

Irwin County, Georgia



Hazard Mitigation Plan 2019-2024

Including the City of Ocilla

This Plan produced for the Irwin 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

Effective April 17, 2019 – April 17, 2024

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Chapter 1: Introduction to the Planning Process

Summary of changes:

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

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

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

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

This document is the official plan update to the previous Irwin 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 April 17, 2014 and expires on April 17, 2019.

The purpose of this document is to provide an overview of the hazards that may impact Irwin County and the City of Ocilla, 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 Irwin County and the City of Ocilla after they formed the Irwin 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 City of Ocilla is the only incorporated city located in Irwin County.

Authority for the development of this Plan was given by the Irwin County Commission as a result of their execution of the Grantee-Subgrantee Agreement for the Irwin County Hazard Mitigation Grant Program (HMGP) Planning Project; and by the City of Ocilla, located within Irwin 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 Irwin County), attended the Irwin County meetings. They participated in all aspects of the planning process and provided a regional perspective in the formation of the multi-jurisdictional Irwin County and City of Ocilla Hazard Mitigation Plan.

Through the above efforts, the multi-jurisdictional Irwin County and City of Ocilla 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 Irwin County and the City of Ocilla, 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 (Irwin 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 Irwin 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 Irwin County HMPUC. The Irwin County HMPUC was comprised of representatives from Irwin County and the City of Ocilla and also included representatives from other groups and individuals, as shown below, who attended meetings and/or conducted research:

Jurisdiction	Title	Name
Irwin County	Clerk	Patricia Battle
Irwin County	EMS/EMA Director	Jerry Edwards
Irwin County	Building Inspector	Daniel Lockett
Irwin County	Road Superintendent	Lee Martin
Irwin County	Commission Chair	Joey Whitley
Irwin County Board of Education	Superintendent	Thad Clayton
Irwin County Health Dept.	Nurse Manager	Michelle Stone
Irwin County Health Dept.	LPN	Latasha Watson
Irwin County Sheriff's Dept.	Deputy	Cody Youghn
City of Ocilla	Fire Fighter	Josh Burnham
City of Ocilla	Police officer	Nathan Edwards
City of Ocilla	Police Chief	Billy J. Hancock
City of Ocilla	Fire Fighter	Kenneth Herdley
City of Ocilla	Captain	Will Towson
Georgia Forestry Commission	Chief Ranger	Theo Craddock
Georgia Forestry Commission	Ranger II	Harvey Taylor
Southern Georgia Regional Commission	Planner	Ariel Godwin

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

- Kick-off public hearing – June 13, 2017
- First workshop – July 11, 2017
- Second workshop – August 8, 2017
- Third workshop – October 10, 2017
- Fourth workshop – November 14, 2017
- Final public hearing – September 10, 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 City. 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 City 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 September 10, 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 comments. 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.

Irwin County and the City of Ocilla
Hazard Mitigation Plan Update Committee
Mission Statement

This committee’s mission is to make Irwin County and the City of Ocilla, 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.

Irwin County and the City of Ocilla
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 Irwin County and City of Ocilla.

Due to Irwin County and the City of Ocilla being such close-knit communities, the Irwin 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 City, 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 Irwin County and the City of Ocilla. 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. Windstorms/Hailstorms/Lightning
5. Extreme Heat
6. Wildfires
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 Irwin County and City of Ocilla 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 Irwin County and the City of Ocilla 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), 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

Irwin County has a total area of 354.34 square miles with a population density of 26.9 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. Irwin County contains one incorporated city: Ocilla (the county seat).

The Irwin County Fire Department has 8 fire stations, and the City of Ocilla has 1 fire station. The fire stations in Irwin County are all staffed by volunteers, and the City of Ocilla fire station has paid staff. The ISO classes of the fire stations in Irwin County and the City of Ocilla are as follows:

Station	ISO Class
City of Ocilla Fire Department	5
Irwinville Volunteer Fire Department	8
Waterloo Volunteer Fire Department	9
Lands Crossing Volunteer Fire Department	9
Whitley Crossing Volunteer Fire Department	9
Holt Volunteer Fire Department	9
Tucker Volunteer Fire Department	9
Riverbend Volunteer Fire Department	9
Irwin County Main Fire Station	9

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 September 10, 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 on September 10, 2018 (Irwin County) and October 2, 2018 (City of Ocilla). 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.).

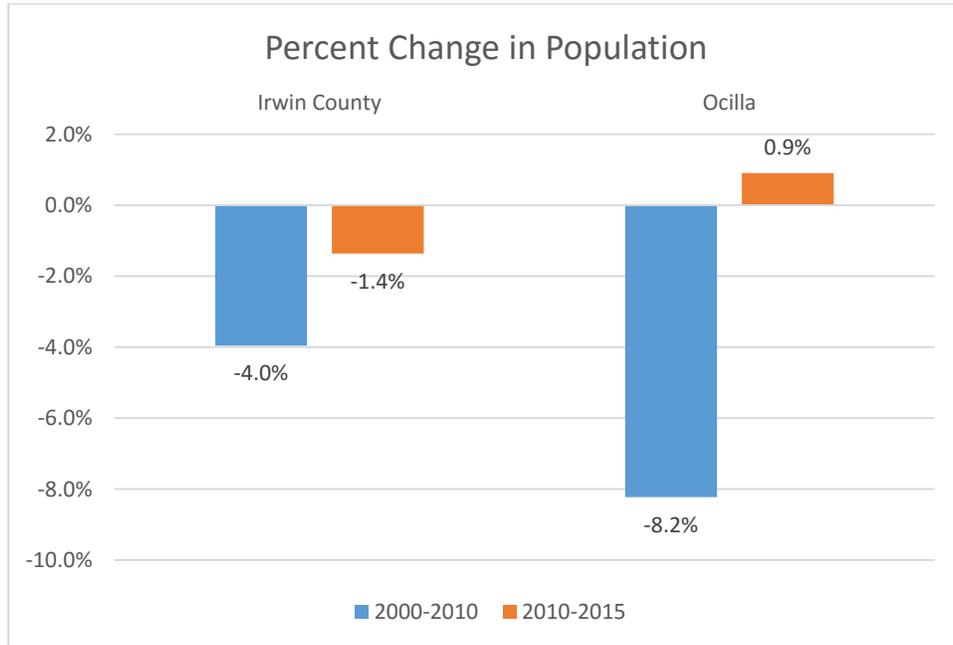
The method that the County EMA will use to monitor the plan will be to conduct quarterly telephone interviews with the various local governments and area agencies in order to chart their plan progress. Also, throughout the year, a series of informal meetings will be held in which various aspects of the 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 participates 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.

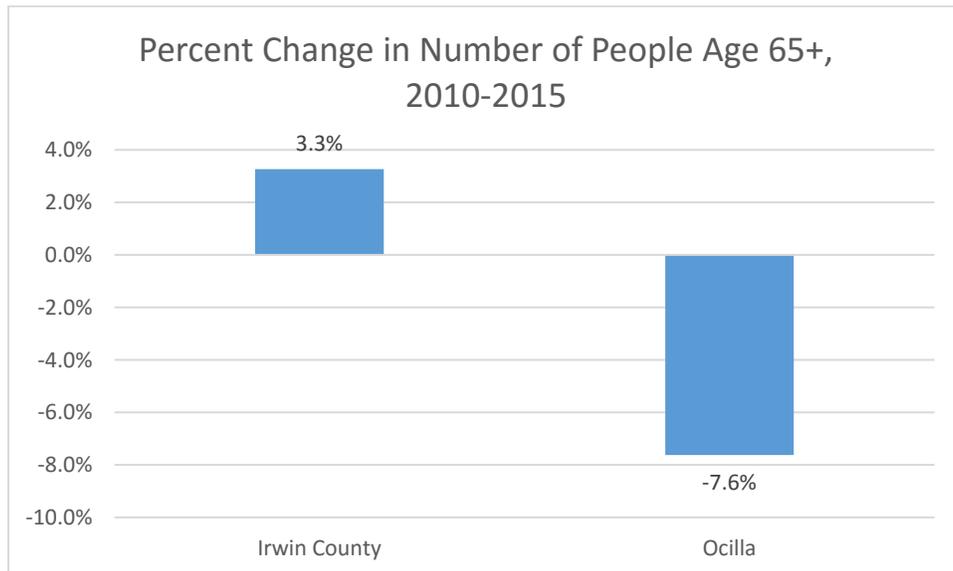
The major criteria to measure plan success will be the number of goals, objectives, and action steps, or components thereof, that have been completed, which in turn will result in savings of life, money, and property. For further details on plan execution, see Chapter 6.

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.

