# Albany and Dougherty County Resiliency Playbook:

## *A Roadmap for Joint Efforts*

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# Summary of Recommendations

## Play #1: Build the Resiliency Coalition

Create Albany Dougherty Resiliency Alliance (DARA)
Designate Community-Based Hubs and Champions
Establish Process for Declaring Community Disruptions
Integrate Recurring Events, Drills and Resiliency Education Initiatives

## Play #2: Provide Resiliency Communication Strategy

Establish One-stop Portal for Agencies and the Public
Establish Community-Based Communications
Utilize Resiliency Challenge Videos

## Play #3: Prepare Local Infrastructure

Enhance Zoning and Building Codes and Policies
***Amend Zoning Regulations***
***Update Building Codes***
***Formalize Building Fee Waivers***
***Implement Flexible Zoning***
Invest in Resilient Capital Infrastructure
***Transportation***
*Conduct Alternative Route Study*
*Expand Transit Lines*
***Stormwater and Flood Prevention/Mitigation***
*Flood Resiliency Plan*
*Streamline Flood Management Documentation*
*Improve Flood Forecasting*
*Strengthen Flood Provisions in Building Codes*

## Play #3: Prepare Local Infrastructure (cont.)

***Modernize Utilities for Climate Change***
*Electric Microgrids*
*Electric Renewable Energy Initiative*
*Electric: AI Monitoring of grid*
*Electric: Optimized Maintenance Schedules*
*Water: OoT Sensors*
*Water: Real-Time Monitoring*
*Water: Predictive Analytics*
*Water: reuse systems*
*Water: Rain Gardens/Bioswales & Permeable Pavements*
*Gas: Pilot Hydrogen Blending*
*Gas: Advanced Leak Detection*
*Gas: Drone-Based Methane Sensors*
Green Infrastructure
***Model Resilient Zoning Code with Equity***

## Play #4: Targeted Resiliency initiatives

Disbursed/Diverse Health Care Initiative
Housing and Recovery Homeless Prevention Initiative
Fuel and Water Continuity & Access Initiative

## Play #5: Investing in Economic Resiliency

Resilient Workforce Initiative
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# Introduction

## What the Playbook is About

This resiliency playbook encapsulates a practical Resiliency Plan for the City of Albany and Dougherty County, Georgia. The plan is offered as a practical guide for community-based and public agency actions based on the effort undertaken in the Fall of 2023 through the Summer of 2024. Albany and Dougherty County have been subject to considerable disruptions and damage to their public and private infrastructure and services due to climate-related, health, and human-made events in recent years. In June of 2023, damaging winds and tornadoes caused widespread power outages, displaced trees, and damaged buildings when a storm system crossed the South. Flash flood events on downtown streets are increasingly common and cause both safety and economic concern to citizens and business owners. Albany has already identified significant stormwater and sewer projects as part of its Combined Sewer Separation efforts, yet a comprehensive assessment of long-term needs and funding opportunities for the changing climate remains a core need for the community. Furthermore, recurrent thunderstorms, flooding, and severe wind events have been common (and were the subject of a 2017 plan) – and continue to pose significant threats in the area. Today, with a recent parcel survey conducted and an array of new federal resiliency funding programs available, it is time for Albany and Dougherty County to undertake a strategic and holistic plan for maximizing its resiliency in the long-term. The current playbook serves to guide actions by which Dougherty County together with the City of Albany and their local partners can implement steps throughout the resiliency cycle to address gaps in the areas' resiliency, prioritizing policy and infrastructure changes – and to arriving at more resilient and sustainable future.

### Topics the Playbook Addresses

Based on the input taken from the public as well as direct engagement with Albany and Dougherty County's public agencies resiliency needs are prioritized in key focus areas. Each of these focus areas is addressed through a concise action-focused "play" which is a set of actions, agents, and outcomes by which resiliency can be improved in both the near and long-term. The "plays" offered in this plan/playbook are as follows:

**PLAY 1 | Build the Resiliency Coalition:** The Albany/Dougherty County area strongly requires a transparent set of roles with well-understood constraints and resources for both the general population and for public agencies that respond to events. **Play #1** of this Resiliency Plan addresses a structure, recommended steps, and roles for creating a cohesive ongoing community-based coalition to improve resiliency in the area.

**PLAY 2 | Provide Resiliency Communication Strategy:** Another primary need identified is the need for both formal and informal communication between key actors in preparing for, responding to, and recovering from incidents. **Play #2** offers a series of actions, resources, and

recommended steps that can create enhanced transparency (1) between public agencies and (2) grassroots members of the community who can most credibly relate and communicate needs and resources.

**PLAY 3 | Prepare the Local Infrastructure:** A key resource for this Resiliency Plan is an inventory of Albany and Dougherty County land parcels, documenting their age, condition, and the degree to which they have been affected by weather incidents, emergencies, and disasters over time. **Play #3** is based on an understanding of Albany and Dougherty County's current zoning and building status, existing infrastructure, and capabilities for managing natural resources (including not only physical infrastructure but water, forestry, and other resources). **Play #3** includes recommended actions, agents, and reasonable outcomes of infrastructure, planning and zoning changes based on the area's resiliency experience.

**PLAY 4 | Targeted Resiliency Initiatives: Play #4** addresses specific goals and actions that public agencies and their partners can take based on issues identified in the resiliency planning process. It is based on successful resiliency practices from throughout the US as well as specific needs expressed by Albany's stakeholders and documents in archives.

**PLAY 5 | Invest in Economic Resiliency: Play #5** addresses the topic of economic resiliency. One of the key issues facing Albany and Dougherty County has been the loss of businesses and workforce when workplaces, homes, infrastructure, and private assets have been unable to feasibly recover from a disaster. These compromised capabilities cannot be addressed solely by infrastructure, emergency response and other elements of resiliency – but require incorporation of resiliency into larger economic development and business strategies.

## How to Use the Plays

The plays that follow provide helpful actions and guiding principles for a wide range of partners in Albany and Dougherty County. The plays are not offered as strict "rules". Like any list of strategies, they are not all-inclusive, nor will they all be relevant to every situation that may arise. While the steps in some plays may ideally be implemented in sequence, the plays themselves do not need to be implemented in a particular order and should add value to the City and County's resiliency efforts, whether taken individually or together. The playbook represents many experiences, some shared from multiple perspectives across neighborhood, community, business, and public agency roles.

When using this playbook, the community is encouraged to change up the plays to suit local needs. The plan offers best practice techniques and methods for addressing the expressed resiliency needs of the people and stakeholders in Albany and Dougherty County. However, it is not intended to address every problem in the process of resiliency planning. It is offered to facilitate a new generation of collaboration and enhancement of city and county resiliency collaboration and investments that address emerging issues of equity, public-private coordination, information-sharing, and an increasingly collaborative

resiliency planning environment. Hopefully, this playbook will be a starting point for more innovative practices and tools to be developed from these basic plays.

## Playbook Resources

The development of this playbook has involved extensive research into Albany and Dougherty County's resiliency needs, the experiences of peer-communities, and strategies. This document encapsulates the actions recommended to improve resiliency in Albany and Dougherty County. It is designed such that a reader can identify a topic, read a "play" in an hour or less, and have practical guidance on what can be done to improve resiliency in any of the focus areas of the plan. The playbook is supported by a series of technical documents (included as Appendixes) and community resources to enable their implementation. The technical appendices given below provide the source material for the synoptic plays – giving greater context to the material summarized in the plays and how the conclusions are drawn. These include:

**Starting Conditions Summary:** This is an assessment of Albany and Dougherty County's resiliency status at the time the plan commenced in 2023. It documents key findings and observations from Albany and Dougherty county's parcel survey and associated records, existing resiliency resources, and areas that can be addressed by the plan. The *Starting Conditions Summary* comprises **Appendix 1**.

**Resiliency Needs Summary:** This is an assessment based on both engagement with stakeholders and community regarding key problems the 2024 Resiliency Plan must address, and priorities for making the area more resilient moving forward. The *Resiliency Needs Summary* has a more exhaustive assessment of specific needs and actions considered in the plan and comprises **Appendix 2**.

**Resiliency Strategies:** This is an in-depth assessment of specific strategies considered as the recommendations in the playbook have been developed. It includes illustrative actions not in the playbook. The *Resiliency Strategies Summary Comprises* **Appendix 3**.

**Historical Equity and Cultural Assessment:** This is an in-depth assessment of how Albany and Dougherty County's experience of social and racial inequity has left specific gaps and unmet needs concerning resiliency and recovery. The assessment is based on historical archives as well as direct engagement with the area's neighborhoods, area leaders, and institutions regarding the gap that has existed between the "formal" response to disasters and incidents and the lived experience and needs "on the ground". The *Historical Equity and Cultural Assessment* comprises **Appendix 4**.

**Resiliency Challenge Videos:** These videos accompany the plan and offer educational resources for both the public and Albany's stakeholders. The videos clearly articulate specific

roles, needs, and constraints that can be expected based on practical experience the community has had with both public and community responses to incidents, emergencies, and disasters.

**Resiliency Interactive Story Map:** The interactive story map is an online resource to make the plays recommended in this plan and the supporting resources, documentation, videos, and other products readily available on an ongoing basis.

# Play 1: Build the Resiliency Coalition

## Create the Standing Resiliency Coalition

A principal issue confronting Albany and Dougherty County's resiliency is the disconnect between public agencies and to a larger degree between public agencies and community networks with "gatekeepers" who have the greatest awareness of how the community is affected by and responds to events. For this reason, a community-based resiliency coalition is recommended to empower, give voice, and directly engage all parties with an interest in the areas' resiliency throughout the resiliency cycle.

A *resiliency coalition* can be defined broadly as a group of people who share a common concern, passion, or set of goals advocating for resilient communities. A coalition can empower public agencies as well as community stakeholders to leverage the social capital and tacit knowledge of the community together with formal agency resources to prepare for, respond to, and recover from events in ways that could not be achieved by public agencies alone. For the City of Albany and Dougherty County, such a coalition is envisioned to include – but is not limited to – stakeholders within the community, grassroots activists, small business owners, educators, and community gatekeepers who will be crucial champions in the makeup and steering of the coalition.

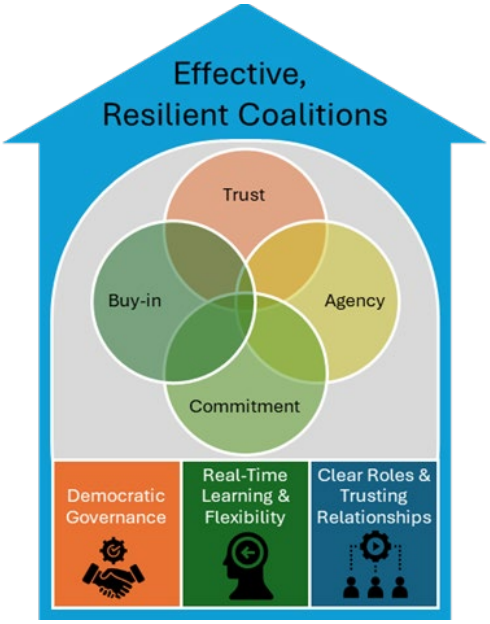



Figure 1: Coalition Architecture: The Building Blocks of an Effective, Resilient Coalition (courtesy of the P3 Lab and Johns Hopkins University)

The Johns Hopkins P3 Lab outlines extensive criteria and considerations for the creation of resiliency coalitions. They have also published reports and tools to facilitate this process. One of which is a Reflection Guide for Starting an Effective, Resilient Coalition. The Hopkins research notes that resiliency coalitions are characterized by the cornerstones of *democratic governance*, *real-time learning & flexibility*, and the establishment of *clear roles & trusting relationships*. The latter is especially relevant to the future of resiliency in Albany, GA.

Developing rapport between government authorities and the communities they serve is largely based on sustained trust between parties. Members of the community have expressed frustration with an overall lack of communication and bureaucratic inefficacy, which has historically resulted in diminished interest for engaging with municipal and county government processes. This tendency is further compounded by the damaged social fabric of Albany, frayed by legacies of systemic racism in the United States, and thus disproportionately prevalent in communities of color. In recognition of this, the coalition is recommended to highly emphasize cultural sensitivity and anti-racism. Albany has a rich history of civil

rights activism which persists to this day, enshrined and celebrated at the Albany Civil Rights Institute. To ensure that the coalition conducts itself in a demonstrably equitable manner, key activists and educators affiliated with this institution are recommended as potential members of the coalition and should be informed and consulted in decision-making processes.

## Resiliency Summit: Initiating the Coalition

**Establishing the Resiliency Coalition:** A key to establishing a resiliency coalition is to involve community champions who are (1) empowered to set priorities for enhanced resiliency and (2) can see an accountability structure between public agencies and community champions. For this reason, a *City of Albany & Dougherty County Resiliency Summit* is recommended to be hosted by the city leadership to (1) develop a mission statement, concept of operations, and charter for *Albany Dougherty Resiliency Alliance* (DARA), (2) establish membership, representation and succession and (3) prioritize the recommended actions of this Resiliency Plan (given in **Play #3** and **Play #4**). The summit is recommended to include key public agency actors involved in the areas' event response as well as key neighborhood and community leaders trusted by the public and familiar with how resiliency needs have affected (and continue to affect) neighborhoods, businesses, and communities. Upon completion of the summit, the community should have:

### Who are "Community Champions?"

Community champions are people in the community who are active, influential, and in good standing with the people in their social groups (i.e., neighborhoods, church communities, online communities, etc.) but are not necessarily formally employed by a government agency. For example, local church leaders, active members of humanitarian organizations, well-known business owners, etc., are generally good community champion candidates.

- A charter for the DARA establishing its duties and responsibilities
- Frequency and standing agenda of meetings
- Membership and standing near-term objectives as well as
- The specific role of in identifying, preparing, responding, and recovering from disruptive incidents in Albany and Dougherty County.

**Figure 2** on the following page shows a suggested structure/agenda for a DARA Resiliency Summit. By distributing the questions in Figure 2 in advance of the summit, participants can come prepared, and work through key issues for forming a resiliency coalition in a structured way.

**Figure 3** offers a structure for city/county staff to form an initial invitation list for the Resiliency Summit with the understanding that the summit invitees should be few enough (20 or fewer) to be able to efficiently work through an agenda with meaningful input from each person, and diverse enough to represent all the roles shown on **Figure 3**. This standing resiliency coalition can be established by identifying key representatives from both grassroots neighborhood/civic networks and agencies including the Albany Emergency Management Agency and Fire Department, The Phoebe Putney Health System

(i.e., Phoebe Putney Memorial Hospital), Albany Utilities, Albany Public Works, The Dougherty County School System, non-government organizations (NGOs) and nonprofit organizations like the Red Cross and Samaritan's Purse, and voluntary organizations active in disaster (VOADs).

## Figure 2: DARA Resiliency Agenda Planning Guide: Source NCHRP 20-125

DARA Resiliency Summit Potential Agenda

| | |
|---|---|
| **STEP 1** | **Define Objectives & Need for Team** |
| IS A COALITION NEEDED?<br>IF SO, WHY? | • When determining whether a team is needed within the initiating agency and why, ask:<br>• Are there groups or organizations on which the area must depend to operate during incidents?<br>• Collectively, what do we need during a disruption that we cannot provide independently?<br>• Is a near-term solution to a singular challenge needed, or is there a need for ongoing readiness?<br>• What are the unanswered questions about how network institutions, individuals, or physical assets can best prepare for, respond to, and recover from disruptions? |
| **STEP 2** | **Recruit & Curate Coalition** |
| WHO WILL JOIN THE COALITION?<br>HOW WILL THEY BENEFIT? | In the initiating agency when organizing exploratory outreach, ask:<br>• Who is most likely to be affected by how the community performs during a disruption?<br>• Who owns the resources or supplies the services that I will need during a disruption?<br>*Examples:*<br>• Neighborhood Groups<br>• Fuel suppliers<br>• Suppliers of road salt, sandbags, medical supplies<br>• Dougherty County Health Department and Phoebe Hospital<br>• Freight carriers<br>• Warehousing firms<br>• Internet service providers/cyber-services<br>• Emergency response providers<br>• Utilities<br>• Workforce transit/transportation services<br>• What roles/staff are responsible for affected operations?<br>• What areas of expertise are needed to answer the questions from step 1?<br>• Are there examples of a recent or potential disruption I can cite when engaging others? |
| **STEPS 3&4** | **Set Priorities & the Order of Activities** |
| WHAT WILL SUCCESS LOOK LIKE? | In recruitment interviews/sessions:<br>(1) Introduce a menu of disruption types that the coalition may address (from Play #4).<br>(2) Ask for specific examples of network-related costs or challenges that have occurred or that members anticipate will occur during disruptions.<br>(3) Use this list of tangible costs to map out business processes and pinch points associated with each disruption type.<br>(4) Ask about potential members' specific collaborative objectives for the coalition, their relative importance, how they can be measured, and over what timeframe. |
| **STEP 5** | **Identify & Acquire Resources** |
| WHAT WILL IT TAKE TO SUCCEED?<br>HOW WILL WE MEET MEMBER NEEDS? | In the initial stages of determining the feasibility and value of the coalition, ask:<br>• How frequently should the coalition meet and what is the time commitment for representatives?<br>• Are there special studies or services needed to address priority activities?<br>• Which partners own resources, information, or expertise that might require enhancement or improvement? Are there estimates of the time and cost to make these improvements? |
| **STEP 6** | **Structure the Coalition** |
| HOW WILL THE COALITION WORK? | In initial scoping/concept of operations sessions, ask:<br>• What specific boundaries are there on the scope of the resiliency coalition?<br>• Are there specific types of disruptions/threats defining what the coalition will and will not address?<br>• Are there formal agreements needed to support accountability and ongoing engagement<br>• What will the regular weekly/monthly/annual activities be?<br>• Does the coalition need to be sustained through political/economic cycles?<br>• How will membership be determined?<br>• Who will lead the coalition and how?<br>• What resources/investments are required to participate in the coalition? |
| **STEP 7** | **Ensure Ongoing Vitality & Relevance** |
| HOW TO MAKE THE COALITION SUSTAINABLE? | In the charter or written concept of operations/bylaws, indicate:<br>• How will conflicts or disagreements be handled?<br>• How will transitions in leadership be made?<br>• How will success and important activities be communicated to stakeholders?<br>• How will the membership be sustained? |
| **STEP 8** | **Aim for Ongoing Evaluation & Improvement** |
| HOW WILL THE COALITION IMPROVE? | In the charter or written concept of operations/bylaws, indicate:<br>• How will success be measured?<br>• How will improvements be made in overall performance?<br>• How frequently and by what means will goals and objectives be updated? |

Figure 3: Recommended DARA Summit Representation (Source: NOAA Climate Resiliency Toolkit)

| Structuring Invitation List for DARA Summit | | | | | |
|---|---|---|---|---|---|
| Represented Interests | Contact information | Notes | Representative (person who agrees to serve in this role) | Email | Phone |
| Neighborhood groups | | | | | |
| Local business owners | | | | | |
| Chamber of Commerce | | | | | |
| Building owners, and managers | | | | | |
| Utility providers | | | | | |
| Public health officials | | | | | |
| Health facilities | | | | | |
| Architects and urban planners | | | | | |
| Developers and construction professionals | | | | | |
| Media representatives | | | | | |
| Non-governmental Organizations (NGOs) | | | | | |
| Community Service Organizations (CSOs) and religious/cultural groups | | | | | |
| State Agency | | | | | |
| Federal Agency | | | | | |
| Natural resource managers | | | | | |

## Scope of Resiliency Coalition

**The Resiliency Agenda:** The scope of the DARA is to (1) build the capacity of the region to leverage both the social capital and agency resources when disruptive events occur, (2) establish a clear understanding of resources through recurring educational events, drills and follow-through on actions from recurring drills/tabletops in collaboration with the Dougherty Local Emergency Management Agency and Georgia Emergency Management Agency (GEMA) (3) prioritize and benchmark progress toward the strategic goals in **Play #4** and physical improvements in **Play #3** through at least quarterly status meetings and (4) to trigger and synchronize inter-agency and grassroots-community responses in the preparation, response and recovery phases of the resiliency cycle. **Figure 4** below shows how a Dougherty/Albany DARA group may structure its activities and roles through the resiliency cycle.

**Disruptive Events:**

The work of a resiliency coalition is not limited to formally declared emergencies or disasters.

A *disruptive event* is understood as any unexpected and potentially harmful event that requires a coordinated community response. A key function of a resilience coalition is to define specific incident types and ensure the definition is current when different types of events occur.

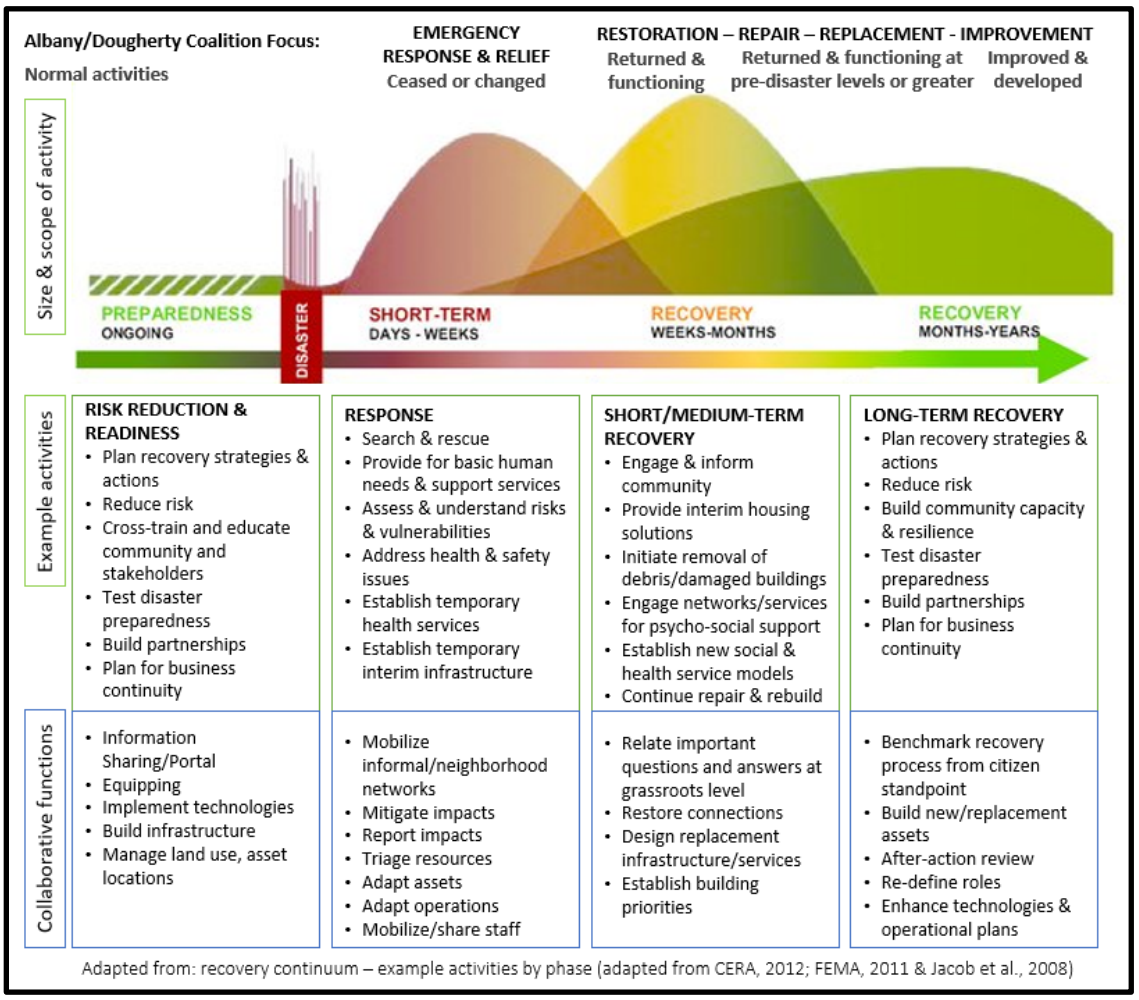



Figure 4: DARA Key Collaborative Roles Through the Resiliency Cycle (Source: CERA/FEMA, Jacob et. al.)

## Coalition Measures of Effectiveness and Self Assessments

One of the key functions of the DARA coalition can be to regularly track resiliency measures over time, and to set a regional resiliency agenda as changes occur in the area that affect community resiliency. **Figure 5** shows a recommended structure for a resiliency "scorecard" that a coalition can update annually and use quarterly (or at the frequency with which the coalition meets) to pinpoint key change items occurring that coalition members may be able to address. One important role of a resiliency coalition is to recognize changes that may affect readiness and resiliency when the change in the community occurs, and not only during the preparation stage for an event. **Play #4** and **Play #5** further develop resiliency indicators for infrastructure, policy and economic progress which can be utilized in this DARA framework.

Figure 5: Recommended DARA Resiliency Scorecard/Indicators (Source: FEMA 2022)

| DARA Resiliency Scorecard Recommended Structure | |
|---|---|
| **Population Characteristics:**<br>• **Population without a High School Education**<br>• **Population 65 and Older**<br>• **Population with a Disability** | **Healthcare:**<br>• Number of Hospitals*<br>• Medical Professional Capacity*<br>• Population without Health Insurance |
| **Household Characteristics:**<br>• **Households without a Vehicle**<br>• **Households with Limited English**<br>• **Single-Parent Households**<br>• **Households without a Smartphone** | **Connection to Community**<br>• Presence of Civic and Social Organizations*<br>• Population with Religious Affiliation*<br>• Percent of Inactive Voters*<br>• Population Change* |
| **Housing:**<br>• **Mobile Homes as Percentage of Housing**<br>• **Owner-Occupied Housing**<br>• **Neighborhoods with ongoing/legacy damage from prior events.** | **Economic:**<br>• Population Below Poverty Level<br>• Median Household Income<br>• Unemployed Labor Force<br>• Unemployed Women Labor Force<br>• Income Inequality+ Workforce in Predominant Sector<br>• Businesses with ongoing/legacy damage from prior events |
| *Most data are available at Census Tract Level Except*<br>***+ Data Available from County/Tribal Census***<br>****Data Available from County-Level Census***<br>***DARA would maintain and track a registry of properties submitted at each meeting* | |

**National Resources:** In tracking and responding to changes in overall resiliency, the coalition can prioritize quarterly and annual preparedness endeavors commensurate with the level of likelihood that specific types of disasters, disruptions, and emergencies will occur, taking note of their potential acute and long-term impacts. The US Climate Resilience Toolkit used in developing this playbook is updated periodically and includes resources and exercises that the DARA can engage as part of its regular agenda to continue ongoing engagement on the topic of resiliency over time. The FEMA National Risk Index (NRI) is recommended as a resource for making such determinations, considering the relative likelihoods of various severe weather events and their relationship to determinations for social vulnerability. Other resources, such as Census data and GIS data from NOAA's GeoPlatform can forge the basis for well-rounded preparedness and benchmarking strategies, tracking progress in socioeconomic, epidemiological, and environmental domains. It would also be beneficial to maintain a log of subject matter experts to consult on these concerns or have them on the coalition as permanent members.

