LOCATION HYDRAULICS REPORT

Florida Department of Transportation

District 1

Fort Hamer Road

Limits of Project: Fort Hamer Road from Upper Manatee River Road to US-301

Manatee County, Florida

Financial Management Number: 452775-3-22-01

ETDM Number: 14536

Date: 06/20/2024

Professional Engineer Certification

LOCATION HYDRAULIC REPORT

FLORIDA DEPARTMENT OF TRANSPORTATION

DISTRICT 1

Project: Fort Hamer Road and Bridge (Bridge #134123)

Limits: From Upper Manatee River Road to US 301

County: Manatee

CIP #: 6054767 & 6054768

FMN: 452775-3-22-01

ETDM: 14536

Date: June 20, 2024

I hereby certify that I am a registered professional engineer in the State of Florida practicing with Kimley-Horn and Associates Inc., and that I have prepared or approved the evaluation, findings, opinions, conclusions, or technical advice for this project.

MOLLY CHARLENE WILLIAMS, P.E.

STATE OF FLORIDA
PROFESSIONAL ENGINEER,
LICENSE NO. 54281

THIS ITEM HAS BEEN DIGITALLY
SIGNED AND SEALED BY
MOLLY CHARLENE WILLIAMS, P.E.
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.

11/06/2024 11:55:04 PM

Molly C Williams

Digitally signed by Molly C Williams
DN: CN=Molly C Williams, dnQualifier=A01410D0000018A6C1540C000030395, O=KIMLEY-HORN AND ASSOCIATES, C=US
Reason: I attest to the accuracy and integrity of this document
Date: 2024.11.06 23:56:03-05'00'

MOLLY CHARLENE WILLIAMS, P.E. # 54281
Kimley-Horn and Associates, Inc.
1800 2nd Street, Suite 900
Sarasota, Florida 34236
Registry No. 35106

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1.0 Project Summary

Manatee County is conducting a Project Development & Environment (PD&E) Study along the existing Fort Hamer Road for approximately 3.8 miles. The study extends from Upper Manatee River Road to US 301 within unincorporated Manatee County.

The purpose of the project is to improve the operational capacity of Fort Hamer Road to accommodate projected future travel demand as a result of area-wide population and employment growth. Other goals include enhancing safety conditions, accommodating multimodal activity, and providing stormwater treatment and attenuation.

The Project Development & Environment (PD&E) study will evaluate the benefits, costs, and impacts of widening this portion of Fort Hamer Road from a 2-lane undivided roadway to a 4-lane divided roadway. Widening will also include the construction of an additional two lanes of bridge infrastructure crossing the Manatee River. In keeping with the objectives of the Sarasota-Manatee Metropolitan Planning Organization (MPO), the proposed project may include shared-use paths to enhance bicycle and pedestrian safety and comfort. Accommodating bicycle and pedestrian activity within the corridor is particularly important due to the development of residential neighborhoods and schools along the project corridor.

This Location Hydraulic Report will detail the floodplain analysis associated with the proposed improvements. The extents of the project will be captured using a closed stormwater management system that will convey runoff into stormwater management facilities, where runoff will be treated and attenuated as per Southwest Florida Water Management District and Manatee County standards.

1.1 Project Description

This project will be reviewed and permitted by the U.S. Army Corps, the Florida Department of Transportation (FDOT), the Southwest Florida Water Management District (SWFWMD), and Manatee County.

Fort Hamer Road provides a critical north-south connection across the Manatee River and spans from Upper Manatee Road (major collector) to the intersection with US-301 (principal arterial). This project is planned to be a reliever to the adjacent I-75 crossing of the Manatee River and is a part of Manatee County's comprehensive plan for a continuous north-south arterial that parallels I-75.[1] This segment of Fort Hamer Road is a minor arterial roadway that passes through varying density residential areas as well as a school zone. The traffic volume on Fort Hamer Road is expected to increase in the future making a future expansion to the capacity of the roadway a crucial investment.

[1] Manatee County, 2022. Map 5-B. PA=21-04 / ORD-22-07. Accessed on July 19, 2023 from https://cdnsm5-hosted.civiclive.com/UserFiles/Servers/Server_7588306/File/Departments/Building%20&%20Development%20Services/Planning%20&%20Development/Comprehensive%20Planning/Comprehensive%20Plan/Map_5B_Func_Class_2022.pdf

In current conditions, Fort Hamer Road is a 2-lane roadway with a 2-lane bridge spanning the Manatee River. The roadway is classified as a minor arterial[2], with dedicated bicycle lanes and intermittent sidewalks primarily along the west side of the road. Stormwater runoff in the corridor is currently maintained primarily by an open drainage conveyance system, while the existing bridge and both its north and south approaches are served by a closed drainage system. The posted speed limit is 45 miles per hour, and the context classification is C3R-Suburban Residential. The existing roadway right-of-way varies from approximately 84 feet to 120 feet. It is anticipated that additional right-of-way will be needed to accommodate the proposed improvements.

Figure 1: Corridor Location

The typical section to be evaluated for this PD&E study will include widening the existing road to a 4-lane section with 6-foot bike lanes in each travel direction, a 22-foot median, 10-foot shared use path, and 6-foot sidewalk. In addition to the road widening, an additional 2-lane bridge will be constructed

[2] FDOT, 2013. Federal Functional Classification / Urban Boundaries map. Accessed on July 19, 2023, from https://www.fdot.gov/statistics/hwysys/cubfc.shtm

in parallel to the existing bridge. Curb and gutter will be added, as well as the expansion and implementation of a closed drainage system. The project also proposes stormwater management facilities to retain and provide treatment for the entirety of the project corridor. Possible intersection improvements, turn lane additions, improvements for connectivity, floodplain compensation, and wetland mitigation will also be investigated as a part of the PD&E Study.

2.0 Floodplain Analysis

The Fort Hamer Road corridor is located within the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) Panels 12081C0195F and 12081C0191F (dated 08/10/2021). See **Appendix A** for the Effective FEMA FIRM panels. The ditches alongside the existing roadway are mostly within flood zone A or AE, with multiple locations along the roadway corridor where the FEMA 100-year flood zones overtop the existing roadway. Both the ditches and the overtopping areas would be considered floodplain impacts within the proposed project, as well as the areas adjacent to the bridge which are in flood zone AE. The ditch capacity will be replaced with a closed drainage system.

The data contained within the FEMA FIRM maps served as the basis for the calculation of the floodplain impacts proposed with the project. In total, there are 12.56 acres of the roadway corridor located in the floodplain zones A and AE according to the FEMA flood maps. The bridge area was excluded. An estimated 4.95 acre-feet of volume will be required for floodplain compensation. Maps of the basin areas with the FEMA floodplain are provided in **Appendix B**. Floodplain impacts calculated per roadway basin are in **Appendix C**.

It is important to note, that the FEMA floodplain layer depict the floodplain prior to the construction of the 2-lane Ft Hamer Road bridge over the Manatee River. Floodplain compensation for the north and south approaches to the Fort Hamer Bridge was provided during construction of the 2-lane bridge. Any impacts to the FEMA designated flood zones A and AE by this project will require compensation.

In the project area, the Manatee River is classified as a FEMA Designated Floodway. The impact from the additional Fort Hamer Road Bridge to the FEMA Designated Floodway will require an updated HEC-RAS model for the floodway and a No-Rise certification. Project areas in FEMA Flood zone X do not encroach into the floodplain and do not require floodplain compensation. It should be noted that floodplain compensation is not required for impacts within tidally influenced Flood Zone AE.

2.1 Floodplain Management Approach

According to the Effective FEMA FIRM Panels (12081C0183F, 12081C0191F, and 12081C0195F dated 08/10/2021) for the project corridor, the proposed construction will impact existing 100-year floodplain. The project proposes impacts within Flood Zone A and Flood Zone AE. Due to these impacts, it is expected that floodplain compensation will be necessary for this project in the Lower Manatee River and Gamble Creek watersheds. Floodplain impacts in Basins 1 and 2 are in the Lower Manatee River watershed and Basins 3, 4, 5, 6, and 7 are in the Gamble Creek watershed.

To estimate preliminary areas and volumes of floodplain impacts proposed with the project, an analysis was completed using the FEMA Flood Hazard GIS Layer and the assigned Base Flood Elevations (BFE). For each proposed basin, floodplain impact area and volume were calculated by comparing the FEMA

BFE to the 2018 USGS Florida Peninsular DEM data, assuming that all areas below the BFE would be considered an impact. A summary of the analysis calculations for each basin can be found in **Table 1**.

A total of 12.56 acres of the roadway corridor was found to be within Flood Zones A or AE, and the calculated volume of floodplain encroachment was 4.95 acre-feet. In the Lower Manatee River watershed, the calculated encroachment volume is 1.23 acre-feet and the calculated encroachment volume in the Gamble Creek watershed is 3.72 acre-feet. Floodplain impacts calculated per roadway basin are in **Appendix C**. It is important to note that the current FEMA Floodplain was mapped based on information available prior to the publication of the 2018 USGS Florida Peninsular DEM and the encroachment volume will be refined during design phase. Additionally, the existing Fort Hamer Bridge was excluded from the floodplain encroachment calculations as the bridge deck is above the BFE for the area. Floodway encroachment due to the bridge piers and piles will be evaluated and compensation will be provided based on the Manatee River HEC-RAS model in design phase.

In addition to treatment and attenuation, the proposed stormwater management system will provide the required floodplain compensation. The ponds will be designed to provide attenuation and floodplain compensation volume above the control water level to compensate for the floodplain impacts. In Gamble Creek watershed, the Interconnected Channel and Pond Routing, Version 4 (ICPR4) software will be used to design the stormwater management system for the proposed Fort Hamer Road improvements such that the system meets the peak discharge requirements; additional attenuation requirements; and no adverse impacts (increases in peak stages / BFE) upstream or downstream in the 10-year 24-hour, 25-year 24-hour, and 100-year 24-hour design storm events. Verification of no adverse impacts in the ICPR4 model will provide reasonable assurance that the appropriate floodplain compensation has been provided in the system to address the floodplain encroachments.

In the Lower Manatee River Watershed, compensation for floodplain impacts will be calculated based on the proposed peak stage in the stormwater ponds. The volume between peak stage and existing BFE will be considered as floodplain compensation.

