

# Turner County, Georgia

And the Cities of Ashburn, Rebecca, and Sycamore



## Hazard Mitigation Plan 2018-2023

**Adopted June 5, 2018**  
**Effective Nov. 4, 2018 – Nov. 4, 2023**

This Plan 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

# Table of Contents

Chapter 1: Introduction to the Planning Process.....	3
Section I. Purpose and Need, Authority and Statement of Problem .....	3
Section II. Local Methodology, Plan Update Process, and Participants .....	5
Section III. Plan Review, Analysis, and Revision .....	8
Section IV. Organization of the Plan .....	9
Section V. Local Hazard, Risk, and Vulnerability (HRV) Summary, Local Mitigation Goals, and Objectives .....	10
Section VI. Multi-Jurisdictional Special Considerations .....	10
Section VII. Adoption, Implementation, Monitoring, and Evaluation.....	11
Section VIII. Community Data.....	13
Chapter 2: Local Natural Hazard, Risk, And Vulnerability (HRV) Summary .....	19
Section I. Hurricanes/Tropical Storms.....	20
Section II. Tornadoes.....	24
Section III. Floods .....	28
Section IV. Lightning/Thunderstorms/Wind/Hail .....	33
Section VI. Wildfires.....	38
Section V. Extreme Heat .....	43
Section VII. Drought .....	47
Chapter 3: Local Technological Hazard, Risk, and Vulnerability (HRV) Summary.....	51
Section I. CBRNE.....	51
Section II. Hazardous Materials Release .....	55
Chapter 4: Local Natural Hazard Mitigation Goals and Objectives .....	58
Overall Community Mitigation Goals, Policies, and Values Narrative.....	59
Section I. Hurricanes/Tropical Storms.....	61
Section II. Tornadoes.....	67
Section III. Floods .....	73
Section IV. Lightning/Thunderstorms/Wind/Hail .....	77
Section V. Wildfires .....	79
Section VI. Extreme Heat.....	87
Section VII. Drought .....	89
Chapter 5. Local Technological Hazard Mitigation Goals and Objectives.....	91
Overall Community Mitigation Goals, Policies, and Values Narrative.....	91
Section I. CBRNE.....	92
Section II. Hazardous Materials Release .....	97
Chapter 6: Executing The Plan .....	100
Section I. Implementation of the Action Plan.....	100
Section II. Evaluation and Monitoring .....	102
Section III. Plan Update and Maintenance .....	102
Chapter 7: Conclusion .....	104
References .....	105
Appendices .....	106

# 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 that have been made.

<b>CHAPTER 1 Section</b>	<b>Updates to Section</b>
<b>I. Purpose, Need, Authority, and Statement of Problem</b>	<ul style="list-style-type: none"> <li>• Language updated to reflect that this was an update to the existing plan</li> </ul>
<b>II. Local Methodology, Plan Update Process, and Participants</b>	<ul style="list-style-type: none"> <li>• Consistent with original plan</li> </ul>
<b>III. Plan Review, Analysis, and Revision</b>	<ul style="list-style-type: none"> <li>• Planning Committee reviewed each section</li> <li>• Updates made using national, state, and local data</li> </ul>
<b>IV. Organization of Plan</b>	<ul style="list-style-type: none"> <li>• Consistent with original plan</li> </ul>
<b>V. Local Hazard, Risk and Vulnerability (HRV) Summary, Local Mitigation Goals, and Objectives</b>	<ul style="list-style-type: none"> <li>• Updates made using national, state, and local data</li> </ul>
<b>VI. Multi-Jurisdictional Special Considerations</b>	<ul style="list-style-type: none"> <li>• No major changes from original plan</li> </ul>
<b>VII. Adoption, Implementation, Monitoring, and Evaluation</b>	<ul style="list-style-type: none"> <li>• Evaluation method revised and updated.</li> </ul>
<b>VIII. Community Data</b>	<ul style="list-style-type: none"> <li>• Updates made using most recent available national, state, and local data</li> </ul>

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, 2013 and expires on November 4, 2018.

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 that may be caused by natural or 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 reduce

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

Authority for the development of this Plan was given by the Turner County Commission as a result of their execution of 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.

In order to initiate an outreach program to neighboring communities, governments, local and regional agencies, and to 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 those on them 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 in the process. Additionally, several area county Hazard Mitigation Plans were being updated at the same time and an active meeting list was maintained for scheduling purposes.

Planning Division staff from the Southern Georgia Regional Commission, which represents eighteen counties in the region (including Turner County), attended the Turner County meetings. They participated in all aspects of the planning process and provided a regional perspective in the formation of 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 was 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, and 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 by 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 also included representatives from other groups and individuals, as shown below, who attended meetings and/or conducted research:

<b>Jurisdiction</b>	<b>Title</b>	<b>Name</b>
City of Ashburn	City Clerk	Sheree Hickman
City of Ashburn	City Manager	Sedric Carithers
City of Ashburn	Fire Chief	James Turner
City of Ashburn	Police Chief	Clifford Jordan
Town of Rebecca	City Clerk	Lynn Reed
Town of Rebecca	Mayor pro-tem	Jimmy Wilkerson
City of Sycamore	City Clerk	Ashley Nutt
City of Sycamore	Mayor	Wayne Woodruff
City of Sycamore	Police Chief	William Ryder
Department of Public Health	Healthcare Liaison	Lauren Bewley
Turner County	Board of Education Superintendent	Jeff McDaniel
Turner County	Building Inspector/Zoning Administrator	Mike Mastrario
Turner County	Commission Chair	Sam McCard
Turner County	Commissioner	Daryl Hall
Turner County	Commissioner	Brad Calhoun
Turner County	Commissioner	Joe Burgess
Turner County	County Clerk	Latrice Wilson
Turner County	County Manager	Horace Hudgins
Turner County	Economic Development Director/Chamber of Commerce	Stevi Thompson
Turner County	EMA Director	Mark Robinson
Turner County	Road Superintendent	Brent Rucker
Turner County	Sheriff	Andy Hester
Turner County	Turner EMS Director	Robby Royal
Turner County	Vice-Chairman Commissioner	Nick Denham

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

- Kick-off public hearing – May 2, 2017
- First workshop – July 27, 2017
- Second workshop – August 23, 2017
- Third workshop – October 25, 2017
- Final public hearing – June 5, 2018

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

Open discussion was permitted at all public meetings for suggestions and/or comments regarding the plan update. Also, during general question and answer periods, comments (if any) 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 of the formal meetings, parts of the plan were e-mailed to certain individuals who were unable to attend the meetings, and their comments were sought. Copies of the previous Plan and the draft Plan Update document were also available on the Southern Georgia Regional Commission website and from 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, information about zoning, and information about community services were updated using the current 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, and data from the NCDC were used to create the Hazard Frequency Table and associated information regarding each hazard, which can be found in 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 June 5, 2018 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 itself. 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 the attendees who wrote their e-mail address on the sign-in sheet at each meeting, as well as any other interested parties. Further reminders of meetings were provided as needed through telephone calls and in-person communication.

## **C. Mission and Vision**

The HMPUC decided on the following Mission Statement 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 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 relating to 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 were to 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 beginnings of the chapters for further information regarding which items were changed and updated.

## Section IV. Organization of the Plan

This Plan focuses on seven natural hazards chosen by the HMPUC that may affect and cause damage to Turner County and the Cities of Ashburn, Rebecca, and Sycamore. Chapter 2, Chapter 4, and Appendix A are each subdivided into Sections I through VII; these sections reflect the 7 natural hazards that were 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

Other hazards, such as Avalanche, Coastal Erosion, Coastal Storm, Dam Failure, Earthquake, 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 past 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 time period of this Plan, the County Commissioners and City Council Members will assign staff, as appropriate, to implement the comprehensive range of Mitigation Goals, Objectives, and Action Steps and other pertinent items that are contained in this Plan.

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

This Plan was prepared for:  
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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](http://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. A Hazard, Risk, and Vulnerability (HRV) Assessment has been formulated through a variety of information obtained during the planning process. Information 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 vulnerability of the community to natural hazards is also summarized in the Hazard Frequency Table (see Appendix D), and the Inventory of Assets and number of people exposed to each hazard is evaluated in GEMA Worksheet 3A (see Appendix A). Critical Facilities and Critical Infrastructure are also examined as to 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 comprehensive ranges for each jurisdiction) is included in Chapter 4, Sections I-VII. In Chapter 6, Section I, there is a description related to prioritization of these Mitigation Goals, Objectives, and Action Steps through the use of 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 285.39 square miles with a population density of 31.3 people per square mile (US Census data, 2010). As such, certain 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, in order to minimize disputes and avoid duplication of services.

The City of Ashburn has two fire stations, which are staffed by paid employees and volunteers. Turner County has one fire station staffed by paid employees and volunteers. All other fire stations in the community are staffed by volunteers. The following are the ISO Classes of fire stations in Turner County and the Cities of Ashburn, Rebecca, and Sycamore.

<b>Station</b>	<b>ISO Class</b>
Ashburn Fire Department Station One	Class 2
Ashburn Fire Department Station Two	Class 2
Turner County Volunteer Fire Department	Class 9
Rebecca Volunteer Fire Department	Class 9
Sycamore (Turner County) Volunteer Fire Department	Class 5

## **Section VII. Adoption, Implementation, Monitoring, and Evaluation**

After all plan development workshops were concluded, the draft plan was submitted to all local governments for their review. The draft plan was then submitted to GEMA and FEMA for their review and approval. After their approval, and any recommended changes, a second and final public hearing was held on June 5, 2018 in order 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 the 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 to do so.

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 in order to chart their plan progress. Also, throughout the year, a series of informal meetings will be held in which various aspects of the plan are discussed. In addition, annual evaluations of the plan will take place on or near the anniversary of the date of Plan adoption. The 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 current resources are appropriate for implementing the plan; and whether agencies and other parties have participated as originally proposed.

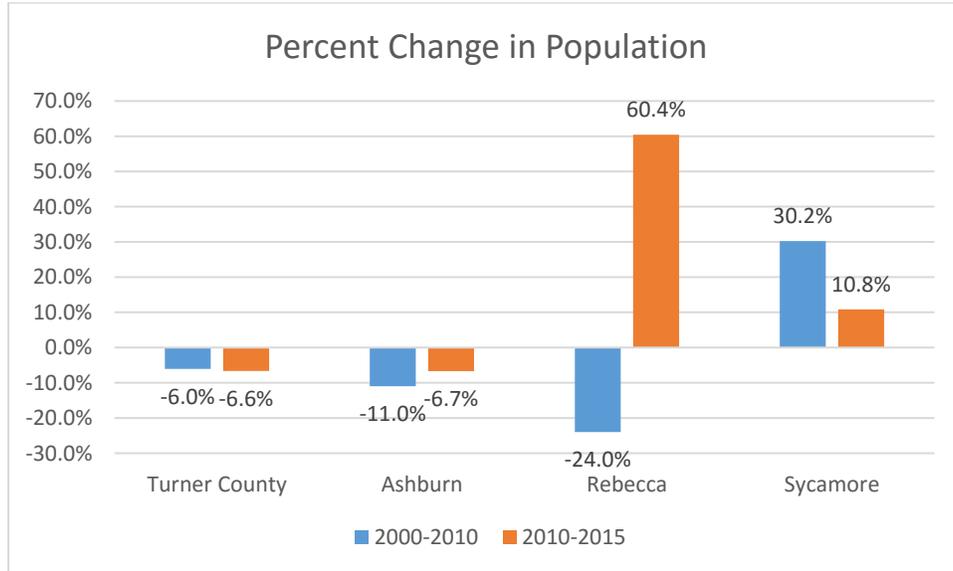
During this annual evaluation, problems (if any) with completing the action steps will be discussed, methods of resolving those problems (if any) will be formulated, the action steps will be updated (if necessary), and new actions steps will be developed (if necessary) in response to new problems that have developed throughout the year. If any changes or updates are needed to the other sections of the plan itself, these will also be discussed and noted. Critical Facilities and infrastructure

changes and updates will also be discussed at this time and then added to the online GEMA database as required. New hazards in the area (if any) will be discussed and planned for and an assessment made as to whether community needs dictate additions to the materials of the plan.

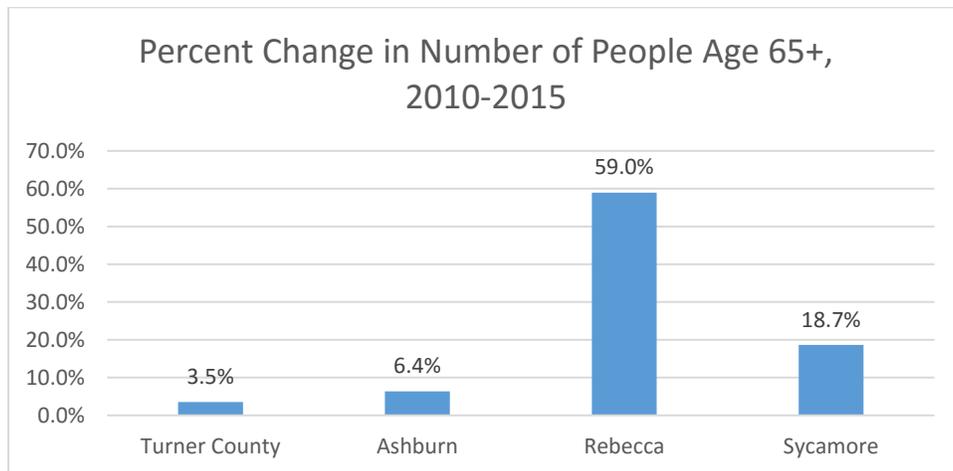
The major criteria to measure plan success will be the number of goals, objectives, and action steps, or components thereof, that have been completed, which in turn will result in savings of life, money, and property. For further details on plan execution, see Chapter 6.

The Plan will be updated by the EMA Director and chosen representatives of all of the local governments every five years, as required by FEMA. All sections of this Plan will be updated at that time. The Plan update will be reviewed by all jurisdictions and relevant stakeholders. The requirements of this Hazard Mitigation Plan will be taken into consideration 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 public comment solicited and incorporated as necessary and as appropriate.

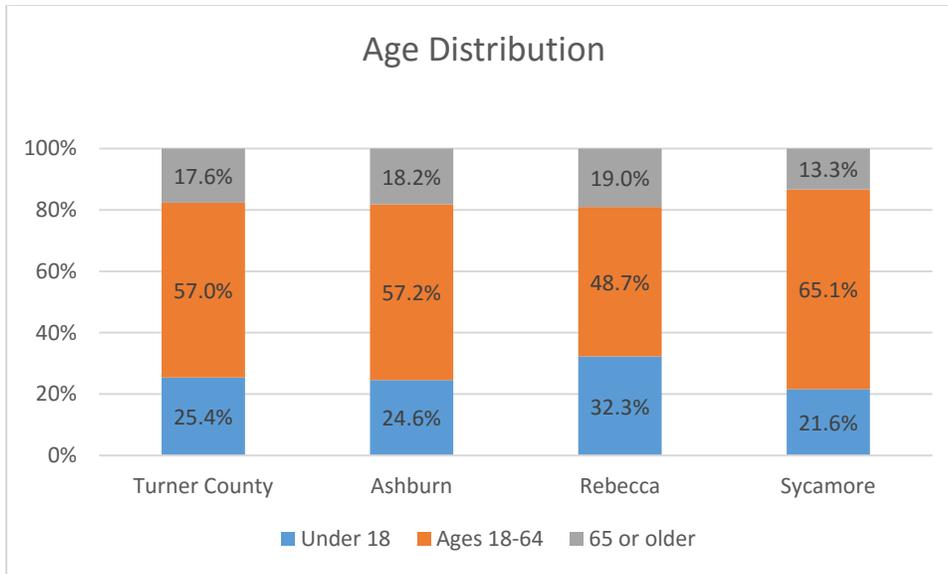
## Section VIII. Community Data



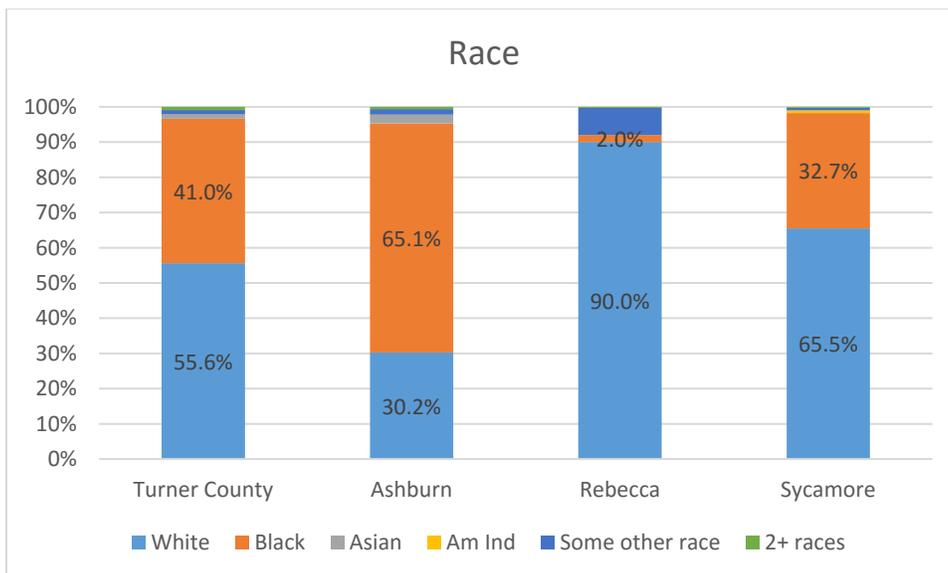
According to 2015 U.S. Census Bureau American Community Survey 5-year estimates, the population of Turner County is 8,338, a decrease of 6.6% since 2010. The City of Ashburn's 2015 population is 3,875, a 6.7% decrease since 2010. The Town of Rebecca's population is estimated at 300 (however, this Census Bureau estimate has a +/-124 margin of error), a 60.4% increase since 2010. The City of Sycamore's population is 788, a 10.8% increase since 2010. Turner County had a decrease in population from 2000-2010 at -6.0%, while the Cities of Ashburn and Rebecca also had a decrease in population, Ashburn at -11.0% and Rebecca at 24.0%. Sycamore had an increase in population from 2000 to 2010 at 30.2%.