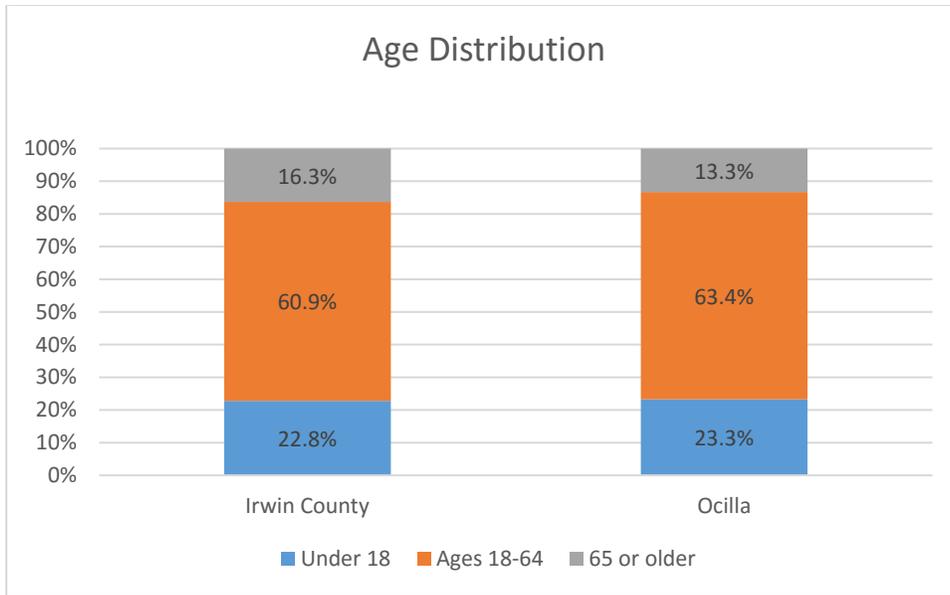
Section VIII. Community Data



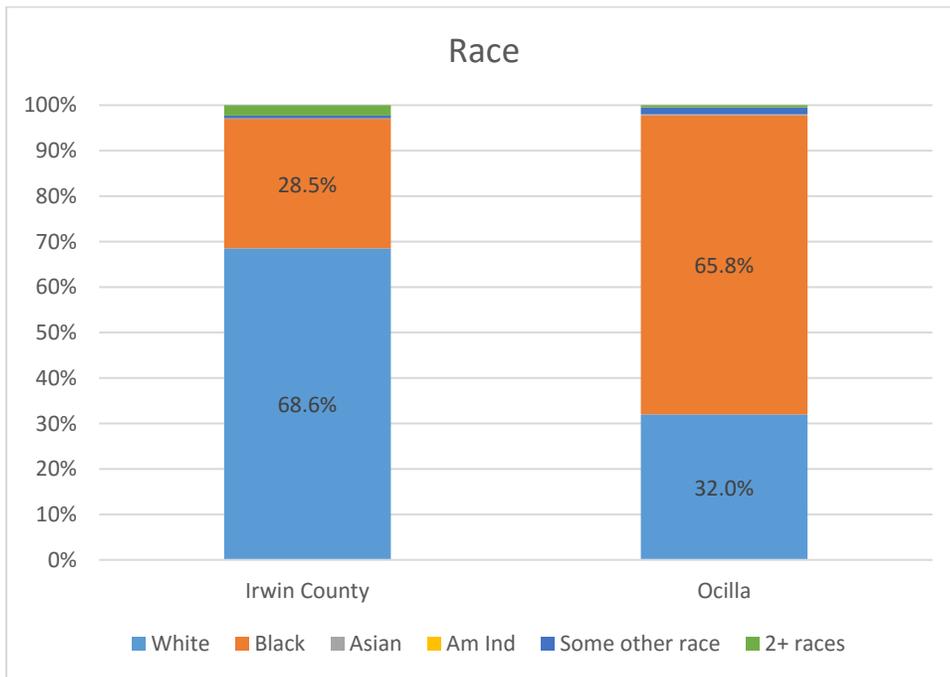
According to 2015 U.S. Census Bureau American Community Survey 5-year estimates, the population of Irwin County is 9,408, a decrease of 1.4% since 2010. The City of Ocilla's 2015 population is 3,445, a 0.9% decrease since 2010. Ocilla's population decreased by 8.2% from 2000 to 2010 and Irwin County's decreased by 4.0%.



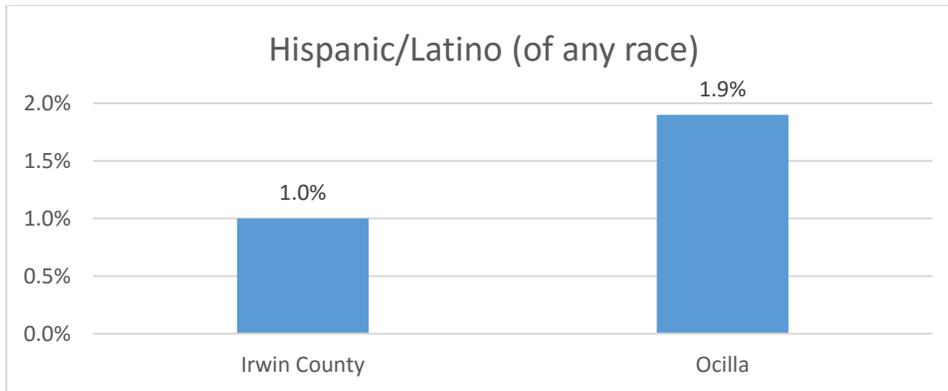
The total number of people aged 65 and older increased in Irwin County from 2010 to 2015 (3.3%). The number of people aged 65+ decreased in Ocilla (-7.6%)



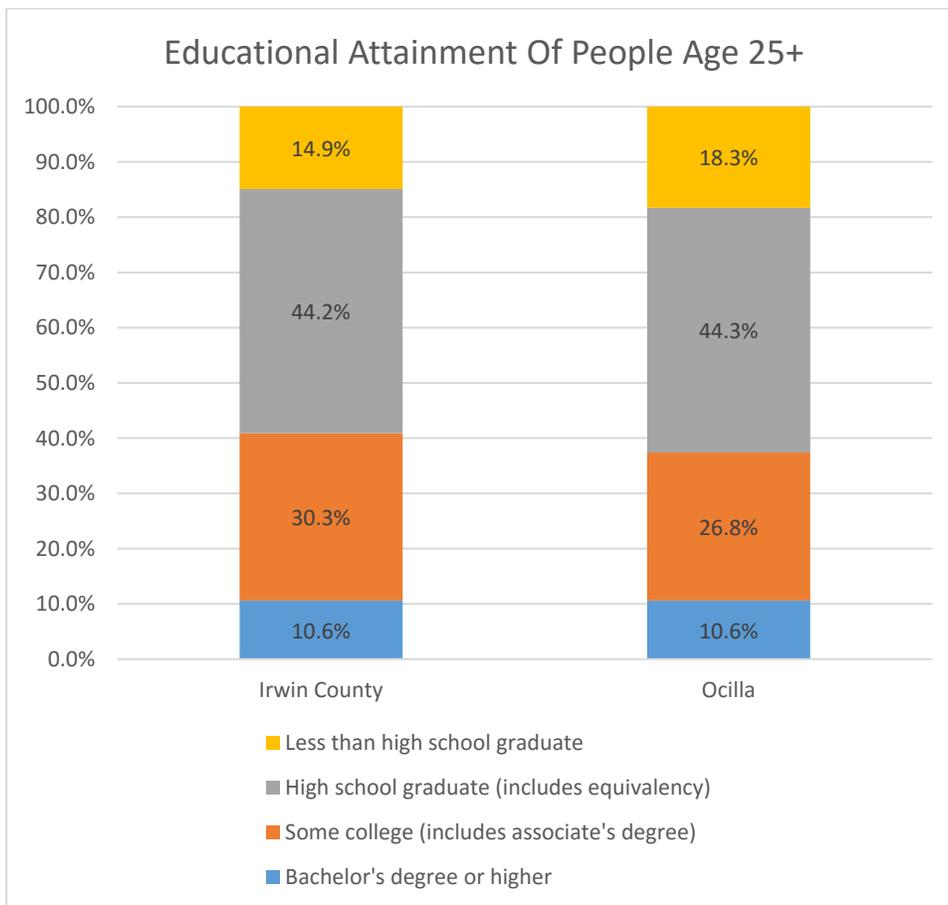
According to 2015 estimates, the age distribution in Irwin County is 16.3% over 65, 60.9% ages 18-64, and 22.8% under 18. In the City of Ocilla, the age distribution is 13.3% over 65, 63.4% ages 18-64, and 23.3% under 18. Irwin County’s population is 49.6% female and 50.4% male, and the City of Ocilla’s population is 48.3% female and 51.7% male.



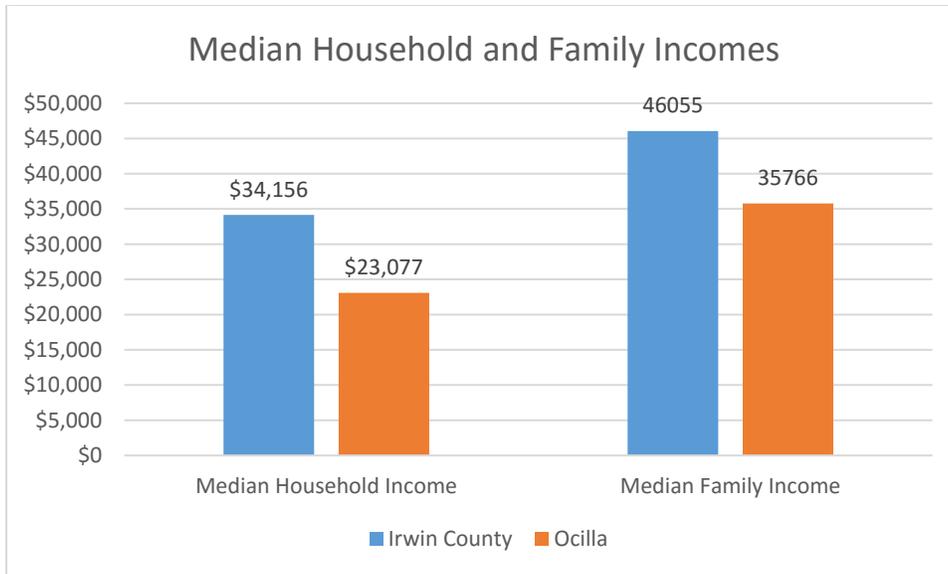
The 2015 population of Irwin County is estimated to be 68.6% White/Caucasian, 28.5% Black/African American, 2.3% two or more races, 0.6% some other race, and 0.1% Asian. The City of Ocilla’s population is 65.8% Black/African American, 32.0% White/Caucasian, 1.5% some other race, 0.5% two or more races, and 0.2% Asian.



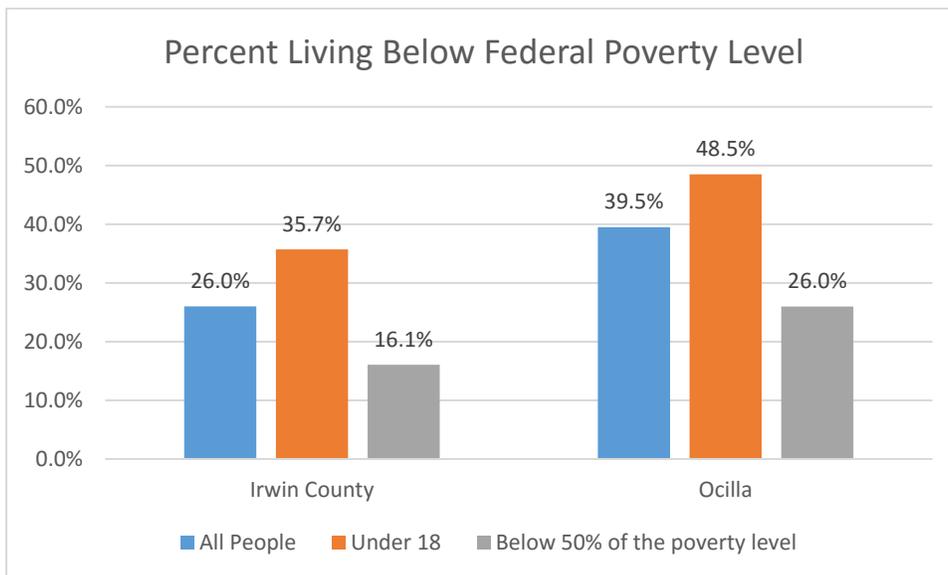
Irwin County’s population is 1.0% Hispanic/Latino of any race, and the City of Ocilla’s population is 1.9% Hispanic/Latino of any race.



Among persons aged 25 or older, in Irwin County, 14.9% have no high school diploma, 44.2% are high school graduates (includes equivalency) with no further education, 30.3% have an associate’s degree or some college, and 10.6% have a bachelor’s or higher degree. Among persons aged 25 or older in the City of Ocilla, 18.3% have no high school diploma, 44.3% are high school graduates (includes equivalency) with no further education, 26.8% have an associate’s degree or some college, and 10.6% have a bachelor’s or higher degree.



The 2015 median household income in Irwin County is \$34,156 and the median household income in the City of Ocilla is \$23,077. Among families, the median income is \$46,055 in Irwin County and \$35,766 in the City of Ocilla.



