Appendix A

GEMA Worksheet #3a Inventory of Assets

Jurisdiction: Ben Hill County
Hazard: Hurricanes/Tropical Storms

Task A. Determine the proportion of buildings, the value of buildings, and the population in your community or state that are located in hazard areas.

	Number of Structures			Value of Structures			Number of People		
Type of Structure (Occupancy Class)	# in Community of State	# in Hazard Area	% in Hazard Area	$ in Community or State	$ in Hazard Area	% in Hazard Area	# in Community or State	# in Hazard Area	% in Hazard Area
Residential	8,521	8,521	100.000%	$ 424,651,736	$ 424,651,736	100.000%	16,996	16,996	100.000%
Commercial	686	686	100.000%	$ 130,721,638	$ 130,721,638	100.000%	0	0	0%
Industrial	36	36	100.000%	$ 63,500,491	$ 63,500,491		0	0	0%
Agricultural	1,387	1,387	100.000%	$ 308,109,007	$ 308,109,007	100.000%	0	0	0%
Religious/ Non-profit	252	252	100.000%	$ 99,208,370	$ 99,208,370	100.000%	0	0	0%
Government	394	394	100.000%	$ 52,725,681	$ 52,725,681	100.000%	0	0	0%
Education	26	26	100.000%	$ 78,586,824	$ 78,586,824	100.000%	0	0	0%
Utilities	119	119		$ 1,067,841,013	$ 1,067,841,013		0	0	0%
Total	11,421	11,421		$ 2,225,344,760	$ 2,225,344,760		16,996	16,996	

Task B. Determine whether (and where) you want to collect additional inventory data.

	Y	N
1. Do you know where the greatest damages may occur in your area?	Y	
2. Do you know whether your critical facilities will be operational after a hazard event?	Y	
3. Is there enough data to determine which assets are subject to the greatest potential damages?	Y	
4. Is there enough data to determine whether significant elements of the community are vulnerable to potential hazards?	Y	
5. Is there enough data to determine whether certain areas of historic, environmental, political, or cultural significance are vulnerable to potential hazards?	Y	
6. Is there concern about a particular hazard because of its severity, repetitiveness, or likelihood of occurrence?	N	
7. Is additional data needed to justify the expenditure of community or state funds for mitigation initiatives?	N	

GEMA Worksheet #3a Inventory of Assets

Jurisdiction: Ben Hill County
Hazard: Tornadoes

Task A. Determine the proportion of buildings, the value of buildings, and the population in your community or state that are located in hazard areas.

	Number of Structures			Value of Structures			Number of People		
Type of Structure (Occupancy Class)	# in Community of State	# in Hazard Area	% in Hazard Area	$ in Community or State	$ in Hazard Area	% in Hazard Area	# in Community or State	# in Hazard Area	% in Hazard Area
Residential	8,521	8,521	100.000%	$ 424,651,736	$ 424,651,736	100.000%	16,996	16,996	100.000%
Commercial	686	686	100.000%	$ 130,721,638	$ 130,721,638	100.000%	0	0	0%
Industrial	36	36	100.000%	$ 63,500,491	$ 63,500,491		0	0	0%
Agricultural	1,387	1,387	100.000%	$ 308,109,007	$ 308,109,007	100.000%	0	0	0%
Religious/ Non-profit	252	252	100.000%	$ 99,208,370	$ 99,208,370	100.000%	0	0	0%
Government	394	394	100.000%	$ 52,725,681	$ 52,725,681	100.000%	0	0	0%
Education	26	26	100.000%	$ 78,586,824	$ 78,586,824	100.000%	0	0	0%
Utilities	119	119		$ 1,067,841,013	$ 1,067,841,013		0	0	0%
Total	11,421	11,421		$ 2,225,344,760	$ 2,225,344,760		16,996	16,996	

Task B. Determine whether (and where) you want to collect additional inventory data.

	Y	N
1. Do you know where the greatest damages may occur in your area?	Y	
2. Do you know whether your critical facilities will be operational after a hazard event?	Y	
3. Is there enough data to determine which assets are subject to the greatest potential damages?	Y	
4. Is there enough data to determine whether significant elements of the community are vulnerable to potential hazards?	Y	
5. Is there enough data to determine whether certain areas of historic, environmental, political, or cultural significance are vulnerable to potential hazards?	Y	
6. Is there concern about a particular hazard because of its severity, repetitiveness, or likelihood of occurrence?	N	
7. Is additional data needed to justify the expenditure of community or state funds for mitigation initiatives?	N	

GEMA Worksheet #3a Inventory of Assets

Jurisdiction: Ben Hill County
Hazard: Floods

Task A. Determine the proportion of buildings, the value of buildings, and the population in your community or state that are located in hazard areas.

	Number of Structures			Value of Structures			Number of People		
Type of Structure (Occupancy Class)	# in Community of State	# in Hazard Area	% in Hazard Area	$ in Community or State	$ in Hazard Area	% in Hazard Area	# in Community or State	# in Hazard Area	% in Hazard Area
Residential	8,521	229	2.687%	$ 424,651,736	$ 10,932,478	2.574%	16,996	457	2.687%
Commercial	686	52	7.580%	$ 130,721,638	$ 15,670,072	11.987%	0	0	0%
Industrial	36	1	2.778%	$ 63,500,491	$ -		0	0	0%
Agricultural	1,387	47	3.389%	$ 308,109,007	$ 17,360,131	5.634%	0	0	0%
Religious/ Non-profit	252	19	7.540%	$ 99,208,370	$ 12,631,630	12.732%	0	0	0%
Government	394	56	14.213%	$ 52,725,681	$ 7,156,661	13.573%	0	0	0%
Education	26	3	11.538%	$ 78,586,824	$ 2,995,392	3.812%	0	0	0%
Utilities	119	2	1.681%	$ 1,067,841,013	$ 338,430	0.032%	0	0	0%
Total	11,421	409		$ 2,225,344,760	$ 67,084,794		16,996	457	

Task B. Determine whether (and where) you want to collect additional inventory data.

	Y	**N**
1. Do you know where the greatest damages may occur in your area?	Y	
2. Do you know whether your critical facilities will be operational after a hazard event?	Y	
3. Is there enough data to determine which assets are subject to the greatest potential damages?	Y	
4. Is there enough data to determine whether significant elements of the community are vulnerable to potential hazards?	Y	
5. Is there enough data to determine whether certain areas of historic, environmental, political, or cultural significance are vulnerable to potential hazards?	Y	
6. Is there concern about a particular hazard because of its severity, repetitiveness, or likelihood of occurrence?	N	
7. Is additional data needed to justify the expenditure of community or state funds for mitigation initiatives?	N	

GEMA Worksheet #3a Inventory of Assets

Jurisdiction: Ben Hill County
Hazard: Lightning

Task A. Determine the proportion of buildings, the value of buildings, and the population in your community or state that are located in hazard areas.

	Number of Structures			Value of Structures			Number of People		
Type of Structure (Occupancy Class)	# in Community of State	# in Hazard Area	% in Hazard Area	$ in Community or State	$ in Hazard Area	% in Hazard Area	# in Community or State	# in Hazard Area	% in Hazard Area
Residential	8,521	8,521	100.000%	$ 424,651,736	$ 424,651,736	100.000%	16,996	16,996	100.000%
Commercial	686	686	100.000%	$ 130,721,638	$ 130,721,638	100.000%	0	0	0%
Industrial	36	36	100.000%	$ 63,500,491	$ 63,500,491		0	0	0%
Agricultural	1,387	1,387	100.000%	$ 308,109,007	$ 308,109,007	100.000%	0	0	0%
Religious/ Non-profit	252	252	100.000%	$ 99,208,370	$ 99,208,370	100.000%	0	0	0%
Government	394	394	100.000%	$ 52,725,681	$ 52,725,681	100.000%	0	0	0%
Education	26	26	100.000%	$ 78,586,824	$ 78,586,824	100.000%	0	0	0%
Utilities	119	119		$ 1,067,841,013	$ 1,067,841,013		0	0	0%
Total	11,421	11,421		$ 2,225,344,760	$ 2,225,344,760		16,996	16,996	

Task B. Determine whether (and where) you want to collect additional inventory data.

	Y	N
1. Do you know where the greatest damages may occur in your area?	Y	
2. Do you know whether your critical facilities will be operational after a hazard event?	Y	
3. Is there enough data to determine which assets are subject to the greatest potential damages?	Y	
4. Is there enough data to determine whether significant elements of the community are vulnerable to potential hazards?	Y	
5. Is there enough data to determine whether certain areas of historic, environmental, political, or cultural significance are vulnerable to potential hazards?	Y	
6. Is there concern about a particular hazard because of its severity, repetitiveness, or likelihood of occurrence?	N	
7. Is additional data needed to justify the expenditure of community or state funds for mitigation initiatives?	N	

GEMA Worksheet #3a Inventory of Assets

Jurisdiction: Ben Hill County
Hazard: Wildfires

Task A. Determine the proportion of buildings, the value of buildings, and the population in your community or state that are located in hazard areas.

	Number of Structures			Value of Structures			Number of People		
Type of Structure (Occupancy Class)	# in Community of State	# in Hazard Area	% in Hazard Area	$ in Community or State	$ in Hazard Area	% in Hazard Area	# in Community or State	# in Hazard Area	% in Hazard Area
Residential	8,521	8,521	100.000%	$ 424,651,736	$ 424,651,736	100.000%	16,996	16,996	100.000%
Commercial	686	686	100.000%	$ 130,721,638	$ 130,721,638	100.000%	0	0	0%
Industrial	36	36	100.000%	$ 63,500,491	$ 63,500,491		0	0	0%
Agricultural	1,387	1,387	100.000%	$ 308,109,007	$ 308,109,007	100.000%	0	0	0%
Religious/ Non-profit	252	252	100.000%	$ 99,208,370	$ 99,208,370	100.000%	0	0	0%
Government	394	394	100.000%	$ 52,725,681	$ 52,725,681	100.000%	0	0	0%
Education	26	26	100.000%	$ 78,586,824	$ 78,586,824	100.000%	0	0	0%
Utilities	119	119		$ 1,067,841,013	$ 1,067,841,013		0	0	0%
Total	11,421	11,421		$ 2,225,344,760	$ 2,225,344,760		16,996	16,996	

Task B. Determine whether (and where) you want to collect additional inventory data.

	Y	N
1. Do you know where the greatest damages may occur in your area?	Y	
2. Do you know whether your critical facilities will be operational after a hazard event?	Y	
3. Is there enough data to determine which assets are subject to the greatest potential damages?	Y	
4. Is there enough data to determine whether significant elements of the community are vulnerable to potential hazards?	Y	
5. Is there enough data to determine whether certain areas of historic, environmental, political, or cultural significance are vulnerable to potential hazards?	Y	
6. Is there concern about a particular hazard because of its severity, repetitiveness, or likelihood of occurrence?	N	
7. Is additional data needed to justify the expenditure of community or state funds for mitigation initiatives?	N	

GEMA Worksheet #3a Inventory of Assets

Jurisdiction: Ben Hill County
Hazard: Extreme Heat

Task A. Determine the proportion of buildings, the value of buildings, and the population in your community or state that are located in hazard areas.

	Number of Structures			Value of Structures			Number of People		
Type of Structure (Occupancy Class)	# in Community of State	# in Hazard Area	% in Hazard Area	$ in Community or State	$ in Hazard Area	% in Hazard Area	# in Community or State	# in Hazard Area	% in Hazard Area
Residential	8,521	8,521	100.000%	$ 424,651,736	$ 424,651,736	100.000%	16,996	16,996	100.000%
Commercial	686	686	100.000%	$ 130,721,638	$ 130,721,638	100.000%	0	0	0%
Industrial	36	36	100.000%	$ 63,500,491	$ 63,500,491		0	0	0%
Agricultural	1,387	1,387	100.000%	$ 308,109,007	$ 308,109,007	100.000%	0	0	0%
Religious/ Non-profit	252	252	100.000%	$ 99,208,370	$ 99,208,370	100.000%	0	0	0%
Government	394	394	100.000%	$ 52,725,681	$ 52,725,681	100.000%	0	0	0%
Education	26	26	100.000%	$ 78,586,824	$ 78,586,824	100.000%	0	0	0%
Utilities	119	119		$ 1,067,841,013	$ 1,067,841,013		0	0	0%
Total	11,421	11,421		$ 2,225,344,760	$ 2,225,344,760		16,996	16,996	

Task B. Determine whether (and where) you want to collect additional inventory data.

	Y	N
1. Do you know where the greatest damages may occur in your area?	Y	
2. Do you know whether your critical facilities will be operational after a hazard event?	Y	
3. Is there enough data to determine which assets are subject to the greatest potential damages?	Y	
4. Is there enough data to determine whether significant elements of the community are vulnerable to potential hazards?	Y	
5. Is there enough data to determine whether certain areas of historic, environmental, political, or cultural significance are vulnerable to potential hazards?	Y	
6. Is there concern about a particular hazard because of its severity, repetitiveness, or likelihood of occurrence?	N	
7. Is additional data needed to justify the expenditure of community or state funds for mitigation initiatives?	N	

GEMA Worksheet #3a Inventory of Assets

Jurisdiction: Ben Hill County
Hazard: Drought

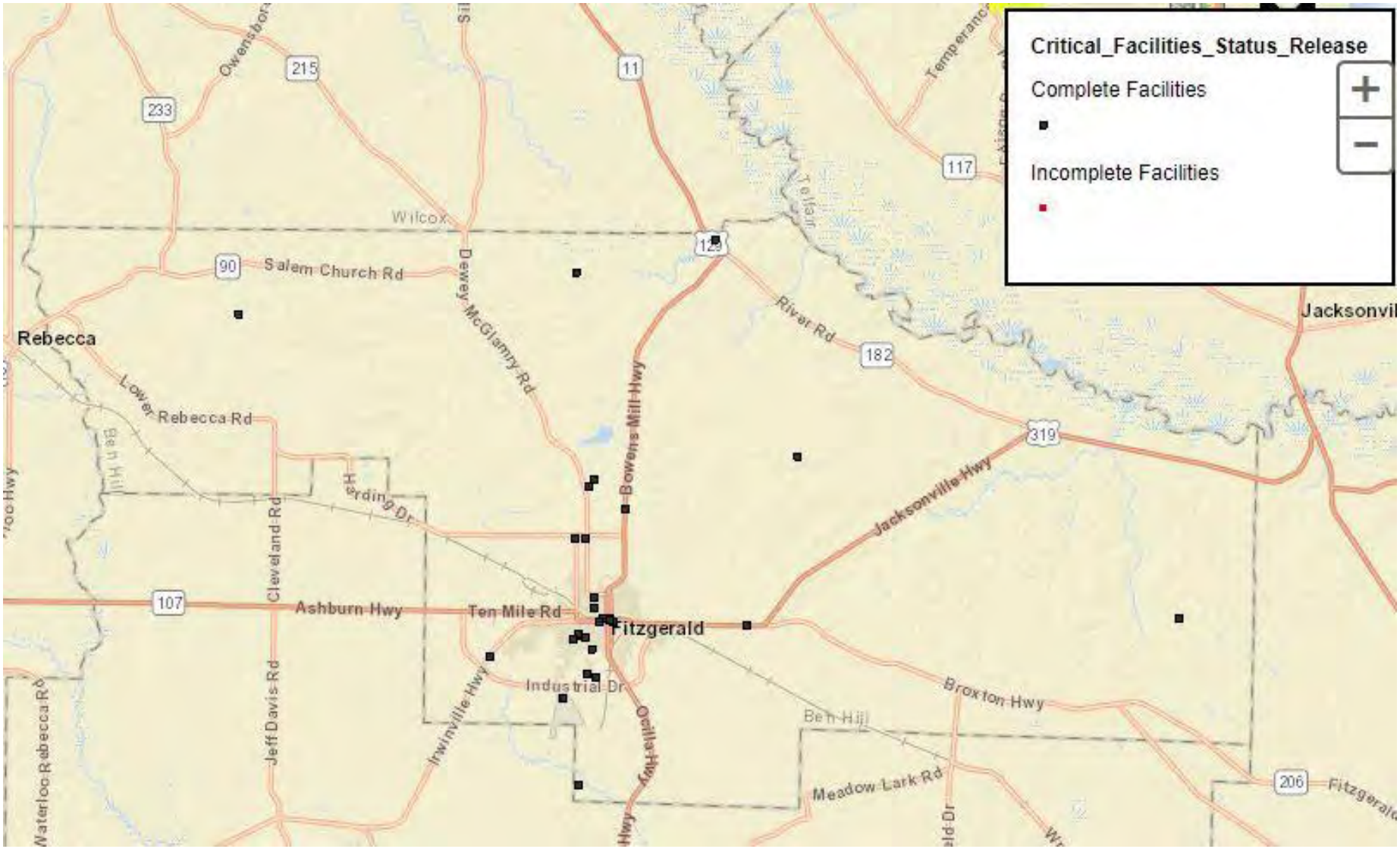
Task A. Determine the proportion of buildings, the value of buildings, and the population in your community or state that are located in hazard areas.

	Number of Structures			Value of Structures			Number of People		
Type of Structure (Occupancy Class)	# in Community of State	# in Hazard Area	% in Hazard Area	$ in Community or State	$ in Hazard Area	% in Hazard Area	# in Community or State	# in Hazard Area	% in Hazard Area
Residential	8,521	8,521	100.000%	$ 424,651,736	$ 424,651,736	100.000%	16,996	16,996	100.000%
Commercial	686	686	100.000%	$ 130,721,638	$ 130,721,638	100.000%	0	0	0%
Industrial	36	36	100.000%	$ 63,500,491	$ 63,500,491		0	0	0%
Agricultural	1,387	1,387	100.000%	$ 308,109,007	$ 308,109,007	100.000%	0	0	0%
Religious/ Non-profit	252	252	100.000%	$ 99,208,370	$ 99,208,370	100.000%	0	0	0%
Government	394	394	100.000%	$ 52,725,681	$ 52,725,681	100.000%	0	0	0%
Education	26	26	100.000%	$ 78,586,824	$ 78,586,824	100.000%	0	0	0%
Utilities	119	119		$ 1,067,841,013	$ 1,067,841,013		0	0	0%
Total	11,421	11,421		$ 2,225,344,760	$ 2,225,344,760		16,996	16,996	

Task B. Determine whether (and where) you want to collect additional inventory data.

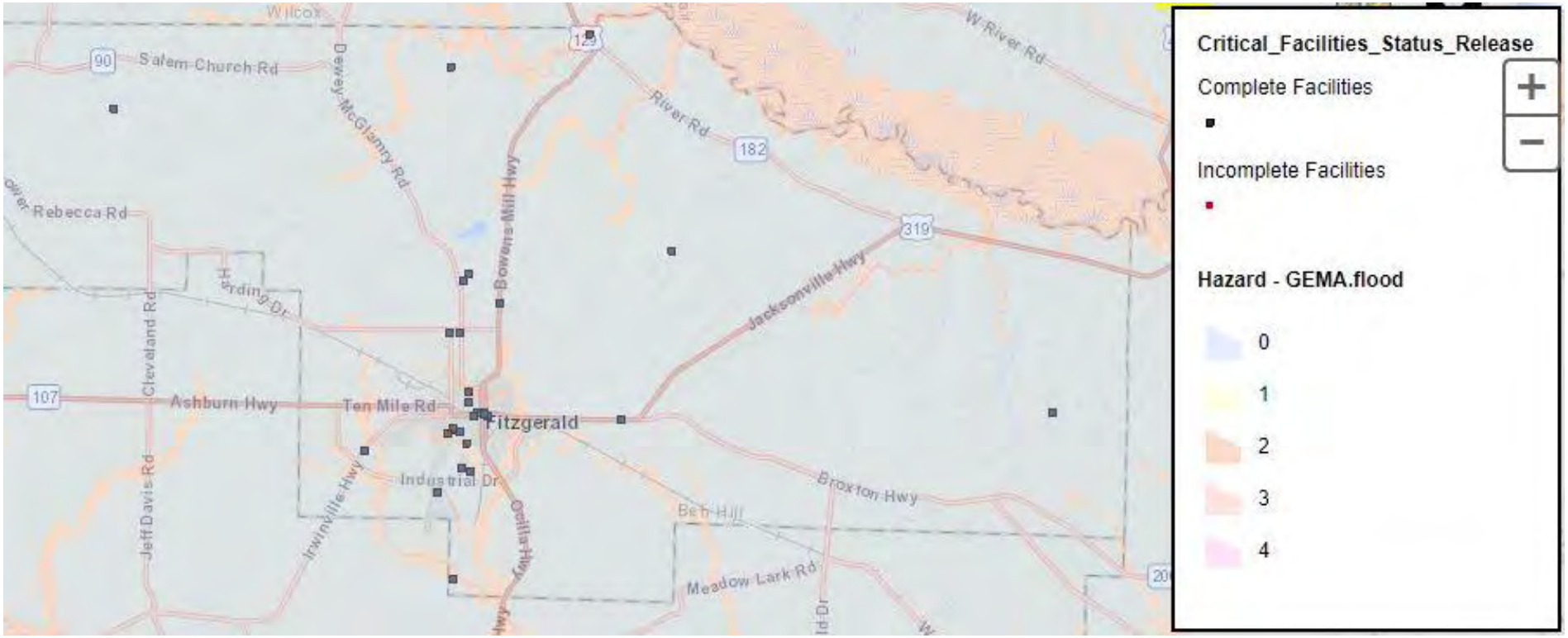
	Y	**N**
1. Do you know where the greatest damages may occur in your area?	Y	
2. Do you know whether your critical facilities will be operational after a hazard event?	Y	
3. Is there enough data to determine which assets are subject to the greatest potential damages?	Y	
4. Is there enough data to determine whether significant elements of the community are vulnerable to potential hazards?	Y	
5. Is there enough data to determine whether certain areas of historic, environmental, political, or cultural significance are vulnerable to potential hazards?	Y	
6. Is there concern about a particular hazard because of its severity, repetitiveness, or likelihood of occurrence?	N	
7. Is additional data needed to justify the expenditure of community or state funds for mitigation initiatives?	N	

Critical Facilities and Hazard Potential for Hazards Affecting the Entire Community (Hurricanes/Tropical Storms, Tornadoes, Lightning, Extreme Heat, Drought)



Critical Facilities and Wind Zones

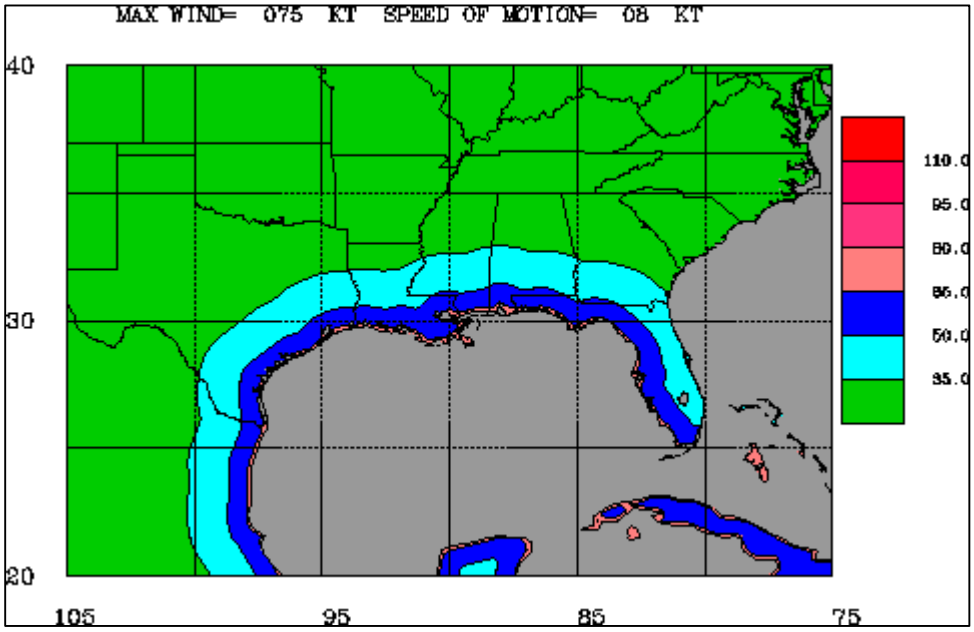
Critical Facilities and Flood Zones



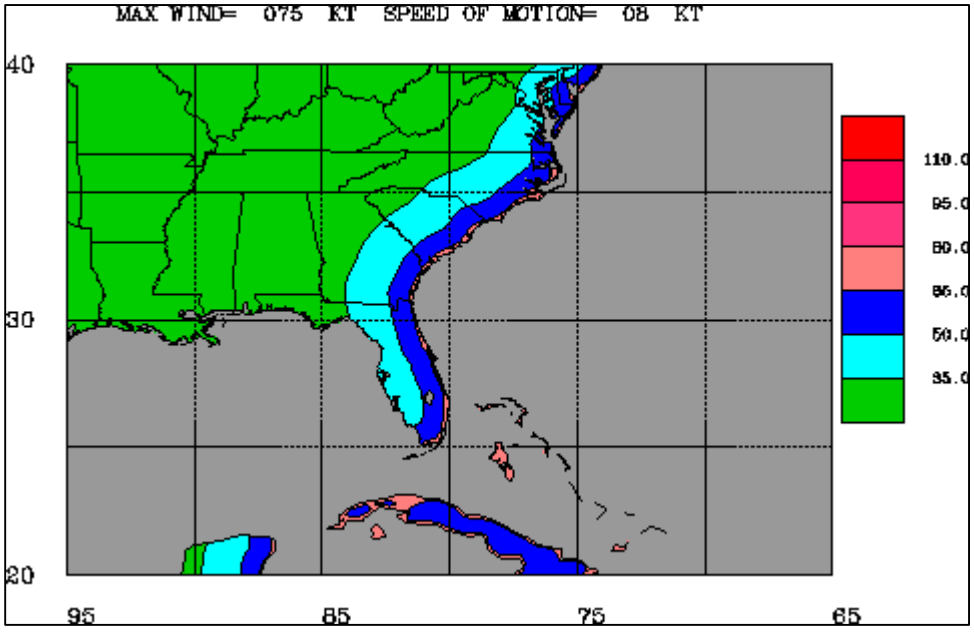
Examples of the Maximum Envelope of Wind
(Source: NOAA. http://www.nhc.noaa.gov/aboutmeow.shtml)

Mild case (Category 1, 8 knots forward motion)

Gulf Coast Region



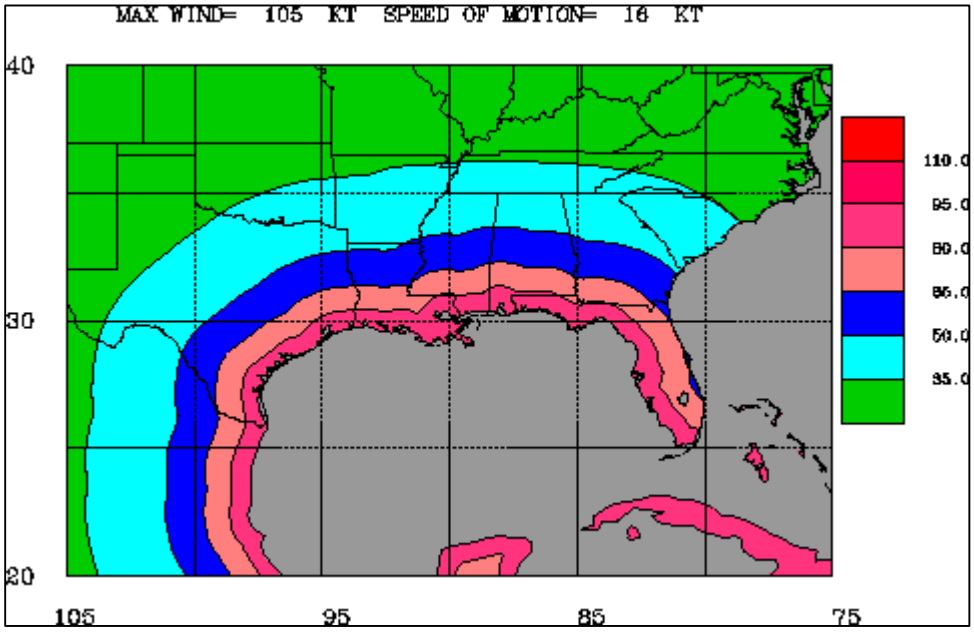
East Coast Region



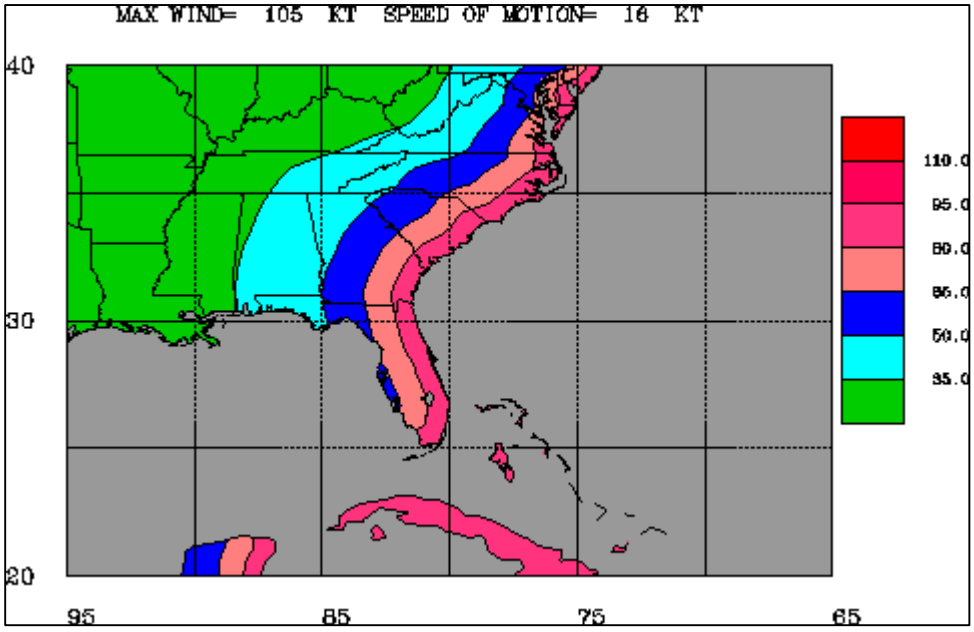
Examples of the Maximum Envelope of Wind
(Source: NOAA. http://www.nhc.noaa.gov/aboutmeow.shtml)

Mid-range case (Category 3, 16 knots forward motion)

Gulf Coast Region



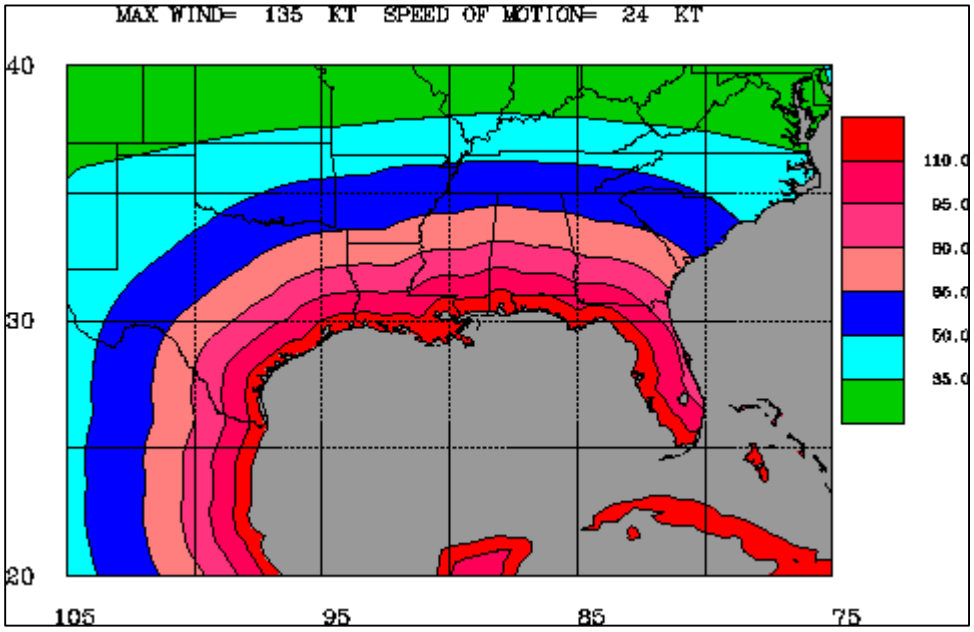
East Coast Region



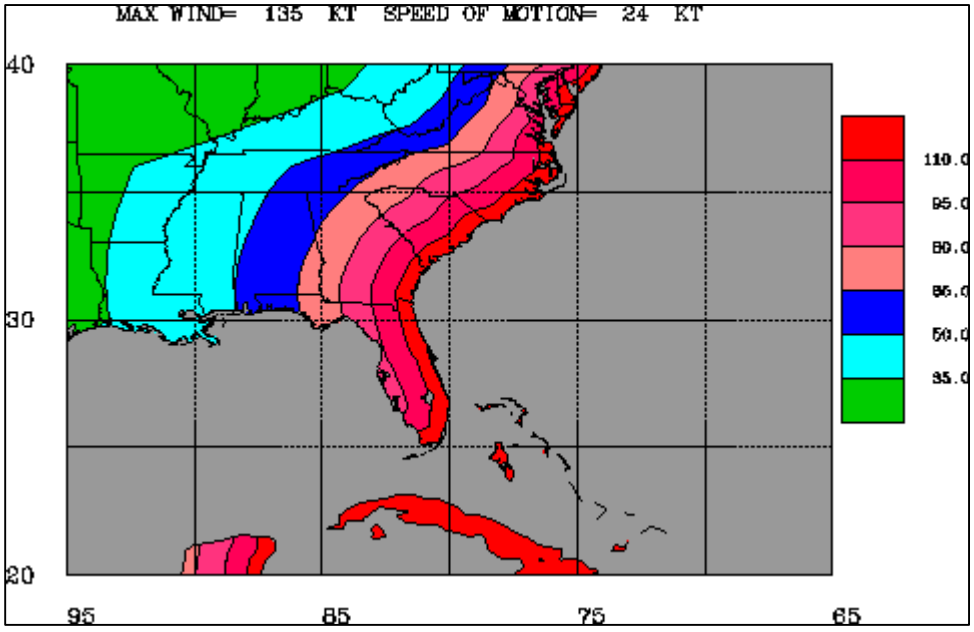
Examples of the Maximum Envelope of Wind
(Source: NOAA. http://www.nhc.noaa.gov/aboutmeow.shtml)

Worst case (Category 5, 24 knots forward motion)

Gulf Coast Region



East Coast Region



Legend

Tornado Tracks

EF5

EF5 Tornado

EF5 Tornado Track

EF4

EF4 Tornado

EF4 Tornado Track

EF3

EF3 Tornado

EF3 Tornado Track

EF2

EF2 Tornado

EF2 Tornado Track

EF1

EF1 Tornado

EF1 Tornado Track

EF0

EF0 Tornado

EF0 Tornado Track

Data source:
https://www.arcgis.com/home/webmap/viewer.html?useExisting=1&layers=ae96a522f2824552b20cdcf53a30d3c1

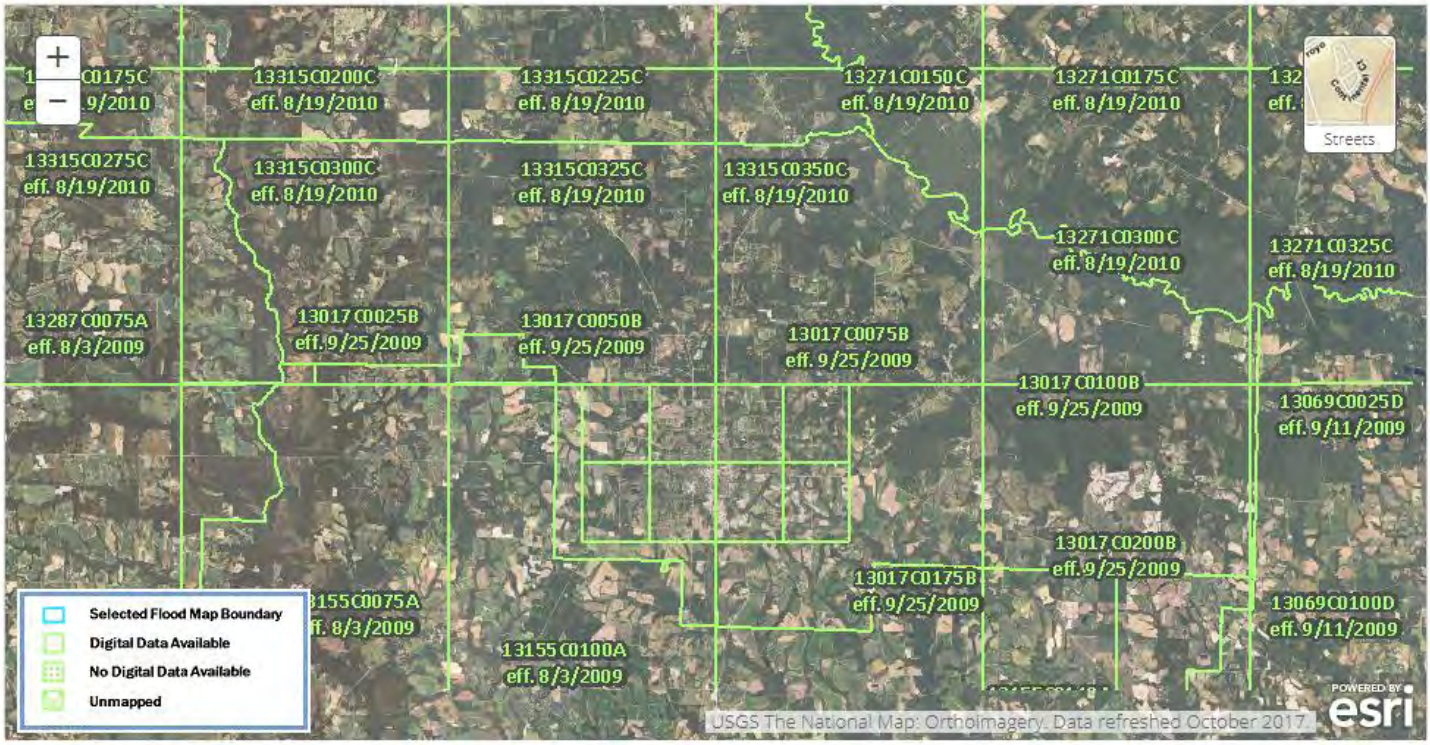
These map layers, derived from National Oceanic and Atmospheric Administration data, portray tornadoes and available tracks from 1950 to 2014