The total number of people aged 65 and older increased between 2010 and 2015 in Turner County (3.5%), Ashburn (6.4%), Rebecca (59.0%), and Sycamore (18.7%).

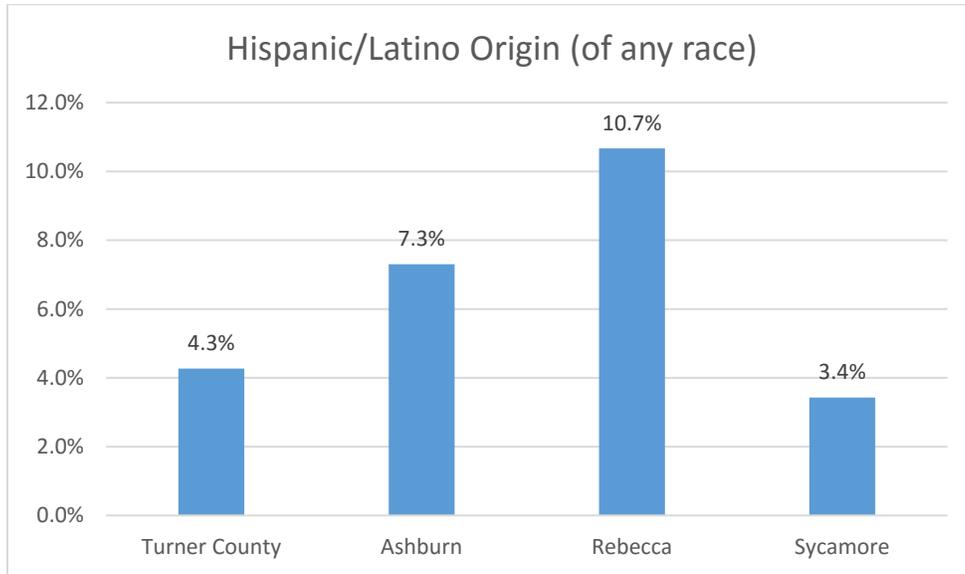


According to 2015 estimates, the age distribution in Turner County is 17.6% over 65, 57.0% ages 18-64, and 25.4% under 18. In the City of Ashburn, the age distribution is 18.2% over 65, 57.2% ages 18-64, and 24.6% under 18. In the Town of Rebecca the age distribution is 19.0% over 65, 48.7% ages 18-64, and 32.3% under 18. The City of Sycamore is 13.3% over 65, 65.1% ages 18-64, and 21.6% under 18. Turner County’s population is 51.2% female and 48.8% male, the City of Ashburn’s population is 55.1% female and 44.9% male, the Town of Rebecca’s population is 50.8% female and 49.2% male, and the City of Sycamore’s population is 34.6% female and 65.4% male.

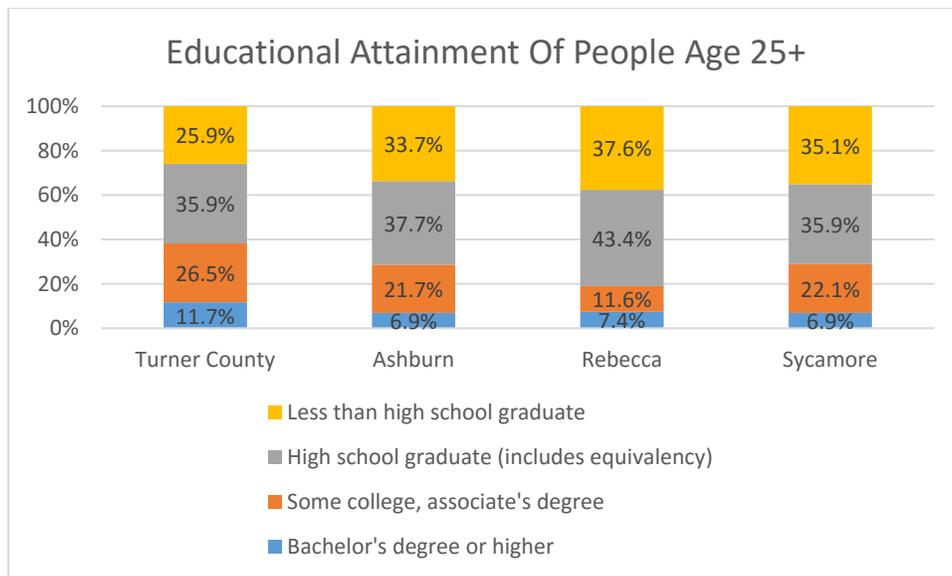


The population of Turner County is 55.6% White/Caucasian, 41.0% Black/African American, 1.2% Asian, 1.2% some other race, 0.9% two or more races, and 0.1% Native American. The City of Ashburn’s population is 65.1% Black/African American, 30.2% White/Caucasian, 2.5% Asian, 1.6% some other race, and 0.6% two or more races. The Town of Rebecca’s population is 90.0%

White/Caucasian, 2.0% Black/African American, 7.7% some other race, and 0.3% two or more races. The City of Sycamore’s population is 65.5% White/Caucasian, 32.7% Black/African American, 0.8% some other race, 0.3% two or more races, and 0.8% Native American.

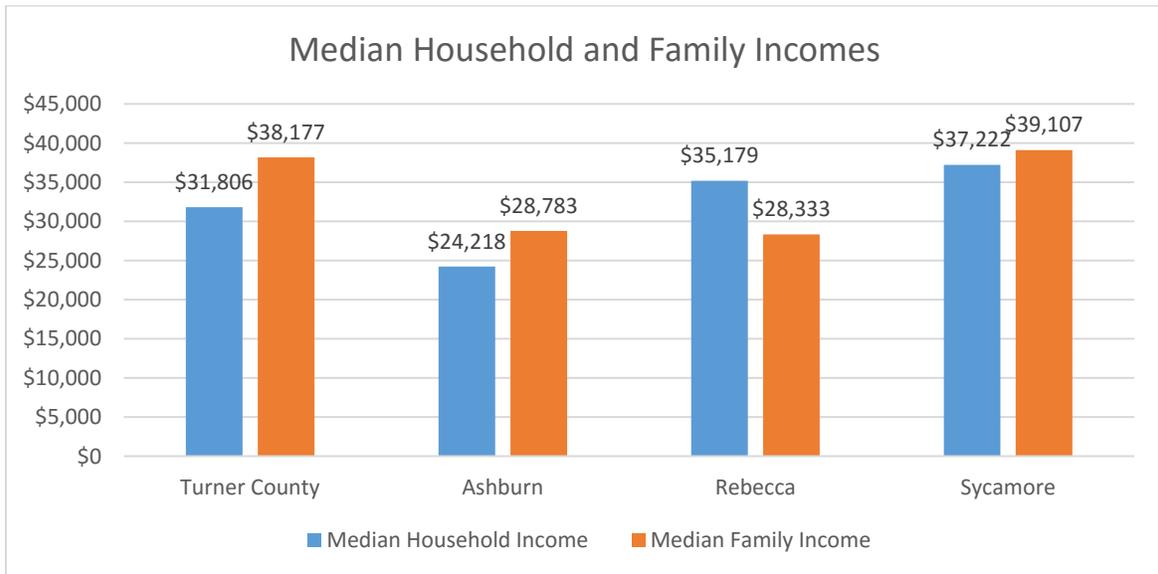


Turner County’s population is 4.3% Hispanic/Latino, the City of Ashburn’s population is 7.3% Hispanic/Latino, the Town of Rebecca’s population is 10.7% Hispanic/Latino, and the City of Sycamore’s population is 3.4% Hispanic/Latino.



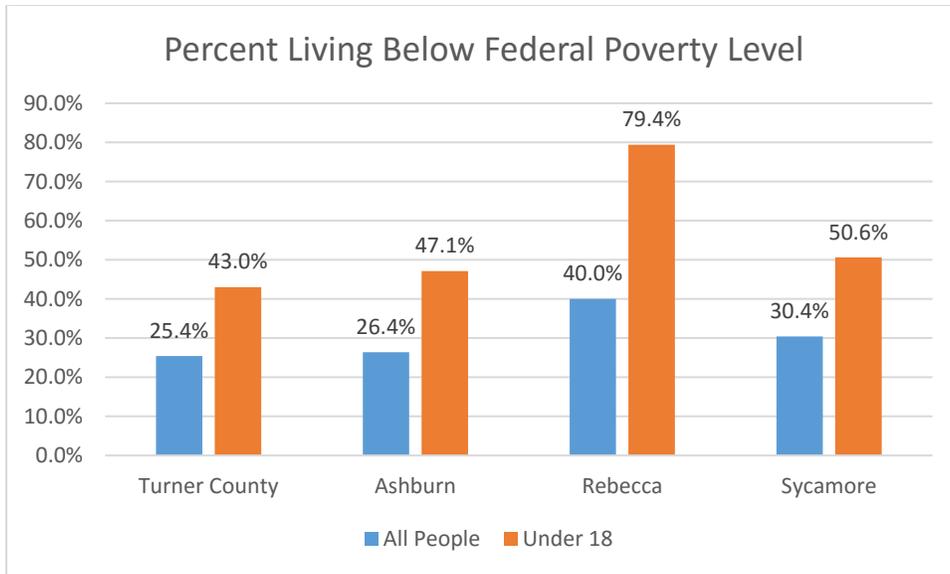
Among persons aged 25 or older, in Turner County, 25.9% have no high school diploma, 35.9% are high school graduates (includes equivalency) with no further education, 26.5% have an associate’s degree or some college, and 11.7% have a bachelor’s or higher degree. Among persons aged 25 or older in the City of Ashburn, 33.7% have no high school diploma, 37.7% are high school graduates (includes equivalency) with no further education, 21.7% have an associate’s

degree or some college, and 6.9% have a bachelor’s or higher degree. Among persons aged 25 or older in the Town of Rebecca, 37.6% have no high school diploma, 43.4% are high school graduates (includes equivalency) with no further education, 11.6% have an associate’s degree or some college, and 7.4% have a bachelor’s or higher degree. Among persons aged 25 or older in the City of Sycamore, 35.1% have no high school diploma, 35.9% are high school graduates (includes equivalency) with no further education, 22.1% have an associate’s degree or some college, and 6.9% have a bachelor’s or higher degree.



The median household income in Turner County is \$31,806, the median household income in the City of Ashburn is \$24,218, the median household income in the Town of Rebecca is \$35,179, and the median household income in the City of Sycamore is \$37,222.

The median family income in Turner County is \$38,177, the median family income in the City of Ashburn is \$28,783, the median family income in the Town of Rebecca is \$28,333, and the median family income in the City of Sycamore is \$39,107.



An estimated 25.4% of Turner County’s population, 26.4% of the City of Ashburn’s population, 40.0% of the Town of Rebecca’s population, and 30.4% of the City of Sycamore’s population live below the federal poverty level. In Turner County, 43.0% of persons under age 18 live below the poverty level, in the City of Ashburn 47.1% of persons under age 18 live below the poverty level, in the Town of Rebecca 79.4% of persons under age 18 live below the poverty level, and in the City of Sycamore 50.6% of persons under age 18 live below the poverty level.

*Source: U.S. Census Bureau ([www.census.gov](http://www.census.gov))*



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## :: Turner County ::

### Community Profile

**County Formed** August 18, 1905

**County Seat** Ashburn

**Incorporated Cities** Ashburn, Rebecca and Sycamore

**Total Area** 289.941874 square miles

**History** From its county population in 2000 of 9513 to its current population estimate of 8153, the county has experienced a growth change of -1360.

Turner County, was created in 1905 from Dooly, Irwin, Wilcox, and Worth counties, and named for Henry Gray Turner, a Confederate veteran, U.S. congressman, and justice on the Supreme Court of Georgia.

The county seat is Ashburn, incorporated in 1890, when it was part of Worth County. First named Troupville Crossroads and then called Marion, Ashburn acquired its current name when the Georgia Southern and Florida Railroad surveyed the area in 1889. At the time, the railroad's just-finished line from Florida to Macon had generated interest in the area. A local landowner and bank president, W. W. Ashburn, facilitated a large number of real estate transactions, and it was deemed appropriate to name the town in his honor

**Points of Interest** Among the places of interest in the county are the Ashburn Commercial Historic District, which includes the courthouse and county jail; the Ashburn Heights and Shingler Heights historic neighborhoods; the Big Peanut monument, which symbolizes Ashburn's st

**Annual Events** Ashburn also hosts the annual Fire Ant Festival each March.

**County** <http://turnercountygeorgia.com/>

**Chamber of Commerce** <http://www.turnerchamber.com/>

**Additional County Info** <http://www.georgiaplanning.com/CountyPortal/countyportal.asp?FIPS=13287>



Fire Ant Festival in Ashburn

Source: Georgia Department of Community Affairs, Georgia County Snapshots (<http://www.dca.state.ga.us/countysnapshotsnet/countysnapshot.aspx?cicoid=1142142>).

## Chapter 2: Local Natural Hazard, Risk, 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 that were included in the previous plan, in the same order of priority. Table 2.1 provides a brief description of each section in this chapter and a summary of changes that have been made.

<b>Chapter 2 Section</b>	<b>Updates to Section</b>
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

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. Flood and wildfire are limited to somewhat smaller areas (see Chapter 2 and Appendix A).

Other hazards, such as Avalanche, Coastal Erosion, Coastal Storm, Dam Failure, Earthquake, 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 past history and available data.

## **Section I. Hurricanes/Tropical Storms**

### **A. Identification of Hazard**

The threat of hurricanes/tropical storms has been chosen by the HMPUC as the most likely hazard to occur and cause damage in the community, based on past experience, the FEMA-described methodology, and other factors. Historic data have been examined from various sources, including the National Climatic Data Center (see Appendix F), as well as from local history and personal accounts, in order 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 used for all circulating weather systems over tropical water.<sup>1</sup> Tropical cyclones are destructive and have the potential to cause great 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/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 west of the International Dateline.

A tropical storm is defined as 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/hr) to 63 kt (73 mph or 118 km/hr).

