Florida Statewide Regional Evacuation Study Program

Directional Atlas

Lafayette County

Volume 10-3

Book 4C

WNW-N Directional Storms

Florida Division of Emergency Management

North Central Florida Regional Planning Council

North Central Florida Region

2015

Includes Hurricane Evacuation Study

Statewide Regional Evacuation Study Program

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NORTH CENTRAL FLORIDA STORM TIDE DIRECTIONAL ATLAS

Volume 10-3
Book 4 C - Lafayette County
Directional Atlas: WNW-W (Paralleling) Storms

This Atlas is part of Volume 10 of the ***Statewide Regional Evacuation Study Program*** (SRESP), and one of three sets of county books in the *North Central Florida Storm Tide Directional Atlas* series. Book 1 covers Dixie County; Book 2 covers Taylor County; and Books 3 and 4 cover the two inland Counties which receive storm surge: Gilchrist and Lafayette. In each county, the primary volume presents an overview of the study and the methodology, while the Appendices, numbered from A to C, include the surge inundation maps for each of three directional storm clusters: N-ENE, SW-WNW, and WNW-N. The Atlas maps identify those areas subject to potential storm tide flooding from the five categories of hurricane on the Saffir-Simpson Hurricane Wind Scale, as determined by the National Oceanic and Atmospheric Administration (NOAA) numerical storm surge model, Sea, Lake and Overland Surges from Hurricanes (SLOSH). Volume 10 is unique in that it is based on the direction the storm is heading and depicts the resulting surge of storms approaching from that specific directional angle.

The *Storm Tide Directional Atlas* series supplements the original hazards analysis for storm tides (Volume 7-3) and depth (Volume 9-3), and enhances a key component of the SRESP. The *Technical Data Report* (Volume 1-3) was built upon the original storm tide analysis and includes the evacuation zones and population estimates, results of the evacuation behavioral data, shelter analysis and evacuation transportation analysis. The study, which provides vital information to state and local emergency management, forms the basis for county evacuation plans. The final study documents are available on the Internet at:

http://www.ncfrpc.org/sres/directional/index.html

This Atlas series was produced by the North Central Florida Regional Planning Council with funding from the Federal Emergency Management Agency, through the Florida Division of Emergency Management.

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Bryan Koon, Director
Andrew Sussman, Hurricane Program Manager
Richard Butgereit, GIS Manager

Northeast Florida Regional Council
Elizabeth Payne, Project Manager

Florida Emergency Preparedness Association
For their support in this statewide effort

County Emergency Management Agencies
Scott Garner, Division Chief, Dixie County Emergency Management
David Peaton, Director of Gilchrist County Emergency Management
Marc Land, Director of Lafayette County Emergency Management
Steve Spradley, Director of Taylor County Emergency Management

A. Storm Tide Directional Atlas

The surge inundation limits (directional maximum surge heights minus the ground elevations) are provided as GIS shape files and graphically displayed on maps in the *Directional Storm Tide Atlas for the South Florida Region*. The *Atlas* was prepared by the South Florida Regional Council under contract to the State of Florida, Division of Emergency Management, as part of this study effort. The maps prepared for the *Atlas* consist of base maps (1:24000) including topographic, hydrographic and highway files updated using current county and state highway data. Detailed shoreline and storm tide limits for each category of storm were determined using the region's geographic information system (GIS).

The purpose of the maps contained in this Atlas is to reflect a worst probable scenario of the hurricane storm tide inundation for a given cluster of compass directions that a storm would be heading and to provide a basis for the hurricane evacuation zones and study analyses. While the storm tide delineations include the addition of an astronomical mean high tide and tidal anomaly, it should be noted that the data reflects only still-water saltwater flooding. **Local processes such as <u>waves</u>, <u>rainfall</u> and <u>freshwater flooding from overflowing rivers</u>, are usually included in observations of storm tide height, but are not surge and are not calculated by the SLOSH model. It is incumbent upon local emergency management officials and planners to estimate the degree and extent of freshwater flooding as well as to determine the magnitude of the waves that will accompany the surge.**

Although the methodology used for surge determination in this Atlas does the most to reduce inconsistencies and human subjectivity, factors remain in the data itself that could show variations from previous efforts and results. Whenever a SLOSH basin is changed in any way, results can vary. Using MEOW (Maximum Envelope of Water) data as we do in this directional atlas, instead of the MOM (Maximum of Maximums) data, and choosing directional subsets of the maximums (MOMs) will indeed produce different results than other atlases – and this was expected. Other factors can include different elevation model data, as well as number and scope of selected SLOSH basin grid cells. Also, any data that is beyond the original extent or boundary of the basin is interpolation influenced by the modeling trend up to that location, and hand adaptation of basin extensions.

Figure 1 shows the projected surge inundation for each category of storm for storms moving in an WNW-N direction. Figure 2 provides an index of the WNW-W directional map series for Lafayette County.

B. Points of Reference

County emergency management agencies selected reference points, which include key facilities or locations critical for emergency operations. The Table 1 includes the map identification number, descriptions of the selected points, and the elevation of the site. The elevation is based on the digital elevation data provided by LiDAR. It should be noted that if the site is large, elevations may vary significantly. Table 1 also provides the storm tide value from the SLOSH value and the depth of inundation above ground (storm tide height minus the ground elevation) at the site.

