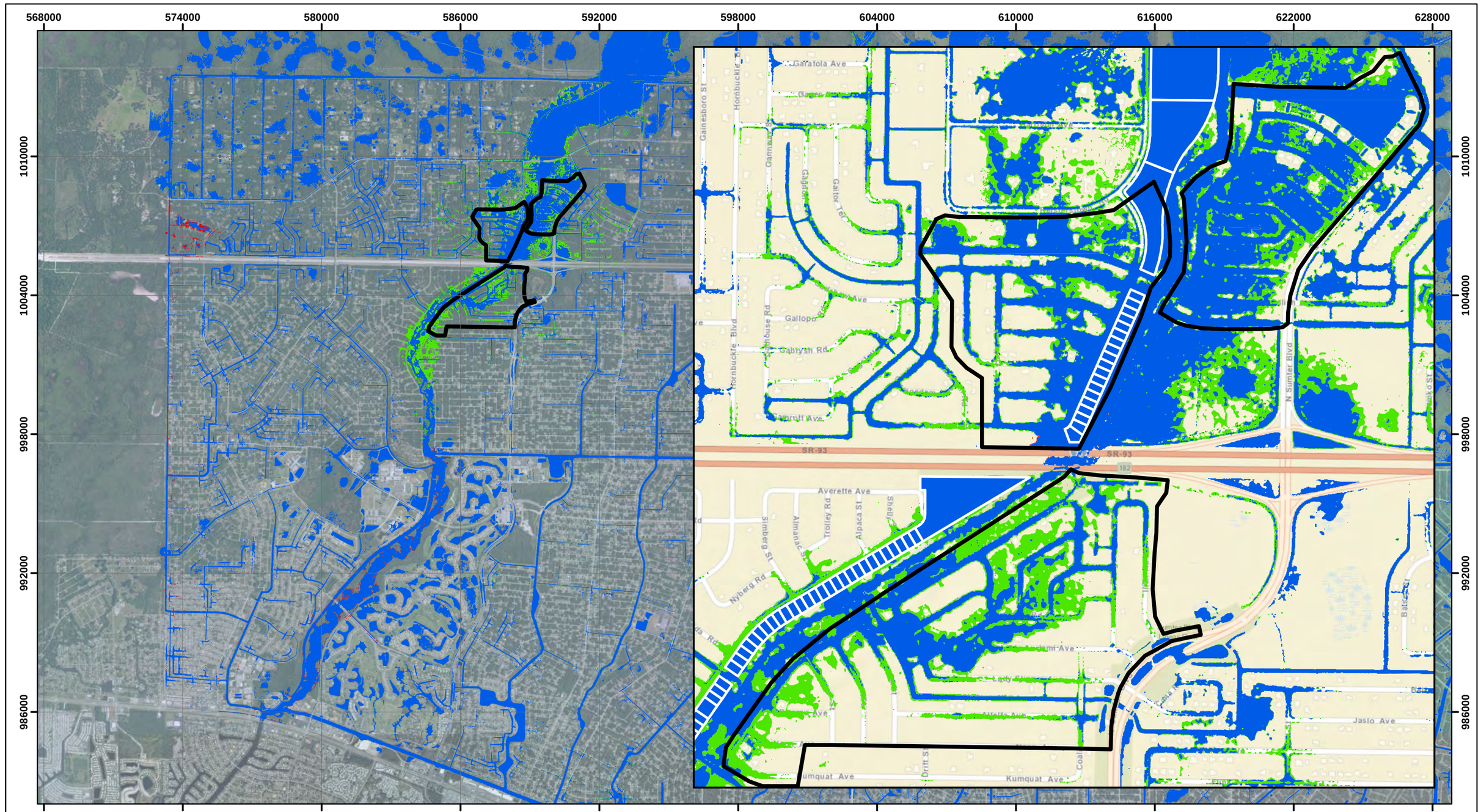
1 inch = 4,000 feet

DELOACHes

Notes:

Project: 16-00400-00	**Date:** 8/18/2017	**Author:** DAD
Projection: Projection: NAD83 StatePlane Florida West HARN		

Path: C:\Users\Dave\Desktop\20170821 - Scenario Comparison\20170930 - Big Slough Compare Scenarios DeLoach.xlsx Landscape 11x17.mxd



Area of Flooding
Decreased Flooding
Increased Flooding

0 4,000 8,000
Feet

N

FIGURE 16

Big Slough Flood Reduction Study

1-DAY 10-YEAR EVENT FLOOD REDUCTION - SCENARIO 6H

1 inch = 4,000 feet

DELOACHes

Notes:

Project: 16-00400-00	**Date:** 8/18/2017	**Author:** DAD
Projection: Projection: NAD83 StatePlane Florida West HARN		

Appendix I

SWFWMD Resource Regulation Division Pre-Application Meeting Notes

City of North Port – Flooding Alternatives PreApp

Southwest Florida Water Management District, November 2018

THIS FORM IS INTENDED TO FACILITATE AND GUIDE THE DIALOGUE DURING A PRE-APPLICATION MEETING BY PROVIDING A PARTIAL "PROMPT LIST" OF DISCUSSION SUBJECTS. IT IS NOT A LIST OF REQUIREMENTS FOR SUBMITTAL BY THE APPLICANT.

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT
RESOURCE REGULATION DIVISION
PRE-APPLICATION MEETING NOTES

FILE NUMBER:

PA 406256

Date:	11/27/18		
Time:	1:30		
Project Name:	City of North Port - Flooding Alternatives PreApp		
District Engineer:	David Kramer, Steve Lopes, Jezabel Pagan Garcia, Terese Power		
District ES:	Al Gagne		
Attendees:	Elizabeth Wong, Dave Jayroe, Dave Deloach		
County:	Sarasota	**Sec/Twp/Rge:**	Numerous including 3, 4, 9, 16, 17, 20, 21, 29, 30/39/21
Total Land Acreage:	ROW	**Project Acreage:**	100+ acres

Prior On-Site/Off-Site Permit Activity:

- Significant permitting history (ERP, WCP and WUP) within watershed(s).

Project Overview:

- Cooperatively funded project by and between the City of North Port and the SWFWMD to mitigate flooding throughout the City.
- Improvements may include, but may not be limited to:
  - Construction of a parallel storage and conveyance system along Myakkahatchee Creek within I-75 and Jockey Club areas.
  - Attenuation structure located close to northern City boundary that would back flows and maximize flood storage within County and District owned conservation properties.
  - Various culvert and open conveyance upgrades.

Environmental Discussion: (Wetlands On-Site, Wetlands on Adjacent Properties, Delineation, T&E species, Easements, Draw down Issues, Setbacks, Justification, Elimination/Reduction, Permanent/Temporary Impacts, Secondary and Cumulative Impacts, Mitigation Options, SHWL, Upland Habitats, Site Visit, etc.)

- Hydrographic modeling will be required in order to show that the project will not have an adverse effect on wetlands and surface waters.
- Provide the limits of jurisdictional wetlands and surface waters.
- Provide appropriate mitigation using UMAM for impacts, if applicable.
- Demonstrate elimination and reduction of wetland impacts.
- Maintain minimum 15 foot, average 25 foot wetland conservation area setback or address secondary impacts.
- Determine SHWL's at pond locations, wetlands, and OSWs.
- Determine normal pool elevations of wetlands.
- Determine 'pop-off' locations and elevations of wetlands.
- As of October 1, 2017, the District will no longer send a copy of an application that does not qualify for a State Programmatic General Permit (SPGP) to the U.S. Army Corps of Engineers. If a project does not qualify for a SPGP, you will need to apply separately to the Corps using the appropriate federal application form for activities under federal jurisdiction. Please see the Corps' Jacksonville District Regulatory Division Sourcebook for more information about federal permitting. Please call your local Corps office if you have questions about federal permitting. Link: http://www.saj.usace.army.mil/Missions/Regulatory/Source-Book/

Site Information Discussion: (SHW Levels, Floodplain, Tailwater Conditions, Adjacent Off-Site Contributing Sources, Receiving Waterbody, etc.)

- Where relevant, document/justify SHWE's at pond locations, wetlands, and OSWs.
- Discussed possible benefits of obtaining input/coordination with FDOT.
- Minimum flows and levels of receiving waters shall not be disrupted.
- Contamination issues need to be resolved with the FDEP. Check FDEP MapDirect layer for possible contamination points within/adjacent to the project area. FDEP MapDirect Link
- There do appear to be several District data collection sites including, but not limited to, Site ID's 770430, 710465, and 711760 that may be eventually be impacted by proposed construction. Contact the District's

Data Steward at Data.Maps@watermatters.org under the subject line "PRIORITY ERP Data Evaluation" to coordinate relocation of District data collection site.