Table 1: Floodplain Analysis Per Basin

Preliminary Floodplain Analysis			
Basin	**Area (ac)**	**Area in Flood Zones (ac)**	**Floodplain Volume (ac-ft)**
1	3.72*	3.22	0.16
2	8.76	1.76	1.07
3	5.97	1.03	0.71
4	5.86	1.12	0.47
5	9.34	1.74	1.29
6	9.33	2.19	0.74
7	6.29	1.51	0.52
TOTALS	**49.27**	**12.56**	**4.95**

**For Basin 1, the bridge area is removed from the basin area and for calculating the area in flood zone and floodplain volume because the bridge is elevated above the flood zone.*

3.0 Conclusion

The Fort Hamer Road and Bridge project will widen the existing 2-lane roadway to a 4-lane roadway. Avoidance and minimization measures will be implemented in the design of the seven (7) Stormwater Management Facilities (SMF) and existing drainage patterns will be maintained. The proposed stormwater management system for the project will be developed to meet the design and performance criteria established by Manatee County for Basins of Known Flooding and in the SWFWMD ERP Applicant's Handbook Volumes I and II for the treatment and attenuation of discharges to nearby waterbodies, including impaired waters. Stormwater will be treated to prevent ground and surface water contamination; water quality impacts; protect natural function and maintain or improve the natural predevelopment hydroperiods of the adjacent wetlands. The design will make every effort to maximize the treatment of stormwater runoff from the proposed improvements.

Potential project impacts will depend upon the required filling, encroachment, or alteration of Zone A and Zone AE floodplains, historic basin storage areas, and floodways within the proposed areas of bridge/roadway construction, new stormwater management ponds, and alterations of existing surface water storage and conveyance facilities. Compensation for fill (or other encroachments) into floodplains, floodways, and historic basin storage areas up to the 100-year event may be required if such encroachments are to adversely affect conveyance, storage, water quality, or adjacent lands.

APPENDIX A

FEMA FIRM PANELS

- FEMA FIRM PANEL 12081C0195F
- FEMA FIRM PANEL 12081C0191F
- FEMA FIRM PANEL 12081C0183F

THIS AREA SHOWN AT A SCALE OF 1"=500'
ON MAP NUMBER 12081C0191

THIS AREA SHOWN AT A SCALE OF 1"=500'
ON MAP NUMBER 12081C0192

Manatee County
Unincorporated Areas
120153

NOTE: MAP AREA SHOWN ON THIS PANEL IS LOCATED WITHIN TOWNSHIP 34 SOUTH, RANGE 19 EAST.

FLOOD HAZARD INFORMATION

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

THE INFORMATION DEPICTED ON THIS MAP AND SUPPORTING DOCUMENTATION ARE ALSO AVAILABLE IN DIGITAL FORMAT AT HTTPS://MSC.FEMA.GOV

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A,V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN — Area of Minimal Flood Hazard *Zone X*
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- E 18.2 / 17.5 — Cross Sections with 1% Annual Chance Water Surface Elevation
- 8 — Coastal Transect
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature
- 513 — Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary

NOTES TO USERS

For information and questions about this Flood Insurance Rate Map (FIRM), available products associated with this FIRM, including historic versions, the current map date for each FIRM panel, how to order products, or the National Flood Insurance Program (NFIP) in general, please call the Flood Mapping and Insurance eXchange (FMIX) at 1-877-FEMA-MAP (1-877-336-2627) or visit the FEMA Flood Map Service Center website at https://msc.fema.gov. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. Many of these products can be ordered or obtained directly from the website.

Communities annexing land on adjacent FIRM panels must obtain a current copy of the adjacent panel as well as the current FIRM Index. These may be ordered directly from the Flood Map Service Center at the number listed above.

For community and countywide map dates refer to the Flood Insurance Study Report for this jurisdiction.

To determine if flood insurance is available in this community, contact your Insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

Base map information shown on this FIRM was provided in digital format by Manatee County, dated 2010 and 2017; the Southwest Florida Water Management District, dated 2010 and 2012; the Florida Department of Transportation, dated 2017; and the U.S. Department of Agriculture, dated 2016.

SCALE

N

Map Projection:
State Plane Transverse Mercator, Florida West Zone 0902; North American Datum 1983; Western Hemisphere; Vertical Datum: NAVD 88

1 inch = 1,000 feet 1:12,000

0 1,000 2,000 4,000 feet

0 250 500 1,000 meters

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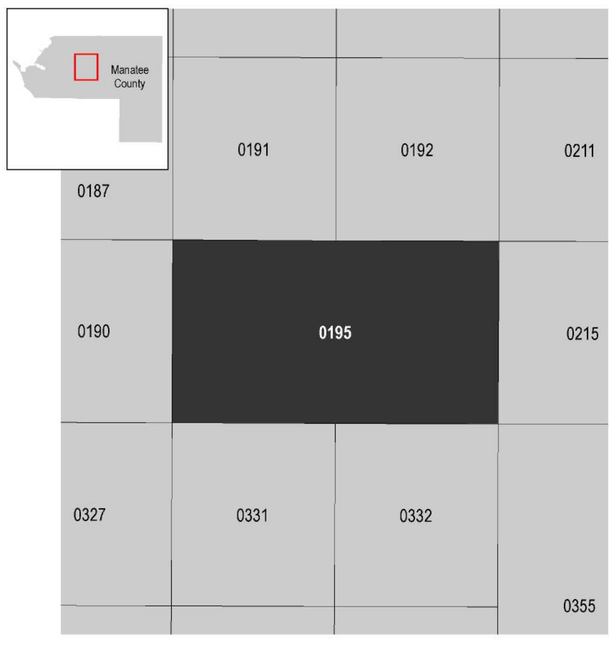


FEMA National Flood Insurance Program

NATIONAL FLOOD INSURANCE PROGRAM
FLOOD INSURANCE RATE MAP

MANATEE COUNTY, FLORIDA
and Incorporated Areas

PANEL 195 OF 575

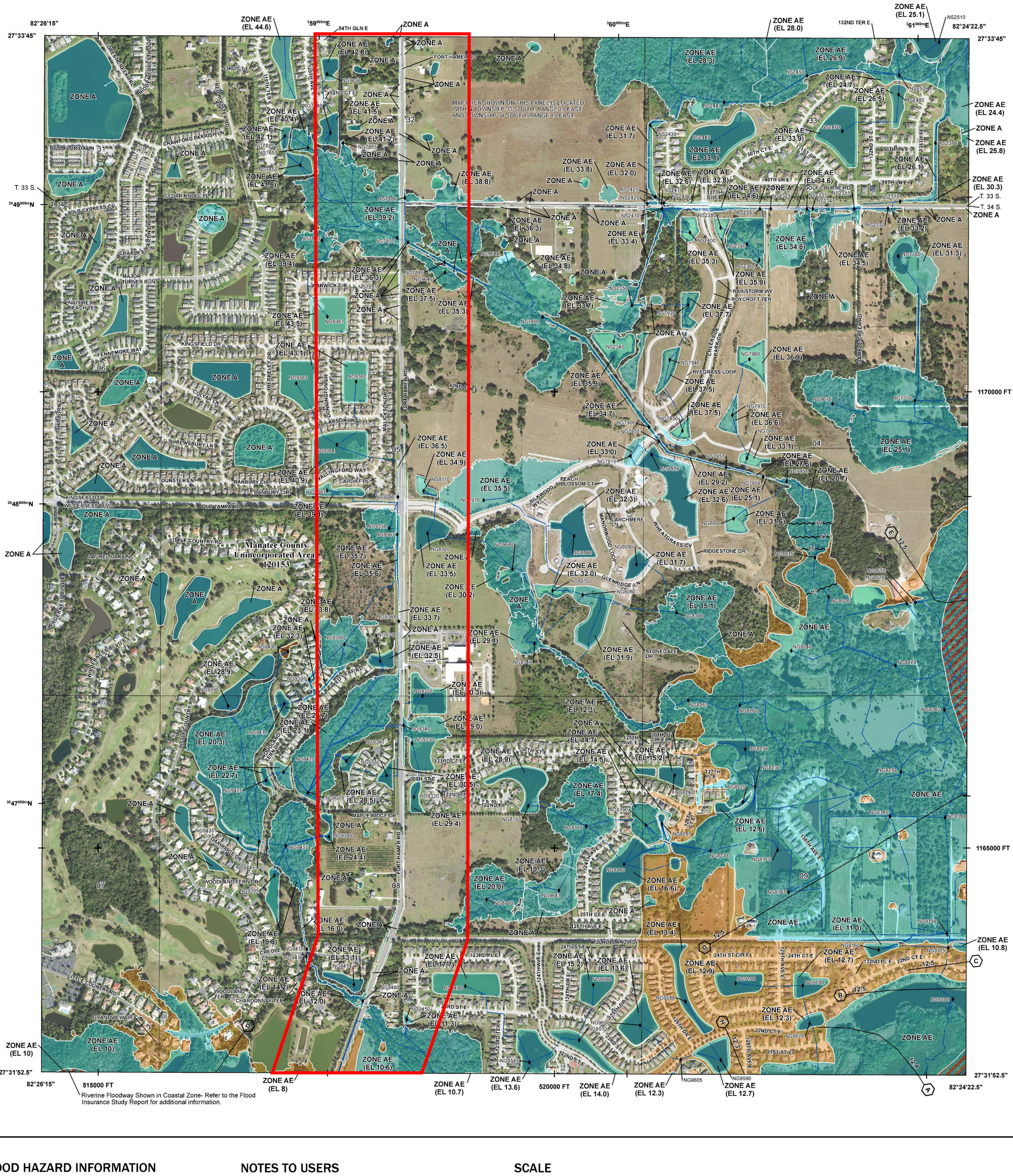
Panel Contains:

