Turner County, Georgia

and the Cities of Ashburn, Rebecca, and Sycamore

Hazard Mitigation Plan

2023-2028

Adopted _____, 2023

This Plan was produced for the Turner County Board of Commissioners
by the Southern Georgia Regional Commission
through funding provided by the Federal Emergency Management Agency
and the Georgia Emergency Management Agency

SGRC SOUTHERN GEORGIA REGIONAL COMMISSION

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Chapter 1: Introduction to the Planning Process

Summary of changes:

Table 1.1 provides a brief description of each section in this chapter and a summary of changes made.

CHAPTER 1 Section	Updates to Section
I. Purpose, Need, Authority, and Statement of Problem	• Language updated to reflect that this was an update to the existing plan
II. Local Methodology, Plan Update Process, and Participants	• Consistent with the original plan
III. Plan Review, Analysis, and Revision	• Planning Committee reviewed each section • Updates made using national, state, and local data
IV. Organization of Plan	• Consistent with the original plan
V. Local Hazard, Risk, and Vulnerability (HRV) Summary, Local Mitigation Goals and Objectives	• Updates made using national, state, and local data
VI. Multi-Jurisdictional Special Considerations	• No significant changes from the original plan
VII. Adoption, Implementation, Monitoring, and Evaluation	• Evaluation method revised and updated.
VIII. Community Data	• Updates made using the most recently available national, state, and local data

Table 1.1: Overview of updates to Chapter 1: Introduction to the Planning Process

Section I. Purpose and Need, Authority, and Statement of Problem

This document is the official plan update to the previous Turner County Pre-Disaster Mitigation Plan Update, as approved by the Georgia Emergency Management Agency (GEMA) and the Federal Emergency Management Agency (FEMA), which took effect on November 4, 2018, and expires on November 4, 2023.

The purpose of this document is to provide an overview of the hazards that may impact Turner County and the Cities of Ashburn, Rebecca, and Sycamore and to outline the community's plans to mitigate the potential loss of life and damages to property and the economy that could occur with these events. Hazard Mitigation is a means to address and proactively reduce the potential damage caused by man-made disasters.

This Plan is a direct result of research and a planning and public involvement process undertaken by the local government officials and citizens of Turner County and the Cities of Ashburn, Rebecca, and Sycamore after they formed the Turner County Hazard Mitigation Plan Update Committee (hereafter known as the HMPUC). This Plan is the result of their commitment to

reducing the risks of natural hazards and the effects of the natural hazards on their communities. The Cities of Ashburn, Rebecca, and Sycamore are the only incorporated cities in Turner County.

The Turner County Commission gave authority for the development of this Plan because they executed the Grantee-Subgrantee Agreement for the Turner County Hazard Mitigation Grant Program (HMGP) Planning Project; and by the Cities of Ashburn, Rebecca, and Sycamore, located within Turner County, through their participation in the planning project.

To initiate an outreach program to neighboring communities, governments, local and regional agencies, and agencies authorized to regulate development, business, and the public, two Public Hearing Notices were published in the legal organ of the local newspaper. In addition, e-mail lists of stakeholders were kept updated, and they were informed of meetings through e-mails, letters, and/or telephone calls. Surrounding county EMA Directors were notified of the plan update and invited to participate.

Planning Division staff from the Southern Georgia Regional Commission, representing eighteen counties in the region (including Turner County), attended the Turner County meetings. They participated in all aspects of the planning process. They provided a regional perspective forming the multi-jurisdictional Turner County and Cities of Ashburn, Rebecca, and Sycamore Hazard Mitigation Plan.

Through the above efforts, the multi-jurisdictional Turner County and Cities of Ashburn, Rebecca, and Sycamore Hazard Mitigation Plan were updated, including a comprehensive range of Mitigation Goals, Objectives, and Action Steps (see Chapter 4,) which will assist the local governments in emphasizing a more direct approach to Hazard Mitigation. The long-term goal is to reduce potential natural disaster losses to life, property, and the economy through Hazard Mitigation Efforts.

Section II. Local Methodology, Plan Update Process, and Participants

A. Overview

This Hazard Mitigation Plan Update encompasses the jurisdictions of Turner County and the Cities of Ashburn, Rebecca, and Sycamore, located in Southern Georgia. Each of these jurisdictions also participated in the previous Hazard Mitigation Plan update. The Southern Georgia Regional Commission provided technical assistance. A local Hazard Mitigation Plan Update Committee (Turner County HMPUC) was formed. A year-long planning effort was undertaken, the final product of which was a Plan Update containing updated Mitigation Goals, Objectives, and Action Steps to reduce or eliminate the potential for loss of life and damage to property and the economy caused by natural disasters (see Chapter 4).

Potential members of the Turner County HMPUC were contacted by telephone or letter/e-mail concerning their participation on the Committee. Southern Georgia Regional Commission (SGRC) staff provided technical assistance to the Turner County HMPUC. The Turner County HMPUC was comprised of representatives from Turner County and the Cities of Ashburn, Rebecca, and Sycamore and included representatives from other groups and individuals, as shown below, who attended meetings and/or conducted research:

Jurisdiction	Title	Name	Email Address
City of Ashburn	Fire Chief	James Turner	jturner@cityofashburn.net
City of Ashburn	Fire Department/Firefighter	Charles Jordan	charlesjordan1002@gmail.com
City of Ashburn	Police Chief	Richard Purvis	rpurvis@cityofashburnpolice.com
City of Ashburn	Assistant Chief	Jerome Troutman	rtroutman@cityofashburn.net
City of Rebecca	City Clerk	Mary L. Wynn	cityofrebecca@windstream.net
City of Sycamore	Fire Chief	Bruce Burgess	sycamorecityhall@yahoo.com
Department of Public Health	Healthcare Liaison	Lauren Robinson	lauren.robinson@dph.ga.gov
Turner County	Commissioner	Brad Calhoun	bcalhoun@turnercountygeorgia.com
Turner County	EMA Director	Mark Robinson	turnerfirerescue@gmail.com
Turner County	EMA Director	Robby Royal	turnerems@windstrteam.net
Turner County	EMA/EMS Deputy Director	Kerri Calhoun	kcalhoun7379@yahoo.com
Turner County	Public Works Director	Dustin Beaty	dbeaty@turnercountygeorgia.com
Turner County	Turner EMS Director	Robby Royal	turnerems@windstream.net
Turner County	Fire Dept./Assistant Chief	Hank Pate	pate29264@yahoo.com
Turner County Housing Authority	Executive Director	Roger Jones	rogerjonesaha@gmail.com
Georgia Forestry	Chief Ranger III	Al Potts	apotts@gfc.state.ga.us
Georgia Forestry	AFMO	Brad Gregory	bgreagory@gfc.state.ga.us
Pruitt Health	Maintenance	Tony Yarborough	tyarbourough@pruitthealth.com

The Committee held the following meetings, the sign-in sheets of which are included in Appendix E:

- Kick-off public hearing – January 18, 2023
- First workshop – February 15, 2023
- Second workshop – March 15, 2023
- Third workshop – April 19, 2023
- Fourth workshop – October 11, 2023
- Final public hearing – October 31, 2023

Building upon the previous Plan, each chapter was reviewed chronologically with updated hazard, risk, and vulnerability data and the previous accomplishments of mitigation strategy efforts.

An open discussion was permitted at all public meetings for suggestions and/or comments regarding the plan update. Also, during the general question and answer periods, comments were noted by the Southern Georgia Regional Commission staff and incorporated into the plan as appropriate. Copies of the previous Plan were made available at each meeting, while relevant chapters and sections under discussion were photocopied and distributed to those in attendance for comments. Outside the formal meetings, parts of the plan were e-mailed to specific individuals who could not attend the meetings, and their comments were sought. Copies of the previous Plan and the draft Plan Update document were available on the Southern Georgia Regional Commission website, the local EMA office, and city and county government offices.

For the plan update, the Hazard Mitigation Plan Update Committee (HMPUC) used the prior Hazard Mitigation Plan as a basis, reviewing all chapters and sections and updating them as appropriate using national, state, and local data sources. The HMPUC reviewed the individual parts of the prior plan (with an emphasis on the hazards, goals, objectives, and action steps) and updated these elements through open discussion in which updates were noted by SGRC staff, who then used notes from the workshops to create the new Hazard Mitigation Plan document. The Wildfire section was updated using the Georgia Forestry Commission's "Community Wildfire Protection Plan" (see Appendix C). The CWPP was consulted to ensure consistency between the CWPP and HMP, and all action items from the CWPP that were still relevant were included as action steps in the HMP. Land use descriptions, zoning information, and community services were updated using the joint Comprehensive Plan for the County and Cities. Other documents used were the local Emergency Operations Plan, the previous Hazard Mitigation Plan, the State of Georgia Hazard Mitigation Plan, and information from the National Climatic Data Center (NCDC). The State Hazard Mitigation Plan was consulted to ensure the HMP would be consistent with this plan. Data from the NCDC was used to create the Hazard Frequency Table and associated information regarding each hazard, which can be Chapter 2. The County and Cities do not have a Flood Mitigation Assistance Plan or a Flood Insurance Study.

B. Public Comment and Participation

The publication of a Public Notice in the legal organ is considered the legal method of notifying the public and inviting them to meetings.

The public was invited to attend and comment during two public hearings. The "kick-off" public hearing was advertised in the local newspaper (meeting advertisements and sign-in sheets are provided in Appendix E). A second and final public hearing was held on October 31, 2023, and was advertised in the local newspaper (see Appendix E). Citizens, including staff and members of the HMPUC, were present (see Appendix E). There were no substantive comments other than those complimentary of the planning process. Therefore, there was no need to consider or add public comments.

In addition, an e-mail list of stakeholders was kept up to date, including all attendees who wrote their e-mail addresses on the sign-in sheet at each meeting and any other interested parties. Further reminders of meetings were provided as needed through telephone calls and in-person communication. Emails were sent out, and phone calls were made inviting the Turner County Housing Authority, the Turner County Department of Family and Children Services, Golden South Assisted Living in Sycamore, and Pruitt Health in Ashburn, to the workshops. Neighboring EMA Directors were also invited to attend the workshop.

A final workshop was held to invite the vulnerable population once again. Flyers explaining the Hazard Mitigation process were distributed to be available at the county and city offices, and also at the Health Department and the Department of Family and Children Services (DFACS). (See Appendix H). Flyers were printed in English and Spanish.

C. Mission and Vision

The HMPUC decided on the following Mission and Vision Statement in the original plan and re-confirmed them in this update to help guide them through the planning process.

Turner County and the Cities of Ashburn, Rebecca, and Sycamore
Hazard Mitigation Plan Update Committee
Mission Statement

This committee's mission is to make Turner County and the Cities of Ashburn, Rebecca, and Sycamore and their citizens, local governments, communities, residences, and businesses less vulnerable to the effects of natural hazards. This will be accomplished through the effective administration of Hazard Mitigation Programs, hazard risk assessments, wise floodplain management, and a coordinated approach to mitigation policy through state, regional, and local planning activities.

Turner County and the Cities of Ashburn, Rebecca, and Sycamore
Hazard Mitigation Plan Update Committee
Vision Statement

This committee's vision is to institutionalize a local Hazard Mitigation ethic through leadership, professionalism, and excellence, thus leading the way to a safe, sustainable way of life for Turner County and the Cities of Ashburn, Rebecca, and Sycamore.

Due to Turner County and the Cities of Ashburn, Rebecca, and Sycamore being such close-knit communities, the Turner County HMPUC chose not to break into subcommittees but to address issues as a whole group. Various members of this group had direct knowledge of local infrastructure and agencies, emergency planning, hazard planning, and the operations of major departments and emergency services. Through their efforts, this Plan was developed.

The HMPUC was responsible for identifying natural hazard events and completing a profile, vulnerability assessment, potential loss estimation (see Chapter 2, Appendix A, and Appendix D), and updating the Georgia Mitigation Information System (GMIS) Critical Facilities Inventory (see Appendix F). They were also responsible for reviewing and updating the Mitigation Goals, Objectives, and Action Steps (see Chapter 4), among other responsibilities.

Section III. Plan Review, Analysis, and Revision

As mentioned above, the prior Hazard Mitigation Plan was used as a basis for the plan update. The Hazard Mitigation Plan Update Committee (HMPUC) reviewed all chapters and sections of the prior plan and updated them as appropriate, using national, state, and local sources. Other documents consulted included:

- The Georgia Forestry Commission's "Community Wildfire Protection Plan" (see Appendix C)
- The current joint Comprehensive Plan for the County and Cities, which includes the five-year Community Work Program
- The Local Emergency Operations Plan
- The State of Georgia Hazard Mitigation Plan
- The local Service Delivery Strategy
- Data from the National Climatic Data Center (NCDC).

After organizing resources, an update of the risk assessment was performed. New forms, worksheets, and data (included in the Appendix) were also completed. Afterward, the Mitigation Goals, Objectives, and Action Steps were reviewed to determine if they would remain the same or be added to, modified, or removed.

All chapters of this Plan have been updated to reflect the new material. See the tables at the beginning of the chapters for further information regarding which items were changed and updated.

Section IV. Organization of the Plan

This Plan focuses on eight natural hazards the HMPUC chose that may affect and cause damage to Turner County and the Cities of Ashburn, Rebecca, and Sycamore. Chapters 2, 4, and Appendix A are subdivided into Sections I through VII, reflecting the seven natural hazards chosen. The natural hazards are as follows (in order of priority):

1. Hurricanes/Tropical Storms
2. Tornadoes
3. Floods
4. Lightning/Thunderstorms/Wind/Hail
5. Wildfires
6. Extreme Heat
7. Drought
8. Public Health Emergency

Other hazards, such as Avalanches, Coastal Erosion, Coastal Storms, Dam Failures, Earthquakes, Expansive Soils, Extreme Heat, Land Slide, SLOSH (Sea, Lake, and Overland Surges from Hurricanes), Tsunami, and Volcano, were examined and determined not to be of sufficient significance in the community to warrant their inclusion in the present Hazard Mitigation Planning effort, based on history and available data.

This Plan also contains a HAZUS report (see Appendix G), a comprehensive range of Mitigation Goals, Objectives, and Action Steps (Chapter 4), and information on implementation, monitoring, and plan update and maintenance (see Chapter 6), as well as other FEMA-required items and materials (included in various Chapters, Sections, and Appendices).

Throughout the effective period of this Plan, the County Commissioners and City Council Members will assign appropriate staff to implement the comprehensive range of Mitigation Goals, Objectives, Action Steps, and other pertinent items contained in this Plan.

The Turner County and Cities of Ashburn, Rebecca, and Sycamore Hazard Mitigation Plan exist in one bound volume appended with various papers and documents and a PDF document available on the SGRC website. The planning efforts of Turner County and the Cities of Ashburn, Rebecca, and Sycamore are intended to be ongoing, and the Plan is to be amended as appropriate.

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Copies of the Plan are on file and may be examined at the County and City government offices, the County Emergency Management Agency, the Southern Georgia Regional Commission office (as well as the SGRC website, www.sgrc.us), and the Georgia Emergency Management and Homeland Security Agency (GEMHSA).

Section V. Local Hazard, Risk, and Vulnerability (HRV) Summary, Local Mitigation Goals, and Objectives

The HMPUC determined that the hazards established in the previous plan were still the most significant threats to the community, and their order of priority remains unchanged. Public Health Emergency was chosen as a new hazard and added to this update. A Hazard, Risk, and Vulnerability (HRV) Assessment has been formulated through various information obtained during the planning process. Data has been obtained from online databases, published sources, and personal accounts regarding hazards, their history in the community, and when and where they were active. This summary is provided in Chapter 2.

The community's vulnerability to natural hazards is also summarized in the Hazard Frequency Table (see Appendix D). The Inventory of Assets and the number of people exposed to each hazard are evaluated in GEMA Worksheet 3A (see Appendix A). Critical Facilities and Critical Infrastructure are also examined regarding the present value and potential losses from natural hazards (see Appendix F).

A description that identifies and analyses a comprehensive range of Mitigation Goals, Objectives, and Action Steps to reduce the effects of each hazard (based on risk assessment findings, with identifiable wide ranges for each jurisdiction) is included in Chapter 4, Sections I-VII. Chapter 6, Section I describes the prioritization of these Mitigation Goals, Objectives, and Action Steps using cost/benefit analysis, STAPLEE (Social, Technical, Administrative, Political, Legal, Economic, and Environmental), and other criteria. Also, in Chapter 6, there are sections on Implementing the Action Plan (see Section I), Evaluation, Monitoring, updating (see Section II), and Plan Update and Maintenance (see Section III).

Section VI. Multi-Jurisdictional Special Considerations

Turner County has a total area of 290 square miles with a population density of 31.6 people per square mile (US Census data, 2021). As such, specific services, including emergency services, may have large distances to cover when responding to an event, which may negatively influence emergency response times and strain resources. Turner County contains three incorporated cities: Ashburn (the county seat), Rebecca, and Sycamore. The Service Delivery Strategy describes which entity will be responsible for which service to minimize disputes and avoid duplication of services.

Station One in Turner County, 625 East Washington Ave., has a manned 24/7 station. Volunteers staff the others located in the county. The Ashburn Fire Department maintains two fire stations. One is next to City Hall, and Station Two is at the corner of West Washington Ave and Bridges Road. Both locations are under the direction of the Ashburn Fire Department. The Ashburn Fire Department employs five career firefighters and approximately nineteen certified volunteers. The ISO Class is 3x for all the fire stations. The following are the fire stations in Turner County and the Cities of Ashburn, Rebecca, and Sycamore.

STATION	NAME	LATTITUDE	LONGITUDE	ADDRESS
1	Headquarters	31.709949	-83.643025	625 East Washington Ave. Ashburn
2	Rebecca	31.806434	-83.48813	61 West Depot Street Rebecca
3	Sycamore	31.670499	-83.636423	10 South Railroad Ave Sycamore
3W	Sycamore	31.669079	-83.630118	11 Irwinville Ave. Sycamore
4	Inaha	31.625671	-83.580051	1657 Inaha Rd Sycamore
5	Bethal	31.658668	-83.551224	691 Purcell Rd Sycamore
6	Coverdale	31.633362	-83.691821	5036 Coverdale Hwy Sycamore
7	Amboy	31.792875	-83.588944	7719 GA Hwy 159 Ashburn
8	Dakota	31.776163	-83.693246	5652 Hwy 41 North Ashburn
9	Harmony	31.677343	-83.750994	2370 Whiddon Rd Ashburn
10	Pope	31.721537	-83.528539	3020 Hwy 107 Ashburn
11	Rocky Mount	31.751563	-83.770471	110 Rocky Mount Rd Ashburn

Section VII. Adoption, Implementation, Monitoring, and Evaluation

After all plan development workshops were concluded, the draft plan was submitted to all local governments for review. The draft plan was then submitted to GEMA and FEMA for their approval. After their approval and any recommended changes, a second and final public hearing was held on October 31, 2023, to provide a further opportunity for public comment and review. After this final public hearing, resolutions adopting the plan were passed by the local governments adopting Plan Update. Copies of the public hearing advertisements and resolutions are available in Appendix E.

The comprehensive range of Mitigation Goals, Objectives, and Action Steps (see Chapter 4), which contains items related to all local governments, will be implemented as soon as possible and/or as funds become available.

All sections of the Plan will be monitored and evaluated annually by the County Emergency Management Agency. Incremental accomplishments of Mitigation Goals, Objectives, and Action Steps will be reported to the public through appropriate means (TV, website, social media, local newspapers, City Council meetings, County Commission meetings, etc.).

The method that the County EMA will use to monitor the plan will be to conduct quarterly telephone interviews with the various local governments and area agencies to chart their plan progress. Also, a series of informal meetings will be held throughout the multiple aspects of the plan are discussed. In addition, annual evaluations of the plan will occur on or near the anniversary of the plan's adoption date. Annual evaluation will assess which of the goals, objectives, and action steps have been achieved; whether those goals, objectives, and action steps still address current and expected conditions; whether the nature or magnitude of risks has changed; whether existing resources are appropriate for implementing the plan; and whether agencies and other parties have participated as initially proposed.

During this annual evaluation, problems (if any) with completing the action steps will be discussed, methods of resolving those problems (if any) will be formulated, the action steps will be updated (if necessary), and new actions steps will be developed (if required) in response to new problems that have developed throughout the year. If any changes or updates are needed to the other plan sections, these will also be discussed and noted. Critical Facilities and infrastructure changes and updates will also be addressed and added to the online GEMA database as required. New hazards in the area (if any) will be discussed and planned for, and an assessment will be made as to whether the community needs to dictate additions to the plan's materials.

The primary criteria to measure plan success will be the number of goals, objectives, and action steps, or components thereof, that have been completed, resulting in savings of life, money, and property. For further details on plan execution, see Chapter 6.

The Plan will be updated by the EMA Director and chosen representatives of all local governments every five years, as FEMA requires. All sections of this Plan will be updated at that time. All jurisdictions and relevant stakeholders will review the Plan update requirements of this Hazard Mitigation Plan will be considered and incorporated into Comprehensive Plans, Capital Improvement Plans, Local Emergency Operations Plans, and all other such Plans, as appropriate. This updating process will be publicly advertised, and comments will be solicited and incorporated as necessary.

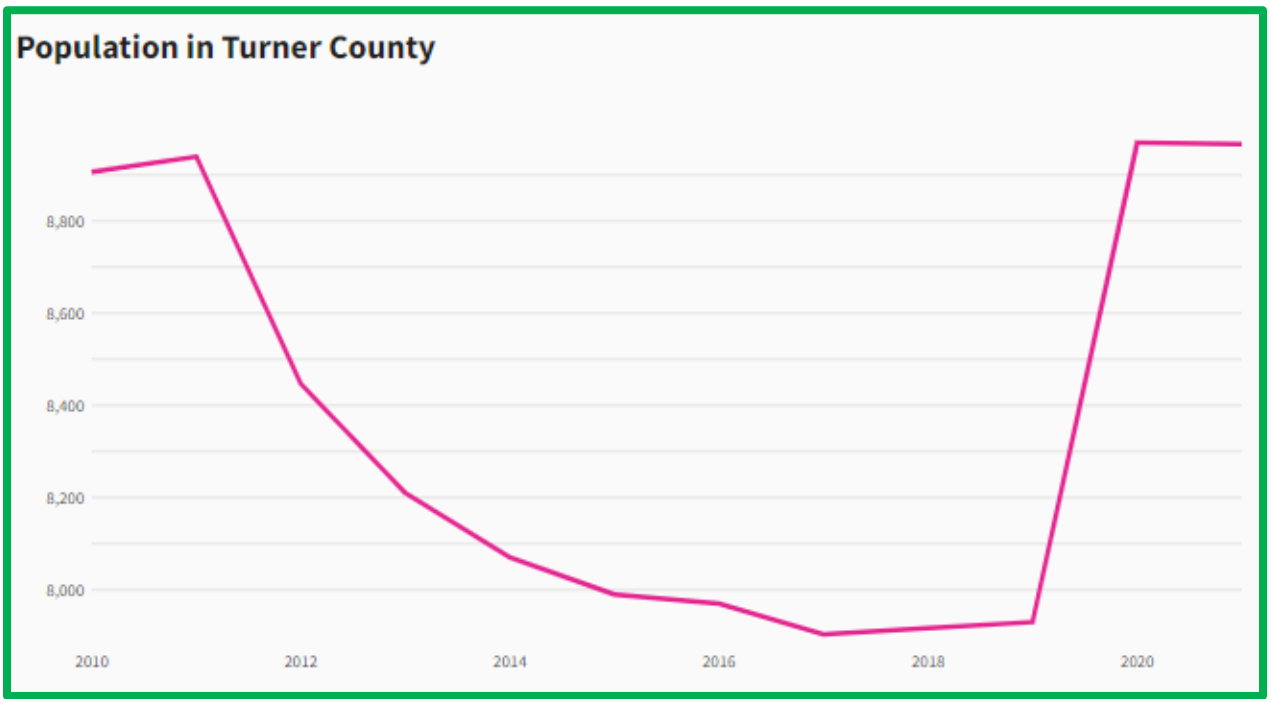
Section VIII. Community Data

(Sources for data: https://worldpopulationreview.com ;https://usafact.org, and https://census.gov)

Turner County

According to the U.S. Census Bureau, the population of Turner County in 2021 was 8,966, an increase of 0.6% from 8,909 in 2010.

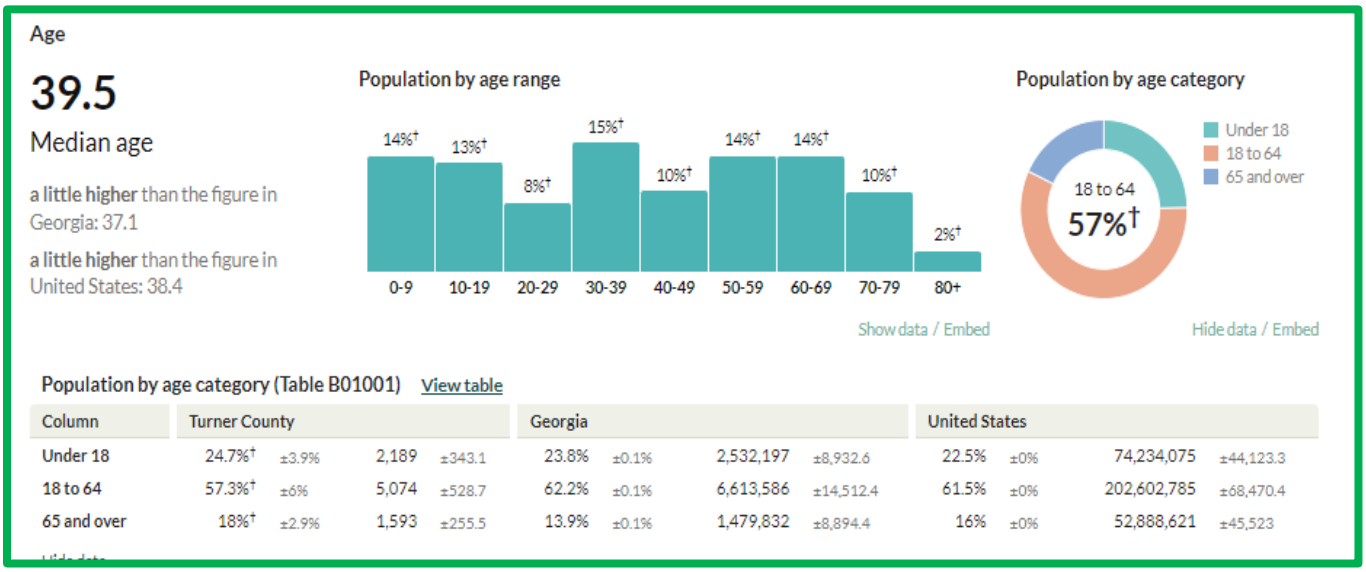
Turner County's population increased in 4 out of the 11 years between 2010 and 2021. Its most significant annual population increase was 13.1% between 2019 and 2020. The most significant decline was between 2011 and 2012, with the population dropping 5.5%. The county grew by an average of 0.2% annually between 2010 and 2021.



The 18 and underage population increased by 3.9% from 2016 to 2021. Age 18 to 64 increased by 6%, and the 65 and over population increased by 2.9%. The median age in Turner County is 39.5.

Age 0-4 increased from 6.4% in 2010 to 6.7% in 2021. The 65 and older population increased from 15.7% in 2010 to 18.8% in 2021.

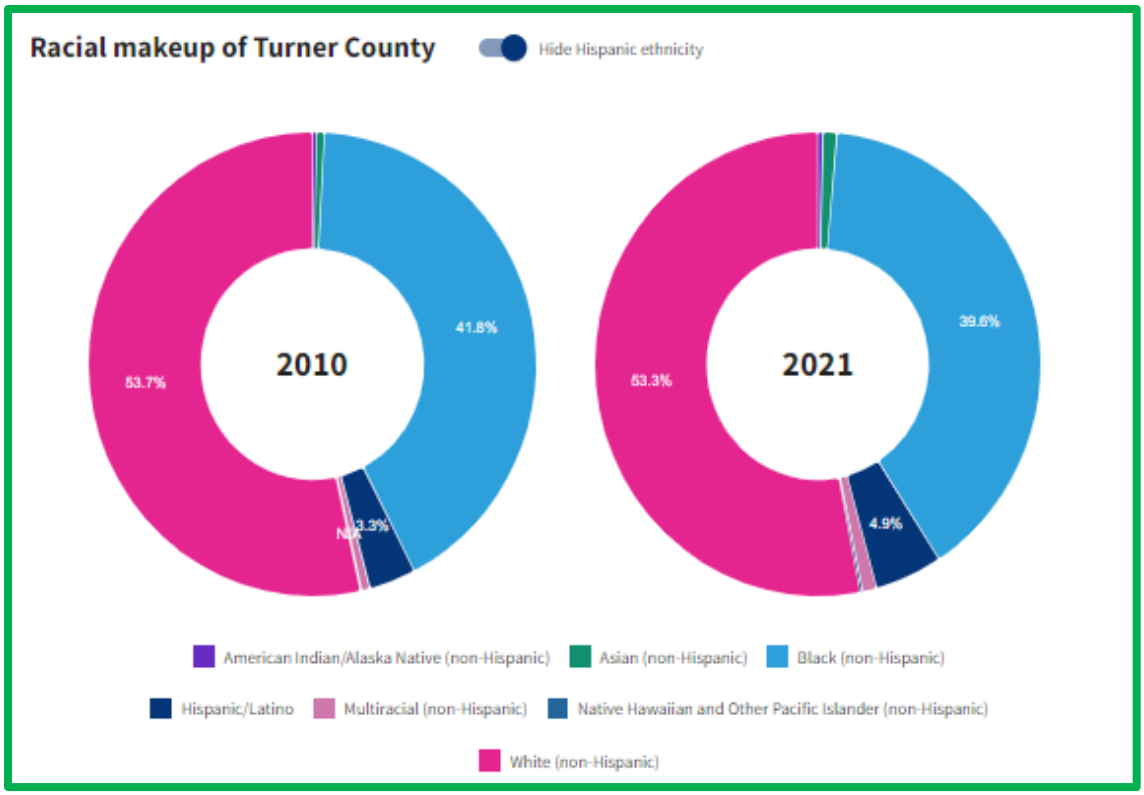
For males, the most growth increased by 141, from 294 in 2010 to 435 in 2021.

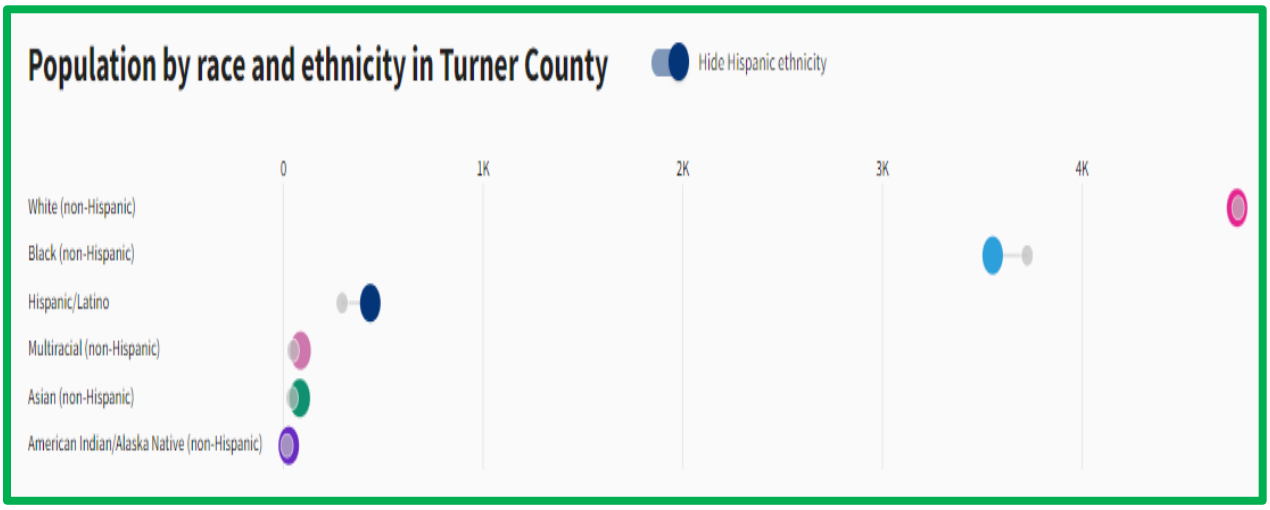


Population by age category (Table B01001) View table

Column	Turner County				Georgia				United States			
Under 18	24.7%†	±3.9%	2,189	±343.1	23.8%	±0.1%	2,532,197	±8,932.6	22.5%	±0%	74,234,075	±44,123.3
18 to 64	57.3%†	±6%	5,074	±528.7	62.2%	±0.1%	6,613,586	±14,512.4	61.5%	±0%	202,602,785	±68,470.4
65 and over	18%†	±2.9%	1,593	±255.5	13.9%	±0.1%	1,479,832	±8,894.4	16%	±0%	52,888,621	±45,523

In 2021, Turner County was more diverse than it was in 2010. In 2021, the white, non-Hispanic group made up 53.3% of the population compared to 53.7% in 2010. The Hispanic/Latino population grew the most between 2010 and 2021, with a 1.6 to 4.9% percentage point increase. The Black, non-Hispanic population dropped significantly from 2.2 percentage points to 39.%.

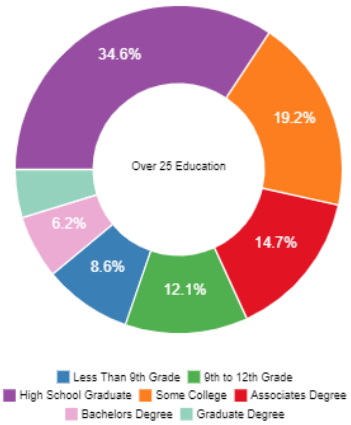




The Education Attainment for Turner County for the 9th Grade or less is 8.65%. 9th to 12th Grade attainment is 12.10%, 34.56% for High School Graduates, 19.9% for some college, 14.68% for associate degrees, 6.18% for bachelor's degrees, and 4.64% for graduate degrees.

CSV JSON

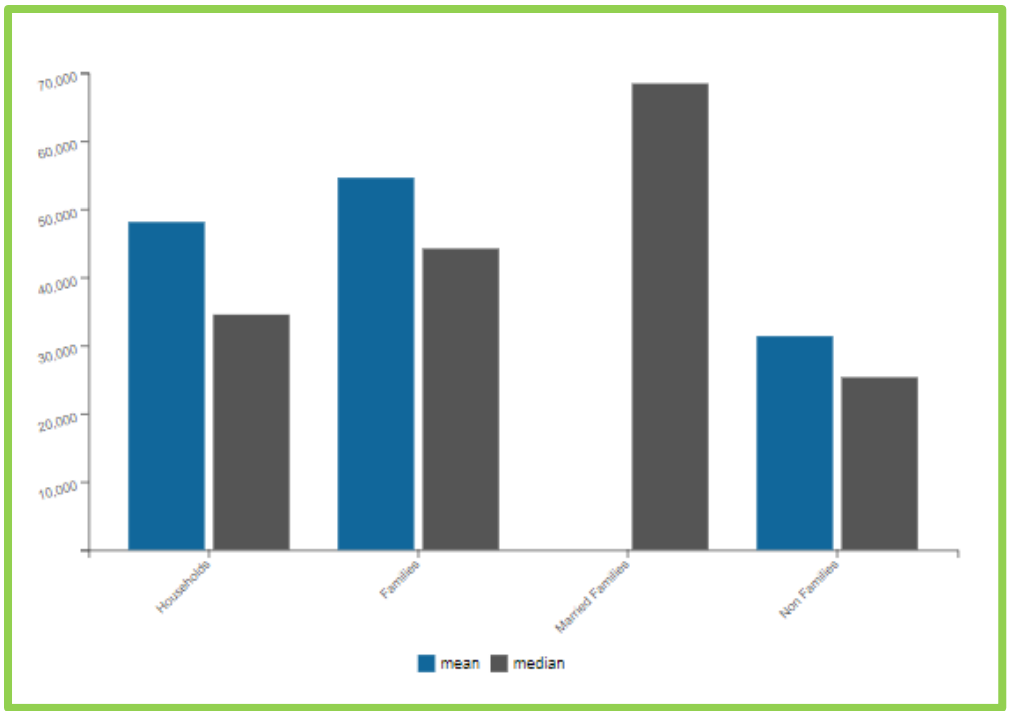
Education Attained	Count	Percentage
Less Than 9th Grade	483	8.65%
9th to 12th Grade	676	12.10%
High School Graduate	1,930	34.56%
Some College	1,072	19.19%
Associates Degree	820	14.68%
Bachelors Degree	345	6.18%
Graduate Degree	259	4.64%



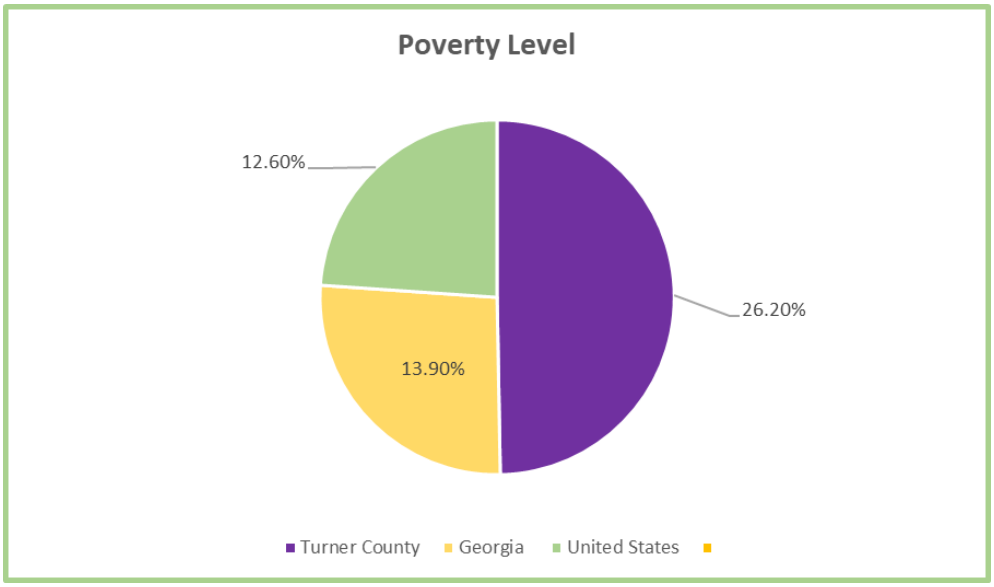
The median household income in Turner County is $34,514, with a poverty rate of 29.54%. The Family's Medium Income is $44,199, the Married Family's Median Income is $68,423, and the Median Non-Families Income is $25,319.

CSV JSON

Name	Median	Mean
Households	$34,514	$48,098
Families	$44,199	$54,585
Married Families	$68,423	-
Non Families	$25,319	$31,346

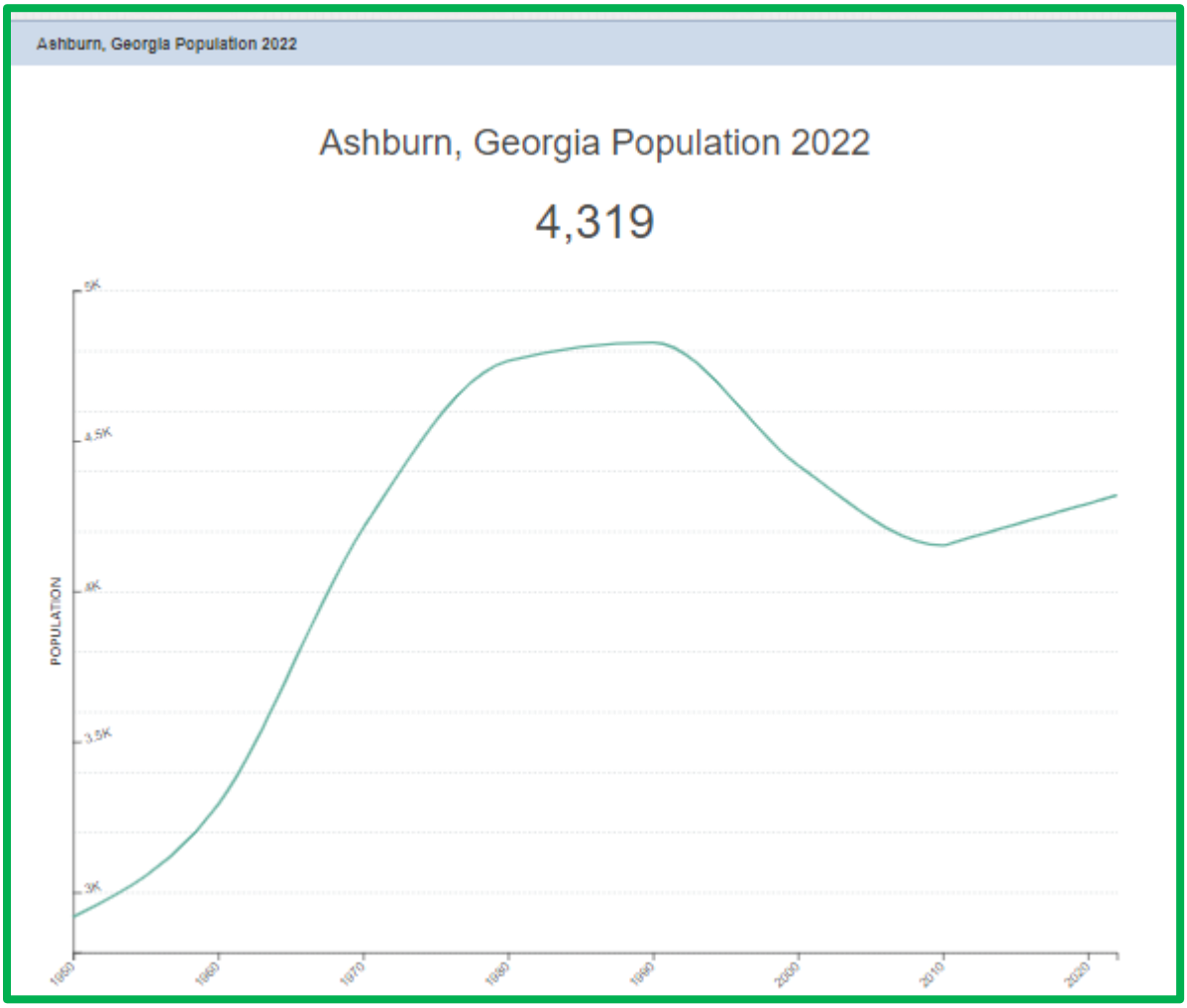


The current poverty rate in Turner County was estimated at 26.2% as of July 1, 2022, according to U.S. Census Bureau QuickFacts: Turner County, Georgia. An estimated 2,349 of 8966 people in Turner County live in poverty. The poverty rate was more than Georgia's poverty rate of 13.9% and higher than the United States poverty rate of 11.6%.

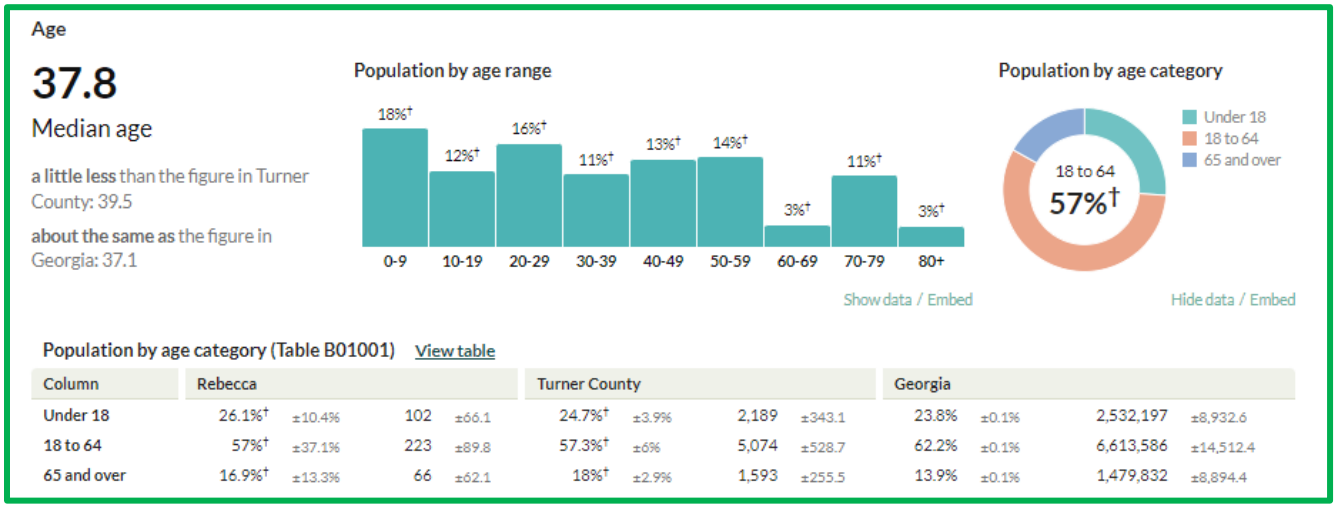


Ashburn

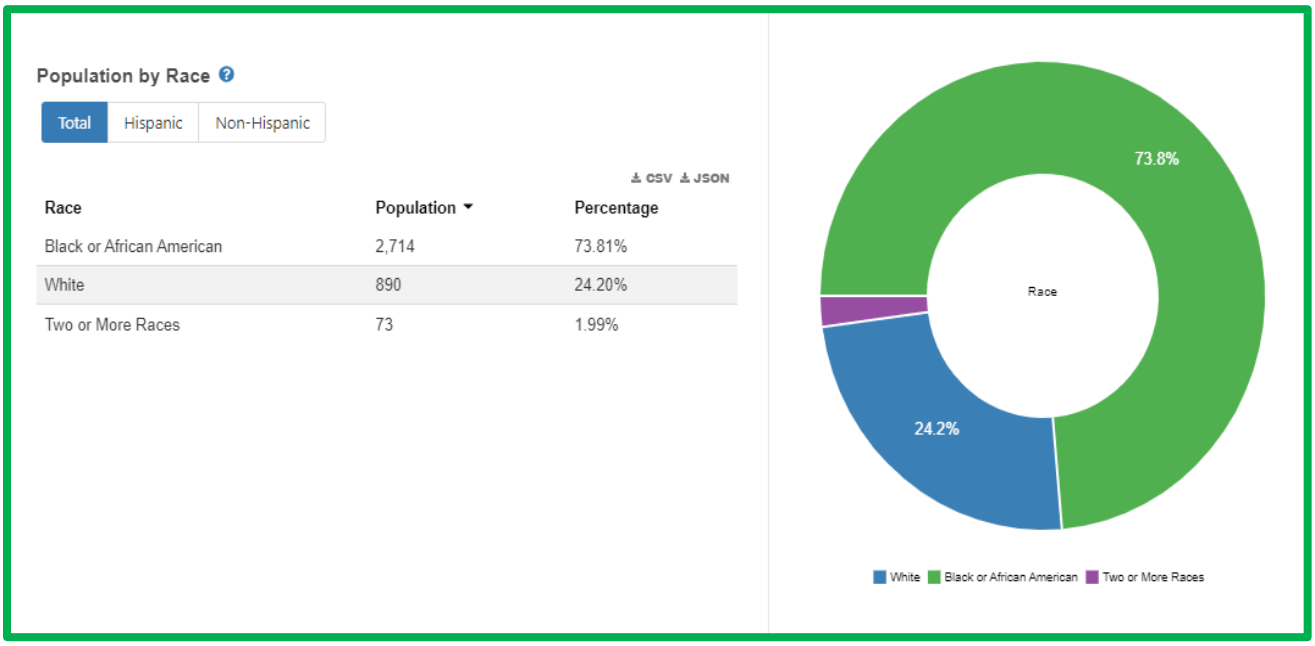
Ashburn is the county seat of Turner County. Its population in 2020 was 4,319. Ashburn is growing at a rate of 0.33% annually, and its population has increased by 0.65% since the last census, of which the population in 2020 was 4,291.



The Under 18 population increased from 2016 to 2021 by 10.4%. The median age in Rebecca is 37.8. Age 18 to 64 increased by 37.1%, and the 65 and over increased by 13.3%. The median age is 41.1.



The Black or African American population is 73.81%, White is 24.20%, and two or more races are 1.99%.

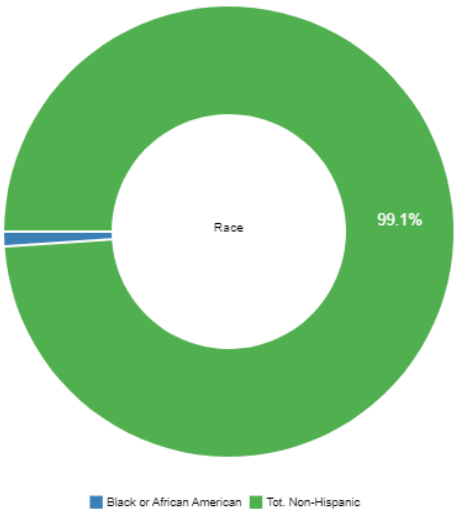


Population by Race

Total | Hispanic | Non-Hispanic

CSV JSON

Race	Population	Percentage
Black or African American	33	0.90%

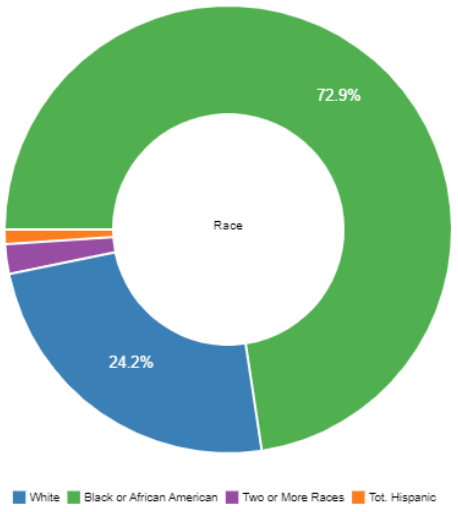


Population by Race

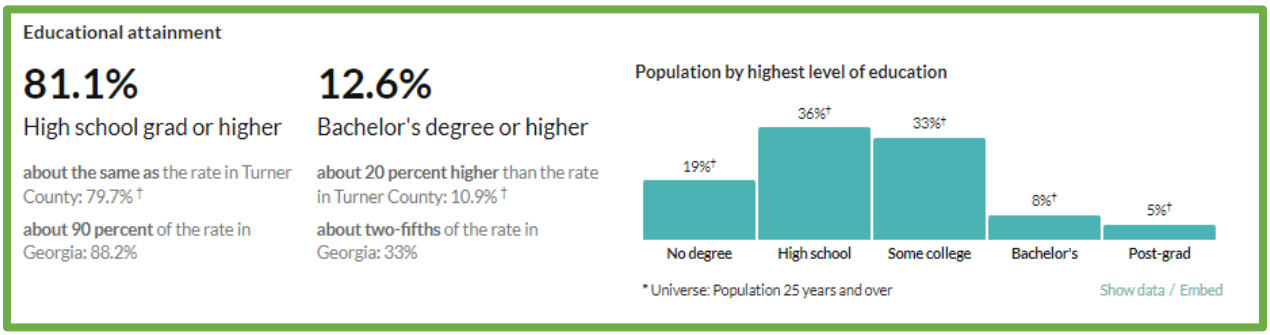
Total | Hispanic | Non-Hispanic

CSV JSON

Race	Population	Percentage
Black or African American	2,681	72.91%
White	890	24.20%
Two or More Races	73	1.99%



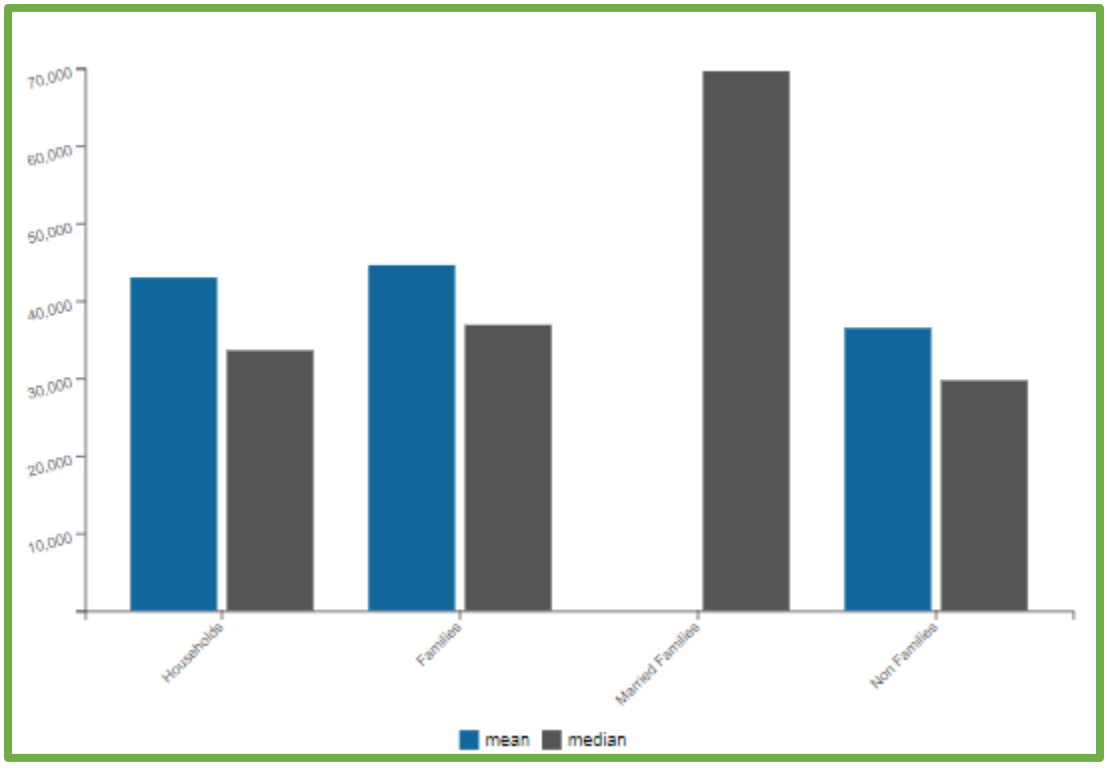
The Education Attainment for Ashburn for high school graduates is 36%, some college 33%, bachelor's degree 8%, and post-grad 5%.



The median household income in Ashburn is $33,594, with a poverty rate of 35.7%. The Median Families Income is $36,875, the Median Married Families Income is $69,598, and the Median Non-Families Income is $29.722.