Figure 1 Directional WNW-W (Paralleling) Storm Surge

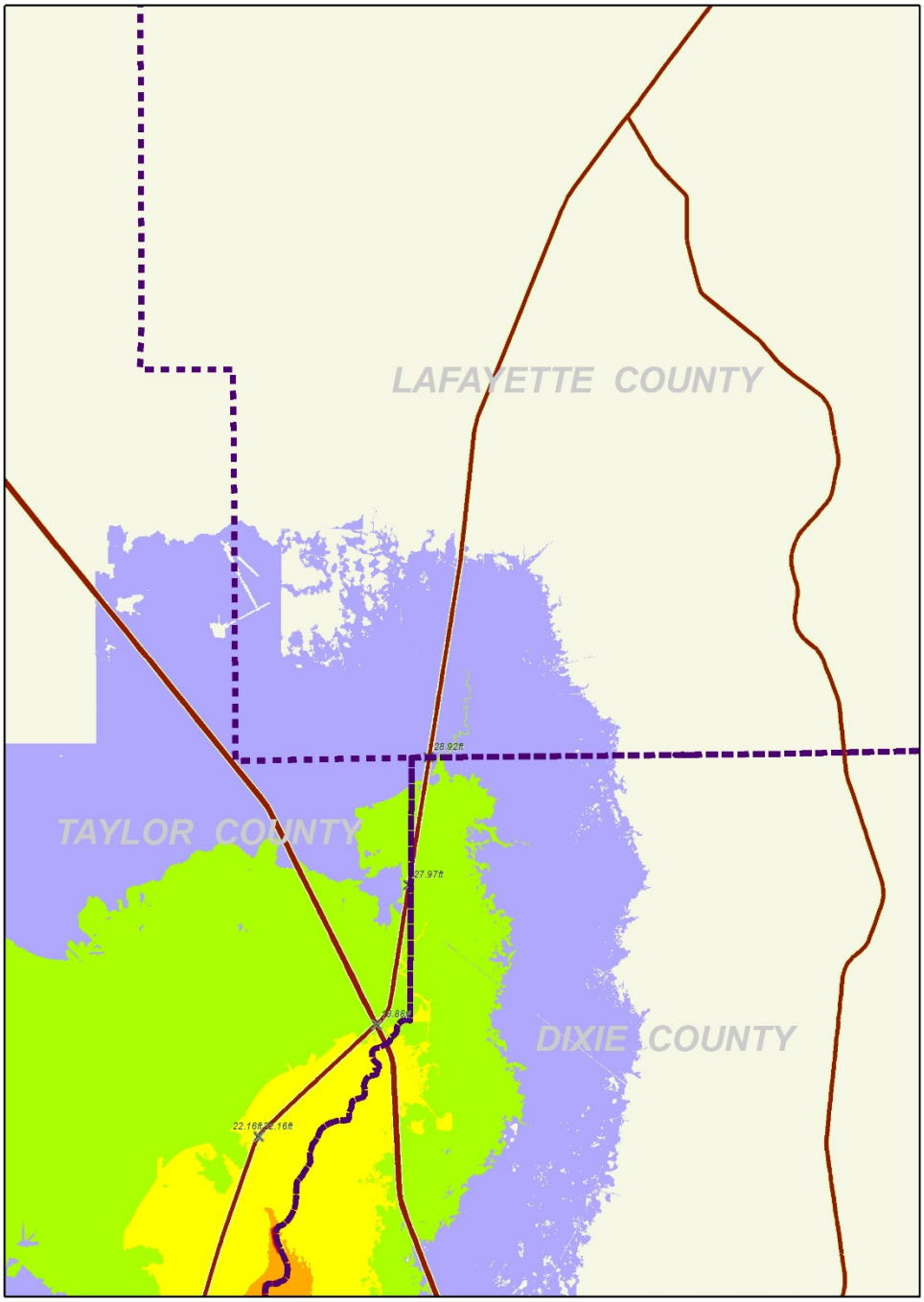
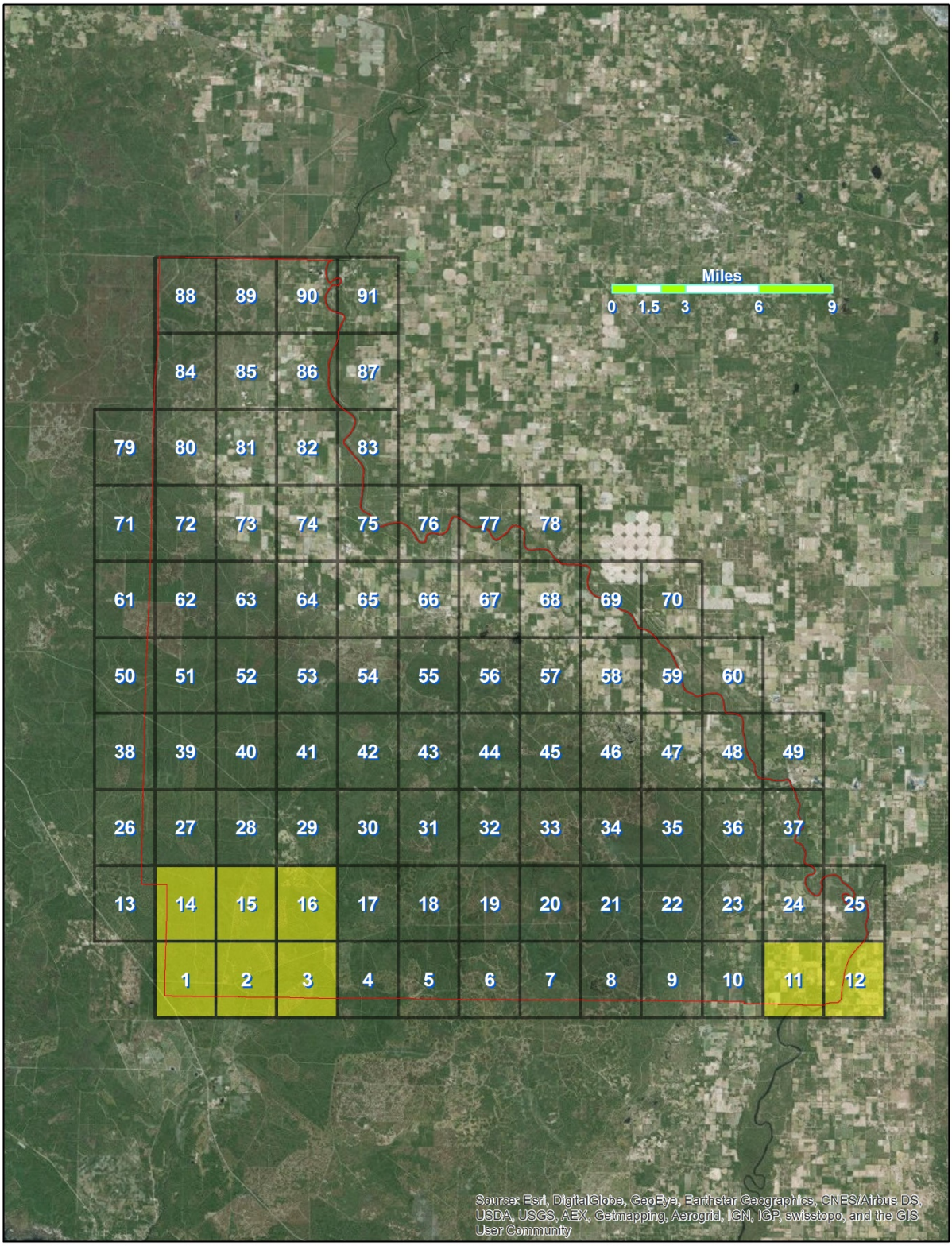


