



*A Golden Past.  
A Shining Future.*

**COMMUNITY DEVELOPMENT DEPARTMENT**  
**1725 Reynolds Street, Suite 200, Brunswick, GA 31520**

**TO:** Glynn County Board of Commissioners  
**FROM:** David Hainley, Director  
**SUBJECT:** Annual Flood Mitigation Report August 28, 2013 - September 1, 2014  
**DATE:** September 2, 2014

**BACKGROUND:** This is a report on the progress made during the past twelve months on enforcing the provisions of the Flood Damage Prevention Ordinance and any new initiatives that were undertaken. This report is required as a part of the annual Community Rating System review which determines the flood insurance rating. This report was prepared based upon the 2010 Flood Mitigation Plan. This annual report is submitted to the Board of Commissioners in electronic format as well as to the local media and made available in downloadable form by the public from the county website. Printed copies of this report were provided to both libraries and will also be made for any member of the public who does not have internet access. The availability and location of the report was made as a part of the “commercials” on the local public access channel before and after planning commission and board of commissioners meetings.

**PARTICIPATION IN FLOOD INSURANCE PROGRAM**

Currently there are approximately 15,111 Flood Insurance policies issued in the county. This year the County obtained a CRS rating of 7 with a 15% savings.

**FLOOD PLAIN INQUIRIES AND ELEVATION CERTIFICATES:**

During the last year staff provided approximately a thousand responses to inquiries regarding whether a property was located in a flood zone or providing a copy of an existing flood elevation certificate.

**BUILDING PERMITS:**

Additionally one hundred and thirty-eight building permits were issued for new or substantial improvements for structures in a flood zone. All new construction excluding accessory structures were required to submit a Flood Elevation Certificate prior to receiving a Certificate of Occupancy. A building was discovered that was built without a permit and it was required to be removed.

**APPEALS:**

There were no appeals filed during the last year to elevation/construction decisions made by the Building Official regarding flood damage prevention issues.

**2010 FLOOD MITIGATION PLAN:**  
**FLOOD MITIGATION PROJECT STATUS:**

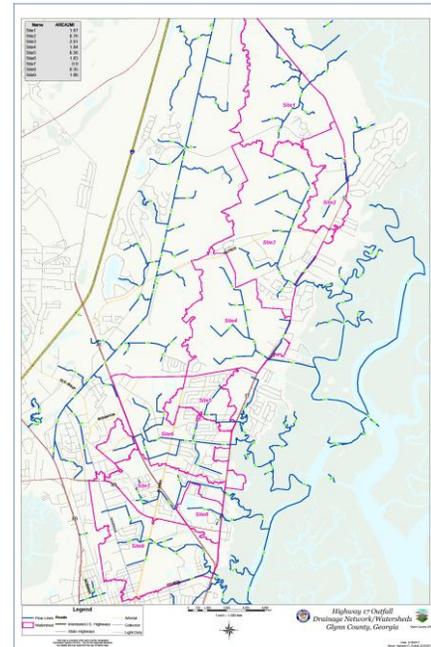
The Flood Mitigation Committee analyzed the proposed flood mitigation projects in the 2002 study and presents the following status report that indicates that all projects except for the Altamaha Park Road project were successfully completed.

The Glynn County Flood Mitigation Plan 2010 was adopted by the Board of Commissioners on September 1, 2011 and was approved by the Federal Emergency Management Agency on April 4, 2012. During the time from the adoption of the plan by the board until the approval of the plan by FEMA, staff was providing minor edits and clarifications to the plan. Because there was no approved Flood mitigation Plan in place for all but one month of the reporting period there were no active projects underway. The activities in the plan that will be undertaken in the next twelve months are included at the end of this report. The plan calls for the Flood Mitigation Committee to meet quarterly or after a major flooding event. Staff is working to establish a meeting time for this committee. Staff is also exploring means of obtaining grants to assist in the implementation of the recommended projects.

The Flood Mitigation Committee that prepared the plan update proposed the following projects that are recommended in the mitigation plan currently being reviewed by GEMA:

### Project A

Analyze the nine basins shown on the following map that have all existing drainage structures under US 17. The study will use LIDAR generated drainage basins to analyze the performance of the storm drainage structures during a 100 yr. storm event. The study which is currently underway will determine the extent of flooding caused by existing conditions and recommend outlet structure sizing and analyze resultant improvement of conditions utilizing HAZUS. The outcome is to utilize this data as a basis for grant requests to increase structure sizes as indicated for the best cost benefit basis. A detailed drainage study was completed this year for this basin.