As of 2015, an estimated 26.0% of Irwin County’s population and 39.5% of the City of Ocilla’s population lives below the federal poverty level. In Irwin County, 35.7% of persons under age 18 live below the poverty level and in the City of Ocilla 48.5% of persons under age 18 live below the poverty level. 16.1% of people in Irwin County and 26% of people in Ocilla live in households with income below 50% of the poverty level.

In 2016, according to the Bureau of Labor Statistics, the annual average seasonally-adjusted unemployment rate for Irwin County was 7.7%.

Data source: U.S. Census Bureau (www.census.gov)



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:: Irwin County ::

Community Profile

County Formed December 15, 1818

County Seat Ocilla

Incorporated Cities Ocilla

Total Area 362.755403 square miles



History From its county population in 2000 of 9970 to its current population estimate of 9104, the county has experienced a growth change of -866.

Irwin County, the 45th county created, retains only a small portion of the territory given to it when it was formed from Creek Indian lands in 1818. It once encompassed all of south central Georgia, but now contains the upper reaches of the Alapaha, Willacochee and Satilla rivers.

Irwin County was named for Governor Jared Irwin, a North Carolina native. Irwin was famous for his opposition to the Yazoo Law of 1795, by which the state of Georgia sold a vast tract of land at one and a half cents per acre to several companies, including one owned in part by a U.S. Senator. Irwin rescinded the law in 1796 during his term as governor.

During the Civil War, Irwinville to the northeast of Ocilla was the county seat, and the location where Union soldiers captured Jefferson Davis. The site is now the Jefferson Davis Park and Museum.

Ocilla is a version of an old Indian name, Osceola. The county's first courthouse was constructed in 1848-1849, and the one currently in use was built in 1905.



Points of Interest There are two entries on the National Register from Irwin County: the Irwin County Courthouse and the Jefferson Davis Capture Site.

There are several endangered species found in the county, including the Florida Panther, the Peregrine Falcon and the Southern Bald Eagle.

Notable Citizens Dave Prater of the soul group, Sam and Dave, was from Ocilla. This soul duo was responsible for hits like "You Don't Know" Like I Know" during the 1960s.



Royal Singing Convention Memorial

Source: Georgia Department of Community Affairs, Georgia County Snapshots (<http://www.dca.state.ga.us/countysnapshotsnet/countysnapshot.aspx?cicoid=1077077>).

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.

Chapter 2 Section	Updates to Section
I. Hurricanes/Tropical Storms	Updated data and information; edited for clarity
II. Tornadoes	Updated data and information; edited for clarity
III. Floods	Updated data and information; edited for clarity
IV. Windstorms/Hailstorms/Lightning	Updated data and information; edited for clarity
V. Extreme Heat	Updated data and information; edited for clarity
VI. Wildfires	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). Irwin County is entirely within Wind Hazard Zone 2 (see Chapter 2).

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.¹ 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:

¹ 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, Irwin County and the City of Ocilla 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 5 reports of Hurricanes/Tropical Storms occurring in Irwin County (including the City of Ocilla) 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 6 events between 01/01/1950 and 12/31/2017. The Historic Recurrence Interval is 11.33 years. This is an 8.82% Historic Frequency Chance per year. The past 10-year Record Frequency Per Year is 0.3, the past 20-year frequency is 0.3, and the past 50-year frequency is 0.12 (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 Irwin County and the City of Ocilla are equally vulnerable to hurricanes/tropical storms. Approximately half of the County (the northern half) has a wind hazard score of 2 (91-100 mph gust) and the other half (the southern half) has a wind hazard score of 3 (101-110 mph gust). A map of the wind hazard scores and critical facilities is provided in Appendix A.

An estimated 100% of the Residential property (3,861 of 3,861) in Irwin County (including the City of Ocilla) could be affected by this hazard, with a total value of \$194,112,465. Also, an estimated 100% of the Commercial, Industrial, Agricultural, Religious/Non-Profit, Government, Education and Utility properties (2,986 of 2,986) in the community may be affected, with a total value of \$742,621,621. The values are based on the most recent available tax roll data for Irwin County and the City of Ocilla, provided by the Irwin 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), the total farm gate value of agricultural production in Irwin County is \$97,006,975.

According to the inventory database reports and maps, all of the 31 Critical Facilities and Infrastructure for Irwin County (including the City of Ocilla) could be affected by this hazard. The total value of these Critical Facilities is \$222,925,953.

E. Land Use and Development Trends

Irwin County and the City of Ocilla have both seen a slight decrease in population over the last few years. Both the County and the City have zoning regulations and mandatory building and fire codes which are enforced by a building inspector. The City and County both 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 Irwin County and the City of Ocilla. 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.

Irwin County and the City of Ocilla are both members of the National Flood Insurance Program. (Source: <https://www.fema.gov/cis/GA.html>) Irwin County and the City of Ocilla 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 Irwin County and the City of Ocilla. 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 Irwin 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>)

EF Number	3-Second Gust	Damage
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.

Irwin County and the City of Ocilla 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 Irwin County (including the City of Ocilla) 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 April 7, 2014. A tornado briefly touched down in Irwin county south of Ocilla and produced mainly EF0 damage along its path, largely in the form of uprooted trees with some smaller trees snapped. The tornado was at its strongest near the end of its damage path where EF1 damage was noted. A mobile home was knocked several feet off its foundation, but remained upright. Most of the roof was torn off. A large hardwood tree was snapped in half and many others were uprooted. Several out buildings were destroyed and shingles were stripped from the roof of one home. Peak winds were estimated around 105 mph.

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 Irwin County and the City of Ocilla are equally vulnerable to this hazard.

An estimated 100% of the Residential property (3,861 of 3,861) in Irwin County (including the City of Ocilla) could be affected by this hazard, with a total value of \$194,112,465. Also, an estimated 100% of the Commercial, Industrial, Agricultural, Religious/Non-Profit, Government, Education and Utility properties (2,986 of 2,986) in the community may be affected, with a total value of \$742,621,621. The values are based on the most recent available tax roll data for Irwin County and the City of Ocilla, provided by the Irwin 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), the total farm gate value of agricultural production in Irwin County is \$97,006,975.

According to the inventory database reports and maps, all of the 31 Critical Facilities and Infrastructure for Irwin County (including the City of Ocilla) could be affected by this hazard. The total value of these Critical Facilities is \$222,925,953.

E. Land Use and Development Trends

Typically, mobile/manufactured homes are most vulnerable to tornado damage. According to 2015 Census Bureau estimates, there are 1,183 occupied mobile homes in Irwin County, including the City of Ocilla (29.4% of occupied housing units). This figure includes 184 mobile homes in the City of Ocilla (14.2% of housing units).

The estimated average household size in Irwin County is 2.54 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 3,005 people residing in mobile homes countywide, which includes an estimated 467 people in the City of Ocilla.

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

Irwin County and the City of Ocilla 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 are 6 reports of floods occurring in Irwin County (including the City of Ocilla) between 01/01/1950 and 12/31/2017. The Historic Recurrence Interval is 11.33 years. This is a 8.82% Historic Frequency Chance per year. The past 10-year Record Frequency Per Year is 0.3, the past 20-year frequency is 0.3, and the past 50-year frequency is 0.12 (see the Hazard Frequency Table in Appendix D).

Since the previous Hazard Mitigation Plan was completed, no flood events have been recorded.

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 Irwin County and the City of Ocilla are equally vulnerable to this hazard.

An estimated 5.85% of the Residential property (226 of 3,861) in Irwin County (including the City of Ocilla) could be affected by this hazard, with a total value of \$13,203,432. Also, an estimated 20.36% of the Commercial, Industrial, Agricultural, Religious/Non-Profit, Government, Education and Utility properties (608 of 2,986) in the community may be affected, with a total value of \$173,595,788. The values are based on the most recent available tax roll data for Irwin County and the City of Ocilla, provided by the Irwin 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), the total farm gate value of agricultural production in Irwin County is \$97,006,975.

According to the inventory database reports and maps, 1 of the 31 Critical Facilities and Infrastructure for Irwin County (including the City of Ocilla) is located within a flood zone and therefore could be affected by this hazard. The total value of this Critical Facility is \$340,672.

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 Irwin County or the City of Ocilla.

E. Land Use and Development Trends

Irwin County and the City of Ocilla have both seen a slight decrease in population over the last few years. Both the County and the City have zoning regulations and mandatory building and fire codes which are enforced by a building inspector. The City and County both 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

Both local governments have some part of their jurisdiction located within a flood hazard area. 11.1 percent of the total area of Irwin County (23,260 acres) is within a flood hazard area. Approximately 5.79 percent of the City of Ocilla (98.9 acres) is within a flood hazard area.

Irwin County and the City of Ocilla are both members of the National Flood Insurance Program (source: <https://www.fema.gov/cis/GA.html>). As of late 2017, both jurisdictions are in compliance with NFIP requirements. Both jurisdictions intend to remain in compliance by enforcing flood plain ordinances which prohibit or severely limit development in floodplains. For example, Irwin County's "Alapaha River Corridor Protection District" (Irwin County Zoning Ordinance §10-5) and the City of Ocilla's "Water Resource Districts" (City of Ocilla Zoning Ordinance §10-2, §10-3, and §10-4) both limit development in floodplains.

Irwin County and the City of Ocilla 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 Irwin County and the City of Ocilla, 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. Windstorms/Hailstorms/Lightning

A. Identification of Hazard

The threat of **Windstorms/Hailstorms/Lightning** 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.

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>)

Table 2.4. 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.

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

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>)

Irwin County and the City of Ocilla are equally vulnerable to the effects of lightning.

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.

B. Profile of Events, Frequency of Occurrences, Probability

According to the NOAA Storm Events Database (see Appendix F), there are 97 reports of Windstorms/Hailstorms/Lightning occurring in Irwin County (including the City of Ocilla) between 01/01/1950 and 12/31/2017. The Historic Recurrence Interval is 0.70 years. This is a 142.65% Historic Frequency Chance per year. The past 10-year Record Frequency Per Year is 4,

the past 20-year frequency is 2.95, and the past 50-year frequency is 1.8 (see the Hazard Frequency Table in Appendix D).

Since the previous Hazard Mitigation Plan was completed, 30 Windstorms/Hailstorms/Lightning events have occurred. Two of these were hail events, which included large hail and damaging winds. The remaining 28 events were thunderstorms wind events, many of which caused wind damage to buildings and caused localized flooding and power outages.

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 Irwin County and the City of Ocilla are equally vulnerable to this hazard.

An estimated 100% of the Residential property (3,861 of 3,861) in Irwin County (including the City of Ocilla) could be affected by this hazard, with a total value of \$194,112,465. Also, an estimated 100% of the Commercial, Industrial, Agricultural, Religious/Non-Profit, Government, Education and Utility properties (2,986 of 2,986) in the community may be affected, with a total value of \$742,621,621. The values are based on the most recent available tax roll data for Irwin County and the City of Ocilla, provided by the Irwin 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), the total farm gate value of agricultural production in Irwin County is \$97,006,975.