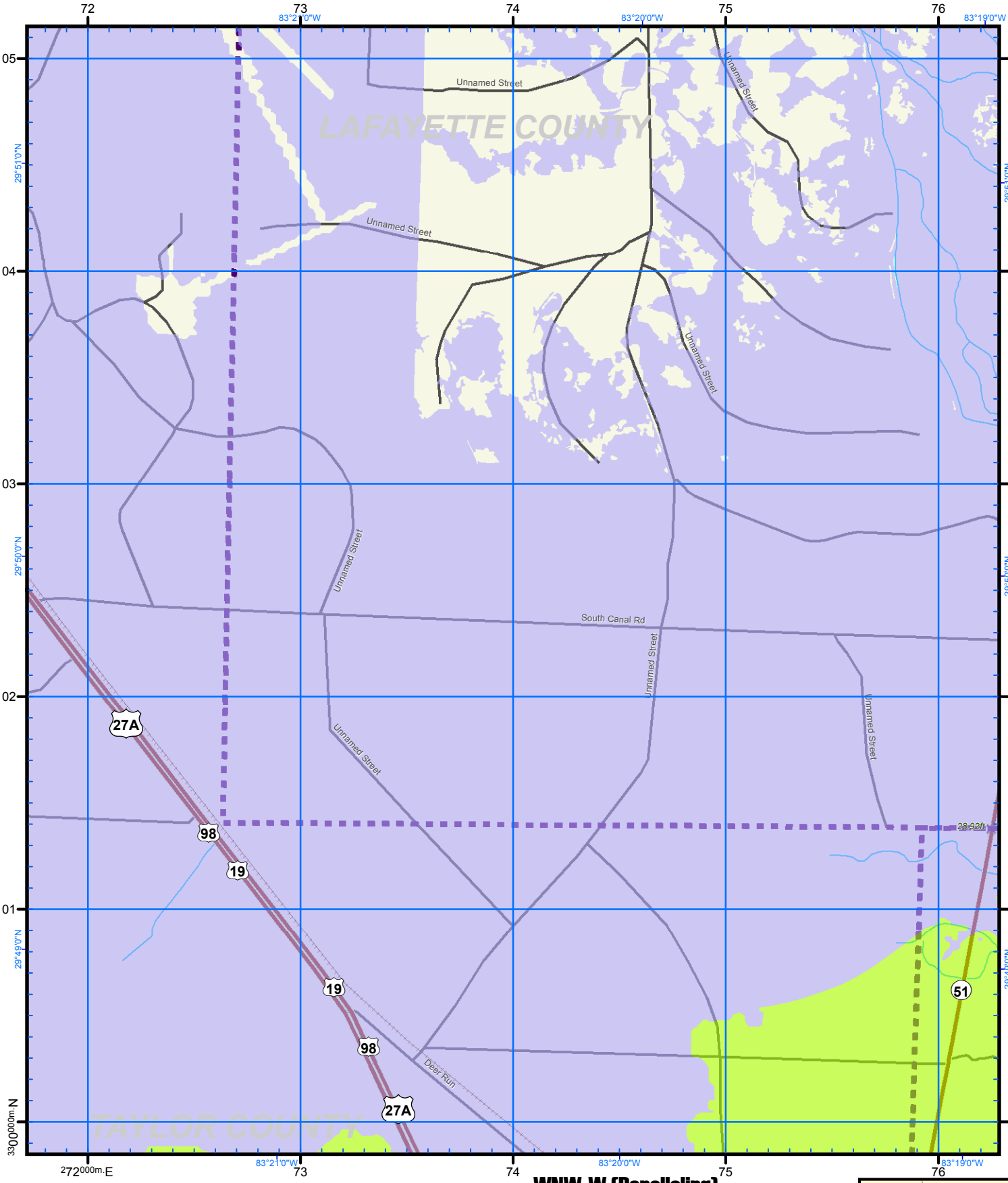
Table 1 Points of Reference, Surge Height and Inundation Depth Above Ground

Map ID	Name	Elevation	C1 Depth[1]	C2 Depth	C3 Depth	C4 Depth	C5 Depth	C1 Surge[2]	C2 Surge	C3 Surge	C4 Surge	C5 Surge
01	Lafayette	28.6	Dry	Dry	Dry	Dry	Dry	5.2	9.6	13.7	17.6	27.7
02	Lafayette	30.7	Dry	Dry	Dry	Dry	Dry	7.0	12.4	17.3	22.6	30.7

[1] Depth refers to the depth of inundation at the site (storm surge value minus the ground elevation)
[2] Surge refers to the storm surge value from the SLOSH Model

Figure 2 WNW-W (Paralleling) Atlas Map Index





WNW-W (Paralleling)

US National Grid
100,000-m Square ID
KP

Grid Zone Designation
17R

Datum = NAD 1983, 1,000-m USNG

GN

Notes:
1. Surge limits are based on still water storm tide height elevation above NAVD88 at high tide with no wave setup.
2. The Points of Reference are locations determined to be relevant to emergency management officials. The depths contained in the accompanying table were derived from Maximum of Maximums surge heights over LIDAR based digital elevation.