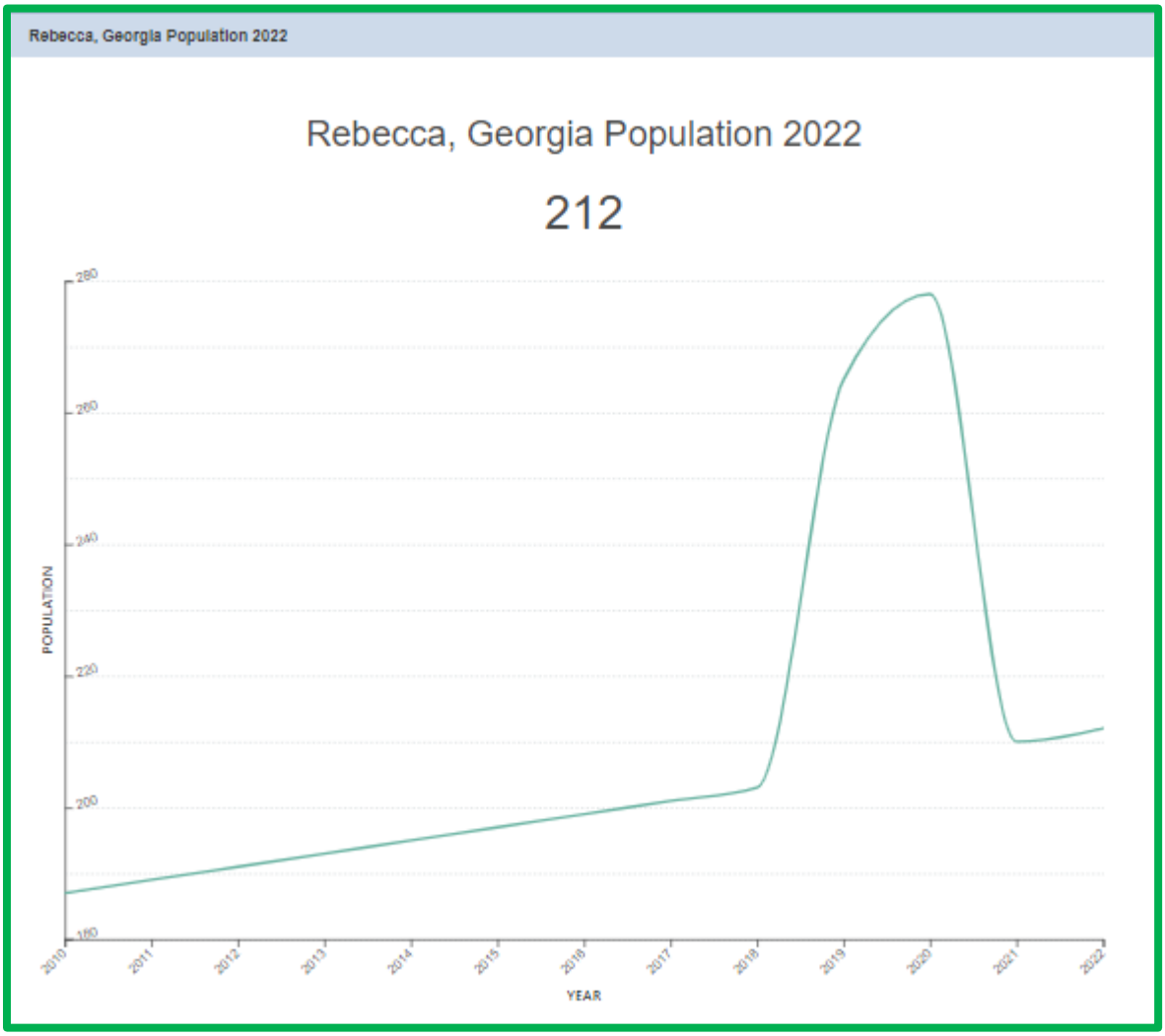
CSV JSON

Name	Median	Mean
Households	$33,594	$42,982
Families	$36,875	$44,576
Married Families	$69,598	-
Non Families	$29,722	$36,474



Rebecca

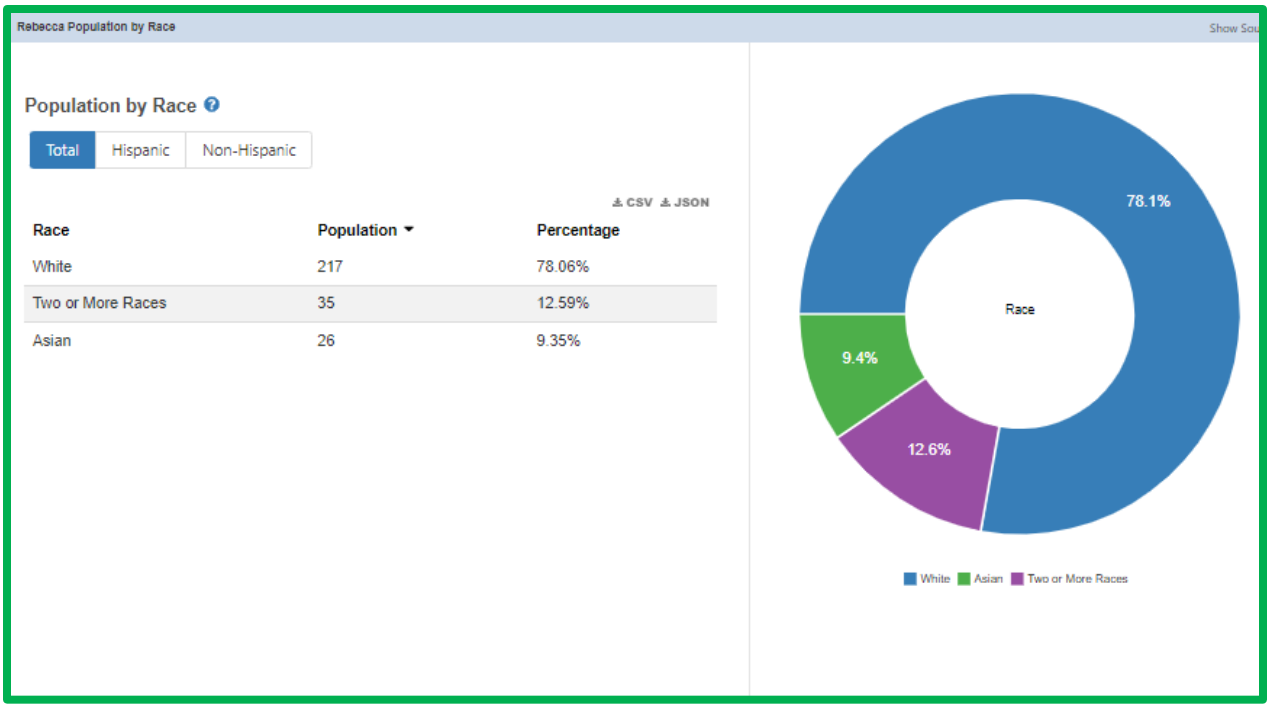
Rebecca had a population of 212 in 2020. It is growing at a rate of 0.95% annually, but its population has decreased by -23.74% since the most recent census in 2020, with a population of 278.

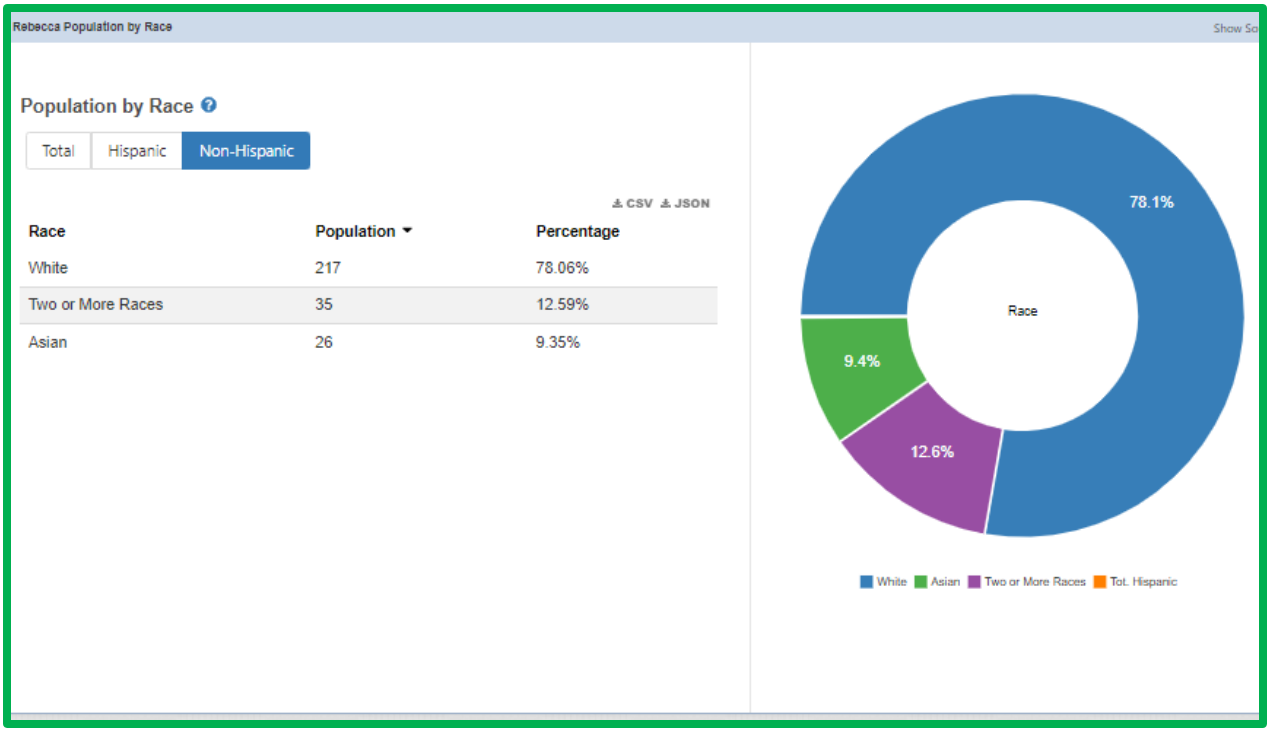


The racial composition of Rebecca is 78.06% White, 12.59% Two or more races, and 9.35% Asian.

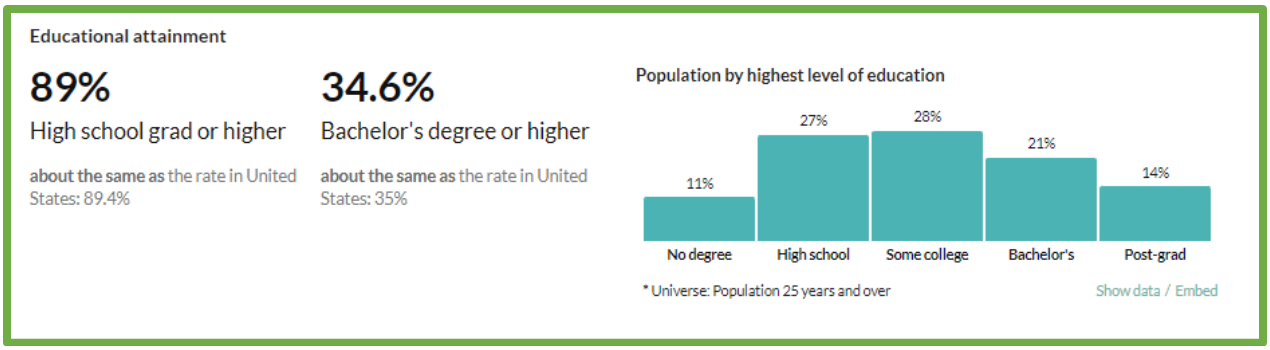
The 5 largest ethnic groups in Rebecca are White (non-Hispanic) at 78.1%, Two or more (Non-Hispanic) at 12.6%, and Asian (Non-Hispanic) at 9.35%.

In 2020, there were 6.2 times more White (Non-Hispanic) residents (217) living in Rebecca than any other race or ethnicity. There were 35, two or more (non-Hispanic) and 26 Asian (Non-Hispanic) residents.

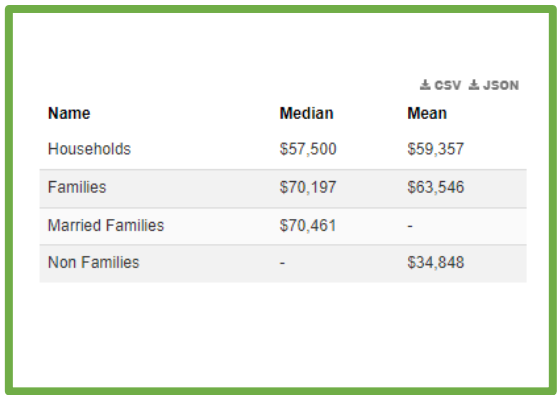

Rebecca Population by Race
Population by Race
Total
Hispanic
Non-Hispanic
CSV
JSON
Race
Population
Percentage
White
217
78.06%
Two or More Races
35
12.59%
Asian
26
9.35%
78.1%
Race
9.4%
12.6%
White
Asian
Two or More Races



The Education Attainment for Rebecca for a High School Diploma or its equivalent is 89%, some college 28%, bachelor's degree 21%, and post-grad 14%.

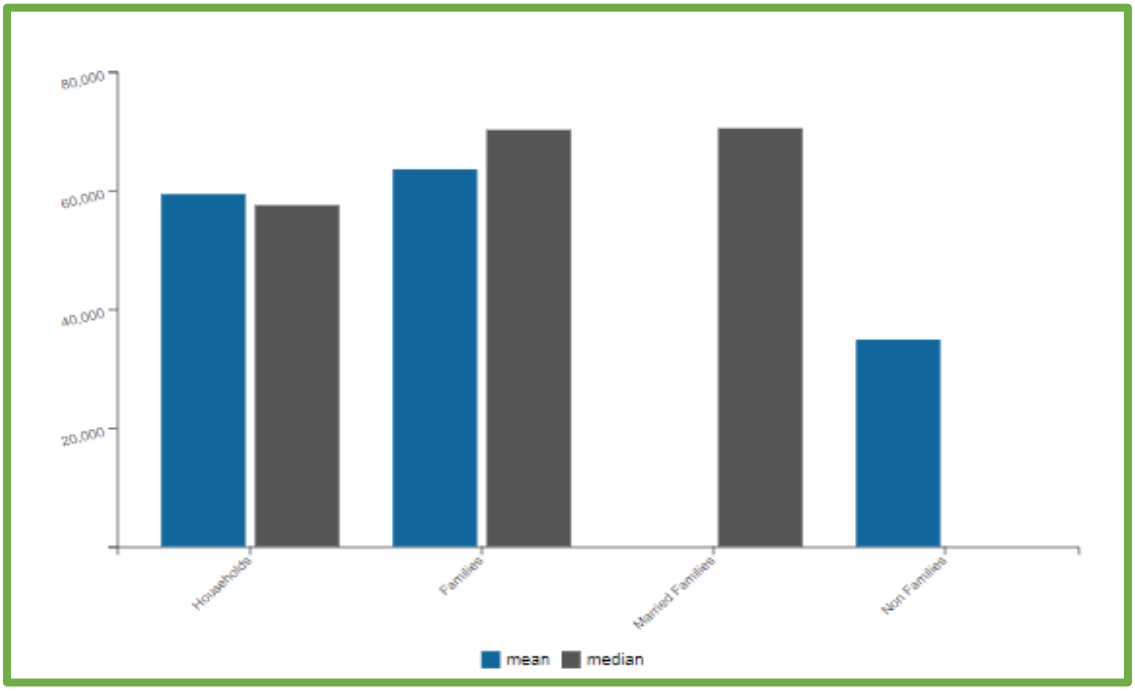


The median household income in Rebecca is $57,500, with a poverty rate of 32.73%. Between 2019 and 2020, the median household income grew from $30,938 to $57,500, an 85.9% increase. The Median Families Income is $70,197, and the Median Married Families Income is $70,461.



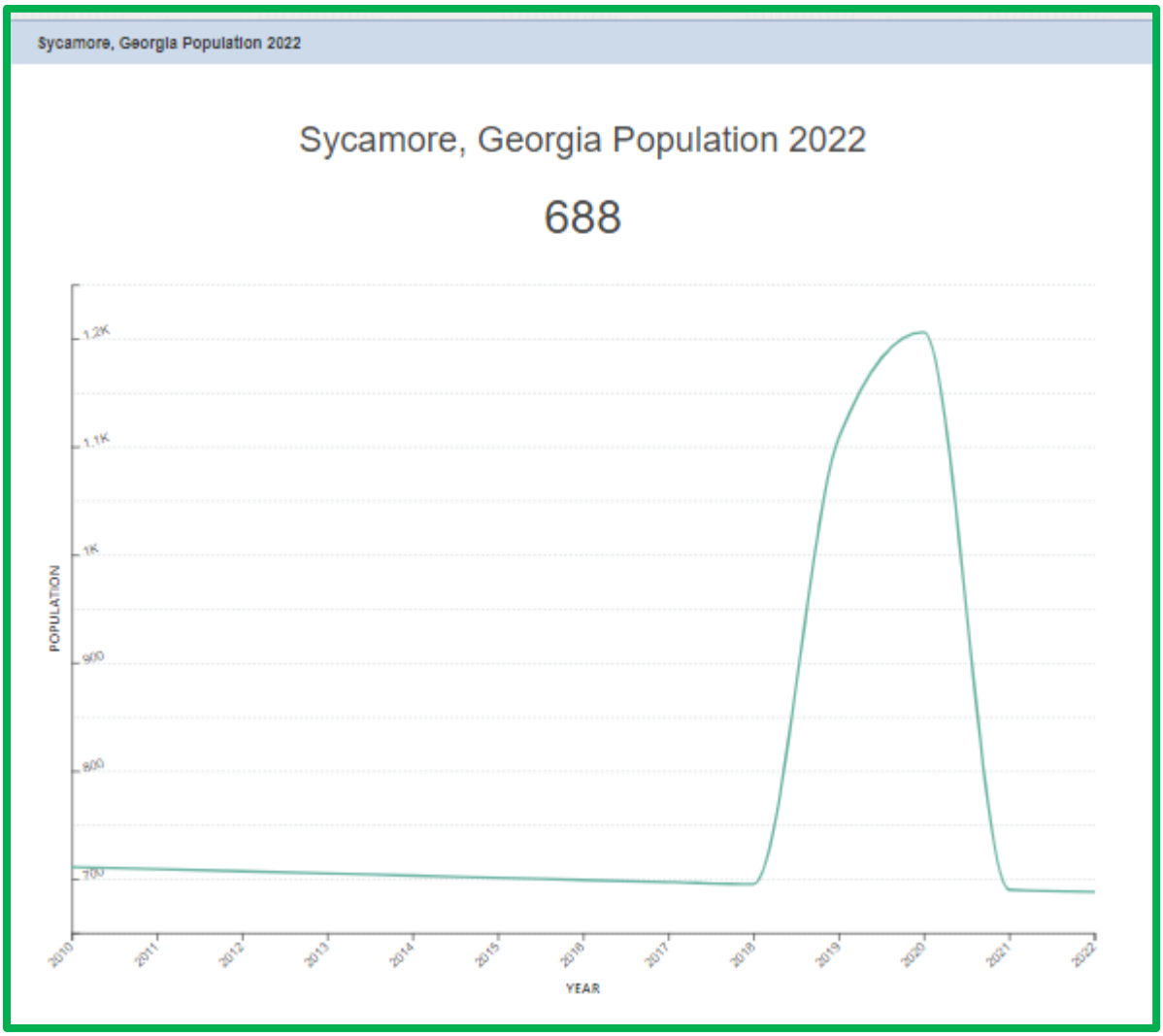
CSV JSON

Name	Median	Mean
Households	$57,500	$59,357
Families	$70,197	$63,546
Married Families	$70,461	-
Non Families	-	$34,848

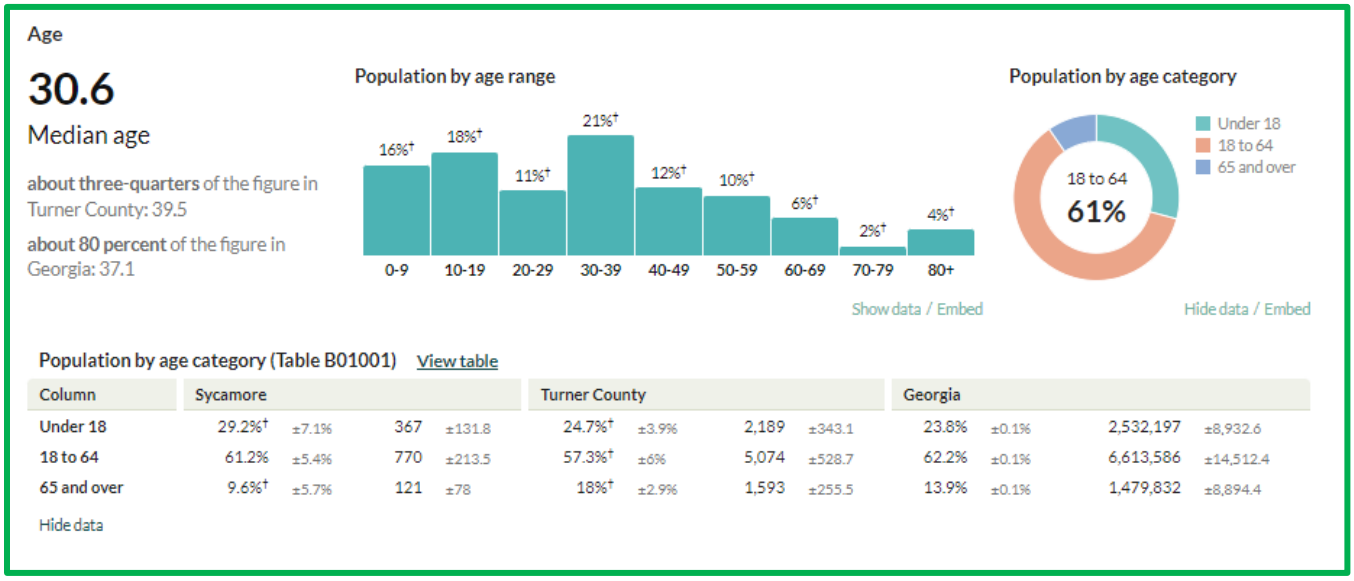


Sycamore

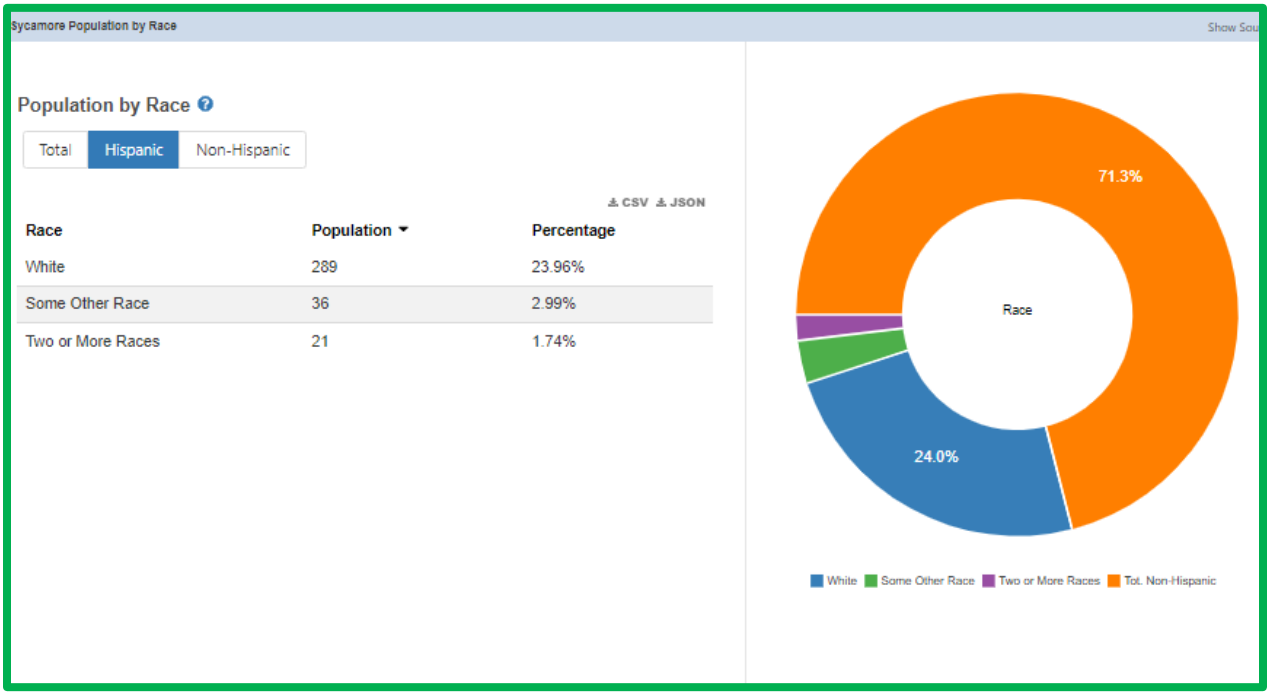
Sycamore's population for 2020 is 688 and is currently declining at -0.29% annually. Its population has decreased by -42.95% since the 2020 census, which was 1,206.

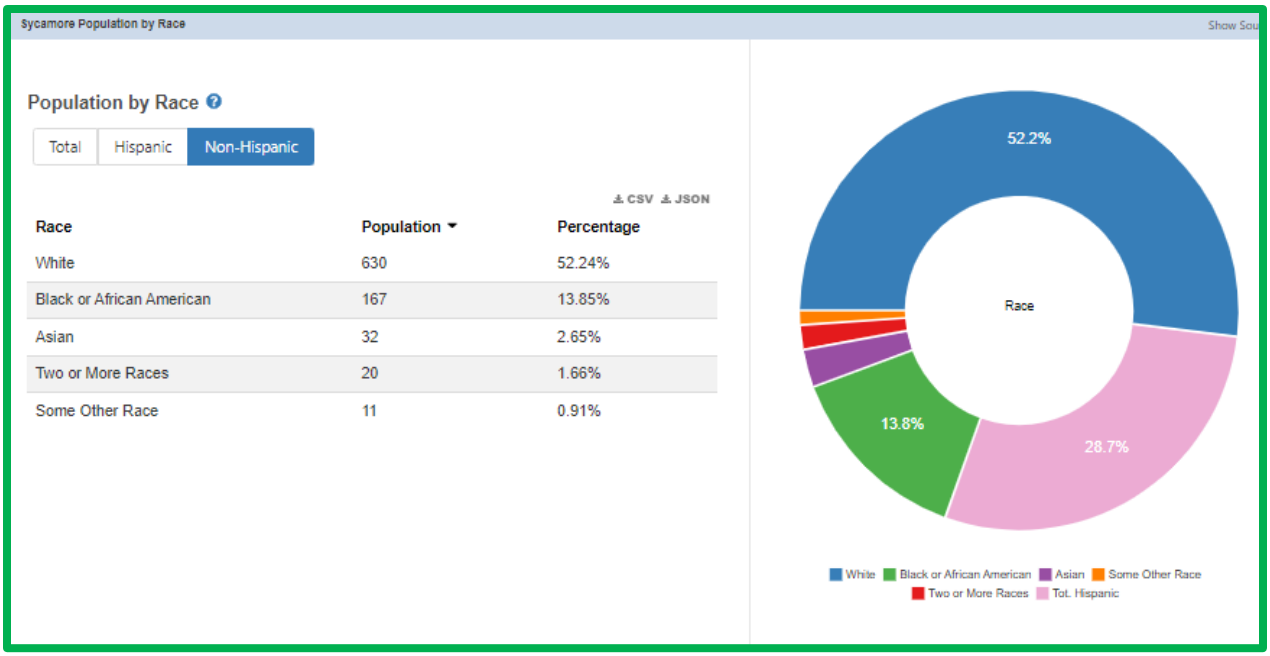


The Under 18 population increased from 2016 to 2021 by 7.1%.1 Age 18 to 64 increased by 37.1%, and the 65 and over age increased by 13.3%. The median age is 41.1.

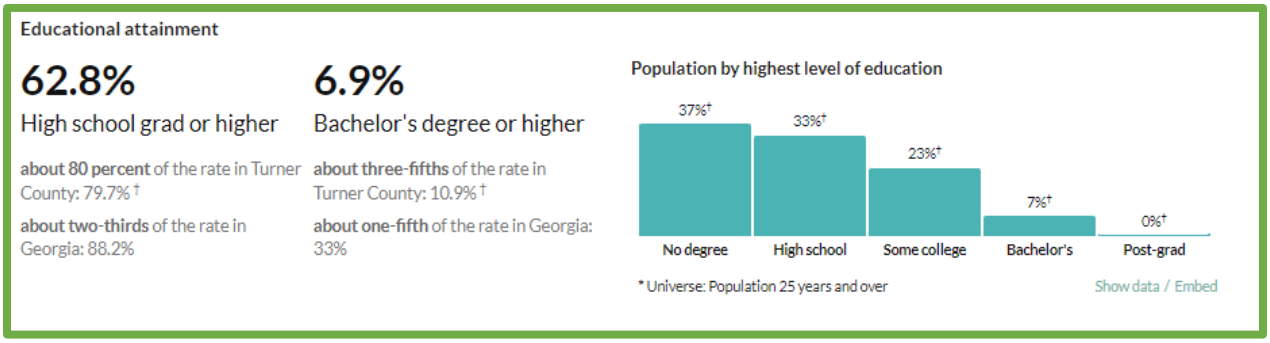


The Black or African American population is 13.85%, the White population is 76.20%, some other race is 3.90%, two or more races is 3.40%, and 2.65% for the Asian population.





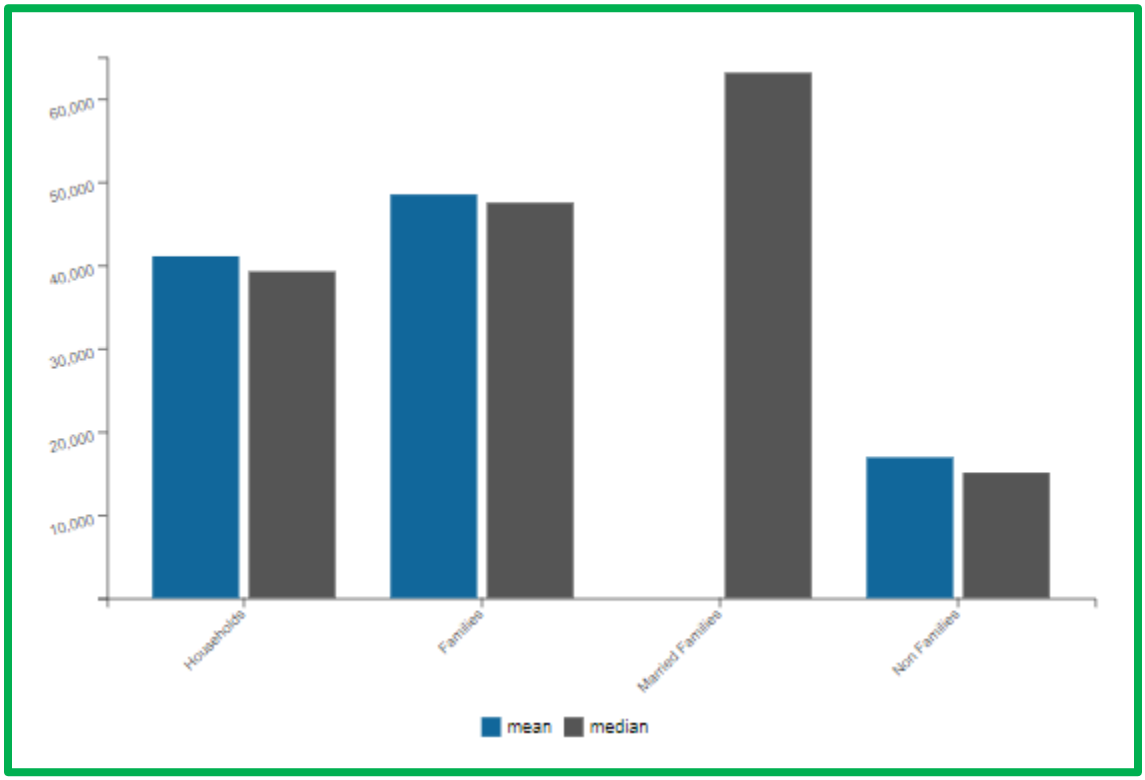
The Education Attainment for Sycamore is 33% High school graduates, some college 23%, and bachelor's degree 7%.



The median household income in Sycamore is $39,250, with a poverty rate of 31.48%. The Median Families Income is $47,500, the Median Married Families Income is $63,116, and non-Families is $15,066.

CSV JSON

Name	Median	Mean
Households	$39,250	$41,064
Families	$47,500	$48,488
Married Families	$63,116	-
Non Families	$15,066	$16,914



Chapter 2: Local Natural Hazards, Risks, And Vulnerability (HRV) Summary

Summary of changes:

During the plan update process, the HMPUC reviewed the hazards that may affect the community and their priority. This updated plan includes the same seven natural hazards in the previous plan in the same order of importance, and Public Health Emergency was added as a new hazard. Table 2.1 provides a brief description of each section in this chapter and a summary of changes made.

Chapter 2 Section	**Updates to Section**
I. Hurricanes/Tropical Storms	Updated data and information; edited for clarity
II. Tornadoes	Updated data and information; edited for clarity
III. Floods	Updated data and information; edited for clarity
IV. Lightning/Thunderstorms/Wind/Hail	Updated data and information; edited for clarity
V. Wildfires	Updated data and information; edited for clarity
VI. Extreme Heat	Updated data and information; edited for clarity
VII. Drought	Updated data and information; edited for clarity
VIII. Public Health Emergency	New item and data

Table 2.1: Overview of updates to Chapter 2

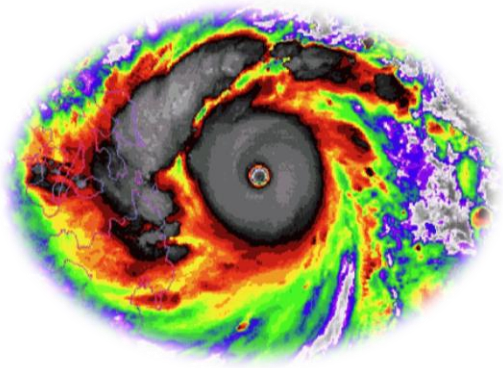
Five of these hazards constitute an equal threat to all geographic areas of the community. The remaining two, flood and wildfire, are the only hazards for which the level of risk varies geographically within the county. Floods and wildfires are limited to smaller areas (see Chapter 2 and Appendix A).

Other hazards, such as Avalanches, Coastal Erosion, Coastal Storms, Earthquake, Expansive Soils, Extreme Heat, Land Slide, SLOSH (Sea, Lake, and Overland Surges from Hurricanes), Tsunamis, and Volcanoes, were examined and determined not to be of sufficient significance in the community to warrant their inclusion in the present Hazard Mitigation Planning effort, based on history and available data.

There are 25 Essential Facilities located within Turner County. There is 1 EOC building, 2 Senior Homes, 14 Fire Stations, 4 Police Stations, and 4 schools.

Each hazard addresses future conditions, including climate change (e.g., long-term weather patterns, average temperature), according to the type, location, and range of anticipated intensities of identified hazards. These conditions are listed as **Item H.** for each hazard. Also, **Item I.** has been added to address the underserved or socially vulnerable population risks for each hazard.

Section I. Hurricanes/Tropical Storms



A. Identification of Hazard

The HMPUC has chosen the threat of hurricanes/tropical storms as the most likely hazard to occur and cause damage in the community based on experience, the FEMA-described methodology, and other factors. Historical data have been examined from various sources, including the National Climatic Data Center (see Appendix F) and local history and personal accounts, to determine the frequency of events. For further information, see the HAZUS Report in Appendix G.

Hurricanes and tropical storms are both types of tropical cyclones. Tropical cyclones are the general term for all circulating weather systems over tropical water. Tropical cyclones are destructive and have the potential to cause significant damage and loss of life. They are divided into four major types: Hurricanes, Tropical Storms, Tropical Disturbances, and Tropical Depressions.

A hurricane, also known as a typhoon, is defined by NOAA's National Hurricane Center (http://www.nhc.noaa.gov/aboutgloss.shtml) as a tropical cyclone in which the maximum sustained surface wind (using the U.S. 1-minute average) is 64 kt (74 mph or 119 km (about 73.94 mi)/hr.) or more. 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 and west of the International Dateline.

A tropical storm is defined as a tropical cyclone in which the maximum sustained surface wind speed (using the U.S. 1-minute average) ranges from 34 kt (39 mph or 63 km (about 39.15 mi)/hr) to 63 kt (73 mph or 118 km (approximately 73.32 mi)/hr.).
A tropical disturbance is a discrete tropical weather system of apparently organized convection -- generally 100 to 300 nm in diameter, originating in the tropics or subtropics, having a non-frontal migratory character, and maintaining its identity for 24 hours or more. It may or may not be associated with a detectable perturbation of the wind field.

A tropical depression is a tropical cyclone in which the maximum sustained surface wind speed (using the U.S. 1-minute average) is 33 kt (38 mph or 62 km (about 38.53 mi)/hr.) or less.

The Saffir-Simpson Hurricane Wind Scale is a 1 to 5 categorization based on the hurricane's intensity at the indicated time. The scale provides examples of damage and impacts in the United

States associated with winds of the predicted intensity. The following table shows the scale broken down by winds:

SAFFIR-SIMPSON HURRICANE SCALE
(Source: NOAA http://www.nhc.noa /about gloss.html)

Category	Wind Speed	Damage
1	74 - 95	Hazardous winds will produce some damage
2	96 - 110	Extremely dangerous winds will cause extensive damage.
3	111 - 129	Devastating damage will occur
4	130 - 156	Catastrophic damage will occur
5	> 156	Catastrophic damage will occur

The official Atlantic hurricane season (which includes Gulf Coast and East Coast hurricanes) is June 1 through November 30, but hurricanes and tropical storms may also occur outside those dates. Whether the hurricane/tropical storm is a short-term or long-term event depends on many factors, including category, strength, speed, and impact of other weather systems, including fronts and wind patterns.

Because of their location, Turner County and the Cities of Ashburn, Rebecca, and Sycamore are vulnerable to severe hurricanes/tropical storms forming in the Atlantic Ocean and the Gulf of Mexico. Also, due to location, hurricanes may degrade into tropical storms, tropical depressions, or tropical disturbances by the time they reach this area. These may or may not contain tornadoes or hail. Tropical storms, depressions, or disturbances may never reach hurricane strength before reaching the shore. The effects vary depending on the severity of the hurricane/tropical storm and the duration of the event.

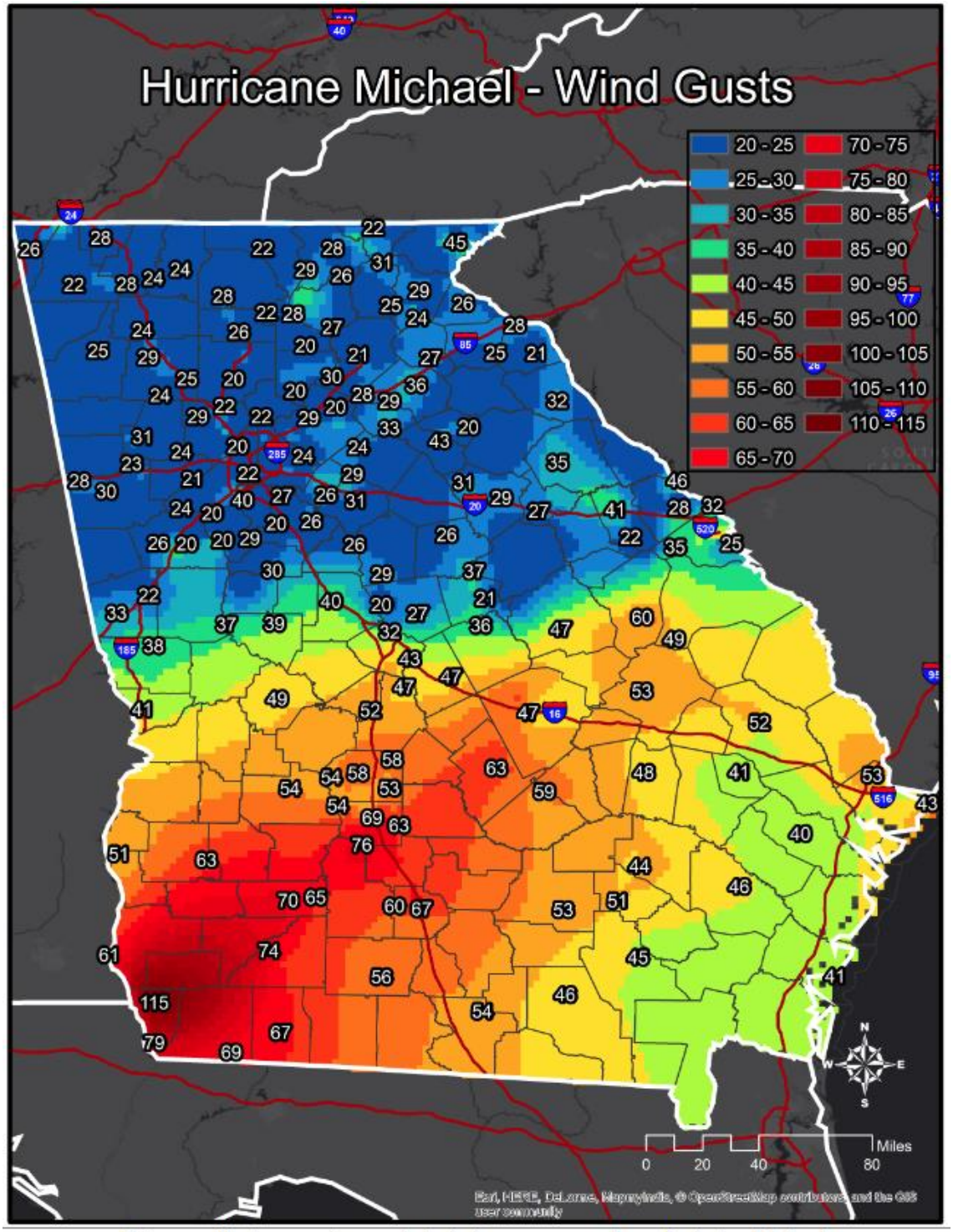
B. Profile of Events, Frequency of Occurrences, Probability

According to the NOAA Storm Events Database (see Appendix F), five reports of Hurricanes/Tropical Storms occurred in Turner County (including the Cities) between 01/01/1950 and 12/31/2022. The Historic Recurrence Interval is 14.40 years. This is a 6.94% Historic Frequency Chance per year. The past 10-year Record Frequency Per Year is 0.3, the past 20-year frequency is 0.25, and the past 50-year frequency is 0.1 (see the Hazard Frequency Table in Appendix D).

Since the previous Hazard Mitigation Plan was completed, one Hurricane/Tropical Storm event has occurred. On October 10, 2018, Tropical Storm Michael caused widespread power outages, downed power lines, impassable roads due to fallen trees, and damaged homes and other structures.

In Georgia, 2,368,226 acres of forestland were impacted by Hurricane Michael. The estimated value of this land is $762,683,909. Catastrophic damage was mainly confined to Seminole, Decatur, and Miller Counties, with severe damage extending into Dougherty and Terrell Counties. Additional crop damage occurred in Georgia to cotton, vegetables, pecans, poultry, peanuts, and timber. According to Georgia Agriculture Commissioner Gary Black, estimated damages were as follows: Cotton $300-$900 million, Vegetables $480 million, Pecans $560 million, Poultry $25 million, Peanuts $10-$20 million, and Timber $1 billion.

Inland flooding associated with Hurricane Michael across the tri-state region was limited as the hurricane quickly tracked across the area. A maximum rainfall total of 6.84 inches was observed near Crossroads, GA (Quitman County), with the second highest amount for the region recorded in Calhoun County, FL, with 6.66 inches. With these higher rainfall amounts isolated, only a few areas of inland flooding were observed. Record flooding was observed in Bay County on the Econfina Creek at State Road 20 with 26.17 feet (NAVD88). This resulted in the SR-20 bridge being overtopped. In addition, moderate flooding occurred on the Chipola River near Altha in Calhoun County, FL. A few homes were impacted downstream from the gauge, and significant damage was sustained to the fish camps along the river. No recorded tornadoes across the Florida Panhandle, Big Bend, southwest Georgia or southeast Alabama were associated with Hurricane Michael.



Although the complete available data was used for this analysis, the possibility remains that other hurricane/tropical storm events may have occurred in the community that went unreported or underreported.

Hurricane Advisories
09/25/2022

NOAA NWS National Hurricane Center
September 25, 2022

...IAN FORECAST TO BEGIN RAPIDLY STRENGTHENING TONIGHT...
...SIGNIFICANT WIND AND STORM SURGE IMPACTS EXPECTED IN WESTERN CUBA...

At 200 PM EDT (1800 UTC), the center of Tropical Storm Ian was about 265 miles (425 km) south-southeast of Grand Cayman. Ian is moving toward the west-northwest near 12 mph (19 km/h). A turn toward the northwest is expected this evening, followed by a north-northwestward motion on Monday and a northward motion on Tuesday with a slightly slower forward speed. On the forecast track, the center of Ian is expected to pass well southwest of Jamaica this evening, and pass near or west of the Cayman Islands early Monday. Ian will then move near or over western Cuba Monday night and early Tuesday and emerge over the southeastern Gulf of Mexico on Tuesday. Maximum sustained winds are near 50 mph (85 km/h) with higher gusts. Rapid strengthening is forecast to begin tonight. Ian is expected to become a hurricane by early Monday and reach major hurricane strength Monday night or early Tuesday before it reaches western Cuba. Tropical-storm-force winds extend outward up to 60 miles (95 km) from the center. The estimated minimum central pressure is 1001 mb (29.56 inches).

WIND: Hurricane conditions are expected to reach Grand Cayman by early Monday, with tropical storm conditions expected later tonight. Hurricane conditions are expected within the warning area in Cuba by early Tuesday, with tropical storm conditions expected by late Monday. Tropical storm conditions are expected within the tropical storm warning area in Cuba Monday night and Tuesday. Tropical storm conditions are possible on Little Cayman and Cayman Brac by tonight
or early Monday.

RAINFALL: Ian is expected to produce the following rainfall:

Jamaica and the Cayman Islands: 3 to 6 inches, with local maxima up to 8 inches.

Western Cuba: 6 to 10 inches, with local maxima up to 16 inches.

Florida Keys into southern and central Florida Peninsula: 2 to 4 inches, with local maxima up to 6 inches beginning Monday through Wednesday morning.

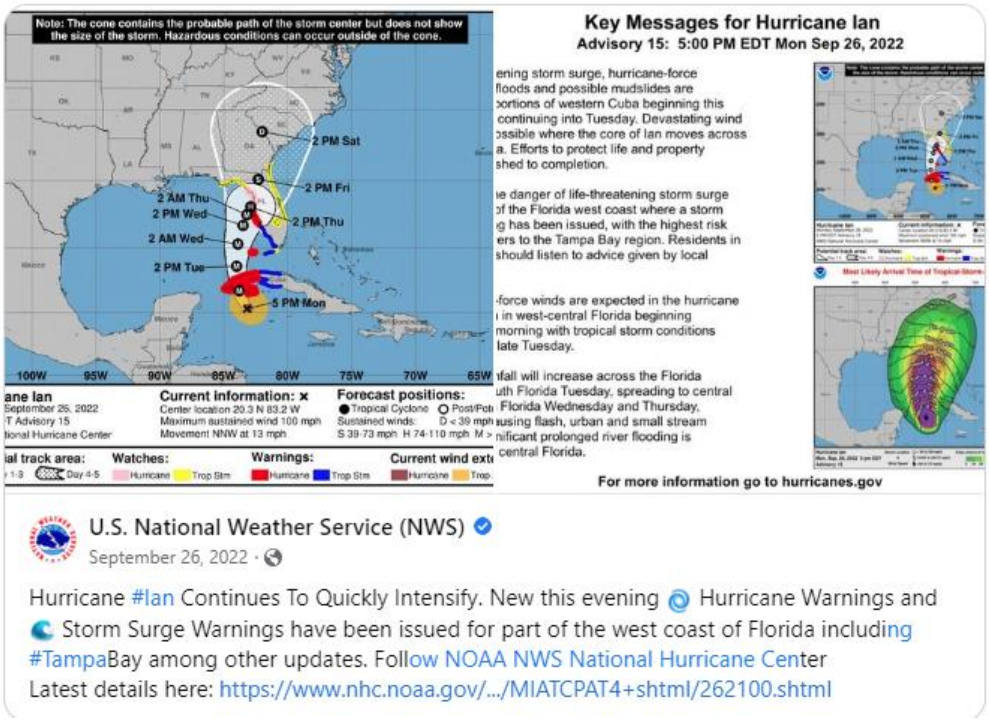
Heavy rainfall may affect north Florida, the Florida panhandle and the southeast United States Thursday, Friday and Saturday.

These rains may produce flash flooding and mudslides in areas of higher terrain, particularly over Jamaica and Cuba. Flash and urban flooding are possible across the Florida Keys and the Florida
peninsula through mid week. Additional flooding and rises on area streams and rivers across northern Florida and parts of the southeast U.S. later this week cannot be ruled out, especially in
central Florida given already saturated conditions.

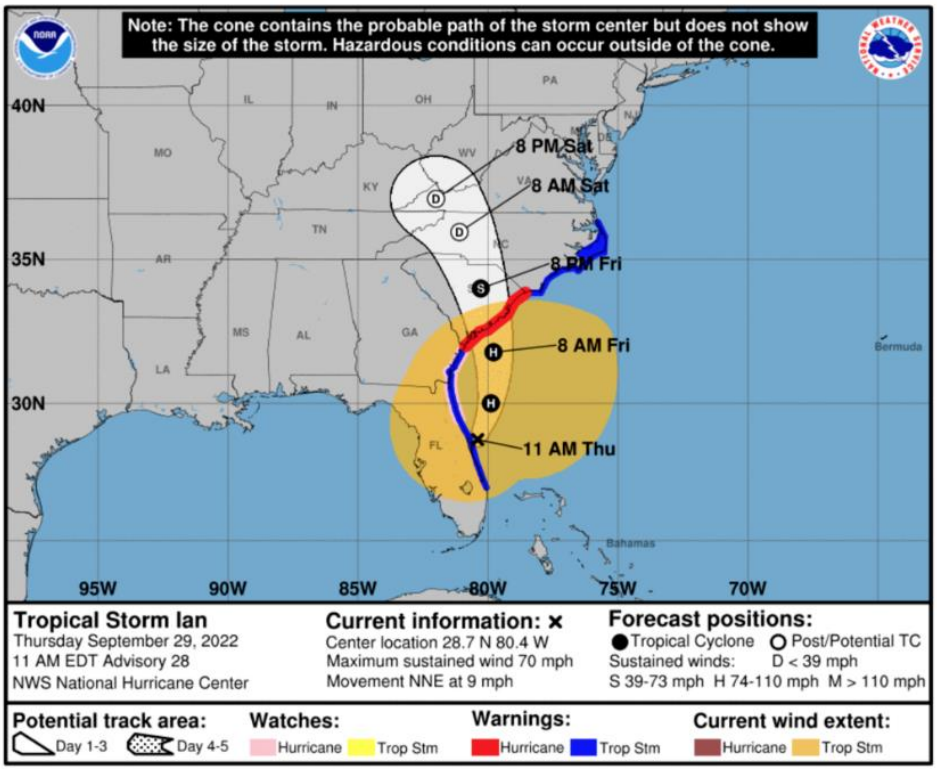
STORM SURGE: Storm surge could raise water levels by as much as 9 to 14 feet above normal tide levels along the coast of western Cuba in areas of onshore winds in the hurricane warning area Monday night and early Tuesday.

Storm surge could raise water levels by as much as 2 to 4 feet above normal tide levels along the immediate coast in areas of onshore winds in the Cayman Islands Sunday night into Monday.

SURF: Swells generated by Ian are affecting Jamaica and the Cayman Islands. Swells will spread northwestward to the southwestern coast of Cuba and the coasts of Honduras, Belize, and the Yucatan Peninsula of Mexico on Monday and Monday night. These swells are likely to cause life-threatening surf and rip current conditions. Please consult products from your local weather office.



On September 29, 2022, Hurricane Ian was downgraded to Tropical Storm Ian.



Tropical Storm Nicole Advisory

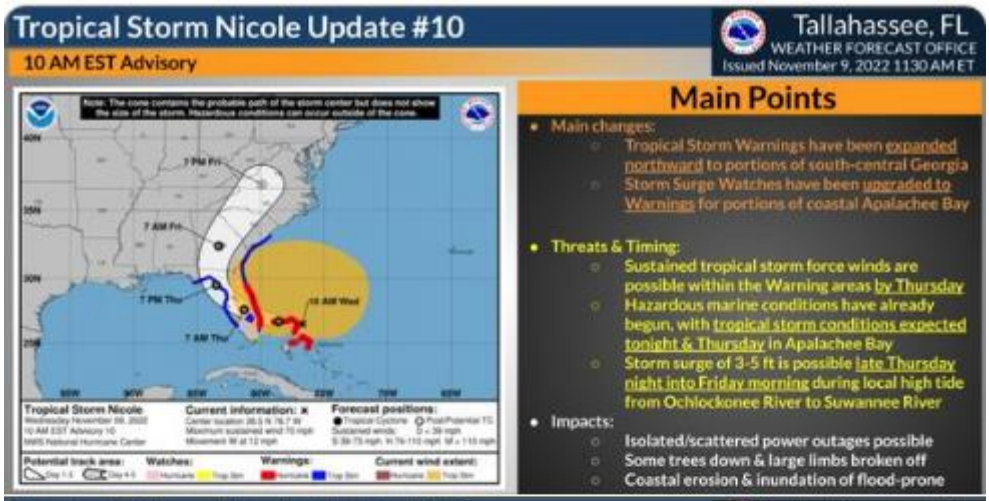
US National Weather Service Tallahassee Florida
November 8, 2022 ·

11/8/22 Tropical Storm Nicole 4PM ET Advisory Update

MAIN CHANGES SINCE PREVIOUS ADVISORY:
⚠️ Tropical Storm Watches have been extended to now include the east FL Big Bend all the way up to the GA border.
Storm Surge Watch issued for coastal Apalachee Bay (2-4 ft).

Next full advisory: 10PM ET

Please read the main points in the attached graphic for more details.



US National Weather Service Tallahassee Florida
November 9, 2022 ·

11/9/22 Tropical Storm Nicole 10AM ET Advisory Update

MAIN CHANGES:
Tropical Storm Warnings have expanded into portions of south-central GA
Storm Surge Warnings now in effect for portions of coastal Apalachee Bay (3-5 ft)

Next full advisory: 4PM ET

THREATS & TIMING:
Tropical storm force winds most likely in Warning areas on Thurs
Tropical storm conditions expected in Apalachee Bay tonight & Thurs
Storm surge possible late Thurs-Fri morning across coastal Apalachee Bay
Improving conditions by Fri

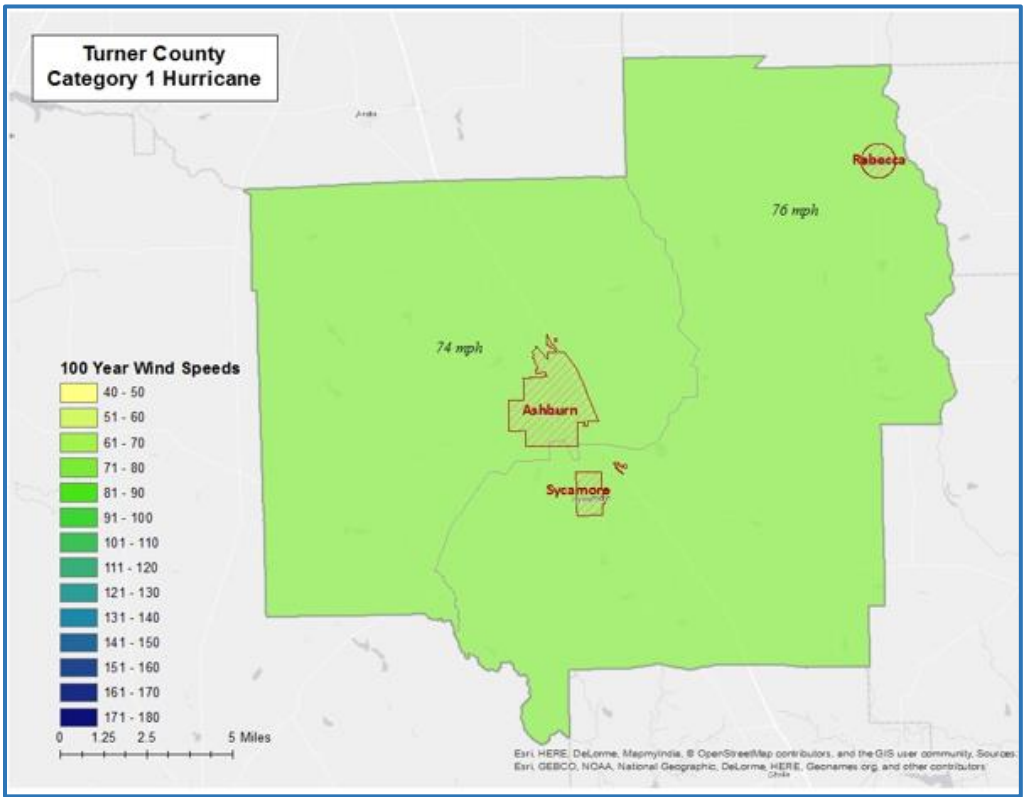
IMPACTS:
Isolated/scattered power outages possible
Some trees down & large limbs broken off
Coastal erosion & inundation of flood-prone areas

C./D. Inventory of Assets Exposed and Potential Loss

In Worksheet 3A: Inventory of Assets (appearing in Appendix A), we estimate that all of Turner County and the Cities of Ashburn, Rebecca, and Sycamore are equally vulnerable to hurricanes/tropical storms. The County has a wind hazard score of 2 (91-100 mph gust). A map of the wind hazard speeds, and critical facilities is provided in Appendix A.

An estimated 100% of the Residential property (2,716 of 2,716) in Turner County (including the Cities of Ashburn, Rebecca, and Sycamore) could be affected by this hazard, with a total value of $133,386,535. Also, an estimated 100% of the community's commercial, Industrial, Agricultural, Religious/Non-Profit, Government, Education, and Utility properties (5,126) may be affected, with a total value of $172,294,083. The values are based on the most recent tax roll data provided by the Turner County Tax Assessor's Office for Turner County and the Cities of Ashburn, Rebecca, and Sycamore.

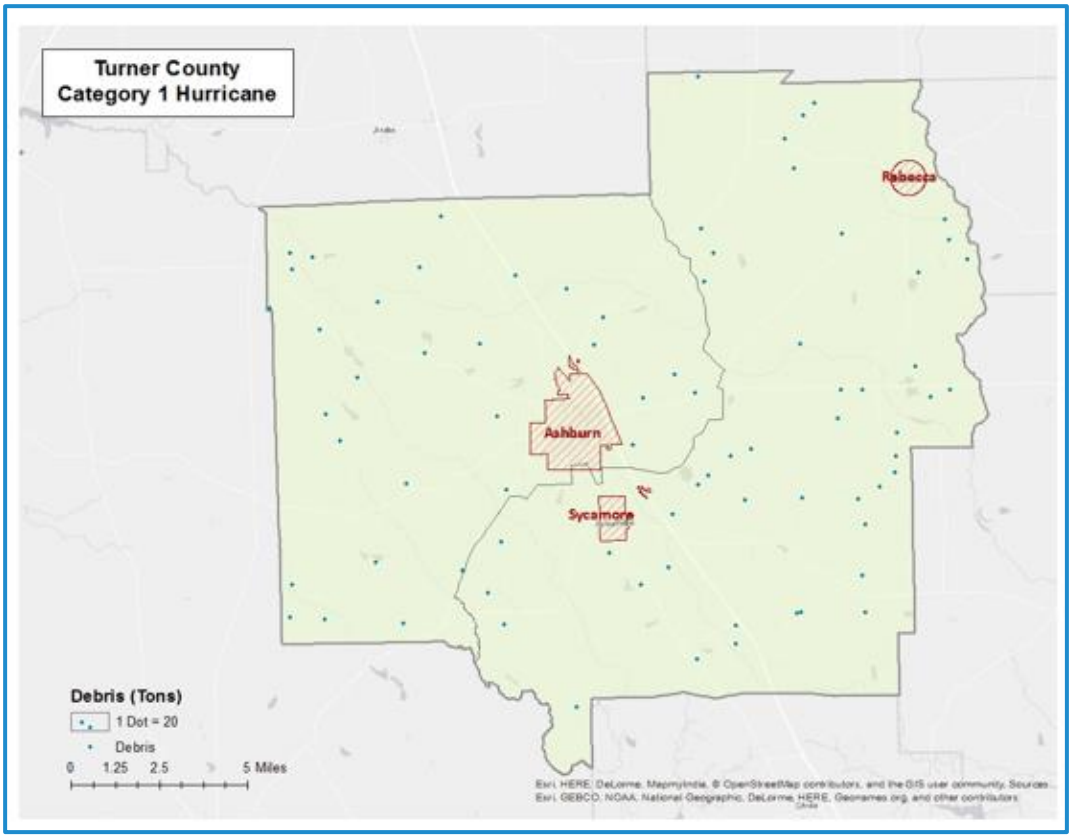
A Category 1 Hurricane would have maximum winds of 76 mph, and buildings in Turner County would be vulnerable. The map below shows the wind speeds throughout the county:



In a Category 1 Hurricane scenario, there would be $1,536,400 in damage to 40 buildings. The Total Economic Loss would be $2,170,940. The overall building damage ratio would be 0.15% of total countywide building replacement costs. It's expected that 25 Essential Facilities will have some damage. No households should be displaced, and no short-term shelter should be needed.