A tropical disturbance is a discrete tropical weather system of apparently organized convection -- generally 100 to 300 nmi in diameter -- originating in the tropics or subtropics, having a nonfrontal 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 defined as 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/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 the type of damage and impacts in the United States associated with winds of the indicated intensity. The following table shows the scale broken down by winds:

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<sup>1</sup> A tropical cyclone is defined by NOAA as "a warm-core non-frontal synoptic-scale cyclone, originating over tropical or subtropical waters, with organized deep convection and a closed surface wind circulation about a well-defined center. Once formed, a tropical cyclone is maintained by the extraction of heat energy from the ocean at high temperature and heat export at the low temperatures of the upper troposphere. In this they differ from extratropical cyclones, which derive their energy from horizontal temperature contrasts in the atmosphere (baroclinic effects)." (<http://www.nhc.noaa.gov/aboutgloss.shtml>)

## SAFFIR-SIMPSON HURRICANE SCALE

(Source: NOAA <http://www.nhc.noaa.gov/aboutgloss.shtml>)

Category	Wind Speed	Damage
1	74 - 95	Very dangerous 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 of those dates. Whether the hurricane/tropical storm is a short-term event or a 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 both 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. In some cases, 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), there are 4 reports of Hurricanes/Tropical Storms occurring in Turner County (including the Cities) between 01/01/1950 and 12/31/2017. Besides these events, there was one additional Tropical Storm event occurring on Sept. 11, 2017 which has not yet been recorded in the NCDC database, bringing the total to 5 events between 01/01/1950 and 12/31/2017. The Historic Recurrence Interval is 13.60 years. This is a 7.35% 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, two Hurricane/Tropical Storm events have occurred. On Sept. 1, 2016, Tropical Storm Hermine caused widespread power outages, downed power lines, impassable roads due to fallen trees, and damage to homes and other structures. On Sept. 11, 2017, Tropical Storm Irma caused widespread power outages, downed power lines, impassable roads due to fallen trees, and damage to homes and other structures.

Although the most complete available data were used for this analysis, the possibility remains that other hurricane/tropical storm 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 hurricanes/tropical storms. The County has a wind hazard score of 2 (91-100 mph gust). A map of the wind hazard scores and critical facilities is provided in Appendix A.

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 Commercial, Industrial, Agricultural, Religious/Non-Profit, Government, Education and Utility properties (2,979 of 2,979) in the community may be affected, with a total value of \$535,409,739. The values are based on the most recent 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 taken into account in any of these figures. According to the Center for Agribusiness & Economic Development's 2015 Georgia Farm Gate Value Report ([http://caes2.caes.uga.edu/center/caed/documents/GAFGVR2015\\_DEC16.pdf](http://caes2.caes.uga.edu/center/caed/documents/GAFGVR2015_DEC16.pdf)), the total farm gate value of agricultural production in Turner County is \$78,902,124.

According to the inventory database reports and maps, all of 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 populations of the Cities of Rebecca and Sycamore have increased.

The County and all the Cities have zoning regulations and mandatory building and fire codes which are enforced by a building inspector. All Cities and the County participate in joint comprehensive planning and 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.

## **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 be evacuated, more debris from damaged buildings, and other impacts associated with higher population density. In jurisdictions without building codes and inspections, structures may exist that are not built to code and therefore may be especially vulnerable to the effects of strong winds and other hazards.

Turner County and the Cities of Ashburn and Sycamore are members of the National Flood Insurance Program. The Town 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. As of 2017, they were not eligible, according to FEMA.

(Source: <http://www.fema.gov/library/viewRecord.do?id=3629>).

### **G. Overall HRV Summary of Events And Their Impact**

Hurricanes/tropical storms have the potential to cause damage at any place, at any time, 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 as opposed to more 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 from 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.

## Section II. Tornadoes

### A. Identification of Hazard

The threat of tornadoes has been chosen by the HMPUC as the second most likely hazard to occur and cause damage in the community, based on past experience, the FEMA-described methodology, and other factors. Historic data have been examined from various sources, including the National Climatic Data Center (see Appendix F), as well as from local history and personal accounts, in order 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 made up 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 serious threat to life and property to those in the path of the tornado. When a tornado warning is issued, residents must act immediately to find safe shelter. 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, is used to assign 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>)

<b>EF Number</b>	<b>3-Second Gust</b>	<b>Damage</b>
EF-0	65 to 85 mph	Light damage. Some damage chimneys; branches broken 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 torn off well-constructed houses; trains overturned; most trees in 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 at any time of year, although the peak “tornado season” for the Southern Plains is during May into early June. Tornadoes can occur due to inclement weather conditions, as a result of a passing front, or as part of thunderstorm 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 occur per month in Georgia.

**B. Profile of Events, Frequency of Occurrences, Probability**

According to the NOAA Storm Events Database (see Appendix F), there are 8 reports of tornadoes occurring in Turner County (including the Cities) between 01/01/1950 and 12/31/2017. The Historic Recurrence Interval is 8.50 years. This is a 11.76% Historic Frequency Chance per year. The past 10-year Record Frequency Per Year is 0.1, the past 20-year frequency is 0.2, and the past 50-year frequency is 0.16 (see the Hazard Frequency Table in Appendix D).

Since the previous Hazard Mitigation Plan was completed, one tornado event has occurred. This event occurred on Jan. 22, 2017. The tornado entered Turner County along and north of Son Story Road, with maximum winds estimated around 150 mph. Damage to a frame home along Ireland road was consistent with EF3 damage. Additional EF2 damage was found along this road. There was also some evidence for multiple vortices near the intersection of Ireland Road and U.S. 41. Additional EF3 damage was observed on King Burgess Circle, where a large frame house was severely damaged and multiple mobile homes were destroyed. The tornado continued northeast across Interstate 75, causing EF2 damage to several frame homes and mobile homes. Tree damage diminished as the tornado approach the Wilcox county line, suggesting that the tornado temporarily weakened. The Turner County Emergency Manager said up to 25 people were injured in Turner County. Damage cost was estimated at \$5 million.

Although the most complete available data were 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 Commercial, Industrial, Agricultural, Religious/Non-Profit, Government, Education and Utility properties (2,979 of 2,979) in the community may be affected, with a total value of \$535,409,739. The values are based on the most recent 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 taken into account in any of these figures. According to the Center for Agribusiness & Economic Development's 2015 Georgia Farm Gate Value Report ([http://caes2.caes.uga.edu/center/caed/documents/GAFGVR2015\\_DEC16.pdf](http://caes2.caes.uga.edu/center/caed/documents/GAFGVR2015_DEC16.pdf)), the total farm gate value of agricultural production in Turner County is \$78,902,124.

According to the inventory database reports and maps, all of 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**

Typically, mobile/manufactured homes are most vulnerable to tornado damage. According to 2015 Census Bureau estimates, there are 802 occupied mobile homes in Turner County, including the Cities (26.6% of occupied housing units). This figure includes 218 mobile homes in the City of Ashburn (14.3% of housing units), 102 mobile homes in the Town of Rebecca (45.1% of housing units), and 180 mobile homes in the City of Sycamore (28.9% of housing units).

The estimated average household size in Turner County is 2.63 persons per household, according to 2015 Census Bureau estimates. Extrapolating this figure to the numbers of mobile homes, it is estimated that there are approximately 2,109 people residing in mobile homes countywide, which includes an estimated 573 people in the City of Ashburn, 121 in the Town of Rebecca, and 137 people in the City of Sycamore.

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

The County and all the Cities have zoning regulations and mandatory building and fire codes which are enforced by a building inspector. All Cities and the County participate in joint comprehensive planning and 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.

## **F. Multi-Jurisdictional Differences**

Tornadoes tend to 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 be evacuated, more debris from damaged buildings, and other impacts associated with higher population density. In jurisdictions without building codes and inspections, structures may exist that are not built to code and therefore may be especially vulnerable to the effects of strong winds and other hazards. In jurisdictions with a large number of mobile homes, the damage can be expected to be more severe.

## **G. Overall HRV Summary of Events And Their Impact**

Tornadoes have the potential to cause damage at any place, at any time, throughout Turner County and the Cities of Ashburn, Rebecca, and Sycamore. They can form quickly and residents may not have time to find adequate shelter, or else adequate 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 from 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.

## Section III. Floods

### **A. Identification of Hazard**

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

Floods may occur at any time, in many cases without warning, and their effects can range from minor inconvenience to wholesale destruction. Floods are most often caused by heavy rains 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 absorbed by the ground (especially under weather conditions that make soil less pervious, 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 are floods that occur in short time-spans, often so quickly that people are caught off-guard. Flash floods can occur as a result of 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 each year due to flooding than from 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 next highest percentage of flood-related deaths is due to walking into or near flood waters. People underestimate 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 just 12 inches of rushing water to carry away a small car, while 2 feet of rushing water can carry away most vehicles. It is never safe to drive or walk into flood waters.

Flood zones, as defined by FEMA, 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
<b>A</b>	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.
<b>AH</b>	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.
<b>AO</b>	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.
<b>A1-A30</b>	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).
<b>A99</b>	Areas with a 1% annual chance of flooding that 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.
<b>AE</b>	The base floodplain where base flood elevations are provided. AE Zones are now used on new format FIRMs instead of A1-A30 Zones.
<b>AR</b>	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.
<b>V</b>	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.
<b>V1-V30</b>	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>VE</b>	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>B</b>	Area of moderate flood hazard, usually the area between the limits of the 100-year and 500-year floods. Are also used to designate base floodplains of lesser hazards, such as areas protected by levees from 100-year flood, or shallow flooding areas with average depths of less than one foot or drainage areas less than 1 square mile.
<b>C</b>	Area of minimal flood hazard, usually depicted on FIRMs as above the 500-year flood level.
<b>D</b>	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.
<b>X Shaded</b>	Area of moderate flood hazard, usually the area between the limits of the 100-year and 500-year floods. Are also used to designate base floodplains of lesser hazards, such as areas protected by levees from 100-year flood, or shallow flooding areas with average depths of less than one foot or drainage areas less than 1 square mile.
<b>X Unshaded</b>	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 vulnerable. For more information, see the maps in Appendix A.

## **B. Profile of Events, Frequency of Occurrences, Probability**

According to the NOAA Storm Events Database (see Appendix F), there is 1 report of a flood occurring in Turner County (including the Cities) between 01/01/1950 and 12/31/2017. The Historic Recurrence Interval is 68.00 years. This is a 1.47% Historic Frequency Chance per year. The past 10-year Record Frequency Per Year is 0.1, the past 20-year frequency is 0.05, and the past 50-year frequency is 0.02 (see the Hazard Frequency Table in Appendix D).

No flood events have occurred since the previous Hazard Mitigation Plan was completed.

Although the most complete available data were 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 5.0% of the Residential property (152 of 3,062) in Turner County (including the Cities of Ashburn, Rebecca, and Sycamore) are partly or entirely in flood zones and therefore could be affected by this hazard, with a total value of \$ \$8,708,517. An estimated 16.7% of the Commercial, Industrial, Agricultural, Religious/Non-Profit, Government, Education and Utility properties (497 of 2,979) in the community may be affected, with a total value of \$ \$112,019,930. The values are based on the most recent 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 taken into account in any of these figures. According to the Center for Agribusiness & Economic Development's 2015 Georgia Farm Gate Value Report ([http://caes2.caes.uga.edu/center/caed/documents/GAFGVR2015\\_DEC16.pdf](http://caes2.caes.uga.edu/center/caed/documents/GAFGVR2015_DEC16.pdf)), the total farm gate value of agricultural production in Turner County is \$78,902,124.

According to the inventory database reports and maps, 8 of 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 \$24,966,013, plus a content value of \$2,083,000.

Many individuals do not have access to transportation and thus are susceptible to weather hazards. It is very important to notify these individuals through weather radios, radio stations, and other means so that they may seek shelter and/or make arrangements 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 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 populations of the Cities of Rebecca and Sycamore have increased.

The County and all the Cities have zoning regulations and mandatory building and fire codes which are enforced by a building inspector. All Cities and the County participate in joint comprehensive planning and 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.

## **F. Multi-Jurisdictional Differences**

7.3% of the total area of Turner County (13,596 acres) is within Flood Zone A.

3.8% of the total area of the City of Ashburn (118 acres) is within Flood Zone A.

2.6% of the total area of the City of Sycamore (17 acres) is within Flood Zone A.

No part of the Town of Rebecca is within a flood zone.

Turner County and the Cities of Ashburn and Sycamore are members of the National Flood Insurance Program; the Town of Rebecca is not (source: <https://www.fema.gov/cis/GA.html>) Turner County and the Cities of Ashburn and Sycamore are in compliance with NFIP requirements as of late 2017, and intend to remain in compliance by enforcing flood plain ordinances which prohibit or severely limit development in floodplains. For example, Turner County has a Wetlands Protection District (Zoning Ordinance §10-5), encompassing all wetland areas within the County as shown 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.

Turner County and the Cities of Ashburn, Rebecca, and Sycamore do not participate in the Community Rating System (CRS) program. As of 2017, they were not eligible, according to FEMA (source: <http://www.fema.gov/library/viewRecord.do?id=3629>).

## **G. Overall HRV Summary of Events And Their Impact**

Floods have the potential to cause damage at any place, at any time, throughout Turner County and the Cities of Ashburn, Rebecca, and Sycamore, and especially in flood-prone areas. Floods can happen quickly and residents may not have time to evade floodwaters. 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.

The HMPUC has developed a comprehensive range of Mitigation Goals, Objectives, and Action Steps to lessen the impacts from 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.

## **Section IV. Lightning/Thunderstorms/Wind/Hail**

### **A. Identification of Hazard**

The threat of lightning/thunderstorms/wind/hail has been chosen by the HMPUC as the fourth most likely hazard to occur and cause damage in the community, based on past experience, the FEMA-described methodology, and other factors. Historic data have been examined from various sources, including the National Climatic Data Center (see Appendix F), as well as from local history and personal accounts, in order 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 becomes 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 can 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 a year. 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 each year, 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 course of 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, it is not the car’s rubber tires that 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>)

**Thunderstorms** are defined by NOAA as rain showers during which thunder is heard. The following are some of the most common thunderstorms 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 or so. They are typically driven by heating on a summer afternoon. Single-cell storms may produce brief heavy rain and lightning.
- A **multi-cell storm** is a common type of 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 tend to pass quickly and are less prone to produce

tornadoes than are 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 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 very small extension of this larger rotation. Most large and violent tornadoes come from supercells.

**Hail** is a form of precipitation that occurs when updrafts in thunderstorms carry raindrops upward into extremely cold areas of the atmosphere, where they freeze into balls of ice. Hail can damage aircraft, homes and cars, and can be deadly to 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 hail storms are made up of a mix of sizes, and only the very largest hail stones pose serious risk to people caught in the open. The following are some common 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
- Tea cup = 3 inches
- Grapefruit = 4 inches
- Softball = 4 1/2 inches

**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

Force	Wind (Knots)	Wind (Mph)	World Meteorological Organization (WMO) Classification	Appearance of Wind Effects	
				On the Water	On Land
0	Less than 1	Less than 1	Calm	Sea surface smooth and mirror-like	Calm, smoke rises vertically
1	1-3	1-3	Light Air	Scaly ripples, no foam crests	Smoke drift indicates wind direction, still wind vanes
2	4-6	4-7	Light Breeze	Small wavelets, crests glassy, no breaking	Wind felt on face, leaves rustle, vanes begin to move
3	7-10	8-12	Gentle Breeze	Large wavelets, crests begin to break, scattered whitecaps	Leaves and small twigs constantly moving, light flags extended
4	11-16	13-18	Moderate Breeze	Small waves 1-4 ft. becoming longer, numerous whitecaps	Dust, leaves, and loose paper lifted, small tree branches move
5	17-21	19-24	Fresh Breeze	Moderate waves 4-8 ft taking longer form, many whitecaps, some spray	Small trees in leaf begin to sway
6	22-27	25-31	Strong Breeze	Larger waves 8-13 ft, whitecaps common, more spray	Larger tree branches moving, whistling in wires
7	28-33	32-38	Near Gale	Sea heaps up, waves 13-19 ft, white foam streaks off breakers	Whole trees moving, resistance felt walking against wind
8	34-40	39-46	Gale	Moderately high (18-25 ft) waves of greater length, edges of crests begin to break into spindrift, foam blown in streaks	Twigs breaking off trees, generally impedes progress
9	41-47	47-54	Strong Gale	High waves (23-32 ft), sea begins to roll, dense streaks of foam, spray may reduce visibility	Slight structural damage occurs, slate blows off roofs
10	48-55	55-63	Storm	Very high waves (29-41 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	64-72	Violent Storm	Exceptionally high (37-52 ft) waves, foam patches cover sea, visibility more reduced	Very rarely experienced; accompanied by widespread damage.
12	64+	73+	Hurricane	Air filled with foam, waves over 45 ft, sea completely white with driving spray, visibility greatly reduced	Devastation.