Figure 6: Social Vulnerability score for Dougherty County (courtesy of FEMA's National Risk Index)

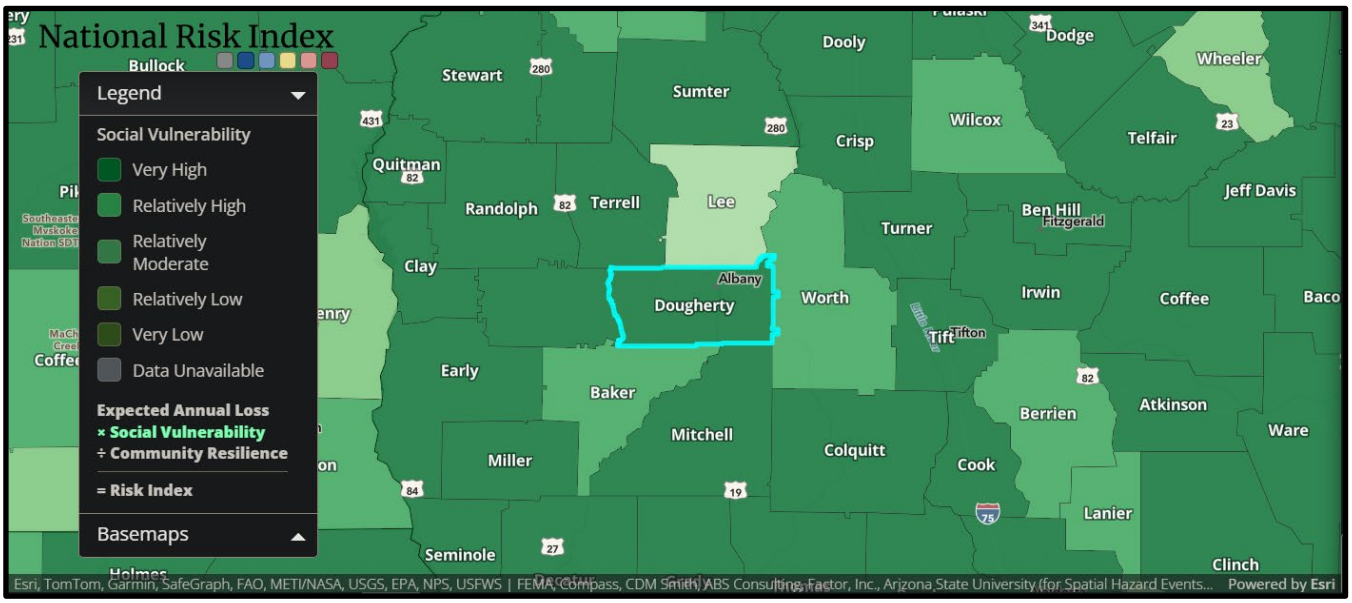



**Figure 7** below summarizes the key steps recommended to establish an ongoing resiliency coalition to support recommendations and outcomes envisioned in this playbook and plan.

Figure 7: Recommended Steps for Establishing Resiliency Coalition

| Resiliency Coalition Formation Key Actions, Agents, and Outcomes | | |
|---|---|---|
| **Actions** | **Agents** | **Outcomes** |
| **Step 1: Resolution of elected bodies calling for DARA and resiliency summit.** | City of Albany Board of Commissioners, Dougherty County Board of Commissioners. | Widespread recognition of the importance of resiliency collaboration and engagement across public agencies. |
| **Step 2: Identify Invitation List for Resiliency Summit guided by Figure 3.** | Albany and Dougherty County Planning Staff | Collaborative engagement of grassroots/community champions and public agencies in creating and formalizing the resiliency coalition (DARA). |
| **Step 3: Hold Resiliency Summit to establish DARA charter, mission and concept of operations guided by Figure 2.** | Albany city staff organize and include entities shown in Figure 2, involving Georgia Emergency Management Agency (GEMA). | Resiliency coalition has a membership structure, concept of operations and governing charter, ready for first meeting. |
| **Step 4: Set Priorities and benchmarks (based on Play #4) for both policy changes and investments in infrastructure or services. Identify a grant or ongoing funding strategy for the coalition's goals.** | Albany Dougherty Resiliency Alliance (DARA) members. | Coalition has priorities for implementing resiliency strategies in Play #4 and key roles for each member in achieving long-term objectives. |
| **Step 5: Define specific roles, needs and capabilities for DARA members in specific points in the resiliency cycle as shown in Figure 4.** | DARA members. | Grassroots community champions have an active and empowered role alongside public agencies from beginning to end of a disruptive event/incident. |
| **Step 6: Define recuring annual, quarterly and periodic collaborative educational events and cross-organizational drills to raise resiliency awareness.** | Structured by DARA and involving all major public city/county agencies involved in incident response with neighborhood and community champions. | All key staff in the public agency and members of the community are familiar with what to expect in disruptions, where to turn for help and how to share information. |

# Establish Community-based Hubs and Champions

**Community-Based Resiliency:** A grassroots and collaborative resiliency coalition as described above empowers Albany and Dougherty County to implement a community-based resiliency process. A community-based process differs from the top-down agency-driven process in the following ways:

- Community champions play a key ongoing role in defining needs and building capacity.
- Decentralized neighborhood or town/township level champions and groups are involved in all phases of the resiliency cycle and play a critical role in relating needs and information between formal agencies and informal social networks.
- Formal agencies are both accountable and dependent on the actions and roles of community, neighborhood, church, and business networks for localized communication and response to needs, challenges, and opportunities.

Community champions can be identified, vetted, and selected by Albany and Dougherty County's Commissioners, and invited to the resiliency summit. People can also volunteer to be community champions, as long as they can provide adequate justification for taking on the role, attend meetings, and reside in Dougherty County. The DARA coalition is recommended to represent a balance of agency stakeholders and community champions.

**Overcoming Historical Barriers:** Given the historical disconnect between grassroots/community-based responses and impacts of past events and formal agency responses (as documented in the **Historical/Cultural Resiliency Assessment**) – empowering community champions is essential for improving resiliency in Albany and Dougherty County. Trusted community champions will be encouraged and expected to provide accurate information by word of mouth and informal channels which may otherwise not be trusting or receptive to information from local/federal government authorities.

Figure 8: A house in Radium Springs, raised to stave off future floodwaters, is now abandoned. Its future is uncertain. (Photograph courtesy of Denise Clarke-Dumas via the HEAL photovoice process.)

**Resiliency Hubs:** Resiliency hubs are geographic areas small enough that everyone within the node/area is generally familiar with the resources, problems, and needs occurring in the area and able to interact by word of mouth.

Community-based hubs, in the form of *resiliency hubs*, can serve as geographically dispersed centers for distributing information, resources, and other forms of aid in emergency scenarios. Given the historical, cultural, geographic, and socioeconomic context of Albany and

Dougherty County, it is advisable to cultivate a stronger level of rapport between first responders, the area's Emergency Management Services, the municipal and county governments, and members of the community who may be disproportionately vulnerable to natural hazards, epidemics, and other threats to the area's welfare. A key task for the DARA (which may commence at the resiliency summit) entails identifying locations for these hubs, and ensuring they are accessible to all residents. These hubs can facilitate training sessions, workshops, and community meetings that empower residents to take an active role in disaster preparedness and recovery efforts.

Resiliency hubs can be strategically established based on 1) proximity to areas highly vulnerable to natural hazards, 2) the structural integrity and capacity of the buildings themselves if they are to be used as shelters, and 3) renown and recognizability and 4) ease and comfort with which they can be reached by community members seeking help, to relate needs or participate in resiliency supportive activities.


Figure 9: The Albany Bottling Co. and Hope Center, captured from Google Street View

The Albany Bottling Co. and Hope Center on Pine Ave, (**Figure 9**) for example, is a prime location for a resiliency hub. Not only was it used as a shelter during the 2017 windstorms and tornado, but it has served as a "hub for disaster relief operations" in the recent past.[1] The site is currently owned by Sherwood Baptist Church, which is regarded as one of the most influential places of worship in the region, forged connections with faith-based groups such as Samaritan's Purse, which were active in disaster response efforts in 2017. Sherwood Baptist Church could also serve as a resiliency hub, as well as other longstanding, prestigious places of worship thanks to their convenient locations and familiarity with surrounding communities.

**Benefits of Resiliency Hubs: "Ground Truthing" the Response:** Defining hubs and champions can create the conditions for more intimate relationships between people "on the ground" and agencies involved in the resiliency cycle, creating opportunities to explore the precise needs and nuances of Albany's internally diverse communities. For example, the coalition may include a champion of the Radium Springs area, which was severely affected by the flood of 1994, as well as the 2017 windstorms and tornadoes. The resiliency hub structure will serve to ensure that each neighborhood's concerns are being heard and addressed and that people "on the ground" have a practical awareness of resources and

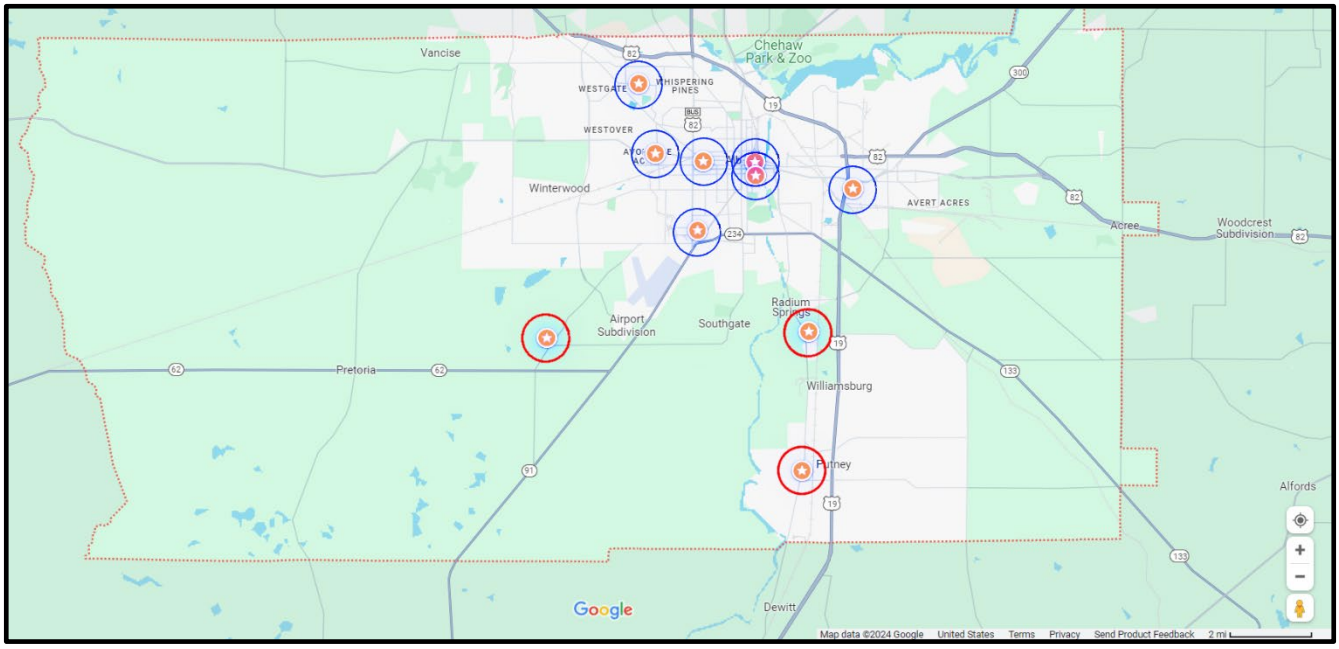
[1] Cloud, Gordon. "Lives Are Being Changed at an Old Coke Bottling Plant." *Word&Way* (blog), September 13, 2019. https://wordandway.org/2019/09/13/lives-are-being-changed-at-an-old-coke-bottling-plant/.

responses. Hubs with area champions add both word of mouth and interaction at a one-stop "go-to" place in a disruption to the area's resiliency capability, which may be more than being limited to top-down decisions and "announcements" that may not be responsive to actual conditions or understood (or even known) by those most in need.

By establishing resiliency hubs, Albany and Dougherty County can ensure that (1) the DARA includes well-connected resiliency champions in diverse areas of the county and city, (2) city and county services and agency responses directly involve people and places known to the community, (3) preparation and responses to incidents can be tailored to how they are experienced in specific areas and (4) it is well understood where to go for help/support during a disruption and where and how to relate information about neighborhood/community needs and responses.

**Locating Resiliency Hubs:** Dougherty County's council districts and Albany's wards serve as a starting point for defining areas to be served by resiliency hubs. **Figure 10** shows some potential locations of resiliency hubs throughout the area. Other locations can be used for information dissemination and coordination with recovery process experts. The Dougherty County Extension Services office (located at 125 Pine Ave.) can serve as a preparedness and relief hub, holding community meetings, tabletop exercises, and training sessions with the community. All hubs, however, should have accessible materials on-site, including literature and forms in English and Spanish, as well as resources for those who are hard of hearing and/or visually impaired. Further locations to consider include the YMCA on Gillionville Rd, the Civic Center on 100 W. Oglethorpe Blvd, and Albany Technical College. In East Albany, the former Roses Discount Store on Oglethorpe Blvd could, once repaired, serve as a hub. Outside Albany, the Bethel Holiness Tabernacle in Putney, Radium Springs Middle School, and New Communities, Inc. (described further at the end of Play 3) just west of the Airport Subdivision, could be viable locations.

Figure 10: Potential hub locations; those located in Albany are starred and circled in blue, while those outside Albany are starred and circled in red




In addition to selecting optimal locations for resiliency hubs, selecting representative champions representing each hub from sectors and industries most affected by disaster events may be crucial in devising future resiliency strategies.

In recognition of the impacts of extreme weather events on labor conditions, community-based hubs should be cognizant of the human capital within Albany, noting the economic contingencies of different disasters, disruptions, and emergencies. Notably, construction, retail, real estate, and healthcare industries must be taken into consideration and called upon where needed, keeping in mind that the nature and severity of disruptive events may vary, and that the workers within these industries may, themselves, be dealing with personal damages and injuries. **Figure 11** shows recommended steps for establishing resiliency hubs in Albany and Dougherty County.

Figure 11: Action Steps for Establishing Resiliency Hubs in Dougherty County/Albany

| Community-Based Resiliency Hubs: Actions, Agents and Outcomes | | |
|---|---|---|
| **Actions** | **Agents** | **Outcomes** |
| **Step 1: Establish optimal locations for resiliency hubs** | The DARA in collaboration with ward or council representatives, city and county staff, local churches and nonprofit organizations/NGOs | More disbursed geographic distribution of information, services, and supplies throughout the resiliency cycle |
| **Step 2: Identify a resiliency champion/representative for each hub on the DARA** | Conferees of the Resiliency Summit. | Hubs represent more than locations, but also networks of people and a relationship between grassroots citizen support networks and agencies responding to issues. |
| **Step 3: Define specific operations, resources and agency activities as well as community & neighborhood roles for each node through the resiliency cycle (as shown in Figure 4)** | The DARA Coalition. | Hubs become an integral part of resiliency drills, collaborative agency and neighborhood and community preparations, responses and recovery activities. |

## Establish Process for Declaring Community Disruptions

To enhance the City's resiliency and disaster response framework, a process for declaring unofficial disasters or disruptions should be established while drawing from historical context. This involves developing criteria based on previous events, such as flooding, droughts, heatwaves, or severe storms, which have significantly affected the community but were not formally declared as "disasters" or "catastrophes." By defining what constitutes a disruption, the coalition can ensure timely and appropriate responses, even before formal declarations are made.

A timeline for declaring a community disruption, however, cannot be a completely spontaneous process. It requires measured and critical approaches that are analogous to those in formal disaster declarations, only on a smaller scale. Once established, The Albany Dougherty Resiliency Alliance (DARA) should work to develop such a timeline.

A proposed timeline of how the DARA can declare a community disruption in two weeks or less (a period that may begin when the event is still forecast or anticipated) is described below, acknowledging that the precise nature of different types of disruptions (heatwaves, epidemics, severe weather, etc.) may require further augmentation and preparatory measures.

**1. Initial Assessment (Workdays 1-2)**

- **Identify Potential Disruptions**: Gather data on potential disruptions (natural disasters, economic downturns, social unrest, etc.). Members of the Albany Resiliency Coalition should bring this before the Steering Committee, or the Steering Committee may initiate the process themselves. The rationale for making an initial assessment must be based on reliable sources of information, either from formal or informal channels.
- **Engage Stakeholders**: Involve community champions, local government, and residents to understand their concerns and perspectives.

**2. Data Collection and Analysis (Workdays 3-4)**

- **Collect Data**: Gather quantitative and qualitative data on past disruptions and their impacts.
- **Analyze Data**: Identify patterns and key indicators of disruptions.

**3. Community Engagement (Workdays 5-6)**

- **Public Meetings**: Hold meetings to discuss findings and gather additional input.
- **Surveys and Feedback**: Distribute surveys to collect broader community feedback.

**4. Checkpoint Review (Workdays 7-8)**

- **Disruption Criteria**: Based on data and community input, does this event constitute a community disruption?
    - **Yes**: Move forward with the disruption protocol.
    - **No**: Begin deescalating the situation.

**5. Finalization (Workdays 9-10)**

- **Stakeholder Review**: Present draft criteria and guidelines to key stakeholders for feedback.
- **Revise and Finalize**: Incorporate feedback and finalize next steps.

**6. Declaration and Implementation (Workdays 11-14)**

- **Declaration**: Formally declare the disruption through media channels.

- **Implementation Plan**: Develop and initiate a plan to implement the guidelines, allowing for time dedicated to training for volunteers.

**7. Ongoing Monitoring and Evaluation**

- **Monitor**: Continuously monitor for potential concurrent and/or emergent disruptions.
- **Evaluate and Update**: Regularly evaluate the effectiveness of implementation process and update as needed.

What constitutes a disruptive event for the people in Albany and Dougherty County may differ substantially from formal disaster and emergency declarations at the state and federal levels. These determinations can be made through active community engagement and seasonal considerations for vulnerabilities, paired with considerations for geographic, environmental, and cultural domain factors. Extreme heat, for example, may outstrip the community's capacity to maintain air conditioning systems, leading to epidemiological concerns for heat-related illnesses, as well as issues with upkeep in local businesses. This was the case for the Roses Discount store in East Albany **(Figure 12**), which has been relocated to an area in northwest Albany.[2] **Figure 13** highlights the key steps for integrating community-identified events into Albany and Dougherty County's overall resiliency process.

Figure 12: The old location of the Roses Discount Store. It is currently not being utilized for commercial activity.

[2] Barker, Katelyn. "Albany's Only Roses Discount Store Set to Open in New Location." https://www.walb.com, April 4, 2024. https://www.walb.com/2024/04/04/roses-discount-store-set-open-new-albany-location/.

Figure 13: Incorporating Community-Based recognition into the resiliency framework.

| Community-Based Disruption Recognition Actions, Agents and Outcomes | | |
|---|---|---|
| **Actions** | **Agents** | **Outcomes** |
| **Step 1: Establish procedures for identifying and declaring community disruptions** | DARA | Community members and champions have a way to alert support networks and public agencies when an event not declared as an official incident may create local needs or impacts. |
| **Step 2: Define specific roles for resiliency hubs, and coalition members in recognizing and addressing "unofficial" events/incidents.** | DARA | Public agencies and local support systems know how to respond when events are anticipated that are not addressed at federal or state levels. |

## Integrate Recurring Events, Drills, and Educational Activities


To cultivate a culture of preparedness in the City of Albany and Dougherty County, specific events, drills, and educational activities should be organized in accordance with the recommendations established in the 2020 Albany-Dougherty Pre-Disaster Mitigation Plan. Community-wide disaster preparedness drills can simulate various scenarios, such as tornadoes, flooding, and public health emergencies, allowing residents to practice their response plans and voice concerns. Educational activities, such as workshops on emergency preparedness kits, first aid training, tabletop exercises, and information sessions on local hazards, can further enhance community resiliency. Collaborations with local schools to integrate emergency preparedness into curricula can also instill a sense of responsibility and awareness among younger generations.

There are educational assets in Dougherty County that could play various roles in this, as well as major landmarks and amenities for training and educating the public. For example, the Dougherty County School System, Albany State University, and Albany Technical College could host lectures and seminars for the public to attend (virtually or in person). These activities can also create training opportunities (i.e., first aid) for Next in Nursing, the joint nursing school in the Phoebe Putney Health System.


Other examples of landmarks and amenities to point to for utilization could be the Albany Civic Center, the Flint RiverQuarium, Chehaw Park, Riverside Park, and Radium Springs Gardens. Those who are interested in learning more about the historical importance of preparedness and natural hazards in Albany may also utilize archival resources at the Thronateeska Heritage Center, as well as the Albany State University Archives Collection. **Figure 14** highlights the recommended steps to establish community-based drills, exercises, and educational materials. The role of the *Community Resiliency Challenge* videos that accompany this playbook are further explored in **Play #2** and can be incorporated into these activities.

Figure 14: Making Preparedness Drills and Education a Community-Wide Activity

| Community-Based Preparedness Drills and Training Actions, Agents and Outcomes | | |
|---|---|---|
| **Actions** | **Agents** | **Outcomes** |
| **Step #1: Define roles and ways to involve designated community champions and hubs into annual drills.** | DARA in association with Dougherty County Emergency Management Agency, local churches, businesses and nonprofit organizations, preparedness educators, public educators. | EMA Drills become "whole community" activities in which resiliency roles and preparedness become common knowledge. |
| **Step #2: Declare "resiliency awareness week" for Albany and Dougherty County when public agencies, businesses, schools and civic organizations are given educational videos, activities and workshops of the type featured in the US Climate Resiliency Toolkit in conjunction with annual drills or tabletops.** | | |
| **Raise awareness of the week through public service announcements in local media, churches and civic groups as well as neighborhood word of mouth.** | | |

# Play 2: Provide Resiliency Communication Strategy

This play offers practical steps that can be taken to improve resiliency communications when Albany and Dougherty County face disruptive events. One of the key issues facing Albany and Dougherty County's resiliency and preparedness is the challenge of communicating resiliency needs, resources, and conditions during the response and recovery stages of an event. The primary disconnect is between members of the community and the formal agencies responding to events, exacerbated by a disconnect between the public agencies themselves. A lack of awareness on the part of public agencies of actual conditions as they are experienced "on the ground" in Albany and Dougherty County's neighborhoods and communities has led to responses that are confusing and frustrating to residents who have wondered if and how or when their needs would be met. This problem has been compounded by long-term racial and social disparities and an associated distrust of public institutions. Among the agencies involved – there has also been difficulty sharing awareness, status documents, and information between utilities, city and county agencies, health care providers, and other stakeholders for understanding the status of recovery activities.

## Establish One-stop Portal for Agencies and the Public

A cohesive system for sharing "real-time" information among partners involved in the resiliency cycle and making the response transparent to the public is recommended as a core improvement to the area's resiliency capacity. An online portal is recommended that includes both (1) a public-facing "one-stop" web resource for events and agency responses and (2) an internally facing web resource for agencies to share records, status reports, and the most current information about the status of utilities, buildings, personnel and activities.

**Key Success Features of the Resiliency Portal:** The online portal must feature a user-friendly interface that prioritizes accessibility and ease of navigation. Employing responsive design principles should ensure seamless functionality across various devices, including smartphones, tablets, and computers. Given the diverse demographics of Albany and Dougherty County, it is crucial to incorporate accessibility features such as screen reader compatibility, adjustable text sizes, and high-contrast color schemes. These enhancements will serve individuals with disabilities and those who may not be as tech-savvy. Conducting user testing sessions with community members from various backgrounds will refine the interface based on their feedback, ensuring that the portal meets the needs of all users. This iterative process will help identify potential barriers to access and usability, leading to a more inclusive platform.

**Requirements for the Resiliency Portal:** Data and records from across multiple agencies can be synthesized and maintained on a cloud-based WebEOC (Web-based Emergency Operations Center) system, where agencies (such as Albany Utilities, Emergency Management, the Phoebe Putney Health System, etc.) can collaborate on emergency-related endeavors, tracking data sets from various sources.

*Initial Development and Testing Requirements:* An initial development process requires skilled web development and knowledge management expertise to derive the specific requirements for the system from engagement with the participating agencies, design a relational structure for the different data files to be organized and shared, and a look-and-feel for the portal's interface. It is also recommended that this activity include a pre-testing and training process. The development effort can be overseen by a collaborative resiliency coalition (as described in **Play #1**) and implemented either by an internal information-technology group within the city or county government or by a third-party vendor.

*Data Governance and Literacy Requirements:* A data governance process is needed for such a platform to direct, compile, and vet information through both administrative and technical personnel. The data governance and literacy protocol will entail considerations such as (1) how the currency, sources, and validity of information in the portal can be documented and checked as information is shared in real time, (2) how data users can be made aware of the uses of the information and the limitations and potential omissions or gaps in information they see in the portal (3) how data and records from allied organizations can be expressed to intended partners in ways that they can be understood readily without prior knowledge of the providing agency's internal business process and (4) where and how the system is to be housed and maintained.

*Personnel Requirements:* Personnel requirements entail a process by which public-agency users of the inter-agency "internal" face of the portal are identified and trained, as well as personnel responsible for maintaining, updating, and troubleshooting the system on an ongoing basis. Below is a summary of key technical and staff roles that the DARA would need to assign and sponsor for the ongoing use of such a portal:

**Tech Personnel**

- **System Administrators**: Manage the WebEOC platforms, ensuring it is up-to-date, secure, and functioning correctly. They are also responsible for handling user accounts, permissions, and troubleshoot technical issues.
- **IT Support Specialists**: These professionals provide technical support to users, helping them navigate the system, resolve technical problems, and ensure connectivity.
- **Database Administrators**: They manage the databases that store WebEOC data, ensuring data integrity, security, and availability.
- **Network Engineers**: Responsible for maintaining the network infrastructure that supports WebEOC, ensuring reliable and secure communication between users and the system.
- **Cybersecurity Experts:** They protect the WebEOC system from cyber threats, implementing security measures and monitoring for potential breaches.

