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# GEORGIA HAZUS PROJECT – A MODEL FOR SUCCESS THROUGH COLLABORATION

# Agenda

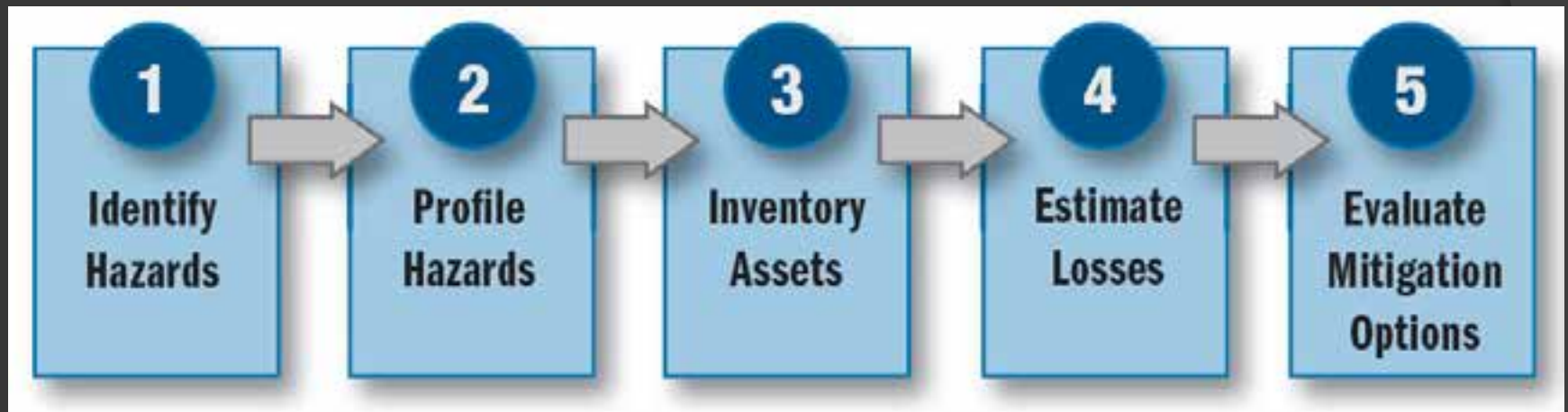
- ž Project history
- ž Review of project design
- ž Lessons learned