Water Quantity Discussions: (Basin Description, Storm Event, Pre/Post Volume, Pre/Post Discharge, etc.)

- Big Slough Flood Reduction Study being performed by DeLoach Engineering for City. Local and regional flood alleviation alternatives in phases being investigated.
- A Conceptual ERP may be obtained to establish the baseline existing conditions and to demonstrate that proposed improvements will not cause adverse impacts.
- Conceptual could also evaluate improvements/reductions in flood stage resulting from initial phases of the project that future or later phases could rely on.
- Proposed improvements anticipated to include four possible main features:
    - New weirs or operable gates to impound/attenuate water upstream of I-75. Since this would involve stage increases on District lands, consistency with any Conservation Easements or other easements and approval from SWFWMD Lands Management would be needed.
    - Construction of a new bypass channel. It would need to be demonstrated that surrounding existing groundwater levels would not be adversely lowered (refer to Subsection 3.6, A.H.V.II).
    - Widening of Canal R-36, including associated culvert improvements.
    - Widening of conveyances in Dorothy Avenue area.
- Demonstrate that site will not impede the conveyance of contributing off-site flows.
- Provide documentation to support modeling tailwater conditions. Modeling must extend sufficiently upstream and downstream to assure no adverse stage increases upstream or downstream.
- The Big Slough Watershed Model will be used to demonstrate that proposed improvements will not increase flood stages up- or down-stream of the project area(s) based on Mean Annual, 10yr, 25yr and 100yr 24hr events.
- Please be aware that if there is credible historical evidence of past flooding or the physical capacity of the downstream conveyance or receiving waters indicates that the conditions for issuance will not be met without consideration of storm events of different frequency or duration, applicants shall be required to provide additional analyses using storm events of different duration or frequency than the 25-year 24-hour storm event, or to adjust the volume, rate or timing of discharges. [Section 3.0 Applicant's Handbook Volume II]

Water Quality Discussions: (Type of Treatment, Technical Characteristics, Non-presumptive Alternatives, etc.)

- It is anticipated that the project will not cause or contribute to pollutant loadings; please address with Application.

Sovereign Lands Discussion: (Determining Location, Correct Form of Authorization, Content of Application, Assessment of Fees, Coordination with FDEP)

- The project may be located within state owned sovereign submerged lands (SSSL). Be advised that a title determination will be required from FDEP to verify the presence and/or location of SSSL.
- If use of SSSL is proposed, authorization will be required. Refer to Chapter 18-21, F.A.C. and Chapter 18-20, F.A.C. for guidance on projects that impact SSSL and Aquatic Preserves.

Operation and Maintenance/Legal Information: (Ownership or Perpetual Control, O&M Entity, O&M Instructions, Homeowner Association Documents, Coastal Zone requirements, etc.)

- The permit must be issued to entity that owns or controls the property. City of North Port will be Applicant/permittee/O&M Entity.

Application Type and Fee Required:

For Conceptual ERP:

- Provide/address Sections A, C, and E of the ERP Application.
- Consult the fee schedule for fee.

Other: (Future Pre-Application Meetings, Fast Track, Submittal Date, Construction Start Date, Required District Permits – WUP, WOD, Well Construction, etc.)

- An application for an individual permit to construct or alter a dam, impoundment, reservoir, or appurtenant work, requires that a notice of receipt of the application must be published in a newspaper within the affected area. Provide documentation that such noticing has been accomplished. Note that the published notices of receipt for an ERP can be in accordance with the language provided in Rule 40D-1.603(10), F.A.C.
- The plans and drainage report submitted electronically must include the appropriate information required under Rules 61G15-23.005 and 61G15-23.004 (Digital), F.A.C. The following text is required by the Florida

Board of Professional Engineers (FBPE) to meet this requirement when a digitally created seal is not used and must appear where the signature would normally appear:

ELECTRONIC (Manifest): *[NAME] State of Florida, Professional Engineer, License No. [NUMBER] This item has been electronically signed and sealed by [NAME] on the date indicated here using a SHA authentication code. Printed copies of this document are not considered signed and sealed and the SHA authentication code must be verified on any electronic copies*

DIGITAL: *[NAME] State of Florida, Professional Engineer, License No. [NUMBER]; This item has been digitally signed and sealed by [NAME] on the date indicated here using a Digital Signature; Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.*

- Provide soil erosion and sediment control measures for use during construction. Refer to ERP Applicant's Handbook Vol. 1 Part IV Erosion and Sediment Control.
- Demonstrate that excavation of any stormwater ponds does not breach an aquitard (see Subsection 2.1.1, A.H.V.II) such that it would allow for lesser quality water to pass, either way, between the two systems. In those geographical areas of the District where there is not an aquitard present, the depth of the pond(s) shall not be excavated to within two (2) feet of the underlying limestone which is part of a drinking water aquifer. [Refer to Subsection 5.4.1(b), A.H.V.II]
- If lowering of SHWE is proposed, then burden is on Applicant to demonstrate no adverse onsite or offsite impacts as per Subsection 3.6, A.H.V.II. Groundwater drawdown 'radius of influence' computations may be required to demonstrate no adverse onsite or offsite impacts. Please note that new roadside swales or deepening of existing roadside swales may result in lowering of SHWE. Proposed ponds with control elevation less than SHWE may result in adverse lowering of onsite or offsite groundwater.

Appendix J

North Port Big Slough Flood Reduction Study, Presentation to the North Port City Commission

DeLoach Engineering Science, PLLC., December 2018

North Port Big Slough Flood Reduction Study

Presentation to the
North Port City Commission

December 6, 2018

DeLoach Engineering Science
water resources and civil engineering

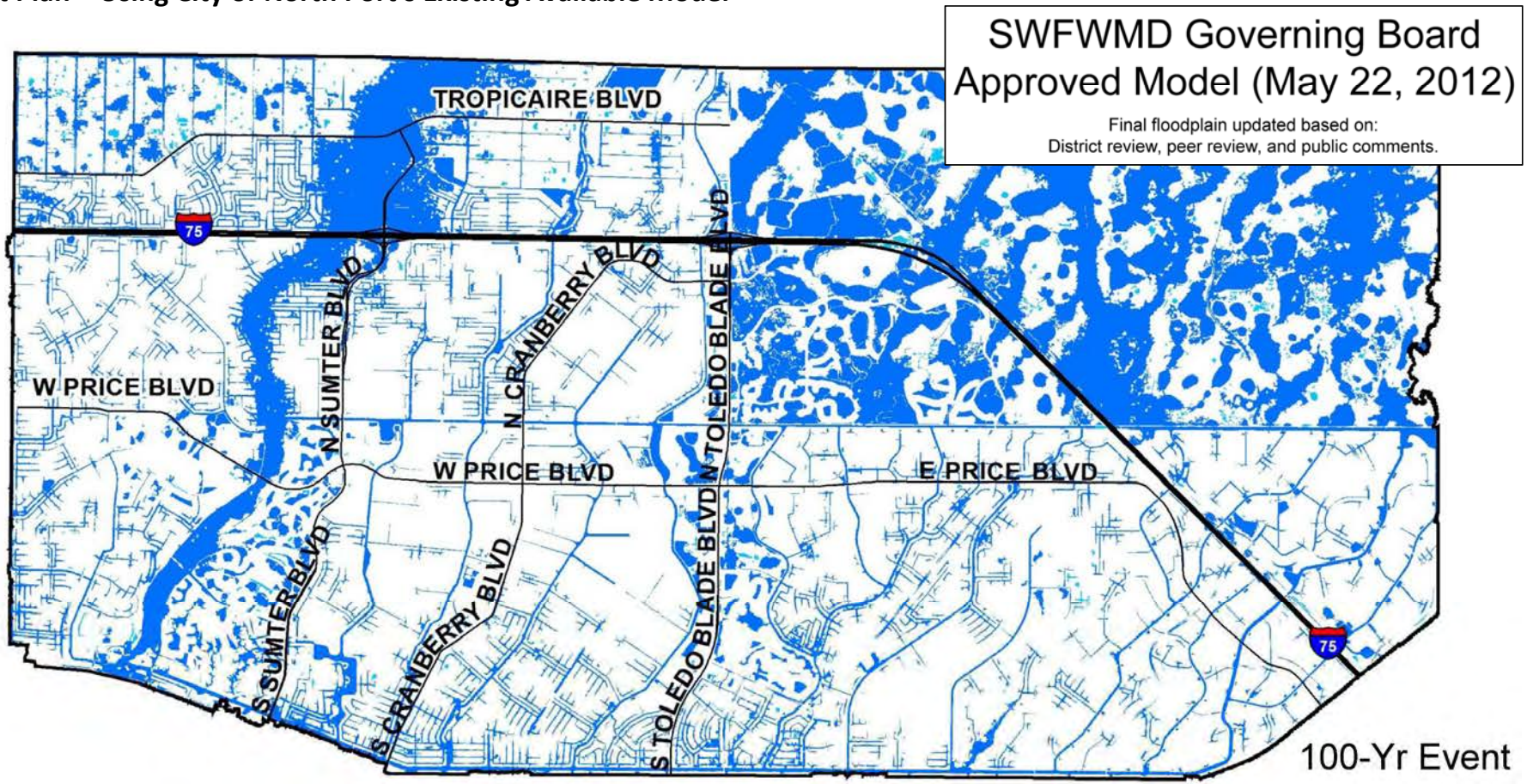
Project Plan – Scope of Work

"Evaluate the feasibility and cost effectiveness of solutions to reduce flooding"