There would be approximately 33,314 tons of wind-related debris from a Category 1 Hurricane. The following chart shows the types of debris to be expected and a map showing the debris throughout the county:

Storm Classification	Brick, Wood, and Other	Reinforced Concrete/Steel	Tree Debris	Other Tree Debris	Total
Category 1	133	-	1,424	31,757	33,314



Damage to crops is not considered in any of these figures. According to the Center for Agribusiness & Economic Development's 2021 Georgia Farm Gate Value Report (http://caes2.caes.uga.edu/center/caed/documents/GAFGVR2015_DEC16.pdf), the total farm gate value of agricultural production in Turner County is $76,861,946.09.

According to the inventory database reports and maps, all the 117 Critical Facilities and Infrastructure for Turner County (including the Cities of Ashburn, Rebecca, and Sycamore) could be affected by this hazard. The total value of these Critical Facilities is $137,758,656, plus a content value of $9,354,241.

E. Land Use and Development Trends

Turner County and the City of Ashburn have seen a decrease in population over the last few years, while the number of people in Rebecca and Sycamore has increased.

The County and all the Cities have zoning regulations, and mandatory building and fire codes building inspector enforces. All Cities and the County participate in joint comprehensive planning in the required updates of the Service Delivery Strategy.

No other land use or development trends that relate to this hazard have been identified at this time.

Turner County and the Cities of Ashburn, Rebecca, and Sycamore have zoning regulations. All jurisdictions have mandatory building and fire codes that a building inspector enforces. On October 1, 1991, the Uniform Codes Act became effective in Georgia. On July 1, 2004, this Act was revised to make the following construction codes mandatory as the Georgia State Minimum Standard Codes. Listed below are the code editions in effect as of January 1, 2021, with amendments in 2020 and 2022:

- International Building Code – 2018 Edition
- International Residential Code – 2018 Edition
- International Plumbing Code – 2018 Edition
- International Mechanical Code – 2018 Edition
- International Fuel Gas Code – 2018 Edition
- International Energy Conservation Code – 205 Edition
- International Fire Code – 2018 Edition
- International Electric Code – 2020 Edition
- International Swimming Pool and Spa Code – 2018 Edition

The Act requires local governments that elect to enforce these codes within their jurisdictions to adopt administrative procedures and penalties in order to locally enforce any of these mandatory codes. Also, any applicable appendices of these codes must be adopted locally in order to be enforceable within a specific local jurisdiction.

The Act also made the following optional codes available for local government adoption and enforcement. Local governments choosing to enforce any of the below optional codes must adopt the code(s) they wish to enforce, as well as administrative procedures and penalties. Some of the communities have chosen to adopt the following:

- International Property Maintenance Code - 2018 Edition
- International Existing Building Code - 2018 Edition
- National Green Building Standard - 2008 Edition
- Disaster Resilient Building Code IBC Appendix - 2020 Edition
- Disaster Resilient Building Code IRC Appendix - 2020 Edition

The DCA Board specifically omitted the plumbing, electrical, and energy requirements of the International Residential Code for One- and Two-Family Dwellings. Therefore, the plumbing

requirements of the International Plumbing Code, the electrical requirements of the National Electrical Code, and the energy requirements of the International Energy Conservation Code must be used for one- and two-family dwelling construction.

F. Multi-Jurisdictional Differences

Hurricane/tropical storm events are usually area-wide, and no difference in severity is expected between Turner County and the Cities of Ashburn, Rebecca, and Sycamore. However, the impact may be more severe in places with higher population density due to more people being in danger, more people needing to evacuate, more debris from damaged buildings, and other impacts associated with higher population density. In jurisdictions with building codes and inspections, structures built to code may be especially vulnerable to the effects of strong winds and other hazards.

Turner County and the Cities of Ashburn and Sycamore are National Flood Insurance Program members. The City of Rebecca is not. (Source: https://www.fema.gov/cis/GA.html) Turner County and the Cities of Ashburn, Rebecca, and Sycamore do not participate in the Community Rating System (CRS) program. According to FEMA, they were not eligible as of October 1, 2022. (Source: http://www.fema.gov/library/viewRecord.do?id=3629).

G. Overall HRV Summary of Events and Their Impact

Hurricanes/tropical storms can potentially cause damage anywhere, anytime, throughout Turner County and the Cities of Ashburn, Rebecca, and Sycamore. They are usually preceded by some watch or warning well in advance. The cost of the damage and potential loss of life may be higher if the path of the hurricanes/tropical storms covers populated areas instead of sparsely populated or unpopulated areas.

The Turner County HMPUC has developed a comprehensive range of Mitigation Goals, Objectives, and Action Steps to lessen the impacts of this hazard. These are contained in Chapter 4.

Since the previous plan was approved, there have not been any new developments, regulations, programs, or other changes in the community that would either increase or decrease the community's overall vulnerability to this hazard.

H. Impacts from Future Conditions

Turner County, including the cities, is in a very low-risk hurricane zone. 43 hurricanes have been recorded since 1930. The largest Hurricane was Dora in 1964.

Global warming also causes the oceanic temperature to rise and provides energy for forming hurricanes. The damage caused by a hurricane can multiply rapidly, with a slight rise in strength. Wind damage led by a Category A (130-156 mph) is 250 times higher than caused by a Category 1 (74-95 mph) hurricane. If necessary, measures are not taken; hurricanes can damage crops, cattle, wildlife, and humans. Climate change has increased the frequency of stronger storms and is

expected to continue through this century. The Atlantic basin is expected to haincrease0% in the frequency of category 4 and 5 hurricanes over the next 80 years.

Even rainier storms are predicted for the future. Future hurricanes are expected to be as much as 37 percent wetter near their center and about 20 percent wetter as much as 60 miles away. The waters of the Atlantic Ocean are unusually high, and weather forecasters and scientists are bracing for a much more intensified Hurricane Season.

I. Underserved/Socially Vulnerable Population Risk

Turner County has a large population of elderly individuals that live in assisted living facilities/nursing homes that may not receive emergency notifications through existing emergency notifications systems. Homeless people living in various county areas do not receive emergency notifications. The Health Department Liaison attended the workshops, as did one of Pruitt Health employees, and these concerns were discussed. Currently, the homeless population is in different county areas, and getting an actual location for this population is tough.

Flyers explaining the Hazard Mitigation process were distributed to be available at the county and city offices and also at the Health Department and the Department of Family and Children Services (DFACS). (See Appendix H).

Section II. Tornadoes

A. Identification of Hazard

The HMPUC has chosen the threat of tornadoes as the second most likely hazard to occur and cause damage in the community based on experience, the FEMA-described methodology, and other factors. Historical data have been examined from various sources, including the National Climatic Data Center (see Appendix F) and local history and personal accounts, to determine the frequency of events. For further information, see the HAZUS Report in Appendix G.

A tornado is defined by NOAA (http://www.nssl.noaa.gov/education/svrwx101/tornadoes/) as a narrow, violently rotating column of air that extends from the base of a thunderstorm to the ground. Because wind is invisible, it is hard to see a tornado unless it forms a condensation funnel of water droplets, dust, and debris. Tornadoes are the most violent of all atmospheric storms.

About 1,200 tornadoes hit the U.S. yearly. A tornado watch is issued when weather conditions are favorable for tornadoes. During a tornado watch, residents are advised to watch and prepare for severe weather and stay tuned to NOAA Weather Radio to know when warnings are issued. A tornado warning is issued when a tornado has been reported by spotters or indicated by radar, and there is a severe threat to life and property to those in the path of the tornado. Residents must act immediately to find safe shelter when a tornado warning is issued. A warning can cover parts of counties or several counties in the path of danger.

The Enhanced Fujita Scale, implemented by the National Weather Service in 2007, assigns a tornado a rating based on estimated wind speeds and related damage. The wind speeds associated with the EF ratings are shown in the table below. Because of the difficulty of measuring wind speeds inside a tornado, wind speeds are estimated based on the type of damage that occurs; more information is available on the NOAA website at http://www.spc.noaa.gov/faq/tornado/ef-scale.html.

ENHANCED FUJITA WIND DAMAGE SCALE

(Source: http://www.spc.noaa.gov/faq/tornado/ef-scale.html)

EF Number	3-Second Gust	Damage
EF-0	65 to 85 mph	Light damage. Some damaged chimneys; branches broke off trees; shallow-rooted trees pushed over; sign boards damaged.
EF-1	86 to 110 mph	Moderate Damage., The lower limit is the beginning of hurricane wind speed, peels surface off roofs; mobile homes pushed off foundations or overturned; moving autos pushed off the roads; attached garages may be destroyed.
EF-2	111 to 135 mph	Significant Damage. Roofs torn off frame houses; mobile homes demolished; boxcars overturned; large trees snapped or uprooted; high rise windows broken and blown in; light-object missiles generated.
EF-3	136 to 165 mph	Severe Damage. Roofs and walls were torn off well-constructed houses; trains overturned; most trees in the forest uprooted; heavy cars lifted off the ground and thrown.
EF-4	166 to 200 mph	Devastating, damage. Well-constructed houses leveled; structures with weak foundations blown away some distance; cars thrown and large missiles generated.
EF-5	Over 200 mph	Incredible damage. Strong frame houses lifted off foundations and carried considerable distances to disintegrate; automobile sized missiles fly through the air in excess of 100 m (109 yards); trees debarked; steel reinforced concrete structures badly damaged.

Tornadoes may occur any time of year, although the peak "tornado season" for the Southern Plains is from May to early June. Tornadoes can occur due to inclement weather conditions, due to a passing front, or as part of thunderstorms or hurricane/tropical storm events. Tornadoes can occur at any time of the day or night, but according to NOAA (http://www.nssl.noaa.gov/education/svrwx101/tornadoes/), most tornadoes occur between 4:00 and 9:00 p.m. The path and severity of a tornado cannot be determined in advance. The best defense is to heed tornado warnings and seek appropriate shelter when a tornado has been sighted in the area or when conditions conducive to a tornado are present.

Turner County and the Cities of Ashburn, Rebecca, and Sycamore are all vulnerable to the effects of tornadoes. According to NOAA (https://www.ncdc.noaa.gov/climate-information/extreme-events/us-tornado-climatology), an average of 30 tornadoes occurs per month in Georgia.

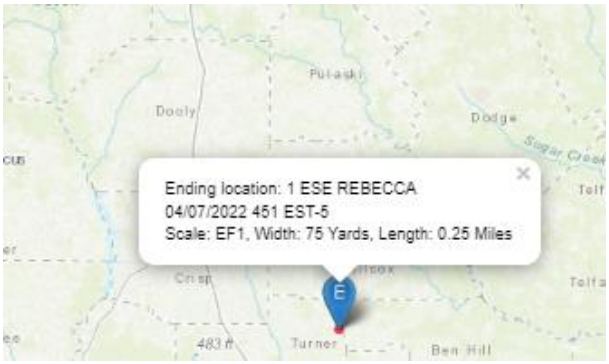
B. Profile of Events, Frequency of Occurrences, Probability

According to the NOAA Storm Events Database (see Appendix F), nine reports of tornadoes occurred in Turner County (including the Cities) between 01/01/1950 and 12/31/2022. The Historic Recurrence Interval is 8.00 years. This is a 12.50% Historic Frequency Chance per year.

The past 10-year Record Frequency Per Year is 0.2, the past 20-year frequency is 0.25, and the past 50-year frequency is 0.1 (see the Hazard Frequency Table in Appendix D).

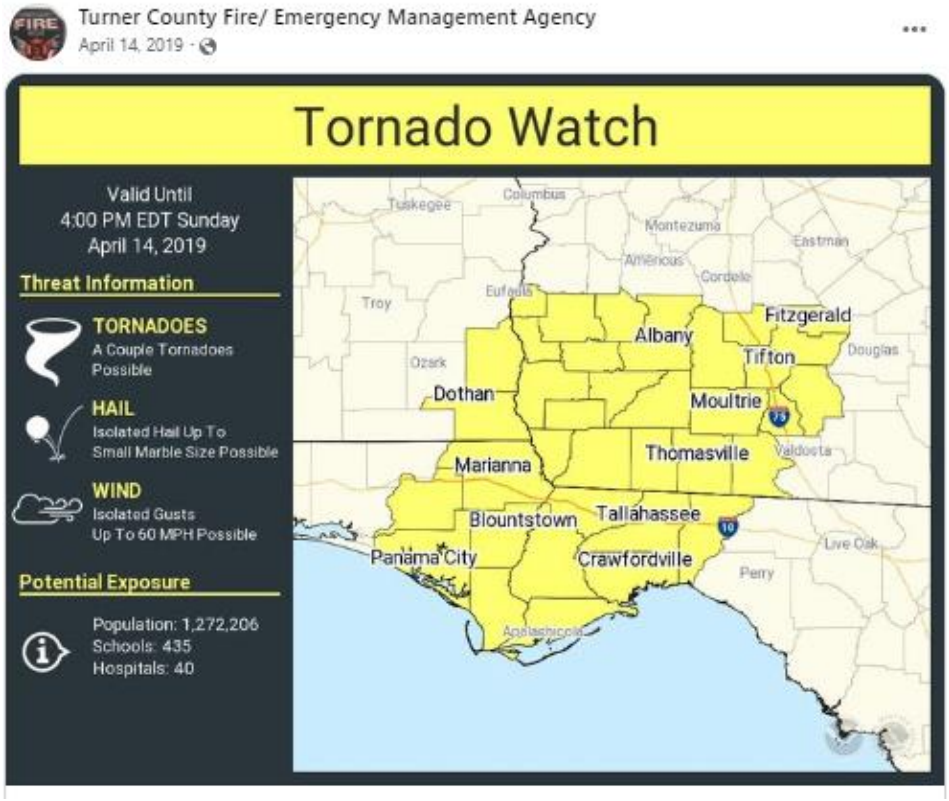
Georgia averages 23 tornadoes annually, resulting in an average of 3 fatalities. Turner County is considered a High-Risk area for tornados. According to records, the largest tornado in the Turner County area was an EF3 in 1999, causing 28 injuries and 0 deaths. On March 1, 2007, an E-F 2 caused 6 fatalities and 3 injuries; on March 20, 2003, an EF 3 caused deaths and 200 injuries. The yearly average for tornados in Turner County is 2. Some records indicate that 108 tornadoes have been recorded in Turner County since 1950, even though NOAA has only recorded nine.

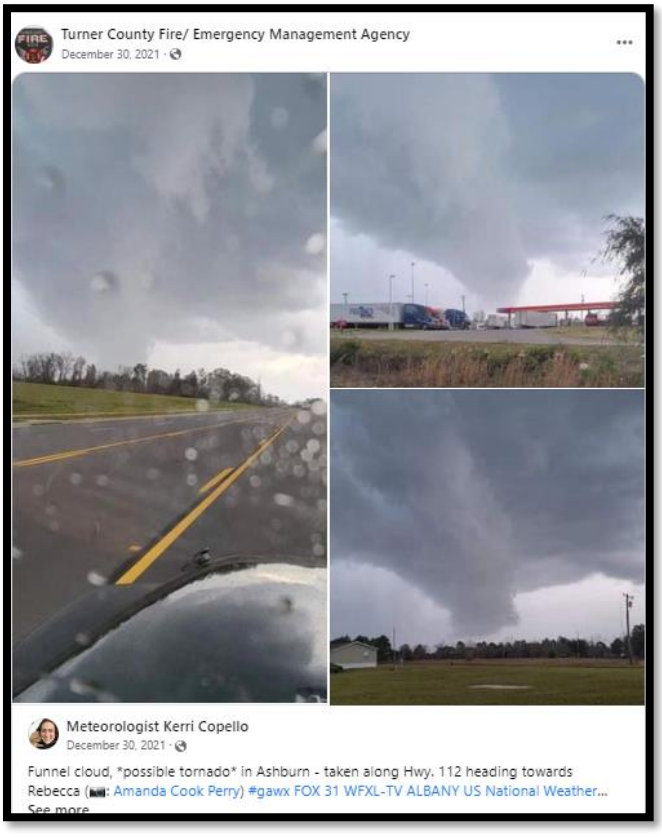
According to NOAA, one tornado event has occurred since the previous Hazard Mitigation Plan was completed. This event occurred on April 7, 2022. A tornado briefly touched down just along S. Washington Street, southeast of Rebecca in Turner County. The tornado caused significant damage to several chicken houses before quickly dissipating. This tornado was rated EF1 with maximum winds estimated at 90 mph. Damage was reported at $100,000.



Although the complete available data was used for this analysis, the possibility remains that other events may have occurred in the community that went unreported or underreported.

Tornado Watches in Turner County and its Cities






> TORNADO WATCH IN SOUTHWEST GEORGIA
» FOLLOW COVERAGE ON FOX31 AND WFXL.COM
A WATCH MEANS CONDITIONS ARE FAVORABLE FOR SEVERE WEATHER, INICLUDING TORNADOES.
HAVE A WAY TO GET WARNINGS WHEN THEY ARE ISSUED
CONSIDER POSTPONING OUTDOOR PLANS AND TRAVEL UNTIL THE THREAT IS OVER.
SEEK SHELTER IF WARNINGS ARE ISSUED.
FOR MORE INFO, TUNE TO FOX24, ABC16 OR VISIT WGXA.TV
POSTED
Feb 15, 2021 3:12PM
AMERICUS
ABBEVILLE
CORDELE
DAWSON
CUTHBERT
LEESBURG
ASHBURN
FITZGERALD
FORT GAINES
MORGAN
ALBANY
SYLVESTER
TIFTON
OCILLA
DOUGLAS
BLAKELY
NEWTON
NASHVILLE
PEARSON
CAMILLA
MOULTRIE
ADEL
COLQUITT
HOMERVILLE
BAINBRIDGE
CAIRO
THOMASVILLE
VALDOSTA
QUITMAN
75


Turner County Fire/ Emergency Management Agency
April 7, 2022
Emileigh Forrester TV
April 7, 2022
POSSIBLE TORNADO DAMAGE in Turner Co., GA from around 6 a.m. Thursday (just clarified that it was NOT 6 p.m Wednesday). Turner Co. EMA says 7 chicken houses were damaged. One is destroyed, and one has significant damage. No one was hurt. NWS will have to confirm whether it was a tornado. There were no chickens in the chicken houses at the time. We're told the owner was growing lettuce.
(Photos: Turner County Fire/ Emergency Management Agency)

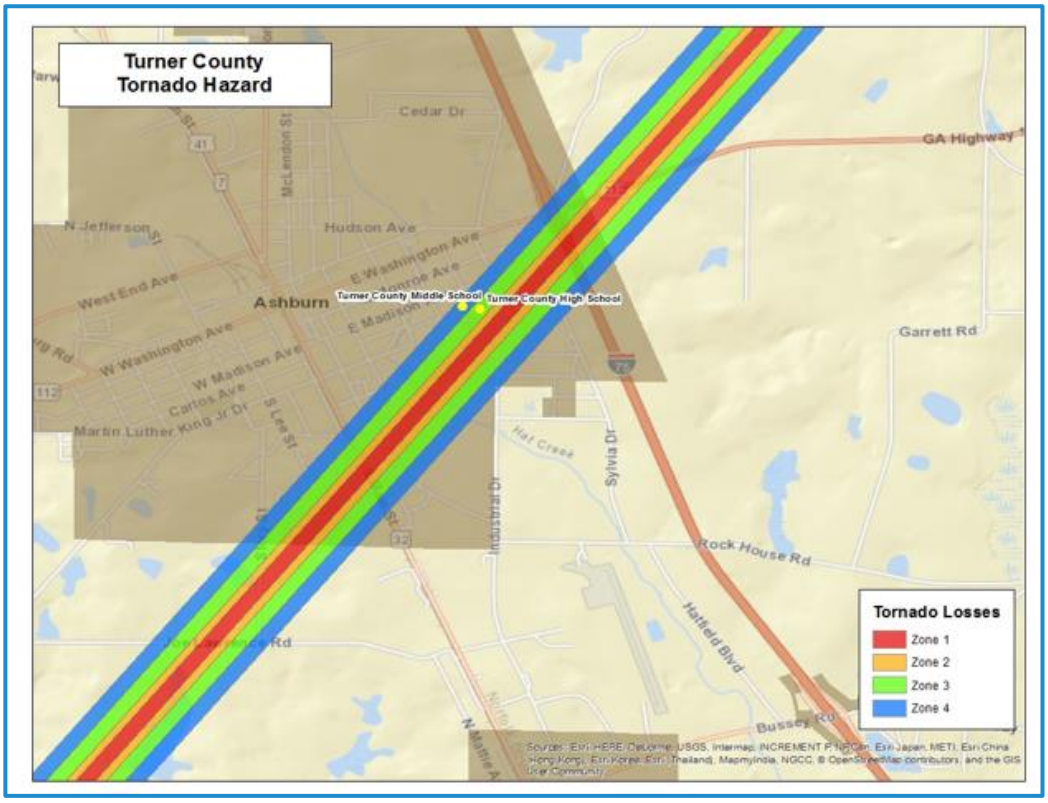
C./D.: Inventory of Assets Exposed and Potential Loss

In Worksheet 3A: Inventory of Assets (appearing in Appendix A), we estimate that all of Turner County and the Cities of Ashburn, Rebecca, and Sycamore are equally vulnerable to this hazard.

An estimated 100% of the Residential property (2,716 of 2,716) in Turner County (including the Cities of Ashburn, Rebecca, and Sycamore) could be affected by this hazard, with a total value of $133,386,535. Also, an estimated 100% of the community's commercial, Industrial, Agricultural, Religious/Non-Profit, Government, Education, and Utility properties (5,126) may be affected, with a total value of $172,294,083. The values are based on the most recent tax roll data provided by the Turner County Tax Assessor's Office for Turner County and the Cities of Ashburn, Rebecca, and Sycamore.

Damage to crops is not considered in any of these figures. According to the Center for Agribusiness & Economic Development's 2021 Georgia Farm Gate Value Report (http://caes2.caes.uga.edu/center/caed/documents/GAFGVR2015_DEC16.pdf), the total farm gate value of agricultural production in Turner County is $76,861,946.09.

Damages from an EF-3 Hypothetical tornado with a 1,200' wide damage path through Turner County is estimated at $15.8 million, with 351 buildings damaged. The building losses are an estimate of building replacement costs multiplied by the percentage of damage. There are 2 essential facilities located in the tornado path. They would suffer minor damage should such a tornado strike occur. The map below shows the damaged Essential Facilities:



E. Land Use and Development Trends

Typically, mobile/manufactured homes are most vulnerable to tornado damage. According to 2021 Census Bureau estimates, there are 678 occupied mobile homes (8.3% of occupied housing units) in Turner County, including the Cities (63.6% of occupied housing units). This figure includes 115 mobile homes in the City of Ashburn (7.0% of housing units), 38 mobile homes in the City of Rebecca (27.3% of housing units), and 88 mobile homes in the City of Sycamore (29.3% of housing units).

The average household size in Turner County is 2.56 persons per household, according to 2021 Census Bureau estimates. Extrapolating this figure to the number of mobile homes, it is estimated that there are approximately 2,565 people residing in mobile homes countywide, which includes an estimated 294 people in the City of Ashburn, 310 in the City of Rebecca, and 225 people in the City of Sycamore.

Turner County and the City of Ashburn have seen an increase in population over the last few years, while the number of people in Rebecca has decreased.

The County and all the Cities have zoning regulations, and a building inspector enforces mandatory building and fire codes. All Cities and the County participate in joint comprehensive planning and the required updates of the Service Delivery Strategy.

All jurisdictions have mandatory building and fire codes that a building inspector enforces. On October 1, 1991, the Uniform Codes Act became effective in Georgia. On July 1, 2004, this Act was revised to make the following construction codes mandatory as the Georgia State Minimum Standard Codes. Listed below are the code editions in effect as of January 1, 2021, with amendments in 2020 and 2022:

- International Building Code – 2018 Edition
- International Residential Code – 2018 Edition
- International Plumbing Code – 2018 Edition
- International Mechanical Code – 2018 Edition
- International Fuel Gas Code – 2018 Edition
- International Energy Conservation Code – 205 Edition
- International Fire Code – 2018 Edition
- International Electric Code – 2020 Edition
- International Swimming Pool and Spa Code – 2018 Edition

The Act requires local governments that elect to enforce these codes within their jurisdictions to adopt administrative procedures and penalties in order to locally enforce any of these mandatory codes. Also, any applicable appendices of these codes must be adopted locally in order to be enforceable within a specific local jurisdiction.

The Act also made the following optional codes available for local government adoption and enforcement. Local governments choosing to enforce any of the below optional codes must adopt

the code(s) they wish to enforce, as well as administrative procedures and penalties. Some of the communities have chosen to adopt the following:

- International Property Maintenance Code - 2018 Edition
- International Existing Building Code - 2018 Edition
- National Green Building Standard - 2008 Edition
- Disaster Resilient Building Code IBC Appendix - 2020 Edition
- Disaster Resilient Building Code IRC Appendix - 2020 Edition

The DCA Board specifically omitted the plumbing, electrical, and energy requirements of the International Residential Code for One- and Two-Family Dwellings. Therefore, the plumbing requirements of the International Plumbing Code, the electrical requirements of the National Electrical Code, and the energy requirements of the International Energy Conservation Code must be used for one- and two-family dwelling construction.

No other land use or development trends that relate to this hazard have been identified at this time.

F. Multi-Jurisdictional Differences

Tornadoes follow a straight path regardless of natural features or political boundaries, and no difference in severity is expected between Turner County and the Cities of Ashburn, Rebecca, and Sycamore. However, the impact may be more severe in places with higher population density due to more people being in danger, more people needing to evacuate, more debris from damaged buildings, and other impacts associated with higher population density. In jurisdictions with many mobile homes, the damage can be expected to be more severe.

G. Overall HRV Summary of Events and Their Impact

Tornadoes can cause damage anywhere, anytime, throughout Turner County and the Cities of Ashburn, Rebecca, and Sycamore. They can form quickly, and residents may need more time to find adequate shelter, or good shelter facilities may not be available. The cost of the damage and potential loss of life may be higher if the event strikes populated areas as opposed to more sparsely populated or unpopulated areas or if the event strikes areas with a large number of mobile homes.

The HMPUC has developed a comprehensive range of Mitigation Goals, Objectives, and Action Steps to lessen the impacts of this hazard. These are contained in Chapter 4.

Since the previous plan was approved, there have not been any new developments, regulations, programs, or other changes in the community that would either increase or decrease the community's overall vulnerability to this hazard.

H. Impacts from Future Conditions

The United States experiences around 1,000 tornadoes each year. Most occur in Tornado Alley, an area of the Great Plains region, where the atmospheric conditions are right for massive, tornado-

spawning thunderstorms. The number of tornadoes that make up Tornado Alley is falling, while tornadoes are rising in Alabama, Arkansas, Missouri, Illinois, Indiana, Tennessee, and Kentucky.

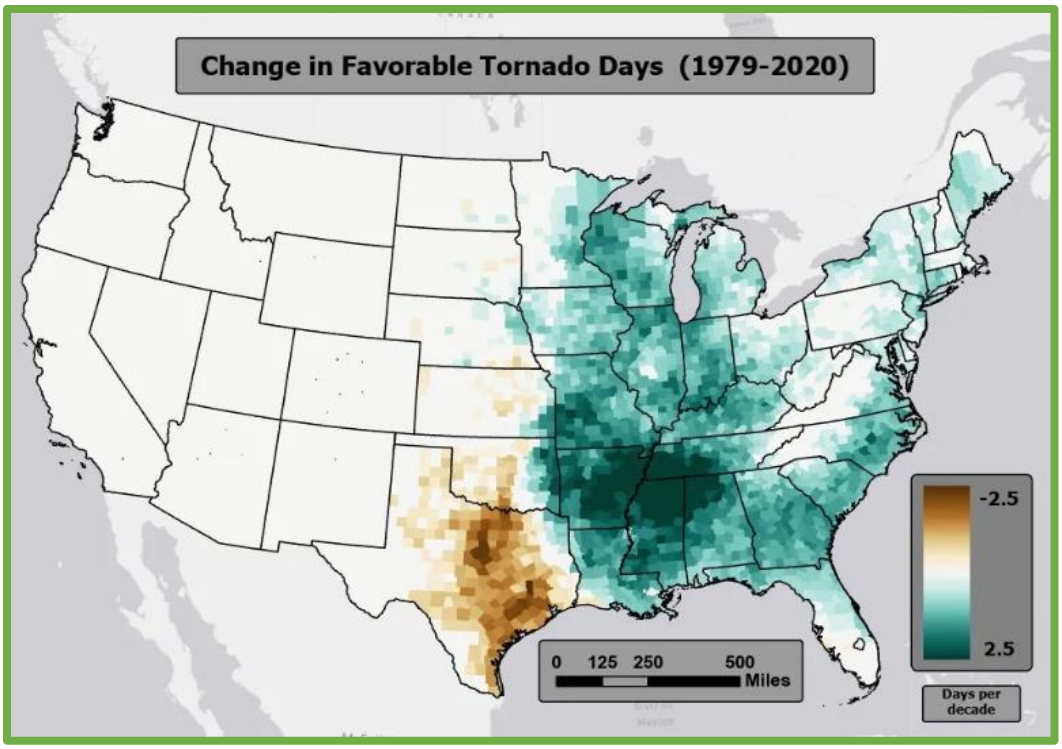
Predicting whether climate change will affect the frequency and power of tornadoes is a challenge. Tornadoes are small compared to other extreme weather, yet they are very destructive and short-lived. This makes it difficult for scientists to project the effect of climate change.

Scientists must attempt to predict how climate change might affect individual weather ingredients that support the development of a supercell thunderstorm. Supercell thunderstorms produce tornadoes. The weather ingredients include war, moist air, an unstable atmosphere, and wind at different levels moving in different directions at different speeds (also known as wind shear).

Rainfall and extreme heat can directly contribute to global warming. However, tornadoes also exhibit changes that may be linked to climate change, but scientists understand they can't project the direction and magnitude of future change. There is still much to learn about climate change's effects on tornadoes.

The Southeast is vulnerable on multiple accounts. More people live in tornado-vulnerable manufactured homes in the southeast than anywhere else. Safe shelters can be miles away from these areas. Southeastern tornadoes are more likely than elsewhere to strike at night when people are asleep and approaching tornadoes are less visible.

A 2017 Yale analysis found that average yearly tornado impacts, and vulnerability could be 6 to 36 times higher by 2100 compared to 1940, depending on location. The most considerable projected increase is from eastern Arkansas to the Appalachians in the Mid-South region.



https://yaleclimateconnections.org

The U.S. property losses from tornadoes over the decade from 2010-2020 were around $14.1 billion (about $43 per person in the US). (*Insurance Information Institute*).

I. Underserved/Socially Vulnerable Population Risk

Turner County has a large population of elderly individuals that live in assisted living facilities/nursing homes that may not receive emergency notifications through existing emergency notifications systems. Homeless people living in various areas county areas do not receive emergency notifications. The Health Department Liaison attended the workshops, as did one of Pruitt Health's employees, and these concerns were talked about and addressed. Currently, the homeless population is in different county areas, and it is tough to get an actual location for this population.

Flyers explaining the Hazard Mitigation process were distributed to be available at the county and city offices, and also at the Health Department and the Department of Family and Children Services (DFACS). (See Appendix H).

Section III. Floods

A. Identification of Hazard

The HMPUC has chosen the flood threat as the third most likely hazard to occur and cause damage in the community based on experience, the FEMA-described methodology, and other factors. Historical data have been examined from various sources, including the National Climatic Data Center (see Appendix F) and local history and personal accounts, to determine the frequency of events. For further information, see the HAZUS Report in Appendix G.

Floods may occur anytime, in many cases without warning, and their effects can range from minor inconvenience to wholesale destruction. Floods are often caused by heavy rain associated with thunderstorms, hurricanes, or tropical storms. Flooding can result from a rise in the level of a body of water such as a river or a lake or from rain falling faster than it can be the ground can absorb it under weather conditions that make the soil less the previous, for example, after a period of drought). Flooding frequently occurs in urban areas when a large amount of rain, above the capacity of the urban drainage system, falls on impervious surfaces such as streets, buildings, and parking lots. Flooding can also result from the failure of man-made structures such as levees and dams.

Flash floods occur in short periods, and people are caught off-guard. Flash floods can occur due to any of the causes mentioned above but are most often due to extremely heavy rainfall from thunderstorms. More information is available at the National Weather Service (https://www.weather.gov/phi/FlashFloodingDefinition).

According to the National Weather Service (http://tadd.weather.gov/), more deaths occur yearly due to flooding than any other thunderstorm-related hazard. The Centers for Disease Control and Prevention report that over half of all flood-related drownings occur when a vehicle is driven into hazardous flood water. The highest percentage of flood-related deaths is from walking into or near flood waters. People need to pay more attention to the force and power of water. Many of the deaths occur in automobiles as they are swept downstream. Of these drownings, many are preventable, but too many people continue to drive around the barriers that warn you the road is flooded. A mere 6 inches of fast-moving flood water can knock over an adult. It takes 6 inches of rushing water to carry away a small car, while 2 feet can carry away most vehicles. It is never safe to drive or walk into flood waters. 1 to 2 feet of water will carry cars and SUVs away. However, the impact from rushing water starts in water far shallower than that.
As defined by FEMA, Flood zones are described in the table below.

Flood Zone Designations and Descriptions

Source: FEMA (https://hazards.fema.gov/onlinelomc/ext/Help/loadInstructions)

Zone Designations	Zone Descriptions
A	Areas with a 1% annual chance of flooding and a 26% chance of flooding over the life of a 30-year mortgage. Because detailed analyses are not performed for such areas, no depths or base flood elevations are shown within these zones.
AH	Areas with a 1% annual chance of shallow flooding, usually in the form of a pond, with an average depth ranging from 1 to 3 feet. These areas have a 26% chance of flooding over the life of a 30-year mortgage. Base flood elevations derived from detailed analyses are shown at selected intervals within these zones.
AO	River or stream flood hazard areas, and areas with a 1% or greater chance of shallow flooding each year, usually in the form of sheet flow, with an average depth ranging from 1 to 3 feet. These areas have a 26% chance of flooding over the life of a 30-year mortgage. Average flood depths derived from detailed analyses are shown within these zones.
A1-A30	These are known as numbered A Zones (e.g., A7 or A14). This is the base floodplain where the FIRM shows a BFE (old format).
A99	Areas with a 1% annual chance of flooding will be protected by a Federal flood control system where construction has reached specified legal requirements. No depths or base flood elevations are shown within these zones.
AE	The base floodplain where base flood elevations are provided. AE Zones are now used on new format FIRMs instead of A1-A30 Zones.
AR	Areas with a temporarily increased flood risk due to the building or restoration of a flood control system (such as a levee or a dam). Mandatory flood insurance purchase requirements will apply, but rates will not exceed the rates for unnumbered A zones if the structure is built or restored in compliance with Zone AR floodplain management regulations.
V	Coastal areas with a 1% or greater chance of flooding and an additional hazard associated with storm waves. These areas have a 26% chance of flooding over the life of a 30-year mortgage. No base flood elevations are shown within these zones.
V1-V30	Coastal areas with a 1% or greater chance of flooding and an additional hazard associated with storm waves. These areas have a 26% chance of flooding over the life of a 30-year mortgage. Base flood elevations derived from detailed analyses are shown at selected intervals within these zones.
VE	Coastal areas with a 1% or greater chance of flooding and an additional hazard associated with storm waves. These areas have a 26% chance of flooding over the life of a 30-year mortgage. Base flood elevations derived from detailed analyses are shown at selected intervals within these zones.
B	Area of moderate flood hazard, usually the area between the limits of the 100-year and 500-year floods. They are also used to designate base floodplains of lesser hazards, such as areas protected by levees from 100-year flood, shallow flooding areas with average depths of less than one foot or drainage areas less than 1 square mile.
C	Area of minimal flood hazard, usually depicted on FIRMs as above the 500-year flood level.
D	Areas with possible but undetermined flood hazards. No flood hazard analysis has been conducted. Flood insurance rates are commensurate with the uncertainty of the flood risk.
X Shaded	Area of moderate flood hazard, usually the area between the limits of the 100-year and 500-year floods. They are also used to designate base floodplains of lesser hazards, such as areas protected by levees from 100-year flood, shallow flooding areas with average depths of less than one foot or drainage areas less than 1 square mile.
X Unshaded	Area of minimal flood hazard, usually depicted on FIRMs as above the 500-year flood level.

Turner County and the Cities of Ashburn, Rebecca, and Sycamore are all vulnerable to the effects of flooding. Areas within flood zones are naturally more susceptible. For more information, see the maps in Appendix A.

B. Profile of Events, Frequency of Occurrences, Probability

According to the NOAA Storm Events Database (Appendix F), four flood reports occurred in Turner County (including the Cities) between 01/01/1950 and 12/31/2022. The Historic Recurrence Interval is 18.00 years. This is a 5.56% Historic Frequency Chance per year. The past 10-year Record Frequency Per Year is 0.4, the past 20-year frequency is 0.02, and the past 50-year frequency is 0.08 (see the Hazard Frequency Table in Appendix D).

In December 2018, many roads were closed in Turner County due to the large amounts of rain within the community on two separate occasions.

Due to flooding, Turner County was included in the State of Emergency for 120 Georgia counties south of I-20. GDOT closed State Hwy 107 at the Deep Creek bridge at the Waterloo/Rebecca Road on March 5, 2020. Other roads throughout the community also had closures.

Deep Creek Bridge

SR 112

Flood Advisory September 16, 2020

Meteorologist Kerri Copello
September 16, 2020 ·

SOUTHWEST GEORGIA: The flood threat is going up. Areas west of I-75 are at a threat level of either 3 or 4, out of 4. Take this heavy, widespread rain seriously.

Bainbridge has already seen 3.21 inches of rain, Donalsonville has seen 3.28 inches.

Two flood events have occurred since the previous Hazard Mitigation Plan was completed. Although the complete available data was used for this analysis, the possibility remains that other events may have occurred in the community that went unreported or underreported.

According to Mike Mastrario, Turner County Building Inspector/Zoning Administrator, Turner County, and its cities have not had any serious flooding in the past 32 years that he has lived in the county. He stated there had been very little property damage and minor flooding in houses built in low-lying areas in the 60s or before. Maybe 4 or 5 houses that he knows of.

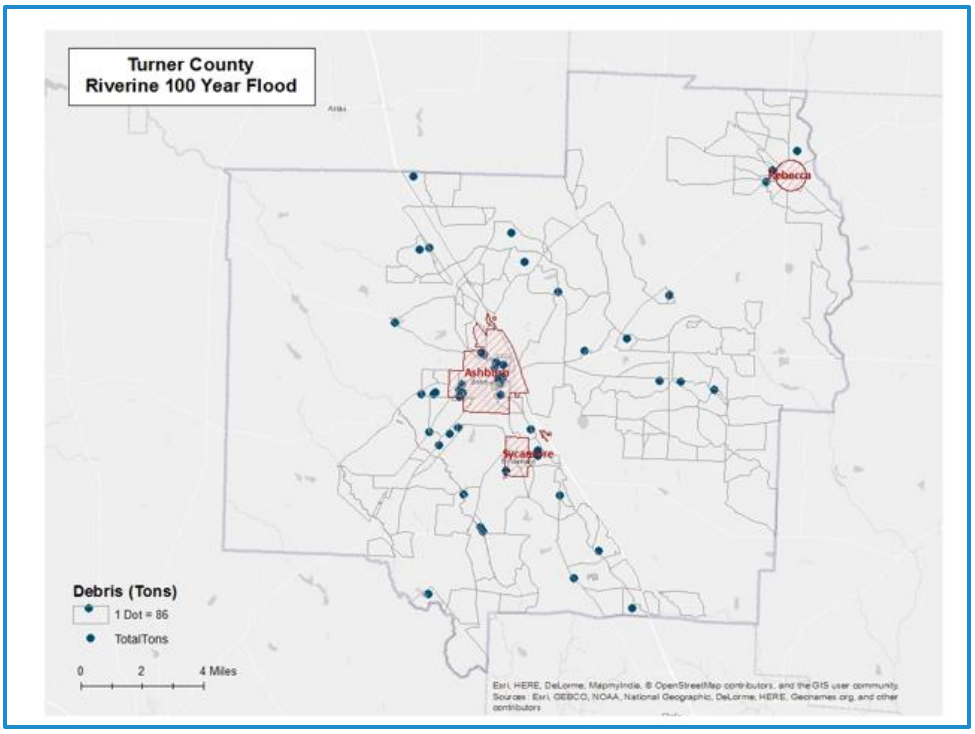
C./D.: Inventory of Assets Exposed and Potential Loss

In Worksheet 3A: Inventory of Assets (Appendix A), we estimate that all of Turner County and the Cities of Ashburn, Rebecca, and Sycamore are equally vulnerable to this hazard.

Buildings in Turner County are vulnerable to flooding from events equivalent to the 1% riverine flood. Of the 4,026 residential units listed in the HAZUS Report, 1.89% of residential units could have a loss (76 of 4,026). The economic and social impacts can be significant. This would be a total loss of $3,734,617 for residential units. Commercial units affected by the 1% riverine flood would be 1.10% of the 365 entire commercial buildings, at a complete loss of $326,740,527. The assessed values are based on the most recently available tax roll data for Turner County and the Cities of Ashburn, Rebecca, and Sycamore, provided by the Turner County Tax Assessor's Office. The HAZUS analysis for essential facilities determines that no facility was subject to damage in Turner County riverine 1% probability floodplain.

The report also estimates 120 households might be displaced due to the flood. Displacement includes households evacuated within or very near the inundated area. Displaced households represent 359 individuals, of which 56 may need short-term publicly provided shelter. The results are mapped in Figure 10. These numbers may be over-estimated for two reasons: elevated housing not considered and parcel centroids (not aligned precisely with actual structures).

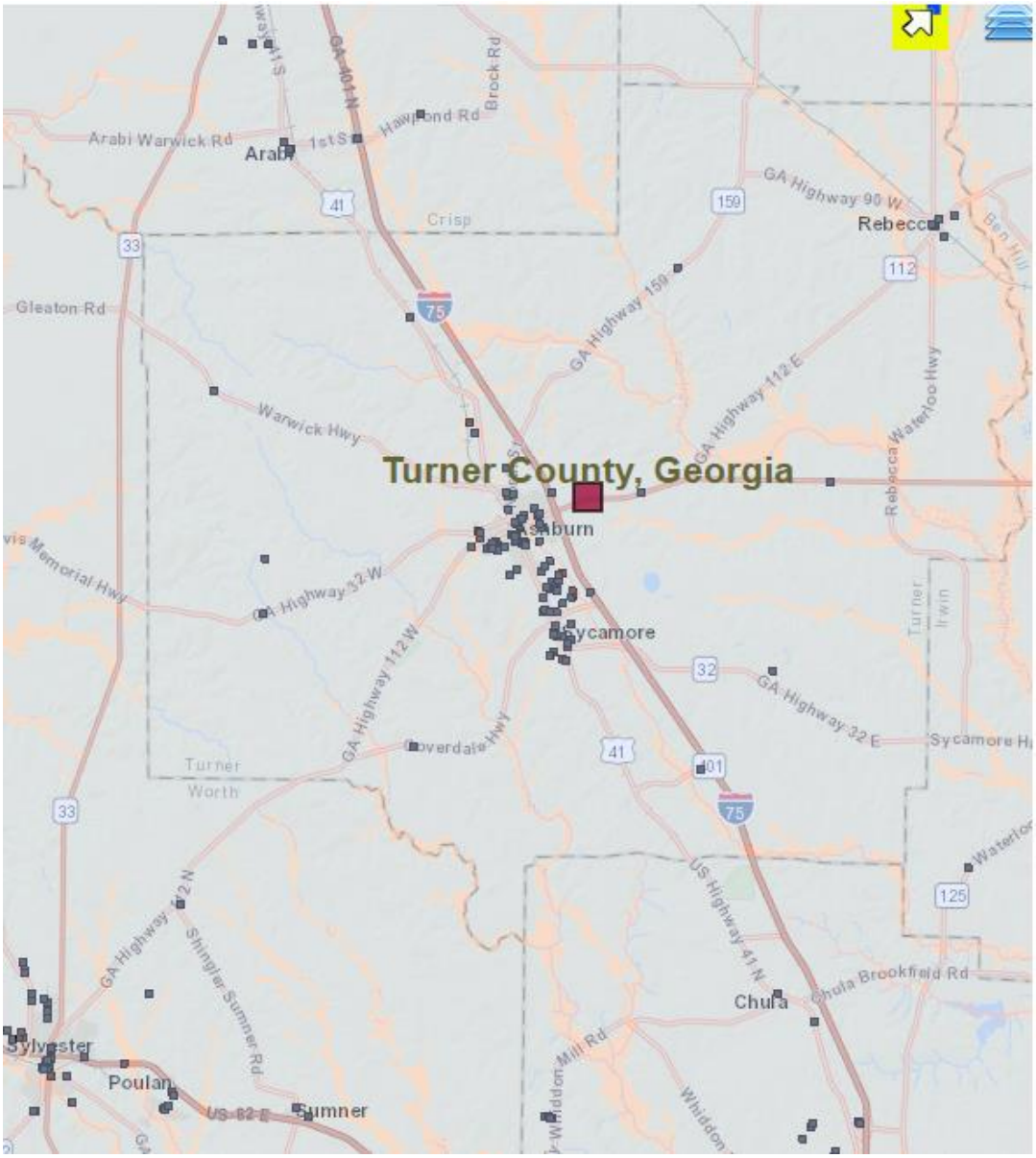
The analysis also shows that approximately 5,013 tons of debris might be generated: 1) Finishes – 1,496 tons; 2) Structural – 1,479 tons; and 3) Foundations – 2,039 tons. The results are shown in the map below:

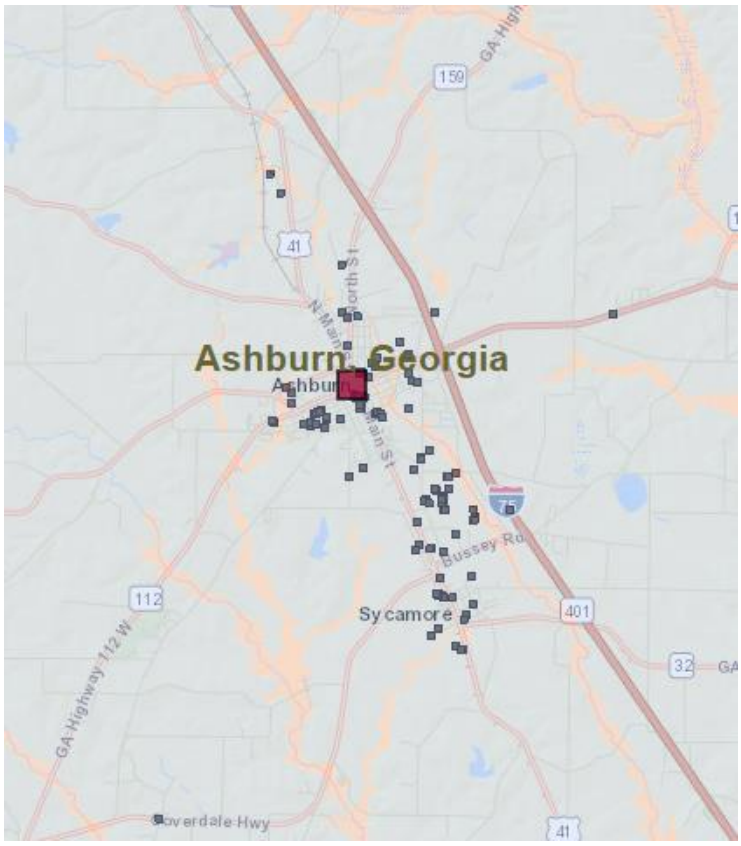


Damage to crops is not considered in any of these figures. According to the Center for Agribusiness & Economic Development's 2021 Georgia Farm Gate Value Report (http://caes2.caes.uga.edu/center/caed/documents/GAFGVR2015_DEC16.pdf), the total farm gate value of agricultural production in Turner County is $76,861,946.09.

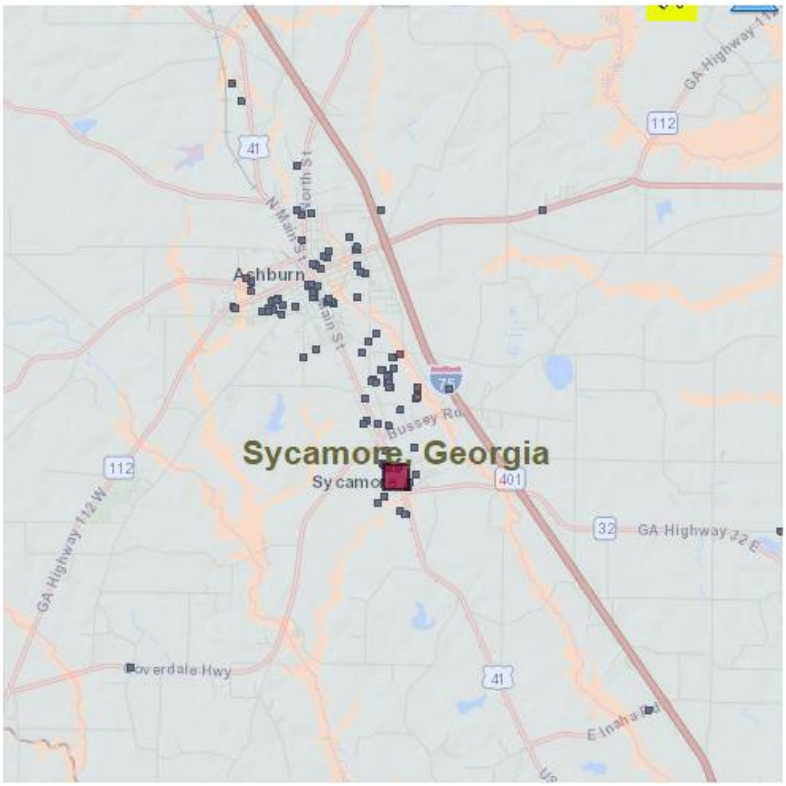
Many individuals do not have access to transportation and thus are susceptible to weather hazards. It is essential to notify these individuals through weather radios, radio stations, and other means so that they may seek shelter and/or plan for transportation to shelter facilities. Therefore, a major consideration should be helping individuals, government, and non-profit organizations prepare for the pending flood hazard events.

The following are the maps of the Flood Zones located in Turner County, and the Cities of Ashburn, Rebecca, and Sycamore:




Ashburn, Georgia
159
41
112
401
32
Sycamore
Bussey Rd
GA Highway 112 W
Coverdale Hwy


Rebecca, Georgia
112
90
Double Run Creek



The GMIS reports do not list any Repetitive Loss/NFIP properties in Turner County or the Cities of Ashburn, Rebecca, and Sycamore.

E. Land Use and Development Trends

Turner County and the City of Ashburn have seen a decrease in population over the last few years, while the number of people in the Cities of Rebecca and Sycamore has increased.

The County and all the Cities have zoning regulations and mandatory building and fire codes enforced by a building inspector enforces. All Cities and the County participate in joint comprehensive planning and the required updates of the Service Delivery Strategy.

Turner County has a Building Inspector/Zoning Administrator who handles flood prevention for the county and all of the cities. The Officer/Inspector is a designee that enforces the National Flood Insurance Program. The Officer/Inspector reviews permit applications or zoning complaints for Turner County and its cities. Permits are compliant with all building and flood requirements before any permit is issued.

Turner County and the cities have used various funds to mitigate potential flood damage. In recent years, they have used CBDG funding and various other funding for these projects. Turner County has drainage projects in its Comprehensive Plan and hopes to utilize additional CDBG funding. There are other road improvement projects throughout the county and cities where CBGG's and other funding sources will be used for funding, which will also include drainage work. The county

and cities also maintain their storm drainage system on a regular schedule to prevent flooding issues.

The communities have documented damage assessments after storms with cost estimation and calculations. This helps to determine insurance claims or assistance applications.

No other land use or development trends that relate to this hazard have been identified at this time.

F. Multi-Jurisdictional Differences

Turner County and the Cities of Ashburn, Rebecca, and Sycamore are members of the National Flood Insurance Program; the City of Rebecca is not (source: https://www.fema.gov/cis/GA.html). Rebecca is a small rural community with approximately 200 residents and a few city employees. At the time that the other communities were applying for participation in the NFIP, they did not have the resources for participation. However, the County Building Inspector/Zoning Inspector does enforce the Flood Ordinance for Rebecca, as he does for the county and other jurisdictions. Turner County and the Cities of Ashburn, Rebecca, and Sycamore comply with NFIP requirements as of 2022. They intend to remain compliant by enforcing floodplain ordinances that prohibit or severely limit development in floodplains. For example, Turner County has a Wetlands Protection District (Zoning Ordinance §10-5), encompassing all wetland areas without on the U. S. Fish and Wildlife Service National Wetlands Inventory Maps. The Cities of Rebecca and Sycamore have adopted Part V Wetlands Notification Ordinances.

The Turner County Building Department Administrator (Building Official) has been designated to administer and implement the requirements of the NFIP. The duties and responsibilities of the Building Official for the requirements are as follows, shown in Chapter 34, Article II, Division 3. - Administration – Flood Damage Prevention, Turner County, GA, (Code of Ordinances - Municode).

1. Review the proposed development to ensure that the permit requirements of this article have been satisfied.
2. Review proposed development to assure that all necessary permits have been received from governmental agencies from which approval is required by federal or state law, including section 404 of the Federal Water Pollution Control Act Amendments of 1972, 33 U.S.C. 1334. Require that copies of such permits be provided and maintained on file.
3. Review all permit applications to determine whether proposed building sites will be reasonably safe from flooding.
4. When base flood elevation data or floodway data have not been provided in accordance with sections 34-52, then the building official shall obtain, review and reasonably utilize any base flood elevation and floodway data available from a federal, state, or other sources to administer the provisions of division 4.
5. Review and record the actual elevation in relation to the mean sea level (or highest adjacent grade) of the lowest floor, including the basement, of all new or substantially improved structures in accordance with sections 34-72(2).

6. Review and record the actual elevation, in relation to the mean sea level to which any new or substantially improved structures have been floodproofed, in accordance with section 34-72(2).
7. When floodproofing is utilized for a structure, the building official shall obtain certification of design criteria from a registered professional engineer or architect in accordance with section 34-72(1) c. and section 34-92(2) or 34-94(2).
8. Make substantial damage determinations following a flood event or any other event that causes damage to structures in flood hazard areas.
9. Notify adjacent communities and the Georgia Department of Natural Resources prior to any alteration or relocation of a watercourse and submit evidence of such notification to the Federal Emergency Management Agency (FEMA).
10. For any altered or relocated watercourse, submit engineering data/analysis within six months to FEMA to ensure the accuracy of community flood maps through the letter of the map revision process. Assure the flood-carrying capacity of any altered or relocated watercourse is maintained.
11. Where interpretation is needed as to the exact location of boundaries of the areas of special flood hazard (for example, where there appears to be a conflict between a mapped boundary and actual field conditions), the building official shall make the necessary interpretation. Any person contesting the location of the boundary shall be given a reasonable opportunity to appeal the interpretation as provided in this article.
12. All records pertaining to the provisions of this article shall be maintained in the office of the building official and shall be open for public inspection.

The Flood Prevention Ordinance was adopted on August 10, 2009. There are no Special Flood Areas (SFHA) located within Turner County.

Turner County and the Cities of Ashburn, Rebecca, and Sycamore do not participate in the Community Rating System (CRS) program. According to FEMA, they were not eligible as of October 1, 2022 (source: http://www.fema.gov/library/viewRecord.do?id=3629).

G. Overall HRV Summary of Events and Their Impact

Floods can cause damage anywhere, anytime, throughout Turner County and the Cities of Ashburn, Rebecca, and Sycamore, especially in flood-prone areas. Floods can happen quickly, and residents may not need more to evade floodwaters. The cost of the damage and potential loss of life might be higher if the event strikes populated areas instead of more sparsely populated or unpopulated areas.

The HMPUC has developed a comprehensive range of Mitigation Goals, Objectives, and Action Steps to lessen the impacts of this hazard. These are contained in Chapter 4.

Since the previous plan was approved, there have not been any new developments, regulations, programs, or other changes in the community that would either increase or decrease the community's overall vulnerability to this hazard.

