Appendix A

GEMA Worksheet #3a Inventory of Assets

Jurisdiction: Echols 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	1,344	1,344	100.000%	$ 52,296,462	$ 52,296,462	100.000%	3,936	3,936	100.000%
Commercial	14	14	100.000%	$ 2,059,967	$ 2,059,967	100.000%	0	0	0%
Industrial	1	1	100.000%	$ -	$ -		0	0	0%
Agricultural	703	703	100.000%	$ 327,999,786	$ 327,999,786	100.000%	0	0	0%
Religious/ Non-profit	35	35	100.000%	$ 3,339,415	$ 3,339,415	100.000%	0	0	0%
Government	20	20	100.000%	$ 1,018,453	$ 1,018,453	100.000%	0	0	0%
Education	6	6	100.000%	$ 157,255	$ 157,255	100.000%	0	0	0%
Utilities	1	1		$ -	$ -		0	0	0%
Total	2,124	2,124		$ 386,871,338	$ 386,871,338		3,936	3,936	

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: Echols 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	1,344	87	6.473%	$ 52,296,462	$ 2,841,583	5.434%	3,936	255	6.473%
Commercial	14	1	7.143%	$ 2,059,967	$ 23,900	1.160%	0	0	0%
Industrial	1	1	100.000%	$ -	$ -		0	0	0%
Agricultural	703	239	33.997%	$ 327,999,786	$ 194,193,578	59.205%	0	0	0%
Religious/ Non-profit	35	4	11.429%	$ 3,339,415	$ 769,600	23.046%	0	0	0%
Government	20	0	0.000%	$ 1,018,453	$ -	0.000%	0	0	0%
Education	6	0	0.000%	$ 157,255	$ -	0.000%	0	0	0%
Utilities	1	0		$ -	$ -		0	0	0%
Total	2,124	332		$ 386,871,338	$ 197,828,661		3,936	255	

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: Echols 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	1,344	1,344	100.000%	$ 52,296,462	$ 52,296,462	100.000%	3,936	3,936	100.000%
Commercial	14	14	100.000%	$ 2,059,967	$ 2,059,967	100.000%	0	0	0%
Industrial	1	1	100.000%	$ -	$ -		0	0	0%
Agricultural	703	703	100.000%	$ 327,999,786	$ 327,999,786	100.000%	0	0	0%
Religious/ Non-profit	35	35	100.000%	$ 3,339,415	$ 3,339,415	100.000%	0	0	0%
Government	20	20	100.000%	$ 1,018,453	$ 1,018,453	100.000%	0	0	0%
Education	6	6	100.000%	$ 157,255	$ 157,255	100.000%	0	0	0%
Utilities	1	1		$ -	$ -		0	0	0%
Total	2,124	2,124		$ 386,871,338	$ 386,871,338		3,936	3,936	

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: Echols 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	1,344	1,344	100.000%	$ 52,296,462	$ 52,296,462	100.000%	3,936	3,936	100.000%
Commercial	14	14	100.000%	$ 2,059,967	$ 2,059,967	100.000%	0	0	0%
Industrial	1	1	100.000%	$ -	$ -		0	0	0%
Agricultural	703	703	100.000%	$ 327,999,786	$ 327,999,786	100.000%	0	0	0%
Religious/ Non-profit	35	35	100.000%	$ 3,339,415	$ 3,339,415	100.000%	0	0	0%
Government	20	20	100.000%	$ 1,018,453	$ 1,018,453	100.000%	0	0	0%
Education	6	6	100.000%	$ 157,255	$ 157,255	100.000%	0	0	0%
Utilities	1	1		$ -	$ -		0	0	0%
Total	2,124	2,124		$ 386,871,338	$ 386,871,338		3,936	3,936	

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: Echols County
Hazard: Thunderstorms/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	1,344	1,344	100.000%	$ 52,296,462	$ 52,296,462	100.000%	3,936	3,936	100.000%
Commercial	14	14	100.000%	$ 2,059,967	$ 2,059,967	100.000%	0	0	0%
Industrial	1	1	100.000%	$ -	$ -		0	0	0%
Agricultural	703	703	100.000%	$ 327,999,786	$ 327,999,786	100.000%	0	0	0%
Religious/ Non-profit	35	35	100.000%	$ 3,339,415	$ 3,339,415	100.000%	0	0	0%
Government	20	20	100.000%	$ 1,018,453	$ 1,018,453	100.000%	0	0	0%
Education	6	6	100.000%	$ 157,255	$ 157,255	100.000%	0	0	0%
Utilities	1	1		$ -	$ -		0	0	0%
Total	2,124	2,124		$ 386,871,338	$ 386,871,338		3,936	3,936	

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: Echols 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	1,344	1,344	100.000%	$ 52,296,462	$ 52,296,462	100.000%	3,936	3,936	100.000%
Commercial	14	14	100.000%	$ 2,059,967	$ 2,059,967	100.000%	0	0	0%
Industrial	1	1	100.000%	$ -	$ -		0	0	0%
Agricultural	703	703	100.000%	$ 327,999,786	$ 327,999,786	100.000%	0	0	0%
Religious/ Non-profit	35	35	100.000%	$ 3,339,415	$ 3,339,415	100.000%	0	0	0%
Government	20	20	100.000%	$ 1,018,453	$ 1,018,453	100.000%	0	0	0%
Education	6	6	100.000%	$ 157,255	$ 157,255	100.000%	0	0	0%
Utilities	1	1		$ -	$ -		0	0	0%
Total	2,124	2,124		$ 386,871,338	$ 386,871,338		3,936	3,936	

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: Echols County
Hazard: Drought

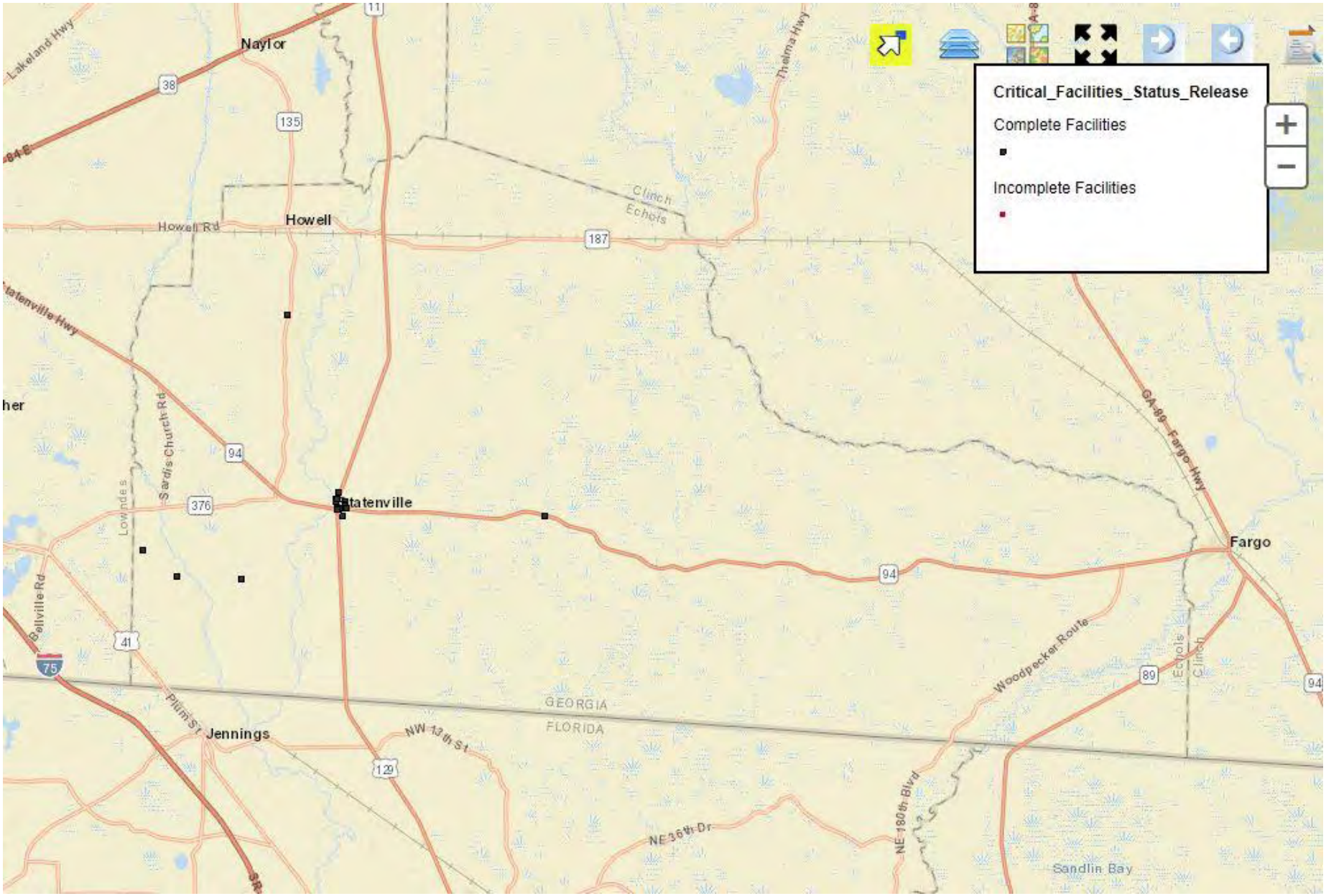
Task A. Determine the proportion of buildings, the value of buildings, and the population in your community or state that are located in hazard areas.

	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	1,344	1,344	100.000%	$ 52,296,462	$ 52,296,462	100.000%	3,936	3,936	100.000%
Commercial	14	14	100.000%	$ 2,059,967	$ 2,059,967	100.000%	0	0	0%
Industrial	1	1	100.000%	$ -	$ -		0	0	0%
Agricultural	703	703	100.000%	$ 327,999,786	$ 327,999,786	100.000%	0	0	0%
Religious/ Non-profit	35	35	100.000%	$ 3,339,415	$ 3,339,415	100.000%	0	0	0%
Government	20	20	100.000%	$ 1,018,453	$ 1,018,453	100.000%	0	0	0%
Education	6	6	100.000%	$ 157,255	$ 157,255	100.000%	0	0	0%
Utilities	1	1		$ -	$ -		0	0	0%
Total	2,124	2,124		$ 386,871,338	$ 386,871,338		3,936	3,936	

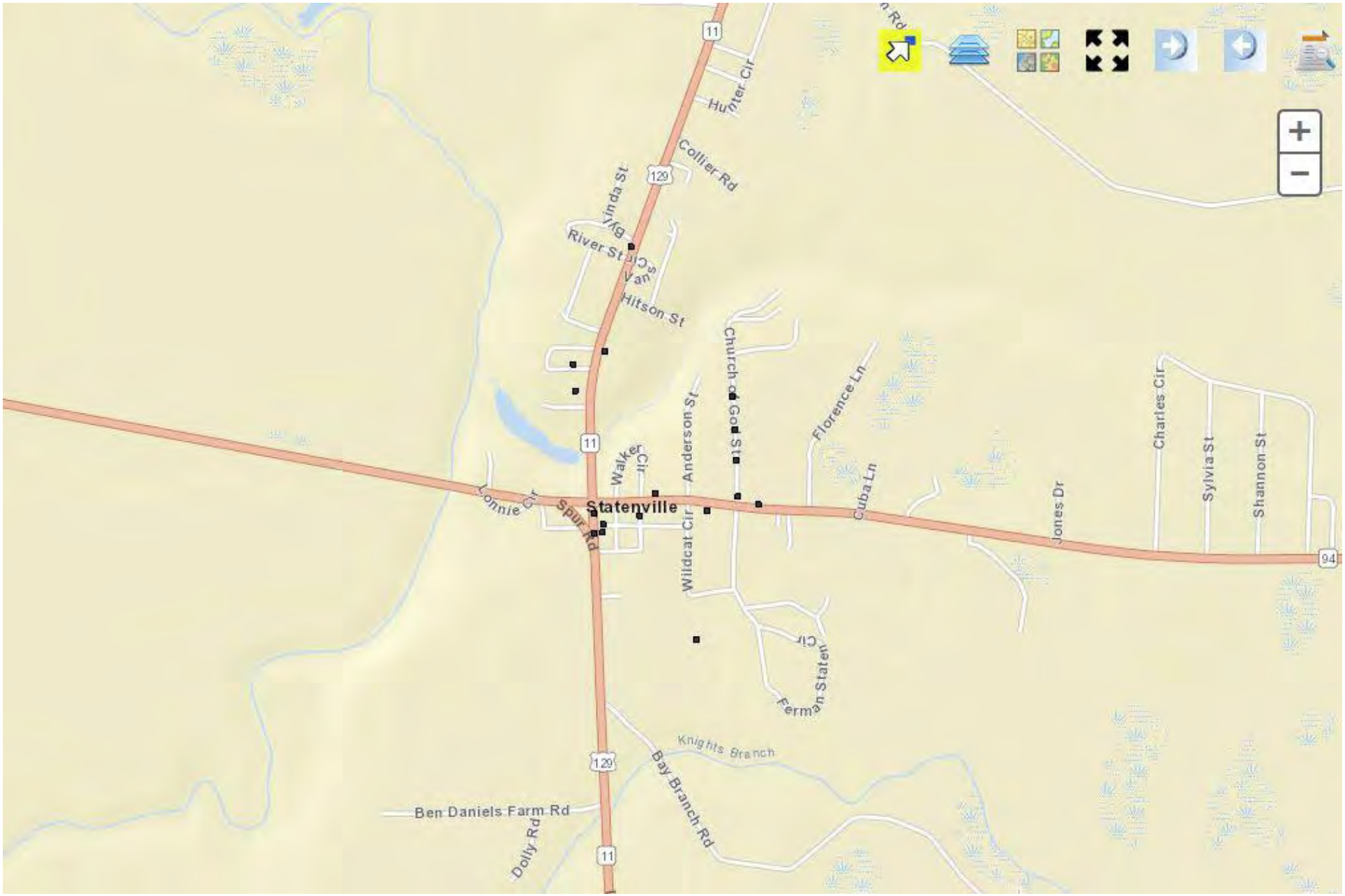
Task B. Determine whether (and where) you want to collect additional inventory data.

	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	

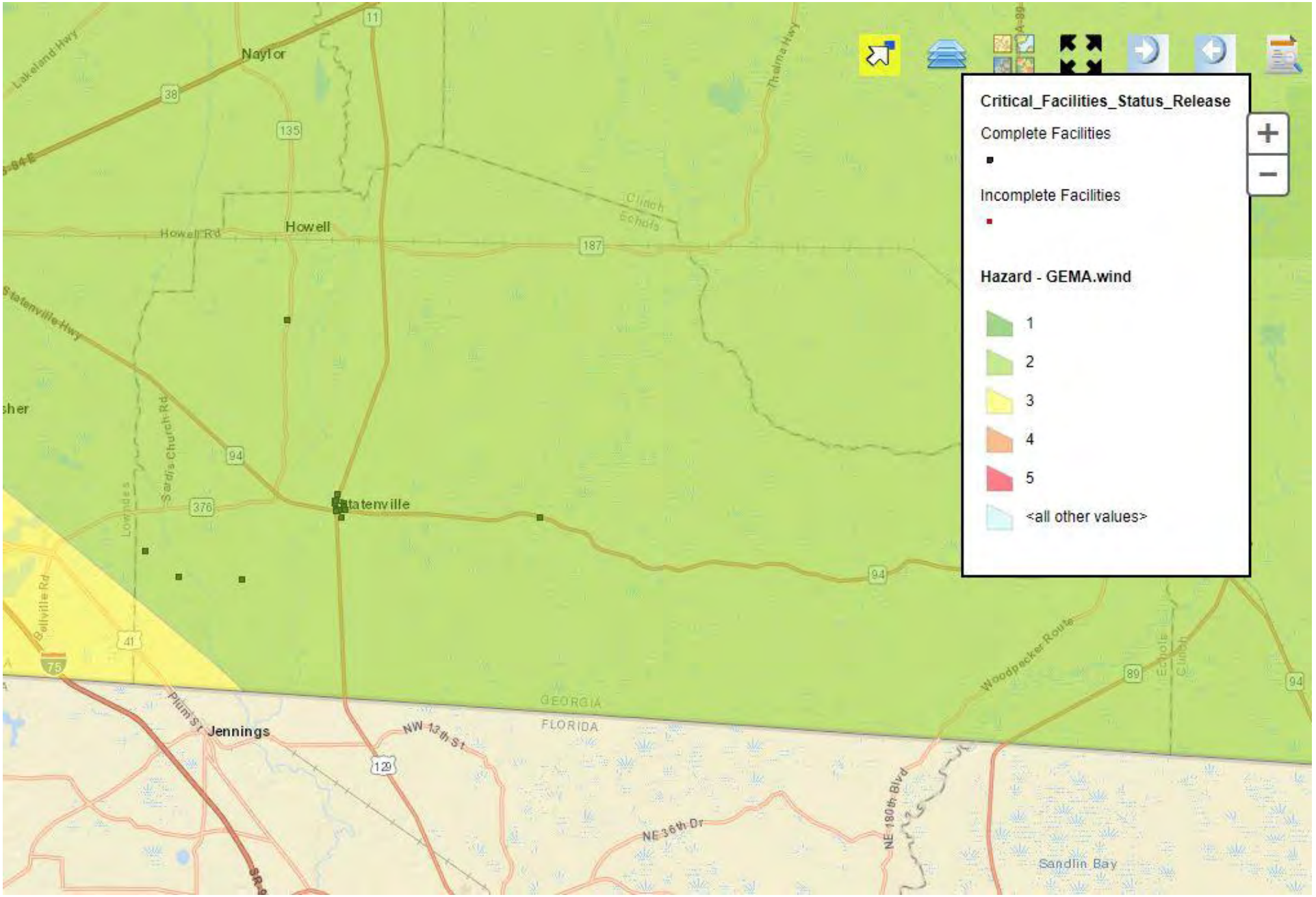
Critical Facilities and Hazard Potential for Hazards Affecting the Entire Community (Hurricanes/Tropical Storms, Tornadoes, Thunderstorms/Lightning, Extreme Heat, and Drought)



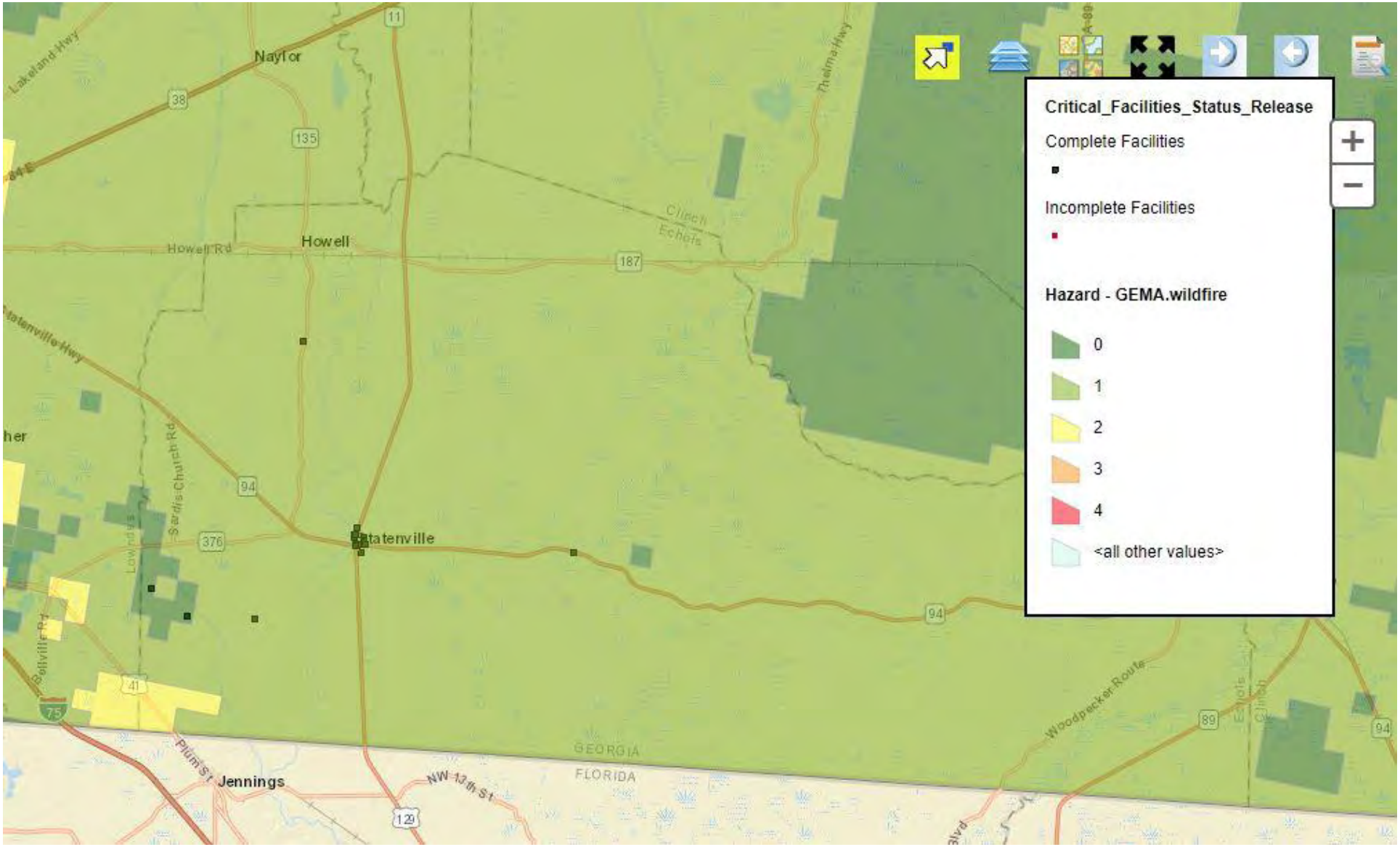
Statenville Area Detail – Critical Facilities



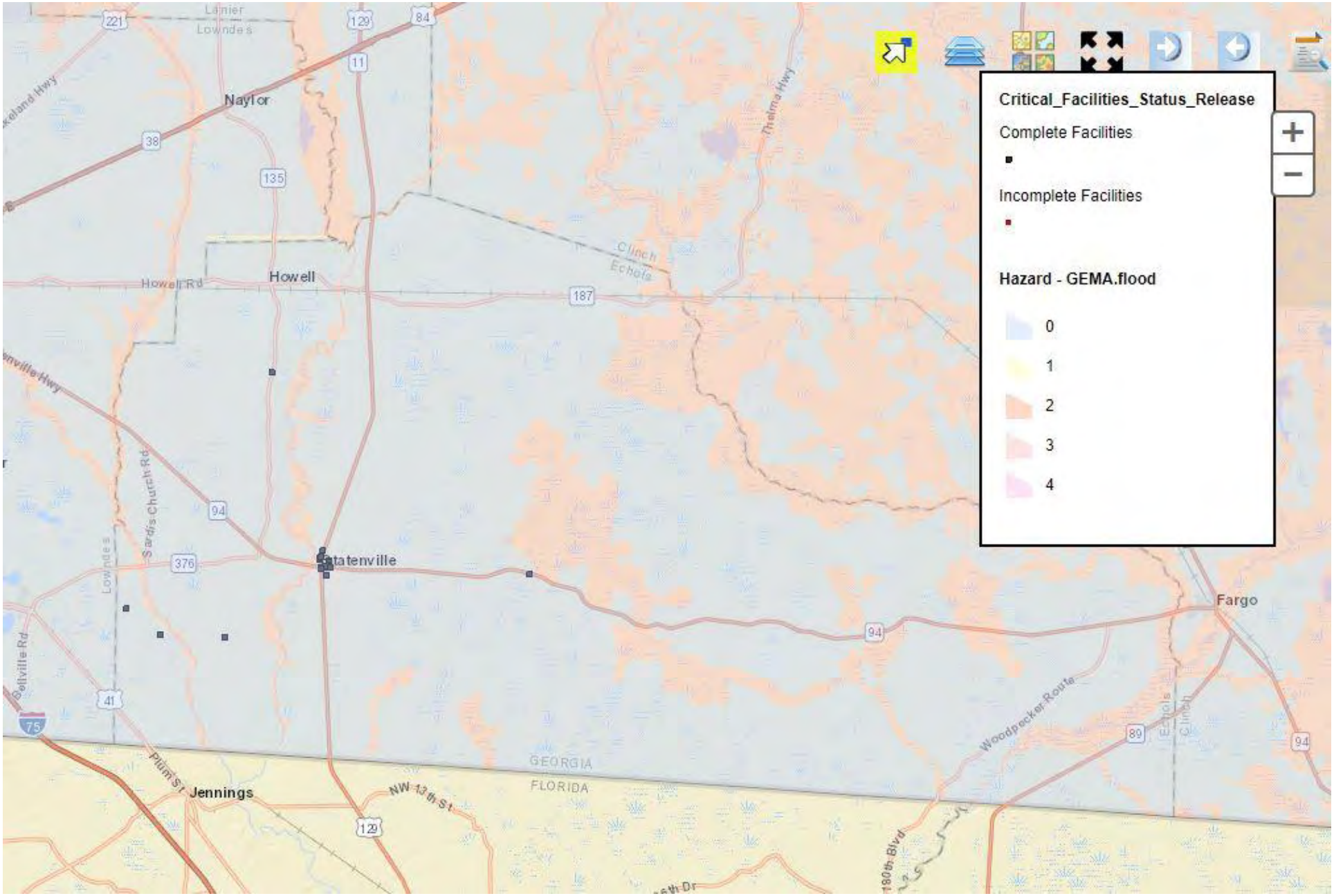
Critical Facilities and Wind Zones



Critical Facilities and Wildfire Hazard Areas (GMIS data)