**Administrative Personnel**

- **Dougherty Albany Resilience Alliance (DARA):** The DARA described in Play #2 should coordinate with all relevant IT and emergency management personnel to ensure that qualitative and quantitative data is being procured and disseminated in a fair and equitable fashion, providing insight on particular needs which are not being met in the community. The coalition should procure and share data from their respective fields and disciplines (i.e., public health, environmental science, education, etc.), to maximize holistic situation awareness.
- **Emergency Management Coordinators**: Oversee the use of WebEOC during emergencies, coordinating response efforts and ensuring that information is accurately logged and disseminated.
- **Training Coordinators**: Develop and conduct training programs for WebEOC users, ensuring that all personnel are proficient in using the system.
- **Data Analysts**: They analyze the data collected in WebEOC to provide insights and reports that aid in decision-making and improve emergency response strategies.
- **Administrative Assistants**: Provide general administrative support, like scheduling meetings, managing communications, and assisting with documentation related to WebEOC operations.

  **Public Information Officers**: Collect and disseminate information to the public and media, ensuring that accurate and timely updates are provided during emergencies. They will also be responsible for ensuring that data is displayed properly on the Albany and Dougherty County Resilience Dashboard.

**Technology Infrastructure Requirements:** Accommodate real-time communication demands, the portal should be hosted on robust servers with cloud-based data storage capabilities. The configuration requires scalability during events when traffic spikes are anticipated. Security measures, including encryption and regular backups, are crucial to protect sensitive information and maintain data integrity. Establishing partnerships with reliable IT service providers will enhance the portal's performance and reliability, ensuring that it remains operational during critical times. Regular maintenance and updates will be essential to keep the system functioning optimally. In an effort to keep operations and employment as local as possible, the Information Technology Services (ITS) at Albany State University could aid in this endeavor.

**Requirements of Allied Agencies and Stakeholders in the Development Process:** The portal development process should commence with stakeholder consultations to gather input from community leaders, emergency services, and residents. This collaborative approach will ensure that the portal effectively meets user needs. Development phases should include designing the architecture, creating prototypes, conducting user testing, and iterating based on feedback. A timeline should be established which allows for thorough testing and community familiarization. Training sessions for users, including

emergency responders and community leaders, will also be essential to ensure they are comfortable using the portal and can assist others in accessing it.

**Public-Facing Dashboard Requirements:** The portal's public-facing dashboard serves as a centralized hub for critical information, including emergency alerts, resource availability, and maps of affected areas. When events are not occurring, the dashboard supports the educational objectives of the DARA and ways for the community to get involved in ongoing resiliency activities. In an event, the dashboard has an intuitive structure (organized by typical questions that arise to the public, not by the agency providing the information) for residents to easily identify and obtain information specifically about (1) the status of recovery items (2) the uses and disposition of aid and (3) channels for relating needs either directly to supporting agencies or through the resiliency hubs as described in **Play #1**. A live feed from verified government and local news and social media accounts (e.g., Facebook, YouTube) will keep residents informed of real-time updates, ensuring they receive timely information. Integrating interactive maps that display evacuation routes, shelter locations, and areas of concern during disasters will empower residents to make informed decisions swiftly. The dashboard should also feature a section for frequently asked questions (FAQs) to address common concerns and provide guidance on emergency preparedness and response. **Figure 15** illustrates a potential structure for a dashboard with tabs at the top to navigate to specific types of information and a front page with a summary of the "vital information" on any given day. **Figure 16** summarizes the steps to implement a portal of this type.

Figure 15: Mockup of Potential Albany Resiliency Dashboard

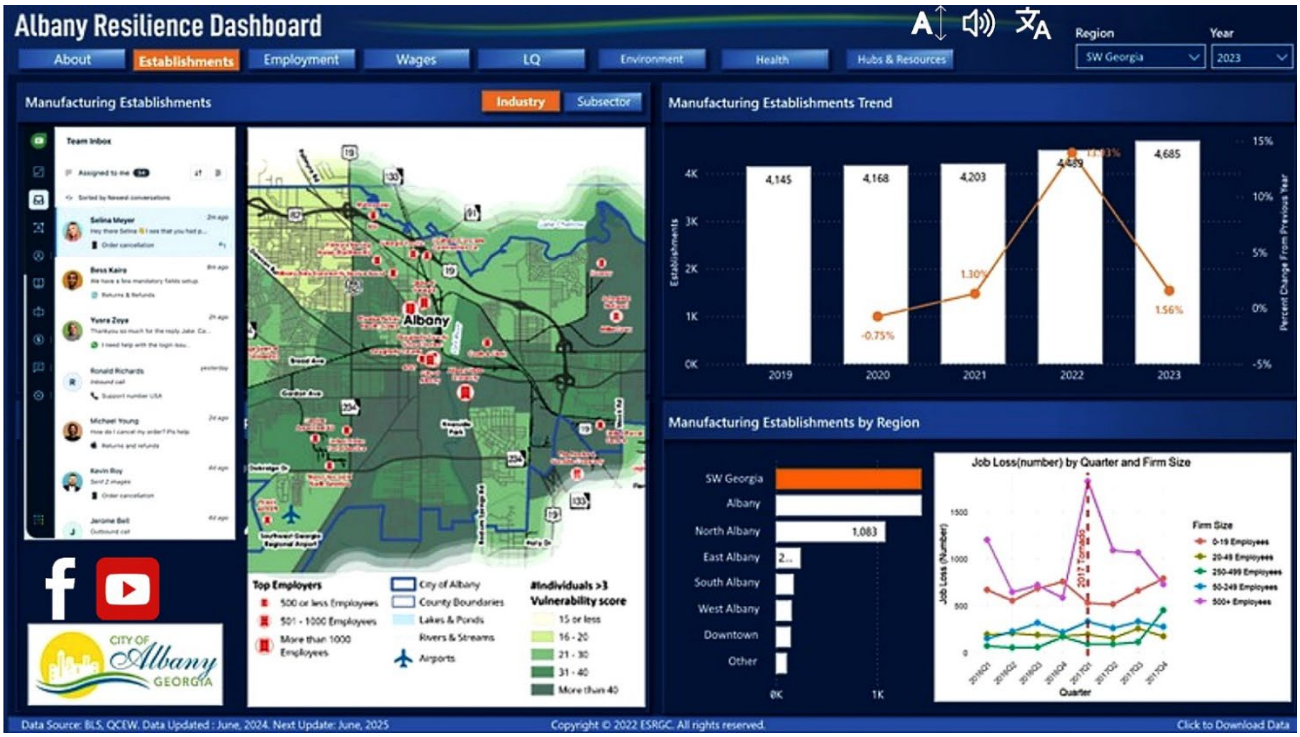


Figure 16: Key Actions, Agencies and Outcomes in Resiliency Portal Development

| Resiliency Portal Key Steps, Agents and Outcomes | | |
|---|---|---|
| **Actions** | **Agents** | **Outcomes** |
| **Step 1: Specify Technical Requirements: Develop requirements document for resiliency portal specifying key users, information elements and use-cases.** | DARA potentially aided by a system design vendor. (Potentially identify grants to support development). | Clear development blueprint for the online portal and understanding of what each partner needs to provide. |
| **Step 2: Build and Test: Code/program and construct the portal for pre-tests in hypothetical scenarios.** | The building of the system may involve a third-party vendor. The testing process and scenario can be developed by DARA in association with public agencies. | Public agencies verify the system can house and access the desired information accurately and with a manageable level of effort. |
| **Step 3: Train agency Staff: Train agency staff in how to share and access information under different circumstances.** | DARA coordinates training sessions, videos and tutorials in collaboration with its member agencies. | Agencies can populate the portal with their latest information and access/share as needed throughout the resiliency cycle. |
| **Step 4: Raise Public Awareness: Publicize the public-facing portal, its capabilities and uses through resiliency awareness activities as described in Play #1.** | Dougherty County in collaboration with the City of Albany. | The public is aware of the portal as a one-stop source of information on both overall resiliency status and activities as well as specific events. |
| **Step 5: Manage and Maintain: Implement a protocol for the hosting agency to monitor, maintain and validate information shared through the portal.** | Hosting agency identified in **Step 1**. | The portal has ongoing support and continuous development as lessons are learned from each application. |

# Establish Community-Based Communications Strategy

**The Importance of Diverse Communication Channels:** Identifying and establishing diverse communication channels is crucial for fostering trust within the community. Over-reliance on web-based information or agency publications can create a gap between the ways that people access information in "day-to-day life" and the ways that vital information is made available during an event. The disconnect thereby exacerbates the trust and credibility of the overall response. This problem can be addressed through a formal communication protocol for making information available through multiple formal and informal channels. Channels can include community meetings, local radio broadcasts, and partnerships with neighborhood associations. Utilizing diverse channels enables city and county agencies to disseminate information quickly and effectively, ensuring that residents receive timely updates. Training community leaders to effectively communicate information will enhance outreach and ensure that critical messages reach all segments of the population.


Figure 17: Locations like Helen's Barber Shop in Albany are important channels for informal communication. Identifying key "conversation venues" and ways to make key messages available through them is vital to utilizing diverse communication channels.

**Complex Messaging:** An effective communication strategy goes beyond simply conveying what agencies are doing, also offering information sharing about the unique circumstances facing communities in a disruption. Social, logistical, and environmental conditions are as important in communication as are formal actions and resources. Transparent communication about the difficulties faced, such as displacement or resource scarcity, and material convergence, will help manage community expectations and foster a sense of collective responsibility. Contractors should also be rigorously vetted to ensure that their prices are fair, and that the quality of their services is reputable. Scalping, looting, and price-gouging should be reported immediately by concerned members of the public to local police, and members of the community should be made aware of how to identify these activities as part of preparedness activities and training.

**Role of Businesses in Resiliency Communication:** Businesses and essential services must establish clear protocols for communicating their operational status post-disaster, both to the municipal government and to

the community at large. Considerations for supply chain maintenance in response and recovery efforts should be scalable and closely monitored, commensurate with the scope and severity of particular disasters, disruptions, and emergencies. Business and supply chain needs are especially sensitive in the age of social media campaigns, which can be designed to encourage residents to share verifiable information about available resources, creating online community-driven support networks. Advertising key resources, locations, and services (such as food drives, shelters, and volunteer opportunities) will aid in mobilizing support during emergencies. However, overt and implicit solicitations for aid through these channels can create logistical issues for emergency managers, leading to a phenomenon known as convergence, where rapid inundations of unneeded resources can obstruct access to high-priority resources, such as food, water, and medical supplies. Mismanagement of aid sources and materials can, in turn, exacerbate post-event conditions.

To help manage supplier information in disruptions, organizations like the American Logistics Aid Network (ALAN) have worked with government organizations to find innovative solutions in humanitarian logistics, streamlining resource distribution, and enhancing disaster response and recovery processes, ensuring the community's needs are met in an equitable and accessible manner. They can be contacted for further information on humanitarian logistics as it pertains to Albany, specifically, providing support where needed in the event of a major disaster.

Engaging local business associations in this process, groups like the Albany-Dougherty Economic Development Commission and the Albany Chamber of Commerce can enhance outreach and ensure that all businesses are represented, facilitating coordinated recovery efforts. The Albany Chamber of Commerce hosts a directory of business contacts as well. Regular updates on the status of local businesses will help residents make informed decisions about where to seek goods and services. Specifically, including business groups in the resiliency awareness efforts described in **Play #1** can be a key feature of a successful resiliency communication protocol. **Figure 18** shows key steps in creating an updated community-based communication protocol.

**Engaging with Public Media:** Partnerships with local media outlets are essential in maintaining clear, cordial, and comprehensive public relations. Likewise, regular communications must be developed internally among agencies and relevant emergency management personnel. This can be facilitated through regularly scheduled meetings to discuss strategies for civic engagement with hazard mitigation and preparedness. Public meetings must also be held to address the community's needs in their own words. These meetings should inform emergency management policy and planning, and not be conducted after decisions on these fronts have been effectively established. In an emergency, press conferences should also be held to provide transparency with the news media and, in turn, the public at large. Lastly, social media outlets play an increasingly vital role in disseminating information on disasters as they develop in real time. However, this requires access to an internet connection, which many in Albany may not have. Optimal communications now largely depend on some form of high-speed internet

access and, as such, must be factored into plans for resiliency. **Figure 18** addresses key actions for implementing a resiliency information and transparency strategy.

Figure 18: Steps, Agents and Actions in Implementing Community-Based Communications Protocol

| Resiliency Transparency and Communications Strategy Actions | | |
|---|---|---|
| **Actions** | **Agents** | **Outcomes** |
| **Build a strong relationship with local news media and community influencers** | • DARA Coalition<br>• Televised and online news stations (i.e., WALB [NBC], WABW [PBS], WFXL [FOX31], WSWG [CBS]), radio stations, and other news outlets like the Albany Southwest Georgian and Albany Harold newspapers<br>• Albany Technology and Communications<br>• Dougherty County Emergency Management Services | Community media are familiar with the questions residents will have about events, responses, aid and resources and communicate in a way to provide optimal transparency. |
| **Educate the public about the Resiliency Plan** | • Albany Technology and Communications<br>• Dougherty County Emergency Management Services<br>• Local Voluntary Organizations Active in Disaster (VOADs) | All stakeholders and community members know their roles and ways they can be involved in enhancing resiliency. |
| **Create infographics showing where aid resources come from, and how accessible they are** | • Dougherty County Emergency Management Services | It is easy for community residents and stakeholders to understand the flow of resources without jargon or bureaucratic explanations. Those with literacy or ESL issues can readily understand the flow of resources. |

## Utilize Resiliency Challenge Videos


This playbook is accompanied by a series of short *Albany Resiliency Challenge videos* relating in practical terms key resiliency roles, needs, and activities from community, public agency, and other perspectives. The videos enable viewers to understand how disruptions are experienced from different perspectives and can raise awareness of how allied organizations, vulnerable populations, and others are experiencing the challenges of a disruption. By sharing and watching them both during the anticipation/preparation stage of the resiliency cycle and using them in recurring educational events and drills described in **Play #1**, the region can create a more cohesive internal knowledge of how roles are inter-related, and how to best support all of the partners involved in a response. **Figure 19** suggests agents and actions to make the best use of this resource.

Figure 19: Steps, Agents and Actions in Applying Resiliency Awareness Videos

| Applying Resiliency Challenge Videos | | |
|---|---|---|
| **Actions** | **Agents** | **Outcomes** |
| **Disseminate the Albany Resiliency Challenge videos** | DARA | There exists a clear guidance for all partners in resiliency on what they need to communicate, when, to whom and through what channels. |

# Play 3: Prepare the Local Infrastructure

**While** **Plays #1** and **2** have focused on developing Albany and Dougherty County's capacity for improved resiliency performance, **Play #3** focuses on protecting and leveraging the physical assets that are both vulnerable to disruptions and necessary for an effective state of resiliency.

## Focus on Priority Needs and Objectives

**Appendix 1** and **Appendix 2** document how past disruptions have affected the state of Albany and Dougherty County's built environment including land parcels and public infrastructure. **Appendix 1** explores how past events have revealed vulnerabilities in the area's land use patterns, zoning regulations, and built environment. This examination reveals vulnerabilities, particularly in low-density residential areas at the city's edges, which lack adequate infrastructure and access to essential services during weather events. Moreover, the analysis highlights shortcomings in existing zoning codes, indicating a deficiency in prioritizing accessibility in land use planning. Comprehensive vulnerability assessments underscore the imperative to enhance infrastructure resiliency and improve building standards to mitigate risks posed by frequent weather events, storms, sinkholes, and droughts. Solutions can also be informed by the City of Albany and Dougherty County's previous plans, their treatment of resiliency and the experience of peer communities.

### Priorities for Resiliency in the Built Environment

Key land use, building and infrastructure goals include:

- Prioritize accessibility in zoning codes and development projects,
- Improve building standards to ensure equitable access and withstand weather events,
- Revise zoning codes to align with resiliency goals and foster sustainable development.
- Implement polices and investment responsive to vulnerabilities posed by frequent weather
- Consider legacy deficiencies in resiliency clusters when prioritizing capital improvements

These priorities are reflected in practical actions that Albany and Dougherty County can take specifically related to (1) zoning (2) building codes and policies (3) transportation infrastructure, (4) utility infrastructure and (5) green infrastructure/natural resources. Furthermore, the survey data, census data and history of traumatic events affecting Albany and Dougherty County suggest key focus areas or "resiliency clusters" on which to target changes in policy and investment related to the built environment.

# Invest In Resiliency Clusters

A resiliency cluster can be understood as an area that (1) has critical assets for the vitality of the community (especially those that may be needed in a disruptive event) (2) has a history or existing condition of being compromised by such events and/or (3) is located in an area (such as a floodplain) that is susceptible to such events in the future. Clusters provide focus areas for land use, policy and infrastructure priorities:

> ***Resiliency clusters*** *help focus land use, zoning, public capital infrastructure and community development initiatives in critical areas hardest hit by disruptions and with greatest vulnerability and impact.*

- When investing in community development and pursuing grants, focusing on specific revitalization or rebuilding in cluster areas can complete a recovery process,
- When selecting locations for resiliency hubs as described in **Play #1**, proximity to clusters is an important consideration.
- Plans for stormwater management and utility infrastructure can consider treatments for cluster areas taking into account the specific events that cluster areas have experienced
- Capital programming priorities can elevate specific infrastructure modernization or replacement of specific elements that have either (1) been damaged or (2) may warrant specific features due to their history and risk.
- When reassessing zoning and building codes, cluster locations may warrant special designations related to their unique vulnerabilities or experiences.

The resiliency clusters shown in **Figure 20** are based on (1) The location of assets where key activities occur that cannot readily be staged elsewhere in a disruption, (2) the age and condition of buildings and other infrastructure, (3) the history of damage or compromise of key facilities in the area from past disruptions and (4) proximity to critical population and business activity.

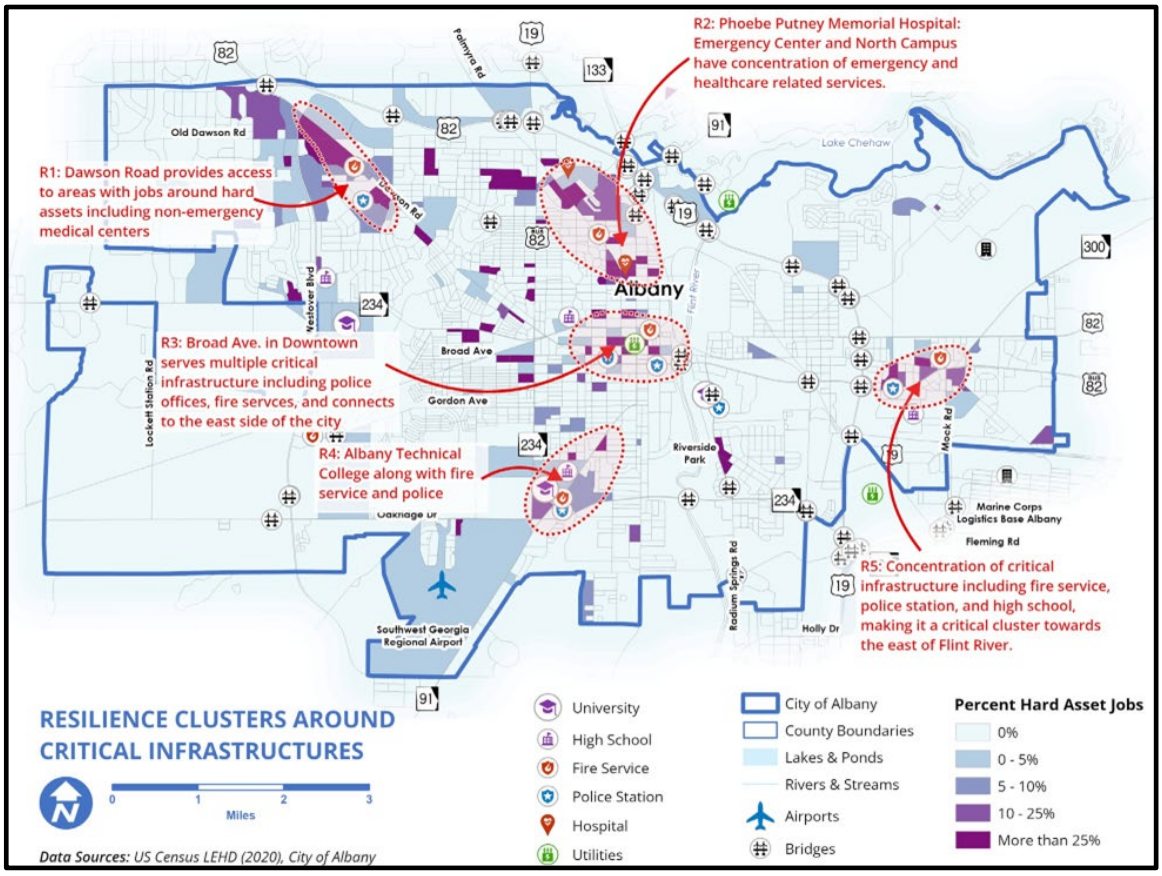
These clusters act as anchors for emergency response, with each cluster having tailored plans based on its unique assets and risk profile. For instance, the cluster with a concentration of healthcare assets may require strategies for medical supply chain continuity, while the transportation infrastructure within a cluster may need plans for rerouting traffic during emergencies. Examination of these clusters helps identify the types of infrastructure present, potential threats, existing emergency plans, and necessary improvements. This focused approach should ensure that Albany's resiliency efforts are both efficient and effective, safeguarding the city's most critical areas against a wide array of potential threats.

> ***A Holistic Approach:***
> *Resiliency clusters are to focus, but not limit resiliency solutions. Needs should never be discarded because they are not in cluster, however clusters can help pinpoint concentrated issues.*

**Appendix 1** provides further detail about how these clusters have been identified and specific considerations associated with the

history, condition and needs of these areas. **Figure 21** summarizes the characteristics, unique vulnerabilities and specific infrastructure and policy remedies to enhance resiliency in these areas.

Figure 20: Physical Resiliency Clusters




**Southeast Albany/Radum Springs:** The area near GA-234 and Radium Springs has significant issues of poor structural condition, aged infrastructure, and a history of flooding. Likewise, the concentration of parcels off GA-234 both to the east and west of the Flint River Crossing represents areas of specific concern due to their present age and condition. Furthermore, GA-234 as a singular crossing of the Flint River in south Albany highlights the importance of both protecting this asset and addressing the risks that may be associated with its compromise.

**Downtown Albany:** Specific areas of concern downtown include the exceptionally poor structural conditions surrounding Slappey Boulevard and Oglethorpe Boulevard which have already borne significant compromise in condition from the 2017 wind events. Consideration of resources to improve housing and commercial structures downtown, protect from future flooding and respond to future threats are of particular importance in the 2024 Plan.

**North Central Albany:** The area of North Central Albany adjacent to Lake Chehaw served by GA-133 and GA- 91 has a concentration of older structures, that while in good condition, may be vulnerable due to their proximity to the lake. (This north-central area has older structures than other areas on Lake Chehaw).