H. Impacts from Future Conditions

According to NOAA Severe Storms Laboratory, flash flooding is rising across the US, and storms will likely become up to 10% more capable of creating a flood by 2100. With rising ocean levels, high storm surges in coastal communities will increase the risk of coastal and inland flooding.

Floods are the most common and deadly natural disasters in the United States. Every state and nearly every county in the US have witnessed destruction. As global warming continues to exacerbate sea level rise and extreme weather, the floodplains in the US are expected to grow by approximately 45 percent by the century's end.

As flooding events get bigger, they will be happening more often, and the response will be the duty of city, county, and state agencies. Climate change has influenced water-related variables contributing to floods, such as rainfall and snowmelt. According to the *Climate Science Special Report*, which reports on climate change in America, more flooding in the United States will be occurring in the Mississippi River Valley, Midwest, and Northeast. In contrast, coastal flooding has doubled in a matter of decades.

Evidence proves that natural disasters have increased in the past few decades because human activity adversely damages our environment. The environment, in turn, is forming disasters that cause environmental, life, and economic losses.

The intensity and frequency of floods have increased rapidly in recent decades because of global warming. The moisture in warm air can increase by 7% with every 1.8 °F increase. A warmer atmosphere holds and dumps more water. The country has heated up by an average of 1.8 degrees Fahrenheit since 1901, and we have become a 4 percent wetter country; the eastern half of the United States has grown to be the soggiest.

Looking forward, heavy precipitation events are projected to increase, along with temperatures, through the 21st century, from 50% to as much as three times the historical average. While heavier rainfall doesn't automatically lead to floods, it does increase their potential. Where urban flooding is rising, moderate amounts of rain have caused severe damage. Population shift, and loss of crops, land, cattle, etc., are being destroyed by the increased rainfalls that have led to flooding. While it is true that floods do not discriminate, affecting anyone in their path regardless of wealth or ethnicity, it is most often lower-income people, the elderly, and minority communities who suffer the most significant impacts. These populations are least likely to have flood insurance, access to transportation during an evacuation, cash on hand, or the ability to relocate.

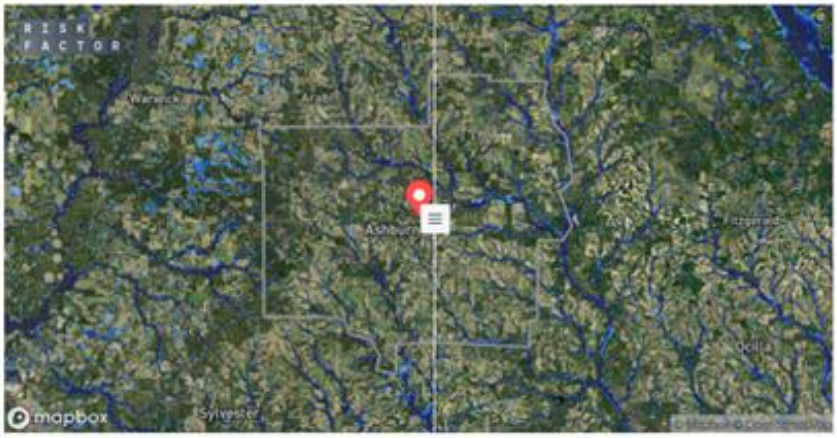
Turner County and the Cities of Ashburn, Rebecca and Sycamore, have a minor risk of flooding in the next 30 years, which means that the community will be impacted in some way. The following information from Risk Factor shows more of what is expected in Turner County, due to flooding in the next 30 years:

Anticipating Changes in Flood Risk for Turner County

Deeper floods from major events, like hurricanes, are less likely to occur, but affect more properties than more shallow flood events, like heavy rains. As Turner County feels the effects of a changing environment, however, events of all kinds will affect more properties within the community.

If a low-likelihood storm resulting in severe flooding (a 1-in-100 year flood event), occurred today, it could affect **375** properties in **Turner County**. This type of event has a 26% chance of occurring at least once over the life of a 30 year mortgage. 30 years from now, an event of this same likelihood would affect **380** properties due to a changing environment.

This year → In 30 years



Properties at risk

375	380
Today	In 30 years

0 0.5 1 2 3+

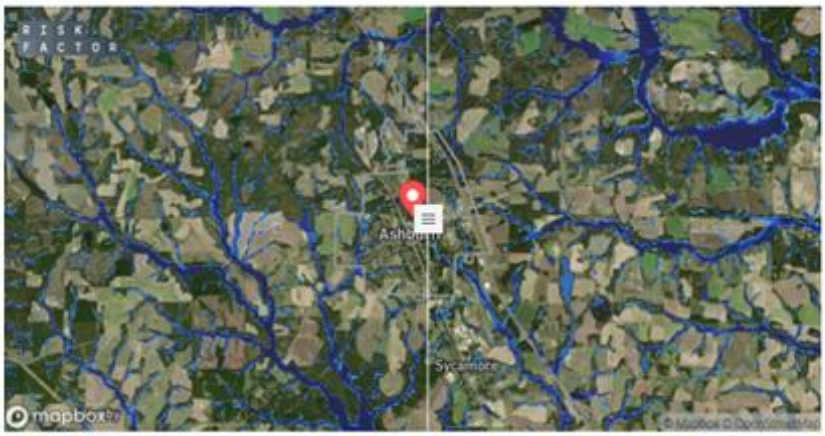
Depth of flooding (ft.)

Anticipating Changes in Flood Risk for Ashburn

Deeper floods from major events, like hurricanes, are less likely to occur, but affect more properties than more shallow flood events, like heavy rains. As Ashburn feels the effects of a changing environment, however, events of all kinds will affect more properties within the community.

If a low-likelihood storm resulting in severe flooding (a 1-in-100 year flood event), occurred today, it could affect **67** properties in **Ashburn**. This type of event has a 26% chance of occurring at least once over the life of a 30 year mortgage. 30 years from now, an event of this same likelihood would affect **69** properties due to a changing environment.

This year — In 30 years



Properties at risk

67	69
Today	In 30 years

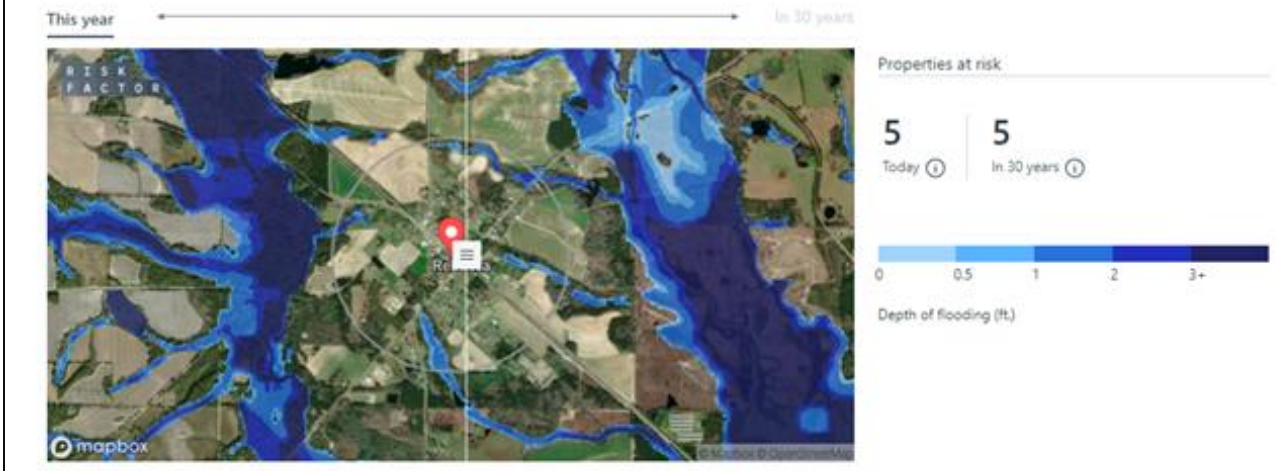
0 0.5 1 2 3+

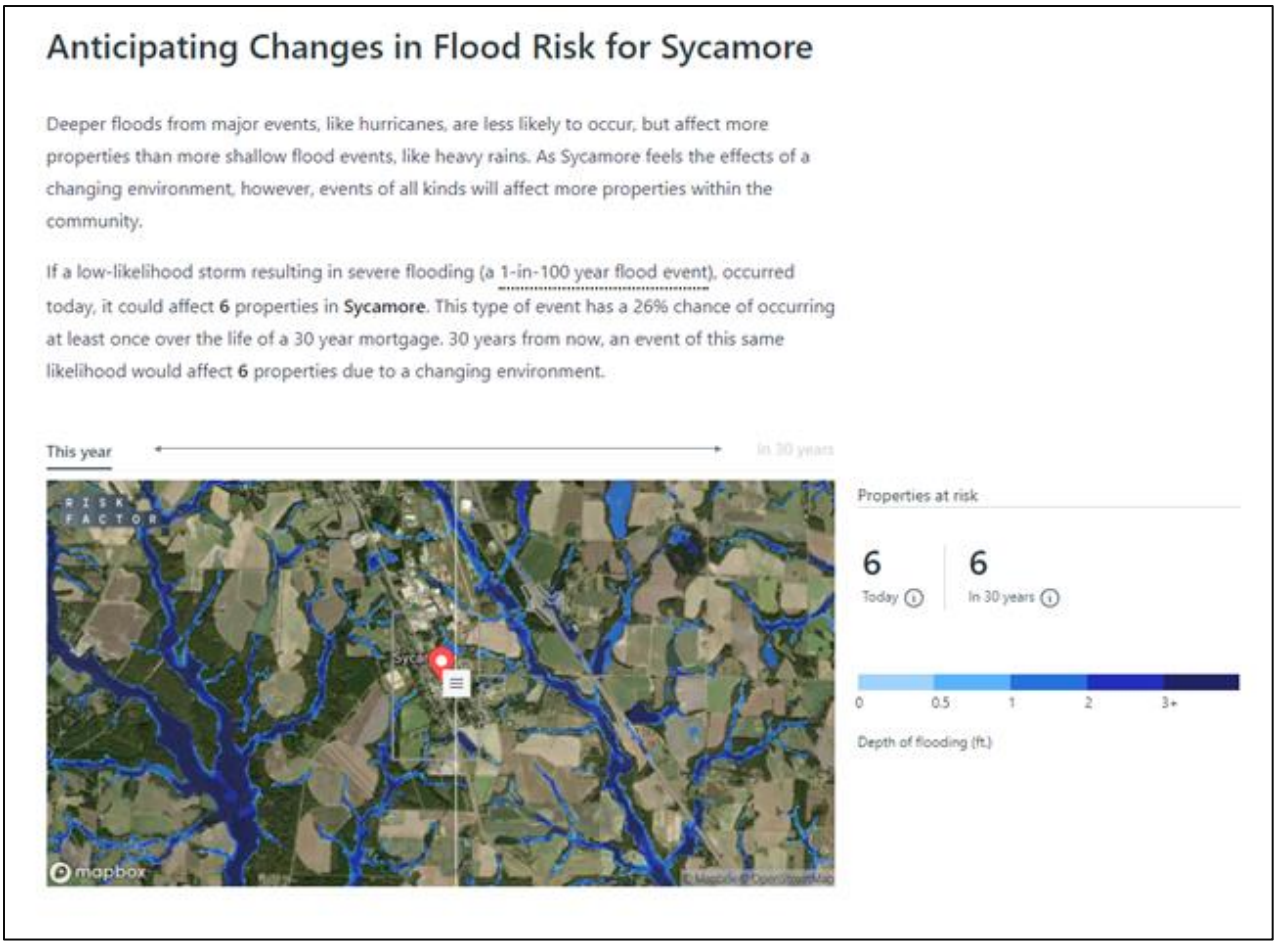
Depth of flooding (ft.)

Anticipating Changes in Flood Risk for Rebecca

Deeper floods from major events, like hurricanes, are less likely to occur, but affect more properties than more shallow flood events, like heavy rains. As Rebecca feels the effects of a changing environment, however, events of all kinds will affect more properties within the community.

If a low-likelihood storm resulting in severe flooding (a 1-in-100 year flood event), occurred today, it could affect **5** properties in **Rebecca**. This type of event has a 26% chance of occurring at least once over the life of a 30 year mortgage. 30 years from now, an event of this same likelihood would affect **5** properties due to a changing environment.





I. Underserved/Socially Vulnerable Population Risk

Turner County has a large population of elderly individuals that live in assisted living facilities/nursing homes that may not receive emergency notifications through existing emergency notifications systems. A homeless population residing in various county areas may not receive emergency notifications. The Health Department Liaison attended the workshops, as did one of Pruitt Health employees, and these concerns were talked about and addressed. Currently, the homeless population is in different county areas, and getting an actual location for this population is tough.

Flyers explaining the Hazard Mitigation process were distributed to be available at the county and city offices and at the Health Department and the Department of Family and Children Services (DFACS). (See Appendix H).

Section IV. Lightning/Thunderstorms/Wind/Hail

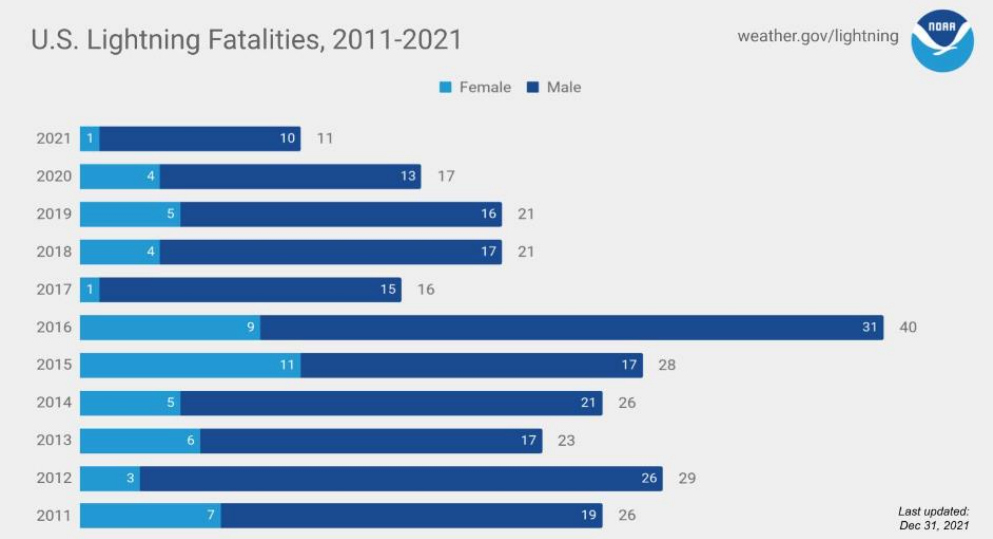
A. Identification of Hazard

The HMPUC has chosen the threat of lightning/thunderstorms/wind/hail as the fourth most likely hazard to occur and cause damage in the community, based on experience, the FEMA-described methodology, and other factors. Historical events have been examined from various sources, including the National Climatic Data Center (see Appendix F), as well as from local history and personal acts, to determine the frequency of events.

Lightning is a giant spark of electricity in the atmosphere or between the atmosphere and the ground. In the initial stages of development, air acts as an insulator between the positive and negative charges in the cloud and between the cloud and the ground; however, when the differences in charges become too great, this insulating capacity of the air breaks down, and there is a rapid discharge of electricity that we know as lightning. Lightning most often strikes during thunderstorms but can strike many miles from the center of the storm or even strike in areas not covered by a storm (this phenomenon is known as a "bolt from the blue").

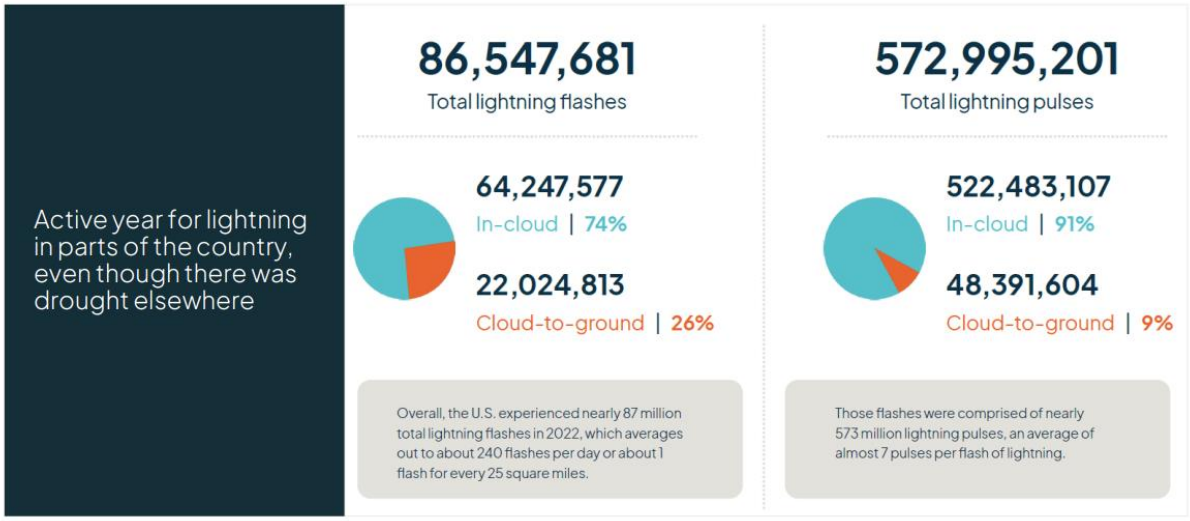
According to NOAA (http://www.lightningsafety.noaa.gov/), lightning strikes the United States about 25 million times yearly. Although most lightning occurs in the summer, people can be struck at any time of year. Lightning kills an average of 47 people in the United States annually, and hundreds more are severely injured.

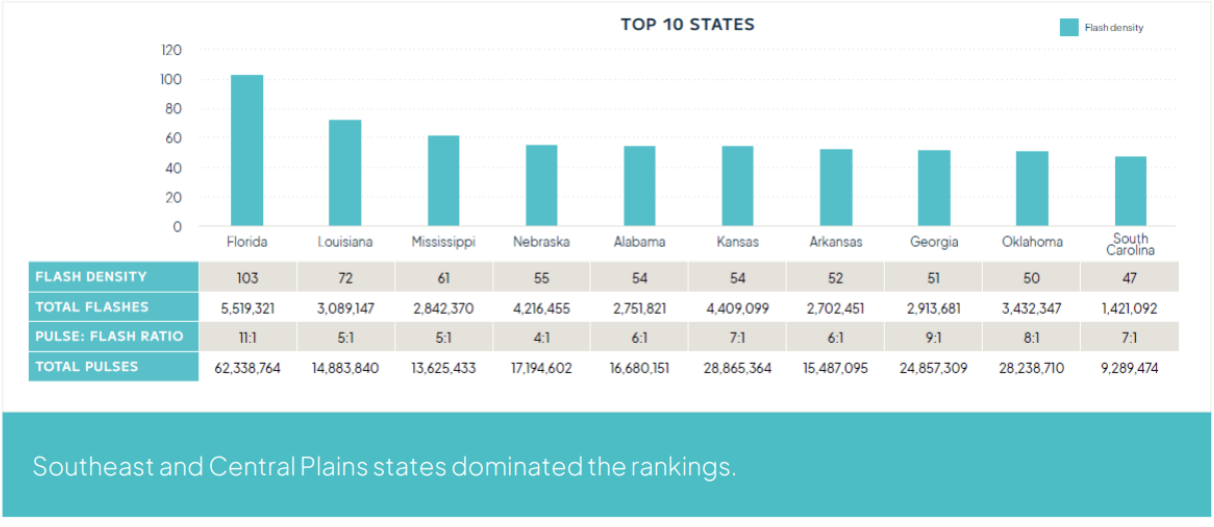
Lightning can strike in any place at any time but, contrary to popular myth, is not attracted to metal. Tall, isolated structures with a pointy shape are most likely to be struck by lightning. When thunder and lightning are present, the best action is to seek shelter inside a robust building. Sheltering under a tree increases the risk of getting struck by lightning and is more dangerous than being out in the open. Most cars protect their occupants from lightning because they have metal roofs and sides; contrary to popular myth, the car's rubber tires do not protect the occupants. When sheltering inside a building, one should avoid metal objects (metal doors, plumbing, electronics, etc.). (Source: http://www.lightningsafety.noaa.gov/myths.shtml)

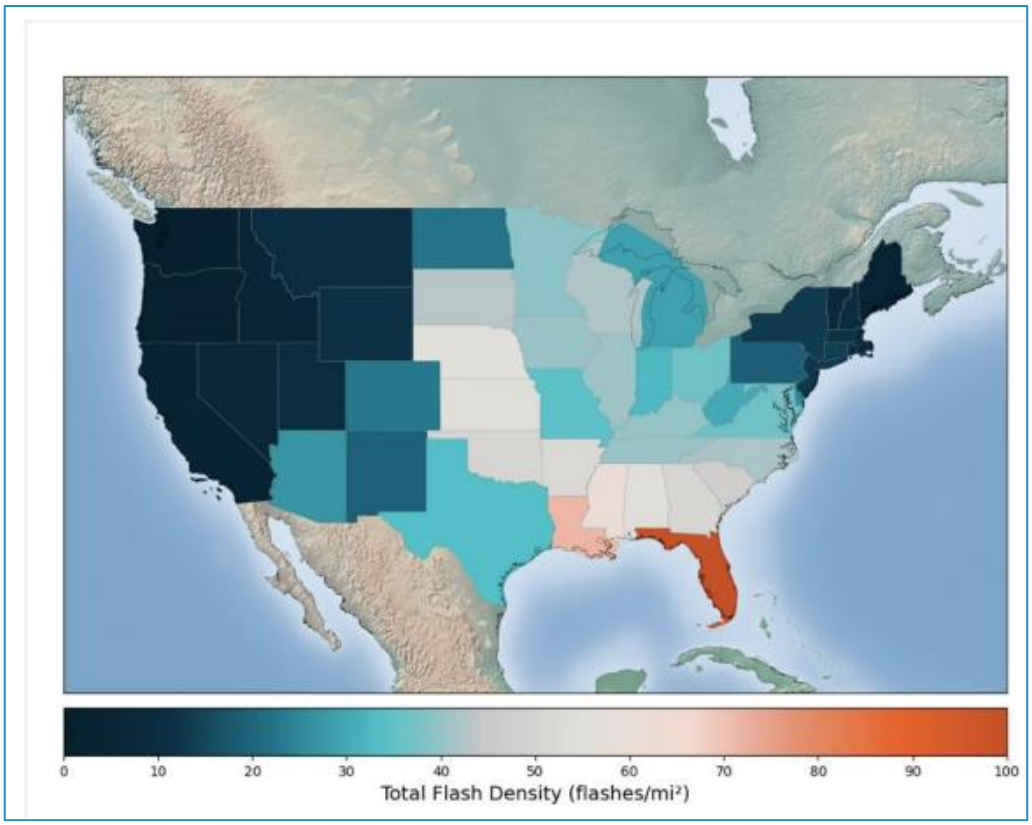


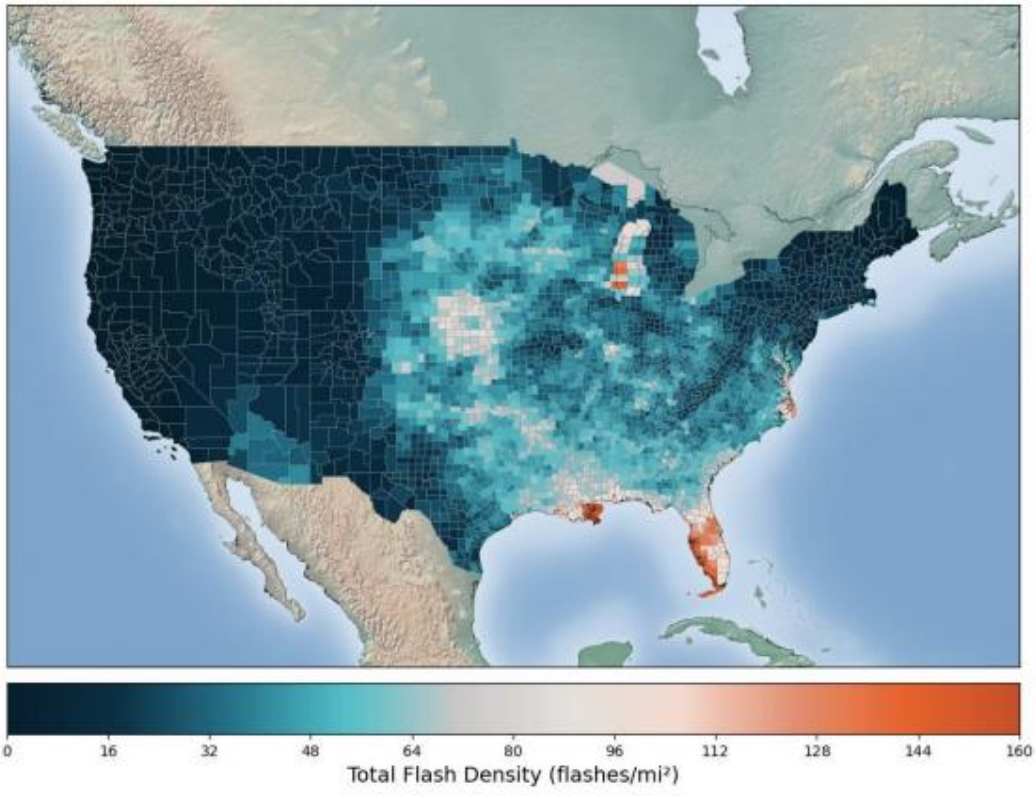
State flash density rankings

Below are exerts from the case study that Dr. Elizabeth DiGangi, an AEM Lightning Scientist leading researcher, was part of in the annual 2022 Lightning Report:

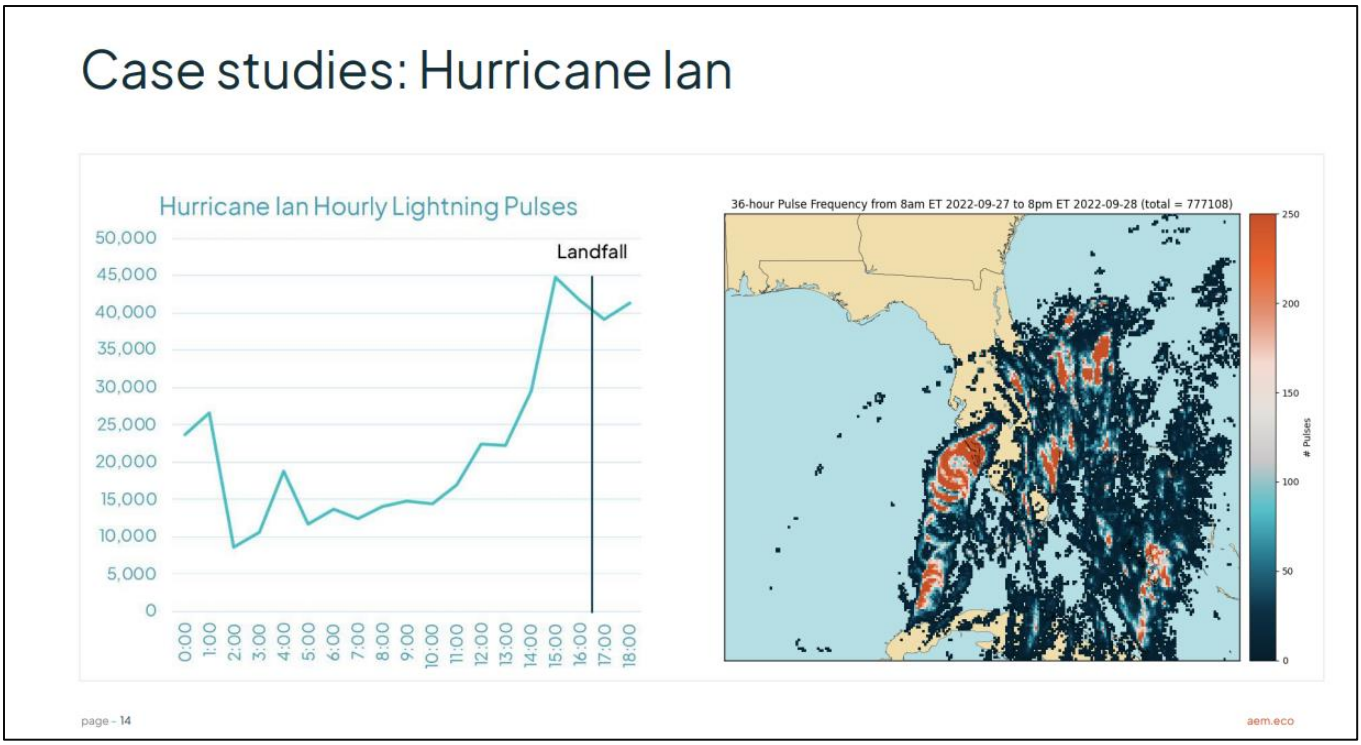





0
10
20
30
40
50
60
70
80
90
100
Total Flash Density (flashes/mi²)


0
16
32
48
64
80
96
112
128
144
160
Total Flash Density (flashes/mi²)

AEM. eco

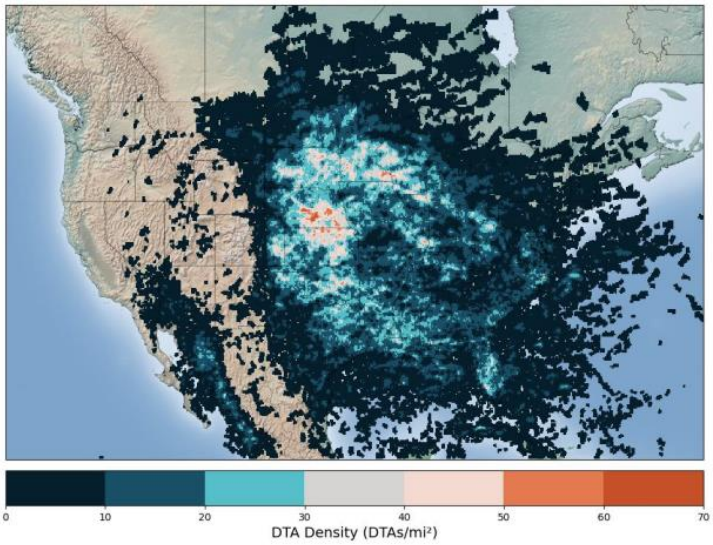


NOAA defines thunderstorms as rain showers during which thunder is heard. The following are some of the most common thunderstorm types:
(Source: http://www.nssl.noaa.gov/education/svrwx101/thunderstorms/types/)

- **Single-cell thunderstorms**, often called "popcorn" convection, are small, brief, weak storms that grow and die within an hour. They are typically driven by heat on a summer afternoon. Single-cell storms may produce brief heavy rain and lightning.
- A **multi-cell storm** is an ordinary thunderstorm in which new updrafts form along the leading edge of rain-cooled air (the gust front). Individual cells usually last 30 to 60 minutes, while the system as a whole may last for many hours. Multicell storms may produce hail, strong winds, brief tornadoes, and/or flooding.
- A **squall line** is a group of storms arranged in a line, often accompanied by "squalls" of high wind and heavy rain. Squall lines pass quickly and are less prone to produce tornadoes than supercells. They can be hundreds of miles long but are typically only 10 or 20 miles wide.
- A **supercell** is a long-lived (greater than 1 hour) and highly organized storm feeding off an updraft (a rising current of air) that is tilted and rotating. This rotating updraft - as large as 10 miles in diameter and up to 50,000 feet (about 15.24 km) tall - can be present as much as 20 to 60 minutes before a tornado forms. Scientists call this rotation a mesocyclone when it is detected by Doppler radar. The tornado is a minimal extension of this larger rotation. Most large and violent tornadoes come from supercells.

The big picture: Dangerous Thunderstorm Alerts

A **Dangerous Thunderstorm Alert (DTA)** is issued by AEM when a thunderstorm's total lightning flash rate indicates a **risk of severe weather.**



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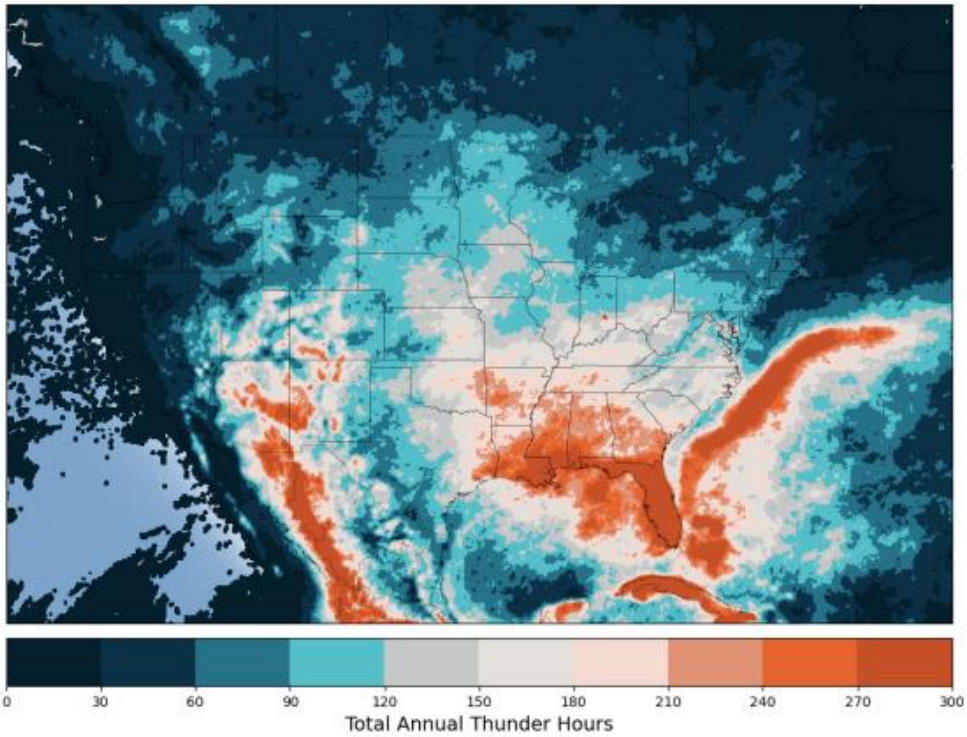
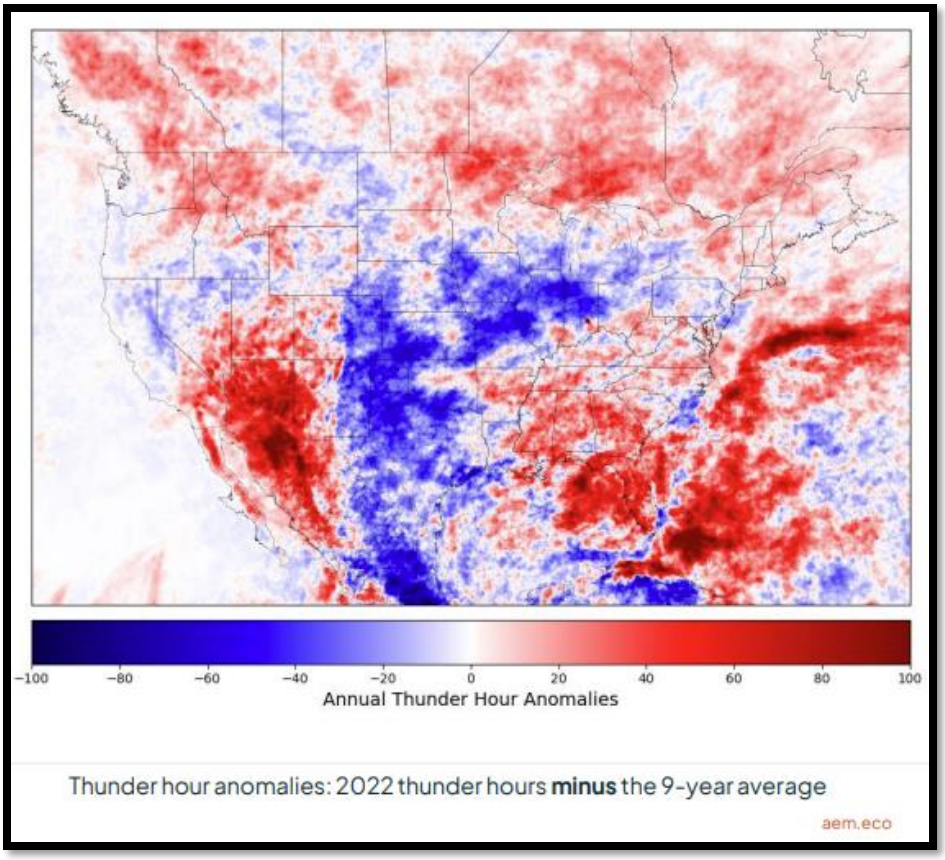
aem.eco



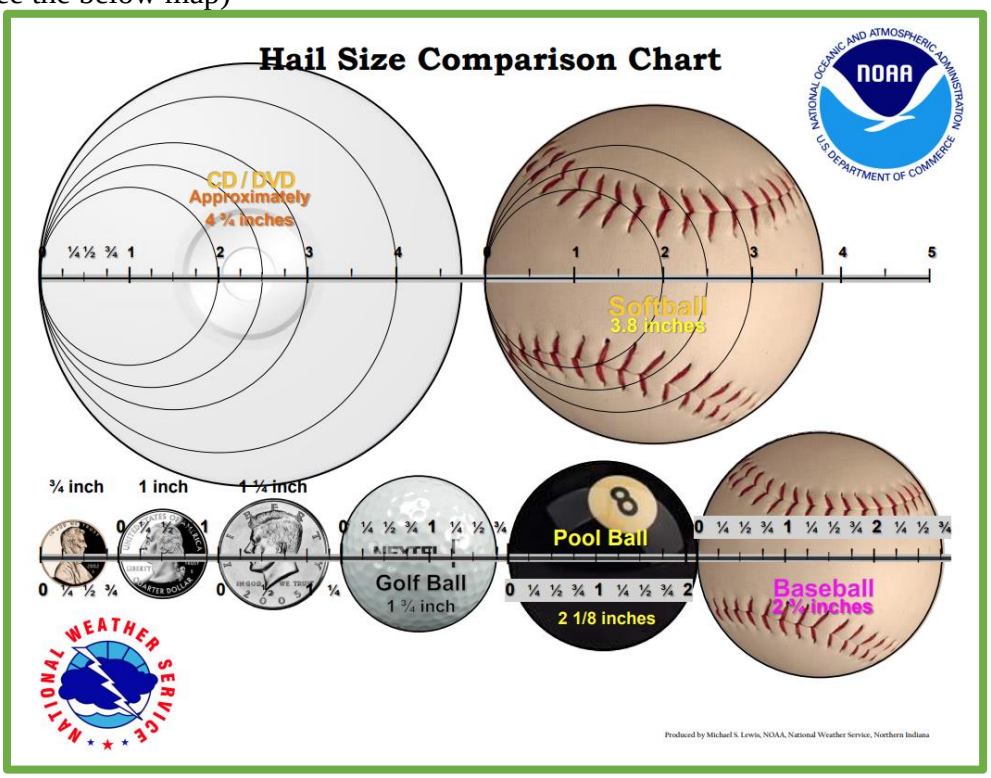


Hail is a form of precipitation that occurs when thunderstorm updrafts carry raindrops upward into extremely cold areas of the atmosphere, where they freeze into ice balls. Hail can damage aircraft, homes, and cars and kill livestock and people. Hail is usually pea-sized to marble-sized, but big thunderstorms can produce big hail.

Hail size is estimated by comparing it to a known object. Most hailstorms are made up of a mix of sizes, and only the largest hailstones propose a severe risk to people caught in the open. The following are some standard size measurements.
(Source: http://www.nssl.noaa.gov/education/svrwx101/hail/):

- Pea = 1/4-inch diameter
- Marble/mothball = 1/2-inch diameter
- Dime/Penny = 3/4-inch diameter
- Nickel = 7/8 inch
- Quarter = 1 inch — hail quarter size or larger is considered severe
- Ping-Pong Ball = 1 1/2 inch
- Golf Ball = 1 3/4 inches
- Tennis Ball = 2 1/2 inches
- Baseball = 2 3/4 inches
- Teacup = 3 inches
- Grapefruit = 4 inches
- Softball = 4 1/2 inches

(See the below map)



The wind is categorized, according to its strength and severity, using the Beaufort Wind Scale, developed in 1805 by Sir Francis Beaufort of the U.K. Royal Navy. The Beaufort Wind Scale is shown in the table below. (Source: http://www.spc.noaa.gov/faq/tornado/beaufort.html)

Beaufort Wind Scale

(table courtesy of NOAA's Storm Prediction Center www.spc.noaa.gov/)

Force	Wind (Knots)	WMO Classification	Appearance of Wind Effects	
			On the Water	On Land
0	<1	Calm	Sea surface smooth and mirror-like	Calm, smoke rises vertically
1	1-3	Light Air	Scaly ripples, no foam crests	Smoke drift indicates wind direction, still wind vanes
2	4-6	Light Breeze	Small wavelets, crests glassy, no breaking	Wind felt on face, leaves rustle, vanes begin to move
3	7-10	Gentle Breeze	Large wavelets, crests begin to break, scattered whitecaps	Leaves and small twigs constantly moving, light flags extended
4	11-16	Moderate Breeze	Small waves 1-4 ft. becoming longer, numerous whitecaps	Dust, leaves, and loose paper lifted, small tree branches move
5	17-21	Fresh Breeze	Moderate waves 4-8 ft taking longer form, many whitecaps, some spray	Small trees in leaf begin to sway
6	22-27	Strong Breeze	Larger waves 8-13 ft, whitecaps common, more spray	Larger tree branches moving, whistling in wires
7	28-33	Near Gale	Sea heaps up, waves 13-20 ft, white foam streaks off breakers	Whole trees moving, resistance felt walking against wind
8	34-40	Gale	Moderately high (13-20 ft) waves of greater length, edges of crests begin to break into spindrift, foam blown in streaks	Whole trees in motion, resistance felt walking against wind
9	41-47	Strong Gale	High waves (20 ft), sea begins to roll, dense streaks of foam, spray may reduce visibility	Slight structural damage occurs, slate blows off roofs
10	48-55	Storm	Very high waves (20-30 ft) with overhanging crests, sea white with densely blown foam, heavy rolling, lowered visibility	Seldom experienced on land, trees broken or uprooted, "considerable structural damage"
11	56-63	Violent Storm	Exceptionally high (30-45 ft) waves, foam patches cover sea, visibility more reduced	
12	64+	Hurricane	Air filled with foam, waves over 45 ft, sea completely white with driving spray, visibility greatly reduced	

Turner County and the Cities of Ashburn, Rebecca, and Sycamore are all equally vulnerable to the effects of lightning, thunderstorms, wind, and hail.

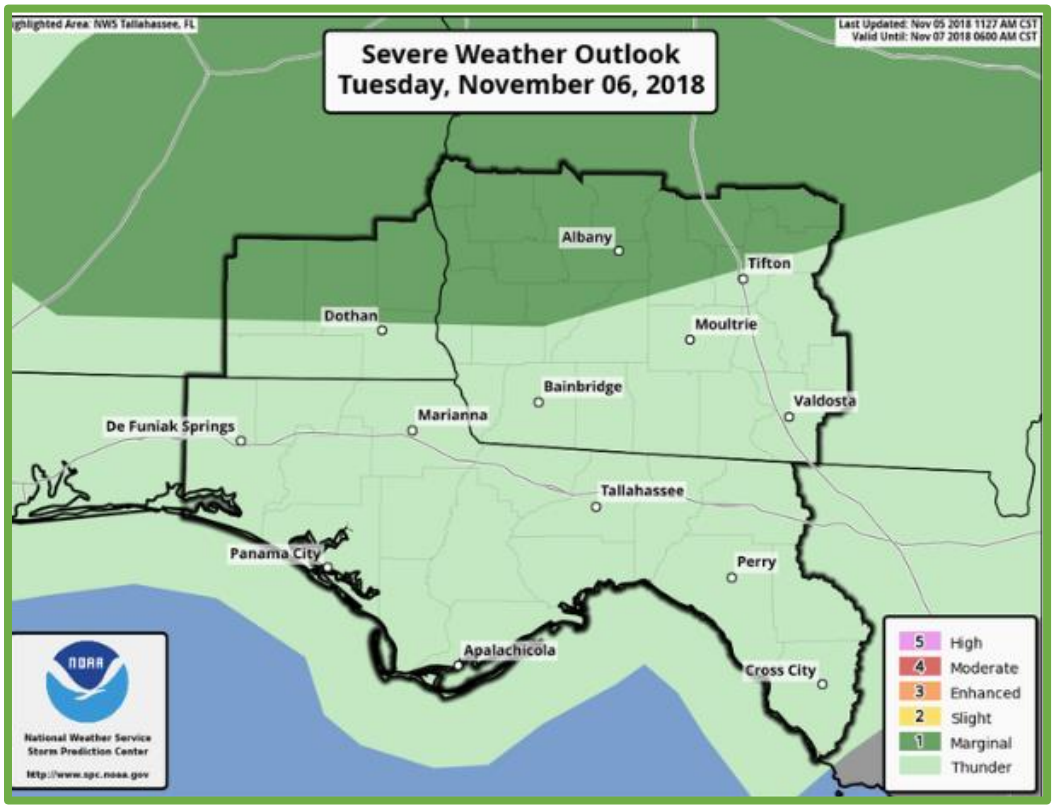
B. Profile of Events, Frequency of Occurrences, Probability

According to the NOAA Storm Events Database (Appendix F), 123 lightning/thunderstorms/wind/hail reports occurred in Turner County (including the Cities) between 01/01/1950 and 12/31/2022. The Historic Recurrence Interval is 0.59 years (about 7 months). This is a 170.83% Historic Frequency Chance per year. The past 10-year Record Frequency Per Year is 5.8, the past 20-year frequency is 4.40, and the past 50-year frequency is 2.04 (see the Hazard Frequency Table in Appendix D).

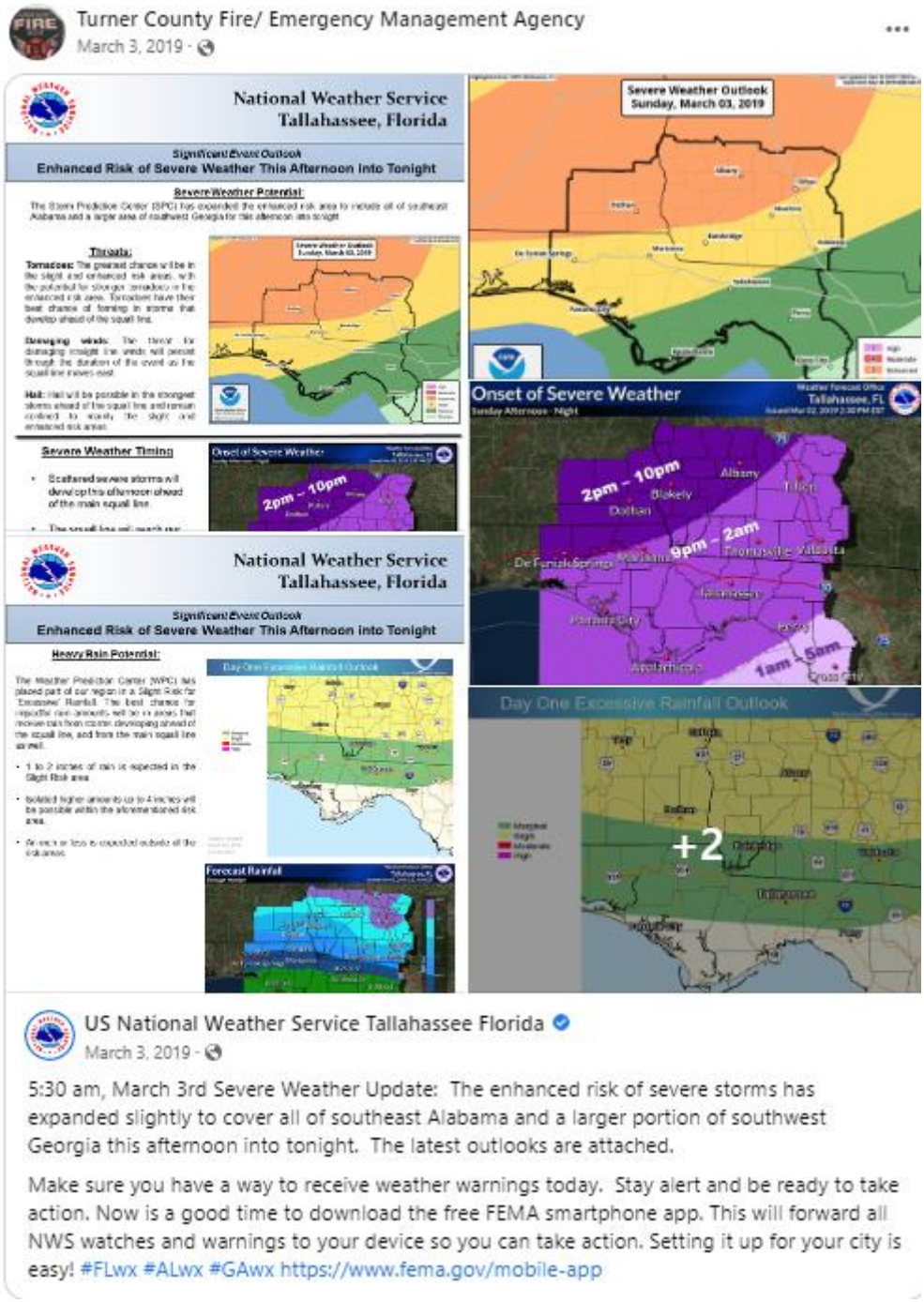
Since the previous Hazard Mitigation Plan was completed, 21 lightning/thunderstorms/wind/hail events have occurred. Eight of these were hail events, which caused dents on some vehicles and roofs. Wind events resulted in fallen trees and branches, a home being destroyed with one serious injury reported, and power lines across roads in some areas.

Although the complete available data was used for this analysis, the possibility remains that other events may have occurred in the community that went unreported or underreported.

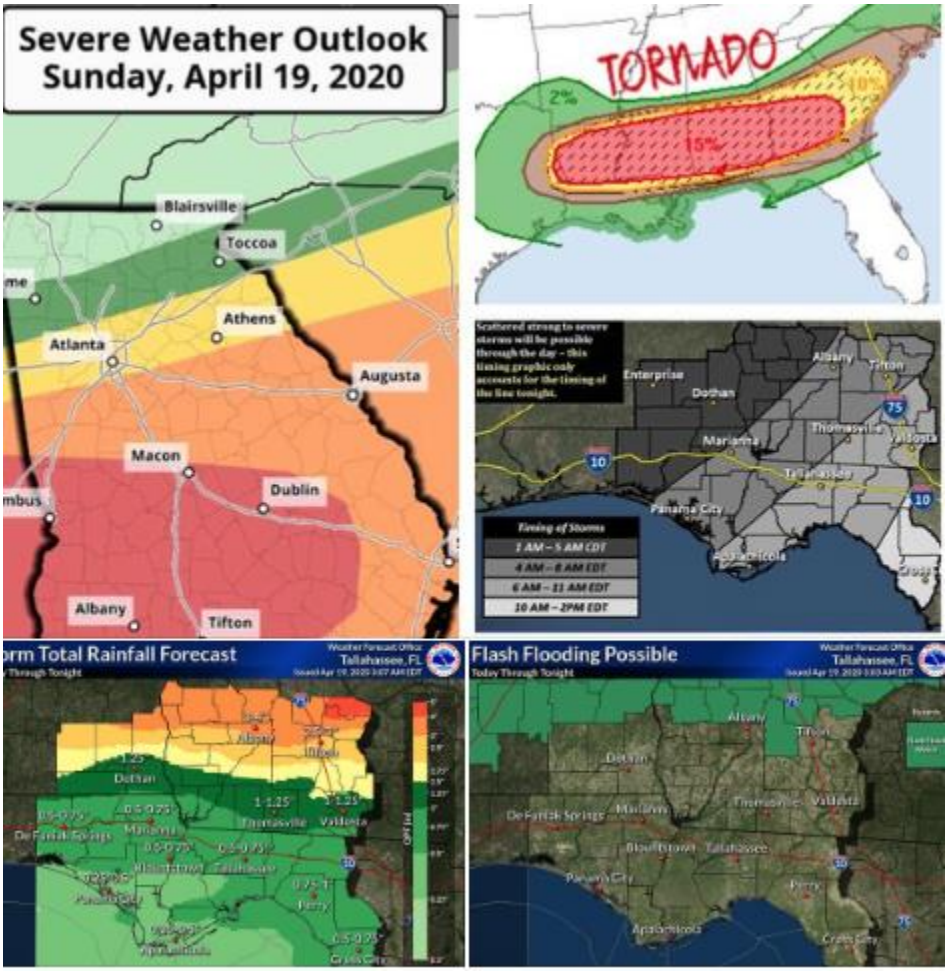
On November 6, 2018, a cold front triggered showers and thunderstorms across Turner County. The significant wind gusts caused damage to the roofs of homes and other buildings across the county.



On March 3, 2019, the National Weather Service in Tallahassee, FL, issued a Severe Weather Warning for Turner County and its cities.



On April 19. 2020, a Severe Weather Outlook was issued for Turner County and its cities.