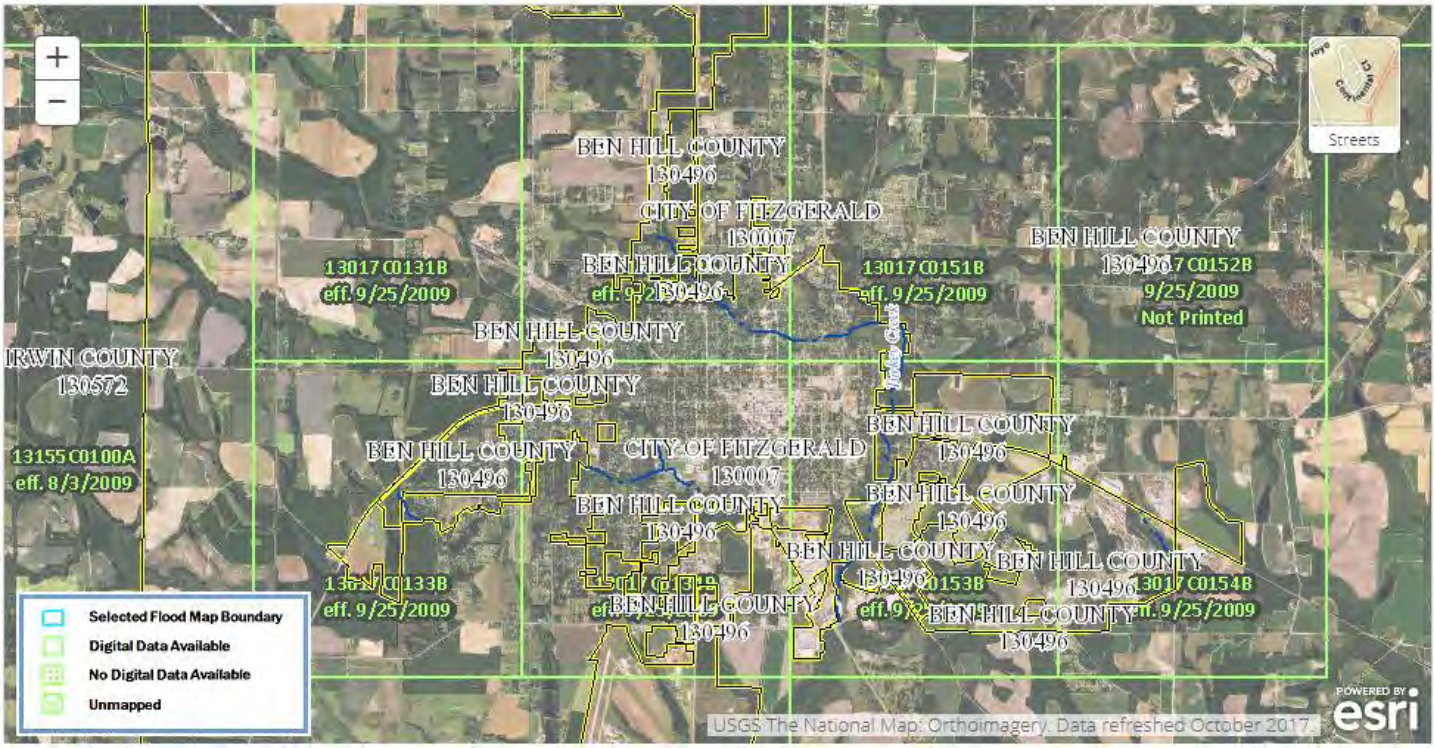
Map Image Layer
by Federal_User_Community

Last Modified: February 21, 2018

FEMA Flood Maps

Source: https://msc.fema.gov/portal/search

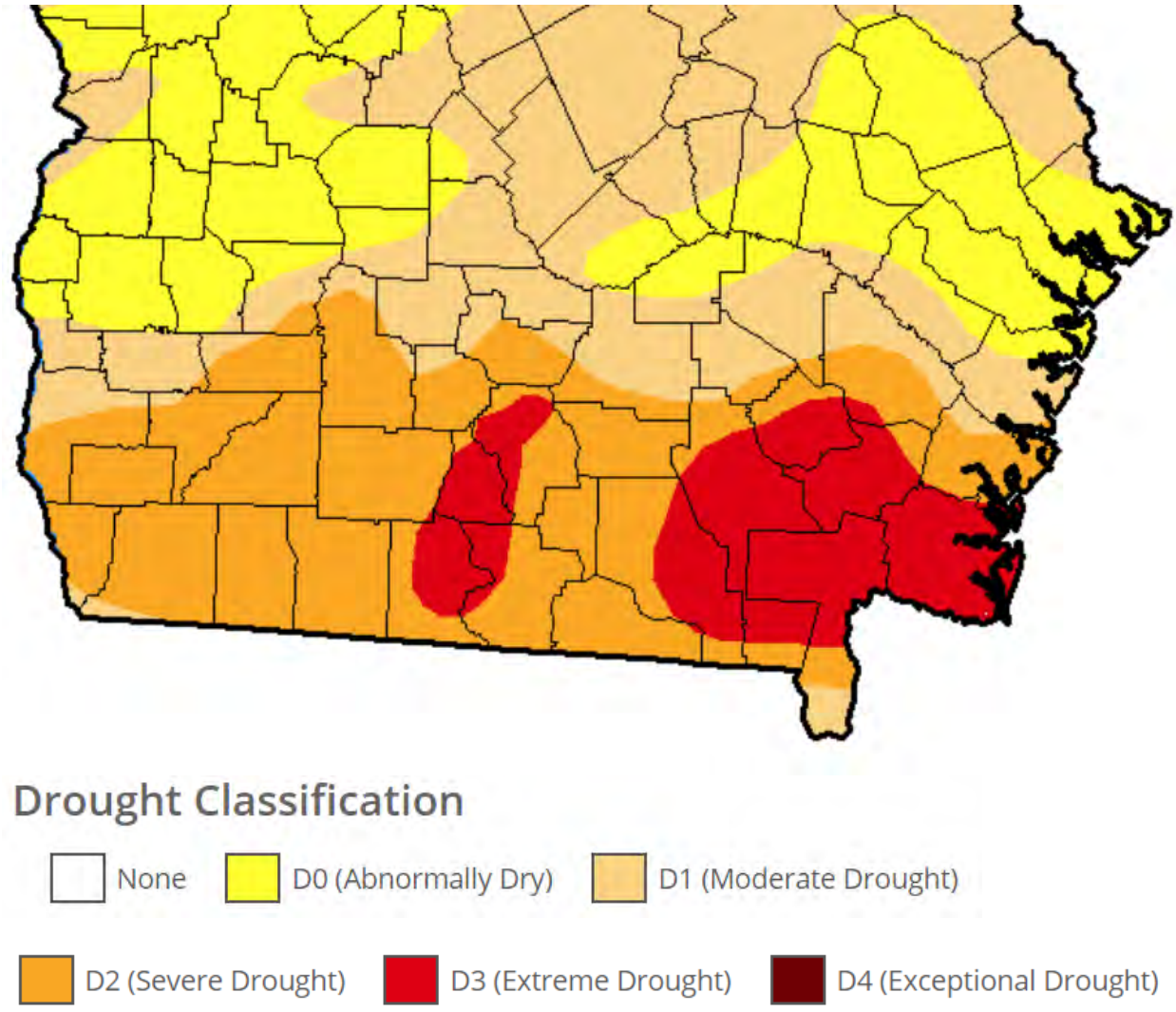


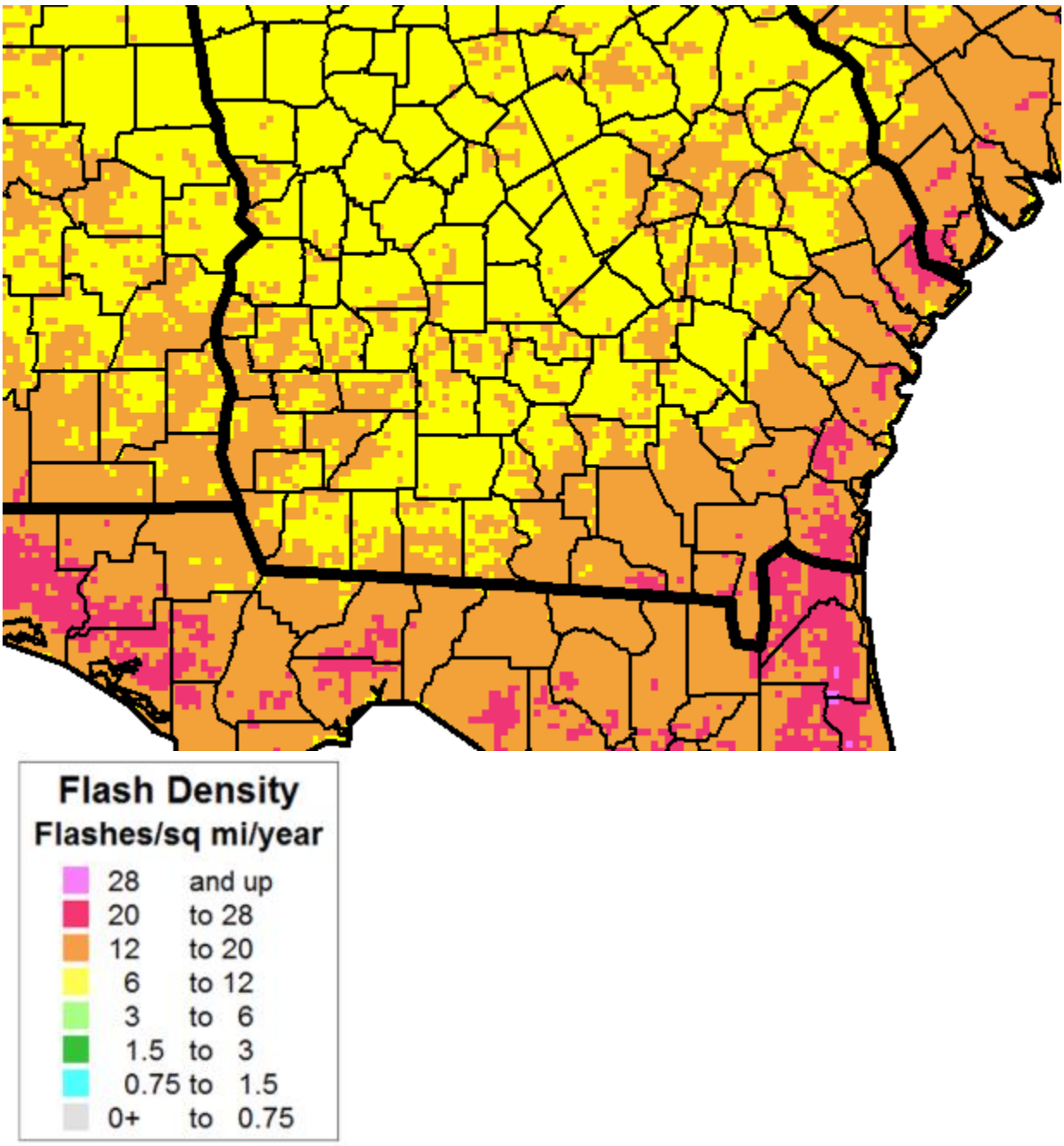


Drought

The example map below, from the week of May 16, 2017, shows moderate to extreme drought conditions throughout southern Georgia.

Source: U.S. Drought Monitor
(http://droughtmonitor.unl.edu/Maps/ComparisonSlider.aspx)





Lightning flash density in southern Georgia, according to the National Weather Service National Lightning Detection Network (https://www.weather.gov/images/safety/NLDN_CGFlash09-18-miles.png)

Appendix B

QuickFacts

Fitzgerald city, Georgia; Ben Hill County, Georgia; UNITED STATES

QuickFacts provides statistics for all states and counties, and for cities and towns with a ***population of 5,000 or more***.

Table

All Topics	Fitzgerald city, Georgia	Ben Hill County, Georgia	UNITED STATES
Population estimates, July 1, 2017, (V2017)	**8,721**	**16,996**	**325,719,178**
PEOPLE			
Population			
Population estimates, July 1, 2017, (V2017)	**8,721**	**16,996**	**325,719,178**
Population estimates base, April 1, 2010, (V2017)	9,074	17,634	308,758,105
Population, percent change - April 1, 2010 (estimates base) to July 1, 2017, (V2017)	-3.9%	-3.6%	5.5%
Population, Census, April 1, 2010	9,053	17,634	308,745,538
Age and Sex			
Persons under 5 years, percent	⚠ 8.3%	⚠ 6.5%	⚠ 6.1%
Persons under 18 years, percent	⚠ 26.7%	⚠ 25.4%	⚠ 22.6%
Persons 65 years and over, percent	⚠ 17.7%	⚠ 16.8%	⚠ 15.6%
Female persons, percent	⚠ 54.6%	⚠ 52.4%	⚠ 50.8%
Race and Hispanic Origin			
White alone, percent (a)	⚠ 44.2%	⚠ 61.2%	⚠ 76.6%
Black or African American alone, percent (a)	⚠ 52.3%	⚠ 35.9%	⚠ 13.4%
American Indian and Alaska Native alone, percent (a)	⚠ 0.0%	⚠ 0.6%	⚠ 1.3%
Asian alone, percent (a)	⚠ 0.2%	⚠ 0.9%	⚠ 5.8%
Native Hawaiian and Other Pacific Islander alone, percent (a)	⚠ 0.0%	⚠ 0.1%	⚠ 0.2%
Two or More Races, percent	⚠ 1.2%	⚠ 1.4%	⚠ 2.7%
Hispanic or Latino, percent (b)	⚠ 2.8%	⚠ 6.2%	⚠ 18.1%
White alone, not Hispanic or Latino, percent	⚠ 43.7%	⚠ 56.0%	⚠ 60.7%
Population Characteristics			
Veterans, 2012-2016	315	793	19,535,341
Foreign born persons, percent, 2012-2016	1.1%	2.4%	13.2%
Housing			
Housing units, July 1, 2017, (V2017)	X	7,947	137,403,460
Owner-occupied housing unit rate, 2012-2016	47.8%	61.0%	63.6%
Median value of owner-occupied housing units, 2012-2016	$85,400	$81,100	$184,700
Median selected monthly owner costs -with a mortgage, 2012-2016	$881	$877	$1,491
Median selected monthly owner costs -without a mortgage, 2012-2016	$376	$376	$462
Median gross rent, 2012-2016	$586	$606	$949
Building permits, 2017	X	57	1,281,977
Families & Living Arrangements			
Households, 2012-2016	3,352	6,452	117,716,237
Persons per household, 2012-2016	2.59	2.65	2.64
Living in same house 1 year ago, percent of persons age 1 year+, 2012-2016	88.9%	91.1%	85.2%
Language other than English spoken at home, percent of persons age 5 years+, 2012-2016	2.5%	4.7%	21.1%
Education			
High school graduate or higher, percent of persons age 25 years+, 2012-2016	82.6%	81.2%	87.0%
Bachelor's degree or higher, percent of persons age 25 years+, 2012-2016	13.4%	10.6%	30.3%
Health			
With a disability, under age 65 years, percent, 2012-2016	14.8%	15.0%	8.6%
Persons without health insurance, under age 65 years, percent	⚠ 18.1%	⚠ 15.4%	⚠ 10.2%
Economy			
In civilian labor force, total, percent of population age 16 years+, 2012-2016	35.8%	45.6%	63.1%
In civilian labor force, female, percent of population age 16 years+, 2012-2016	35.5%	42.3%	58.3%

Total accommodation and food services sales, 2012 ($1,000) (c)	D	17,723	708,138,598
Total health care and social assistance receipts/revenue, 2012 ($1,000) (c)	47,121	49,899	2,040,441,203
Total manufacturers shipments, 2012 ($1,000) (c)	153,521	512,428	5,696,729,632
Total merchant wholesaler sales, 2012 ($1,000) (c)	46,202	D	5,208,023,478
Total retail sales, 2012 ($1,000) (c)	167,555	200,347	4,219,821,871
Total retail sales per capita, 2012 (c)	$18,518	$11,424	$13,443
Transportation			
Mean travel time to work (minutes), workers age 16 years+, 2012-2016	16.3	16.9	26.1
Income & Poverty			
Median household income (in 2016 dollars), 2012-2016	$18,396	$29,510	$55,322
Per capita income in past 12 months (in 2016 dollars), 2012-2016	$12,653	$15,311	$29,829
Persons in poverty, percent	▲ 42.4%	▲ 26.4%	▲ 12.3%

BUSINESSES

Businesses			
Total employer establishments, 2016	X	313	7,757,807
Total employment, 2016	X	4,837	126,752,238
Total annual payroll, 2016 ($1,000)	X	158,138	6,435,142,055
Total employment, percent change, 2015-2016	X	-0.9%	2.1%
Total nonemployer establishments, 2016	X	1,053	24,813,048
All firms, 2012	944	1,475	27,626,360
Men-owned firms, 2012	553	888	14,844,597
Women-owned firms, 2012	300	458	9,878,397
Minority-owned firms, 2012	279	362	7,952,386
Nonminority-owned firms, 2012	621	1,064	18,987,918
Veteran-owned firms, 2012	251	268	2,521,682
Nonveteran-owned firms, 2012	629	1,137	24,070,685

GEOGRAPHY

Geography			
Population per square mile, 2010	1,022.0	70.5	87.4
Land area in square miles, 2010	8.86	250.12	3,531,905.43
FIPS Code	1329528	13017	00

Department of Revenue

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GEORGIA DEPARTMENT OF REVENUE Local Government Services Division County Digest Section	2017 TAX DIGEST CONSOLIDATED SUMMARY

County:BEN HILL County #:009 Tax District:BEN HILL COUNTY

Dist #: 00 Assessment %: 040 Tot Parcels:10667

RESIDENTIAL

Code	Count	Acres	40% Value
R1	5,614		121,254,379
R3	5,730	2,869.2	16,041,868
R4	2,567	14,682.09	16,433,259
R5			
R6	15,956		10,182,373
R7			
R9			
RA	19		943,450
RB	217		689,854
RF			
RI			
RZ			

RESIDENTIAL TRANSITIONAL

Code	Count	Acres	40% Value
T1			
T3			
T4			

HISTORIC

Code	Count	Acres	40% Value
H1	17		420,245
H3	6	2.6	56,807

AGRICULTURAL

Code	Count	Acres	40% Value
A1	295		7,201,415
A3			
A4	29	239.39	185,537
A5	375	31,633.27	15,594,834
A6	2,188		2,091,552
A7			
A9			
AA			
AB			
AF			
AI			
AZ			

PREFERENTIAL

Code	Count	Acres	40% Value

UTILITY

Code	Count	Acres	40% Value
U1			
U2	19	0	18,073,746
U3			
U4	1	0	28,468
U5	1	0	98,768
U7			
U9			
UA			
UB			
UF			
UZ			

EXEMPT PROPERTY

Code	Count	40% Value
E0		
E1	685	13,491,459
E2	537	14,170,675
E3	8	172,646
E4	16	109,717
E5	41	4,026,742
E6	73	19,282,907
E7		
E8		
E9	73	3,364,672
TOTAL	1,433	54,618,818

HOMESTEAD AND PROPERTY EXEMPTIONS

Code	Count	M&O	Bond
S1	2,633	5,264,048	
SC	32	64,000	
S2	0	0	
S3	14	28,000	
S4	570	2,277,816	
S5	72	2,741,894	
SD	1	77,307	
SS	1	10,526	
SE	0	0	
SG	0	0	

P3			
P4			
P5			
P6			
P7			
P9			

CONSERVATION USE

Code	Count	Acres	40% Value
V3			
V4	174	4,235.29	3,012,107
V5	497	67,267.94	38,561,116
V6			

BROWNFIELD PROPERTY

Code	Count	Acres	40% Value
B1			
B3			
B4			
B5			
B6			

FOREST LAND CONSERVATION USE

Code	Count	Acres	40% Value
J3			
J4	2	75.67	43,605
J5	82	30,739.09	12,876,506
J9			

FLPA FAIR MARKET ASSMT

Code	Count	Acres	40% Value
F3			
F4	2	75.67	51,040
F5	82	30,740.09	11,170,670
F9			
Total	84	30,815.76	11,221,710

ENVIRONMENTALLY SENSITIVE

Code	Count	Acres	40% Value
W3			
W4			
W5			

COMMERCIAL

Code	Count	Acres	40% Value
C1	1,421		31,067,460
C3	392	213.89	4,083,670
C4	235	1,165.14	5,522,966
C5			
C7			
C9			
CA			
CB			
CF	470		15,476,261
CI	379		9,117,420
CP	14		6,236,799
CZ	2		7,849

INDUSTRIAL

Code	Count	Acres	40% Value
I1	187		22,060,468
I3			
I4	32	593.32	1,338,440
I5	3	163.58	337,448
S6			
S7			
S8			
S9			
SF	33	25,497,255	
SA	0	0	
SB	0	0	
SP	265	380,462	
SH	6	290,769	
ST	0	0	
SV	671	24,608,519	
SJ	84	6,773,520	
SW	0	0	
SX			
SN	0	0	

DO NOT USE CODES L1-L9 ON STATE SHEET

L1	2,628	10,379,111	
L2	0	0	
L3	14	55,520	
L4	568	4,295,695	
L5			
L6			
L7			
L8			
L9	32	123,627	
TOTAL	7,624	82,868,069	0

SUMMARY

Code	Count	Acres	40% Value
Residential	30,103	17,551.29	165,545,183
Residential Transitional			
Historical	23	2.6	477,052
Agricultural	2,887	31,872.66	25,073,338
Preferential Conservation Use	671	71,503.23	41,573,223
Brownfield Property			
Forest Land Cons Use	84	30,814.76	12,920,111
Environmentally Sensitive			
Commercial	2,913	1,379.03	71,512,425
Industrial	294	756.9	65,155,818
Utility	21	0	18,200,982
Motor Vehicle	8,116		11,476,130
Mobile Home	1,287		5,120,133
Timber 100%	94	9,584	5,007,526
Heavy Equipment	0		0
Gross Digest	46,493	163,464.47	422,061,921
Exemptions Bond			
Net Bond Digest			422,061,921
Gross Digest	46,493	163,464.47	422,061,921
Exemptions-M&O			82,868,069
Net M&O Digest			339,193,852

I7		
I9		
IA		
IB		
IF	28	20,334,769
II	23	1,768,550
IP	19	19,260,456
IZ	2	55,687

TAX LEVIED

TYPE	ASSESSED VALUE	MILLAGE	TAX
M & O	339,193,852	.000	0.00
BOND	422,061,921	.000	0.00

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Department of Revenue

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GEORGIA DEPARTMENT OF REVENUE Local Government Services Division County Digest Section	2017 TAX DIGEST CONSOLIDATED SUMMARY

County:BEN HILL County #:009 Tax District:FITZGERALD

Dist #: 07 Assessment %: 040 Tot Parcels:4522

RESIDENTIAL

Code	Count	Acres	40% Value
R1	2,824		55,602,745
R3	3,515	1,199.64	9,046,660
R4	122	508.18	1,238,878
R5			
R6	4,514		2,094,251
R7			
R9			
RA	10		818,600
RB	50		147,217
RF			
RI			
RZ			

RESIDENTIAL TRANSITIONAL

Code	Count	Acres	40% Value
T1			
T3			
T4			

HISTORIC

Code	Count	Acres	40% Value
H1	17		420,245
H3	6	2.6	56,807

AGRICULTURAL

Code	Count	Acres	40% Value
A1			
A3			
A4			
A5	5	97.32	73,994
A6	1		1,200
A7			
A9			
AA			
AB			
AF			
AI			
AZ			

PREFERENTIAL

Code	Count	Acres	40% Value

UTILITY

Code	Count	Acres	40% Value
U1			
U2	8	0	4,638,937
U3			
U4	1	0	28,468
U5			
U7			
U9			
UA			
UB			
UF			
UZ			

EXEMPT PROPERTY

Code	Count	40% Value
E0		
E1	550	9,512,288
E2	270	9,140,442
E3	5	80,645
E4	3	75,728
E5	24	427,871
E6	46	10,738,765
E7		
E8		
E9	69	3,304,708
TOTAL	967	33,280,447

HOMESTEAD AND PROPERTY EXEMPTIONS

Code	Count	M&O	Bond
S1			
SC			
S2			
S3			
S4			
S5	31	940,847	
SD	0	0	
SS	0	0	
SE	0	0	
SG	0	0	

P3			
P4			
P5			
P6			
P7			
P9			

CONSERVATION USE

Code	Count	Acres	40% Value
V3			
V4	3	33.19	34,000
V5	1	46.6	22,480
V6			

BROWNFIELD PROPERTY

Code	Count	Acres	40% Value
B1			
B3			
B4			
B5			
B6			

FOREST LAND CONSERVATION USE

Code	Count	Acres	40% Value
J3			
J4			
J5			
J9			

FLPA FAIR MARKET ASSMT

Code	Count	Acres	40% Value
F3			
F4			
F5			
F9			
Total			

ENVIRONMENTALLY SENSITIVE

Code	Count	Acres	40% Value
W3			
W4			
W5			

COMMERCIAL

Code	Count	Acres	40% Value
C1	925		25,034,889
C3	358	165.01	3,683,995
C4	89	296.94	2,569,859
C5			
C7			
C9			
CA			
CB			
CF	307		8,948,619
CI	253		7,362,389
CP	7		4,889,491
CZ	2		7,849

INDUSTRIAL

Code	Count	Acres	40% Value
I1	70		12,383,910
I3			
I4	14	292.4	641,665
S6			
S7			
S8			
S9			
SF	0	0	
SA	0	0	
SB	0	0	
SP	121	178,643	
SH	6	290,769	
ST	0	0	
SV	4	36,475	
SJ	0	0	
SW	0	0	
SX			
SN	0	0	

DO NOT USE CODES L1-L9 ON STATE SHEET

L1			
L2			
L3			
L4			
L5			
L6			
L7			
L8			
L9			
TOTAL	162	1,446,734	0

SUMMARY

Code	Count	Acres	40% Value
Residential	11,035	1,707.82	68,948,351
Residential Transitional			
Historical	23	2.6	477,052
Agricultural	6	97.32	75,194
Preferential Conservation Use	4	79.79	56,480
Brownfield Property			
Forest Land Cons Use			
Environmentally Sensitive			
Commercial	1,941	461.95	52,497,091
Industrial	98	345.61	17,395,896
Utility	9	0	4,667,405
Motor Vehicle	2,714		3,800,150
Mobile Home	255		773,407
Timber 100%	0	0	0
Heavy Equipment	0		0
Gross Digest	16,085	2,695.09	148,691,026
Exemptions Bond			
Net Bond Digest			148,691,026
Gross Digest	16,085	2,695.09	148,691,026
Exemptions-M&O			1,446,734
Net M&O Digest			147,244,292

I5	1	53.21	133,136		TAX LEVIED		
I7				TYPE	ASSESSED VALUE	MILLAGE	TAX
I9							
IA				M & O	147,244,292	10.000	1,472,442.92
IB				BOND	148,691,026	.000	0.00
IF	5		2,292,155				
II	4		61,549				
IP	4		1,883,481				
IZ							

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Appendix C

Ben Hill County 5-Year Community Work Program Update

PROJECTS	ESTIMATED COST	RESPONSIBLE PARTY	FUNDING SOURCE	GOAL	FY 16	FY 17	FY 18	FY 19	FY 20
CULTURAL RESOURCES									
Complete renovation of Federal Building and integrate into Grand/Carnegie Complex	$400,000	County, City	Grants, general fund, SPLOST	2, 5	*	*	*	*	*
Develop a Master Resources Guide	$50,000	County, City, Development Authority of Ben Hill County, Convention & Visitor's Bureau, Family Connections	Grants, general fund	2, 4, 5	*	*			
ECONOMIC DEVELOPMENT									
Prepare and maintain an inventory of incentives, business programs, housing stock and available sites to accommodate new businesses and business expansions, and provide the list on the county website.	Staff time	Chamber of Commerce, Fitzgerald-Ben Hill Development Authority	City and County Joint Service Funds	2	*	*			
Develop a guidebook for development that describes the local development process and provides useful information to potential new businesses regarding zoning, site plan approval, permitting and potential incentives.	Staff time	Chamber of Commerce, Fitzgerald-Ben Hill Development Authority	City and County Joint Service Funds	2	*	*			
Approve and implement the Comprehensive Economic Development Plan through the coordinated efforts of all economic development organizations	Staff time	Fitzgerald-Ben Hill Development Authority, other economic development organizations	City and County Joint Service Funds	2	*	*	*	*	*
Develop a Senior/Retiree Marketing Strategy	Staff time	Convention & Visitor's Bureau	General fund	1, 2, 3, 6	*	*			
Develop a Comprehensive Tourism Master Plan to incorporate under the Comprehensive Economic Development Plan	Staff time	Convention & Visitor's Bureau	General fund	2, 4, 5	*	*			

PROJECTS	ESTIMATED COST	RESPONSIBLE PARTY	FUNDING SOURCE	GOAL	FY 16	FY 17	FY 18	FY 19	FY 20
HOUSING									
Construct The Village at Ben Hill Phase 1	$9 million	County	Low Income Housing Tax Credit, private funding	1	*	*			
Construct The Village at Ben Hill Phase 2	$9 million	County	Low Income Housing Tax Credit, private funding	1			*	*	
LAND USE									
None listed									
COMMUNITY FACILITIES AND SERVICES									
Repair and resurface 82.1 miles of roads	$8.2 million	County	General fund, LMIG, SPLOST (pending SPLOST approval)	7	*	*	*	*	*
Replace Bethlehem Church Road Bridge	$2 million	County	General fund, LMIG, SPLOST (pending SPLOST approval)	7		*			
Replace Tulip Road Bridge	$700,000	County	General fund, LMIG, SPLOST (pending SPLOST approval)	7			*		
Complete renovations to Monitor gym, auditorium, and classroom building at Recreation Services complex	$200,000	County, City	City, County, SPLOST (pending SPLOST approval)	6, 7	*	*			
Implement airport improvements as listed in 5-year CIP for 2016-2020	$4.66 million	Fitzgerald-Ben Hill County Airport Commission	Federal, State, and Local	2, 7	*	*	*	*	*

PROJECTS	ESTIMATED COST	RESPONSIBLE PARTY	FUNDING SOURCE	GOAL	FY 16	FY 17	FY 18	FY 19	FY 20
Complete Peachtree Corridor Industrial Transportation Project	$8 million	County, City	General funds, grants, SPLOST (pending SPLOST approval), loans, contributions	2, 7	*	*	*	*	*
Develop Comprehensive Mobility Plan	$40,000	County, City	General fund	1, 2, 6, 7	*	*			
Complete façade maintenance on Grand Theater	$75,000	County, City	General fund, SPLOST (pending SPLOST approval)	5		*	*	*	*
Construct covers for existing outdoor performances spaces (downtown and Paulk Park)	$50,000	County, City	General fund, SPLOST (pending SPLOST approval)	6			*	*	
Complete Grand Theater ADA improvements, phase 2	$20,000	County, City	General fund, SPLOST (pending SPLOST approval)	5		*	*		
Construct a multi-use recreational facility, offices, gymnasium, and/or swimming pool	$1.5 million	County, City	General fund, SPLOST (pending SPLOST approval)	6			*	*	*
Construct Merrimac Rd. sidewalks from Merrimac Village Apts. to Central Ave	$250,000	County	General fund, SPLOST (pending SPLOST approval), GDOT	1, 7		*	*		
Construct Dewey McGlamry Road (SR90) sidewalks from Jack Allen Rd to Sultana Ave	$150,000	County	General fund, SPLOST (pending SPLOST approval), GDOT	1, 7		*	*		
Construct Benjamin H Hill Drive SE sidewalks and/or culvert extension & pedestrian bridge from SR90 to Walmart (with pedestrian signals)	$250,000	County	General fund, SPLOST (pending SPLOST approval), GDOT	1, 7			*	*	

PROJECTS	ESTIMATED COST	RESPONSIBLE PARTY	FUNDING SOURCE	GOAL	FY 16	FY 17	FY 18	FY 19	FY 20
Construct Sultana Drive (SR90) sidewalks from Jefferson St. to Merrimac Dr.	$300,000	County	General fund, SPLOST (pending SPLOST approval), GDOT	1, 7			*	*	
Recruit 2 physicians per year to Dorminy Medical Center	$20,000	DMC	DMC	2, 7		*		*	
Renovate emergency room at Dorminy Medical Center	$300,000	DMC	DMC	2, 7		*			
Implement Hospital Cosmetic Upgrades at Dorminy Medical Center	$75,000	DMC	DMC	2, 7	*	*	*	*	
Replace front of Massee Building at Dorminy Medical Center	$50,000	DMC	DMC	2, 7	*				
Upgrade Medical Equipment and Computers at Dorminy Medical Center	$300,000	DMC	DMC	2, 7	*	*	*	*	*
Replace Hospital Elevator sat Dorminy Medical Center	$80,000	DMC	DMC	2, 7		*			
Replace 3 Chillers at Dorminy Medical Center	$600,000	DMC	DMC	2, 7	*		*		
INTERGOVERNMENTAL COORDINATION									
Research opportunities for inter-governmental agreements with surrounding counties to better facilitate emergency services	Staff time	County, City	General funds	8	*	*	*	*	*

Fitzgerald 5-Year Community Work Program Update

PROJECTS	ESTIMATED COST	RESPONSIBLE PARTY	FUNDING SOURCE	GOAL	FY 16	FY 17	FY 18	FY 19	FY 20
CULTURAL RESOURCES									
Develop Downtown Master Plan	Staff time	City	General fund	1, 2, 5, 6, 8	*	*			
Re-evaluate existing tree ordinance and develop a replanting strategy	Staff time	City	General fund	2, 4, 6	*	*			
ECONOMIC DEVELOPMENT									
None listed									
HOUSING									
None listed									
LAND USE									
None listed									
COMMUNITY FACILITIES AND SERVICES									
Complete Jaycee Stadium improvements	$900,000	City, Board of Education	SPLOST, ELOST	6	*	*	*	*	*
Renovate A, B & A Depot for preservation and flexible space.	$625,000	City	SPLOST, Federal funds	5		*	*	*	*
Resurface approximately 15 miles of city streets; associated transportation improvements; sidewalks, parking, and storm drainage right-of-way.	$1.5 million	City	General fund, SPLOST, LMIG	7	*	*	*	*	*
Review and implement improvements to ADA compliance plan by adding facilities annually.	$25,000	City	General fund	1, 7	*	*	*	*	*
INTERGOVERNMENTAL COORDINATION									
None listed									

GEORGIA FORESTRY COMMISSION

Community Wildfire Protection Plan

An Action Plan for Wildfire Mitigation and Conservation of Natural Resources

Ben Hill County, Georgia

A Program of the Georgia Forestry Commission
with support from the U.S. Forest Service

JUNE 2018

Prepared by;
Theo Craddock, Chief Ranger, Ben Hill County
Will Fell CWPP Specialist (Initial Plan 2011)
Beryl Budd, Wildfire Prevention Specialist (Revised Plan 2018)

Georgia Forestry Commission
473 Bowens Mill Hwy
Fitzgerald, GA 31750

The following report is a collaborative effort among various entities; the representatives listed below comprise the core decision-making team responsible for this report and mutually agree on the plan's contents:

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PLAN CONTENTS

Preface

The extreme weather conditions that are conducive to wildfire disasters (usually a combination of extended drought, low relative humidity and high winds) can occur in this area of Georgia as infrequently as every 10-15 years. This is not a regular event, but as the number of homes that have been built in or adjacent to forested or wildland areas increases, it can turn a wildfire under these weather conditions into a major disaster. Wildfires move fast and can quickly overwhelm the resources of even the best equipped fire department. Advance planning can save lives, homes and businesses.

This Community Wildfire Protection Plan (CWPP) includes a locally assessed evaluation of the wildland urban interface areas of the county, looking at the critical issues regarding access to these areas, risk to properties from general issues such as building characteristics and "fire wise" practices and response from local firefighting resources. It further incorporates a locally devised action plan to mitigate these risks and hazards though planning, education and other avenues that may become available to address the increasing threat of wildland fire. The CWPP does not obligate the county financially in any way, but instead lays a foundation for improved emergency response if and when grant funding is available to the county.

The Plan is provided at no cost to the county and can be very important for county applications for hazard mitigation grant funds through the National Fire Plan, FEMA mitigation grants and Homeland Security. Under the Healthy Forest Restoration Act (HFRA) of 2003, communities (counties) that seek grants from the federal government for hazardous fuels reduction work are required to prepare a Community Wildfire Protection Plan.

This plan will:

- Enhance public safety
- Raise public awareness of wildfire hazards and risks
- Educate homeowners on how to reduce home ignitability
- Build and improve collaboration at multiple levels

The public does not have to fall victim to this type of disaster. Homes (and communities) can be designed, built and maintained to withstand a wildfire even in the absence of fire equipment and firefighters on the scene. It takes planning and commitment at the local level before the wildfire disaster occurs and that is what the Community Wildfire Protection Plan is all about.