- City of North Port Department of Public Works, Agreement #2016-48
- Cooperatively funded by and between the City of North Port and the SWFWMD
- Part 1 – localized along Myakkahatchee Creek within I-75 and Jockey Club areas
- Part 2 – preliminary regional concepts to mitigate flooding throughout City

North Port Big Slough Flood Reduction Study

Project Plan – Using City of North Port's Existing Available Model



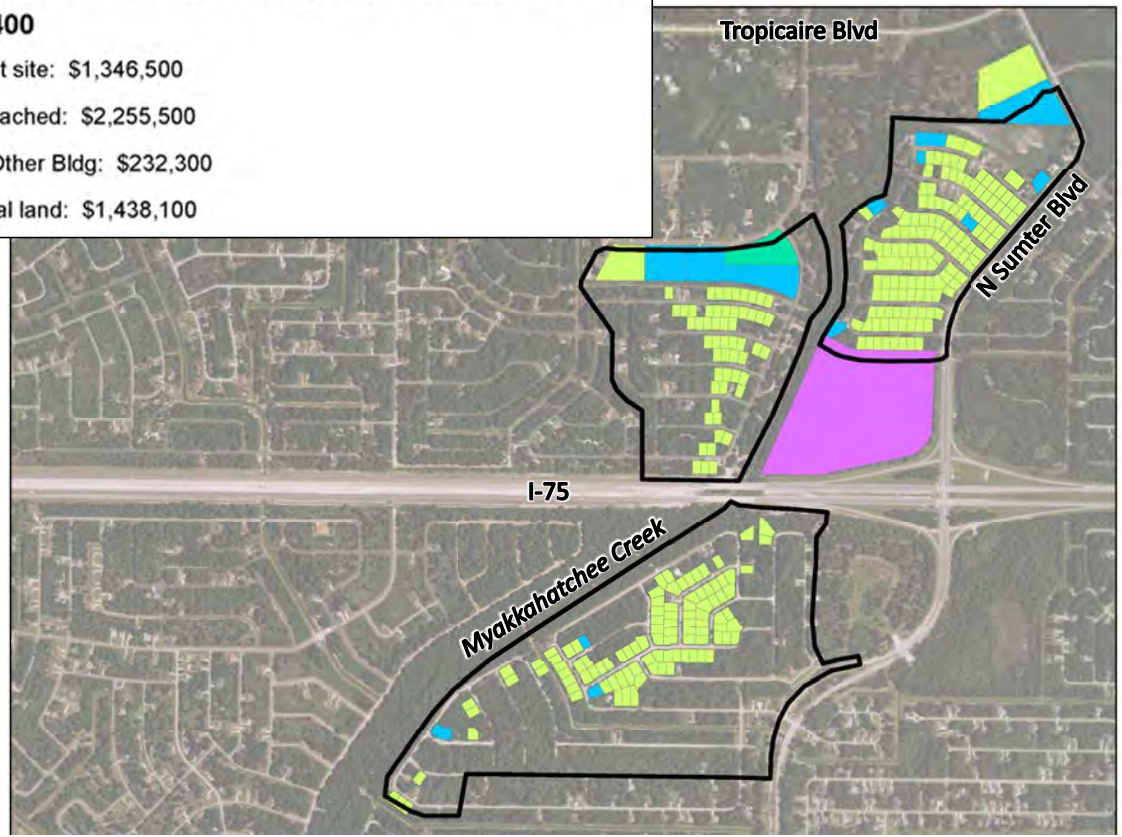
North Port Big Slough Flood Reduction Study

Project Plan – Focus on Local Areas of Recurring Flooding, I-75 Area

Parcels more than 50% inundated by a 1-day 10-year rainfall event

2017 Just Value: $5,272,400

- 0000 - Residential vacant site: $1,346,500
- 0100 - Single Family Detached: $2,255,500
- 010X - Single Family & Other Bldg: $232,300
- 1000 - Vacant commercial land: $1,438,100



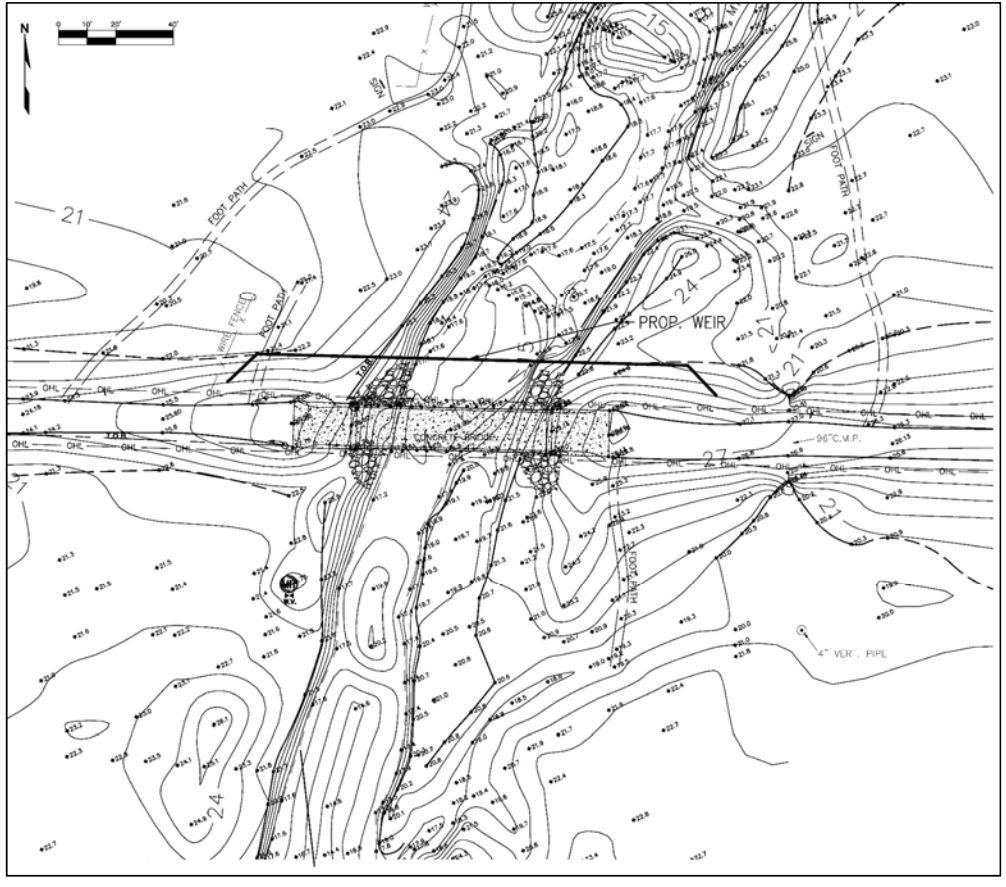
North Port Big Slough Flood Reduction Study

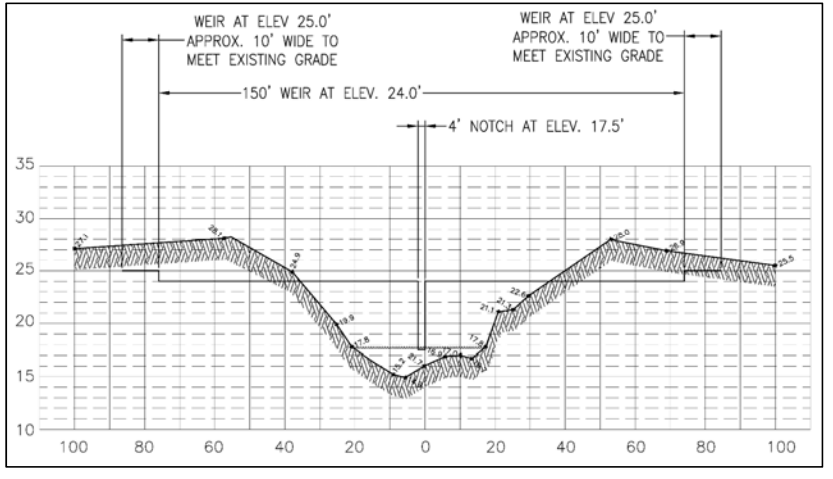
Project Plan – Focus on Local Areas of Recurring Flooding, Dorothy Avenue Area