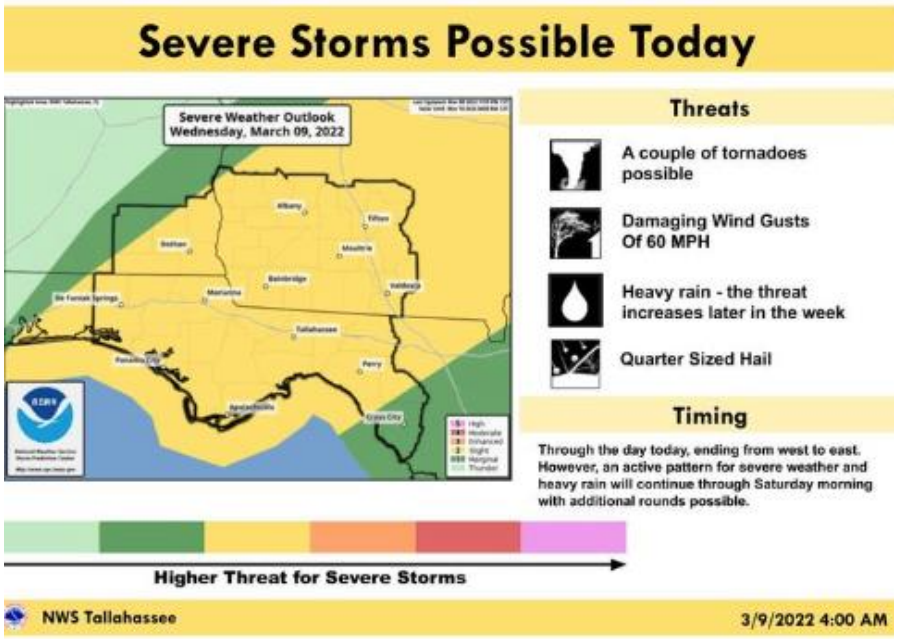


Thunderstorm Advisory for 10/27/2021

US National Weather Service Tallahassee Florida
October 27, 2021 ·

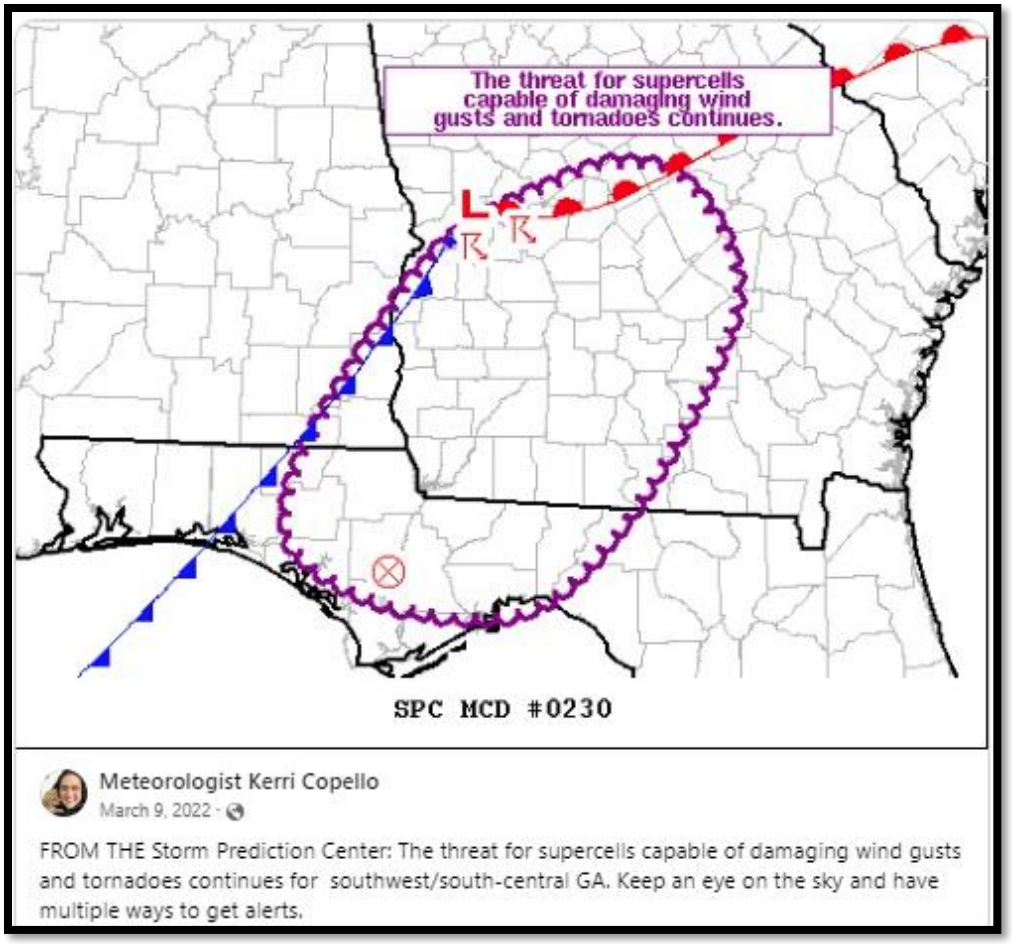
⚠ The graphic below depicts the estimated time of arrival for thunderstorms late tonight and through Thursday. Two rounds of thunderstorms could also be a possibility with this approaching system. Please stay tuned for more updates as they come! ⚠

Severe Storm Alert 03/09/2022



US National Weather Service Tallahassee Florida
March 9, 2022 ·

3/9/22, 4 am ET: An active pattern is expected for the next few days. Today includes the possibility for severe weather. Additional severe weather is possible on Friday and Friday night along with the potential for locally heavy rainfall. #flwx #gawx #alwx

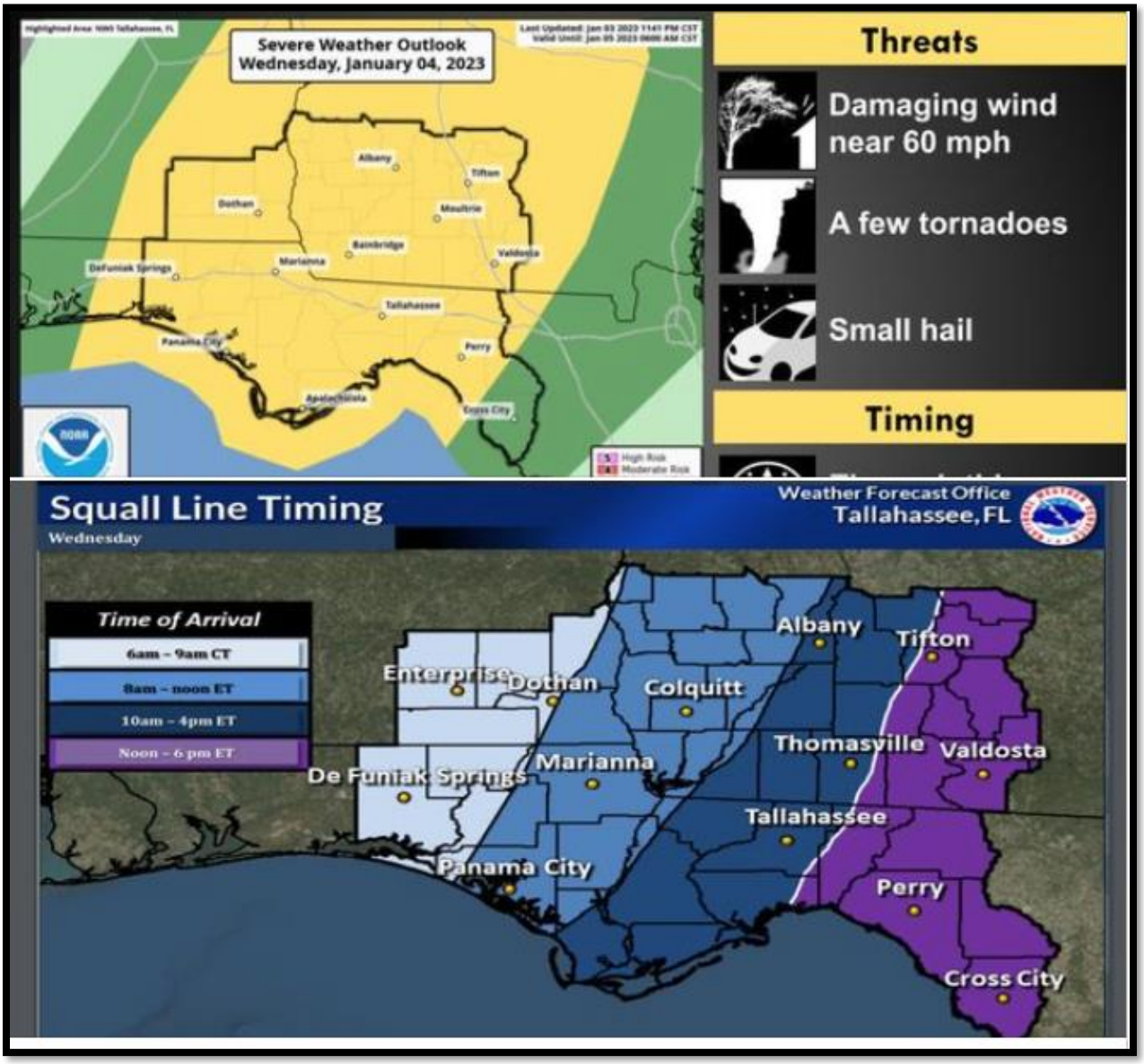

The threat for supercells capable of damaging wind gusts and tornadoes continues.
L
SPC MCD #0230
Meteorologist Kerri Copello
March 9, 2022 ·
FROM THE Storm Prediction Center: The threat for supercells capable of damaging wind gusts and tornadoes continues for southwest/south-central GA. Keep an eye on the sky and have multiple ways to get alerts.

Severe Weather Advisory 03/5/2022

US National Weather Service Tallahassee Florida
April 5, 2022 ·

⚠ 11 AM ET/10 AM CT - Forecast Update ⚠
The timing has slowed down just a bit for the squall line. However, the threats remain the same - destructive winds, tornadoes, and locally heavy rainfall. Stay weather aware and have multiple ways to receive warnings. #ALwx #FLwx #GAwx

Severe Weather Outlook 01/04/2023



C./D. Inventory of Assets Exposed and Potential Loss

In Worksheet 3A: Inventory of Assets (appearing in Appendix A), we estimate that all of Turner County and the Cities of Ashburn, Rebecca, and Sycamore are equally vulnerable to this hazard.

An estimated 100% of the Residential property (2,716 of 2,716) in Turner County (including the Cities of Ashburn, Rebecca, and Sycamore) could be affected by this hazard, with a total value of $133,386,535. Also, an estimated 100% of the community's commercial, Industrial, Agricultural, Religious/Non-Profit, Government, Education, and Utility properties (5,126) may be affected, with a total value of $172,294,083. The assessed values are based on the most recently available tax roll data for Turner County and the Cities of Ashburn, Rebecca, and Sycamore, provided by the Turner County Tax Assessor's Office.

Damage to crops is not considered in any of these figures. According to the Center for Agribusiness & Economic Development's 2021 Georgia Farm Gate Value Report (http://caes2.caes.uga.edu/center/caed/documents/GAFGVR2015_DEC16.pdf), the total farm gate value of agricultural production in Turner County is $76,861,946.09.

According to the inventory database reports and maps, all the 117 Critical Facilities and Infrastructure for Turner County (including the Cities of Ashburn, Rebecca, and Sycamore) could be affected by this hazard. The total value of these Critical Facilities is $137,758,656, plus a content value of $9,354,241.

E. Land Use and Development Trends

Turner County and the City of Ashburn have seen a decrease in population over the last few years, while the number of people in Rebecca and Sycamore has increased.

The County and all the Cities have zoning regulations and mandatory building and fire codes enforced by a building inspector. All Cities and the County participate in joint comprehensive planning and the required updates of the Service Delivery Strategy.

All jurisdictions have mandatory building and fire codes that a Building Inspector/Zoning Administrator enforces. On October 1, 1991, the Uniform Codes Act became effective in Georgia. On July 1, 2004, this Act was revised to make the following construction codes mandatory as the Georgia State Minimum Standard Codes. Listed below are the code editions in effect as of January 1, 2021, with amendments in 2020 and 2022:

- International Building Code – 2018 Edition
- International Residential Code – 2018 Edition
- International Plumbing Code – 2018 Edition
- International Mechanical Code – 2018 Edition
- International Fuel Gas Code – 2018 Edition
- International Energy Conservation Code – 205 Edition
- International Fire Code – 2018 Edition
- International Electric Code – 2020 Edition
- International Swimming Pool and Spa Code – 2018 Edition

The Act requires local governments that elect to enforce these codes within their jurisdictions to adopt administrative procedures and penalties in order to locally enforce any of these mandatory codes. Also, any applicable appendices of these codes must be adopted locally in order to be enforceable within a specific local jurisdiction.

The Act also made the following optional codes available for local government adoption and enforcement. Local governments choosing to enforce any of the below optional codes must adopt the code(s) they wish to enforce, as well as administrative procedures and penalties. Some of the communities have chosen to adopt the following:

- International Property Maintenance Code - 2018 Edition
- International Existing Building Code - 2018 Edition
- National Green Building Standard - 2008 Edition
- Disaster Resilient Building Code IBC Appendix - 2020 Edition
- Disaster Resilient Building Code IRC Appendix - 2020 Edition

The DCA Board specifically omitted the plumbing, electrical, and energy requirements of the International Residential Code for One- and Two-Family Dwellings. Therefore, the plumbing requirements of the International Plumbing Code, the electrical requirements of the National Electrical Code, and the energy requirements of the International Energy Conservation Code must be used for one- and two-family dwelling construction.

No other land use or development trends that relate to this hazard have been identified at this time.

F. Multi-Jurisdictional Differences

Lightning/thunderstorms/wind/hail may happen anywhere, and no severity difference is expected between Turner County and the Cities of Ashburn, Rebecca, and Sycamore. However, the impact may be more severe in places with higher population density due to more people being in danger and other effects associated with higher population density. In jurisdictions without building codes and inspections, structures not built to code may exist and are vulnerable to lightning and other hazards. No other multi-jurisdictional differences have been identified at this time.

G. Overall HRV Summary of Events and Their Impact

Lightning/thunderstorms/wind/hail can cause damage at any place and time, throughout Turner County and the Cities of Ashburn, Rebecca, and Sycamore, especially during thunderstorms. Where lightning strikes cannot be predicted, residents may need more time to seek shelter. The cost of the damage and potential loss of life might be higher if the event strikes populated areas instead of more sparsely populated or unpopulated areas.

The HMPUC has developed a comprehensive range of Mitigation Goals, Objectives, and Action Steps to lessen the impacts of this hazard. These are contained in Chapter 4.

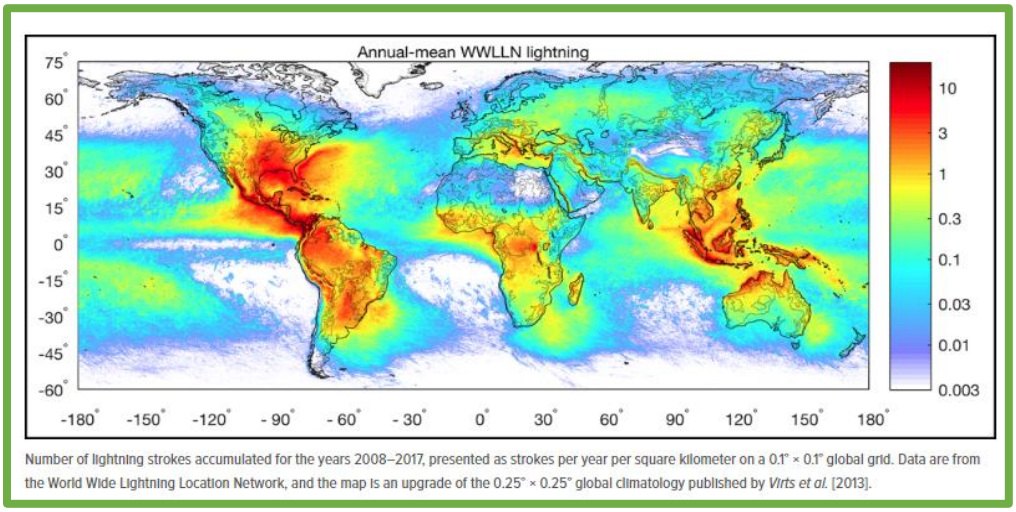
Since the previous plan was approved, there have not been any new developments, regulations, programs, or other changes in the community that would either increase or decrease the community's overall vulnerability to this hazard.

H. Impacts from Future Conditions

Lightning

Lightning frequency is changing as the climate is changing. It will strike far more frequently in the world with climate change. In recent years, the measurements of lightning have become more extensive. Lightning is still hard to monitor for climate, and satellite instrument services still need improvement.

At any given time, about 45 flashes of lightning occur every second on the Earth. Seasonally, the rate can vary from 10% to 20% across timescales.



Number of lightning strokes accumulated for the years 2008–2017, presented as strokes per year per square kilometer on a 0.1° × 0.1° global grid. Data are from the World Wide Lightning Location Network, and the map is an upgrade of the 0.25° × 0.25° global climatology published by *Virts et al.* [2013].

According to David Romps, an atmospheric scientist at the University of California, Berkley, lightning also triggers about half of the wildfires in the United States. As stated, a warmer atmosphere can hold more moisture, which is one of the key ingredients for triggering a lightning strike. Lightning strikes kill a few dozen people each year.

Observations show that taller clouds generate more lightning, and lightning frequency is based on thunderclouds. Lightning forms when a spark travels from a cloud's positively or negatively charged area to an area with the opposite charge.

Thunderstorm & Wind

Extreme rainfall events are increasing in the United States. Over the past 25 years, the number of days with three or more inches has increased. 70% of precipitation records show an upward trend since 1950. There are some downward trends at many stations southeast of the Appalachian Mountains and in Florida. Severe thunderstorms can lead to dangerous supercells, Derechos, and tornadoes. See the map on the following page below:

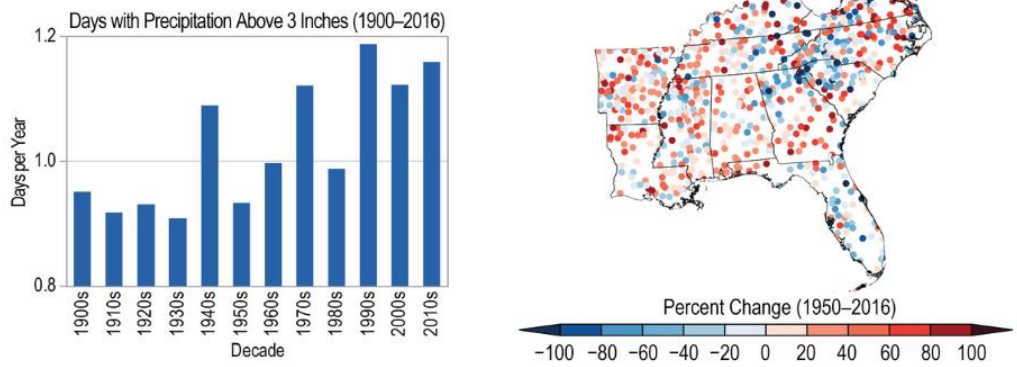


Figure 19.3: The figure shows variability and change in (left) the annual number of days with precipitation greater than 3 inches (1900–2016) averaged over the Southeast by decade and (right) individual station trends (1950–2016). The number of days with heavy precipitation has increased at most stations, particularly since the 1980s. Sources: NOAA NCEI and CICS-NC.

Severe thunderstorms are defined as having sustained winds above 58 mph or huge hail, and two key factors fuel their formation: convective available potential energy (CAPE) and strong wind shear. Scientists have evidence that global warming should increase CAPE by warming the surface and putting more moisture into the air by evaporation. On the other hand, disproportionate warming in the Artic could lead to less wind shear in mid-latitude areas prone to severe thunderstorms. By this, one factor makes severe storms more likely, and the other makes them less likely.

Georgia's greatest threats from severe thunderstorms are damaging straight-line winds and large hail. Straight-line winds can reach speeds over 58 mph, producing damage like a tornado. These winds occur about 75 per year in Georgia and are most common in the spring and summer.

Climate change will affect Turner County as the temperatures rise and thunderstorms increase and have more intensity, affecting the amounts of rain, wind, lightning, and hail.

As Joao Teixeira, co-director of the Center for Climate Sciences at NASA's Jet Propulsion Laboratory in Pasadena, California, and science team leader for the Atmospheric Infrared Sounder (AIRS) instrument on NASA's Aqua satellite stated, "Within the scientific community, it's a relatively well-accepted fact that as global temperatures increase, extreme precipitation will very likely increase as well," he says. "Beyond that, we're still learning."

An El Niño has formed, and by Winter 2024, the weather pattern will intensify. According to NOAA, there's an 84 percent chance of a "great than a moderate strength El Niño" developing and a 56 percent chance of a strong El Niño taking shape, and this will intensify storms and possibly warmer temperatures.

Hail

Hailstorms are expected to change due to the warming climate. As a result of the warming, it is anticipated that the low-level moisture and convective instability will increase, raising the chance of hailstorms and forming more significant storms. The melting height will rise and enhance hail melt, increasing the average size of surviving hail. However, efforts to understand the effects of climate change on hail are complicated by the small scale and rarity of hailstorms.

In the United States, hailstorms cause more property damage than tornadoes, and their toll is rising fast. Climate change may make the trend more prominent. The U.S. property losses from tornadoes over the decade from 2010-2020 were around $14.1 billion (about $43 per person in the US) (about $43 per person in the US). Hail losses now average from $8 billion (about $25 per person in the US) (about $25 per person in the US) to $14 billion (about $43 per person in the US) (about $43 per person in the US) annually, or $80-140 billion per decade (*Insurance Information Institute*). This far outpaces the loss from tornadoes. The most disruptive hailstorms occur in the Great Plains and High Plains, where there are larger cities, such as Dalla-Fort Worth and Denver.

Nature localizes hail-producing thunderstorms, and there is a little database on these storms. Even though hailstorms may lessen in the southeast over the next decade, the storms are expected to produce large hail.

I. Underserved/Socially Vulnerable Population Risk

Turner County has a large population of elderly individuals that live in assisted living facilities/nursing homes that may not receive emergency notifications through existing emergency notifications systems. A homeless population residing in various county areas may not receive emergency notifications. The Health Department Liaison attended the workshops, as did one of Pruitt Health employees, and these concerns were talked about and addressed. Currently, the homeless population is in different county areas, and it is tough to get an actual location for this population.

Flyers explaining the Hazard Mitigation process were distributed to be available at the county and city offices and at the Health Department and the Department of Family and Children Services (DFACS). (See Appendix H).

Section VI. Wildfires

A. Identification of Hazard

The HMPUC has chosen the threat of wildfire as the fifth most likely hazard to occur and cause damage in the community based on experience, the FEMA-described methodology, and other factors. Historical data have been examined from various sources, including the National Climatic Data Center and Georgia Forestry Commission (see Appendix F), as well as from local history and personal accounts, to determine the frequency of events.

Much of southern Georgia is covered by forests, and fires play an essential role in the health of forest ecosystems by breaking down organic matter into soil nutrients and helping seeds to germinate (Source: NASA, https://earthobservatory.nasa.gov/Features/GlobalFire/fire_2.php). When naturally occurring wildfires are suppressed, combustible fuel (such as dead leaves and branches) accumulates in the forest. This increases the risk of future larger, more destructive fire events. Controlled, prescribed fires lower the risk of larger fire events and benefit health (source: USDA, https://www.fs.usda.gov/detail/dbnf/home/?cid=stelprdb5281464).

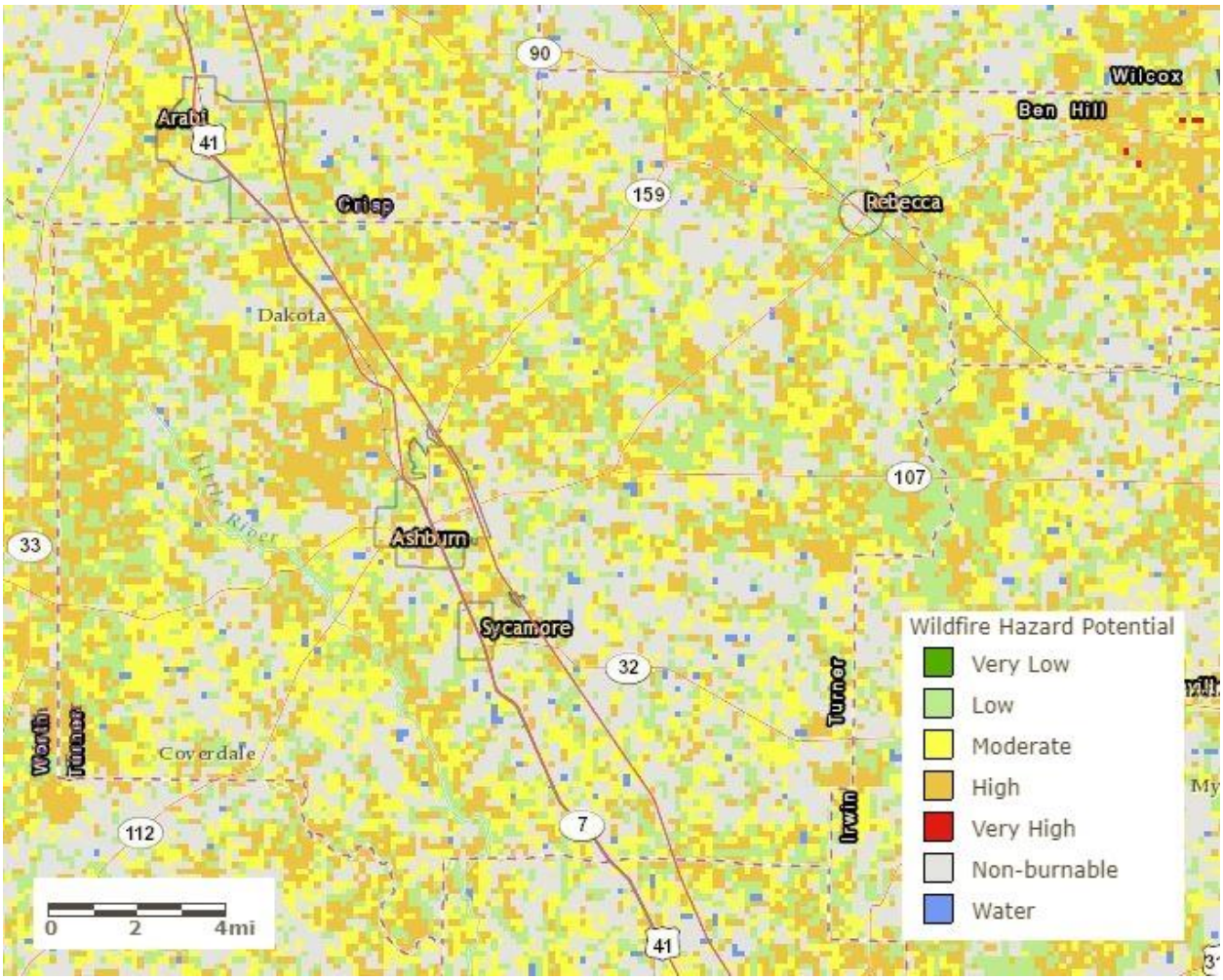
Low humidity, lack of precipitation (or drought conditions), wind speed, and temperature are weather conditions that favor the kindling and spread of wildfires. Combined with the above, a high fuel load (i.e., the accumulation of dead vegetation) also provides for the kindling and spreading of wildfires. Much of Turner County, including some areas near the Cities, is forested with commercial and free-growing pine and other trees. These trees can and do catch fire frequently in small and large fires.

According to NASA (https://earthobservatory.nasa.gov/IOTD/view.php?id=89757), an estimated 84 percent of wildfires are caused by humans. Some common ways to start fires include discarding cigarettes, leaving campfires unattended, and losing control of prescribed burns or crop fires. Sparks from railroads and power lines, as well as arson, also routinely cause wildfires.

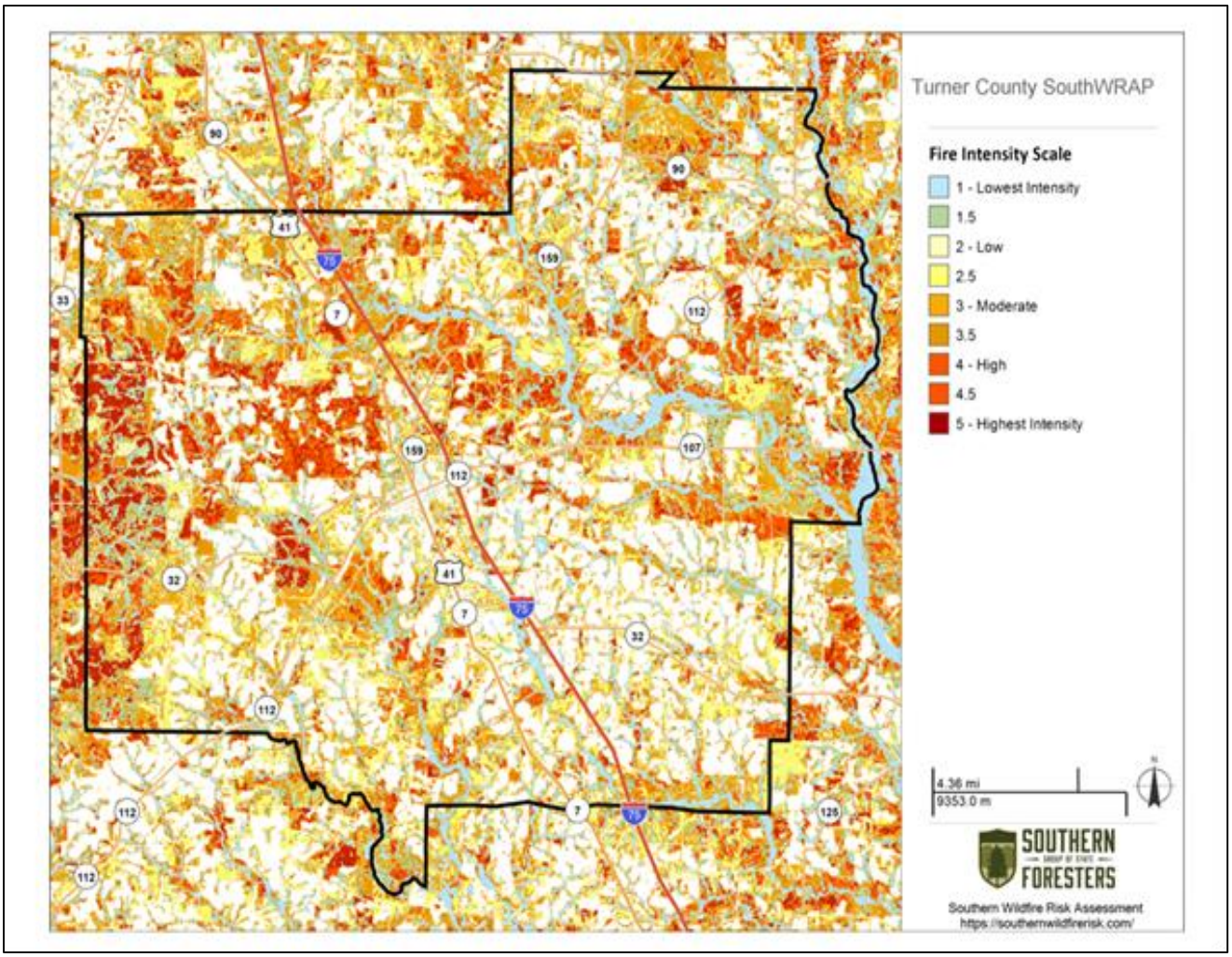
When a residential area, whether a single home or an entire subdivision, is adjacent to an area containing vegetative fuels, such as a forest or other wooded area, this is referred to as a Wildland-Urban Interface area (WUI). These are the areas at most significant risk for property damage due to Wildfire.

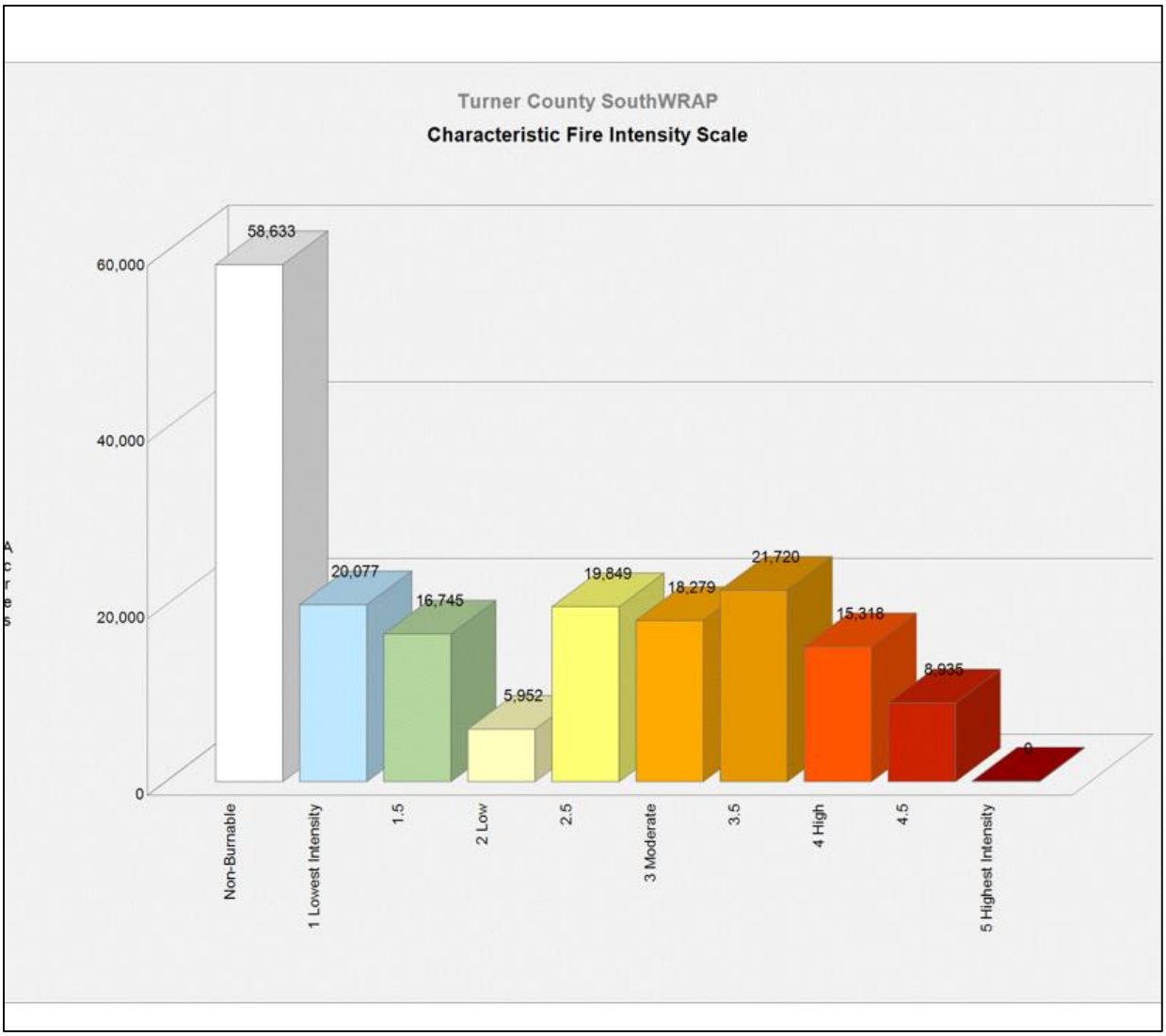
Turner County and the Cities of Ashburn, Rebecca, and Sycamore are all vulnerable to the effects of wildfires. The USDA Forest Service assigns areas a Wildfire Hazard Potential (WHP) score of

Very Low, Low, Moderate, High, or Very High. The maps below show that most of Turner County scored either Moderate, High, or Non-burnable.



Data Source: USDA Forest Service and Fire Modeling Institute
https://www.arcgis.com/home/item.html?id=f291ac4840984de5a0cf842d8d7a0973


Turner County SouthWRAP
Fire Intensity Scale
1 - Lowest Intensity
1.5
2 - Low
2.5
3 - Moderate
3.5
4 - High
4.5
5 - Highest Intensity
4.36 mi
9353.0 m
SOUTHERN FORESTERS
Southern Wildfire Risk Assessment
https://southernwildfirerisk.com/



B. Profile of Events, Frequency of Occurrences, Probability

Since the previous Hazard Mitigation Plan was completed, 131 wildfire events have occurred. According to Georgia Forestry Commission from the 2018 HMP, there were 2,798 reports of wildfires occurring in Turner County (including the Cities) between 01/01/1950 and 12/31/2017. Since that time (2018-2022), 131 wildfire events have occurred. This brings the total number of wildfires from 1950-2022 to 2,929. The Historic Recurrence Interval is 0.02 years (about 1 week). This is a 4,155.56% Historic Frequency Chance per year. The past 10-year Record Frequency Per Year is 28.3, the past 20-year frequency is 70.05, and the past 50-year frequency is 59.84 (see the Hazard Frequency Table in Appendix D).

C./D. Inventory of Assets Exposed and Potential Loss

In Worksheet 3A: Inventory of Assets (appearing in Appendix A), we estimate that all Turner An estimated 100% of the Residential property (2,716 of 2,716) in Turner County (including the Cities

of Ashburn, Rebecca, and Sycamore) could be affected by this hazard, with a total value of $133,386,535. Also, an estimated 100% of the community's commercial, Industrial, Agricultural, Religious/Non-Profit, Government, Education, and Utility properties (5,126) may be affected, with a total value of $172,294,083. The assessed values are based on the most recently available tax roll data for Turner County and the Cities of Ashburn, Rebecca, and Sycamore, provided by the Turner County Tax Assessor's Office.

Damage to crops is not considered in any of these figures. According to the Center for Agribusiness & Economic Development's 2021 Georgia Farm Gate Value Report (http://caes2.caes.uga.edu/center/caed/documents/GAFGVR2015_DEC16.pdf), the total farm gate value of agricultural production in Turner County is $76,861,946.09.

According to the inventory database reports and maps, all the 117 Critical Facilities and Infrastructure for Turner County (including the Cities of Ashburn, Rebecca, and Sycamore) could be affected by this hazard. The total value of these Critical Facilities is $137,758,656, plus a content value of $9,354,241.

Fire Events:

A Georgia man was arrested and charged with arson in Ashburn for fires that occurred from September 29 through October 25, 2019. On September 29th, he set the 2,016-square-foot-foot house on fire at 405 South Main Street in Ashburn. The house was unoccupied and suffered major damage. On October 14th, he set fire to a storage building at 404 South Gordon Street in Ashburn, and that fire spread to a nearby occupied structure, resulting in aggravated assault. The building was destroyed. The third fire, on October 25th at 331 South Main Street in Ashburn, was a 2,432 square-foot, 121-year-old unoccupied structure. This building also had major damage.

The Office of Insurance and Safety Fire Commissioner John F. King announced on November 12, 2020, that a fire at 646 South Main Street in Ashburn had been ruled arson. The fire occurred around 3:30 a.m. on Wednesday, November 11. Damage was estimated at $750,000.

Although the complete available data was used for this analysis, the possibility remains that other events may have occurred in the community that went unreported or underreported.

E. Land Use and Development Trends

Turner County and the City of Ashburn have seen a decrease in population over the last few years, while the number of people in Rebecca and Sycamore has increased.

The County and all the Cities have zoning regulations, and a building inspector enforces mandatory building and fire codes. All Cities and the County participate in joint comprehensive planning and the required updates of the Service Delivery Strategy.

All jurisdictions have mandatory building and fire codes. Turner County has a Building Inspector/Zoning Administrator for enforcement of the codes. On October 1, 1991, the Uniform Codes Act became effective in Georgia. On July 1, 2004, this Act was revised to make the following construction codes mandatory as the Georgia State Minimum Standard Codes. Listed below are the code editions in effect as of January 1, 2021, with amendments in 2020 and 2022:

- International Building Code – 2018 Edition
- International Residential Code – 2018 Edition
- International Plumbing Code – 2018 Edition
- International Mechanical Code – 2018 Edition
- International Fuel Gas Code – 2018 Edition
- International Energy Conservation Code – 205 Edition
- International Fire Code – 2018 Edition
- International Electric Code – 2020 Edition
- International Swimming Pool and Spa Code – 2018 Edition

The Act requires local governments that elect to enforce these codes within their jurisdictions to adopt administrative procedures and penalties in order to locally enforce any of these mandatory codes. Also, any applicable appendices of these codes must be adopted locally in order to be enforceable within a specific local jurisdiction.

The Act also made the following optional codes available for local government adoption and enforcement. Local governments choosing to enforce any of the below optional codes must adopt the code(s) they wish to enforce, as well as administrative procedures and penalties. Some of the communities have chosen to adopt the following:

- International Property Maintenance Code - 2018 Edition
- International Existing Building Code - 2018 Edition
- National Green Building Standard - 2008 Edition
- Disaster Resilient Building Code IBC Appendix - 2020 Edition
- Disaster Resilient Building Code IRC Appendix - 2020 Edition

The DCA Board specifically omitted the plumbing, electrical, and energy requirements of the International Residential Code for One- and Two-Family Dwellings. Therefore, the plumbing requirements of the International Plumbing Code, the electrical requirements of the National Electrical Code, and the energy requirements of the International Energy Conservation Code must be used for one- and two-family dwelling construction.

No other land use or development trends that relate to this hazard have been identified at this time.

F. Multi-Jurisdictional Differences

Wildfires may happen anywhere but are more likely in forested areas. Unincorporated Turner County has more areas rated "High" for Wildfire Hazard Potential than the Cities. The impact of a wildfire would be more severe in places with higher population density due to more people being in danger and more potential for destroying homes and other buildings. In jurisdictions without building codes and inspections, structures are not built to code or may be especially vulnerable to wildfires and other hazards.

The City of Ashburn has two fire stations, with paid employees and volunteer staff. Turner County has one fire station staffed by paid employees and volunteers. Volunteers staff all other fire stations in the community. The ISO Class of all fire stations in Turner County and the Cities of Ashburn, Rebecca, and Sycamore is 3x.

Station	Name	Lat.	Lon.	Address
1	Headquarters	31.709949	-83.643025	625 East Washington Ave. Ashburn
2	Rebecca	31.806434	-83.48813	61 West Depot Street Rebecca
3E	Sycamore	31.670499	-83.636423	10 South Railroad Ave Sycamore
3W	Sycamore	31.669079	-83.630118	11 Irwinville Ave. Sycamore
4	Inaha	31.625671	-83.580051	1657 Inaha Rd Sycamore
5	Bethal	31.658668	-83.551224	691 Purcell Rd Sycamore
6	Coverdale	31.633362	-83.691821	5036 Coverdale Hwy Sycamore
7	Amboy	31.792875	-83.588944	7719 GA Hwy 159 Ashburn
8	Dakota	31.776163	-83.693246	5652 Hwy 41 North Ashburn
9	Harmony	31.677343	-83.750994	2370 Whiddon Rd Ashburn
10	Pope	31.721537	-83.528539	3020 Hwy 107 Ashburn
11	Rocky Mount	31.751563	-83.770471	110 Rocky Mount Rd Ashburn

G. Overall HRV Summary of Events and Their Impact

Wildfires can cause damage anywhere and time throughout Turner County and the Cities of Ashburn, Rebecca, and Sycamore. They can spread quickly, and residents may need more time to evacuate. The cost of the damage and potential loss of life might be higher if the event strikes populated areas instead of more sparsely populated or unpopulated areas.
The HMPUC has developed a comprehensive range of Mitigation Goals, Objectives, and Action Steps to lessen the impacts of this hazard. These are contained in Chapter 4.

Since the previous plan was approved, there have not been any new developments, regulations, programs, or other changes in the community that would either increase or decrease the community's overall vulnerability to this hazard.

H. Impacts from Future Conditions

Climate change has also resulted in extreme wildfires due to increased temperature, dryness, and evapotranspiration, causing the vegetation to become more flammable. Heavy wet seasons cause the overgrowth of vegetation, which will dry out during extremely dry conditions. This will lead to mega-fires contributing to releasing 290 million metric tons of carbon dioxide into the environment, triggering further climate change through global warming.

The average wildfire season is now three and a half months longer than a few decades ago. We can expect worse wildfires in the years ahead as the temperature's warming cycle continues. Shifting meteorological patterns can drive the rain away from wildfire-prone regions, a phenomenon scientist discovered in California and has been linked to human-made climate change.

Fire is caused by fuel, oxygen, and heat, and drier conditions mean more fuel for the fire. Warmer weather conditions also add more heat. Climate change means bigger and worse fires and a more extended fire season.

In 2007, Georgia experienced unprecedented wildfires and was fourth in the nation for the number of wildfires, with nearly 4,000 wildfires that year. More than 600,000 were forced to evacuate, nine homes were destroyed, and almost $100 million in damage was reported.

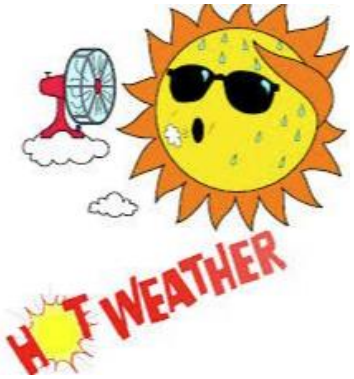
With climate change causing more dry and hotter temperatures, stronger lightning/thunderstorms/winds, etc., fires will continue to increase within the next decade.

I. Underserved/Socially Vulnerable Population Risk

Turner County has a large population of elderly individuals that live in assisted living facilities/nursing homes that may not receive emergency notifications through existing emergency notifications systems. A homeless population residing in various county areas may not receive emergency notifications. The Health Department Liaison attended the workshops, as did one of Pruitt Health employees, and these concerns were talked about and addressed. Currently, the homeless population is in different areas of the county, and it is very hard to get an actual location for this population.

Flyers explaining the Hazard Mitigation process were distributed to be available at the county and city offices and at the Health Department and the Department of Family and Children Services (DFACS). (See Appendix H). (See Appendix H)

Section V. Extreme Heat



A. Identification of Hazard

The HMPUC has chosen the threat of extreme heat as the sixth most likely hazard to occur and cause damage in the community based on experience, the FEMA-described methodology, and other factors. Extreme Heat has been examined from various sources, including the National Climatic Data Center (see Appendix F), as well as from local history and personal accounts, to determine the frequency of events.

The major hazard of heat waves is not so much to infrastructure as to the population. Despite the region's comparatively warm climate, many residents are unprepared to handle extreme heat events (for example, those without air conditioning). The risk is exceptionally high for the elderly and the young. Extreme heat is a hazard that may result in loss of life or damage to property and the economy. Due to weather forecasting methods, most extreme heat events can be predicted with some accuracy time.

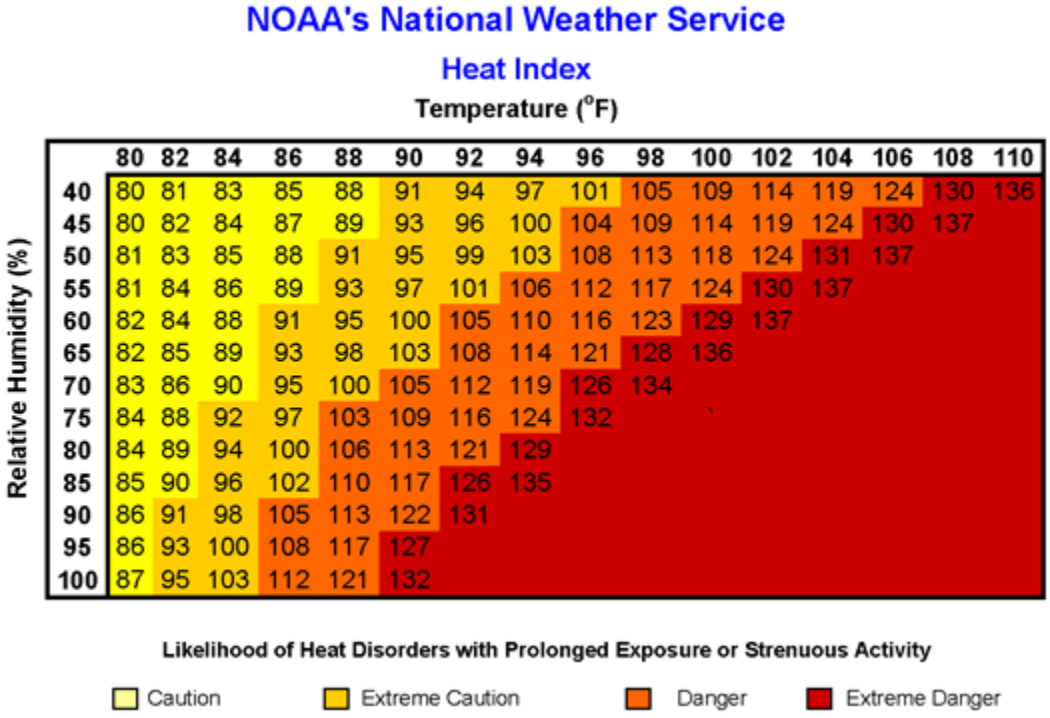
The heat index is a measure that combines the effects of heat and humidity. When heat and humidity combine to reduce the amount of evaporation of sweat from the body, outdoor exercise becomes dangerous even for those in good shape (source: National Weather Service, http://www.nws.noaa.gov/forecasts/wfo/definitions/defineHeatIndex.html).

The table below shows the levels of danger associated with the heat index as calculated by the National Weather Service (source: https://www.weather.gov/ama/heatindex).

Heat Index category and effects

Classification	Heat Index	Effect on the body
Caution	80°F - 90°F	Fatigue is possible with prolonged exposure and/or physical activity.
Extreme Caution	90°F - 103°F	Heat stroke, cramps, or exhaustion are possible with prolonged exposure and/or physical activity.
Danger	103°F - 124°F	Heat cramps or heat exhaustion are likely, and heat stroke is possible with prolonged exposure and/or physical activity.
Extreme Danger	125°F or higher	Heat stroke is highly likely

The Heat Index chart below shows Heat Index Values for various temperatures and humidity levels. For example, if the air temperature is 96° F and the relative humidity is 65%, the heat index—i.e., how hot it feels—is 121° F.



For the National Weather Service's Tallahassee district (which includes Turner County), an **Excessive Heat Watch** is issued when conditions are favorable for an excessive heat event in the next 24 to 72 hours. A Watch is used when the risk of a heat wave has increased, but its occurrence and timings are still uncertain. A Watch provides enough lead time, so those who need to prepare can do so, such as city officials with excessive heat event mitigation plans. The National Weather Service office in Tallahassee will issue this product if the heat index might reach or exceed 113°F.

A **Heat Advisory** is issued when an excessive heat event is expected in the next 24 hours. This product is given when an extreme heat event occurs, is imminent, or has a high probability of occurring. An advisory is for less severe conditions that cause significant discomfort or inconvenience and could lead to a threat to life if caution is not taken. The National Weather Service will issue this product if the heat index might reach 108-112°F.

An **Excessive Heat Warning** is issued when an excessive heat event is expected in the next 24 hours. A warning is issued when an extreme heat event occurs imminently or has a very high probability of occurring. The warning is used for conditions posing a threat to life. The National Weather Service will issue this product if the heat index is expected to reach or exceed 113°F. (Source: Florida State University, https://emergency.fsu.edu/hazards/heat/about)

Turner County and the Cities of Ashburn, Rebecca, and Sycamore are all equally vulnerable to the effects of extreme heat.

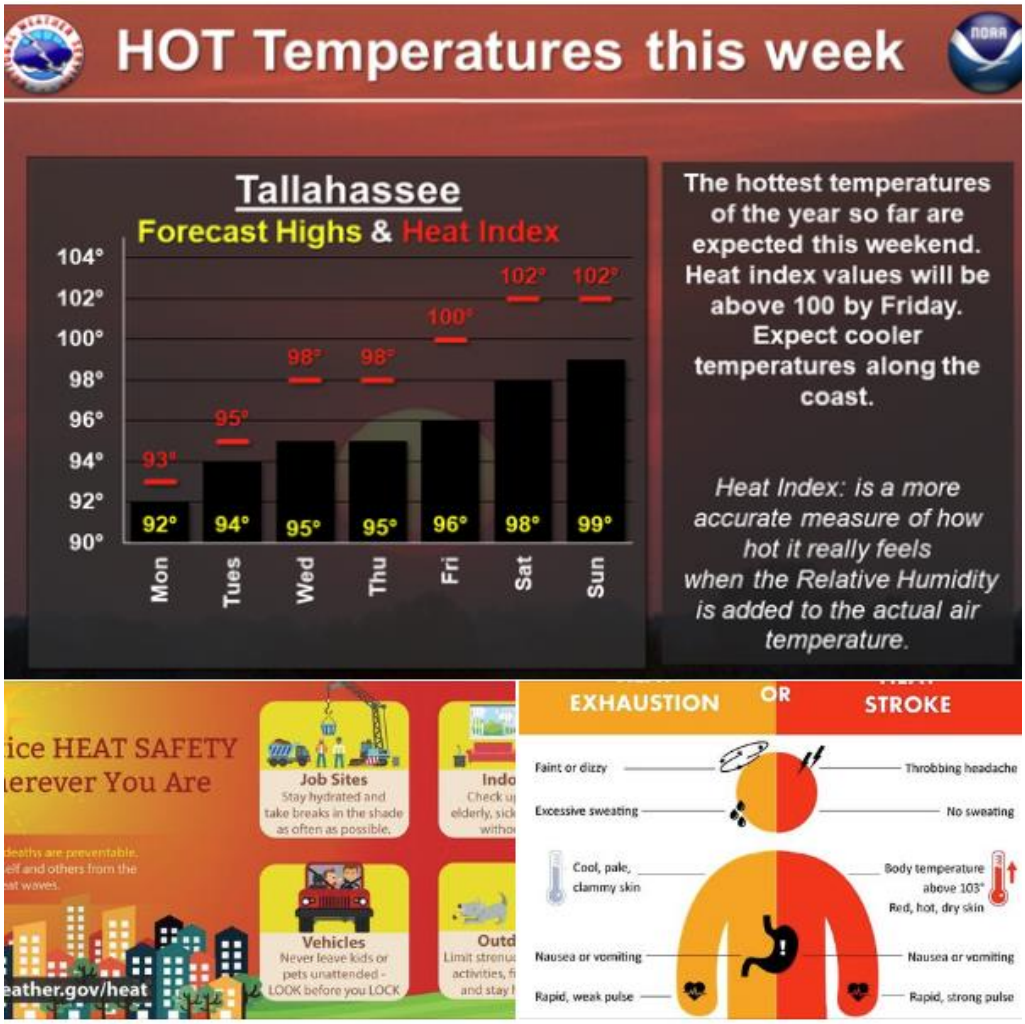
B. Profile of Events, Frequency of Occurrences, Probability

According to National Weather Service data (see Appendix F), there are 57 reports of extreme heat events occurring in Turner County (including the Cities) between 01/01/2006 and 12/31/2022. The Historic Recurrence Interval is 1.26 years. This is a 79.17% Historic Frequency Chance per year. The past 10-year Record Frequency Per Year is 4.2, the past 20-year frequency is 2.85, and the past 50-year frequency is 1.14 (see the Hazard Frequency Table in Appendix D). These were all Heat Advisories except for one event in 2012, an Excessive Heat Warning.

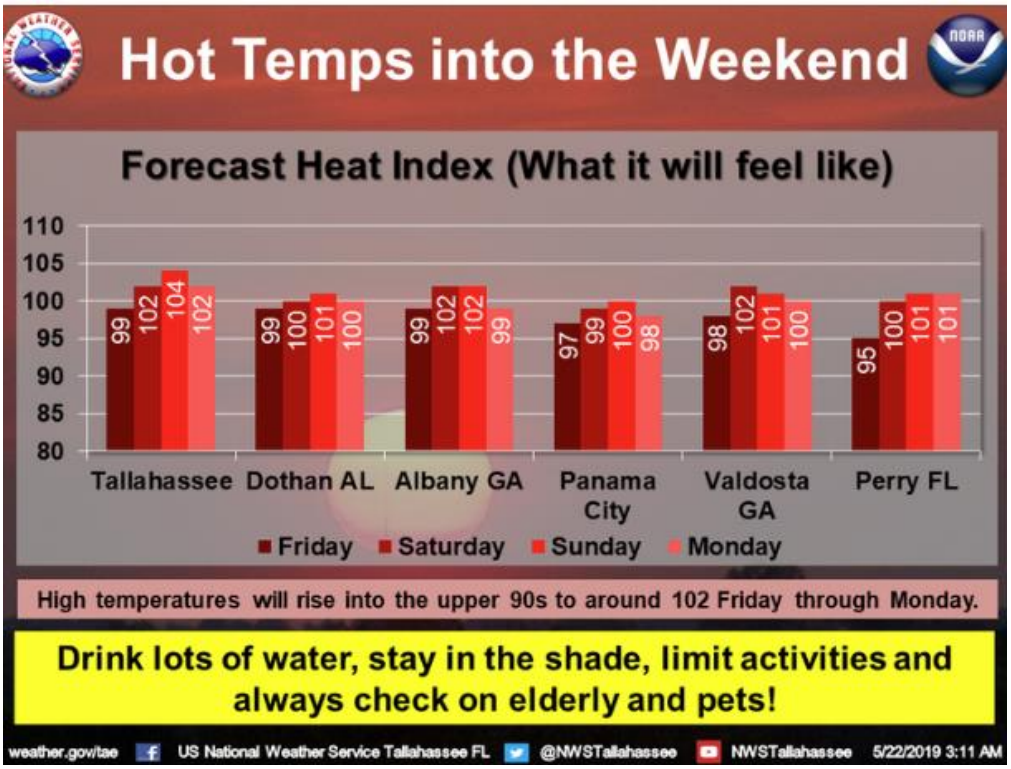
Since the previous Hazard Mitigation Plan became effective, 22 extreme heat events (days) have occurred. These were all Heat Advisories.

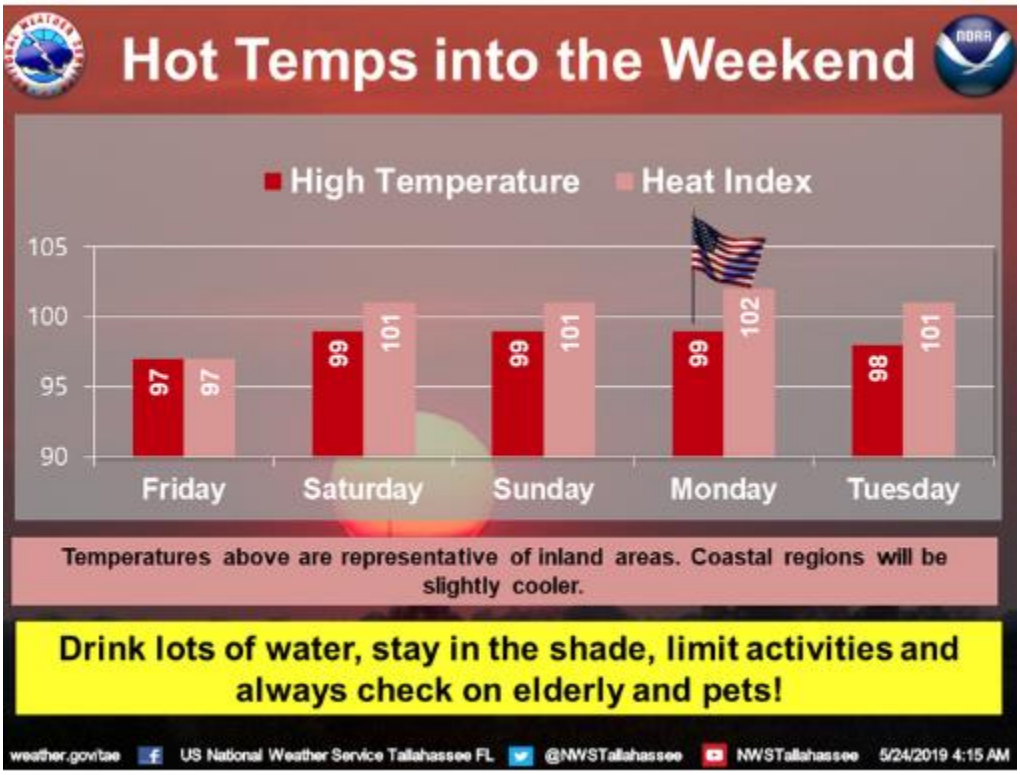
Although the complete available data was used for this analysis, the possibility remains that other events may have occurred in the community that went unreported or underreported.