Figure 21: Characteristics, Risks and Improvement Actions for Resiliency Clusters

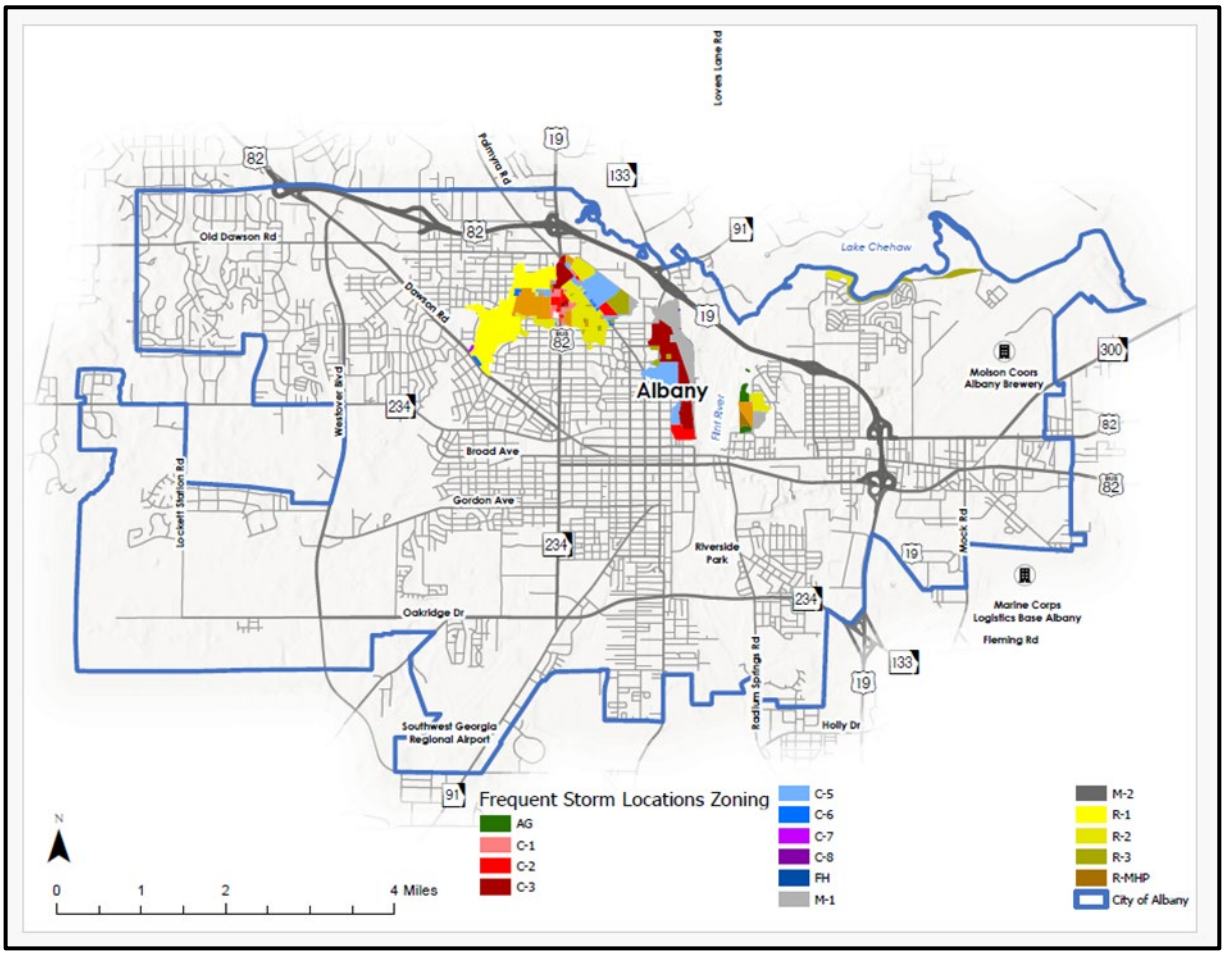
| Clusters | Characteristics | Vulnerabilities and Risks | Resiliency Comments/ Connections |
|---|---|---|---|
| **R1: Dawson Road** | Major commercial center: critical assets include Albany Fire Station, Phoebe Urgent Care (Northwest), Albany Vascular Specialist Center | Severely impacted by 2017 high intensity winds: some structures over 50 years old in poor condition | **Prepare alternate access routes (e.g., Westover Blvd, US 82) to ensure emergency response and recovery in case of transportation infrastructure damage** |
| **R2: Phoebe Putney Memorial Hospital** | Essential emergency response hub; includes Phoebe Putney Memorial Hospital: Emergency Center and North Campus | Hospital's electric connections vulnerable to damage (e.g., 1994 flooding, 2017 winds); plans to bury electrical lines underground; accessibility crucial during disasters due to hospital's significance | **Underground electrical lines planned for resiliency; ensure accessibility given hospital's critical role during and after disasters** |
| **R3: Downtown** | Houses critical assets like Albany Fire Department Station 1, Albany Civic Center, and Albany Police Department | Inundated during 1994 floods; disruption of Broad Avenue Bridge; 2017 windstorm caused further damage; efforts on revitalization and floodplain protection; reinforce bridges over Flint River | **Revitalization efforts ongoing; reinforce bridges to maintain connectivity and prevent disruption during disasters** |
| **R4: Albany South** | Home to Albany Technical College, Monroe High School, Albany Area Vocational High School, several major employers, and other critical institutions | Significant damage from 1994 Flint River floods; delays in recovery impact citywide education attainment | **Educational recovery critical for citywide education; prioritize recovery efforts for long-term impact on education attainment** |

| Clusters | Characteristics | Vulnerabilities and Risks | Resiliency Comments/ Connections |
|---|---|---|---|
| **R4: Albany East** | Key assets include Thornton Community Center, Urgent Care Center (Phoebe East), Dougherty High School, Marine Corps Logistics Base Albany | Affected by 2017 windstorm and tornadoes: crucial for east side emergency response, especially during bridge obstructions like 1994 floods | **Key for east side emergency response; ensure preparedness for severe weather events and bridge disruptions to maintain connectivity and response capabilities** |

## Enhance Zoning and Building Codes and Policies

**Future Zoning Areas of Focus:** Land use planning and building codes/policies are critical components of Resiliency planning, as the planning controls, relevant standards, building codes, and zoning are powerful tools for managing hazard risk. Planning designations provide an important perspective on the exposure of known hazard events and enable the community to prepare for the future. In areas frequently hit by severe storms, the dominant land use is low-density residential. Significant areas of public/institutional and commercial land are also in the frequent storm area. Noticeably missing from the citywide future land use are industrial or agricultural areas. This absence of agricultural and industrial areas might indicate that these types of land uses may not require special planning for resiliency against similar storms in the future. **Figure 22** illustrates intended future land uses in the areas that have been most affected by storm damage.

Figure 22: Future Zoning Designations in Areas of Frequent Storm Incidence




In areas of Albany prone to frequent storm events, residential districts single-family residential (R-1) and community residential/multiple dwellings (R-2) continue to occupy most of the land. As such, they are comparatively more vulnerable. Additionally, there's a notable expansion in the multifamily residential (C-R), general commercial (C-5), and central commercial/retail (C-3) districts. A detailed zoning review of these districts for their ongoing compatibility with intended uses, and special requirements for storm events is recommended.

**Focus on Vulnerable Population and Employment Areas:** The community resiliency estimates (CRE), taken from the NOAA toolkit, provide a metric to represent socially vulnerable populations in every neighborhood in the United States to the impact of disasters. Using the American Community Survey (ACS-2022) microdata, CRE provides estimates of the total number of people living in a community by the number of risk factors.

- 0 risk factors (Low risk)
- 1-2 risk factors (Medium risk)

- 3 + risk factors (High risk)

The number of risk factors is determined for each household if it meets the following criteria using demographic, socio-economic, and housing characteristics.

1. Income-to-Poverty Ratio (IPR) < 130 percent (Household)
2. Single or zero caregiver household - only one or no individuals living in the household who are 18-64 (Household)
3. Unit-level crowding with ≥0.75 persons per room (Household)
4. Communication Barrier defined as:
    a. No one in the household has received a high school diploma
    b. No one in the household speaks English "very well"
5. Aged 65 years or older
6. No one in the household is employed full-time, year-round. The flag is not applied if all residents of the household are aged 65 years or older (Household)
7. Disability, at least one serious constraint to significant life activity
8. No health insurance coverage
9. No vehicle access (Household)
10. Households without broadband internet access

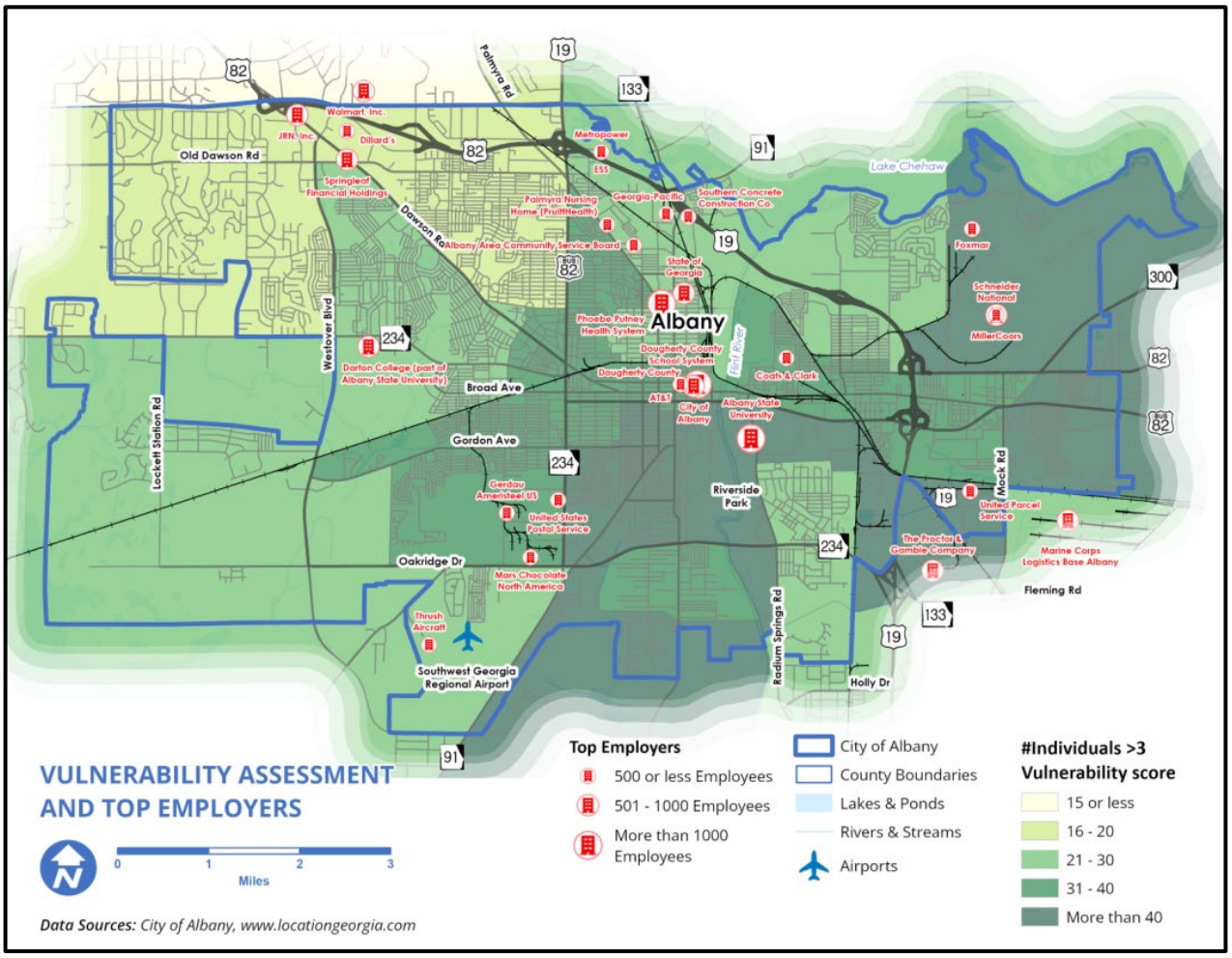
The green shades in **Figure 23** demonstrate areas with greater vulnerability and are defined by the number of people in a census tract that are classified as having 3+ risk factors. The figure shows where these populations are in relation to major employers and transportation facilities. **Appendix 2** provides a more detailed discussion of zoning, land use, employment and housing in proximity to vulnerabilities and hazards.

In general, larger concentrations of vulnerable populations are situated in the eastern and southern regions of Albany. These vulnerable groups are also present in areas containing critical clusters, particularly within zones R-2 to R-5, underscoring the rationale behind establishing these clusters and highlighting the necessity for targeted attention in Resiliency planning for this area. In addition, the vulnerable populations are located near major employers and universities such as *The Procter & Gamble*, *MillerCoors*, and Albany State University. Specifically, these vulnerable populations may lack sufficient resources to withstand the impacts of events.

## Recommended Enhancements to Zoning and Building Codes/Policies

Based on the analysis given in **Appendix 2** as well as stakeholder input and the historical and cultural equity assessment given in **Appendix 3** – the following key recommendations are made regarding zoning and building codes and policies:

Figure 23 shows Vulnerable Populations and Employment Centers




*Recommended Changes in Zoning*

1. **Promote Land Use Accessibility**: Amend zoning codes and maps to encourage land use accessibility, enhance community resiliency and reduce dependency on transportation networks during disasters.
2. **Flexibility in Zoning**: Update zoning regulations to allow for greater flexibility in land use, enabling adaptation to changing environmental conditions.
3. **Incentivize Resiliency Features**: Incentivize developers and homeowners to incorporate resiliency features into projects, such as green infrastructure, flood-resistant design, and drought-resistant landscaping.
4. **Waivers and Variances:** In times of emergency or disaster, the City acknowledges its responsibility to adapt swiftly to evolving circumstances while ensuring the safety and welfare of its residents. Therefore, the City should explore its ability to grant variances or waivers of specific

building and zoning regulations when it is demonstrated that such regulations are not applicable, or when there is a need to explore new and innovative approaches in service delivery.

*Recommended Changes in Building and Development Policy (Fee Waivers Etc.)*

1. **Disaster Resilient Building Codes**: Review and update building codes to ensure compliance with Disaster Resilient Building Codes, incorporating resiliency standards into new construction and redevelopment projects. (**See Appendix U Georgia Disaster Resilient Codes**).
2. **Technical Assistance**: Provide training and technical assistance to building professionals to familiarize them with resiliency requirements and best practices (in conjunction with actions described in **Play #2**).
3. **Fee Waivers and Incentives**: Consider offering fee waivers or other incentives to developers who integrate resiliency features into their projects.

**Figure 24** summarizes the implementation steps for changes in zoning, building code and land use, also suggesting resources and timing for changes to be effective.

Figure 24: Planning, Zoning and Building Recommendations

| Planning, Zoning and Building Recommendations | | | |
|---|---|---|---|
| **Action** | **Agent** | **Resources** | **Timing** |
| **Amend zoning regulations: to promote land use accessibility focusing on cluster areas and identified hazard areas above (and in Appendix 2). Codes should reflect the principles of the Model Resilient Zoning Code with Equity** | Planning and Development Services | Technical expertise, stakeholders, consultants | Within one year of adoption |
| **Review and update building codes: to incorporate resiliency standards in vulnerable and cluster areas.** | Development Services (Permitting & Inspection) | DCA Permissive Codes (IBC & IRC), expert input, training programs | Within six months of adoption. |
| **Building Fee Waivers: Formalize a policy of allowing building fee waivers for damaged properties for a 3-month period after a formally declared disaster or emergency.** | City of Albany | Reserve budget to allow for revenue cession. | Within one year after adoption |
| **Implement flexible zoning for adaptive reuse of properties in high-risk areas: provide increased resiliency through the repurposing of buildings to better withstand environmental stressors** | Planning & Development Services | Expertise of city staff. | Within one year after adoption. |

# Pathways to Resilient Capital Infrastructure

## Resilient Transportation: Local Role in Regional and National Access

**The Critical Lifelines:** US Route 19 and US Route 82 provide Albany and Dougherty County's critical life-line to freight, supplies and national support accessing the area by I-75 and I-85 and surrounding communities Macon, Columbus and Tallahassee, FL shown in **Figure 25**.

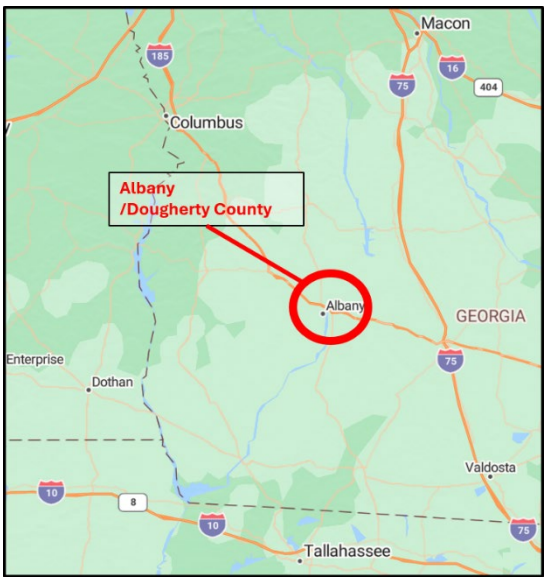
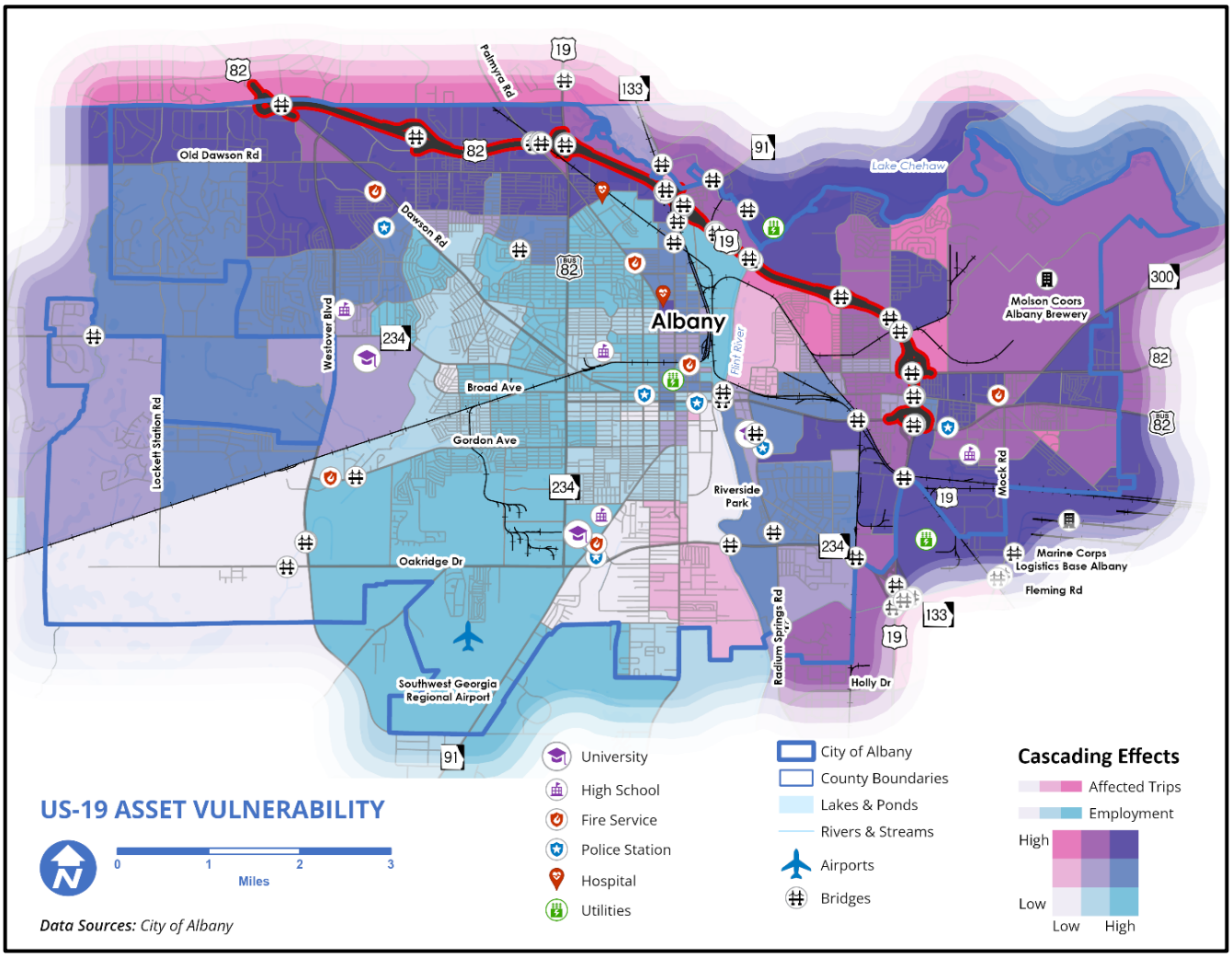



Figure 25: Albany/Dougherty Lifelines to National Transportation Networks

**Cascading Effects and First-Last Mile:** While federal aid and programming through the USDOT and GDOT can support reconstruction of major roadway and bridge facilities connecting Albany and Dougherty County following disruptions – there are critical local connections in the purview of the county and the city. Disruptions in transportation systems have broader localized impacts than just the damage to the infrastructure. **Appendix 2** analyses cascading transportation effects relating to Albany and Dougherty County. The cascading effects of transportation system failure can significantly affect travel times and accessibility between trip origins and destinations far beyond the disrupted area, subsequently affecting workforce and residents' access to evacuation routes as well as the goods, services, and employment most needed in a disruptive event. The north common section of US-19 and US-82 in Albany from the Slappey Blvd. interchange to the E Oglethorpe Blvd. interchange and its connections to vulnerable areas in and around Albany is found to have significant cascading effects on the area. A select-link analysis of the origins and destinations of trips carried by this link shows that it carries significantly more people and goods to areas with the highest risk of disruption and the highest criticality in terms of access to health care, law enforcement, utility, and other facilities and workers needed in a disruption. A select-link analysis of the origins and destinations of trips carried by people and goods utilizing this common section who could be affected by a disruption by access to national and regional access.

Figure 26 : Cascading Effects of Access to US 19/82 Common Section




Facilities like Stuart Avenue, Nottingham Way and Dawson Rd. in the Sherwood Acres area and East Broad Ave, Johnson and Cordele Roads in the Five Poins/Baker Heights/Eastgate areas to the east of Albany warrant special consideration for specific treatments related to flooding, incident management and continuity of access to support the access to the larger transportation network for the greatest concentration of affected trips.

Connectivity and availability of multiple routes for incident management for East Albany as well as Northwest Albany to access the common section and the other key assets shown in **Figure 26** is a recommended focus of future transportation programming. **Figure 27** shows key actions associated with improving transportation resiliency in Albany and Dougherty County.

Figure 27: Resilient Transportation Recommendations

| Resilient Transportation Action Items | | | |
|---|---|---|---|
| **Action** | **Agent** | **Resources** | **Timing** |
| **Conduct alternative transportation route study: Define alternative routes to support freight movement across relevant industries such as The Proctor & Gamble Company, United Parcel Service, Marine Corps Logistics Base Albany, and Schneider National Miller Coors** | Engineering Department and DARTS MPO. | Transportation planners, GIS and traffic data, funding. | Within one year of adoption. |
| **Expand transit lines to provide access to employment: Create more alternatives and less dependency on a singular route or mode.** | Albany Transit and DARTS MPO | FTA grants or Bipartisan Infrastructure Programs (PROTECT, RASIE and others) | Within two years of adoption on completion of DARTS MTP. |

# Stormwater and Utilities

## Long Term Stormwater and Flood Resiliency planning

**From Flood Mitigation to Strategic Resiliency planning:** The area presently has a Flood Hazard Mitigation Plan providing updated FEMA forms for elevation and dry flood proofing certificates and promoting flood insurance through resources like Flood Smart. The next step is to develop and implement a comprehensive flood resiliency strategy that includes updating flood management documentation, enhancing public awareness, improving flood forecasting and early warning systems, strengthening building codes, and utilizing technology for flood management. This next step in flood resiliency will lead to improved flood risk management, enhanced community preparedness and resiliency, reduced flood damage, and more effective response to flood events.

**Long-Term Comprehensive Stormwater and Flood Mitigation Planning:** The city of Albany developed its current emergency operations and response plan in 2017. Since the 2017 events and tornadoes, Albany has developed or updated other plans to address resiliency needs. The 2021 comprehensive plan update addresses the floodplain ordinance, stormwater systems and floodplain management/hazard mitigation, and the 2023 strategic plan further addresses stormwater sewer systems, lighting, utilities, and housing rehabilitation based on the experiences of 2017. (Dougherty county's floodplain ordinance also addresses flood mitigation). However, the resiliency elements of these plans have not been revisited since the 2020 COVID pandemic and have never been fully integrated into a singular strategy. For these reasons a comprehensive stormwater strategic stud and plan is recommended to integrate

these areas into a cohesive approach, with the added focus on resiliency clusters as provided in Appendix 2. **Figure 28** summarizes key actions related to resilient stormwater and flood prevention/mitigation.

Figure 28: Stormwater and Flood Prevention/Mitigation Actions

| Resilient Stormwater and Flood Prevention/Mitigation Action Items | | | |
|---|---|---|---|
| **Action** | **Agent** | **Resources** | **Timing** |
| **Develop and implement a flood Resiliency Plan: Coordinated approach to flood risk management and effective response.** | City of Albany and Dougherty County | Budget and agency management of planning effort | Within 2 years of adoption |
| **Update and streamline flood management documentation: Improved compliance with FEMA requirements and better flood risk management.** | | Guidance from strategic flood Resiliency Plan. | Within 1 year of adopting strategic flood Resiliency Plan |
| **Improve flood forecasting and early warning systems: Enhanced ability to prepare and respond to potential flood events.** | | Specific systems can be recommended in the plan. | |
| **Strengthen building codes and floodplain regulations: Reduced vulnerability of structures to flood damage.** | | Planning and zoning expertise using clusters and other areas in Appendix 2 | |

## Modernize Utilities for a Changing Climate:

New technologies and approaches to electricity, water, gas and other utilities can both enhance the sustainability of the community and support resiliency in the face of disruptive events. Each of these areas offers opportunities to improve resiliency for Albany and Dougherty County.

**Electric Utilities:** The electric utility operates 24/7, 365 days a year, ensuring continuous monitoring and management. Automated switching via feeders and the use of the Supervisory Control and Data Acquisition (SCADA) system for power outage management are key features.

*Microgrids:* One of resiliency challenges of electricity networks like Albany and Dougherty County is the singular dependency on one grid which may be compromised affecting the community in catastrophic ways. While **Play #4** explores the value and resources for making on-site and mobile generators available or water and fuel pumping stations – microgrids is a long-term solution that an protect electricity for critical locations. A microgrid is a **local electrical grid with defined electrical boundaries**, acting as a single and controllable entity. It can operate grid-connected and in island mode. A ' stand-alone microgrid ' or ' isolated microgrid ' only operates off-the-grid and cannot be connected to a wider electric power system. Grants can be available to provide microgrids for critical infrastructure such as hospitals, emergency response centers, water supply and water treatment facilities. Integrate renewable energy sources like solar and wind into the microgrids to enhance sustainability and reduce dependency on the main grid.

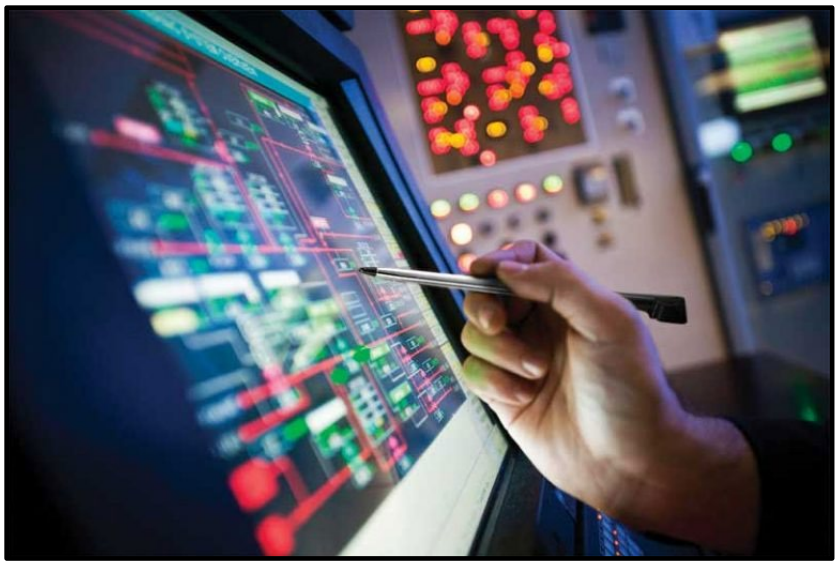


Figure 29: A SCADA Dashboard Rapidly Pinpoints Areas of Improvement in the Electric Grid.