Grobe Street at Herbison Avenue 9/11/17 after Hurricane Irma

North Port Big Slough Flood Reduction Study

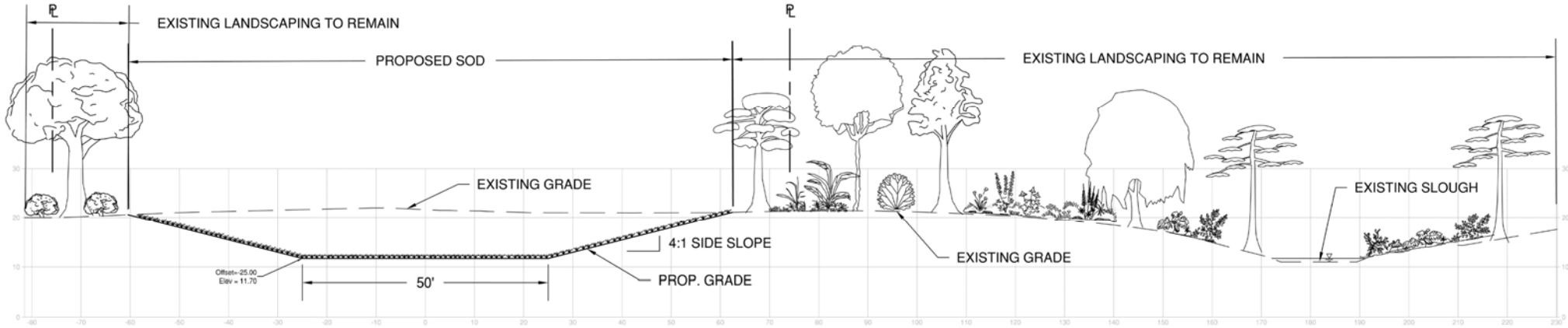
Regional Improvements (e.g., Reduce Offsite Inflows at FPL Easement North of City)





North Port Big Slough Flood Reduction Study

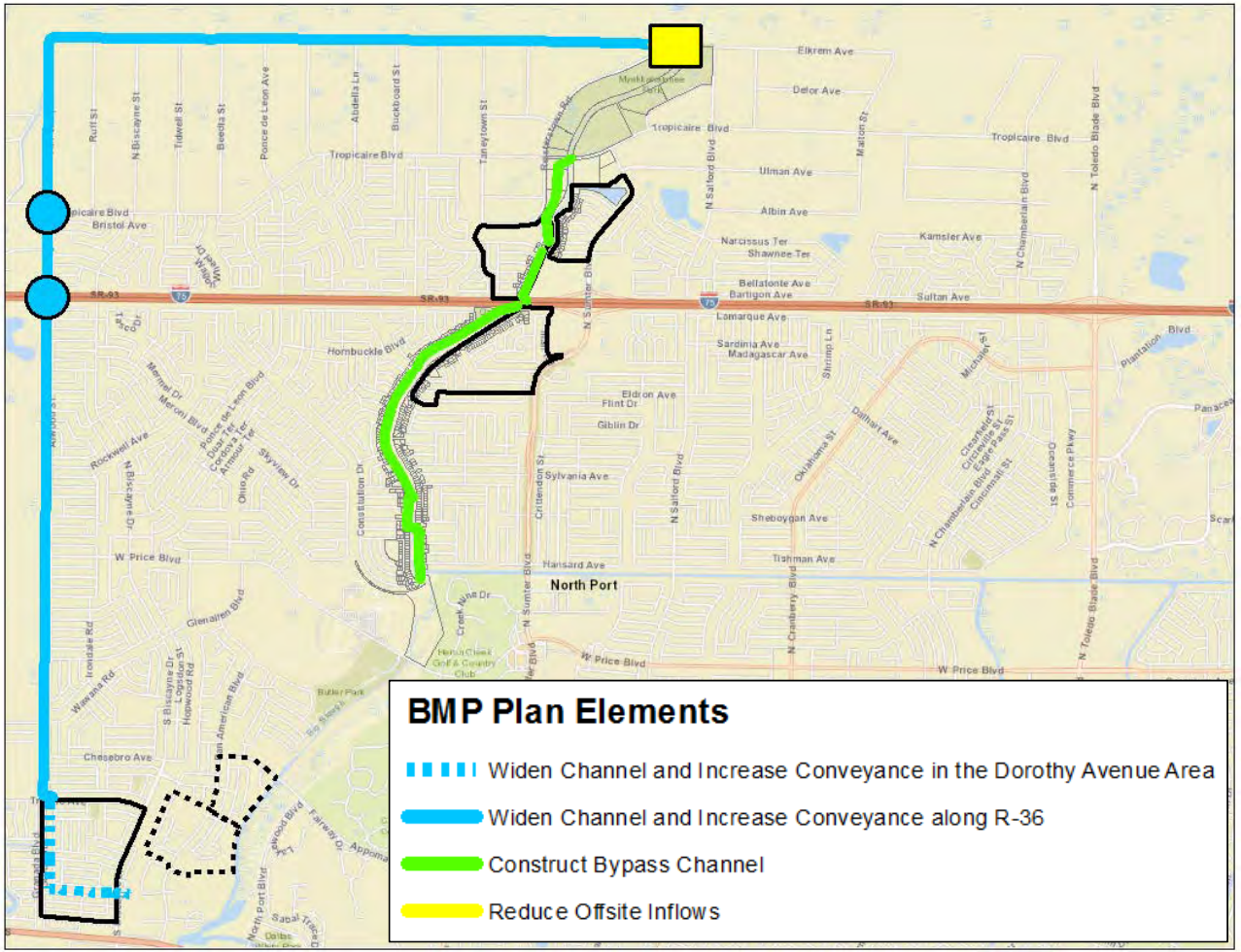
Local/Regional Improvements (e.g., Bypass Construction)



North Port Big Slough Flood Reduction Study

Recommended Plan – Plan Components

Project Components	105B
Existing Condition*	x
Dorothy (Single Box Culvert)	-
Dorothy (Triple Box Culvert)	x
R-36 Improvements	x
Bypass (flowway, n = 0.040)	x
Bypass (wetland, n = 0.150)	-
Reduce Northern Inflows	x
Other Planned Improvements	-



**** Existing Condition model updated from 2012 version***

North Port Big Slough Flood Reduction Study

Recommended Plan – Plan Components and Engineer's Opinion of Probable Costs

	Existing	Phasing			"Full Plan"		Best BCR	
Project Components	**101**	**102**	**103**	**104**	**105**	**105B**	**106**	**106A**
Existing Condition*	x	x	x	x	x	x	x	x
Dorothy (Single Box Culvert)	-	x	x	x	x	-	x	x
Dorothy (Triple Box Culvert)	-	-	-	-	-	x	-	-
R-36 Improvements	-	-	x	x	x	x	-	-
Bypass (flowway, n = 0.040)	-	-	-	x	x	x	x	-
Bypass (wetland, n = 0.150)	-	-	-	-	-	-	-	x
Reduce Northern Inflows	-	-	-	-	x	x	-	-
Other Planned Improvements	-	-	-	-	-	-	-	-
Estimated Combined Cost	**$ -**	**$ 1,299,000**	**$ 12,156,000**	**$ 29,422,000**	**$ 31,922,000**	**$ 32,771,594**	**$ 18,565,000**	**$ 22,018,200**
Estimated Annualized Cost		**$ 94,125**	**$ 880,822**	**$ 2,131,914**	**$ 2,313,063**	**$ 2,374,625**	**$ 1,345,217**	**$ 1,595,435**

Engineer's Estimate of Probable Construction Cost (by Component)

Existing Condition	$	-
Dorothy (Single Box Culvert)	$	1,299,000
Dorothy (Triple Box Culvert)	$	2,148,594
R-36 Improvements	$	10,857,000
Bypass (flowway, n = 0.040)	$	17,266,000
Bypass (wetland, n = 0.150)	$	20,719,200
Reduce Northern Inflows	$	2,500,000