An excessive Heat Watch was Issued on 5/20/2019

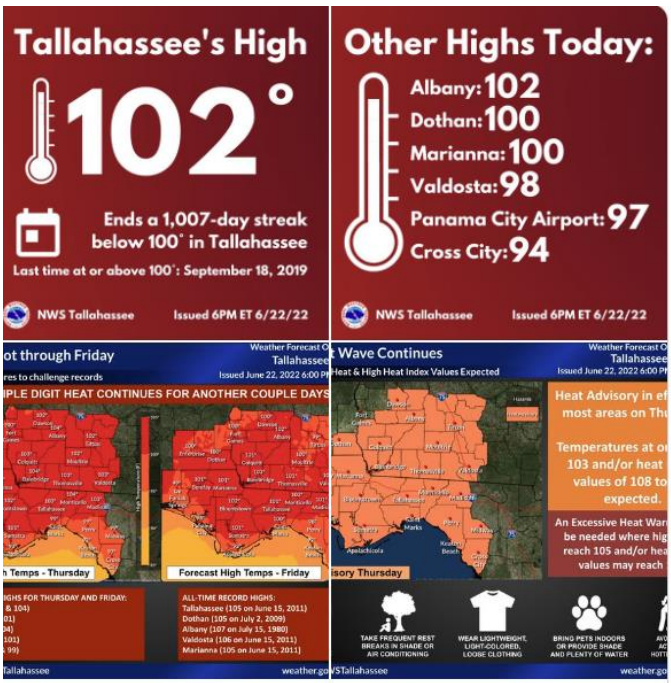


Excessive Heat Watch Issued on 5/22/2019





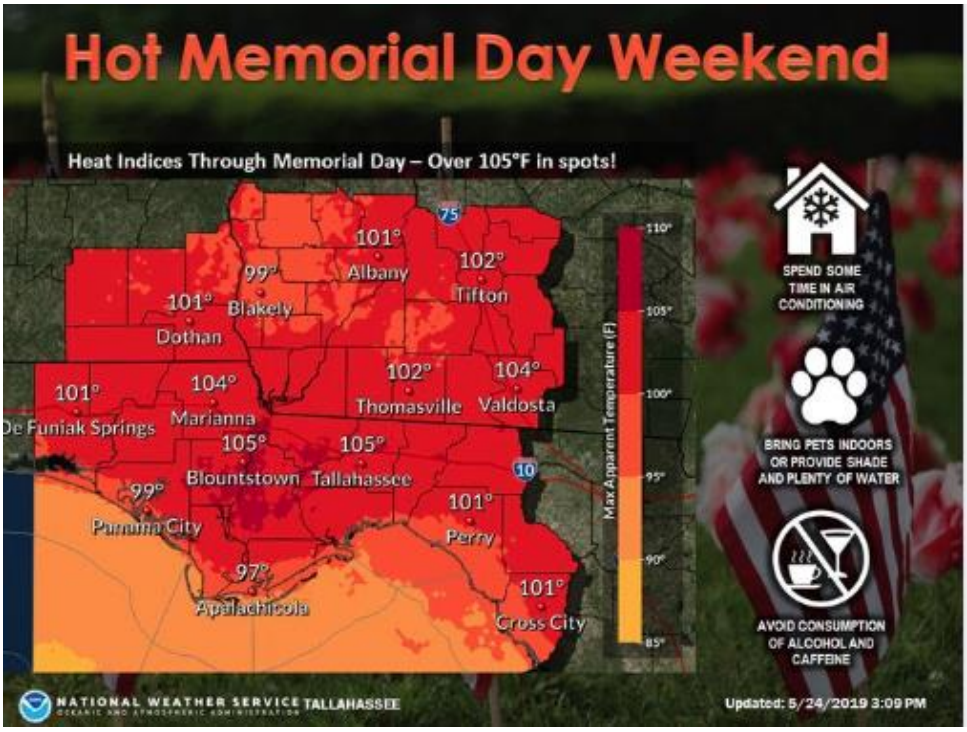
Heat Advisory 8/12/2019

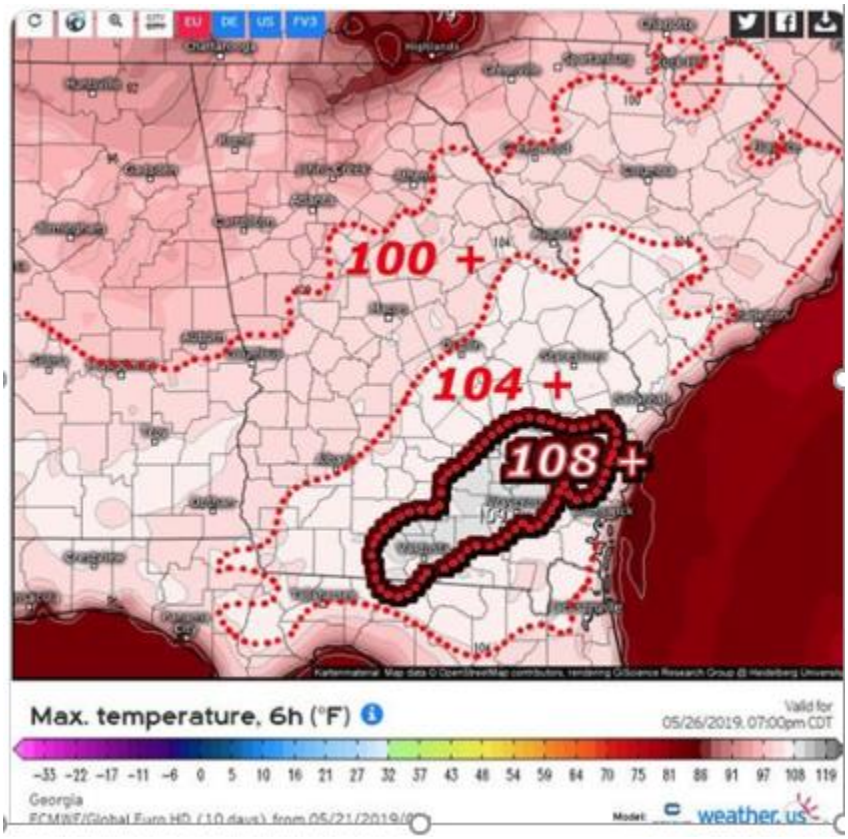


US National Weather Service Tallahassee Florida
June 22 ·

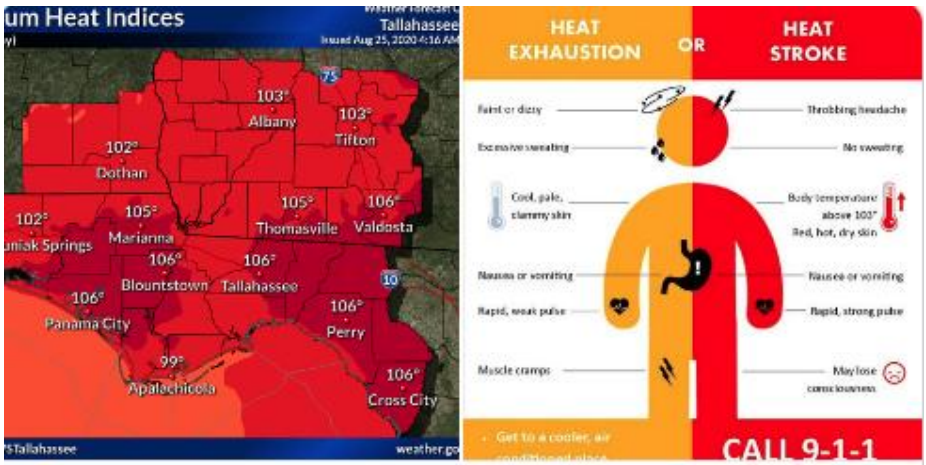
⚠️ DANGEROUS HEAT CONTINUES INTO THURSDAY AND FRIDAY ⚠️

Memorial Weekend 2019





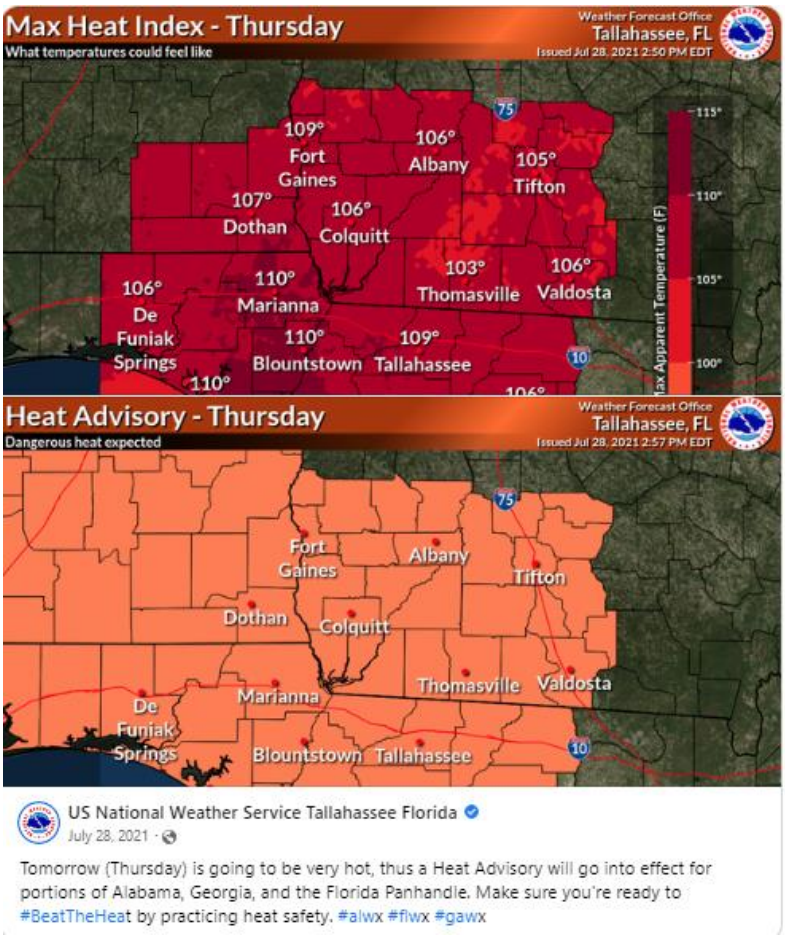
On August 25, 2020, the Heat Index was between 105-108



US National Weather Service Tallahassee Florida
August 25, 2020 ·

While a lot of attention is rightly being given to the Tropics, we're expecting heat indices between 105-108 degrees this afternoon. Take caution outdoors, whether it be for work or recreation.

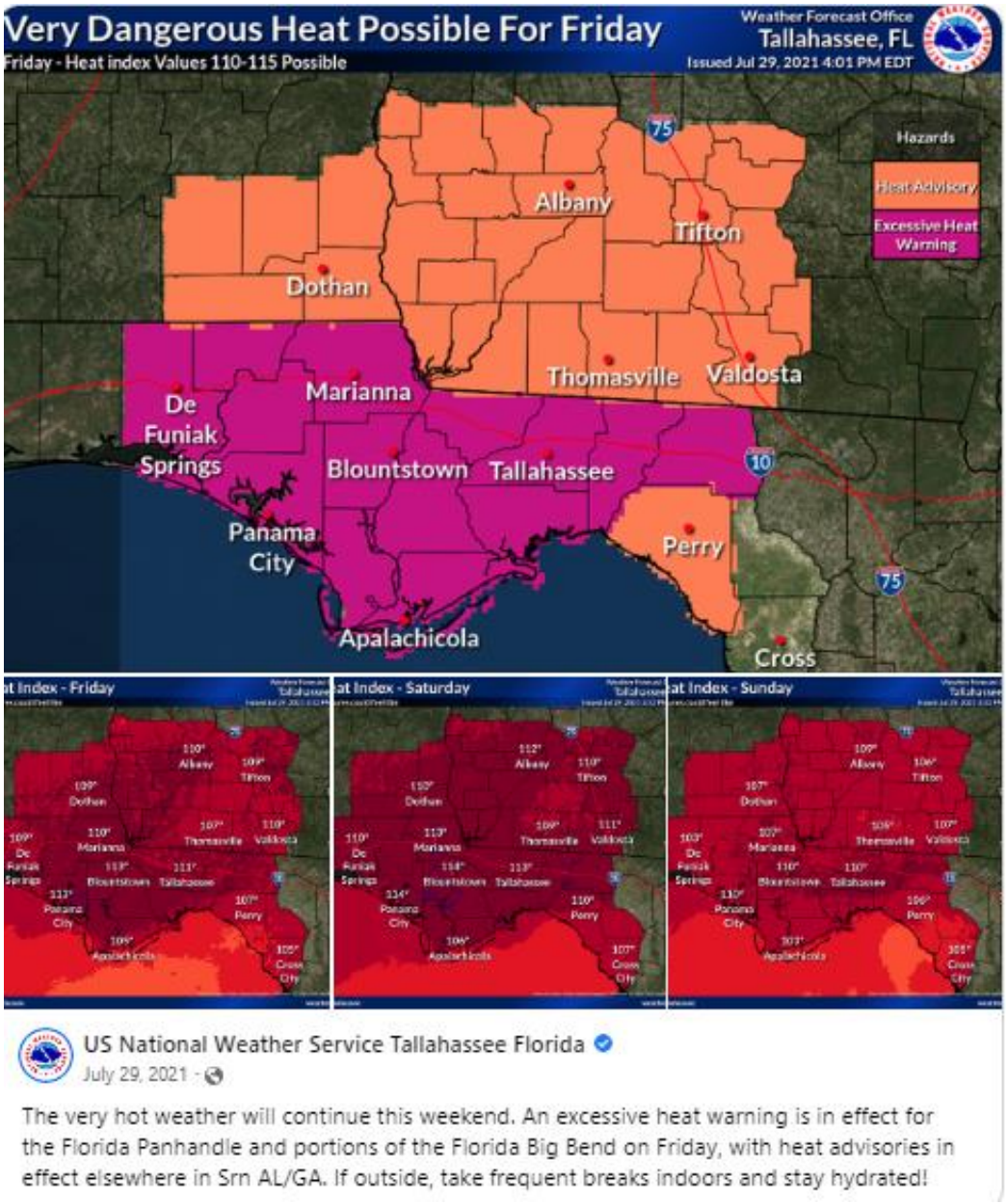
Heat Advisory issued on July 18, 2021



US National Weather Service Tallahassee Florida
July 28, 2021 ·

Tomorrow (Thursday) is going to be very hot, thus a Heat Advisory will go into effect for portions of Alabama, Georgia, and the Florida Panhandle. Make sure you're ready to #BeatTheHeat by practicing heat safety. #alwx #flwx #gawx

Heat Advisory issued for 7/30/2021 and 7/31/21

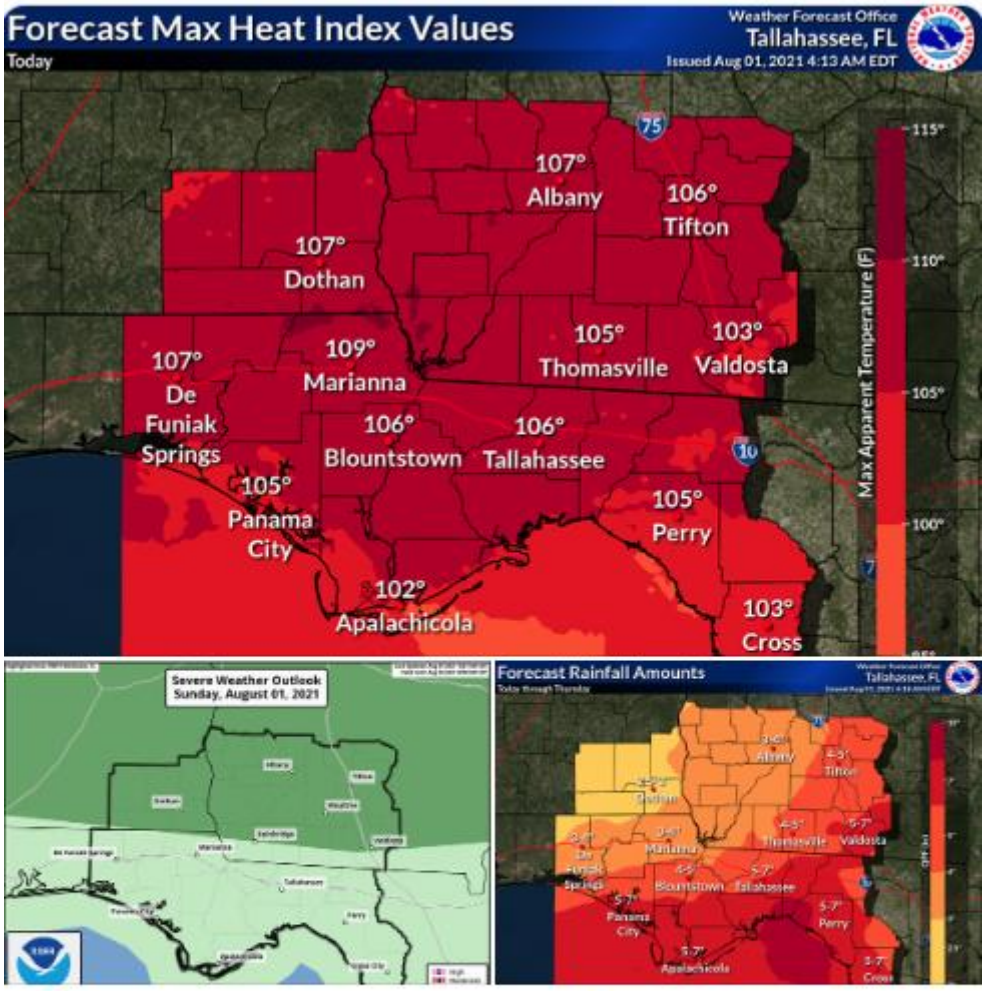


US National Weather Service Tallahassee Florida

July 31, 2021 ·

It'll be hot again today. Dangerous heat index values of 110+ are possible this afternoon.

Heat Advisory Issued for 8/1/2021

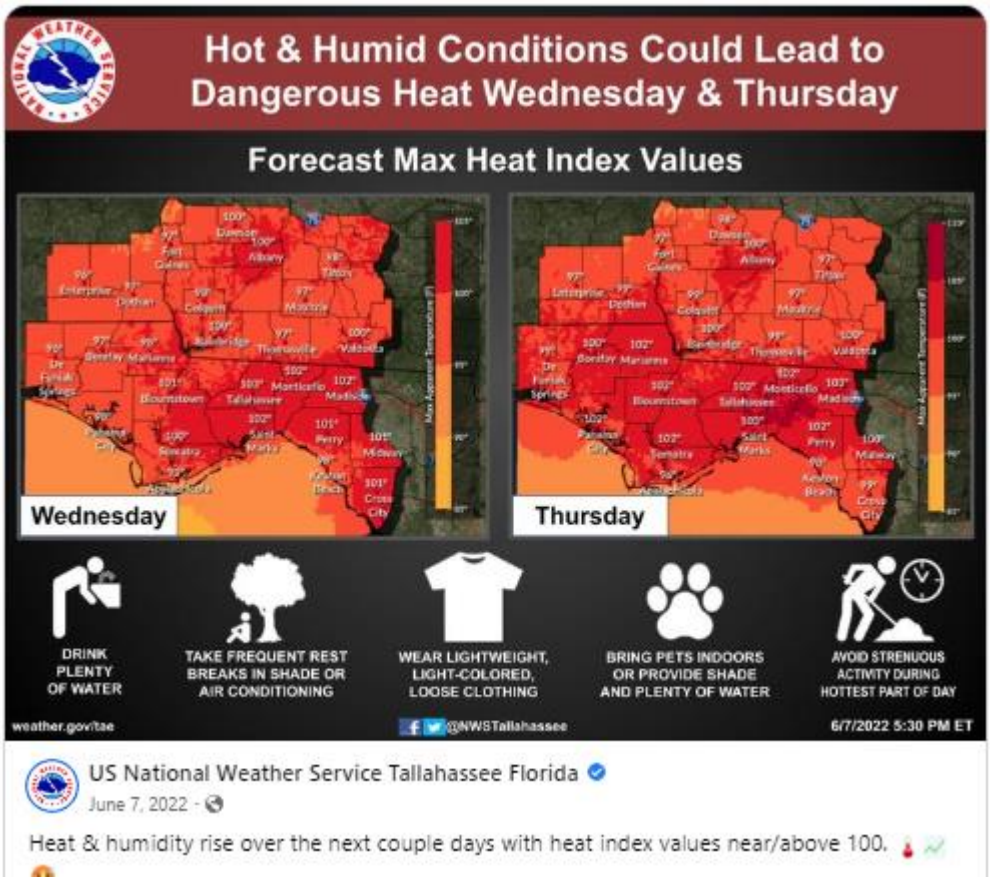


US National Weather Service Tallahassee Florida

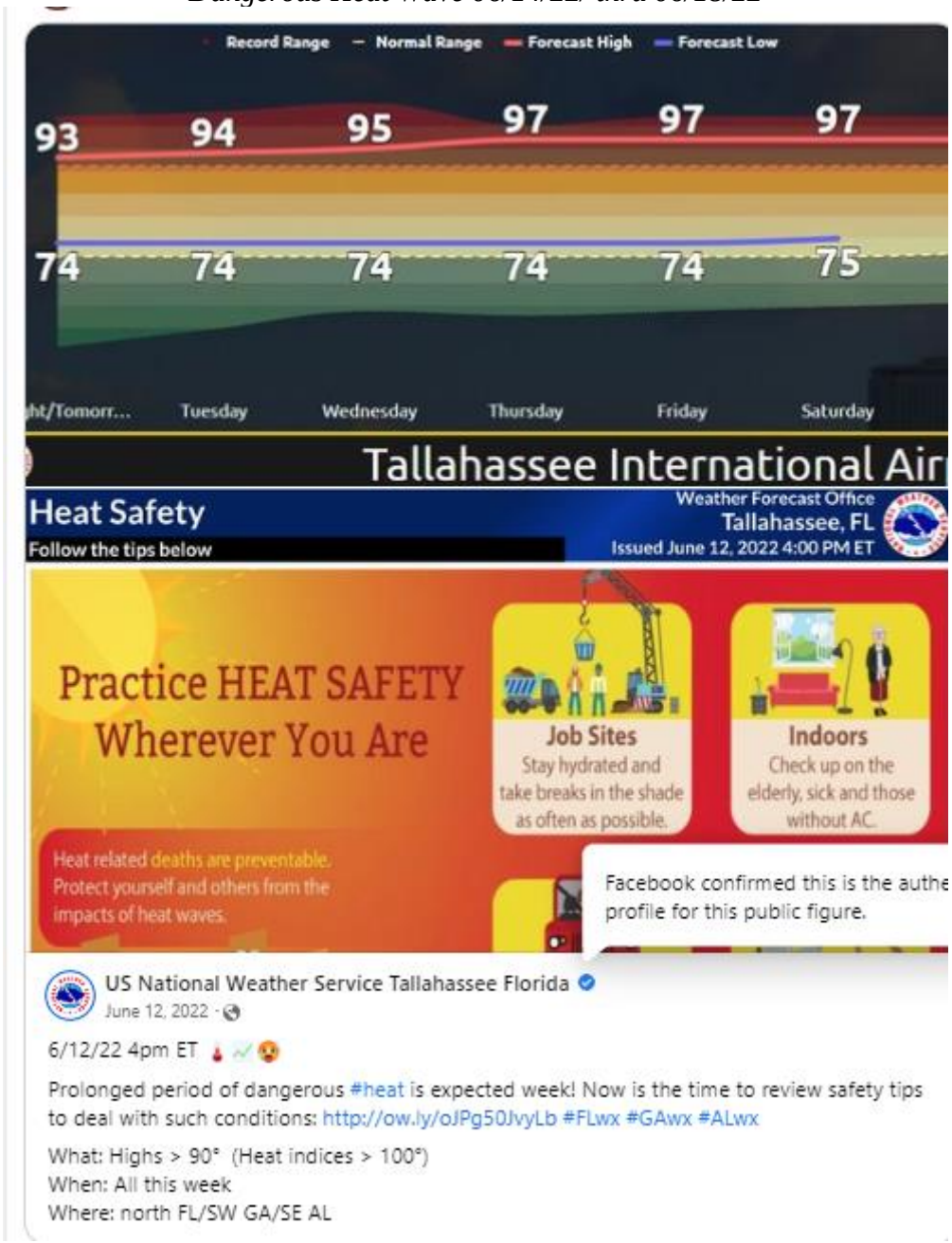
August 1, 2021 ·

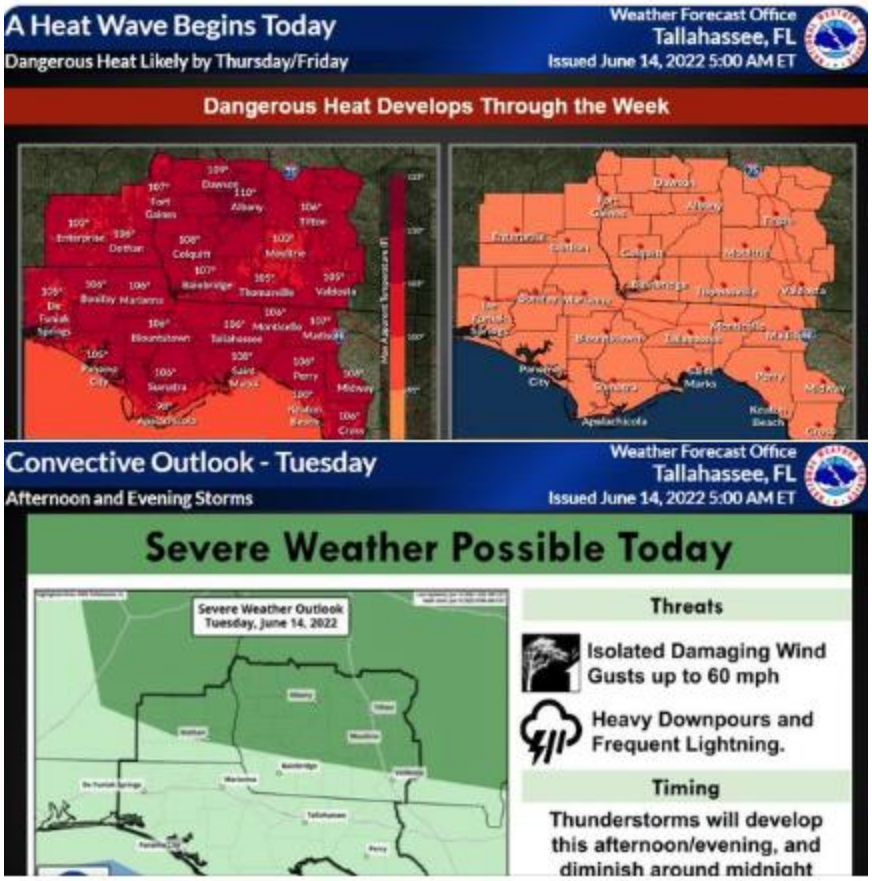
Today marks a transition from heat-related concerns to thunderstorms and heavy rainfall. The heat index will start to trend down today but remain high. Meanwhile, strong thunderstorms with isolated damaging wind gusts are possible late today and this evening, especially north of the Florida border. As we move into the week ahead, heavy rainfall is likely, with the heaviest rain from Monday through Wednesday. This will raise the prospect of runoff issues and some river flooding.

Heat Advisory Issued for 06/08/22 thru 06/09/22



Dangerous Heat Wave 06/14/22/ thru 06/18/22





US National Weather Service Tallahassee Florida
June 14, 2022 ·

Tuesday June 14, 2022 6:10am ET - While the heat wave begins today, with heat index of 105-110°F and a Heat Advisory, we're also keeping an eye on the severe weather threat today.

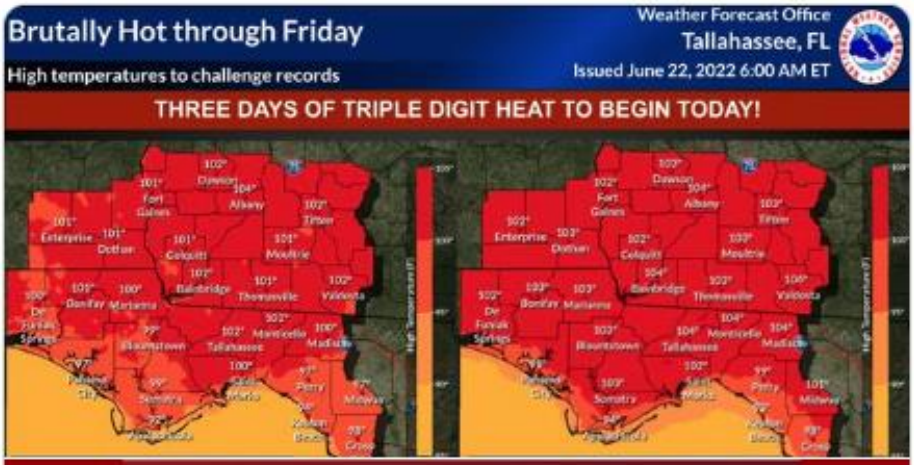
Thunderstorms are expected to develop this afternoon and evening, and continue until potentially midnight. However, there is some uncertainty regarding how the severe weather potential evolves, and the magnitude. There are two possible severe weather scenarios.

1). The first and most likely scenario is for scattered storms to develop this afternoon and evening. These storms will be capable of isolated damaging wind gusts and frequent lightning.

2). The second scenario is has a low probability of occurring, but would result in potentially greater impact. In this scenario, storms could consolidate into a squall line over the southern Appalachians and move southwestward into the area late this afternoon into early tonight. This line could have more widespread strong/severe winds if it develops compared to scenario 1. While this scenario is a low potential, it would have a greater impact, possibly requiring both an expansion and upgrade to the severe weather risk.

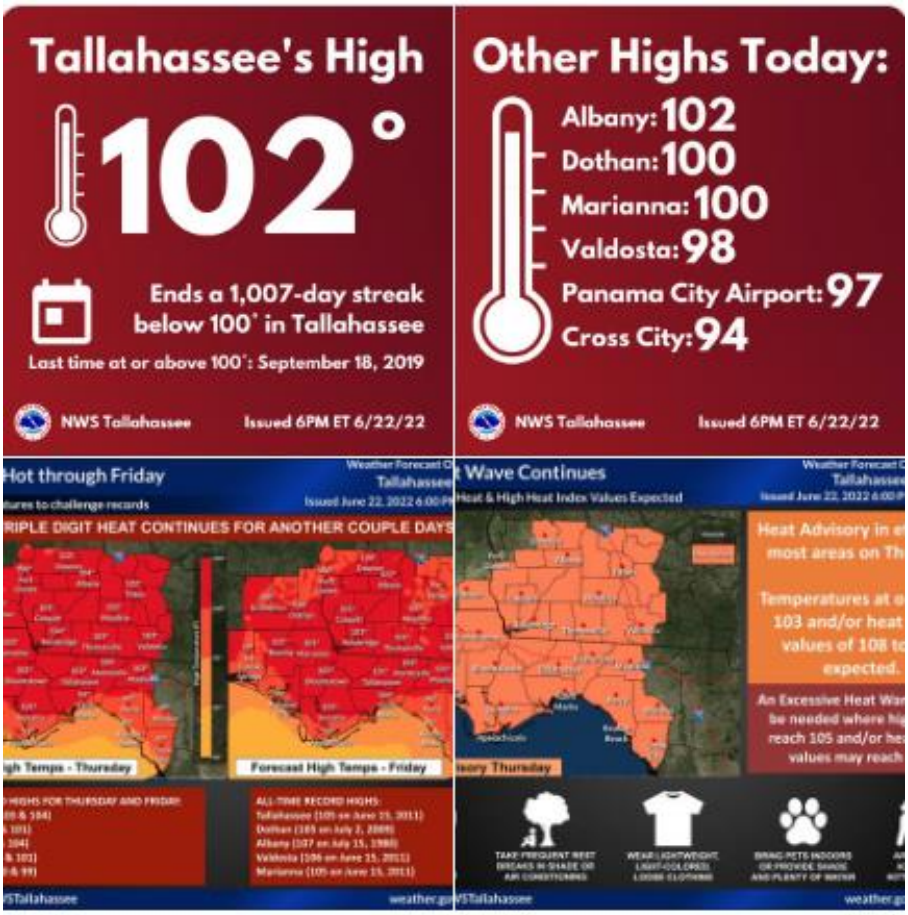
Regardless how things evolve, make sure to respect the heat and stay hydrated, and take frequent breaks if you will be outside for extended periods. Also be sure to keep an eye on the weather through the day as things evolve. #FLwx #ALwx #GAwx

Heat Advisory 06/22/22 thru 07/24/22



US National Weather Service Tallahassee Florida
June 22, 2022 ·

This is the first of 3 days with brutally hot 100+ degree heat! Many records will be set on Thursday. Don't mess around with this heat! Hydrate, take frequent cooling breaks, wear lightweight clothes. NEVER leave a child or pet in an unattended vehicle for even a short time!



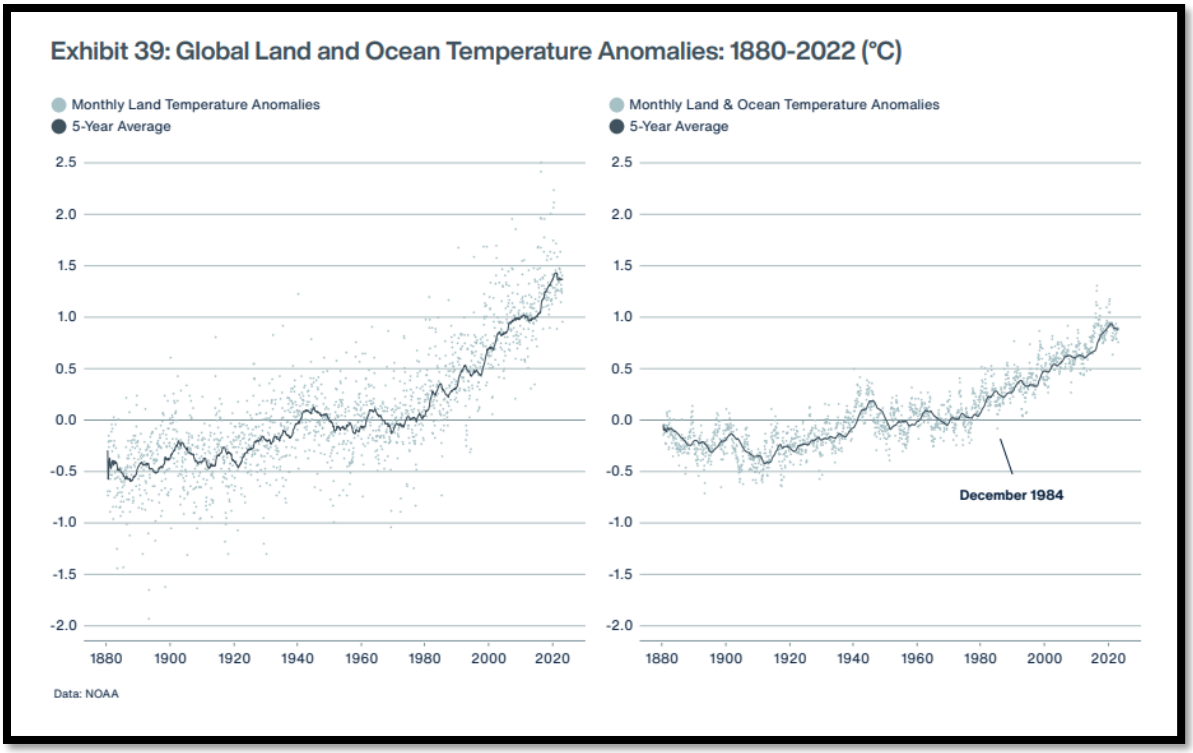
US National Weather Service Tallahassee Florida
June 22, 2022 ·

⚠️ DANGEROUS HEAT CONTINUES INTO THURSDAY AND FRIDAY⚠️

🥵🌡️📈 It's brutally hot. Tallahassee fell short of the record high by 1 degree, but still broke the century mark for the first time since September of 2019!

Triple digit heat continues into Thursday and Friday with Heat Advisories in effect for most areas on Thursday. Actual air temperatures of 103 or greater and/or heat index values of 108-112 are expected in these areas.

Please use extreme caution if you have to be outside the next couple of days. Just because it doesn't feel as humid doesn't mean the heat is any less dangerous.



2022 marked the continuation of the overall long-term warming trend of the planet. Preliminary official data from the National Centers for Environmental Information (NCEI), noted that 2022 was 0.86°C (1.55°F) above average global land and sea surface temperatures. This marked the sixth-warmest year on record dating to 1880, when comparing against NCEI's 20th century average (1901-2000). European Union's Copernicus Climate Change Service declared 2022 the fifth-warmest based on ERA5 dataset, while NASA suggested that 2022 tied as the fifth-warmest.

It was previously assumed that El Niño years comprise most of the warm year lists since it amplifies warming. The opposite was always assumed to be true for La Niña — meaning that historical data typically shows that the globe tends to cool during such phases. Despite enduring La Niña conditions throughout the year, 2022 was still anomalously warm. This suggests that land and ocean temperatures continue to warm at an accelerated rate regardless of any influence from natural variability, volcanic eruptions, or solar cycles. It is further evidence anthropogenic activity is driving most of the warming.

The last below-average year for the globe occurred in 1976, while the last individual month to be below average was December 1984 at -0.08°C (-0.15°F) lower, and before that November 1976. December 2022 marked the 456th consecutive month with above average global temperatures.

Source: NOAA

C./D. Inventory of Assets Exposed and Potential Loss

In Worksheet 3A: Inventory of Assets (appearing in Appendix A), we estimate that all of Turner County and the Cities of Ashburn, Rebecca, and Sycamore are equally vulnerable to this hazard.

An estimated 100% of the Residential property (2,716 of 2,716) in Turner County (including the Cities of Ashburn, Rebecca, and Sycamore) could be affected by this hazard, with a total value of $133,386,535. Also, an estimated 100% of the community's commercial, Industrial, Agricultural, Religious/Non-Profit, Government, Education, and Utility properties (5,126) may be affected, with a total value of $172,294,083. The assessed values are based on the most recently available tax roll data for Turner County and the Cities of Ashburn, Rebecca, and Sycamore, provided by the Turner County Tax Assessor's Office.

Damage to crops is not considered in any of these figures. According to the Center for Agribusiness & Economic Development's 2021 Georgia Farm Gate Value Report (http://caes2.caes.uga.edu/center/caed/documents/GAFGVR2015_DEC16.pdf), the total farm gate value of agricultural production in Turner County is $76,861,946.09.

According to the inventory database reports and maps, all the 117 Critical Facilities and Infrastructure for Turner County (including the Cities of Ashburn, Rebecca, and Sycamore) could be affected by this hazard. The total value of these Critical Facilities is $137,758,656, plus a content value of $9,354,241.

E. Land Use and Development Trends

Turner County and the City of Ashburn have seen a decrease in population over the last few years, while the number of people in Rebecca and Sycamore has increased.

The County and all the Cities have zoning regulations and mandatory building and fire codes a building inspector enforces. All Cities and the County participate in joint comprehensive planning in the required updates of the Service Delivery Strategy.

All jurisdictions have mandatory building and fire codes that a Building Inspector/Zoning Administrator enforces. On October 1, 1991, the Uniform Codes Act became effective in Georgia. On July 1, 2004, this Act was revised to make the following construction codes mandatory as the Georgia State Minimum Standard Codes. Listed below are the code editions in effect as of January 1, 2021, with amendments in 2020 and 2022:

- International Building Code – 2018 Edition
- International Residential Code – 2018 Edition
- International Plumbing Code – 2018 Edition
- International Mechanical Code – 2018 Edition
- International Fuel Gas Code – 2018 Edition
- International Energy Conservation Code – 205 Edition
- International Fire Code – 2018 Edition
- International Electric Code – 2020 Edition

- International Swimming Pool and Spa Code – 2018 Edition

The Act requires local governments that elect to enforce these codes within their jurisdictions to adopt administrative procedures and penalties in order to locally enforce any of these mandatory codes. Also, any applicable appendices of these codes must be adopted locally in order to be enforceable within a specific local jurisdiction.

The Act also made the following optional codes available for local government adoption and enforcement. Local governments choosing to enforce any of the below optional codes must adopt the code(s) they wish to enforce, as well as administrative procedures and penalties. Some of the communities have chosen to adopt the following:

- International Property Maintenance Code - 2018 Edition
- International Existing Building Code - 2018 Edition
- National Green Building Standard - 2008 Edition
- Disaster Resilient Building Code IBC Appendix - 2020 Edition
- Disaster Resilient Building Code IRC Appendix - 2020 Edition

The DCA Board specifically omitted the plumbing, electrical, and energy requirements of the International Residential Code for One- and Two-Family Dwellings. Therefore, the plumbing requirements of the International Plumbing Code, the electrical requirements of the National Electrical Code, and the energy requirements of the International Energy Conservation Code must be used for one- and two-family dwelling construction.

No other land use or development trends that relate to this hazard have been identified at this time.

F. Multi-Jurisdictional Differences

Extreme heat may happen at any place and time, and no difference in severity is expected between Turner County and the Cities of Ashburn, Rebecca, and Sycamore. However, the impact may be more severe in places with higher population density because more people are in danger. In jurisdictions with building codes and inspections, structures built to code may be especially vulnerable to hot weather and other hazards. Power failures exacerbate extreme heat events because of the lack of air conditioning. No other multi-jurisdictional differences have been identified at this time.

G. Overall HRV Summary of Events and Their Impact

Extreme heat can potentially harm people throughout Turner County and the Cities of Ashburn, Rebecca, and Sycamore, especially during the summer months. The potential for damage to health and loss of life will be higher for people without air conditioning and would be exacerbated by a power failure. Extreme heat is a far greater threat to public health than buildings and infrastructure.

The HMPUC has developed a comprehensive range of Mitigation Goals, Objectives, and Action Steps to lessen the impacts of this hazard. These are contained in Chapter 4.

Since the previous plan was approved, there have not been any new developments, regulations, programs, or other changes in the community that would either increase or decrease the community's overall vulnerability to this hazard.

H. Impacts from Future Conditions

The rise in temperature and humidity leads to stronger heat waves that affect humans. If a person's internal temperature exceeds 104 °F, it will cause cellular damage and malfunctioning of the body that can result in vital organ damage and death. Agricultural areas can also be severely affected by heat stress and cause economic loss to people with low incomes and migration to urban areas.

As cities develop, vegetation is often lost, and more surfaces are paved or covered with buildings. This can lead to higher temperatures. Unlike rural areas, built-up areas have higher temperatures, especially at night.

Heat waves have occasionally been an aspect of summer weather in most of the United States. As climate change makes heat waves more intense and more frequent, there will be dangers and health risks that come with it.

Every region in the US is expected to experience hotter temperatures and more intense heat waves in the coming decades. This will pose serious health risks, especially for the young and elderly, construction and agricultural workers, and those living in the core of urban areas.

Since 1970, the average annual temperatures across the southeast have increased by about 2° F, with the warming occurring during the summer. By the end of the century, temperatures are projected to increase by 4° to 8°F. There will also be a predicted 95°F and fewer freezing events. Inland areas will be warmer than coastal areas.

I. Underserved/Socially Vulnerable Population Risk

Turner County has a large population of elderly individuals that live in assisted living facilities/nursing homes that may not receive emergency notifications through existing emergency notifications systems. A homeless population residing in various county areas may not receive emergency notifications. The Health Department Liaison attended the workshops, as did one of Pruitt Health's employees, and these concerns were talked about and addressed. Currently, the homeless population is in different areas of the county, and it is very hard to get an actual location for this population.

Flyers explaining the Hazard Mitigation process were distributed to be available at the county and city offices and at the Health Department and the Department of Family and Children Services (DFACS). (See Appendix H).

Section VII. Drought

A. Identification of Hazard

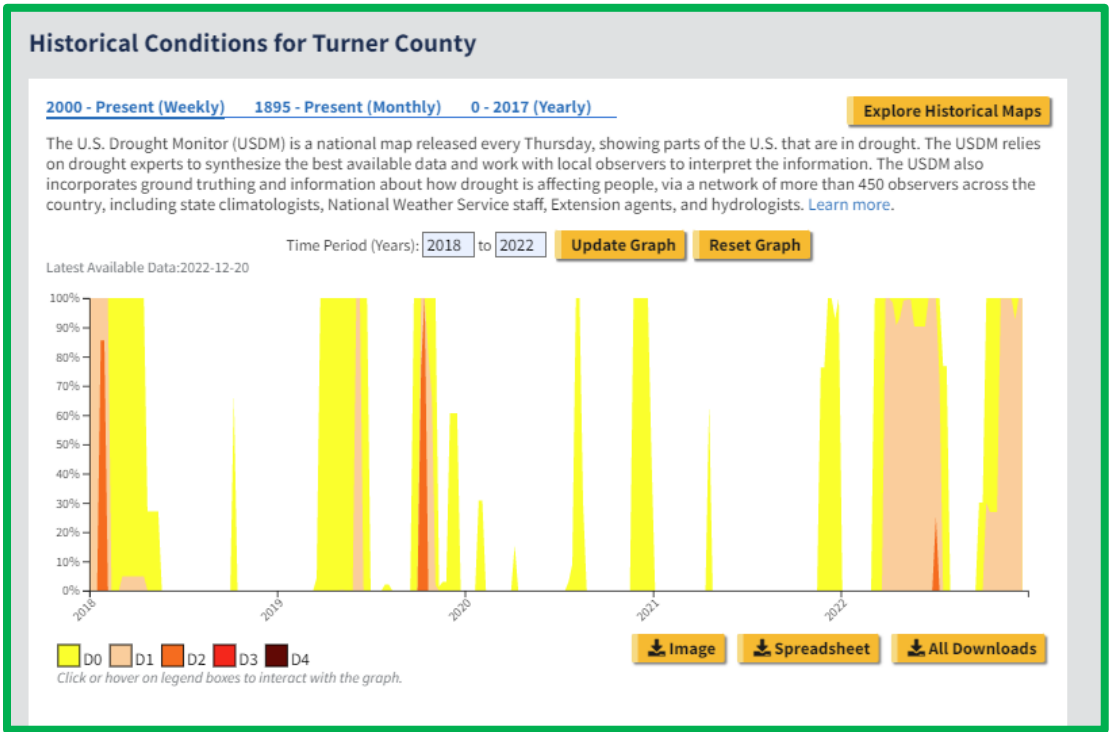
The HMPUC has chosen the threat of drought as the seventh most likely hazard to occur and cause damage in the community, based on experience, the FEMA-described methodology, and other factors. Historical data has been examined from various sources, including the National Climatic Data Center and U.S. Drought Monitor (see Appendix F), as well as from local history and personal accounts, to determine the frequency of events.

Although drought is associated with the summer months in many other parts of the United States, our region has a humid subtropical climate with more precipitation, on average, in the summer than in the winter. Drought can occur at any time, and its effects can last throughout the year and continue from year to year. These effects may include agricultural losses, increased wildfire and fire risk, lack of water for citizens and firefighting, increased flooding risk (because dry land can be less absorbent of rainfall), and other effects that influence other hazards and the community's safety.

Crops (including trees) are usually most adversely affected by drought events and community residents whose water supplies are restricted or cut off (especially those using individual wells). Residents of unincorporated Turner County have wells, which may dry during drought periods, thus leaving those residents without water for extended periods. The Cities of Ashburn, Rebecca, and Sycamore have municipal water systems.

The U.S. Drought Monitor (http://droughtmonitor.unl.edu), established in 1999, is a weekly map of drought conditions produced jointly by the National Oceanic and Atmospheric Administration, the U.S. Department of Agriculture, and the National Drought Mitigation Center (NDMC) at the University of Nebraska-Lincoln. The U.S. Drought Monitor website is hosted and maintained by the NDMC. The Drought Monitor summary map identifies general drought areas, labeled by intensity, with D1 being the least intense and D4 being the most intense. These categories are described below (source: http://droughtmonitor.unl.edu/AboutUs/ClassificationScheme.aspx).

Category	Description	Possible Impacts
D0	Abnormally Dry	Going into drought: ▪ short-term dryness slowing planting, growth of crops or pastures Coming out of drought: ▪ some lingering water deficits ▪ pastures or crops not fully recovered
D1	Moderate Drought	▪ Some damage to crops, pastures ▪ Streams, reservoirs, or wells low, some water shortages developing or imminent ▪ Voluntary water-use restrictions requested
D2	Severe Drought	▪ Crop or pasture losses likely ▪ Water shortages common ▪ Water restrictions imposed
D3	Extreme Drought	▪ Major crop/pasture losses ▪ Widespread water shortages or restrictions
D4	Exceptional Drought	▪ Exceptional and widespread crop/pasture losses ▪ Shortages of water in reservoirs, streams, and wells creating water emergencies



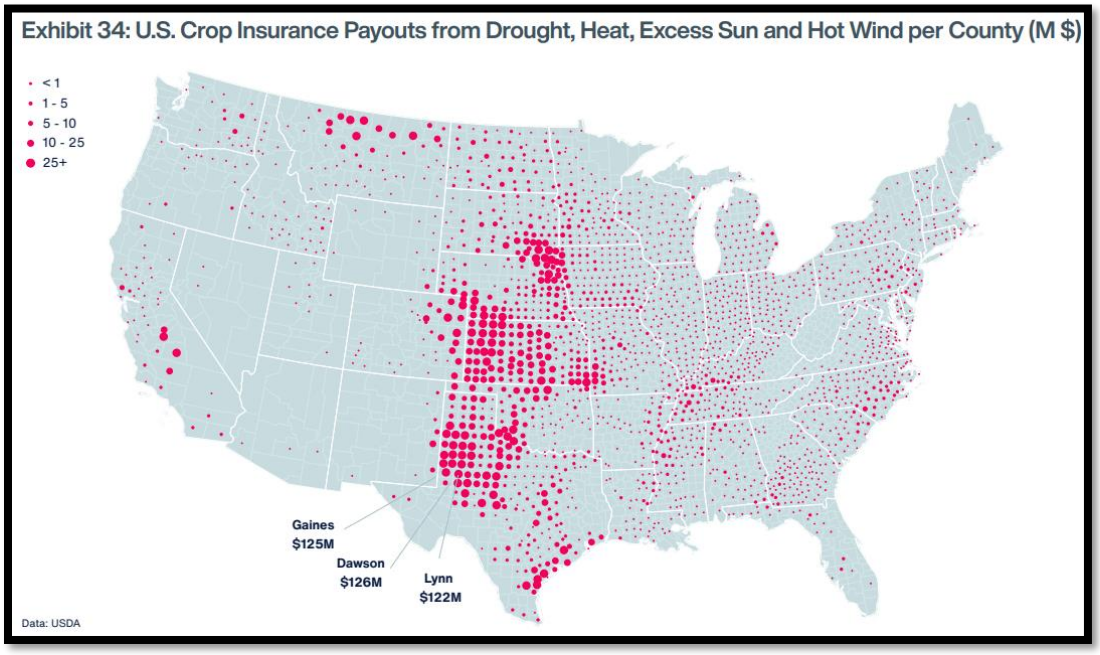
Turner County and the Cities of Ashburn, Rebecca, and Sycamore are all equally vulnerable to the effects of drought.

B. Profile of Events, Frequency of Occurrences, Probability

According to the NOAA Storm Events Database (see Appendix F), 5 reports of drought events occurred in Turner County (including the Cities) between 01/01/1950 and 12/31/2017. Since 2017, there have been 53 drought days of D1-Moderate to D-2 Severe Drought.

The Historic Recurrence Interval is 0.82 years (about 10 months). This is a 122.22% Historic Frequency Chance per year. The past 10-year Record Frequency Per Year is 6.80, the past 20-year frequency is 3.75, and the past 50-year frequency is 1.76 (see the Hazard Frequency Table in Appendix D).

Since 2020 and continuing through 2022, severe drought conditions spread across the United States. The total number of drought events, under moderate or worse, was the largest since 2012. The maximum number of events reached in November 2022 (63%) was close to the maximum in September 2012 (65%). These drought conditions caused considerable payouts by the US Department of Agriculture's (USDA's) Risk Management Agency (RMA) crop insurance program. There was more than $8 billion (about $25 per person in the US) in indemnity payouts. This was second to the 2012 payout of $18 billion (about $55 per person in the US).



- *Source: USDA*

Although the complete available data was used for this analysis, the possibility remains that other events may have occurred in the community that went unreported or underreported.

C./D. Inventory of Assets Exposed and Potential Loss

In Worksheet 3A: Inventory of Assets (appearing in Appendix A), we estimate that all of Turner County and the Cities of Ashburn, Rebecca, and Sycamore are equally vulnerable to this hazard.

An estimated 100% of the Residential property (2,716 of 2,716) in Turner County (including the Cities of Ashburn, Rebecca, and Sycamore) could be affected by this hazard, with a total value of $133,386,535. Also, an estimated 100% of the community's commercial, Industrial, Agricultural, Religious/Non-Profit, Government, Education, and Utility properties (5,126) may be affected, with a total value of $172,294,083. The assessed values are based on the most recently available tax roll data for Turner County and the Cities of Ashburn, Rebecca, and Sycamore, provided by the Turner County Tax Assessor's Office.

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According to the inventory database reports and maps, all the Critical Facilities and Infrastructure for Turner County (including the Cities of Ashburn, Rebecca, and Sycamore) could be affected by this hazard. The total value of these Critical Facilities is $137,758,656, plus a content value of $9,354,241.

E. Land Use and Development Trends

Turner County and the City of Ashburn have seen a decrease in population over the last few years, while the number of people from Rebecca and Sycamore has increased.

The County and all the Cities have zoning regulations and mandatory building and fire codes enforced by a building inspector. All Cities and the County participate in joint comprehensive planning and the required updates of the Service Delivery Strategy.

All jurisdictions have mandatory building and fire codes that a Building Inspector/Zoning Administrator enforces. On October 1, 1991, the Uniform Codes Act became effective in Georgia. On July 1, 2004, this Act was revised to make the following construction codes mandatory as the Georgia State Minimum Standard Codes. Listed below are the code editions in effect as of January 1, 2021, with amendments in 2020 and 2022:

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- International Energy Conservation Code – 205 Edition
- International Fire Code – 2018 Edition
- International Electric Code – 2020 Edition

- International Swimming Pool and Spa Code – 2018 Edition

The Act requires local governments that elect to enforce these codes within their jurisdictions to adopt administrative procedures and penalties in order to locally enforce any of these mandatory codes. Also, any applicable appendices of these codes must be adopted locally in order to be enforceable within a specific local jurisdiction.

The Act also made the following optional codes available for local government adoption and enforcement. Local governments choosing to enforce any of the below optional codes must adopt the code(s) they wish to enforce, as well as administrative procedures and penalties. Some of the communities have chosen to adopt the following:

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The DCA Board specifically omitted the plumbing, electrical, and energy requirements of the International Residential Code for One- and Two-Family Dwellings. Therefore, the plumbing requirements of the International Plumbing Code, the electrical requirements of the National Electrical Code, and the energy requirements of the International Energy Conservation Code must be used for one- and two-family dwelling construction.

No other land use or development trends that relate to this hazard have been identified at this time.

F. Multi-Jurisdictional Differences

Residents of unincorporated Turner County have wells, which may dry during drought periods, thus leaving those residents without water for extended periods. The Cities of Ashburn, Rebecca, and Sycamore have municipal water systems.

No other multi-jurisdictional differences have been identified at this time.

G. Overall HRV Summary of Events and Their Impact

Drought can harm people and the economy throughout Turner County and the Cities of Ashburn, Rebecca, and Sycamore, potentially at any time of the year, and most significantly in unincorporated areas not served by municipal water systems. Drought may increase the likelihood of wildfires and flooding. Water shortages can impede firefighting efforts at all levels.

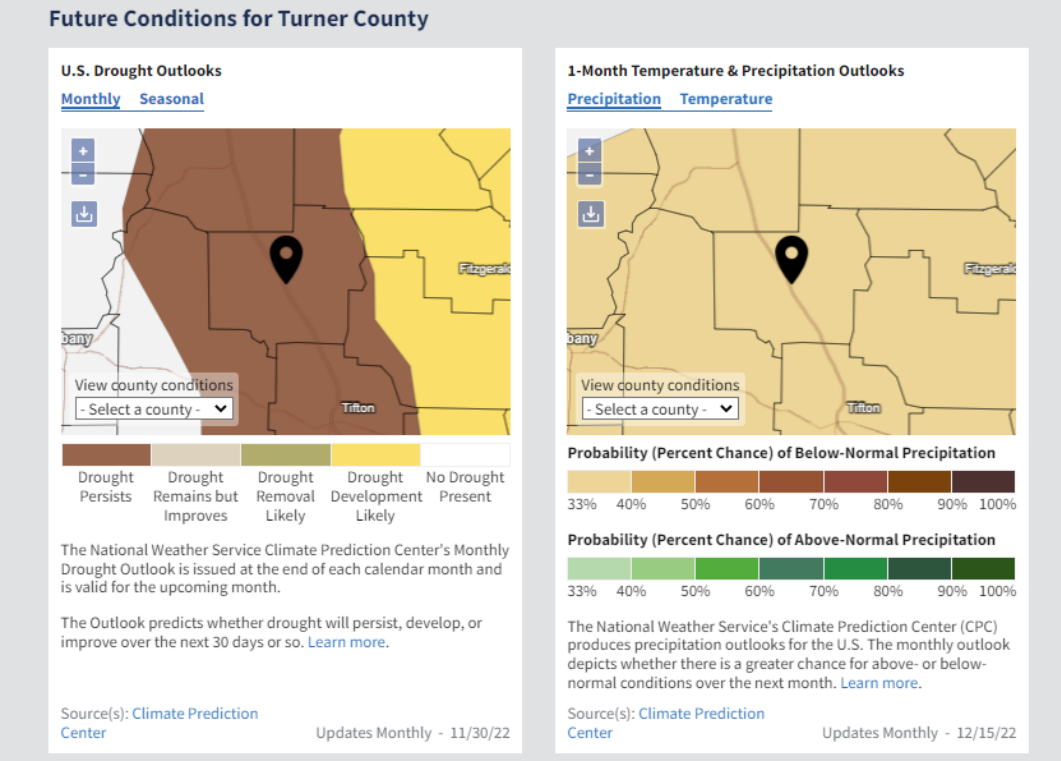
The HMPUC has developed a comprehensive range of Mitigation Goals, Objectives, and Action Steps to lessen the impacts of this hazard. These are contained in Chapter 4.

Since the previous plan was approved, there have not been any new developments, regulations, programs, or other changes in the community that would either increase or decrease the community's overall vulnerability to this hazard.

H. Impacts from Future Conditions

The impact of drought is quicker than hurricanes, wildfires, or floods, but their lasting effects on the area can permanently alter the ecosystem. Drought also leads to wildfires, insect migration, and disturbed carbon and water cycles. The period of drought is prolonged by climate change compared to the time required if the land replenishes its water and nutrient needs. The stress from drought harms plants, wildlife, and humans as the drought can worsen with time.