*Artificial Intelligence and Advanced Analytics:* Machine Learning and Artificial Intelligence (AI) increasingly provide opportunities to integrate advanced analytics into the provision of electrical services. These programs involve the implementation of monitoring programs that provide regular assessments to track and replace the worst-performing feeders and circuits in terms of outages and reliability. Machine learning and AI technologies are available in Supervisory Control and Data Acquisition (SCADA) systems and other monitoring equipment to predict potential failures and optimize maintenance schedules. For example, platforms like IBM Maximo and GE Predix integrate AI models to enhance predictive maintenance for utility providers. These can result in significantly improved reliability and efficiency in power outage management. (2 Years).

**Water Utility:** While backup generators are a critical element of the areas' current approach to resilient water infrastructure and **Play #4** offers a strategic way to make more generators available at critical locations– longer term systemic solutions are also available. Most notably the provision of a Smart Water Network for the area, and investment in resilient water infrastructure can greatly enhance the resiliency of water availability in Albany and Dougherty County.

> ***The Internet of Things:*** *(IoT) refers to the network of physical objects embedded with sensors, software, and other technologies that connect and exchange data with other devices and systems over the Internet1. It encompasses a wide range of internet-enabled devices, from fitness trackers to smart heating systems, and is part of the Fourth Industrial Revolution.*

*Smart Water Network:* Albany and Dougherty County's water utility conducts risk assessments based on EPA-mandated AWWA J100 Standards. A smart water network with Internet of Things (IoT) sensors throughout the distribution system can greatly enhance monitor water quality, pressure, and flow in real-time. Implementing a smart water network can lead to enhanced water quality monitoring and reduced water loss. By monitoring water quality, pressure, and flow in real-time, utility providers can quickly detect and respond to issues such as contamination, leaks, or disruptions in the distribution system. The action will strengthen the system's ability to maintain consistent water supply, even in the face of challenges, ensuring a reliable and sustainable water source

*Resilient Water Infrastructure* Resilient infrastructure such as rain gardens, permeable pavements, and bioswales can enable Albany and Dougherty County to manage stormwater more effectively. These nature-based solutions reduce runoff, improve water absorption, and decrease the load on traditional water treatment facilities. Implementation can reduce the burden on water treatment facilities, leading to lower operational stress during heavy rainfall events and improved system resiliency.

> ***Rain Gardens:*** *Designed landscape sites that collect stormwater runoff from impervious surfaces, allow it to seep back into the ground, and are planted with grasses and flowering plants to reduce runoff pollutants.*
>
> ***Bioswales:*** are channels designed to concentrate and convey stormwater runoff while removing debris and pollution while recharging groundwater.

**Gas Utilities:** The resiliency of gas utilities in Albany and Dougherty County can be greatly enhanced through new technologies including pilot hydrogen blending and leak detection systems.

*Pilot Hydrogen Blending:* The Albany Water, Gas and Light Commission replaces at least two valves every month and has been repairing and replacing 400 miles of steel gas lines with polyethylene pipe since 2016. Pilot hydrogen blending in natural gas pipelines has been shown to reduce carbon emissions and enhance the resiliency of the gas supply. By incorporating hydrogen, the gas system becomes less vulnerable to disruptions in natural gas supply, such as shortages or price spikes. Additionally, hydrogen blending supports a transition to cleaner energy, contributing to long-term environmental sustainability. Implementing this solution will reduce area carbon emissions and enhance gas supply resiliency.

*Advanced Leak Detection Systems:* The gas utility has also been repairing and replacing steel gas lines with polyethylene and converting analog systems to smart meter systems. Advanced leak detection technologies like drones equipped with methane sensors and ground-based robotic inspection systems can further advance this effort. Implementing this solution can greatly improve leak detection and maintenance efficiency. **Figure 30** summarizes key actions recommended for implementation to support Albany and Dougherty County's overall resiliency.

Figure 30: Resilient Utilities Action Items

| Resilient Utilities Action Items | | | |
|---|---|---|---|
| **Utility Area** | **Action** | **Agent** | **Outcome** |
| **Resilient Electric Utilities** | Develop microgrids | City of Albany Utilities | Increased reliability |
| | Integrate microgrids and renewable energy | City of Albany Utilities | |
| | Utilize machine learning and AI | City of Albany Utilities, IT Department | Improved reliability |
| | Optimize maintenance schedules | City of Albany Utilities, IT Department | Enhanced efficiency |
| **Resilient Water Utilities** | Implement IoT sensors | City of Albany Utilities, IT Department | Reduced water loss through early detection of leaks and inefficiencies. |
| | Monitor water quality in real-time | Albany Utilities | Enhanced water quality by quickly identifying and addressing contamination or quality issues. |
| | Integrate predictive analytics | City of Albany Utilities, IT Department | Optimized water distribution and storage, reducing drought-related risks. |
| | Incorporate water reuse systems | Public Works - Sewer Division, IT Dept. | Increased water availability for non-potable uses, reducing strain on potable supplies. |
| | Pay for and invest in rain gardens, bioswales, and permeable pavements | Department of Public Works | Reduced burdens of water loss and improve groundwater recharge. |
| **Resilient Gas Infrastructure** | Research and pilot hydrogen blending | Albany Utilities | Enhanced gas supply resiliency |
| | Implement advanced leak detection | City of Albany Utilities, IT Department | Improved leak detection |
| | Use drones with methane sensors | Albany Utilities, IT Department | Enhanced maintenance efficiency |

# Green Infrastructure, Environmental Justice, and Natural Resources

Sustainability goes hand in hand with long-term resiliency, as well as considerations for environmental and social justice. As such, the recommendations described in this play should be paired with practical considerations for increased environmental sustainability. This will not be possible without a comprehensive understanding of the regional ecology of Southwest Georgia in general, and Albany in particular. This goes for city officials as well as business owners and the community at large.

Figure 31: Long leaf pines in Albany, GA

Emphases on sustainable practices are further compounded by Albany's geographic location. The city is situated on the Flint River, which is a vital source of water contained entirely within the state of Georgia – from Atlanta to Lake Seminole – forging a confluence with the Chattahoochee River; the waters of which combine to become the Apalachicola River in Florida. While this river plays a vital role in the ecology of Dougherty County (and beyond), it has also been a focal point of concern over natural hazards in the region. The flood of 1994, especially, was a testament to the devastating force of the river in times of heavy rainfall. Any preparations regarding physical infrastructure must take historic floods into account, as well as legacies of inequitable social infrastructure which fomented racial tensions shortly thereafter.

Figure 32: Water Resources in Albany

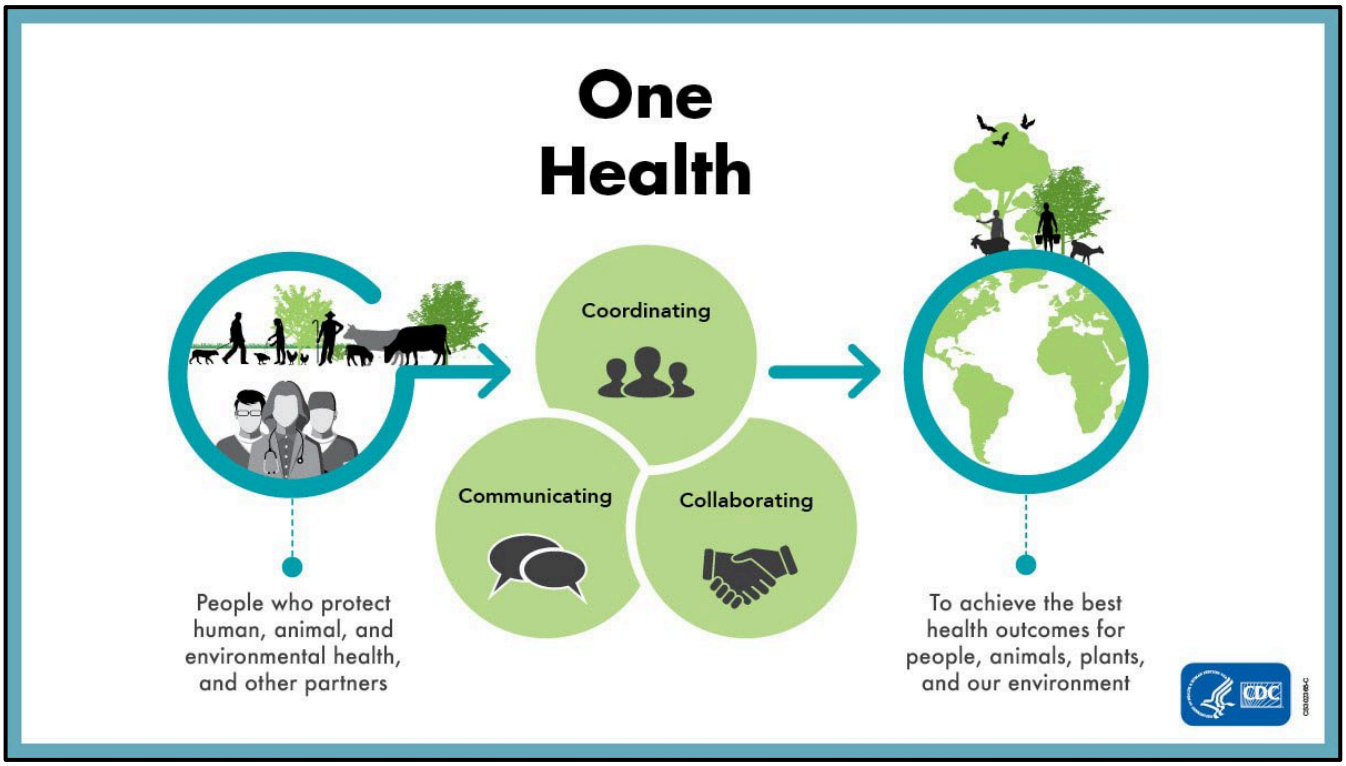
Climate change has elevated concerns for other natural hazards as well, including tornadoes, droughts, and heatwaves. Such hazards can lead to increased burdens of heat-related illnesses, as well as economic burdens in the form of high electricity bills and water usage. Local agricultural yields may also be affected by droughts, which have been occurring more frequently in the last 20 years.

To anticipate the incidence and severity of drought in the future, NOAA's National Integrated Drought Information System (NIDIS) offers up-to-date insights into past, current, and projected conditions for drought in Southwest Georgia and beyond.


Figure 33: Agencies Collaborating to Address Drought Risk in Albany and Dougherty County

Environmental conditions are also closely intertwined with epidemiological concerns. Since the COVID-19 pandemic, public health officials have begun to turn their attention to matters of environmental justice (and, in turn, health equity) via the One Health approach, explained further in the figure below.

Figure 34: "One Health" Model for Resilient Health Implementation



With this approach in mind, local public health experts, particularly in the Dougherty County Department of Public Health, as well as clinicians in the Phoebe Putney Health System, should familiarize themselves with the environmental factors of Albany, GA, and the health outcomes they may contribute to. For example, clean and ample water supplies are vital for Phoebe Putney Memorial Hospital's core functions. Without this resource, patients would not be able to receive the care they require.

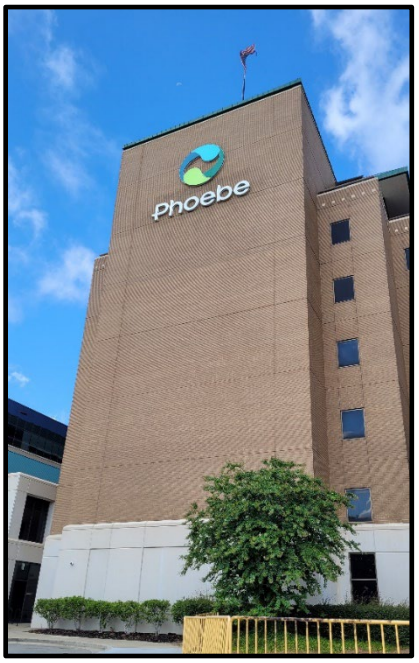


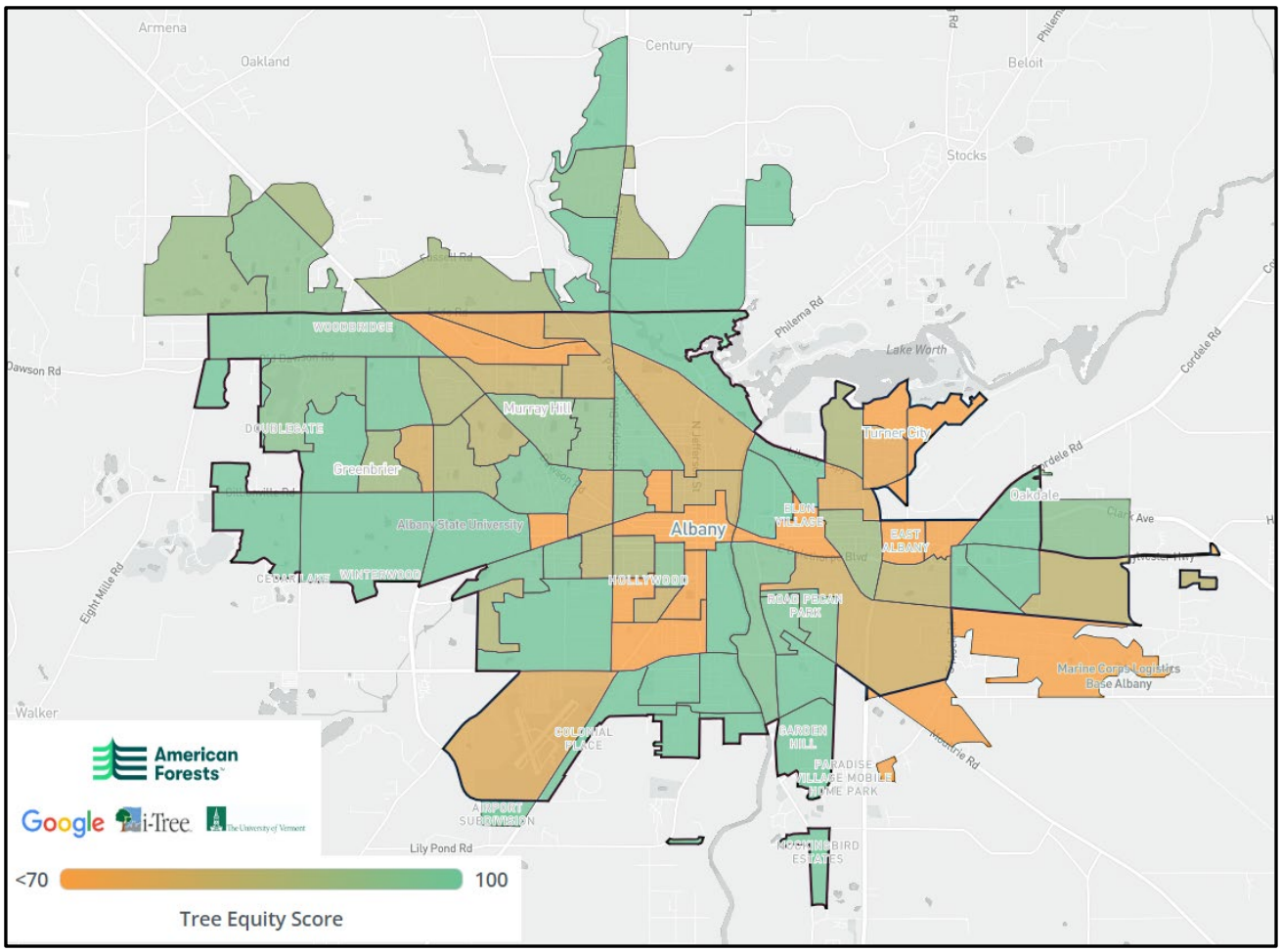
Figure 35: Phoebe Putnam Hospital

As such, the structural integrity and accessibility of water wells and storage tanks must be reevaluated by water and sewer personnel in conjunction with resource managers at Phoebe Putney Memorial Hospital and other inpatient facilities, making considerations for typical volume usage. This is to ensure that, if drought conditions require water to be used sparingly, the healthcare services rendered at the clinical level would not be compromised.

Gas is also a valuable resource in emergency situations where power outages are likely to occur. People need this resource to fuel their cars and generators. However, in the event of a power outage, gas stations must also be provided with generators to ensure that the public can get what they need at the pump. While the use of fossil fuels is typically regarded as an unsustainable practice, they are currently still utilized as primary fuel sources in Albany. Transitioning to green energy sources (i.e., solar and wind), while encouraged, is not likely to occur in a timely manner. Members of the Albany Resiliency Coalition will therefore need to discuss, amongst themselves, which short- and long-term trade-offs they (and the communities they represent) are willing to accept.

Maintaining resiliency and sustainability simultaneously is an ongoing challenge. Fortunately, there are information systems which can aid in decision-making and prioritization, as well as local experts who can provide insight and expertise on sustainable practices, consulting on innovative ways to integrate these practices into various sectors, working with the Albany Recreation & Parks Department and Albany Utilities. The Jones Center at Ichauway, for example, hosts an array of subject matter experts on forestry, hydrology, and wildlife in Southwest Georgia. These experts should be consulted and incentivized to devise community education activities that emphasize the importance of ecological factors in resiliency and preparedness endeavors. **Figure 36** gives a tree equity score for Albany.

Figure 36: Tree Equity Score for Albany GA, which cross-references socioeconomic data with access to green space. Learn more at https://www.treeequityscore.org/map#10.87/31.5767/-84.1445




Efforts addressing environmental justice concerns, in conjunction with matters of racial equity in Albany and Dougherty County, are critical for an equitable resiliency strategy. Some key recommendations include removing invasive species and restoring pine forestry, as well as maintaining an urban tree canopy that consists of entirely native species requiring less irrigation. Land being utilized for green

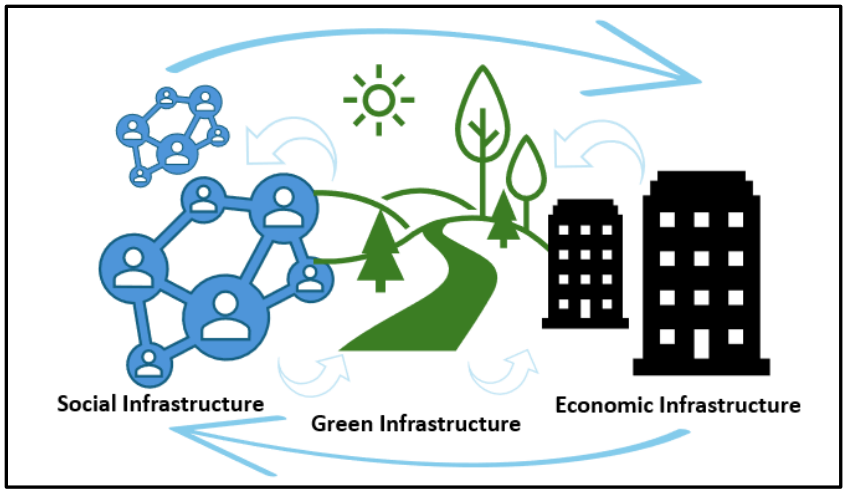



Figure 37: Linkage of Economic, Green and Social Infrastructure

space, agroforestry, or horticultural activities can lessen the economic and public health burdens of heat waves, likewise serving as places of civic engagement, education, and lessening the impact of food insecurity, which disproportionately impact Albany's low-income and African American communities. **Appendix 3** provides an in-depth cultural and historical equity assessment of the area's experience with resiliency as relates to the current plan.

Figure 38: "Preserve, Farm, Culture" - the core tenants of New Communities, Inc. (photographs courtesy of https://www.newcommunitiesinc.com/new-communities.html)


One such organization that embodies these ideals is the Charles Sherrod Community Development Corporation (or Charles Sherrod CDC), which is part of New Communities, Inc. Founded by Charles and Shirley Sherrod. According to their website, "...New Communities, Inc. is a non-profit 501(c)(4) based in Albany, Georgia. Founded as a collective farm, New Communities is widely recognized as the original model for community land trusts in the US..." The institution espouses three core ideals in three simple words:

> **"PRESERVE. FARM. CULTURE."** In preserving, it will improve and protect the wildlife habitat and preserve a restorative landscape for human meditation and health through hiking, biking, and other low-impact activities. In Farming, it will produce revenue-generating crops and serve as a place for teaching, learning, and the development of new agriculture techniques and technology. As a Culture, a place for community and social development will emerge as New Communities establishes a new public meeting ground for events seminars, social activities, lodging, retail, classroom and conference center.

This organization forges a model of resiliency that is codependent on social activism and sustainability. To maintain and iteratively negotiate the implications of resiliency over time, city officials, in tandem with the Albany Resiliency Coalition, should be cognizant of the New Communities, Inc. model (Preserve. Farm. Culture.) The utilization of this model should be reciprocated with ample collaboration, communication, and investment in organizations like New Communities, Inc.

The implications of social and environmental justice are intertwined with the maintenance of green infrastructure and sustainable landscaping practices. Likewise, historical and cultural concerns for racial equity are implicated in these strategies for resilient infrastructure. This is elaborated further in the historical narrative in the index of this playbook. **Figure 39** offers practical actions related to green infrastructure and resiliency.

Figure 39: Green Infrastructure and Equity Resiliency Actions

| Action | Agent | Resources |
|---|---|---|
| **Amend zoning codes to reflect the principles of the Model Resilient Zoning Code with Equity** | Planning & Development Services | Reflects resilient and equitable principles |

# Play 4: Targeted Resiliency Initiatives

While the first three plays have focused on ways to strengthen Albany and Dougherty County's ability to implement solutions to become a more resilient area, **Play #4** focuses on specific policy initiatives that Dougherty County, Albany and their partners can undertake to address resiliency issues identified in the planning process. Resources like a **regional resiliency coalition**, an **online resiliency portal** and **enhanced zoning, building and infrastructure** practices can equip the area to implement policies to advance strategic improvement in practical aspects of greatest need.

Based on an assessment of peer communities and input from the public and stakeholders seven key strategic focus areas are recommended for priority implementation. **Figure 40** these priority focus areas.

Figure 40: Economic Resiliency Initiatives

| Dougherty County/Albany Resiliency Initiatives |
|---|
| **Benchmark Status and Progress:** Practical benchmarks for a resiliency coalition to monitor and address year-over-year can ensure focus and follow-through on resiliency needs. |
| **Offer Disbursed/Diverse Health Care Locations: Providing basic first-aid, safe/healthy environments and practical health care at non-clinical locations can partially compensate for the heavy reliance on Phoebe** Putney. |
| **Focus on Housing and Homeless Prevention:** Transitional housing options navigation assistance helps those who may experience extended homelessness during prolonged recovery periods. |
| **Enhance Fuel and Water Disruption and Access:** Providing a strategic source of priority backup generators for fuel and water access will prevent cascading effects from power outages to fuel, water and health care deficiencies. |
| **Develop Economic Resiliency Strategy: An economic resiliency strategy can offer resources and pathways to recover occupations, jobs and competencies lost from the region through successive incidents, emergencies and disasters.** |

If the region implements a resiliency coalition of the type featured in **Play #1**, these strategies can be prioritized and put into place by the DARA coalition. Otherwise, they provide focus areas to be integrated into the strategic business and community planning for the city of Albany and Dougherty County.

## Benchmark Progress Against Goals and Objectives:

Given Albany and Dougherty County's experience with past incidents, emergencies and disasters one of the most vital needs is to establish a sense of transparency and accountability between the stakeholders charged with providing resiliency and the citizenry of the community. Establishing transparent benchmarks towards resiliency goals and outcomes given in the current plan is essential for the public to see how resiliency needs are being addressed, and that there is genuine follow through on unmet needs created or exposed by events. The Action steps and intended outcomes in **Plays 1**, **2** and **3** of this

playbook can be tracked annually for both self-assessment and 360-degree mutual assessment by members of the resiliency coalition for consensus on progress relative to specific priorities.

**Prioritizing Resiliency Goals:** **Figure 41** gives a set of resiliency objectives based on the findings of this Resiliency Plan as supported in **Plays 1**, **2** and **3**. Even with a full resiliency coalition in place as described in Play #1, it can take years to achieve many of the envisioned goals, and it is expected that there will be lessons learned in each disruptive event that occurs under the current plan For this reason, it will be important for a resiliency coalition (or in the absence of a coalition the Albany and Dougherty County city and county leadership) to prioritize from the objectives in **Figure 41** to establish "early wins" to both show follow-through to the community and create momentum for the plan. Prioritization should also be opportunistic and responsive to unique opportunities. For example, if an EDA grant is obtained that can fund an economic resiliency strategy as recommended in **Play #5**, or a source becomes available to design and deploy the resiliency portal described in **Play #2** – these items may be elevated in their priority. Recommended criteria for establishing priorities of actions from this playbook in an annual process, and revisiting on a quarterly basis include:

- *First Priority:* Prioritizing "early win" items that can be achieved with minimal cost and will have the greatest public visibility in the community to establish good faith and follow-through for the plan.

- *Second Priority:* Items that can be feasibly implemented with existing resources within the first year and are agreed by the coalition or implementing agency to have the greatest potential impact on capacity to respond to disruptive events.

- *Third Priority:* Items that arise opportunistically due to a grant program, related project or plan, or agency initiative of the city, county or a corporate/private partner that may be able to scope recommended actions into larger funded and staffed efforts.

**Annual Resiliency Goal Setting and Resiliency Tracker:** It is recommended that the resiliency coalition create a standard scorecard or "tracker" to compare the area's overall capability and success with each objective relative to the prior year. Achieving this would require:

(1) A city or county staff member is responsible for compiling the annual resiliency tracking table (comprised of objectives and indicators as shown in **Figure 41**)

(2) An open survey is made available and promoted on either the resiliency portal (as described in Play #2) or on the city and county websites for the public and stakeholders to rate the overall improvement or decline in resiliency conditions with respect to each objective on a scale of 1-5.

(3) The coalition may host an annual ***resiliency forum*** (which could be held during the "resiliency week" activities described in **Play #2** (if this play is implemented). The forum may include (1)

focus-group style breakouts to assess progress, barriers and opportunities with respect to each goal area and (2) an after-action open facilitated community discussion about any disruptions or events that occurred in the last year and how effectively the actions and resources of the current plan were, barriers encountered, and lessons learned.

**Resiliency Measures/Indicators: Play #1 (Figure 5)** suggests a set of quantitative indicators that can be updated and reviewed annually as part of a resiliency tracker/annual benchmarking report. In addition to these, specific indicators related to progress on priority actions from the Resiliency Plan can also be tracked using the indicators below in relation to goal areas and objectives included in this playbook.

**Figure 42** summarizes a structure for setting and checking indicators against goal areas and objectives encapsulated in this 2024 Resiliency Plan.