I. OBJECTIVES

The mission of the following report is to set clear priorities for the implementation of wildfire mitigation in Ben Hill County. The plan includes prioritized recommendations for the appropriate types and methods of fuel reduction and structure ignitability reduction that will protect this community and its essential infrastructure. It also includes a plan for wildfire suppression. Specifically, the plan includes community-centered actions that will:

- Educate citizens on wildfire, its risks, and ways to protect lives and properties,
- Support fire rescue and suppression entities,
- Focus on collaborative decision-making and citizen participation,
- Develop and implement effective mitigation strategies, and
- Develop and implement effective community ordinances and codes.

II. COMMUNITY COLLABORATION

The core team convened on May 16th, 2011 to assess risks and develop the Community Wildfire Protection Plan. The group is comprised of representatives from local government, local fire authorities, and the state agency responsible for forest management. Below are the groups included in the task force:

Ben Hill County EMA
Ben Hill County Volunteer Fire Departments
Fitzgerald Fire Department
Ben Hill County Government
Georgia Forestry Commission

It was decided to conduct community assessments on the basis of the individual fire districts in the county. The chiefs of the various fire departments in the county assessed the selected areas and reconvened on July 28th, 2011 for the purpose of completing the following:

Risk Assessment	Assessed wildfire hazard risks and prioritized mitigation actions.
Fuels Reduction	Identified strategies for coordinating fuels treatment projects.
Structure Ignitability	Identified strategies for reducing the ignitability of structures within the Wildland interface.
Emergency Management	Forged relationships among local government and fire districts and developed/refined a pre-suppression plan.
Education and Outreach	Developed strategies for increasing citizen awareness and action and to conduct homeowner and community leader workshops

III. COMMUNITY HISTORY & WILDFIRE HISTORY

Background

Ben Hill County covers 252 square miles of south central Georgia. Georgia's 146th county was carved from Irwin and Wilcox counties in 1906 and is named for Benjamin Hill, a U.S. senator who served as Troup County's State Representative and Senator in the mid-1800s.

The county seat is Fitzgerald, founded in 1895 by Philander H. Fitzgerald, a newspaperman from Indiana. The town's settlers opened a public school, which became the first school to provide textbooks free of charge. The courthouse was built in the first decade of the twentieth century and renovated during the 1950s. Still in use, the courthouse was listed in the National Register of Historic Places in 1980.

According to the 2010 U.S. census, the population is 17,634, a modest increase from the 2000 population of 17,484.

Although agriculture has always been important to the county, the high concentration of population in its county seat has resulted in a higher than average percentage of employment in the manufacturing sector. One of the largest employers in the area is American Blanching, and major agricultural crops are cotton, poultry, peanuts, timber, and tobacco.

Among the historic places listed on the National Register are the Ben Hill County Jail, the Charles W. Kimball House (also known as the C. W. Smith House), and the Dorminy-Massee House, all located in Fitzgerald. Also in Fitzgerald is the Blue and Gray Museum. The county boasts nine recreational parks and one river-access park to the Ocmulgee River. Annual spring events include the Wild Chicken Festival, the Ebony-in-Arts Festival, and the Colony City Chase.

Elizabeth B. Cooksey, Savannah, Courtesy New Georgia Encyclopedia

Wildfire History

Ben Hill County located in south central Georgia, despite its noted agricultural presence, is still over 60% forested. Perhaps with the exception of the large blocks of woodlands along the Ocmulgee River, there are homes and communities scattered throughout the county. The risks and hazards from the wildland urban interface are fairly general and substantial throughout the county even on the edges of the incorporated cities.

Ben Hill County is protected by the Ben Hill Fire Department with five stations in the unincorporated areas and a full time department in the city of Fitzgerald. The Georgia Forestry Commission maintains a county protection unit located on Hwy 129 three miles north of Fitzgerald near the center of the county to respond to wildfires throughout the county. The city of Fitzgerald is serviced by pressurized water system with hydrants available.

Over the past 54 years, Ben Hill County has averaged 58 reported wildland fires per year, burning an average of 208 acres per years. Using more recent figures over the past 20 years, the average acreage burned has decreased markedly to 107 acres per year while the number of fires remained about the same at 55 reported per year. The occurrence of these fires during this later period shows a pronounced increase during the months of January, February, and March in the number of the annual fires and a marked increase in the average acreage burned. The numbers of fires over the remainder of the year are fairly well distributed.

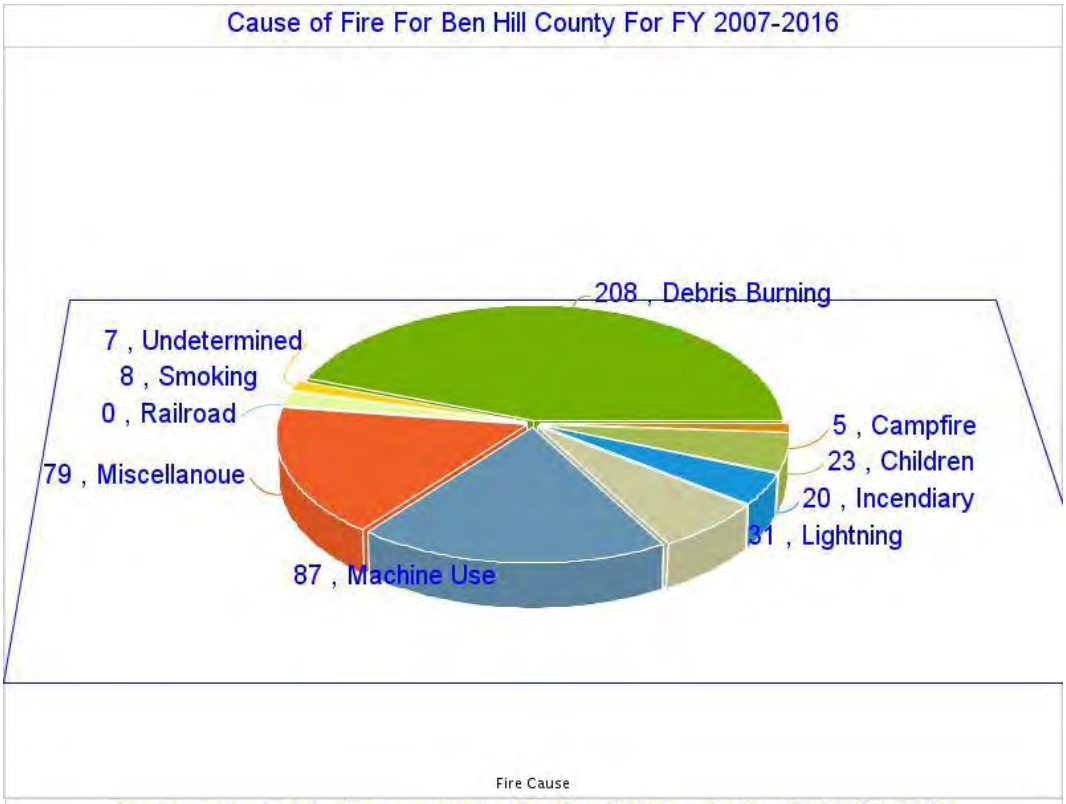
Over the past 10 years, the leading cause of these fires was debris burning causing 44% of the fires and 53% of the acres burned. Machine Use was the 2nd leading cause accounting for 19% of the fires and 11% of the acres burned. Over these 10 years records show that over 39% of the debris fires originated from residential burning.

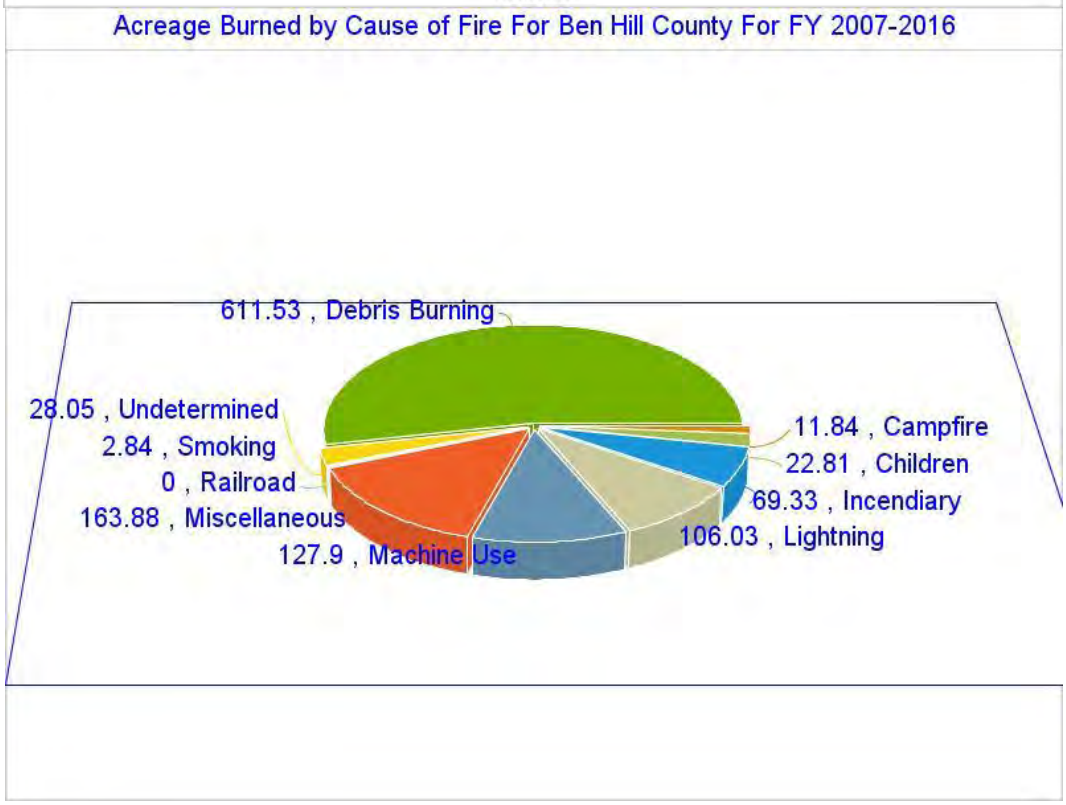
Acreage Burned /Number of Fires For Ben Hill County For FY 2007-2016

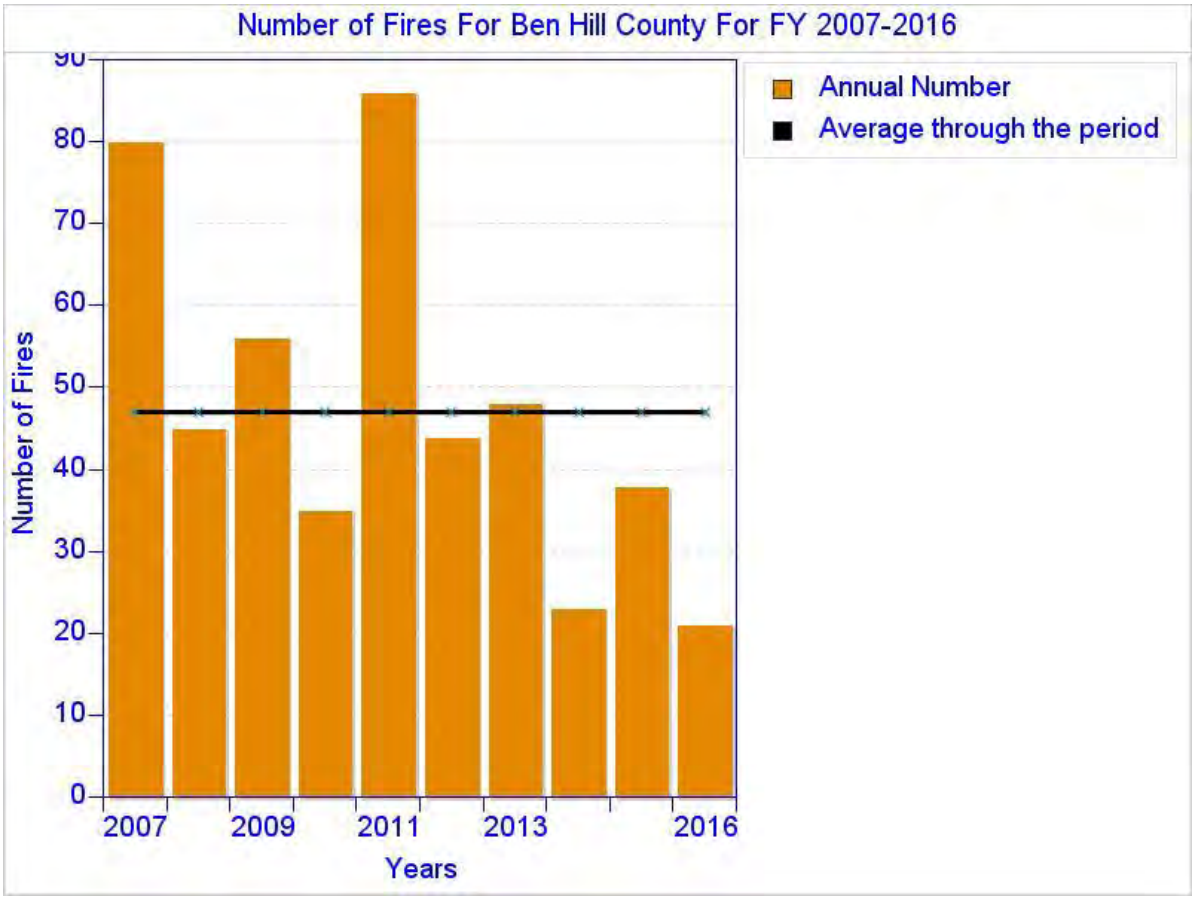
Year	Acreage Burned	Number of Fires	Average Size	Statewide Average Size
2007	130.99	80	1.64	18.64
2008	106.60	45	2.37	4.56
2009	168.87	56	3.02	3.90
2010	35.04	35	1.00	3.93
2011	187.22	86	2.18	17.56
2012	127.50	44	2.90	5.08
2013	166.72	48	3.47	4.53
2014	70.39	23	3.06	5.02
2015	87.03	38	2.29	4.42
2016	66.58	21	3.17	6.29

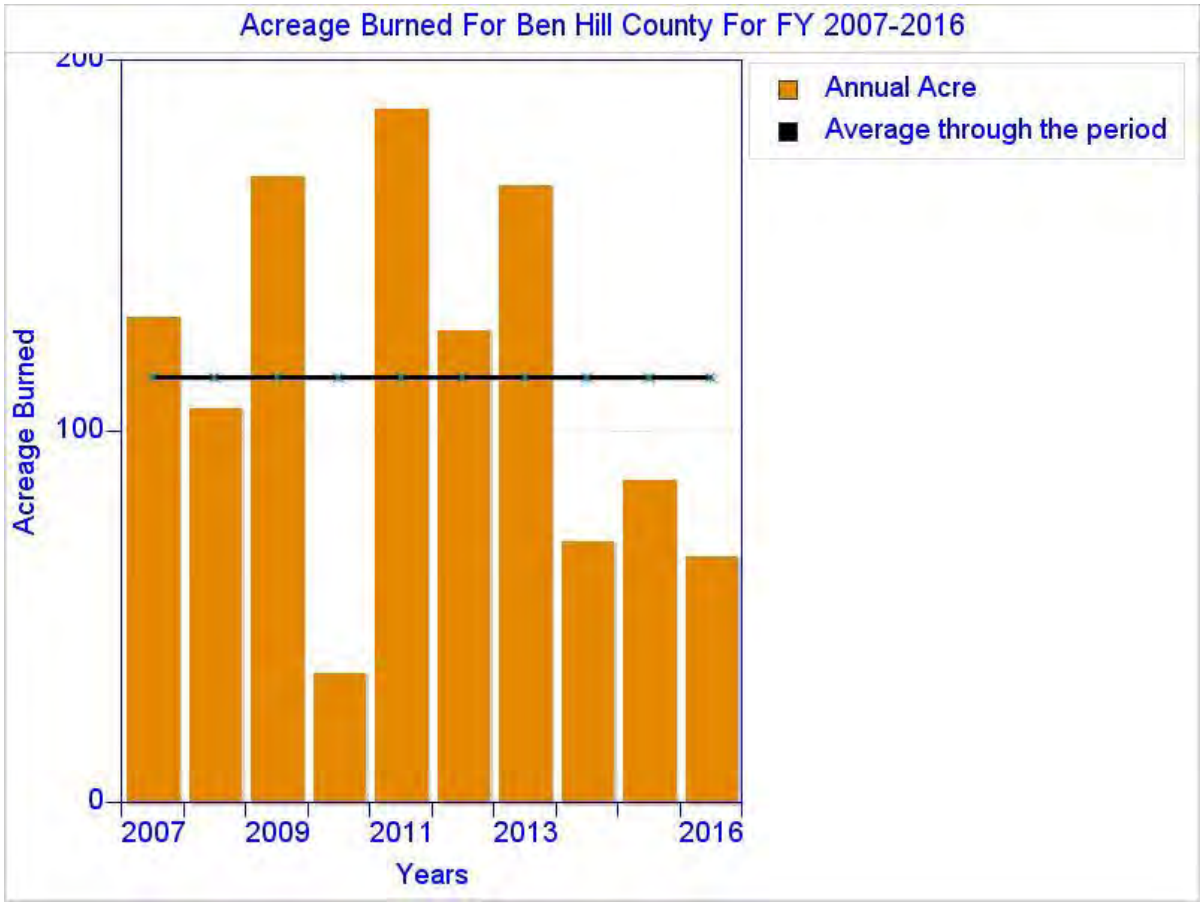
Ben Hill County wildfire data from the last complete fiscal year 2017 (July 1, 2016 thru June 30, 2017), is found in the table below.

County = Ben Hill	Cause	Fires		Acres	Fires 5 Yr Avg	Acres 5 Yr Avg
Campfire	Campfire	3		4.30	1.00	1.69
Children	Children	0		0.00	0.80	2.32
Debris: Ag Fields, Pastures, Orchards, Etc	Debris: Ag Fields, Pastures, Orchards, Etc	1		0.89	0.40	0.60
Debris: Construction Land Clearing	Debris: Construction Land Clearing	0		0.00	0.20	0.24
Debris: Escaped Prescribed Burn	Debris: Escaped Prescribed Burn	11		51.50	5.60	22.20
Debris: Other	Debris: Other	1		0.04	1.00	2.28
Debris: Residential, Leafpiles, Yard, Etc	Debris: Residential, Leafpiles, Yard, Etc	6		8.90	5.00	11.57
Debris: Site Prep - Forestry Related	Debris: Site Prep - Forestry Related	2		0.37	5.40	22.18
Incendiary	Incendiary	0		0.00	0.60	7.68
Lightning	Lightning	4		6.67	3.20	9.61
Machine Use	Machine Use	14		23.55	5.60	6.66
Miscellaneous: Firearms/Ammunition	Miscellaneous: Firearms/Ammunition	1		0.28	0.20	0.06
Miscellaneous: Other	Miscellaneous: Other	0		0.00	0.20	0.00
Miscellaneous: Power lines/Electric fences	Miscellaneous: Power lines/Electric fences	6		11.71	2.80	5.39
Miscellaneous: Spontaneous Heating/Combustion	Miscellaneous: Spontaneous Heating/Combustion	0		0.00	0.20	0.01
Miscellaneous: Structure/Vehicle Fires	Miscellaneous: Structure/Vehicle Fires	0		0.00	1.00	0.41
Miscellaneous: Woodstove Ashes	Miscellaneous: Woodstove Ashes	1		0.02	1.20	1.20
Smoking	Smoking	0		0.00	0.20	0.08
Undetermined	Undetermined	11		62.40	3.60	18.09
Totals for County: Ben Hill Year: 2017		61		170.63	38.20	112.27

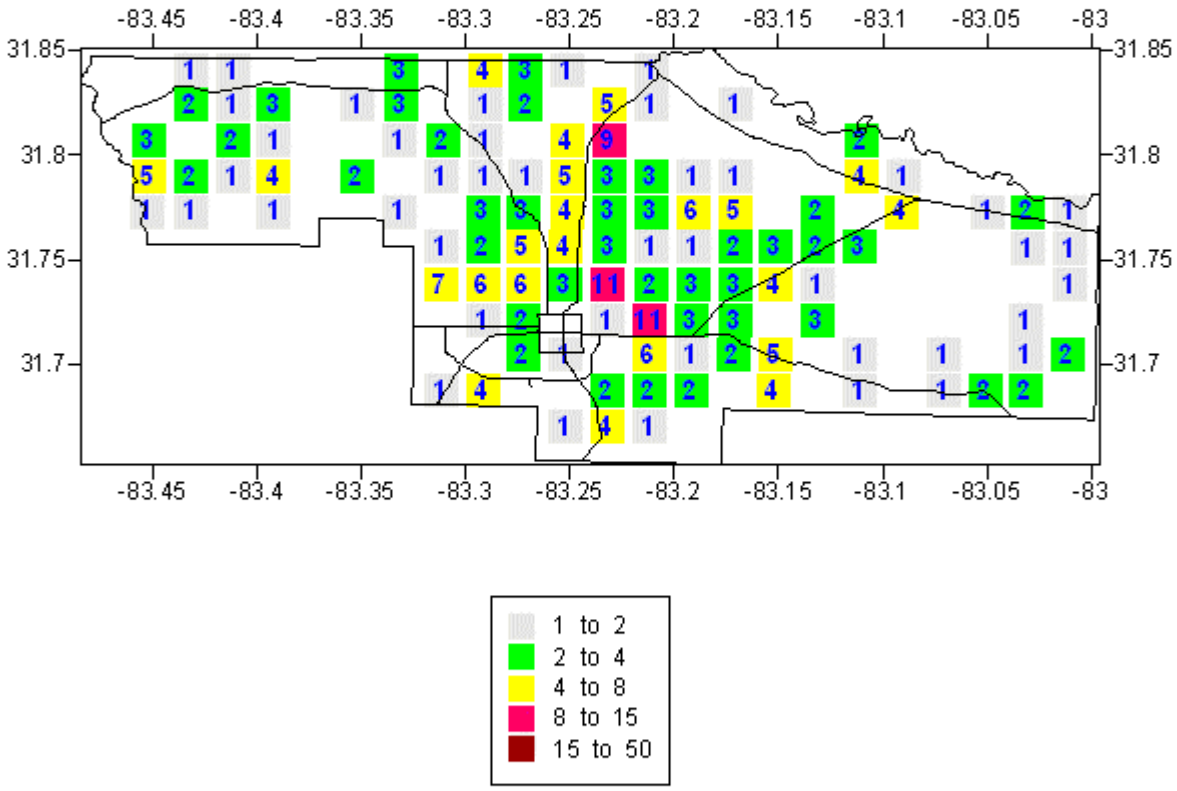

Cause of Fire For Ben Hill County For FY 2007-2016
208 , Debris Burning
7 , Undetermined
8 , Smoking
0 , Railroad
79 , Miscellanoue
5 , Campfire
23 , Children
20 , Incendiary
31 , Lightning
87 , Machine Use
Fire Cause


Acreage Burned by Cause of Fire For Ben Hill County For FY 2007-2016
611.53 , Debris Burning
28.05 , Undetermined
2.84 , Smoking
0 , Railroad
163.88 , Miscellaneous
127.9 , Machine Use
11.84 , Campfire
22.81 , Children
69.33 , Incendiary
106.03 , Lightning

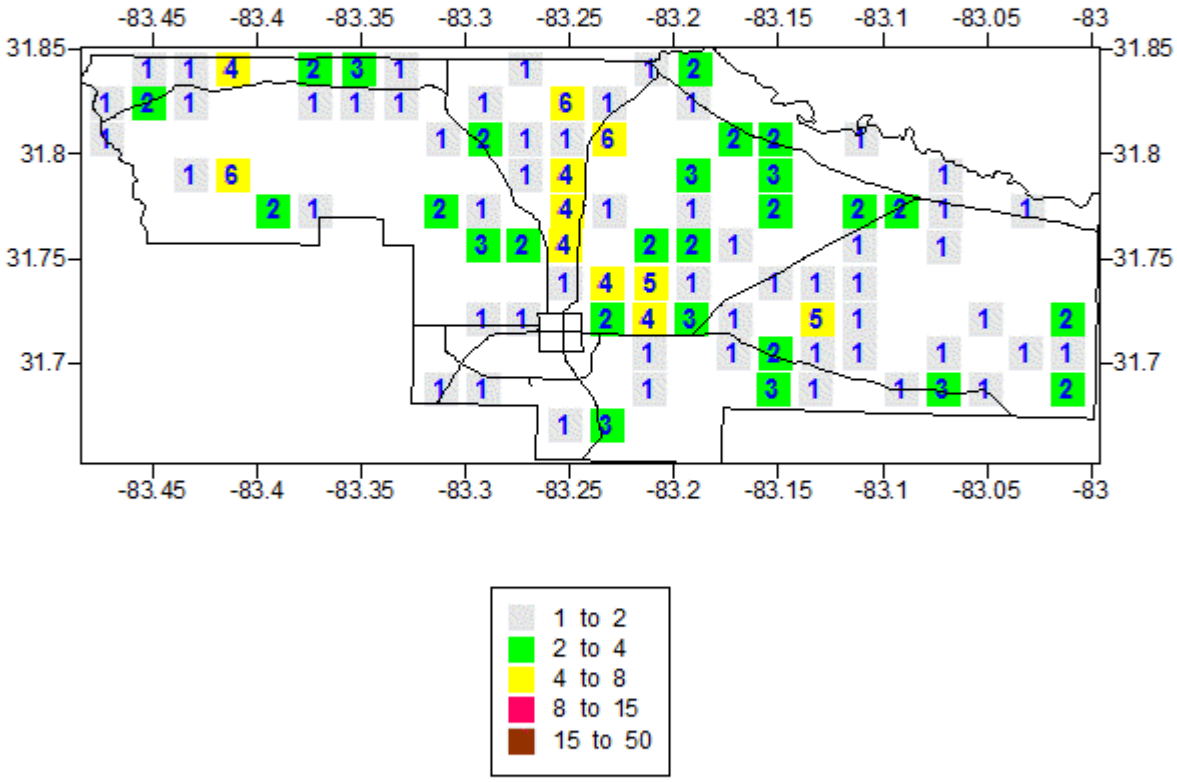

Number of Fires For Ben Hill County For FY 2007-2016
Annual Number
Average through the period
Number of Fires
0
10
20
30
40
50
60
70
80
90
2007
2009
2011
2013
2016
Years


Acreage Burned For Ben Hill County For FY 2007-2016
Annual Acre
Average through the period
Acreage Burned
0
100
200
2007
2009
2011
2013
2016
Years

Fire Occurrence Map for Ben Hill County for Fiscal Year 2007-2011



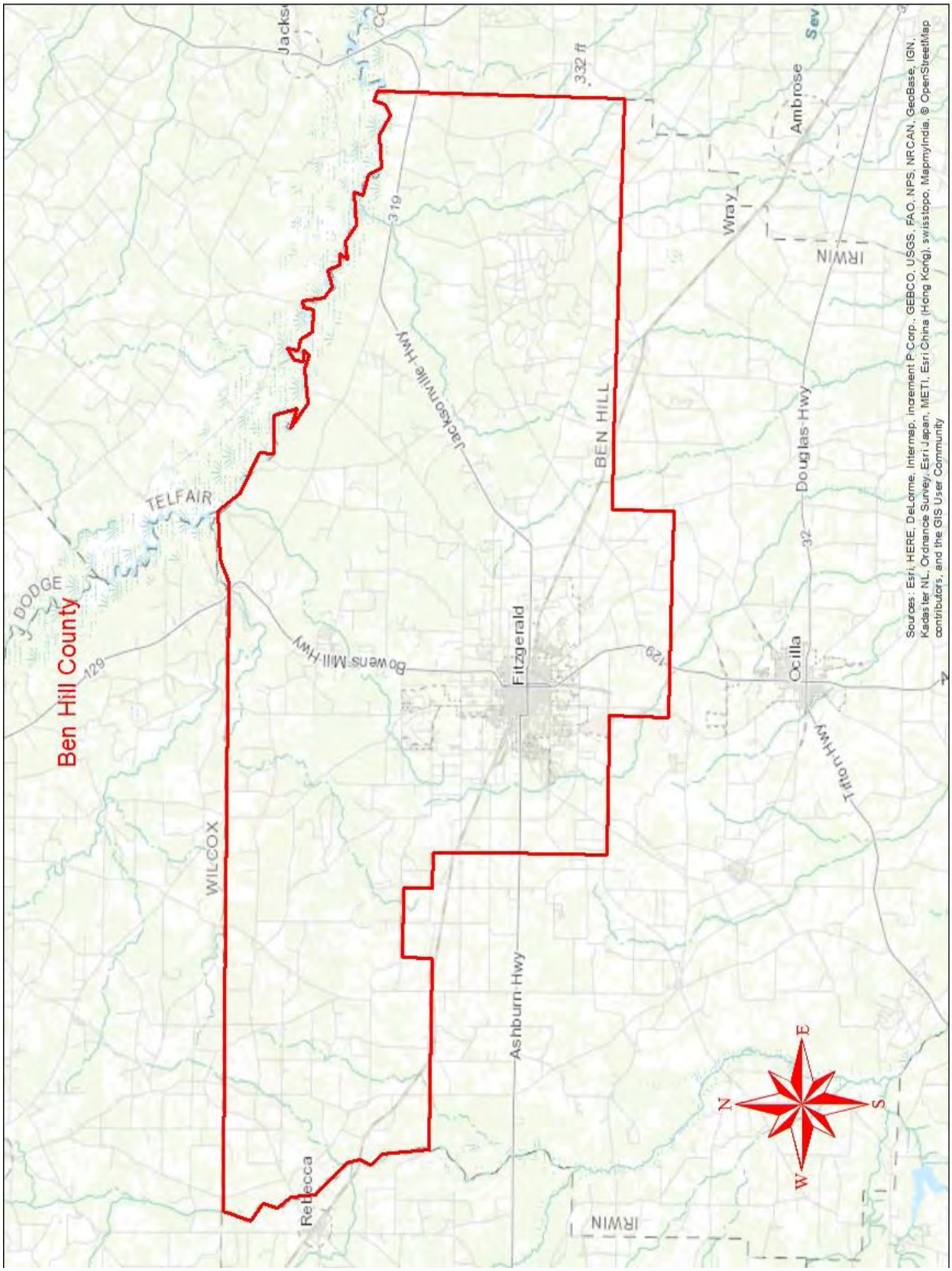
Fire Occurrence Map for Ben Hill County for Fiscal Year 2012-2016

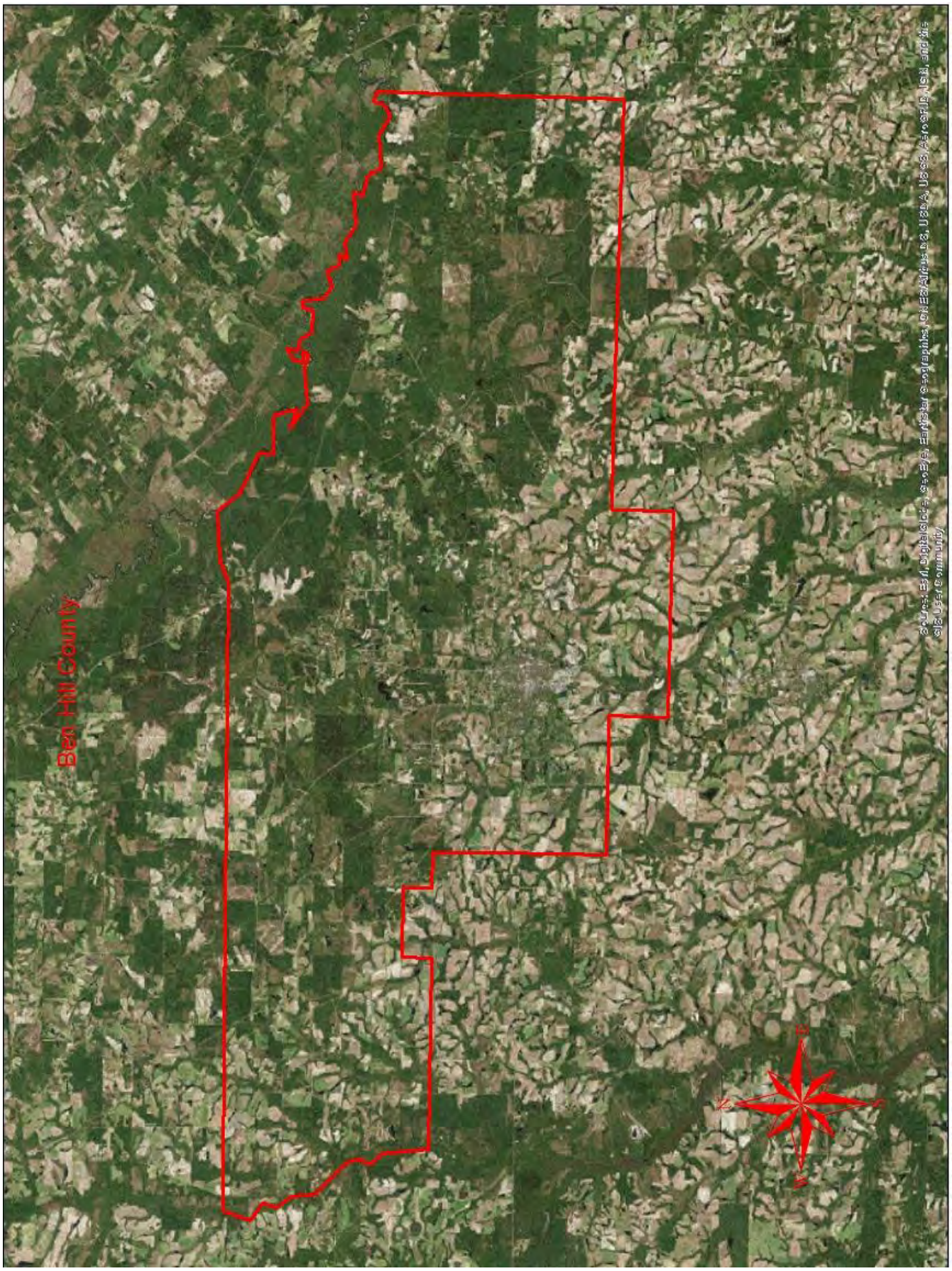


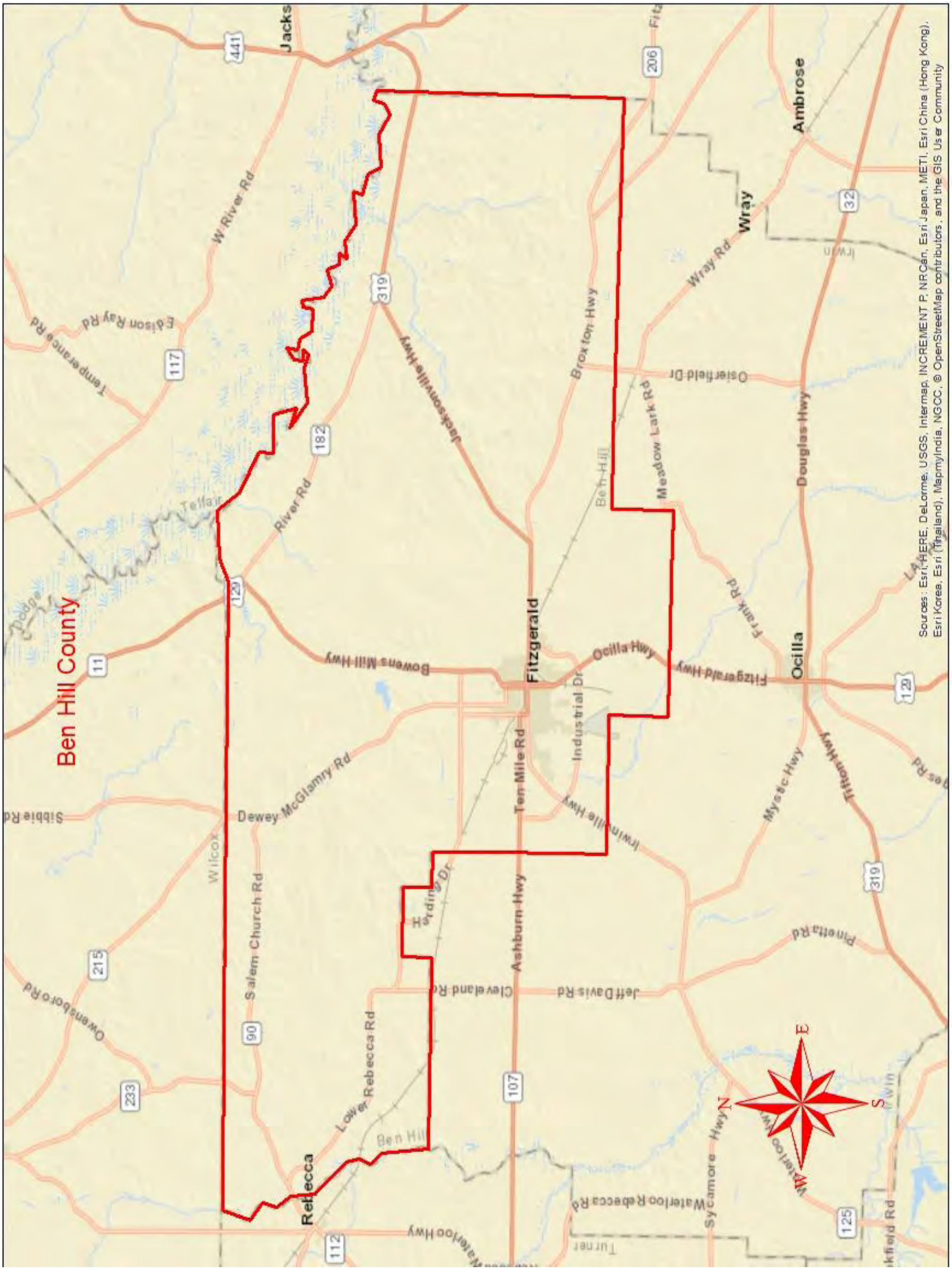
GEORGIA FORESTRY COMMISSION

GEORGIA FORESTRY COMMISSION

IV. COUNTY BASE MAPS




Ben Hill County


Ben Hill County
Fitzgerald
Ocilla
Ambrose
Wray
Rebecca
Bowens Mill Hwy
Ocilla Hwy
Fitzgerald Hwy
Jacksonville Hwy
Broxton Hwy
Ten Mile Rd
Ashburn Hwy
Industrial Dr
Irwinville Hwy
Dewey McGlamry Rd
Salem Church Rd
Lower Rebecca Rd
Cleveland Rd
Jeff Davis Rd
Waterloo Rebecca Rd
Waterloo Hwy
Harding Dr
River Rd
W River Rd
Edison Ray Rd
Temperance Rd
Owensboro Rd
Sibbie Rd
Meadow Lark Rd
Osierfield Dr
Wray Rd
Douglas Hwy
Frank Rd
Mystic Hwy
Tifton Hwy
Pinetta Rd
Sycamore Hwy
Sources: Esri, HERE, DeLorme, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), MapmyIndia, NGCC, © OpenStreetMap contributors, and the GIS User Community
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V. COMMUNITY WILDFIRE RISK ASSESSMENT

The Wildland-Urban Interface

There are many definitions of the Wildland-Urban Interface (WUI), however from a fire management perspective it is commonly defined as an area where structures and other human development meet or intermingles with undeveloped wildland or vegetative fuels. As fire is dependent on a certain set of conditions, the National Wildfire Coordinating Group has defined the wildland-urban interface as a set of conditions that exists in or near areas of wildland fuels, regardless of ownership. This set of conditions includes type of vegetation, building construction, accessibility, lot size, topography and other factors such as weather and humidity. When these conditions are present in certain combinations, they make some communities more vulnerable to wildfire damage than others. This "set of conditions" method is perhaps the best way to define wildland-urban interface areas when planning for wildfire prevention, mitigation, and protection activities.