North Port Big Slough Flood Reduction Study

Recommended Plan – Cost and Benefits

		Existing	Phasing			"Full Plan"		Best BCR	
Project Components		**101**	**102**	**103**	**104**	**105**	**105B**	**106**	**106A**
Existing Condition*		x	x	x	x	x	x	x	x
Dorothy (Single Box Culvert)		-	x	x	x	x	-	x	x
Dorothy (Triple Box Culvert)		-	-	-	-	-	x	-	-
R-36 Improvements		-	-	x	x	x	x	-	-
Bypass (flowway, n = 0.040)		-	-	-	x	x	x	x	-
Bypass (wetland, n = 0.150)		-	-	-	-	-	-	-	x
Reduce Northern Inflows		-	-	-	-	x	x	-	-
Other Planned Improvements		-	-	-	-	-	-	-	-
Estimated Combined Cost		**$ -**	**$ 1,299,000**	**$ 12,156,000**	**$ 29,422,000**	**$ 31,922,000**	**$ 32,771,594**	**$ 18,565,000**	**$ 22,018,200**
Estimated Annualized Cost			**$ 94,125**	**$ 880,822**	**$ 2,131,914**	**$ 2,313,063**	**$ 2,374,625**	**$ 1,345,217**	**$ 1,595,435**
Road Flood Reduction (miles)	2.33-year	-	0.4	1.2	7.7	7.7	7.8	7.5	7.4
	5-year	-	0.6	1.9	11.5	12.2	12.9	10.8	9.4
	10-year	-	0.3	2.7	16.8	18.0	18.3	14.8	11.9
	25-year	-	0.5	2.8	17.9	20.5	20.7	15.9	12.8
	50-year	-	0.6	2.5	18.3	20.9	21.1	16.7	13.8
	100-year	-	0.6	2.6	21.9	24.4	24.5	20.3	17.4
Parcels Reduction (touch)	2.33-year	-	68	113	807	854	863	811	791
	5-year	-	84	91	960	1024	1138	968	836
	10-year	-	49	98	1022	1125	1161	996	891
	25-year	-	58	90	1002	1138	1161	984	858
	50-year	-	66	152	1073	1175	1207	1012	865
	100-year	-	88	167	1170	1313	1313	1133	1000
Parcels Reduction (centroid)	2.33-year	-	0	39	232	233	234	230	223
	5-year	-	0	31	402	405	405	398	362
	10-year	-	0	15	515	538	538	505	427
	25-year	-	0	16	513	539	542	503	381
	50-year	-	0	27	510	563	562	480	366
	100-year	-	5	30	505	556	558	482	372
Estimated Annualized Benefit			**$ 25,216**	**$ 193,186**	**$ 1,889,975**	**$ 1,960,257**	**$ 1,977,742**	**$ 1,842,132**	**$ 1,636,307**
Est. Benefit/Cost Ratio (BCR)			**0.27**	**0.22**	**0.89**	**0.85**	**0.83**	**1.37**	**1.03**

North Port Big Slough Flood Reduction Study

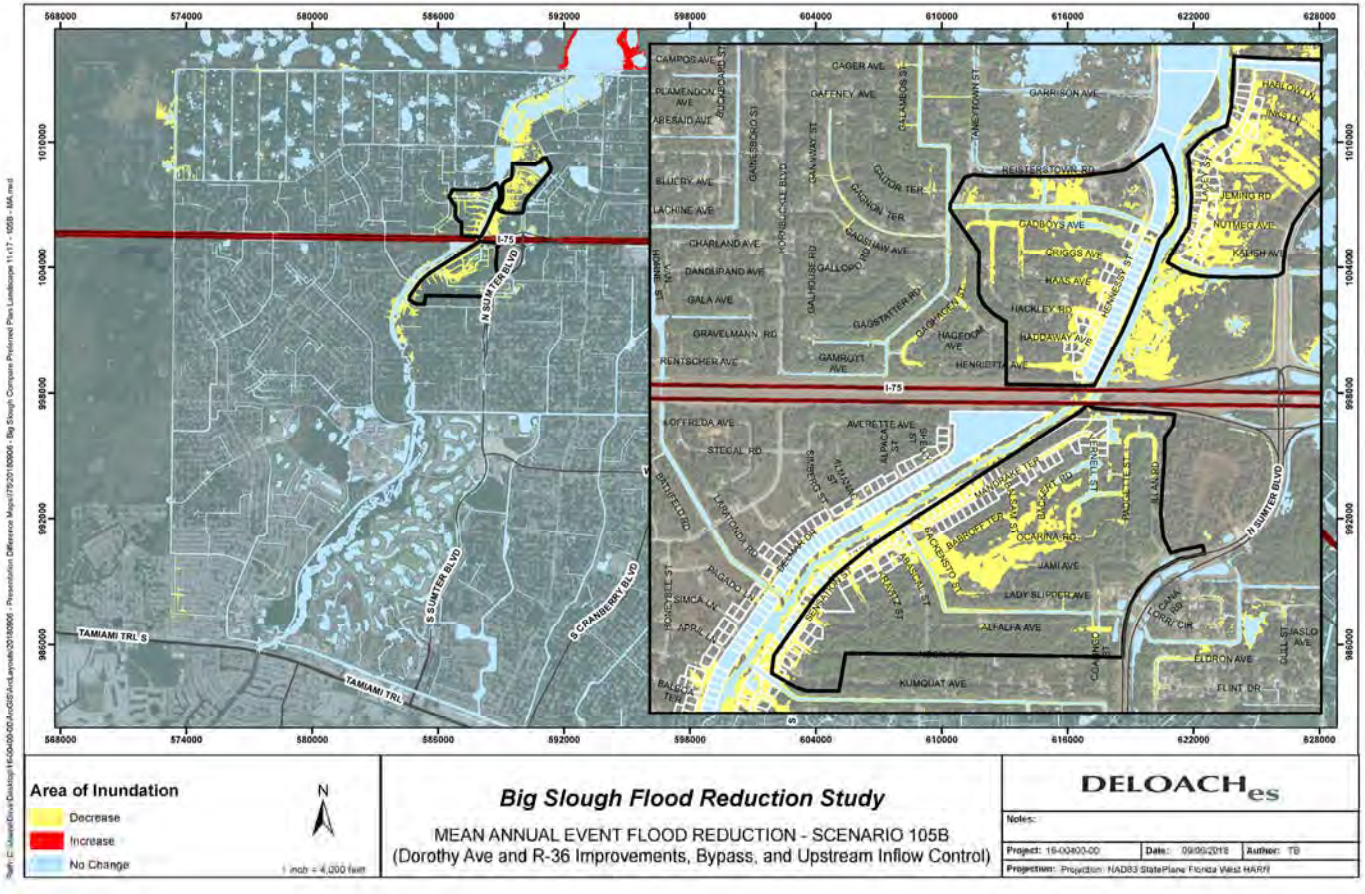
I-75 Area - Scenario 105B, Mean Annual Storm Event Flood Reduction

Project Components	105B
Existing Condition*	x
Dorothy (Single Box Culvert)	-
Dorothy (Triple Box Culvert)	x
R-36 Improvements	x
Bypass (flowway, n = 0.040)	x
Bypass (wetland, n = 0.150)	-
Reduce Northern Inflows	x
Other Planned Improvements	-

Estimated Combined Cost	**$**	**32,771,594**
Estimated Annualized Cost	**$**	**2,374,625**

Road Flood Reduction (miles)	2.33-year	7.8
	5-year	12.9
	10-year	18.3
	25-year	20.7
	50-year	21.1
	100-year	24.5
Parcels Reduction (touch)	2.33-year	863
	5-year	1138
	10-year	1161
	25-year	1161
	50-year	1207
	100-year	1313
Parcels Reduction (centroid)	2.33-year	234
	5-year	405
	10-year	538
	25-year	542
	50-year	562
	100-year	558

Estimated Annualized Benefit	**$**	**1,977,742**
Est. Benefit/Cost Ratio (BCR)		**0.83**