ATLAS LEGEND
- Evacuation Routes
- City Limits
- NHD Lakes
- Point of Reference

Storm Tide Category
- Level 1
- Level 2
- Level 3
- Level 4
- Level 5

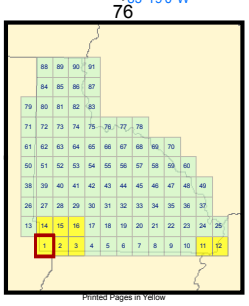
Directional Storm Tide
Lafayette County, 2015

Scale 1:24,000

Feet
0 2,000

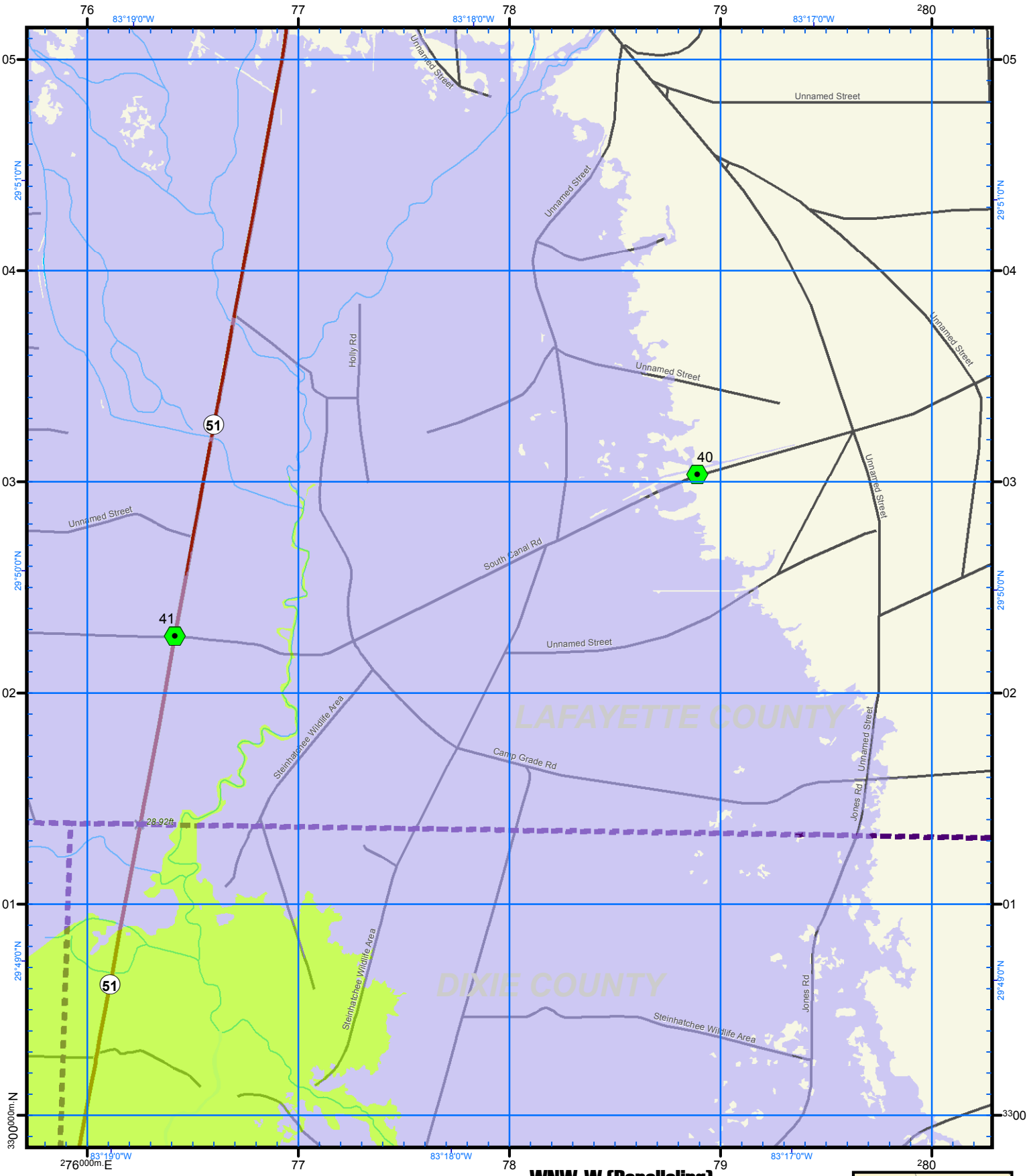
Map Plate **1**

Page 1 of 8



This map is for emergency planning purposes only. Hurricane evacuation decision-making and growth management implementation are local responsibilities. Please consult with local authorities.

Produced by the North Central Florida Regional Planning Council for the Florida Division of Emergency Management, 2015



WNW-W (Paralleling)

Directional Storm Tide
Lafayette County, 2015

Scale 1:24,000

Feet

0 2,000

Map Plate **2**

Page 2 of 8

US National Grid
100,000-m Square ID
KP

Grid Zone Designation
17R

Datum = NAD 1983, 1,000-m USNG

GN

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- City Limits
- NHD Lakes
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Storm Tide Category
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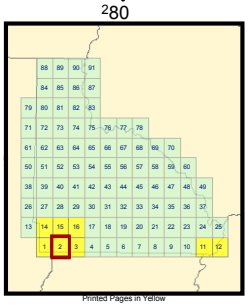