COMMUNITY	NUMBER	PANEL	SUFFIX
MANATEE COUNTY	120153	0195	F

VERSION NUMBER
2.4.3.2

MAP NUMBER
12081C0195F

MAP REVISED
AUGUST 10, 2021



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0 125 250 500 meters

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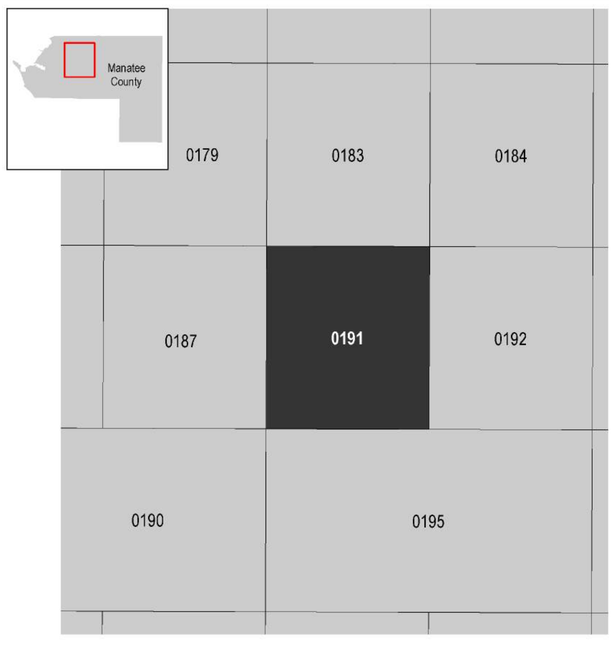

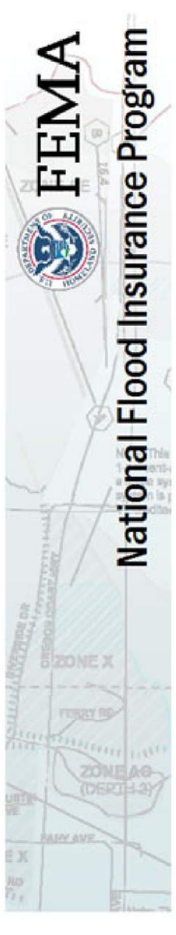

NATIONAL FLOOD INSURANCE PROGRAM

FLOOD INSURANCE RATE MAP

MANATEE COUNTY, FLORIDA
and Incorporated Areas

PANEL 191 OF 575

Panel Contains:

COMMUNITY	NUMBER	PANEL	SUFFIX
MANATEE COUNTY	120153	0191	F

VERSION NUMBER
2.4.3.2

MAP NUMBER
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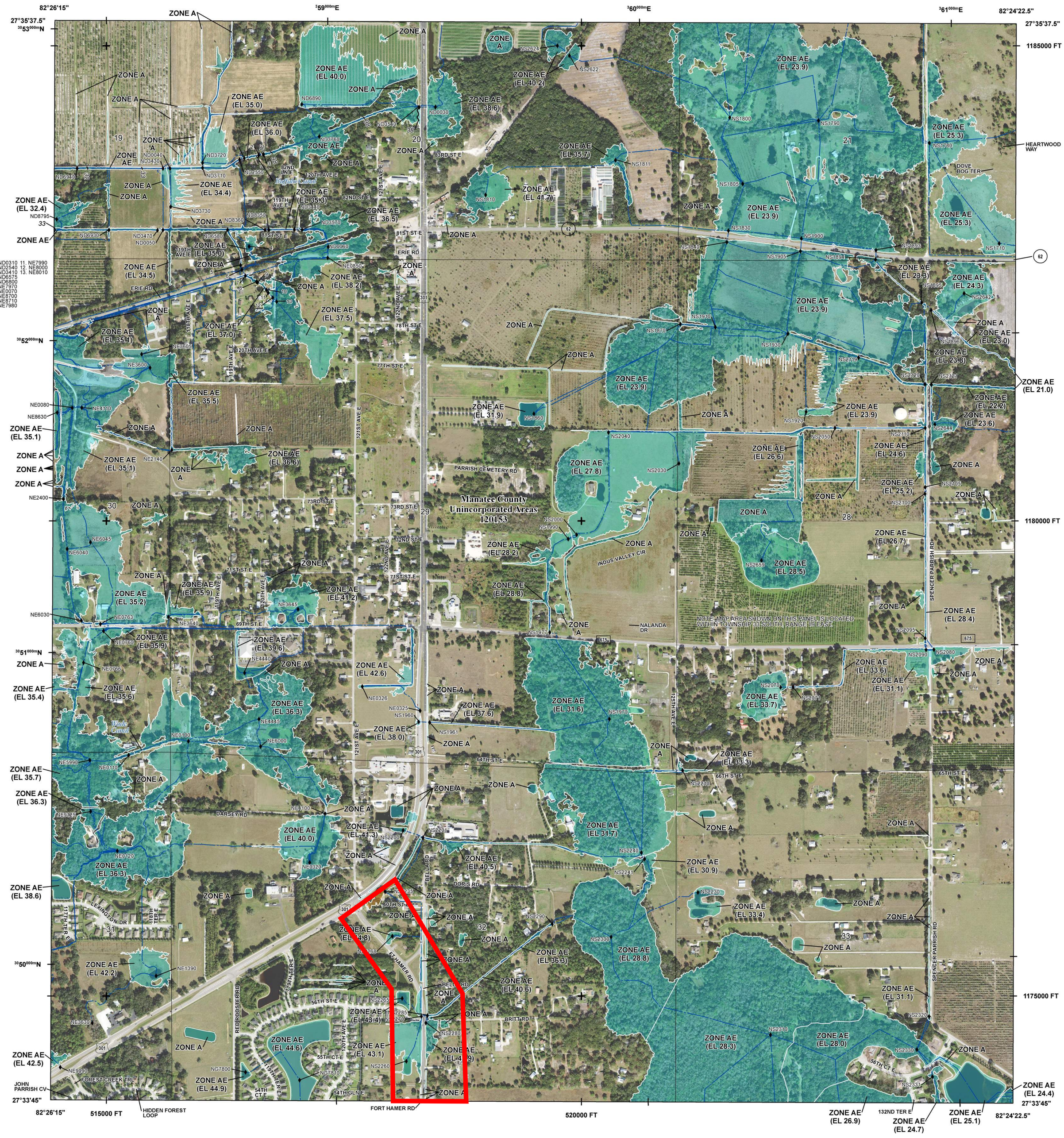
AUGUST 10, 2021



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SCALE

N

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0 125 250 500 meters

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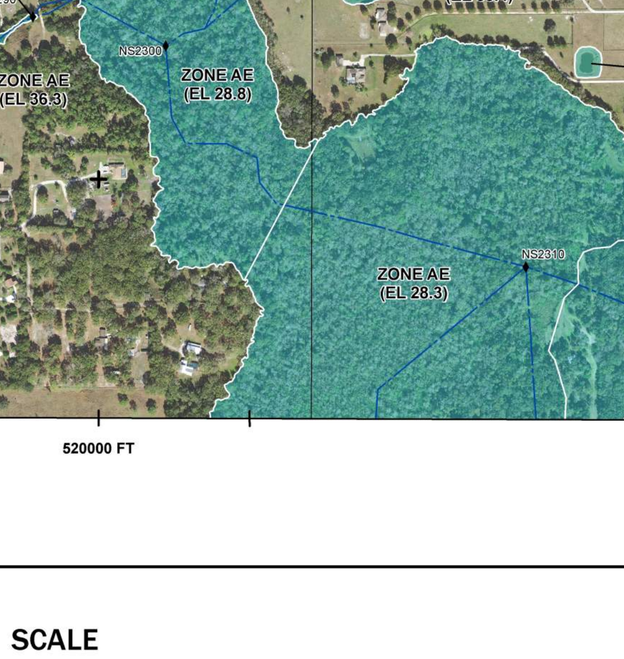

FEMA

National Flood Insurance Program

NATIONAL FLOOD INSURANCE PROGRAM

FLOOD INSURANCE RATE MAP

MANATEE COUNTY, FLORIDA
and Incorporated Areas

PANEL 183 OF 575

Panel Contains:

COMMUNITY	NUMBER	PANEL	SUFFIX
MANATEE COUNTY	120153	0183	F

VERSION NUMBER
2.4.3.2

MAP NUMBER
12081C0183F

MAP REVISED
AUGUST 10, 2021

APPENDIX B

FLOODPLAIN MAPS

- B-1 FEMA Floodplain Map – Basin 1
- B-2 FEMA Floodplain Map – Basin 2
- B-3 FEMA Floodplain Map – Basin 3
- B-4 FEMA Floodplain Map – Basin 4
- B-5 FEMA Floodplain Map – Basin 5
- B-6 FEMA Floodplain Map – Basin 6
- B-7 FEMA Floodplain Map – Basin 7