### Project B

Seek a grant from the EPA for Green Infrastructure as a part of the Clean Water Act to implement drainage demonstration project on St. Simons Island in the Harrington area to deal with inadequate drainage in a developing area. This project will be pre-emptive in nature to address an area that will develop flooding problems if actions are not taken.



St. Simons Island  
Harrington Community Park Master Plan  
November 20, 2008

## Project C

Develop a LIDAR drainage basin map showing the repetitive and most recent single loss locations and determine the amount of storm flow required to produce the flooding effects for the indicated locations. Determine the limiting outlet structure. Utilize HAZUS to analyze the most effective option to address flooding i.e. elevation of structures, demolition of structures, creation of retention ponds, elimination of the outlet structure, enlargement of the outlet structure etc. This project will specifically include at least one of the following basins/sub-basins where there is visually observed issues:

- Analyze the basin that contains Community and Old Cypress Mill Roads from Habersham to Altama including Key Circle, Cypress Run, and all other developed areas.
- Analyze the College Park basin
- Analyze the sub-basin that contains Glynn Haven on St. Simons Island
- Analyze the basin that contains all the neighborhoods on St. Simons Island along the east side of Frederica Road between Demere and Sea Island Roads.
- Analyze the basin that is bounded by US Highway 341, Golden Isles Parkway Ext., Ga. Highway 99, and Crispin Blvd./Cate Road
- Analyze the basin(s) along Old Jesup Rd. from Community Rd. to Crispin Blvd.

### **UPCOMING YEAR WORK ELEMENTS:**

The adopted 2010 Flood Mitigation Plan has specific work elements with a specific party assigned to that task. Some of the tasks are a onetime event and others are ongoing efforts and are so noted. The Flood Mitigation Committee will review progress on these work elements and include an update in next year's report. Due to the time delay in having the plan receive final approval some of the dates have need to be revised.

### **ORDINANCE REVIEW AND RECOMMENDATIONS**

A.The "Flood Damage Prevention Ordinance of Glynn County, Georgia" has a stated purpose of promoting the public health, safety and general welfare and to minimize public and private losses due to flood conditions in specific areas of Glynn County. The ordinance is in substantial compliance with the minimum requirements of the National Flood Insurance Program. Areas not addressed by the Ordinance, but required by the NFIP are listed below. Also listed are recommended changes to the ordinance for consideration by Glynn County. These recommendations exceed the minimum requirements of the NFIP and offer a higher level of protection to the community.

1. There are Areas of Special Flood Hazard designated as Zone A on the Flood Insurance Rate Maps for Glynn County. These zones are approximate zones of flooding where no base flood elevations have been established.

The Ordinance requires developments of 5 acres or 50 lots, whichever is greater; to establish a base flood elevation and that this data shall govern the minimum finished floor elevation. However, structures are being constructed in areas not subject to this rule and are not

required by ordinance to elevate to a given elevation. They are required to construct the base floor two (2) feet above the highest adjacent ground.

In such instances, elevation requirements are typically based on a given height above the highest adjacent natural grade, similar to the requirements of AO zones. It is recommended that the Ordinance be revised to provide elevation guidance for individuals building in approximate A zones, where they are not required to establish a base flood elevation and data is not available from other sources

<b>Responsible Entity</b>	<b>Funding Source</b>
County Engineer & Building Official	Existing Budget
<b>Planning Duration</b>	<b>Objective Status</b>
Delayed until new study published 2015	To be scheduled

2. All new and substantial alterations require the structure to meet the minimum of the base flood elevation. No freeboard requirement has been established for new construction in Glynn County Special Flood Hazard Areas. Freeboard (elevation of the structure above the required elevation) requirements provide an additional level of protection. The Flood Insurance Rate Maps are based on current conditions and are supposed to consider built-out conditions. In essence, structures protected only to the Base Flood Elevation continue to be at risk of flooding.

The Community Rating System provides points for communities having a freeboard requirement in their flood damage prevention ordinance. Flood insurance rates are based on coverage and risk. Elevating a structure can decrease the annual flood insurance premium. It is recommended that Glynn County consider establishing a freeboard requirement of at least one (1) foot, with consideration of establishing a two (2) foot freeboard.