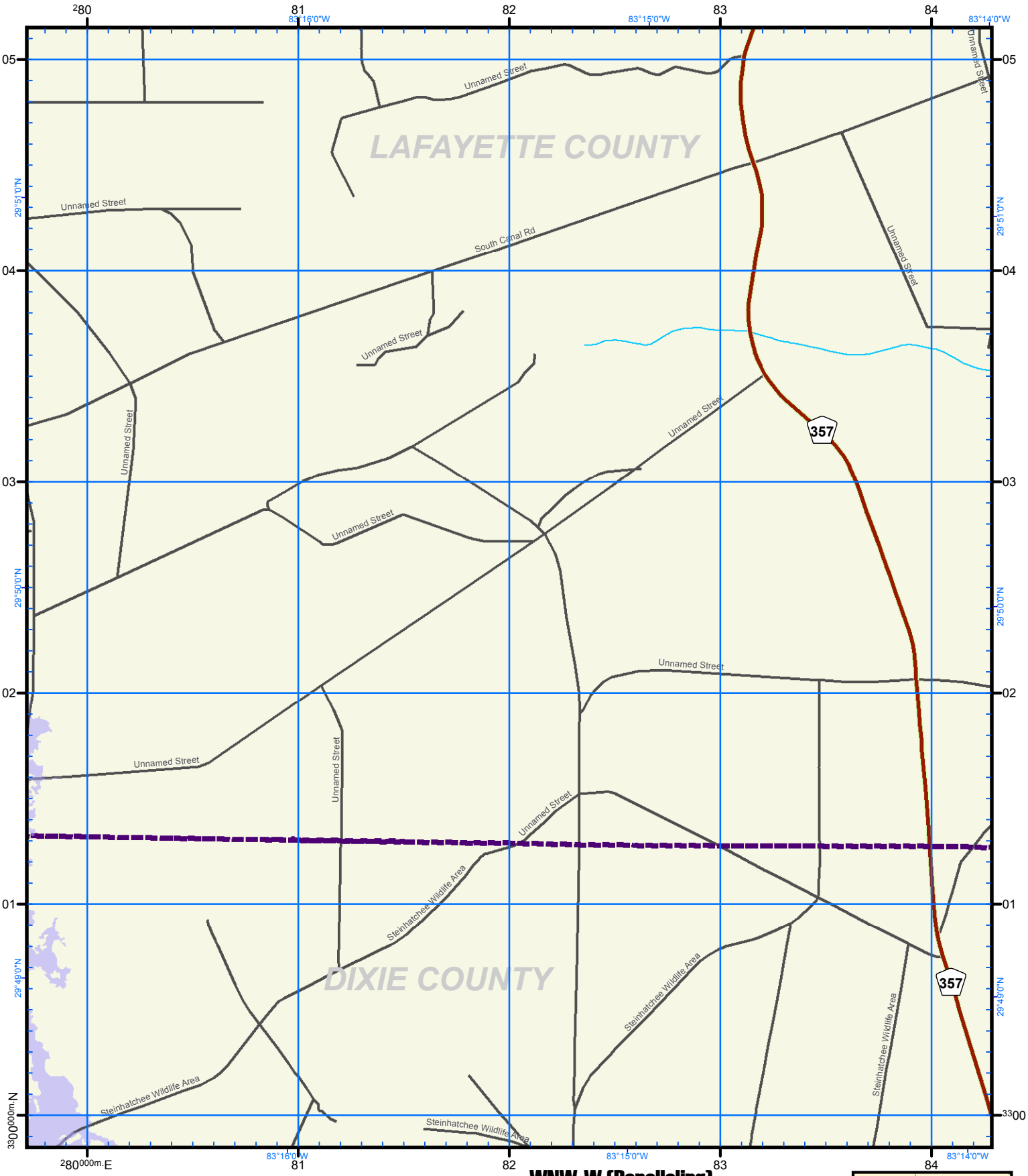

WNW-W (Paralleling)

US National Grid
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Grid Zone Designation
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ATLAS LEGEND
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- City Limits
- NHD Lakes
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Storm Tide Category
- Level 1
- Level 2
- Level 3
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- Level 5

Directional Storm Tide
Lafayette County, 2015

Scale 1:24,000

Feet
0 2,000

Map Plate **3**

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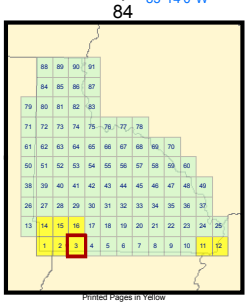

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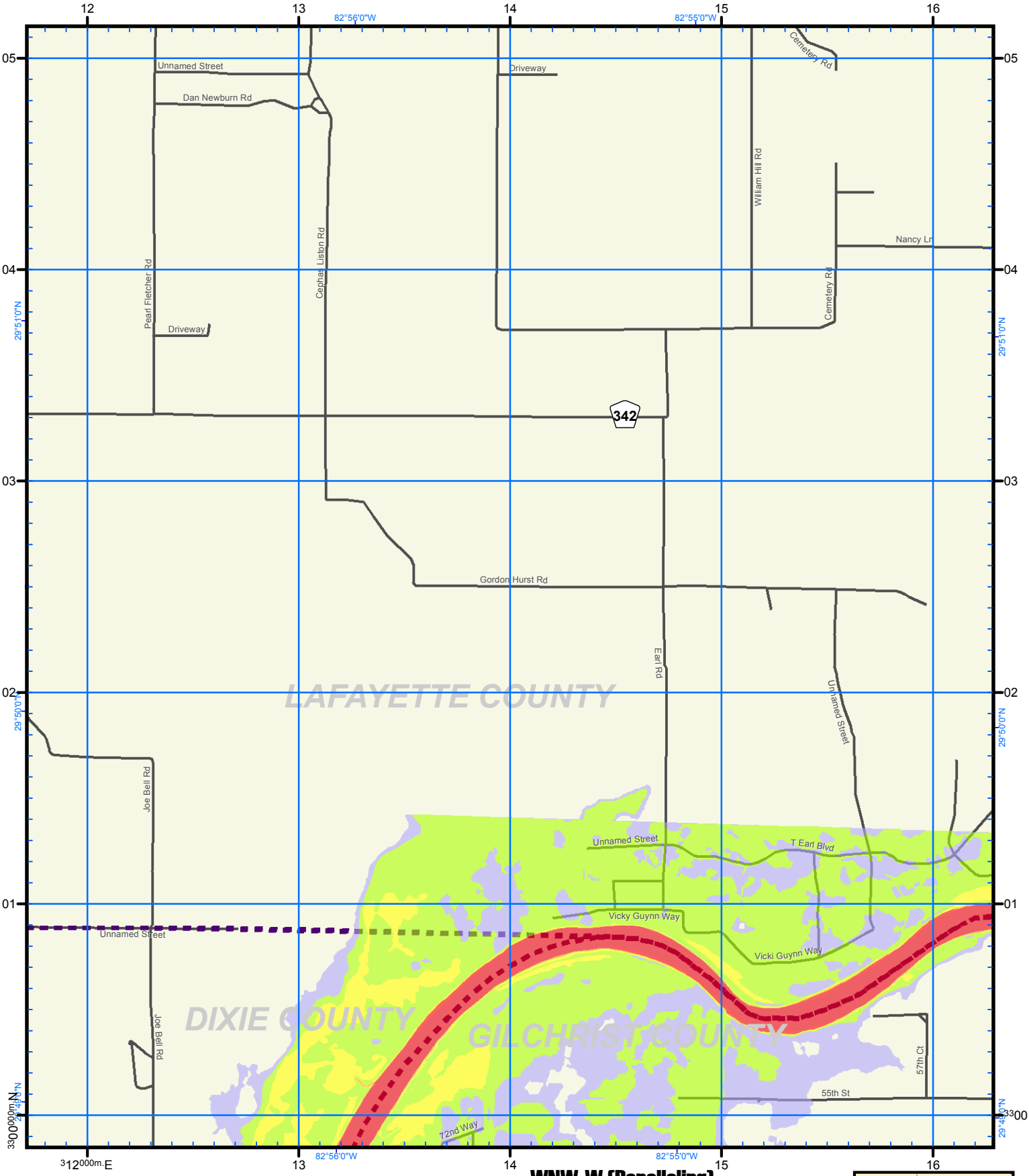