# Hazus overview

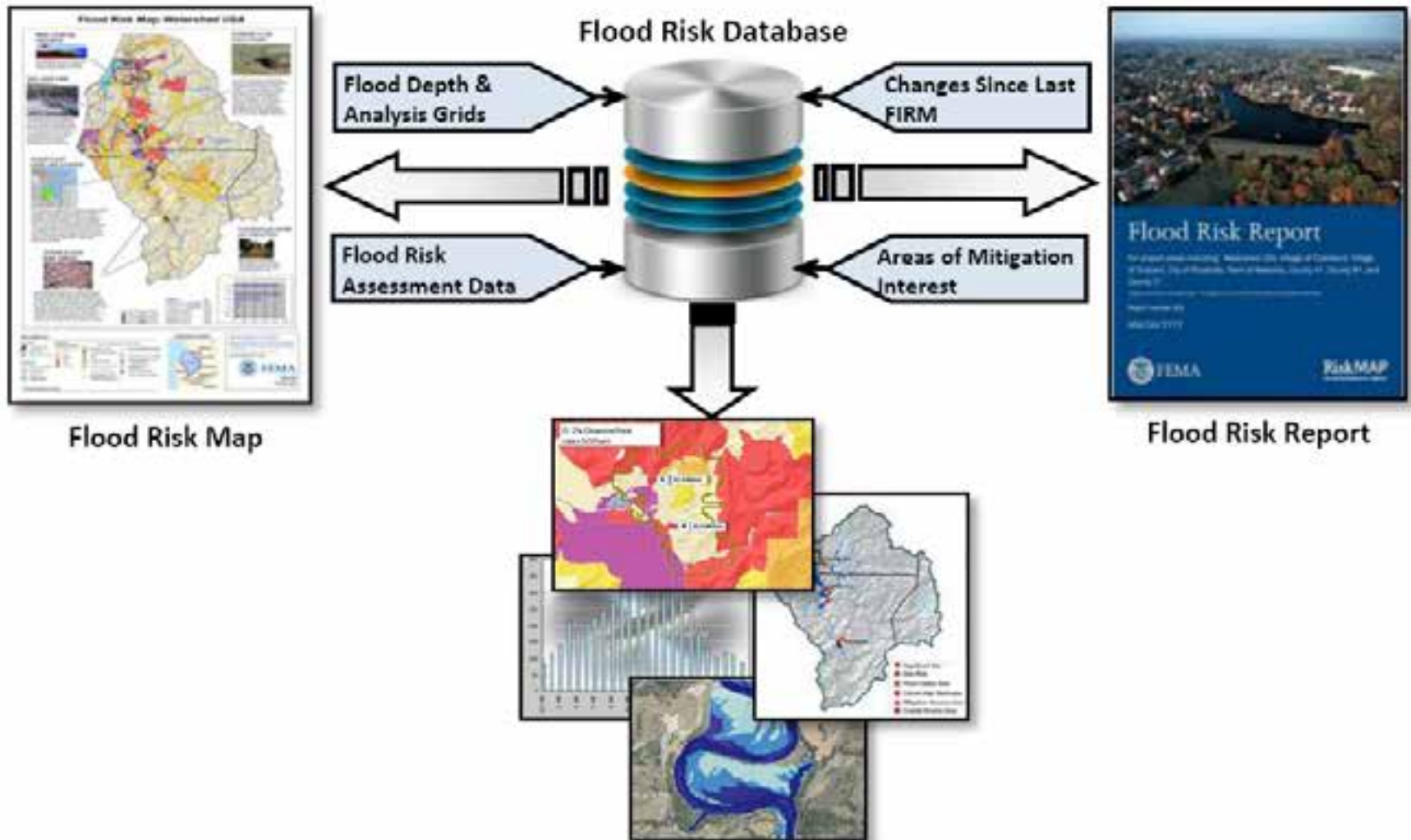
## **What is HAZUS?**

HAZUS is a nationally applicable standardized methodology that contains models for estimating potential losses from earthquakes, floods, and hurricanes. HAZUS uses Geographic Information Systems (GIS) technology to estimate physical, economic, and social impacts of disasters. It graphically illustrates the limits of identified high-risk locations due to earthquake, hurricane, and floods. Users can then visualize the spatial relationships between populations and other more permanently fixed geographic assets or resources for the specific hazard being modeled, a crucial function in the pre-disaster planning process.

# What is the Hazus Risk Assessment Process?



# FEMA Risk MAP



Ad-Hoc & User-Defined Flood Risk Analysis and Mapping

Figure 1 - Flood Risk Data and Products Model

# Background

ž HUD CDBG DREF *Forward Thinking Land Use*

## ž Objectives

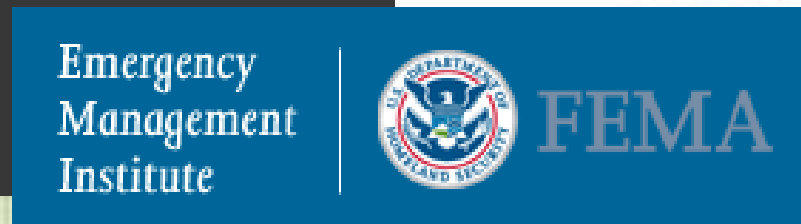
- Assist local governments in preparing for future disaster mitigation and resilience.
- Increase disaster mitigation education and awareness.
- Enhance consistency amongst various required planning documents, to foster complementary comprehensive plans and hazard mitigation plans.

# Disaster Recovery Enhancement Fund

Qualifying activities were limited to:

- A. Development and adoption of a ***forward-thinking land-use plan that will guide use of long-term recovery efforts and subsequent land-use decisions throughout the community and that reduces existing or future development in disaster-risk areas; and/or***
- B. Floodplain or critical fire or seismic hazard area buyouts programs under an optional relocation plan that includes incentives so that families and private sector employers move out of areas at severe risk for a future disaster; and/or
- C. Individual mitigation measures (IMM) to improve residential properties and make them less prone to damage. If such activities are incorporated into the grantee's rehabilitation or new construction programs generally, the cost increment attributed to IMM will be the amount considered for the additional allocation, not the total construction amount budget; and/or
- D. Implementation of ***modern disaster resistant building codes, including, but not limited to, training on new standards and code enforcement.***

# Project partners





# Project design

- ž Hazus course series
- ž Development of tools and workflow that supported efficient development of quality risk assessments
- ž Pilot project