See B-2

Basin 2

Basin 1

Legend

FEMA Flood Hazard Zones

- Zone A
- Zone AE
- Proposed Roadway Basins

Maxar, Microsoft

FEMA Floodplain Map - Basin 1

Ft Hamer Road

March 2024

Manatee County

0 100 200 400 Feet

Scale: 1:2,700

N

Kimley»Horn

B-1

See B-3

Basin 3

Basin 2

Basin 1

See B-1

Maxar, Microsoft

Legend

FEMA Flood Hazard Zones

- Zone A
- Zone AE
- Proposed Roadway Basins

FEMA Floodplain Map - Basin 2

Ft Hamer Road

March 2024

Manatee County

0 150 300 600 Feet

Scale: 1:4,000

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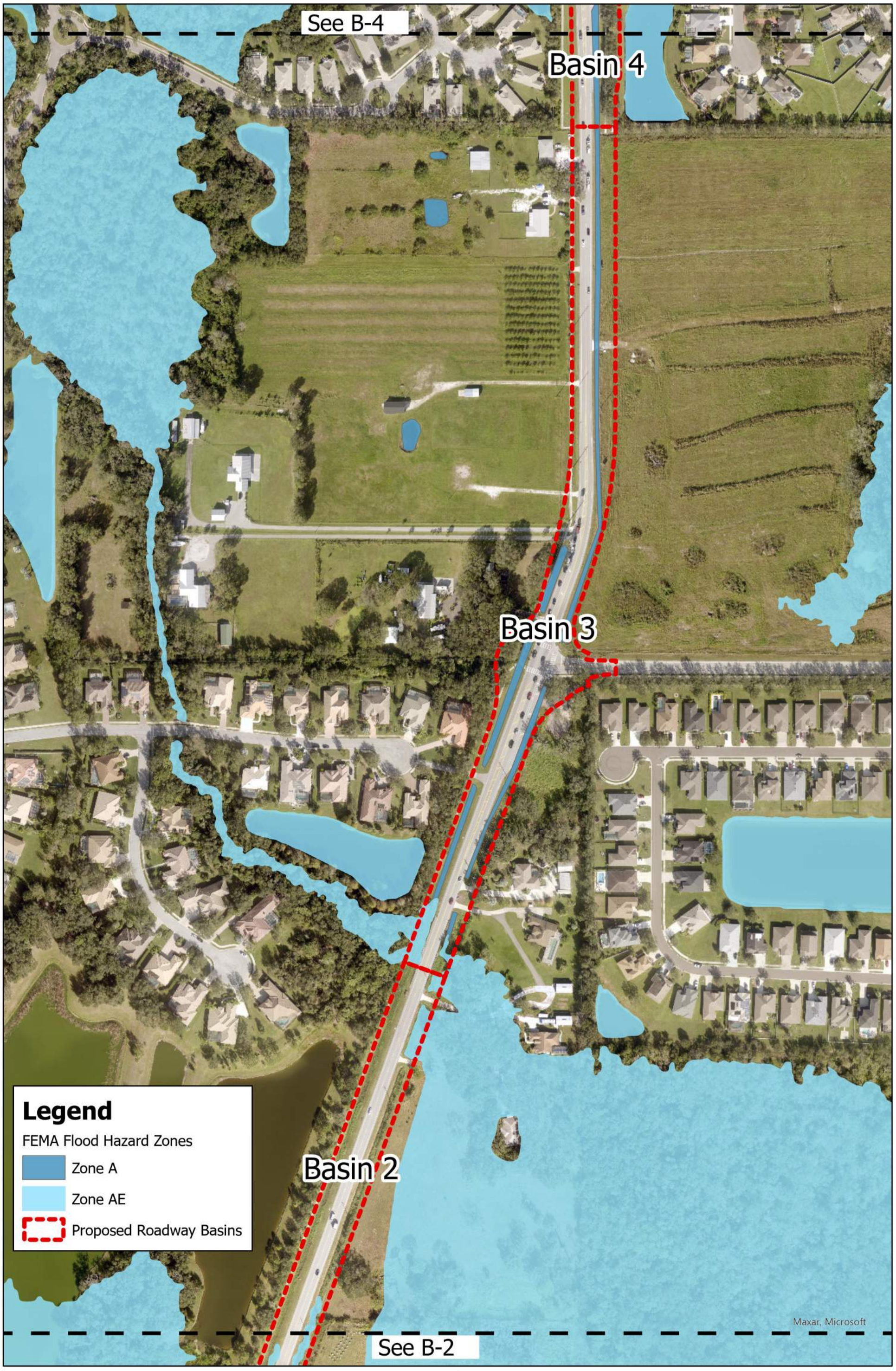
Kimley»Horn

B-2



FEMA Floodplain Map - Basin 3

Ft Hamer Road

March 2024

Manatee County

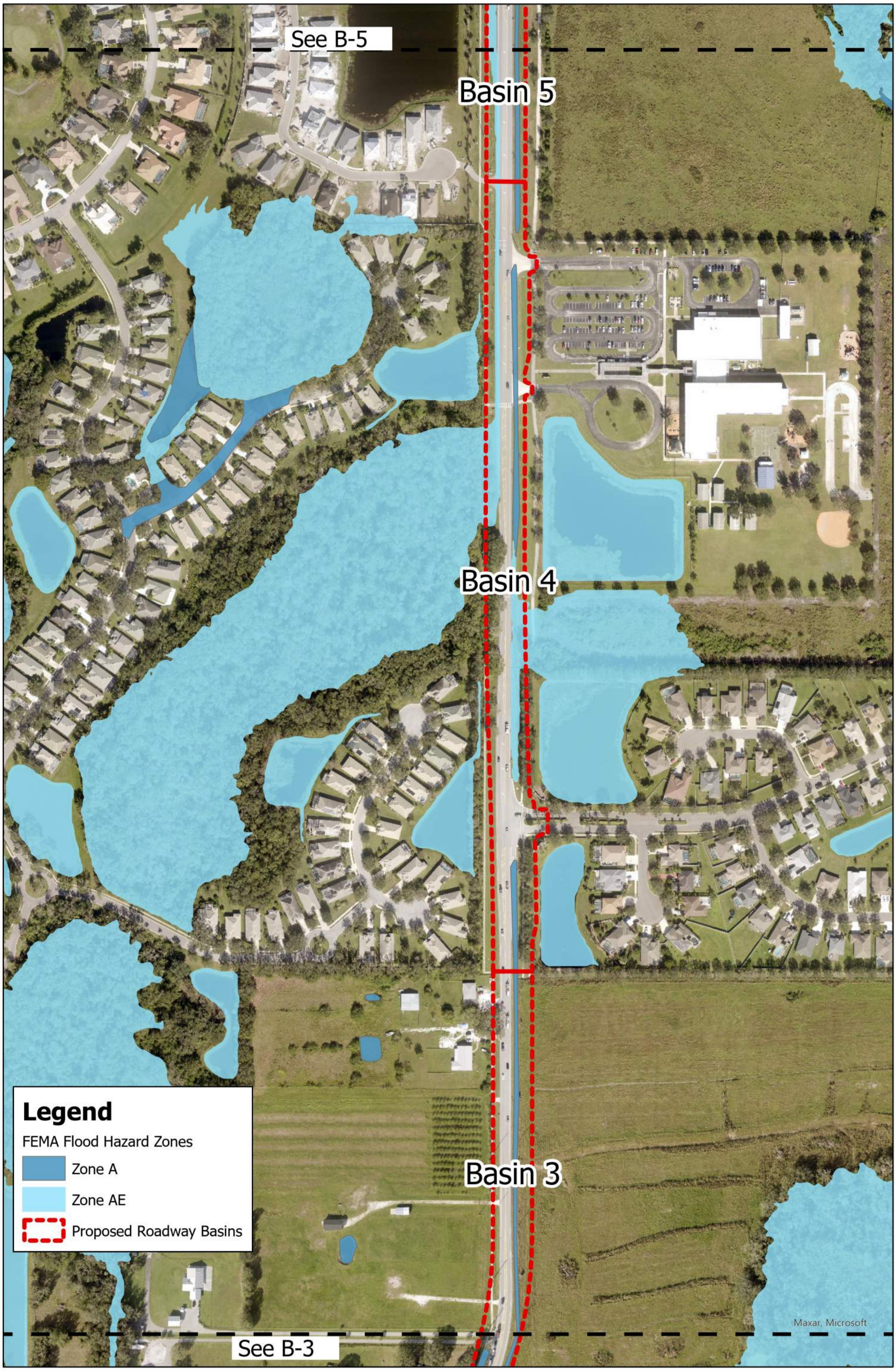
0 100 200 400 Feet

Scale: 1:2,700

N

Kimley»Horn

B-3



FEMA Floodplain Map - Basin 4

Ft Hamer Road

March 2024

Manatee County

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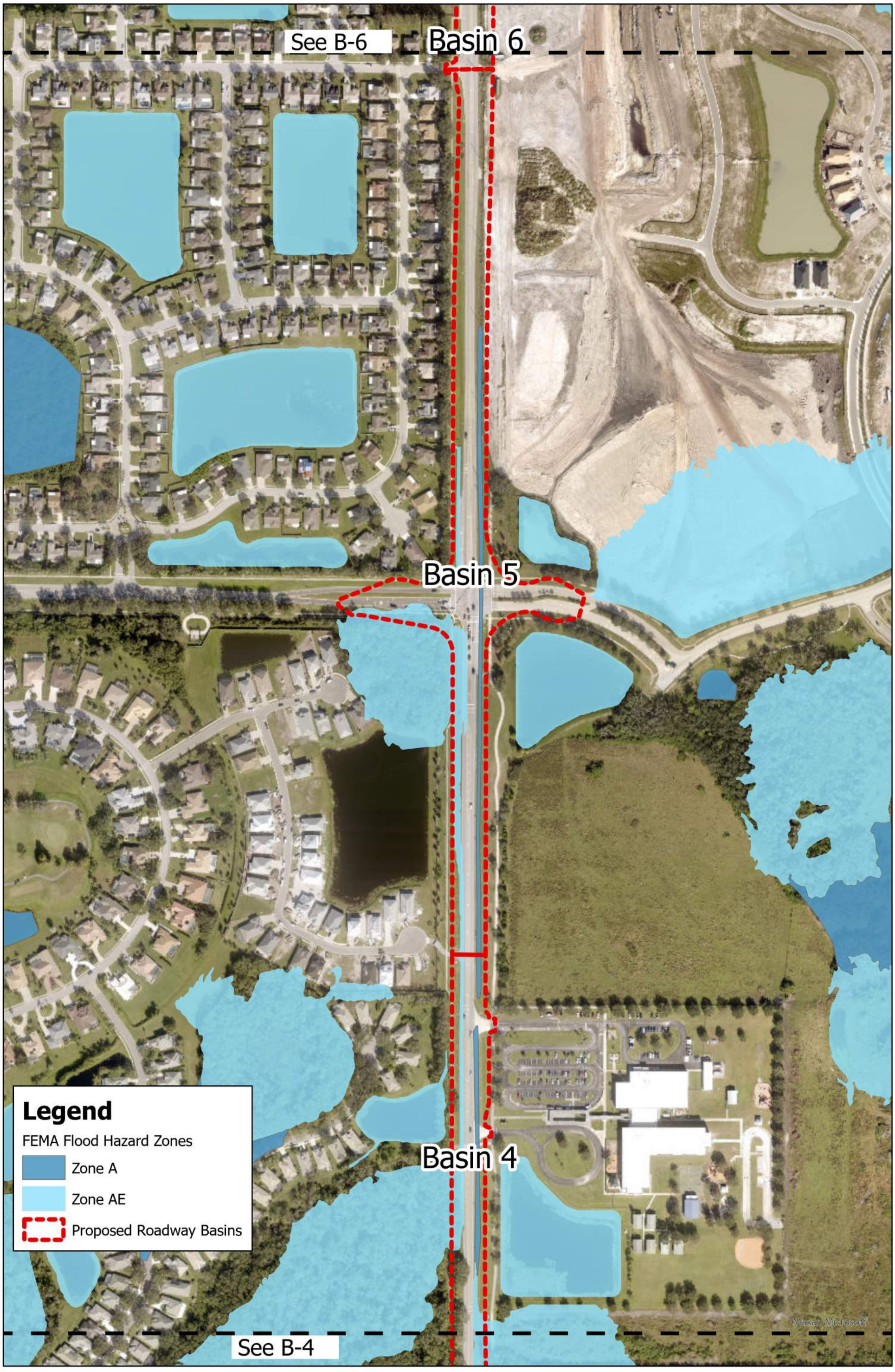
Scale: 1:3,000