Climate change exacerbates drought by making it frequent, more prolonged, and more severe. The severity increases over time depending on how long an area remains dry. Drought affects water stored in wetlands, lakes, and rivers and the water below the ground stored in aquifers and the soil. When the groundwater is gone, the dry land is like a sponge and sucks water straight in. Even if there is enough water, the timing of the water dictates whether an area is in a drought. Climate change has altered the natural pattern of droughts, making them more frequent, prolonged, and severe.



I. Underserved/Socially Vulnerable Population Risk

Turner County has a large population of elderly individuals that live in assisted living facilities/nursing homes that may not receive emergency notifications through existing emergency notifications systems. A homeless population living in various county areas may not receive

emergency notifications. The Health Department Liaison attended the workshops, as did one of Pruitt Health's employees, and these concerns were talked about and addressed. Currently, the homeless population is in different areas of the county, and it is very hard to get an actual location for this population.

Flyers explaining the Hazard Mitigation process were distributed to be available at the county and city offices and at the Health Department and the Department of Family and Children Services (DFACS). (See Appendix H).

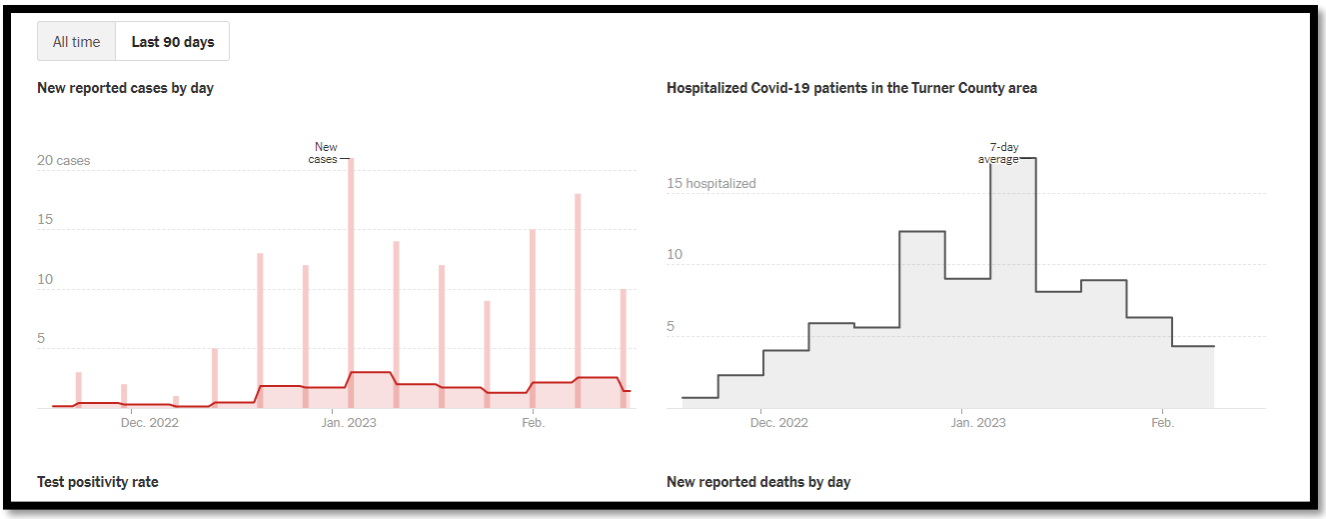
Section VIII. Public Health Emergency

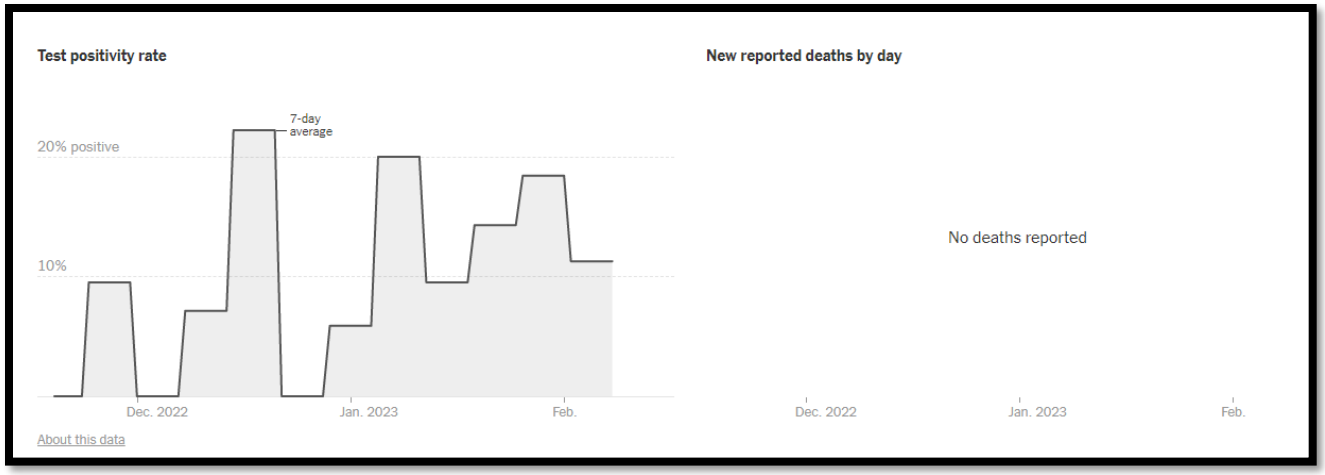
A. Identification of Hazard

A public health emergency is an event that impacts the health of a significant portion of the population. Public Health emergencies can occur at any time without warning. Examples of public health emergencies arising from natural causes include disease outbreaks (including pandemics and food-borne illnesses) and poisoning from naturally occurring environmental factors. Public health emergencies may occur by themselves or secondary to other natural hazards, for example, when flooding leads to contamination of drinking water supplies. Public health emergencies may also be man-made (for example, chemical spills, radiation incidents, bioterrorism, or inadvertent release of a novel virus).

The events of 2020 have shown that a public health emergency can be the greatest threat to a community's local economy and well-being. Currently, the community level of Covid-19 in Turner County is low based on the cases and hospitalizations, according to the most recent update from the CDC on February 16, 2023. The number of hospitalizations of Covid-19 patients has fallen in Turner County. Deaths have remained at about the same level. The positive test rate is still very high within the county. Since the beginning of the pandemic in early 2020, at least 1 in 123 residents have died from Covid-19.

The maps below show the trend between December 2022 and February 2023:





Other disease outbreaks have occurred in recent years, including the 2015-2017 Zika virus outbreak in South and Central America and the 2014-2016 Ebola outbreak in Africa. While these outbreaks did not directly affect the community, the potential remains for Turner County to be affected by an attack.

Due to Turner County's humid subtropical climate, mosquito-borne illness is a more significant hazard here than in many other parts of the country. Levels of exposure to mosquito-borne illness depend on several factors, including:

- Presence and prevalence of an illness-causing mosquito-borne virus;
- Presence of mosquitoes, which may be exacerbated both by natural standing water (such as lakes and ponds) and by standing water in artificial structures, such as old tires, buckets, and other containers;
- Human exposure to mosquito bites may be influenced by factors such as the use of insect repellent, the amount of time spent outside, and the availability of air conditioning and window screens in residences.

B. Profile of Events, Frequency of Occurrences, Probability

The COVID-19 pandemic 2020 is the most significant public health emergency affecting the community. As of February 17, 2023, 3,172 cases of COVID-19 had been reported in Turner County, with 65 deaths.

Before the COVID-19 pandemic, no significant public health emergency had occurred in Turner County in recent memory. However, the effects of communicable diseases, generally considered more routine, should not be discounted. For example, in 2018, 1,530 Georgians died from influenza.

The effects of longer-term, slower-acting public health crises can be insidious and should not be discounted. For example, an estimated 41.4% of the population in Tuner County is obesity prevalent, and 10.4% are diabetic. Therefore, they may be more predisposed to health problems such as high blood pressure, heart disease (7.7% within the county), cancer, and stroke. 25% of

adults in Turner County are in poor or fair general health. Underlying health conditions can significantly increase an individual's vulnerability to communicable diseases, as has the COVID-19 pandemic. Preventive measures to reduce the population's vulnerability to the condition include not only vaccination and medications but also an increase in the opportunity to pursue healthy lifestyles with access to healthy food and exercise. In addition, many identified natural hazards in Turner County can potentially lead to secondary public health emergencies.

C./D. Inventory of Assets Exposed and Potential Loss

Public health emergencies represent a threat primarily to people rather than to infrastructure. As such, the entire population of Turner County (14,185) is vulnerable to a public health emergency.

Systems that may be overwhelmed by a public health emergency include the health care system, emergency response systems, and any institutions and businesses that may be impacted by their personnel becoming unavailable due to illness. As such, all businesses and organizations in Turner County, and all sectors of the economy, are vulnerable to a public health emergency.

E. Land Use and Development Trends

Various land use and development regulations protect Turner County's public health, such as animal control ordinances, plumbing codes, solid waste management regulations, and zoning regulations that minimize incompatible land uses. All such laws contribute to reducing the likelihood of a public health emergency.

F. Multi-Jurisdictional Differences

Jurisdictional differences in vulnerability to public health emergencies depend on the nature and severity of the crisis and the mitigation measures in place. For example, communities not covered by any active mosquito control program may be more vulnerable to outbreaks of mosquito-borne illness.

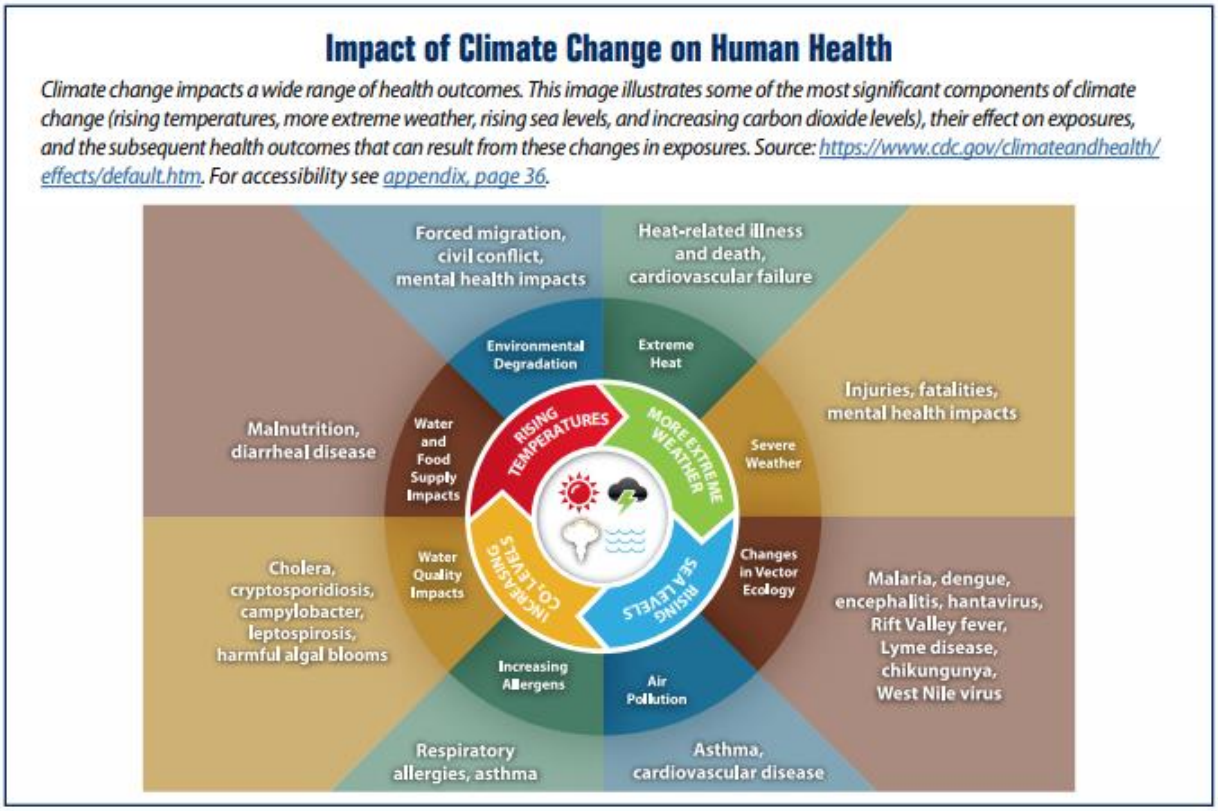
G. Overall HRV Summary of Events and Their Impact

The entire population of Turner County is conceivably at risk from a public health emergency. The level of risk depends on the emergency type and severity and the measures in place to control and respond to it. Some public health emergencies are impossible to predict and occur swiftly, leaving little or no time to respond. Others are more gradual in their onset, and mitigation measures can be implemented beforehand.

H. Impacts from Future Conditions

The climate will have an effect, along with natural and human-made health stressors, on our health. Existing health issues will intensify, and new health threats will emerge. The risk is different for everyone due to age, economic resources, and location.

Disruptions of physical, biological, and ecological systems can affect public health. There can be increased respiratory and cardiovascular disease, injuries, and premature deaths related to severe weather events. Rising air and water temperatures and more intense extreme events are expected to shift exposure to waterborne and foodborne diseases, affecting food and water safety. These can also be a threat to mental health.

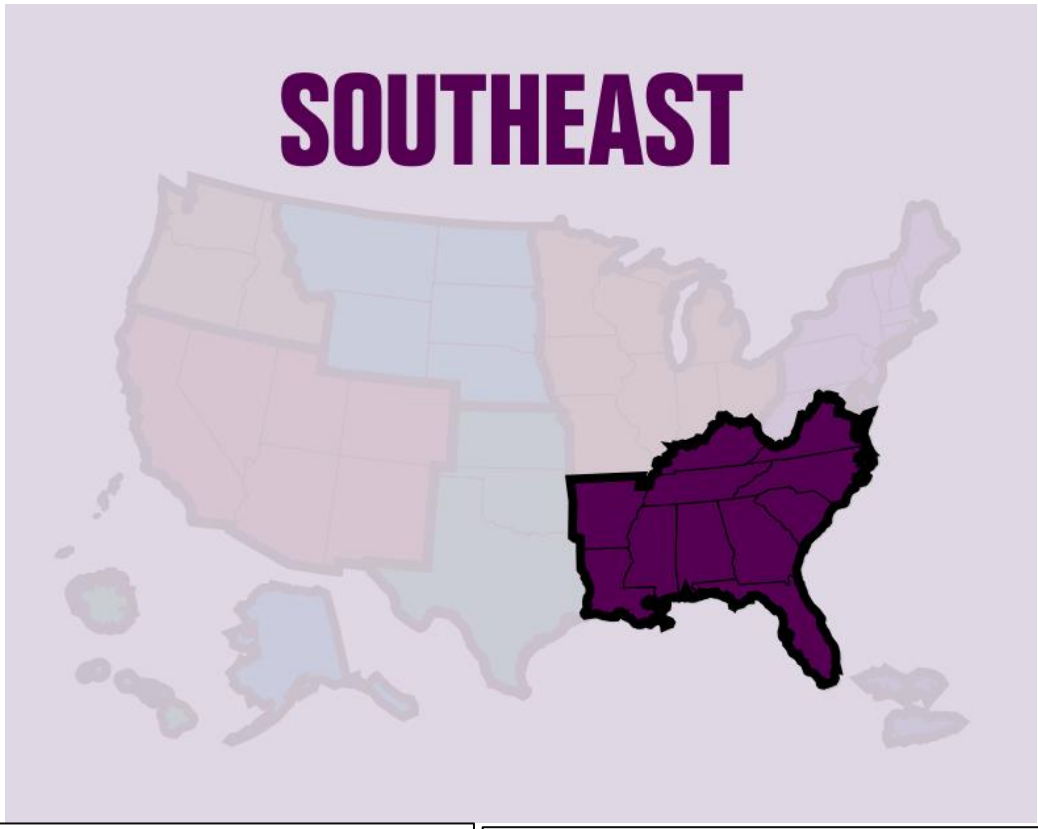


Changes in temperature and precipitation are increasing health risks associated with wildfire and ground-level ozone pollution. Smoke exposure increases respiratory and cardiovascular hospitalizations; emergency department visits; medication dispensations for asthma, bronchitis, chest pain, chronic obstructive pulmonary disease (commonly known by its acronym, COPD); and respiratory infections; and medical visits for lung illnesses. It has also been associated with hundreds of thousands of deaths annually, based on an assessment of the global health risks from landscape fire smoke. Climate change is projected to increase wildfire risks and associated emissions, with harmful impacts on health.

Heat-related deaths are projected to increase, and in most regions, increases in heat-related deaths are expected to outpace reductions in cold-related deaths. The frequency and severity of allergic illnesses, including hay fever, are expected to increase due to shorter winters and earlier summers.

With climate change projected to alter the geographic range and distribution of insects and pests, it will expose more people to ticks and mosquitoes that carry the agents that cause diseases like Lyme disease, Zika, West Nile, and dengue. Communities in the Southeast, for example, are particularly vulnerable to the combined health impacts of heat and flooding, which can result in large populations of nuisance mosquitoes and potential disease risk.

https://nca2018.globalchange.gov



Health Impacts

Temperature-Related Death and Illness

Cities across the Southeast are experiencing more and longer summer heat waves. Sixty-one percent of major Southeast cities are exhibiting some aspects of worsening heat waves, which is a higher percentage than any other region of the country (NCA4 Southeast Chapter, KM1, Increasing Heat).

Air Quality Impacts

In the Southeast, poor air quality can result from emissions (mostly from vehicles and power plants), wildfires, and airborne allergens. The major urban centers in the Southeast are already impacted by poor air quality during warmer months. The Southeast has more days with stagnant air masses than other regions of the country (40% of summer days) and higher levels of fine (small) particulate matter (PM2.5), which cause heart and lung disease. The fast growth rate of urban areas in the Southeast also contributes to aeroallergens, which are known to cause and exacerbate respiratory diseases such as asthma. Urban areas have higher concentrations of CO2, which causes allergenic plants, such as ragweed, to grow faster and produce more pollen allergen than in rural areas (NCA4 Southeast Chapter, KM1, Air Quality and Human Health).

Extreme Events

An assessment by the Florida Department of Health determined that 590,000 people in South Florida face "extreme" or "high" risk from sea level rise, with 125,000 people living in these areas identified as socially vulnerable and 55,000 classified as medically. In addition to causing direct injury, storm surge and related flooding can impact transportation infrastructure by blocking or flooding roads and affecting access to healthcare facilities (NCA4 Southeast Chapter, KM2, Sea Level Rise Is Contributing to Increased Coastal Flooding in the Southeast).

Vector-Borne Diseases

The Southeast is the region of the country with the most favorable conditions for the Aedes aegypti mosquito and thus faces the greatest threat from diseases the mosquito carries. Summer increases in dengue cases are expected across every state in the Southeast (NCA4 Southeast Chapter, KM1, Vector-Borne Disease). Warmer conditions may have facilitated expansion of the geographic range of mosquito populations and could potentially increase their capacity to transmit Zika virus. Zika virus can cause a wide range of symptoms, including fever, rash, and headaches, as well as birth defects (NCA4 Health Chapter, Box 14.2: Transboundary Transmission of Infectious Diseases).

https://www.cdc.gov/climateandhealth/docs/Health_Impacts_Climate_Change

l. Underserved/Socially Vulnerable Population Risk

Turner County has a large population of elderly individuals that live in assisted living facilities/nursing homes that may not receive emergency notifications through existing emergency notifications systems. A homeless population residing in various county areas may not receive emergency notifications. The Health Department Liaison attended the workshops, as did one of Pruitt Health's employees, and these concerns were talked about and addressed. Currently, the homeless population is in different areas of the county, and it is very hard to get an actual location for this population, as they tend to move around frequently.

Flyers explaining the Hazard Mitigation process were distributed to be available at the county and city offices and at the Health Department and the Department of Family and Children Services (DFACS). (See Appendix H).

Chapter 3:
Local Technological Hazards, Risks, and Vulnerability (HRV) Summary

Section I. CBRNE

A. Identification of Hazard

The threat of a Chemical, Biological, Radiological, Nuclear, or Explosive (CBRNE) attack has been chosen by the HMPUC as the most likely human-caused hazard to occur and cause damage in the community.

In pursuit of the community's goals of local preparedness, Turner County and the Cities of Ashburn, Rebecca, and Sycamore need to have reliable chemical, biological, radiological, nuclear, and explosives (CBRNE) countermeasures and equipment that can be used with confidence for the protection of life, health, property, and commerce.

Terrorists have used chemical weapons recently, which is likely to happen again. Several casualties could be expected in a successful chemical attack. Chemical agents can enter the body by inhaling the chemical agents, absorption through the skin or eyes, injection into the body by flying glass or shrapnel, or ingesting food or water. A viable delivery method is in the form of a gas or an aerosol spray. (Source: http://www.disasters.org/dera/library/Heyer%20WMD.pdf)

Chemical weapons include the following categories (source: http://www.disasters.org/dera/library/Heyer%20WMD.pdf)

- **Nerve Agents**: Nerve agents attack the victim's nervous system. Most belong to the family of chemicals known as organophosphates. Many common pesticides belong to this family of chemicals.
- **Blister Agents**: Blister agents, also known as vesicants, attack the victim's skin, resulting in blisters and burns. Mustard gas and Lewisite are common blister agents.
- **Blood Agents**: Blood agents damage the ability of the blood to hold and deliver oxygen. The victim suffocates. Cyanide gases and compounds are the most common types of these agents.
- **Choking Agents**: These chemicals attack the lungs causing them to fill with fluid. Chlorine gas and phosgene are typical choking agents.
- **Incapacitating Agents**: These agents irritate the skin, mucous membranes, eyes, nose, lips, and mouth. They may cause vomiting or intolerable pain. While they may lead to serious medical situations such as seizures or heart attacks, they are not designed to kill or cause permanent harm. Used alone, the intention is to temporarily incapacitate or harass the target or force them to evacuate the area. However, incapacitating agents may be used with other agents to cause responders to remove their gas masks and other protective gear so that they will be exposed to lethal doses of the other agent. Examples of incapacitating agents are

pepper spray, tear gas, riot control agents, and several military chemicals from different nations.

Biological weapons present a severe challenge for response planning. There is a risk that a biological attack may only be detected days or even weeks after it happens. First responder resources, therefore, may be of little use in a bioterrorism incident unless detected promptly.

The following are the two main types of biological weapons:

- **Pathogens:** These are disease-causing organisms, some of which can reproduce and keep spreading long after the attack. The potential for many thousands of casualties is possible. Still, the more likely number is much less because of the difficulty of efficiently delivering the pathogenic agents to many people.
- **Toxins:** These are poisonous substances produced by living things. Many toxins are extremely lethal, and small quantities can kill many people. In many ways, a toxin attack is more like a chemical attack than a biological one. Some possible toxin weapons are ricin, botulism toxin, and aflatoxin. Again, the difficulty for the terrorist is in finding an effective way to disperse or distribute the toxin.

(Source: http://www.disasters.org/dera/library/Heyer%20WMD.pdf)

Radiological weapons are weapons that produce radiation without the detonation of a nuclear device. A radiological incident can cause victims to have contamination and/or exposure. Examples of radiological weapons include:

- **Radiological Dispersal Devices (RDDs)** cause the purposeful dissemination of radioactive material without a nuclear detonation. One type of RDD is known as a "dirty bomb," which uses a conventional explosive to produce radioactive and nonradioactive shrapnel and radioactive dust, thereby causing radiation contamination and possibly some degree of radiation exposure, as well as physical injury and burns. (Source: https://www.remm.nlm.gov/rdd.htm)
- **Radiological Exposure Devices (REDs)**, Hidden Sealed Radioactive Sources. These cause exposure but typically not contamination. The dose from exposure and its specific effect on people depends on the source properties (isotope, activity, amount), the proximity of each person to the source, the length of exposure time, and the portion of the body exposed. (Source: https://www.remm.nlm.gov/red.htm)

Nuclear incidents involve a nuclear explosion (nuclear fission). A possible example is an attack from an improvised nuclear device (IND), which consists of an illicit nuclear weapon bought, stolen, or otherwise originating from a nuclear state or a weapon fabricated by a terrorist group from illegally obtained fissile nuclear weapons material that produces a nuclear explosion—detonating such a weapon results in catastrophic loss of life, destruction of infrastructure, and contamination of a vast area. (Source: https://www.remm.nlm.gov/nuclearexplosion.htm#ind)

Explosives can pack a very powerful punch and can bring down large buildings. The casualties could number in the hundreds in this type of attack. One example of this type of weapon was the fuel oil-fertilizer bomb used to attack the Murray Federal Building in Oklahoma City.

First responders should be alert to the potential for structural collapse and secondary explosive devices in the area.

Great caution should be used if the explosion seems to do minor damage. A small explosive device might be used to disperse chemical, biological, or even radioactive agents. Another purpose of a small device might be to bring large numbers of first responders subjected to a larger secondary device.

Another immediate problem for responders and victims is the potential for asbestos exposure. Older buildings may contain asbestos as insulation, pipe coverings, siding or roofing, flooring, adhesives, floor or ceiling tile, and wall panels. Any explosion or collapse may cause this asbestos to become airborne at hazardous levels.

(Source: http://www.disasters.org/dera/library/Heyer%20WMD.pdf)

B. Profile of Events, Frequency of Occurrences, Probability

According to the best data available, any CBRNE events in Turner County and the Cities of Ashburn, Rebecca, and Sycamore have yet to be reported. However, the entire community is equally vulnerable to this hazard, and an attack could happen anywhere, at any time.

C./D.: Inventory of Assets Exposed and Potential Loss

In Worksheet 3A: Inventory of Assets (appearing in Appendix A), we estimate that all of Turner County and the Cities of Ashburn, Rebecca, and Sycamore are equally vulnerable to this hazard.

Damage to crops is not considered in any of these figures. According to the Center for Agribusiness & Economic Development's 2021 Georgia Farm Gate Value Report (http://caes2.caes.uga.edu/center/caed/documents/GAFGVR2015_DEC16.pdf), the total farm gate value of agricultural production in Turner County is $76,861,946.09.

According to the inventory database reports and maps, all the 117 Critical Facilities and Infrastructure for Turner County (including the Cities of Ashburn, Rebecca, and Sycamore) could be affected by this hazard. The total value of these Critical Facilities is $137,758,656, plus a content value of $9,354,241.

E. Land Use and Development Trends

Turner County and the City of Ashburn have seen a decrease in population over the last few years, while the number of people from Rebecca and Sycamore has increased.

The County and all the Cities have zoning regulations and mandatory building and fire codes enforced by a building inspector. All Cities and the County participate in joint comprehensive planning and the required updates of the Service Delivery Strategy.

No other land use or development trends that relate to this hazard have been identified at this time.

F. Multi-Jurisdictional Differences

The impact of a CBRNE event will be more severe in places with higher population density due to more people being in danger. Response times may be longer in remote areas. No other multi-jurisdictional differences have been identified at this time.

G. Overall HRV Summary of Events and Their Impact

A CBRNE event could harm people throughout Turner County and the Cities of Ashburn, Rebecca, and Sycamore. The HMPUC has developed a comprehensive range of Mitigation Goals, Objectives, and Action Steps to lessen this impact, which is contained in Chapter 4.

Since the previous plan was approved, there have not been any new developments, regulations, programs, or other changes in the community that would either increase or decrease the community's overall vulnerability to this hazard.

Section II. Hazardous Materials Release

A. Identification of Hazard

Hazardous materials are substances or materials the Secretary of Transportation has determined that can pose an unreasonable risk to health, safety, and property when transported in commerce. When these materials are released, they become dangerous. A release may occur by spilling, leaking, emitting toxic vapors, or any other process that enables the material to escape its container, enter the environment, and create a potential hazard.

The effects of hazardous material releases can occur rapidly with little or no advance warning in the form of explosions, fires, and immediate health impacts. Slower effects can include long-term environmental damage and long-term health problems.

B. Profile of Events, Frequency of Occurrences, Probability

Hazardous material spills are common, where hazardous materials are fabricated, processed, and stored. Transportation of hazardous materials by truck is the cause of the most significant number of hazardous materials events. Many products containing hazardous chemicals are routinely used and stored in homes. These products are shipped daily on highways, railroads, waterways, and pipelines. In most cases, disasters involving hazardous materials are confined to a localized area, whether an accidental release occurs at a fixed facility or in association with a transportation incident. The United States Environmental Protection Agency categorizes wastes according to four characteristics: Ignitability, corrosivity, reactivity, and toxicity. Furthermore, the EPA classifies wastes according to the following hazard codes (source: https://www.epa.gov/hw/defining-hazardous-waste-listed-characteristic-and-mixed-radiological-wastes(:

(T) - Toxic Waste
(H) - Acute Hazardous Waste
(I) - Ignitable Waste
(C) - Corrosive Waste
(R) - Reactive Waste
(E) - Toxicity Characteristic Waste

The extent or severity of a hazardous materials release within the community is not predictable due to the varied nature of hazardous materials and the vast area covered by the transportation network upon which such materials may be transported.

According to the USDOT Pipeline and Hazardous Materials Safety Administration's Office of Hazardous Materials Safety database (see Appendix F), 11 reports of Hazardous Materials Release events occur in Turner County (including the Cities) between 07/05/1972 and 12/31/2022. The Historic Recurrence Interval is 4.50 years. This is a 22.22% Historic Frequency Chance per year. The past 10-year Record Frequency Per Year is 0.1, the past 20-year frequency is 0.1, and the past 50-year frequency is 0.2 (see the Hazard Frequency Table in Appendix D).

One hazardous materials release event was recorded since the previous Hazard Mitigation Plan was completed. This was a highway-related incident in the City of Ashburn on 96 One Georgia

Drive. There were no injuries. On August 18, 2022, one (1) 330-gallon tote of paint released approximately less than one (1) gallon of product to the trailer interior due to a faulty lid. R+L Carriers retained Cura Emergency Services, LC, who dispatched a crew from Alpha-Omega Training and Compliance (AOTC) to perform the necessary corrective actions. AOTC personnel observed that the product had dried and re-secured the lid.

Although the complete available data was used for this analysis, the possibility remains that other events may have occurred in the community that went unreported or underreported.

C./D. Inventory of Assets Exposed and Potential Loss

In Worksheet 3A: Inventory of Assets (appearing in Appendix A), we estimate that all of Turner County and the Cities of Ashburn, Rebecca, and Sycamore are equally vulnerable to this hazard.

An estimated 100% of the Residential property (3,062 of 3,062) in Turner County (including the Cities of Ashburn, Rebecca, and Sycamore) could be affected by this hazard, with a total value of $159,382,334. Also, an estimated 100% of the community's commercial, Industrial, Agricultural, Religious/Non-Profit, Government, Education, and Utility properties (2,979 of 2,979) may be affected, with a total value of $535,409,739. The values are based on the most recent tax roll data provided by the Turner County Tax Assessor's Office for Turner County and the Cities of Ashburn, Rebecca, and Sycamore.

Damage to crops is not considered in any of these figures. According to the Center for Agribusiness & Economic Development's 2021 Georgia Farm Gate Value Report (http://caes2.caes.uga.edu/center/caed/documents/GAFGVR2015_DEC16.pdf), the total farm gate value of agricultural production in Turner County is $76,861,946.09.

According to the inventory database reports and maps, all the 117 Critical Facilities and Infrastructure for Turner County (including the Cities of Ashburn, Rebecca, and Sycamore) could be affected by this hazard. The total value of these Critical Facilities is $137,758,656, plus a content value of $9,354,241.

E. Land Use and Development Trends

Residential land use in Turner County is widely dispersed, except in the City of Ashburn, where relatively higher residential density exists. Interstate 75 passes through the County and Ashburn, and these areas could be vulnerable should a hazardous materials event occur on the Interstate highway.

Turner County and the City of Ashburn have seen an increase in population over the last few years, while the people of Rebecca and Sycamore have decreased.

The County and all the Cities have zoning regulations and mandatory building and fire codes enforced by a building inspector. All Cities and the County participate in joint comprehensive planning and the required updates of the Service Delivery Strategy.

No other land use or development trends that relate to this hazard have been identified at this time.

F. Multi-Jurisdictional Differences

The facilities most vulnerable to hazardous materials release are located within a one-mile buffer of the major highways (especially Interstate 75) and railways in the community.

Interstate 75 passes through the Cities of Ashburn and Sycamore, and US-41 is another significant truck route. CSX rail lines pass through all jurisdictions.

G. Overall HRV Summary

Many of the community could be vulnerable to a hazardous materials release. Preparation for such an event requires specific training for first responders and coordination among agencies to ensure a swift response and containment of hazardous materials to minimize the potential loss of life and property. Therefore, a key priority should be to train responders to fulfill their responsibilities and conduct periodic tests to be sure the response plan is realistic. Responders are ready to carry it out.

Human error is the probable cause of most transportation incidents and associated consequences involving the accidental release of hazardous materials. Varying quantities of hazardous materials are manufactured, used, or stored in Turner County. Due to the county's location on or near several major transportation routes, the potential exists for a catastrophic hazardous material release event due to a transportation accident.

Since the previous plan was approved, there have not been any new developments, regulations, programs, or other changes in the community that would either increase or decrease the community's overall vulnerability to this hazard.

Chapter 4: Local Natural Hazard Mitigation Goals and Objectives

Summary of Changes:

Table 4.1 provides a brief description of each section in this chapter and a summary of the changes made.

Chapter 4 Section	Updates to Section
I. Hurricanes/Tropical Storms	Updated Goals, Objectives, and Action Step Formatting, Numbering, and Data Field; updated or Deleted Prior Action Steps and Added New Action Steps (if applicable)
II. Tornadoes	Updated Goals, Objectives, and Action Step Formatting, Numbering, and Data Field; updated or Deleted Prior Action Steps and Added New Action Steps (if applicable)
III. Floods	Updated Goals, Objectives, and Action Step Formatting, Numbering, and Data Field; updated or Deleted Prior Action Steps and Added New Action Steps (if applicable)
IV. Lightning/Thunderstorms/ Wind/Hail	Updated Goals, Objectives, and Action Step Formatting, Numbering, and Data Field; updated or Deleted Prior Action Steps and Added New Action Steps (if applicable)
V. Extreme Heat	Updated Goals, Objectives, and Action Step Formatting, Numbering, and Data Field; updated or Deleted Prior Action Steps and Added New Action Steps (if applicable)
VI. Wildfires	Updated Goals, Objectives, and Action Step Formatting, Numbering, and Data Field; updated or Deleted Prior Action Steps and Added New Action Steps (if applicable)
VII. Drought	Updated Goals, Objectives, and Action Step Formatting, Numbering, and Data Field; updated or Deleted Prior Action Steps and Added New Action Steps (if applicable)
VIII. Public Health Emergency	New Natural Hazard and data

Table 4.1: Overview of updates to Chapter 4: Local Natural Hazards, Mitigation Goals, and Objectives

Overall Community Mitigation Goals, Policies, and Values Narrative

While Turner County and the Cities of Ashburn, Rebecca, and Sycamore operate autonomously, there is a high level of cooperation in hazard mitigation and emergency planning efforts. Each local government has designated representatives to participate in the emergency management process, whether during the planning, response, or recovery phases. The local Emergency Management Agency hosts regular meetings to gather all relevant local, regional, and state partners together to develop effective plans and strengthen stakeholder relationships. The jurisdictions have been able to access resources available through several state and federal sources that have been instrumental in improving the technical capabilities of these communities to mitigate hazards more effectively and provide more accurate warning and preparatory information to their citizens.

Overall, the local communities' priorities have remained relatively unchanged. The hazards and risks associated with each have not changed. Many of the action steps identified during previous Hazard Mitigation Plans are still relevant and remain a priority in this plan.

The Turner County Commission gave authority for the development of this Plan because they executed the Grantee-Subgrantee Agreement for the Turner County Hazard Mitigation Grant Program (HMGP) Planning Project; and by the Cities of Ashburn, Rebecca, and Sycamore, located in Turner County, through their participation in the planning project. The Turner County Emergency Management Agency is authorized to oversee emergency management within Turner County and the Cities of Ashburn, Rebecca, and Sycamore.

The jurisdictions have many current policies and programs related to hazard mitigation, which are described in detail in the goals, objectives, and action steps contained in Chapter 4 of this Plan. All jurisdictions (within the boundaries of their budgets) can expand and improve their existing policies and programs, as evidenced by the new and current goals, objectives, and action steps included in this plan. The number of resources available to the jurisdictions to expand and improve existing programs will depend on local government budgets and state and federal funding to support hazard mitigation activities.

This chapter describes the comprehensive range of Mitigation Goals, Objectives, and Action Steps developed by the HMPUC to reduce damages and improve safety through Hazard Mitigation. These have been arranged by the natural hazards contained in Chapter 2. There is particular emphasis on emergency preparedness and infrastructure.

The HMPUC discussed and identified the comprehensive range of Mitigation Goals, Objectives, and Action Steps contained in Chapter 4 of this Plan after identifying the hazards noted in Chapter 2. All community areas were considered in developing the comprehensive range of Mitigation Goals, Objectives, and Action Steps. These were identified after weighing many factors discovered during the planning process, including risk assessment, storm history, past damage, community resources, etc.

A list of the comprehensive range of Mitigation Goals, Objectives, and Action Steps was compiled from the input of the HMPUC and others within the community. Members of the HMPUC prioritized the identified comprehensive range of Mitigation Goals, Objectives, and Action Steps

based on what was anticipated to be most beneficial to the community. The benefits of all action steps were determined to be greater than the costs involved.

Several criteria were established to assist the HMPUC members in prioritizing these suggested Mitigation Goals, Objectives, and Action Steps. Criteria included perceived cost vs. benefit or cost-effectiveness, availability of potential funding sources, overall feasibility, measurable milestones, political support for the proposed actions, and the STAPLEE criteria.

Through this prioritization process, several projects emerged as having higher priority than others. Some of the tasks involved spending considerable funds to initiate the required actions. The determination of the cost/benefit analysis (such as the FEMA B/CA model) of a project will be implemented at the time of project application or funding request. Other projects allowed the communities to pursue project completion using potential grant funding. Still, others needed more financial commitment from the communities.

Chapter 6, Sections I-III, describes the planning process for selecting the comprehensive range of Mitigation Goals, Objectives, and Action Steps. The Action Steps of the HMPUC gives the Action Steps a rating of High, Medium, or Low Priority of factors (with a primary emphasis on prioritized cost versus benefit review) identified in Chapter 6, Section I.

The chapter lists relevant, comprehensive ranges of Mitigation Goals, Objectives, and Action Steps below. The Turner County EMA Director has been chosen by Turner County and the Cities of Ashburn, Rebecca, and Sycamore to oversee the projects. The Turner County EMA has been designated by Turner County and the Cities of Ashburn, Rebecca, and Sycamore as the coordinating agency for implementing and administering these projects.

Section I. Hurricanes/Tropical Storms

A. Community Mitigation Goals

As previously indicated in Chapter 2, hurricanes and tropical storms may cause substantial damage to life, property, and the economy in Turner County and the Cities of Ashburn, Rebecca, and Sycamore. They are usually accompanied by some advanced notice, giving the community time to prepare and/or evacuate. The HMPUC believes that because these extreme weather events have the potential to cause significant damage, injury, and loss of life, a comprehensive range of Mitigation Goals, Objectives, and Action Steps (contained in Section C below) should be implemented to reduce this hazard's potential impact on the community.

B. Identification and Analysis of Comprehensive Range of Mitigation Options

1. Structural and Non-Structural Mitigation:

This Hazard Mitigation Plan contains both structural and non-structural options. For more information, see the comprehensive range of Mitigation Goals, Objectives, and Action Steps in Section C below.

2. Existing Policies, Regulations, Ordinances, and Land Use:

Chapter 2 of this plan contains information regarding existing policies, regulations, ordinances, and land use relevant to this hazard. For more information, see Chapter 2, Section I.

3. Community Values, Historical and Special Considerations:

A few historic buildings exist in the community Critical Facilities. Historic and special considerations pose significant challenges to retrofitting historic buildings to be more resilient to natural hazards. The Ashburn Heights--Hudson-College Avenue Historic District and the Ashburn Commercial Historic District are listed in the National Register of Historic Places and several individual properties in Turner County.

4. New Buildings and Infrastructure:

The mitigation strategy and recommendations that follow include action steps designed to protect new buildings and infrastructure from the effects of this hazard.

5. Existing Buildings and Infrastructure:

The mitigation strategy and recommendations that follow include action steps designed to protect existing buildings and infrastructure from the effects of this hazard.

C. Mitigation Strategy and Recommendations

Goal 1.1: Enhance the community's ability to issue early warnings of Hurricanes/Tropical Storms in an effective, dependable, and rapid manner.

Objective 1.1.1: Ensure that staff are educated to use Code Red.

Action Step 1: Continue to train staff on the use of Code Red	
Responsible Department	Turner County EMA, City of Rebecca/City of Sycamore Public Works
Anticipated Cost	Staff Time
Existing & Potential Funding Sources	General Funds
Jurisdiction	City of Rebecca, City of Sycamore
Timeframe	2023-2028
Priority	High
Status	New

Objective 1.1.2: Enhance the ability of the Turner County Emergency Management Agency to respond effectively and efficiently to emergency needs during and after a Hurricane/Tropical Storm event.

Action Step 2: Maintain "StormReady" status.	
Responsible Department	Turner County EMA
Anticipated Cost	$5,000
Existing & Potential Funding Sources	General Funds, DOHS-GEMA/FEMA
Jurisdiction	All Local Governments
Timeframe	2023-2028
Priority	High
Status	Ongoing/Amended Cost to $20,000

Action Step 3: Implement the "Community Emergency Response Team" (CERT) Program.	
Responsible Department	Turner County EMA
Anticipated Cost	$5,000
Existing & Potential Funding Sources	General Funds, DOHS-GEMA/FEMA
Jurisdiction	All Local Governments
Timeframe	2023-2028
Priority	High
Status	Ongoing/Changed cost to $20,000

Action Step 4: Expand radio capabilities to be compatible with the narrow band for Turner County Fire Dept., EMA/EMS, Board of Education, Turner County Sheriff's Department, the City of Ashburn, the City of Rebecca, and the City of Sycamore.	
Responsible Department	Turner County EMA, Turner FD/EMA/EMS, the City of Ashburn FD, City of Rebecca FD, City of Sycamore FD
Anticipated Cost	$500,000
Existing & Potential Funding Sources	General Funds, DOHS-GEMA/FEMA
Jurisdiction	All Local Governments
Timeframe	2023-2028
Priority	High
Status	Ongoing/Amended cost to $500,000 total/Amended Action Step

Action Step 5: Update the study to install repeaters and radio towers, as needed, including between Rebecca and the 86-mile marker, the Board of Education, the Sycamore Police Department, and the Turner County Sheriff's Department.	
Responsible Department	Turner County EMA, Turner County Sheriff's Dept.
Anticipated Cost	$300,000
Existing & Potential Funding Sources	General Funds, DOHS-GEMA/FEMA
Jurisdiction	All Local Governments
Timeframe	2023-2028
Priority	High
Status	Ongoing/A study has been completed but needs to be updated/Amended Cost to $300,000/Amended Action Step.

Goal 1.2: Reduce the risks and vulnerability of citizens and critical facilities to damage from Hurricanes/Tropical Storms.

Objective 1.2.1: Protect the residents' life, health, and property from the force of Hurricanes/Tropical Storms.

Action Step 6: Educate homeowners and builders on individual safe rooms	
Responsible Department	Turner County EMA, Turner County/ City of Ashburn/ City of Rebecca/ City of Sycamore Building Inspection Depts.
Anticipated Cost	Staff Time
Existing & Potential Funding Sources	General Funds
Jurisdiction	All Local Governments
Timeframe	2023-2028
Priority	High
Status	Ongoing

Action Step 7: Distribute programs on personal emergency preparedness, i.e., emergency survival kits.	
Responsible Department	Turner County EMA
Anticipated Cost	$300
Existing & Potential Funding Sources	General Funds
Jurisdiction	All Local Governments
Timeframe	2024-2028
Priority	Medium
Status	Ongoing

Action Step 8: Encourage businesses to develop emergency plans.	
Responsible Department	Turner County EMA
Anticipated Cost	Staff Time
Existing & Potential Funding Sources	General Funds
Jurisdiction	All Local Governments
Timeframe	2023-2028
Priority	Medium
Status	Ongoing

Action Step 9: 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 schools.	
Responsible Department	Turner County EMA
Anticipated Cost	Staff Time
Existing & Potential Funding Sources	General Funds
Jurisdiction	All Local Governments
Timeframe	2023-2028
Priority	High
Status	Ongoing

Action Step 10: Install auxiliary portable and fixed generators (including transfer switches) and soft start systems for all designated evacuation and emergency shelters and critical facilities (serving the entire Turner County community) and community water systems, including 2 for the wells in Sycamore (serving the total population).	
Responsible Department	Turner County EMA
Anticipated Cost	$350,000 per unit
Existing & Potential Funding Sources	General Funds, DOHS-GEMA/FEMA
Jurisdiction	All Local Governments
Timeframe	2023-2028
Priority	High
Status	Ongoing/Two generators purchased thru a grant for Pruitt Health

Action Step 11: Trim tree lines around roads, homes, utilities, and businesses.	
Responsible Department	Turner County/ City of Ashburn/ City of Rebecca/ City of Sycamore Public Works Depts.
Anticipated Cost	$20,000
Existing & Potential Funding Sources	General Funds
Jurisdiction	All Local Governments
Timeframe	2023-2028
Priority	High
Status	Ongoing

Action Step 12: Initiate an inspection program at Critical Facilities to identify construction weaknesses subject to high wind damage and seek funding to retrofit public buildings to reinforce windows, roofs, doors, etc.	
Responsible Department	Turner County/ City of Ashburn/ City of Rebecca/ City of Sycamore Building Inspection Depts.
Anticipated Cost	$1,000,000
Existing & Potential Funding Sources	General Funds, DOHS-GEMA/FEMA
Jurisdiction	All Local Governments
Timeframe	2023-2028
Priority	Medium
Status	Ongoing

Action Step 13: Obtain 2 generators for sewage pump stations and 1 generator for City Hall in Sycamore to serve all residents.	
Responsible Department	Sycamore Public Works
Anticipated Cost	$12,000 each
Existing & Potential Funding Sources	General Funds, DOHS-GEMA/FEMA
Jurisdiction	City of Sycamore
Timeframe	2023-2028
Priority	High
Status	Ongoing

D. Special Multi-Jurisdictional Strategy and Considerations:

Most of the above strategies are intended to be carried out by each local jurisdiction. The applicable jurisdictions are noted in the table in certain instances where the action step may not apply to all jurisdictions.

All sections of the Plan shall be monitored and evaluated annually by the County Emergency Management Agency. Incremental accomplishments of Mitigation Goals, Objectives, and Action Steps will be reported to the public through appropriate means (news media, social media, web pages, City Council and County Commission meetings, etc.). By utilizing available resources, each jurisdiction will inform the public of these strategies' development and how citizens can best assist with and/or take advantage of these efforts.
The primary criteria to measure plan success will be the number of Goals, Objectives, and Action Steps, or components thereof, that have been completed, resulting in savings of life, money, and property. For further details on plan execution, see Chapter 6.

E. Local Public Information and Awareness Strategy:

All sections of the Plan shall be monitored and evaluated annually by the County Emergency Management Agency. Incremental accomplishments of Mitigation Goals, Objectives, and Action Steps will be reported to the public through appropriate means (news media, social media, web pages, City Council and County Commission meetings, etc.). By utilizing available resources, each jurisdiction will inform the public of these strategies' development and how citizens can best assist with and/or take advantage of these efforts.

F. Changes from the Previous Plan

Action Step	Changes
Action Step 1: Purchase an early warning horn system for the City of Rebecca and Sycamore.	Deleted
Action Step 1: Continue to train staff on the use of Code Red.	New
Action Step 3: Implement the "Community Emergency Response Team" (CERT) Program.	Change cost from $5,000 each to $20,000 total.
Action Step 4: Expand radio capabilities to be compatible with the narrow band for Turner County Fire Dept., EMA/EMS, Board of Education, Turner County Sheriff's Department, the City of Ashburn, the City of Rebecca, and the City of Sycamore.	Amended Action Step and cost from $25,000 each to $500,000 total
Action Step 5: Update the study to install repeaters and radio towers, as needed, including between Rebecca and the 86-mile marker, the Board of Education, the Sycamore Police Department, and the Turner County Sheriff's Department.	Amended Action Step and cost from $75,000 each to $300,000 total
Action Step 10: Install auxiliary portable and fixed generators (including transfer switches) and soft start systems for all designated evacuation and emergency shelters and critical facilities (serving the entire Turner County community) and community water systems, including 2 for the wells in Sycamore (serving the total population).	Ongoing Two generators were purchased thru a grant for Pruitt Health

Section II. Tornadoes

A. Community Mitigation Goals

As previously indicated in Chapter 2, this hazard may cause substantial damage to life, property, and the economy in Turner County and the Cities of Ashburn, Rebecca, and Sycamore. Thunderstorms and wind are unpredictable and can happen anywhere and at any time. Because these tornadoes may be extremely powerful and cause significant damage, the HMPUC believes that the comprehensive range of Mitigation Goals, Objectives, and Action Steps (contained in Section C below) should be implemented to reduce this hazard's potential impact on the community.

B. Identification and Analysis of Comprehensive Range of Mitigation Options

1. Structural and Non-Structural Mitigation:

This Hazard Mitigation Plan contains both structural and non-structural options. For more information, see the comprehensive range of Mitigation Goals, Objectives, and Action Steps in Section C below.

2. Existing Policies, Regulations, Ordinances, and Land Use:

Chapter 2 of this plan contains information regarding existing policies, regulations, ordinances, and land use relevant to this hazard. For more information, see Chapter 2, Section II.

3. Community Values, Historic, and Special Considerations:

Historic buildings exist in the community, a few of which are Critical Facilities. Historic and special considerations pose significant challenges to retrofitting historical buildings to be more resilient to natural hazards. The Ashburn Heights-Hudson-College Avenue Historic District and the Ashburn Commercial Historic District are listed in the National Register of Historic Places and several properties in Turner County.

4. New Buildings and Infrastructure:

The mitigation strategy and recommendations that follow include action steps designed to protect new buildings and infrastructure from the effects of this hazard.

5. Existing Buildings and Infrastructure:
The mitigation strategy and recommendations that follow include action steps designed to protect existing buildings and infrastructure from the effects of this hazard.

C. Mitigation Strategy and Recommendations

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

Objective 2.1.1: Ensure that staff are educated to use Code Red.

Action Step 1: Continue to train staff on the use of Code Red	
Responsible Department	Turner County EMA, City of Rebecca/City of Sycamore Public Works
Anticipated Cost	Staff Time
Existing & Potential Funding Sources	General Funds
Jurisdiction	City of Rebecca, City of Sycamore
Timeframe	2023-2028
Priority	High
Status	New

Objective 2.1.2: Enhance the ability of the Turner County Emergency Management Agency to respond effectively and efficiently to emergency needs during and after a tornado event.

Action Step 2: Maintain "StormReady" status.	
Responsible Department	Turner County EMA
Anticipated Cost	$5,000
Existing & Potential Funding Sources	General Funds, DOHS-GEMA/FEMA
Jurisdiction	All Local Governments
Timeframe	2023-2028
Priority	High
Status	Ongoing

Action Step 3: Implement the "Community Emergency Response Team" (CERT) Program.	
Responsible Department	Turner County EMA
Anticipated Cost	$5,000
Existing & Potential Funding Sources	General Funds, DOHS-GEMA/FEMA
Jurisdiction	All Local Governments
Timeframe	2023-2028
Priority	High
Status	Ongoing/Change cost to $20,000

Action Step 4: Expand radio capabilities to be compatible with the narrow band for Turner County Fire Dept., EMA/EMS, Board of Education, Turner County Sheriff's Department, the City of Ashburn, the City of Rebecca, and the City of Sycamore.	
Responsible Department	Turner County EMA, Turner FD/EMA/EMS, City of Ashburn FD, City of Rebecca FD, City of Sycamore FD
Anticipated Cost	$500,000
Existing & Potential Funding Sources	General Funds, DOHS-GEMA/FEMA
Jurisdiction	All Local Governments
Timeframe	2023-2028
Priority	High
Status	Ongoing/Amended cost from $25,00 each to $500,000 total/Amended Action Step wording.

Action Step 5: Update the study to install repeaters and radio towers, as needed, including between Rebecca and the 86-mile marker, Board of Education, Sycamore Police Department, and the Turner County Sheriff's Department.	
Responsible Department	Turner County EMA, Turner County Sheriff's Dept.
Anticipated Cost	$300,000
Existing & Potential Funding Sources	General Funds, DOHS-GEMA/FEMA
Jurisdiction	All Local Governments
Timeframe	2023-2028
Priority	High
Status	Ongoing/A study has been completed but needs to be updated/Amended Cost from $75,000 each to $a total of $300,000/Amended Action Step wording.

Goal 2.2: Reduce the risks and vulnerability of citizens and critical facilities to damage resulting from tornadoes.

Objective 2.2.1: Protect the residents' life, health, and property from the force of tornadoes.

Action Step 6: Educate homeowners and builders on individual safe rooms	
Responsible Department	Turner County EMA, Turner County/ City of Ashburn/ City of Rebecca/ City of Sycamore Building Inspection Depts.
Anticipated Cost	Staff Time
Existing & Potential Funding Sources	General Funds
Jurisdiction	All Local Governments
Timeframe	2023-2028
Priority	High
Status	Ongoing

Action Step 7: Distribute programs on personal emergency preparedness, i.e., emergency survival kits.	
Responsible Department	Turner County EMA
Anticipated Cost	$300
Existing & Potential Funding Sources	General Funds
Jurisdiction	All Local Governments
Timeframe	2023-2028
Priority	Medium
Status	Ongoing

Action Step 8: Encourage businesses to develop emergency plans.	
Responsible Department	Turner County EMA
Anticipated Cost	Staff Time
Existing & Potential Funding Sources	General Funds
Jurisdiction	All Local Governments
Timeframe	2023-2028
Priority	Medium
Status	Ongoing

Action Step 9: 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 schools.	
Responsible Department	Turner County EMA
Anticipated Cost	Staff Time
Existing & Potential Funding Sources	General Funds
Jurisdiction	All Local Governments
Timeframe	2023-2028
Priority	High
Status	Ongoing

Action Step 10: Install auxiliary portable and fixed generators (including transfer switches) and soft start systems for all designated evacuation and emergency shelters and critical facilities (serving the entire Turner County community) and community water systems including 2 for the wells in Sycamore (serving total population).	
Responsible Department	Turner County EMA
Anticipated Cost	$350,000 per unit
Existing & Potential Funding Sources	General Funds, DOHS-GEMA/FEMA
Jurisdiction	All Local Governments
Timeframe	2023-2028
Priority	High
Status	Ongoing

Action Step 11: Trim tree lines around roads, homes, utilities, and businesses.	
Responsible Department	Turner County/ City of Ashburn/ City of Rebecca/ City of Sycamore Public Works Depts.
Anticipated Cost	$20,000
Existing & Potential Funding Sources	General Funds
Jurisdiction	All Local Governments
Timeframe	2023-2028
Priority	High
Status	Ongoing

Action Step 12: Initiate an inspection program at Critical Facilities to identify construction weaknesses subject to high wind damage and seek funding to retrofit public buildings to reinforce windows, roofs, doors, etc.	
Responsible Department	Turner County/ City of Ashburn/ City of Rebecca/ City of Sycamore Building Inspection Depts.
Anticipated Cost	$1,000,000
Existing & Potential Funding Sources	General Funds, DOHS-GEMA/FEMA
Jurisdiction	All Local Governments
Timeframe	2023-2028
Priority	Medium
Status	Ongoing

Action Step 13: Obtain 2 generators for sewage pump stations and 1 generator for City Hall in Sycamore to serve all residents.	
Responsible Department	Sycamore Public Works
Anticipated Cost	$12,000 each
Existing & Potential Funding Sources	General Funds, DOHS-GEMA/FEMA
Jurisdiction	City of Sycamore
Timeframe	2023-2028
Priority	High
Status	Ongoing

D. Special Multi-Jurisdictional Strategy and Considerations:

Most of the above strategies are intended to be carried out by each local jurisdiction. In some instances where the action step may not apply to all jurisdictions, the applicable jurisdictions are noted in the table.

E. Local Public Information and Awareness Strategy:

All sections of the Plan shall be monitored and evaluated annually by the County Emergency Management Agency. Incremental accomplishments of Mitigation Goals, Objectives, and Action Steps will be reported to the public through appropriate means (news media, social media, web pages, City Council and County Commission meetings, etc.). By utilizing available resources, each jurisdiction will inform the public of these strategies' development and how citizens can best assist with and/or take advantage of these efforts.

The primary criteria to measure plan success will be the number of Goals, Objectives, and Action Steps, or components thereof, that have been completed, resulting in savings of life, money, and property. For further details on plan execution, see Chapter 6.