North Port Big Slough Flood Reduction Study

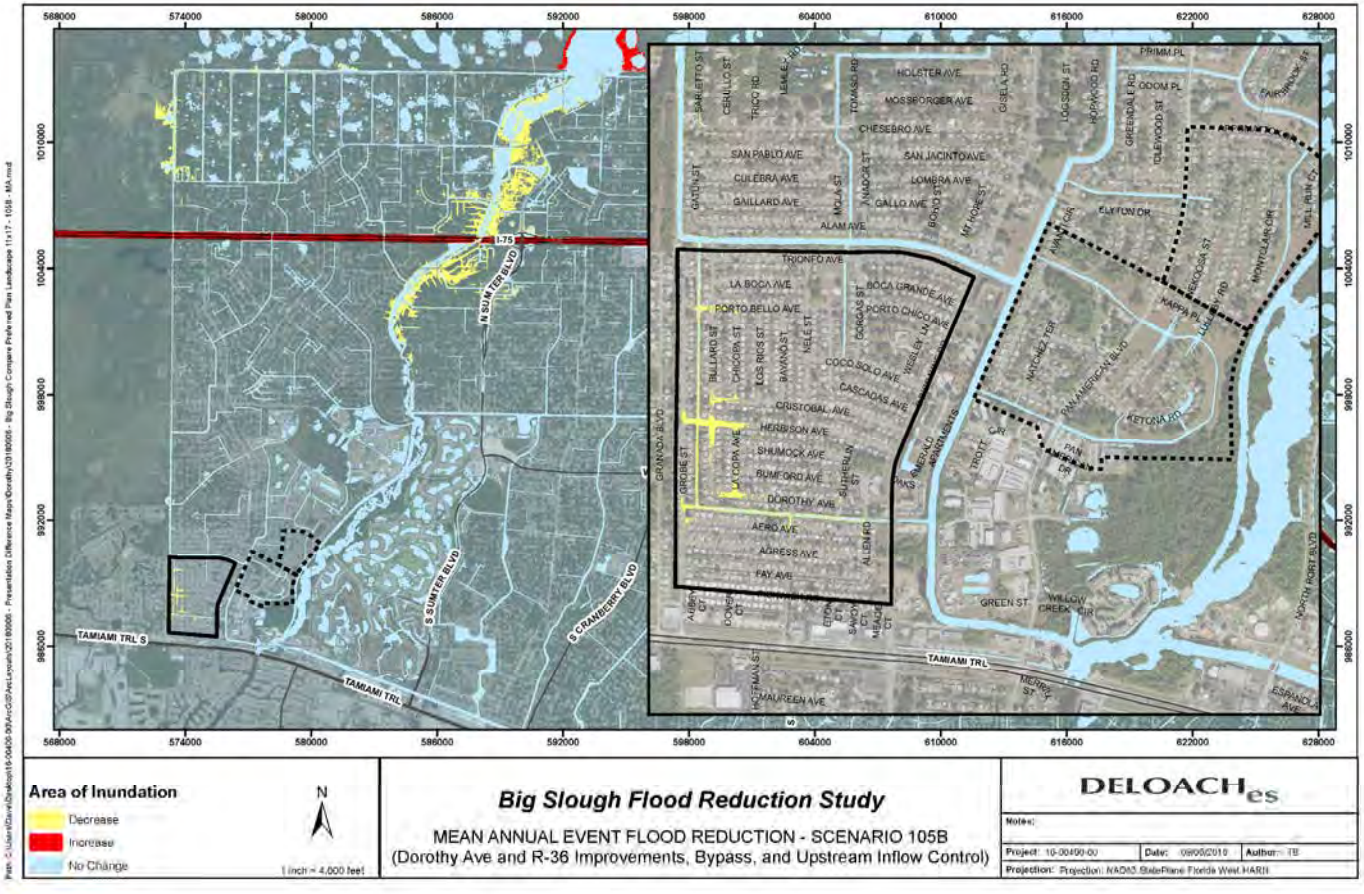
Dorothy Avenue Area - Scenario 105B, Mean Annual Storm Event Flood Reduction

Project Components	105B
Existing Condition*	x
Dorothy (Single Box Culvert)	-
Dorothy (Triple Box Culvert)	x
R-36 Improvements	x
Bypass (flowway, n = 0.040)	x
Bypass (wetland, n = 0.150)	-
Reduce Northern Inflows	x
Other Planned Improvements	-

Estimated Combined Cost	**$**	**32,771,594**
Estimated Annualized Cost	**$**	**2,374,625**

Road Flood Reduction (miles)	2.33-year	7.8
	5-year	12.9
	10-year	18.3
	25-year	20.7
	50-year	21.1
	100-year	24.5
Parcels Reduction (touch)	2.33-year	863
	5-year	1138
	10-year	1161
	25-year	1161
	50-year	1207
	100-year	1313
Parcels Reduction (centroid)	2.33-year	234
	5-year	405
	10-year	538
	25-year	542
	50-year	562
	100-year	558

Estimated Annualized Benefit	**$**	**1,977,742**
Est. Benefit/Cost Ratio (BCR)		**0.83**



North Port Big Slough Flood Reduction Study

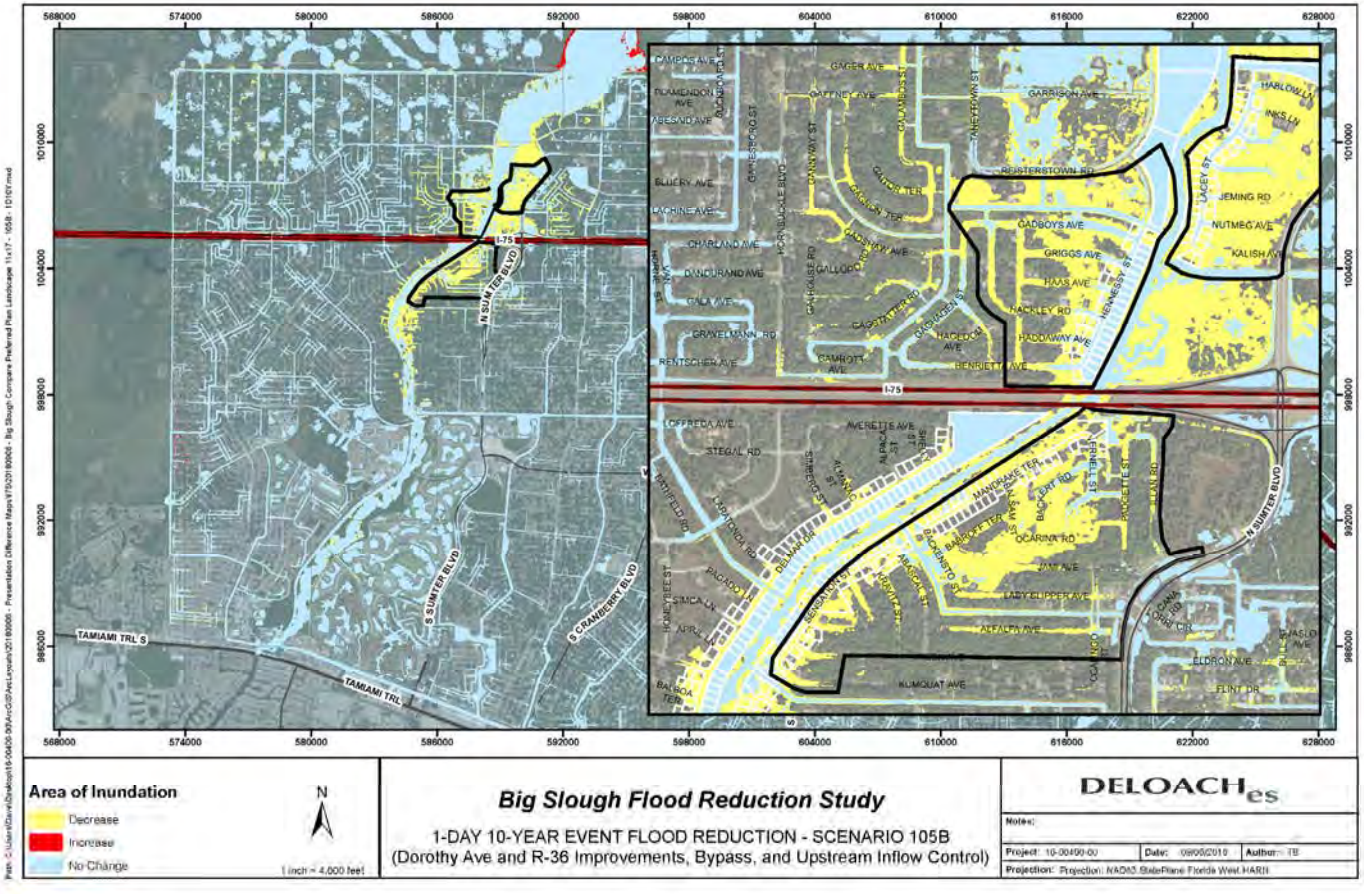
I-75 Area - Scenario 105B, 10-Year Storm Event Flood Reduction

Project Components	105B
Existing Condition*	x
Dorothy (Single Box Culvert)	-
Dorothy (Triple Box Culvert)	x
R-36 Improvements	x
Bypass (flowway, n = 0.040)	x
Bypass (wetland, n = 0.150)	-
Reduce Northern Inflows	x
Other Planned Improvements	-

Estimated Combined Cost	**$**	**32,771,594**
Estimated Annualized Cost	**$**	**2,374,625**

Road Flood Reduction (miles)	2.33-year	7.8
	5-year	12.9
	10-year	18.3
	25-year	20.7
	50-year	21.1
	100-year	24.5
Parcels Reduction (touch)	2.33-year	863
	5-year	1138
	10-year	1161
	25-year	1161
	50-year	1207
	100-year	1313
Parcels Reduction (centroid)	2.33-year	234
	5-year	405
	10-year	538
	25-year	542
	50-year	562
	100-year	558