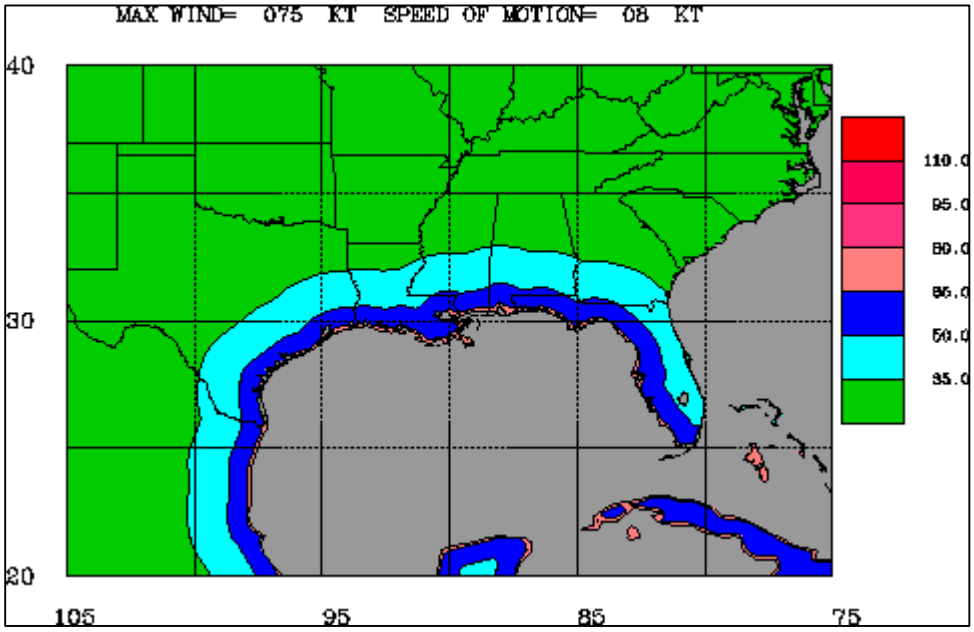
Critical Facilities and Flood Zones



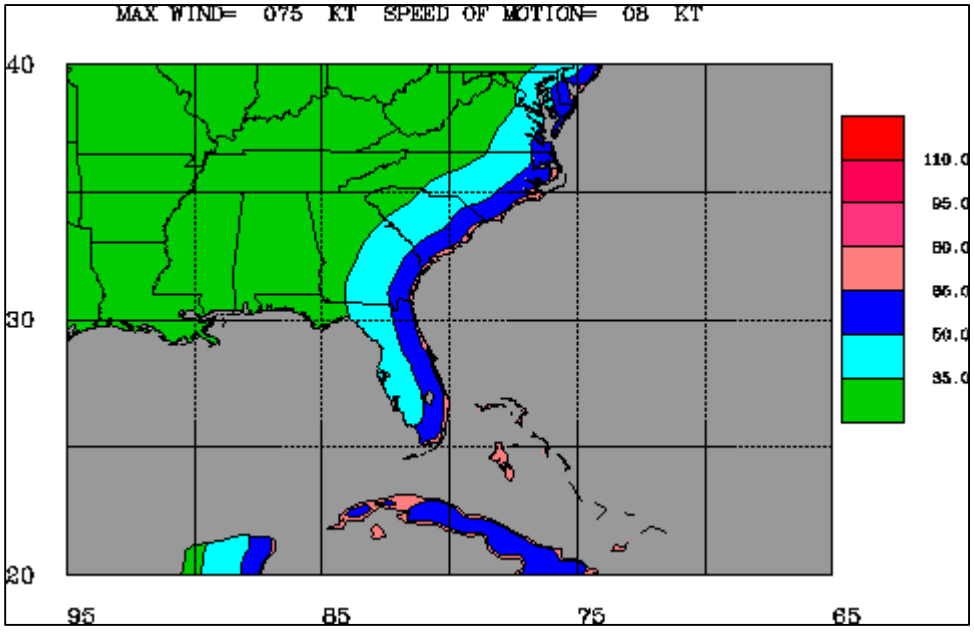
Examples of the Maximum Envelope of Wind
(Source: NOAA. http://www.nhc.noaa.gov/aboutmeow.shtml)

Mild case (Category 1, 8 knots forward motion)

Gulf Coast Region



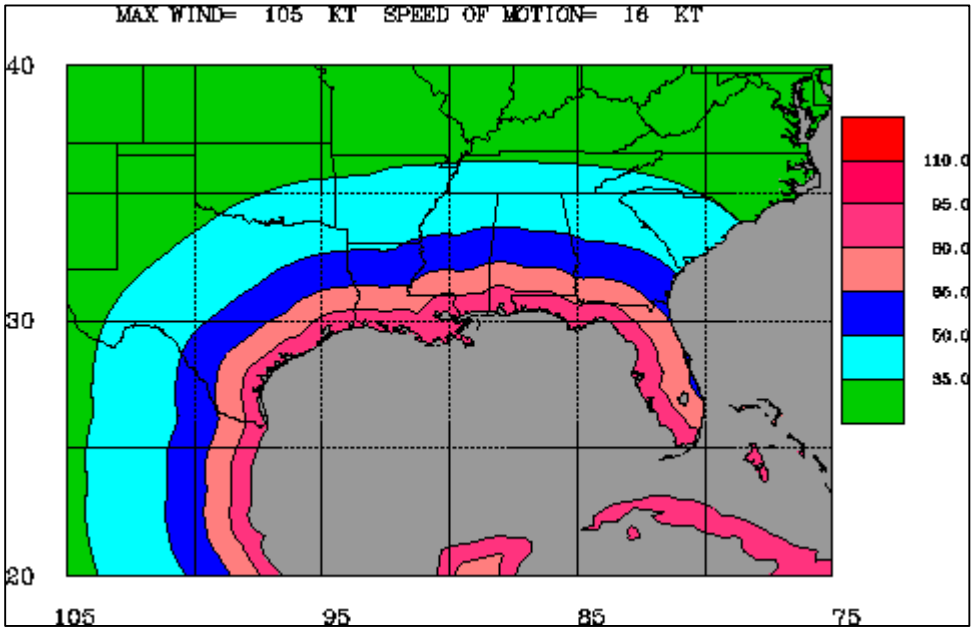
East Coast Region



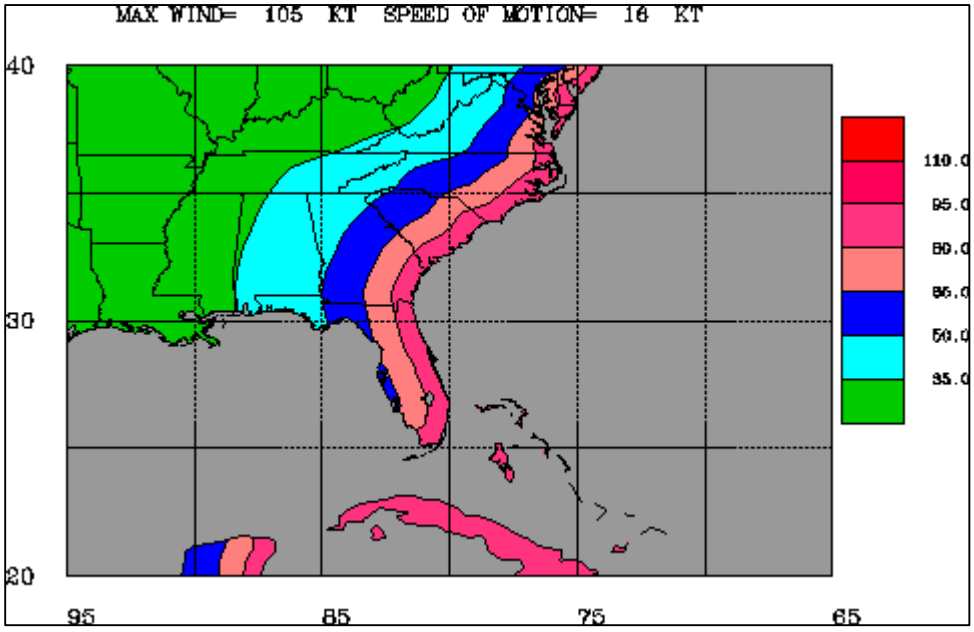
Examples of the Maximum Envelope of Wind
(Source: NOAA. http://www.nhc.noaa.gov/aboutmeow.shtml)

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

Gulf Coast Region



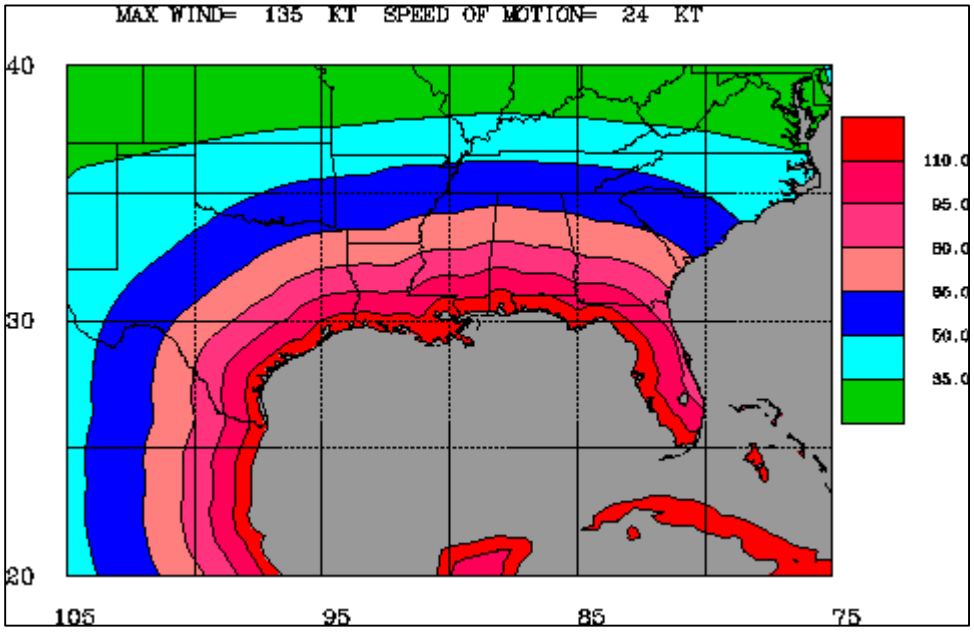
East Coast Region



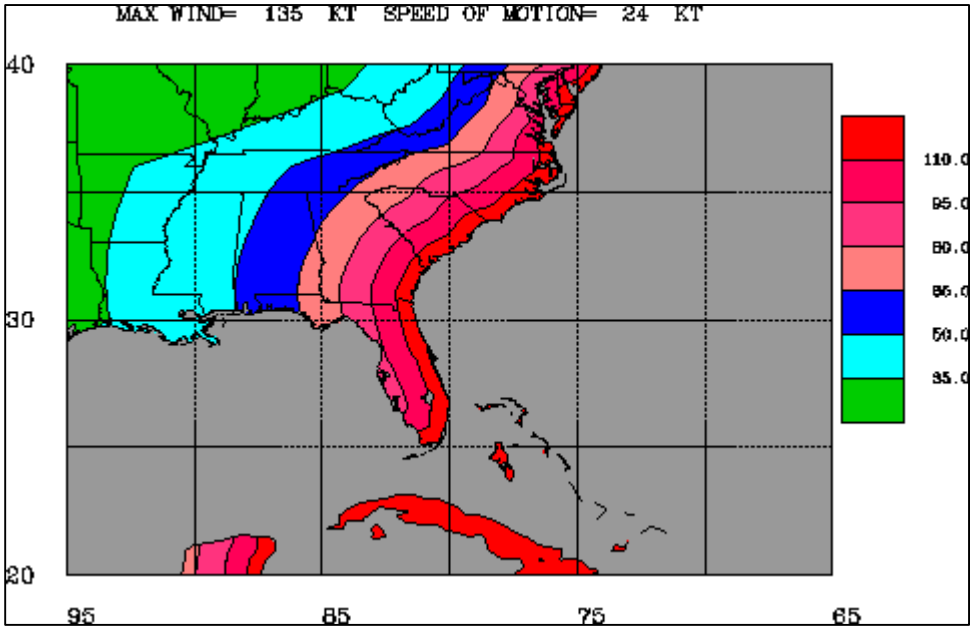
Examples of the Maximum Envelope of Wind
(Source: NOAA. http://www.nhc.noaa.gov/aboutmeow.shtml)

Worst case (Category 5, 24 knots forward motion)

Gulf Coast Region



East Coast Region




5 EF5
4 EF4
3 EF3
2 EF2
1 EF1
0 EF0
Howell
ECHOLS
129
LOWNDES
Statenville
1993
1997
2002
94
1999
GEORGIA
FLORIDA
SR-93
Jennings
441
0 2 4mi

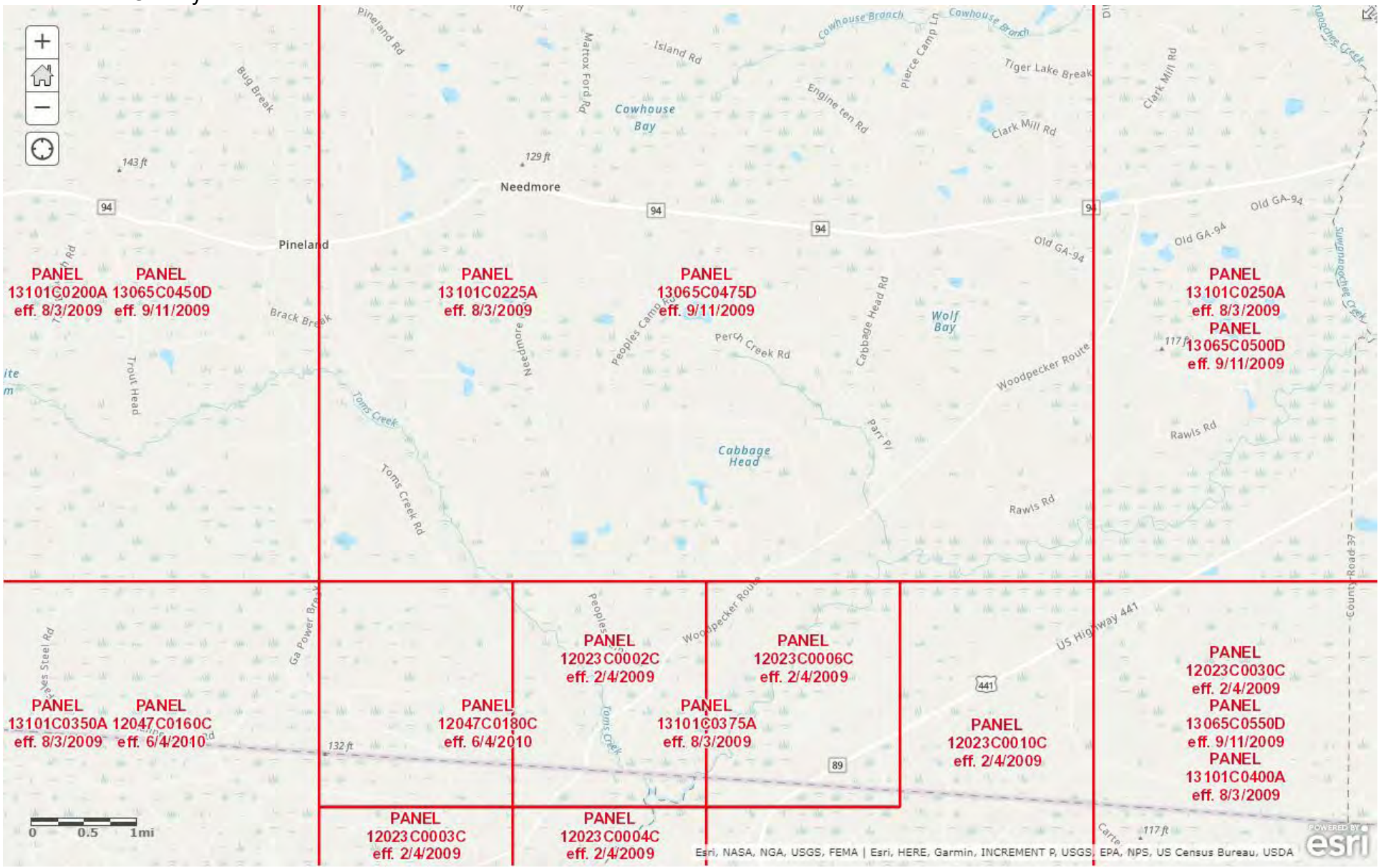
FEMA Flood Maps

Source: ArcGIS Online (FEMA data)

https://fema.maps.arcgis.com/home/webmap/viewer.html?webmap=cbe088e7c8704464aa0fc34eb99e7f30

West Echols County

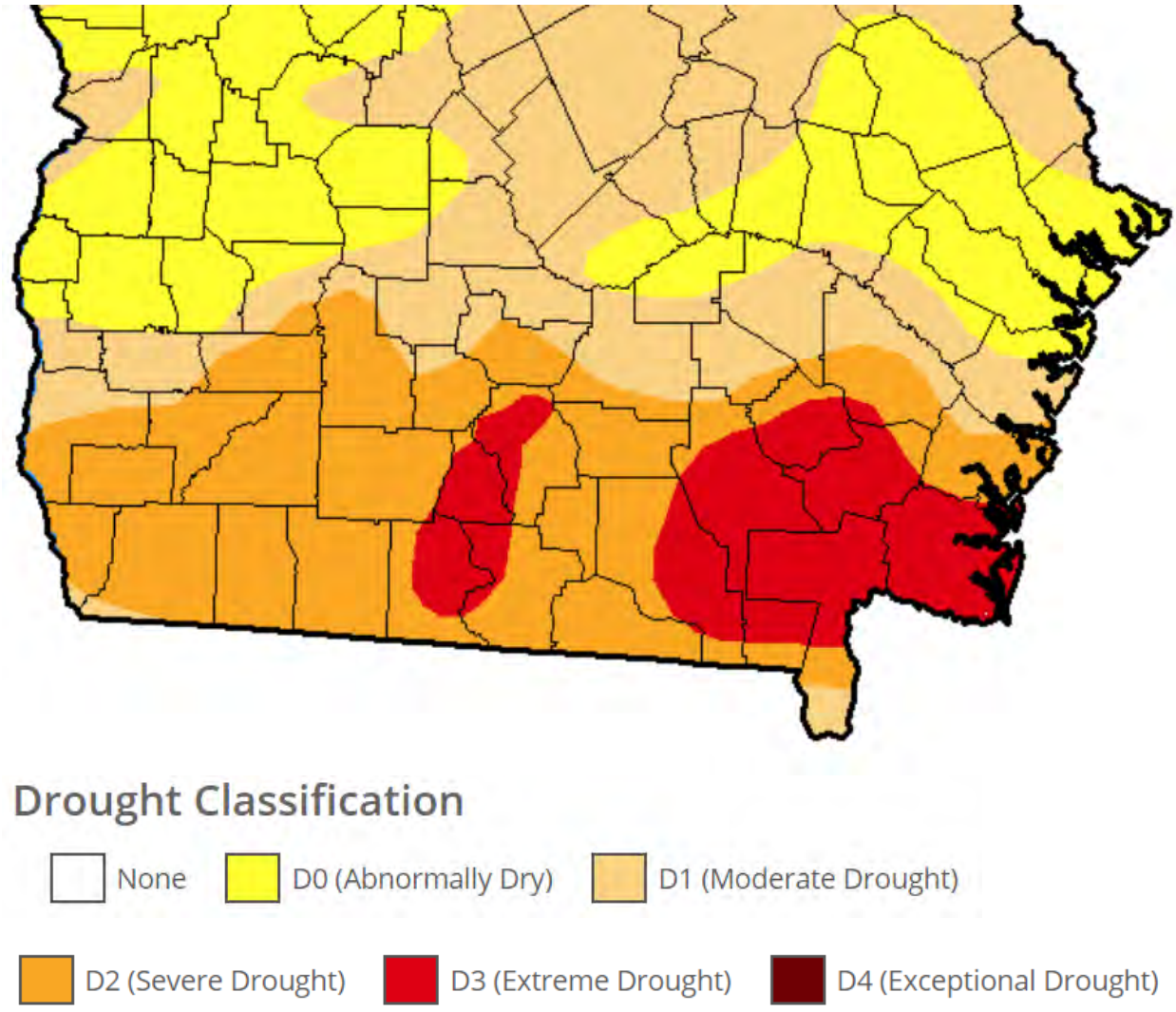
East Echols County



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)



Appendix B

United States Census Bureau

QuickFacts

selected: Echols County , Georgia

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

Table

All Topics	Echols County , Georgia
Population estimates, July 1, 2016, (V2016)	3,962
PEOPLE	
Population	
Population estimates, July 1, 2016, (V2016)	3,962
Population estimates base, April 1, 2010, (V2016)	4,034
Population, percent change - April 1, 2010 (estimates base) to July 1, 2016, (V2016)	-1.8%
Population, Census, April 1, 2010	4,034
Age and Sex	
Persons under 5 years, percent, July 1, 2016, (V2016)	7.6%
Persons under 5 years, percent, April 1, 2010	8.9%
Persons under 18 years, percent, July 1, 2016, (V2016)	27.0%
Persons under 18 years, percent, April 1, 2010	29.3%
Persons 65 years and over, percent, July 1, 2016, (V2016)	11.8%
Persons 65 years and over, percent, April 1, 2010	9.9%
Female persons, percent, July 1, 2016, (V2016)	49.4%
Female persons, percent, April 1, 2010	49.4%
Race and Hispanic Origin	
White alone, percent, July 1, 2016, (V2016) (a)	89.2%
Black or African American alone, percent, July 1, 2016, (V2016) (a)	5.2%
American Indian and Alaska Native alone, percent, July 1, 2016, (V2016) (a)	2.8%
Asian alone, percent, July 1, 2016, (V2016) (a)	0.8%
Native Hawaiian and Other Pacific Islander alone, percent, July 1, 2016, (V2016) (a)	0.2%
Two or More Races, percent, July 1, 2016, (V2016)	1.8%
Hispanic or Latino, percent, July 1, 2016, (V2016) (b)	29.6%
White alone, not Hispanic or Latino, percent, July 1, 2016, (V2016)	62.3%
Population Characteristics	
Veterans, 2011-2015	213
Foreign born persons, percent, 2011-2015	13.5%
Housing	
Housing units, July 1, 2016, (V2016)	1,528
Housing units, April 1, 2010	1,558
Owner-occupied housing unit rate, 2011-2015	65.8%
Median value of owner-occupied housing units, 2011-2015	$67,600
Median selected monthly owner costs -with a mortgage, 2011-2015	$922
Median selected monthly owner costs -without a mortgage, 2011-2015	$313
Median gross rent, 2011-2015	$612
Building permits, 2016	3
Families & Living Arrangements	
Households, 2011-2015	1,416
Persons per household, 2011-2015	2.86
Living in same house 1 year ago, percent of persons age 1 year+, 2011-2015	83.6%
Language other than English spoken at home, percent of persons age 5 years+, 2011-2015	23.2%
Education	
High school graduate or higher, percent of persons age 25 years+, 2011-2015	71.5%
Bachelor's degree or higher, percent of persons age 25 years+, 2011-2015	8.3%
Health	
With a disability, under age 65 years, percent, 2011-2015	9.0%
Persons without health insurance, under age 65 years, percent	▲ 27.6%
Economy	
In civilian labor force, total, percent of population age 16 years+, 2011-2015	59.7%

In civilian labor force, female, percent of population age 16 years+, 2011-2015	47.1%
Total accommodation and food services sales, 2012 ($1,000) (c)	D
Total health care and social assistance receipts/revenue, 2012 ($1,000) (c)	D
Total manufacturers shipments, 2012 ($1,000) (c)	0
Total merchant wholesaler sales, 2012 ($1,000) (c)	D
Total retail sales, 2012 ($1,000) (c)	D
Total retail sales per capita, 2012 (c)	NA
Transportation	
Mean travel time to work (minutes), workers age 16 years+, 2011-2015	25.2
Income & Poverty	
Median household income (in 2015 dollars), 2011-2015	$32,959
Per capita income in past 12 months (in 2015 dollars), 2011-2015	$16,954
Persons in poverty, percent	⚠ 25.9%

BUSINESSES

Businesses	
Total employer establishments, 2015	27
Total employment, 2015	126
Total annual payroll, 2015 ($1,000)	3,795
Total employment, percent change, 2014-2015	16.7%
Total nonemployer establishments, 2015	175
All firms, 2012	204
Men-owned firms, 2012	116
Women-owned firms, 2012	51
Minority-owned firms, 2012	58
Nonminority-owned firms, 2012	143
Veteran-owned firms, 2012	27
Nonveteran-owned firms, 2012	151

GEOGRAPHY

Geography	
Population per square mile, 2010	9.7
Land area in square miles, 2010	414.89
FIPS Code	13101

Value Notes

⚠ This geographic level of poverty and health estimates is not comparable to other geographic levels of these estimates

Some estimates presented here come from sample data, and thus have sampling errors that may render some apparent differences between geographies statistically indistinguishable. Click the Quick Info left of each row in TABLE view to learn about sampling error.

The vintage year (e.g., V2016) refers to the final year of the series (2010 thru 2016). Different vintage years of estimates are not comparable.

Fact Notes

(a) Includes persons reporting only one race
(b) Hispanics may be of any race, so also are included in applicable race categories
(c) Economic Census - Puerto Rico data are not comparable to U.S. Economic Census data

Value Flags

- Either no or too few sample observations were available to compute an estimate, or a ratio of medians cannot be calculated because one or both of the median estimates falls in the lowes interval of an open ended distribution.
D Suppressed to avoid disclosure of confidential information
F Fewer than 25 firms
FN Footnote on this item in place of data
NA Not available
S Suppressed; does not meet publication standards
X Not applicable
Z Value greater than zero but less than half unit of measure shown

QuickFacts data are derived from: Population Estimates, American Community Survey, Census of Population and Housing, Current Population Survey, Small Area Health Insurance Estimates, Small Area Poverty Estimates, State and County Housing Unit Estimates, County Business Patterns, Nonemployer Statistics, Economic Census, Survey of Business Owners, Building Permits.