According to the inventory database reports and maps, all of the 31 Critical Facilities and Infrastructure for Irwin County (including the City of Ocilla) could be affected by this hazard. The total value of these Critical Facilities is \$222,925,953.

E. Land Use and Development Trends

Irwin County and the City of Ocilla have both seen a slight decrease in population over the last few years. Both the County and the City have zoning regulations and mandatory building and fire codes which are enforced by a building inspector. The City and County both 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 may happen at any place at any time, and no difference in severity is expected between Irwin County and the City of Ocilla. 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 has the potential to cause damage at any place, at any time, throughout Irwin County and the City of Ocilla, 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 V. Extreme Heat

A. Identification of Hazard

The threat of extreme heat 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 (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>).

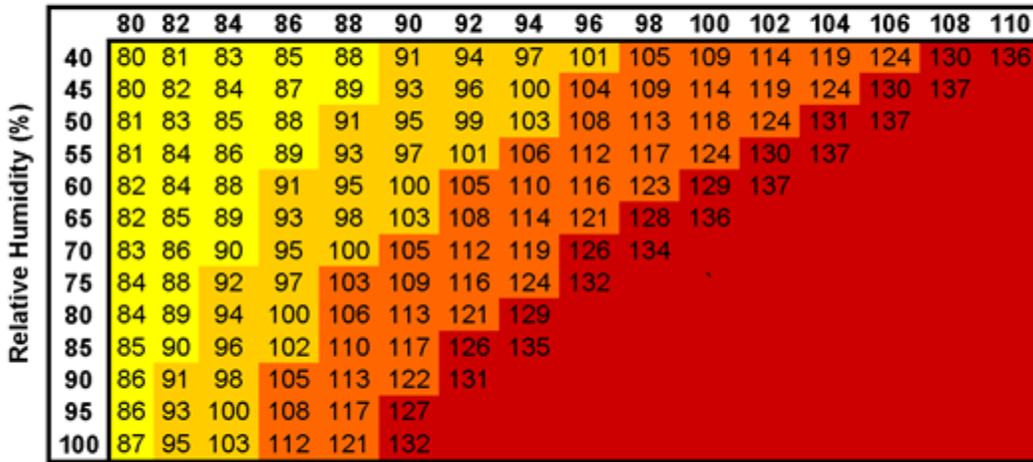
Heat Index category and effects

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

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—is i.e., how hot it feels—is 121° F.

NOAA's National Weather Service

Heat Index Temperature (°F)



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 Irwin 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>)

Irwin County and the City of Ocilla are 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 34 reports of extreme heat events occurring in Irwin County (including the City of Ocilla) between 01/01/2006 and 12/31/2017. The Historic Recurrence Interval is 0.35 years. This is a 283.33% Historic Frequency Chance per year. The past 10-year Record Frequency Per Year is 3.3, the past 20-year frequency is 1.7, and the past 50-year frequency is 0.68 (see the Hazard Frequency Table in Appendix D). These were all Heat Advisories except for two events in 2012, which were Excessive Heat Warnings.

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 Irwin County and the City of Ocilla are equally vulnerable to this hazard.

An estimated 100% of the Residential property (3,861 of 3,861) in Irwin County (including the City of Ocilla) could be affected by this hazard, with a total value of \$194,112,465. Also, an estimated 100% of the Commercial, Industrial, Agricultural, Religious/Non-Profit, Government, Education and Utility properties (2,986 of 2,986) in the community may be affected, with a total value of \$742,621,621. The values are based on the most recent available tax roll data for Irwin County and the City of Ocilla, provided by the Irwin 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), the total farm gate value of agricultural production in Irwin County is \$97,006,975.

According to the inventory database reports and maps, all of the 31 Critical Facilities and Infrastructure for Irwin County (including the City of Ocilla) could be affected by this hazard. The total value of these Critical Facilities is \$222,925,953.

E. Land Use and Development Trends

Irwin County and the City of Ocilla have both seen a slight decrease in population over the last few years. Both the County and the City have zoning regulations and mandatory building and fire codes which are enforced by a building inspector. The City and County both 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 Irwin County and the City of Ocilla. 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 Irwin County and the City of Ocilla, 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 VI. Wildfires

A. Identification of Hazard

The threat of wildfire 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 and Georgia Forestry Commission (see Appendix F), as well as from local history and personal accounts, in order to determine the frequency of events.

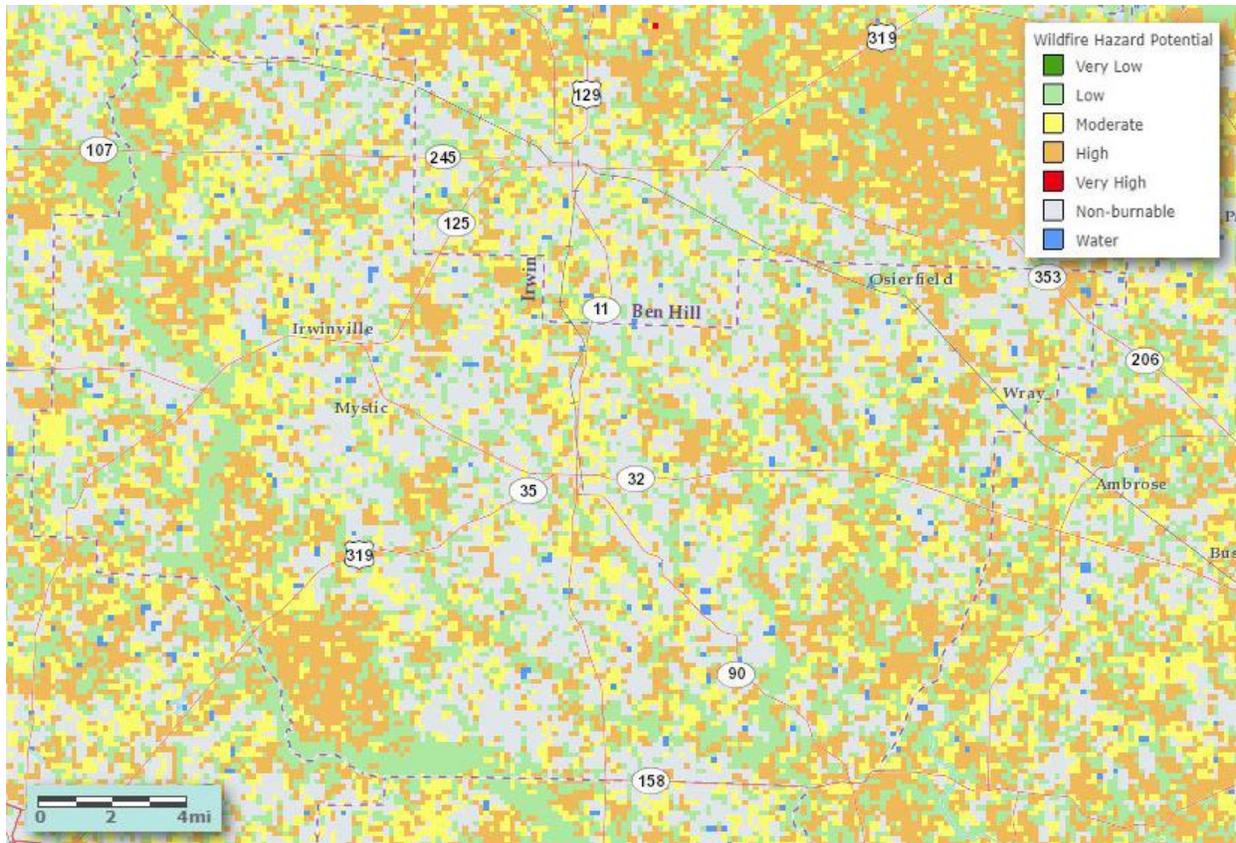
Much of southern Georgia is covered by forests, and fires play an important role in the health of forest ecosystems by breaking down organic matter into soil nutrients and helping seeds to germinate (source: NASA, https://earthobservatory.nasa.gov/Features/GlobalFire/fire_2.php). When naturally occurring 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 Irwin County, including some areas near the City of Ocilla, 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.

Irwin County and the City of Ocilla are both 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 map below shows, most of Irwin County is scored either Low, 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 2,477 reports of wildfires occurring in Irwin County (including the City of Ocilla) between 01/01/1968 and 12/31/2017. The Historic Recurrence Interval is 0.02 years. This is a 4,954.00% Historic Frequency Chance per year. The past 10-year Record Frequency Per Year is 31.4, the past 20-year frequency is 43.8, and the past 50-year frequency is 49.54 (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 Irwin County and the City of Ocilla are equally vulnerable to this hazard.

An estimated 100% of the Residential property (3,861 of 3,861) in Irwin County (including the City of Ocilla) could be affected by this hazard, with a total value of \$194,112,465. Also, an estimated 100% of the Commercial, Industrial, Agricultural, Religious/Non-Profit, Government, Education and Utility properties (2,986 of 2,986) in the community may be affected, with a total value of \$742,621,621. The values are based on the most recent available tax roll data for Irwin County and the City of Ocilla, provided by the Irwin 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), the total farm gate value of agricultural production in Irwin County is \$97,006,975.

According to the inventory database reports and maps, all of the 31 Critical Facilities and Infrastructure for Irwin County (including the City of Ocilla) could be affected by this hazard. The total value of these Critical Facilities is \$222,925,953.

E. Land Use and Development Trends

Irwin County and the City of Ocilla have both seen a slight decrease in population over the last few years. Both the County and the City have zoning regulations and mandatory building and fire codes which are enforced by a building inspector. The City and County both 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. Irwin County and the City of Ocilla are equally vulnerable to wildfires. 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 Irwin County Fire Department has 8 fire stations, and the City of Ocilla has 1 fire station. The fire stations in Irwin County are all staffed by volunteers, and the City of Ocilla fire station has paid staff. The ISO classes of the fire stations in Irwin County and the City of Ocilla are as follows:

Station	ISO Class
City of Ocilla Fire Department	5
Irwinville Volunteer Fire Department	8
Waterloo Volunteer Fire Department	9
Lands Crossing Volunteer Fire Department	9
Whitley Crossing Volunteer Fire Department	9
Holt Volunteer Fire Department	9
Tucker Volunteer Fire Department	9
Riverbend Volunteer Fire Department	9

G. Overall HRV Summary of Events And Their Impact

Wildfires have the potential to cause damage at any place, at any time, throughout Irwin County and the City of Ocilla. 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 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 Irwin County have wells, which may go dry during drought periods, thus leaving those residents without water for extended periods of time. The City of Ocilla 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	Going into drought: <ul style="list-style-type: none"> ▪ short-term dryness slowing planting, growth of crops or pastures Coming out of drought: <ul style="list-style-type: none"> ▪ some lingering water deficits ▪ pastures or crops not fully recovered
D1	Moderate Drought	<ul style="list-style-type: none"> ▪ Some damage to crops, pastures ▪ Streams, reservoirs, or wells low, some water shortages developing or imminent ▪ Voluntary water-use restrictions requested
D2	Severe Drought	<ul style="list-style-type: none"> ▪ Crop or pasture losses likely ▪ Water shortages common ▪ Water restrictions imposed
D3	Extreme Drought	<ul style="list-style-type: none"> ▪ Major crop/pasture losses ▪ Widespread water shortages or restrictions
D4	Exceptional Drought	<ul style="list-style-type: none"> ▪ Exceptional and widespread crop/pasture losses ▪ Shortages of water in reservoirs, streams, and wells creating water emergencies

Irwin County and the City of Ocilla are 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 Irwin County (including the City of Ocilla) 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. Both were in the autumn of 2016 and involved D2 and D3 drought conditions.