There are three major categories of wildland-urban interface. Depending on the set of conditions present, any of these areas may be at risk from wildfire. A wildfire risk assessment can determine the level of risk.

1. **"Boundary" wildland-urban interface** is characterized by areas of development where homes, especially new subdivisions, press against public and private wildlands, such as private or commercial forest land or public forests or parks. This is the classic type of wildland-urban interface, with a clearly defined boundary between the suburban fringe and the rural countryside.

2. **"Intermix" wildland-urban interface** areas are places where improved property and/or structures are scattered and interspersed in wildland areas. These may be isolated rural homes or an area that is just beginning to go through the transition from rural to urban land use.

"Island" wildland-urban interface, also called occluded interface, are areas ofwildland within predominately urban or suburban areas. As cities or subdivisions grow, islands of undeveloped land may remain, creating remnant forests. Sometimes these remnants exist as parks, or as land that cannot be developed due to site limitations, such as wetlands.

Wildland Urban Interface (WUI) is described as the area where structures and other human improvements meet and intermingle with undeveloped wildland or vegetative fuels.

Wildland Urban Interface Hazards

Firefighters in the wildland urban interface may encounter hazards other than the fire itself, such as hazardous materials, utility lines and poor access.

Hazardous Materials

- Common chemicals used around the home may be a direct hazard to firefighters from a flammability, explosion potential and/or vapors or off gassing. Such chemicals include paint, varnish and other flammable liquids, fertilizer, pesticides, cleansers, aerosol cans, fireworks, batteries and ammunition. In addition, some common household products such as plastics may give off very toxic fumes when they burn. Stay out of smoke form burning structures and any unknown sources such as trash piles.

Illicit Activities

- Marijuana plantations or drug production labs may be found in the wildland urban interface areas. Extremely hazardous materials such as propane tanks and flammable/toxic chemicals may be encountered.

Propane Tanks

- Both large (household size) and small (gas grill size) liquefied propane gas (LPG) tanks can present hazards to firefighters, including explosion. See the “LPG Tank Hazards” discussion for details

Utility Lines

- Utility Lines may be located above and below ground and may be cut or damaged by tools or equipment. Don’t spray water on utility lines or boxes. Underground natural gas lines are a major hazard and extreme caution should be taken when working near these lines.

Septic Tanks and Fields

- Below ground structures may not be readily apparent and may not support the weight of engines or other equipment.

New Construction Materials

- Many new construction materials have comparatively low melting points and may “off- gas” extremely hazardous vapors. Plastic decking materials that resemble wood are becoming more common and may begin softening and losing structural strength at 180 degrees F, though they normally do not sustain combustion once direct flame is removed. However if the continue to burn they exhibit the characteristics of flammable liquids.

Pets and Livestock

- Pets and livestock may be left when residents evacuate and will likely be highly stressed making them more inclined to bite and kick. Firefighters should not put themselves at risk to rescue pets or livestock.

Evacuation Occurring

- Firefighters may be taking structural protect actions while evacuations of residents are occurring. Be very cautious of people driving erratically. Distraught residents mayrefuse to leave their property and firefighters may need to disengage from fighting fire to contact law enforcement officers for assistance. In most jurisdictions firefighters do not have the authority to force evacuations. Firefighters should not put themselves at risk trying to protect someone who will not evacuate!

Limited Access

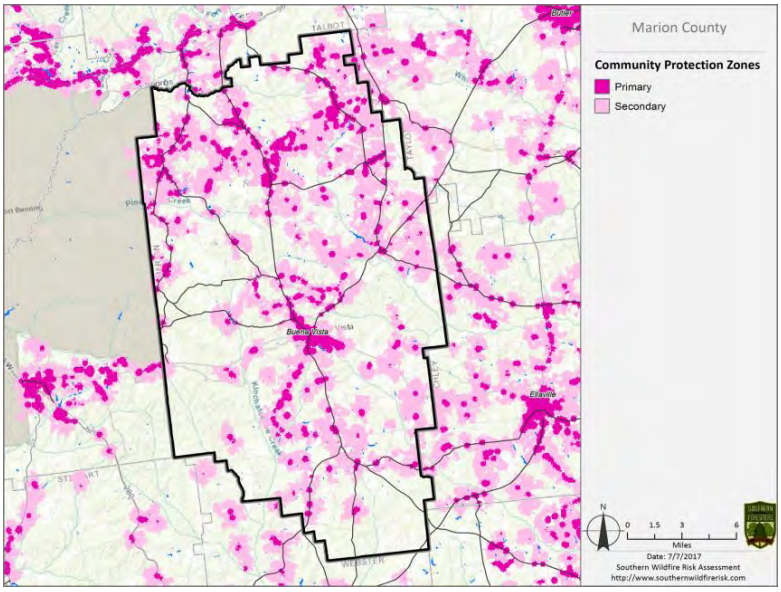
Narrow one-lane roads with no turn around room, inadequate or poorly maintained bridges and culverts are frequently found in wildland urban interface areas. Access should be sized up and an evacuation plan for all emergency personnel should be developed. The wildland fire risk assessment conducted in 2011 by the Ben Hill County Fire Departments identified a number of hazards and risks to communities in the wildland urban interface. The risk assessment instrument used to evaluate wildfire hazards to Ben Hill County's WUI was the Hazard and Wildfire Risk Assessment Checklist. The instrument takes into consideration accessibility, vegetation (based on fuel models), roofing assembly, building construction, and availability of fire protection resources, placement of gas and electric utilities, and additional rating factors. The following factors contributed to the wildfire hazard's identified for Ben Hill County:

- Unpaved roads and private driveways
- Narrow driveways with narrow clearance and with overhanging trees
- Short or inadequate culverts leading to private drives
- Dead end roads lacking turnarounds
- Minimal defensible space around structures
- Homes with wooden siding
- Unmarked septic tanks in yards
- Lack of pressurized or non-pressurized water systems available
- Large, adjacent areas of forest or wildlands
- Heavy fuel buildup in adjacent wildlands
- Lack of enforcement of addressing ordinance
- High occurrence of wildfires in the several locations

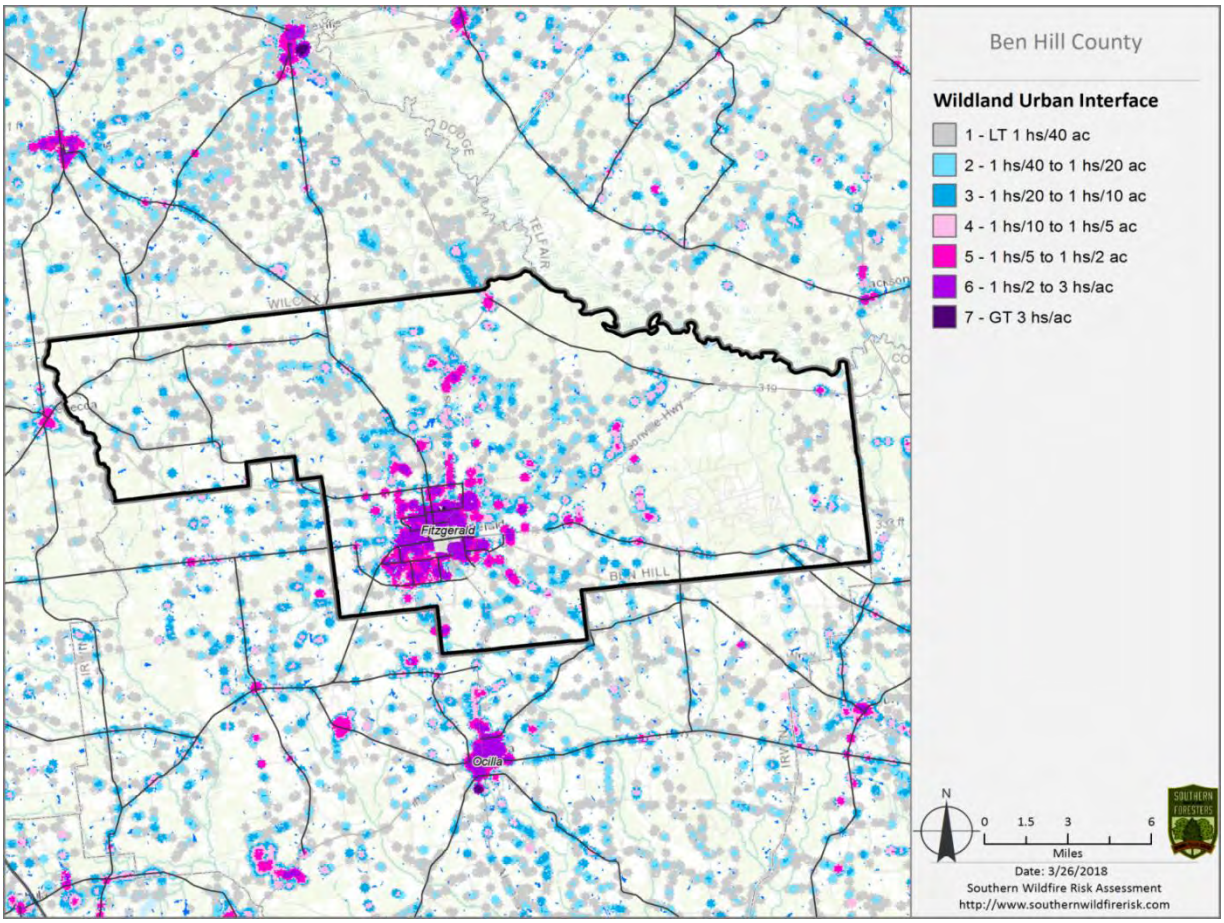
VI. SOUTHERN WILDFIRE RISK ASSESSMENT & RISK HAZARDS MAPS

The Southern Wildfire Risk Assessment tool, developed by the Southern Group of State Foresters, was released to the public in July 2014. This tool allows users of the Professional Viewer application of the Southern Wildfire Risk Assessment (SWRA) web Portal (SouthWRAP) to define a specific project area and summarize wildfire related information for this area. A detailed risk summary report is generated using a set of predefined map products developed by the Southern Wildfire Risk Assessment project which have been summarized explicitly for the user defined project area. A risk assessment summary was generated for Ben Hill County. The SouthWRAP (SWRA) products included in this report are designed to provide the information needed to support the following key priorities:

- Identify areas that are most prone to wildfire.
- Identify areas that may require additional tactical planning, specifically related to mitigation projects and Community Wildfire Protection Planning.
- Provide the information necessary to justify resource, budget and funding requests.
- Allow agencies to work together to better define priorities and improve emergency response, particularly across jurisdictional boundaries.
- Define wildland communities and identify the risk to those communities.
- Increase communication and outreach with local residents and the public to create awareness and address community priorities and needs.
- Plan for response and suppression resource needs.
- Plan and prioritize hazardous fuel treatment programs.

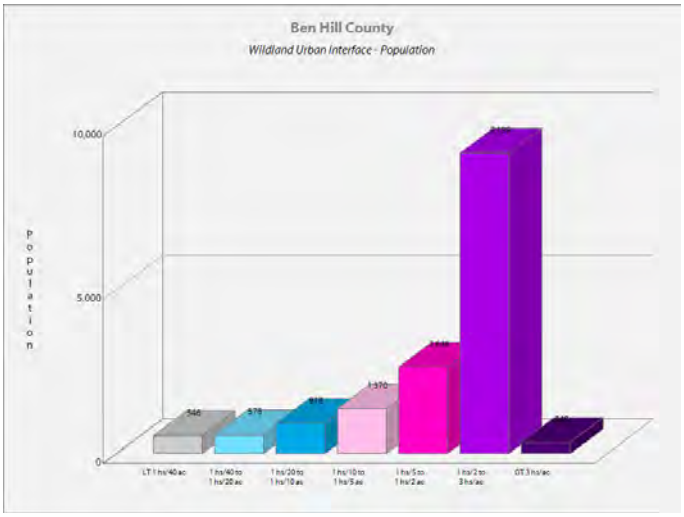


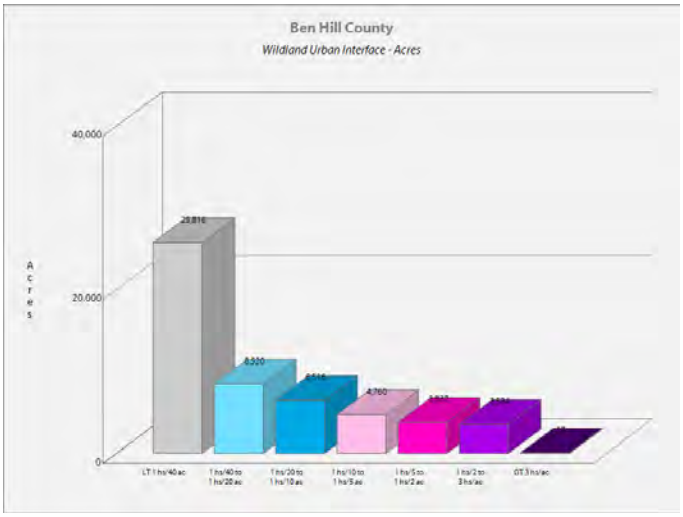
Community Protection Zones map from the Ben Hill County SWRA

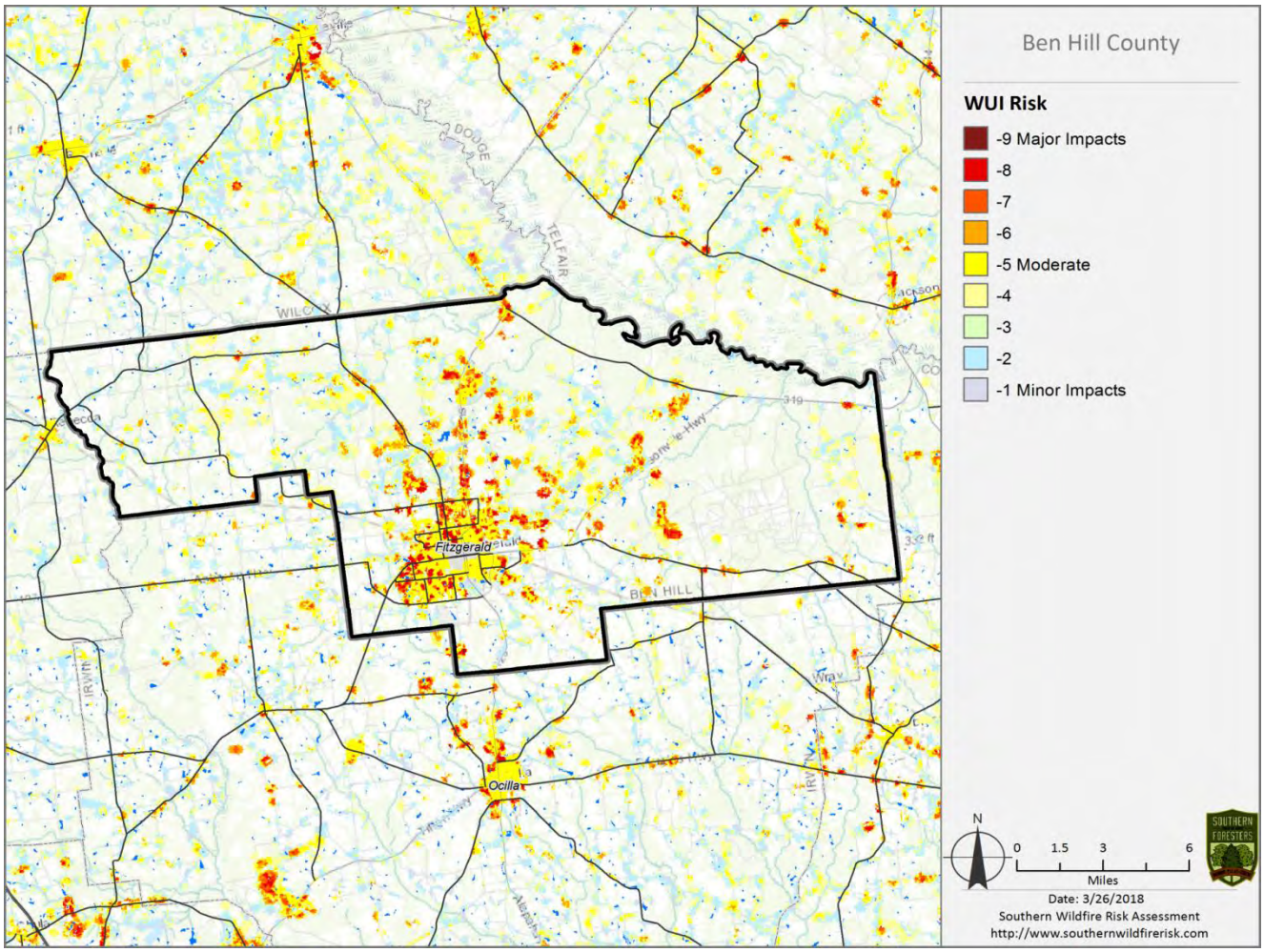


Above: Wildland Urban Interface (WUI) map

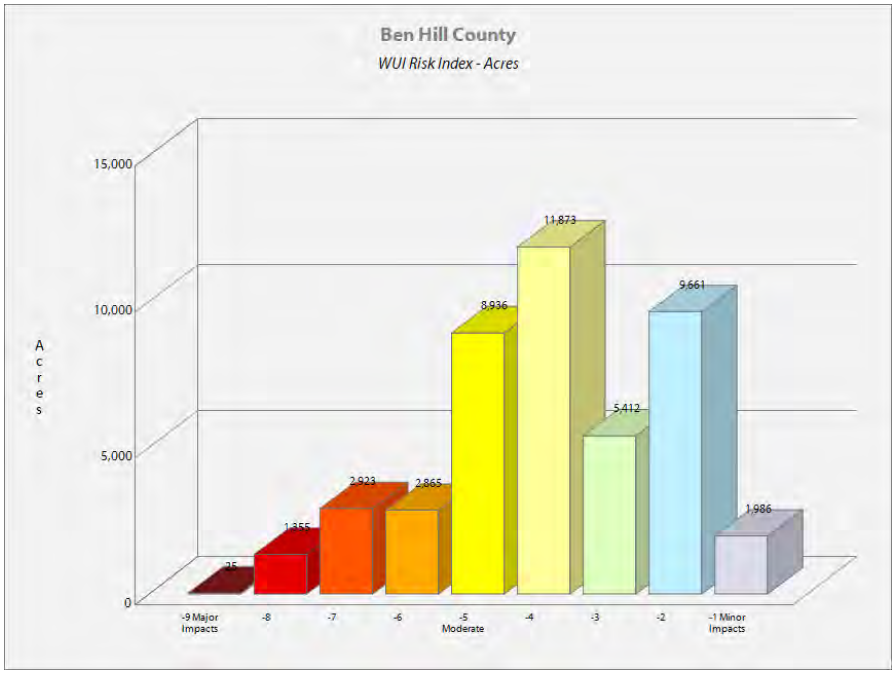
Below: WUI Population (left) WUI Acres (right)

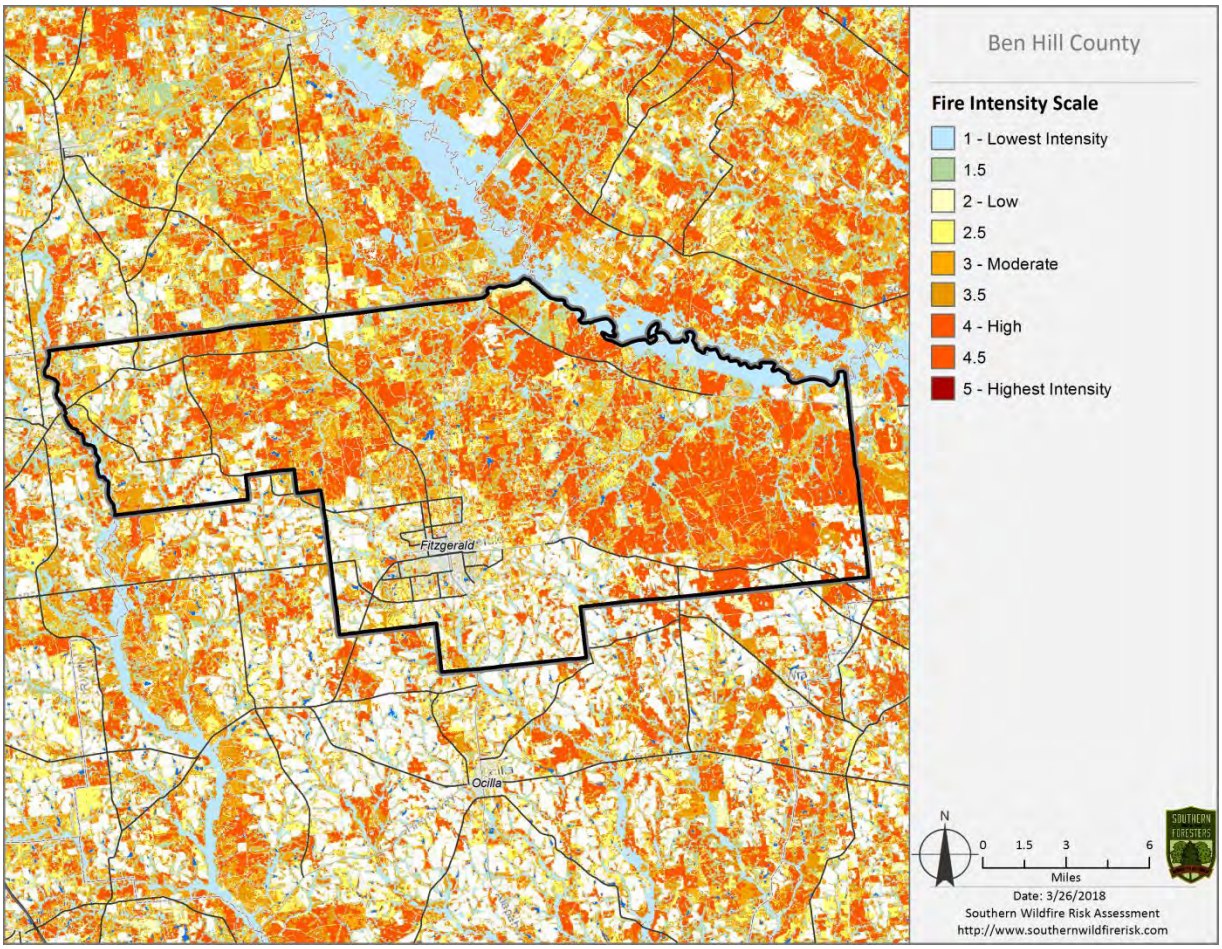




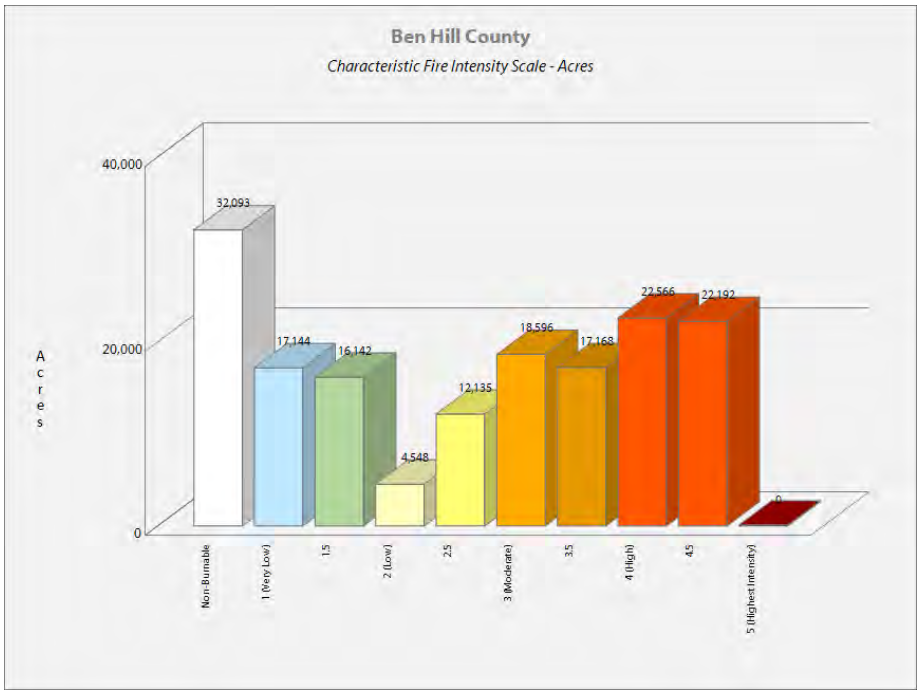


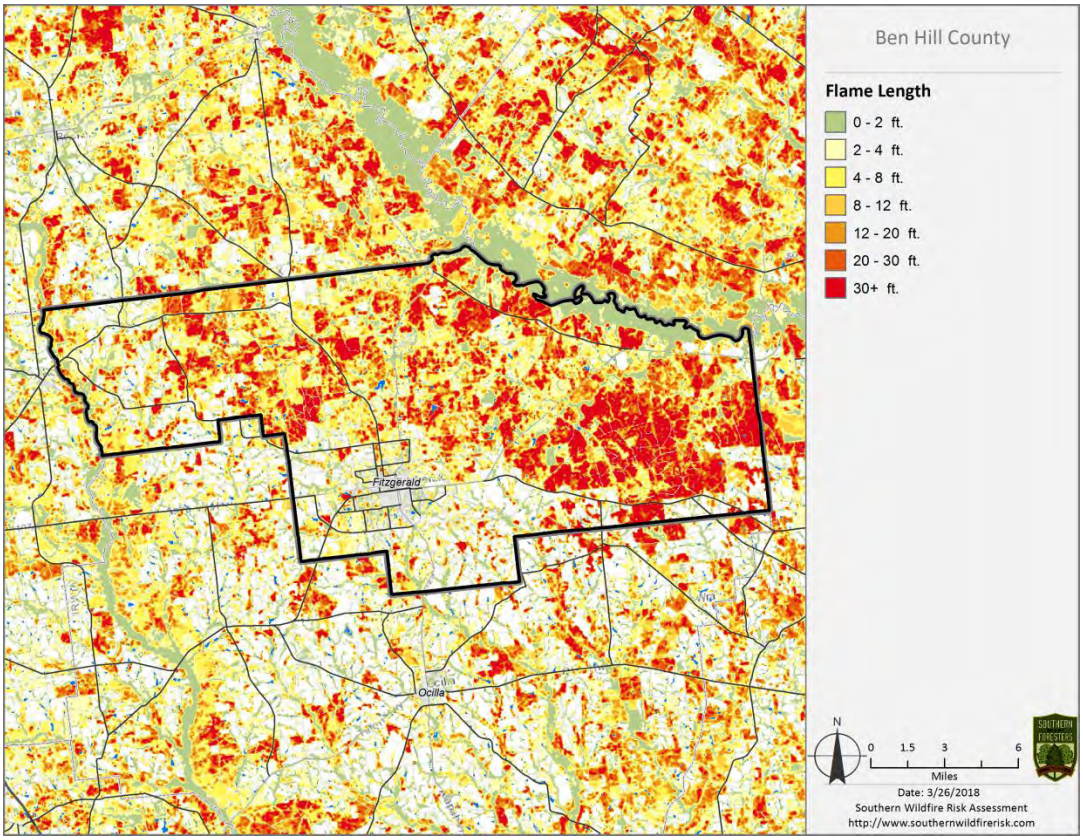
Above: Wildland Urban Interface (WUI) Risk map Below: WUI Risk Index Acres



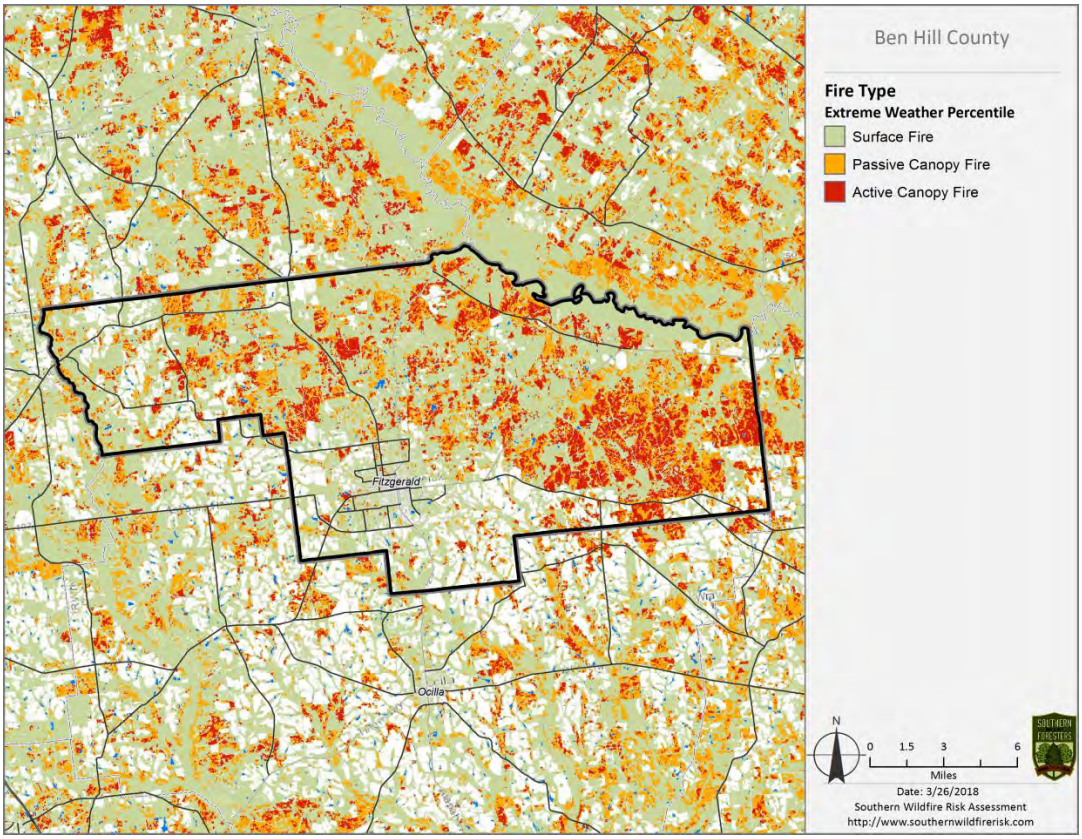


Above: Fire Intensity Scale Map Below: Fire Intensity Scale Acres





Above: Flame Length map Below: Fire Type map



VII. PRIORITIZED MITIGATION RECOMMENDATIONS

Executive Summary

As South Georgia continues to see increased growth from other areas seeking less crowded and warmer climes, new development will occur more frequently on forest and wildland areas. Ben Hill County will have an opportunity to significantly influence the wildland fire safety of new developments. It is important that new development be planned and constructed to provide for public safety in the event of a wildland fire emergency.

Over the past 20 years, much has been learned about how and why homes burn during wildland fire emergencies. Perhaps most importantly, case histories and research have shown that even in the most severe circumstances, wildland fire disasters can be avoided. Homes can be designed, built and maintained to withstand a wildfire even in the absence of fire services on the scene. The national Firewise Communities program is a national awareness initiative to help people understand that they don't have to be victims in a wildfire emergency. The National Fire Protection Association has produced two standards for reference: NFPA 1144 Standard for Reducing Structure Ignition Hazards from Wildland Fire. 2008 Edition and NFPA 1141 Standard for Fire Protection Infrastructure for Land Development in Suburban and Rural Areas.

The International Code Council developed the International Wildland Urban (WUI) Interface Code (IWUIC) in 2012. The Georgia Legislature adopted the code in 2014 for Georgia counties to use when developing building codes and zoning ordinances. If utilized this code will help reduce structure loss and minimize wildfire risk in the WUI.

When new developments are built in the Wildland/Urban Interface, a number of public safety challenges may be created for the local fire services: (1) the water supply in the immediate areas may be inadequate for fire suppression; (2) if the Development is in an outlying area, there may be a longer response time for emergency services; (3) in a wildfire emergency, the access road(s) may need to simultaneously support evacuation of residents and the arrival of emergency vehicles; and (4) when wildland fire disasters strike, many structures may be involved simultaneously, quickly exceeding the capability of even the best equipped fire departments.

The following recommendations were developed by the Ben Hill County CWPP Core team as a result of surveying and assessing fuels and structures and by conducting meetings and interviews with county and city officials. A priority order was determined based on which mitigation projects would best reduce the hazard of wildfire in the assessment area.

Proposed Community Hazard and Structural Ignitability Reduction Priorities

Primary Protection for Community and Its Essential Infrastructure		
Treatment Area	Treatment Types	Treatment Method(s)
1. All Structures	Create minimum of 30-feet of defensible space**	Trim shrubs and vines to 30 feet from structures, trim overhanging limbs, replace flammable plants near homes with less flammable varieties, remove vegetation around chimneys.
2. Applicable Structures	Reduce structural ignitability**	Clean flammable vegetative material from roofs and gutters, store firewood appropriately, install skirting around raised structures, store water hoses for ready access, and replace pine straw and mulch around plantings with less flammable landscaping materials.
3. Community Clean-up Day National Wildfire Preparedness Day	Cutting, mowing, pruning**	Cut, prune, and mow vegetation in shared community spaces.
4. Driveway Access	Right of Way Clearance	Maintain vertical and horizontal clearance for emergency equipment. See that adequate lengths of culverts are installed to allow emergency vehicle access.
5. Road Access	Identify needed road improvements	As roads are upgraded, widen to minimum standards with at least 50 foot diameter cul de sacs or turn arounds. Work with road department to improve standards for new culvert installation and replacement sufficient to allow access by firefighting equipment.
6. Codes and Ordinances	Examine existing codes and ordinances. Utilize the International Wildland Urban Interface Code (IWUIC)	Amend and enforce existing building codes as they relate to skirting, propane tank locations, public nuisances (trash/debris on property), Property address marking standards and other relevant concerns. Set minimum culvert size to allow safe access of emergency equipment to private drives. Review Subdivision and development ordinances for public safety concerns. Enforce uniform addressing ordinance.