Figure 41: Goals, Objectives and Indicators for Tracking Resiliency Plan Implementation

| Resiliency Plan Goals, Objectives and Implementation Tracking Indicators | | |
|---|---|---|
| **Goal Area** | **Objectives** | **Indicators/Assessment Factors** |
| **Area 1: Community-Based Collaboration** | **Coalition Participation:** Coalition is active, well attended with multiple initiatives underway. | • Coalition Meeting Attendance<br>• Number of Initiatives Underway<br>• 360 Degree Annual Member Assessment (1-5 effectiveness rating) |
| | **Resiliency Hubs:** Resiliency hubs are well understood in the community, equipped to provide neighborhood-based support in 'real-world' situations. | • Hubs participating in annual resiliency awareness week/event (active vs. target)<br>• Hubs offering specific services or opportunities set by DARA (active hubs vs. target hubs).<br>• Hubs actively utilized during disruption in past year (yes/no) |
| | **Community-Based Awareness and Engagement:** Resiliency planning is understood as more than a periodic agency function. | • Number and attendance in annual resiliency week/events<br>• Engagement in after-action forums hosted by DARA |
| **Area 2: Communication and Transparency** | **Resiliency Portal:** Progress in the steps of Portal Development as given in **Play #2**. | • Number of steps in Play #2 portal development that have been undertaken/completed.<br>• Usage statistics and currency of information available + online user ratings. |
| | **Community-Based Communications Protocol** | • Number of steps in Play #2 communications protocol that have been implemented. |
| **Area 3: Infrastructure and Built Environment** | **Storm Water and Flood Resiliency** | • Number of Issues in specific areas recommended in Play #3 that have been implemented. |
| | **Utilities** | |
| | **Transportation** | |
| | **Planning, Zoning and Building Codes** | |
| | **Green Infrastructure & Natural Resources** | |
| **Area 5: Strategic Focus Areas** | **Disbursed and Diffused Health Care Locations** | • Number of local-are resiliency hubs that have basic health support capabilities. |
| | **Housing and Homeless Prevention** | • Availability of Counseling & Rapid Re-Housing |
| | **Fuel and Water Continuity** | • Percent progress towards the back-up generator goal for water serving Phoebe and for selecting fuel site locations. |
| | **Economic Resiliency Strategy** | • New businesses recruited in key occupations or industries identified in Play #5. |

Figure 42: Resiliency Portal Key Steps, Agents, and Outcomes

| Resiliency Portal Key Steps, Agents and Outcomes | | |
|---|---|---|
| **Actions** | **Agents** | **Outcomes** |
| **Step 1: Specify Technical Requirements: Develop requirements document for resiliency portal specifying key users, information elements and use-cases.** | DARA potentially aided by a system design vendor. (Potentially identify grants to support development). | Clear development blueprint for the online portal and understanding of what each partner needs to provide. |
| **Step 2: Build and Test: Code/program and construct the portal for pre-tests in hypothetical scenarios.** | The building of the system may involve a third-party vendor. The testing process and scenario can be developed by DARA in association with public agencies. | Public agencies verify the system can house and access the desired information accurately and with a manageable level of effort. |
| **Step 3: Train agency Staff: Train agency staff in how to share and access information under different circumstances.** | DARA coordinates training sessions, videos and tutorials in collaboration with its member agencies. | Agencies can populate the portal with their latest information and access/share as needed throughout the resiliency cycle. |
| **Step 4: Raise Public Awareness: Publicize the public-facing portal, its capabilities and uses through resiliency awareness activities as described in Play #1.** | Dougherty County in collaboration with the City of Albany. | The public is aware of the portal as a one-stop source of information on both overall resiliency status and activities as well as specific events. |
| **Step 5: Manage and Maintain: Implement a protocol for the hosting agency to monitor, maintain and validate information shared through the portal.** | Hosting agency identified in **Step 1**. | The portal has ongoing support and continuous development as lessons are learned from each application. |

## Offer Disbursed/Diverse Health Care Locations

Albany and Dougherty County have been increasingly challenged by heavy reliance on Phoebe Putney Memorial Hospital and its limited accessibility and capacity during disruptions. Most notably level 2 trauma availability is limited with wait times seen as unacceptable by many in the community – even when there is not a disruptive event. The needs and ability to triage medical and health related needs both during formal (declared) emergencies and disasters as well as incidents like extreme heat and cold,

periodic power outages and other occurrences that can compromise the well-being of the elderly, children, those with chronic health conditions and other vulnerabilities. A growing dependence on telemedicine is also a challenge both for older residents less proficient with online technologies and those without computer or internet access, as well as during power outages. This challenge is further exacerbated by power outages which may compromise needed water service to Phoebe itself even when backup generators ensure hospital electricity. Key actions to ameliorate this situation include:

**Establish a network of volunteer and on-call reserve health care providers:** Establishing a network of volunteer and on-call nurses and certified nursing assistants (CNA's) can create a significant resource for Albany and Dougherty County. These providers could be located anywhere in the state of Georgia to offer telemedicine triage to Albany and Dougherty County's resiliency hub location through telemedicine offered on dedicated computers with internet and backup generators. During power outages or extreme events this resource can enable residents to (1) access telemedicine at the resiliency hub location (2) be assisted by a CNA or other volunteer at the resiliency hub site if challenged by telemedicine technology. Establishing such a network entails (1) the resiliency coalition designating an individual to identify and recruit candidates to volunteer or be on-call from the pool of providers not already engaged with Phoebe, (2) designate a credentialing organization to handle verification of the credentialing and liability coverage for the providers and (3) establish a training and deployment protocol for this network. The US Department of Housing and Human Services currently has a pilot program (The Regional Disaster Health Response System) which can both serve as a model for such a network and may be able to help Dougherty County/Albany establish such a site.

**Identify resiliency hub local health care volunteers:** From within the network of health care volunteers and on-call providers, those located within resiliency hubs can be associated with their hub to be present during the response phase of the resiliency cycle. These providers (nurses and CNA's) can provide basic first aid, triage and facilitate telemedicine assistance within the local neighborhood or community both to alleviate over-utilization of Phoebe's level 2 trauma facilities and make health care support more available when flooding, road blockage, ice, failing signals or other constraints make access to Phoebe difficult or impossible.

**Establish direct relationship for FEMA and ARC representatives to resiliency hub champions:** In addition to enabling resiliency hubs to provide basic support for the community whenever an incident may be locally recognized as warranting a response, in formal emergencies and disasters the hub system and its champions are recommended to play a direct role. When the Federal Emergency Management Agency and the American Red Cross are mobilized, it is recommended that a protocol is established for the resiliency hub champion exchanges briefings with their key staff about specific localized needs and opportunities and ways the hub can connect directly with users at the community level. Utilizing locally trusted champions from within the community can enhance the quality and credibility of responses.

**Provide backup generators, internet hot-spots and telemedicine access at hubs and power stations:** A critical constraint on health care access and provision in the Dougherty County/Albany area

is the cascading effects that loss of electricity has on water access. When pumping stations lose power, it has a more profound impact on health care operations than a power outage, as Phoebe can generate back-up power, but without water, most health care functions cannot proceed. Likewise, if residential neighborhoods are without power to access telemedicine, resiliency hubs may become an important location for accessing these services. For this reason, a key priority for supporting health care access is an initiative to make back-up generators available both at water pumping stations supporting Phoebe and at the resiliency hub sites.

Figure 43: Resilient Health Care Strategy Steps, Agents, and Outcomes

| Resilient Health Care Strategy Key Steps, Agents and Outcomes | | |
|---|---|---|
| **Actions** | **Agents** | **Outcomes** |
| **Step 1: Develop capacity for mobile health care (i.e., house visits)** | Phoebe Putney Health System, Local EMS services, Southwest Georgia Public Health District | Greater access to professional services from Phoebe not available at local hubs or from telemedicine. |
| **Step 2: An identified plan for health care locations and access during electricity or transportation disruptions** | Phoebe Putney Health System, Southwest Georgia Public Health District, Local voluntary organizations (i.e., the Red Cross), Local EMS services | Triage and ability to for public to identify and find available health care during electricity disruptions and for Phoebe to prioritize the most in-need patients. |
| **Step 3: Establish a Network of On-Call Volunteer or Hourly Rate Providers. These include nurses, CNA's, PA's and NP's or Doctors able to support disruptions. The network includes both (1) telehealth providers and (2) locally based providers within resiliency hub areas.** | DARA identifies a specific agent in collaboration with the Dougherty County Health Department. A specific agent of Phoebe East or another health care provider will need to be identified to cover credentialing and liability for providers. | Basic health, first-aid and telehealth access are available from home, and from resiliency hubs (if residents need assistance or homes are without needed connections). |
| **Step 4: Designate Resiliency Champion Roles with FEMA and ARC** | DARA in coordination with Dougherty County Emergency Management Agency and Georgia Emergency Management Agency | There is a clear role for a community champion familiar with, known and trusted in the community to advise and be advised by FEMA and Red Cross agents assisting in events. |
| **Step 5 Electricity and Continuity at Health Locations: Backup Generators, Hot-Spots and Computer/Telemedicine access at Hubs.** | DARA in coordination with the Dougherty County Health Department and other agencies identified by DARA (in conjunction with the Fuel and Water Continuity initiative described below) | Resiliency hubs have electricity, air conditioning, heat, internet connectivity people available to assist with accessing telemedicine when household utilities and access to Phoebe Putnam are compromised. |

## Focus on Housing and Homeless Prevention:

Albany and Dougherty County have lost residents and businesses due to transitional homelessness in which individuals have not been able to return to their previous homes for an extended period following an event. The displacement of vulnerable populations leading to homelessness and relocation is a national problem being addressed by the US Department of Housing and Urban Development (HUD). Responses to this problem should be closely coordinated with the Georgia Department of Community Affairs (DCA) *Balance of State Continuum of Care* efforts, which can include grants for homelessness prevention actions. Key recommendations specifically addressing resiliency needs for Albany and Dougherty County consistent with HUD guidance and that can be eligible for HUD funding (and made available through resiliency hubs as described in **Play #1**) include:

**Housing Counseling and Case Management:** Many Albany residents have expressed difficulty knowing and navigating options for where to go when recovery aid is slow in coming, or housing recovery after an incident takes longer than transitional aid is available. Fully developing and providing a resiliency-based housing initiative to include education through activities described in **Play #2,** and a network of trained housing counselors to support resiliency hubs is recommended. Existing housing counseling services, such as homebuyer or foreclosure prevention, can be expanded post disaster such as coordinating with case management agencies, recognizing and avoiding scams, connecting individuals to and applying for relief efforts and other needs.

**Rapid Re-Housing:** Rapid re-housing is a model of permanent housing that provides short and/or medium-term rental assistance and supportive services to help individuals and families achieve and maintain housing stability as quickly as possible. Rapid Rehousing can be used as a strategy combining case management services with Tenant Based Rental Assistance. This strategy can be adapted to a post-disaster market to help families displaced by the disaster regain their stability and avoid prolonged homelessness. Resources for rapid-re-housing initiatives that can be tailored towards incident recovery are available from the National Alliance to End Homelessness (NAEH).

Further information about implementing these initiatives (along with funding and other resources) are can be found through the (HUD) Disaster Recovery Homelessness Toolkit. **Figure 44** shows key actions, agents and outcomes for a resiliency/homeless prevention initiative in Albany and Dougherty County.

Figure 44: Recovery Homeless Prevention Agents, Actions, and Outcomes

| Recovery Homeless Prevention, Agents and Outcomes | | |
|---|---|---|
| **Actions** | **Agents** | **Outcomes** |
| **Step 1: Establish and Strengthen Housing Counseling and Case Work Resources: Identify Agencies or Non-Profits to provide Counseling and Case Management during the recovery stage.** | DARA identifies agencies and facilitates coordination with HUD and DCA Continuity of Care resources and funding. | Transitional housing and housing counseling are available to minimize post-event homelessness. |
| **Step 2: Rapid Re-Housing Initiative** | | Public agencies verify the system can house and access the desired information accurately and with a manageable level of effort. |

## Enhance Fuel and Water Continuity and Access:

**Demonstrated Fuel Needs and Challenges:** Albany and Dougherty County face challenges regarding fuel accessibility and generator usage during major disruptive events like Hurricane Michael in 2018. During Hurricane Michael, the city's inability to access its fuel storage sites and generators became a critical issue. The storm's severe impact on infrastructure made it difficult for city workers and technicians to reach these crucial sites. Roads were blocked by debris, and communication was hampered, which further strained efforts to coordinate fuel distribution and generator activation. Further, the lack of accessibility to fuel storage sites meant that essential services were at risk of being interrupted, potentially endangering lives and exacerbating the overall crisis.

**Exacerbating Factors:** Compounding these access issues is the city of Albany's lack of a cohesive emergency plan for fuel and generator management. During the hurricane, technicians and personnel struggled to understand how to access and operate the generators. The absence of clear guidelines and protocols led to inefficiencies and delays. Persistent staffing shortages exacerbate these problems, as there are not enough personnel to manage and respond to the issues that arise during a disaster. With a limited workforce, the city's ability to implement emergency protocols is significantly hindered. Staffing shortages have resulted in fewer hands to clear debris, fewer technicians to repair damaged infrastructure, and fewer officials to coordinate the response.

**Cascading Effects Backup Generator Initiative:** As with health care continuity, power outages can have significant cascading effects in Albany and Dougherty County when a lack of electricity affects gas stations and water pumps. A recommended agenda item for a resiliency coalition is to pinpoint strategic backup generator locations at (1) pumping stations supporting Phoebe Putney, (2) gas stations disbursed throughout the region and (3) at the site of each resiliency hub and (4) select city or county owned/operated mobile generators and fuel for deployment to other locations as needed. When a map of backup generation sites for fuel and water pumping is created, the coalition can price out the cost of supplying generators and a baseline stock of fuel and pursue funding for a cascading effects/backup generator initiative. To be covered by a program a site must demonstrate the capability and proximity to provide fuel and water to resiliency hubs and Phoebe Putney during power disruptions.

**Funding for Backup Generators:** There are multiple grant programs available to provide backup generators once an initiative is in place to position, oversee and maintain them. Specific programs include the FEMA Hazard Mitigation Grant Program, the Department of Energy Cybersecurity for Energy Delivery Systems (CEDS) program the USDA Rural Energy for America Program the USDA Renewable Energy Systems & Energy Efficiency Improvement Guaranteed Loans & Grants, USDA Community Facilities Direct Loan & Grant Program and the EPA's Clean Water and Drinking Water State Revolving Funds (SRFs) programs as well as private sponsorships like the State Farm Good Neighbor Citizenship Company Grants. It is recommended that the DARA coalition appoint a champion for backup funding resources and coordinate with Dougherty County and City of Albany staff to develop a funding strategy for a backup generator initiative. **Figure 45** shows recommended steps for homeless prevention in the recovery phase of the resiliency cycle in Albany and Dougherty County.

**Use of Natural Gas:** One step to address fuel disruptions is transitioning from diesel to natural gas for fuel storage and generators. Natural gas is a more reliable and cleaner fuel source that can be supplied through underground pipelines, reducing dependency on road-based delivery methods that are often compromised during disasters. This transition can ensure a steadier and more secure fuel supply, even when roads are blocked or damaged.

**Role of Renewable Energy:** To further strengthen Albany's emergency preparedness, the city could switch to alternate energy sources, such as incorporating propane and solar power, which will allow Albany to reduce its reliance on a single fuel type, thereby enhancing its resiliency against supply chain disruptions. Further, implementing a robust system for distributing mobile plug-in generators to gas stations will guarantee that fuel remains accessible to emergency response teams and the public. These generators can be deployed quickly to restore power at critical points, ensuring continuous fuel availability. Moreover, developing clear guidelines and protocols for generator use and maintenance, coupled with comprehensive training programs for city workers and technicians, will address the inefficiencies observed during Hurricane Michael. By bolstering staffing levels and ensuring that all personnel are well-trained and equipped to handle emergency scenarios, Albany and Dougherty County can significantly improve its disaster response capabilities and protect its residents more effectively. **Play #3** further offers actions to improve overall electricity resiliency in Albany and Dougherty County.

Figure 45: Continuity of Fuel and Water Access Initiatives Actions, Agents and Outcomes

| Continuity of Fuel and Water Access Initiative: Actions, Agents and Outcomes | | |
|---|---|---|
| **Actions** | **Agents** | **Outcomes** |
| **Generator Initiative Step 1: Establish a Priority Network of Backup Generator Sites.** | DARA with Albany Utilities Administration, Municipal Gas Authority of Georgia, Municipal Electric Authority of Georgia, private distributors, and government contractors | There is a specific and known set of locations where backup generators can most effectively establish fuel and water continuity, and an understood cost and effort of placement and oversight. |
| **Generator Initiative Step 2: Develop Grant-Funding Strategy for Generators.** | DARA with Albany Utilities Administration, Municipal Gas Authority of Georgia, Municipal Electric Authority of Georgia, private distributors, and government contractors | Funding is provided and generators are eventually provided at all selected locations. |
| **Switch from diesel to natural gas** | Albany Utilities Administration, Municipal Gas Authority of Georgia, Municipal Electric Authority of Georgia, private distributors, and government contractors, DOE grants are needed to update generators. | Less dependency on road-delivered fuels, cleaner air quality in the long-term and better localized health/air quality conditions during disruptions than using diesel generators. |

## Develop Economic Resiliency Strategy

While economic development strategy is beyond the scope of the current Resiliency Plan, it is recommended that an economic resiliency strategy is developed and implemented to address long-term efforts aimed at both recovery and future continuity of workforce, employment and business activity in key industry sectors and occupations which have significantly declined from the areas' experience of incidents, emergencies and disasters. The potential scope and structure of such an initiative is featured in Play #5.

# Play 5: Investing in Economic Resiliency

As successive incidents, emergencies and disasters have imposed recovery costs on Albany and Dougherty County's households and businesses, the area's economic base has seen businesses downsizing, closing and in many cases not returning to their prior levels. Employers like Mars (2023), Coats and Clark (2021), Cooper Tire (2008) and Merck (2007) have downsized in Albany in periods following disruptions caused by natural events.

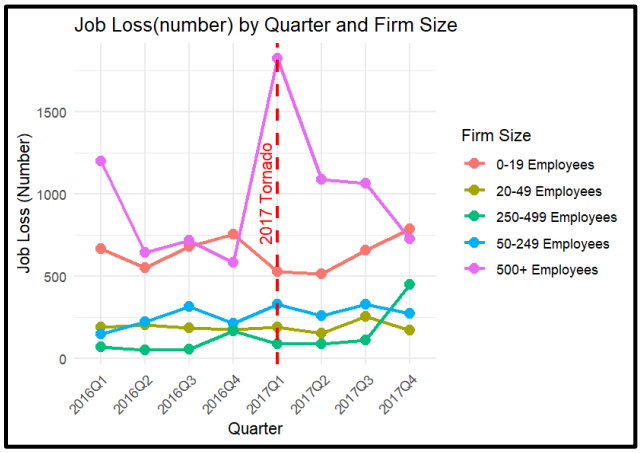



Figure 46: Job Loss Before and Following 2017 Tornado Incident (Source: LEHD)

**Economic Disruption Example - 2017 Tornado:** The 2017 tornados provide an instructive example of the economic dynamics that occur as Albany and Dougherty County go through disruptive incidents. The 2017 tornados most strongly correlated with a decline in jobs especially among large employers who did not resume employment at normal levels even in the year following the event. **Figure 46** shows the number of jobs lost by quarter by firm size in Dougherty County in the period before and following the events. The figure demonstrates that jobs were already declining before the events, and there was not a near-term reversal of job-loss following the events, but rather just a continuation of job loss at a higher rate throughout the year than before. **Figure 47** shows this trend by industry sector, demonstrating how Albany's construction, retail, real estate and health care sectors were most affected. The distribution by industry suggests that many of the sectors the economy most needs to respond to and recover from disruptive events are those most apt to leave the economy after the events are over.

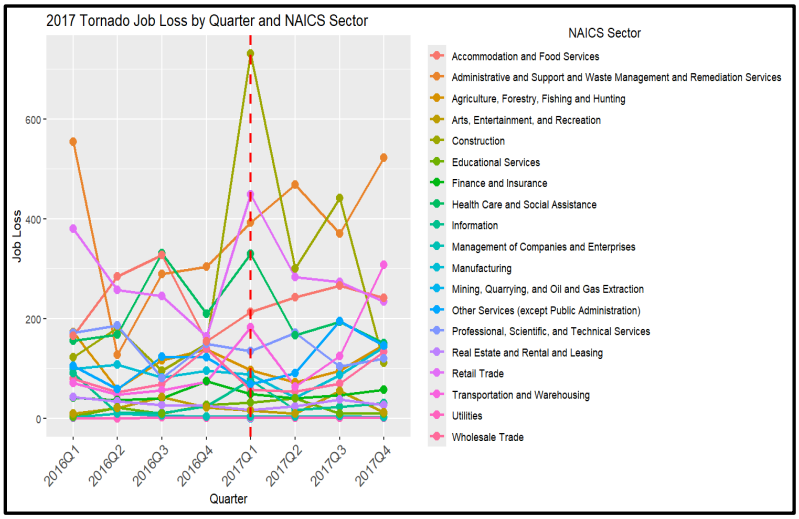



Figure 47: Industry Job Loss by Quarter 2017 Dougherty County (Source: LEHD)

**Wider Economic Effects of Disruptions:** While job-loss is a highly visible indicator of the immediate impact disruptions have on the Albany and Dougherty County economy, the events (and ongoing lack of full recovery) deplete the area's workforce, available business sites for new or revitalized development and amenities in ways that can exacerbate long-term declines even when the most visible effects of the event have passed and recovery aid efforts have wound down. The loss of local provision of specialized health care and engineering occupations, the emergence of food and medicine "deserts" (large

geographic areas where there is not nearby access to businesses dispensing food and medicine). Even when the area physically recovers in terms of infrastructure and physical condition – gaps in the economy leave imbalances in the labor and job market, the availability of goods, services and sites and other inefficiencies that require specific economic development initiative to recover and fortify to make the economy less susceptible to long-term losses. Economic resiliency objectives relate to (1) recruiting businesses and workers into the area (both to replace those lost from prior events and to support resiliency from future events), (2) fostering the creation of locally based businesses that can continue and thrive in the face of disruptions, (3) retaining businesses that may yet be lost or are vulnerable to loss from events, and (4) expanding businesses that may be able to take advantage of opportunities and gaps left by disruptions.

## Workforce Development

Albany and Dougherty County have faced significant workforce shortages for addressing near-term disruptions as well as longer-term needs to fill gaps left by businesses departing the area. There is a need to both develop the readiness of the existing workforce (especially in nursing, electrical or engineering fields) through training and identification of on-call or volunteer pools (of the type described for health care in **Play #2**). There is also a need for a longer-term strategy to recruit businesses and qualified workers into the region, which is further described in the section on an economic Resiliency planning initiative. **Figure 48** below summarizes recommended actions to enhance workforce development in the near term.

There is also a need for a longer-term strategy to recruit businesses and qualified workers into the region, which is further described in the section on an economic Resiliency planning initiative.

**Occupational Needs Specific to Resiliency Capacity:** The area faces significant challenges in maintaining adequate staffing capacity for its essential emergency services, as well as its utilities and educational sectors. The scarcity of affordable housing poses a critical barrier to attracting and retaining qualified professionals in these fields. Medical staff, including doctors and nurses, are particularly impacted as the high cost of living makes it difficult to relocate or remain in the area. The lack of available land for development further exacerbates this issue, limiting opportunities for new housing projects that could alleviate the burden. The declining population following the Covid-19 pandemic compounds these issues, as it reduces the tax base and, subsequently, the funding available for public services and infrastructure improvements, including housing.

**Staffing Concerns for Fire and Emergency Response:** The fire department has managed to avoid major staffing shortages using recruitment drives and campaigns; however, there is still a shortage of 911 dispatchers due in part to the long training process, which is handled by the state and not the city. During previous episodes of disaster, the fire department has worked with the marine base to relieve some of the pressure put on the staff. There is not much in terms of cooperation with private individuals, and the fire

department does not have a dedicated volunteer corps, though organizations and citizens are allowed to attend the regular tabletop meetings.

**Staffing Concerns for Utilities:** The utilities department, particularly the water department, has cited numerous vacant positions, some of which have been unfilled for numerous years. This is due to the utility department being outpriced by private corporations and the marine base, as the salary offered by the department is much lower, and the benefits offered have been enough to attract more applicants. Further, numerous certifications are required to be hired, which are expensive and take many months to acquire. While the department helps people acquire these certifications, often employees will then leave for higher-paying jobs.

**Staffing Concerns for Transit:** The transit department faces a shortage of drivers, technicians, and operators. These issues have persisted for some time but have been made worse since the Covid-19 pandemic. The transit department has attempted to address this through recruitment drives, making use of billboards, social media posts, and quarterly job fairs as well as incentives such as a $1,000 signing bonus. However, this has done little to address the staffing shortages. It is speculated that lingering fears about Covid and job loss to corporations is the main roadblock in hiring new workers.

**Indicators of Staffing Status and Progress:** Play #4 calls for a process to benchmark resiliency. This can be especially important when tracking the sufficiency of the workforce, which is difficult to observe when not actively responding to an event. To measure current and future staffing shortages in emergency services in Albany, key indicators must encompass both quantitative and qualitative metrics. For medical services, indicators include the nurse-to-patient ratio, the number of EMTs available per shift, and response times to medical emergencies. Additionally, monitoring vacancy rates, turnover rates, and the duration of job postings for medical personnel can provide insight into staffing challenges and recruitment difficulties.

In the realm of fire and police services, key indicators involve the number of active-duty firefighters and police officers relative to the population size, average response times to emergencies, and the frequency of overtime hours worked, which can signal understaffing. Metrics such as the rate of call volumes per service member and the proportion of emergency calls that receive a timely response are essential for understanding the operational strain on these services. Additionally, evaluating the attrition rates, the length of training periods, and the backlog of unfilled positions can provide a clearer picture of potential future shortages.