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 Irwin County and the City of Ocilla are equally vulnerable to this hazard.

An estimated 100% of the Residential property (3,861 of 3,861) in Irwin County (including the City of Ocilla) could be affected by this hazard, with a total value of \$194,112,465. Also, an estimated 100% of the Commercial, Industrial, Agricultural, Religious/Non-Profit, Government, Education and Utility properties (2,986 of 2,986) in the community may be affected, with a total

value of \$742,621,621. The values are based on the most recent available tax roll data for Irwin County and the City of Ocilla, provided by the Irwin 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), the total farm gate value of agricultural production in Irwin County is \$97,006,975.

According to the inventory database reports and maps, all of the 31 Critical Facilities and Infrastructure for Irwin County (including the City of Ocilla) could be affected by this hazard. The total value of these Critical Facilities is \$222,925,953.

E. Land Use and Development Trends

Irwin County and the City of Ocilla have both seen a slight decrease in population over the last few years. Both the County and the City have zoning regulations and mandatory building and fire codes which are enforced by a building inspector. The City and County both 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 Irwin County have wells, which may go dry during drought periods, thus leaving those residents without water for extended periods of time. The City of Ocilla has a municipal water system.

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 Irwin County and the City of Ocilla, 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. 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 is 1 report of Hazardous Materials

Release events occurring in Irwin County (including the City of Ocilla) between 01/01/1978 and 12/31/2017. The Historic Recurrence Interval is 40.00 years. This is a 2.50% 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 hazardous materials release events have been recorded 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 Irwin County and the City of Ocilla are equally vulnerable to this hazard.

An estimated 100% of the Residential property (3,861 of 3,861) in Irwin County (including the City of Ocilla) could be affected by this hazard, with a total value of \$194,112,465. Also, an estimated 100% of the Commercial, Industrial, Agricultural, Religious/Non-Profit, Government, Education and Utility properties (2,986 of 2,986) in the community may be affected, with a total value of \$742,621,621. The values are based on the most recent available tax roll data for Irwin County and the City of Ocilla, provided by the Irwin 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), the total farm gate value of agricultural production in Irwin County is \$97,006,975.

According to the inventory database reports and maps, all of the 31 Critical Facilities and Infrastructure for Irwin County (including the City of Ocilla) could be affected by this hazard. The total value of these Critical Facilities is \$222,925,953.

E. Land Use and Development Trends

Residential land use in Irwin County is widely dispersed, except in the City of Ocilla, where some relatively higher residential density exists.

Irwin County and the City of Ocilla have both seen a slight decrease in population over the last few years. Both the County and the City have zoning regulations and mandatory building and fire codes which are enforced by a building inspector. The City and County both 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 and railways in the community.

State and U.S. highways carrying truck traffic pass through both jurisdictions, the principal highways being State Route 32 (east-west), U.S. Route 129 (north-south), and U.S. Route 319 (southwest-north). The southwest corner of Irwin County is within 3 miles of Interstate 75. A CSX rail line passes through the northernmost portion of Irwin County, and through the unincorporated communities of Arp, Abba, and Wray. There are no commercially navigated waterways in the community.

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 Irwin 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.

Chapter 4 Section	Updates to Section
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. Windstorms/Hailstorms/Lightning	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 Irwin County and the City of Ocilla 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 Irwin County Commission as a result of their execution of the Grantee-Subgrantee Agreement for the Irwin County Hazard Mitigation Grant Program (HMGP) Planning Project; and by the City of Ocilla, located in Irwin County, through their participation in the planning project. The Irwin County Emergency Management Agency is authorized to oversee emergency management within Irwin County and the City of Ocilla.

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 Irwin County EMA Director has been chosen by Irwin County and the City of Ocilla to oversee the projects. The Irwin County EMA has been designated by Irwin County and the City of Ocilla 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 Irwin County and the City of Ocilla. 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. A small number of properties in Irwin County and the City of Ocilla are listed in the National Register of Historic Places, including the Jefferson Davis Memorial State Historic Site.

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

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

Action Step 1.1.1. Seek funding for a county-wide Early Warning Communication/ Notification System.	
Priority:	High
Responsible Parties:	EMA, Irwin County, City of Ocilla
Estimated Cost:	\$6,000 per year
Funding Source:	Local, Grants
Timeline:	2019-2024
Status:	Ongoing

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

Action Step 1.1.2. Become a designated “StormReady Community.”	
Priority:	High
Responsible Parties:	EMA, Irwin County, City of Ocilla
Estimated Cost:	Staff time
Funding Source:	Local, Grants
Timeline:	2019-2024
Status:	Ongoing

Action Step 1.1.3. Implement the “Community Emergency Response Team” (CERT) program.	
Priority:	High
Responsible Parties:	EMA, Irwin County, City of Ocilla
Estimated Cost:	\$5,000
Funding Source:	Local, Grants
Timeline:	2019-2024
Status:	Ongoing

Action Step 1.1.4. Implement upgrades to the EOC, including more phone lines, improved internet access, etc.	
Priority:	Medium
Responsible Parties:	EMA, Irwin County
Estimated Cost:	\$100,000
Funding Source:	Local, Grants
Timeline:	2019-2024
Status:	New

Goal 2: Reduce the risks and vulnerability of citizens and critical facilities to damage resulting from hurricanes.

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

Action Step 2.1.1. Educate homeowners and builders on individual safe rooms.	
Priority:	Medium
Responsible Parties:	EMA, Building Inspections Office
Estimated Cost:	Staff time
Funding Source:	Local Operating Funds
Timeline:	2019-2024
Status:	Ongoing

Action Step 2.1.2. Distribute brochures and programs on personal emergency preparedness, e.g., emergency survival kits.	
Priority:	High
Responsible Parties:	EMA
Estimated Cost:	\$1,000
Funding Source:	Local, Grants
Timeline:	2019-2024
Status:	Ongoing

Action Step 2.1.3. Encourage the American Red Cross to teach the Citizen’s Disaster Course on a frequent basis.	
Priority:	Medium
Responsible Parties:	EMA, Irwin County, American Red Cross
Estimated Cost:	\$2,000
Funding Source:	Local, Grants
Timeline:	2019-2024
Status:	Ongoing

Action Step 2.1.4. Encourage businesses to develop emergency plans	
Priority:	Medium
Responsible Parties:	EMA, Irwin County, City of Ocilla
Estimated Cost:	Staff time
Funding Source:	Local, Grants
Timeline:	2019-2024
Status:	Ongoing

Action Step 2.1.5. 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, publishing information on the internet, holding town hall meetings, providing bulletins to local churches and the schools, and other methods as needed.	
Priority:	High
Responsible Parties:	EMA
Estimated Cost:	Staff time
Funding Source:	Local, Grants
Timeline:	2019-2024
Status:	Ongoing

Action Step 2.1.6. Acquire and install auxiliary portable and fixed generators (including transfer switches) for all designated evacuation and emergency shelters, community water systems, and other critical facilities.	
Priority:	High
Responsible Parties:	EMA, Irwin County, City of Ocilla
Estimated Cost:	\$500,000
Funding Source:	Local, Grants
Timeline:	2019-2024
Status:	Ongoing

Action Step 2.1.7. Trim tree lines around roads, homes, utilities and businesses.	
Priority:	Medium
Responsible Parties:	Public Works Departments, Georgia Power, Irwin EMC
Estimated Cost:	\$50,000
Funding Source:	Local Operating Funds, Grants, Businesses
Timeline:	2019-2024
Status:	Ongoing

Action Step 2.1.8. Retrofit public buildings and critical facilities to reinforce windows, roofs and doors.	
Priority:	Medium
Responsible Parties:	EMA, Building Inspections/Code Enforcement, Board of Education
Estimated Cost:	\$200,000
Funding Source:	Local Operating Funds, Grants, GEMA/FEMA
Timeline:	2019-2024
Status:	Ongoing

Action Step 2.1.9. Initiate an inspection program at critical facilities to identify construction weaknesses subject to high wind damage.	
Priority:	Medium
Responsible Parties:	Building Inspections Office
Estimated Cost:	Staff time
Funding Source:	Local Operating Funds, Grants, GEMA/FEMA
Timeline:	2019-2024
Status:	Ongoing

Action Step 2.1.10. Review building codes for proper wind strength and safety regulations and for consistency with state and federal regulations.	
Priority:	High
Responsible Parties:	Building Inspections Office, Irwin County, City of Ocilla
Estimated Cost:	Staff time
Funding Source:	Local, Grants
Timeline:	2019-2024
Status:	Ongoing

Action Step 2.1.11. Designate and inform the public about shelter locations.	
Priority:	High
Responsible Parties:	EMA
Estimated Cost:	Staff time
Funding Source:	Local, Grants
Timeline:	2019-2024
Status:	New

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 1.1.1. Seek funding for a county-wide Early Warning Communication/ Notification System.	Unchanged
Action Step 1.2.1 (Seek funding for construction of a hardened Emergency Operations Center, including necessary communications and operational equipment)	Completed
Action Step 1.2.2. Become a designated “StormReady Community.”	Renumbered to 1.1.2
Action Step 1.2.3. Implement the “Community Emergency Response Team” (CERT) program.	Renumbered to 1.1.3
Action Step 1.1.4. Implement upgrades to the EOC, including more phone lines, improved internet access, etc.	New
Action Step 2.1.1. Educate homeowners and builders on individual safe rooms.	Unchanged
Action Step 2.1.2. Distribute brochures and programs on personal emergency preparedness, e.g., emergency survival kits.	Unchanged
Action Step 2.1.3. Encourage the American Red Cross to teach the Citizen’s Disaster Course on a frequent basis.	Unchanged
Action Step 2.1.4. Encourage businesses to develop emergency plans	Unchanged
Action Step 2.1.5. 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, publishing information on the internet, holding town hall meetings, providing bulletins to local churches and the schools, and other methods as needed.	Unchanged
Action Step 2.1.6. Install auxiliary generators for all designated evacuation and emergency shelters and community water systems.	Reworded
Action Step 2.1.7. Trim tree lines around roads, homes, utilities and businesses.	Unchanged
Action Step 2.1.8. Retrofit public buildings and critical facilities to reinforce windows, roofs and doors.	Unchanged
Action Step 2.1.9. Initiate an inspection program at critical facilities to identify construction weaknesses subject to high wind damage.	Unchanged
Action Step 2.1.10. Review building codes for proper wind strength and safety regulations and for consistency with state and federal regulations.	Unchanged
Action Step 2.1.11. Designate and inform the public about shelter locations.	New

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 Irwin County and the City of Ocilla. 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. A small number of properties in Irwin County and the City of Ocilla are listed in the National Register of Historic Places, including the Jefferson Davis Memorial State Historic Site.