Estimated Annualized Benefit	**$**	**1,977,742**
Est. Benefit/Cost Ratio (BCR)		**0.83**



North Port Big Slough Flood Reduction Study

Dorothy Avenue Area - Scenario 105B, 10-Year Storm Event Flood Reduction

Project Components	105B
Existing Condition*	x
Dorothy (Single Box Culvert)	-
Dorothy (Triple Box Culvert)	x
R-36 Improvements	x
Bypass (flowway, n = 0.040)	x
Bypass (wetland, n = 0.150)	-
Reduce Northern Inflows	x
Other Planned Improvements	-

Estimated Combined Cost	**$**	**32,771,594**
Estimated Annualized Cost	**$**	**2,374,625**

Road Flood Reduction (miles)	2.33-year	7.8
	5-year	12.9
	10-year	18.3
	25-year	20.7
	50-year	21.1
	100-year	24.5
Parcels Reduction (touch)	2.33-year	863
	5-year	1138
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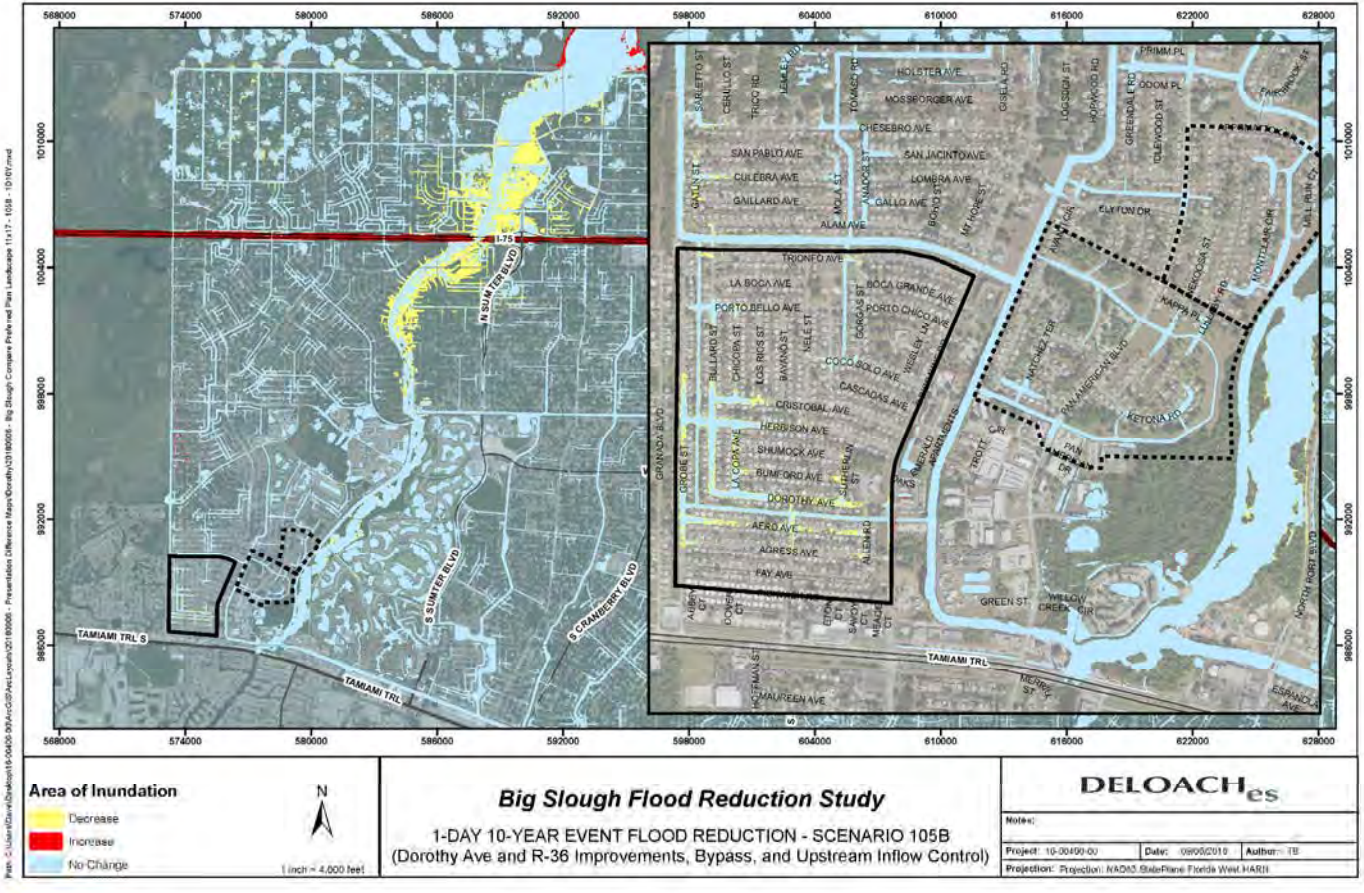
	50-year	1207
	100-year	1313
Parcels Reduction (centroid)	2.33-year	234
	5-year	405
	10-year	538
	25-year	542
	50-year	562
	100-year	558

Estimated Annualized Benefit	**$**	**1,977,742**
Est. Benefit/Cost Ratio (BCR)		**0.83**



North Port Big Slough Flood Reduction Study

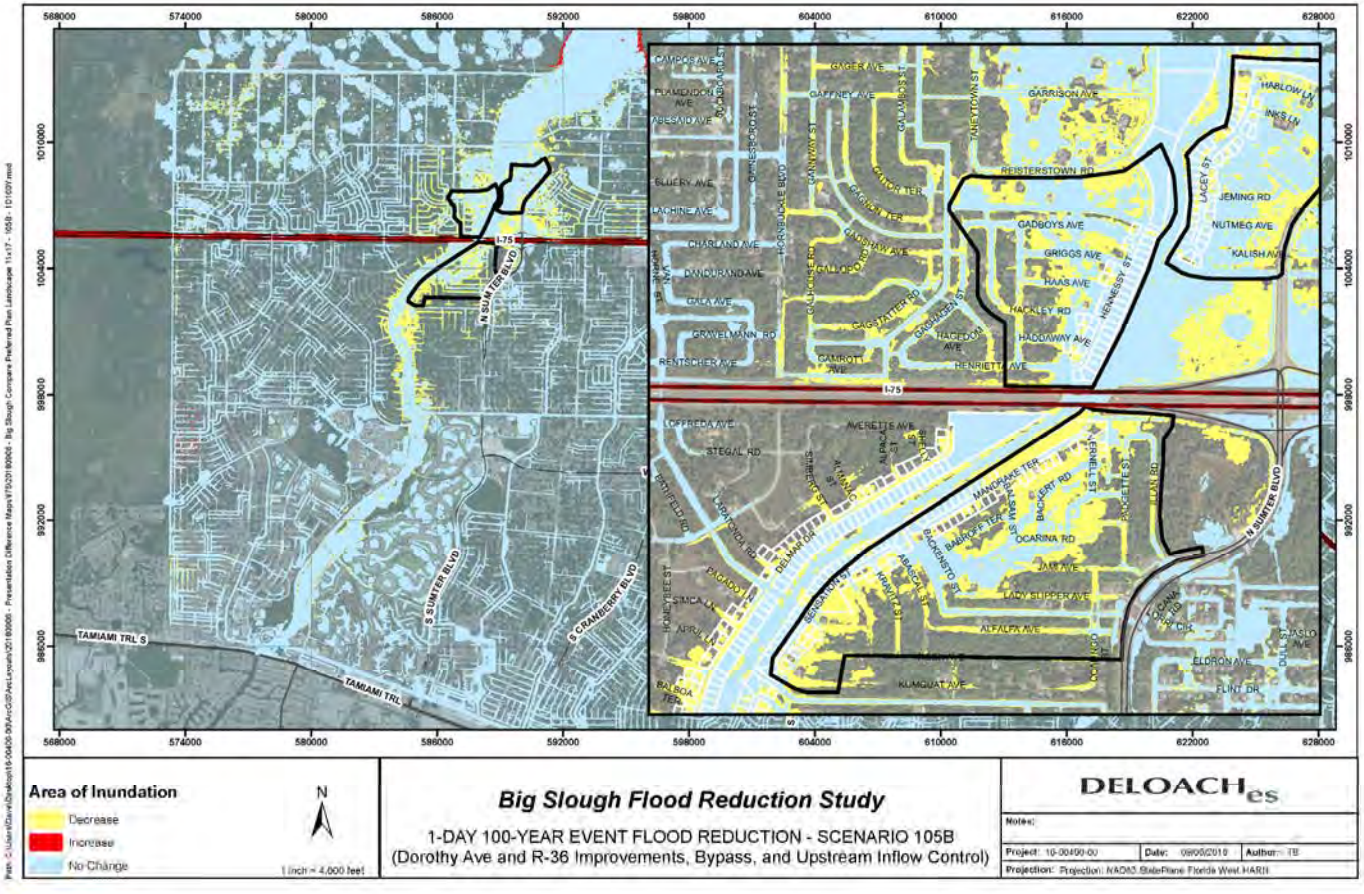
I-75 Area - Scenario 105B, 100-Year Storm Event Flood Reduction