Department of Revenue

Return

GEORGIA DEPARTMENT OF REVENUE Local Government Services Division County Digest Section	2016 TAX DIGEST CONSOLIDATED SUMMARY

County:ECHOLS County #:050 Tax District:ECHOLS COUNTY

Dist #: 00 Assessment %: 040 Tot Parcels:1916

RESIDENTIAL			
Code	Count	Acres	40% Value
R1	1,073		14,757,101
R3	811	1,153.73	1,519,424
R4	495	1,732.76	1,603,320
R5	23	262.86	161,360
R6	2,298		2,419,489
R7	0	0	0
R9	1	2	600
RA	0		0
RB	5		26,098
RF	0		0
RI	0		0
RZ	0		0

RESIDENTIAL TRANSITIONAL			
Code	Count	Acres	40% Value
T1	0		0
T3	0	0	0
T4	0	0	0

HISTORIC			
Code	Count	Acres	40% Value
H1	0		0
H3	0	0	0

AGRICULTURAL			
Code	Count	Acres	40% Value
A1	257		6,674,312
A3	2	26.5	11,920
A4	87	838.11	474,120
A5	156	124,182.35	24,819,240
A6	861		1,466,432
A7	0	0	0
A9	0	0	0
AA	0		0
AB	0		0
AF	9		7,531,268
AI	6		2,266,720
AZ	1		900

PREFERENTIAL			
Code	Count	Acres	40% Value

UTILITY			
Code	Count	Acres	40% Value
U1	0		0
U2	11	0	10,111,097
U3	0	0	0
U4	1	0	3,221
U5	0	0	0
U7	0	0	0
U9	0	0	0
UA	0		0
UB	0		0
UF	0		0
UZ	0		0

EXEMPT PROPERTY		
Code	Count	40% Value
E0	0	0
E1	30	417,213
E2	86	1,141,980
E3	3	6,840
E4	4	14,400
E5	2	15,040
E6	18	117,182
E7	0	0
E8	0	0
E9	10	38,969
TOTAL	153	1,751,624

HOMESTEAD AND PROPERTY EXEMPTIONS			
Code	Count	M&O	Bond
S1	510	1,019,880	0
SC	13	26,000	0
S2	0	0	0
S3	3	6,000	0
S4	111	444,000	0
S5	6	175,448	0
SD	1	45,459	0
SS	0	0	0
SE	0	0	0
SG	0	0	0

P3	0	0	0
P4	2	27.85	13,800
P5	5	2,400.86	946,920
P6	4		3,840
P7	0	0	0
P9	0	0	0

CONSERVATION USE

Code	Count	Acres	40% Value
V3	2	59.41	55,120
V4	54	996.23	520,440
V5	271	42,046.54	18,434,040
V6	1		168

BROWNFIELD PROPERTY

Code	Count	Acres	40% Value
B1	0		0
B3	0	0	0
B4	0	0	0
B5	0	0	0
B6	0		0

FOREST LAND CONSERVATION USE

Code	Count	Acres	40% Value
J3	0	0	0
J4	0	0	0
J5	53	89,619.46	21,942,692
J9	0	0	0

FLPA FAIR MARKET ASSMT

Code	Count	Acres	40% Value
F3	0	0	0
F4	0	0	0
F5	53	89,619.46	23,198,677
F9	0	0	0
Total	53	89,619.46	23,198,677

ENVIRONMENTALLY SENSITIVE

Code	Count	Acres	40% Value
W3	0	0	0
W4	0	0	0
W5	0	0	0

COMMERCIAL

Code	Count	Acres	40% Value
C1	38		595,742
C3	6	8	27,280
C4	5	29.46	25,520
C5	0	0	0
C7	0	0	0
C9	0	0	0
CA	0		0
CB	0		0
CF	36		1,540,816
CI	8		62,308
CP	0		0
CZ	1		194

INDUSTRIAL

Code	Count	Acres	40% Value
I1	0		0
I3	0	0	0
I4	0	0	0
I5	0	0	0
S6	0	0	0
S7	0	0	0
S8	0	0	0
S9	0	0	0
SF	0	0	0
SA	7	241,140	0
SB	0	0	0
SP	5	13,546	0
SH	0	0	0
ST	0	0	0
SV	327	10,147,637	0
SJ	53	5,786,531	0
SW	0	0	0
SX	0	0	0
SN	0	0	0
DO NOT USE CODES L1-L9 ON STATE SHEET			
L1	0	0	0
L2	0	0	0
L3	0	0	0
L4	0	0	0
L5	0	0	0
L6	0	0	0
L7	0	0	0
L8	0	0	0
L9	0	0	0
TOTAL	1,036	17,905,641	0

SUMMARY

Code	Count	Acres	40% Value
Residential	4,706	3,151.35	20,487,392
Residential Transitional	0	0	0
Historical	0	0	0
Agricultural	1,379	125,046.96	43,244,912
Preferential	11	2,428.71	964,560
Conservation Use	328	43,102.18	19,009,768
Brownfield Property	0	0	0
Forest Land Cons Use	53	89,619.46	21,942,692
Environmentally Sensitive	0	0	0
Commercial	94	37.46	2,251,860
Industrial	0	0	0
Utility	12	0	10,114,318
Motor Vehicle	2,652		4,161,570
Mobile Home	251		1,140,716
Timber 100%	198	88,736	10,210,083
Heavy Equipment	0		0
Gross Digest	9,684	352,122.12	133,527,871
Exemptions Bond			0
Net Bond Digest			133,527,871
Gross Digest	9,684	352,122.12	133,527,871
Exemptions-M&O			17,905,641
Net M&O Digest			115,622,230

I7	0	0	0
I9	0	0	0
IA	0		0
IB	0		0
IF	0		0
II	0		0
IP	0		0
IZ	0		0

TAX LEVIED

TYPE	ASSESSED VALUE	MILLAGE	TAX
M & O	115,622,230	.000	0.00
BOND	133,527,871	.000	0.00

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Appendix C

3. Community Work Program

ECHOLS COUNTY FIVE-YEAR SHORT-TERM WORK PROGRAM UPDATE (2016 - 2020)

PROJECTS	Goal	Estimated Cost / Resp.	Funding	FY 16	FY 17	FY 18	FY 19	FY 20
PLANNING								
Re-instate the Echols County Planning Commission to implement the Comprehensive Plan	1	$2,500/y BOCC	General Fund				x	
NATURAL AND CULTURAL RESOURCES								
Seek grants and provide technical assistance to Echols County Historical Society with the development of the museum of local history	1	$500/y BOCC	General Fund	x	x	x	x	x
Use completed historical resource inventory to preserve properties and use to encourage visitors and tourism to further the camera ready program.	1	$1,500/y BOCC	General Fund	x	x	x	x	x
Hire a code officer to enforce environmental ordinances	3,4	$15,000/y BOCC	General Fund, available grants			x	x	
HOUSING								
Develop a list of potential grants and funding sources for financing a housing rehabilitation program.	3	(Cost $100) BOCC	General Fund	x	x	x		
Establish a housing rehabilitation program for dilapidated areas throughout the County.	3	(Cost 2,500) BOCC	General Fund				x	x
Revitalize single family housing that can be used for affordable housing through available grants and housing programs.	3	(Cost $500,000) BOCC	CHIP, CDBG, Enterprise Zone		x	x		
ECONOMIC DEVELOPMENT								
Create an Industrial Development Authority to serve as the public catalyst for economic development	2	(Cost $2,500) BOCC	General Fund		x	x	x	
Identify available land to purchase for a public industrial park	2	$1,000 BOCC	General Fund	x	x			

PROJECTS	Goal	Estimated Cost / Resp.	Funding	FY 16	FY 17	FY 18	FY 19	FY 20
Develop a public industrial park with infrastructure (roads, water, sanitary sewer, etc.)	2	$500,000 BOCC /Industrial Dev. Authority	EIP, One Georgia and USDA Grants				x	x
Recruit new industries to place in the industrial park, and further develop and expand existing industries through financial incentives and designation of industrial park as an Opportunity Zone.	2	(Cost $5,000) BOCC /Industrial Dev. Authority	General Fund	x	x	x	x	x
Continue to pursue all applicable grants, loans, and technical assistance that will help enhance the community and foster economic development, including CDBG grants.	2	(Cost $5,000) BOCC/Industrial Dev. Authority	General Fund	x	x	x	x	x
Become a Camera Ready Community to attract visitors and businesses	2	$5,000 BOCC	General Fund	x	x	x	x	x
Update the County website to raise awareness and promote the County	2	$10,000 BOCC	General Fund	x	x	x	x	x
LAND USE								
Prepare and adopt a land development regulations, which assists in implementing the Echols County Comprehensive Plan, revitalizes blighted areas, and regulates subdivisions and mobile home parks.	3,4,5	(Cost $5,000) BOCC/SGRC	General Funds	x	x	x	x	x
COMMUNITY FACILITIES & SERVICES								
Hire 2 new deputies as needed.	6	($60,000) BOCC	COPS Hiring Grant			x	x	x
Upgrade police communication devices on as need basis.	6	$15,000 - $20,0000 BOCC	JAG Grants, General Fund	x	x	x		
Purchase for volunteer fire services (Air packs, fire service training, communication devices, Class A Pumper, one fire truck) on an as needed basis.	6	($497,000) BOCC / SGRC	AFG Grant	x	x	x	x	x
Pursue funding for the upgrading of the intersection at GA 94 and State Route 135 by renovating buildings and landscaping in order to attract more businesses.	3,6	($50, 000) BOCC / SGRC	GDOT		x	x	x	x
Install a new kitchen and 2 new bathrooms in the Court House	1,6	($50,000) BOCC	General Fund,				x	

PROJECTS	Goal	Estimated Cost / Resp.	Funding	FY 16	FY 17	FY 18	FY 19	FY 20
Seek grant funds to construct a paved walking trail at Recreation Dept.	6	(Cost $1,000) BOCC	DNR Grant			x	x	x
Pave and maintain Coggins Farm Road.	6	(Cost TBD) BOCC	LMIG, General Fund	x	x	x	x	x
Prepare preliminary engineering plans and cost estimates for a sanitary sewer collection/treatment system for the Statenville area, County School, and possible new industrial park.	6	$1,000,000 County /Industrial Dev. Authority	General Fund, CDBG			x	x	x
Improve Road Department Shop and purchase new equipment: 2 graders, 1 side cutter, 1 dump truck	6	(Cost $500,000) BOCC	General Fund ,GEFA		x	x	x	x
Apply to the AFG for a fire truck pumper and equipment	6	$215,000 BOCC/SGRC	AFG Grant		x	x	x	x
Research and review ways the community can improve its fire protection services and its ISO rating, and implement those measures.	6	(Cost $7,500) BOCC	General Fund	x	x	x		
Investigate potential funding sources to assist the community improve its water utilities services.	6	(Cost $5,000) BOCC	General Fund	x				
Expand the existing Board of Commissioners building to add office and storage space.	6	$50,000 BOCC	General Fund					x
Improve the intersections of Spur Road and Highway 94 and Highway 129.	2	(Cost $250,000) GDOT, BOCC	LMIG, General Fund		x	x	x	
Create a committee to research the feasibility of providing sewer services through the County for Statenville.	6	(Cost $3,000) BOCC	General Fund			x	x	x
Establish recreational programs for youth	6	(Cost $7,500) BOCC	General Fund		x			
Create a public/private partnership between the water authority and the County Commission to address water issues, and enable the County to apply for CDBG grants to improve water supply and storage capability.	6	Cost $8,500) BOCC	General Fund	x				

GEORGIA FORESTRY COMMISSION

Community Wildfire Protection Plan

An Action Plan for Wildfire Mitigation and Conservation of Natural Resources

Echols County, Georgia

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

SEPTEMBER 12, 2012

Prepared by;
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Georgia Forestry Commission
207 Hwy 129
Statenville, GA 31648

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 fire fighting 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 form 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 Echols 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 October 4th, 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:

Echols County Board of Commissioners
Echols County Fire Dept.
Georgia Forestry Commission

It was decided to conduct community assessments on the basis individual fire districts in the county. The Chief of the Echols County Fire Department assessed the districts and the core team reconvened on April 24th, 2012 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 BACKGROUND AND EXISTING SITUATION

Background

Echols County, on Georgia's border with Florida, was carved from Clinch and Lowndes counties in 1858 and named in honor of Robert M. Echols, who commanded troops in the Mexican War (1846-48) after serving a total of twenty years in the state legislature. Before white settlers arrived, the inhabitants of the area were Seminole Indians. Sparsely populated, Echols County contains no incorporated towns.

The county seat, Statenville, was first called "Troublesome" after nearby Troublesome Creek. The name was changed when the town was chartered in 1859. There are some stories that its new name was a misreading of "Statesville," which was subsequently used on some maps, but locals believe that the intent was to name it for James W. Staten, a local farmer and store owner. Two wooden courthouses were used from 1859 until 1897, when the second burned down. The business of government was then carried on in rented halls until 1899. The current courthouse was built in 1956. In 1958 the state legislature redrew the city's boundaries to include only the courthouse square; this action resulted in the city's having no residents, and in 1965 Statenville voters turned down the opportunity for a new city charter. Echols County is one of only three in Georgia whose county seat is unincorporated. In addition to Statenville, the county contains the unchartered communities of Fruitland, Haylow, Howell, Mayday, Needmore, Potter, and Tarver.

More than 90 percent of Echols County land is pine forest, most of it privately owned. Historically the economy has been based on agriculture and forestry.

The history of Echols County is dominated by the presence of the Langdale Forest Products Company, founded in 1894 by John Wesley Langdale. Langdale started the business by leasing acres of turpentine timber, and with his sons Billy, Harley, and Noah, he built it into one of the largest wood and wood by-product manufacturers in America. The company owns much of the land in Echols County, although it is based in Valdosta (Lowndes County).

In 1910 the Statenville Railway connected Statenville to Haylow, in the northern part of the county, but the railroad ceased operations in 1924. Despite the county's isolation, residents have joined together to form a unified school system. Between 1898 and 1945, there were seventy-seven schools scattered throughout the county, many of them open just six months a year. School-bus transportation was first provided in 1917, enabling some of the schools to consolidate their operations, and by 1928 the number of schools had been reduced to fourteen. In 1931 the Echols Consolidated School, a brick building in Statenville, was built, and by 1950 all white schoolchildren in the county attended it. Black schools began consolidating in 1941, and in 1948 the Herctoma School was built for African American children. The two schools were integrated in 1970, forming the Statenville Consolidated School. Situated on the campus of the former Echols Consolidated School, the school was added to the National Register of Historic Places in 1988.

According to the 2010 U.S. census, the population of Echols County is 4,034, an increase from the 2000 population of 3,754.

Elizabeth B. Cooksey, Savannah, Courtesy New Georgia Encyclopedia

Existing Situation

Echols County located deep in south central Georgia, is over 91% forested, despite an agricultural presence scattered in the southwestern corner of the county. While there are large blocks of industrial woodlands in the eastern and central sections of the county, there are homes and communities scattered throughout the western third of the county. The risks and hazards from the wildland urban interface are fairly general and substantial throughout the county.

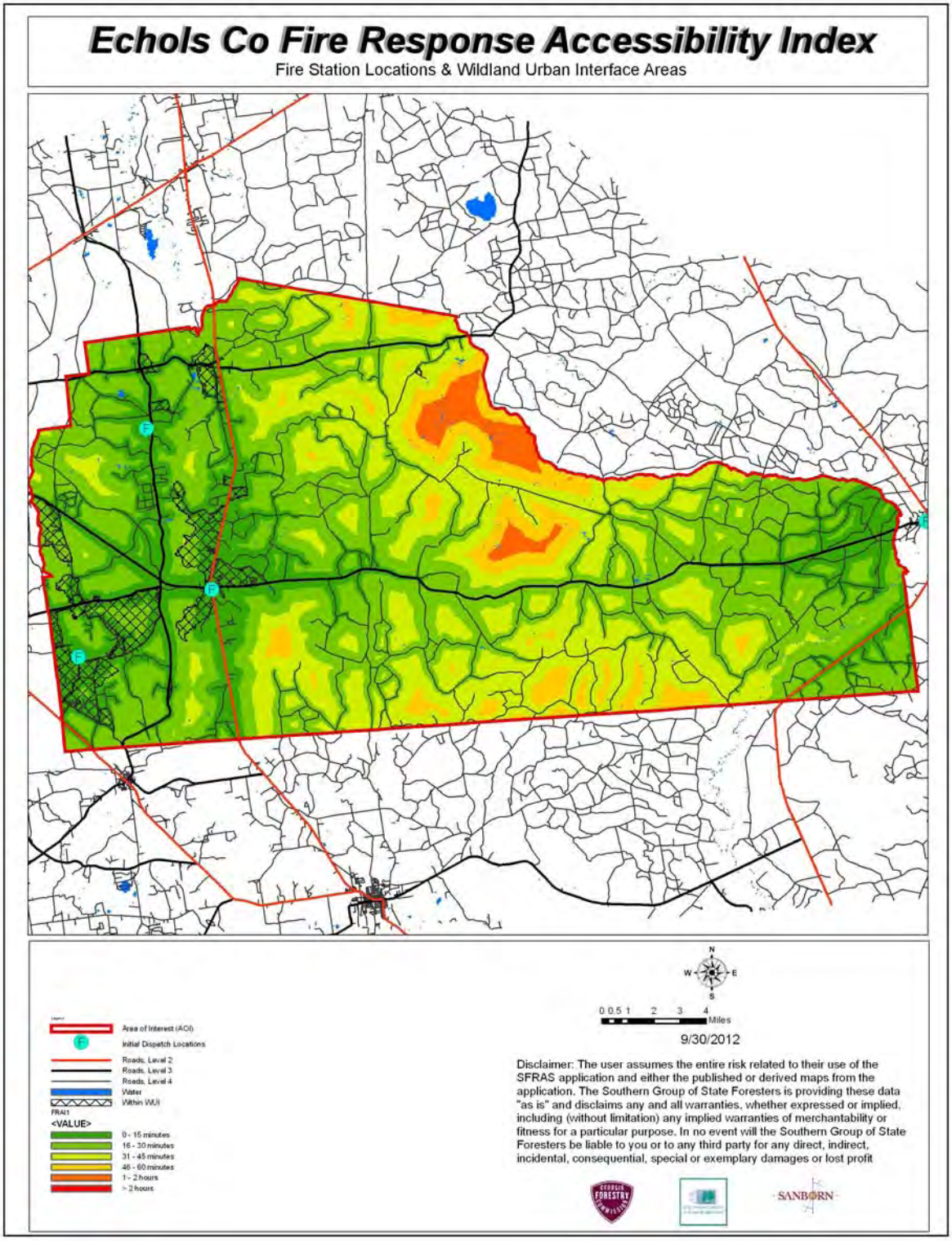
Echols County is protected by three organized volunteer fire departments located in Statenville, Chapel Station and in the Howell community. There is also a mutual aid agreement with the Fargo VFD located in Clinch County to cover the far eastern end of the county. The Georgia Forestry Commission maintains a county protection unit located just north of Statenville on US Hwy 129 to respond to wildfires throughout the county. The community of Statenville is serviced by a pressurized water system with hydrants available.

Over the past 55 years, Echols County has averaged 51 reported wildland fires per year, burning an average of 248 acres per year. Using more recent figures over the past 20 years, this number has dropped somewhat to an average of 43 fires per year burning on average 189 acres annually. While the number of fires during this later period remains rather level throughout the year, the acres burned show a significant increase during the summer months. There is a significant decrease in the acres burned during the remainder of the year, particularly during the fall months.

Over the past 20 years, the leading causes of these fires, was arson and debris burning causing 33% and 23% respectively of the fires and 25% and 29% respectively of the acres burned. Over the past six years records show that over 63% of the debris fires originated from residential burning.

Georgia Forestry Commission Wildfire Records show that in the past nine years, seven homes damaged by wildfire in Echols County resulting in estimated loss of $149,150 along with six outbuildings valued at $12,200. Additionally three pieces of mechanized equipment valued at $100,140 were lost. This is a significant loss of non timber property attributed to wildfires in Echols County.

IV. COMMUNITY BASE MAP



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.

3. "Island" wildland-urban interface, also called occluded interface, are areas of wildland 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.
(courtesy *Fire Ecology and Wildfire Mitigation in Florida* 2004)

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.

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 they 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 may refuse 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 assessments conducted in 2012 by the Echols County Fire Departments returned a number of communities in the moderate to high range. The risk assessment instrument used to evaluate wildfire hazards to Echols 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 scores for Echols County:

- Unpaved roads and private driveways
- Narrow roads without drivable shoulders and inadequate overhead clearance
- Poor drainage in winter and sugar sand in summer on many roads
- Dead end roads without "turnarounds"
- Isolated homes and buildings
- Lack of uniform address signs
- Minimal defensible space around structures
- Homes with wooden siding
- Mobile homes without fire resistant underpinning
- Lack of pressurized or non-pressurized water systems available
- Large, adjacent areas of forest or wildlands
- Heavy fuel buildup in adjacent wildlands
- High occurrence of wildfires in the several locations
- Lack of homeowner or community organizations

Southern Fire Risk Assessment System Maps.

The attached maps were generated from a computerized Geographical Information System (GIS) program developed by the Sanborn Company under contract from the Southern Group of State Foresters to model the various risks to life and property within the southeastern US. The program is known as the Southern Fire Risk Assessment System (SFRAS). It utilizes multiple layers of data developed cooperatively from the various states and the US Forest Service under the Southern Wildfire Risk Assessment (SWRA)

Wildland Urban Interface maps are developed using data from the SILVIS Lab at the University of Wisconsin at Madison. WUI is composed of both interface and intermix communities. In both interface and intermix communities, housing must meet or exceed a minimum density of one structure per 40 acres. Intermix communities are places where housing and vegetation intermingle. In intermix, wildland vegetation is continuous, more than 50 percent vegetation, in areas with more than one house per 40 acres. Interface communities are areas with housing in the vicinity of continuous vegetation. Interface areas have more than one house per 40 acres, have less than 50 percent vegetation, and are within 1.5 miles of an area (made up of one or more contiguous Census blocks) over 1,325 acres that is more than 75 percent vegetated. The minimum size limit ensures that areas surrounding small urban parks are not classified as interface WUI.

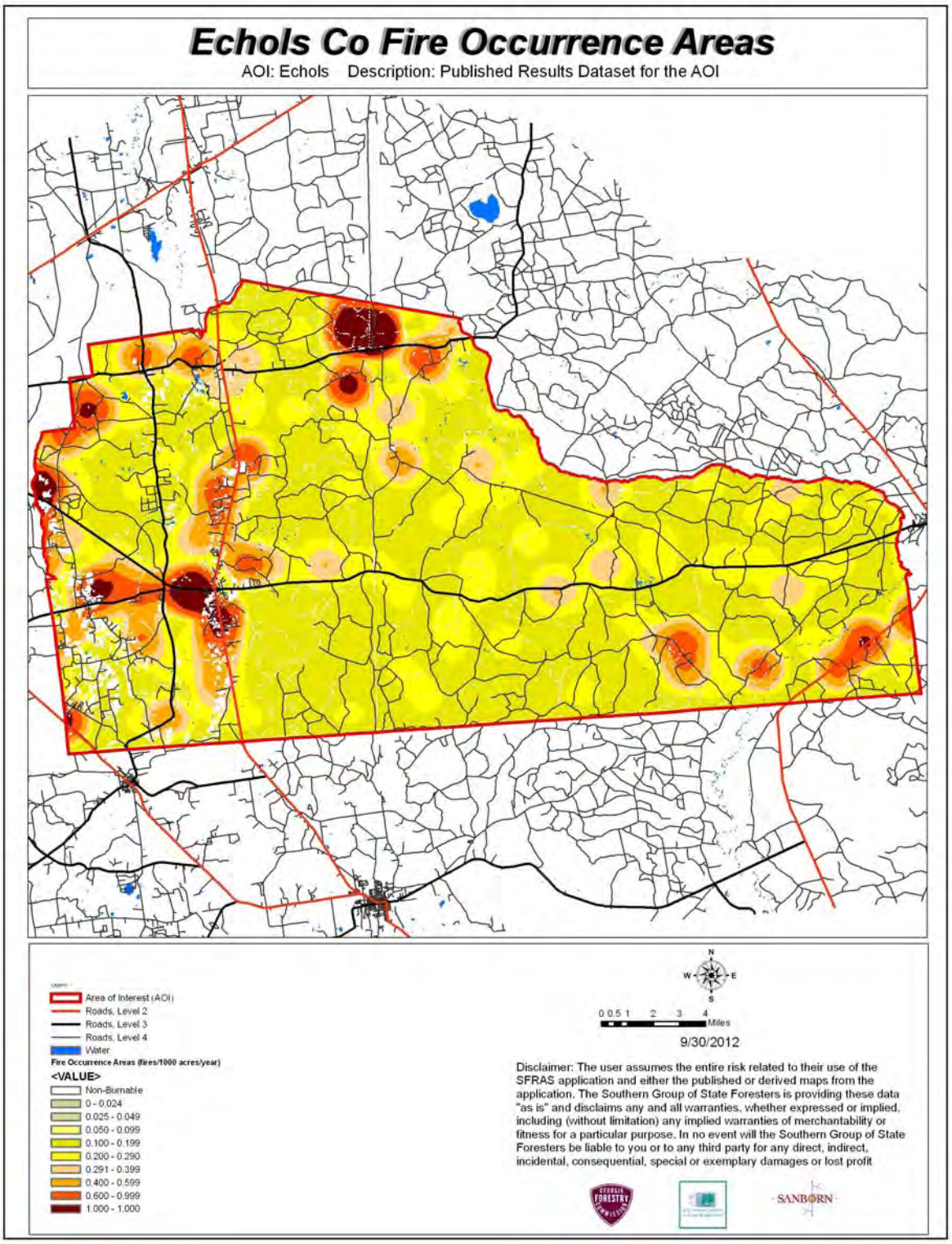
Fire Response Accessibility Index is a relative measure of how long it would take initial attack resources to drive from their station to various areas of the county. This index is derived from assigning average speeds to the various road classes in the county. For the purpose of this analysis the following speeds were assigned: 55 mph for level 1 roads, primarily interstates and four lane open highways, 50 mph for level 2 roads, primarily state and federal highways, 40 mph for level 3 roads, primarily paved two lanes collector roads and 25 mph for level 4 roads, mainly city streets and rural roads, paved and unpaved. For areas away from roads a travel speed of 3 mph is assigned as it is assumed travel will be by foot or extremely slow moving equipment.