Proposed Community Wildland Fuel Reduction Priorities		
Treatment Area	Treatment Types	Treatment Method(s)
1. Adjacent WUI Lands	Reduce hazardous fuels	Encourage prescribed burning for private landowners and industrial timberlands particularly adjacent to residential areas. Seek grant for mowing or prescribed burning in WUI areas.
2. Existing Fire Lines	Reduce hazardous fuels	Clean and re-harrow existing lines. Utilize forestry mowers and mastication in areas adjacent to homes.
Proposed Improved Community Wildland Fire Response Priorities		
1. Water Sources	Dry Hydrants	Locate additional dry hydrants or drafting locations needed. Locate and pre-clear helicopter dip sites. Map location of dry hydrants.
2. Fire Stations	Equipment	Seek grants or other funding for Wildland hand tools and lightweight Wildland PPE Gear. Investigate need for fulltime position for the county fire department.
3. Road Names	Road Signage	Timely replacement of missing road signs. “Dead End” or “No Outlet” Tags on Road Signs.
4. Personnel	Training	Obtain Wildland Fire Suppression training for Fire Personnel. Ready Set Go training.
**Actions to be taken by homeowners and community stakeholders		

Proposed Education and Outreach Priorities

1. Conduct "How to Have a Firewise Home" Workshop for Ben Hill County Residents
Set up and conduct a workshop for homeowners that teach the principles of making homes and properties safe from wildfire. Topics for discussion include defensible space, landscaping, building construction, etc. Workshop will be scheduled for evenings or weekends when most homeowners are available and advertised through local media outlets. Target local schools, community groups and local senior centers. Distribute materials promoting firewise practices and planning through local community and governmental meetings.
2. Conduct "Firewise" Workshop for Community Leaders
Arrange for GFC Firewise program to work with local community leaders and governmental officials on the importance of "Firewise Planning" in developing ordinances and codes as the county as the need arises. Identify "Communities at Risk" within the county for possible Firewise Community USA recognition.
3. Spring Clean-up Event – National Wildfire Preparedness Day is held annually on the 1st Saturday in May
Conduct clean-up event every spring involving the Georgia Forestry Commission, Ben Hill County and Fitzgerald Fire Departments and community residents. Set up information table with educational materials and refreshments. Initiate the event with a morning briefing by GFC Firewise coordinator and local fire officials detailing plans for the day and safety precautions. Activities to include the following: • Clean flammable vegetative material from roofs and gutters • Trim shrubs and vines to 30 feet away from structures • Trim overhanging limbs • Clean hazardous or flammable debris from adjacent properties Celebrate the work with a community cookout, with Community officials, GFC and Ben Hill County Fire Departments discussing and commending the work accomplished.
4. Informational Packets
Develop and distribute informational packets to be distributed by realtors and insurance agents. Included in the packets are the following: • Be Firewise Around Your Home • Firewise Guide to Landscape and Construction • Firewise Communities USA materials • Ready Set Go materials • Fire Adapted Community information

5. Wildfire Protection Display
Create and exhibit a display for the general public at the annual EMC meeting and other local events. Display can be independent or combined with the Georgia Forestry Commission display. Hold landowner or "town hall" meetings to promote Community Firewise Safety and develop community support and understanding of local fire departments and current issues.
6. Media
Invite the local news media to community "Firewise" functions for news coverage and regularly submit press releases documenting wildfire risk improvements in Ben Hill County. Utilize radio and social media to reach new audiences.

Prescribed burning is a best management practice to reduce hazardous fuel buildup. The Georgia Forestry Commission can assist by developing a prescribed burning plan, installation of firebreaks, and can provide equipment standby and burning assistance when personnel are available. Forestry consultants and contractors can also provide this service.

VIII. ACTION PLAN

Roles and Responsibilities

The following roles and responsibilities have been developed to implement the action plan:

Role	Responsibility
Hazardous Fuels and Structural Ignitability Reduction	
Ben Hill County WUI Fire Council	Create this informal team or council comprised of concerned residents, officials from Fitzgerald and Ben Hill County Fire Departments and Georgia Forestry Commission along with the EMA Director for Ben Hill County. Meet periodically to review progress towards mitigation goals, appoint and delegate special activities, work with federal, state, and local officials to assess progress and develop future goals and action plans. Work with residents to implement projects and firewise activities.
Key Messages to focus on	1 Defensible Space and Firewise Landscaping 2 Debris Burning Safety 3 Firewise information for homeowners 4 Prescribed burning benefits 5 Hazardous fuel reduction
Communications objectives	1 Create public awareness for fire danger and defensible space issues 2 Identify most significant human cause fire issues 3 Enlist public support to help prevent these causes 4 Encourage people to employ fire prevention and defensible spaces in their communities.
Target Audiences	1 Homeowners 2 Forest Landowners and users 3 Civic Groups 4 School Groups 5 Hunting Clubs
Methods	1 News Releases 2 Radio and TV PSA's for area stations and cable access channels 3 Personal Contacts 4 Key messages and prevention tips 5 Visuals such as signs, brochures and posters 6 Social Media 7 Electronic billboards

Spring Clean-up Day – National Wildfire Preparedness Day is held nationally om the 1st Saturday in May	
Event Coordinator	Coordinate day's events and schedule, catering for cookout, guest attendance, and moderate activities the day of the day of the event.
Event Treasurer	Collect funds from residents to cover food, equipment rentals, and supplies.
Publicity Coordinator	Advertise event through neighborhood newsletter, letters to officials, and public service announcements (PSAs) for local media outlets. Publicize post-event through local paper and radio PSAs.
Work Supervisor	Develop volunteer labor force of community residents; develop labor/advisory force from Georgia Forestry Commission, Fitzgerald and Ben Hill County Fire Departments and Emergency Management Agency. Procure needed equipment and supplies. In cooperation with local city and county officials, develop safety protocol. Supervise work and monitor activities for safety the day of the event.

Funding Needs

The following funding is needed to implement the action plan:

Project	Estimated Cost	Potential Funding Source(s)
1. Create a minimum of 30 feet of defensible space around structures	Varies	Residents will supply labor and fund required work on their own properties.
2. Reduce structural ignitability by cleaning flammable vegetation from roofs and gutters; appropriately storing firewood, installing skirting around raised structures, storing water hoses for ready access, replacing pine needles and mulch around plantings with less flammable material.	Varies	Residents will supply labor and fund required work on their own properties.
3. Amend codes and ordinances to provide better driveway access, increased visibility of house numbers, properly stored firewood, minimum defensible space brush clearance, required Class A roofing materials and skirting around raised structures, planned maintenance of community lots.	No Cost	To be adopted by city and county governments. Utilize IWUIC
4. Spring Cleanup Day National Wildfire Preparedness Day	Varies	Community Business Donations. State Farm grants available
5. Fuel Reduction Activities	$35/acre	FEMA & USFS Grants

Assessment Strategy

To accurately assess progress and effectiveness for the action plan, the Ben Hill County WUI Fire Council will implement the following:

- Annual wildfire risk assessment will beconducted to re-assess wildfire hazards and prioritize needed actions.

- Mitigation efforts that are recurring (such as mowing, burning, and clearing of defensible space) will be incorporated into an annual renewal of the original action plan.

- Mitigation efforts that could not be funded in the requested year will be incorporated into the annual renewal of the original action plan.

- Continuing educational and outreach programs will be conducted and assessed for effectiveness. Workshops will be evaluated based on attendance and post surveys that are distributed by mail 1 month and 6 months following workshop date.

- The Ben Hill County WUI Council will publish an annual report detailing mitigation projects initiated and completed, progress for ongoing actions, funds received, funds spent, and in-kind services utilized. The report will include a "state of the community" section that critically evaluates mitigation progress and identifies areas for improvement. Recommendations will be incorporated into the annual renewal of the action plan.

- An annual survey will be distributed to residents soliciting information on individual mitigation efforts on their own property (e.g., defensible space). Responses will be tallied and reviewed at the next Ben Hill County WUI Council meeting. Needed actions will be discussed and delegated.

This plan should become a working document that is shared by local, state, and federal agencies that will use it to accomplish common goals. An agreed-upon schedule for meeting to review accomplishments, solve problems, and plan for the future should extend beyond the scope of this plan. Without this follow up this plan will have limited value.

IX. MITIGATION ASSISTANCE & GRANT FUNDING

Community Protection Grant: US Forest Service sponsored prescribed fire program. Communities with "at-risk" properties that lie within ten miles of a National Forest, National Park Service or Bureau of Land Management tracts may apply with the Georgia Forestry Commission to have their land prescribe burned free-of-charge. Forest mastication, where it is practical with Georgia Forestry Commission equipment, is also available under this grant program.

FEMA Mitigation Policy MRR-2-08-01: through GEMA – Hazard Mitigation Grant Program (HMGP) and Pre-Disaster Mitigation Program (PDM).

1. To provide technical and financial assistance to local governments to assist in the implementation of long term, cost effective hazard mitigation accomplishments.

2. This policy addresses wildfire mitigation for the purpose of reducing the threat to all-risk structures through creating defensible space, structural protection through the application of ignition resistant construction and limited hazardous fuel reduction to protect life and property.

3. With a completed registered plan (addendum to the State Plan) counties can apply for pre-mitigation funding. They will also be eligible for HMGP funding if the county is declared under a wildfire disaster.

Georgia Forestry Commission: Plowing and prescribed burning assistance, as well as forest mastication, can be obtained from the GFC as a low-cost option for mitigation efforts.

The Georgia Forestry Commission Firewise Community Mitigation Assistance Grants – Nationally recognized Firewise Communities can receive up to $5000 grants to help address potential wildfire risk reduction projects. Grant submission can be made through local Georgia Forestry Commission offices or your Regional Wildfire Prevention Specialist.

The International Association of Fire Chiefs (IAFC) and American International Group, Inc. (AIG) offer grants to assist local fire departments in establishing or enhancing their community fuels mitigation programs while educating members of the community about community wildfire readiness and encouraging personal action.

X. GLOSSARY

Community-At-Risk – *A group of two or more structures whose proximity to forested or wildland areas places homes and residents at some degree of risk.*

Critical Facilities – *Buildings, structures or other parts of the community infrastructure that require special protection from an approaching wildfire.*

CWPP – *The Community Wildfire Protection Plan.*

Defensible Space – *The immediate landscaped area around a structure (usually a minimum of 30 ft.) kept "lean, clean and green" to prevent an approaching wildfire from igniting the structure.*

Dry Hydrant - *A non-pressurized pipe system permanently installed in existing lakes, ponds and streams that provides a suction supply of water to a fire department tank truck.*

FEMA – *The Federal Emergency Management Agency whose mission is to support our citizens and first responders to ensure that as a nation we work together to build, sustain, and improve our capability to prepare for, protect against, respond to, recover from, and mitigate all hazards.*

Fire Adapted Community – *A community fully prepared for its wildfire risk by taking actions to address safety, homes, neighborhoods, businesses and infrastructure, forest, parks, open spaces, and other community assets.*

Firewise Program – *A national initiative with a purpose to reduce structural losses from wildland fires.*

Firewise Community/USA – *A national recognition program for communities that take action to protect themselves from wildland fire. To qualify a community must have a wildfire risk assessment by the Georgia Forestry Commission, develop a mitigation action plan, have an annual firewise mitigation/education event, have dedicated firewise leadership, and complete the certification application.*

Fuels – *All combustible materials within the wildland/urban interface or intermix including, but not limited to, vegetation and structures.*

Fuel Modification – *Any manipulation or removal of fuels to reduce the likelihood of ignition or the resistance to fire control.*

Hazard & Wildfire Risk Assessment – *An evaluation to determine an area's (community's) potential to be impacted by an approaching wildland fire.*

Healthy Forests Initiative - *Launched in August 2002 by President Bush (following passage of the Healthy Forests Restoration Act by Congress) with the intent to reduce the risks severe wildfires pose to people, communities, and the environment.*

Home Ignition Zone (Structure Ignition Zone) - *Treatment area for wildfire protection. The "zone" includes the structure(s) and their immediate surroundings from 0-200 ft.*
Mitigation – An a*ction that moderates the severity of a fire hazard or risk.*

National Fire Plan – *National initiative, passed by Congress in the year 2000, following a landmark wildland fire season, with the intent of actively responding to severe wildland fires and their impacts to communities while ensuring sufficient firefighting capacity for the future.*

National Fire Protection Association (NFPA) - *An international nonprofit organization established in 1896, whose mission is to reduce the worldwide burden of fire and other hazards on the quality of life by providing and advocating consensus codes and standards, research, training, and education.*

National Wildfire Preparedness Day – *Started in 2014 by the National Fire Protection Association as a day for communities to work together to prepare for the approaching wildfire season. It is held annually on the first Saturday in May.*

Prescribed Burning (prescribed fire) –*The use of planned fire that is deliberately set under specific fuel and weather condition to accomplish a variety of management objectives and is under control until it burns out or is extinguished.*

Ready, Set, Go - *A program fire services use to help homeowners understand wildfire preparedness, awareness, and planning procedures for evacuation.*

Southern Group of State Foresters – *Organization whose members are the agency heads of the forestry agencies of the 13 southern states, Puerto Rico and the Virgin Islands.*

Stakeholders– *Individuals, groups, organizations, businesses or others who have an interest in wildland fire protection and may wish to review and/or contribute to the CWPP content.*

Wildfire or Wildland Fire – *An unplanned and uncontrolled fire spreading through vegetative fuels.*

Wildland/Urban Interface - *The presence of structures in locations in which the authority having jurisdiction (AHJ) determines that topographical features, vegetation, fuel types, local weather conditions and prevailing winds result in the potential for ignition of the structures within the area from flames and firebrands from a wildland fire* (NFPA 1144, 2008).

XI. SOURCES OF INFORMATION

Publications/Brochures/Websites:

- FIREWISE materials can be ordered at www.firewise.org
- Georgia Forestry Commission www.georgiafirewise.org
- Examples of successful wildfire mitigation programs can be viewed at the website for National Database of State and Local wildfire Hazard Mitigation Programs sponsored by the U.S. Forest Service and the Southern Group of State Foresters www.wildfireprograms.com
- Information about a variety of interface issues (including wildfire) can be found at the USFS website for Interface South: www.interfacesouth.org
- Information on codes and standards for emergency services including wildfire can be found at www.nfpa.org
- Information on FEMA Assistance to Firefighters Grants (AFG) can be found at www.firegrantsupport.com
- Information on National Fire Plan grants can be found at http://www.federalgrantswire.com/national-fire-plan--rural-fire-assistance.html
- Southern Wildfire Risk Assessment website SouthWRAP www.SouthernWildfireRisk.com
- Fire Adapted Communities www.fireadapted.org
- Ready, Set, Go www.wildlandfirersg.org
- National Wildfire Preparedness Day www.wildfireprepday.org

Appended Documents:

Ben Hill County Southern Wildfire Risk Assessment Summary Report (SWRA)
Ben Hill County Wildfire assessment scoresheets

All files that make up this plan are available in an electronic format from the Georgia Forestry Commission.

Georgia Forestry Commission
5645 Riggins Mill Rd.
Dry Branch, GA 31020

1-800-GA-TREES
GaTrees.org

The Georgia Forestry Commission provides leadership, service, and education in the protection and conservation of Georgia's forest resources.

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Appendix D

BEN HILL COUNTY
HAZARD FREQUENCY TABLE

Hazard	Number of Events in Historic Record	Number of Years in Historic Record	Number of Events in Past 10 Years	Number of Events in Past 20 Years	Number of Events in Past 50 Years	Historic Recurrence Interval (years)	Historic Frequency % chance/ year	Past 10 Year Record Frequency Per Year	Past 20 Year Record Frequency Per Year	Past 50 Year Record Frequency Per Year
Hurricanes/Tropical Storms	7	69	3	6	7	9.86	10.14	0.3	0.3	0.14
Tornadoes	13	69	1	3	10	5.31	18.84	0.1	0.15	0.2
Floods	5	69	2	4	5	13.80	7.25	0.2	0.2	0.1
Lightning	1	69	1	1	1	69.00	1.45	0.1	0.05	0.02
Wildfires	3038	60	457	1081	3038	0.02	5063.33	45.7	54.05	60.76
Extreme Heat	33	12	32	33	33	0.36	275.00	3.2	1.65	0.66
Drought	30	69	29	30	30	2.30	43.48	2.9	1.5	0.6

NOTE: The historic frequency of a hazard event over a given period of time determines the historic recurrence interval. For example: If there have been 20 HazMat Releases in the County in the past 5 years, statistically you could expect that there will be 4 releases a year.

Realize that from a statistical standpoint, there are several variables to consider. 1) Accurate hazard history data and collection are crucial to an accurate recurrence interval and frequency. 2) Data collection and accuarcy has been much better in the past 10-20 years (NCDC weather records). 3) It is important to include all significant recorded hazard events which will include periodic updates to this table.

By updating and reviewing this table over time, it may be possible to see if certain types of hazard events are increasing in the past 10-20 years.

GEMA Worksheet #1 Identify the Hazard Step 1

Date: What kinds of natural hazards can affect you?

Task A. List the hazards that may occur.

1. *Research newspapers and other historical records*
2. *Review existing plans and reports.*
3. *Talk to the experts in your community, state, or region.*
4. *Gather information on Internet Websites.*
5. *Next to the hazard list below, put a check mark in the Task A boxes beside all hazards that may occur in your community or state.*

Task B. Focus on the most prevalent hazard in your community or state.

1. *Go to hazard Websites.*
2. *Locate your community or state on the Website map.*
3. *Determine whether you are in a high-risk area. Get more localized information if necessary.*
4. *Next to the hazard list below, put a check mark in the Task B boxes beside all hazards that post a significant threat.*

	Task A	**Task B**
Avalanche	___	___
Coastal Erosion	___	___
Coastal Storm	___	___
Dam Failure	___	___
Drought	_X	_X_
Earthquake	___	___
Expansive Soils	___	___
Extreme Heat	___	___
Flood	**_X_**	**_X_**
Hailstorm	_X_	_X_
Hurricane	**_X_**	**_X_**
Land Slide	___	___
Severe Winter Storm	_X_	_X_
Tornado	**_X_**	**_X_**
Tsunami	___	___
Volcano	___	___
Wildfire	**_X_**	**_X_**
Windstorm	___	___
Hazard Material	___	___
Radiological	___	___
Other: Thunderstorm/Wind	X	X
Other_____	___	___
Other_____	___	___

*Note: **Bolded** hazards are addressed in this How-to Guide.*

Use this space to record information you find for each of the hazards you will be researching. Attach additional pages as necessary.

Hazard or Event Description (Type of hazard, date of event, number of injuries, cost and types of damage, etc.)	**Source of Information**	**Map Available for this Hazard?**	**Scale of Map**

GEMA Worksheet #2 Profile Hazard Events Step 2

County: Date:

How Bad Can It Get?

Task A. Obtain or create a base map.

GEMA will be providing you with a base map, USGS topos and DOQQ as part of our deliverables to local government for the planning process. Additionally, we will be providing you with detailed hazard layer coverages. These data layers originate from state or nationwide coverage or datasets. Therefore, it is important for local government to assess what you already have at the local level. It is important for you at the local level to have an idea of what existing maps you have available for the planning process. Some important things to think about:

1) What maps do we already have in the county that would be relevant to the planning process?
2) Have other local plans used maps or mapping technology where there is specific data that is also needed in my local plan?
3) What digital maps do we have?
4) Do we have any Geographic Information System (GIS) data, map themes or layers or databases here at the local level (or regional) that we can use?
5) If we do have any GIS data, where is it located at, and who is our local expert?
6) Are there any ongoing GIS or mapping initiatives at the local level in other planning or mapping efforts? If so, what are they, and what are the timetables for completion?
7) Are there mapping needs that have been identified at the local level in the past? If so, what are they and when were they identified?
8) Of the existing maps, GIS data and other digital mapping information, what confidence do we have at the local level that it is accurate data?

Please answer the above questions on a separate sheet of paper and attach to this worksheet.
It is important to realize that those counties that already have GIS and digital mapping, (ie: parcel level data, GPS fire hydrants, etc) higher levels of spatial accuracy and detail will exist for some data layers at the local level. However, for this planning process, that level of detail will not be needed on all layers in the overall mapping and analysis.

You can use existing maps from:

- Road Maps
- USGS topographic maps or Digital Orthophoto Quarter Quads (DOQQ)
- Topographic and/or planimetric maps from other agencies
- Aerial topographic and/or planimetric maps
- Field Surveys
- GIS software
- CADD software
- Digitized paper map

Title of Map	Scale	Date

Task B. Obtain a hazard event profile.	Task C. Record your hazard event profile information.
Avalanche	
Coastal Storm / Coastal Erosion 1. Get a copy of your FIRM. _____ 2. Verify that the FIRM is up-to-date and complete. _____ 3. Determine the annual rate of coastal erosion. _____ 4. Find your design wind speed. _____	1. Transfer the boundaries of your coastal storm hazard areas onto your base map. 2. Transfer the BFEs onto your base map. 3. Record the erosion rates on your base map: _____ 4. Record the design wind speed here and on your base map: _____
Dam Failure	
Drought	
Earthquake 1. Go to the http://geohazards.cr.usgs.gov Website. 2. Locate your planning area on the map. 3. Determine your PGA.	1. Record your PGA: _____ 2. If you have more than one PGA print, download or order your PGA map.
Expansive Soils	
Extreme Heat	
Flood 1. Get a copy of your FIRM. _____ 2. Verify the FIRM is up-to-date and complete. _____	1. Transfer the boundaries from your firm onto your base map (floodway, 100-yr flood, 500-yr flood). 2. Transfer the BFEs onto your base map.
Hailstorm	
Hurricane	
Land Subsidence	
Landslide 1. Map location of previous landslides. _____ 2. Map the topography. _____ 3. Map the geology. _____ 4. Identify thee high-hazard areas on your map. _____	1. Mark the areas susceptible to landslides onto your base map.
Severe Winter Storm	
Tornado 1. Find your design wind speed. _____	1. Record your design wind speed: _____ 2. If you have more than one design wind speed, print, download or copy your design wind speed zones, copy the boundary of your design wind speed zones on your base map, then record the design wind speed zones on your base map.
Tsunami	
Wildfire 1. Map the fuel models located within the urban-wildland interface areas. _____ 2. Map the topography. _____ 3. Determine your critical fire weather frequency. _____ 4. Determine your fire hazard severity. _____	1. Draw the boundaries of your wildfire hazard areas onto your base map.
Other 1. Map the hazard. _____	1. Record hazard event info on your base map.

Worksheet #4 Evaluate Alternative Mitigation Actions

1. Fill in the goal and its corresponding objective. Use a separate worksheet for each objective. The considerations under each criterion are suggested ones to use; you can revise these to reflect your own considerations (see Table 2-1).

2. Fill in the alternative actions that address the specific objectives the planning team identified in Worksheet #1.

3. ***Scoring:*** *For each consideration, indicate a plus (+) for favorable, and a negative (-) for less favorable.*

When you complete the scoring; negatives will indicate gaps or shortcomings in the particular action, which can be noted in the Comments section. For considerations that do not apply, fill in N/A for not applicable. Only leave a blank if you do not know an answer. In this case, make a note in the Comments section of the "expert" or source to consult to help you evaluate the criterion.

Goal #1.1: Enhance the community's ability to issue an early warning of hurricanes in an effective, dependable, and rapid manner..

Objective 1: Enhance the ability of the Ben Hill County Emergency Management Agency to respond effectively and efficiently to emergency needs during and after a hurricane event.

STAPLEE Criteria	S		T			A			P			L			E				E				
	(Social)		(Technical)			(Administrative)			(Political)			(Legal)			(Economic)				(Environmental)				
Considerations → for Alternative Actions ↓	Community Acceptance	Effect on Segment of Population	Technical Feasibility	Long-term Solution	Secondary Impacts	Staffing	Funding Allocated	Maintenance / Operations	Political Support	Local Champion	Public Support	State Authority	Existing Local Authority	Potential Legal Challenge	Benefit of Action	Cost of Action	Contributes to Economic Goals	Outside Funding Required	Effect on Land / Water	Effect on Endangered Species	Effect on HAZMAT / Waste Sites	Consistent with Community Environmental Goals	Consistent With Federal Laws
Action Step 1: Implement the "Community Emergency Response Team" (CERT) program.	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	N/A	N/A	N/A	N/A	N/A

Worksheet #4 Evaluate Alternative Mitigation Actions

1. Fill in the goal and its corresponding objective. Use a separate worksheet for each objective. The considerations under each criterion are suggested ones to use; you can revise these to reflect your own considerations (see Table 2-1).

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Goal 1.2: Reduce the risks and vulnerability of citizens and critical facilities to damage resulting from hurricanes.

Objective 1: **Protect life, health, and property of residents from the force of hurricanes.**

STAPLEE Criteria	S		T			A			P			L			E				E				
	(Social)		(Technical)			(Administrative)			(Political)			(Legal)			(Economic)				(Environmental)				
Considerations → for Alternative Actions ↓	Community Acceptance	Effect on Segment of Population	Technical Feasibility	Long-term Solution	Secondary Impacts	Staffing	Funding Allocated	Maintenance / Operations	Political Support	Local Champion	Public Support	State Authority	Existing Local Authority	Potential Legal Challenge	Benefit of Action	Cost of Action	Contributes to Economic Goals	Outside Funding Required	Effect on Land / Water	Effect on Endangered Species	Effect on HAZMAT / Waste Sites	Consistent with Community Environmental Goals	Consistent With Federal Laws
Action Step 2: Educate homeowners and builders on individual safe rooms.	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	N/A	N/A	N/A	N/A	N/A
Action Step 3: Encourage the American Red Cross to teach the Citizen's Disaster Course on a frequent basis.	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	N/A	N/A	N/A	N/A	N/A
Action Step 4: Encourage businesses to develop emergency plans.	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	N/A	N/A	N/A	N/A	N/A
Action Step 5: Increase public awareness of the Early Warning Communication/Notification System, NOAA weather radios, and available community safe shelters by publishing articles in the local newspaper, holding town hall meetings, and providing bulletins to local churches and the schools.	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	N/A	N/A	N/A	N/A	N/A

STAPLEE Criteria	S		T			A			P			L			E				E				
	(Social)		(Technical)			(Administrative)			(Political)			(Legal)			(Economic)				(Environmental)				
Considerations → for Alternative Actions ↓	Community Acceptance	Effect on Segment of Population	Technical Feasibility	Long-term Solution	Secondary Impacts	Staffing	Funding Allocated	Maintenance / Operations	Political Support	Local Champion	Public Support	State Authority	Existing Local Authority	Potential Legal Challenge	Benefit of Action	Cost of Action	Contributes to Economic Goals	Outside Funding Required	Effect on Land / Water	Effect on Endangered Species	Effect on HAZMAT / Waste Sites	Consistent with Community Environmental Goals	Consistent With Federal Laws
Action Step 6: Install auxiliary, mobile, and/or fixed generators (including transfer switches) where needed, including all designated evacuation and emergency shelters, community water systems, and critical facilities.	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	N/A	N/A	N/A	N/A	N/A
Action Step 7: Trim tree lines around roads, homes, utilities and businesses.	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	N/A	N/A	N/A	N/A	N/A
Action Step 8: Seek funding to retrofit public buildings to reinforce windows, roofs and doors.	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	N/A	N/A	N/A	N/A	N/A
Action Step 9: Initiate an inspection program at critical facilities to identify construction weaknesses subject to high wind damage.	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	N/A	N/A	N/A	N/A	N/A

Worksheet #4 Evaluate Alternative Mitigation Actions

1. Fill in the goal and its corresponding objective. Use a separate worksheet for each objective. The considerations under each criterion are suggested ones to use; you can revise these to reflect your own considerations (see Table 2-1).

2. Fill in the alternative actions that address the specific objectives the planning team identified in Worksheet #1.

3. ***Scoring:*** *For each consideration, indicate a plus (+) for favorable, and a negative (-) for less favorable.*

When you complete the scoring; negatives will indicate gaps or shortcomings in the particular action, which can be noted in the Comments section. For considerations that do not apply, fill in N/A for not applicable. Only leave a blank if you do not know an answer. In this case, make a note in the Comments section of the "expert" or source to consult to help you evaluate the criterion.

Goal 2.1: Enhance the community's ability to issue an early warning of tornadoes in an effective, dependable, and rapid manner.

Objective 1: Enhance the ability of the Ben Hill County Emergency Management Agency to respond effectively and efficiently to emergency needs during and after a tornado event.

STAPLEE Criteria	S		T			A			P			L			E				E				
	(Social)		(Technical)			(Administrative)			(Political)			(Legal)			(Economic)				(Environmental)				
Considerations → for Alternative Actions ↓	Community Acceptance	Effect on Segment of Population	Technical Feasibility	Long-term Solution	Secondary Impacts	Staffing	Funding Allocated	Maintenance / Operations	Political Support	Local Champion	Public Support	State Authority	Existing Local Authority	Potential Legal Challenge	Benefit of Action	Cost of Action	Contributes to Economic Goals	Outside Funding Required	Effect on Land / Water	Effect on Endangered Species	Effect on HAZMAT / Waste Sites	Consistent with Community Environmental Goals	Consistent With Federal Laws
Action Step 1: Implement the "Community Emergency Response Team" (CERT) program	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	N/A	N/A	N/A	N/A	N/A

Worksheet #4 Evaluate Alternative Mitigation Actions

1. Fill in the goal and its corresponding objective. Use a separate worksheet for each objective. The considerations under each criterion are suggested ones to use; you can revise these to reflect your own considerations (see Table 2-1).

2. Fill in the alternative actions that address the specific objectives the planning team identified in Worksheet #1.

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When you complete the scoring; negatives will indicate gaps or shortcomings in the particular action, which can be noted in the Comments section. For considerations that do not apply, fill in N/A for not applicable. Only leave a blank if you do not know an answer. In this case, make a note in the Comments section of the "expert" or source to consult to help you evaluate the criterion.

Goal 2.2: Reduce the risks and vulnerability of citizens and critical facilities to tornado damage.

Objective 1: Protect the life, health, and property of residents from the force of tornadoes.

STAPLEE Criteria	S		T			A			P			L			E				E				
	(Social)		(Technical)			(Administrative)			(Political)			(Legal)			(Economic)				(Environmental)				
Considerations → for Alternative Actions ↓	Community Acceptance	Effect on Segment of Population	Technical Feasibility	Long-term Solution	Secondary Impacts	Staffing	Funding Allocated	Maintenance / Operations	Political Support	Local Champion	Public Support	State Authority	Existing Local Authority	Potential Legal Challenge	Benefit of Action	Cost of Action	Contributes to Economic Goals	Outside Funding Required	Effect on Land / Water	Effect on Endangered Species	Effect on HAZMAT / Waste Sites	Consistent with Community Environmental Goals	Consistent With Federal Laws
Action Step 2: Educate homeowners and builders on individual safe rooms.	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	N/A	N/A	N/A	N/A	N/A
Action Step 4: Encourage the American Red Cross to teach the Citizen's Disaster Course on a frequent basis.	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	N/A	N/A	N/A	N/A	N/A
Action Step 5: Encourage businesses to develop emergency plans.	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	N/A	N/A	N/A	N/A	N/A
Action Step 6: Increase public awareness of the Early Warning Communication/Notification System, NOAA weather radios, and available community safe shelters by publishing articles in the local newspaper, holding town hall meetings, and providing bulletins to local churches and the schools.	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	N/A	N/A	N/A	N/A	N/A

STAPLEE Criteria	S		T			A			P			L			E				E				
	(Social)		(Technical)			(Administrative)			(Political)			(Legal)			(Economic)				(Environmental)				
Considerations → for Alternative Actions ↓	Community Acceptance	Effect on Segment of Population	Technical Feasibility	Long-term Solution	Secondary Impacts	Staffing	Funding Allocated	Maintenance / Operations	Political Support	Local Champion	Public Support	State Authority	Existing Local Authority	Potential Legal Challenge	Benefit of Action	Cost of Action	Contributes to Economic Goals	Outside Funding Required	Effect on Land / Water	Effect on Endangered Species	Effect on HAZMAT / Waste Sites	Consistent with Community Environmental Goals	Consistent With Federal Laws
Action Step 7: Install auxiliary, mobile, and/or fixed generators (including transfer switches) where needed, including all designated evacuation and emergency shelters, community water systems, and critical facilities.	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	N/A	N/A	N/A	N/A	N/A
Action Step 8: Trim tree lines around roads, homes, utilities and businesses.	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	N/A	N/A	N/A	N/A	N/A
Action Step 9: Seek funding to retrofit public buildings to reinforce windows, roofs and doors.	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	N/A	N/A	N/A	N/A	N/A
Action Step 10: Initiate an inspection program at critical facilities to identify construction weaknesses subject to high wind damage.	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	N/A	N/A	N/A	N/A	N/A

Worksheet #4 Evaluate Alternative Mitigation Actions

1. Fill in the goal and its corresponding objective. Use a separate worksheet for each objective. The considerations under each criterion are suggested ones to use; you can revise these to reflect your own considerations (see Table 2-1).

2. Fill in the alternative actions that address the specific objectives the planning team identified in Worksheet #1.

3. ***Scoring:*** *For each consideration, indicate a plus (+) for favorable, and a negative (-) for less favorable.*

When you complete the scoring; negatives will indicate gaps or shortcomings in the particular action, which can be noted in the Comments section. For considerations that do not apply, fill in N/A for not applicable. Only leave a blank if you do not know an answer. In this case, make a note in the Comments section of the "expert" or source to consult to help you evaluate the criterion.

Goal 3.1: Minimize flood damage in Ben Hill County

Objective 1: **Minimize losses to existing and future structures due to flooding caused by excessive rainfall.**

STAPLEE Criteria	S		T			A			P			L			E				E				
	(Social)		(Technical)			(Administrative)			(Political)			(Legal)			(Economic)				(Environmental)				
Considerations → for Alternative Actions ↓	Community Acceptance	Effect on Segment of Population	Technical Feasibility	Long-term Solution	Secondary Impacts	Staffing	Funding Allocated	Maintenance / Operations	Political Support	Local Champion	Public Support	State Authority	Existing Local Authority	Potential Legal Challenge	Benefit of Action	Cost of Action	Contributes to Economic Goals	Outside Funding Required	Effect on Land / Water	Effect on Endangered Species	Effect on HAZMAT / Waste Sites	Consistent with Community Environmental Goals	Consistent With Federal Laws
Action Step 1: Review data on storm events to determine where repetitive flooding occurs as a result of inadequate drainage infrastructure.	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	N/A	N/A	N/A	N/A	N/A
Action Step 2: Identify and pursue grant opportunities to upgrade deficient drainage systems.	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	N/A	N/A	N/A	N/A	N/A
Action Step 4: Continue membership in the NFIP by adopting updated ordinances and FIRM maps as updates become available.	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	N/A	N/A	N/A	N/A	N/A

Worksheet #4 Evaluate Alternative Mitigation Actions

1. Fill in the goal and its corresponding objective. Use a separate worksheet for each objective. The considerations under each criterion are suggested ones to use; you can revise these to reflect your own considerations (see Table 2-1).

2. Fill in the alternative actions that address the specific objectives the planning team identified in Worksheet #1.

3. ***Scoring:*** *For each consideration, indicate a plus (+) for favorable, and a negative (-) for less favorable.*

When you complete the scoring; negatives will indicate gaps or shortcomings in the particular action, which can be noted in the Comments section. For considerations that do not apply, fill in N/A for not applicable. Only leave a blank if you do not know an answer. In this case, make a note in the Comments section of the "expert" or source to consult to help you evaluate the criterion.

Goal 4.1: Protect Citizens of Ben Hill County from the threat of lightning strikes.

Objective 1: Provide tools necessary for warning of lightning strikes.

STAPLEE Criteria	S		T			A			P			L			E				E				
	(Social)		(Technical)			(Administrative)			(Political)			(Legal)			(Economic)				(Environmental)				
Considerations → for Alternative Actions ↓	Community Acceptance	Effect on Segment of Population	Technical Feasibility	Long-term Solution	Secondary Impacts	Staffing	Funding Allocated	Maintenance / Operations	Political Support	Local Champion	Public Support	State Authority	Existing Local Authority	Potential Legal Challenge	Benefit of Action	Cost of Action	Contributes to Economic Goals	Outside Funding Required	Effect on Land / Water	Effect on Endangered Species	Effect on HAZMAT / Waste Sites	Consistent with Community Environmental Goals	Consistent With Federal Laws
Action Step 1: Provide every public outdoor recreation facility and every public school outdoor recreation facility with automatic warning device, if feasible.	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	N/A	N/A	N/A	N/A	N/A
Action Step 2: Make lightning warning system information available to entities having significant outdoor activities such as businesses, airports, etc.	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	N/A	N/A	N/A	N/A	N/A
Action Step 3: Educate public on the risks of lightning.	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	N/A	N/A	N/A	N/A	N/A
Action Step 4: Educate public on the risks of lightning. Ben Hill County public information officer, in coordination with Fitzgerald public information officer, will provide news media with press releases concerning lightning.	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	N/A	N/A	N/A	N/A	N/A

Appendix E

“KICK-OFF” MEETING
BEN HILL COUNTY & CITY OF FITZGERALD HAZARD MITIGATION PLAN UPDATE

The Ben Hill County Emergency Management Agency (EMA) invites the public to attend the kick-off meeting for planning and updating our local Hazard Mitigation Plan. This plan is renewed every five (5) years. We would welcome any input from our citizens and local business owners. Some of those who will be part of the planning group will be: Planning specialist from GEMHSA (Georgia Emergency Management and Homeland Security Agency), Board of County Commissioners, City Council, Fire/EMS, Sheriff’s Department, Health Department, Code Enforcement, Public Works, Forestry, School Board, and hopefully… you. The meeting will be for an hour on Monday, July 9, 2018 at 10:00 a.m. at the Chamber of Commerce, 121 E Pine St., Fitzgerald, GA.