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 1: Minimize losses to existing and future structures, especially community critical facilities, due to tornadoes.

Objective 1: Take steps to reduce the community's vulnerability to tornado damage.

Action Step 2.1.1. Use building inspection program to inspect for adequate tie-downs on manufactured housing throughout the community.	
Priority:	High
Responsible Parties:	EMA, Irwin County, City of Ocilla
Estimated Cost:	Staff time
Funding Source:	Local, Grants
Timeline:	2019-2024
Status:	New

Action Step 2.1.2. Promote identification and designation of safe shelter rooms in Critical Facilities, if available.	
Priority:	Medium
Responsible Parties:	EMA, Irwin County, City of Ocilla
Estimated Cost:	Staff time
Funding Source:	Local, Grants
Timeline:	2019-2024
Status:	New

Action Step 2.1.3. Plan for pre-disaster mitigation in tornado and other hazard seasons by preparing public service announcements and brochures. Solicit business participation in distributing information.	
Priority:	Medium
Responsible Parties:	EMA, Irwin County, City of Ocilla
Estimated Cost:	Staff time
Funding Source:	Local, Grants
Timeline:	2019-2024
Status:	New

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 2.1.1. Use building inspection program to inspect for adequate tie-downs on manufactured housing throughout the community.	New
Action Step 2.1.2. Promote identification and designation of safe shelter rooms in Critical Facilities, if available.	New
Action Step 2.1.3. Plan for pre-disaster mitigation in tornado and other hazard seasons by preparing public service announcements and brochures. Solicit business participation in distributing information.	New

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 Irwin County and the City of Ocilla. 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 Irwin County are the Withlacoochee River and Little River, which run along the eastern border of the county, and Okapilco Creek, which flows through in the middle of the county. The southern boundary of the County interfaces with Florida. The majority of Irwin County is located in the Withlacoochee River sub-basin of the Suwannee River basin. Most of the southern end is located within the Aucilla River sub-basin of the larger Aucilla-Waccasassa basin. The northeastern portion of the County is located in the Little River sub-basin of the Suwannee River basin. Due to these facts, the Irwin 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 Irwin County and the City of Ocilla.

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. A small number of properties in Irwin County and the City of Ocilla are listed in the National Register of Historic Places, including the Jefferson Davis Memorial State Historic Site.

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

Objective 1: Improve capacity of the Ocilla and Irwin County existing drainage infrastructure to handle excessive rainfall.

Action Step 3.1.1. Seek funding to develop a countywide Master Drainage Plan.	
Priority:	Medium
Responsible Parties:	Irwin County, City of Ocilla
Estimated Cost:	Staff time
Funding Source:	Local Operating Funds, Grants, GEMA/FEMA
Timeline:	2019-2024
Status:	Ongoing

Action Step 3.1.2. Implement the Master Drainage Plan. This will include determining the schedule for phased implementation, seeking funding to relieve flood threat and impact of flood damages, and continuing to review and update storm water run-off, watershed plans and effectiveness of present drainage ditching, culverts, storm water and sanitation network.	
Priority:	Medium
Responsible Parties:	EMA, Irwin County, City of Ocilla
Estimated Cost:	\$5,000,000
Funding Source:	Local Operating Funds, Grants, GEMA/FEMA
Timeline:	2019-2024
Status:	New

Action Step 3.1.3. Review existing regulations to ensure adequacy in reducing the amount of future development in identified flood hazard areas.	
Priority:	High
Responsible Parties:	Building Inspections/Code Enforcement
Estimated Cost:	Staff time
Funding Source:	Local, Grants
Timeline:	2019-2024
Status:	Ongoing

Action Step 3.1.4. Continue pursuing eligibility for the Community Rating System.	
Priority:	Medium
Responsible Parties:	EMA, Irwin County, City of Ocilla
Estimated Cost:	Staff time
Funding Source:	Local, Grants
Timeline:	2019-2024
Status:	Ongoing

Action Step 3.1.5. Review all capital improvements plans to ensure that infrastructure improvements are not directed towards flood hazard areas.	
Priority:	Medium
Responsible Parties:	EMA, Irwin County, City of Ocilla
Estimated Cost:	Staff time
Funding Source:	Local, Grants
Timeline:	2019-2024
Status:	Ongoing

Action Step 3.1.6. Work with Georgia Department of Transportation to identify areas of frequent roadway flooding and develop mitigation strategies.	
Priority:	Medium
Responsible Parties:	EMA, Irwin County, City of Ocilla
Estimated Cost:	Staff time
Funding Source:	Local, Grants
Timeline:	2019-2024
Status:	Ongoing

Action Step 3.1.7. Continue membership in the NFIP by adopting updated ordinances and FIRM maps as updates are available, and continue to enforce floodplain regulations.	
Priority:	High
Responsible Parties:	EMA, Irwin County, City of Ocilla
Estimated Cost:	Staff time
Funding Source:	Local Operating Funds, Grants, GEMA/FEMA
Timeline:	2019-2024
Status:	Ongoing

Objective 2: Protect and conserve flood prone areas for community greenspace development.

Action Step 3.1.8. Monitor comprehensive land use plans to ensure consistency with the green space program, including mapping of lands to be permanently protected.	
Priority:	Medium
Responsible Parties:	Building Inspections, Irwin County, City of Ocilla
Estimated Cost:	\$15,000
Funding Source:	Local, Grants
Timeline:	2019-2024
Status:	Ongoing

Action Step 3.1.9. Monitor existing subdivision regulations to promote conservation of floodplains, wetlands, and groundwater recharge areas.	
Priority:	High
Responsible Parties:	Building Inspections/Code Enforcement
Estimated Cost:	\$20,000
Funding Source:	Local, Grants
Timeline:	2019-2024
Status:	Ongoing

Action Step 3.1.10. Seek funding from private foundations, individuals, federal and state grants, and local communities to leverage green space grant funds.	
Priority:	High
Responsible Parties:	Irwin County, City of Ocilla
Estimated Cost:	Staff time
Funding Source:	Local, Grants
Timeline:	2019-2024
Status:	Ongoing

Objective 3: Ensure public health and safety during and following flood events.

Action Step 3.1.11. Seek funding for a county-wide Early Warning Communication/ Notification System.	
Priority:	High
Responsible Parties:	EMA, Irwin County, City of Ocilla
Estimated Cost:	\$6,000 per year
Funding Source:	Local, Grants
Timeline:	2019-2024
Status:	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 3.1.1. Seek funding to develop a countywide Master Drainage Plan.	New
Action Step 3.1.2. Determine, in consultation with engineers, schedule for phased implementation	Deleted; combined into new 3.1.2
Action Step 3.1.3. Seek funding for phased implementation to Relieve flood threat and impact of flood damages	Deleted; combined into new 3.1.2
Action Step 3.1.4. Continue to review and update storm water run-off, watershed plans and effectiveness of present drainage ditching, culverts, storm water and sanitation network.	Deleted; combined into new 3.1.2
Action Step 3.1.2. Implement the Master Drainage Plan. This will include determining the schedule for phased implementation, seeking funding to relieve flood threat and impact of flood damages, and continuing to review and update storm water run-off, watershed plans and effectiveness of present drainage ditching, culverts, storm water and sanitation network.	New
Action Step 3.1.5. Review existing regulations to ensure adequacy in reducing the amount of future development in identified flood hazard areas.	Renumbered to 3.1.3
Action Step 3.1.6. Petition FEMA to develop FIRM maps for Ocilla and Irwin County.	Completed
Action Step 3.1.7. Distribute letters to all property owners in the county regarding potential flood hazards as required for participation in the Community Rating System.	Reworded; Renumbered to 3.1.4
Action Step 3.1.8. Review all capital improvements plans to ensure that infrastructure improvements are not directed towards flood hazard areas.	Renumbered to 3.1.5
Action Step 3.1.9. Work with Georgia Department of Transportation to identify areas of frequent roadway flooding and develop mitigation strategies.	Renumbered to 3.1.6

Action Step	Changes
Action Step 3.1.10. Continue membership in the NFIP by adopting updated ordinances and FIRM maps as updates are available, and continue to enforce floodplain regulations.	Renumbered to 3.1.7
Action Step 3.2.1. Monitor comprehensive land use plans to ensure consistency with the green space program, including mapping of lands to be permanently protected.	Renumbered to 3.1.8
Action Step 3.2.2. Monitor existing subdivision regulations to promote conservation of floodplains, wetlands, and groundwater recharge areas.	Renumbered to 3.1.9
Action Step 3.2.3. Seek funding from private foundations, individuals, federal and state grants, and local communities to leverage green space grant funds.	Renumbered to 3.1.10
Action Step 3.3.1. Seek funding for a county-wide Early Warning Communication/ Notification System.	Renumbered to 3.1.11

Section IV. Windstorms/Hailstorms/Lightning

A. Community Mitigation Goals

As previously indicated in Chapter 2, this hazard may cause substantial damage to life, property, and the economy in Irwin County and the City of Ocilla. 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. A small number of properties in Irwin County and the City of Ocilla are listed in the National Register of Historic Places, including the Jefferson Davis Memorial State Historic Site.

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: Reduce the risks and vulnerability of citizens and critical facilities to damage resulting from windstorms, hail, and lightning.

Objective 1: Pursue structural and non-structural solutions to prevent or reduce damage from windstorms, hail, and lightning in Irwin County and the City of Ocilla.

Action Step 4.1.1. Acquire and install auxiliary portable and fixed generators (including transfer switches) for all designated evacuation and emergency shelters, community water systems, and other critical facilities.	
Priority:	High
Responsible Parties:	EMA, Irwin County, City of Ocilla
Estimated Cost:	\$500,000
Funding Source:	Local, Grants
Timeline:	2019-2024
Status:	New for this section

Action Step 4.1.2. Retrofit public buildings and critical facilities to reinforce windows, roofs and doors.	
Priority:	Medium
Responsible Parties:	EMA, Building Inspections/Code Enforcement, Board of Education
Estimated Cost:	\$200,000
Funding Source:	Local Operating Funds, Grants, GEMA/FEMA
Timeline:	2019-2024
Status:	New for this section

Action Step 4.1.3. Review building codes for proper wind strength and safety regulations and for consistency with state and federal regulations.	
Priority:	High
Responsible Parties:	Building Inspections Office, Irwin County, City of Ocilla
Estimated Cost:	Staff time
Funding Source:	Local, Grants
Timeline:	2019-2024
Status:	New for this section

Action Step 4.1.4. Install lightning warning and protection equipment at outdoor recreational facilities countywide.	
Priority:	High
Responsible Parties:	EMA, BOE
Estimated Cost:	\$50,000
Funding Source:	Local Operating Funds, Grants, GEMA/FEMA
Timeline:	2019-2024
Status:	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 4.1.1. Acquire and install auxiliary portable and fixed generators (including transfer switches) for all designated evacuation and emergency shelters, community water systems, and other critical facilities.	New for this section
Action Step 4.1.2. Retrofit public buildings and critical facilities to reinforce windows, roofs and doors.	New for this section
Action Step 4.1.3. Review building codes for proper wind strength and safety regulations and for consistency with state and federal regulations.	New for this section
Action Step 2.1.10. Install lightning warning and protection equipment at outdoor recreational facilities countywide.	Renumbered to 4.1.4

Section V. 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 Irwin County and the City of Ocilla. 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 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. A small number of properties in Irwin County and the City of Ocilla are listed in the National Register of Historic Places, including the Jefferson Davis Memorial State Historic Site.