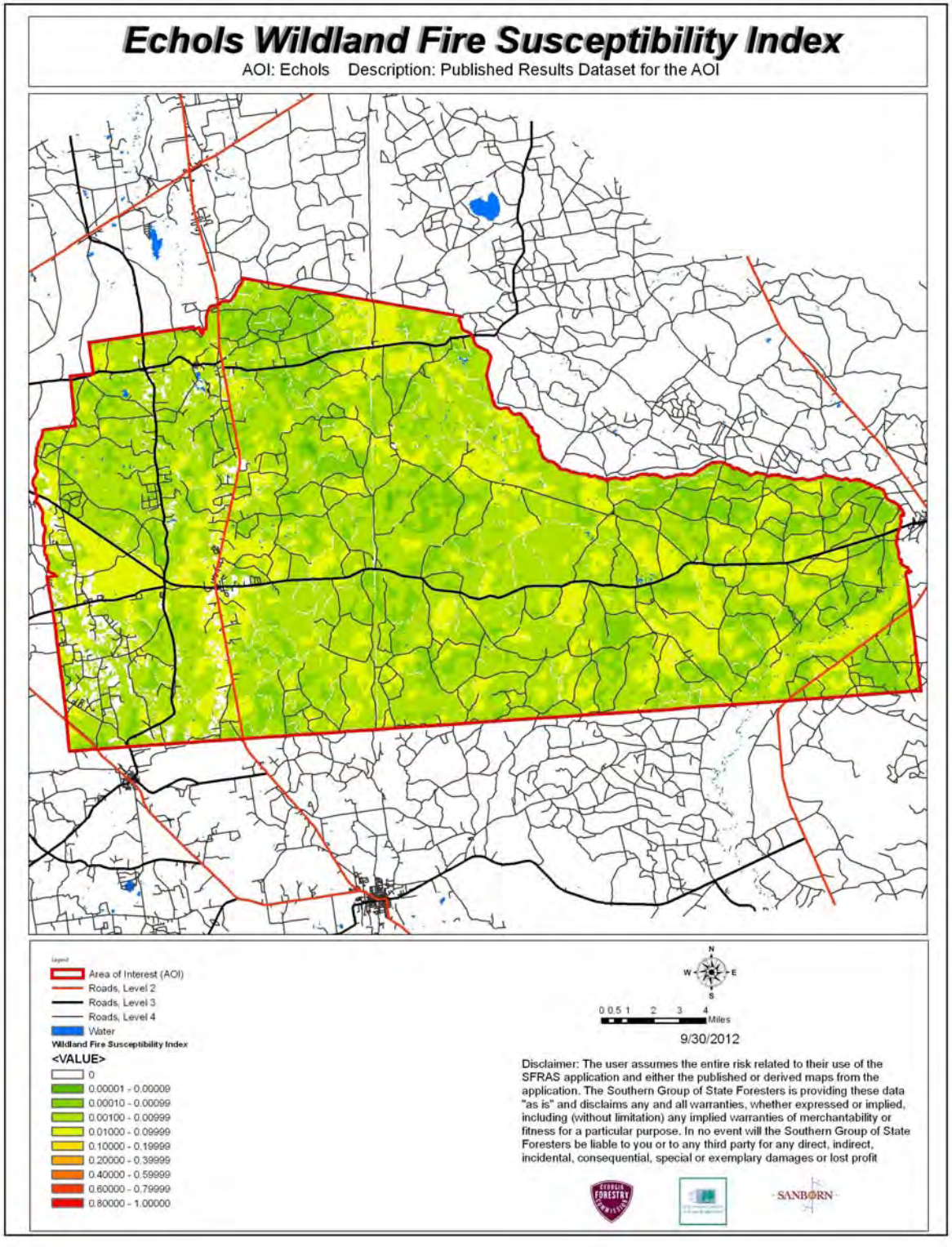
Fire Occurrence Areas maps use data from wildfire reports over the period from 1997-2002. The fire occurrence rates mapped are the probability of the number of fires occurring per 1000 acres per year base on this historic information.

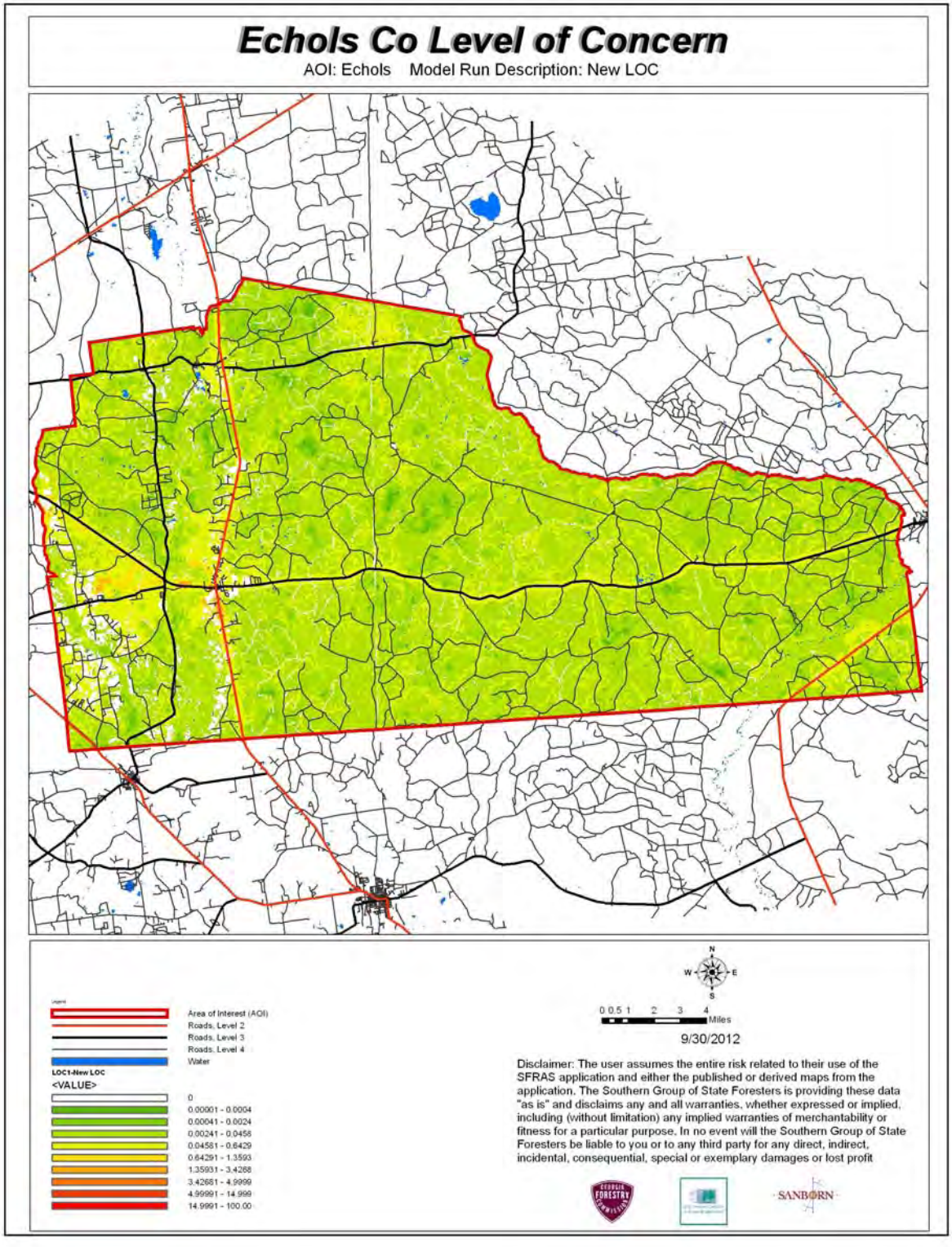
Wildland Fire Susceptibility maps show an index value between 0 and 1 and are developed by a mathematical calculation process for determining the probability of an acre burning and the expected final fire size. Many layers of data are used in developing this calculation including historic fire data, wildland fuels and rate of spread, canopy attributes (closure, height and density), weather influences, topography, soils and fire suppression effectiveness.

Level of Concern maps are a complex calculation using the Wildland Fire Susceptibility Index (previously described) and the Fire Effects Index which is calculated using data layers of transportation and infrastructure, urban interface and timber values along with suppression difficulty ratings. This provides an output categorizing the expected levels of concern from low to high.

VI. COMMUNITY HAZARDS MAPS




Echols Wildland Fire Susceptibility Index
AOI: Echols Description: Published Results Dataset for the AOI
Area of Interest (AOI)
Roads, Level 2
Roads, Level 3
Roads, Level 4
Water
Wildland Fire Susceptibility Index
<VALUE>
0
0.00001 - 0.00009
0.00010 - 0.00099
0.00100 - 0.00999
0.01000 - 0.09999
0.10000 - 0.19999
0.20000 - 0.39999
0.40000 - 0.59999
0.60000 - 0.79999
0.80000 - 1.00000
N
W
E
S
0 0.5 1 2 3 4
Miles
9/30/2012
Disclaimer: The user assumes the entire risk related to their use of the SFRAS application and either the published or derived maps from the application. The Southern Group of State Foresters is providing these data "as is" and disclaims any and all warranties, whether expressed or implied, including (without limitation) any implied warranties of merchantability or fitness for a particular purpose. In no event will the Southern Group of State Foresters be liable to you or to any third party for any direct, indirect, incidental, consequential, special or exemplary damages or lost profit
SANBORN


Echols Co Level of Concern
AOI: Echols Model Run Description: New LOC
Area of Interest (AOI)
Roads, Level 2
Roads, Level 3
Roads, Level 4
Water
LOC1-New LOC
<VALUE>
0
0.00001 - 0.0004
0.00041 - 0.0024
0.00241 - 0.0458
0.04581 - 0.6429
0.64291 - 1.3593
1.35931 - 3.4268
3.42681 - 4.9999
4.99991 - 14.999
14.9991 - 100.00
N
W
E
S
0 0.5 1 2 3 4
Miles
9/30/2012
Disclaimer: The user assumes the entire risk related to their use of the SFRAS application and either the published or derived maps from the application. The Southern Group of State Foresters is providing these data "as is" and disclaims any and all warranties, whether expressed or implied, including (without limitation) any implied warranties of merchantability or fitness for a particular purpose. In no event will the Southern Group of State Foresters be liable to you or to any third party for any direct, indirect, incidental, consequential, special or exemplary damages or lost profit
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VII. PRIORITIZED MITIGATION RECOMMENDATIONS

Executive Summary

As Southern 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. Echols 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.

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 Echols County CWPP Core team as a result of surveying and assessing fuels and structures and by conducting meetings and interviews with county 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 Hazards	Utility services	Work with GA Power and EMC's to encourage new underground service to rural homes. Adopt standards for safety zone around propane distribution tanks.
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.
6. Codes and Ordinances	Examine existing codes and ordinances.	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 Review the need for subdivision and development ordinances for public safety concerns. Enforce uniform addressing ordinance.
7. Law Enforcement	Traffic control	Work with local law enforcement to better control non essential traffic during fire emergencies.

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. Railroad Corridors	Reduce hazardous fuels	Encourage railroads to better maintain their ROW eliminating brush and grass through herbicide and mowing. Maintain firebreaks along ROW adjacent to residential areas.
3. Existing Fire Lines	Reduce hazardous fuels	Clean and re-harrow existing lines.
Proposed Improved Community Wildland Fire Response Priorities		
1. Water Sources	Dry Hydrants	Inspect, maintain and improve access to existing dry hydrants. Add signage along road to mark the hydrants. Need improved drafting equipment, floating and turbo draft pumps. Investigate possibility of placing compatible fittings on irrigation wells. Update GFC Fire plan to include identified helicopter dip sites.
2. Fire Stations	Equipment	Wildland hand tools. Lightweight Wildland PPE Gear.
3. Water Handling	Tanker Capacity	Investigate need for additional tankers and overhead refill tanks at rural stations.
4. Road Names	Road Signage	Improved Road Signage at Crossroads. “Dead End” or “No Outlet” Tags on Road Signs
5. Personnel	Training	Obtain Wildland Fire Suppression training for Fire Personnel.
**Actions to be taken by homeowners and community stakeholders		

Proposed Education and Outreach Priorities

1. Conduct "How to Have a Firewise Home" Workshop for Echols 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 recognition.
3. Spring Clean-up Event
Conduct clean-up event every spring involving the Georgia Forestry Commission, Echols County Fire Department 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 Echols County Fire Department discussing and commending the work accomplished.
4. Informational Packets
Develop and distribute informational packets to be distributed by realtors, tax office and insurance agents. Included in the packets are the following: • Be Firewise Around Your Home • Firewise Guide to Landscape and Construction • Firewise Communities USA Bookmarks

5. Wildfire Protection Display
Create and exhibit a display for the general public at Carrot Festival and Fourth of July. Display can be independent or combined with the Georgia Forestry Commission display. Hold Open House at individual Fire Stations to promote Community Firewise Safety and develop community support and understanding of local fire departments and current issues.
6. Press
Invite the local news media to community “Firewise” functions for news coverage and regularly submit press releases documenting wildfire risk improvements in Echols County.

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	
Echols County WUI Fire Council	Create this informal team or council comprised of residents, GFC officials, Echols County Fire Department officials, a representative from the county government along with EMA Director for Echols 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
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
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

Spring Clean-up Day	
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, Echols County Fire Department and Emergency Management Agency. Procure needed equipment and supplies. In cooperation with local 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 county government.
4. Spring Cleanup Day	Varies	Community Business Donations.
5. Fuel Reduction Activities	$35/acre	FEMA & USFS Grants

POTENTIAL FUNDING SOURCES:

As funding is questionable in these times of tight government budgets and economic uncertainty, unconventional means should be identified whereby the need for funding can be reduced or eliminated.

Publications / Brochures –

- FIREWISE materials are available for cost of shipping only at www.firewise.org.
- Another source of mitigation information can be found at www.nfpa.org.
- Access to reduced cost or free of charge copy services should be sought whereby publications can be reproduced.
- Free of charge public meeting areas should be identified where communities could gather to be educated regarding prevention and firewise principles.

Mitigation –

- Community Protection Grant:
    - USFS sponsored prescribed burn program. Communities with at risk properties that lie within 3 miles of the USFS border may apply with the GFC to have their forest land prescribed burned free of charge.
- FEMA Mitigation Policy MRR-2-08-01: through GEMA - Hazard Mitigation Grant Program (HMGP) and Pre Disaster Mitigation (PDM)
    - To provide technical and financial assistance to local governments to assist in the implementation of long term cost effective hazard mitigation measures.
    - 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 fuels reduction to protect life and property.
    - With a complete and registered plan (addendum to the State plan) counties can apply for pre-mitigation funding. They will also be eligible for HMGP if the county is declared under a wildfire disaster.
- GFC - Plowing and burning assistance can be provided through the Georgia Forestry Commission as a low cost option for mitigation efforts.
- Individual Homeowners –
    - In most cases of structural protection ultimately falls on the responsibility of the community and the homeowner. They will bear the cost; yet they will reap the benefit from properly implemented mitigation efforts.
    - GEMA Grant - PDM (See above)

Ultimately it is our goal to help the communities by identifying the communities threatened with a high risk to wildfire and educate those communities on methods to implement on reducing those risks.

Assessment Strategy

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

- Annual wildfire risk assessment will be conducted 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 Echols 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 Echols 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

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Appendix D

Echols 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	4	68	2	4	4	17.00	5.88	0.2	0.2	0.08
Floods	4	68	1	3	4	17.00	5.88	0.1	0.15	0.08
Tornadoes	4	68	0	2	4	17.00	5.88	0	0.1	0.08
Wildfires	2712	50	168	612	2712	0.02	5424.00	16.8	30.6	54.24
Thunderstorms and Lightning	62	68	32	55	62	1.10	91.18	3.2	2.75	1.24
Extreme Heat	34	22	34	34	34	0.65	154.55	3.4	1.7	0.68
Drought	461	19	336	461	461	0.04	2426.32	33.6	23.05	9.22

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: Minimize damage caused by high winds of Hurricanes/Tropical Storms in Echols County.

Objective #1: Protect life, health and property of residents from high winds of Hurricanes/Tropical Storms.

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: Educate homeowners and builders on individual safe rooms.	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	N/A	N/A	N/A	N/A	N/A
Action Step 2: Distribute programs on personal emergency preparedness, i.e., emergency survival kits.	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	N/A	N/A	N/A	N/A	N/A
Action Step #3: Encourage the American Red Cross to teach Citizen Disaster Courses on a frequent basis.	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	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 #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 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
Action Step #6: Trim tree lines around roads, homes, utilities and businesses.	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	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.*

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Goal 1: Minimize damage caused by high winds of Hurricanes/Tropical Storms in Echols County.

Objective 2: Minimize damages from high winds to institutional/public buildings in Echols County.

STAPLEE Criteria	S		T			A			P			L			E				E				
	(Social)		(Technical)			(Administrative)			(Political)			(Legal)			(Economic)				(Environmental)				
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Action Step 4: Purchase and install mobile and fixed generators (including transfer switches) for all designated evacuation and emergency shelters, community water systems, and critical facilities, and wherever else they are needed.	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	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 2: Minimize flood damage in Echols County.

Objective 1: Minimize losses to existing and future structures, especially community critical facilities, due to flooding caused by excessive rainfall.

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Action Step 1: Review data on storm events to determine where repetitive Flooding occurs as a result of inadequate drainage infrastructure and identify & pursue grant funds to upgrade deficient drainage systems.	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	N/A	+	+	+
Action Step 2: Utilize tax evaluation data to determine cost effectiveness of acquiring properties in flood prone areas.	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	N/A	N/A	+	+

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Action Step 3: Identify and pursue funding to acquire properties in flood prone areas.	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	N/A	N/A	N/A	+	+
Action Step 4: Continue membership in the NFIP by adopting updated ordinances and FIRM maps as updates are available.	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	N/A	N/A	N/A	N/A	N/A
Action Step 5 (formerly #4): Encourage homeowners review benefits offered through the National Flood Insurance Program.	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	N/A	N/A	N/A	N/A	N/A

Worksheet #4 Evaluate Alternative Mitigation Actions

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

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Goal 2: Minimize flood damage in Echols County.

Objective 2: Protect and preserve flood prone areas for green space use, such as community parks and recreational areas.

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Action Step 1: Monitor comprehensive land use plans to ensure mapping of lands to be permanently protected.	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	N/A	+	N/A
Action Step 2: Monitor existing subdivision regulations to promote conservation of floodplains, wetlands, and groundwater recharge areas.	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	N/A	+	N/A

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Action Step 3: Seek funding from private foundations, individuals, federal and state grants, and local communities to leverage available green space grant funds.	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	N/A	+	N/A
Action Step 4: Educate public and private organizations on methods for preserving parks and recreation areas.	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	N/A	+	N/A

Worksheet #4 Evaluate Alternative Mitigation Actions

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Goal 2: Minimize flood damage in Echols County.

Objective 3: Establish correct boundaries for flood prone areas along the major rivers in Echols County.

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Action Step 1 (new): Rebuild SR-135 bridge over the Alapahoochee River (known locally as the "Little River")	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	N/A	N/A	N/A	N/A	N/A
Action Step 2 (new): Repair J. Frank Culpepper Rd. bridge over the Alapahoochee River (known locally as the "Little River")	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	N/A	N/A	N/A	N/A	N/A

Worksheet #4 Evaluate Alternative Mitigation Actions

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Goal 3: Enhance the community's ability to issue early warning of Tornadoes in an effective, dependable, and rapid manner.

Objective 1: Ensure that a comprehensive early warning notification system is in place.

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	(Social)		(Technical)			(Administrative)			(Political)			(Legal)			(Economic)				(Environmental)				
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Action Step 1: Get an early warning system horn in Statenville by seeking funding from various sources.	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	N/A	N/A	N/A	N/A	N/A

Worksheet #4 Evaluate Alternative Mitigation Actions

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Goal 3: Enhance the community's ability to issue early warning of Tornadoes in an effective, dependable, and rapid manner.

Objective 2: Enhance the ability of the Echols County Emergency Management Agency to respond effectively and efficiently to emergency needs during and after a Tornado event.

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Action Step 1: Become a designated "StormReady Community".	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	N/A	N/A	N/A	N/A	N/A
Action Step 2: Implement the "Community Emergency Response Team" (CERT) program.	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	N/A	N/A	N/A	N/A	N/A
Action Step 3: Seek funds to purchase 800 mhz (or similar) base station and portable radios for emergency use.	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	N/A	N/A	N/A	N/A	N/A

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Goal 3a: Reduce the risks and vulnerability of citizens and critical facilities to Tornado damage.

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

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Action Step 1: Educate homeowners and builders on individual safe rooms.	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	N/A	N/A	N/A	N/A	N/A
Action Step 2: Distribute programs on personal emergency preparedness, i.e., emergency survival kits	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	N/A	N/A	N/A	N/A	N/A
Action Step 3: Encourage the American Red Cross to teach Citizen Disaster Courses on a frequent basis.	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	N/A	N/A	N/A	N/A	N/A

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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
Action Step 6: Purchase and install mobile and fixed generators (including transfer switches) for all designated evacuation and emergency shelters, community water systems, and critical facilities, and wherever else they are needed.	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	N/A	N/A	N/A	N/A	N/A

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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

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Goal 4. Prevent damage resulting from wildfires in Echols County, reduce the threat of Wildfires, and protect the life and property of residents.

Objective 1: Minimize the threat of Wildfires to persons and properties in Echols County.

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Action Step #1: Request the Echols County Commission to consider the use of Urban/Wildland Interface in the development of its comprehensive plan.	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	N/A	N/A	N/A	N/A	N/A
Action Step #2: Implement Fire-Wise program in Echols County.	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	N/A	N/A	N/A	N/A	N/A

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Action Step #3: Train all firefighters to FF1 & FF2 standards and ensure that emergency vehicle drivers are trained properly.	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	N/A	N/A	N/A	N/A	N/A
Action Step #4: Ensure that all firefighters have latest NFPA compliant PPE turnout gear sets and SCBAs.	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	N/A	N/A	N/A	N/A	N/A
Action Step #5: Obtain a new fire trucks and rehabilitate old trucks, as needed.	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	N/A	N/A	N/A	N/A	N/A
Action Step #6: Create a minimum of 30 feet of defensible space around all governmental structures and recommend to homeowners & community stakeholders that they create same space through the trimming of shrubs and vines, overhanging limbs, replacement of flammable plants with less flammable varieties and remove vegetation around chimneys.	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	N/A	N/A	N/A	N/A	N/A

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Action Step #7: Reduce structural ignitability by cleaning flammable vegetative materials from roofs and gutters, store firewood appropriately, install skirting around raised structures, store water hoses for easy access and replace pine straw and mulch around plantings with less flammable landscaping materials around all governmental structures and recommend same to homeowners and community stakeholders.	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	N/A	N/A	N/A	N/A	N/A
Action Step #8: Work with GA Power and EMCs to encourage new underground service to rural homes.	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	N/A	N/A	N/A	N/A	N/A
Action Step #9: Adopt standards for safety zones around propane distribution tanks.	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	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 #10: Ensure Driveway Access/Right-Of-Way Clearance by maintaining vertical and horizontal clearance for emergency equipment and seeing that adequate lengths of culverts are installed to allow emergency vehicle access.	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	N/A	N/A	N/A	N/A	N/A
Action Step #11: Ensure Road Access by identifying needed road improvements and as roads are upgraded, widen to minimum standards with at least 50 foot diameter cul-de-sacs or turn arounds.	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	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 #12: Examine existing codes and ordinances and amend and enforce existing building codes as they relate to skirting, propane tank locations, public nuisances (trash/debris on property) and other relevant concerns; Review subdivision and development ordinances for public safety concerns; Enact and enforce uniform addressing ordinance.	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	N/A	N/A	N/A	N/A	N/A
Action Step #13: Work with local law enforcement to better control non-essential traffic during fire emergencies.	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	N/A	N/A	N/A	N/A	N/A
Action Step #14: On adjacent WUI Lands, reduce hazardous fuels by encouraging prescribed burning for private landowners and industrial timberlands particularly adjacent to residential areas; Seek grant for mowing or prescribed burning in WUI areas.	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	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 #15: Encourage railroads to better maintain their ROW eliminating brush and grass through herbicide and mowing. Maintain firebreaks along ROW adjacent to residential areas.	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	N/A	N/A	N/A	N/A	N/A
Action Step #16: Improve existing fire lines by reducing hazardous fuels through the cleaning and re-harrowing of existing lines.	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	N/A	N/A	N/A	N/A	N/A
Action Step #17: Ensure access to water sources and dry hydrants by inspecting, maintaining and improving access to existing dry hydrants, adding signage along roads to mark the hydrants, purchasing improved drafting equipment, floating and turbo drafts, investigating the possibility of placing compatible fittings on irrigation wells and updating the GFC Fire plan to include identified helicopter dip sites.	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	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 #18: Ensure all fire stations and firefighters are equipped with wildland hand tools & lightweight PPE gear and investigate the need for additional tankers and overhead refill tanks (at rural stations).	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	N/A	N/A	N/A	N/A	N/A
Action Step #19: Ensure that road names are adequately marked through improved road signage at crossroads and installation of “Dead End” or “No Outlet” tags on road signs.	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	N/A	N/A	N/A	N/A	N/A
Action Step #20: Ensure that all personnel are trained in Wildfire Suppression.	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	N/A	N/A	N/A	N/A	N/A
Action Step #21: Conduct “How to Have a Firewise Home” Workshop for Echols County Residents.	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	N/A	N/A	N/A	N/A	N/A
Action Step #22: Conduct “Firewise” Workshop for Echols County Community Leaders.	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	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)				
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Action Step #23: Conduct a Spring Clean-up Event Every Spring.	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	N/A	N/A	N/A	N/A	N/A
Action Step #24: Develop and distribute Firewise informational packets to realtors, tax office & insurance agents.	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	N/A	N/A	N/A	N/A	N/A
Action Step #25: Create and Exhibit a Wildfire Protection Display at Local Events such as the Carrot Festival & Fourth of July and Hold Open Houses At Fire Stations to Develop Community Support and Understanding of Local Fire Departments and Current Issues.	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	N/A	N/A	N/A	N/A	N/A
Action Step #26: Invite the Local News Media to Community "Firewise" Functions for News Coverage and Regularly Submit Press Releases Documenting Wildfire Risk Improvements.	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	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 5: Protect Citizens of Echols County from the threat of Thunderstorms & Lightning strikes.