SOUTHERN GEORGIA REGIONAL COMMISSION
BEN HILL COUNTY & CITY OF FITZGERALD
HAZARD MITIGATION PLAN UPDATE – KICK OFF
DATE: JULY 9, 2018

Name	Organization	Title	Email
Lee Cone	BHSO	Sheriff	LCONE@benhillcounty.com
Randy Kendrick	BHSO	Colonel	rkendrick@benhillcounty.com
Sheldon Conger	BHV-FD	Chief	S.Conger@ENVIOT-LOG-NET
Theo Craddock	Georgia Forestry Commission	Chief Ranger	tcraddock@gfc.state.ga.us
Tracey Roberson	DMC ex Nurse manager	ex Nurseman	Troberson@dorminymedical.org
Ronald Jordan	Dorminy medical	Engineering Dir	R.Jordan@Dorminymedical.org
Holley Lee	DMC	PR/MKting	hlee@dorminymedical.org
Michael Dinkelman	Ben Hill Co	Manager	mdinkelman@benhillcounty.com
KATHY A YOUNG	CITY OF FITZGERALD	DEPUTY ADMIN	fitzcity@mchsi.com
William Smallwood	Fitzgerald PD	Chief	smallwood6@mchsi.com
Steve Taylor	Ben Hill Co.	Chairman	staylor@benhillcounty.com

→

Loretta Hylton	SGRC	Planner	
Neesa Williams	Chamber of Commerce	Executive Director	neesawilliams@gmail.com
Christine Naylor	Ben Hill Co Health Dept	County nurse manager	Chris.Naylor@DPH.ga.gov
Shelby Meyers	GEMA/HS		
Cam Jordan	City	County Admin	CamJordan@mchsi.com

Southern Georgia Regional Commission
Ben Hill County and the City of Fitzgerald
Hazard Mitigation Plan Update – Workshop
Date: July 26, 2018

Name	Organization	Title	Email
Rusty Seaver	FFD	Asst. Chief	bull739@hotmail.com
Sheldon Conger	Ben Hill VFD	Chief	S conger@Envior-Log.net
Steve Tayh	Ben Hill County	Chairman	
Jim Puckett	City of Fitzgerdd	Mayor	mayorpuckett@mediacombb.net
Cam Jordan	" "	Depth Admin	CAMJORSANDMCHSI.com
ALLEN A. CONGER	BEN HILL VFD	FIREMAN	ACONGER@AC1966.COM
Brandon Fletcher	Ben Hill EMA	Dep Director	bfletcher@benhillcounty.com
Christine Naylor	Ben Hill Co Health Dept	County nurse manager	Chris.Naylor@DPH.ga.gov
Lisa Smith RN	Ben Hill Co. Health Dept	Staff RN	Tolisa.Smith@DPH.ga.gov
Neesa Williams	Chamber of Commerce	Ex. Director	neesawilliams@gmail.com
Ronald Jordan	Ben Hill Co Dorminy Medical	Engineering Director	mdnreeman@benhillcounty.com R.Jordan@Dorminymedical.org

SOUTHERN GEORGIA REGIONAL COMMISSION
BEN HILL COUNTY & CITY OF FITZGERALD
HAZARD MITIGATION PLAN UPDATE – KICK OFF
DATE: SEPTEMBER 20, 2018

Name	Organization	Title	Email
KATHY A YOUNG	CITY OF FITZGERALD	DEPUTY ADMIN	fitzcity@mchsi.com
Rusty Seaver	COF Fire Dept.	Asst. Chief	bull739@hotmail.com
Jeffery Dobbins	COF Fire Dept	Chief	fitzfire1@mchsi.com
Tracey Roberson	DMC ER	ER Nurse manager	troberson@dorminymedical.org
Ronald Jordan	D.M.C	Director	RJordan@Dorminymedical.org
	City	D.A.	
	County		
David Walker	City of Fitzgerald	Public Works Dir.	fitzdw@mchsi.com

SOUTHERN GEORGIA REGIONAL COMMISSION
BEN HILL COUNTY & CITY OF FITZGERALD
HAZARD MITIGATION PLAN UPDATE – FINAL PUBLIC HEARING
DATE: NOVEMBER 7, 2019, 12:00 P.M.

Name	Organization	Title	Email
Ariel Godwin	SGRC	Planner	agodwin@sgrc.us
Donna Prather	Ben Hill County	Clerk	donna.prather@benhillcounty-ga.gov

ag museum on Saturday

or join the fun by participating in yard games. The costume contest will take place at 11 a.m.

Riding the 1917 steam train is always a big hit with museum visitors, and the big locomotive will be huffing and puffing to transport visitors from the Country Store to the Historic Village all day long.

The celebration will also include plenty of snacks to enjoy from the Village Drug Store, which features barbecue sandwiches, hot dogs, chili dogs and hand-dipped ice cream.

Cotton candy and popcorn will also be available on the Cotton Gin Lawn. K&K Custom Creations and Sno Biz will add to the goodies available.

Admission for the day is $10 for adults, $8 for senior citizens, $5 for children 5–16 years of age, and free for children ages 4 and under.

For more information, call the Country Store at (229) 391-5205.

Victorious Conference tomorrow

Hope and Deliverance Ministry will present its 2019 Victorious Conference tomorrow-Friday, beginning at 8 each evening, and Sunday at 10:30 a.m.

Scheduled guests are: Thursday, Pastor Shawanda Reed of Lumber City; Friday, Dr. T.C. Boone of Warner Robins, with musical guests Minister L. Odoms-Johnson and Family Affair Chorale, and Sunday, Dr. Joseph Braswell of St. Augustine, Fla.

Bishop Terry E. Sr. and Pastor Patricia B. Wells invite everyone to attend. The church is located at 138 W. Jack Allen Rd.

KIWANIS CLUB TO MEET

The Fitzgerald Kiwanis Club meets on Wednesdays from noon until 1 p.m. at La Lomita.

PUBLIC HEARING/ OPEN HOUSE

The Ben Hill County Emergency Management Agency (EMA), in cooperation with the Southern Georgia Regional Commission (SGRC), invites the public to attend a Joint Public Hearing to review the Ben Hill County and City of Fitzgerald Hazard Mitigation Plan Update and provide an opportunity for public comment.

The plan update has been developed in accordance with the Disaster Mitigation Act of 2000, which requires local governments to have an approved Hazard Mitigation Plan addressing natural hazards as a condition of receiving future federal disaster assistance.

A Public Hearing/Open House will be held at 12:00 noon on Thursday, November 7, 2019, in the Courthouse Annex located at 324 East Pine Street, Fitzgerald, GA.

Comments are being accepted by email at agodwin@sgrc.us, by fax at 229-333-5312, or by mailing them to Ben Hill HMP, 327 W. Savannah Ave., Valdosta, GA 31601. The draft of the Plan is available on the SGRC website, www.sgrc.us.

For more information please call Ariel Godwin, Senior Planner at 229-333-5277.

Appendix F

Storm Events Database

Search Results for Ben Hill County, Georgia

Event Types: Hurricane (Typhoon), Tropical Storm

Ben Hill county contains the following zones:
'Ben Hill'

7 events were reported between 01/01/1950 and 06/30/2019 (25383 days)

Summary Info:

Number of County/Zone areas affected:	1
Number of Days with Event:	7
Number of Days with Event and Death:	0
Number of Days with Event and Death or Injury:	0
Number of Days with Event and Property Damage:	5
Number of Days with Event and Crop Damage:	0
Number of Event Types reported:	2

Column Definitions:
'Mag': Magnitude, 'Dth': Deaths, 'Inj': Injuries, 'PrD': Property Damage, 'CrD': Crop Damage

*Click on **Location** below to display details.*
Available Event Types have changed over time. Please refer to the Database Details for more information.

Sort By: Date/Time (Oldest)

Location	County/Zone	St.	Date	Time	T.Z.	Type	Mag	Dth	Inj	PrD	CrD
Totals:								0	0	905.00K	0.00K
BEN HILL (ZONE)	BEN HILL (ZONE)	GA	09/03/1998	00:00	EST	Tropical Storm		0	0	25.00K	0.00K
BEN HILL (ZONE)	BEN HILL (ZONE)	GA	09/26/2004	18:00	EST	Tropical Storm		0	0	30.00K	0.00K
BEN HILL (ZONE)	BEN HILL (ZONE)	GA	07/09/2005	18:00	EST	Hurricane (typhoon)		0	0	100.00K	0.00K
BEN HILL (ZONE)	BEN HILL (ZONE)	GA	08/22/2008	12:00	EST-5	Tropical Storm		0	0	0.00K	0.00K
BEN HILL (ZONE)	BEN HILL (ZONE)	GA	09/02/2016	00:00	EST-5	Tropical Storm		0	0	0.00K	0.00K
BEN HILL (ZONE)	BEN HILL (ZONE)	GA	09/10/2017	22:00	EST-5	Tropical Storm		0	0	500.00K	0.00K
BEN HILL (ZONE)	BEN HILL (ZONE)	GA	10/10/2018	07:00	EST-5	Tropical Storm		0	0	250.00K	0.00K
Totals:								0	0	905.00K	0.00K

Storm Events Database

Search Results for Ben Hill County, Georgia

Event Types: Tornado

13 events were reported between 01/01/1950 and 06/30/2019 (25383 days)

Summary Info:

Number of County/Zone areas affected:	1
Number of Days with Event:	12
Number of Days with Event and Death:	0
Number of Days with Event and Death or Injury:	1
Number of Days with Event and Property Damage:	12
Number of Days with Event and Crop Damage:	0
Number of Event Types reported:	1

Column Definitions:
'Mag': Magnitude, 'Dth': Deaths, 'Inj': Injuries, 'PrD': Property Damage, 'CrD': Crop Damage

*Click on **Location** below to display details.*
Available Event Types have changed over time. Please refer to the Database Details for more information.

Select: All Tornadoes ▼ Sort By: Date/Time (Oldest) ▼

Location	County/Zone	St.	Date	Time	T.Z.	Type	Mag	Dth	Inj	PrD	CrD
Totals:								0	2	1.653M	0.00K
BEN HILL CO.	BEN HILL CO.	GA	04/15/1961	07:30	CST	Tornado	F1	0	0	250.00K	0.00K
BEN HILL CO.	BEN HILL CO.	GA	06/14/1963	17:00	CST	Tornado	F2	0	2	250.00K	0.00K
BEN HILL CO.	BEN HILL CO.	GA	06/19/1967	14:45	CST	Tornado	F2	0	0	25.00K	0.00K
BEN HILL CO.	BEN HILL CO.	GA	05/28/1968	00:30	CST	Tornado	F1	0	0	25.00K	0.00K
BEN HILL CO.	BEN HILL CO.	GA	05/28/1968	00:30	CST	Tornado	F1	0	0	2.50K	0.00K
BEN HILL CO.	BEN HILL CO.	GA	01/15/1971	12:30	CST	Tornado	F1	0	0	25.00K	0.00K
BEN HILL CO.	BEN HILL CO.	GA	04/25/1982	14:10	CST	Tornado	F0	0	0	25.00K	0.00K
BEN HILL CO.	BEN HILL CO.	GA	12/05/1982	13:15	CST	Tornado	F1	0	0	25.00K	0.00K
BEN HILL CO.	BEN HILL CO.	GA	02/22/1983	14:45	CST	Tornado	F1	0	0	250.00K	0.00K
BEN HILL CO.	BEN HILL CO.	GA	05/16/1983	08:00	CST	Tornado	F1	0	0	250.00K	0.00K
BEN HILL CO.	BEN HILL CO.	GA	11/24/1992	11:15	EST	Tornado	F0	0	0	25.00K	0.00K
FITZGERALD	BEN HILL CO.	GA	12/25/2006	06:30	EST-5	Tornado	F1	0	0	300.00K	0.00K
FITZGERALD MUNICIPAL ARPT	BEN HILL CO.	GA	04/13/2009	11:40	EST-5	Tornado	EF1	0	0	200.00K	0.00K
Totals:								0	2	1.653M	0.00K

Storm Events Database

Search Results for Ben Hill County, Georgia

Event Types: Flash Flood, Flood

Ben Hill county contains the following zones:
'Ben Hill'

5 events were reported between 01/01/1950 and 06/30/2019 (25383 days)

Summary Info:

Number of County/Zone areas affected:	2
Number of Days with Event:	5
Number of Days with Event and Death:	0
Number of Days with Event and Death or Injury:	0
Number of Days with Event and Property Damage:	3
Number of Days with Event and Crop Damage:	0
Number of Event Types reported:	2

Column Definitions:
'Mag': Magnitude, 'Dth': Deaths, 'Inj': Injuries, 'PrD': Property Damage, 'CrD': Crop Damage

*Click on **Location** below to display details.*
Available Event Types have changed over time. Please refer to the Database Details for more information.

Sort By: Date/Time (Oldest)

Location	County/Zone	St.	Date	Time	T.Z.	Type	Mag	Dth	Inj	PrD	CrD
Totals:								0	0	340.00K	0.00K
BEN HILL (ZONE)	BEN HILL (ZONE)	GA	03/08/1998	12:00	EST	Flood		0	0	75.00K	0.00K
COUNTYWIDE	BEN HILL CO.	GA	03/30/2000	07:00	EST	Flash Flood		0	0	250.00K	0.00K
BEN HILL (ZONE)	BEN HILL (ZONE)	GA	06/16/2003	20:00	EST	Flood		0	0	15.00K	0.00K
QUEENSLAND	BEN HILL CO.	GA	02/13/2013	03:00	EST-5	Flood		0	0	0.00K	0.00K
FITZGERALD COTTON MILL	BEN HILL CO.	GA	12/02/2018	06:39	EST-5	Flood		0	0	0.00K	0.00K
Totals:								0	0	340.00K	0.00K

Storm Events Database

Search Results for Ben Hill County, Georgia

Event Types: Lightning

1 events were reported between 01/01/1950 and 06/30/2019 (25383 days)

Summary Info:

Number of County/Zone areas affected:	1
Number of Days with Event:	1
Number of Days with Event and Death:	0
Number of Days with Event and Death or Injury:	1
Number of Days with Event and Property Damage:	1
Number of Days with Event and Crop Damage:	0
Number of Event Types reported:	1

Column Definitions:
'Mag': Magnitude, 'Dth': Deaths, 'Inj': Injuries, 'PrD': Property Damage, 'CrD': Crop Damage

*Click on **Location** below to display details.*
Available Event Types have changed over time. Please refer to the Database Details for more information.

Sort By: Date/Time (Oldest)

Location	County/Zone	St.	Date	Time	T.Z.	Type	Mag	Dth	Inj	PrD	CrD
Totals:								0	1	5.00K	0.00K
WESTWOOD	BEN HILL CO.	GA	08/06/2015	09:45	EST-5	Lightning		0	1	5.00K	0.00K
Totals:								0	1	5.00K	0.00K

Acreage Burned /Number of Fires For Ben Hill County For FY 1968-2018		
Year	Acreage Burned	Number of Fires
1968	234.59	41
1969	231.08	33
1970	173.55	26
1971	224.41	51
1972	196.58	55
1973	155.97	56
1974	198.28	78
1975	87.1	56
1976	344.21	137
1977	308.51	66
1978	323.8	98
1979	392.82	152
1980	125.89	60
1981	675.24	167
1982	341.89	59
1983	171.14	61
1984	119.29	75
1985	171.05	113
1986	148.74	73
1987	109.99	36
1988	258.83	56
1989	125.61	39
1990	79.53	34
1991	211.18	58
1992	214.26	50
1993	93.72	32
1994	53.93	41
1995	26.14	25
1996	281.64	88
1997	84.48	41
1998	73.65	32
1999	165.25	70
2000	287.63	111
2001	147.52	59
2002	239.52	73
2003	12.16	16
2004	185.61	58
2005	67.67	34
2006	207.71	91
2007	130.99	80
2008	106.6	45

Year	Acreage Burned	Number of Fires
2009	168.87	56
2010	35.04	35
2011	187.22	86
2012	127.5	44
2013	166.72	48
2014	70.39	23
2015	87.03	38
2016	66.58	21
2017	170.63	61

Storm Events Database

Search Results for Ben Hill County, Georgia

Event Types: Wildfire

Ben Hill county contains the following zones:
'Ben Hill'

0 events were reported between 01/01/1950 and 06/30/2019 (25383 days)

Summary Info:

Number of County/Zone areas affected:	0
Number of Days with Event:	0
Number of Days with Event and Death:	0
Number of Days with Event and Death or Injury:	0
Number of Days with Event and Property Damage:	0
Number of Days with Event and Crop Damage:	0
Number of Event Types reported:	0

Column Definitions:
'Mag': Magnitude, 'Dth': Deaths, 'Inj': Injuries, 'PrD': Property Damage, 'CrD': Crop Damage

*Click on **Location** below to display details.*
Available Event Types have changed over time. Please refer to the Database Details for more information.

Sort By: Date/Time (Oldest)

Location	County/Zone	St.	Date	Time	T.Z.	Type	Mag	Dth	Inj	PrD	CrD
Totals:								0	0	0.00K	0.00K

Storm Events Database

Search Results for Ben Hill County, Georgia

Event Types: Excessive Heat

Ben Hill county contains the following zones:
'Ben Hill'

0 events were reported between 01/01/1950 and 06/30/2019 (25383 days)

Summary Info:

Number of County/Zone areas affected:	0
Number of Days with Event:	0
Number of Days with Event and Death:	0
Number of Days with Event and Death or Injury:	0
Number of Days with Event and Property Damage:	0
Number of Days with Event and Crop Damage:	0
Number of Event Types reported:	0

Column Definitions:
'Mag': Magnitude, 'Dth': Deaths, 'Inj': Injuries, 'PrD': Property Damage, 'CrD': Crop Damage

*Click on **Location** below to display details.*
Available Event Types have changed over time. Please refer to the Database Details for more information.

Sort By: Date/Time (Oldest)

Location	County/Zone	St.	Date	Time	T.Z.	Type	Mag	Dth	Inj	PrD	CrD
Totals:								0	0	0.00K	0.00K

EXTREME HEAT DATA FOR BEN HILL COUNTY AND CITY OF FITZGERALD

Data Source:

Archived NWS Watch/Warnings at the Iowa State University Environmental Mesonet

https://mesonet.agron.iastate.edu/request/gis/watchwarn.phtml

Codes: W = Warning, A = Watch, Y = Advisory, S = Statement, HT = Heat, EH = Excessive Heat

Complete codes are at: https://www.weather.gov/bmx/vtec

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	**Total**
Heat Warning	0	0	0	0	0	2	0	0	0	0	0	0	**2**
Heat Advisory	1	0	3	6	4	4	0	6	7	0	0	0	**31**
Total	**1**	**0**	**3**	**6**	**4**	**6**	**0**	**6**	**7**	0	0	0	**33**

Storm Events Database

Search Results for Ben Hill County, Georgia

Event Types: Drought

Ben Hill county contains the following zones:
'Ben Hill'

30 events were reported between 01/01/1950 and 06/30/2019 (25383 days)

Summary Info:

Number of County/Zone areas affected:	1
Number of Days with Event:	30
Number of Days with Event and Death:	0
Number of Days with Event and Death or Injury:	0
Number of Days with Event and Property Damage:	0
Number of Days with Event and Crop Damage:	0
Number of Event Types reported:	1

Column Definitions:
'Mag': Magnitude, 'Dth': Deaths, 'Inj': Injuries, 'PrD': Property Damage, 'CrD': Crop Damage

*Click on **Location** below to display details.*
Available Event Types have changed over time. Please refer to the Database Details for more information.

Sort By: Date/Time (Oldest)

Location	County/Zone	St.	Date	Time	T.Z.	Type	Mag	Dth	Inj	PrD	CrD
Totals:								0	0	0.00K	0.00K
BEN HILL (ZONE)	BEN HILL (ZONE)	GA	09/01/1997	00:00	EST	Drought		0	0	0.00K	0.00K
BEN HILL (ZONE)	BEN HILL (ZONE)	GA	11/23/2010	00:00	EST-5	Drought		0	0	0.00K	0.00K
BEN HILL (ZONE)	BEN HILL (ZONE)	GA	12/01/2010	00:00	EST-5	Drought		0	0	0.00K	0.00K
BEN HILL (ZONE)	BEN HILL (ZONE)	GA	01/01/2011	00:00	EST-5	Drought		0	0	0.00K	0.00K
BEN HILL (ZONE)	BEN HILL (ZONE)	GA	02/01/2011	00:00	EST-5	Drought		0	0	0.00K	0.00K
BEN HILL (ZONE)	BEN HILL (ZONE)	GA	03/01/2011	00:00	EST-5	Drought		0	0	0.00K	0.00K
BEN HILL (ZONE)	BEN HILL (ZONE)	GA	04/01/2011	00:00	EST-5	Drought		0	0	0.00K	0.00K
BEN HILL (ZONE)	BEN HILL (ZONE)	GA	05/01/2011	00:00	EST-5	Drought		0	0	0.00K	0.00K
BEN HILL (ZONE)	BEN HILL (ZONE)	GA	06/01/2011	00:00	EST-5	Drought		0	0	0.00K	0.00K
BEN HILL (ZONE)	BEN HILL (ZONE)	GA	07/01/2011	00:00	EST-5	Drought		0	0	0.00K	0.00K
BEN HILL (ZONE)	BEN HILL (ZONE)	GA	08/01/2011	00:00	EST-5	Drought		0	0	0.00K	0.00K
BEN HILL (ZONE)	BEN HILL (ZONE)	GA	09/01/2011	00:00	EST-5	Drought		0	0	0.00K	0.00K
BEN HILL (ZONE)	BEN HILL (ZONE)	GA	10/01/2011	00:00	EST-5	Drought		0	0	0.00K	0.00K
BEN HILL (ZONE)	BEN HILL (ZONE)	GA	11/01/2011	00:00	EST-5	Drought		0	0	0.00K	0.00K
BEN HILL (ZONE)	BEN HILL (ZONE)	GA	12/01/2011	00:00	EST-5	Drought		0	0	0.00K	0.00K
BEN HILL (ZONE)	BEN HILL (ZONE)	GA	01/01/2012	00:00	EST-5	Drought		0	0	0.00K	0.00K
BEN HILL (ZONE)	BEN HILL (ZONE)	GA	02/01/2012	00:00	EST-5	Drought		0	0	0.00K	0.00K
BEN HILL (ZONE)	BEN HILL (ZONE)	GA	03/01/2012	00:00	EST-5	Drought		0	0	0.00K	0.00K
BEN HILL (ZONE)	BEN HILL (ZONE)	GA	04/01/2012	00:00	EST-5	Drought		0	0	0.00K	0.00K
BEN HILL (ZONE)	BEN HILL (ZONE)	GA	05/01/2012	00:00	EST-5	Drought		0	0	0.00K	0.00K
BEN HILL (ZONE)	BEN HILL (ZONE)	GA	06/01/2012	00:00	EST-5	Drought		0	0	0.00K	0.00K
BEN HILL (ZONE)	BEN HILL (ZONE)	GA	07/01/2012	00:00	EST-5	Drought		0	0	0.00K	0.00K
BEN HILL (ZONE)	BEN HILL (ZONE)	GA	08/01/2012	00:00	EST-5	Drought		0	0	0.00K	0.00K
BEN HILL (ZONE)	BEN HILL (ZONE)	GA	11/20/2012	00:00	EST-5	Drought		0	0	0.00K	0.00K
BEN HILL (ZONE)	BEN HILL (ZONE)	GA	12/01/2012	00:00	EST-5	Drought		0	0	0.00K	0.00K
BEN HILL (ZONE)	BEN HILL (ZONE)	GA	01/01/2013	00:00	EST-5	Drought		0	0	0.00K	0.00K
BEN HILL (ZONE)	BEN HILL (ZONE)	GA	02/01/2013	00:00	EST-5	Drought		0	0	0.00K	0.00K
BEN HILL (ZONE)	BEN HILL (ZONE)	GA	11/22/2016	00:00	EST-5	Drought		0	0	0.00K	0.00K

BEN HILL (ZONE)	BEN HILL (ZONE)	GA	12/01/2016	00:00	EST-5	Drought		0	0	0.00K	0.00K
BEN HILL (ZONE)	BEN HILL (ZONE)	GA	02/01/2018	00:00	EST-5	Drought		0	0	0.00K	0.00K
Totals:								0	0	0.00K	0.00K

Ben Hill County City of Fitzgerald
Critical Facilities - 2018 Update

Name	Jurisdiction	Address	Facility Types	Risk	Occupancy	Building Value
Ben Hill County Elementary School	Fitzgerald city	327 Dewey Mcglamry Road	Education, K - 12	Economic Assets, Essential, High Potential Loss, Historic Consideration, Important, Special Consideration, Transportation, Vulnerable Population	Grade Schools and Admin. Offices	$ 32,478,900
Fitzgerald High	Fitzgerald city	601 W. Cypress	Education, K - 12	Essential, Transportation, Lifeline, High Potential Loss, Important, Vulnerable Population, Economic Assets, Special Consideration	Grade Schools and Admin. Offices	$ 59,010,300
Ben Hill County Federal Building	Fitzgerald city	124 W Central Ave	Education, Library	Important, Economic Assets, Historic Consideration	Food/Drugs/Chemicals	$ 2,437,200
Ben Hill County Health Department	Fitzgerald city	251 Appomattox Rd	Education, Library	Essential, High Potential Loss, Hazardous Materials, Important, Vulnerable Population, Economic Assets	Medical Office and Clinic	$ 1,663,200
EMS - Fitzgerald	Fitzgerald city	302 W. Altamaha	Education, Library	Essential, Transportation, Lifeline, High Potential Loss, Important, Economic Assets	Government - Emergency Response	$ 3,375,000
Library	Fitzgerald city	123 N Main St	Education, Library	Important	Entertainment & Recreation	$ 3,436,200
Bowen's Mill Christian Center	Ben Hill County	1721 Bowen's Mill Hwy.	Education, Private	High Potential Loss, Important, Vulnerable Population, Special Consideration, Historic Consideration	Grade Schools and Admin. Offices	$ 1,906,200
East Central Technical Institute	Ben Hill County	667 Perry House Road	Education, VoTech	Essential, Transportation, Lifeline, High Potential Loss, Important, Vulnerable Population, Economic Assets, Special Consideration	Colleges and Universities	$ 49,473,000
Ben Hill Volunteer Fire Department Station 01	Ben Hill County	582 Jacksonville Hwy	Emergency Services, Fire Fighters	Essential, Transportation, Lifeline, Hazardous Materials, Important	Government - Emergency Response	$ 228,000
Ben Hill Volunteer Fire Department Station 02	Ben Hill County	Whitewater Rd	Emergency Services, Fire Fighters	Essential, Transportation, Lifeline, Hazardous Materials, Important	Government - Emergency Response	$ 228,000
Ben Hill Volunteer Fire Department Station 04	Ben Hill County	Glenn Merritt Rd	Emergency Services, Fire Fighters	Essential, Transportation, Lifeline, Hazardous Materials, Important	Government - Emergency Response	$ 228,000
Ben Hill Volunteer Fire Department Station 05	Ben Hill County	Beth Church Rd	Emergency Services, Fire Fighters	Essential, Transportation, Lifeline, Hazardous Materials, Important	Government - Emergency Response	$ 228,000

Ben Hill County City of Fitzgerald
Critical Facilities - 2018 Update

Name	Jurisdiction	Address	Facility Types	Risk	Occupancy	Building Value
Ben Hill Volunteer Fire Department Station 06	Ben Hill County	Sweetpen Rd	Emergency Services, Fire Fighters	Essential, Transportation, Lifeline, Hazardous Materials, Important	Government - Emergency Response	$ 228,000
GA Forestry Commission	Ben Hill County	473 Bowens Mill Hwy	Emergency Services, Fire Fighters	Essential, Transportation, Lifeline, High Potential Loss, Important, Economic Assets	Government - Emergency Response	$ 1,297,200
Ben Hill Volunteer Fire Department Station 03	Fitzgerald city	715 Johnson St	Emergency Services, Fire Fighters	Essential, Transportation, Lifeline, Hazardous Materials, Important	Government - Emergency Response	$ 696,000
Fitzgerald Fire Department	Fitzgerald city	315 E Pine St	Emergency Services, Fire Fighters	Lifeline, Important	Government - Emergency Response	$ 1,200,000
City of Fitzgerald	Fitzgerald city	302 E Central Ave	Government, City Hall	Historic Consideration, Important, Special Consideration	Government - General Services	$ 3,438,000
National Guard Armory	Fitzgerald city	509 West Palm Street	Government, Police	Important	Government - Emergency Response	$ 7,089,123
Fitzgerald Tourism/Museum	Fitzgerald city	116 N Johnston St	Government Private	Essential, Important	Government - General Services	$ 900,000
Ben Hill County Courthouse	Fitzgerald city	401 E Central Ave	Law Enforcement, Court House	Essential, High Potential Loss, Important, Vulnerable Population, Economic Assets, Historic Consideration	Government - General Services	$ 3,756,900
Ben Hill County Commission Office	Fitzgerald city	402 E Pine St	Law Enforcement, Jails	Essential, Important, Vulnerable Population, Economic Assets, Historic Consideration	Government - General Services	$ 1,762,800
Fitzgerald Police Department	Fitzgerald city	255 Appamattox Rd Suite C	Law Enforcement, Police	Essential, Important	Government - General Services	$ 750,000
Ben Hill County Public Safety Complex	Fitzgerald city	255 Appomatox Rd.	Law Enforcement, Prisons	Essential, Transportation, Lifeline, High Potential Loss, Important, Vulnerable Population, Economic Assets, Special Consideration	Government - Emergency Response	$ 14,556,300
Ben Hill County Sheriff Office	Fitzgerald city	255-B Appomattox Rd	Law Enforcement, Prisons	Essential, Important, Vulnerable Population	Government - Emergency Response	$ 12,667,500

Ben Hill County City of Fitzgerald
Critical Facilities - 2018 Update

Name	Jurisdiction	Address	Facility Types	Risk	Occupancy	Building Value
E-911 Building	Fitzgerald city	255 - C Appomattox Road	Law Enforcement, Prisons	Essential, Lifeline, Important, Economic Assets	Government - Emergency Response	$ 1,618,200
Dorminy Medical Center	Fitzgerald city	200 Perry House Road	Medical, EMS	Essential, Transportation, Lifeline, High Potential Loss, Hazardous Materials, Important, Vulnerable Population, Economic Assets, Special Consideration	Hospital	$ 39,067,800
Arbor Baptist Church	Fitzgerald city	1137 Merrimac Drive	NGO, Non-Profit	Essential	Churches and Non-Profit Organizations	$ 2,165,329
Church of God	Fitzgerald city	601 S. Merrimac Drive	NGO, Non-Profit	Special Consideration	Churches and Non-Profit Organizations	$ 1,134,120
Crossview Baptist Church	Fitzgerald city	506 Irwinville Highway	NGO, Non-Profit	Essential	Churches and Non-Profit Organizations	$ 1,865,061
First Baptist Church	Fitzgerald city	402 S. Merrimac Dr	NGO, Non-Profit	Essential	Churches and Non-Profit Organizations	$ 3,831,739
Grand Theatr/Conference Center Main Street office	Fitzgerald city	115-121 S Main St	NGO, Police	Economic Assets, High Potential Loss, Historic Consideration, Important, Special Consideration, Vulnerable Population	Theaters	$ 8,701,800
Ben Hill County Middle School	Fitzgerald city	134 J. C. Hunter Drive	NGO, Water/Sewer	Economic Assets, Essential, High Potential Loss, Important, Lifeline, Special Consideration, Transportation, Vulnerable Population	Grade Schools and Admin. Offices	$ 24,987,300
Ben Hill County Primary School	Fitzgerald city	221 J. C. Hunter Drive	NGO, Water/Sewer	Economic Assets, Essential, High Potential Loss, Important, Lifeline, Special Consideration, Transportation, Vulnerable Population	Grade Schools and Admin. Offices	$ 19,911,000
Fitzgerald Municipal Airport	Fitzgerald city	125 Terminal Rd	NGO, Transportation	Lifeline, Important	Professional/Technical Services	$ 300,000

Appendix G

Hazard Risk Analyses
Supplement to the Ben Hill County Joint Hazard Mitigation Plan

Southern Georgia Regional Commission

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Introduction

The Federal Disaster Mitigation Act of 2000 (DMA2K) requires state, local, and tribal governments to develop and maintain a mitigation plan to be eligible for certain federal disaster assistance and hazard mitigation funding programs.

Mitigation seeks to reduce a hazard's impacts, which may include loss of life, property damage, disruption to local and regional economies, and the expenditure of public and private funds for recovery. Sound mitigation must be based on a sound risk assessment that quantifies the potential losses of a disaster by assessing the vulnerability of buildings, infrastructure, and people.

In recognition of the importance of planning in mitigation activities, FEMA Hazus-MH, a powerful disaster risk assessment tool based on geographic information systems (GIS). This tool enables communities of all sizes to predict estimated losses from floods, hurricanes, earthquakes, and other related phenomena and to measure the impact of various mitigation practices that might help reduce those losses.

In 2018, the Georgia Department of Emergency Management partnered with The SOUTHERN GEORGIA REGIONAL COMMISSION (SGRC) to develop a detailed risk assessment focused on defining hurricane, riverine flood and tornado impacts for Georgia. This assessment identifies the characteristics and potential consequences of the disaster, how much of the community could be affected by the disaster, and the impact on community assets. In the following years, the Georgia Association of Regional Commissions (GARC) are utilizing this workflow to define impacts in other counties in Georgia. This document provides the results for Ben Hill County.

Risk Assessment Process Overview

Hazus-MH Version 2.2 SP1 was used to perform the analyses for Ben Hill County. The Hazus-MH application includes default data for every county in the US. This Hazus-MH data was derived from a variety of national sources and in some cases the data are also several years old. Whenever possible, using local provided data is preferred. Ben Hill County provided building inventory information from the county's property tax assessment system. This section describes the changes made to the default Hazus-MH inventory and the modeling parameters used for each scenario.

County Inventory Changes

The default Hazus-MH site-specific point inventory was updated using data compiled from the Georgia Emergency Management Agency (GEMA). The default Hazus-MH aggregate inventory (General Building Stock) was also updated prior to running the scenarios. Reported losses reflect the updated data sets.

General Building Stock Updates

General Building Stock (GBS) is an inventory category that consists of aggregated data (grouped by census geography — tract or block). Hazus-MH generates a combination of site-specific and aggregated loss estimates based on the given analysis and user input.

The GBS records for Ben Hill County were replaced with data derived from parcel and property assessment data obtained from Ben Hill County. The county provided property assessment data was current as of November 2018 and the parcel data current as of November 2018. Records without improvements were deleted. The parcel boundaries were converted to parcel points located in the centroids of each parcel boundary; then, each parcel point was linked to an assessor record based upon matching parcel numbers. The parcel assessor match-rate for Ben Hill County is 99.0%. The generated building inventory represents the approximate locations (within a parcel) of structures. The building inventory was aggregated by census block. Both the tract and block tables were updated. Table 1 shows the results of the changes to the GBS tables by occupancy class.

Table 1: GBS Building Exposure Updates by Occupancy Class*

Occupancy Classification	Default Count	Updated Count	Default Exposure	Updated Exposure
Agricultural	42	0	$ 7,740,000	$ -
Commercial	425	656	$ 247,082,000	$ 1,002,612,000
Education	15	53	$ 56,102,000	$ 108,537,000
Government	13	21	$ 8,272,000	$ 35,495,000
Industrial	120	132	$ 112,774,000	$ 194,295,000
Religious	64	148	$ 38,939,000	$ 117,536,000
Residential	7265	5839	$ 1,096,510,000	$ 1,057,625,000
Total	**7944**	**6849**	**$ 1,567,419,000**	**$ 2,516,100,000**

*The exposure values represent the total number and replacement cost for all Ben Hill County Buildings

For Ben Hill County, the updated GBS was used to calculate hurricane wind losses. The flood losses and tornado losses were calculated from building inventory modeled in Hazus-MH as User-Defined Facility (UDF)[1], or site-specific points. Figure 1 shows the distribution of buildings as points based on the county provided data.

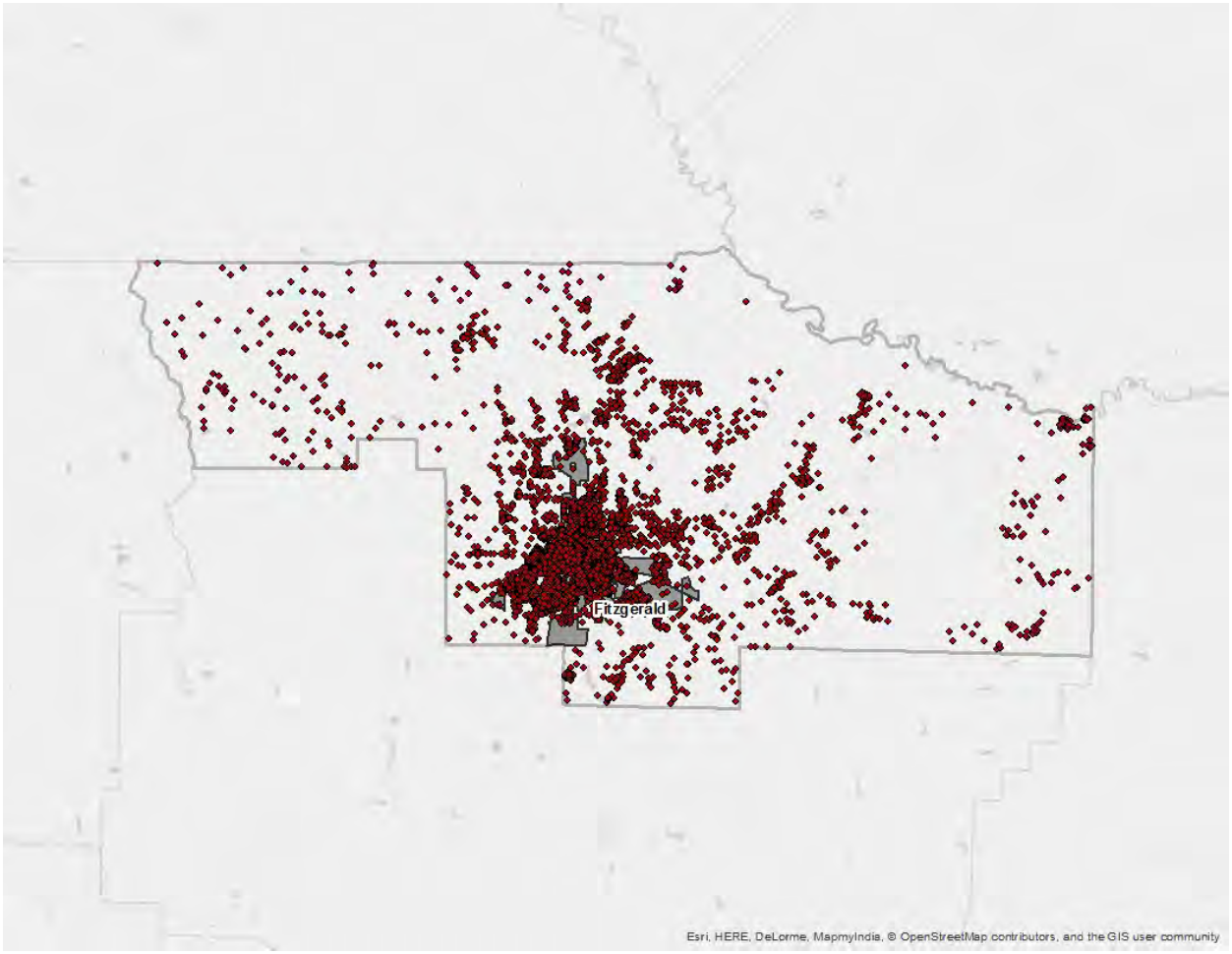

Figure 1: Ben Hill County Overview

[1] The UDF inventory category in Hazus-MH allows the user to enter site-specific data in place of GBS data.