N

Kimley»Horn

B-4



FEMA Floodplain Map - Basin 5

Ft Hamer Road

March 2024

Manatee County

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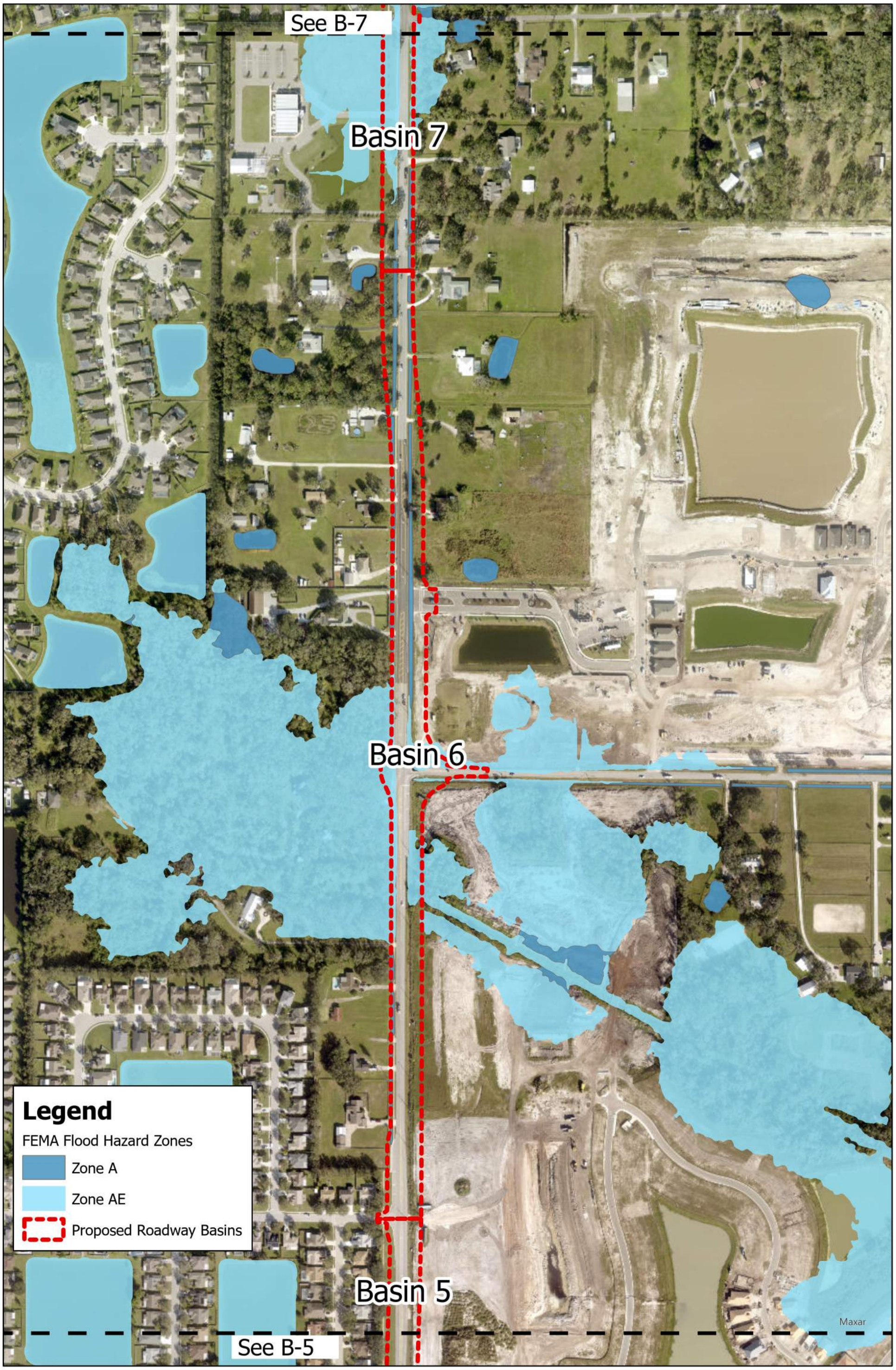
Scale: 1:3,500

N Kimley»Horn

B-5



FEMA Floodplain Map - Basin 6

Ft Hamer Road

March 2024

Manatee County

0 125 250 500 Feet

Scale: 1:3,800

N

Kimley»Horn

B-6

Basin 7

Basin 6

See B-6

Legend

FEMA Flood Hazard Zones

Zone A

Zone AE

Proposed Roadway Basins

Maxar, Microsoft

FEMA Floodplain Map - Basin 7

Ft Hamer Road

March 2024

Manatee County

0 100 200 400 Feet

Scale: 1:3,200

N

Kimley»Horn

B-7

APPENDIX C

FLOODPLAIN ANALYSIS CALCULATIONS

- Preliminary Floodplain Analysis Calculations

Kimley»Horn

Fort Hamer Road
Floodplain Analysis

Road Basin	1	
Base Flood Elevation	8.00	ft
Encroachment Vol.	0.16	ac-ft

Stage (ft.)	Area (ac.)	Volume (ac-ft.)
5.19	0.00	0.00
5.20	0.00	0.00
5.30	0.00	0.00
5.40	0.00	0.00
5.49	0.01	0.00
5.59	0.01	0.00
5.69	0.01	0.00
5.79	0.01	0.00
5.89	0.02	0.01
5.99	0.02	0.01
6.09	0.03	0.01
6.19	0.03	0.01
6.29	0.03	0.02
6.40	0.04	0.02
6.49	0.04	0.02
6.59	0.04	0.03
6.69	0.04	0.03
6.79	0.05	0.04
6.89	0.05	0.04
6.99	0.06	0.05
7.09	0.07	0.05
7.19	0.07	0.06
7.29	0.08	0.07
7.39	0.09	0.08
7.49	0.11	0.09
7.59	0.12	0.10
7.69	0.13	0.11
7.79	0.15	0.12
7.89	0.17	0.14
8.00	0.19	0.16

Road Basin	2	
Base Flood Elevation	8.00	ft
Encroachment Vol.	1.04	ac-ft

Stage (ft.)	Area (ac.)	Volume (ac-ft.)
2.80	0.00	0.00
2.91	0.00	0.00
3.01	0.00	0.00
3.11	0.00	0.00
3.21	0.00	0.00
3.31	0.00	0.00
3.41	0.00	0.00
3.50	0.00	0.00
3.60	0.00	0.00
3.71	0.00	0.00
3.81	0.00	0.00
3.90	0.00	0.00
4.01	0.01	0.00
4.11	0.01	0.00
4.21	0.01	0.00
4.30	0.01	0.00
4.40	0.01	0.01
4.50	0.01	0.01
4.61	0.02	0.01
4.70	0.02	0.01
4.80	0.02	0.01
4.90	0.03	0.02
5.00	0.04	0.02
5.10	0.04	0.02
5.20	0.05	0.03
5.30	0.06	0.03
5.40	0.07	0.04
5.50	0.08	0.05
5.60	0.09	0.05
5.70	0.11	0.06
5.80	0.12	0.08
5.90	0.13	0.09
6.00	0.15	0.10
6.10	0.16	0.12
6.20	0.18	0.14
6.30	0.21	0.15
6.40	0.24	0.18
6.50	0.27	0.20
6.60	0.30	0.23
6.70	0.34	0.26
6.80	0.38	0.30
6.90	0.41	0.34
7.00	0.45	0.38
7.10	0.50	0.43
7.20	0.54	0.48
7.30	0.58	0.54
7.40	0.62	0.60
7.50	0.66	0.66
7.60	0.70	0.73
7.70	0.74	0.80
7.80	0.78	0.88
7.90	0.82	0.96
8.00	0.86	1.04

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Fort Hamer Road
Floodplain Analysis

Road Basin	2	
Base Flood Elevation	10.60	ft
Encroachment Vol.	0.03	ac-ft

Stage (ft.)	Area (ac.)	Volume (ac-ft.)
9.55	0.00	0.00
9.60	0.00	0.00
9.70	0.00	0.00
9.80	0.01	0.00
9.90	0.02	0.00
10.00	0.02	0.00
10.10	0.03	0.01
10.19	0.03	0.01
10.30	0.04	0.01
10.39	0.04	0.02
10.49	0.05	0.02
10.60	0.05	0.03

Road Basin	2	
Base Flood Elevation	12.00	ft
Encroachment Vol.	0.00	ac-ft

Stage (ft.)	Area (ac.)	Volume (ac-ft.)
10.27	0.00	0.00
10.30	0.00	0.00
10.40	0.00	0.00
10.50	0.00	0.00
10.60	0.00	0.00
10.70	0.00	0.00
10.80	0.00	0.00
10.89	0.00	0.00
11.00	0.00	0.00
11.10	0.00	0.00
11.20	0.00	0.00
11.30	0.00	0.00
11.40	0.00	0.00
11.50	0.00	0.00
11.60	0.00	0.00
11.70	0.00	0.00
11.80	0.00	0.00
11.90	0.00	0.00
12.00	0.00	0.00

Kimley»Horn

Fort Hamer Road
Floodplain Analysis

Road Basin	3	
Base Flood Elevation	12.00	ft
Encroachment Vol.	0.08	ac-ft

Stage (ft.)	Area (ac.)	Volume (ac-ft.)
9.83	0.00	0.00
9.90	0.00	0.00
10.00	0.00	0.00
10.10	0.01	0.00
10.19	0.01	0.00
10.30	0.02	0.00
10.39	0.02	0.00
10.49	0.02	0.01
10.59	0.03	0.01
10.69	0.03	0.01
10.79	0.03	0.02
10.89	0.04	0.02
10.99	0.04	0.02
11.09	0.04	0.03
11.19	0.05	0.03
11.29	0.05	0.04
11.39	0.06	0.04
11.49	0.06	0.05
11.59	0.06	0.05
11.69	0.07	0.06
11.80	0.07	0.07
11.89	0.08	0.08
12.00	0.08	0.08