Objective #1: Provide tools necessary for warning of Thunderstorms & 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 an automatic warning device, if feasible.	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	N/A	N/A	N/A	N/A	N/A
Action Step 3: Educate the public on the risks of thunderstorms & lightning through press releases on thunderstorms & lightning, brochures and other methods.	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	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.*

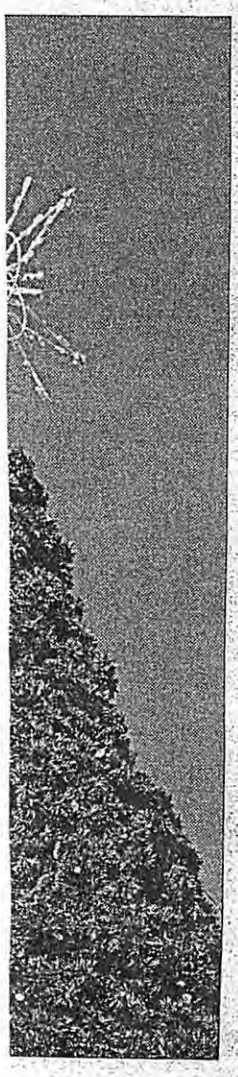
When you complete the scoring; negatives will indicate gaps or shortcomings in the particular action, which can be noted in the Comments section. For considerations that do not apply, fill in N/A for not applicable. Only leave a blank if you do not know an answer. In this case, make a note in the Comments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

Goal 7: Protect Echols County from the effects of drought conditions.

Objective 1: Ensure adequate drinking water supply is available during drought conditions.

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: Develop a comprehensive study that will allow community leaders to understand when public and domestic underground water systems' water levels are threatened.	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	N/A	N/A	N/A	N/A	N/A

Appendix E

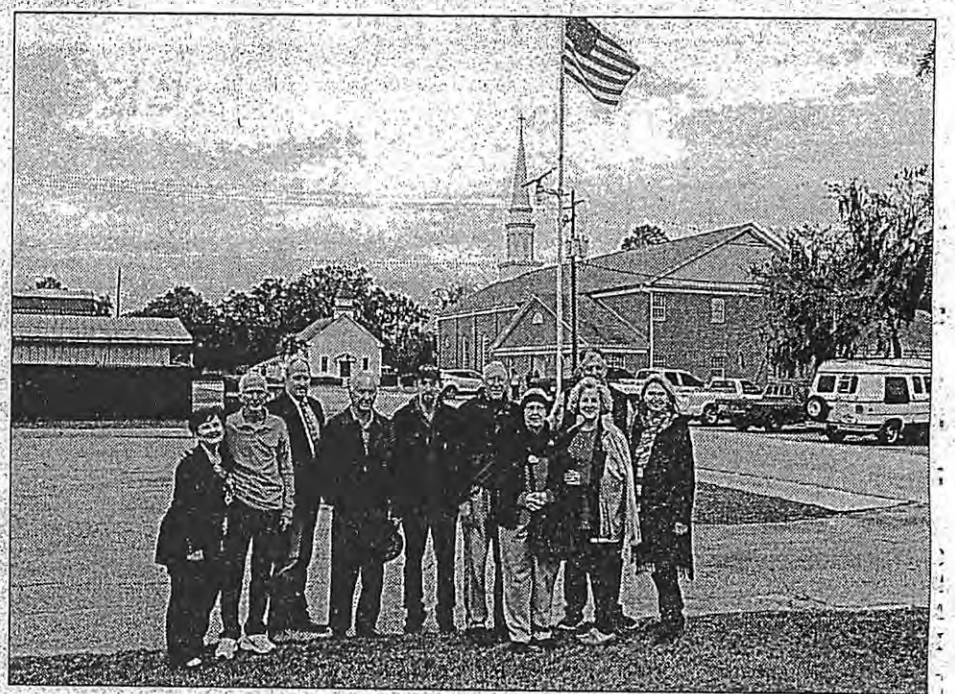


SUBMITTED PHOTO
or Lonnie Ledbetter
tree assembled on
public is invited to
will be held here on
kick off the holiday

ks off

Lake Park celebrates Veterans Day

On Saturday Nov. 11, the City of Lake Park held a Veterans Day Memorial Celebration at the flag pole in front of City Hall. Residents were invited to attend along with city officials to show their appreciation to veterans. Pictured are Pamela Barr, Thomas Barr, council member-elect, Police Chief James Breletic, Wasyl Wojtaszewski, Mayor Eric Schindler, Council Member Ronald Carter, Dorothy Carter, Jennifer Taylor, Carl Taylor, council member-elect and Fran Wilbers.



SUBMITTED PHOTO

The Echols 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 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 December 6, 2017 at 2:00 p.m. at 110 General DeLoach St., Statenville, GA 31648.

30728-1

AUTO SERVICE DIRECTORY

Southern Georgia Regional Commission
Echols County
Hazard Mitigation Plan Update – Kickoff
Date: Dec. 6, 2017

Name	Organization	Title	Email
Jackie L Carter	Echols Co EMA	Director	JLCEMA@ATT.NET
Christopher Shuler	Echols co GFC	Ranger	cshuler@gfc.state.ga.us
Kenneth Mason Terrell	Echols co GFC	Ranger I	KTerrell@GFC.State.ga.us.
Daryl Kinsey	Echols co. Rd Dept	superintendent	Echoc.at yhoo.comm
Rachel Rogers	Echols Co Health Dept	Nurse manager	Rachel.Rogers@dph.ga.gov
Karen Craft	South Health District	EP Director	karen.craft@dph.ga.gov
Myrna Turner	Tax Comm. Office	Tax Comm.	echolstax@bellsouth.net
Faye Pearson	Echols CO. Extension	Secretary	uge41018uga.edu
Blake Stokes	Echols Co. Sheriff's office	Chief Deputy	Echols699K@gmail.com
Randy Carlson	Echols Co. Sheriffs Office	Sheriff	echols.sheriff@gmail.com
Lance Heard	Echols Co. BOE	Superintendent	lance.heard@echols.K12.ga.us
Shelby Meyers	GEMA/HS		
Lucretia Hylton	SGRC	Planner	

Echols County
Hazard Mitigation Plan Update – First Workshop
Date: January 23, 2018

Name	Organization	Title	Email
Ariel Godwin	SGRC	Planner	agodwin@sgrc.us
Jackie Carter	Echols EMA	Dir	JLCEMA@ATT.NET
Conrad Zeigler	Echols Co.		zeigle_c@bellsouth.net
Daryl Kinsey	Echols Road Dept	Superintendent	ecboc@yahoo.com
Amy Swails	South Health District	Risk Communicator	amy.swails@dph.ga.gov
Karen Craft	South Health District	EP Director	Karen.Craft@dph.ga.gov
Myrna Turner	Echols Tax Commissioners	Tax Commissioner	echolstax@bellsouth.net
Latrice Bennett	Echols Co. Bd of Commission	County Administrator	ecboc@yahoo.com

Echols County
Hazard Mitigation Plan Update – Second Workshop
Date: Feb. 27, 2018

Name	Organization	Title	Email
Rachel Rogers RN	Echols Co H.D	RN	Rachel.Rogers@dph.ga.gov
Krestie Dixon SN VSU	VSU student nurse	student nurse	kedixon@valdosta.edu
Ariel Godwin	SGRC	planner	agodwin@sgrc.us
Conrad Zeigler	Ec. Co.		zeiglerc@bellsouth.NET
Latrica Bennett	Echols Co. Bd of Commission	County Admin.	ecboc@yahoo.com
Nora L. Rogers	Superior Court	Clerk	nora.rogers@gsccca.org
[illegible]	EMA	Dir	—
Justin Shealy	Extension	County Coordinator	Justin1@uga.edu
Blake Stokes	Sheriff's office	Chief Deputy	Echols 6994@gmail.com
Myrna Turner	Tax Office	Tax Comm.	echolstax@bellsouth.net
Daryl Kinney	Echols Co	RD Superintendent	ecboc@yahoo.com
Amy Swails	South Health District	Risk Communicator	amy.swails@dph.ga.gov
[illegible]	ECPC	Judge	judgerodgers@planttel.net

Echols County
Hazard Mitigation Plan Update – Third Workshop
Date: May 1, 2018

Name	Organization	Title	Email
Ariel Godwin	SGRC	Planner	agodwin@sgrc.us
Latrice Bennett	Echols Bd of Commission	County Admin	echocc@yahoo.com
Daryl Kinsey	Echols Bd Commission	RD. Superintendent	
Blake Stokes	Echols SO	Chief Deputy	
Jackie Carter	Echols EMA	EMA Dir.	—
Shane Davidson	SGRC	—	—
Karen Craft	South Health District	EP Director	karen.craft@dph.ga.gov
Myrna Turner	Tax Commissioner	Tax Commissioner	echols-tax@bellsouth.net
Rachel Rogers	Echols CHTD	Nurse mg	Rachel.Rogers@dph.ga.gov

Smith named Principal of the Year finalist

VALDOSTA — Ivy Smith, principal of Pine Grove Middle School, has been named a finalist for Principal of the Year.

The Georgia Association of Secondary School Principals announced the 2019 Principal of the Year Finalists.

"I am extremely honored to be recognized by GASSP," Smith said. "The Lowndes County School System provides students, teachers, and administrators with first-class opportunities, personalized learning initiatives and continuous support. I have been privileged to work alongside of outstanding educators, learn from community members and make a positive difference in the lives of students."

In addition to Smith, the finalists are:

• Kristi Gerrells, White County Middle School, White County.

• Dr. Mark Merges, Creekview High School, Cherokee County.

• Dr. Gene Starr, Appling County High School, Appling County.

• Mary Beth Thomas, Wilbanks Middle School, Habersham County.

• Kerensa Wing, Collins Hill High School, Gwinnett, County.

The Principal of the Year finalists were selected from a large pool of applicants, state officials said. The application process involves an extensive review of the performance of their school, based on data provided by the applicants.

Finalists will go through an interview process in Athens to determine who will be named the Georgia Principal of the Year.

The Principal of the Year recognition program is sponsored by the National Association of Secondary School Principals, the Georgia Association of Secondary School Principals, and Association Member Benefit Advisor. The Georgia winner will represent the state in the competition for National Principal of the Year, sponsored by the National Association of Secondary School Principals.

The Principal of the Year program recognizes principals who excel in educational leadership, resolving complex problems, developing self and others, as well as community service.

SUBMITTED PHOTO

Ivy Smith, Pine Grove Middle School principal, is in the running for state Principal of the Year.

Public Notice

The Echols 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 Echols County 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. The County will host a Public Hearing/Open House on March 7 at 6:15 at 110 General Deloach Road, Statenville, GA. Comments are being accepted by email at agodwin@sgrc.us, by fax at 229-333-5312, or by mailing them to Echols 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.

204854-1

Echols County
Hazard Mitigation Plan Update – Final Public Hearing
March 7, 2019

Name	Organization	Title	Email
	ECBOC	Chairman	ecboc@yahoo.com
	ECBOC	Vice-Chairman	ecboc@yahoo.com
	ECBOC	Co. Admin	ecboc@yahoo.com
	ECBOC	Asst Co CLK	same
	Fire Dept	Chief	echolsfiredept@bellsouth.net
	ECRD	Superintendent	ECBOC at yahoo
	Echols Co EMA	Dir.	—
	ECBOC	Commissioner	Kennyraypetty@Icloud

Resolution no. 2019-004

RESOLUTION FOR ADOPTION OF
ECHOLS COUNTY
HAZARD MITIGATION PLAN UPDATE

WHEREAS, to be eligible for federal disaster assistance in the event of a presidentially declared disaster and mitigation assistance under the Hazard Mitigation Grant programs, local governments must have adopted or be actively developing a Hazard Mitigation Plan prepared in accordance with federal regulations promulgated pursuant to the Disaster Mitigation Act of 2000 ("the Act"); and

WHEREAS, Echols County adopted the previous Echols County Hazard Mitigation Plan Update in 2014; and

WHEREAS, in accordance with the requirements of the Act, an updated plan is required to be submitted to FEMA through GEMA every five years; and

WHEREAS, the 2014 Plan Update will expire on March 18, 2019 and the new Hazard Mitigation Plan Update will become effective on March 18, 2019; and

WHEREAS, the Echols County Emergency Management Agency, with the assistance of representatives from various other departments and agencies, has developed an updated plan to meet these requirements; and

WHEREAS, the updated plan is titled the "Echols County 2019 Hazard Mitigation Plan Update" (referred to hereafter as "the Plan"); and

WHEREAS, GEMA has notified the Echols County Emergency Management Agency that the Plan satisfies the requirements of the Act;

BE IT THEREFORE RESOLVED that the Echols County Board of Commissioners, meeting in regular session, hereby adopts the Plan.

SO RESOLVED this 8th day of March, 2019.

By _____

Chair

Attest Latrica Bennett

Appendix F

Storm Events Database

Search Results for Echols County, Georgia

Event Types: Hurricane (Typhoon), Tropical Storm

Echols county contains the following zones:
'Echols'

2 events were reported between 01/01/1950 and 12/31/2017 (24837 days)

Summary Info:

Number of County/Zone areas affected:	1
Number of Days with Event:	2
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
ECHOLS (ZONE)	ECHOLS (ZONE)	GA	09/05/2004	00:01	EST	Tropical Storm		0	0	0.00K	0.00K
ECHOLS (ZONE)	ECHOLS (ZONE)	GA	09/25/2004	12:00	EST	Tropical Storm		0	0	0.00K	0.00K
Totals:								0	0	0.00K	0.00K

Storm Events Database

Search Results for Echols County, Georgia

Event Types: Flash Flood, Flood

Echols county contains the following zones:
'Echols'

4 events were reported between 01/01/1950 and 12/31/2017 (24837 days)

Summary Info:

Number of County/Zone areas affected:	2
Number of Days with Event:	3
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:	1
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	25.00K	0.00K
ECHOLS (ZONE)	ECHOLS (ZONE)	GA	03/01/1998	00:01	EST	Flood		0	0	25.00K	0.00K
COUNTYWIDE	ECHOLS CO.	GA	06/12/2001	02:05	EST	Flash Flood		0	0	0.00K	0.00K
COUNTYWIDE	ECHOLS CO.	GA	06/12/2001	10:30	EST	Flash Flood		0	0	0.00K	0.00K
MAYDAY	ECHOLS CO.	GA	04/05/2009	00:00	EST-5	Flood		0	0	0.00K	0.00K
Totals:								0	0	25.00K	0.00K

Storm Events Database

Search Results for Echols County, Georgia

Event Types: Funnel Cloud, Tornado

4 events were reported between 01/01/1950 and 12/31/2017 (24837 days)

Summary Info:

Number of County/Zone areas affected:	1
Number of Days with Event:	4
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:	4
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	0	514.50K	0.00K
Statenville	ECHOLS CO.	GA	03/31/1993	11:00	EST	Tornado	F1	0	0	500.00K	0.00K
TARVER	ECHOLS CO.	GA	10/26/1997	20:45	EST	Tornado	F0	0	0	2.00K	0.00K
TARVER	ECHOLS CO.	GA	11/01/1999	20:50	EST	Tornado	F0	0	0	2.50K	0.00K
NEEDMORE	ECHOLS CO.	GA	11/06/2002	05:00	EST	Tornado	F0	0	0	10.00K	0.00K
Totals:								0	0	514.50K	0.00K

Acreage Burned for Echols County for CY 1967 to 2017

Year	January	February	March	April	May	June	July	August	September	October	November	December	Total
1967	0	3.86	42.7	1	31.85	10.5	1.4	0	0	0.7	11.05	2.25	105.31
1968	7.8	161.04	33.73	0	9.6	87.41	11.72	2.01	0.39	19.3	2.59	28.36	363.95
1969	10.48	13.55	7.09	1.29	1.47	14.9	4	0	0.45	25.3	0	0	78.53
1970	0.27	63.78	45.65	12.82	4.19	11.5	0	1.54	1.22	15.1	0.68	1.13	157.88
1971	60.85	5.03	54.53	196.07	1.71	6.63	32.08	0.77	0	0.76	1.75	8.19	368.37
1972	0.45	0	23.12	45.91	10.88	25.01	32.5	3.12	1.13	17.46	0	1.6	161.18
1973	11.54	6.76	41.52	1.21	0.23	0.67	11.41	292.1	20.36	74.36	117.17	0.53	577.86
1974	31.16	28.68	56.78	564.05	71.26	25.04	33.75	31.94	1.67	0.88	17.65	1.45	864.31
1975	0.01	2.43	38.4	0.33	3.59	42.54	0.02	0.01	4.51	2.89	7.1	1.76	103.59
1976	12.42	98.92	4.53	8.22	0	4.61	0.03	8.86	0.1	0.01	7.12	0.12	144.94
1977	0.01	22.23	12.15	27.95	46.68	68.48	3.98	0.02	26	18.11	24.46	0	250.07
1978	3.85	66.31	30.49	18.53	0	0.73	0	0.25	33.67	82.01	80.71	17.21	333.76
1979	2.26	14.85	49.87	11.42	0	1.22	1.5	1.09	0	0.86	1.39	0	84.46
1980	5.65	9.62	6.18	0.18	0	40.76	38.94	10.88	30.28	9.27	46.78	12.71	211.25
1981	384.13	22.02	70.57	26.2	0.64	82.41	83.29	4.24	9.68	20.14	7.62	0.94	711.88
1982	20.16	65.32	33.94	5.14	99.2	0.4	0.37	0.43	0	0.19	6.7	1.47	233.32
1983	2.25	2.43	0.26	32.16	0.23	6.72	1.44	4.72	0	22.47	0.02	7.16	79.86
1984	23.61	7.37	6.78	0.95	0.62	41.44	6.5	4.2	1.24	3.37	2.31	7.83	106.22
1985	20.58	68.57	40.69	6.75	1,724.35	31.68	21.21	0	0.48	0.58	0	1.29	1,916.18
1986	3.68	11.94	9.62	53.02	14.66	61.39	52.92	4.03	1.22	0	0.01	0.34	212.83
1987	0.3	7.34	0	17.08	0	0	80.5	30.44	2.68	0.89	16.46	24.02	179.71
1988	8.62	9.97	1.17	0.91	255.9	2.51	84.84	37.29	1.26	0	0.6	2.41	405.48
1989	16.49	16.34	28.97	2.54	3.35	0.02	0	0	0.19	0.01	22.4	5.69	96
1990	11.01	0	27.78	29.17	0	3.81	438.81	58.68	42.99	4.98	8.21	7.83	633.27
1991	0	11.67	13.66	11.32	3.67	0.75	0.14	3.13	2.53	8.84	0.93	10.5	67.14
1992	7.79	5.76	0.2	14.9	0.72	22.25	2.97	0	0.62	0.83	23.66	49.52	129.22
1993	94.13	3.84	42.5	33.76	36.45	49.94	7.38	1.15	8.38	24.18	6.09	1.01	308.81
1994	1.16	0.55	12.95	2.54	3.72	9.96	1.34	77.78	0	0.35	2.24	0.46	113.05
1995	0.08	36.6	48	4.54	1.51	41.67	40.73	28.2	1.84	0.1	7.17	2.88	213.32
1996	0.82	38.22	57.57	6.41	357.99	19.06	52.88	0.11	0.4	2.65	0.45	0.05	536.61
1997	1.81	4.71	0.78	8.17	3.02	0	1.08	1.7	0.3	1.6	0	0	23.17
1998	1.04	0.02	0	0	20.42	28.73	3.08	1.89	4.78	0.03	33.5	0.59	94.08

1999	0.62	20.25	36.39	14.64	317.76	101.87	70.48	0.38	141.55	29.19	0	17.94	751.07
2000	81.96	3.08	25.7	32.75	26.63	55.98	13.38	16.16	0.02	0.01	0	2.97	258.64
2001	10.7	14.33	5.86	1.51	95.7	2.38	0	19.4	0	0	31.86	0.08	181.82
2002	2.02	0.76	0.16	0	24.67	33.35	0	5.73	10.22	0	1.7	0.31	78.92
2003	20.83	17.02	33.73	1.7	0	0.04	1.9	11.2	1.08	2.28	0.01	1.05	90.84
2004	28.59	0.02	45.29	15.58	85.03	3.53	213.18	0.01	0	0.03	0	33.3	424.56
2005	3.61	0.15	3.63	0.11	0	8.01	0	0.51	3.05	0.27	2.76	0	22.1
2006	0.13	16.09	6.76	10.93	1.26	12.54	4.85	1.72	0.05	148.34	0	0	202.67
2007	0	0.95	1.97	0.15	106.1	6.77	0.78	2.55	28.75	0	19.84	0	167.86
2008	0.25	16.63	3.96	0	0.05	2.88	3.13	0.17	0.54	6.01	0	0.6	34.22
2009	3.85	3.36	8.97	0	0	0	0	0	0.1	0	0	0	16.28
2010	2.72	1.76	0.03	0.46	0	2.16	0	2.5	0	0.43	0.89	0.1	11.05
2011	2.7	1.7	4	8.1	6.6	91.9	4.1	13	0	0	0	0.5	132.6
2012	0	0	2.26	2.3	1	0	0	0	0	0	0.1	0	5.66
2013	0.1	20.48	2	0	0	0	0	0	9.5	0	0	0	32.08
2014	0	12	6.07	0	0	1	2	3	2	0	3.6	0	29.67
2015	4.19	128.9	8.1	0	0	10.66	10.2	7.14	3.04	0	0	7.4	179.63
2016	2.08	12.9	52.33	0	5.32	12	487.2	0	0.02	0.21	6.1	0	578.16
2017	4	2.5	57.7	57.9	14.67	0	0	0.5	3	0	0	0	140.27

Number of Fires for Echols County for CY 1967 to 2017

Year	January	February	March	April	May	June	July	August	September	October	November	December	Total
1967	0	4	8	1	13	3	3	0	0	3	15	2	52
1968	4	13	7	0	3	9	9	2	1	1	2	2	53
1969	8	7	3	5	2	4	1	0	1	2	0	0	33
1970	1	5	7	5	10	3	0	1	1	8	2	3	46
1971	9	7	3	5	1	3	5	1	0	2	5	3	44
1972	1	0	7	8	3	4	13	3	2	5	1	2	49
1973	5	7	14	8	2	2	2	5	5	17	49	4	120
1974	8	11	19	31	8	14	7	5	3	4	20	6	136
1975	1	5	4	2	5	8	2	1	3	3	4	4	42
1976	11	13	2	7	2	6	1	8	2	1	5	5	63
1977	4	11	10	8	11	27	7	3	6	5	6	0	98
1978	2	18	5	16	0	2	2	2	11	29	23	16	126
1979	1	6	13	5	0	1	3	11	0	2	9	0	51
1980	9	9	4	1	3	15	6	10	10	7	7	5	86
1981	30	12	19	3	2	29	3	1	4	25	7	5	140
1982	13	10	14	4	5	4	2	4	1	3	6	3	69
1983	1	13	1	4	2	2	3	6	1	7	2	5	47
1984	8	6	5	3	4	4	3	5	5	8	9	6	66
1985	12	22	20	3	17	5	2	2	1	1	1	8	94
1986	9	6	4	12	7	10	15	6	1	1	1	1	73
1987	3	4	1	8	0	1	4	7	3	6	1	6	44
1988	5	4	2	4	5	6	13	3	2	0	4	2	50
1989	7	9	12	4	7	1	0	0	2	1	3	6	52
1990	9	0	8	4	0	2	8	9	13	4	6	4	67
1991	0	5	7	1	1	2	1	9	15	6	4	6	57
1992	10	4	1	6	2	2	1	0	1	4	3	10	44
1993	9	6	13	12	17	9	3	3	3	9	3	3	90
1994	3	2	6	4	3	4	4	2	0	5	1	2	36
1995	3	12	10	3	3	5	9	6	4	1	3	11	70
1996	6	14	5	5	6	8	5	1	2	7	3	2	64
1997	6	5	5	2	3	1	3	2	2	9	0	0	38
1998	5	1	0	0	8	10	3	4	3	1	4	3	42