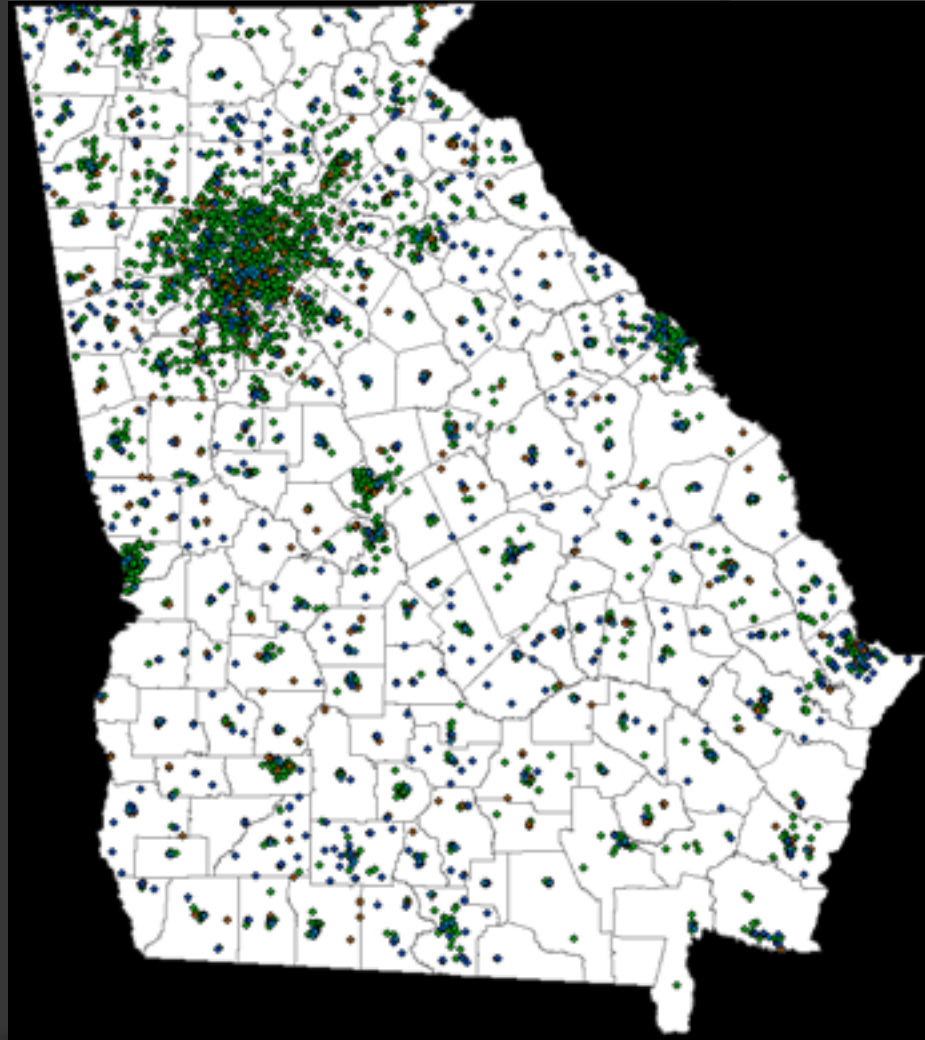
# Training

- ArcGIS for Emergency Managers
- Basic Hazus-MH
- Hazus-MH for Flood
- Hazus-MH for Hurricanes
- Using Hazus for Risk Assessment
- Comprehensive Data Management for Hazus
- Using Hazus for Floodplain Management

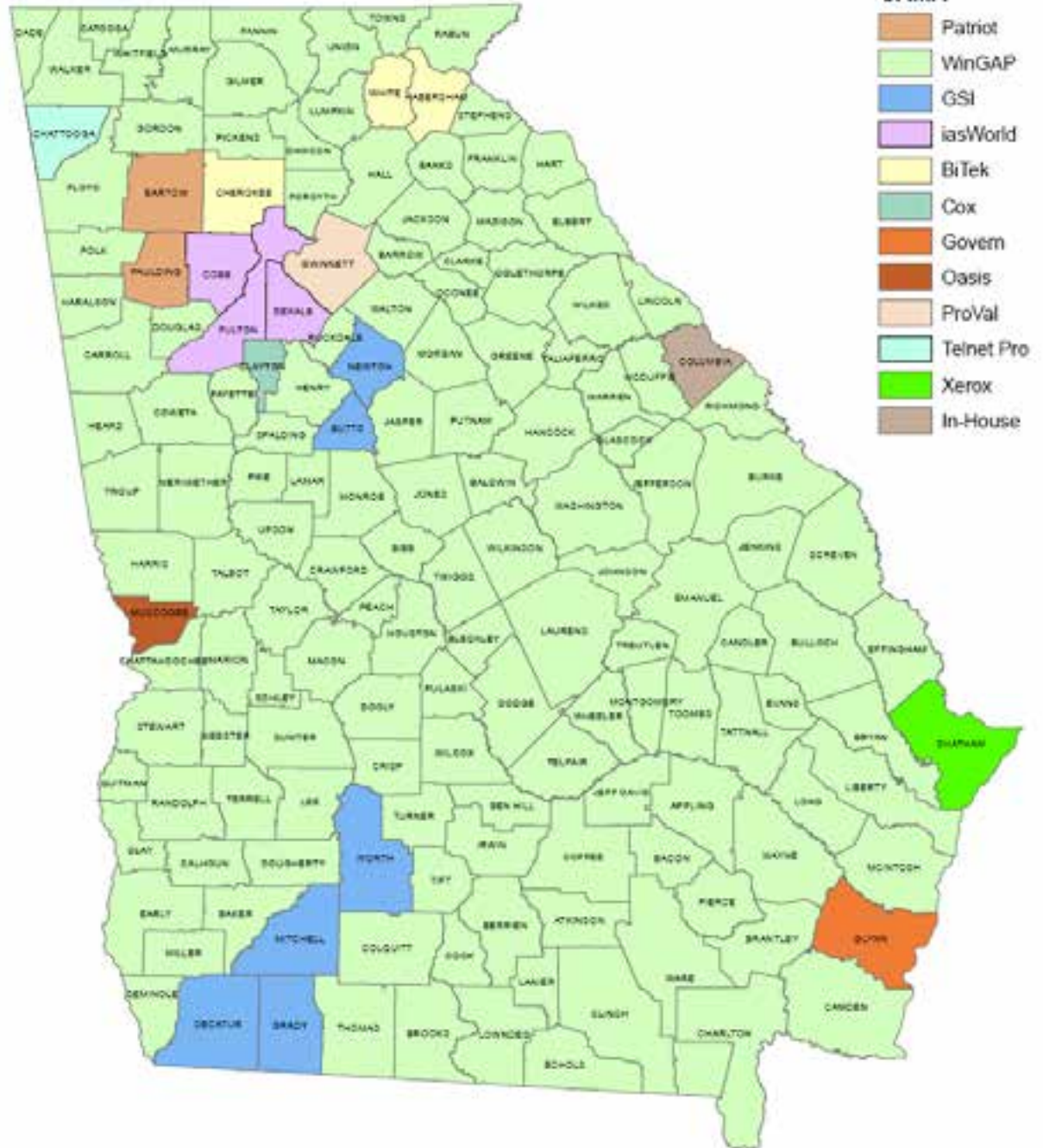


# Inventory

- ž Update Essential Facilities (GMIS)
- ž Update Demographic Data (Census 2010 SF-1)
- ž Tools and workflow for maintenance



# Georgia CAMA Systems



# Tools and workflow

**Table Of Contents**

- Camden County Data Sources
  - Parcel\_Points
  - Parcels\_Dissolve
  - BI
  - moBuildings
  - reBuildings
  - acBuildings
  - coBuildings
  - Parcels
  - Counties
  - ESRI\_Imagery\_World\_2D
  - Basemap
  - Streets