Road Basin	3	
Base Flood Elevation	10.60	ft
Encroachment Vol.	0.00	ac-ft

Stage (ft.)	Area (ac.)	Volume (ac-ft.)
9.87	0.00	0.00
9.90	0.00	0.00
10.00	0.00	0.00
10.10	0.00	0.00
10.19	0.00	0.00
10.30	0.01	0.00
10.40	0.01	0.00
10.50	0.01	0.00
10.60	0.01	0.00

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Fort Hamer Road
Floodplain Analysis

Road Basin	3	
Base Flood Elevation	13.00	ft
Encroachment Vol.	0.05	ac-ft

Stage (ft.)	Area (ac.)	Volume (ac-ft.)
11.17	0.00	0.00
11.20	0.00	0.00
11.30	0.00	0.00
11.40	0.00	0.00
11.50	0.01	0.00
11.60	0.01	0.00
11.70	0.02	0.00
11.80	0.02	0.01
11.89	0.02	0.01
11.99	0.03	0.01
12.09	0.03	0.01
12.19	0.03	0.02
12.29	0.04	0.02
12.39	0.04	0.02
12.49	0.04	0.03
12.59	0.04	0.03
12.69	0.05	0.04
12.79	0.05	0.04
12.89	0.05	0.04
12.99	0.05	0.05
13.00	0.05	0.05

Road Basin	3	
Base Flood Elevation	16.50	ft
Encroachment Vol.	0.11	ac-ft

Stage (ft.)	Area (ac.)	Volume (ac-ft.)
13.14	0.00	0.00
13.20	0.00	0.00
13.30	0.00	0.00
13.40	0.00	0.00
13.50	0.00	0.00
13.60	0.00	0.00
13.70	0.00	0.00
13.80	0.01	0.00
13.89	0.01	0.00
13.99	0.01	0.00
14.09	0.01	0.00
14.19	0.01	0.01
14.29	0.01	0.01
14.39	0.02	0.01
14.50	0.02	0.01
14.59	0.02	0.01
14.69	0.03	0.01
14.79	0.03	0.02
14.89	0.03	0.02
14.99	0.03	0.02
15.09	0.04	0.03
15.19	0.04	0.03
15.29	0.05	0.04
15.39	0.05	0.04
15.49	0.05	0.05
15.59	0.06	0.05
15.70	0.06	0.06
15.79	0.06	0.06
15.90	0.07	0.07
15.99	0.07	0.08
16.09	0.07	0.08
16.19	0.07	0.09
16.29	0.07	0.10
16.39	0.08	0.11
16.50	0.08	0.11

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Fort Hamer Road
Floodplain Analysis

Road Basin	3	
Base Flood Elevation	17.00	ft
Encroachment Vol.	0.04	ac-ft

Stage (ft.)	Area (ac.)	Volume (ac-ft.)
14.89	0.00	0.00
14.90	0.00	0.00
15.00	0.00	0.00
15.10	0.00	0.00
15.20	0.00	0.00
15.30	0.00	0.00
15.40	0.00	0.00
15.49	0.01	0.00
15.59	0.01	0.00
15.69	0.01	0.00
15.79	0.01	0.00
15.89	0.01	0.00
16.00	0.02	0.01
16.10	0.02	0.01
16.20	0.02	0.01
16.30	0.03	0.01
16.40	0.03	0.02
16.50	0.03	0.02
16.60	0.03	0.02
16.70	0.04	0.03
16.80	0.04	0.03
16.90	0.04	0.03
17.00	0.05	0.04

Road Basin	3	
Base Flood Elevation	22.00	ft
Encroachment Vol.	0.01	ac-ft

Stage (ft.)	Area (ac.)	Volume (ac-ft.)
20.66	0.00	0.00
20.70	0.00	0.00
20.80	0.00	0.00
20.90	0.00	0.00
21.00	0.00	0.00
21.10	0.00	0.00
21.20	0.00	0.00
21.30	0.01	0.00
21.40	0.01	0.00
21.50	0.01	0.00
21.60	0.01	0.00
21.70	0.01	0.01
21.80	0.02	0.01
21.90	0.02	0.01
22.00	0.02	0.01

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Fort Hamer Road
Floodplain Analysis

Road Basin	3	
Base Flood Elevation	23.00	ft
Encroachment Vol.	0.14	ac-ft

Stage (ft.)	Area (ac.)	Volume (ac-ft.)
18.79	0.00	0.00
19.00	0.00	0.00
19.25	0.00	0.00
19.50	0.00	0.00
19.75	0.01	0.00
20.00	0.01	0.00
20.25	0.02	0.01
20.50	0.02	0.01
20.75	0.03	0.02
21.00	0.04	0.03
21.25	0.04	0.04
21.50	0.04	0.05
21.75	0.05	0.06
22.00	0.06	0.07
22.25	0.06	0.09
22.50	0.07	0.10
22.75	0.07	0.12
23.00	0.07	0.14

Road Basin	3	
Base Flood Elevation	25.50	ft
Encroachment Vol.	0.05	ac-ft

Stage (ft.)	Area (ac.)	Volume (ac-ft.)
23.12	0.00	0.00
23.25	0.00	0.00
23.50	0.00	0.00
23.75	0.01	0.00
24.00	0.01	0.00
24.25	0.02	0.01
24.50	0.03	0.01
24.75	0.04	0.02
25.00	0.04	0.03
25.25	0.04	0.04
25.50	0.05	0.05

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Fort Hamer Road
Floodplain Analysis

Road Basin	3	
Base Flood Elevation	30.00	ft
Encroachment Vol.	0.21	ac-ft

Stage (ft.)	Area (ac.)	Volume (ac-ft.)
26.74	0.00	0.00
26.75	0.00	0.00
27.00	0.00	0.00
27.25	0.01	0.00
27.50	0.02	0.01
27.75	0.03	0.01
28.00	0.04	0.02
28.25	0.05	0.03
28.50	0.06	0.04
28.75	0.08	0.06
29.00	0.10	0.09
29.25	0.12	0.11
29.50	0.13	0.14
29.75	0.14	0.18
30.00	0.15	0.21

Road Basin	3	
Base Flood Elevation	30.00	ft
Encroachment Vol.	0.00	ac-ft

Stage (ft.)	Area (ac.)	Volume (ac-ft.)
29.60	0.00	0.00
29.70	0.00	0.00
29.80	0.01	0.00
29.90	0.01	0.00
30.00	0.01	0.00

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Fort Hamer Road
Floodplain Analysis

Road Basin	4	
Base Flood Elevation	29.00	ft
Encroachment Vol.	0.21	ac-ft

Stage (ft.)	Area (ac.)	Volume (ac-ft.)
25.06	0.00	0.00
25.10	0.00	0.00
25.20	0.00	0.00
25.30	0.00	0.00
25.40	0.00	0.00
25.50	0.00	0.00
25.60	0.00	0.00
25.70	0.00	0.00
25.80	0.00	0.00
25.90	0.00	0.00
26.00	0.00	0.00
26.10	0.00	0.00
26.20	0.00	0.00
26.30	0.00	0.00
26.40	0.00	0.00
26.50	0.01	0.00
26.60	0.01	0.00
26.70	0.01	0.00
26.80	0.01	0.01
26.90	0.02	0.01
27.00	0.02	0.01
27.10	0.03	0.01
27.20	0.03	0.01
27.30	0.04	0.02
27.40	0.05	0.02
27.50	0.05	0.03
27.60	0.06	0.03
27.70	0.07	0.04
27.80	0.08	0.05
27.90	0.09	0.06
28.00	0.10	0.06
28.10	0.11	0.08
28.20	0.12	0.09
28.30	0.13	0.10
28.40	0.14	0.11
28.50	0.15	0.13
28.60	0.15	0.14
28.70	0.16	0.16
28.80	0.17	0.17
28.90	0.18	0.19
29.00	0.19	0.21

Road Basin	4	
Base Flood Elevation	32.00	ft
Encroachment Vol.	0.25	ac-ft

Stage (ft.)	Area (ac.)	Volume (ac-ft.)
27.77	0.00	0.00
27.80	0.00	0.00
27.90	0.00	0.00
28.00	0.00	0.00
28.10	0.00	0.00
28.20	0.00	0.00
28.30	0.00	0.00
28.40	0.00	0.00
28.50	0.00	0.00
28.60	0.00	0.00
28.70	0.00	0.00
28.80	0.00	0.00
28.90	0.01	0.00
29.00	0.02	0.00
29.10	0.02	0.00
29.20	0.03	0.01
29.30	0.03	0.01
29.40	0.04	0.01
29.50	0.05	0.02
29.60	0.05	0.02
29.70	0.06	0.03
29.80	0.06	0.03
29.90	0.07	0.04
30.00	0.07	0.05
30.10	0.07	0.06
30.20	0.08	0.06
30.30	0.08	0.07
30.40	0.09	0.08
30.50	0.09	0.09
30.60	0.10	0.10
30.70	0.10	0.11
30.80	0.10	0.12
30.90	0.11	0.13
31.00	0.11	0.14
31.10	0.11	0.15
31.20	0.11	0.16
31.30	0.11	0.17
31.40	0.11	0.18
31.50	0.11	0.19
31.60	0.11	0.21
31.70	0.11	0.22
31.80	0.11	0.23
31.90	0.12	0.24
32.00	0.12	0.25

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Fort Hamer Road
Floodplain Analysis

Road Basin	4	
Base Flood Elevation	33.70	ft
Encroachment Vol.	0.00	ac-ft

Stage (ft.)	Area (ac.)	Volume (ac-ft.)
33.10	0.00	0.00
33.21	0.00	0.00
33.30	0.00	0.00
33.40	0.00	0.00
33.50	0.00	0.00
33.61	0.00	0.00
33.70	0.00	0.00

Road Basin	4	
Base Flood Elevation	33.50	ft
Encroachment Vol.	0.00	ac-ft

Stage (ft.)	Area (ac.)	Volume (ac-ft.)
33.09	0.00	0.00
33.10	0.00	0.00
33.20	0.01	0.00
33.30	0.01	0.00
33.40	0.02	0.00
33.50	0.02	0.00

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Fort Hamer Road
Floodplain Analysis