1999	3	9	21	7	9	7	4	4	9	21	0	3	97
2000	6	7	4	4	5	11	6	4	1	1	0	4	53
2001	7	4	1	3	9	1	0	1	0	0	11	2	39
2002	4	3	1	0	13	4	0	6	8	0	1	2	42
2003	7	8	3	2	0	1	4	4	4	10	2	3	48
2004	7	1	14	6	5	2	1	1	0	1	0	9	47
2005	3	2	2	2	0	1	0	1	1	2	4	0	18
2006	1	5	3	3	5	5	7	4	1	2	0	0	36
2007	0	1	4	1	5	2	4	3	1	0	1	0	22
2008	1	6	1	0	1	2	2	1	1	5	0	1	21
2009	2	7	4	0	0	0	0	0	1	0	0	0	14
2010	1	2	2	2	0	2	0	1	0	2	1	1	14
2011	1	3	3	2	1	8	1	4	0	0	0	1	24
2012	0	0	3	1	1	0	0	0	0	0	1	0	6
2013	1	2	1	0	0	0	0	0	1	0	0	0	5
2014	0	2	3	0	0	1	1	2	1	0	3	0	13
2015	1	3	1	0	0	8	1	2	2	0	0	6	24
2016	2	2	5	0	4	3	3	0	1	2	2	0	24
2017	1	2	7	7	4	0	0	1	1	0	0	0	23

Storm Events Database

Search Results for Echols County, Georgia

Event Types: Wildfire

Echols county contains the following zones:
'Echols'

0 events were reported between 01/01/1950 and 12/31/2017 (24837 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 Echols County, Georgia

Event Types: Lightning, Thunderstorm Wind

62 events were reported between 01/01/1950 and 12/31/2017 (24837 days)

Summary Info:

Number of County/Zone areas affected:	1
Number of Days with Event:	54
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:	22
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

Wind Magnitude Definitions:
Measured Gust:'MG', Estimated Gust:'EG', Measured Sustained:'MS', Estimated Sustained:'ES'

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 Wind Speeds ▼ Sort By: Date/Time (Oldest) ▼

Location	County/Zone	St.	Date	Time	T.Z.	Type	Mag	Dth	Inj	PrD	CrD
Totals:								0	0	63.20K	0.00K
ECHOLS CO.	ECHOLS CO.	GA	06/19/1985	17:00	CST	Thunderstorm Wind	0 kts.	0	0	0.00K	0.00K
ECHOLS CO.	ECHOLS CO.	GA	08/01/1986	18:00	CST	Thunderstorm Wind	0 kts.	0	0	0.00K	0.00K
ECHOLS CO.	ECHOLS CO.	GA	06/16/1989	11:10	CST	Thunderstorm Wind	0 kts.	0	0	0.00K	0.00K
Needmore	ECHOLS CO.	GA	03/31/1993	11:30	EST	Thunderstorm Wind	0 kts.	0	0	0.00K	0.00K
Statenville	ECHOLS CO.	GA	06/09/1994	18:25	EST	Thunderstorm Wind	0 kts.	0	0	0.50K	0.00K
Statenville	ECHOLS CO.	GA	06/09/1994	18:25	EST	Thunderstorm Wind	0 kts.	0	0	5.00K	0.00K
Needmore	ECHOLS CO.	GA	10/28/1995	01:30	EST	Thunderstorm Wind	0 kts.	0	0	2.00K	0.00K
STATENVILLE	ECHOLS CO.	GA	06/01/1997	16:00	EST	Thunderstorm Wind		0	0	0.60K	0.00K
STATENVILLE	ECHOLS CO.	GA	02/22/1998	12:18	EST	Thunderstorm Wind		0	0	1.50K	0.00K
STATENVILLE	ECHOLS CO.	GA	03/08/1998	19:30	EST	Thunderstorm Wind		0	0	1.50K	0.00K
STATENVILLE	ECHOLS CO.	GA	04/09/1998	04:30	EST	Thunderstorm Wind		0	0	0.50K	0.00K
NEEDMORE	ECHOLS CO.	GA	06/19/1998	18:05	EST	Thunderstorm Wind		0	0	2.50K	0.00K
HAYLOW	ECHOLS CO.	GA	06/27/1998	15:48	EST	Thunderstorm Wind		0	0	2.00K	0.00K
STATENVILLE	ECHOLS CO.	GA	09/03/1998	01:30	EST	Thunderstorm Wind		0	0	15.00K	0.00K
STATENVILLE	ECHOLS CO.	GA	01/24/2000	07:55	EST	Thunderstorm Wind		0	0	2.50K	0.00K
STATENVILLE	ECHOLS CO.	GA	02/14/2000	03:56	EST	Thunderstorm Wind		0	0	2.50K	0.00K
STATENVILLE	ECHOLS CO.	GA	04/24/2000	12:05	EST	Thunderstorm Wind		0	0	2.50K	0.00K
STATENVILLE	ECHOLS CO.	GA	05/22/2000	16:30	EST	Thunderstorm Wind		0	0	2.50K	0.00K
NEEDMORE	ECHOLS CO.	GA	10/06/2000	16:30	EST	Thunderstorm Wind		0	0	2.50K	0.00K
HAYLOW	ECHOLS CO.	GA	06/11/2001	02:05	EST	Thunderstorm Wind		0	0	2.50K	0.00K
NEEDMORE	ECHOLS CO.	GA	06/12/2001	06:01	EST	Thunderstorm Wind		0	0	3.50K	0.00K
NEEDMORE	ECHOLS CO.	GA	06/30/2001	19:00	EST	Thunderstorm Wind		0	0	3.50K	0.00K
NEEDMORE	ECHOLS CO.	GA	05/30/2002	16:15	EST	Thunderstorm Wind		0	0	0.10K	0.00K
COUNTYWIDE	ECHOLS CO.	GA	06/30/2002	17:10	EST	Thunderstorm Wind		0	0	2.00K	0.00K
NEEDMORE	ECHOLS CO.	GA	12/24/2002	10:35	EST	Thunderstorm Wind		0	0	2.00K	0.00K
MAYDAY	ECHOLS CO.	GA	03/01/2003	13:00	EST	Thunderstorm Wind	60 kts. EG	0	0	5.00K	0.00K
MAYDAY	ECHOLS CO.	GA	06/16/2003	15:55	EST	Thunderstorm Wind	55 kts. EG	0	0	0.00K	0.00K

STATENVILLE	ECHOLS CO.	GA	01/26/2004	15:59	EST	Thunderstorm Wind	50 kts. ES	0	0	0.00K	0.00K
STATENVILLE	ECHOLS CO.	GA	06/26/2004	15:45	EST	Thunderstorm Wind	55 kts. EG	0	0	0.00K	0.00K
STATENVILLE	ECHOLS CO.	GA	06/26/2004	15:47	EST	Thunderstorm Wind	55 kts. EG	0	0	0.00K	0.00K
STATENVILLE	ECHOLS CO.	GA	03/02/2007	03:30	EST-5	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
STATENVILLE	ECHOLS CO.	GA	06/04/2007	16:00	EST-5	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
STATENVILLE	ECHOLS CO.	GA	06/12/2007	07:45	EST-5	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
MAYDAY	ECHOLS CO.	GA	07/14/2007	14:45	EST-5	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
STATENVILLE	ECHOLS CO.	GA	02/26/2008	12:30	EST-5	Thunderstorm Wind	52 kts. EG	0	0	0.00K	0.00K
STATENVILLE	ECHOLS CO.	GA	06/11/2008	17:00	EST-5	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
STATENVILLE	ECHOLS CO.	GA	10/09/2008	08:45	EST-5	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
STATENVILLE	ECHOLS CO.	GA	04/08/2010	18:55	EST-5	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
HOWELL	ECHOLS CO.	GA	06/13/2010	15:25	EST-5	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
STATENVILLE	ECHOLS CO.	GA	05/14/2011	16:55	EST-5	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
STATENVILLE	ECHOLS CO.	GA	06/13/2011	17:40	EST-5	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
FRUITLAND	ECHOLS CO.	GA	09/05/2011	15:45	EST-5	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
STATENVILLE	ECHOLS CO.	GA	09/05/2011	19:15	EST-5	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
STATENVILLE	ECHOLS CO.	GA	09/25/2011	15:20	EST-5	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
STATENVILLE	ECHOLS CO.	GA	09/25/2011	15:25	EST-5	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
STATENVILLE	ECHOLS CO.	GA	09/25/2011	15:35	EST-5	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
STATENVILLE	ECHOLS CO.	GA	09/25/2011	15:45	EST-5	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
STATENVILLE	ECHOLS CO.	GA	01/30/2013	21:00	EST-5	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
STATENVILLE	ECHOLS CO.	GA	07/21/2013	14:50	EST-5	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
STATENVILLE	ECHOLS CO.	GA	08/17/2013	18:13	EST-5	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
STATENVILLE	ECHOLS CO.	GA	08/17/2013	18:14	EST-5	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
STATENVILLE	ECHOLS CO.	GA	02/21/2014	09:35	EST-5	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
PINELAND	ECHOLS CO.	GA	03/16/2014	14:53	EST-5	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
HAYLOW	ECHOLS CO.	GA	06/22/2014	15:00	EST-5	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
STATENVILLE	ECHOLS CO.	GA	07/03/2014	16:55	EST-5	Thunderstorm Wind	45 kts. EG	0	0	1.00K	0.00K
MAYDAY	ECHOLS CO.	GA	06/03/2015	19:45	EST-5	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
TARVER	ECHOLS CO.	GA	06/03/2015	20:00	EST-5	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
HOWELL	ECHOLS CO.	GA	06/22/2015	17:30	EST-5	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
STATENVILLE	ECHOLS CO.	GA	07/01/2015	18:05	EST-5	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
STATENVILLE	ECHOLS CO.	GA	07/05/2015	13:24	EST-5	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
STATENVILLE	ECHOLS CO.	GA	05/31/2016	17:08	EST-5	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
HOWELL	ECHOLS CO.	GA	08/14/2016	18:20	EST-5	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Totals:								0	0	63.20K	0.00K

Storm Events Database

Search Results for Echols County, Georgia

Event Types: Excessive Heat

Echols county contains the following zones:
'Echols'

0 events were reported between 01/01/1950 and 12/31/2017 (24837 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

DROUGHT DATA - ECHOLS COUNTY
Source: US Drought Monitor

Year	D0 events	D1 events	D2 events	D3 events	D4 events
2000	19	17	29	5	1
2001	20	21	10	0	0
2002	29	16	10	0	0
2003	6	0	0	0	0
2004	13	3	0	0	0
2005	2	0	0	0	0
2006	21	13	0	0	0
2007	30	24	14	9	0
2008	22	12	0	0	0
2009	16	6	0	0	0
2010	8	11	9	4	0
2011	0	19	43	34	4
2012	7	10	13	20	9
2013	18	8	5	3	0
2014	12	4	1	0	0
2015	21	15	6	0	0
2016	25	6	5	0	0
2017	15	8	8	3	0
2018	11	17	6	0	0
Grand Total	295	210	159	78	14

Storm Events Database

Search Results for Echols County, Georgia

Event Types: Drought

Echols county contains the following zones:
'Echols'

0 events were reported between 01/01/1950 and 12/31/2017 (24837 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

PHMSA Office of Hazardous Materials Safety **Incident Reports Database Search**

PHMSA Hazmat Home

Source: Hazmat Intelligence Portal, U.S.Department of T ransportation. Data as of 4/26/2018.

PART II - GENERAL INCIDENT INFORMATION

3. Date of Incident: From: To: (mm/dd/yyyy)

7. Location of Incident: City: statenville (begins) State: Georgia Zip Code: (contains)

Incident Route: (contains)

8. Mode of Transportation: Air Highway Rail Water Other

9. Transportation Phase: In Transit Loading Unloading In Transit Storage

10. Carrier/Reporter Name: (contains)

State: Select Zip Code: (contains)

11. Shipper/Offeror Name: (contains)

12. Origin: City: (contains) State: Select Zip Code: (contains)

14. Proper Shipping Name of Hazardous Material: (contains)

16. Hazardous Class/Division Code: (begins) 17. Identification Number: (contains)

PART III - PACKAGING INFORMATION

24. Packaging Type: Non-Bulk IBC Cargo Tank Motor Vehicle (CTMV) Tank Car Cylinder RAM Portable Tank Other

25. Incident Cause: What Failed: (contains) How Failed: (contains)

Causes of Failure: (contains)

PART IV - CONSEQUENCES

30.Result of Incident: Spillage Fire Explosion Material Entered Waterway/Storm Sewer Vapor(Gas) Dispersion Environmental Damage No Release

33a. Did the hazardous material cause or contribute to a human fatality? Select

34. Did the hazardous material cause or contribute to personal injury? Select

35. Did the hazardous material cause or contribute to an evacuation? Select

36. Was a major transportation artery or facility closed? Select

37. Was the material involved in a crash or derailment? Select

OTHER

Report Number: (contains) Serious Incident: Select

Container Code Detail: (contains) Undeclared Shipment: Select

General Package Type: Select

DISPLAY OPTIONS: Display 50 results per page.

Clear Search

* Since some incidents involve multiple commodities and/or multiple package types, double counting can occur.

* Use the following links to obtain helpful reference information:

Serious Incident Definition - PHMSA revised the definition of a serious incident in Fiscal Year 2002. This site uses both definitions

Data Dictionary - Description of the data fields in the reports on this site

Units Of Measure - Description of the units of measure used in the reports on this site

1 Record(s) found - Please click on any column header to sort by ascending or descending

EXPORT OPTIONS: Export fields: Export all fields

Export to CSV

<< First < Prev 1 Next > Last >>

Report Number	Date of Incident	Incident City	Incident State	Mode of Transportation	Carrier/Reporter Name	Shipper Name	HMIS Serious Incident Ind	Total Hazmat Fatalities	Total Hazmat Injuries	Total Amount of Damages	Packaging T ype	Identification Number	Cor
I-1999010479	11/02/1998	STATENVILLE	GA	Highway	KENAN TRANSPORT, LLC	KENAN TRANSPORT CO INC	No	0	0	$15	Cargo Tank Motor Vehicle (CTMV)	NA1993	FUI

<< First < Prev 1 Next > Last >>

ECHOLS COUNTY CRITICAL FACILITIES LIST
2018 UPDATE

Name	Address	City	Zip	Facility Types	Risk	Building Value	Contents Value
Echols Co Health Dept, Tax Comm., EMA, & Nat. Res.	149 Hwy 94 E	Statenville	31648	Government, Government, Government Offices, Government Offices	Economic Assets, Essential, Important, Lifeline	610000	120000
Echols County BOE-Transportation	216 Hwy 129 N	Statenville	31648	Education, Education, Transportation, Transportation	Economic Assets, Essential, Important, Transportation	310000	60000
Echols County Commission Office	110 General Deloach Street	Statenville	31648	Government, Government, Government Offices, Government Offices	Important	196200	
Echols County Community Center	148 Church of God St	Statenville	31648	Government, Government, Government Offices, Government Offices	Essential, Important, Special Consideration	300000	20000
Echols County Courthouse	110 Hwy 94 E	Statenville	31648	Government, Government, Court House, Court House	Economic Assets, Essential, Historic Consideration, Important	1900000	500000
Echols County DFAC	106 Church of God St	Statenville	31648	Government, Government, Government Offices, Government Offices	Essential, Important	740000	100000
Echols County Elementary/Middle School	229 Hwy 129 S	Fargo	31648	Education, K - 12, Pre K	Economic Assets, High Potential Loss, Vulnerable Population	24000000	
Echols County Elementary/Middle School	229 Hwy 129 S	Fargo	31648	Education, K - 12, Pre K	Economic Assets, High Potential Loss, Vulnerable Population	24000000	
Echols County High School	190 Hwy 94 East	Statenville	31648	Education, Education, K - 12, K - 12	Potential Loss, Historic Consideration, Important, Special Consideration, Transportation,	24000000	5000000
Echols County Road Department	120 Baptist Church Rd	Statenville	31648	Government, Government, Transportation, Transportation	Essential, Important, Transportation	150000	900000
Echols County Senior Citizen Center	170 Church of God St	Statenville	31648	Government, Government, Government Offices, Government Offices	Essential, Important, Special Consideration, Vulnerable Population	600000	100000

ECHOLS COUNTY CRITICAL FACILITIES LIST
2018 UPDATE

Name	Address	City	Zip	Facility Types	Risk	Building Value	Contents Value
Echols County Sheriff's Office	109 General Deloach	Statenville	31648	Law Enforcement, Law Enforcement, Sheriff, Sheriff	Essential, Important, Lifeline	250000	52500
Echols County Water Authority	297 Hwy 129 N	Statenville	31648	Government, Government, Water/Sewer, Water/Sewer	Economic Assets, Essential, Important, Lifeline, Special Consideration	700000	120000
Echols FD-Chapel	1500 J. Frank Culpepper Rd.	Lake Park	31636	Emergency Services, Emergency Services, Fire Fighters, Fire Fighters	Essential, Important, Lifeline	300000	10000
Echols FD-Howell	2300 Highway #135 N	Statenville	31636	Emergency Services, Emergency Services, Fire Fighters, Fire Fighters	Essential, Important, Lifeline	250000	10000
Echols FD-Statenville	229 Highway 94 East	Statenville	31648	Emergency Services, Emergency Services, Fire Fighters, Fire Fighters	Essential, Important, Lifeline	275001	53000
Farm Worker Health Clinic	2186 J. Frank Culpepper Rd	Fargo	31636	Medical, Clinics	Important, Lifeline	352800	
Farm Worker Health Clinic	2186 J. Frank Culpepper Rd	Fargo	31636	Medical, Clinics	Important, Lifeline	352800	
Farm Worker Health Clinic	2186 J. Frank Culpepper Rd	Fargo	31636	Medical, Clinics	Important, Lifeline	352800	
GA Power Substation	2742 Hwy 94 E	Statenville	31648	NGO, NGO, Private, Private	Essential, Important, Lifeline	3700000	
Ga Power Substation	181 Hwy 129 N	Statenville	31648	NGO, NGO, Private, Private	Essential, Important, Lifeline	3700000	
Georgia Forestry Commission	207 Hwy 129 N	Statenville	31648	Government, Government, Government Offices, Government Offices	Essential	339820	500000

ECHOLS COUNTY CRITICAL FACILITIES LIST
2018 UPDATE

Name	Address	City	Zip	Facility Types	Risk	Building Value	Contents Value
Hansford Allen-Echols County Library	123 Hwy 129 S	Statenville	31648	Education, Education, Library, Library	Important	400000	300000
Slash Pine EMC Substation	312 Red Oak Rd	Lake Park	31636	NGO, NGO, Private, Private	Essential, Important, Lifeline	2200000	
Statenville Church of God	129 Church of God St	Statenville	31648	NGO, NGO, Private, Private	Essential	200000	50000

Appendix G

Hazard Risk Analyses
Supplement to the Echols 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 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 Echols County.

Risk Assessment Process Overview

Hazus-MH Version 2.2 SP1 was used to perform the analyses for Echols 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. Echols 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 Echols County were replaced with data derived from parcel and property assessment data obtained from Echols County. The county provided property assessment data was current as of December 2018 and the parcel data current as of December 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 Echols County is 99.7%. 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	14	1	$ 2,630,000	$ 576,000
Commercial	29	20	$ 13,596,000	$ 10,725,000
Education	4	0	$ 4,440,000	$ -
Government	7	3	$ 2,260,000	$ 561,000
Industrial	15	16	$ 4,449,000	$ 43,280,000
Religious	7	0	$ 4,169,000	$ -
Residential	1500	1726	$ 170,304,000	$ 148,102,000
Total	**1576**	**1766**	**$ 201,848,000**	**$ 203,244,000**

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

For Echols 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.

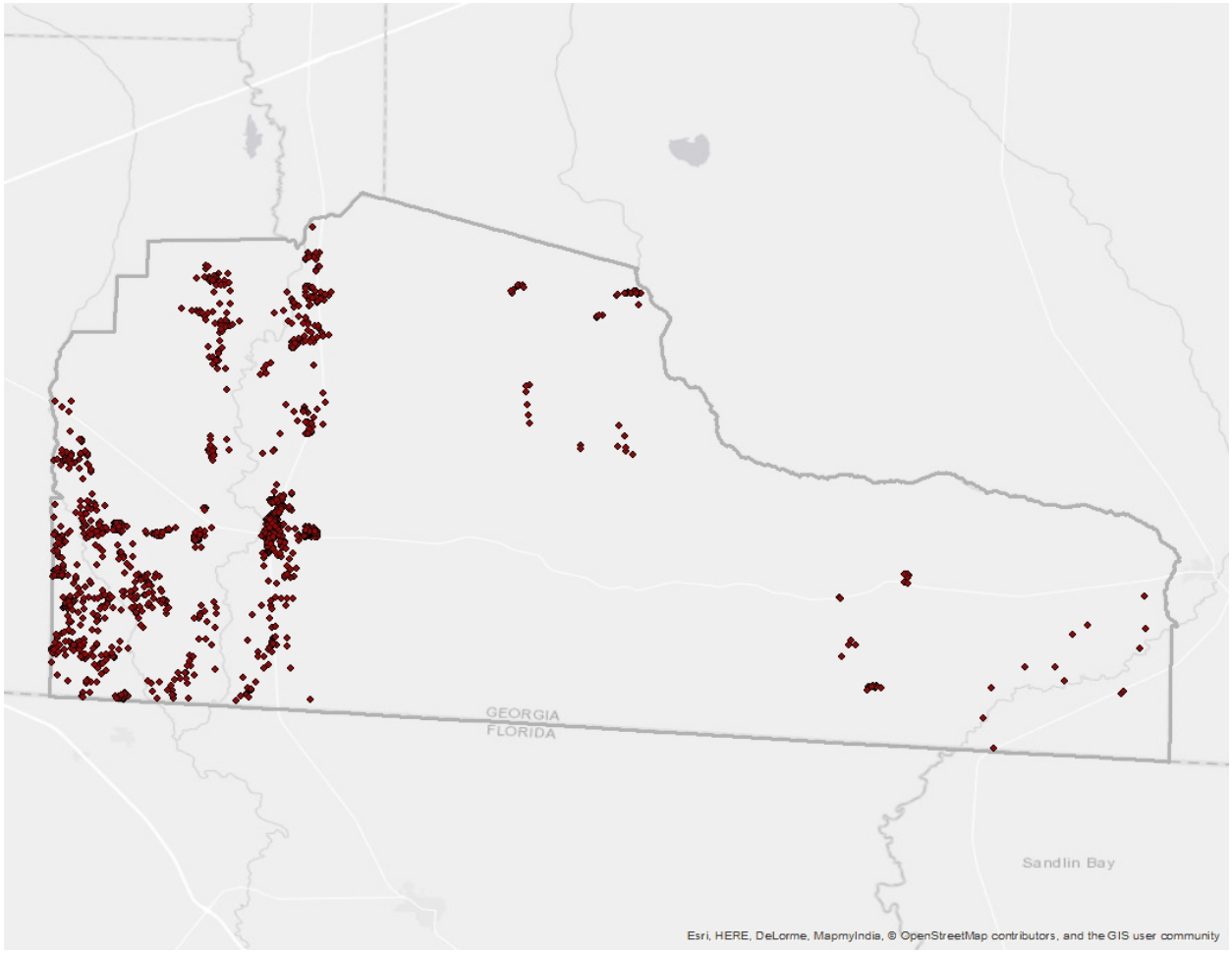

Figure 1: Echols County Overview

[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
Echols County		
EOC	1	$ 880,000
Care	1	$ 610,000
Fire	4	$ 1,164,000
Police	1	$ 250,000
School	3	$ 48,310,000
Total	**10**	**$ 51,214,000**

Assumptions and Exceptions

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

- The Echols 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 Echols 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

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.

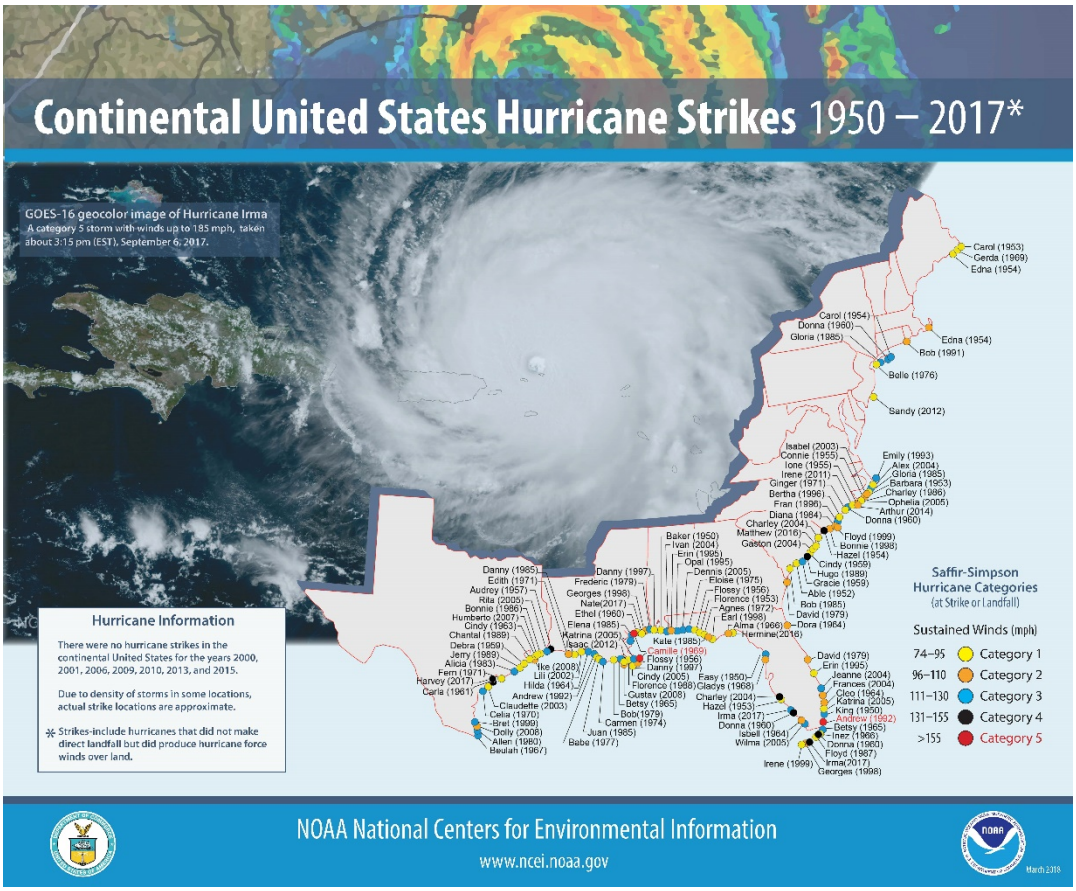

Figure 2: Continental United States Hurricane Strikes: 1950 to 2017[3]

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 Echols County by creating a 20-mile buffer around the county to include storms that didn't make direct landfall in Echols County but impacted the county. Since 1851, Echols County has had 62 tropical systems within 20 miles of its county borders (Table 4).