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 (see Appendix F), there are 102 reports of lightning/thunderstorms/wind/hail occurring in Turner County (including the Cities) between 01/01/1950 and 12/31/2017. The Historic Recurrence Interval is 0.67 years. This is a 150.00% Historic Frequency Chance per year. The past 10-year Record Frequency Per Year is 4.6, the past 20-year frequency is 3.35, 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, 36 lightning/thunderstorms/wind/hail events have occurred. Six of these were hail events, which caused dents on some vehicles and roofs. Wind events resulted in fallen tree branches across roads in some areas.

Although the most complete available data were 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 Commercial, Industrial, Agricultural, Religious/Non-Profit, Government, Education and Utility properties (2,979 of 2,979) in the community may be affected, with a total value of \$535,409,739. The values are based on the most recent 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 taken into account in any of these figures. According to the Center for Agribusiness & Economic Development's 2015 Georgia Farm Gate Value Report ([http://caes2.caes.uga.edu/center/caed/documents/GAFGVR2015\\_DEC16.pdf](http://caes2.caes.uga.edu/center/caed/documents/GAFGVR2015_DEC16.pdf)), the total farm gate value of agricultural production in Turner County is \$78,902,124.

According to the inventory database reports and maps, all of 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 populations of the Cities of Rebecca and Sycamore have increased.

The County and all the Cities have zoning regulations and mandatory building and fire codes which are enforced by a building inspector. All Cities and the County participate in joint comprehensive planning and 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.

#### **F. Multi-Jurisdictional Differences**

Lightning/thunderstorms/wind/hail may happen at any place at any 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 due to more people being in danger, and other impacts associated with higher population density. In jurisdictions without building codes and inspections, structures may exist that are not built to code and therefore may be especially vulnerable to the effects of 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, at any time, throughout Turner County and the Cities of Ashburn, Rebecca, and Sycamore, especially during thunderstorms. Where lightning strikes cannot be predicted and residents may not have time to seek shelter. 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.

The HMPUC has developed a comprehensive range of Mitigation Goals, Objectives, and Action Steps to lessen the impacts from 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.

## **Section VI. Wildfires**

### **A. Identification of Hazard**

The threat of wildfire has been chosen by the HMPUC as the fifth most likely hazard to occur and cause damage in the community, based on past experience, the FEMA-described methodology, and other factors. Historic 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, in order to determine the frequency of events.

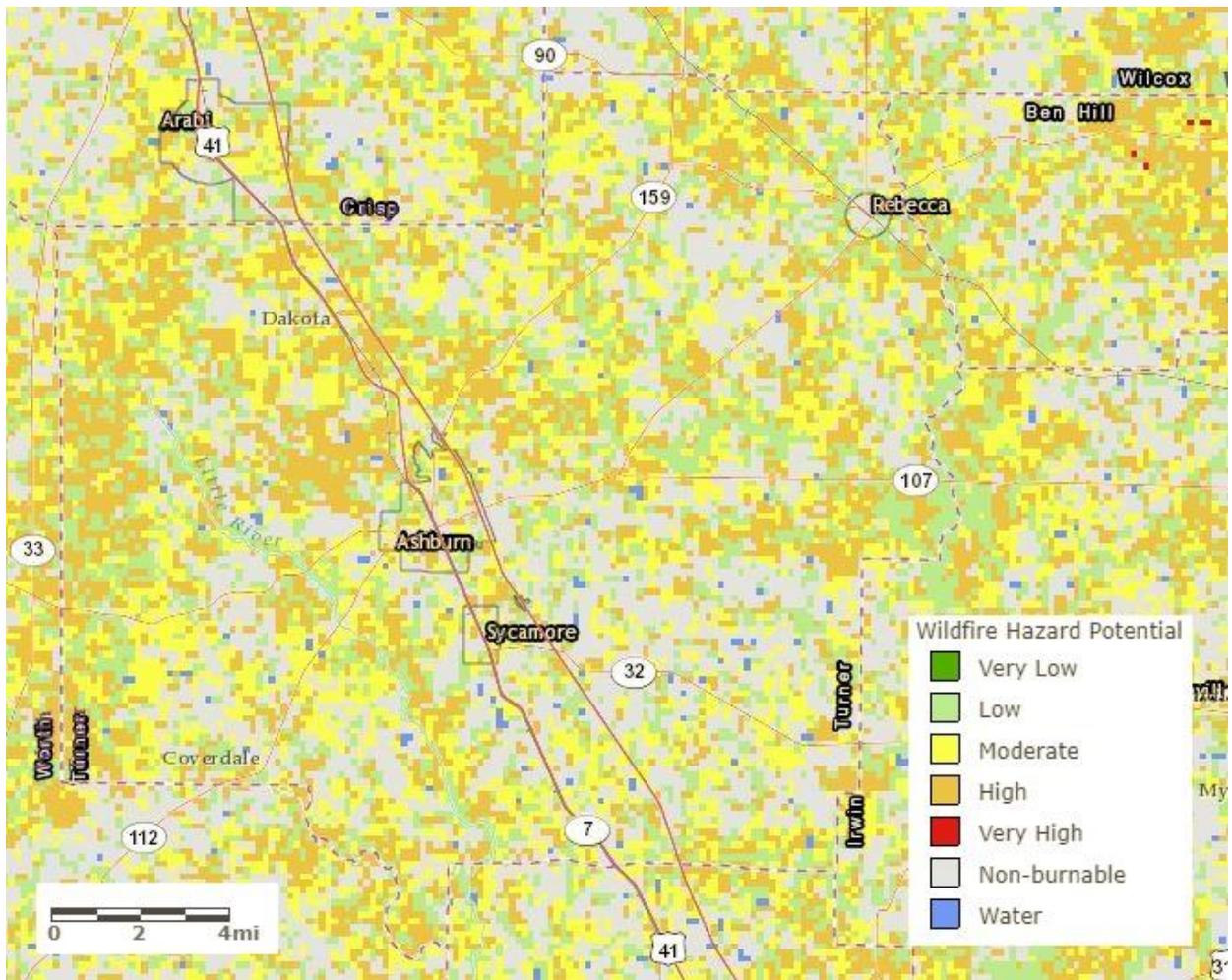
Much of southern Georgia is covered by forests, and fires play an important role in the health of forest ecosystems by breaking down organic matter into soil nutrients and helping seeds to germinate (source: NASA, [https://earthobservatory.nasa.gov/Features/GlobalFire/fire\\_2.php](https://earthobservatory.nasa.gov/Features/GlobalFire/fire_2.php)). When naturally occurring wildfires are suppressed, combustible fuel (such as dead leaves and branches) accumulates in the forest. This increases the risk of larger, more destructive fire events in the future. Controlled, prescribed fires lower the risk of larger fire events and are beneficial to forest health (source: USDA, <https://www.fs.usda.gov/detail/dbnf/home/?cid=stelprdb5281464>).

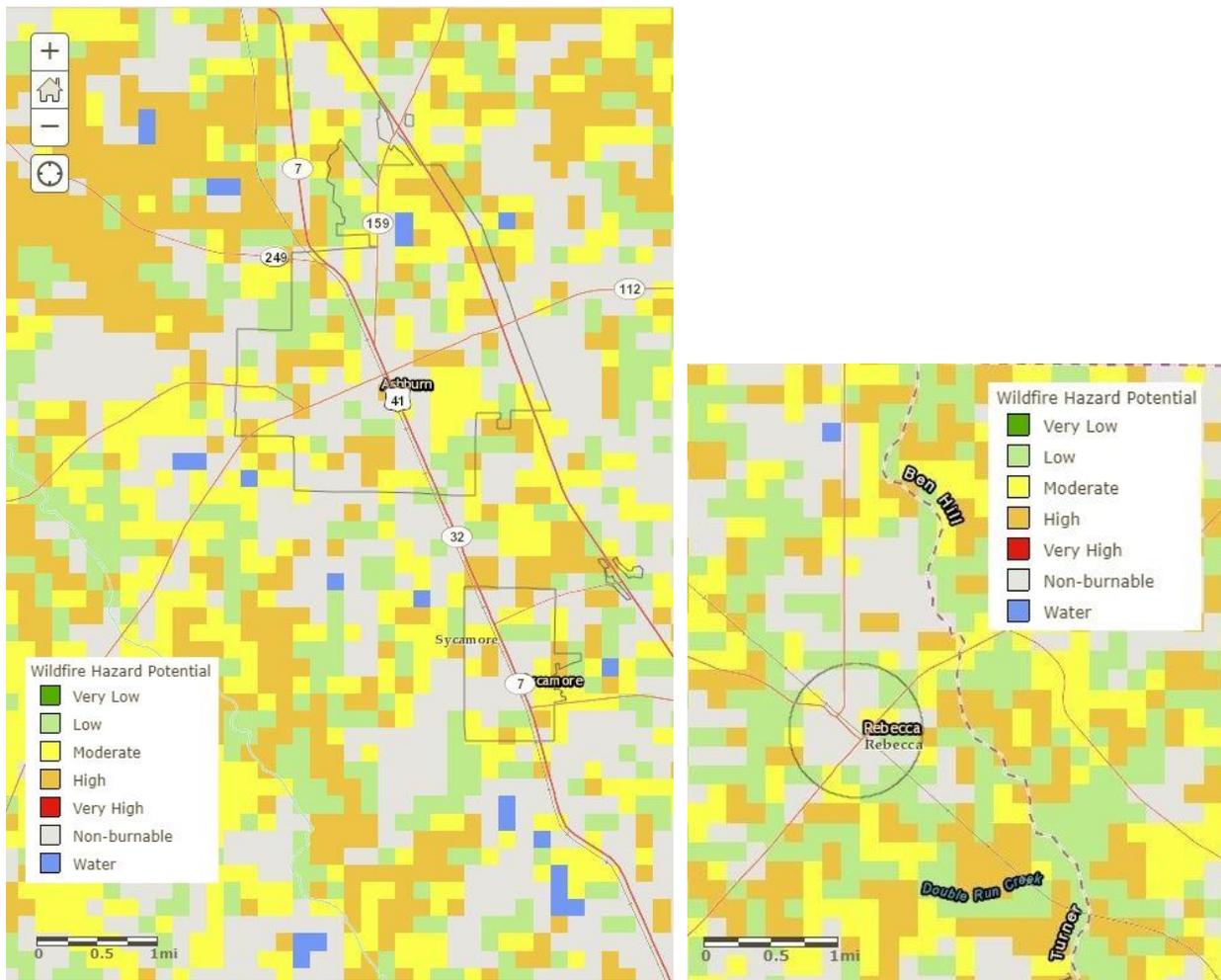
Low humidity, lack of recent precipitation (or drought conditions), wind speed, and temperature are a combination of weather conditions that favor the kindling and spread of wildfires. A high fuel load (i.e. the accumulation of dead vegetation), in combination with the above, also provides for the kindling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

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 that people 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 it be 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 greatest 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. As the maps below show, most of Turner County is 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>

## B. Profile of Events, Frequency of Occurrences, Probability

According to Georgia Forestry Commission data (see Appendix F), there are 2,798 reports of wildfires occurring in Turner County (including the Cities) between 01/01/1950 and 12/31/2017. The Historic Recurrence Interval is 0.02 years. This is a 5,596.00% Historic Frequency Chance per year. The past 10-year Record Frequency Per Year is 31.6, the past 20-year frequency is 41.95, and the past 50-year frequency is 55.96 (see the Hazard Frequency Table in Appendix D).

Since the previous Hazard Mitigation Plan was completed, 79 wildfire events have occurred.

Although the most complete available data were 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 Commercial, Industrial, Agricultural, Religious/Non-Profit, Government, Education and Utility properties (2,979 of 2,979) in the community may be affected, with a total value of \$535,409,739. The values are based on the most recent 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 taken into account in any of these figures. According to the Center for Agribusiness & Economic Development's 2015 Georgia Farm Gate Value Report ([http://caes2.caes.uga.edu/center/caed/documents/GAFGVR2015\\_DEC16.pdf](http://caes2.caes.uga.edu/center/caed/documents/GAFGVR2015_DEC16.pdf)), the total farm gate value of agricultural production in Turner County is \$78,902,124.

According to the inventory database reports and maps, all of 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 populations of the Cities of Rebecca and Sycamore have increased.

The County and all the Cities have zoning regulations and mandatory building and fire codes which are enforced by a building inspector. All Cities and the County participate in joint comprehensive planning and 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.

#### **F. Multi-Jurisdictional Differences**

Wildfires may happen at any place at any time, 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 destruction of homes and other buildings. In jurisdictions without building codes and inspections, structures may exist that are not built to code and therefore may be especially vulnerable to the effects of wildfires and other hazards.

The City of Ashburn has two fire stations, which are staffed by paid employees and volunteers. Turner County has one fire station staffed by paid employees and volunteers. All other fire stations in the community are staffed by volunteers. The following are the ISO Classes of fire stations in Turner County and the Cities of Ashburn, Rebecca, and Sycamore.

<b>Station</b>	<b>ISO Class</b>
Ashburn Fire Department Station One	Class 2
Ashburn Fire Department Station Two	Class 2
Turner County Volunteer Fire Department	Class 9
Rebecca Volunteer Fire Department	Class 9
Sycamore (Turner County) Volunteer Fire Department	Class 5

**G. Overall HRV Summary of Events And Their Impact**

Wildfires have the potential to cause damage at any place, at any time, throughout Turner County and the Cities of Ashburn, Rebecca, and Sycamore. They can spread quickly and residents may not have time to evacuate. 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.

The HMPUC has developed a comprehensive range of Mitigation Goals, Objectives, and Action Steps to lessen the impacts from 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.

## Section V. Extreme Heat

### A. Identification of Hazard

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

The major hazard presented by heat waves is not so much to infrastructure as to the population. Despite the comparatively warm climate of this region, there are many residents who are not adequately prepared to handle extreme heat events (for example, those without air conditioning in their homes). The risk is particularly 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 level of accuracy ahead of 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 associate with the heat index as calculated by the National Weather Service (source: <https://www.weather.gov/ama/heatindex>).

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

The Heat Index chart below shows Heat Index Values for various temperatures and humidity levels. As an 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.

## NOAA's National Weather Service

### Heat Index Temperature (°F)

Relative Humidity (%)	80	82	84	86	88	90	92	94	96	98	100	102	104	106	108	110
40	80	81	83	85	88	91	94	97	101	105	109	114	119	124	130	136
45	80	82	84	87	89	93	96	100	104	109	114	119	124	130	137	
50	81	83	85	88	91	95	99	103	108	113	118	124	131	137		
55	81	84	86	89	93	97	101	106	112	117	124	130	137			
60	82	84	88	91	95	100	105	110	116	123	129	137				
65	82	85	89	93	98	103	108	114	121	128	136					
70	83	86	90	95	100	105	112	119	126	134						
75	84	88	92	97	103	109	116	124	132							
80	84	89	94	100	106	113	121	129								
85	85	90	96	102	110	117	126	135								
90	86	91	98	105	113	122	131									
95	86	93	100	108	117	127										
100	87	95	103	112	121	132										

**Likelihood of Heat Disorders with Prolonged Exposure or Strenuous Activity**

Caution     
  Extreme Caution     
  Danger     
  Extreme Danger

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 timing is still uncertain. A Watch provides enough lead time so that those who need to prepare can do so, such as city officials who have 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 products are issued when an excessive heat event is occurring, is imminent, or has a very high probability of occurring. An advisory is for less serious conditions that cause significant discomfort or inconvenience and, if caution is not taken, could lead to a threat to life. 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 excessive heat event is occurring, is imminent, 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 35 reports of extreme heat events occurring in Turner County (including the Cities) between 01/01/2006 and 12/31/2017. The Historic Recurrence Interval is 0.31 years. This is a 318.18% Historic Frequency Chance per year. The past 10-year Record Frequency Per Year is 3.4, the past 20-year frequency is 1.75, and the past 50-year frequency is 0.7 (see the Hazard Frequency Table in Appendix D). These were all Heat Advisories except for one event in 2012, which was an Excessive Heat Warning.

Since the previous Hazard Mitigation Plan became effective, 14 extreme heat events have occurred. These were all Heat Advisories.

Although the most complete available data were 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 Commercial, Industrial, Agricultural, Religious/Non-Profit, Government, Education and Utility properties (2,979 of 2,979) in the community may be affected, with a total value of \$535,409,739. The values are based on the most recent 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 taken into account in any of these figures. According to the Center for Agribusiness & Economic Development's 2015 Georgia Farm Gate Value Report ([http://caes2.caes.uga.edu/center/caed/documents/GAFGVR2015\\_DEC16.pdf](http://caes2.caes.uga.edu/center/caed/documents/GAFGVR2015_DEC16.pdf)), the total farm gate value of agricultural production in Turner County is \$78,902,124.