Figure 48: Workforce Development Resiliency Actions

| Workforce Development: Actions, Agents and Outcomes | | |
|---|---|---|
| **Actions** | **Agents** | **Outcomes** |
| **Step 1: Develop Reserve Network: Develop network of on-call and volunteer workers willing/able to take assignments in a** disruption**.** | DARA in collaboration with City of Albany Department of Community and Economic Development, Dougherty County Economic Development Commission and Southwest Georgia Regional Commission. (Dougherty County public health and Phoebe Putnam as described in Play #4 Figure 42**)** | There is a clear scope of activity for the plan to engage including key actions, industry and occupational focus areas and expected tools and policies for long-term workforce and industry recovery defined for the plan. |
| **Step 2: Case-Based Training for Existing Staff:** As part of resiliency awareness activities of the type described in **Play #2,** provide drills and tabletops for existing staff to learn core functions based on actual past experiences of services only utilized in a disruption. | | Existing staff can perform specialized activities in disruptions making organizations less dependent on a singular person or group of people. |
| **Step 3: Use EOC/Portal:** List businesses and individuals in specific discipline willing to volunteer or otherwise assist as a resource in the Web EOC or resiliency portal described in Play #2. | | Agencies responding to events can readily identify a pool of talent that can either serve remotely or be mobilized in an emergency. |

# Create Business Support and Readiness Initiative

As described at the outset of this play, losses from natural disasters and pandemics have been known to destabilize Albany and Dougherty County's economy, worsening existing inequalities, reducing productivity, and hindering sustainable development. Addressing these gaps is crucial for restoring economic stability, fostering inclusive growth, and enhancing the resiliency of the area against future shocks.

**Business Course and Guide Recovery Guide:** One of the main reasons why Albany and Dougherty County have lost businesses from disruptions is because businesses and their owners have struggled to cope with the loss of income and revenue, the inability to recover in time to restore cash flow, the lack of capitalization to put resources into their recovery while also comping with the personal day to day consequences of a disruption. Most of the information available through public channels is directed to household and individual needs, and it is often difficult for businesses to navigate the unique concerns and needs they face during recovery. The recovery phase is the worst and most difficult time in the resiliency cycle for business owners to attempt to become familiar with options and resources that could save their operation in Albany and Dougherty County. During the preparation phase of the resiliency cycle, businesses can benefit from a business-focused guide and video course on what to expect in terms of (1) public resources they may encounter or access following the disruption, (2) key steps for engaging constructively with insurance or public assistance programs, (3) resources and steps to take regarding the security of a business property with regards to looting or other activities that may jeopardize the business.

**Content for Business Recovery Guide and Video Course:** Proper information about the disaster recovery efforts, information about insurance scams, engaging individually with small to medium-sized businesses more frequently, and knowledge of grant services, availability of loans and other resources.

**Employee Support Network:** Another key reason businesses have left Albany and Dougherty County has been due to the loss of critical employees who have been unable to work, or unable to recover the basic needs of their residence in enough time to avoid relocation. For this reason, businesses may collaborate with DARA (described in **Play #1**) to create an employee/workforce support network to retain staff in the area following a disruption. This network can be available through the resiliency portal as described in **Play #2**, and also publicized by employers during the preparation phase of the resiliency cycle. The support network can offer a readily available list of businesses, non-profits and organizations by which employees that suffer financial losses can be helped to claim insurance benefits. Businesses can provide incentives to employees to sustain their overall employment which also helps with the household recovery process through formal initiatives/benefits. Proper communication about the recovery efforts to employees is essential. **Figure 49** shows key actions associated with a business readiness and support initiative for Albany and Dougherty County.

Figure 49: Business Readiness Support Initiative for Albany and Dougherty County.

| Business Support Readiness Initiative Action Items | | |
|---|---|---|
| **Actions** | **Agents** | **Outcomes** |
| **Business Course and Recovery Guide** | DARA with Local businesses, Albany Chamber of Commerce, Albany City, Dougherty County Economic Development Commission. | Business owners and managers are prepared and know how to navigate the post-disaster short-term economy in ways conducive to sustaining the business. |
| **Employee Support Network** | | Businesses can pro-actively act to retain employees in key positions and occupations through a specific benefits package associated with the recovery process |

## Create an Economic Resiliency Plan

An **economic Resiliency Plan** is a comprehensive planning effort that incorporates a vision for resiliency. It is neither a classic strategic plan nor a contingency plan, but rather melds operational and strategic thinking to mitigate weaknesses within a region's economy. Economic resiliency is the ability of communities to prevent, withstand, and recover from major disruptions to the economic base. Establishing economic resiliency in the Albany and Dougherty County economy requires the ability to (1) anticipate damage and risk to economic assets, (2) evaluate how that risk can affect economic performance and (3) develop actions and resources to build and protect the economy's "bounce-back" capacity.

**Overarching Goal of Economic Resiliency Plan:** The loss of jobs and workers from past disruptions for over a decade leaves a significant gap in the economy and reveals both vulnerabilities and opportunities in the community's economic resiliency. The goal of an economic Resiliency Plan is to arrive at a practical strategy [complementing this playbook, the Southwest Georgia Comprehensive Economic Development Strategy (CEDS) and Albany's comprehensive plan] to recover from this change and to arrive at a sustainable and growing economic base that not only fills gaps in the regional economy but leaves the economy more diverse, sustainable, and resilient for future changes as employers and industries continue to change over time.

**Key Elements of Economic Resiliency planning for Albany and Dougherty County:** An economic Resiliency Plan for Dougherty County/Albany beings with baseline conditions assessment of the current status, resiliency, and sustainability of the local economy. This assessment will include both quantitative and qualitative elements, (1) defining the meaning of economic resiliency and sustainability for Albany and Dougherty County within the context of this playbook, (2) offering an economic resiliency and sustainability framework of indicators with which to benchmark economic trends and projections and

their historical and prospective future sensitivity to natural or human-made disruptions, (3) assessing underlying historical and cultural sources of resiliency and economic value in the community (building from the Historical/Cultural assessment of this playbook in **Appendix 4**) and (4) pinpointing critical needs in the Albany and Dougherty County business environment, how they are affected by changes in the last five years and moving forward and (5) synthesizing specific resilient workforce, business attraction, creation and retention targets and actions to recover and safeguard Albany and Dougherty County's economy.

**Resources for Economic Resiliency planning:** Because of the complex interplay of sites, industry sectors, occupations and physical needs of businesses affected by the area's history of disruptions, a number of spatial/GIS and economic (spreadsheet) tools are available to develop a working understanding of the Albany and Dougherty County economy, its existing resiliency status (baseline), projected trajectory in terms of the economic base, workforce and assets, and then represent different scenarios of land use, infrastructure, business attraction creation, retention and expansion strategies to ascertain their key elements and likely effects on gaps in workforce, business and physical amenities. Two readily available tools which can be used in economic Resiliency planning include ***Envision Tomorrow*** and ***Urban Footprint***.

**Urban Footprint** can enable planners to Albany and Dougherty County provide a lens for both quantifying and viewing the area's economic assets within the context of wider resiliency, health, and human needs. The platform contains extensive base data on land use and environmental conditions which can be combined with the city's most current GIS and economic data sources. Urban Footprints' Base Canvas leverages dozens of commercial and public data sets, innovative data science and machine learning, and over 30 years of deep domain expertise to present the most detailed and up-to-date view of site conditions across 160 million U.S. land parcels – granular detail for nearly every inch of the county. **Figure 50** illustrates and example of an infrastructure explorer application in Urban Footprint.

Figure 50: Urban Footprint (Source: Urban Footprint)

From these data, an economic Resiliency Plan can apply practical metrics to consider where the area may be facing specific economic resiliency challenges in terms of (1) its built environment, (2) socially vulnerable populations and establishments, and (3) areas and resources most susceptible to climate change. The use of Urban Footprint can help city and county planners, economic development staff and partners to diagnose specific community economic assets that may not be specifically compromised from past disruptions as well as needed new amenities, services or other targets that can both enhance

regional economic/business conditions and also make the overall community more resilient and sustainable in the long term.

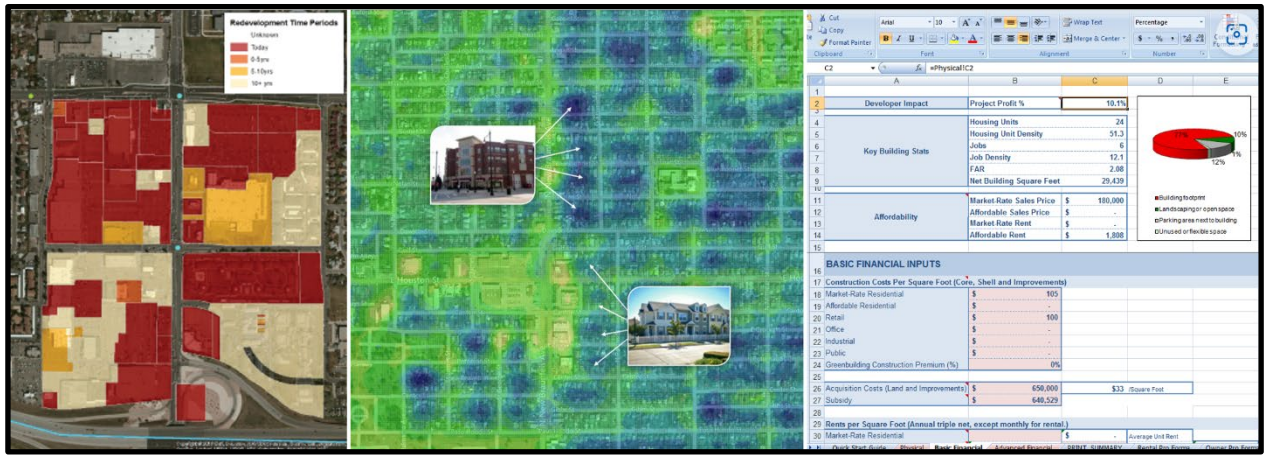
**Envision Tomorrow** is another tool available for economic resiliency strategies Albany and Dougherty County. While **Urban Footprint** provides a way of both assessing and visualizing community assets and vulnerabilities from a sustainability and resiliency perspective – **Envision Tomorrow** can provide a helpful structure for generating and testing strategic economic development scenarios. After establishing a baseline existing condition, a Resiliency Plan can apply the **Envision Tomorrow** platform to assess how (and where) specific policy, tax, infrastructure, and business attraction strategies can affect practical economic resiliency indicators as shown in **Figure 51**:

Figure 51: Envision Tomorrow Economic Resiliency Indicators

| Envision Tomorrow Economic Resiliency Indicators | | |
|---|---|---|
| • **Urbanized Acres**<br>• **Infill Development or Redevelopment**<br>• **Cost of New Infrastructure**<br>• **Building Value and Revenue**<br>• **Housing Affordability and Demand**<br>• **Housing Mix**<br>• **Parking Spaces Costs**<br>• **Jobs-to-Housing Ratio** | • Distribution and Employment Space<br>• Regional Density<br>• Connectivity<br>• Urban Parks per Capita<br>• Loss of Agricultural Land and Rangeland<br>• Acres of Impervious Surface<br>• Impervious Cover in Special Areas (e.g., Aquifers)<br>• Building Energy Use | • Carbon Emissions<br>• Internal Water Consumption<br>• Landscaping Water Consumption<br>• Solid Waste Production<br>• Waste Water Production<br>• Enhanced ROI<br>• Balanced Housing<br>• Building Energy Consumption App |

An economic Resiliency Plan can significantly enhance and complement the resiliency scorecard and indicators given in **Figure 5** and **Figure 51** but with (1) a set of targets and indicators specifically targeted towards economic workforce and business growth objectives and (2) supported by consideration of different scenarios to achieve the most resiliency long-term economy.

Figure 52: Economic Resiliency Dashboard Examples (Source: Envision Tomorrow)




These comparisons facilitate a process for supporting the DARA coalition described in **Play #1** collaboration with both Albany's Department of Community Economic Development and the Dougherty County Economic Development Commission identifying specific opportunities, working through trade-offs, and building on key linkages between the economic resiliency goals and its larger land use, transportation, and environmental planning. **Figure 52** illustrates examples of the types of dashboard indicators and visualizations typically available through the application of **Envision Tomorrow**. **Figure 53** below summarizes key actions for developing an economic Resiliency Plan.

Figure 53: Steps to Economic Resiliency Plan

| Economic Resiliency Plan: Actions, Agents and Outcomes | | |
|---|---|---|
| **Actions** | **Agents** | **Outcomes** |
| **Step 1: Scope Economic Resiliency Plan:** Establish a scope of focus areas, deliverables and tools/resources for economic Resiliency Plan. | DARA in collaboration with City of Albany Department of Community and Economic Development, Dougherty County Economic Development Commission and Southwest Georgia Regional Commission. | There is a clear scope of activity for the plan to engage including key actions, industry and occupational focus areas and expected tools and policies for long-term workforce and industry recovery defined for the plan. |
| **Step 2: Pursue Funding for Plan Development:** Develop Grant Applications to Fund Economic Resiliency Plan (through EDA Grants or other sources) | | Funding is provided to establish the plan and equip economic development organizations to pinpoint, recover and protect critical economic assets. |

# Playbook Appendixes

(1) Albany 2024 Resilience Plan: Starting Assessment
(2) Needs and Solutions
(3) Resiliency Supportive Policies and Actions
(4) Historical Equity Assessment

# Appendix 1
# Albany 2024 Resilience Plan: Starting Assessment

# Executive Summary

## Introduction

The primary objective of this Albany Resiliency 2024 Starting Assessment is to establish an understanding of community resiliency as the starting basis for the City of Albany and Dougherty County's 2024 Resiliency Plan. The understanding is rooted in:

1. Documenting critical disruptions and recovery needs based on the 2023 parcel survey.
2. Documenting observations that address resiliency topics that can be addressed in the plan.
3. Identifying a starting set of 'resiliency 'clusters' within Albany that warrant specific focus in the 2024 plan.
4. Offering a broad framework for evaluating resiliency in the plan and benchmarked thereafter.

## Visible Signs of Trauma History

While Albany has experienced 12 FEMA-documented disasters since 1966, many have affected the community in broad ways. An examination of the storm paths of the 2017 tornadoes and windstorms and the great flood of 1994 reveals significant ongoing substandard structure conditions both in Downtown Albany and south Albany on both sides of the Flint River. While the recent survey revealed that only 8% of Albany's overall parcels are in poor or bad condition, 20% were affected by the flood of 1994 and approximately 74% were affected by the 2017 wind events. Other events including Hurricanes Irma and Michael, and the COVID-19 pandemic have had more disbursed effects, to be further addressed with input from Albany's residents and stakeholders in subsequent reports.

## Existing Plans and Data

Albany developed its current emergency operations and response plan in 2017. Since the 2017 events and tornadoes, Albany has developed or updated other plans to address resiliency needs. The 2021 comprehensive plan update addresses the floodplain ordinance, stormwater systems and floodplain management/hazard mitigation, and the 2023 strategic plan further addresses stormwater sewer systems, lighting, utilities, and housing rehabilitation based on the experiences of 2017. However, the resilience elements of these plans have not been revisited since the 2020 COVID pandemic and have never been fully integrated into a singular strategy.

## Resiliency Clusters

When the concentration of Albany's employment in activities that cannot be readily staged to other locations (hard assets) is considered together with public infrastructure locations and the existing condition of structures, five "resiliency clusters" emerge as important areas to protect the plan as it progresses:

1. The area in south Albany surrounding Albany Technical College.
2. The corridor surrounding Dawson Road in Albany's northwest quadrants.
3. The area surrounding Phoebe Putney Memorial Hospital and North Campus.
4. The area surrounding Broad Avenue and downtown.
5. The area encompasses the police stations, fire stations, and high school east of the Flint River.

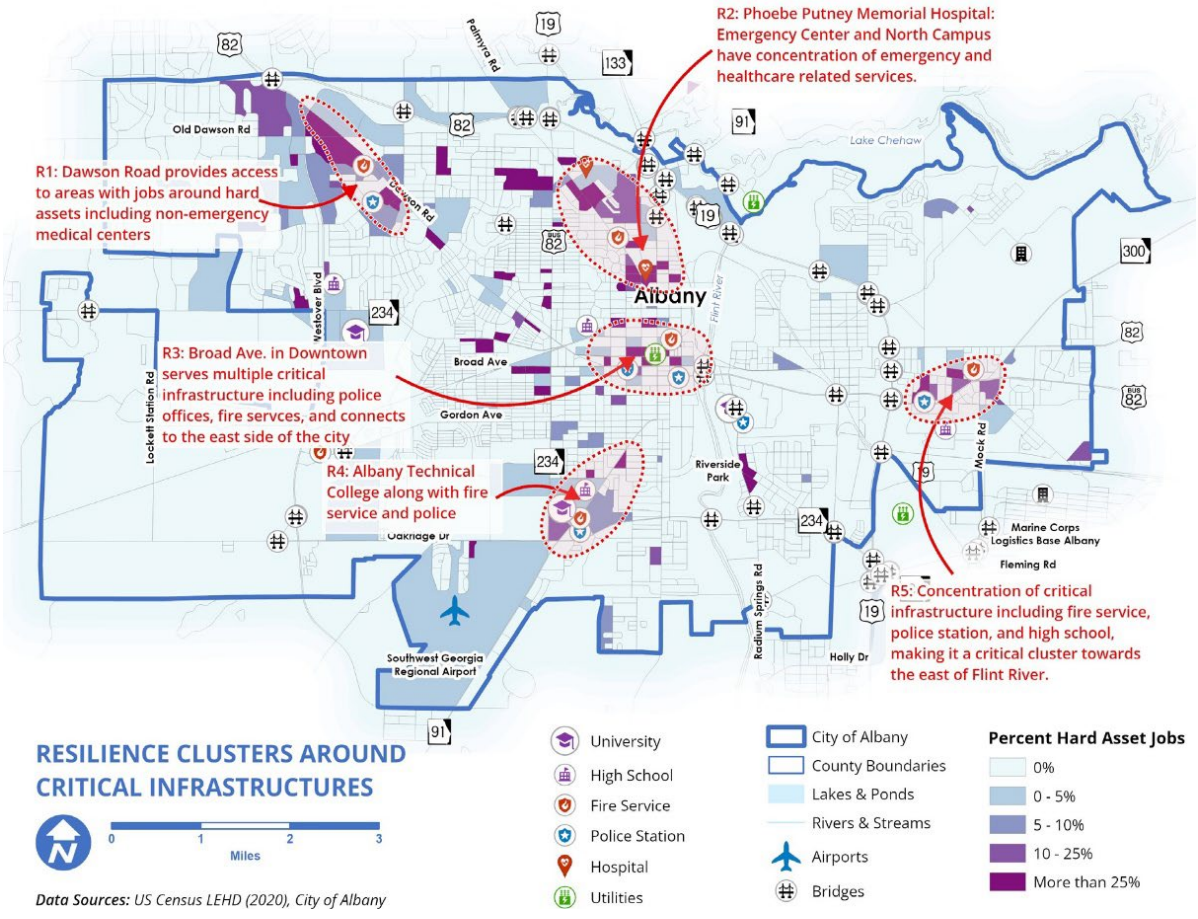
## Learning from Peer Cities

Peer Cities of Lafayette, Louisiana, Jackson, Mississippi; Montgomery, Alabama; and Space Coast, Florida, have faced similar resiliency challenges as Albany with similar resource limitations. The Space Coast's designation of resiliency corridors and process of ongoing community engagement with resilience issues is instructive for Albany's 2024 plan. 'Montgomery's focus on urban renewal and historic preservation/restoration of damaged areas may also inform Albany as does 'Jackson's strong emphasis on flood protection and water/sewer systems. 'Lafayette's specific focus on cultural preservation and urban development is also highly relevant to Albany's experience; these plans provide potential sources of solutions and improvement strategies in subsequent tasks of Albany's 2024 plan.

## Next Steps Informed by Starting Data

Based on the initial review of public data, facilities, and trauma events, three key considerations for the ongoing plan include:

1. Concentrated needs of aging structures and parcels in poor condition in southeast, downtown and north central Albany.
2. Criticality of 5 cluster areas with implications for Albany's ability to respond to disruptions. ~~and~~
3. Focus on engaging stakeholders directly to further address economic, business, and cultural needs in the development efforts of subsequent Resiliency planning tasks.




***Data Sources:*** *US Census LEHD (2020), City of Albany*

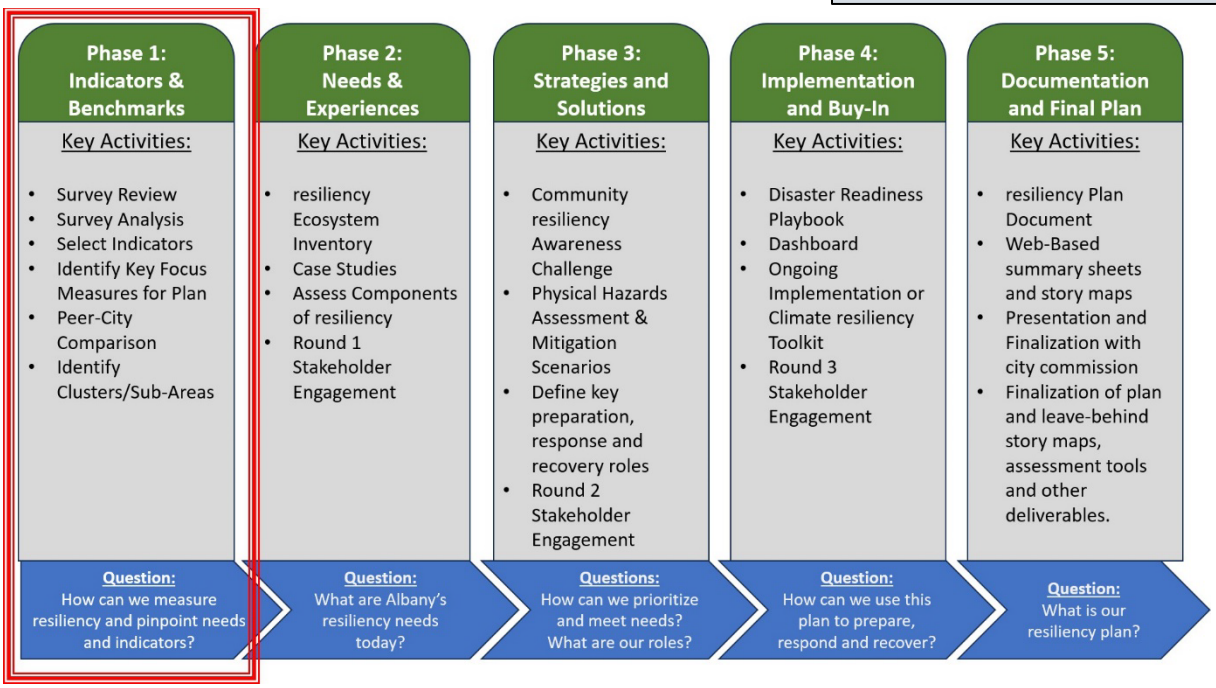
# Section 1: Introduction

This is the first report of the 2023-2024 Albany Resiliency Plan. The report is offered to describe the current understanding of resiliency needs and challenges facing Albany, and its surrounding region based on existing data and plans. By describing the 'city's current conditions, plans, public infrastructure, services, and key economic activity in relation to past and prospective disruptions, the report is meant to establish a basis for subsequent reports that will explore lessons learned, needs and future strategies. Figure 1 below demonstrates the role of the current report within the context of the larger 2023-2024 Resiliency planning effort.

Purpose of this Report *This report is offered to provide a starting*

*understanding of the events, public data sources, plans, and other elements for developing Albany's 2024 resiliency plan.*

*Figure 1: Steps of Albany's Resiliency Plan*




## Background

Albany, Georgia has been subject to considerable disruptions and damage to its public and private infrastructure and services due to weather-related events in recent years. In June of 2023, damaging winds and tornadoes caused widespread power outages, fallen trees, and damaged buildings as a recent storm system crossed the South. Flash flood events on downtown streets are increasingly common and cause both safety and economic concern to both citizens and business owners. Furthermore, recurrent

thunderstorms, flooding and severe wind events have been common (and were the subject of a 2017 plan) – and continue to pose significant needs on the area. Albany has already identified significant stormwater and sewer projects as part of its Combined Sewer Separation efforts, yet a comprehensive assessment of long-term needs and funding opportunities for the changing climate remain a core need for the community. Today, with a recent parcel survey conducted and an array of new federal resiliency funding programs available, it is timely for Albany to undertake a strategic and holistic plan for maximizing its resiliency in the long-term. The current report relates what is presently understood about Albany's starting conditions, experiences, and resiliency position relative to other peer communities and establishes focus areas and indicators for the current Resiliency Plan. Figure 2 shows a recent tornado near Albany in 2023.

*Figure 2: 2023 Tornado Photographed Touching Down near Blakely, Georgia 50 Miles from Albany (Source: Rand McDonald)*

## Objectives and Scope

The primary objective of this report is to establish an understanding of community resiliency as the starting basis for Albany's 2024 Resiliency Plan. The understanding is rooted in (1) documenting critical disruptions that have revealed Albany's resiliency needs, (2) documenting observations from Albany's existing plans and data sources that address resiliency topics that can be addressed in the plan, (3) identifying a starting set of 'resiliency 'clusters' within Albany that warrant specific focus in the plan and (4) offer a broad framework for how resiliency can be evaluated in the plan and benchmarked thereafter.

Intended takeaways from the report include:

**Document Relevant Disruptive Events**: The report identifies past disruptive events that can inform the 2023- 2024 Resiliency Plan and key questions/topics that these events suggest for addressing in subsequent resiliency strategies.

1. **Summarize Existing Data and Plans**: The report offers an understanding of how prior plans and presently available data sources (including Albany's 2023 parcel survey, land use data, and socio-economic data) inform the 2023-2024 Resiliency planning effort.
2. **Identify Key Areas/Clusters**: The report identifies specific areas in the region that have a high concentration of economic activity which may be uniquely susceptible to disruption from extreme weather, human-caused or other events and which may be uniquely dependent on the 'city's infrastructure and services for continuity of operations.
3. **Suggest Resiliency Indicators**: The report defines key indicators of resiliency available from existing data and plans as a basis for developing strategic resiliency goals and objectives in subsequent reports.