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 1: Prevent heat-related injuries and deaths.

Objective 1: Provide potential heat-stress victims with emergency shelter.

Action Step 5.1.1. Designate emergency shelters in consultation with appropriate organizations (Red Cross, Senior Citizen Centers, hospital, churches, health department, etc.)	
Priority:	High
Responsible Parties:	EMA, Red Cross
Estimated Cost:	Staff time
Funding Source:	Local, Grants
Timeline:	2019-2024
Status:	Ongoing

Action Step 5.1.2. Acquire and install auxiliary portable and fixed generators (including transfer switches) for all designated evacuation and emergency shelters, community water systems, and other critical facilities.	
Priority:	High
Responsible Parties:	EMA
Estimated Cost:	\$350,000
Funding Source:	Local Operating Funds, Grants. GEMA/FEMA
Timeline:	2019-2024
Status:	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 4.1.1. Designate emergency shelters in consultation with appropriate organizations (Red Cross, Senior Citizen Centers, hospital, churches, health department, etc.)	Renumbered to 5.1.1
Action Step 4.1.2. Install auxiliary generators for all designated evacuation and emergency shelters and community water systems.	Renumbered to 5.1.2 and reworded
Action Step 4.1.3. Establish operating policies and procedures, identify managing entity, and determine needed equipment and supplies.	Completed

Section VI. Wildfires

A. Community Mitigation Goals

As previously indicated in Chapter 2, this hazard may cause substantial damage to life, property, and the economy in Irwin County and the City of Ocilla. 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 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. A small number of properties in Irwin County and the City of Ocilla are listed in the National Register of Historic Places, including the Jefferson Davis Memorial State Historic Site.

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 1: Prevent damage resulting from wildfires in Irwin County, reduce the threat of wildfires, and protect the life and property of residents.

Objective 1: Prevent destruction of forests and structures.

Action Step 6.1.1. Seek state and federal grants to acquire better fire equipment, including upgrades to County fire trucks, new ladder truck for the City, and breathing gear.	
Priority:	Medium
Responsible Parties:	EMA, County/City Fire Departments
Estimated Cost:	\$300,000
Funding Source:	Local, Grants
Timeline:	2019-2024
Status:	Ongoing

Action Step 6.1.2. Improve wildland fire training at the local fire department level.	
Priority:	Medium
Responsible Parties:	Georgia Forestry Commission, County/City Fire Departments
Estimated Cost:	Staff time
Funding Source:	Local, Grants
Timeline:	2019-2024
Status:	Ongoing

Action Step 6.1.3. Improve public awareness of wildfire fighting techniques and ways to mitigate wildfire danger around the home and community, including the importance of fire buffers around the home, less ignitable landscaping, keeping debris off roofs, emergency vehicle access, dangers from lighted matches, cigarettes, and trash, how to obtain burn permits, and other concerns, by publishing articles in the local newspaper, holding town hall meetings, radio announcements, and providing bulletins to local churches and schools	
Priority:	Medium
Responsible Parties:	EMA, Georgia Forestry Commission, County/City Fire Departments
Estimated Cost:	\$40,000
Funding Source:	Local, Grants
Timeline:	2019-2024
Status:	Ongoing

Action Step 6.1.4. Support Georgia Forestry Public Outreach efforts.	
Priority:	Medium
Responsible Parties:	EMA, Georgia Forestry Commission, County/City Fire Departments
Estimated Cost:	\$10,000
Funding Source:	Georgia Forestry Commission, State and Federal Grant Programs
Timeline:	2019-2024
Status:	Ongoing

Action Step 6.1.5. Enforce building, fire and safety codes.	
Priority:	Medium
Responsible Parties:	Building Inspections, County/City Fire Departments
Estimated Cost:	Staff time
Funding Source:	Local
Timeline:	2019-2024
Status:	Ongoing

Action Step 6.1.6. Investigate methods to provide landowners an incentive to prescribe burn timberland thereby minimizing heavy fuel loads.	
Priority:	Medium
Responsible Parties:	Georgia Forestry Commission, County/City Fire Departments
Estimated Cost:	\$25,000
Funding Source:	Georgia Forestry Commission, State and Federal Grant Programs
Timeline:	2019-2024
Status:	Ongoing

Action Step 6.1.7. Create more fire breaks.	
Priority:	Medium
Responsible Parties:	Georgia Forestry Commission, County/City Fire Departments
Estimated Cost:	\$100,000
Funding Source:	Georgia Forestry Commission, State and Federal Grant Programs
Timeline:	2019-2024
Status:	Ongoing

Action Step 6.1.8. Build roads into areas that have no other access.	
Priority:	Medium
Responsible Parties:	Georgia Forestry Commission
Estimated Cost:	\$200,000
Funding Source:	Georgia Forestry Commission, State and Federal Grant Programs
Timeline:	2019-2024
Status:	Ongoing

Action Step 6.1.9. Educate public and provide information on nighttime burning and smoke, with a focus on having fires extinguished by dusk.	
Priority:	Medium
Responsible Parties:	Georgia Forestry Commission, County/City Fire Departments
Estimated Cost:	\$25,000
Funding Source:	Georgia Forestry Commission, State and Federal Grant Programs
Timeline:	2019-2024
Status:	Ongoing

Action Step 6.1.10. Improve communication with Georgia Environmental Protection Division in regard to illegal burning issues.	
Priority:	High
Responsible Parties:	EMA, Georgia Forestry Commission, DNR
Estimated Cost:	Staff time
Funding Source:	Local, State
Timeline:	2019-2024
Status:	Ongoing

Action Step 6.1.11. Take steps to reduce fire hazards in the Pleasure Lake community.	
Priority:	High
Responsible Parties:	EMA, Irwin County, City of Ocilla
Estimated Cost:	Staff time
Funding Source:	Local, Grants
Timeline:	2019-2024
Status:	New

Objective 2: Reduce threat of wildfire occurring during periods of drought.

Action Step 6.1.12. Become a designated “Firewise Community”	
Priority:	High
Responsible Parties:	County/City Fire Departments
Estimated Cost:	Staff time
Funding Source:	Local
Timeline:	2019-2024
Status:	Ongoing

Action Step 6.1.13. Maintain dry hydrants	
Priority:	High
Responsible Parties:	County/City Fire Departments
Estimated Cost:	\$50,000
Funding Source:	Local, Grants
Timeline:	2019-2024
Status:	Ongoing

Action Step 6.1.15. Investigate options for fitting deep pit wells with attachments for firefighting.	
Priority:	Medium
Responsible Parties:	EMA, County Fire Dept.
Estimated Cost:	Staff time
Funding Source:	Local, Grants
Timeline:	2019-2024
Status:	New

Action Step 6.1.16. Install more fire hydrants in the City of Ocilla	
Priority:	High
Responsible Parties:	City of Ocilla
Estimated Cost:	\$100,000
Funding Source:	Local, Grants
Timeline:	2019-2024
Status:	New

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 5.1.3. Seek state and federal grants to acquire better fire equipment	Wording expanded; renumbered to 6.1.1
Action Step 5.1.4. Improve wildland fire training at the local fire department level.	Renumbered to 6.1.2

Action Step	Changes
Action Step 5.1.5. Improve public awareness of wildfire fighting techniques and the importance of fire buffers around the home and by publishing articles in the local newspaper, holding town hall meetings, radio announcements, and providing bulletins to local churches and schools	Wording expanded; renumbered to 6.1.3
Action Step 5.1.6. Support Georgia Forestry Public Outreach efforts.	Renumbered to 6.1.4
Action Step 5.1.7. Enforce building, fire and safety codes.	Renumbered to 6.1.5
Action Step 5.1.8. Develop an ordinance to enforce burn permits at the local level.	Completed
Action Step 5.1.9. Investigate methods to provide landowners an incentive to prescribe burn timberland thereby minimizing heavy fuel loads.	Renumbered to 6.1.6
Action Step 5.1.10. Create more fire breaks	Renumbered to 6.1.7
Action Step 5.1.11. Build roads into areas that have no other access	Renumbered to 6.1.8
Action Step 5.1.12. Educate public and provide information on nighttime burning and smoke.	Wording expanded; renumbered to 6.1.9
Action Step 5.1.13. Improve communication with Georgia Environmental Protection Division in regard to illegal burning issues.	Renumbered to 6.1.10
Action Step 6.1.11. Take steps to reduce fire hazards in the Pleasure Lake community.	New
Action Step 5.2.1. Become a designated “Firewise Community.”	Renumbered to 6.1.12
Action Step 5.2.2. Install more dry hydrants	Reworded; renumbered to 6.1.13
Action Step 5.2.3. Seek funding to acquire more fire tankers (2000 to 3000 gallons) for local fire departments.	Completed
Action Step 5.2.4. Increase public awareness of wildfire dangers around the home and community, such as lighted matches, cigarettes, trash, and the process for obtaining burn permits by publishing articles in the local newspaper, holding town hall meetings, radio announcements and providing bulletins to local churches and schools	Deleted (combined with 6.1.3)
Action Step 6.1.15. Investigate options for fitting deep pit wells with attachments for firefighting.	New
Action Step 6.1.16. Install more fire hydrants in the City of Ocilla	New

Section VII. Drought

A. Community Mitigation Goals

As previously indicated in Chapter 2, drought may cause substantial economic, property, and personal damage in Irwin County and the City of Ocilla, 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. A small number of properties in Irwin County and the City of Ocilla are listed in the National Register of Historic Places, including the Jefferson Davis Memorial State Historic Site.

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: Reduce the economic impact of drought on the Irwin County economy.

Objective 1: Minimize the economic impact of drought on agriculture.