Essential Facility Updates

The default Hazus-MH essential facility data was updated to reflect improved information available in the Georgia Mitigation Information System (GMIS). For these risk analyses, only GMIS data for buildings that Hazus-MH classified as Essential Facilities was integrated into Hazus-MH because the application provides specialized reports for these five types of facilities. Essential Facility inventory was updated for the analysis conducted for this report. The following table summarizes the counts and exposures, where available, by Essential Facility classification of the updated data for the county.

Essential facilities include:

- Care facilities
- EOCs
- Fire stations
- Police stations
- Schools

Table 2: Updated Essential Facilities

Classification	Updated Count	Updated Exposure
Ben Hill County		
EOC	1	$ 880,000
Care	2	$ 40,730,000
Fire	8	$ 4,333,000
Police	3	$ 16,924,000
School	6	$ 187,765,000
Total	**20**	**$ 250,632,000**

Classification	Updated Count	Updated Exposure
Fitzgerald		
EOC	1	$ 880,000
Care	2	$ 40,730,000
Fire	2	$ 1,896,000
Police	3	$ 16,924,000
School	3	$ 103,908,000
Total	**11**	**$ 164,338,000**

Assumptions and Exceptions

Hazus-MH loss estimates may be impacted by certain assumptions and process variances made in this risk assessment.

- The Ben Hill County analysis used Hazus-MH Version 2.2 SP1, which was released by FEMA in May 2015.
- County provided parcel and property assessment data may not fully reflect all buildings in the county. For example, some counties do not report not-for-profit buildings such as government buildings, schools and churches in their property assessment data. This data was used to update the General Building Stock as well as the User Defined Facilities applied in this risk assessment.
- GBS updates from assessor data will skew loss calculations. The following attributes were defaulted or calculated:
    - Foundation Type was set from Occupancy Class
    - First Floor Height was set from Foundation Type
    - Content Cost was calculated from Replacement Cost
- It is assumed that the buildings are located at the centroid of the parcel unless building footprints are used. For this analysis of Ben Hill County, parcel centroids were used.
- The essential facilities extracted from the GMIS were only used in the portion of the analysis designated as essential facility damage. They were not used in the update of the General Building Stock or the User Defined Facility inventory.

The hazard models included in this risk assessment included:

- Hurricane assessment which was comprised of a wind only damage assessment
- Flood assessment based on the 1% annual chance event that includes riverine assessments
- Tornado assessment based on GIS modeling

Hurricane Risk Assessment

Hazard Definition

The National Hurricane Center describes a hurricane as a tropical cyclone in which the maximum sustained wind is, at minimum, 74 miles per hour (mph)[2]. The term hurricane is used for Northern Hemisphere tropical cyclones east of the International Dateline to the Greenwich Meridian. The term typhoon is used for Pacific tropical cyclones north of the Equator west of the International Dateline. Hurricanes in the Atlantic Ocean, Gulf of Mexico, and Caribbean form between June and November with the peak of hurricane season occurring in the middle of September. Figure 2 shows that many hurricanes have impacted the Atlantic and Gulf coasts of the United States.

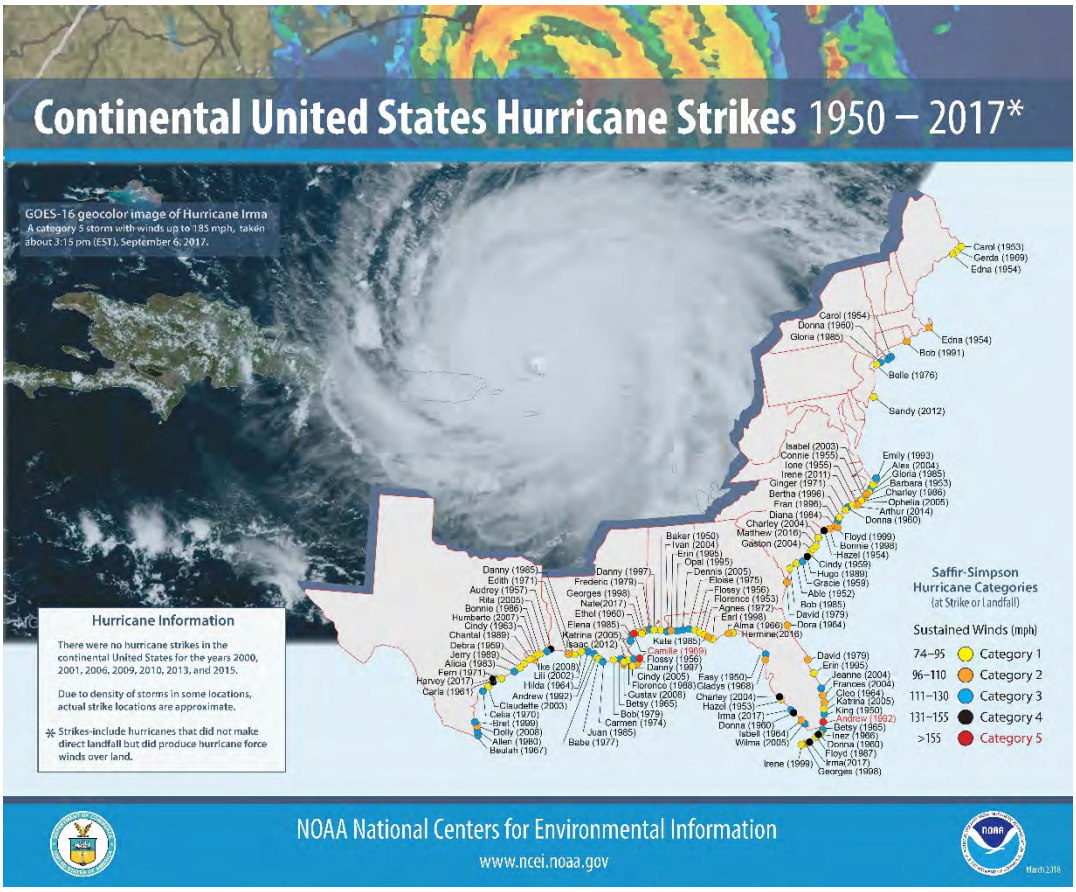

Figure 2: Continental United States Hurricane Strikes: 1950 to 2017[3]

Hurricane intensities are measured using the Saffir-Simpson Hurricane Wind Scale (Table 3). This scale is a 1 to 5 categorization based on the hurricane's intensity at the indicated time.

[2] National Hurricane Center (2011). "Glossary of NHC Terms." National Oceanic and Atmospheric Administration. http://www.nhc.noaa.gov/aboutgloss.shtml#h. Retrieved 2-23-2012.

[3] Source: NOAA National Climatic Data Center

Table 3: Saffir-Simpson Hurricane Wind Scale

Category	Wind Speed (mph)	Damage
1	74 – 95	Very dangerous winds will produce some damage
2	96 – 110	Extremely dangerous winds will cause extensive damage
3	111 - 130	Devastating damage will occur
4	131 -155	Catastrophic damage will occur
5	> 155	Catastrophic damage will occur

Hurricanes bring a complex set of impacts. The winds from a hurricane produce a rise in the water level at landfall called storm surge. Storm surges produce coastal flooding effects that can be as damaging as the hurricane's winds. Hurricanes bring very intense inland riverine flooding. Hurricanes can also produce tornadoes that can add to the wind damages inland. In this risk assessment, only hurricane winds, and coastal storm surge are considered.

The National Oceanic and Atmospheric Administration's National Hurricane Center created the HURDAT database, which contains all of the tracks of tropical systems since the mid-1800s. This database was used to document the number of tropical systems that have affected Ben Hill County by creating a 20-mile buffer around the county to include storms that didn't make direct landfall in Ben Hill County but impacted the county. Since 1851, Ben Hill County has had 66 tropical systems within 20 miles of its county borders (Table 4).

Table 4: Tropical Systems affecting Ben Hill County

Year	Month	Day	Name	Wind (Knots)	Category
1851	August	24	NOTNAMED	70	H1
1852	October	10	NOTNAMED	80	H1
1852	October	10	NOTNAMED	60	TS
1856	August	31	NOTNAMED	70	H1
1860	August	13	NOTNAMED	40	TS
1860	August	13	NOTNAMED	40	TS
1871	August	23	NOTNAMED	50	TS
1871	August	27	NOTNAMED	30	TD
1871	August	27	NOTNAMED	30	TD
1873	June	2	NOTNAMED	40	TS
1877	October	3	NOTNAMED	70	H1
1877	October	3	NOTNAMED	50	TS
1881	August	28	NOTNAMED	70	H1
1881	August	28	NOTNAMED	50	TS
1886	June	21	NOTNAMED	65	H1
1886	July	1	NOTNAMED	70	H1
1886	July	1	NOTNAMED	55	TS
1894	October	9	NOTNAMED	85	H2
1894	October	9	NOTNAMED	70	H1
1898	October	2	NOTNAMED	90	H2
1898	October	3	NOTNAMED	65	H1
1902	June	15	NOTNAMED	40	TS
1904	November	3	NOTNAMED	30	TD
1907	September	29	NOTNAMED	40	TS
1909	July	2	NOTNAMED	25	TD
1909	July	2	NOTNAMED	25	TD
1909	July	2	NOTNAMED	25	TD
1911	August	29	NOTNAMED	35	TS
1911	August	29	NOTNAMED	30	TD
1912	September	6	NOTNAMED	25	TD
1916	October	4	NOTNAMED	50	TS
1917	September	29	NOTNAMED	40	TS
1917	September	30	NOTNAMED	35	TS
1919	10	1	NOTNAMED	35	TS
1919	10	1	NOTNAMED	30	TD
1923	6	27	NOTNAMED	30	TD
1929	10	1	NOTNAMED	45	TS
1933	9	6	NOTNAMED	40	TS
1933	9	6	NOTNAMED	35	TS
1933	9	6	NOTNAMED	35	TS
1935	9	5	NOTNAMED	60	TS
1935	9	5	NOTNAMED	60	TS
1947	10	8	NOTNAMED	25	TD
1947	10	15	NOTNAMED	65	H1
1947	10	16	NOTNAMED	50	TS
1949	8	28	NOTNAMED	50	TS
1949	8	28	NOTNAMED	45	TS
1950	9	7	EASY	35	TS
1953	9	27	FLORENCE	50	E
1956	9	25	FLOSSY	40	TS
1956	9	25	FLOSSY	35	E
1964	9	12	DORA	35	TS
1964	9	12	DORA	35	TS
1985	11	22	KATE	80	H1
1985	11	22	KATE	65	H1
1986	8	14	CHARLEY	10	SD
1986	8	14	CHARLEY	10	SD
1987	8	16	NOTNAMED	10	TD
1987	8	17	NOTNAMED	10	TD
1990	10	12	MARCO	20	TD
1990	10	12	MARCO	20	E
1995	6	5	ALLISON	45	TS
1995	6	6	ALLISON	30	TD
1998	9	3	EARL	45	TS
2004	9	27	JEANNE	35	TS
2005	10	6	TAMMY	35	TS

Category Definitions:
TS – Tropical storm
TD – Tropical depression
CAT_1 – Category 1 (same format for 2, 3, 4 and 5)
E – Extra-tropical cyclone

Probabilistic Hurricane Scenario

The following probabilistic wind damage risk assessment modeled a Category 1 storm with maximum winds of 78 mph.

Wind Damage Assessment

Wind losses were determined from probabilistic models run for the Category 1 storm which equates to the 1% chance storm event. Figure 3 shows wind speeds for the modeled hurricane.

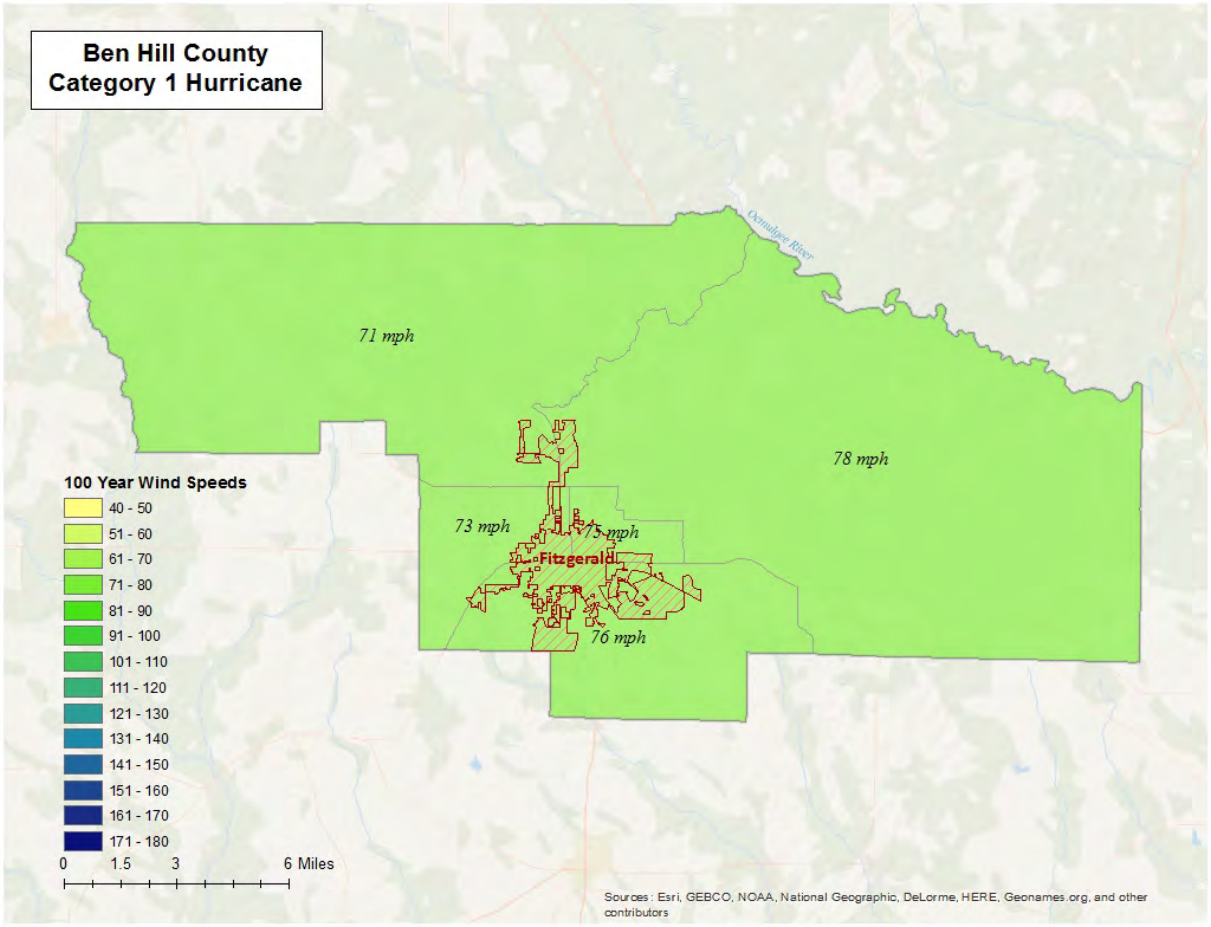

Figure 3: Wind Speeds by Storm Category

Wind-Related Building Damages

Buildings in Ben Hill County are vulnerable to storm events, and the cost to rebuild may have significant consequences to the community. The following table shows a summary of the results of wind-related building damage in Ben Hill County for the Category 1 (100 Year Event) storm. The loss ratio expresses building losses as a percentage of total building replacement cost in the county. Figure 4 illustrates the building loss ratios of the modeled Category 1 storm.

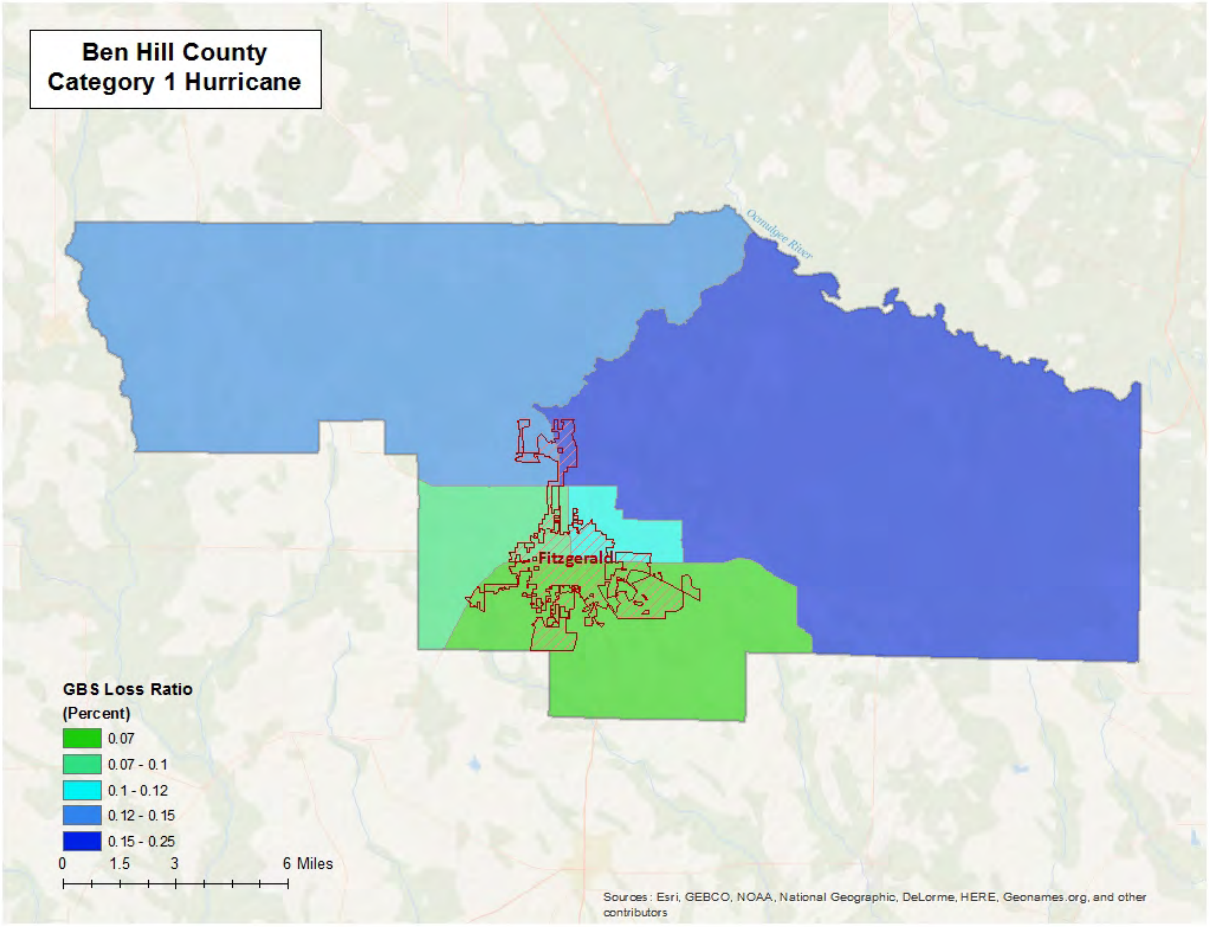

Figure 4: Hurricane Wind GBS Loss Ratios

Table 5 shows the Hurricane Wind Building Damage results including the number of buildings damaged, total building damage, and economic loss.

Table 5: Hurricane Wind Building Damage

Storm Classification	Number of Damaged Buildings	Building Damages	Total Economic Loss	Loss Ratio
Category 1	46	$ 2,465,760	$ 3,337,470	0.1

Essential Facility Losses

Essential facilities are also vulnerable to storm events, and the potential loss of functionality may have significant consequences to the community. Hazus-MH identified the essential facilities that may be moderately or severely damaged by winds. The results are compiled in Table 6.

There are 20 essential facilities in Ben Hill County.

Classification	Number
EOC	1
Care	2
Fire	8
Police	3
School	6
Total	**20**

Table 6: Wind-Damaged Essential Facility Losses

Storm Classification	Facilities Moderately Damaged (>50%)	Facilities Completely Damaged (>50%)	Facilities with expected loss (<1day)
Category 1	0	0	20

Shelter Requirements

Hazus-MH estimates the number of households evacuated from buildings with severe damage from high velocity winds as well as the number of people who will require short-term sheltering. The results are listed in Table 7 and mapped in Figure 5.

Table 7: Displaced Households and People

Storm Classification	# of Displaced Households	# of People Needing Short-Term Shelter
Category 1	0	0

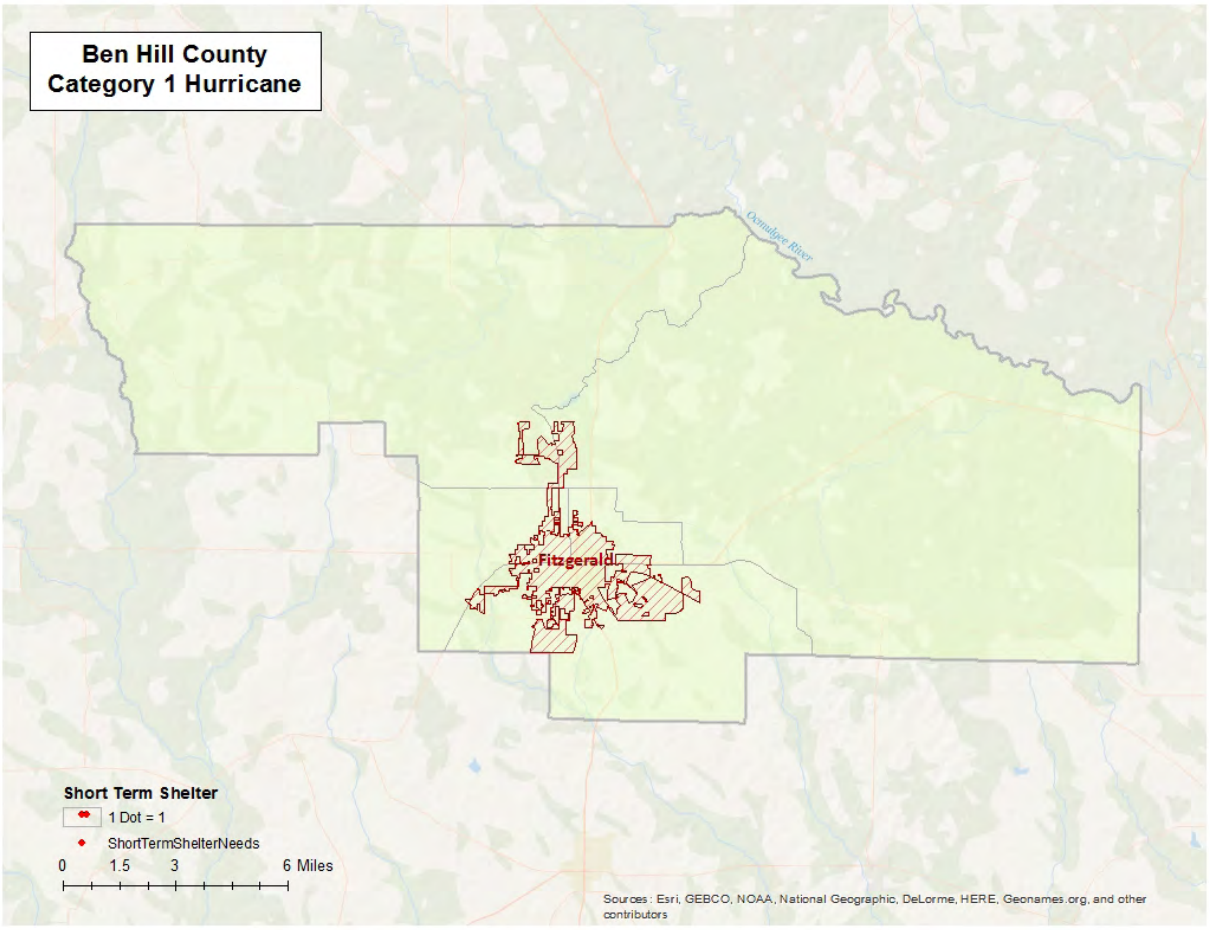

Figure 5: Hurricane Wind Shelter Requirements

Debris Generated from Hurricane Wind

Hazus-MH estimates the amount of debris that will be generated by high velocity hurricane winds and quantifies it into three broad categories to determine the material handling equipment needed:

- Reinforced Concrete and Steel Debris
- Brick and Wood and Other Building Debris
- Tree Debris

Different material handling equipment is required for each category of debris. The estimates of debris for this scenario are listed in Table 8. The amount of hurricane wind related tree debris that is estimated to require pick up at the public's expense is listed in the eligible tree debris column.

Table 8: Wind-Related Debris Weight (Tons)

Storm Classification	Brick, Wood, and Other	Reinforced Concrete/Steel	Tree Debris	Other Tree Debris	Total
Category 1	236	-	1,784	28,088	30,108

Figure 6 shows the distribution of all wind related debris resulting from a Category 1 hurricane. Each dot represents 20 tons of debris within the census tract in which it is located. The dots are randomly distributed within each census tract and therefore do not represent the specific location of debris sites.

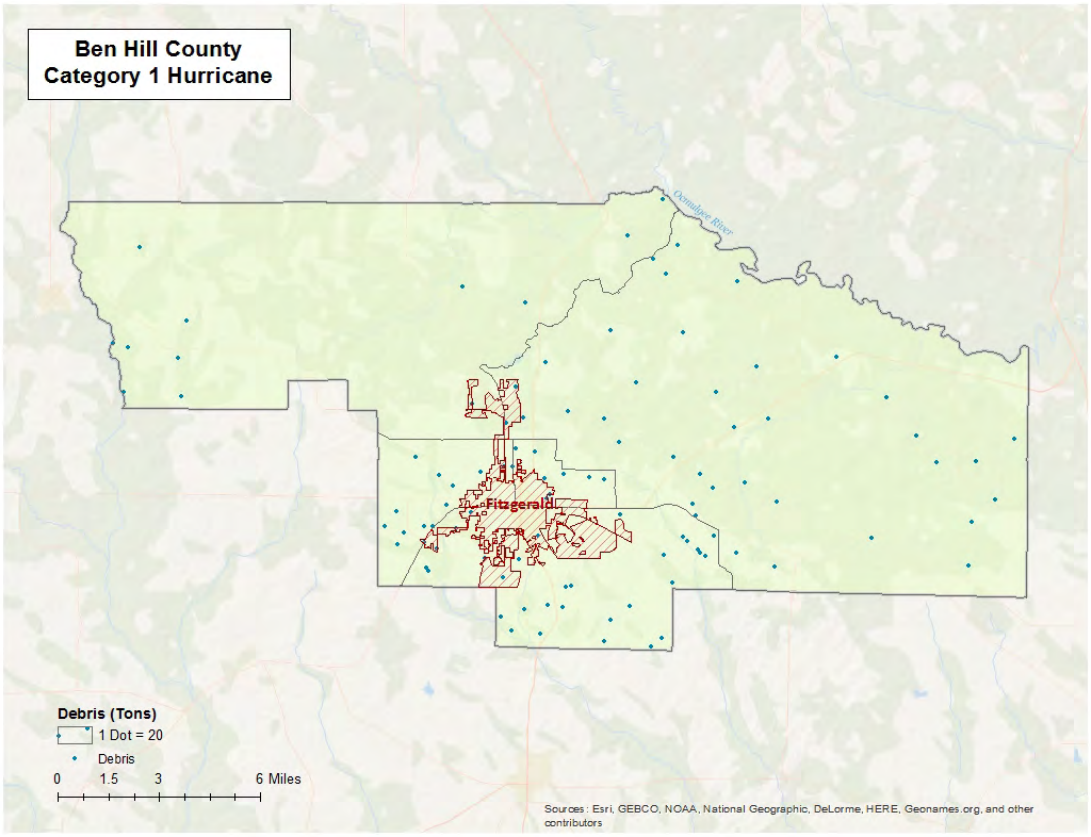

Figure 6: Wind-Related Debris Weight (Tons)

Flood Risk Assessment

Hazard Definition

Flooding is a significant natural hazard throughout the United States. The type, magnitude, and severity of flooding are functions of the amount and distribution of precipitation over a given area, the rate at which precipitation infiltrates the ground, the geometry and hydrology of the catchment, and flow dynamics and conditions in and along the river channel. Floods can be classified as one of three types: upstream floods, downstream floods, or coastal floods.

Upstream floods, also called flash floods, occur in the upper parts of drainage basins and are generally characterized by periods of intense rainfall over a short duration. These floods arise with very little warning and often result in locally intense damage, and sometimes loss of life, due to the high energy of the flowing water. Flood waters can snap trees, topple buildings, and easily move large boulders or other structures. Six inches of rushing water can upend a person; another 18 inches might carry off a car. Generally, upstream floods cause damage over relatively localized areas, but they can be quite severe in the local areas in which they occur. Urban flooding is a type of upstream flood. Urban flooding involves the overflow of storm drain systems and can be the result of inadequate drainage combined with heavy rainfall or rapid snowmelt. Upstream or flash floods can occur at any time of the year in Georgia, but they are most common in the spring and summer months.

Downstream floods, also called riverine floods, refer to floods on large rivers at locations with large upstream catchments. Downstream floods are typically associated with precipitation events that are of relatively long duration and occur over large areas. Flooding on small tributary streams may be limited, but the contribution of increased runoff may result in a large flood downstream. The lag time between precipitation and time of the flood peak is much longer for downstream floods than for upstream floods, generally providing ample warning for people to move to safe locations and, to some extent, secure some property against damage.

Coastal floods occurring on the Atlantic and Gulf coasts may be related to hurricanes or other combined offshore, nearshore, and shoreline processes. The effects of these complex interrelationships vary significantly across coastal settings, leading to challenges in the determination of the base (1-percent-annual-chance) flood for hazard mapping purposes. Land area covered by floodwaters of the base flood is identified as a Special Flood Hazard Area (SFHA). The Ben Hill County flood risk assessment analyzed at risk structures in the SFHA.

> The SFHA is the area where the National Flood Insurance Program's (NFIP) floodplain management regulations must be enforced and the area where the mandatory purchase of flood insurance applies. The owner of a structure in a high-risk area must carry flood insurance, if the owner carries a mortgage from a federally regulated or insured lender or servicer.

The following probabilistic risk assessment involves an analysis of a 1% annual chance riverine flood event.

Riverine 1% Flood Scenario

Riverine losses were determined from the 1% flood boundaries downloaded from the FEMA Flood Map Service Center in November 2018. The flood boundaries were overlaid with the USGS 10 meter DEM using the Hazus-MH Enhanced Quick Look tool to generate riverine depth grids. The riverine flood depth grid was then imported into Hazus-MH to calculate the riverine flood loss estimates. Figure 7 illustrates the riverine inundation boundary associated with the 1% annual chance. Please note that the riverine flooding may not take into account elevated housing or raised Base Flood Elevation.

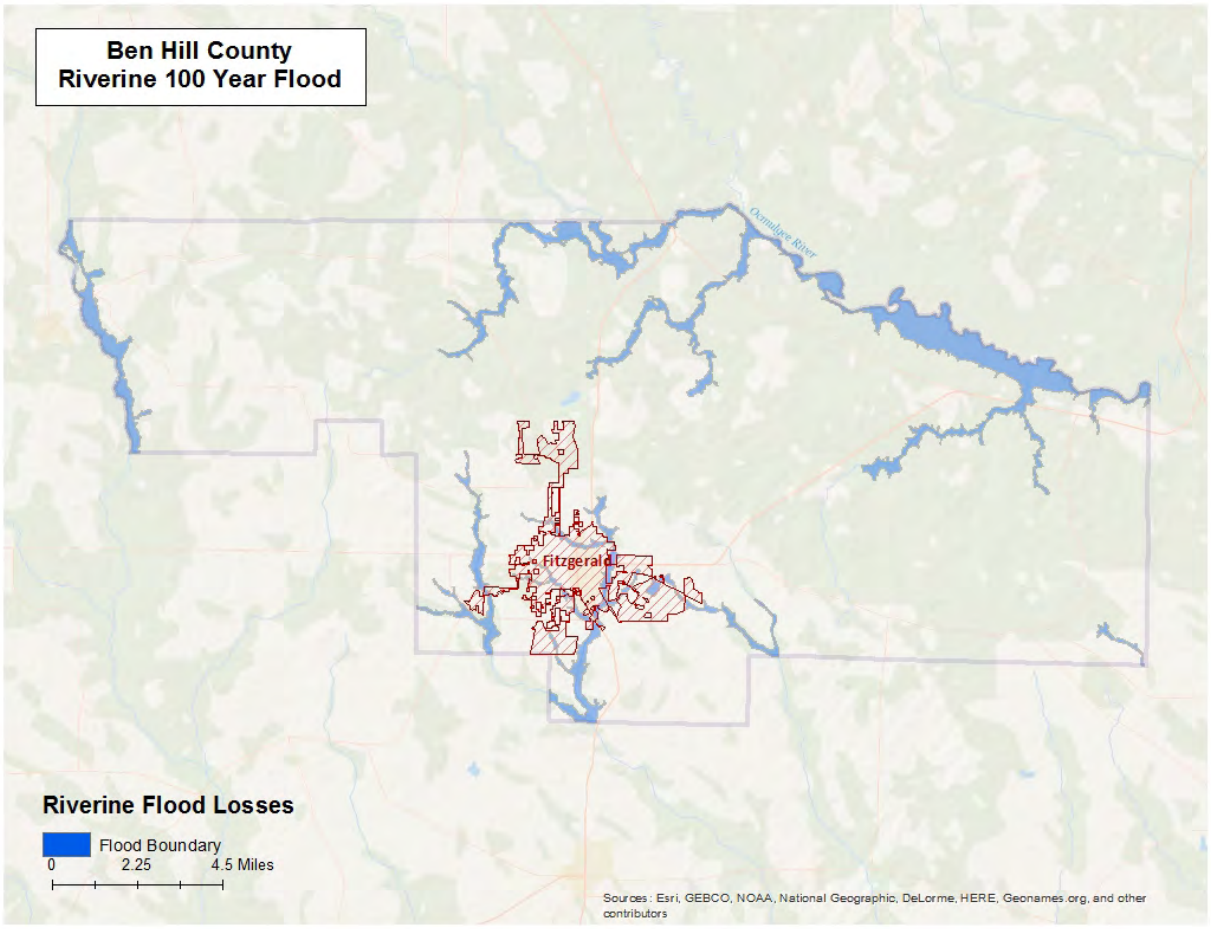

Figure 7: Riverine 1% Flood Inundation

Riverine 1% Flood Building Damages

Buildings in Ben Hill County are vulnerable to flooding from events equivalent to the 1% riverine flood. The economic and social impacts from a flood of this magnitude can be significant. Table 9 provides a summary of the potential flood-related building damage in Ben Hill County by jurisdiction that might be experienced from the 1% flood. Figure 8 maps the potential loss ratios of total building exposure to losses sustained to buildings from the 1% flood by 2010 census block and Figure 9 illustrates the relationship of building locations to the 1% flood inundation boundary.