Table 4: Tropical Systems affecting Echols County

Year	Month	Day	Name	Wind (Knots)	Category
1868	October	4	NOTNAMED	50	TS
1871	October	5	NOTNAMED	50	TS
1871	October	6	NOTNAMED	40	TS
1873	September	19	NOTNAMED	70	H1
1873	September	19	NOTNAMED	60	TS
1877	September	20	NOTNAMED	40	TS
1878	October	11	NOTNAMED	40	TS
1880	September	8	NOTNAMED	40	TS
1882	October	11	NOTNAMED	60	TS
1882	October	11	NOTNAMED	50	TS
1885	August	31	NOTNAMED	50	TS
1885	August	31	NOTNAMED	40	TS
1885	September	21	NOTNAMED	50	TS
1885	September	21	NOTNAMED	40	TS
1885	October	12	NOTNAMED	50	TS
1888	September	9	NOTNAMED	45	TS
1893	June	16	NOTNAMED	50	TS
1896	September	29	NOTNAMED	100	H3
1902	June	15	NOTNAMED	45	TS
1902	June	15	NOTNAMED	40	TS
1907	June	29	NOTNAMED	45	TS
1914	September	17	NOTNAMED	40	TS
1924	September	16	NOTNAMED	45	TS
1924	September	16	NOTNAMED	40	TS
1924	September	29	NOTNAMED	55	TS
1924	September	30	NOTNAMED	55	E
1926	July	29	NOTNAMED	50	TS
1935	September	4	NOTNAMED	75	H1
1935	September	5	NOTNAMED	60	TS
1938	October	24	NOTNAMED	40	TS
1946	October	8	NOTNAMED	35	TS
1947	September	24	NOTNAMED	50	TS
1947	October	7	NOTNAMED	40	TS
1947	October	7	NOTNAMED	35	TS
1947	October	7	NOTNAMED	30	TD
1947	October	8	NOTNAMED	25	TD
1947	October	8	NOTNAMED	25	TD
1949	August	28	NOTNAMED	50	TS
1950	September	7	EASY	40	TS
1950	October	19	KING	35	TS
1953	September	20	NOTNAMED	40	TS
1957	June	9	NOTNAMED	35	TS
1960	July	29	BRENDA	30	TD
1964	October	5	HILDA	35	E
1966	June	10	ALMA	60	TS
1966	June	10	ALMA	55	TS
1972	May	28	ALPHA	30	SD
1972	May	28	ALPHA	30	SD
1976	May	23	SUBTROP1	40	SS
1987	August	16	NOTNAMED	15	TD
1987	August	16	NOTNAMED	10	TD
1990	October	12	MARCO	30	TD
1990	October	12	MARCO	20	TD
1995	August	25	JERRY	25	TD
1995	August	25	JERRY	25	TD
1995	August	26	JERRY	25	TD
1996	October	8	JOSEPHINE	60	TS
1998	September	30	GEORGES	25	TD
1998	October	1	GEORGES	25	TD
2000	September	18	GORDON	40	TS
2004	August	12	BONNIE	30	TD
2006	June	13	ALBERTO	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 85 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.

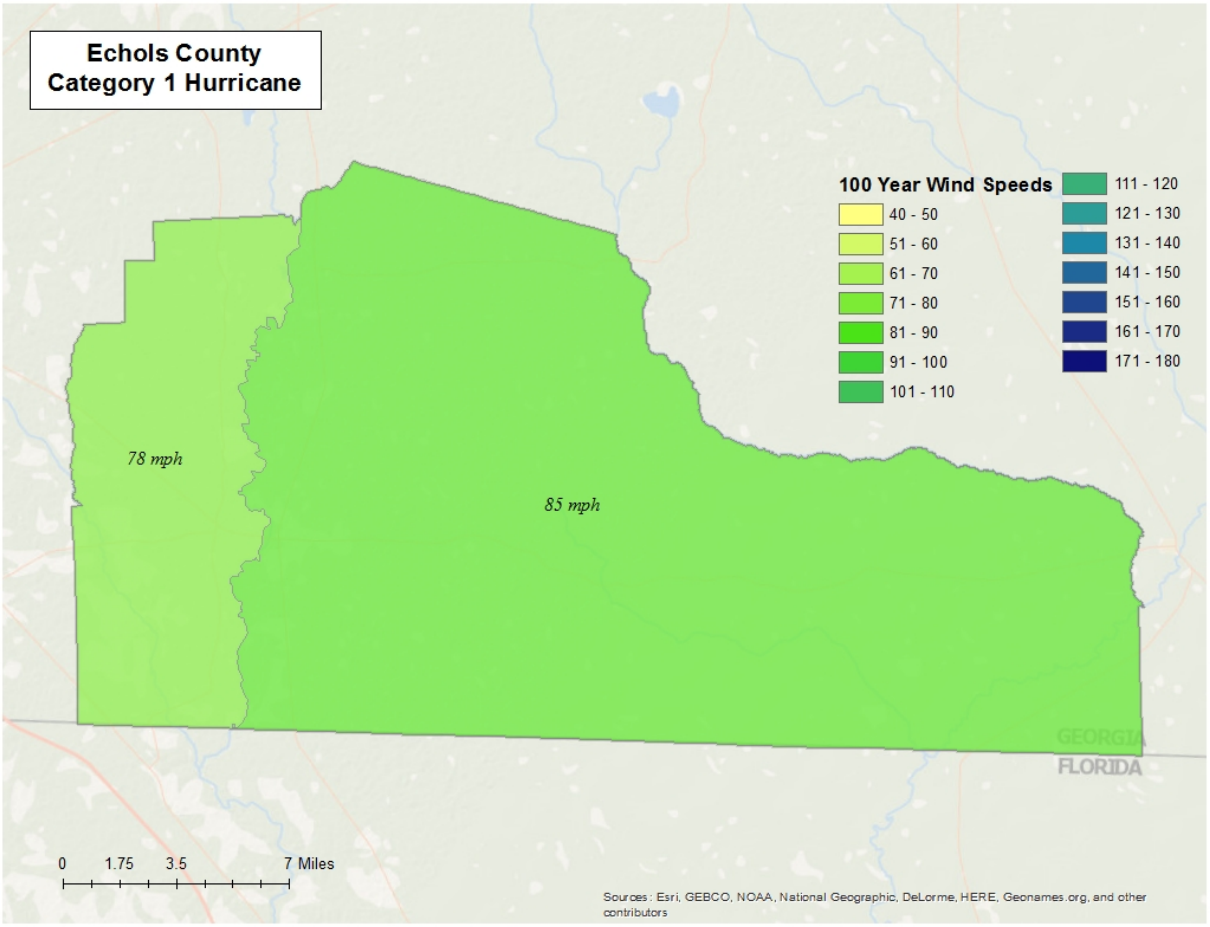

Figure 3: Wind Speeds by Storm Category

Wind-Related Building Damages

Buildings in Echols 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 Echols 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.

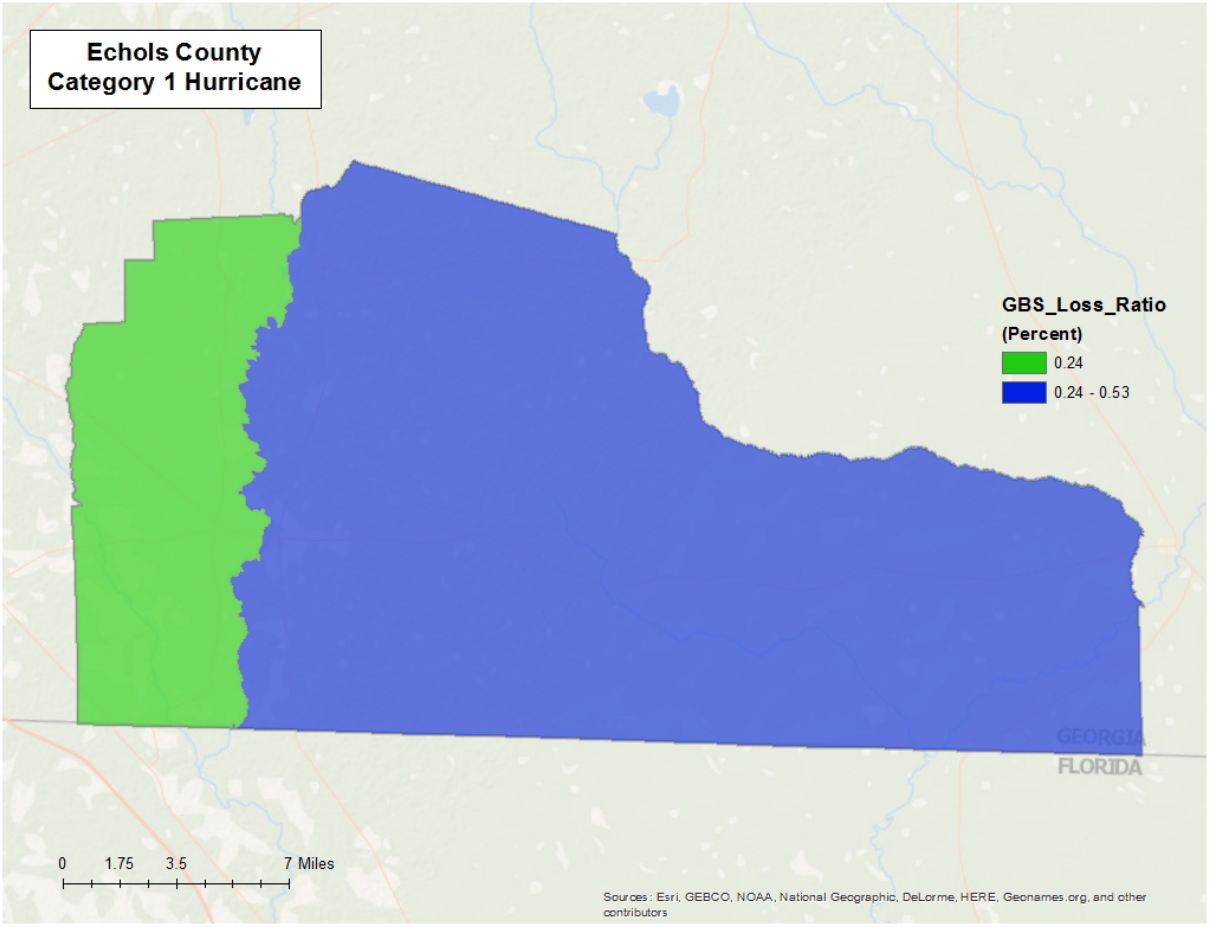

Figure 4: Hurricane Wind GBS Loss Ratios

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	24	$ 691,620	$ 1,027,960	0.34

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 10 essential facilities in Echols County.

Classification	Number
EOC	1
Care	1
Fire	4
Police	1
School	3
Total	**10**

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	10

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

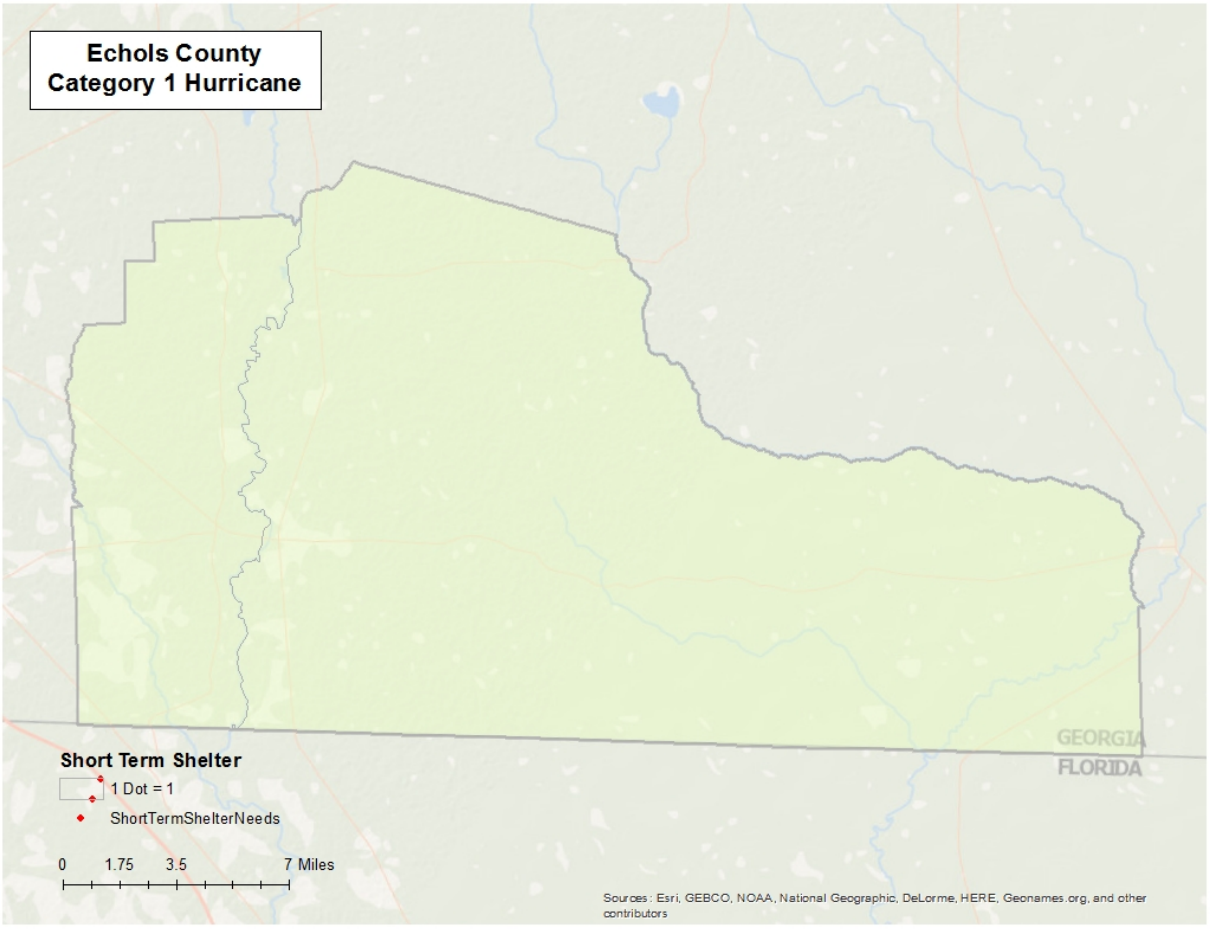

Figure 5: Hurricane Wind Shelter Requirements

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	66	-	3,646	136,643	140,355

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.

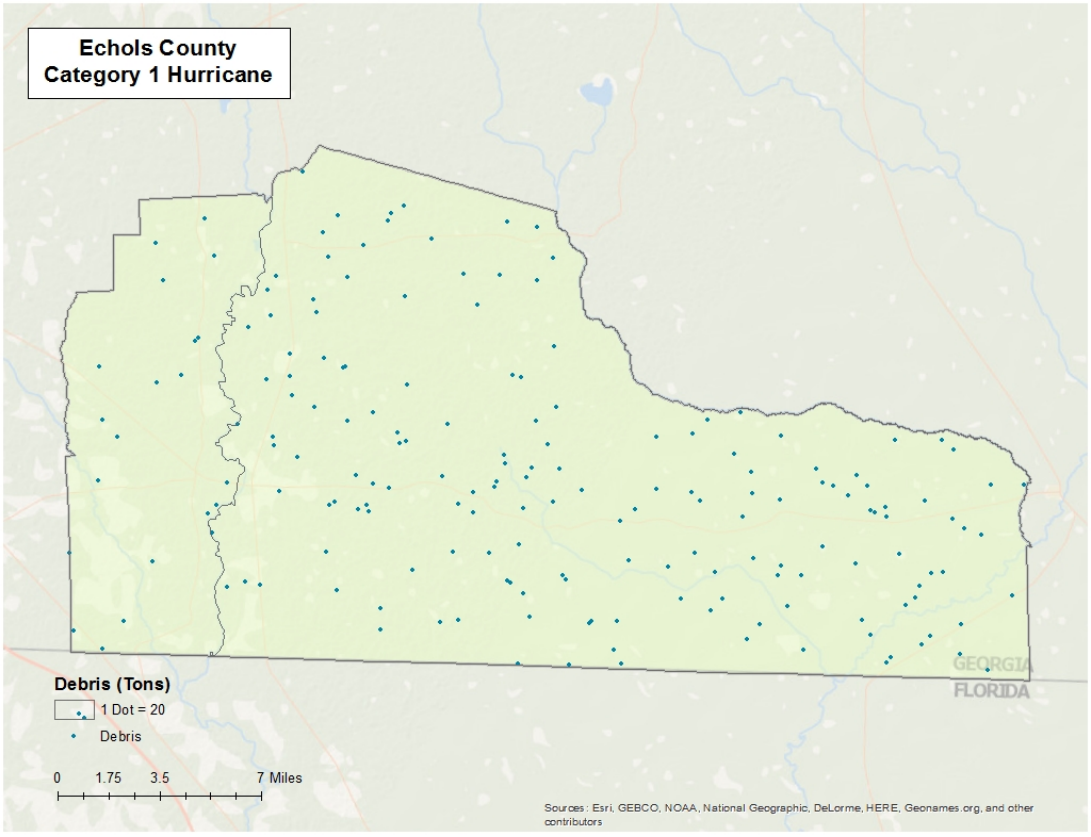

Figure 6: Wind-Related Debris Weight (Tons)

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 Echols 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 December 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.

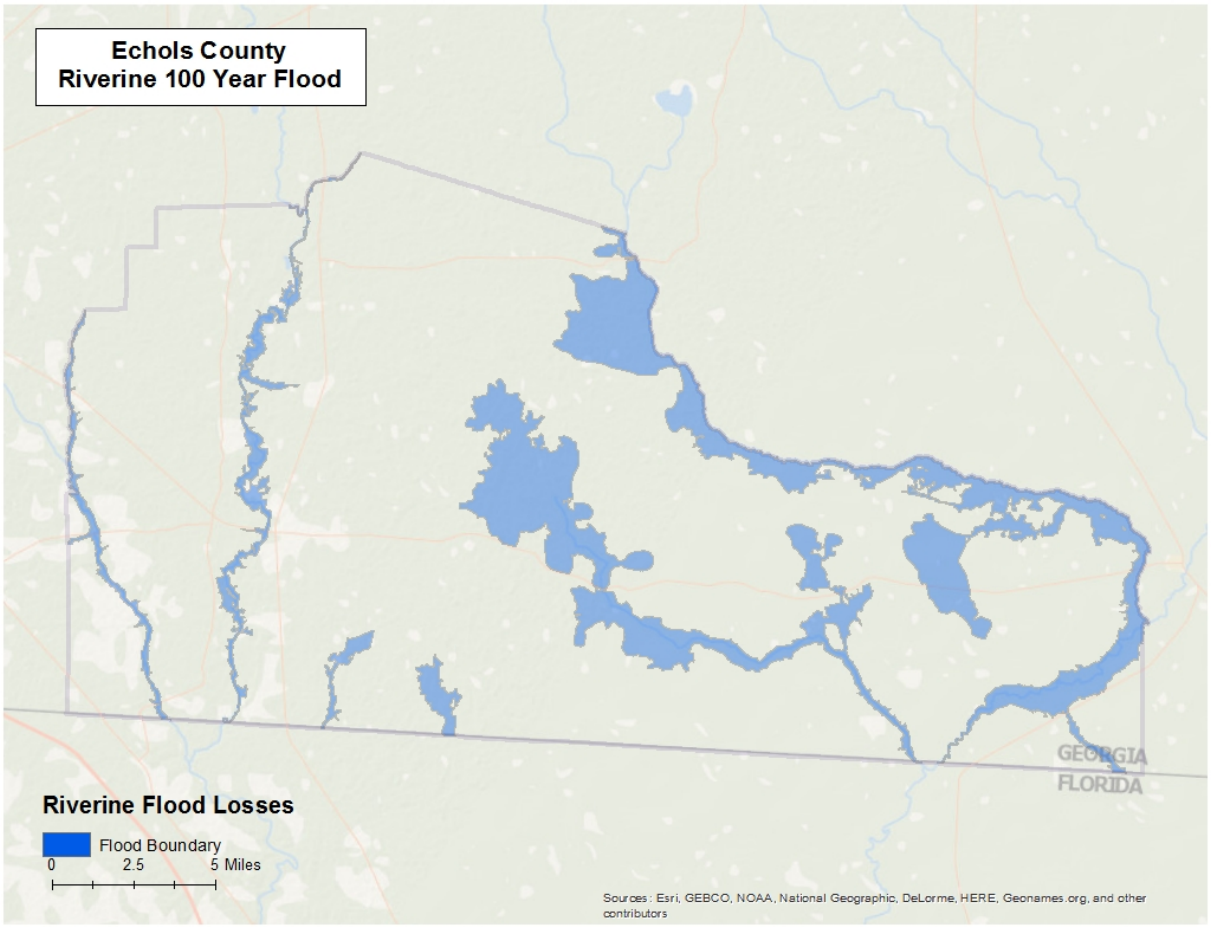

Figure 7: Riverine 1% Flood Inundation

Riverine 1% Flood Building Damages

Buildings in Echols 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 Echols 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: Echols 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
Unincorporated					
Residential	1,318	24	$ 116,994,651	$ 607,706	0.52%
County Total					
Total	1,318	24	$ 116,994,651	$ 607,706	

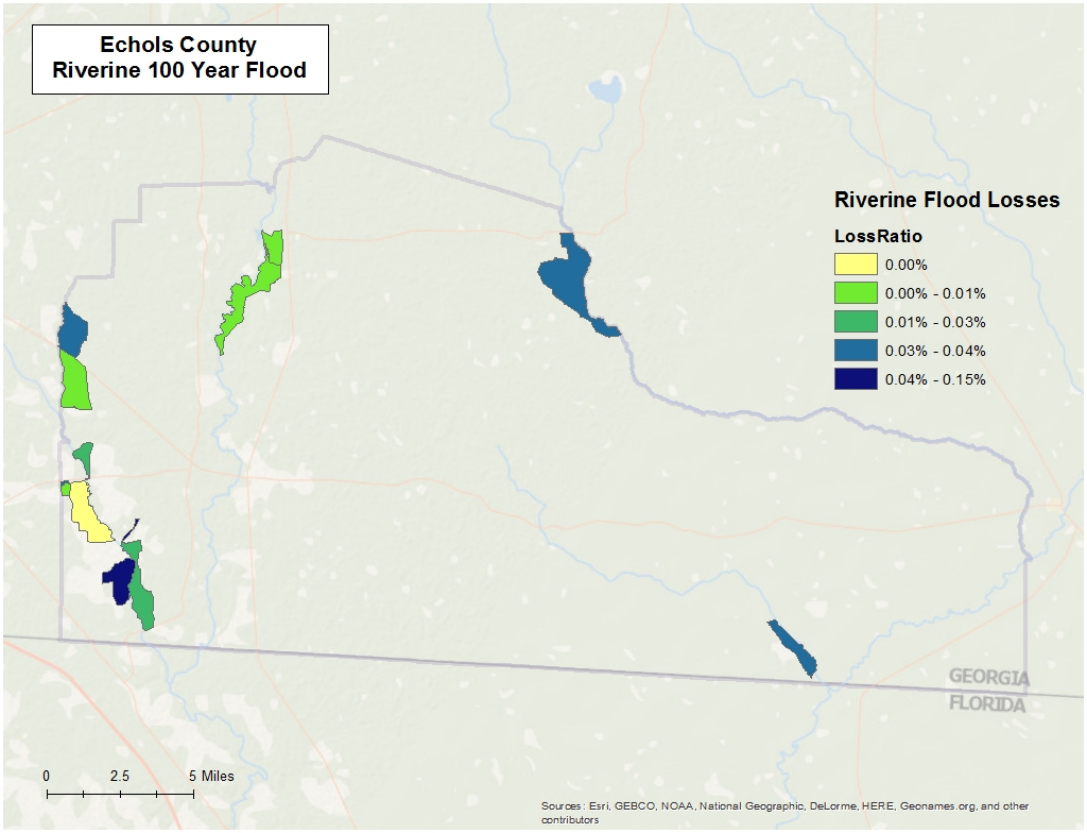

Figure 8: Potential UDF Loss Ratios from the 1% Riverine Flood

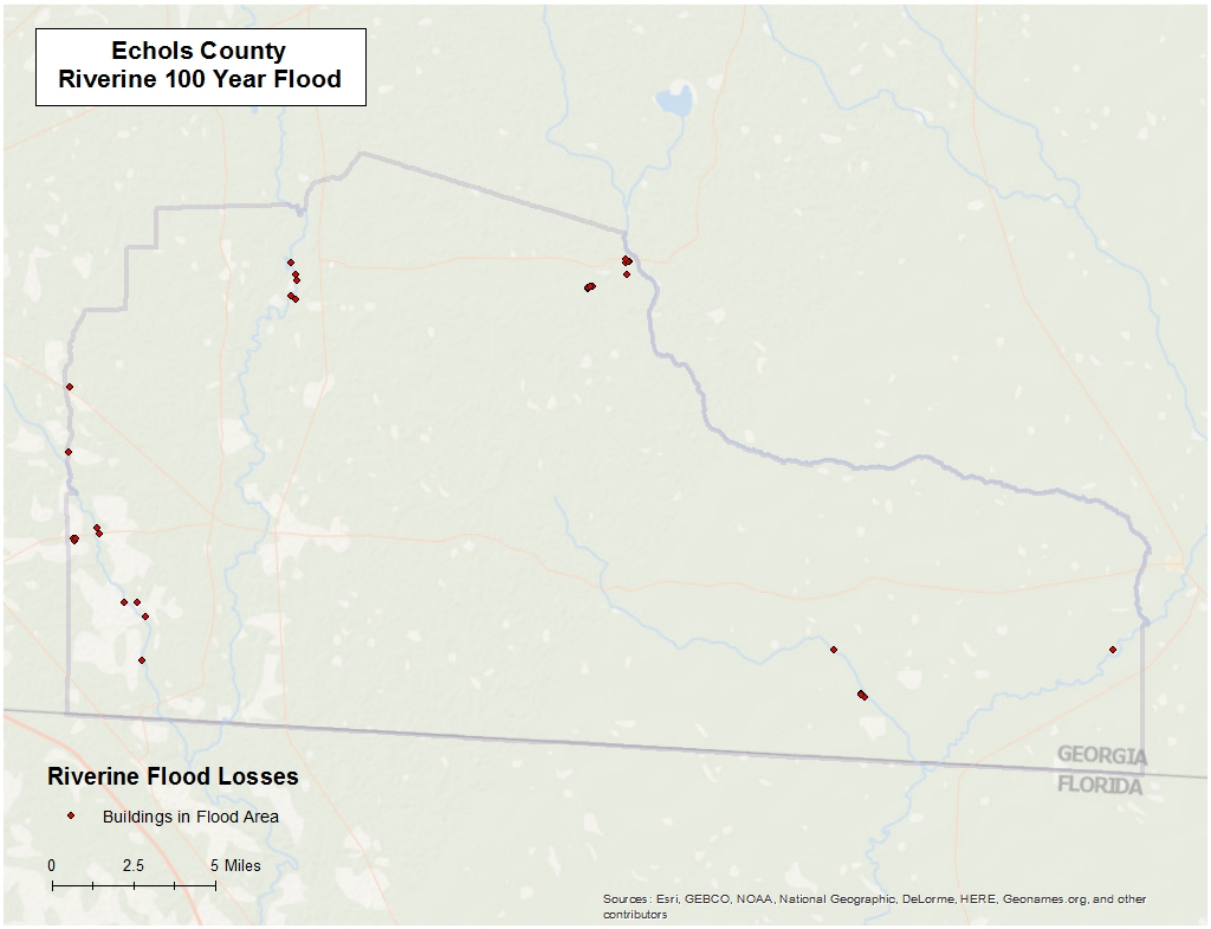

Figure 9: Damaged Buildings in 1% Riverine Flood

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 Echols 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	4	0	0	0
Hospitals	1	0	0	0
Police Stations	1	0	0	0
Schools	3	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 72 households might be displaced due to the flood. Displacement includes households evacuated within or very near to the inundated area. Displaced households represent 216 individuals, of which 56 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).