**Table**

LENGT	MFG	MOBCLA	PURPRIC	EXTVAL	FOUNDATI	REPLACO	CONDITIO	VALUE	ADDONV	CALC_VAL	NADA_CO
72	HORTON HOMES INC	AV	0	1	1	30836	1	21511	0	21511	L
64	REDMAN	AV	0	1	1	31933	1	14035	0	14035	F
80	FLEETWOOD	AV	02200	8	2	63813	2	38723	0	38723	A
44	CATALINA HMS	AV	0	1	1	27150	1	8552	2062	8552	A
18	YELLOWSTONE COACH CO	GD	0	1	2	7940	3	1588	4463	1588	A
60	FLEETWOOD	AV	0	1	1	33667	3	8080	0	8080	A
40	AMERICAN HERITAGE RELOCA	AV	0	1	1	25408	3	8024	120	8024	A
52	HOMES OF MERIT	AV	0	8	2	32483	3	18516	0	18516	A

(0 out of 1482 Selected)

moBuildings

# Tools and workflow

The screenshot displays the WinGap software interface, showing a data workflow and a dialog box for configuring an AttributeValueMapper transformer.

**Workflow Diagram:**

- Source Types:** A yellow box at the top left.
- reBuild\_MDB:** A yellow box connected to the **CaGhsOccCode** transformer.
- UsedAs2\_ccCode:** A yellow box connected to the **CaGhsOccCode** transformer.
- acBuild\_MDB:** A yellow box connected to the **CompNo\_OccCode** transformer.
- modul\_E\_MDB:** A yellow box connected to the **hrOccC** transformer.
- CaGhsOccCode:** A blue transformer with INPUT and OUTPUT ports.
- hrOccCode\_Filter:** A blue transformer with INPUT and OUTPUT ports.
- Class2hrOccCode:** A blue transformer with INPUT and OUTPUT ports.
- Foundat\_rdbType:** A blue transformer with INPUT and OUTPUT ports.
- Foundat\_inType\_2:** A blue transformer with INPUT and OUTPUT ports.
- CompNo\_FdbType:** A blue transformer with INPUT and OUTPUT ports.
- hrOccTy\_FloorH\_A:** A blue transformer with INPUT and OUTPUT ports.

**AttributeValueMapper Parameters Dialog:**

Transformer Name: C82F20CCC09E  
Source Attribute: occupancy  
New Attribute: hrOccCode

Value Mappings

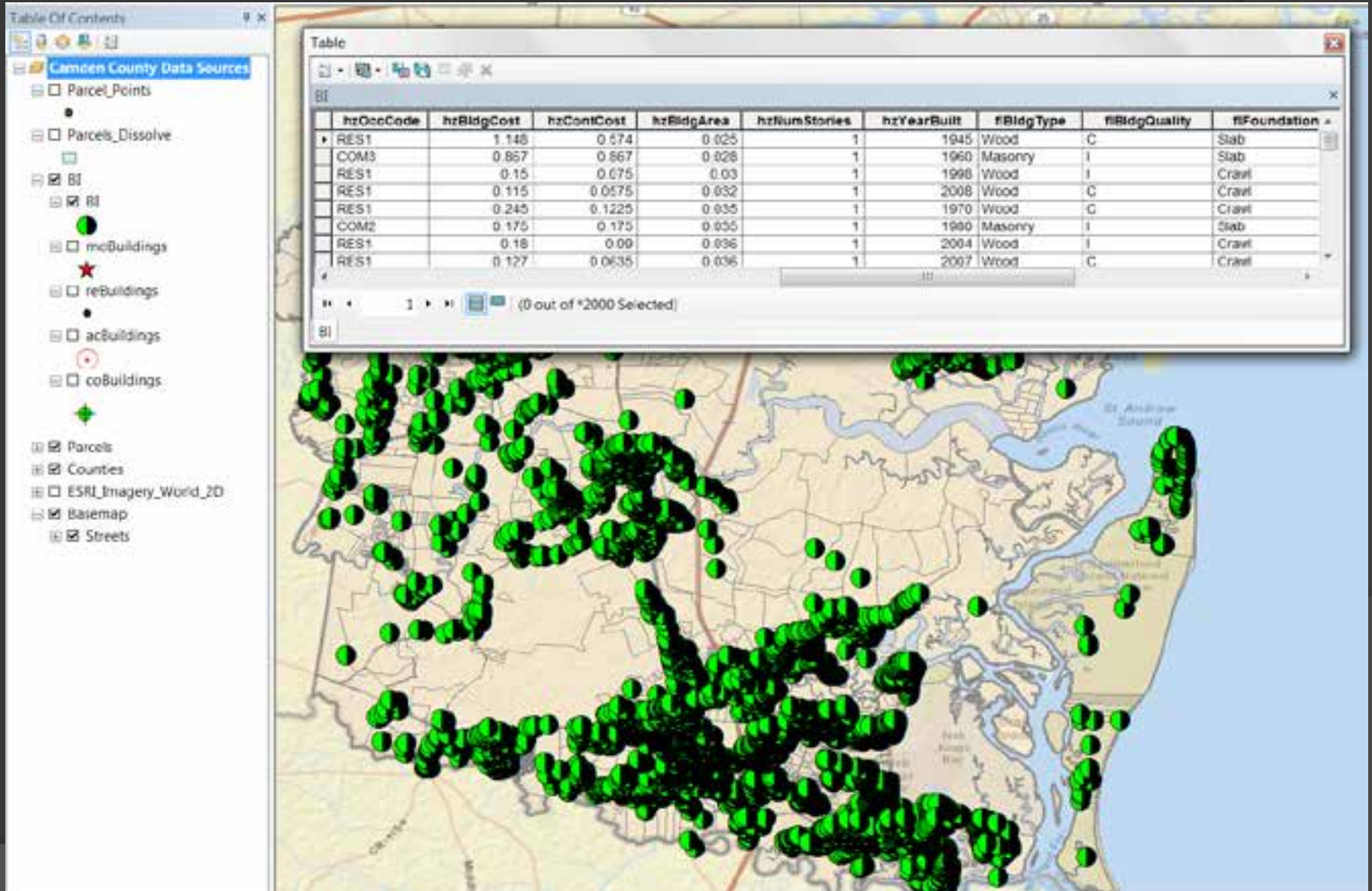
Source Value	Target Value
1	RES3B
3	RES3F
4	RES2