Project Components	105B
Existing Condition*	x
Dorothy (Single Box Culvert)	-
Dorothy (Triple Box Culvert)	x
R-36 Improvements	x
Bypass (flowway, n = 0.040)	x
Bypass (wetland, n = 0.150)	-
Reduce Northern Inflows	x
Other Planned Improvements	-

Estimated Combined Cost	**$**	**32,771,594**
Estimated Annualized Cost	**$**	**2,374,625**

Road Flood Reduction (miles)	2.33-year	7.8
	5-year	12.9
	10-year	18.3
	25-year	20.7
	50-year	21.1
	100-year	24.5
Parcels Reduction (touch)	2.33-year	863
	5-year	1138
	10-year	1161
	25-year	1161
	50-year	1207
	100-year	1313
Parcels Reduction (centroid)	2.33-year	234
	5-year	405
	10-year	538
	25-year	542
	50-year	562
	100-year	558

Estimated Annualized Benefit	**$**	**1,977,742**
Est. Benefit/Cost Ratio (BCR)		**0.83**



North Port Big Slough Flood Reduction Study

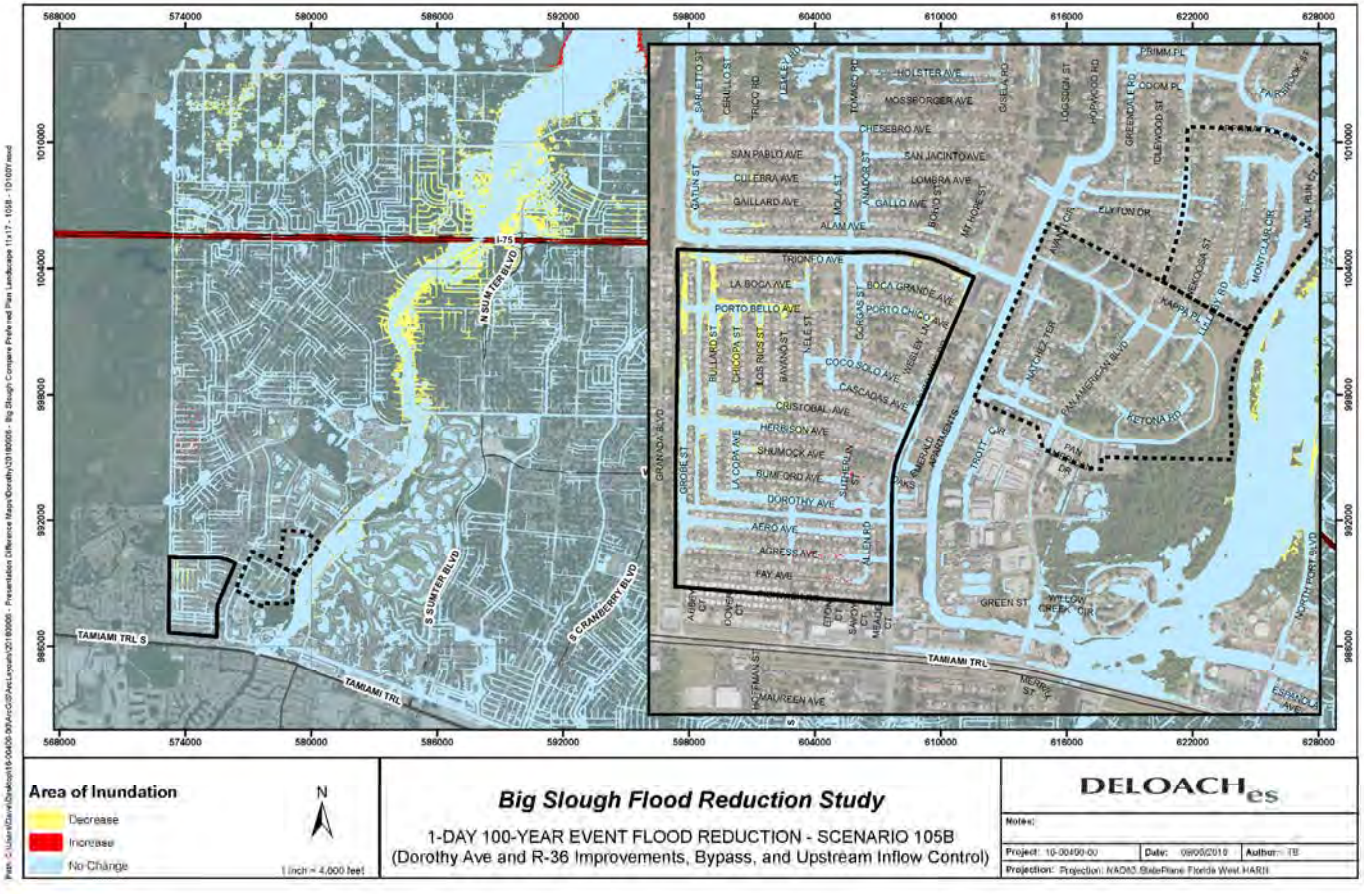
Dorothy Avenue Area - Scenario 105B, 100-Year Storm Event Flood Reduction

Project Components	105B
Existing Condition*	x
Dorothy (Single Box Culvert)	-
Dorothy (Triple Box Culvert)	x
R-36 Improvements	x
Bypass (flowway, n = 0.040)	x
Bypass (wetland, n = 0.150)	-
Reduce Northern Inflows	x
Other Planned Improvements	-

Estimated Combined Cost	**$**	**32,771,594**
Estimated Annualized Cost	**$**	**2,374,625**

Road Flood Reduction (miles)	2.33-year	7.8
	5-year	12.9
	10-year	18.3
	25-year	20.7
	50-year	21.1
	100-year	24.5
Parcels Reduction (touch)	2.33-year	863
	5-year	1138
	10-year	1161
	25-year	1161
	50-year	1207
	100-year	1313
Parcels Reduction (centroid)	2.33-year	234
	5-year	405
	10-year	538
	25-year	542
	50-year	562
	100-year	558

Estimated Annualized Benefit	**$**	**1,977,742**
Est. Benefit/Cost Ratio (BCR)		**0.83**



North Port Big Slough Flood Reduction Study

North Port Big Slough Stormwater Management Master Plan – Apply for SWERP Conceptual Approval

Project Components	105B
Existing Condition*	x
Dorothy (Single Box Culvert)	-
Dorothy (Triple Box Culvert)	x
R-36 Improvements	x
Bypass (flowway, n = 0.040)	x
Bypass (wetland, n = 0.150)	-
Reduce Northern Inflows	x
Other Planned Improvements	-

Estimated Combined Cost	***$***	**32,771,594**
Estimated Annualized Cost	***$***	**2,374,625**

Road Flood Reduction (miles)	2.33-year	7.8
	5-year	12.9
	10-year	18.3
	25-year	20.7
	50-year	21.1
	100-year	24.5
Parcels Reduction (touch)	2.33-year	863
	5-year	1138
	10-year	1161
	25-year	1161
	50-year	1207
	100-year	1313
Parcels Reduction (centroid)	2.33-year	234
	5-year	405
	10-year	538
	25-year	542
	50-year	562
	100-year	558

Estimated Annualized Benefit	***$***	**1,977,742**
Est. Benefit/Cost Ratio (BCR)		**0.83**

Project Components	106
Existing Condition*	x
Dorothy (Single Box Culvert)	x
Dorothy (Triple Box Culvert)	-
R-36 Improvements	-
Bypass (flowway, n = 0.040)	x
Bypass (wetland, n = 0.150)	-
Reduce Northern Inflows	-
Other Planned Improvements	-

Estimated Combined Cost	***$***	**18,565,000**
Estimated Annualized Cost	***$***	**1,345,217**

Road Flood Reduction (miles)	2.33-year	7.5
	5-year	10.8
	10-year	14.8
	25-year	15.9
	50-year	16.7
	100-year	20.3
Parcels Reduction (touch)	2.33-year	811
	5-year	968
	10-year	996
	25-year	984
	50-year	1012
	100-year	1133
Parcels Reduction (centroid)	2.33-year	230
	5-year	398
	10-year	505
	25-year	503
	50-year	480
	100-year	482

Estimated Annualized Benefit	***$***	**1,842,132**
Est. Benefit/Cost Ratio (BCR)		**1.37**