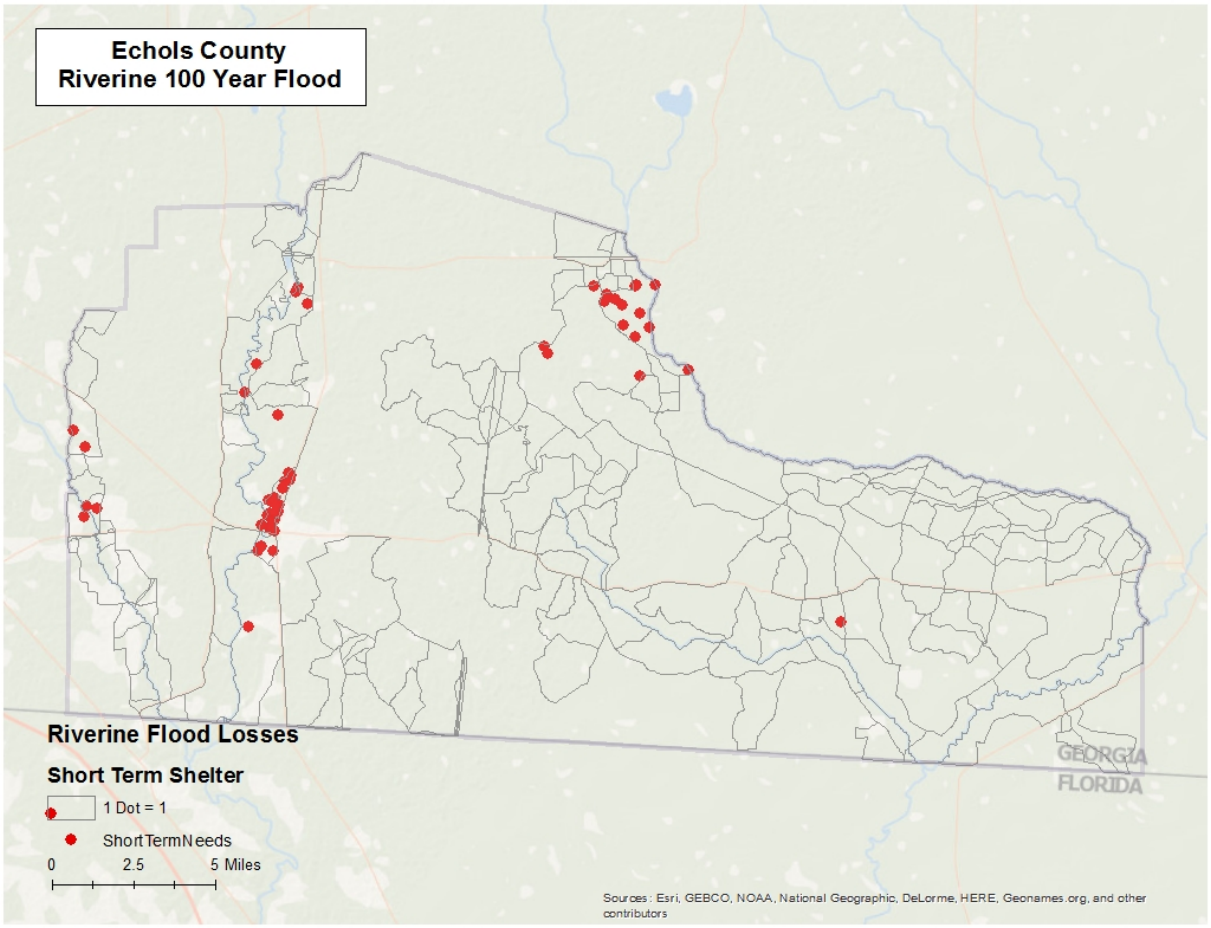

Figure 10: Estimated Flood Shelter Requirements in 1% Riverine Flood

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 1,272 tons of debris might be generated: 1) Finishes – 349 tons; 2) Structural - 378 tons; and 3) Foundations - 544 tons. The results are mapped in Figure 11.

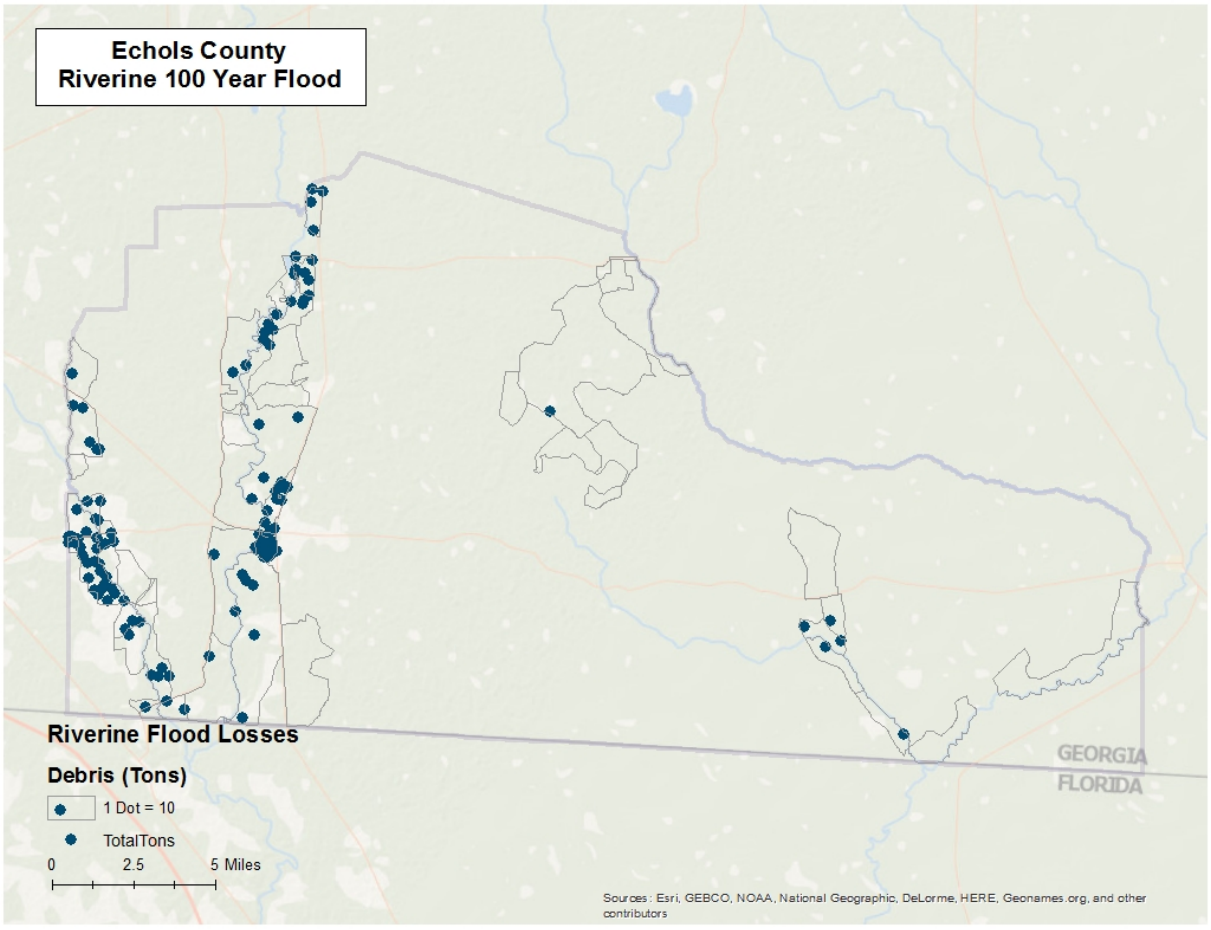

Figure 11: Flood Debris Weight (Tons) in 1% Riverine Flood

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 Statenville. 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.

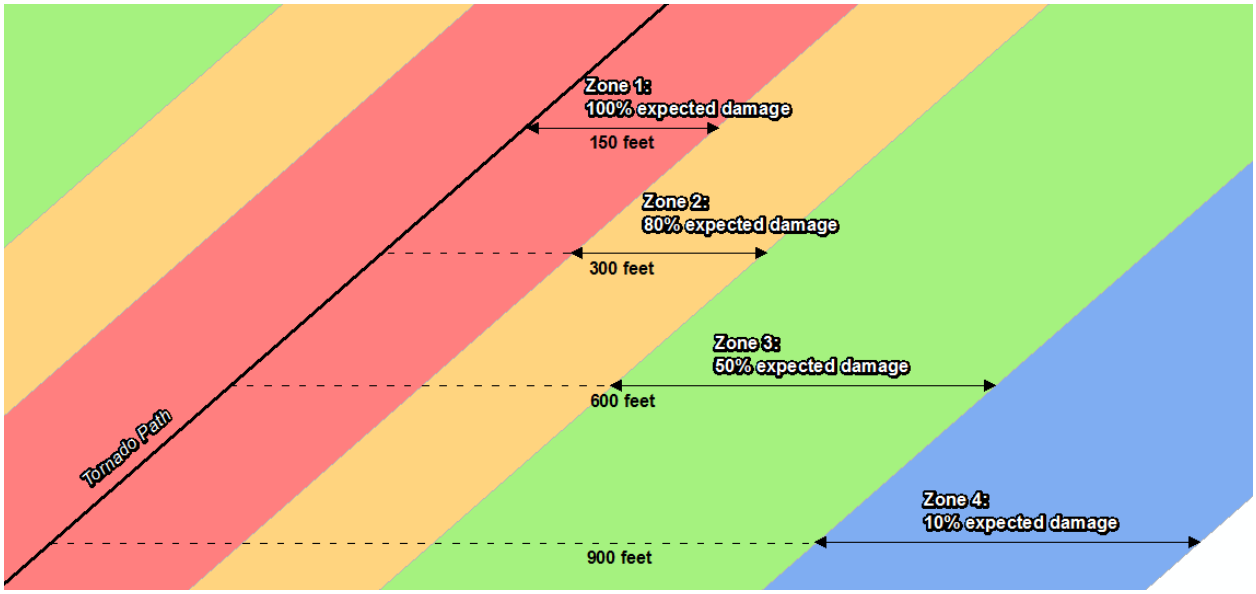

Figure 12: EF Scale Tornado Zones

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%

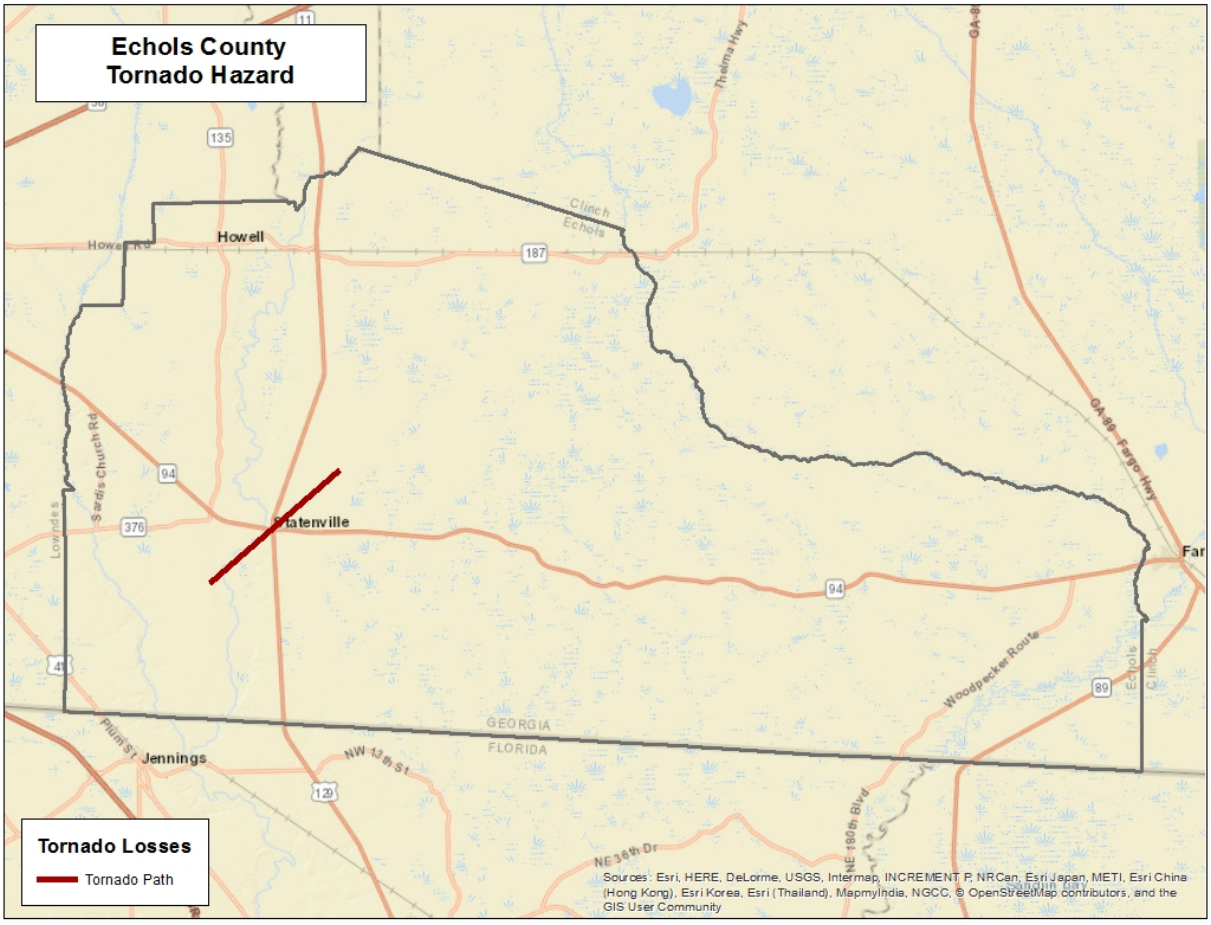

Figure 13: Hypothetical EF3 Tornado Path

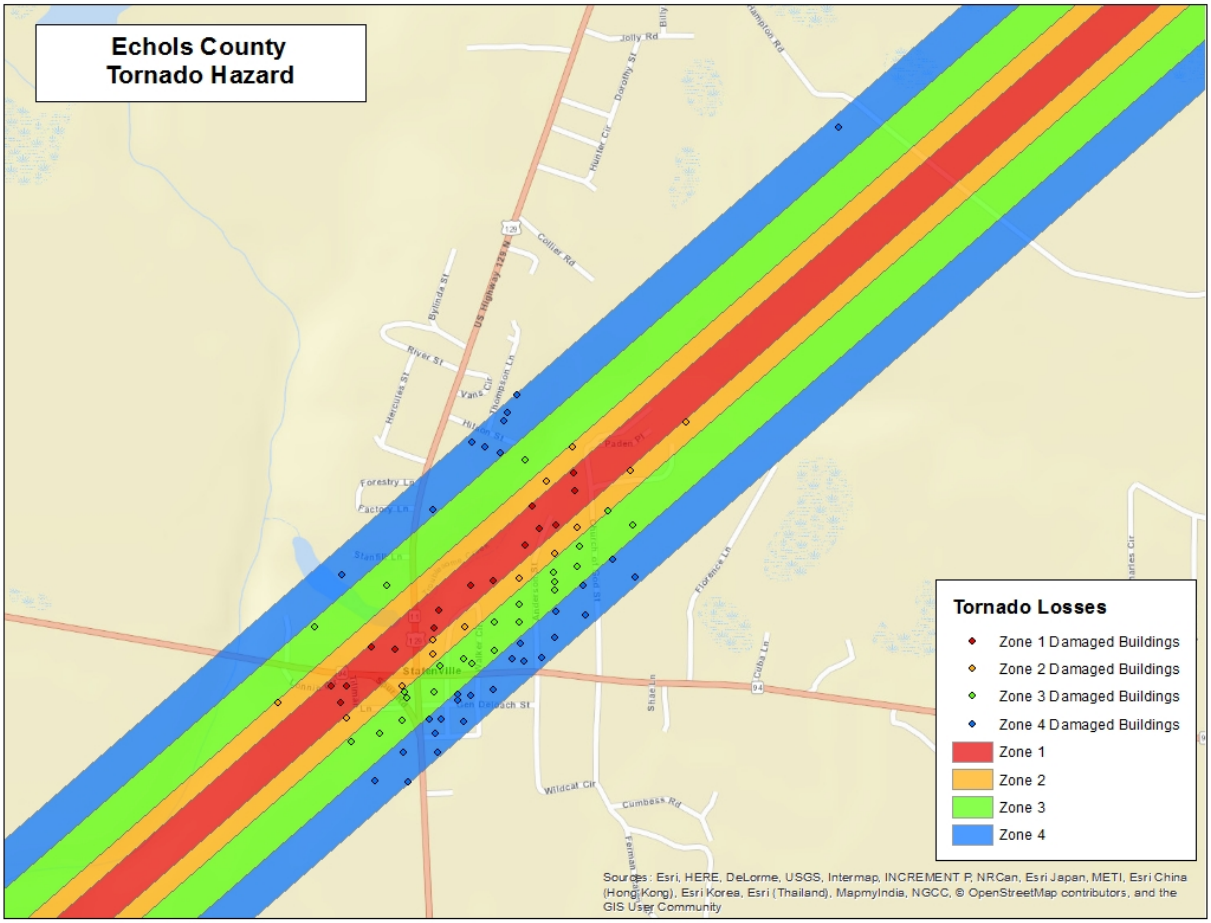

Figure 14: Modeled EF3 Tornado Damage Buffers

EF3 Tornado Building Damages

The analysis estimated that approximately 101 buildings could be damaged, with estimated building losses of approximately $2.8 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 Echols 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	11	$	867,625
Governmental	2	$	38,945
Residential	88	$	1,898,455
Total	**101**	**$**	**2,805,025**

EF3 Tornado Essential Facility Damage

There were 5 essential facilities located in the tornado path according to the modeling, these 5 facilities would suffer moderate to major damage should such a tornado strike occur.

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

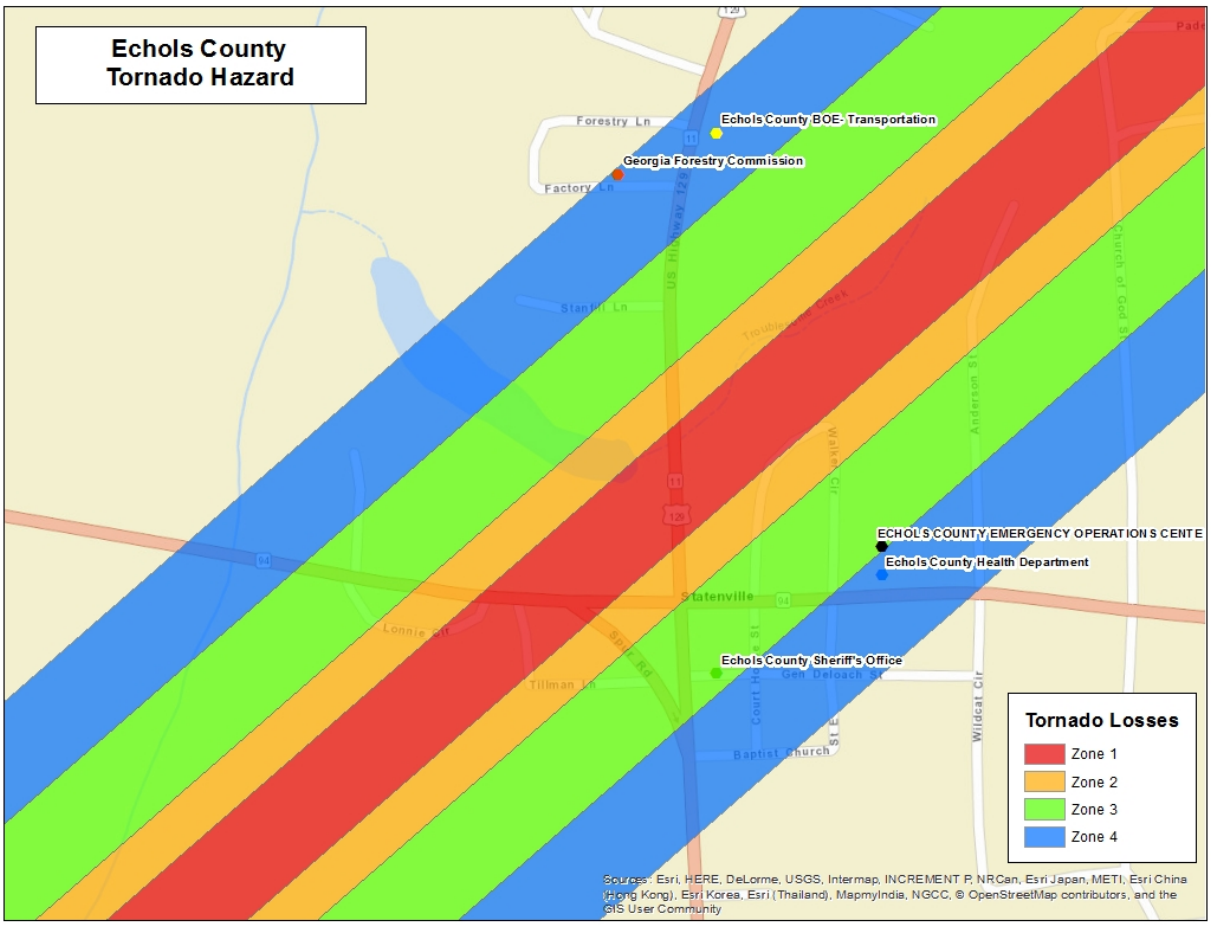

Figure 15: Modeled Essential Facility Damage in Echols County

Exceptions Report

Hazus Version 2.2 SP1 was used to perform the loss estimates for Echols 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 Echols County.

Statewide facility data were supplied by GEMA through the GMIS in December 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 Echols County.

Table 15: Essential Facility Updates

Occupancy Classification	Default Replacement Cost	Default Count	Updated Replacement Cost	Updated Count
Care	$ 610,000	1	$ 610,000	1
EOC	$ 880,000	1	$ 880,000	1
Fire	$ 1,164,000	4	$ 1,164,000	4
Police	$ 250,000	1	$ 250,000	1
School	$ 24,310,000	2	$ 48,310,000	3

County Inventory Changes

The GBS records for Echols County were replaced with data derived from parcel and property assessment data obtained from Echols County. The county provided property assessment data was current as of December 2018 and the parcel data current as of December 2018.

General Building Stock Updates

The parcel boundaries and assessor records were obtained from Echols 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 Echols County was 99.7%.

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 Echols County records.

Table 16: Building Inventory Default Adjustment Rates

Type of Adjustment	Building Count	Percentage
Area Unknown	164	9%
Construction Unknown	159	9%
Condition Unknown	142	8%
Foundation Unknown	156	9%
Year Built Unknown	75	4%

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 Echols 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	1,766	$203,254,784
Total buildings inside the 1% Annual Chance Riverine Flood Area	49	$4,040,065

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