<b>Responsible Entity</b>	<b>Funding Source</b>
County Engineer & Building Official	Existing Budget
<b>Planning Duration</b>	<b>Objective Status</b>
Delayed until new study published 2015	To be scheduled

3. Recreation vehicles located in Special Flood Hazard Areas are not addressed in the flood damage prevention ordinance. Several recreation vehicle parks are located in zones A, AE, and VE. Glynn County needs to require that recreation vehicles in Special Flood Hazard Areas be on-site fewer than 180 days, be fully licensed and be road ready.

<b>Responsible Entity</b>	<b>Funding Source</b>
Community Development	Existing Budget
<b>Planning Duration</b>	<b>Objective Status</b>
Completed	To be scheduled

### **Comprehensive Plan Review and Recommendations**

Page 25 26 of the Community Agenda, Comprehensive Plan, Update 2008, addresses Improved Drainage and Flood Prevention.

“Glynn County’s low topography and ample water bodies have a drawback - much of Glynn County is prone to flooding. Certain areas of the County have already experienced destructive

flooding in recent years. As development moves to increasingly marginal lands, including known floodplains, flooding issues can be expected to worsen unless proactive steps are taken to improve drainage and manage the location of development relative to the floodplain. Note that land disturbance in floodplains, increased impervious surfaces, and loss of wetlands are all demonstrated to exacerbate flooding problems in downstream areas. Flooding constitutes a threat to human life and property and it is in the interest of Glynn County to take actions to prevent the exacerbation of flooding problems and to mitigate the potential destructive impacts of floods. Community stakeholders are concerned with increased flooding on the mainland, and there is broad community support for taking proactive measures to mitigate existing flooding and to prevent future flooding through improved drainage methods.

The County should seek both to improved drainage infrastructure and to employ land use planning to discourage intensive floodplain development or disturbance. Glynn County engineers and other stakeholders recommend that the County develop a County-wide master plan for drainage infrastructure. The new stormwater ordinance helps to mitigate stormwater impacts of new development, but it does not comprehensively address stormwater and flooding issues County-wide. It may be more economical for the County to obtain rights-of-way for drainage if they are planned in advance of ongoing development. If the County pursues a County-wide master plan for drainage, a source of funding will be necessary to finance stormwater projects. Many types of financing are possible, including the use of general revenues; however some communities have employed a stormwater utility fee in order to finance stormwater facilities. At the same time, Glynn County should seek to regulate the amount and type of development occurring in floodplain areas. Development in floodplain areas disturbs existing drainage patterns and increases the speed and volume of floodwater downstream. Floodplains are also generally environmentally sensitive in other aspects, such as stream buffers or wetlands. Some development can be accommodated in floodplain areas, but on the whole Glynn County should seek to minimize development within its floodplains.”

**Responsible Entity**

Community Development, GIS

**Planning Duration**

Ongoing

**Funding Source**

Existing Budget

**Objective Status**

To be scheduled

Page 30 of the Community Agenda, Comprehensive Plan, Update 2008, addresses recommended policies; “Improved Drainage and Flood Prevention

Policy J.1: The County shall design and fund a County-wide Master Stormwater Plan. This will allow the County to acquire drainage rights of way as development occurs, minimizing the expense and inconvenience of securing adequate drainage.

**Responsible Entity**

Community Development, GIS

**Planning Duration**

Ongoing

**Funding Source**

Existing Budget

**Objective Status**

To be scheduled

Policy J.2: Glynn County will seek to minimize development and disturbance within floodplains to reduce flood hazards to persons and property and to prevent exacerbating flooding and erosion in downstream communities. The County may seek to develop a Floodplain Damage Prevention Ordinance to implement this policy.

**Responsible Entity**

Community Development

**Planning Duration**

Delayed until new study published 2015

**Funding Source**

Existing Budget

**Objective Status**

To be scheduled

Policy J.3: The County shall consider conducting a feasibility study on creating a Stormwater Utility to fund stormwater improvements.

**Responsible Entity**

Community Development

**Planning Duration**

Delayed by BOC

**Funding Source**

Existing Budget

**Objective Status**

To be scheduled

Page 33 of the Community Agenda, Comprehensive Plan, Update 2008, addresses recommended policies; Improved Drainage and Flood Prevention

Monitor and record flooding events and property damage from flooding events in a GIS database.”