According to the inventory database reports and maps, all of 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 populations of the Cities of Rebecca and Sycamore have increased.

The County and all the Cities have zoning regulations and mandatory building and fire codes which are enforced by a building inspector. All Cities and the County participate in joint comprehensive planning and 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.

#### **F. Multi-Jurisdictional Differences**

Extreme heat may happen at any place at any 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 due to more people being in danger. In jurisdictions without building codes and inspections, structures may exist that are not built to code and therefore may be especially vulnerable to the effects of hot weather and other hazards. Power failures exacerbate extreme heat events because of the ensuing 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 has the potential to 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 to buildings and infrastructure.

The HMPUC has developed a comprehensive range of Mitigation Goals, Objectives, and Action Steps to lessen the impacts from 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.

## **Section VII. Drought**

### **A. Identification of Hazard**

The threat of drought has been chosen by the HMPUC as the seventh most likely hazard to occur and cause damage in the community, based on past experience, the FEMA-described methodology, and other factors. Historic data have 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, in order 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 safety of the community.

Crops (including trees) are usually most adversely affected by drought events, along with community residents whose water supplies are restricted or cut off (especially those using individual wells). Residents of unincorporated Turner County have wells, which may go dry during drought periods, thus leaving those residents without water for extended periods of time. 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 that is 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, labelling droughts by intensity, with D1 being the least intense and D4 being the most intense. Descriptions of these categories are provided in the table below (source: <http://droughtmonitor.unl.edu/AboutUs/ClassificationScheme.aspx>).

Category	Description	Possible Impacts
D0	Abnormally Dry	<p>Going into drought:</p> <ul style="list-style-type: none"> <li>▪ short-term dryness slowing planting, growth of crops or pastures</li> </ul> <p>Coming out of drought:</p> <ul style="list-style-type: none"> <li>▪ some lingering water deficits</li> <li>▪ pastures or crops not fully recovered</li> </ul>
D1	Moderate Drought	<ul style="list-style-type: none"> <li>▪ Some damage to crops, pastures</li> <li>▪ Streams, reservoirs, or wells low, some water shortages developing or imminent</li> <li>▪ Voluntary water-use restrictions requested</li> </ul>
D2	Severe Drought	<ul style="list-style-type: none"> <li>▪ Crop or pasture losses likely</li> <li>▪ Water shortages common</li> <li>▪ Water restrictions imposed</li> </ul>
D3	Extreme Drought	<ul style="list-style-type: none"> <li>▪ Major crop/pasture losses</li> <li>▪ Widespread water shortages or restrictions</li> </ul>
D4	Exceptional Drought	<ul style="list-style-type: none"> <li>▪ Exceptional and widespread crop/pasture losses</li> <li>▪ Shortages of water in reservoirs, streams, and wells creating water emergencies</li> </ul>

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), there are 27 reports of drought events occurring in Turner County (including the Cities) between 01/01/1950 and 12/31/2017. The Historic Recurrence Interval is 2.52 years. This is a 39.71% Historic Frequency Chance per year. The past 10-year Record Frequency Per Year is 2.6, the past 20-year frequency is 1.35, and the past 50-year frequency is 0.54 (see the Hazard Frequency Table in Appendix D).

Since the previous Hazard Mitigation Plan became effective, 2 drought events have occurred.

Although the most complete available data were 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 Commercial, Industrial, Agricultural, Religious/Non-Profit, Government, Education and Utility properties (2,979 of 2,979) in the community may be affected, with a total value of \$535,409,739. The values are based on the most recent 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 taken into account in any of these figures. According to the Center for Agribusiness & Economic Development's 2015 Georgia Farm Gate Value Report ([http://caes2.caes.uga.edu/center/caed/documents/GAFGVR2015\\_DEC16.pdf](http://caes2.caes.uga.edu/center/caed/documents/GAFGVR2015_DEC16.pdf)), the total farm gate value of agricultural production in Turner County is \$78,902,124.

According to the inventory database reports and maps, all of 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 populations of the Cities of Rebecca and Sycamore have increased.

The County and all the Cities have zoning regulations and mandatory building and fire codes which are enforced by a building inspector. All Cities and the County participate in joint comprehensive planning and 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.

## **F. Multi-Jurisdictional Differences**

Residents of unincorporated Turner County have wells, which may go dry during drought periods, thus leaving those residents without water for extended periods of time. 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 has the potential to 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 from 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.

## Chapter 3: Local Technological Hazard, Risk, 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, it is essential for Turner County and the Cities of Ashburn, Rebecca, and Sycamore 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.

**Chemical weapons** have been used by terrorists in the recent past, and it is likely to happen again. A very large number of casualties could be expected in a successful chemical attack. Chemical agents can enter the body by inhalation of the chemical agents, absorption through the skin or eyes, injection into the body by flying glass or shrapnel, or by ingesting with food or water. A likely delivery method is in the form of a gas or as 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 skin of the victim, resulting in blisters and skin burns. Mustard gas and Lewisite are common blister agents.
- **Blood Agents:** Blood agents attack 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 usually 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 in combination with other agents to force 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 serious challenge for response planning. There is risk that a biological attack may not be detected until days or even weeks after it happens. First responder resources, therefore, may be of little use at a bioterrorism incident unless it is detected promptly.

The following are the two main types 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, but the more likely number is much less because of the difficulty of efficiently delivering the pathogenic agents to large numbers of people.
- **Toxins:** These are poisonous substances produced by living things. Many toxins are extremely lethal and small quantities can kill very large numbers of 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 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)**, which 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)**, otherwise known as a Hidden Sealed Radioactive Source. These cause exposure but typically not contamination. The dose from exposure and specific effect on people depends on the source properties (isotope, activity, amount), proximity of each person to the source, length of exposure time, and 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. Detonation of such a weapon results in catastrophic loss of life, destruction of infrastructure, and contamination of a very large 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 weapon was the fuel oil-fertilizer bomb used to attack the Murrah Federal Building in Oklahoma City.

First responders should be alert to the potential for structure collapse as well as secondary explosive devices in the area.

Great caution should be used if the explosion seems to do little 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, who are then 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 in 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, there have not been any CBRNE events in Turner County and the Cities of Ashburn, Rebecca, and Sycamore. However, the entire community is equally vulnerable to this hazard and an attack could happen at any place 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.

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 Commercial, Industrial, Agricultural, Religious/Non-Profit, Government, Education and Utility properties (2,979 of 2,979) in the community may be affected, with a total value of \$535,409,739. The values are based on the most recent 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 taken into account in any of these figures. According to the Center for Agribusiness & Economic Development's 2015 Georgia Farm Gate Value Report ([http://caes2.caes.uga.edu/center/caed/documents/GAFGVR2015\\_DEC16.pdf](http://caes2.caes.uga.edu/center/caed/documents/GAFGVR2015_DEC16.pdf)), the total farm gate value of agricultural production in Turner County is \$78,902,124.

According to the inventory database reports and maps, all of 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 populations of the Cities of Rebecca and Sycamore have increased.

The County and all the Cities have zoning regulations and mandatory building and fire codes which are enforced by a building inspector. All Cities and the County participate in joint comprehensive planning and 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.

### **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 has the potential to 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 the impacts from 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.

## **Section II. Hazardous Materials Release**

### **A. Identification of Hazard**

Hazardous materials are substances or materials that the Secretary of Transportation has determined is capable of posing 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 very 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 resulting from exposure.

### **B. Profile of Events, Frequency of Occurrences, Probability**

Hazardous material spills are common in areas where hazardous materials are fabricated, processed, and stored. Transportation of hazardous materials by truck is the cause of the greatest number of hazardous materials events. Many products containing hazardous chemicals are routinely used and stored in homes. These products are also shipped daily on the nation's highways, railroads, waterways, and in 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 categorizes hazardous 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 widespread 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), there are 10 reports of Hazardous Materials Release events occurring in Turner County (including the Cities) between 07/05/1972 and 12/31/2017. 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 on Feb. 20, 2015 in the City of Ashburn.

Although the most complete available data were 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 Commercial, Industrial, Agricultural, Religious/Non-Profit, Government, Education and Utility properties (2,979 of 2,979) in the community may be affected, with a total value of \$535,409,739. The values are based on the most recent 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 taken into account in any of these figures. According to the Center for Agribusiness & Economic Development's 2015 Georgia Farm Gate Value Report ([http://caes2.caes.uga.edu/center/caed/documents/GAFGVR2015\\_DEC16.pdf](http://caes2.caes.uga.edu/center/caed/documents/GAFGVR2015_DEC16.pdf)), the total farm gate value of agricultural production in Turner County is \$78,902,124.

According to the inventory database reports and maps, all of 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 some relatively higher residential density exists. Interstate 75 passes through the County and through the Cities of Ashburn and Sycamore, and these two population centers could be vulnerable should a hazardous materials event occur on the Interstate highway.

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

The County and all the Cities have zoning regulations and mandatory building and fire codes which are enforced by a building inspector. All Cities and the County participate in joint comprehensive planning and 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.

## **F. Multi-Jurisdictional Differences**

The facilities most vulnerable to a hazardous materials release are those 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**

A significant portion 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 in order 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 and 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 that have been made.

<b>Chapter 4 Section</b>	<b>Updates to Section</b>
I. Hurricanes/Tropical Storms	Updated Goals, Objectives, and Action Step Formatting, Numbering and Data Fields, 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 Fields, 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 Fields, 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 Fields, 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 Fields, 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 Fields, 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 Fields, Updated or Deleted Prior Action Steps and Added New Action Steps (if applicable)

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 each operate autonomously, there is a high level of cooperation exhibited when it comes to hazard mitigation and emergency planning efforts. Each local government has designated representatives to participate in the emergency management process, whether it be during planning, response, or recovery phases. The local Emergency Management Agency hosts regular meetings to gather all of the relevant local, regional and state partners together to develop effective plans and strengthen relationships among all of the stakeholders. Working together, 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 more effectively mitigate hazards and provide more accurate warning and preparatory information to their citizens.

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

Authority for the development of this Plan was given by the Turner County Commission as a result of their execution of 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) have the ability to expand and improve their existing policies and programs as evidenced by the new and existing goals, objectives, and action steps included in this plan. The amount of resources available to the jurisdictions for expansion and improvement of existing programs will depend on factors such as the local government budgets and the availability of state and federal funding to support hazard mitigation activities.

This chapter contains a description of the comprehensive range of Mitigation Goals, Objectives, and Action Steps that were 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 of this Plan. All areas of the community were taken into account in the development of the comprehensive range of Mitigation Goals, Objectives, and Action Steps. These were identified after the weighing of many factors discovered during the planning process, including risk assessment, storm history, past damage, community resources, and other factors.

A list of the comprehensive range of Mitigation Goals, Objectives, and Action Steps was compiled from the input of the HMPUC, as well as from 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 the prioritization of 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 projects involved expending considerable amounts of 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 completion of the project using potential grant funding. Still others required no significant financial commitment by the communities.

In Chapter 6, Sections I-III, there is a description of the planning process involved in selecting the comprehensive range of Mitigation Goals, Objectives, and Action Steps. The Action Steps are given a rating of High, Medium, or Low Priority by the HMPUC based on a number of factors (with a primary emphasis on prioritized cost versus benefit review) identified in Chapter 6, Section I.

Relevant comprehensive ranges of Mitigation Goals, Objectives, and Action Steps are listed below throughout the chapter. 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 to be the coordinating agency for implementation and administration of 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 great 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 contained 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 that are relevant to this hazard. For more information, see Chapter 2, Section I.

#### **3. Community Values, Historic and Special Considerations:**

Historic buildings exist in the community, a few of which are Critical Facilities. There are historic and special considerations that pose significant challenges with regard to the retrofitting of historic buildings in order to make them 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, along with a small number of 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 warning of Hurricanes/Tropical Storms in an effective, dependable, and rapid manner.**

Objective 1.1.1: Ensure that a comprehensive early warning notification system is in place.

<b>Action Step 1: Purchase an early warning horn system for the Town of Rebecca and City of Sycamore.</b>	
<b>Responsible Department</b>	Turner County EMA, Town of Rebecca/City of Sycamore Public Works
<b>Anticipated Cost</b>	\$20,000 each
<b>Existing &amp; Potential Funding Sources</b>	General Funds, DOHS-GEMA/FEMA
<b>Jurisdiction</b>	Town of Rebecca, City of Sycamore
<b>Timeframe</b>	2018-2023
<b>Priority</b>	High
<b>Status</b>	Ongoing. Completed for 3 locations in Turner County, including the Inaha community.

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.

<b>Action Step 2: Maintain “StormReady” status.</b>	
<b>Responsible Department</b>	Turner County EMA
<b>Anticipated Cost</b>	\$5,000
<b>Existing &amp; Potential Funding Sources</b>	General Funds, DOHS-GEMA/FEMA
<b>Jurisdiction</b>	All Local Governments
<b>Timeframe</b>	2018-2023
<b>Priority</b>	High
<b>Status</b>	New

<b>Action Step 3: Implement the “Community Emergency Response Team” (CERT) Program.</b>	
<b>Responsible Department</b>	Turner County EMA
<b>Anticipated Cost</b>	\$5,000
<b>Existing &amp; Potential Funding Sources</b>	General Funds, DOHS-GEMA/FEMA
<b>Jurisdiction</b>	All Local Governments
<b>Timeframe</b>	2018-2023
<b>Priority</b>	High
<b>Status</b>	Ongoing

<b>Action Step 4: Expand radio capabilities to be compatible with narrow band for Turner County Fire Dept., EMA/EMS, City of Ashburn, Town of Rebecca, and City of Sycamore.</b>	
<b>Responsible Department</b>	Turner County EMA, Turner FD/EMA/EMS, City of Ashburn FD, Town of Rebecca FD, City of Sycamore FD
<b>Anticipated Cost</b>	\$25,000 each
<b>Existing &amp; Potential Funding Sources</b>	General Funds, DOHS-GEMA/FEMA
<b>Jurisdiction</b>	All Local Governments
<b>Timeframe</b>	2018-2023
<b>Priority</b>	High
<b>Status</b>	Ongoing

<b>Action Step 5: Study need for and install repeaters and radio towers, as needed, including between Rebecca and 86 mile marker.</b>	
<b>Responsible Department</b>	Turner County EMA, Turner County Sheriff's Dept.
<b>Anticipated Cost</b>	\$75,000 each
<b>Existing &amp; Potential Funding Sources</b>	General Funds, DOHS-GEMA/FEMA
<b>Jurisdiction</b>	All Local Governments
<b>Timeframe</b>	2018-2023
<b>Priority</b>	High
<b>Status</b>	Ongoing. Study completed, but not implemented.