Road Basin	5	
Base Flood Elevation	36.00	ft
Encroachment Vol.	0.42	ac-ft

Stage (ft.)	Area (ac.)	Volume (ac-ft.)
33.21	0.00	0.00
33.30	0.00	0.00
33.40	0.00	0.00
33.50	0.01	0.00
33.60	0.01	0.00
33.70	0.02	0.00
33.80	0.03	0.01
33.90	0.04	0.01
34.00	0.05	0.01
34.10	0.07	0.02
34.20	0.09	0.03
34.30	0.11	0.04
34.40	0.13	0.05
34.50	0.16	0.06
34.60	0.19	0.08
34.70	0.20	0.10
34.80	0.21	0.12
34.90	0.22	0.14
35.00	0.23	0.16
35.10	0.24	0.19
35.20	0.25	0.21
35.30	0.25	0.24
35.40	0.26	0.26
35.50	0.26	0.29
35.60	0.26	0.32
35.70	0.27	0.34
35.80	0.27	0.37
35.90	0.28	0.40
36.00	0.29	0.42

Road Basin	5	
Base Flood Elevation	35.60	ft
Encroachment Vol.	0.70	ac-ft

Stage (ft.)	Area (ac.)	Volume (ac-ft.)
31.94	0.00	0.00
32.00	0.00	0.00
32.10	0.00	0.00
32.20	0.00	0.00
32.30	0.00	0.00
32.40	0.00	0.00
32.50	0.01	0.00
32.60	0.01	0.00
32.70	0.02	0.00
32.80	0.03	0.01
32.90	0.04	0.01
33.00	0.05	0.01
33.10	0.06	0.02
33.20	0.07	0.03
33.30	0.09	0.03
33.40	0.10	0.04
33.50	0.12	0.05
33.60	0.13	0.07
33.70	0.15	0.08
33.80	0.17	0.10
33.90	0.19	0.12
34.00	0.21	0.14
34.10	0.22	0.16
34.20	0.24	0.18
34.30	0.27	0.21
34.40	0.29	0.23
34.50	0.31	0.26
34.60	0.31	0.29
34.70	0.33	0.33
34.80	0.35	0.36
34.90	0.37	0.40
35.00	0.39	0.43
35.10	0.40	0.47
35.20	0.41	0.51
35.30	0.43	0.56
35.40	0.45	0.60
35.50	0.47	0.65
35.60	0.50	0.70

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Fort Hamer Road
Floodplain Analysis

Road Basin	5	
Base Flood Elevation	35.70	ft
Encroachment Vol.	0.15	ac-ft

Stage (ft.)	Area (ac.)	Volume (ac-ft.)
33.48	0.00	0.00
33.50	0.00	0.00
33.60	0.00	0.00
33.70	0.00	0.00
33.80	0.00	0.00
33.90	0.00	0.00
34.00	0.00	0.00
34.10	0.01	0.00
34.20	0.01	0.00
34.30	0.01	0.00
34.40	0.02	0.00
34.50	0.03	0.01
34.60	0.04	0.01
34.70	0.07	0.02
34.80	0.09	0.02
34.90	0.11	0.03
35.00	0.12	0.05
35.10	0.13	0.06
35.20	0.14	0.07
35.30	0.15	0.09
35.40	0.16	0.10
35.50	0.17	0.12
35.60	0.18	0.14
35.70	0.19	0.15

Road Basin	5	
Base Flood Elevation	36.50	ft
Encroachment Vol.	0.01	ac-ft

Stage (ft.)	Area (ac.)	Volume (ac-ft.)
35.85	0.00	0.00
35.90	0.00	0.00
36.00	0.01	0.00
36.10	0.02	0.00
36.20	0.02	0.00
36.30	0.03	0.01
36.40	0.04	0.01
36.50	0.04	0.01

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Fort Hamer Road
Floodplain Analysis

Road Basin	6	
Base Flood Elevation	43.00	ft
Encroachment Vol.	0.00	ac-ft

Stage (ft.)	Area (ac.)	Volume (ac-ft.)
42.62	0.00	0.00
42.70	0.00	0.00
42.80	0.00	0.00
42.90	0.00	0.00
43.00	0.00	0.00

Road Basin	6	
Base Flood Elevation	41.00	ft
Encroachment Vol.	0.00	ac-ft

Stage (ft.)	Area (ac.)	Volume (ac-ft.)
40.29	0.00	0.00
40.30	0.00	0.00
40.40	0.00	0.00
40.50	0.00	0.00
40.60	0.00	0.00
40.70	0.00	0.00
40.80	0.00	0.00
40.90	0.00	0.00
41.00	0.00	0.00

Kimley»Horn

Fort Hamer Road
Floodplain Analysis

Road Basin	6	
Base Flood Elevation	40.00	ft
Encroachment Vol.	0.02	ac-ft

Stage (ft.)	Area (ac.)	Volume (ac-ft.)
38.24	0.00	0.00
38.30	0.00	0.00
38.40	0.00	0.00
38.50	0.00	0.00
38.60	0.00	0.00
38.70	0.01	0.00
38.80	0.01	0.00
38.90	0.01	0.00
39.00	0.01	0.00
39.10	0.01	0.00
39.20	0.01	0.01
39.30	0.01	0.01
39.40	0.02	0.01
39.50	0.02	0.01
39.60	0.02	0.01
39.70	0.02	0.01
39.80	0.02	0.02
39.90	0.03	0.02
40.00	0.03	0.02

Road Basin	6	
Base Flood Elevation	37.50	ft
Encroachment Vol.	0.00	ac-ft

Stage (ft.)	Area (ac.)	Volume (ac-ft.)
37.41	0.00	0.00
37.50	0.00	0.00

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Fort Hamer Road
Floodplain Analysis

Road Basin	6	
Base Flood Elevation	36.30	ft
Encroachment Vol.	0.12	ac-ft

Stage (ft.)	Area (ac.)	Volume (ac-ft.)
32.76	0.00	0.00
32.80	0.00	0.00
32.90	0.00	0.00
33.00	0.00	0.00
33.10	0.00	0.00
33.20	0.01	0.00
33.30	0.01	0.00
33.40	0.01	0.00
33.50	0.01	0.00
33.60	0.02	0.01
33.70	0.02	0.01
33.80	0.02	0.01
33.90	0.02	0.01
34.00	0.03	0.01
34.10	0.03	0.02
34.20	0.03	0.02
34.30	0.03	0.02
34.40	0.03	0.03
34.50	0.04	0.03
34.60	0.04	0.03
34.70	0.04	0.04
34.80	0.04	0.04
34.90	0.05	0.05
35.00	0.05	0.05
35.10	0.05	0.06
35.20	0.05	0.06
35.30	0.05	0.07
35.40	0.05	0.07
35.50	0.05	0.08
35.60	0.06	0.08
35.70	0.06	0.09
35.80	0.06	0.09
35.90	0.06	0.10
36.00	0.06	0.10
36.10	0.06	0.11
36.20	0.06	0.12
36.30	0.06	0.12

Road Basin	6	
Base Flood Elevation	39.20	ft
Encroachment Vol.	0.12	ac-ft

Stage (ft.)	Area (ac.)	Volume (ac-ft.)
36.24	0.00	0.00
36.30	0.00	0.00
36.40	0.00	0.00
36.50	0.00	0.00
36.60	0.00	0.00
36.70	0.00	0.00
36.80	0.00	0.00
36.90	0.00	0.00
37.00	0.00	0.00
37.10	0.00	0.00
37.20	0.00	0.00
37.30	0.00	0.00
37.40	0.00	0.00
37.50	0.01	0.00
37.60	0.02	0.00
37.70	0.02	0.01
37.80	0.03	0.01
37.90	0.04	0.01
38.00	0.05	0.02
38.10	0.05	0.02
38.20	0.06	0.03
38.30	0.07	0.03
38.40	0.08	0.04
38.50	0.09	0.05
38.60	0.09	0.06
38.70	0.10	0.07
38.80	0.10	0.08
38.90	0.10	0.09
39.00	0.11	0.10
39.10	0.11	0.11
39.20	0.12	0.12

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Fort Hamer Road
Floodplain Analysis

Road Basin	6	
Base Flood Elevation	39.40	ft
Encroachment Vol.	0.00	ac-ft

Stage (ft.)	Area (ac.)	Volume (ac-ft.)
39.17	0.00	0.00
39.20	0.00	0.00
39.30	0.01	0.00
39.40	0.01	0.00

Road Basin	6	
Base Flood Elevation	38.80	ft
Encroachment Vol.	0.04	ac-ft

Stage (ft.)	Area (ac.)	Volume (ac-ft.)
37.57	0.00	0.00
37.60	0.00	0.00
37.70	0.00	0.00
37.80	0.00	0.00
37.90	0.01	0.00
38.00	0.01	0.00
38.10	0.02	0.00
38.20	0.03	0.01
38.30	0.04	0.01
38.40	0.05	0.01
38.50	0.06	0.02
38.60	0.07	0.02
38.70	0.08	0.03
38.80	0.10	0.04

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Fort Hamer Road
Floodplain Analysis

Road Basin	6	
Base Flood Elevation	36.30	ft
Encroachment Vol.	0.00	ac-ft

Stage (ft.)	Area (ac.)	Volume (ac-ft.)
35.72	0.00	0.00
35.80	0.00	0.00
35.90	0.01	0.00
36.00	0.01	0.00
36.10	0.01	0.00
36.20	0.01	0.00
36.30	0.01	0.00

Road Basin	6	
Base Flood Elevation	42.00	ft
Encroachment Vol.	0.18	ac-ft

Stage (ft.)	Area (ac.)	Volume (ac-ft.)
39.40	0.00	0.00
39.50	0.00	0.00
39.60	0.01	0.00
39.70	0.01	0.00
39.80	0.01	0.00
39.90	0.02	0.00
40.00	0.02	0.01
40.10	0.03	0.01
40.20	0.03	0.01
40.30	0.04	0.02
40.40	0.04	0.02
40.50	0.04	0.02
40.60	0.05	0.03
40.70	0.05	0.03
40.80	0.06	0.04
40.90	0.06	0.05
41.00	0.07	0.05
41.10	0.09	0.06
41.20	0.09	0.07
41.30	0.10	0.08
41.40	0.11	0.09
41.50	0.13	0.10
41.60	0.14	0.11
41.70	0.15	0.13
41.80	0.16	0.15
41.90	0.17	0.16
42.00	0.18	0.18