Table 9: Ben Hill County Riverine 1% Building Losses

Occupancy Classification	Total Buildings	Total Buildings Damaged	Total Building Exposure	Total Losses to Buildings	Loss Ratio of Exposed to Damaged
			Fitzgerald		
Commercial	474	22	$ 602,885,323	$ 2,239,728	0.37%
Education	33	2	$ 76,672,164	$ 16,742	0.02%
Industrial	79	7	$ 87,508,301	$ 682,749	0.78%
Religious	84	5	$ 72,284,607	$ 616,616	0.85%
Residential	3,061	36	$ 669,616,741	$ 976,382	0.15%
			Unincorporated		
Commercial	182	11	$ 399,737,730	$ 3,491,407	0.87%
Education	20	5	$ 31,868,233	$ 146,636	0.46%
Industrial	53	3	$ 106,790,227	$ 1,432,239	1.34%
Religious	64	2	$ 45,252,957	$ 33,902	0.07%
Residential	2,778	13	$ 388,019,765	$ 298,638	0.08%
			County Total		
Total	6,828	106	2,480,636,048	9,935,039	

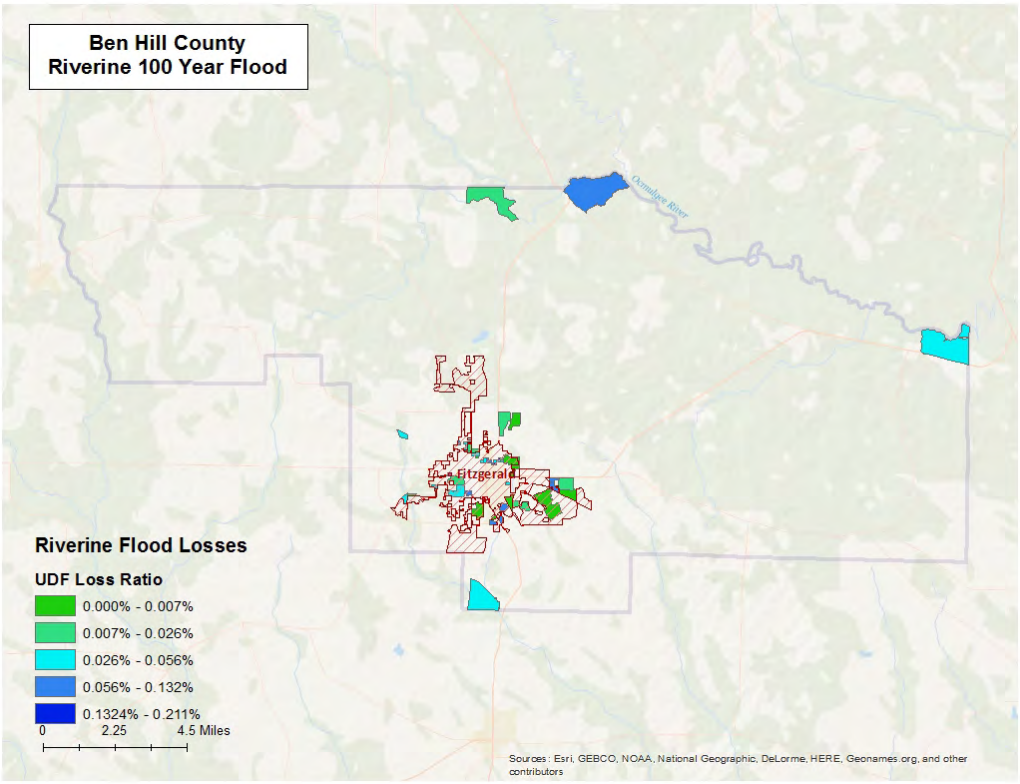

Figure 8: Potential UDF Loss Ratios from the 1% Riverine Flood

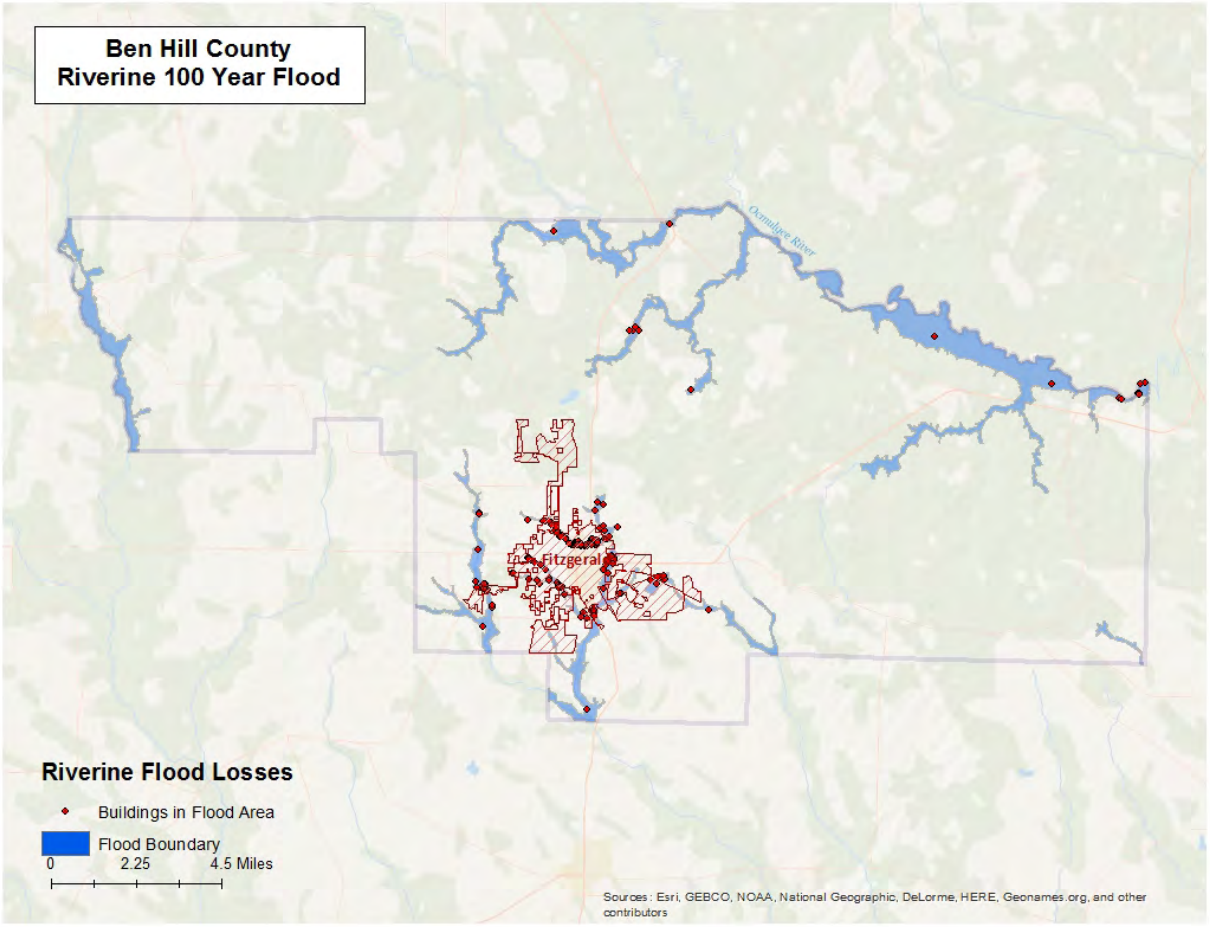

Figure 9: Damaged Buildings in 1% Riverine Flood

Riverine 1% Flood Essential Facility Losses

An essential facility may encounter many of the same impacts as other buildings within the flood boundary. These impacts can include structural failure, extensive water damage to the facility and loss of facility functionality (e.g. a damaged police station will no longer be able to serve the community). The analysis has identified that were 0 Essential Facilities subject to damage in the Ben Hill County riverine 1% probability floodplain.

Table 10: Expected Damage to Essential Facilities in 1% Riverine Flood

Classification	Total	Moderate	Substantial	Loss of Use
Fire Station	8	0	0	0
Hospitals	2	0	0	0
Police Stations	3	0	0	0
Schools	6	0	0	0
EOCs	0	0	0	0

Riverine 1% Flood Shelter Requirements

Hazus-MH estimates that the number of households that are expected to be displaced from their homes due to riverine flooding and the associated potential evacuation. The model estimates 217 households might be displaced due to the flood. Displacement includes households evacuated within or very near to the inundated area. Displaced households represent 652 individuals, of which 132 may require short term publicly provided shelter. The results are mapped in Figure 10. These numbers may be overestimated for two reasons: elevated housing not taken into account and parcel centroids (not aligned exactly with actual structures).

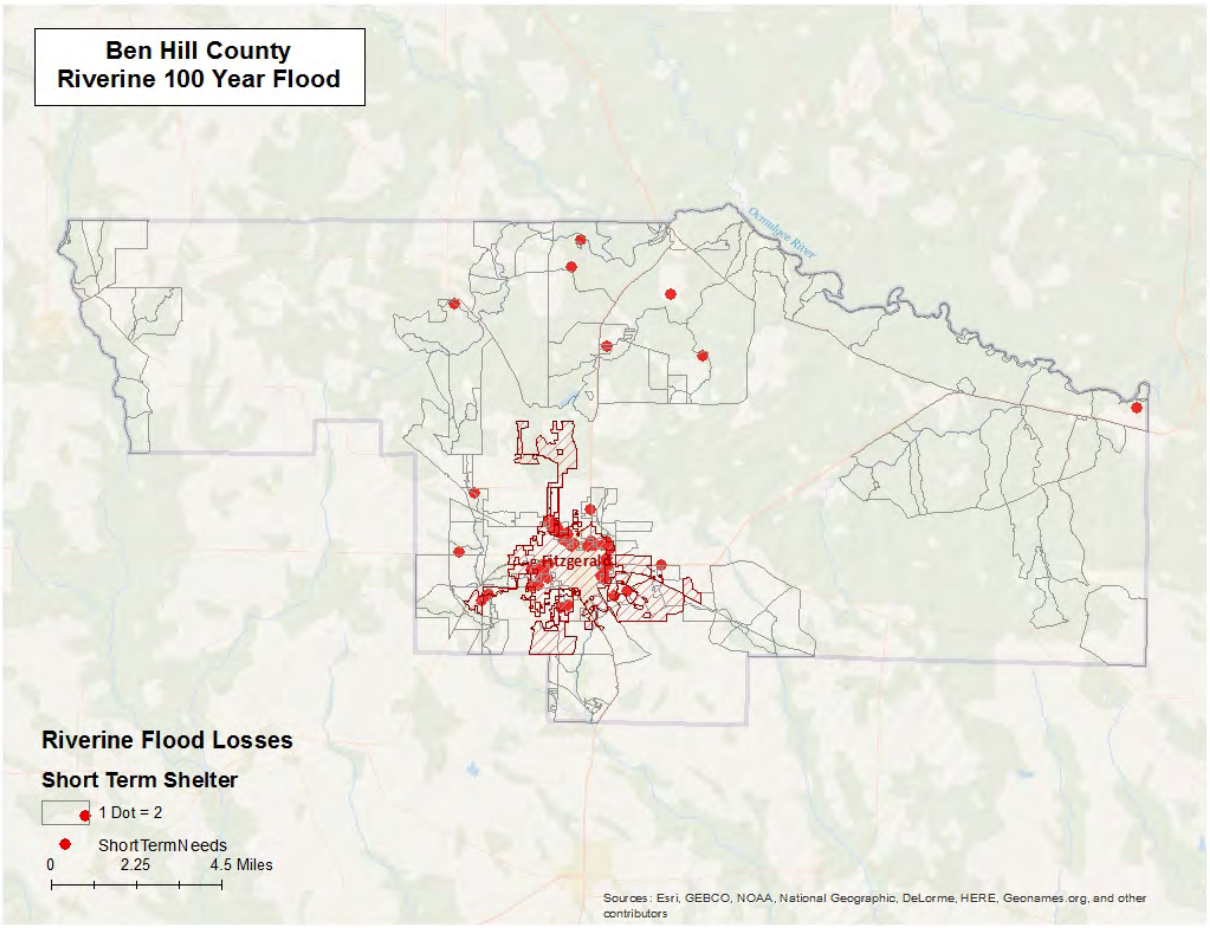

Figure 10: Estimated Flood Shelter Requirements in 1% Riverine Flood

Riverine 1% Flood Debris

Hazus-MH estimates the amount of debris that will be generated by the flood. The model breaks debris into three general categories:

- Finishes (dry wall, insulation, etc.)
- Structural (wood, brick, etc.)
- Foundations (concrete slab, concrete block, rebar, etc.)

Different types of material handling equipment will be required for each category. Debris definitions applied in Hazus-MH are unique to the Hazus-MH model and so do not necessarily conform to other definitions that may be employed in other models or guidelines.

The analysis estimates that an approximate total of 1,796 tons of debris might be generated: 1) Finishes – 1,525 tons; 2) Structural - 110 tons; and 3) Foundations - 162 tons. The results are mapped in Figure 11.

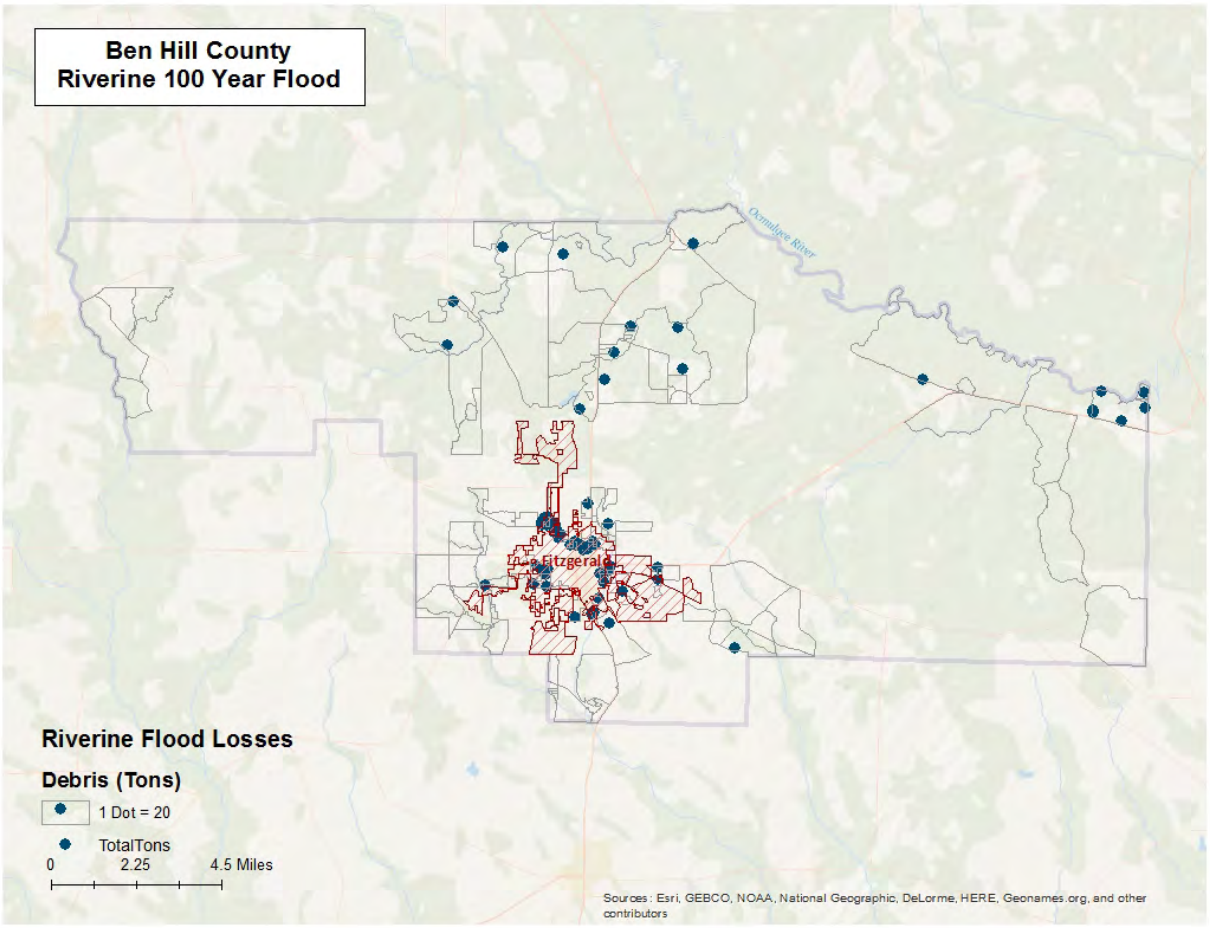

Figure 11: Flood Debris Weight (Tons) in 1% Riverine Flood

Tornado Risk Assessment

Hazard Definition

Tornadoes pose a great risk to the state of Georgia and its citizens. Tornadoes can occur at any time during the day or night. They can also happen during any month of the year. The unpredictability of tornadoes makes them one of Georgia's most dangerous hazards. Their extreme winds are violently destructive when they touch down in the region's developed and populated areas. Current estimates place the maximum velocity at about 300 miles per hour, but higher and lower values can occur. A wind velocity of 200 miles per hour will result in a wind pressure of 102.4 pounds per square foot of surface area—a load that exceeds the tolerance limits of most buildings. Considering these factors, it is easy to understand why tornadoes can be so devastating for the communities they hit.

Tornadoes are defined as violently-rotating columns of air extending from thunderstorms and cyclonic events. Funnel clouds are rotating columns of air not in contact with the ground; however, the violently-rotating column of air can reach the ground very quickly and become a tornado. If the funnel cloud picks up and blows debris, it has reached the ground and is a tornado.

Tornadoes are classified according to the Fujita tornado intensity scale. Originally introduced in 1971, the scale was modified in 2006 to better define the damage and estimated wind scale. The Enhanced Fujita Scale ranges from low intensity EF0 with effective wind speeds of 65 to 85 miles per hour, to EF5 tornadoes with effective wind speeds of over 200 miles per hour. The Enhanced Fujita intensity scale is included in Table 11.

Table 11: Enhanced Fujita Tornado Rating

Fujita Number	Estimated Wind Speed	Path Width	Path Length	Description of Destruction
EF0 *Gale*	65-85 mph	6-17 yards	0.3-0.9 miles	Light damage, some damage to chimneys, branches broken, sign boards damaged, shallow-rooted trees blown over.
EF1 *Moderate*	86-110 mph	18-55 yards	1.0-3.1 miles	Moderate damage, roof surfaces peeled off, mobile homes pushed off foundations, attached garages damaged.
EF2 *Significant*	111-135 mph	56-175 yards	3.2-9.9 miles	Considerable damage, entire roofs torn from frame houses, mobile homes demolished, boxcars pushed over, large trees snapped or uprooted.
EF3 *Severe*	136-165 mph	176-566 yards	10-31 miles	Severe damage, walls torn from well-constructed houses, trains overturned, most trees in forests uprooted, heavy cars thrown about.
EF4 *Devastating*	166-200 mph	0.3-0.9 miles	32-99 miles	Complete damage, well-constructed houses leveled, structures with weak foundations blown off for some distance, large missiles generated.
EF5 *ncredible*	Over 200 mph	1.0-3.1 miles	100-315 miles	Foundations swept clean, automobiles become missiles and thrown for 100 yards or more, steel-reinforced concrete structures badly damaged.

Source: http://www.srh.noaa.gov

Hypothetical Tornado Scenario

For this report, an EF3 tornado was modeled to illustrate the potential impacts of tornadoes of this magnitude in the county. The analysis used a hypothetical path based upon an EF3 tornado event running along the predominant direction of historical tornados (southeast to northwest). The tornado path was placed to travel through Fitzgerald. The selected widths were modeled after a re-creation of the Fujita-Scale guidelines based on conceptual wind speeds, path widths, and path lengths. There is no guarantee that every tornado will fit exactly into one of these categories. Table 12 depicts tornado path widths and expected damage.

Table 12: Tornado Path Widths and Damage Curves

Enhanced Fujita Scale	Path Width (feet)	Maximum Expected Damage
EF5	2,400	100%
EF4	1,800	100%
EF3	1,200	80%
EF2	600	50%
EF1	300	10%

Within any given tornado path there are degrees of damage. The most intense damage occurs within the center of the damage path, with decreasing amounts of damage away from the center. After the hypothetical path is digitized on a map, the process is modeled in GIS by adding buffers (damage zones) around the tornado path. Figure 12 describes the zone analysis.

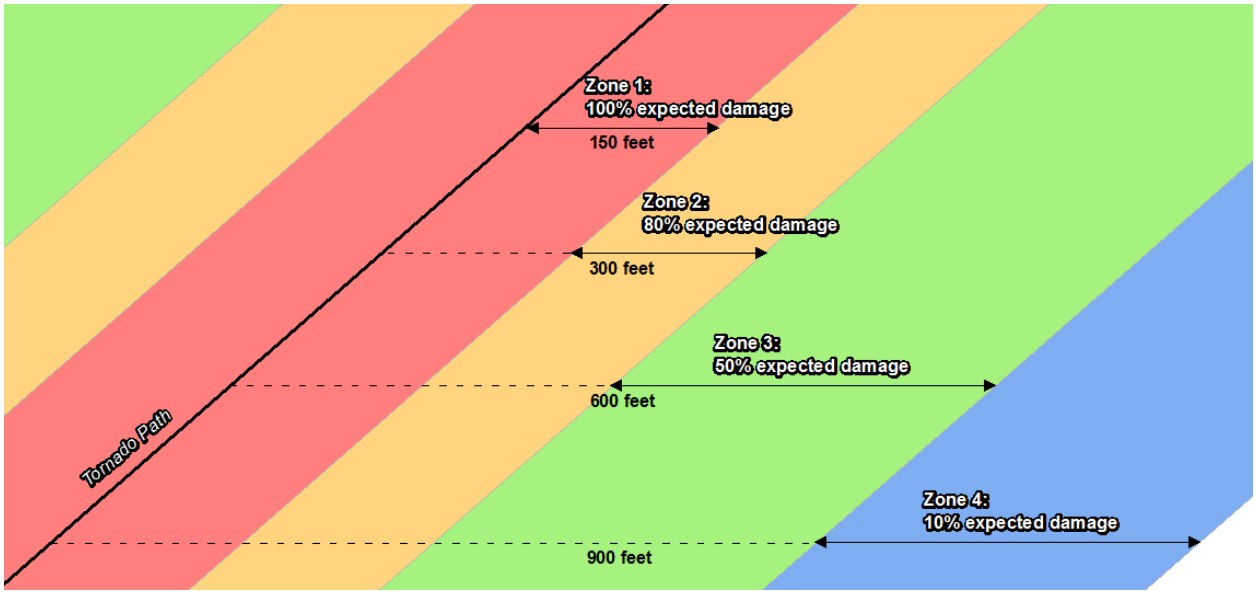

Figure 12: EF Scale Tornado Zones

An EF3 tornado has four damage zones, depicted in Table 13. Major damage is estimated within 150 feet of the tornado path. The outer buffer is 900 feet from the tornado path, within which buildings will not experience any damage. The selected hypothetical tornado path is depicted in Figure 13 and the damage curve buffer zones are shown in Figure 14.

Table 13: EF3 Tornado Zones and Damage Curves

Zone	Buffer (feet)	Damage Curve
1	0-150	80%
2	150-300	50%
3	300-600	10%
4	600-900	0%

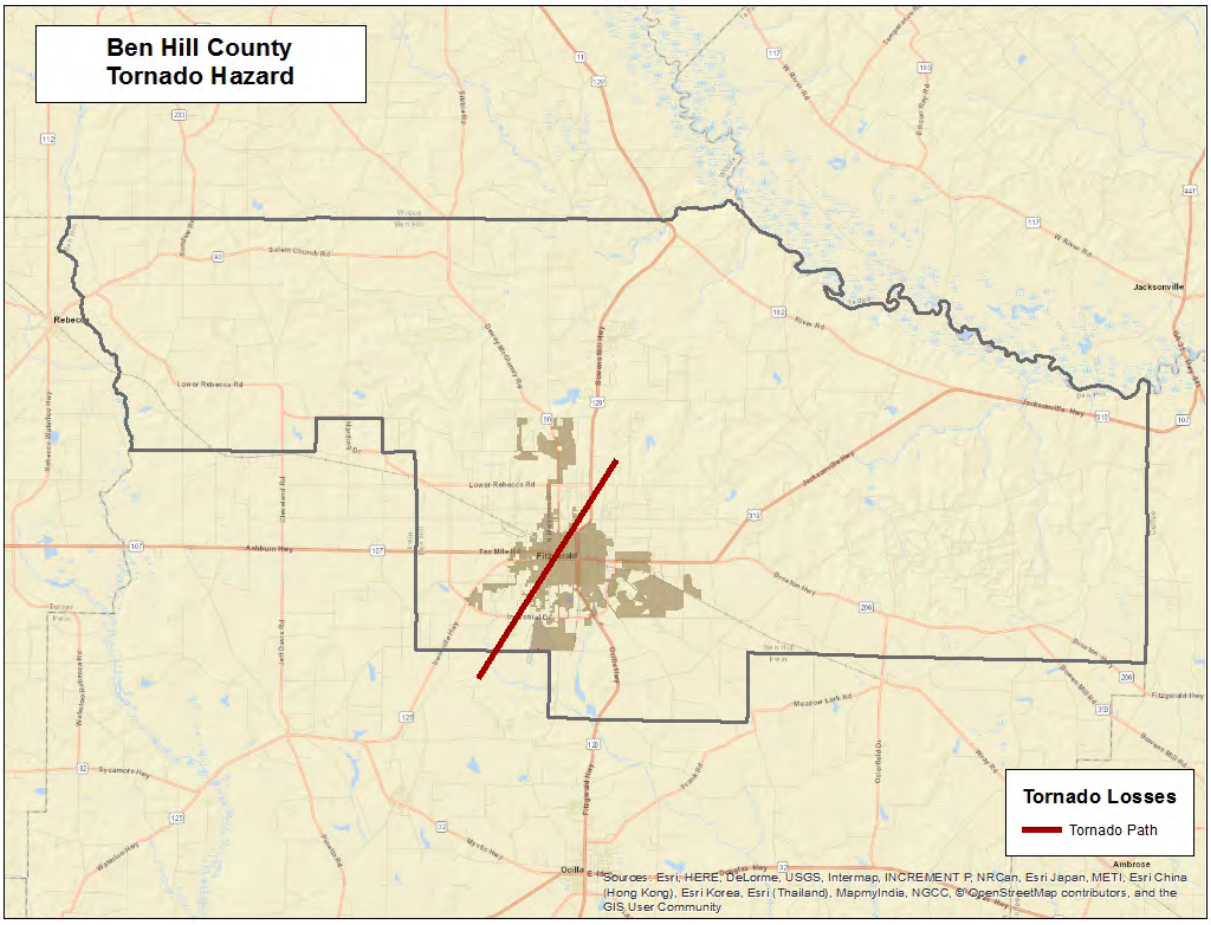

Figure 13: Hypothetical EF3 Tornado Path

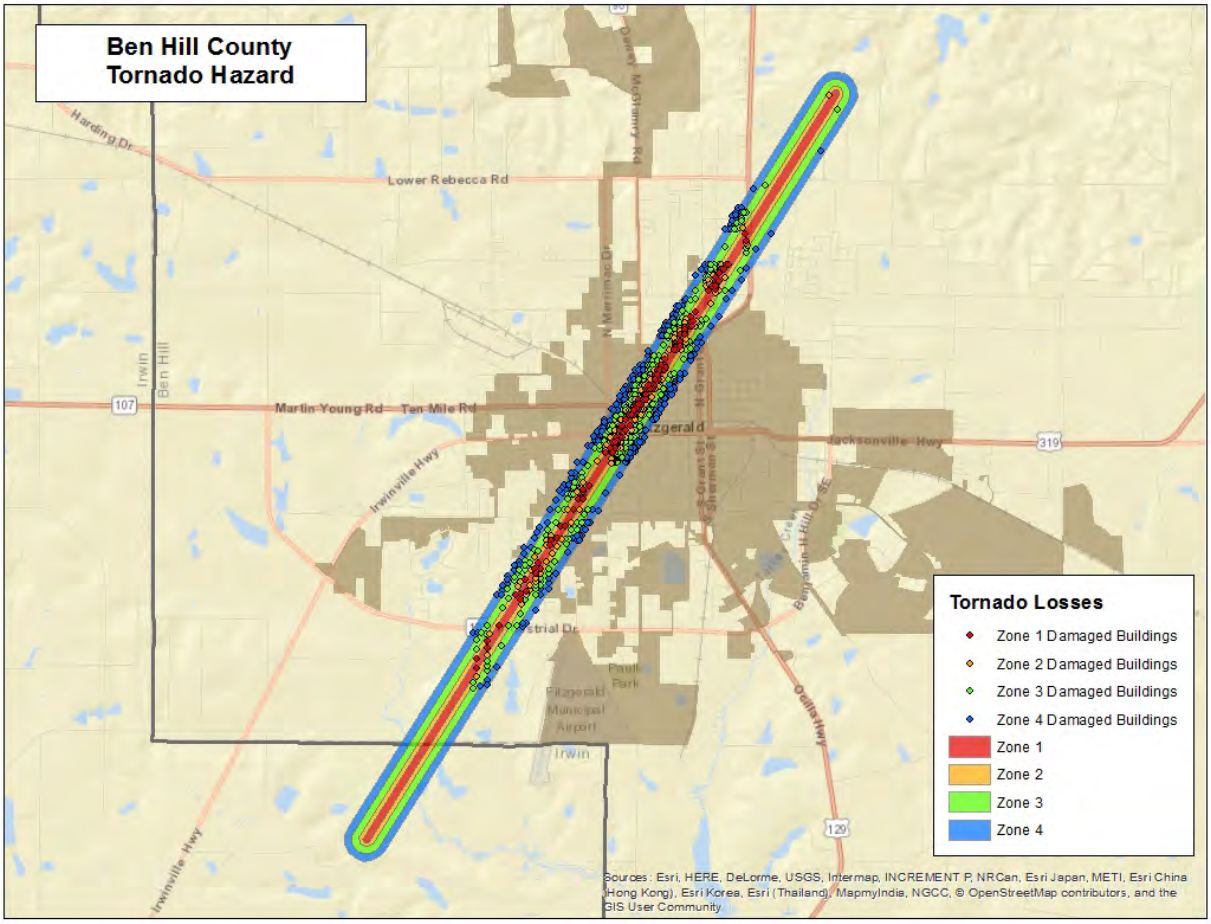

Figure 14: Modeled EF3 Tornado Damage Buffers

EF3 Tornado Building Damages

The analysis estimated that approximately 759 buildings could be damaged, with estimated building losses of approximately $38.9 million. The building losses are an estimate of building replacement costs multiplied by the percentages of damage. The overlay was performed against parcels provided by Ben Hill County that were joined with Assessor records showing estimated property replacement costs. The Assessor records often do not distinguish parcels by occupancy class if the parcels are not taxable and thus the number of buildings and replacement costs may be underestimated. The results of the analysis are depicted in Table 14.

Table 14: Estimated Building Losses by Occupancy Type

Occupancy Classification	Buildings Damaged	Building Losses
Commerical	14	$ 583,790
Educational	2	$ 3,415,185
Governmental	2	$ 105,444
Industrial	9	$ 329,535
Religious	18	$ 2,564,345
Residential	714	$ 31,978,537
Total	**759**	**$ 38,976,836**

EF3 Tornado Essential Facility Damage

There was 1 essential facilities located in the tornado path according to the modeling, this facility would suffer moderate to major damage should such a tornado strike occur.

The location of the damaged Essential Facilities is mapped in Figure 15.

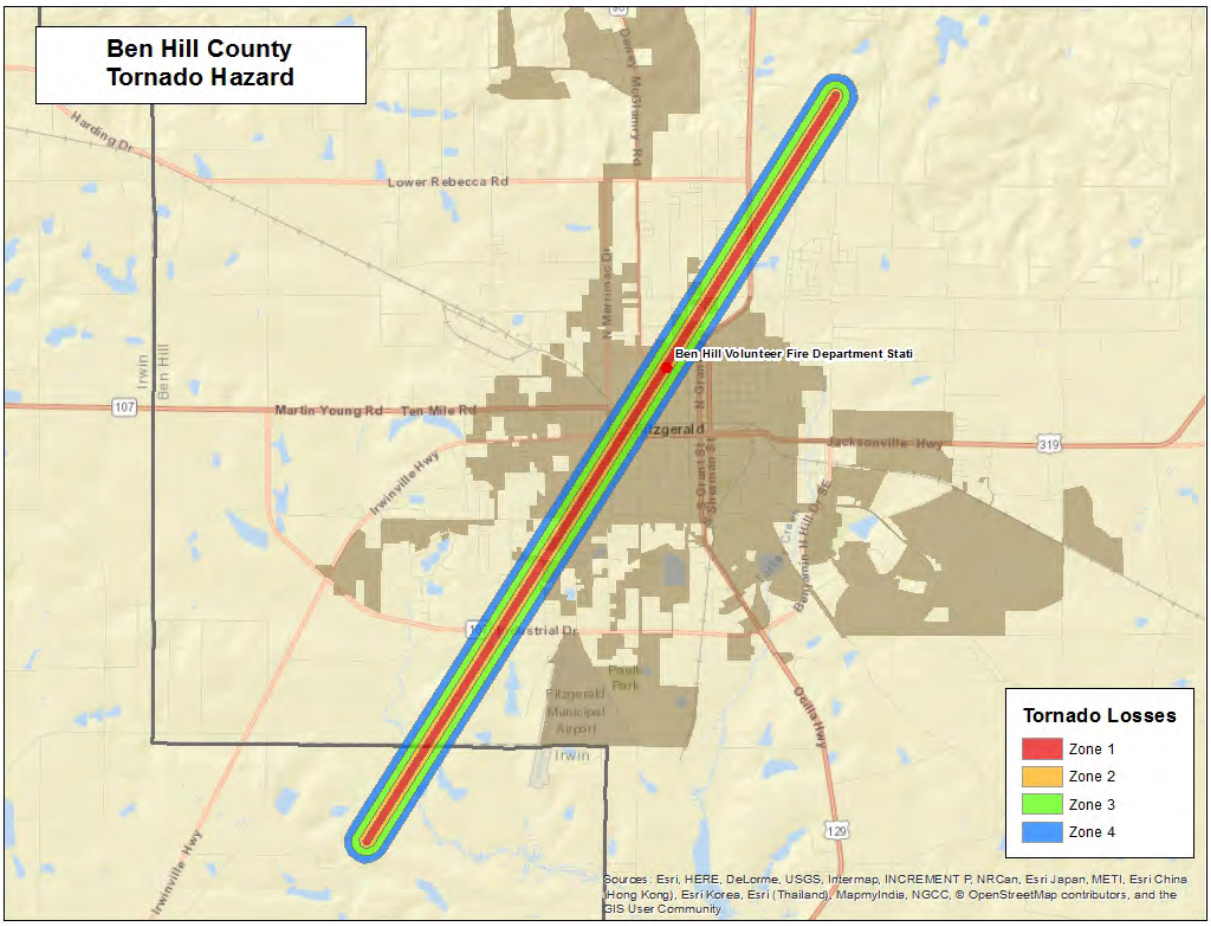

Figure 15: Modeled Essential Facility Damage in Ben Hill County

Exceptions Report

Hazus Version 2.2 SP1 was used to perform the loss estimates for Ben Hill County, Georgia. Changes made to the default Hazus-MH inventory and the modeling parameters used to setup the hazard scenarios are described within this document.

Reported losses reflect the updated data sets. Steps, algorithms and assumptions used during the data update process are documented in the project workflow developed by the Polis Center.

Statewide Inventory Changes

The default Hazus-MH Essential Facility inventory was updated for the entire state prior to running the hazard scenarios for Ben Hill County.

Statewide facility data were supplied by GEMA through the GMIS in November 2018. The Regional Commission updated the essential facilities in 2018. The updated data was used for this analysis. Table 15 summarizes the difference between the original Hazus-MH default data and the updated data for Ben Hill County.

Table 15: Essential Facility Updates

Occupancy Classification	Default Replacement Cost	Default Count	Updated Replacement Cost	Updated Count
Care	$ 40,730,000	2	$ 40,730,000	2
EOC	$ 880,000	1	$ 880,000	1
Fire	$ 4,333,000	8	$ 4,333,000	8
Police	$ 17,283,000	3	$ 16,924,000	3
School	$ 187,765,000	6	$ 187,765,000	6

County Inventory Changes

The GBS records for Ben Hill County were replaced with data derived from parcel and property assessment data obtained from Ben Hill County. The county provided property assessment data was current as of November 2017 and the parcel data current as of November 2017.

General Building Stock Updates

The parcel boundaries and assessor records were obtained from Ben Hill County. Records without improvements were deleted. The parcel boundaries were converted to parcel points located in the centroids of each parcel boundary unless there were building footprints. Each parcel point was linked to an assessor record based upon matching parcel numbers. The generated Building Inventory represents the approximate locations (within a parcel) of building exposure. The Building Inventory was aggregated by Census Block and imported into Hazus-MH using the Hazus-MH Comprehensive Data Management System (CDMS). Both the 2010 Census Tract and Census Block tables were updated.

The match between parcel records and assessor records was based upon a common Parcel ID. For this type of project, unless the hit rate is better than 85%, the records are not used to update the default aggregate inventory in Hazus-MH. The Parcel-Assessor hit rate for Ben Hill County was 99.0%.

Adjustments were made to records when primary fields did not have a value. In these cases, default values were applied to the fields. Table 16 outlines the adjustments made to Ben Hill County records.

Table 16: Building Inventory Default Adjustment Rates

Type of Adjustment	Building Count	Percentage
Area Unknown	22	0%
Construction Unknown	1373	20%
Condition Unknown	36	1%
Foundation Unknown	1373	20%
Year Built Unknown	35	1%

Portions of the CAMA values were either missing (<Null> or '0'), did not match CAMA domains or were unusable ('Unknown', 'Other', 'Pending'). These were replaced with 'best available' values. Missing YearBuilt values were populated from average values per Census Block. Missing Condition, Construction and Foundation values were populated with the highest-frequency CAMA values per Occupancy Class. Missing Area values were populated with the average CAMA values per Occupancy Class.

The resulting Building Inventory was used to populate the Hazus-MH General Building Stock and User Defined Facility tables. The updated General Building Stock was used to calculate flood and tornado losses. Changes to the building counts and exposure that were modeled in Ben Hill County are sorted by General Occupancy in Table 1 at the beginning of this report. If replacements cost or building value were not present for a given record in the Assessor data, replacement costs were calculated from the Building Area (sqft) multiplied by the Hazus-MH RS Means ($/sqft) values for each Occupancy Class.

Differences between the default and updated data are due to various factors. The Assessor records often do not distinguish parcels by occupancy class when the parcels are not taxable; therefore, the total number of buildings and the building replacement costs for government, religious/non-profit, and education may be underestimated.

User Defined Facilities

Local parcel and CAMA data were used to develop points representing the locations of buildings in the county, referred to as User Defined Facilities (UDF) in the Hazus model. For the flood model, this includes only buildings located in the 1% Annual Chance Riverine Flood Area. Table 17 identifies the total building count & exposure for the county and the total building count & exposure for buildings located in the 1% Annual Chance Riverine Flood Area.

Table 17: Building Count and Exposure for County and Riverine Flood Area

Feature	Counts	Exposure
Total buildings in the County	6,849	$2,516,133,469
Total buildings inside the 1% Annual Chance Riverine Flood Area	206	$114,164,067

It should be noted that UDFs are only used in the flood modeling process, due to the fact that it is important to identify if individual buildings are located within the flood area to obtain the depth of flood.

Assumptions

- Flood analysis was performed on UDF. The point locations are parcel centroid accuracy.
- The analysis is restricted to the county boundary within the flood area. Events that occur near the county boundary do not contain loss estimates from adjacent counties.
- The following attributes were defaulted or calculated:
  First Floor Height was set from Foundation Type
  Content Cost was calculated from Building Cost