WNW-W (Paralleling)

US National Grid
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- Level 5

Directional Storm Tide
Lafayette County, 2015

Scale 1:24,000

Feet
0 2,000

Map Plate **11**

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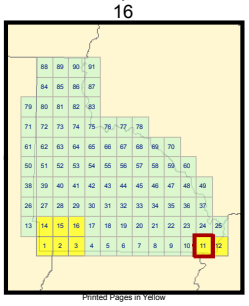

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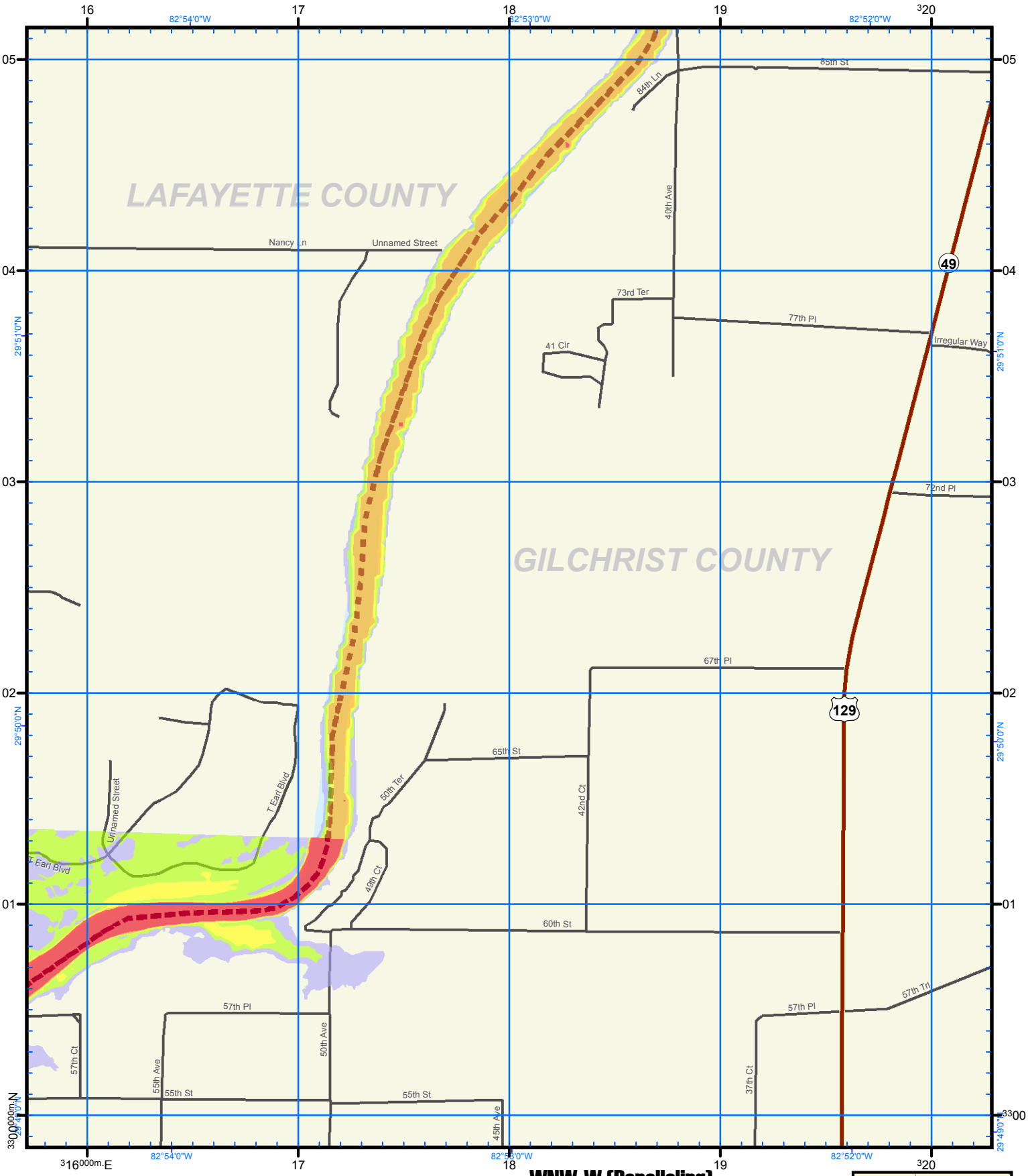

WNW-W (Paralleling)

US National Grid
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- Level 5

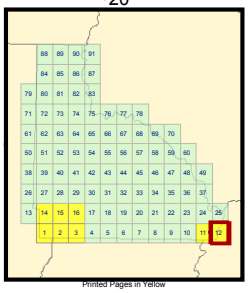
Directional Storm Tide
Lafayette County, 2015