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

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

<b>Action Step 6: Educate homeowners and builders on individual safe rooms</b>	
<b>Responsible Department</b>	Turner County EMA, Turner County/ City of Ashburn/ Town of Rebecca/ City of Sycamore Building Inspection Depts.
<b>Anticipated Cost</b>	Staff Time
<b>Existing &amp; Potential Funding Sources</b>	General Funds
<b>Jurisdiction</b>	All Local Governments
<b>Timeframe</b>	2018-2023
<b>Priority</b>	High
<b>Status</b>	Ongoing

<b>Action Step 7: Distribute programs on personal emergency preparedness, i.e., emergency survival kits.</b>	
<b>Responsible Department</b>	Turner County EMA
<b>Anticipated Cost</b>	\$300
<b>Existing &amp; Potential Funding Sources</b>	General Funds
<b>Jurisdiction</b>	All Local Governments
<b>Timeframe</b>	2018-2023
<b>Priority</b>	Medium
<b>Status</b>	Ongoing

<b>Action Step 8: Encourage businesses to develop emergency plans.</b>	
<b>Responsible Department</b>	Turner County EMA
<b>Anticipated Cost</b>	Staff Time
<b>Existing &amp; Potential Funding Sources</b>	General Funds
<b>Jurisdiction</b>	All Local Governments
<b>Timeframe</b>	2018-2023
<b>Priority</b>	Medium
<b>Status</b>	Ongoing

<b>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 the schools.</b>	
<b>Responsible Department</b>	Turner County EMA
<b>Anticipated Cost</b>	Staff Time
<b>Existing &amp; Potential Funding Sources</b>	General Funds
<b>Jurisdiction</b>	All Local Governments
<b>Timeframe</b>	2018-2023
<b>Priority</b>	High
<b>Status</b>	Ongoing

<b>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 entire Turner County community) and community water systems including 2 for the wells in Sycamore (serving entire population).</b>	
<b>Responsible Department</b>	Turner County EMA
<b>Anticipated Cost</b>	\$350,000 per unit
<b>Existing &amp; Potential Funding Sources</b>	General Funds, DOHS-GEMA/FEMA
<b>Jurisdiction</b>	All Local Governments
<b>Timeframe</b>	2018-2023
<b>Priority</b>	High
<b>Status</b>	Ongoing

<b>Action Step 11: Trim tree lines around roads, homes, utilities and businesses.</b>	
<b>Responsible Department</b>	Turner County/ City of Ashburn/ Town of Rebecca/ City of Sycamore Public Works Depts.
<b>Anticipated Cost</b>	\$20,000
<b>Existing &amp; Potential Funding Sources</b>	General Funds
<b>Jurisdiction</b>	All Local Governments
<b>Timeframe</b>	2018-2023
<b>Priority</b>	High
<b>Status</b>	Ongoing

<b>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.</b>	
<b>Responsible Department</b>	Turner County/ City of Ashburn/ Town of Rebecca/ City of Sycamore Building Inspection Depts.
<b>Anticipated Cost</b>	\$1,000,000
<b>Existing &amp; Potential Funding Sources</b>	General Funds, DOHS-GEMA/FEMA
<b>Jurisdiction</b>	All Local Governments
<b>Timeframe</b>	2018-2023
<b>Priority</b>	Medium
<b>Status</b>	Ongoing

<b>Action Step 13: Obtain 2 generators for sewage pump stations and 1 generator for City Hall in Sycamore to serve all residents.</b>	
<b>Responsible Department</b>	Sycamore Public Works
<b>Anticipated Cost</b>	\$12,000 each
<b>Existing &amp; Potential Funding Sources</b>	General Funds, DOHS-GEMA/FEMA
<b>Jurisdiction</b>	City of Sycamore
<b>Timeframe</b>	2018-2023
<b>Priority</b>	High
<b>Status</b>	Ongoing

#### **D. Special Multi-Jurisdictional Strategy and Considerations:**

Most of the strategies outlined above apply to and are intended to be carried out by each of the local jurisdictions. In certain cases, 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 keep the public constantly informed of the development of these strategies and of how citizens can best assist with and/or take advantage of these efforts.

The major criteria to measure plan success 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 the Previous Plan**

##### **Completed Action Steps**

- Action Step 1: Become a designated “StormReady Community.”
- Action Step 8: Encourage the American Red Cross to teach the Citizen’s Disaster Course on a frequent basis.
- Action Step 10: Obtain 1 generator for sewage pump stations and emergency uses in Ashburn to serve all 4,152 residents.

<b>Action Step</b>	<b>Changes</b>
Action Step 2: Maintain “StormReady” status.	New
Action Step 3: Implement the “Community Emergency Response Team” (CERT) Program.	Formerly Action Step 2
Action Step 4: Expand radio capabilities to be compatible with narrow band for Turner County Fire Dept., EMA/EMS, City of Ashburn, Town of Rebecca, and City of Sycamore.	Formerly Action Step 3, wording changed

<b>Action Step</b>	<b>Changes</b>
Action Step 5: Study need for and install repeaters and radio towers, as needed, including between Rebecca and 86 mile marker.	Formerly Action Step 4
Action Step 6: Educate homeowners and builders on individual safe rooms	Formerly Action Step 1
Action Step 7: Distribute programs on personal emergency preparedness, i.e., emergency survival kits.	Formerly Action Step 2
Action Step 8: Encourage businesses to develop emergency plans.	Formerly Action Step 4
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 the schools.	Formerly Action Step 5
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 entire Turner County community) and community water systems including 2 for the wells in Sycamore (serving entire population).	Formerly Action Step 6
Action Step 11: Trim tree lines around roads, homes, utilities and businesses.	Formerly Action Step 7
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.	Formerly Action Step 8
Action Step 13: Obtain 2 generators for sewage pump stations and 1 generator for City Hall in Sycamore to serve all residents.	Formerly Action Step 9

## **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 at any place and at any time. Because these tornadoes may be extremely powerful and cause great 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 contained 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 that are 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. There are historic and special considerations that pose significant challenges with regard to the retrofitting of historic buildings in order to make them 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, along with a small number of 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 2.1: Enhance the community’s ability to issue early warning of tornadoes in an effective, dependable, and rapid manner.**

Objective 2.1.1: Ensure that a comprehensive early warning notification system is in place.

<b>Action Step 1: Purchase an early warning horn system for the Town of Rebecca and City of Sycamore.</b>	
<b>Responsible Department</b>	Turner County EMA, Town of Rebecca/City of Sycamore Public Works
<b>Anticipated Cost</b>	\$20,000 each
<b>Existing &amp; Potential Funding Sources</b>	General Funds, DOHS-GEMA/FEMA
<b>Jurisdiction</b>	Town of Rebecca, City of Sycamore
<b>Timeframe</b>	2018-2023
<b>Priority</b>	High
<b>Status</b>	Ongoing. Completed for 3 locations in Turner County, including the Inaha community.

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.

<b>Action Step 2: Maintain “StormReady” status.</b>	
<b>Responsible Department</b>	Turner County EMA
<b>Anticipated Cost</b>	\$5,000
<b>Existing &amp; Potential Funding Sources</b>	General Funds, DOHS-GEMA/FEMA
<b>Jurisdiction</b>	All Local Governments
<b>Timeframe</b>	2018-2023
<b>Priority</b>	High
<b>Status</b>	New

<b>Action Step 3: Implement the “Community Emergency Response Team” (CERT) Program.</b>	
<b>Responsible Department</b>	Turner County EMA
<b>Anticipated Cost</b>	\$5,000
<b>Existing &amp; Potential Funding Sources</b>	General Funds, DOHS-GEMA/FEMA
<b>Jurisdiction</b>	All Local Governments
<b>Timeframe</b>	2018-2023
<b>Priority</b>	High
<b>Status</b>	Ongoing

<b>Action Step 4: Expand radio capabilities to be compatible with narrow band for Turner County Fire Dept., EMA/EMS, City of Ashburn, Town of Rebecca, and City of Sycamore.</b>	
<b>Responsible Department</b>	Turner County EMA, Turner FD/EMA/EMS, City of Ashburn FD, Town of Rebecca FD, City of Sycamore FD
<b>Anticipated Cost</b>	\$25,000 each
<b>Existing &amp; Potential Funding Sources</b>	General Funds, DOHS-GEMA/FEMA
<b>Jurisdiction</b>	All Local Governments
<b>Timeframe</b>	2018-2023
<b>Priority</b>	High
<b>Status</b>	Ongoing

<b>Action Step 5: Study need for and install repeaters and radio towers, as needed, including between Rebecca and 86 mile marker.</b>	
<b>Responsible Department</b>	Turner County EMA, Turner County Sheriff's Dept.
<b>Anticipated Cost</b>	\$75,000 each
<b>Existing &amp; Potential Funding Sources</b>	General Funds, DOHS-GEMA/FEMA
<b>Jurisdiction</b>	All Local Governments
<b>Timeframe</b>	2018-2023
<b>Priority</b>	High
<b>Status</b>	Ongoing. Study completed, but not implemented.

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

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

<b>Action Step 6: Educate homeowners and builders on individual safe rooms</b>	
<b>Responsible Department</b>	Turner County EMA, Turner County/ City of Ashburn/ Town of Rebecca/ City of Sycamore Building Inspection Depts.
<b>Anticipated Cost</b>	Staff Time
<b>Existing &amp; Potential Funding Sources</b>	General Funds
<b>Jurisdiction</b>	All Local Governments
<b>Timeframe</b>	2018-2023
<b>Priority</b>	High
<b>Status</b>	Ongoing

<b>Action Step 7: Distribute programs on personal emergency preparedness, i.e., emergency survival kits.</b>	
<b>Responsible Department</b>	Turner County EMA
<b>Anticipated Cost</b>	\$300
<b>Existing &amp; Potential Funding Sources</b>	General Funds
<b>Jurisdiction</b>	All Local Governments
<b>Timeframe</b>	2018-2023
<b>Priority</b>	Medium
<b>Status</b>	Ongoing

<b>Action Step 8: Encourage businesses to develop emergency plans.</b>	
<b>Responsible Department</b>	Turner County EMA
<b>Anticipated Cost</b>	Staff Time
<b>Existing &amp; Potential Funding Sources</b>	General Funds
<b>Jurisdiction</b>	All Local Governments
<b>Timeframe</b>	2018-2023
<b>Priority</b>	Medium
<b>Status</b>	Ongoing

<b>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 the schools.</b>	
<b>Responsible Department</b>	Turner County EMA
<b>Anticipated Cost</b>	Staff Time
<b>Existing &amp; Potential Funding Sources</b>	General Funds
<b>Jurisdiction</b>	All Local Governments
<b>Timeframe</b>	2018-2023
<b>Priority</b>	High
<b>Status</b>	Ongoing

<b>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 entire Turner County community) and community water systems including 2 for the wells in Sycamore (serving entire population).</b>	
<b>Responsible Department</b>	Turner County EMA
<b>Anticipated Cost</b>	\$350,000 per unit
<b>Existing &amp; Potential Funding Sources</b>	General Funds, DOHS-GEMA/FEMA
<b>Jurisdiction</b>	All Local Governments
<b>Timeframe</b>	2018-2023
<b>Priority</b>	High
<b>Status</b>	Ongoing

<b>Action Step 11: Trim tree lines around roads, homes, utilities and businesses.</b>	
<b>Responsible Department</b>	Turner County/ City of Ashburn/ Town of Rebecca/ City of Sycamore Public Works Depts.
<b>Anticipated Cost</b>	\$20,000
<b>Existing &amp; Potential Funding Sources</b>	General Funds
<b>Jurisdiction</b>	All Local Governments
<b>Timeframe</b>	2018-2023
<b>Priority</b>	High
<b>Status</b>	Ongoing

<b>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.</b>	
<b>Responsible Department</b>	Turner County/ City of Ashburn/ Town of Rebecca/ City of Sycamore Building Inspection Depts.
<b>Anticipated Cost</b>	\$1,000,000
<b>Existing &amp; Potential Funding Sources</b>	General Funds, DOHS-GEMA/FEMA
<b>Jurisdiction</b>	All Local Governments
<b>Timeframe</b>	2018-2023
<b>Priority</b>	Medium
<b>Status</b>	Ongoing

<b>Action Step 13: Obtain 2 generators for sewage pump stations and 1 generator for City Hall in Sycamore to serve all residents.</b>	
<b>Responsible Department</b>	Sycamore Public Works
<b>Anticipated Cost</b>	\$12,000 each
<b>Existing &amp; Potential Funding Sources</b>	General Funds, DOHS-GEMA/FEMA
<b>Jurisdiction</b>	City of Sycamore
<b>Timeframe</b>	2018-2023
<b>Priority</b>	High
<b>Status</b>	Ongoing

#### **D. Special Multi-Jurisdictional Strategy and Considerations:**

Most of the strategies outlined above apply to and are intended to be carried out by each of the local jurisdictions. In certain cases, 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 keep the public constantly informed of the development of these strategies and of how citizens can best assist with and/or take advantage of these efforts.

The major criteria to measure plan success 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 the Previous Plan**

##### **Completed Action Steps**

- Action Step 1: Become a designated “StormReady Community.”

- Action Step 8: Encourage the American Red Cross to teach the Citizen’s Disaster Course on a frequent basis.
- Action Step 10: Obtain 1 generator for sewage pump stations and emergency uses in Ashburn to serve all 4,152 residents.

<b>Action Step</b>	<b>Changes</b>
Action Step 2: Maintain “StormReady” status.	New
Action Step 3: Implement the “Community Emergency Response Team” (CERT) Program.	Formerly Action Step 2
Action Step 4: Expand radio capabilities to be compatible with narrow band for Turner County Fire Dept., EMA/EMS, City of Ashburn, Town of Rebecca, and City of Sycamore.	Formerly Action Step 3, wording changed
Action Step 5: Study need for and install repeaters and radio towers, as needed, including between Rebecca and 86 mile marker.	Formerly Action Step 4
Action Step 6: Educate homeowners and builders on individual safe rooms	Formerly Action Step 1
Action Step 7: Distribute programs on personal emergency preparedness, i.e., emergency survival kits.	Formerly Action Step 2
Action Step 8: Encourage businesses to develop emergency plans.	Formerly Action Step 4
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 the schools.	Formerly Action Step 5
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 entire Turner County community) and community water systems including 2 for the wells in Sycamore (serving entire population).	Formerly Action Step 6
Action Step 11: Trim tree lines around roads, homes, utilities and businesses.	Formerly Action Step 7
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.	Formerly Action Step 8
Action Step 13: Obtain 2 generators for sewage pump stations and 1 generator for City Hall in Sycamore to serve all residents.	Formerly Action Step 9

## **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 major 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 contained 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 that are 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. There are historic and special considerations that pose significant challenges with regard to the retrofitting of historic buildings in order to make them 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, along with a small number of 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 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.

<b>Action Step 1: Identify areas within Turner County that experience repetitive localized flooding and evaluate potential increases in minimum building floor elevations.</b>	
<b>Responsible Department</b>	Turner County/ City of Ashburn/ Town of Rebecca/City of Sycamore Building Inspection Depts.
<b>Anticipated Cost</b>	Staff Time
<b>Existing &amp; Potential Funding Sources</b>	General Funds
<b>Jurisdiction</b>	All Local Governments
<b>Timeframe</b>	2018-2023
<b>Priority</b>	High
<b>Status</b>	Ongoing

<b>Action Step 2: Continue compliance with NFIP through review, adoption and updates to flood protection ordinances and maps, and work towards database to record depth of flooding in order to determine extent and possible damage.</b>	
<b>Responsible Department</b>	Turner County/ City of Ashburn/ City of Sycamore Building Inspection Depts.
<b>Anticipated Cost</b>	Staff Time
<b>Existing &amp; Potential Funding Sources</b>	General Funds
<b>Jurisdiction</b>	Turner County, City of Ashburn, City of Sycamore
<b>Timeframe</b>	2018-2023
<b>Priority</b>	High
<b>Status</b>	Ongoing

<b>Action Step 3: Review data on storm events to determine where repetitive Flooding occurs as a result of inadequate drainage infrastructure and identify &amp; pursue grant funds to upgrade deficient drainage systems.</b>	
<b>Responsible Department</b>	Turner County EMA, Turner County Commission, City of Ashburn/ Town of Rebecca/ City of Sycamore Councils
<b>Anticipated Cost</b>	\$500,000 each project
<b>Existing &amp; Potential Funding Sources</b>	General Funds, DOHS-GEMA/FEMA, GA DCA CDBG
<b>Jurisdiction</b>	All Local Governments
<b>Timeframe</b>	2018-2023
<b>Priority</b>	High
<b>Status</b>	Ongoing

<b>Action Step 4: Monitor comprehensive land use plans to ensure mapping of lands to be permanently protected.</b>	
<b>Responsible Department</b>	Turner County/ City of Ashburn/ Town of Rebecca/ City of Sycamore Building Inspection Depts.
<b>Anticipated Cost</b>	Staff Time
<b>Existing &amp; Potential Funding Sources</b>	General Funds
<b>Jurisdiction</b>	All Local Governments
<b>Timeframe</b>	2018-2023
<b>Priority</b>	Low
<b>Status</b>	Ongoing

<b>Action Step 5: Monitor existing subdivision regulations to promote conservation of floodplains, wetlands, and groundwater recharge areas.</b>	
<b>Responsible Department</b>	Turner County/ City of Ashburn/ Town of Rebecca/ City of Sycamore Building Inspection Depts.
<b>Anticipated Cost</b>	Staff Time
<b>Existing &amp; Potential Funding Sources</b>	General Funds
<b>Jurisdiction</b>	All Local Governments
<b>Timeframe</b>	2018-2023
<b>Priority</b>	Low
<b>Status</b>	Ongoing

<b>Action Step 6: Seek funding from private foundations, individuals, federal and state grants, and local communities to leverage available green space grant funds.</b>	
<b>Responsible Department</b>	Turner County EMA, Turner County Commission, City of Ashburn/ Town of Rebecca/ City of Sycamore Councils
<b>Anticipated Cost</b>	\$2,000,000
<b>Existing &amp; Potential Funding Sources</b>	General Funds, GA DOT TE, DOHS-GEMA/FEMA, Private Foundations, Individual Assistance
<b>Jurisdiction</b>	All Local Governments
<b>Timeframe</b>	2018-2023
<b>Priority</b>	Low
<b>Status</b>	Ongoing

<b>Action Step 7: Educate public and private organizations on methods for preserving parks and recreation areas.</b>	
<b>Responsible Department</b>	Turner County EMA, Turner County Commission, City of Ashburn/ Town of Rebecca/ City of Sycamore Councils
<b>Anticipated Cost</b>	Staff Time
<b>Existing &amp; Potential Funding Sources</b>	General Funds
<b>Jurisdiction</b>	All Local Governments
<b>Timeframe</b>	2018-2023
<b>Priority</b>	Low
<b>Status</b>	Ongoing

#### **D. Special Multi-Jurisdictional Strategy and Considerations:**

Most of the strategies outlined above apply to and are intended to be carried out by each of the local jurisdictions. In certain cases, 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 keep the public constantly informed of the development of these strategies and of how citizens can best assist with and/or take advantage of these efforts.