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Fort Hamer Road
Floodplain Analysis

Road Basin	6	
Base Flood Elevation	41.00	ft
Encroachment Vol.	0.00	ac-ft

Stage (ft.)	Area (ac.)	Volume (ac-ft.)
40.64	0.00	0.00
40.70	0.00	0.00
40.80	0.00	0.00
40.90	0.00	0.00
41.00	0.00	0.00

Road Basin	6	
Base Flood Elevation	42.70	ft
Encroachment Vol.	0.03	ac-ft

Stage (ft.)	Area (ac.)	Volume (ac-ft.)
41.25	0.00	0.00
41.30	0.00	0.00
41.40	0.01	0.00
41.50	0.01	0.00
41.60	0.01	0.00
41.70	0.01	0.00
41.80	0.01	0.00
41.90	0.01	0.01
42.00	0.02	0.01
42.10	0.02	0.01
42.20	0.03	0.01
42.30	0.03	0.01
42.40	0.04	0.02
42.50	0.04	0.02
42.60	0.04	0.03
42.70	0.04	0.03

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Fort Hamer Road
Floodplain Analysis

Road Basin	6	
Base Flood Elevation	43.50	ft
Encroachment Vol.	0.04	ac-ft

Stage (ft.)	Area (ac.)	Volume (ac-ft.)
41.94	0.00	0.00
42.00	0.00	0.00
42.10	0.00	0.00
42.20	0.00	0.00
42.30	0.01	0.00
42.40	0.01	0.00
42.50	0.01	0.00
42.60	0.02	0.01
42.70	0.02	0.01
42.80	0.03	0.01
42.90	0.03	0.01
43.00	0.04	0.02
43.10	0.04	0.02
43.20	0.04	0.02
43.30	0.04	0.03
43.40	0.04	0.03
43.50	0.05	0.04

Road Basin	6	
Base Flood Elevation	43.50	ft
Encroachment Vol.	0.04	ac-ft

Stage (ft.)	Area (ac.)	Volume (ac-ft.)
41.95	0.00	0.00
42.00	0.00	0.00
42.10	0.00	0.00
42.20	0.00	0.00
42.30	0.01	0.00
42.40	0.01	0.00
42.50	0.01	0.00
42.60	0.02	0.00
42.70	0.02	0.01
42.80	0.03	0.01
42.90	0.03	0.01
43.00	0.04	0.02
43.10	0.05	0.02
43.20	0.05	0.03
43.30	0.05	0.03
43.40	0.05	0.04
43.50	0.06	0.04

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Fort Hamer Road
Floodplain Analysis

Road Basin	6	
Base Flood Elevation	44.30	ft
Encroachment Vol.	0.05	ac-ft

Stage (ft.)	Area (ac.)	Volume (ac-ft.)
42.37	0.00	0.00
42.40	0.00	0.00
42.50	0.00	0.00
42.60	0.00	0.00
42.70	0.00	0.00
42.80	0.01	0.00
42.90	0.01	0.00
43.00	0.01	0.00
43.10	0.02	0.00
43.20	0.02	0.01
43.30	0.02	0.01
43.40	0.03	0.01
43.50	0.03	0.01
43.60	0.04	0.02
43.70	0.04	0.02
43.80	0.04	0.03
43.90	0.04	0.03
44.00	0.05	0.03
44.10	0.05	0.04
44.20	0.05	0.04
44.30	0.06	0.05

Road Basin	6	
Base Flood Elevation	44.80	ft
Encroachment Vol.	0.08	ac-ft

Stage (ft.)	Area (ac.)	Volume (ac-ft.)
42.45	0.00	0.00
42.50	0.00	0.00
42.60	0.00	0.00
42.70	0.00	0.00
42.80	0.00	0.00
42.90	0.01	0.00
43.00	0.01	0.00
43.10	0.01	0.00
43.20	0.01	0.00
43.30	0.02	0.00
43.40	0.02	0.01
43.50	0.03	0.01
43.60	0.03	0.01
43.70	0.03	0.02
43.80	0.04	0.02
43.90	0.04	0.02
44.00	0.04	0.03
44.10	0.05	0.03
44.20	0.05	0.04
44.30	0.06	0.04
44.40	0.06	0.05
44.50	0.06	0.05
44.60	0.07	0.06
44.70	0.07	0.07
44.80	0.08	0.08

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Fort Hamer Road
Floodplain Analysis

Road Basin	6	
Base Flood Elevation	45.00	ft
Encroachment Vol.	0.02	ac-ft

Stage (ft.)	Area (ac.)	Volume (ac-ft.)
43.20	0.00	0.00
43.30	0.00	0.00
43.40	0.00	0.00
43.50	0.00	0.00
43.60	0.00	0.00
43.70	0.01	0.00
43.80	0.01	0.00
43.90	0.01	0.00
44.00	0.01	0.00
44.10	0.01	0.00
44.20	0.01	0.01
44.30	0.01	0.01
44.40	0.01	0.01
44.50	0.01	0.01
44.60	0.01	0.01
44.70	0.02	0.01
44.80	0.02	0.01
44.90	0.02	0.01
45.00	0.02	0.02

Road Basin	7	
Base Flood Elevation	43.10	ft
Encroachment Vol.	0.39	ac-ft

Stage (ft.)	Area (ac.)	Volume (ac-ft.)
40.55	0.00	0.00
40.60	0.00	0.00
40.70	0.00	0.00
40.80	0.00	0.00
40.90	0.00	0.00
41.00	0.01	0.00
41.10	0.01	0.00
41.20	0.01	0.00
41.30	0.02	0.00
41.40	0.03	0.01
41.50	0.04	0.01
41.60	0.05	0.01
41.70	0.06	0.02
41.80	0.08	0.03
41.90	0.10	0.04
42.00	0.13	0.05
42.10	0.16	0.06
42.20	0.19	0.08
42.30	0.23	0.10
42.40	0.28	0.13
42.50	0.32	0.16
42.60	0.35	0.19
42.70	0.37	0.23
42.80	0.39	0.26
42.90	0.40	0.30
43.00	0.42	0.35
43.10	0.45	0.39

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Fort Hamer Road
Floodplain Analysis

Road Basin	7	
Base Flood Elevation	42.00	ft
Encroachment Vol.	0.01	ac-ft

Stage (ft.)	Area (ac.)	Volume (ac-ft.)
38.84	0.00	0.00
38.90	0.00	0.00
39.00	0.00	0.00
39.10	0.00	0.00
39.20	0.00	0.00
39.30	0.00	0.00
39.40	0.00	0.00
39.50	0.00	0.00
39.60	0.00	0.00
39.70	0.00	0.00
39.80	0.00	0.00
39.90	0.00	0.00
40.00	0.00	0.00
40.10	0.00	0.00
40.20	0.00	0.00
40.30	0.00	0.00
40.40	0.00	0.00
40.50	0.00	0.00
40.60	0.00	0.00
40.70	0.00	0.00
40.80	0.00	0.00
40.90	0.00	0.00
41.00	0.00	0.00
41.10	0.00	0.00
41.20	0.00	0.00
41.30	0.00	0.00
41.40	0.00	0.00
41.50	0.00	0.00
41.60	0.00	0.00
41.70	0.00	0.00
41.80	0.01	0.00
41.90	0.02	0.00
42.00	0.03	0.01

Road Basin	7	
Base Flood Elevation	41.90	ft
Encroachment Vol.	0.03	ac-ft

Stage (ft.)	Area (ac.)	Volume (ac-ft.)
40.31	0.00	0.00
40.40	0.00	0.00
40.50	0.00	0.00
40.60	0.00	0.00
40.70	0.00	0.00
40.80	0.00	0.00
40.90	0.01	0.00
41.00	0.01	0.00
41.10	0.01	0.00
41.20	0.02	0.01
41.30	0.02	0.01
41.40	0.03	0.01
41.50	0.03	0.01
41.60	0.03	0.02
41.70	0.04	0.02
41.80	0.05	0.02
41.90	0.06	0.03

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Fort Hamer Road
Floodplain Analysis

Road Basin	7	
Base Flood Elevation	44.00	ft
Encroachment Vol.	0.02	ac-ft

Stage (ft.)	Area (ac.)	Volume (ac-ft.)
43.17	0.00	0.00
43.20	0.00	0.00
43.30	0.01	0.00
43.40	0.02	0.00
43.50	0.03	0.00
43.60	0.03	0.01
43.70	0.03	0.01
43.80	0.03	0.01
43.90	0.03	0.01
44.00	0.03	0.02

Road Basin	7	
Base Flood Elevation	44.00	ft
Encroachment Vol.	0.06	ac-ft

Stage (ft.)	Area (ac.)	Volume (ac-ft.)
42.11	0.00	0.00
42.20	0.00	0.00
42.30	0.00	0.00
42.40	0.00	0.00
42.50	0.00	0.00
42.60	0.01	0.00
42.70	0.01	0.00
42.80	0.02	0.00
42.90	0.02	0.01
43.00	0.03	0.01
43.10	0.03	0.01
43.20	0.04	0.01
43.30	0.04	0.02
43.40	0.05	0.02
43.50	0.06	0.03
43.60	0.06	0.03
43.70	0.06	0.04
43.80	0.06	0.05
43.90	0.06	0.05
44.00	0.07	0.06

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Fort Hamer Road
Floodplain Analysis

Road Basin	7	
Base Flood Elevation	44.80	ft
Encroachment Vol.	0.02	ac-ft

Stage (ft.)	Area (ac.)	Volume (ac-ft.)
42.86	0.00	0.00
42.90	0.00	0.00
43.00	0.00	0.00
43.10	0.00	0.00
43.20	0.01	0.00
43.30	0.01	0.00
43.40	0.01	0.00
43.50	0.01	0.00
43.60	0.01	0.00
43.70	0.01	0.01
43.80	0.01	0.01
43.90	0.01	0.01
44.00	0.02	0.01
44.10	0.02	0.01
44.20	0.02	0.01
44.30	0.02	0.01
44.40	0.02	0.02
44.50	0.02	0.02
44.60	0.02	0.02
44.70	0.02	0.02
44.80	0.02	0.02