Scale 1:24,000

Feet
0 2,000

Map Plate **12**

Page 5 of 8



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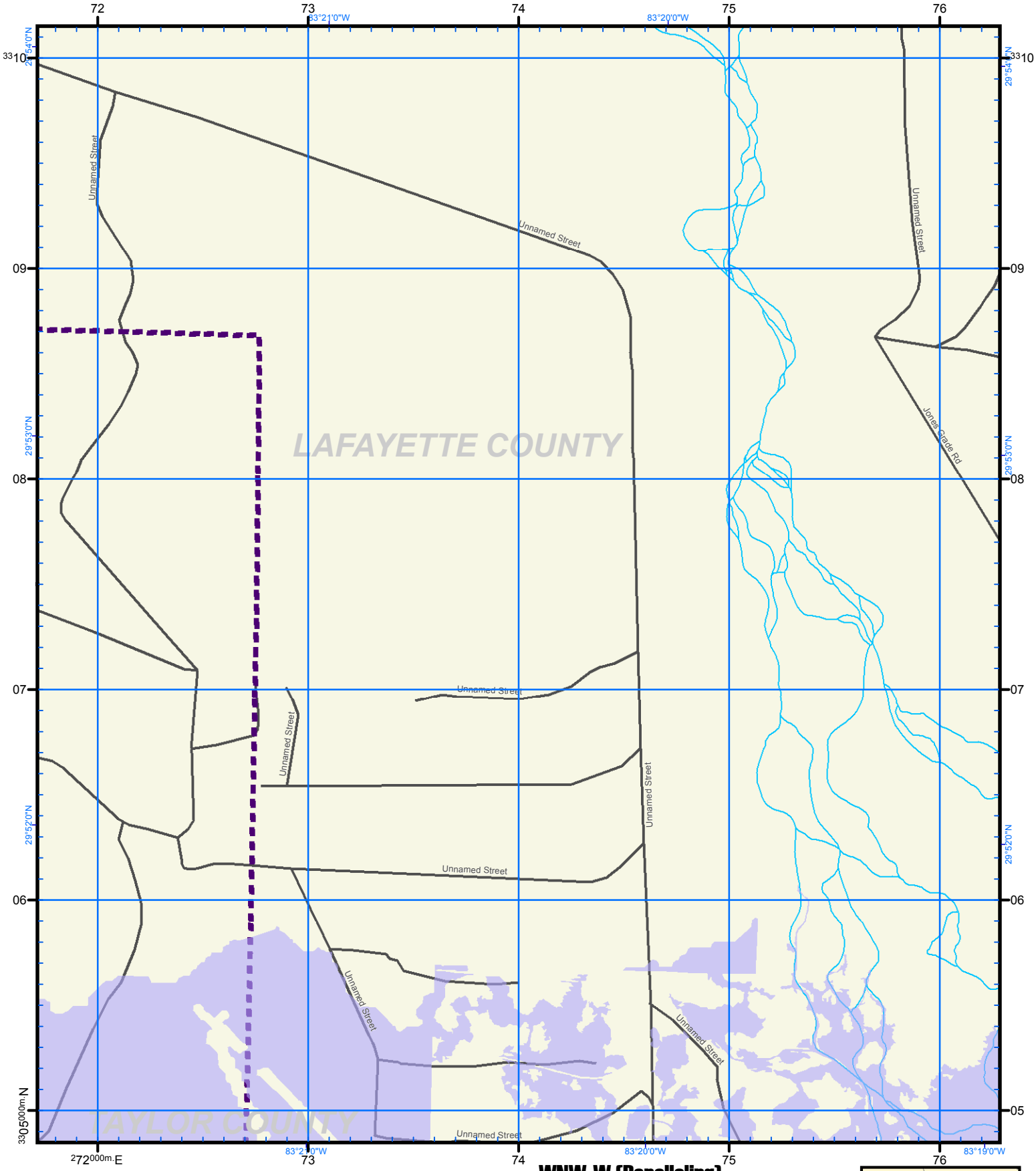

WNW-W (Paralleling)

US National Grid
100,000-m Square ID
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Grid Zone Designation
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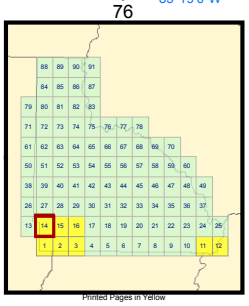
Directional Storm Tide
Lafayette County, 2015

Scale 1:24,000

Feet
0 2,000

Map Plate **14**



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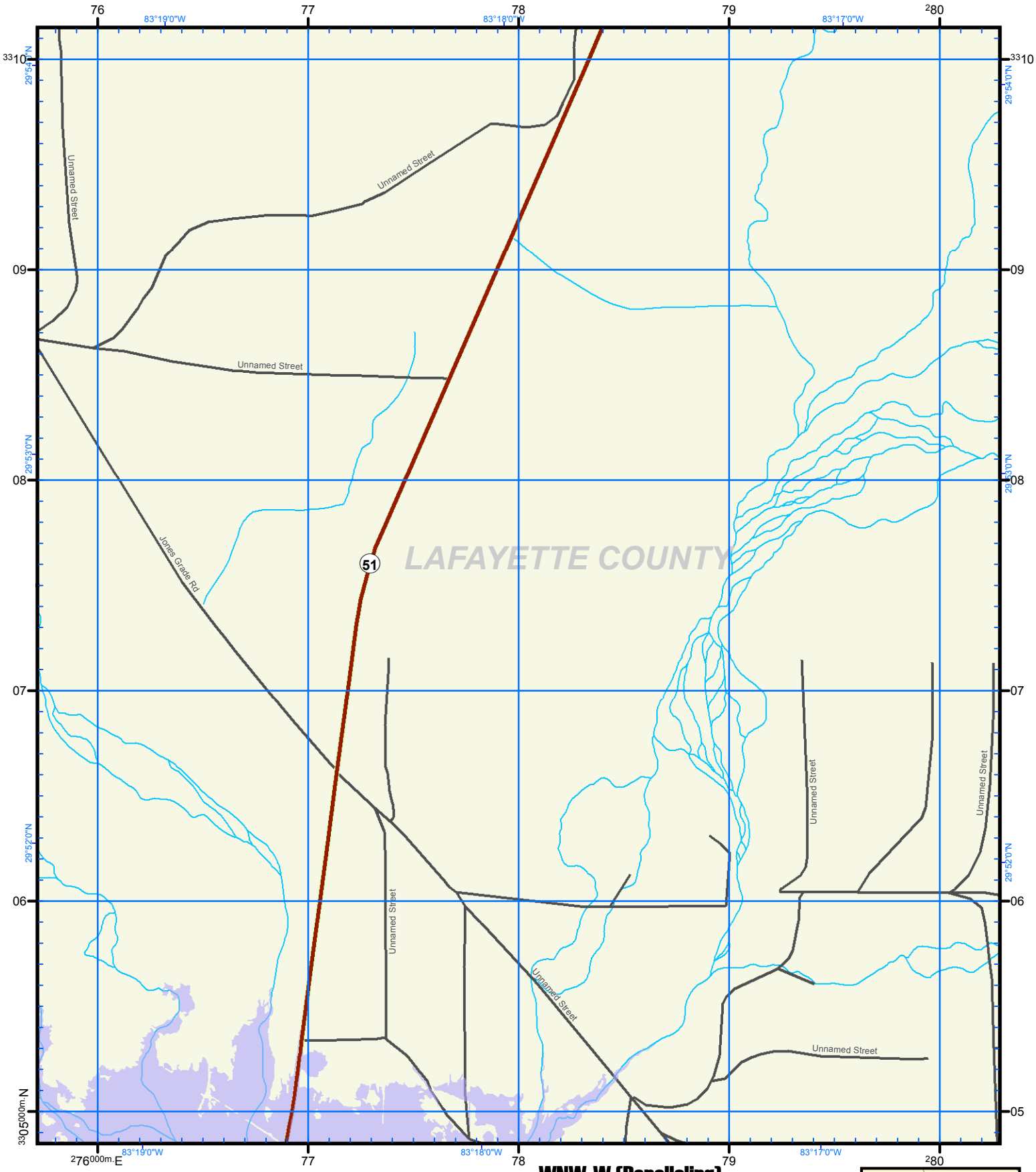