Default Value: RES1

Reverse Mapping

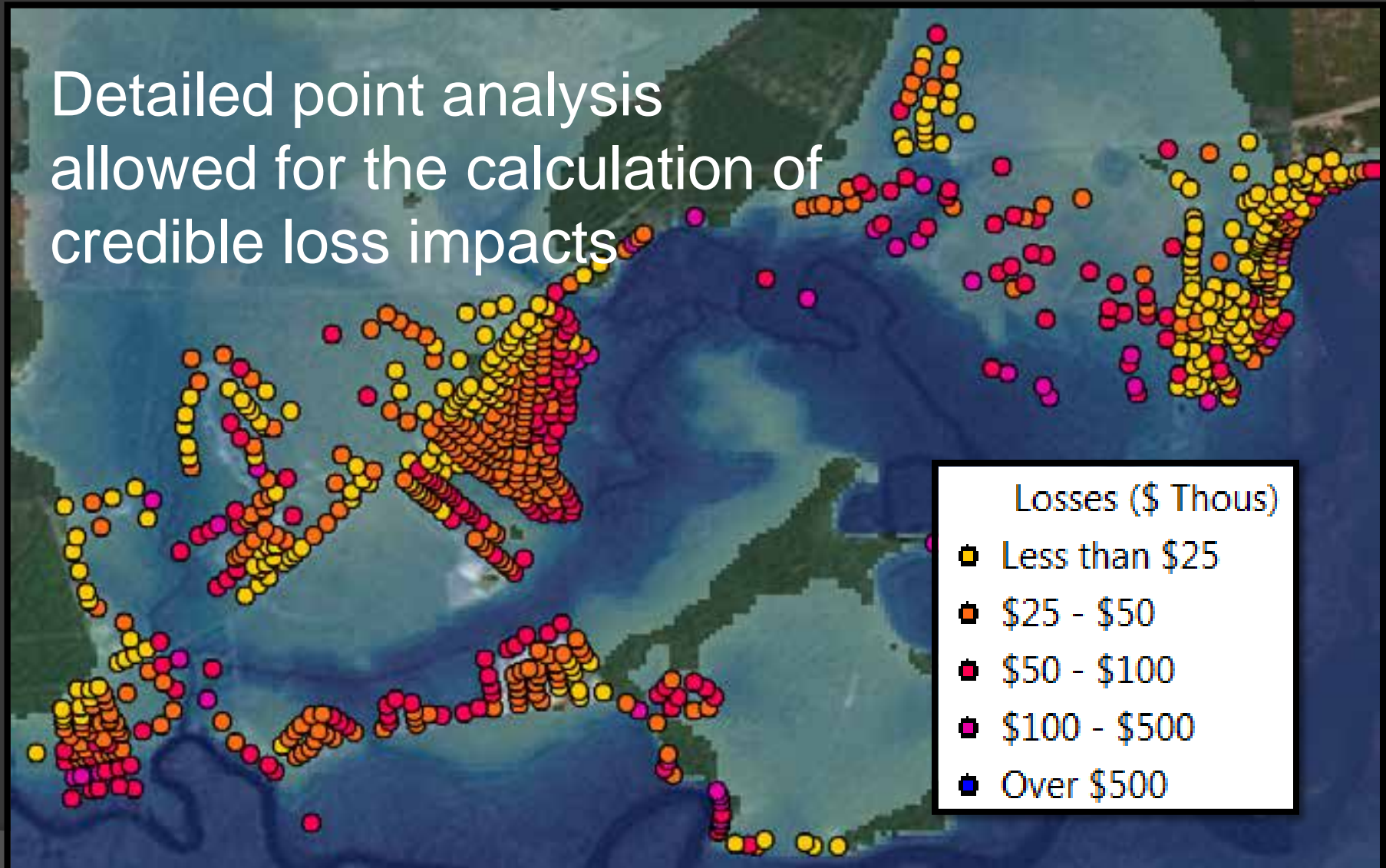
Buttons: Help, OK, Cancel, Import...

# Tools and workflow



# Tools and workflow

Detailed point analysis  
allowed for the calculation of  
credible loss impacts





# Workflow

## Project created a complete workflow

- Processing of local inventory
- Integration of local hazard data
- Analysis of hazards
- Creation of risk assessment maps, tables and reports

### TASK 1.5.4 · CREATE BUILDING INVENTORY FROM BUILDINGS

An FME script named 1 WinGap Buildings to BI has been developed for the purpose of migrating the `acBuildings`, `coBuildings`, `reBuildings`, and `moBuildings` feature classes to Building Inventory.

The Buildings are processed to create BI that fits the Hazus database structure and domains. The resulting dataset represents the Building Inventory in a county derived from the county parcel feature class joined to the county assessor's improvement records. The scripts are setup for Camden County, but may need to be modified for other counties. It may also be necessary to modify the tools to accommodate differences between the data sources. Therefore, modify the name of the toolbox to signify the name of the county that the tools are run against.

- Add the GA\_<County\_Name>\_FME\_BI.tbx toolbox to `ArcTools` from:  
C:\Projects\Hazus\_Projects\PDM\_Georgia\Data\_Management\Models\County\<County\_Name>\Tools\GA\_<County\_Name>\_FME\_BI.tbx
- Right-click on the <County\_Name>\_FME\_BI toolbox and select `Properties`. Change the tool Label to <County\_Name>FME BI.