**Responsible Entity**

Community Development - GIS

**Planning Duration**

Continuous

**Funding Source**

Existing Budget

**Objective Status**

As required

**Stormwater Management Program Review and Recommendations**

Glynn County’s stormwater management requirements are in the subdivision regulations and the Water Resource Ordinance that recognizes the impact of increased runoff on downstream properties and drainage ways. The standards apply to developments where:

(a) new development that involves a 1.0 cubic foot per second (cfs), or greater, increase in the peak rate of runoff for the 25-year return frequency storm or one that disturbs 1 acre or more of land;

(b) redevelopment that involves a 1.0 cfs, or greater, increase in the peak rate of runoff for the 25-year return frequency storm or one that involves other land disturbing activity of one acre or more;

(c) any new development or redevelopment, regardless of size, that is defined by the County Engineer to be a hotspot land use.

The developer may elect to retain the pre and post runoff rates or increase the capacity of downstream drainage facilities to adequately handle the increased rate of runoff where adverse impacts are expected. The design storm frequency identified in the ordinance is the 25-year event peak discharge for drainage structures and the 50-year event, 24-hour storm for detention facilities.

These design requirements provide protection for larger less frequent storms; however, damage can also occur during the smaller more frequent events. In the 1999 Flood Mitigation Study it was recommended that Glynn County consider revising the WRPO to include design standards for smaller, more frequent events. In particular, the two (2) year and ten (10) year twenty-four (24)

hour storm events should be given consideration. It is also recommended that the effects of the 100-year event be demonstrated in the analysis of detention facilities and drainage structures. The subdivision regulations are under current review and these recommendations will be considered for incorporation into the new standards.

**Responsible Entity**

Community Development

**Planning Duration**

Delayed until new study published 2015

**Funding Source**

Existing Budget

**Objective Status**

To be scheduled

The Brunswick Altamaha Canal has been abandoned as a diversion canal. It does, however, continue to function as an important hydrologic drainage feature. Floodwaters from the Altamaha River are carried through the canal to the Turtle River. It has been noted that under certain conditions, flows within the canal can reverse and floodwaters will flow in the direction of the Altamaha River. The Flood Insurance Rate Maps indicate that there is a special flood hazard area in and around the canal. Flood damages in this area have the potential to be reduced by restoring and maintaining the full carrying and storage capacity of the canal. It is recommended that all required permitting be secured to allow conducting routine maintenance of the canal. Inspections should be conducted on a bi-yearly basis, at a minimum, and after storms exceeding the 25-year event.

**Responsible Entity**

Community Development

**Planning Duration**

Ongoing

**Funding Source**

Existing Budget

**Objective Status**

Ongoing

**Other Mitigation Strategies and Recommendations**

1. Provide more publicity to Glynn County’s emergency broadcast system to provide critical data on coastal storms, riverine flooding, localized flooding and other emergencies. This radio broadcast system disseminates important information on approaching storms, evacuation procedures, safe routes of travel, reentry procedures, etc.

**Responsible Entity**

EMA, PIO

**Planning Duration**

Ongoing

**Funding Source**

Existing Budget

**Objective Status**

To be scheduled

3. Create public school program regarding flood hazards: Public school programs have been very successful in teaching fire safety techniques to elementary school children. Flood hazard education can follow this example through lessons targeted at the public school curriculum. Glynn County should work with the school board and teachers to implement flood hazard education into the public school curriculum.

**Responsible Entity**

Community Development, PIO,  
Schools

**Planning Duration**

Ongoing

**Funding Source**

Existing Budget- Grants

**Objective Status**

To be scheduled -Summer 2015

## Action Plan for Non-Structural Mitigation

The overall directions can be summarized under three general approaches

- Improve and administer regulations on new construction throughout the community, with special emphasis on floodplain development and protection of natural resources.
- Respond to floods and other natural hazards before they reach threatened areas.
- Inform and involve the public in the implementation of this Plan and in protecting their health, safety and property.

The Action Plan converts the general recommendations and overall directions to specific action items. It is organized according to the entity that would be responsible for them.

### Board of Commissioners

1. The County should develop and provide technical and financial support to property owners interested in retrofitting their properties to protect them from flooding.