F. Changes from the Previous Plan

Action Step	Changes
Action Step 1: Purchase an early warning horn system for the City of Rebecca and Sycamore.	Deleted
Action Step 1: Continue to train staff on the use of Code Red	New
Action Step 3: Implement the "Community Emergency Response Team" (CERT) Program.	The cost changed from $5,000 to $20,000
Action Step 4: Expand radio capabilities to be compatible with the narrow band for Turner County Fire Dept., EMA/EMS, Board of Education, Turner County Sheriff's Department, the City of Ashburn, the City of Rebecca, and the City of Sycamore.	Amended cost from $25,000 each to $500,000 total/Amended wording
Action Step 5: Update the study to install repeaters and radio towers, as needed, including between Rebecca and the 86-mile marker, Board of Education, Sycamore Police Department, and the Turner County Sheriff's Department.	Amended Cost from $75,000 each to $a total of $300,000/Amended Action Step wording

Section III. Floods

A. Community Mitigation Goals

As previously indicated in Chapter 2, this hazard may cause substantial damage to life, property, and the economy in Turner County and the Cities of Ashburn, Rebecca, and Sycamore. Floods are unpredictable and can happen at any place and at any time. Because of the damage and loss of life, it may cause, the HMPUC believes that the comprehensive range of Mitigation Goals, Objectives, and Action Steps (contained in Section C below) should be implemented to reduce this hazard's potential impact on the community.

The primary flooding sources in Turner County are the Alapaha River, Deep Creek, and Hat Creek. Due to these facts, the Turner County HMPUC believes that the comprehensive range of Mitigation Goals, Objectives, and Action Steps listed below should be implemented to reduce the threat of flood damage in Turner County and the Cities of Ashburn, Rebecca, and Sycamore.

B. Identification and Analysis of the Comprehensive Range of Mitigation Options

1. Structural and Non-Structural Mitigation:

This Hazard Mitigation Plan contains both structural and non-structural options. For more information, see the comprehensive range of Mitigation Goals, Objectives, and Action Steps in Section C below.

2. Existing Policies, Regulations, Ordinances, and Land Use:

Chapter 2 of this plan contains information regarding existing policies, regulations, ordinances, and land use relevant to this hazard. For more information, see Chapter 2, Section III.

3. Community Values, Historic, and Special Considerations:

Historic buildings exist in the community, a few of which are Critical Facilities. Historic and special considerations pose significant challenges to retrofitting Historic buildings to be more resilient to natural hazards. The Ashburn Heights-Hudson-College Avenue Historic District and the Ashburn Commercial Historic District are listed in the National Register of Historic Places and several properties in Turner County.

4. New Buildings and Infrastructure:

The mitigation strategy and recommendations that follow include action steps designed to protect new buildings and infrastructure from the effects of this hazard.

5. Existing Buildings and Infrastructure:

The mitigation strategy and recommendations that follow include action steps designed to protect existing buildings and infrastructure from the effects of this hazard.

C. Mitigation Strategy and Recommendations:

Goal 3.1: Minimize flood damage in Turner County and the Cities of Ashburn, Rebecca, and Sycamore.

Objective 3.1.1: Minimize losses to existing and future structures, especially community critical facilities, due to flooding caused by excessive rainfall.

Action Step 1: Identify areas within Turner County that experience repetitive localized flooding and evaluate potential increases in minimum building floor elevations.	
Responsible Department	Turner County/ City of Ashburn/ City of Rebecca/City of Sycamore Building Inspection Depts.
Anticipated Cost	Staff Time
Existing & Potential Funding Sources	General Funds
Jurisdiction	All Local Governments
Timeframe	2023-2028
Priority	High
Status	Ongoing

Action Step 2: Continue compliance with NFIP through review, adoption, and updates to flood protection ordinances and maps, and work towards a database to record the depth of flood to determine the extent and possible damage.	
Responsible Department	Turner County/ City of Ashburn/ City of Sycamore Building Inspection Depts.
Anticipated Cost	Staff Time
Existing & Potential Funding Sources	General Funds
Jurisdiction	Turner County, City of Ashburn, City of Sycamore
Timeframe	2023-2028
Priority	High
Status	Ongoing

Action Step 3: Review data on storm events to determine where repetitive Flooding occurs due to inadequate drainage infrastructure and identify & pursue grant funds to upgrade deficient drainage systems.	
Responsible Department	Turner County EMA, Turner County Commission, City of Ashburn/ City of Rebecca/ City of Sycamore Councils
Anticipated Cost	$500,000 for each project
Existing & Potential Funding Sources	General Funds, DOHS-GEMA/FEMA, GA DCA CDBG
Jurisdiction	All Local Governments
Timeframe	2023-2028
Priority	High
Status	Ongoing

Action Step 4: Monitor comprehensive land use plans to ensure the mapping of lands to be permanently protected.	
Responsible Department	Turner County/ City of Ashburn/ City of Rebecca/ City of Sycamore Building Inspection Depts.
Anticipated Cost	Staff Time
Existing & Potential Funding Sources	General Funds
Jurisdiction	All Local Governments
Timeframe	2023-2028
Priority	Low
Status	Ongoing

Action Step 5: Monitor existing subdivision regulations to promote the conservation of floodplains, wetlands, and groundwater recharge areas.	
Responsible Department	Turner County/ City of Ashburn/ City of Rebecca/ City of Sycamore Building Inspection Depts.
Anticipated Cost	Staff Time
Existing & Potential Funding Sources	General Funds
Jurisdiction	All Local Governments
Timeframe	2023-2028
Priority	Low
Status	Ongoing

Action Step 6: Seek funding from private foundations, individuals, federal and state grants, and local communities to leverage available green space grant funds.	
Responsible Department	Turner County EMA, Turner County Commission, City of Ashburn/ City of Rebecca/ City of Sycamore Councils
Anticipated Cost	$2,000,000
Existing & Potential Funding Sources	General Funds, GA DOT, TE, DOHS-GEMA/FEMA, Private Foundations, Individual Assistance
Jurisdiction	All Local Governments
Timeframe	2023-2028
Priority	Low
Status	Ongoing

Action Step 7: Educate public and private organizations on methods for preserving parks and recreation areas.	
Responsible Department	Turner County EMA, Turner County Commission, City of Ashburn/ City of Rebecca/ City of Sycamore Councils
Anticipated Cost	Staff Time
Existing & Potential Funding Sources	General Funds
Jurisdiction	All Local Governments
Timeframe	2024-2028
Priority	Low
Status	Ongoing

D. Special Multi-Jurisdictional Strategy and Considerations:

Most of the above strategies are intended to be carried out by each local jurisdiction. In some instances, the action step may not apply to all jurisdictions; the applicable jurisdictions are noted in the table.

E. Local Public Information and Awareness Strategy.

The County Emergency Management Agency shall monitor and evaluate all Plan sections annually. Incremental accomplishments of Mitigation Goals, Objectives, and Action Steps will be reported to the public through appropriate means (news media, social media, web pages, City Council and County Commission meetings, etc.). By utilizing available resources, each jurisdiction will inform the public of these strategies' development and how citizens can best assist with and/or take advantage of these efforts.

The primary criteria to measure plan success will be the number of Goals, Objectives, and Action Steps, or components thereof, that have been completed, resulting in savings of life, money, and property. For further details on plan execution, see Chapter 6.

F. Changes from the Previous Plan

No changes.

Section IV. Lightning/Thunderstorms/Wind/Hail

A. Community Mitigation Goals

As previously indicated in Chapter 2, this hazard may cause substantial damage to life, property, and the economy in Turner County and the Cities of Ashburn, Rebecca, and Sycamore. Thunderstorms and wind are unpredictable and can happen anywhere and at any time. Because these storms may be extremely violent and cause significant damage, the HMPUC believes that the comprehensive range of Mitigation Goals, Objectives, and Action Steps (contained in Section C below) should be implemented to reduce this hazard's potential impact on the community.

B. Identification and Analysis of the Comprehensive Range of Mitigation Options

1. Structural and Non-Structural Mitigation:

This Hazard Mitigation Plan contains both structural and non-structural options. For more information, see the comprehensive range of Mitigation Goals, Objectives, and Action Steps in Section C below.

2. Existing Policies, Regulations, Ordinances, and Land Use:

Chapter 2 of this plan contains information regarding existing policies, regulations, ordinances, and land use relevant to this hazard. For more information, see Chapter 2, Section IV.

3. Community Values, Historic, and Special Considerations:

Historic buildings exist in the community, a few of which are Critical Facilities. Historic and special considerations pose significant challenges to retrofitting historical buildings to be more resilient to natural hazards. The Ashburn Heights-Hudson-College Avenue Historic District and the Ashburn Commercial Historic District are listed in the National Register of Historic Places and several properties in Turner County.

4. New Buildings and Infrastructure:

The mitigation strategy and recommendations that follow include action steps designed to protect new buildings and infrastructure from the effects of this hazard.

5. Existing Buildings and Infrastructure:

The mitigation strategy and recommendations that follow include action steps designed to protect existing buildings and infrastructure from the effects of this hazard.

C. Mitigation Strategy and Recommendations:

Goal 4.1: Protect the Citizens of Turner County from the threat of lightning strikes, thunderstorms, wind, and hail.

Objective 4.1.1: Provide tools necessary for warning of Lightning strikes.

Action Step 1: Provide every public outdoor recreation facility and every public-school outdoor recreation facility with an automatic warning device, if feasible.	
Responsible Department	Turner County BOE, Turner County EMA, Turner County/ City of Ashburn/ City of Rebecca/ City of Sycamore Recreation Depts.
Anticipated Cost	$50,000
Existing & Potential Funding Sources	General Funds, DOHS-GEMA/FEMA
Jurisdiction	All Local Governments
Timeframe	2023-2028
Priority	Medium
Status	Ongoing

Action Step 2: Educate the public on the risks of lightning, thunderstorms, wind, and hail.	
Responsible Department	Turner County EMA
Anticipated Cost	Staff Time
Existing & Potential Funding Sources	General Funds
Jurisdiction	All Local Governments
Timeframe	2023-2028
Priority	High
Status	Ongoing

D. Special Multi-Jurisdictional Strategy and Considerations:

Most of the above strategies are intended to be carried out by each local jurisdiction. The applicable jurisdictions are noted in the table in certain instances where the action step may not apply to all jurisdictions.

E. Local Public Information and Awareness Strategy:

All sections of the Plan shall be monitored and evaluated annually by the County Emergency Management Agency. Incremental accomplishments of Mitigation Goals, Objectives, and Action Steps will be reported to the public through appropriate means (news media, social media, web pages, City Council and County Commission meetings, etc.). By utilizing available resources, each jurisdiction will inform the public of these strategies' development and how citizens can best assist with and/or take advantage of these efforts.

The primary criteria to measure plan success will be the number of Goals, Objectives, and Action Steps, or components thereof, that have been completed, resulting in savings of life, money, and property. For further details on plan execution, see Chapter 6.

F. Changes from the Previous Plan

No changes.

Section V. Wildfires

A. Community Mitigation Goals

As previously indicated in Chapter 2, this hazard may cause substantial damage to life, property, and the economy in Turner County and the Cities of Ashburn, Rebecca, and Sycamore. Wildfires are unpredictable and can happen at any place and time. Due to the significant damage, it may cause, the HMPUC believes that the comprehensive range of Mitigation Goals, Objectives, and Action Steps (contained in Section C below) should be implemented to reduce this hazard's potential impact on the community.

B. Identification and Analysis of the Comprehensive Range of Mitigation Options

1. Structural and Non-Structural Mitigation:

This Hazard Mitigation Plan contains both structural and non-structural options. For more information, see the comprehensive range of Mitigation Goals, Objectives, and Action Steps in Section C below.

2. Existing Policies, Regulations, Ordinances, and Land Use:

Chapter 2 of this plan contains information regarding existing policies, regulations, ordinances, and land use relevant to this hazard. For more information, see Chapter 2, Section V.

3. Community Values, Historic, and Special Considerations:

Historic buildings exist in the community, a few of which are Critical Facilities. Historic and special considerations pose significant challenges to retrofitting historic buildings to be more resilient to natural hazards. The Ashburn Heights-Hudson-College Avenue Historic District and the Ashburn Commercial Historic District are listed in the National Register of Historic Places and several individual properties in Turner County.

4. New Buildings and Infrastructure:

The mitigation strategy and recommendations that follow include action steps designed to protect new buildings and infrastructure from the effects of this hazard.

5. Existing Buildings and Infrastructure:

The mitigation strategy and recommendations that follow include action steps designed to protect existing buildings and infrastructure from the effects of this hazard.

C. Mitigation Strategy and Recommendation

Goal 5.1: Prevent damage resulting from wildfires, reduce the threat of wildfires, and protect the life and property of residents from wildfires in Turner County and the Cities of Ashburn, Rebecca, and Sycamore.

Objective 5.1.1: Minimize the threat of wildfires to persons and properties in the community.

Action Step 1: Update the Urban /Wildland Interface and request the Greater Turner County Planning Commission to consider this plan when updating the Comprehensive Plan.	
Responsible Department	Turner County EMA, Turner County Commission, City of Ashburn/ City of Rebecca/ City of Sycamore Councils
Anticipated Cost	$25,000
Existing & Potential Funding Sources	General Funds
Jurisdiction	All Local Governments
Timeframe	2023-2028
Priority	Medium
Status	Ongoing/Amended the Action Step and changed cost to $25,000

Action Step 2: Annually renew fire protection agreements with neighboring government units	
Responsible Department	Turner County Commission, City of Ashburn/ City of Rebecca/ City of Sycamore Councils, & Turner County/City of Ashburn/City of Rebecca/City of Sycamore Fire Depts.
Anticipated Cost	Staff Time
Existing & Potential Funding Sources	General Funds
Jurisdiction	All Local Governments
Timeframe	2023-2028
Priority	High
Status	Ongoing

Action Step 3: Train all firefighters to FF1 & FF2 standards and ensure that emergency vehicle drivers are adequately trained.	
Responsible Department	Turner County EMA, Turner County/City of Ashburn/City of Rebecca/City of Sycamore Fire Depts.
Anticipated Cost	$30,000
Existing & Potential Funding Sources	General Funds, DOHS-GEMA/FEMA, AFG
Jurisdiction	All Local Governments
Timeframe	2023-2028
Priority	High
Status	Ongoing

Action Step 4: Ensure all firefighters have the latest NFPA-compliant PPE turnout gear sets and SCBAs.	
Responsible Department	Turner County EMA, Turner County/City of Ashburn/City of Rebecca/City of Sycamore Fire Depts.
Anticipated Cost	$250,000
Existing & Potential Funding Sources	General Funds, DOHS-GEMA/FEMA, AFG
Jurisdiction	All Local Governments
Timeframe	2023-2028
Priority	High
Status	Ongoing

Action Step 5: Purchase 2 class A pumpers	
Responsible Department	Turner County Fire Dept.
Anticipated Cost	$1.5 million
Existing & Potential Funding Sources	General Funds, DOHS-GEMA/FEMA, AFG
Jurisdiction	Turner County
Timeframe	2023-2028
Priority	High
Status	Ongoing/Amended cost from $500,000 to $1.5 million

Action Step 6: Contact owners/operators of Critical Facilities in person or by letter to evaluate any Wildfire hazard and suggest what owners/operators might do to mitigate any observed hazards and improve Wildfire protection.	
Responsible Department	Turner County EMA, Turner County/ City of Ashburn/ City of Rebecca/City of Sycamore Fire Depts. & Turner County/City of Ashburn/City of Rebecca/City of Sycamore Public Works Depts.
Anticipated Cost	Staff Time
Existing & Potential Funding Sources	General Funds
Jurisdiction	All Local Governments
Timeframe	2023-2028
Priority	High
Status	Ongoing

Action Step 7 (formerly 10): Promote the use of prescribed burning for wildland fuel reduction, including helping landowners understand how to burn legally and safely and educating the public on the benefits of prescribed burning.	
Responsible Department	Turner County EMA, Turner County/ City of Ashburn/ City of Rebecca/City of Sycamore Fire Depts.
Anticipated Cost	Staff Time
Existing & Potential Funding Sources	General Funds, DHS FEMA/GEMA, GA Forestry
Jurisdiction	All Local Governments
Timeframe	2024-2028
Priority	High
Status	Ongoing

Action Step 8 (formerly 11): Work with the Georgia State Patrol and local law enforcement to ensure that motorists are alerted to smoke hazards on local roadways.	
Responsible Department	Turner County EMA, Turner County/ City of Ashburn/ City of Rebecca/City of Sycamore Fire Depts.
Anticipated Cost	Staff Time
Existing & Potential Funding Sources	General Funds
Jurisdiction	All Local Governments
Timeframe	2023-2028
Priority	High
Status	Ongoing

Action Step 9 (formerly 12): Evaluate the Wildfire hazard of proposed new developments in rural areas as part of the site plan review process using GFC Hazard & Wildfire Risk Assessment Scoresheet.	
Responsible Department	Turner County EMA, Turner County/ City of Ashburn/ City of Rebecca/City of Sycamore Fire Depts.
Anticipated Cost	Staff Time
Existing & Potential Funding Sources	General Funds
Jurisdiction	All Local Governments
Timeframe	2023-2028
Priority	High
Status	Ongoing

Action Step 10 (formerly 13): Consider the "adoption by reference" of 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.	
Responsible Department	Turner County Commission, City of Ashburn/City of Rebecca/City of Sycamore Councils
Anticipated Cost	Staff Time
Existing & Potential Funding Sources	General Funds
Jurisdiction	All Local Governments
Timeframe	2023-2028
Priority	High
Status	Ongoing

Action Step 11 (formerly 14): Assist in providing fuel reduction mitigation for the twelve high to extreme hazard Communities-At-Risk and implement a community fuel reduction initiative.	
Responsible Department	Turner County EMA, Turner County/ City of Ashburn/ City of Rebecca/City of Sycamore Fire Depts.
Anticipated Cost	$50,000
Existing & Potential Funding Sources	General Funds, GA Forestry
Jurisdiction	All Local Governments
Timeframe	2023-2028
Priority	High
Status	Ongoing/Changed cost

Action Step 12 (formerly 15): Purchase tankers to replace hydrant needs.	
Responsible Department	Turner County EMA, Turner County/ City of Ashburn/ City of Rebecca/City of Sycamore Fire Depts.
Anticipated Cost	$60,000
Existing & Potential Funding Sources	General Funds, GA Forestry
Jurisdiction	All Local Governments
Timeframe	2023-2028
Priority	High
Status	Ongoing/Action Step amended/Changed cost from $60,000 to $2 million

Action Step 13 (formerly 17): Continue Turner County Joint CWPP Core Committee and annually assess (if possible) the progress and effectiveness of the CWPP.	
Responsible Department	Turner County EMA, Turner County/ City of Ashburn/ City of Rebecca/City of Sycamore Fire Depts.
Anticipated Cost	Staff Time
Existing & Potential Funding Sources	General Funds, GA Forestry
Jurisdiction	All Local Governments
Timeframe	2023-2028
Priority	High
Status	Ongoing

D. Special Multi-Jurisdictional Strategy and Considerations:

Most of the above strategies are intended to be carried out by each local jurisdiction. In some instances where the action step may not apply to all jurisdictions, the applicable jurisdictions are noted in the table.

E. Local Public Information and Awareness Strategy:

All sections of the Plan shall be monitored and evaluated annually by the County Emergency Management Agency. Incremental accomplishments of Mitigation Goals, Objectives, and Action Steps will be reported to the public through appropriate means (news media, social media, web pages, City Council and County Commission meetings, etc.). By utilizing available resources, each jurisdiction will inform the public of these strategies' development and how citizens can best assist with and/or take advantage of these efforts.

The primary criteria to measure plan success will be the number of Goals, Objectives, and Action Steps, or components thereof, that have been completed, resulting in savings of life, money, and property. For further details on plan execution, see Chapter 6.

F. Changes from the Previous Plan

Action Step	Changes
Action Step 1: Update the Urban /Wildland Interface and request the Greater Turner County Planning Commission to consider this plan when updating the Comprehensive Plan.	Ongoing/Amended the Action Step and changed cost to $25,000
Action Step 5: Purchase 2 class A pumpers	Ongoing/Amended cost from $500,000 to $1.5 million
Action Step 7: Conduct a "How to Have a Firewise Home" Workshop for Turner County residents.	Deleted
Action Step 8: Make Firewise Communities brochures available to the public at central locations such as The Farm Service Agency, the Chamber of Commerce, and the County Courthouse.	Deleted
Action Step 9: Encourage neighborhoods/communities that qualify to apply for recognition as a Firewise Community USA.	Deleted
Action Step 7: Promote the use of prescribed burning for wildland fuel reduction, including helping landowners understand how to burn legally and safely and educating the public on the benefits of prescribed burning.	Formerly Action Step 10
Action Step 8: Work with the Georgia State Patrol and local law enforcement to ensure that motorists are alerted to smoke hazards on local roadways.	Formerly Action Step 11
Action Step 9: Evaluate the Wildfire hazard of proposed new developments in rural areas as part of the site plan review process using GFC Hazard & Wildfire Risk Assessment Scoresheet.	Formerly Action Step 12
Action Step 10: Consider the "adoption by reference" of 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.	Formerly Action Step 13
Action Step 11: Assist in providing fuel reduction mitigation for the twelve high to extreme hazard Communities-At-Risk and implement a community fuel reduction initiative.	Amended cost from $25,000 to $50,000/Formerly Action Step 14
Action Step 12: Locate and develop an additional 40 dry hydrants to supplement water delivery.	Action Step amended /changed cost from $60,000 to $2 million/ Formerly Action Step 15
Action Step 13: Continue Turner County Joint CWPP Core Committee and annually assess (if possible) the progress and effectiveness of the CWPP.	Formerly Action Step 17
Action Step 16: Purchase 2,000-3,000-gallon water tanker and small & large drafting equipment (Turbo Draft) packages for all fire departments.	Completed

Section VI. Extreme Heat

A. Community Mitigation Goals

As previously indicated in Chapter 2, this hazard may cause substantial damage to life, property, and the economy in Turner County and the Cities of Ashburn, Rebecca, and Sycamore. Extreme Heat events can happen at any place and at any time. Because of the potential for injury and death, the HMPUC believes that the comprehensive range of Mitigation Goals, Objectives, and Action Steps contained in Section C below should be implemented to reduce this hazard's potential impact on the community.

B. Identification and Analysis of Comprehensive Range of Mitigation Options

1. Structural and Non-Structural Mitigation:

This Hazard Mitigation Plan contains both structural and non-structural options. For more information, see the comprehensive range of Mitigation Goals, Objectives, and Action Steps in Section C below.

2. Existing Policies, Regulations, Ordinances, and Land Use:

Chapter 2 of this plan contains information regarding existing policies, regulations, ordinances, and land use relevant to this hazard. For more information, see Chapter 2, Section VI.

3. Community Values, Historic, and Special Considerations:

Historic buildings exist in the community, a few of which are Critical Facilities. Historic and special considerations pose significant challenges in retrofitting historic buildings to be more resilient to natural hazards. The Ashburn Heights-Hudson-College Avenue Historic District and the Ashburn Commercial Historic District are listed in the National Register of Historic Places and several individual properties in Turner County.

4. New Buildings and Infrastructure:

The mitigation strategy and recommendations that follow include action steps designed to protect new buildings and infrastructure from the effects of this hazard.

5. Existing Buildings and Infrastructure:

The mitigation strategy and recommendations that follow include action steps designed to protect existing buildings and infrastructure from the effects of this hazard.

C. Mitigation Strategy and Recommendation:

Goal 6.1: Ensure the citizens of Turner County are warned of extreme heat conditions.

Objective 6.1.1: Provide potential heat-stress victims with emergency shelter.

Action Step 1: Designate emergency shelters in consultation with appropriate organizations (Senior Citizen Centers, hospitals, churches, health departments, etc.)	
Responsible Department	Turner County EMA
Anticipated Cost	Staff Time
Existing & Potential Funding Sources	General Funds, DFACS, Red Cross, Public Health
Jurisdiction	All Local Governments
Timeframe	2023-2028
Priority	High
Status	Ongoing

D. Special Multi-Jurisdictional Strategy and Considerations:

Most of the above strategies are intended to be carried out by each local jurisdiction. In some instances where the action step may not apply to all jurisdictions, the applicable jurisdictions are noted in the table.

E. Local Public Information and Awareness Strategy:

All sections of the Plan shall be monitored and evaluated annually by the County Emergency Management Agency. Incremental accomplishments of Mitigation Goals, Objectives, and Action Steps will be reported to the public through appropriate means (news media, social media, web pages, City Council and County Commission meetings, etc.). By utilizing available resources, each jurisdiction will inform the public of these strategies' development and how citizens can best assist with and/or take advantage of these efforts.

The primary criteria to measure plan success will be the number of Goals, Objectives, and Action Steps, or components thereof, that have been completed, resulting in savings of life, money, and property. For further details on plan execution, see Chapter 6.

F. Changes from the Previous Plan

No change.

Section VII. Drought

A. Community Mitigation Goals

As previously indicated in Chapter 2, drought may cause substantial economic, property, and personal damage in Turner County and the Cities of Ashburn, Rebecca, and Sycamore, particularly crop damage. Its effects can be long-term, with the damage increasing as time goes by. In addition, drought conditions can contribute to wildfires in the community. The HMPUC believes that due to the damage drought can cause, a comprehensive range of Mitigation Goals, Objectives, and Action Steps (contained in Section C below) should be implemented to reduce this hazard's potential impact on the community.

B. Identification and Analysis of Comprehensive Range of Mitigation Options

1. Structural and Non-Structural Mitigation:

This Hazard Mitigation Plan contains both structural and non-structural options. For more information, see the comprehensive range of Mitigation Goals, Objectives, and Action Steps in Section C below.

2. Existing Policies, Regulations, Ordinances, and Land Use:

Chapter 2 of this plan contains information regarding existing policies, regulations, ordinances, and land use relevant to this hazard. For more information, see Chapter 2, Section VII.

3. Community Values, Historic, and Special Considerations:

Historic buildings exist in the community, a few of which are Critical Facilities. Historic and special considerations pose significant challenges in retrofitting historical buildings to be more resilient to natural hazards. The Ashburn Heights--Hudson-College Avenue Historic District and the Ashburn Commercial Historic District are listed in the National Register of Historic Places and several individual properties in Turner County.

4. New Buildings and Infrastructure:

The mitigation strategy and recommendations that follow include action steps designed to protect new buildings and infrastructure from the effects of this hazard.

5. Existing Buildings and Infrastructure:

The mitigation strategy and recommendations that follow include action steps designed to protect existing buildings and infrastructure from the effects of this hazard.

C. Mitigation Strategy and Recommendations

Goal 7.1: Protect Turner County from the effects of drought conditions.

Objective 7.1.1: Ensure adequate drinking water supply is available during drought conditions.

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.	
Responsible Department	Turner County/ City of Ashburn/ City of Rebecca/ City of Sycamore Water Depts.
Anticipated Cost	$50,000
Existing & Potential Funding Sources	General Funds, DOHS-GEMA/FEMA, USDA
Jurisdiction	All Local Governments
Timeframe	2023-2028
Priority	Low
Status	Completed for Ashburn, ongoing for Rebecca and Sycamore

D. Special Multi-Jurisdictional Strategy and Considerations:

Most of the above strategies are intended to be carried out by each local jurisdiction. In some instances where the action step may not apply to all jurisdictions, the applicable jurisdictions are noted in the table.

E. Local Public Information and Awareness Strategy:

All sections of the Plan shall be monitored and evaluated annually by the County Emergency Management Agency. Incremental accomplishments of Mitigation Goals, Objectives, and Action Steps will be reported to the public through appropriate means (news media, social media, web pages, City Council and County Commission meetings, etc.). By utilizing available resources, each jurisdiction will inform the public of these strategies' development and how citizens can best assist with and/or take advantage of these efforts.

The primary criteria to measure plan success will be the number of Goals, Objectives, and Action Steps, or components thereof, that have been completed, resulting in savings of life, money, and property. For further details on plan execution, see Chapter 6.

F. Changes from the Previous Plan

No change.

Section VIII. Public Health Emergency

A. Community Mitigation Goals

As previously indicated in Chapter 2, this hazard may occur in many places at unpredictable times and cause substantial damage to life, property, and the economy in Turner County and the Cities of Ashburn, Rebecca, and Sycamore. Due to the significant damage, it may cause, the stakeholders believe that the comprehensive range of Mitigation Goals, Objectives, and Action Steps contained in Section C below should be implemented to reduce this hazard's potential impact on the community.

B. Identification and Analysis of the Comprehensive Range of Mitigation Options

1. Structural and Non-Structural Mitigation: This Hazard Mitigation Plan contains structural and non-structural options. For more information, see the comprehensive range of Mitigation Goals, Objectives, and Action Steps in C below.

2. Existing Policies, Regulations, Ordinances, and Land Use: Chapter 2 of this plan contains information regarding existing policies, regulations, ordinances, and land use relevant to this hazard.

3. Community Values, Historic and Special Considerations: Historic buildings exist in the community, a few of which are Critical Facilities. Historic and special considerations pose significant challenges to retrofitting historic buildings to make them more resilient to natural hazards.

4. New Buildings and Infrastructure: The following mitigation strategy and recommendations include action steps designed to protect new buildings and infrastructure from the effects of this hazard.

5. Existing Buildings and Infrastructure: The following mitigation strategy and recommendations include action steps designed to protect existing buildings and infrastructure from the effects of this hazard.

C. Mitigation Strategy and Recommendations

Goal 8.1: Protect the population of Turner County from the effects of a public health emergency.

Action Step 1*:* Increase Immunization education, prevention, and pre-planning efforts in the community, and host flu shot and other immunization clinics.	
Responsible Department	Health Department
Anticipated Cost	$100,000
Existing & Potential Funding Sources	General Funds, Health Department-GEMA/FEMA
Jurisdiction	Turner County and all municipalities
Timeframe	2023-2028
Priority	High
Status	New

Action Step 2: Identify vulnerable populations (homeless, migrants, low-income, deaf, blind, etc.) and identify community groups to work with to reach and educate these populations effectively regarding health issues.	
Responsible Department	Health Department/EMA
Anticipated Cost	Staff Time
Existing & Potential Funding Sources	General Funds, Health Department-GEMA/FEMA
Jurisdiction	Turner County and all municipalities
Timeframe	2023-2028
Priority	High
Status	New

Action Step 3: Develop a plan to identify community locations to distribute medical countermeasures and other public health resources.	
Responsible Department	EMA/Health Department
Anticipated Cost	Staff Time
Existing & Potential Funding Sources	General Funds, Health Department-GEMA/FEMA
Jurisdiction	Turner County and all municipalities
Timeframe	2023-2028
Priority	Medium
Status	New

Action Step 4: Involve local businesses in developing public health emergency plans.	
Responsible Department	Health Department/EMA
Anticipated Cost	Staff Time
Existing & Potential Funding Sources	General Funds, Health Department-GEMA/FEMA
Jurisdiction	Turner County and all municipalities
Timeframe	2023-2028
Priority	Medium
Status	New

Action Step 5: Explore creating a volunteer database that would be available to assist in a public health emergency.	
Responsible Department	Health Department/EMA
Anticipated Cost	Staff Time
Existing & Potential Funding Sources	General Funds, Health Department-GEMA/FEMA
Jurisdiction	All Local Governments
Timeframe	2023-2028
Priority	Medium
Status	New

Action Step 6: Provide education to businesses and local governments on the development of continuity of operation plans.	
Responsible Department	EMA
Anticipated Cost	Staff Time
Existing & Potential Funding Sources	General Funds, Health Department-GEMA/FEMA
Jurisdiction	All Local Governments
Timeframe	2023-2028
Priority	Medium
Status	New

A. Special Multi-Jurisdictional Strategy and Considerations:

Most of the strategies outlined above apply to and are intended to be carried out by each local jurisdiction. In some instances where the action step may not apply to all jurisdictions, the applicable jurisdictions are noted in the table.

E. Local Public Information and Awareness Strategy:

All sections of the Plan shall be monitored and evaluated annually by the Turner County Emergency Management Agency. Incremental accomplishments of Mitigation Goals, Objectives, and Action Steps will be reported to the public through appropriate means (news media, social media, web pages, City Council and County Commission meetings, etc.). By utilizing available resources, each jurisdiction will inform the public of these strategies' development and how citizens can best assist with and/or take advantage of these efforts. The major criteria for measuring the plan will be the number of Goals, Objectives, and Action Steps, or components thereof, that have been completed, which in turn will result in savings of life, money, and property. For further details on plan execution, see Chapter 6.

F. Changes from Previous Plan.

None. New item.

Chapter 5.
Local Technological Hazard Mitigation Goals and Objectives

Overall Community Mitigation Goals, Policies, and Values Narrative

The purpose of the Turner County Hazard Mitigation Plan is to assess the area's vulnerability to natural hazards and identify the action steps that may need to be undertaken to reduce the potential loss of life and property from identified technological hazards. As in the case of natural hazards, developing this plan requires an overall set of community goals that clearly state the community's commitment to reducing or avoiding the long-term vulnerabilities to the identified hazards. With these overall goals in place, more specific goals, objectives, and action steps can be developed to protect the community from the identified hazards. Using the findings from the Risk Assessment as a guide, the HMPUC has set the following overall community mitigation goals:

Goal 1: Protect public health and safety;

Goal 2: Eliminate or reduce exposure of critical community facilities to the hazards identified in the community risk assessment;

Goal 3: Where exposure to hazards cannot be limited, implement, to the extent resources are available, the action steps needed to reduce the potential loss of life and property;

Goal 4: Maintain and/or enhance the community's capacity to issue warnings and respond promptly and effectively in a hazardous event.

With these overall community mitigation goals in place, the following Goals, Objectives, and Action Steps have been developed to address the technological hazards identified in Chapter 3 specifically. In addition, the same methodology as in Chapter 4 was utilized to rank each action step's priority.

The overall priorities have remained the same since the previous plan was completed.

Section I. CBRNE

A. Community Mitigation Goals

As previously indicated in Chapter 3, a CBRNE event may cause substantial damage to life, property, and the economy in Turner County and the Cities of Ashburn, Rebecca, and Sycamore. Such events may occur without warning, giving the community no time to prepare and/or evacuate. The HMPUC believes that because these events can cause significant damage, injury, and loss of life, a comprehensive range of Mitigation Goals, Objectives, and Action Steps (contained in Section C below) should be implemented to reduce this hazard's potential impact on the community.

B. Identification and Analysis of Comprehensive Range of Mitigation Options

1. Structural and Non-Structural Mitigation:

This Hazard Mitigation Plan contains both structural and non-structural options. For more information, see the comprehensive range of Mitigation Goals, Objectives, and Action Steps in Section C below.

2. Existing Policies, Regulations, Ordinances, and Land Use:

Chapter 2 of this plan contains information regarding existing policies, regulations, ordinances, and land use relevant to this hazard. For more information, see Chapter 3, Section II.

3. Community Values, Historic, and Special Considerations:

Historic buildings exist in the community, a few of which are Critical Facilities. Historic and special considerations pose significant challenges to retrofitting Historic buildings to be more resilient to natural hazards. The Ashburn Heights--Hudson-College Avenue Historic District and the Ashburn Commercial Historic District are listed in the National Register of Historic Places and several individual properties in Turner County.

4. New Buildings and Infrastructure:

The mitigation strategy and recommendations that follow include action steps designed to protect new buildings and infrastructure from the effects of this hazard.

5. Existing Buildings and Infrastructure:

The mitigation strategy and recommendations that follow include action steps designed to protect existing buildings and infrastructure from the effects of this hazard.

C. Mitigation Strategy and Recommendations

Goal 1: Protect the health and safety of residents of Turner County from CBRNE events.

Objective 1.1: Enhance the community's ability to issue an early warning of CBRNE events in an effective, dependable, and rapid manner.

Action Step 1: Continue to educate staff on the Code Red system for the City of Rebecca and Sycamore.	
Responsible Department	Turner County EMA, City of Rebecca/City of Sycamore Public Works
Anticipated Cost	$20,000 each
Existing & Potential Funding Sources	General Funds, DOHS-GEMA/FEMA
Jurisdiction	City of Rebecca, City of Sycamore
Timeframe	2023-2028
Priority	High
Status	Ongoing/Amended Action step for Code Red

Objective 2. Enhance the ability of the Turner County Emergency Management Agency to coordinate effectively and efficiently the emergency response during and after a CBRNE event.

Action Step 2: Implement the "Community Emergency Response Team" (CERT) Program.	
Responsible Department	Turner County EMA
Anticipated Cost	$20,000
Existing & Potential Funding Sources	General Funds, DOHS-GEMA/FEMA
Jurisdiction	All Local Governments
Timeframe	2023-2028
Priority	High
Status	Ongoing/Amended cost from $5,000 to $20,000

Action Step 3: Expand radio capabilities to be compatible with the narrow band for Turner County Fire Dept., EMA/EMS, Board of Education, Turner County Sheriff's Department, the City of Ashburn, the City of Rebecca, and the City of Sycamore.	
Responsible Department	Turner County EMA, Turner FD/EMA/EMS, City of Ashburn FD, City of Rebecca FD, City of Sycamore FD
Anticipated Cost	$500,000
Existing & Potential Funding Sources	General Funds, DOHS-GEMA/FEMA
Jurisdiction	All Local Governments
Timeframe	2023-2028
Priority	High
Status	Ongoing/Amended Action Plan/Changed cost from $25,000 each to $500,000 total

Action Step 4: Update the study to install repeaters and radio towers, as needed, including between Rebecca and the 86-mile marker, Board of Education, Sycamore Police Department, and the Turner County Sheriff's Department.	
Responsible Department	Turner County EMA, Turner County Sheriff's Dept.
Anticipated Cost	$300,000
Existing & Potential Funding Sources	General Funds, DOHS-GEMA/FEMA
Jurisdiction	All Local Governments
Timeframe	2023-2028
Priority	High
Status	Ongoing/A study has been completed but needs to be updated/Amended Cost to $300,000/Amended Action Step.

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 schools.	
Responsible Department	Turner County EMA
Anticipated Cost	Staff Time
Existing & Potential Funding Sources	General Funds
Jurisdiction	All Local Governments
Timeframe	2023-2028
Priority	High
Status	Ongoing

Action Step 6: Train local government officials on proper response procedures for CBRNE events.	
Responsible Department	Turner County EMA
Anticipated Cost	Staff Time
Existing & Potential Funding Sources	General Funds
Jurisdiction	All Local Governments
Timeframe	2023-2028
Priority	High
Status	Ongoing

Action Step 7: Investigate, implement, and train in methods to relocate residents if an event occurs.	
Responsible Department	Turner County EMA, Turner County EMS, Turner County Sheriff's Dept., Turner County/City of Ashburn/City of Rebecca/City of Sycamore Fire Depts., City of Ashburn/City of Sycamore Police Depts., and Turner County Board of Education
Anticipated Cost	Staff Time
Existing & Potential Funding Sources	General Funds
Jurisdiction	All Local Governments
Timeframe	2023-2028
Priority	High
Status	Ongoing/Added BOE as a Responsible Department

Action Step 8: Review annually all CBRNE transportation routes (relocate routes if necessary).	
Responsible Department	Turner County EMA, Turner County EMS, Turner County Sheriff's Dept., Turner County/City of Ashburn/City of Rebecca/City of Sycamore Fire Depts., City of Ashburn/City of Sycamore Police Depts., and GDOT
Anticipated Cost	Staff Time
Existing & Potential Funding Sources	General Funds
Jurisdiction	All Local Governments
Timeframe	2023-2028
Priority	High
Status	Ongoing/Added GDOT as a Responsible Department

Action Step 9: Review and update Standard Operating Procedures (SOP) for responding to a CBRNE event.	
Responsible Department	Turner County EMA
Anticipated Cost	Staff Time
Existing & Potential Funding Sources	General Funds
Jurisdiction	All Local Governments
Timeframe	2023-2028
Priority	High
Status	Ongoing

D. Special Multi-Jurisdictional Strategy and Considerations:

Most of the above strategies are intended to be carried out by each local jurisdiction. In some instances where the action step may not apply to all jurisdictions, the applicable jurisdictions are noted in the table.

E. Local Public Information and Awareness Strategy:

All sections of the Plan shall be monitored and evaluated annually by the County Emergency Management Agency. Incremental accomplishments of Mitigation Goals, Objectives, and Action Steps will be reported to the public through appropriate means (news media, social media, web pages, City Council and County Commission meetings, etc.). By utilizing available resources, each

jurisdiction will inform the public of these strategies' development and how citizens can best assist with and/or take advantage of these efforts.

The primary criteria to measure plan success will be the number of Goals, Objectives, and Action Steps, or components thereof, that have been completed, resulting in savings of life, money, and property. For further details on plan execution, see Chapter 6.

F. Changes from the Previous Plan

Action Step	Changes
Action Step 1: Continue to educate staff on the Code Red system for the City of Rebecca and Sycamore.	Amended Action Step
Action Step 2: Implement the "Community Emergency Response Team" (CERT) Program.	Amended cost from $5,000 to $20,000
Action Step 3: Expand radio capabilities to be compatible with the narrow bands for Turner County Fire Dept., EMA/EMS, City of Ashburn, City of Rebecca, and City of Sycamore.	Amended Action Plan/Changed cost from $25,000 each to $500,000 total
Action Step 4: Update the study to install repeaters and radio towers, as needed, including between Rebecca and the 86-mile marker, Board of Education, Sycamore Police Department, and the Turner County Sheriff's Department.	Ongoing/A study has been completed but needs to be updated/Amended Cost to $300,000/Amended Action Step.
Action Step 7: Investigate, implement, and train in methods to relocate residents if an event occurs.	Amended Responsible Party by adding the BOE
Action Step 8: Review annually all CBRNE transportation routes (relocate routes if necessary).	Amended Responsible Department by adding GDOT

Section II. Hazardous Materials Release

A. Community Mitigation Goals

As previously indicated in Chapter 3, a hazardous materials release may cause substantial damage to life, property, and the economy in Turner County and the Cities of Ashburn, Rebecca, and Sycamore. Such events can occur with little or no warning, giving the community no time to prepare and/or evacuate. The HMPUC believes that because these events can cause significant damage, injury, and loss of life, a comprehensive range of Mitigation Goals, Objectives, and Action Steps (contained in Section C below) should be implemented to reduce this hazard's potential impact on the community.

B. Identification and Analysis of Comprehensive Range of Mitigation Options

1. Structural and Non-Structural Mitigation:

This Hazard Mitigation Plan contains both structural and non-structural options. For more information, see the comprehensive range of Mitigation Goals, Objectives, and Action Steps in Section C below.

2. Existing Policies, Regulations, Ordinances, and Land Use:

Chapter 2 of this plan contains information regarding existing policies, regulations, ordinances, and land use relevant to this hazard. For more information, see Chapter 3, Section II.

3. Community Values, Historic, and Special Considerations:

Historic buildings exist in the community, a few of which are Critical Facilities. Historic and special considerations pose significant challenges to retrofitting landmark buildings to be more resilient to natural hazards. The Ashburn Heights--Hudson-College Avenue Historic District and the Ashburn Commercial Historic District are listed in the National Register of Historic Places and several individual properties in Turner County.

4. New Buildings and Infrastructure:

The mitigation strategy and recommendations that follow include action steps designed to protect new buildings and infrastructure from the effects of this hazard.

5. Existing Buildings and Infrastructure:

The mitigation strategy and recommendations that follow include action steps designed to protect existing buildings and infrastructure from the effects of this hazard.

C. Mitigation Strategy and Recommendations

Goal 1: Protect the health and safety of residents of Turner County.

Objective 1.1: Enhance the ability of the Turner County Emergency Management Agency to coordinate effectively and efficiently the emergency response during and after a hazardous materials release.

Action Step 1: Maintain HazMat response training.	
Responsible Department	Turner County EMA, Turner County EMS, Turner County Sheriff's Dept., Turner County/City of Ashburn/City of Rebecca/City of Sycamore Fire Depts., City of Ashburn/City of Sycamore Police Depts.
Anticipated Cost	Staff Time
Existing & Potential Funding Sources	General Funds, DOHS-GEMA/FEMA
Jurisdiction	All Local Governments
Timeframe	2023-2028
Priority	High
Status	Ongoing

Action Step 2: Seek funding to expand HazMat training to first responders (fire, police, sheriff, EMS)	
Responsible Department	Turner County EMA, Turner County EMS, Turner County Sheriff's Dept., Turner County/City of Ashburn/City of Rebecca/City of Sycamore Fire Depts., City of Ashburn/City of Sycamore Police Depts.
Anticipated Cost	Staff Time
Existing & Potential Funding Sources	General Funds, DOHS-GEMA/FEMA
Jurisdiction	All Local Governments
Timeframe	2023-2028
Priority	High
Status	Ongoing

Action Step 3: Provide workplace training on decontamination steps.	
Responsible Department	Turner County EMA, Turner County EMS, Turner County Sheriff's Dept., Turner County/City of Ashburn/City of Rebecca/City of Sycamore Fire Depts., City of Ashburn/City of Sycamore Police Depts.
Anticipated Cost	Staff Time
Existing & Potential Funding Sources	General Funds
Jurisdiction	All Local Governments
Timeframe	2023-2028
Priority	High
Status	Ongoing

D. Special Multi-Jurisdictional Strategy and Considerations:

Most of the above strategies are intended to be carried out by each local jurisdiction. In some instances, the action step may not apply to all jurisdictions; the applicable jurisdictions are noted in the table.

E. Local Public Information and Awareness Strategy:

All sections of the Plan shall be monitored and evaluated annually by the County Emergency Management Agency. Incremental accomplishments of Mitigation Goals, Objectives, and Action Steps will be reported to the public through appropriate means (news media, social media, web pages, City Council and County Commission meetings, etc.). By utilizing available resources, each jurisdiction will inform the public of these strategies' development and how citizens can best assist with and/or take advantage of these efforts.

The primary criteria to measure plan success will be the number of Goals, Objectives, and Action Steps, or components thereof, that have been completed, resulting in savings of life, money, and property. For further details on plan execution, see Chapter 6.

F. Changes from the Previous Plan

No changes.

Chapter 6: -
Executing the Plan

Summary of changes:

- Revised and updated language.

Section I.
Implementation of the Action Plan

A. Administrative Actions

The Turner County Emergency Management Agency has overseen the meetings and planning process of the HMPUC. The Southern Georgia Regional Commission contracted with the Turner County Commission to administer and facilitate the planning process. The Turner County Commission and the Cities of Ashburn, Rebecca, and Sycamore will adopt the Plan (on approval by GEMA and FEMA) by the resolutions in Appendix E.

B. Authority and Responsibility

The Turner County Commission and the Cities of Ashburn, Rebecca, and Sycamore have authorized the submission of this Plan to both GEMA and FEMA for approval.

As determined by the City and County governments and the HMPUC, the Turner County EMA Director will be responsible for this Plan and its continued usage as a planning document. The EMA Director will oversee all jurisdictions' implementation, monitoring, and updates. The respective jurisdictions will be responsible for implementing their specific mitigation activities as proposed in this plan.

C. Prioritization

1. Methodology for Prioritization

In prioritizing implementing the action steps identified in this plan, those hazards that pose the greatest threat will be given primary consideration. Local governments will consider the additional costs and time factors in prioritizing the implementation feasibility of the action steps and projects. Those activities requiring smaller amounts of money and staff time to implement will be given the highest implementation priority. Those steps requiring additional funding for equipment or staff time beyond the normal budgets of the communities will be incorporated into the budget process, when possible, based on the cost-benefit analysis described below.

2. Use of Cost Benefit Analysis

The data provided in Worksheet 3 will quantify the number of persons and/or property at risk from each hazard. Combined with the criteria in Worksheet 4, local governments can assess the potential value of at-risk properties and the resulting benefits from the proposed action steps.

In prioritizing projects, the local governments will also utilize cost-benefit analysis (CBA) to evaluate the feasibility of a significant undertaking. CBA is a well-established method for quantitatively comparing the benefits and costs of mitigation projects. The result is a Benefit-Cost Ratio (BCR) derived from a project's total net present value of benefits divided by the total project cost estimate, which must include all documented project and maintenance costs. The benefits of mitigation projects are avoiding damage, disruptions, losses, and casualties. Examples of expected benefits include avoided or reduced damages to buildings, contents, or infrastructure; avoided or reduced economic impacts of the loss of function of buildings; avoided or reduced displacement costs for temporary quarters; avoided or reduced loss of public services; avoided or reduced loss of net business income; avoided or reduced economic impacts of the loss of function of infrastructure; avoided or reduced road or bridge closures; avoided or reduced loss of utility services; and avoided or reduced deaths and injuries.

3. Use of Other Calculations

Additional calculations included: Availability of potential funding sources; overall feasibility; measurable milestones; public and political support for the proposed actions; and the STAPLEE criteria.

4. Use of Other Review Structure

In addition to the cost-benefit analysis, other factors that may affect the prioritization of projects include the availability of special tax, grant, and/or loan funds available on a limited basis to finance project implementation, such as SPLOST funds or FEMA Pre-Disaster Mitigation Program funds.

D. Incorporation of Local Hazard Mitigation Plan into Other Plans/Planning Measures

Turner County and the Cities of Ashburn, Rebecca, and Sycamore will review this Plan. The requirements of this Hazard Mitigation Plan will be taken into consideration. They will be incorporated into Comprehensive Plans, Five-Year Short-Term Work Programs, Capital Improvement Plans, Local Emergency Operations Plans, and all other such Plans as appropriate.

Once this plan is approved, it will be used by the consultants and planning committees responsible for the update process for the County and City Comprehensive Plans, Short-Term Work Programs, and all other plans that could incorporate the requirements of this plan.

To facilitate the inclusion of this Plan, the Turner County Commission and the Cities of Ashburn, Rebecca, and Sycamore will provide a copy to the persons and/or committees responsible for writing and updating plans.

Section II.
Evaluation and Monitoring

A. Method

The Turner County EMA Director will ensure this plan is monitored and periodically updated in subsequent years. The method that the Turner County EMA will use to monitor the plan and evaluate implementation progress will be the following:

- The Turner County EMA will conduct quarterly telephone interviews with the various local governments and area agencies to chart their plan progress.
- The EMA Director will hold formal public meetings at least once a year to monitor the plan's implementation progress and allow the public a forum for expressing concerns, opinions, and ideas.
- Throughout the year, several informal meetings will be held to discuss various aspects of the plan, including monitoring and evaluation.

B. Criteria Used to Monitor and Evaluate the Plan

The primary criteria to measure plan success will be the number of goals, objectives, and action steps, or components thereof, that have been completed, resulting in savings of life, money, and property.

Section III.
Plan Update and Maintenance

A. Public Involvement

Because the Hazard Mitigation Plan is intended to help ensure a safe and livable environment for all Turner County and the Cities of Ashburn, Rebecca, and Sycamore residents, public involvement must be an integral part of the planning process.

Since adopting the original Turner County Pre-Disaster Mitigation Plan, citizens have been involved and apprised of plan progress through such forums as regularly scheduled County Commission meetings, public hearings, and applicable newspaper coverage. This same level of public education, awareness, and citizen involvement will continue over the next five years until the next required update of the Hazard Mitigation Plan. Public hearings will be conducted when specific issues dictate. All other community planning efforts (Comprehensive Plan, Regional Plan, etc.) will allow citizens to participate in and comment on the need to incorporate hazard mitigation initiatives.

To facilitate the goal of continued public involvement in the planning process, the EMA will ensure that the following steps are taken:

- The public will be directly involved in the update and review of the Plan.
- Copies of the plan will be held at appropriate agencies throughout the community.

- The plan will be available on the city, county, and/or Regional Commission website. It will contain an e-mail address and phone number the public can use for submitting comments and concerns about the plan.
- A public meeting will be held annually to provide the public with a forum for expressing concerns, opinions, and ideas. The EMA will set meeting schedules and dates and use County resources to publicize and host this meeting.

B. Timeframe

Pursuant to the requirements outlined in the Disaster Mitigation Act of 2000, the community is again required to update and evaluate the plan up to five years after its adoption. At least one year before the end of the required five-year update period, the EMA Director will begin planning a new update to this plan. This will consist of establishing a new planning committee tasked with completing the update following the same method used for this update.

The EMA Director shall submit a revised Hazard Mitigation Plan to GEMA for its approval by the conclusion of the five years following approval of the plan update. It is important to note that the plan update process, as established by the planning committee, is subject to change depending upon subsequent regulations and/or requirements set forth by GEMA and FEMA.

Chapter 7:
Conclusion

Summary of changes:

- Revised and updated language.

Turner County and the Cities of Ashburn, Rebecca, and Sycamore have suffered considerable damage from natural hazards. Planning and undertaking structural and nonstructural action steps before a disaster can save lives and property. This philosophy has been the driving force behind preparing the Turner County Hazard Mitigation Plan.

Education of the population and enhanced warning can decrease the vulnerability of the county's citizens and visitors. Continued and improved public information and communication with the people are essential to this plan. Because of this planning process, Turner County and Cities of Ashburn, Rebecca, and Sycamore officials have better understood the hazards affecting the community.

As a result of the planning process described in Chapter 1 and the hazard, risk, and vulnerability assessment in Chapter 2, Turner County and the Cities of Ashburn, Rebecca, and Sycamore have a realistic perspective on the hazards to which the community is exposed. With the mitigation strategy outlined in Chapter 4 and the implementation plan included in Chapter 6, the local leaders have an "action plan" to allocate resources to reduce their community's vulnerability to such hazards.

References

Heyer, Robert J., D. Sc. *Introduction to CBRNE Terrorism: An Awareness Primer and Preparedness Guide for Emergency Responders*. Longmont, CO: Disaster Preparedness and Emergency Response Association, 2006 (http://www.disasters.org/dera/library/Heyer%20WMD.pdf).

Turner County Board of Tax Assessors (http://qpublic.net/ga/turner/)

Turner County website (http://turnercountygeorgia.com/)

City of Ashburn website (http://www.cityofashburn.net/

Center for Agribusiness & Economic Development. 2015 Georgia Farm Gate Value Report. (http://caes2.caes.uga.edu/center/caed/documents/GAFGVR2015_DEC16.pdf)

Federal Emergency Management Agency (www.fema.gov)

FEMA National Flood Insurance Program Community Status Book (https://www.fema.gov/national-flood-insurance-program-community-status-book)

Georgia Data. "Agriculture." (https://georgiadata.org/agriculture.html)

Georgia Emergency Management Agency, Georgia Mitigation Information System (https://apps.itos.uga.edu/GEMA.GMIS/)

Georgia Emergency Management and Homeland Security Agency (http://www.gema.ga.gov/)

Georgia Forestry Commission (www.gatrees.org)

Georgia Forestry Commission (https://Intranet.gfc.state.ga.us/FireReports)

National Oceanic and Atmospheric Administration, National Centers for Environmental Information, Storm Events Database (http://www.ncdc.noaa.gov/stormevents/)

National Weather Service. Archived NWS Watch/Warnings at the Iowa State University Environmental Mesonet (https://mesonet.agron.iastate.edu/request/gis/watchwarn.phtml)

Southern Georgia Regional Commission (www.sgrc.us)

USDOT Pipeline and Hazardous Materials Safety Administration. Office of Hazardous Materials Safety database (https://hazmatonline.phmsa.dot.gov/IncidentReportsSearch/IncrSearch.aspx)

U.S. Drought Monitor (http://droughtmonitor.unl.edu/)

United States Census Bureau (www.census.gov)

U.S. Environmental Protection Agency (Climate Change Indicators: Heat Waves | US EPA)

U.S. Environmental Protection Agency (https://www.epa.gov)

Environmental Defense Fund (https://www.edf.org/climate)

Natural Resources Defense Council https://www.nrdc.org

Union of Concerned Scientists (https://www.ucsusa.org)

U.S. Department of the Interior Science for Changing World (https://www.usgs.gov)

National Climatic Assessment (https://nca2018.globalchange.gov)

Yale Climate Connections (https://environment.yale.edu/research-impact/)

National Geographic https://www.nationalgeographic.org

Nature Explore https://www.nature.com

The Climate Reality Project https://www.climaterealityproject.org

USDOT Pipeline and Hazardous Materials Safety Administration's Office of Hazardous Materials Safety database https://www.phmsa.dot.gov

Appendices

Appendix A. Hazard Identification, Risk, and Vulnerability (HRV)

Section I. GEMA Worksheet 3A

I. Hurricanes/Tropical Storms
II. Tornadoes
III Floods
IV. Lightning
V. Extreme Heat
VI. Wildfires
VII. Drought
VII. Public Health Emergency

Section II. GMIS Critical Facilities Maps

1. Critical Facilities and Hazard Potential for Hazards Affecting the Entire Community (Hurricanes/Tropical Storms, Tornadoes, Lightning/ Thunderstorms/Windstorms/Hail, Extreme Heat, and Drought)
2. Critical Facilities and Wind Zones
3. Critical Facilities and Wildfire Hazard Areas (GMIS data)
4. Critical Facilities and Flood Zones

Section III. Other Maps

Hurricane MEOW maps
Tornado track map
FEMA flood maps
UNL Drought Monitor Map

Appendix B. Growth and Development Trends

Census Demographic Summary
Comprehensive Plan Short-Term Work Program
Turner County Tax Digest
City of Ashburn Tax Digest
City of Rebecca Tax Digest
City of Sycamore Digest

Appendix C. Other Planning Documents

Community Wildfire Protection Plan

Appendix D. Worksheets Used in the Planning Process

Hazard Frequency Table – Turner County and Cities of Ashburn, Rebecca, and Sycamore
GEMA Worksheet #1
GEMA Worksheet #2
GEMA Worksheet #4 (for each objective)

Appendix E. Copies of Required Planning Documentation

I. Public Notices
II. Sign-in Sheets
III. Adoption Resolutions

Appendix F. Reports and Inventories

I. General Historic Reports

1. Hurricanes/Tropical Storms – NOAA data
2. Tornadoes – NOAA data

3. Floods – NOAA data
4. Lightning/Thunderstorms/Wind/Hail – NOAA data
5. Extreme Heat – NWS data
6. Wildfires – NOAA data
7. Drought – NOAA data
8. Hazardous Materials Release – USDOT data
9. Georgia Forestry Fire Reports (2018-2022)

II. Critical Facilities Inventory

Appendix G. HAZUS Report

Appendix H. Flyer for Vulnerable Population