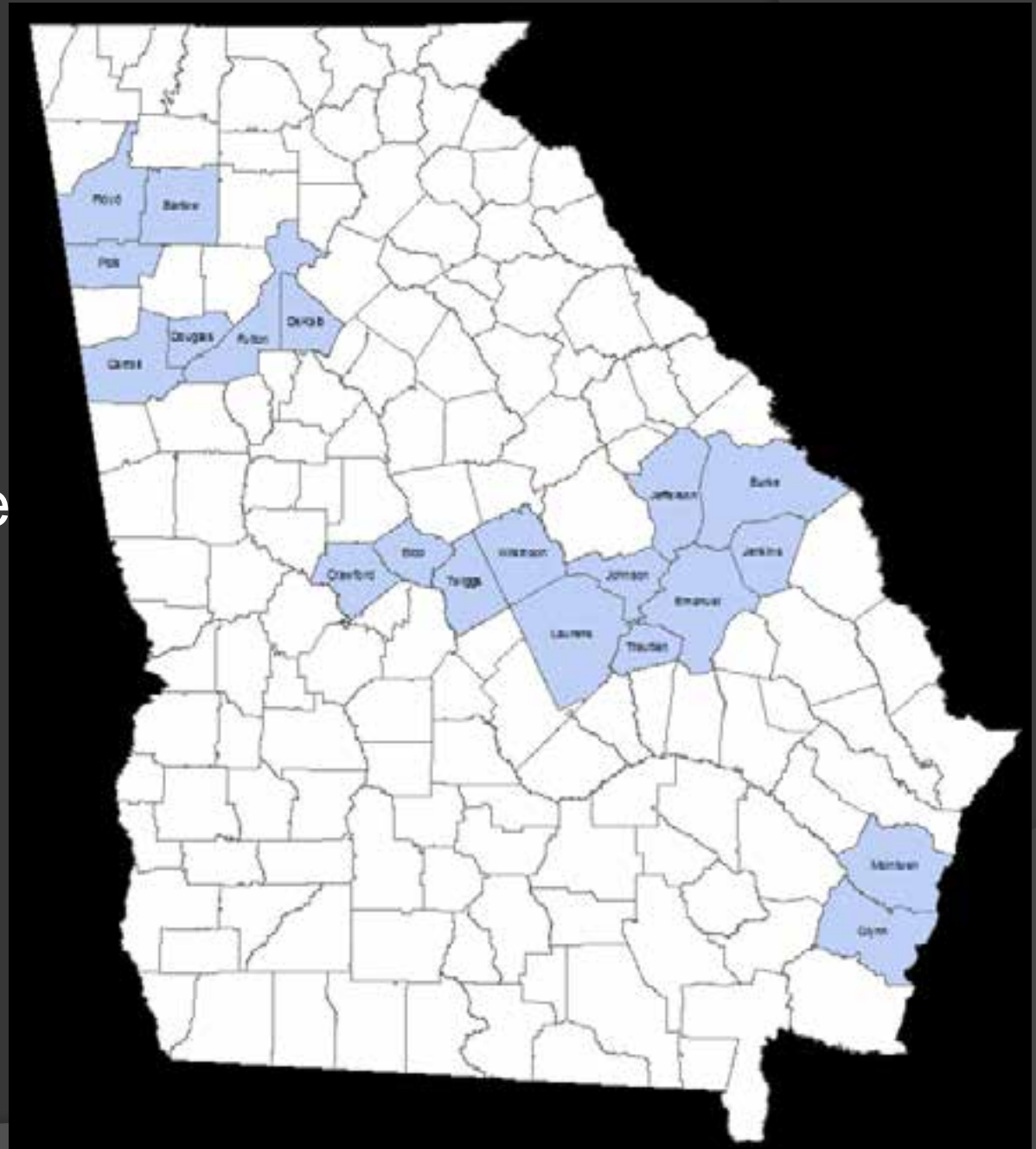
# Pilot project

- Four counties were selected for the pilot



# DREF

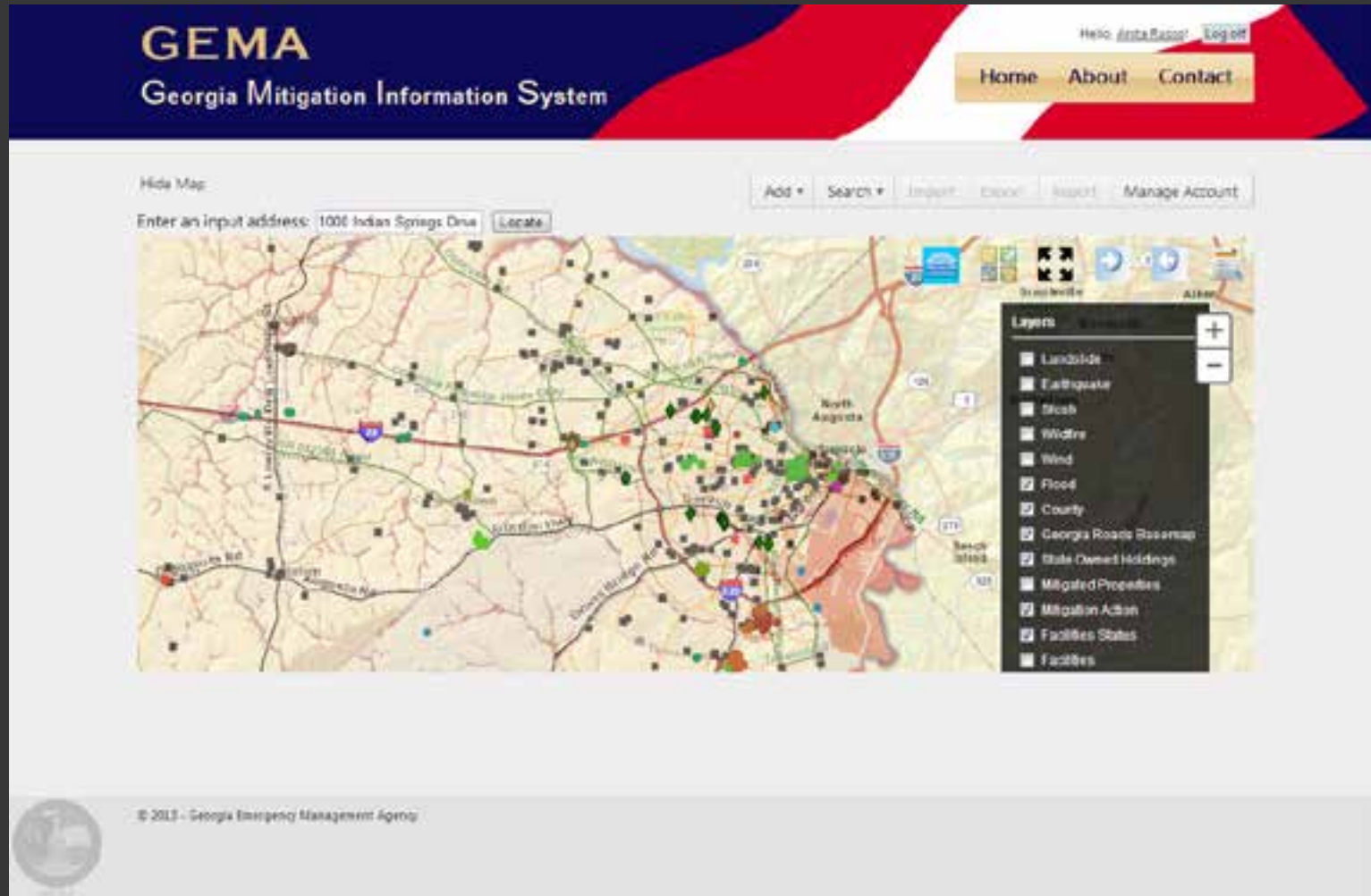
- ž 20 counties  
limited study
- ž 1-percent  
annual chance  
flood analysis  
using NFHL  
and EQL
- ž Probabilistic  
hurricane  
analysis



# Lessons learned

- ž Training is critical to successful rapid implementation
- ž Creation of a designated core of local experts
- ž Integration of training with a pilot project
- ž Building collaboration – most valuable element of this project