The major criteria to measure plan success 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 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 at any place and at any time. Because these storms may be extremely violent and cause great 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 contained 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 that are 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. There are historic and special considerations that pose significant challenges with regard to the retrofitting of historic buildings in order to make them 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, along with a small number of 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 4.1: Protect 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.

<b>Action Step 1: Provide every public outdoor recreation facility and every public school outdoor recreation facility with automatic warning device, if feasible.</b>	
<b>Responsible Department</b>	Turner County BOE, Turner County EMA, Turner County/ City of Ashburn/ Town of Rebecca/ City of Sycamore Recreation Depts.
<b>Anticipated Cost</b>	\$50,000
<b>Existing &amp; Potential Funding Sources</b>	General Funds, DOHS-GEMA/FEMA
<b>Jurisdiction</b>	All Local Governments
<b>Timeframe</b>	2018-2023
<b>Priority</b>	Medium
<b>Status</b>	Ongoing

<b>Action Step 2: Educate public on the risks of lightning, thunderstorms, wind, and hail.</b>	
<b>Responsible Department</b>	Turner County EMA
<b>Anticipated Cost</b>	Staff Time
<b>Existing &amp; Potential Funding Sources</b>	General Funds
<b>Jurisdiction</b>	All Local Governments
<b>Timeframe</b>	2018-2023
<b>Priority</b>	High
<b>Status</b>	Ongoing

#### **D. Special Multi-Jurisdictional Strategy and Considerations:**

Most of the strategies outlined above apply to and are intended to be carried out by each of the local jurisdictions. In certain cases, 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 keep the public constantly informed of the development of these strategies and of how citizens can best assist with and/or take advantage of these efforts.

The major criteria to measure plan success 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 the Previous Plan**

<b>Action Step</b>	<b>Changes</b>
Action Step #2: Educate public on the risks of lightning	Wording expanded

## **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 at any time. Due to the great 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 contained 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 that are 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. There are historic and special considerations that pose significant challenges with regard to the retrofitting of historic buildings in order to make them 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, along with a small number of 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.

<b>Action Step 1: Request the Greater Turner County Planning Commission to consider the use of Urban/Wildland Interface in the development of its comprehensive plan.</b>	
<b>Responsible Department</b>	Turner County EMA, Turner County Commission, City of Ashburn/ Town of Rebecca/ City of Sycamore Councils
<b>Anticipated Cost</b>	Staff Time
<b>Existing &amp; Potential Funding Sources</b>	General Funds
<b>Jurisdiction</b>	All Local Governments
<b>Timeframe</b>	2018-2023
<b>Priority</b>	Medium
<b>Status</b>	Ongoing

<b>Action Step 2: Annually renew fire protection agreements with neighboring units of governments.</b>	
<b>Responsible Department</b>	Turner County Commission, City of Ashburn/ Town of Rebecca/ City of Sycamore Councils, & Turner County/City of Ashburn/Town of Rebecca/City of Sycamore Fire Depts.
<b>Anticipated Cost</b>	Staff Time
<b>Existing &amp; Potential Funding Sources</b>	General Funds
<b>Jurisdiction</b>	All Local Governments
<b>Timeframe</b>	2018-2023
<b>Priority</b>	High
<b>Status</b>	Ongoing

<b>Action Step 3: Train all firefighters to FF1 &amp; FF2 standards and insure that emergency vehicle drivers are trained properly.</b>	
<b>Responsible Department</b>	Turner County EMA, Turner County/City of Ashburn/Town of Rebecca/City of Sycamore Fire Depts.
<b>Anticipated Cost</b>	\$30,000
<b>Existing &amp; Potential Funding Sources</b>	General Funds, DOHS-GEMA/FEMA, AFG
<b>Jurisdiction</b>	All Local Governments
<b>Timeframe</b>	2018-2023
<b>Priority</b>	High
<b>Status</b>	Ongoing

<b>Action Step 4: Ensure that all firefighters have latest NFPA compliant PPE turnout gear sets and SCBAs.</b>	
<b>Responsible Department</b>	Turner County EMA, Turner County/City of Ashburn/Town of Rebecca/City of Sycamore Fire Depts.
<b>Anticipated Cost</b>	\$250,000
<b>Existing &amp; Potential Funding Sources</b>	General Funds, DOHS-GEMA/FEMA, AFG
<b>Jurisdiction</b>	All Local Governments
<b>Timeframe</b>	2018-2023
<b>Priority</b>	High
<b>Status</b>	Ongoing

<b>Action Step 5: Purchase 2 class A pumpers</b>	
<b>Responsible Department</b>	Turner County Fire Dept.
<b>Anticipated Cost</b>	\$500,000
<b>Existing &amp; Potential Funding Sources</b>	General Funds, DOHS-GEMA/FEMA, AFG
<b>Jurisdiction</b>	Turner County
<b>Timeframe</b>	2018-2023
<b>Priority</b>	High
<b>Status</b>	New

<b>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.</b>	
<b>Responsible Department</b>	Turner County EMA, Turner County/ City of Ashburn/ Town of Rebecca/City of Sycamore Fire Depts. & Turner County/City of Ashburn/Town of Rebecca/City of Sycamore Public Works Depts.
<b>Anticipated Cost</b>	Staff Time
<b>Existing &amp; Potential Funding Sources</b>	General Funds
<b>Jurisdiction</b>	All Local Governments
<b>Timeframe</b>	2018-2023
<b>Priority</b>	High
<b>Status</b>	Ongoing

<b>Action Step 7: Conduct “How to Have a Firewise Home” Workshop for Turner County residents.</b>	
<b>Responsible Department</b>	Turner County EMA, Turner County/ City of Ashburn/ Town of Rebecca/City of Sycamore Fire Depts.
<b>Anticipated Cost</b>	\$1,500
<b>Existing &amp; Potential Funding Sources</b>	General Funds, DHS FEMA/GEMA, AFG, GA Forestry
<b>Jurisdiction</b>	All Local Governments
<b>Timeframe</b>	2018-2023
<b>Priority</b>	High
<b>Status</b>	Ongoing

<b>Action Step 8: Make Firewise Communities brochures available to the public at central locations such as: Farm Service Agency, Chamber of Commerce and the County Courthouse.</b>	
<b>Responsible Department</b>	Turner County EMA, Turner County/ City of Ashburn/ Town of Rebecca/City of Sycamore Fire Depts.
<b>Anticipated Cost</b>	Staff Time
<b>Existing &amp; Potential Funding Sources</b>	General Funds, DHS FEMA/GEMA, GA Forestry
<b>Jurisdiction</b>	All Local Governments
<b>Timeframe</b>	2018-2023
<b>Priority</b>	High
<b>Status</b>	Ongoing

<b>Action Step 9: Encourage neighborhoods/communities that qualify to apply for recognition as a Firewise Community USA.</b>	
<b>Responsible Department</b>	Turner County EMA, Turner County/ City of Ashburn/ Town of Rebecca/City of Sycamore Fire Depts.
<b>Anticipated Cost</b>	Staff Time
<b>Existing &amp; Potential Funding Sources</b>	General Funds
<b>Jurisdiction</b>	All Local Governments
<b>Timeframe</b>	2018-2023
<b>Priority</b>	High
<b>Status</b>	Ongoing

<b>Action Step 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.</b>	
<b>Responsible Department</b>	Turner County EMA, Turner County/ City of Ashburn/ Town of Rebecca/City of Sycamore Fire Depts.
<b>Anticipated Cost</b>	Staff Time
<b>Existing &amp; Potential Funding Sources</b>	General Funds, DHS FEMA/GEMA, GA Forestry
<b>Jurisdiction</b>	All Local Governments
<b>Timeframe</b>	2018-2023
<b>Priority</b>	High
<b>Status</b>	Ongoing

<b>Action Step 11: Work with the Georgia State Patrol and local law enforcement to ensure that motorists are alerted to smoke hazards on local roadways.</b>	
<b>Responsible Department</b>	Turner County EMA, Turner County/ City of Ashburn/ Town of Rebecca/City of Sycamore Fire Depts.
<b>Anticipated Cost</b>	Staff Time
<b>Existing &amp; Potential Funding Sources</b>	General Funds
<b>Jurisdiction</b>	All Local Governments
<b>Timeframe</b>	2018-2023
<b>Priority</b>	High
<b>Status</b>	Ongoing

<b>Action Step 12: Evaluate the Wildfire hazard of proposed new developments in rural areas, as part of the site plan review process, using GFC Hazard &amp; Wildfire Risk Assessment Scoresheet.</b>	
<b>Responsible Department</b>	Turner County EMA, Turner County/ City of Ashburn/ Town of Rebecca/City of Sycamore Fire Depts.
<b>Anticipated Cost</b>	Staff Time
<b>Existing &amp; Potential Funding Sources</b>	General Funds
<b>Jurisdiction</b>	All Local Governments
<b>Timeframe</b>	2018-2023
<b>Priority</b>	High
<b>Status</b>	Ongoing

<b>Action Step 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.</b>	
<b>Responsible Department</b>	Turner County Commission, City of Ashburn/Town of Rebecca/City of Sycamore Councils
<b>Anticipated Cost</b>	Staff Time
<b>Existing &amp; Potential Funding Sources</b>	General Funds
<b>Jurisdiction</b>	All Local Governments
<b>Timeframe</b>	2018-2023
<b>Priority</b>	High
<b>Status</b>	Ongoing

<b>Action Step 14: Assist in providing fuel reduction mitigation for the twelve high to extreme hazard Communities-At-Risk and implement a community fuel reduction initiative.</b>	
<b>Responsible Department</b>	Turner County EMA, Turner County/ City of Ashburn/ Town of Rebecca/City of Sycamore Fire Depts.
<b>Anticipated Cost</b>	\$25,000
<b>Existing &amp; Potential Funding Sources</b>	General Funds, GA Forestry
<b>Jurisdiction</b>	All Local Governments
<b>Timeframe</b>	2018-2023
<b>Priority</b>	High
<b>Status</b>	Ongoing

<b>Action Step 15: Locate and develop an additional 40 dry hydrants to supplement water delivery.</b>	
<b>Responsible Department</b>	Turner County EMA, Turner County/ City of Ashburn/ Town of Rebecca/City of Sycamore Fire Depts.
<b>Anticipated Cost</b>	\$60,000
<b>Existing &amp; Potential Funding Sources</b>	General Funds, GA Forestry
<b>Jurisdiction</b>	All Local Governments
<b>Timeframe</b>	2018-2023
<b>Priority</b>	High
<b>Status</b>	Ongoing

<b>Action Step 16: Purchase 2,000-3,000 gallon water tanker and small &amp; large drafting equipment (Turbo Draft) packages for all fire departments.</b>	
<b>Responsible Department</b>	Turner County EMA, Turner County/ City of Ashburn/ Town of Rebecca/City of Sycamore Fire Depts.
<b>Anticipated Cost</b>	\$11,500 each
<b>Existing &amp; Potential Funding Sources</b>	General Funds, DHS FEMA/GEMA, AFG, GA Forestry
<b>Jurisdiction</b>	All Local Governments
<b>Timeframe</b>	2018-2023
<b>Priority</b>	High
<b>Status</b>	Ongoing

<b>Action Step 17: Continue Turner County Joint CWPP Core Committee and annually assess (if possible) the progress and effectiveness of the CWPP.</b>	
<b>Responsible Department</b>	Turner County EMA, Turner County/ City of Ashburn/ Town of Rebecca/City of Sycamore Fire Depts.
<b>Anticipated Cost</b>	Staff Time
<b>Existing &amp; Potential Funding Sources</b>	General Funds, GA Forestry
<b>Jurisdiction</b>	All Local Governments
<b>Timeframe</b>	2018-2023
<b>Priority</b>	High
<b>Status</b>	Ongoing

**D. Special Multi-Jurisdictional Strategy and Considerations:**

Most of the strategies outlined above apply to and are intended to be carried out by each of the local jurisdictions. In certain cases, 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 keep the public constantly informed of the development of these strategies and of how citizens can best assist with and/or take advantage of these efforts.

The major criteria to measure plan success 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 the Previous Plan

### Completed Action Steps

- Action Step 2: Implement Fire-Wise program in Turner County, including its municipalities.
- Action Step 3: Identify specific mitigation projects for funding assistance.
- Action Step 7: Replace 3 Brush Trucks With ICS Type 3 Engine Super Fire Knockers and Re-pump & Re-plumb 5 Existing Brush Trucks
- Action Step 8: Obtain a new fire truck for the Town of Rebecca
- Action Step 18: Purchase Wildland PPE Sets, Hand Tools and Fire Shelters for all Fire Departments.
- Action Step 19: Provide firefighter training Standards for Survival and Wildland Fire Behavior (Courses S-130 & S-190).

<b>Action Step</b>	<b>Changes</b>
Action Step 2: Annually renew fire protection agreements with neighboring units of governments.	Formerly Action Step 4
Action Step 3: Train all firefighters to FF1 & FF2 standards and insure that emergency vehicle drivers are trained properly.	Formerly Action Step 5
Action Step 4: Ensure that all firefighters have latest NFPA compliant PPE turnout gear sets and SCBAs.	Formerly Action Step 6
Action Step 5: Purchase 2 class A pumpers	New
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.	Formerly Action Step 9
Action Step 7: Conduct “How to Have a Firewise Home” Workshop for Turner County residents.	Formerly Action Step 10
Action Step 8: Make Firewise Communities brochures available to the public at central locations such as: Farm Service Agency, Chamber of Commerce and the County Courthouse.	Formerly Action Step 11
Action Step 9: Encourage neighborhoods/communities that qualify to apply for recognition as a Firewise Community USA.	Formerly Action Step 12
Action Step 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.	Formerly Action Step 13
Action Step 11: 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 14
Action Step 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.	Formerly Action Step 15
Action Step 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.	Formerly Action Step 16
Action Step 14: Assist in providing fuel reduction mitigation for the twelve high to extreme hazard Communities-At-Risk and implement a community fuel reduction initiative.	Formerly Action Step 17
Action Step 15: Locate and develop an additional 40 dry hydrants to supplement water delivery.	Formerly Action Step 20

<b>Action Step</b>	<b>Changes</b>
Action Step 16: Purchase 2,000-3,000 gallon water tanker and small & large drafting equipment (Turbo Draft) packages for all fire departments.	Formerly Action Step 21
Action Step 17: Continue Turner County Joint CWPP Core Committee and annually assess (if possible) the progress and effectiveness of the CWPP.	Formerly Action Step 22

## **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 contained 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 that are 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. There are historic and special considerations that pose significant challenges with regard to the retrofitting of historic buildings in order to make them 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, along with a small number of 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 conditions of extreme heat.

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

<b>Action Step 1: Designate emergency shelters in consultation with appropriate organizations (Senior Citizen Centers, hospital, churches, health department, etc.)</b>	
<b>Responsible Department</b>	Turner County EMA
<b>Anticipated Cost</b>	Staff Time
<b>Existing &amp; Potential Funding Sources</b>	General Funds, DFACS, Red Cross, Public Health
<b>Jurisdiction</b>	All Local Governments
<b>Timeframe</b>	2018-2023
<b>Priority</b>	High
<b>Status</b>	Ongoing

### D. Special Multi-Jurisdictional Strategy and Considerations:

Most of the strategies outlined above apply to and are intended to be carried out by each of the local jurisdictions. In certain cases, 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 keep the public constantly informed of the development of these strategies and of how citizens can best assist with and/or take advantage of these efforts.