WNW-W (Paralleling)

Directional Storm Tide
Lafayette County, 2015

Scale 1:24,000

Feet

0 2,000

Map Plate **15**

Page 7 of 8

US National Grid
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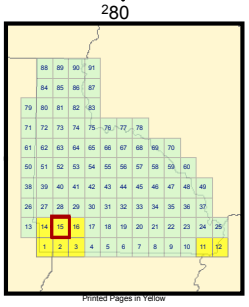

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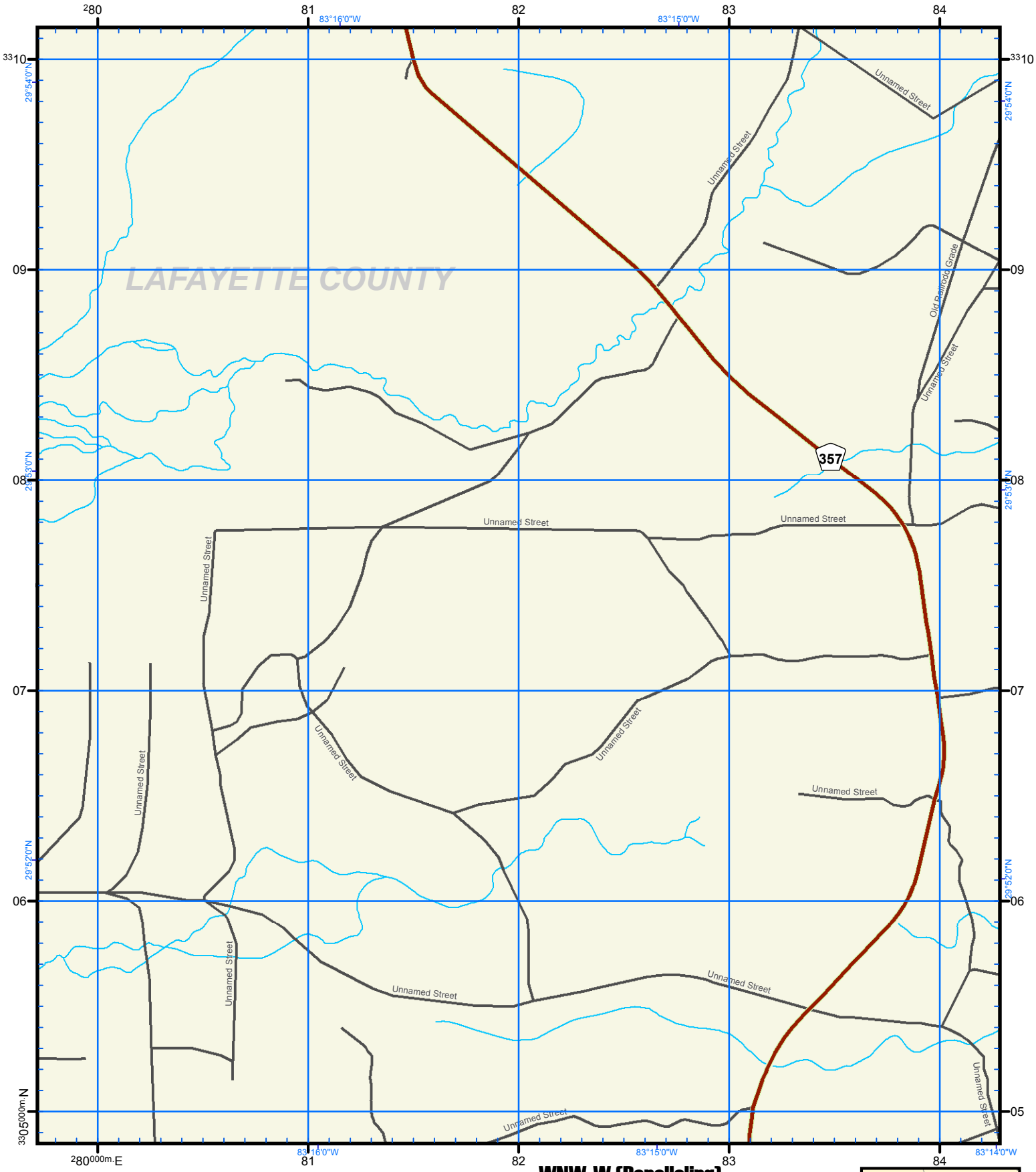

WNW-W (Paralleling)

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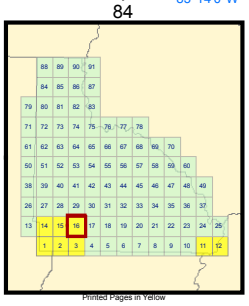
Scale 1:24,000

Feet
0 2,000

Map Plate **16**

Page 8 of 8



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North Central Florida Regional Planning Council

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** Kevin Parrish, Information Technology and Property Management Director

** Jean Strong, Executive Assistant to the Executive Director

** Tameshia Rochelle, Receptionist

* Primary Responsibility
** Secondary Responsibility

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