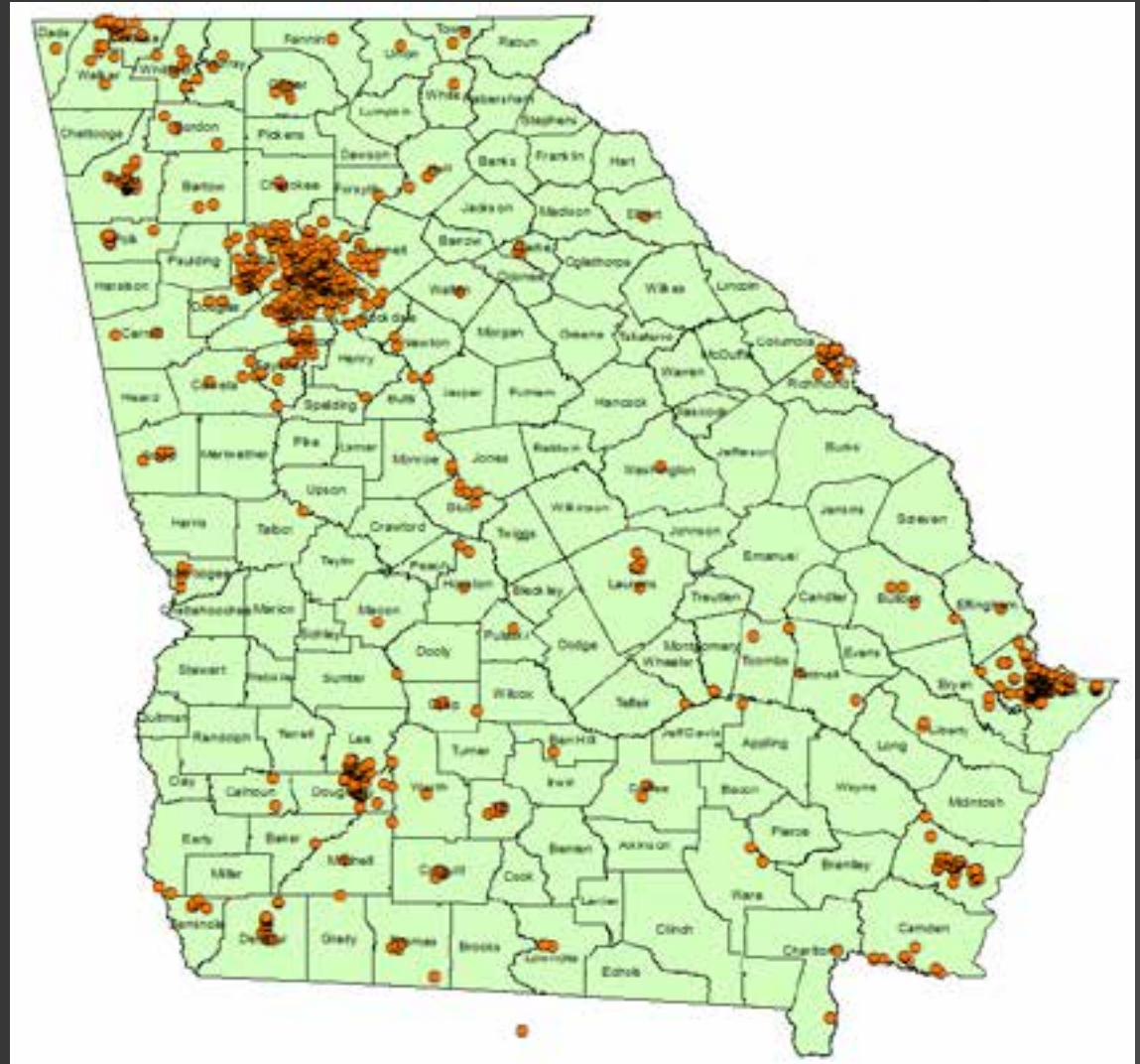
# Collaboration with GEMA: GMIS



**GMIS** information and tools for hazard mitigation planners; source for Hazus Essential Facility update.

# Collaboration with FEMA & GEMA

- Repetitive Loss
- Geocoded 1,621 repetitive loss properties into 1,898 census blocks



# Collaboration with FEMA & GEMA



**Repetitive Loss Block Map** to better coordinate between community planners, hazard mitigation planners, and floodplain managers.

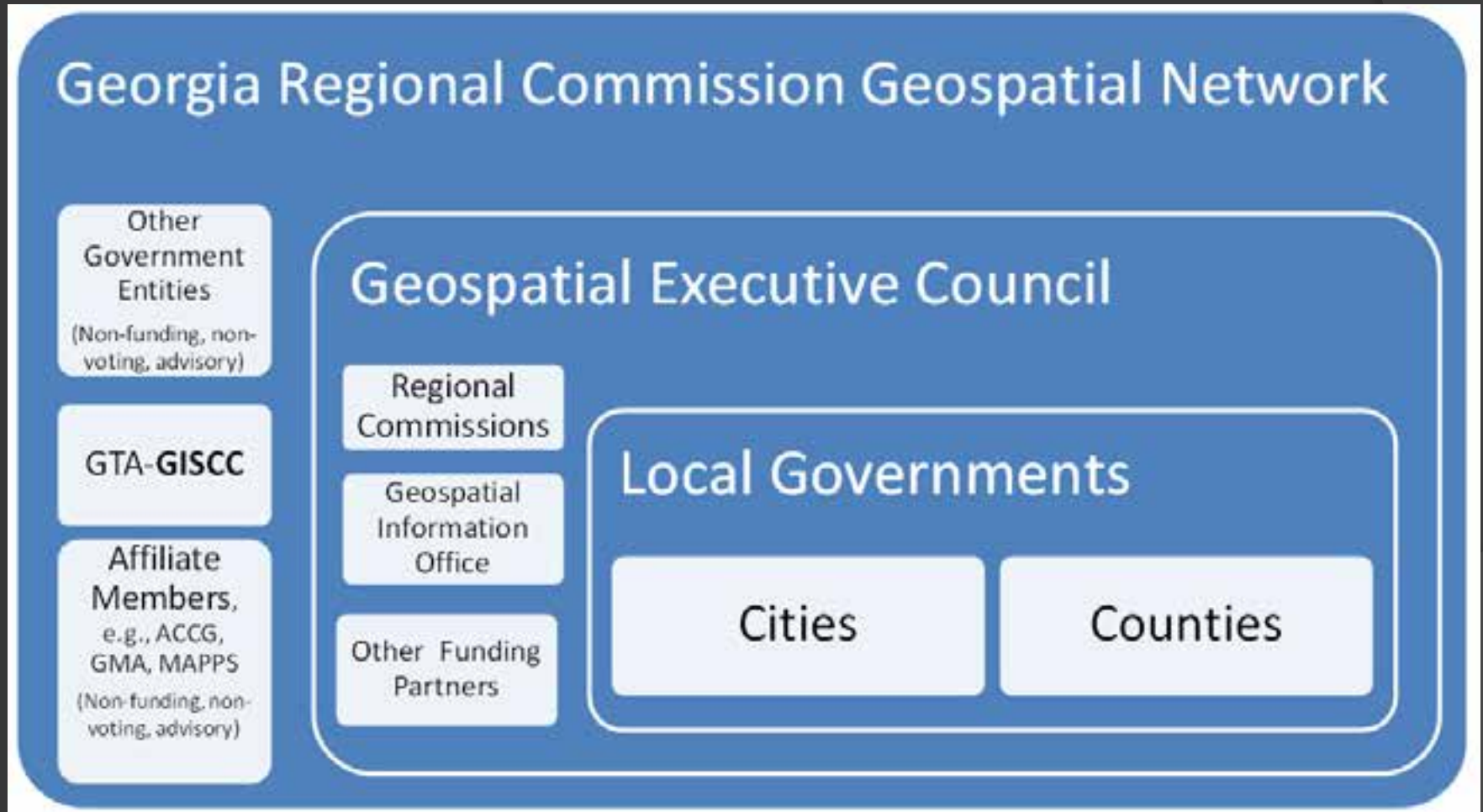
# Collaboration with FEMA CTPs

- ž Risk MAP studies
- ž Updated Essential Facilities and Demographics statewide
- ž Coastal county UDFs





# Foundation for the Future



# New Base Maps

- Georgia Parcel Map and Database
- Georgia Building Inventory Map and Database
- Georgia Address Map and Database
- Georgia Land Use Map and Database

## Additional information

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