The major criteria to measure plan success 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 the Previous Plan

#### Completed Action Steps

- Action Step 1: Request assistance from the National Weather Service, using National Weather Service historical information and computer programming, to determine the number of “Heat Stress” days per year in Turner County. Identify specific mitigation projects for funding assistance.

## **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 in the form of 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 contained 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 that are 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. There are historic and special considerations that pose significant challenges with regard to the retrofitting of historic buildings in order to make them 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, along with a small number of 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.

<b>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.</b>	
<b>Responsible Department</b>	Turner County/ City of Ashburn/ Town of Rebecca/ City of Sycamore Water Depts.
<b>Anticipated Cost</b>	\$50,000
<b>Existing &amp; Potential Funding Sources</b>	General Funds, DOHS-GEMA/FEMA, USDA
<b>Jurisdiction</b>	All Local Governments
<b>Timeframe</b>	2018-2023
<b>Priority</b>	Low
<b>Status</b>	Completed for Ashburn, ongoing for Rebecca and Sycamore

**D. Special Multi-Jurisdictional Strategy and Considerations:**

Most of the strategies outlined above apply to and are intended to be carried out by each of the local jurisdictions. In certain cases, 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 keep the public constantly informed of the development of these strategies and of how citizens can best assist with and/or take advantage of these efforts.

The major criteria to measure plan success 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 the Previous Plan**

**Completed Action Steps**

- Action Step 2: Develop a tiered plan from the comprehensive study of underground water supplies to provide temporary water supplies for domestic consumption on an as needed basis.

## 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 not only assess the vulnerability of the area to natural hazards, but to identify those 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, the development of 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 to protect the community from the identified hazards can then be developed. Using the findings from the Risk Assessment as a guide, the HMPUC has developed the following overall community mitigation goals:

**Goal 1: Protect the 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 to respond promptly and effectively in a hazard event.**

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

There have not been any changes in the overall priorities since the previous plan was completed.

“Hazardous Materials Release” is a new hazard added to the Plan in this current Plan update.

## **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 with no warning, giving the community no time to prepare and/or evacuate. The HMPUC believes that, because these events have the potential to cause great 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 contained 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 that are 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. There are historic and special considerations that pose significant challenges with regard to the retrofitting of historic buildings in order to make them 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, along with a small number of 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 early warning of CBRNE events in an effective, dependable, and rapid manner.

<b>Action Step 1: Purchase an early warning horn system for the Town of Rebecca and City of Sycamore.</b>	
<b>Responsible Department</b>	Turner County EMA, Town of Rebecca/City of Sycamore Public Works
<b>Anticipated Cost</b>	\$20,000 each
<b>Existing &amp; Potential Funding Sources</b>	General Funds, DOHS-GEMA/FEMA
<b>Jurisdiction</b>	Town of Rebecca, City of Sycamore
<b>Timeframe</b>	2018-2023
<b>Priority</b>	High
<b>Status</b>	Ongoing. Completed for 3 locations in Turner County, including the Inaha community.

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.

<b>Action Step 2: Implement the “Community Emergency Response Team” (CERT) Program.</b>	
<b>Responsible Department</b>	Turner County EMA
<b>Anticipated Cost</b>	\$5,000
<b>Existing &amp; Potential Funding Sources</b>	General Funds, DOHS-GEMA/FEMA
<b>Jurisdiction</b>	All Local Governments
<b>Timeframe</b>	2018-2023
<b>Priority</b>	High
<b>Status</b>	Ongoing

<b>Action Step 3: Expand radio capabilities to be compatible with narrow band for Turner County Fire Dept., EMA/EMS, City of Ashburn, Town of Rebecca, and City of Sycamore.</b>	
<b>Responsible Department</b>	Turner County EMA, Turner FD/EMA/EMS, City of Ashburn FD, Town of Rebecca FD, City of Sycamore FD
<b>Anticipated Cost</b>	\$25,000 each
<b>Existing &amp; Potential Funding Sources</b>	General Funds, DOHS-GEMA/FEMA
<b>Jurisdiction</b>	All Local Governments
<b>Timeframe</b>	2018-2023
<b>Priority</b>	High
<b>Status</b>	Ongoing

<b>Action Step 4: Study need for and install repeaters and radio towers, as needed, including between Rebecca and 86 mile marker.</b>	
<b>Responsible Department</b>	Turner County EMA, Turner County Sheriff’s Dept.
<b>Anticipated Cost</b>	\$75,000 each
<b>Existing &amp; Potential Funding Sources</b>	General Funds, DOHS-GEMA/FEMA
<b>Jurisdiction</b>	All Local Governments
<b>Timeframe</b>	2018-2023
<b>Priority</b>	High
<b>Status</b>	Ongoing. Study completed, but not implemented.

<b>Action Step 5: Increase public awareness of the Early Warning Communication/Notification System, NOAA weather radios, and available community safe shelters by publishing articles in the local newspaper, holding town hall meetings, and providing bulletins to local churches and the schools.</b>	
<b>Responsible Department</b>	Turner County EMA
<b>Anticipated Cost</b>	Staff Time
<b>Existing &amp; Potential Funding Sources</b>	General Funds
<b>Jurisdiction</b>	All Local Governments
<b>Timeframe</b>	2018-2023
<b>Priority</b>	High
<b>Status</b>	Ongoing

<b>Action Step 6: Train local government officials on proper response procedures for CBRNE events.</b>	
<b>Responsible Department</b>	Turner County EMA
<b>Anticipated Cost</b>	Staff Time
<b>Existing &amp; Potential Funding Sources</b>	General Funds
<b>Jurisdiction</b>	All Local Governments
<b>Timeframe</b>	2018-2023
<b>Priority</b>	High
<b>Status</b>	Ongoing

<b>Action Step 7: Investigate, implement and train in methods to relocate residents if event occurs.</b>	
<b>Responsible Department</b>	Turner County EMA, Turner County EMS, Turner County Sheriff's Dept., Turner County/City of Ashburn/Town of Rebecca/City of Sycamore Fire Depts., City of Ashburn/City of Sycamore Police Depts.
<b>Anticipated Cost</b>	Staff Time
<b>Existing &amp; Potential Funding Sources</b>	General Funds
<b>Jurisdiction</b>	All Local Governments
<b>Timeframe</b>	2018-2023
<b>Priority</b>	High
<b>Status</b>	Ongoing

<b>Action Step 8: Review annually all CBRNE transportation routes (relocate routes if necessary).</b>	
<b>Responsible Department</b>	Turner County EMA, Turner County EMS, Turner County Sheriff's Dept., Turner County/City of Ashburn/Town of Rebecca/City of Sycamore Fire Depts., City of Ashburn/City of Sycamore Police Depts.
<b>Anticipated Cost</b>	Staff Time
<b>Existing &amp; Potential Funding Sources</b>	General Funds
<b>Jurisdiction</b>	All Local Governments
<b>Timeframe</b>	2018-2023
<b>Priority</b>	High
<b>Status</b>	Ongoing

<b>Action Step 9: Review and update Standard Operating Procedures (SOP) for responding to a CBRNE event.</b>	
<b>Responsible Department</b>	Turner County EMA
<b>Anticipated Cost</b>	Staff Time
<b>Existing &amp; Potential Funding Sources</b>	General Funds
<b>Jurisdiction</b>	All Local Governments
<b>Timeframe</b>	2018-2023
<b>Priority</b>	High
<b>Status</b>	Ongoing

**D. Special Multi-Jurisdictional Strategy and Considerations:**

Most of the strategies outlined above apply to and are intended to be carried out by each of the local jurisdictions. In certain cases, 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 keep the public constantly informed of the development of these strategies and of how citizens can best assist with and/or take advantage of these efforts.

The major criteria to measure plan success 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 the Previous Plan

Action Step	Changes
Action Step 2: Implement the “Community Emergency Response Team” (CERT) Program.	Formerly Action Step 1
Action Step 3: Expand radio capabilities to be compatible with narrow band for Turner County Fire Dept., EMA/EMS, City of Ashburn, Town of Rebecca, and City of Sycamore.	Formerly Action Step 2
Action Step 4: Study need for and install repeaters and radio towers, as needed, including between Rebecca and 86 mile marker.	Formerly Action Step 3
Action Step 1: Maintain HazMat response training.	Moved to Chapter 5, Section II (Hazardous Materials Release)
Action Step 2: Seek funding to expand HazMat training to first responders (fire, police, sheriff, EMS)	Moved to Chapter 5, Section II (Hazardous Materials Release)
Action Step 5: Increase public awareness of the Early Warning Communication/Notification System, NOAA weather radios, and available community safe shelters by publishing articles in the local newspaper, holding town hall meetings, and providing bulletins to local churches and the schools.	Formerly Action Step 3
Action Step 6: Train local government officials on proper response procedures for CBRNE events.	Formerly Action Step 4
Action Step 7: Investigate, implement and train in methods to relocate residents if event occurs.	Formerly Action Step 5
Action Step 8: Review annually all CBRNE transportation routes (relocate routes if necessary).	Formerly Action Step 7
Action Step 9: Review and update Standard Operating Procedures (SOP) for responding to a CBRNE event.	Formerly Action Step 8
Action Step 6: Provide workplace training on decontamination steps.	Moved to Chapter 5, Section II (Hazardous Materials Release)

## **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 have the potential to cause great 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 contained 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 that are 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. There are historic and special considerations that pose significant challenges with regard to the retrofitting of historic buildings in order to make them 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, along with a small number of 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.

<b>Action Step 1: Maintain HazMat response training.</b>	
<b>Responsible Department</b>	Turner County EMA, Turner County EMS, Turner County Sheriff's Dept., Turner County/City of Ashburn/Town of Rebecca/City of Sycamore Fire Depts., City of Ashburn/City of Sycamore Police Depts.
<b>Anticipated Cost</b>	Staff Time
<b>Existing &amp; Potential Funding Sources</b>	General Funds, DOHS-GEMA/FEMA
<b>Jurisdiction</b>	All Local Governments
<b>Timeframe</b>	2018-2023
<b>Priority</b>	High
<b>Status</b>	Ongoing

<b>Action Step 2: Seek funding to expand HazMat training to first responders (fire, police, sheriff, EMS)</b>	
<b>Responsible Department</b>	Turner County EMA, Turner County EMS, Turner County Sheriff's Dept., Turner County/City of Ashburn/Town of Rebecca/City of Sycamore Fire Depts., City of Ashburn/City of Sycamore Police Depts.
<b>Anticipated Cost</b>	Staff Time
<b>Existing &amp; Potential Funding Sources</b>	General Funds, DOHS-GEMA/FEMA
<b>Jurisdiction</b>	All Local Governments
<b>Timeframe</b>	2018-2023
<b>Priority</b>	High
<b>Status</b>	Ongoing

<b>Action Step 3: Provide workplace training on decontamination steps.</b>	
<b>Responsible Department</b>	Turner County EMA, Turner County EMS, Turner County Sheriff's Dept., Turner County/City of Ashburn/Town of Rebecca/City of Sycamore Fire Depts., City of Ashburn/City of Sycamore Police Depts.
<b>Anticipated Cost</b>	Staff Time
<b>Existing &amp; Potential Funding Sources</b>	General Funds
<b>Jurisdiction</b>	All Local Governments
<b>Timeframe</b>	2018-2023
<b>Priority</b>	High
<b>Status</b>	Ongoing

**D. Special Multi-Jurisdictional Strategy and Considerations:**

Most of the strategies outlined above apply to and are intended to be carried out by each of the local jurisdictions. In certain cases, 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 keep the public constantly informed of the development of these strategies and of how citizens can best assist with and/or take advantage of these efforts.

The major criteria to measure plan success 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 the Previous Plan**

<b>Action Step</b>	<b>Changes</b>
Action Step 1: Maintain HazMat response training.	Moved from Chapter 5, Section I
Action Step 2: Seek funding to expand HazMat training to first responders (fire, police, sheriff, EMS)	Moved from Chapter 5, Section I
Action Step 3: Provide workplace training on decontamination steps.	Moved from Chapter 5, Section I

## **Chapter 6:** **Executing The Plan**

### **Summary of changes:**

- Revised and updated language.

## **Section I.** **Implementation of the Action Plan**

### **A. Administrative Actions**

The meetings and planning process of the HMPUC have been overseen by the Turner County Emergency Management Agency. 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 contained 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 implementation, monitoring, and updates for all jurisdictions. The respective jurisdictions will be responsible for the implementation of their specific mitigation activities as proposed in this plan.

### **C. Prioritization**

#### **1. Methodology for Prioritization**

In prioritizing the implementing of the action steps identified in this plan, those hazards deemed to pose the greatest threat will be given the primary consideration. In prioritizing the implementation feasibility of the action steps and projects, local governments will take into consideration the additional factors of cost and time. Those activities requiring smaller amounts of money and staff time to implement will be given 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 be utilized to quantify the number of persons and/or property at risk from each hazard. Combined with the criteria in Worksheet 4, this will

allow local governments to 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 major project. CBA is a well-established method for quantitatively comparing the benefits and costs of mitigation projects. The end result is a Benefit-Cost Ratio (BCR), which is 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 avoided damages, disruptions, losses, and casualties. Examples of common benefits include avoided or reduced damages to buildings, contents, or infrastructure; avoided or reduced economic impacts of 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 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 that were performed 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 which become 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**

This Plan will be reviewed by Turner County and the Cities of Ashburn, Rebecca, and Sycamore. The requirements of this Hazard Mitigation Plan will be taken into consideration and will be incorporated into Comprehensive Plans, Five-Year Short-Term Work Program, 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 inclusion of this Plan, the Turner County Commission and the Cities of Ashburn, Rebecca, and Sycamore will provide a copy of this Plan 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 be charged with ensuring that 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 in order to chart their plan progress.
- The EMA Director will hold formal public meetings at least once a year to monitor the progress of the plan implementation and allow the public a forum for expressing concerns, opinions, and ideas.
- Throughout the year, a series of informal meetings will be held in which various aspects of the plan, including monitoring and evaluation, are discussed.

### **B. Criteria Used To Monitor and Evaluate the Plan**

The major criteria to measure plan success 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.

## **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 Cities of Ashburn, Rebecca, and Sycamore residents, it is imperative that public involvement be an integral part of the planning process.

Since adoption of the original Turner County Pre-Disaster Mitigation Plan, citizens have been kept 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 and awareness and citizen involvement will continue over the next five years until the next required update of the Hazard Mitigation Plan. When specific issues dictate, public hearings will be conducted, and all other community planning efforts (Comprehensive Plan, Regional Plan, etc.) will afford citizens the opportunity 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 assure 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 kept on hand at appropriate agencies throughout the community.

- The plan will be available City, County, and/or Regional Commission websites, and 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 set forth in the Disaster Mitigation Act of 2000, the community is again required to update and evaluate the plan no more than five years after its adoption. At least one year prior to the end of the required five-year update period, the EMA Director will begin the planning process for a new update to this plan. This will consist of establishing a new planning committee that will be tasked with completing the update following the same process used for this update.

No later than the conclusion of the five-year period following approval of the plan update, the EMA Director shall submit a revised Hazard Mitigation Plan to GEMA for its approval. 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 in the past from natural hazards. Planning ahead and undertaking structural and nonstructural action steps before a disaster occurs can save lives and property. This philosophy has been the driving force behind the preparation of 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 population are important parts of this plan. Because of this planning process, Turner County and Cities of Ashburn, Rebecca, and Sycamore officials have gained a better understanding of 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 follow when allocating 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](http://caes2.caes.uga.edu/center/caed/documents/GAFGVR2015_DEC16.pdf))
- Federal Emergency Management Agency ([www.fema.gov](http://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](http://www.gatrees.org))
- 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](http://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](http://www.census.gov))

# **Appendices**

## **Contents**

### **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

#### 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
- Town of Rebecca Tax Digest
- City of Sycamore Digest

### **Appendix C. Other Planning Documents**

- Community Wildfire Protection Plan

### **Appendix D. Worksheets Used In 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. Wildfires – GFC data
6. Extreme Heat – NWS data
7. Drought – NOAA data
8. Hazardous Materials Release – USDOT data

II. Critical Facilities Inventory

Appendix G. HAZUS Report