Action Step 7.1.1. Promote more efficient use of surface irrigation	
Priority:	Medium
Responsible Parties:	Local Extension Services, Irwin County
Estimated Cost:	Staff time
Funding Source:	Local, Grants, State Funds
Timeline:	2019-2024
Status:	Ongoing

Action Step 7.1.2. Promote construction of farm ponds for irrigation	
Priority:	Low
Responsible Parties:	Local Extension Services, Irwin County
Estimated Cost:	Staff time
Funding Source:	Local, Grants, State Funds
Timeline:	2019-2024
Status:	Ongoing

Action Step 7.1.3. Identify funds to repair existing ponds	
Priority:	Low
Responsible Parties:	Local Extension Services, Irwin County
Estimated Cost:	Staff time
Funding Source:	Local, Grants, State Funds
Timeline:	2019-2024
Status:	Ongoing

Action Step 7.1.4. Promote the drilling of 4 inch wells to recharge farm ponds	
Priority:	Medium
Responsible Parties:	Local Extension Services, Irwin County
Estimated Cost:	Staff time
Funding Source:	Local, Grants, State Funds
Timeline:	2019-2024
Status:	Ongoing

Action Step 7.1.5. Implement a support system through FFA and USDA	
Priority:	Low
Responsible Parties:	Local Extension Services, Irwin County, Forestry Commission, GA Dept. of Agriculture
Estimated Cost:	Staff time
Funding Source:	Local, Grants, State Funds
Timeline:	2019-2024
Status:	Ongoing

Goal 2: Educate the citizenry about the effects of drought on public health and safety, economic activity, and environmental resources.

Objective 1: Manage available water resources.

Action Step 7.2.1. Heighten public awareness on actions citizens can take to conserve water	
Priority:	High
Responsible Parties:	Local Extension Services, Irwin County
Estimated Cost:	Staff time
Funding Source:	Local, Grants, State Funds
Timeline:	2019-2024
Status:	Ongoing

Action Step 7.2.2. Utilize the media for the distribution and publication of drought information.	
Priority:	Medium
Responsible Parties:	Local Extension Services, Irwin County
Estimated Cost:	Staff time
Funding Source:	Local, Grants, State Funds
Timeline:	2019-2024
Status:	Ongoing

Action Step 7.2.3. Update community websites to provide drought related information that is readily accessible.	
Priority:	High
Responsible Parties:	Local Extension Services, Irwin County
Estimated Cost:	Staff time
Funding Source:	Local, Grants, State Funds
Timeline:	2019-2024
Status:	Ongoing

Action Step 7.2.4. Ensure the reasonable allocation of supply during drought events through a coordinated and cooperative inter-agency response.	
Priority:	High
Responsible Parties:	EMA, GEMA, FEMA
Estimated Cost:	Staff time
Funding Source:	Local, GEMA, FEMA
Timeline:	2019-2024
Status:	Ongoing

Action Step 7.2.5. Enforce policies for conservation of water during times of water shortage and drought.	
Priority:	High
Responsible Parties:	City of Ocilla
Estimated Cost:	Staff time
Funding Source:	Local, Grants
Timeline:	2019-2024
Status:	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 6.1.1. Promote more efficient use of surface irrigation	Renumbered to 7.1.1
Action Step 6.1.2. Promote construction of farm ponds for irrigation	Renumbered to 7.1.2
Action Step 6.1.3. Identify funds to repair existing ponds	Renumbered to 7.1.3
Action Step 6.1.4. Promote the drilling of 4 inch wells to recharge farm ponds	Renumbered to 7.1.4
Action Step 6.1.5. Implement a support system through FFA and USDA	Renumbered to 7.1.5
Action Step 7.1.1. Heighten public awareness on actions citizens can take to conserve water	Renumbered to 7.2.1
Action Step 7.1.2. Utilize the media for the distribution and publication of drought information.	Renumbered to 7.2.2
Action Step 7.1.3. Update community websites to provide drought related information that is readily accessible.	Renumbered to 7.2.3
Action Step 7.1.4. Target conservation alerts to individual households through an Early Warning Communication/Notification bulletin board.	Completed

Action Step	Changes
Action Step 7.1.5. Ensure the reasonable allocation of supply during drought events through a coordinated and cooperative inter-agency response.	Renumbered to 7.2.4
Action Step 7.1.6. Enforce policies for conservation of water during times of water shortage and drought.	Renumbered to 7.2.5

Chapter 5. Local Technological Hazard Mitigation Goals and Objectives

Overall Community Mitigation Goals, Policies, and Values Narrative

The purpose of the Irwin 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.

Section I. 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 Irwin County and the City of Ocilla. 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 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. A small number of properties in Irwin County and the City of Ocilla are listed in the National Register of Historic Places, including the Jefferson Davis Memorial State Historic Site.

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 Irwin County.

Objective 1: Enhance the community's ability to issue early warning of a hazardous materials release in an effective, dependable, and rapid manner.

Action Step 8.1.1. Seek funding for a county-wide Early Warning Communication/ Notification System.	
Priority:	High
Responsible Parties:	EMA, Irwin County, City of Ocilla
Estimated Cost:	\$6,000 per year
Funding Source:	Local, Grants
Timeline:	2019-2024
Status:	Ongoing

Objective 2: Enhance the ability of the Irwin County Emergency Management Agency to coordinate effectively and efficiently the emergency response during and after a hazardous materials release.

Action Step 8.1.2. Become a designated “StormReady Community.”	
Priority:	High
Responsible Parties:	EMA, Irwin County, City of Ocilla
Estimated Cost:	Staff time
Funding Source:	Local, Grants
Timeline:	2019-2024
Status:	Ongoing

Action Step 8.1.3. Implement the “Community Emergency Response Team” (CERT) program.	
Priority:	High
Responsible Parties:	EMA, Irwin County, City of Ocilla
Estimated Cost:	\$5,000
Funding Source:	Local, Grants
Timeline:	2019-2024
Status:	Ongoing

Objective 3: Minimize the effect of hazardous material spills.

Action Step 8.1.4. Maintain HazMat response training	
Priority:	High
Responsible Parties:	EMA, City/ County Fire Depts.
Estimated Cost:	Staff time
Funding Source:	Local, Grants
Timeline:	2019-2024
Status:	Ongoing

Action Step 8.1.5. Seek funding to expand HazMat training to first responders (fire, police, sheriff, EMS)	
Priority:	High
Responsible Parties:	EMA, City/ County Fire Depts.
Estimated Cost:	Staff time
Funding Source:	Local, Grants, FEMA, GEMA, DHS
Timeline:	2019-2024
Status:	Ongoing

Action Step 8.1.6. Increase public awareness and procedures to follow if a hazardous material spill event occurs by publishing articles in the local newspaper, holding town hall meetings, radio announcements and providing bulletins to local churches and schools	
Priority:	High
Responsible Parties:	EMA
Estimated Cost:	Staff time
Funding Source:	Local, Grants, FEMA, GEMA
Timeline:	2019-2024
Status:	Ongoing

Action Step 8.1.7. Train local government officials on proper response procedures for hazardous material spill events	
Priority:	High
Responsible Parties:	Local Emergency Operations Planning Committee, EMA, Fire Departments
Estimated Cost:	Staff time
Funding Source:	Local
Timeline:	2019-2024
Status:	Ongoing

Action Step 8.1.8. Review and update Standard Operating Procedures (SOP) for responding to a hazardous material spill event	
Priority:	High
Responsible Parties:	Local Emergency Operations Planning Committee, EMA, Fire Departments
Estimated Cost:	Staff time
Funding Source:	Local
Timeline:	2019-2024
Status:	Ongoing

Action Step 8.1.9. Investigate, implement and train in methods to relocate residents if event occurs	
Priority:	High
Responsible Parties:	Local Emergency Operations Planning Committee, EMA, Fire Departments
Estimated Cost:	Staff time
Funding Source:	Local
Timeline:	2019-2024
Status:	Ongoing

Action Step 8.1.10. Provide workplace training on decontamination steps	
Priority:	High
Responsible Parties:	Local Emergency Operations Planning Committee, EMA, Fire Departments
Estimated Cost:	Staff time
Funding Source:	Local
Timeline:	2019-2024
Status:	Ongoing

Action Step 8.1.11. Review annually all hazardous material transportation routes (relocate routes if necessary)	
Priority:	Medium
Responsible Parties:	Local Emergency Operations Planning Committee, EMA, GDOT
Estimated Cost:	Staff time
Funding Source:	Local
Timeline:	2019-2024
Status:	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 8.1.1. Seek funding for a county-wide Early Warning Communication/ Notification System.	Unchanged
Action Step 8.2.1. Seek funding for construction of a hardened Emergency Operations Center, including necessary communications and operational equipment.	Completed
Action Step 8.2.2. Become a designated “StormReady Community.”	Renumbered to 8.1.2
Action Step 8.2.3. Implement the “Community Emergency Response Team” (CERT) program.	Renumbered to 8.1.3
Action Step 8.3.1. Maintain HazMat response training	Renumbered to 8.1.4
Action Step 8.3.2. Seek funding to expand HazMat training to first responders (fire, police, sheriff, EMS)	Renumbered to 8.1.5
Action Step 8.3.3. Increase public awareness and procedures to follow if a hazardous material spill event occurs by publishing articles in the local newspaper, holding town hall meetings, radio announcements and providing bulletins to local churches and schools	Renumbered to 8.1.6
Action Step 8.3.4. Train local government officials on proper response procedures for hazardous material spill events	Renumbered to 8.1.7
Action Step 8.3.5. Review and update Standard Operating Procedures (SOP) for responding to a hazardous material spill event	Renumbered to 8.1.8
Action Step 8.3.6. Investigate, implement and train in methods to relocate residents if event occurs	Renumbered to 8.1.9
Action Step 8.3.7. Provide workplace training on decontamination steps	Renumbered to 8.1.10
Action Step 8.3.8. Review annually all hazardous material transportation routes (relocate routes if necessary)	Renumbered to 8.1.11

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 Irwin County Emergency Management Agency. The Southern Georgia Regional Commission contracted with the Irwin County Commission to administer and facilitate the planning process. The Irwin County Commission and the City of Ocilla will adopt the Plan (on approval by GEMA and FEMA) by the resolutions contained in Appendix E.

B. Authority and Responsibility

The Irwin County Commission and the City of Ocilla 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 Irwin 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 Irwin County and the City of Ocilla. 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 Irwin County Commission and the City of Ocilla 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 Irwin County EMA Director will be charged with ensuring that this plan is monitored and periodically updated in subsequent years. The method that the Irwin County EMA will use to monitor the plan and evaluate implementation progress will be the following:

- The Irwin 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 Irwin County and City of Ocilla residents, it is imperative that public involvement be an integral part of the planning process.

Since adoption of the original Irwin 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.

Irwin County and the City of Ocilla 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 Irwin 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, Irwin County and City of Ocilla 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, Irwin County and the City of Ocilla 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

Irwin County Board of Tax Assessors (<http://www.qpublic.net/ga/irwin/>)

City of Ocilla website (<http://www.cityofocillaga.net/>)

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

Federal Emergency Management Agency (www.fema.gov)

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

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

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

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

Georgia Forestry Commission (www.gatrees.org)

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

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

Southern Georgia Regional Commission (www.sgrc.us)

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

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

United States Census Bureau (www.census.gov)

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 3. Floods – NOAA data
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Appendix G. HAZUS Report