**Responsible Entity**

Building Official, Board of Commissioners

**Funding Source**

Existing Budget Grants

**Planning Duration**

Funding Application slated 2015

**Objective Status**

Continuous

2. Adopt this Flood Mitigation Plan and create a permanent Mitigation Committee.

**Responsible Entity**

Board of Commissioners, County  
Administrator

**Funding Source**

Existing Budget

**Objective Status**

Completed

**Planning Duration**

Fall 2013 and Spring 2014

### Community Development Department

#### Planning

Complete the drainage basin master plan to quantify the amount of stormwater affecting downstream basins.

**Responsible Entity**

Community Development, GIS

**Funding Source**

Existing Budget

**Planning Duration**

Continuous

**Objective Status**

Partially completed

#### Building & Zoning

Review the inspection and enforcement procedures to determine if changes are needed to ensure complete compliance with the County's flood damage reduction requirements.

**Responsible Entity**

Community Development

**Funding Source**

Existing Budget

**Planning Duration**

Continuous

**Objective Status**

Delayed until new study published 2015

**Code Enforcement**

Review the Zoning Ordinances and the Code of Ordinances to determine appropriate amendment language to address simple and inexpensive property protection measures and to initiate stream and wetland dumping regulations.

**Responsible Entity**

Community Development - Code

**Funding Source**

Existing Budget

**Planning Duration**

Annual

**Objective Status**

Completed no change proposed

**Fire Department/EMA**

Continue to follow the Emergency Operations Plan and critique and revise it after each emergency or disaster. Prepare an appendix to the Emergency Operations Plan that uses the Flood Stage Forecast Map to identify areas affected and resources needed at various predicted flood levels.

**Responsible Entity**

Fire Development - EMA

**Funding Source**

Existing Budget

**Planning Duration**

Post occurrence

**Objective Status**

To be scheduled

**GIS**

Incorporate the new Digital Flood Insurance Rate Map for Glynn County into the geographic information system when the FIRMs are revised to utilize LIDAR mapping data.

**Responsible Entity**

GIS

**Funding Source**

Existing Budget

**Planning Duration**

Within three months of FEMA delivery

**Objective Status**

To be scheduled

Evaluate the ability to prepare a riverine flood stage forecast map for the Altamaha, Turtle and Satilla River floodplains.

**Responsible Entity**

Community Development, GIS,

**Funding Source**

Existing Budget - Grant

**Planning Duration**

Ongoing effort

**Objective Status**

To be scheduled based upon modeling

**Public Works**

Develop and implement a drainage system inventory and drainage and storm sewer improvement plan Capital Improvements Program.

**Responsible Entity**

Public Works -Community Development

**Funding Source**

Existing Budget

**Planning Duration**

Ongoing effort

**Objective Status**

To be scheduled - begin spring 2014

Prepare formal drainage system maintenance procedures that are coordinated with other agencies' maintenance programs.

**Responsible Entity**

Public Works

**Planning Duration**

Ongoing effort

**Funding Source**

Existing Budget

**Objective Status**

To be scheduled –begin summer 2014

Work to obtain permits necessary to open and maintain the Brunswick-Altamaha Canal as a primary drainageway.

**Responsible Entity**

Public Works - Community Development

**Planning Duration**

Ongoing Effort

**Funding Source**

Existing Budget - Grants

**Objective Status**

Underway

**Public Information**

1. Ensure that the following technical information activities are implemented:

- Stocking the Public Library with additional property protection references.
- Links on the County's web site to flood data, references and sources of assistance as updates are needed.
- Develop an electronic guidebook for property owners.
- Site visits to advise residents and businesses on how to protect their properties

**Responsible Entity**

Community Development

**Planning Duration**

Ongoing effort

**Funding Source**

Existing Budget

**Objective Status**

To be scheduled

**Mitigation Committee**

1. Monitor implementation of the Action Plans and report on progress and recommended changes to the County Administrator and Board of Commissioners thru quarterly meetings and annual progress reports. The committee shall review each work element and determine what progress has been made including completing work items and identifying new/additional work items.

**Responsible Entity**

Community Development

**Planning Duration**

Ongoing effort

**Funding Source**

Existing Budget

**Objective Status**

To be scheduled-begin winter 2014

**County Administrator**

Submit an application for a flood insurance premium rate discount under the Community Rating System.

**Responsible Entity**

County Administrator - Community Development

**Planning Duration**

Ongoing effort

Existing Budget

**Objective Status**

Projected CRS fall 2015 review

**Funding Source**

**Recommended Action:** No formal action on this item is required by the Board.