# Section 2: Disruptive Events Visible in 2023 Parcel Conditions

A central focus of Albany's 2024 Resiliency Plan entails empowering Albany and its stakeholders in the preparation, response, recovery, and ultimate improvement after disruptive events. Disruptive events are understood as natural or human-made occurrences that place Albany's population and property in danger and require an immediate response through the use of community resources and procedures[3]. In the 2024 Resiliency Plan, disruptive events inform (1) weaknesses or unmet needs discovered in the events, (2) 'stakeholders' understanding of focus topics for improving resiliency, (3) ongoing damage and recovery needs that remain unmet, and (4) capital, operational and technology resources that can be prioritized when implementing the Resiliency Plan. As a starting point, the current report explores events with the most concentrated impacts in specific areas that can still be observed in Albany's 2023 documented parcel conditions. These events include the severe flood and wind events of 1994 and 2017. However, subsequent events such as Hurricane Michael in 2018, COVID 19 and the December power storm/floods of 2023 reveal further needs throughout the community to be further explored in subsequent reports. Table 1 is a summary of disruptive events to be considered in the 2024 Resiliency Plan.

*Table 1: Historic Federal Disaster Declarations within Dougherty County, GA.*

| Event | Disaster Number | Subcategory | Incident Period | Declaration Date | Declaration Type |
|---|---|---|---|---|---|
| Flooding | 214 | Flood | 3/14/1966 | 3/14/1966 | Major Disaster |
| Tornadoes, Flooding, Torrential Rain, Tropical Storm Alberto | 1033 | Tornado | Jul 3, 1994 - Jul 25, 1994 | 7/7/1994 | Major Disaster |
| Severe Storms, Tornadoes | 1076 | Severe Strom | Nov 7, 1995 - Nov 8, 1995 | 12/20/1995 | Major Disaster |
| Severe Storms, Tornadoes and Flooding | 1209 | Severe Strom | Feb 14, 1998 - May 11, 1998 | 3/11/1998 | Major Disaster |
| Tropical Storm Frances | 1560 | Hurricane | Sep 3, 2004 - Oct 30, 2004 | 9/24/2004 | Major Disaster |
| Hurricane Katrina Evacuation | 3218 | Hurricane | Aug 27, 2005 - Oct 1, 2005 | 9/5/2005 | Emergency |
| Severe Storms and Tornadoes | 1686 | Severe Strom | Mar 1, 2007 - Mar 2, 2007 | 3/3/2007 | Major Disaster |
| Severe Storms, Flooding, Tornadoes, and Straight-line Winds | 1833 | Severe Strom | Mar 26, 2009 - Apr 13, 2009 | 4/23/2009 | Major Disaster |
| Severe Storms, Tornadoes, and Straight-line Winds | 4294 | Severe Strom | Jan 2, 2017 | 1/25/2017 | Major Disaster |
| Severe Storms, Tornadoes, and Straight-line Winds | 4297 | Tornado | Jan 21, 2017 - Jan 22, 2017 | 1/26/2017 | Major Disaster |
| Hurricane Irma | 3387 | Hurricane | Sep 7, 2017 - Sep 20, 2017 | 9/8/2017 | Emergency |

[3] Perry, R.W. (2018). Defining Disaster: An Evolving Concept. In: Rodríguez, H., Donner, W., Trainor, J. (eds) Handbook of Disaster Research. Handbooks of Sociology and Social Research. Springer, Cham.

| Event | Disaster Number | Subcategory | Incident Period | Declaration Date | Declaration Type |
|---|---|---|---|---|---|
| Hurricane Irma | 4338 | Hurricane | Sep 7, 2017 - Sep 20, 2017 | 9/15/2017 | Major Disaster |
| Hurricane Michael | 3406 | Hurricane | Oct 9, 2018 - Oct 23, 2018 | 10/10/2018 | Emergency |
| Hurricane Michael | 4400 | Hurricane | Oct 9, 2018 - Oct 23, 2018 | 10/14/2018 | Major Disaster |
| Covid-19 | 3464 | Biological | Jan 20, 2020 - May 11, 2023 | 3/13/2020 | Emergency |
| Covid-19 Pandemic | 4501 | Biological | Jan 20, 2020 - May 11, 2023 | 3/29/2020 | Major Disaster |

*Data Source: Federal Emergency Management Agency (FEMA)*[4]

## The Great Floods of 1994

In 1994, Tropical Storm Alberto came through Southwest Georgia, damaging significant areas of Albany. This singular incident led to flooding in many locations in Abany and Dougherty County. Flood waters reached 43 feet high, with the flood inundating the central portion of the city, causing the death of 31 people. The floods led to the evacuation of more than 18,000 people, damaging 5,000 structures, and leaving thousands of people homeless. Approximately 1,000 bridges throughout the southeast were closed due to the flood and approximately 471,000 acres of croplands were affected[5]. Overall, 20% of Albany's commercial properties were affected by the floods, 19% of single-family homes and 15% of Albany's multi-family homes were affected.

While 30 years have passed, the 1994 floods revealed several resiliency needs that have not been fully addressed by other plans. For example, at the time the Georgia Power Dam was not designed for the flood. Furthermore, the drainage capacity of the downtown area was overwhelmed with areas of the central business district underwater for days. When the flood submerged the center of Albany, bridge closures cut off traffic between the two sides of town. The campus of Albany State University was inundated by floods as well. The experience of the 1994 floods is still apparent in Albany's parcel conditions, as explored in this report and serves as a key case study for the current Resiliency Plan.

Questions raised for the 2024 Resiliency Strategy include:

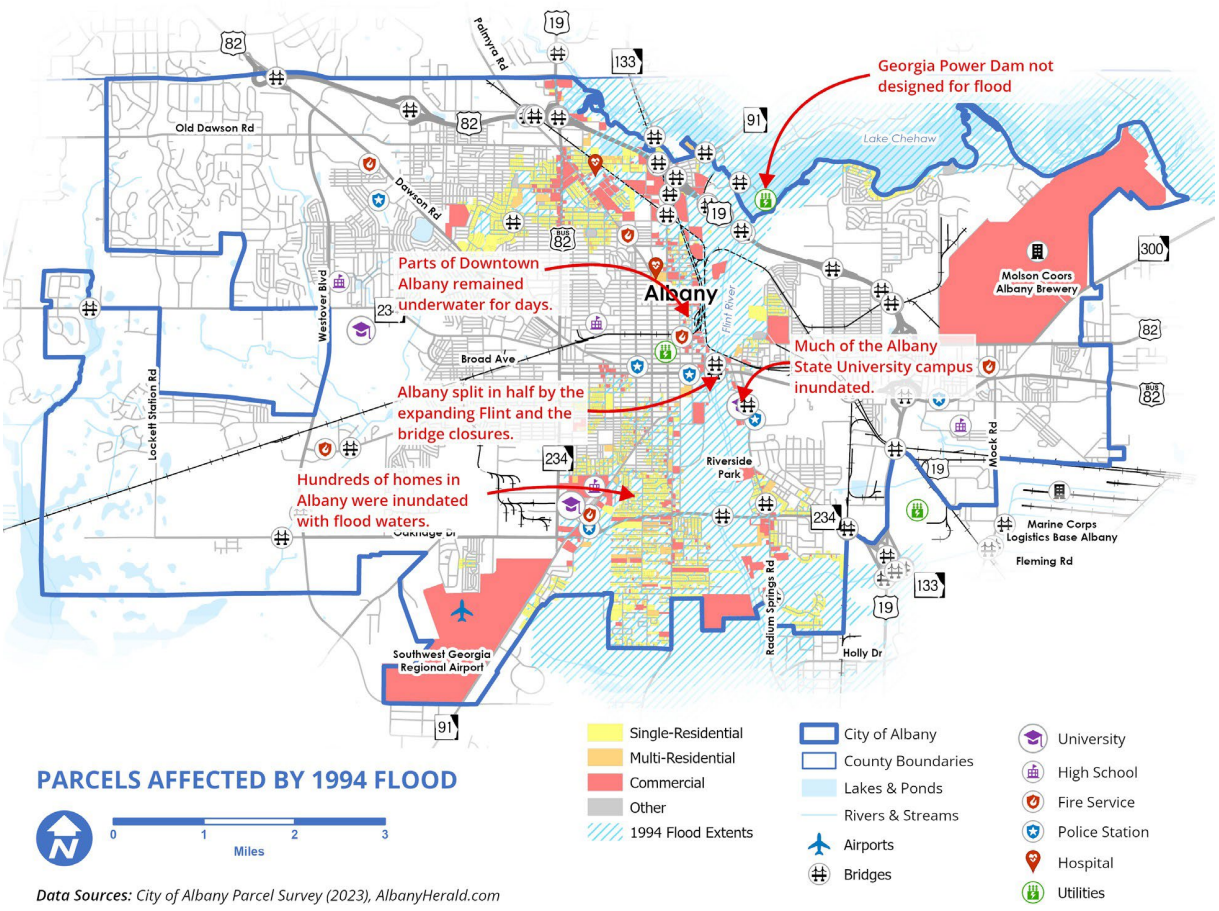
- What has changed since the 1994 flood and how effective are those changes?
- Are there unmet needs experienced in the flood that remain unmet and how can they be addressed?
- Is there ongoing damage either physically, socially, or economically that has yet to be addressed and how?

[4] Disaster Declarations for States and Counties https://www.fema.gov/data-visualization/disaster-declarations-states- and-counties accessed 03/25/2024

[5] https://www.theclio.com/entry/6439 accessed 12/15/2023

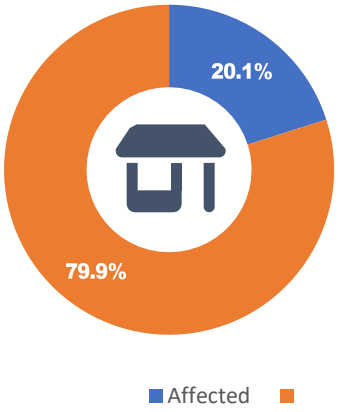
Figure 3 and Figure 4 below illustrate where the 1994 flood waters covered Albany in relation to where 'today's land uses, key assets and infrastructure are located, with observations about how the flood affected the area in 1994.

*Figure 3: Land Parcels Exposed to 1994 Flood*

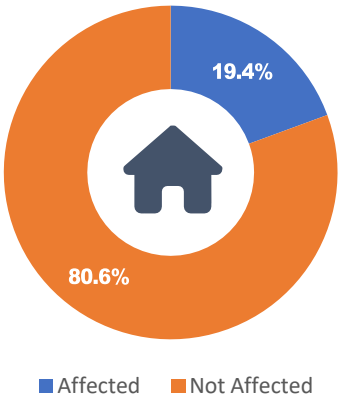



***Data Sources:*** *City of Albany Parcel Survey (2023), AlbanyHerald.com*

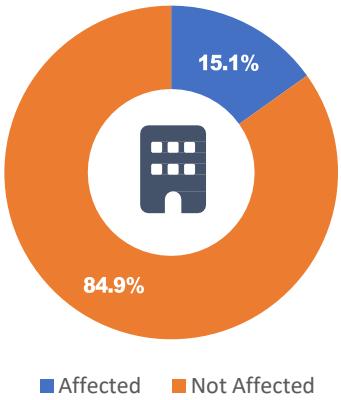
*Figure 4: Percent of Structures Affected by 1994 Flood Event*




*(a) Commercial (Total: 2,340)*




*(b) Single-Residential (Total: 17,589)*




*(c) Multi-Residential (Total: 2,265)*

Table 2 indicates the specific data on the 1994 flood effects as documented by Albany's parcel survey and other records.

*Table 2: Impacts of 1994 Flood on the Structure by Type*

| Structure Type | Total Parcels | Affected | % Affected |
|---|---|---|---|
| *Commercial* | 2,340 | 470 | 20.1% |
| *Single-Residential* | 17,589 | 3,413 | 19.4% |
| *Multi-Residential* | 2,265 | 343 | 15.1% |
| *Other* | 142 | 47 | 33.1% |
| *Vacant Parcels* | 872 | 309 | 35.4% |
| **Total** | **23,208** | **4,582** | |

## The Windstorm and Tornados of 2017

On January 2nd, 2017, Albany experienced a severe thunderstorm system with winds exceeding 80 MPH across the northern half of the city. The storm damaged roofs and structures, downed trees, and powerlines throughout the city, with impacts in the Rawson Circle area. Weeks later, Albany was in the direct path of a tornado outbreak January 21- 23, 2017. Eighty-three tornados were documented throughout the southeast US in the outbreak nationally killing 20 people, including 4 in Albany.[6] A 1.2-mile-wide tornado passed through Albany and Dougherty County, originally touching down on Tarva Road, moving through mobile home parks, residential neighborhoods, the Proctor and Gamble warehouse and the US Marine Corps Logistics Base. The 150 MPH winds were so strong as to demolish a concrete block church on Sylvester Rd[7]. Overall, 43% of Albany's commercial properties were affected by the tornados and associated winds, 48% of single-family homes and 48% of Albany's multi-family homes were affected by the storm events of 2017. The 2017 wind events reveal several resiliency needs relevant to the 2024 Resiliency Plan. The breadth of the damage reveals that the impact of disruptive events affects not only the physical structures but also businesses. Moreover, business conditions can experience long-term impacts if firms and their customers and suppliers are unable to recover from the uncovered costs of such events.

Questions raised for the 2024 resiliency strategy include:

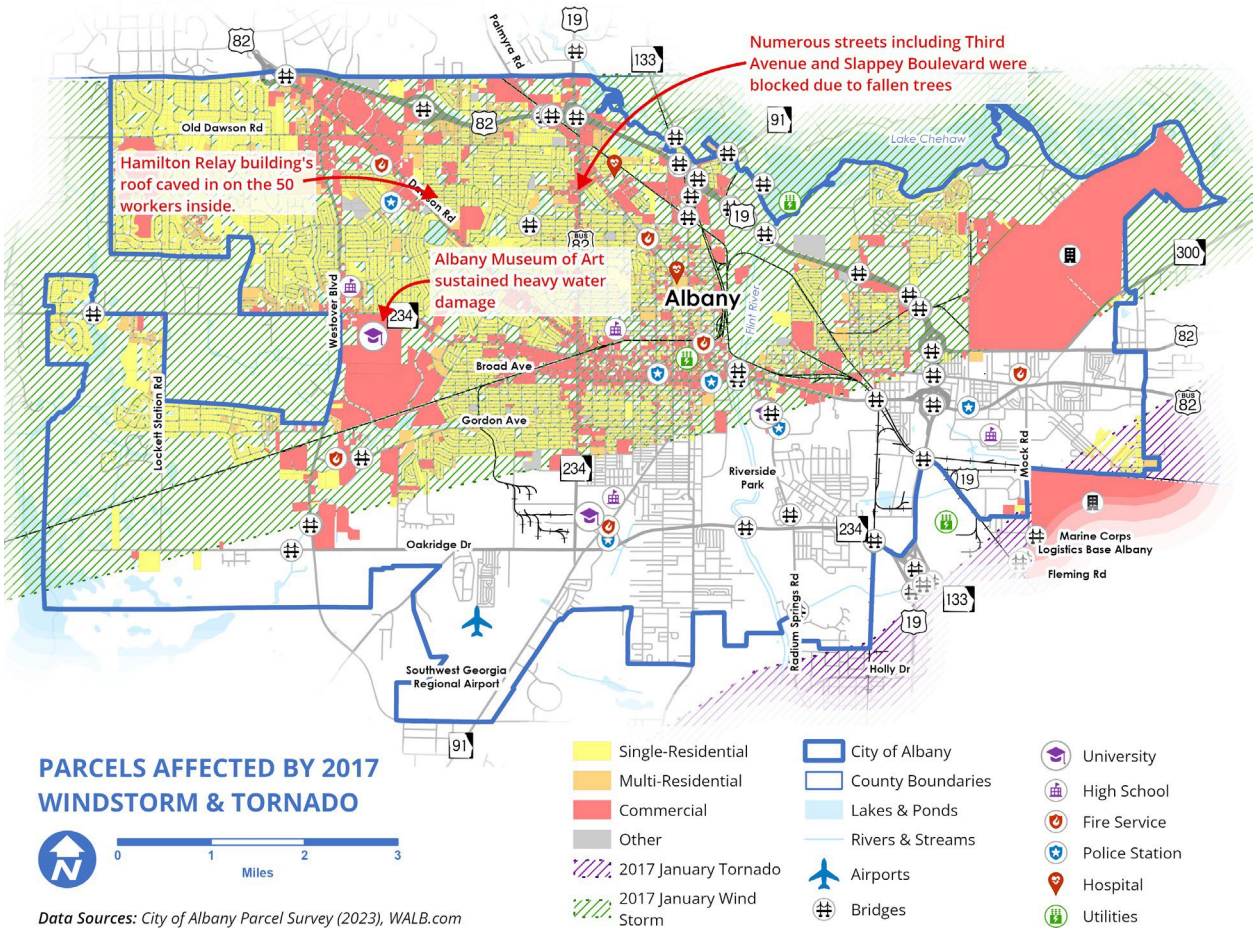
- What infrastructure conditions are different today because of the 2017 response and recovery?
- How are Albany's policies and plans today shaped by the 2017 experience?
- How has Albany's core of available businesses and services been affected by 2017 and other events?
- Are there unmet needs experienced in the storms that remain unmet and how can they be addressed?

[6] "Tornadoes in January". TornadoHistoryProject.com. Retrieved 23 January 2017.
[7] Web reporting from NOAA/National Weather Service, Tallahassee, FL, 2017.

- Is there ongoing damage either physically, socially, or economically that has yet to be addressed and how?

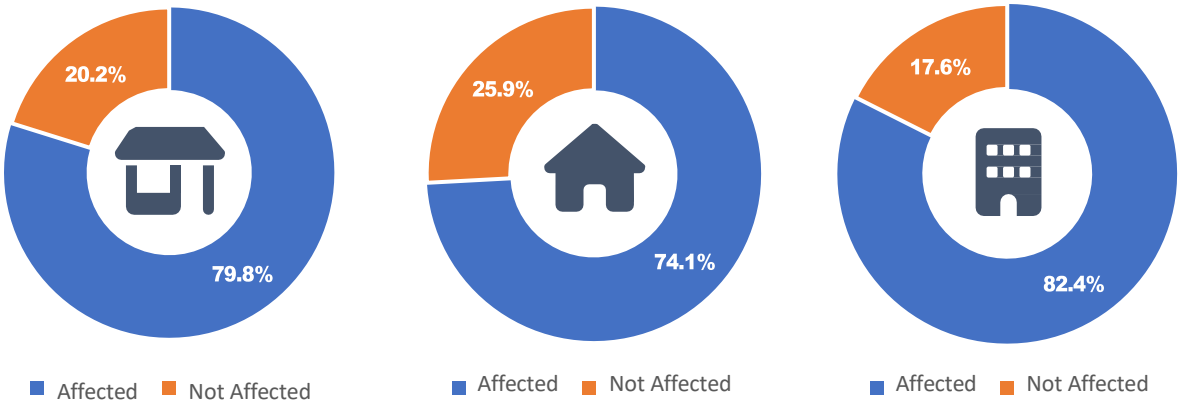
Figure 5 and Figure 6 below illustrate where the 2017 wind events most affected Albany in relation to where 'today's land uses, key assets and infrastructure are located, with observations about the impact of these events.

*Figure 5: Land Parcels Exposed to 2017 Wind Events*




***Data Sources:*** *City of Albany Parcel Survey (2023), WALB.com*

*Figure 6: Percent of Structures Impacted by 2017 Wind Events*




*(a) Commercial (Total: 2,340) (b) Single-Residential (Total: 17,589) (c) Multi-Residential (Total: 2,265)*

Table 3 indicates the specific data on the 2017 windstorm events as documented by Albany's parcel survey and other records.

*Table 3: Impacts of 2017 Windstorm on the Structure by Type*

| Structure Type | Total Parcels | Affected | % Affected |
|---|---|---|---|
| *Commercial* | 2,340 | 1,868 | 79.8% |
| *Single-Residential* | 17,589 | 13,042 | 74.1% |
| *Multi-Residential* | 2,265 | 1,867 | 82.4% |
| *Other* | 142 | 109 | 76.8% |
| *Vacant Parcels* | 872 | 450 | 51.6% |
| **Total** | **23,208** | **17,336** | |

## Learning from Disruptive Events

The documentation in Albany's parcel survey' is only a starting point for fully understanding these and other disruptive events. A key focus of the Resiliency Plan entails obtaining documentation of how Albany's government, businesses and households have responded and adapted to these events and others to build on the initial findings of the recent survey to offer a complete understanding of Albany's trauma history and how it can inform future actions.

# Section 3: Review of Relevant Plans and Policies

Albany's public agencies have developed several planning and policy documents before and after many of the area's disruptive events have occurred. The 2024 Resiliency Plan seeks to both integrate and enhance these efforts into a cohesive strategy for the city and county. Understanding how disruptive events are already addressed in Albany's current plans and policies is essential as a starting place for a holistic strategy in the 2024 Resiliency Plan. Furthermore, identifying plans and policies that have not been updated since disruptive events provides a guide to areas of policy and planning that may specifically need to be updated or visited in the 2024 effort. Table 4 summarizes key plans and policies addressing some aspects of resiliency, and those elements of the plans and policies most relevant to the 2024 plan.

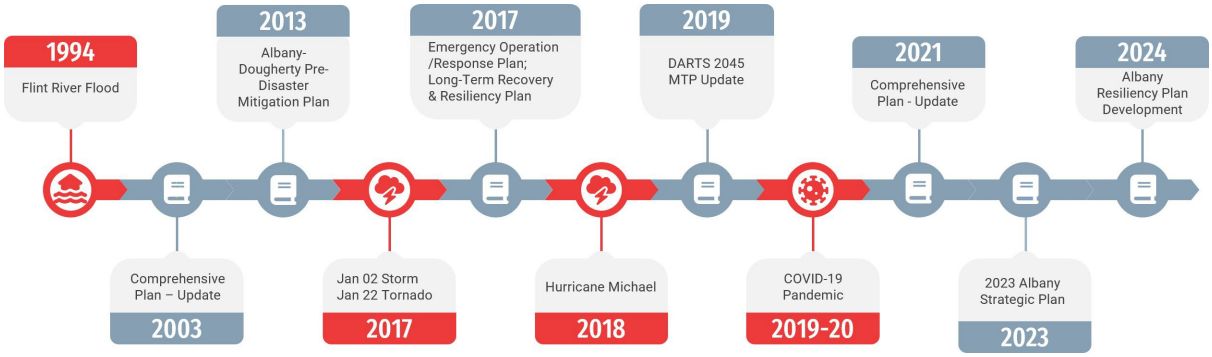
*Table 4: Summary of Review of Policies and Plans*

| Plans/Policies, Sources/Agency | Key Findings |
|---|---|
| Albany-Dougherty Pre-Disaster Mitigation Plan[6] Dougherty County Emergency Management Agency (2013, Updated in 2015) | - Prioritizes improved information sharing through public awareness campaigns and early warning systems, utilizing new technologies to keep communities informed.<br>- Puts emphasis on enforcing building codes and floodplain regulations, with specific amendments proposed to enhance safety standards and resiliency.<br>- Prioritizes the protection of critical natural areas like the Flint River corridor, aiming to mitigate flood damage and promote ecological sustainability.<br>- Recommends adoption of the three-foot freeboard requirement to enhance building resiliency against flood hazards.<br>- Identifies the need to relocate or flood-proof critical infrastructure, addressing vulnerabilities highlighted in previous disruptive event maps and implementing targeted measures for resiliency. |
| Emergency Operation / Response Plan[7] Dougherty County Emergency Management Agency (2017) | - Establishes an emergency management planning and response framework to respond to emergencies, reduce vulnerability during disasters, and facilitate efficient coordination.<br>- Supports disaster public awareness initiatives through various channels such as information dissemination, news articles, PSAs, and audio-visual presentations.<br>- Develops protocols for agencies and organizations with functional support responsibilities, covering preparedness, mitigation, response, and recovery phases.<br>- Maintains a robust system for accurate dissemination of emergency information, including hazard details, assessment of damage extents, shelter availability, evacuation routes, and protective actions. |

| | |
|---|---|
| Long-Term Recovery & Resiliency Plan [8] Dougherty County (2017) | - Identifies the extent of damage caused by the January 2nd and 22nd, 2017 weather events.<br>- Provides the framework for repair and rehabilitation of the critical infrastructure such as the Fire station damaged by the 2017 January events; burying the power lines to the Albany/Dougherty County Government Center and Phoebe Putney Memorial Hospital to avoid service disruptions during future events; and equip well stations with stationary generators for backup power in times of emergencies.<br>- Outlines the Downtown redevelopment focusing on economic revitalization. |
| DARTS 2045 Metropolitan Transportation Plan (MTP) Update [9], Albany Metropolitan Planning Organization (DARTS) (2019) | - Evaluates and assesses the system reliability and resiliency to improve quality of living and the quality of transportation system.<br>- Addresses system deficiency through identification of vulnerable transportation corridors, impacts of congestion, and safety issues.<br>- Proposes operational and safety improvements that address mobility resiliency, including the project that adds alternate bypasses to critical infrastructures.<br>- Proposes inter-agency strategies to identify and mitigate the stormwater issues on transportation systems. |
| Comprehensive Plan [10], City of Albany & Dougherty County (2021) | - Proposes the implementation of stringent flood plain ordinances, limiting development in flood-prone areas and prioritizing the acquisition of Flint River properties for greenspace preservation in response to the historical floods.<br>- Identify deficiencies in stormwater systems through engineering studies, to develop comprehensive long-term recovery and hazard mitigation plans.<br>- Updates were made to existing Floodplain Management and Hazard Mitigation Plans to further bolster disaster preparedness efforts, while environmental codes in the Zoning Ordinance remained unchanged due to consistent state requirements.<br>- Details specific projects such as housing unit rehabilitation, EMS headquarters construction, and rental housing improvements, aimed at enhancing disaster resiliency. |
| 2023 Albany Strategic Plan [11], City of Albany (2023) | - While the 2023 Albany Strategic Plan does not directly respond to disaster preparedness or mitigation, the document discusses investment of infrastructures within the city that contributes to resiliency.<br>- Provides details on investment for housing redevelopment and rehabilitation in targeted areas within the city such as downtown.<br>- Reinforces and expands infrastructure such as stormwater sewer systems, streetlights, telecom, and natural gas, etc.<br>- Seeks to revitalize downtown through establishments of university center and downtown conference center.<br>- Promotes public awareness through campaigns related to emergency management and public safety. |

The timeline of plans and policies shown in Figure 7 provides a comprehensive framework for disaster preparedness and resiliency in Albany and Dougherty County.

*Figure 7: Timing of Key Planning Documents in Relation to Major Disruptions*




Notably, the Comprehensive Plan and the Pre-Disaster Mitigation Plan, both pre-date the latest disruptive events in 2017, drawing from the regional experiences of 1994 flooding of the Flint River. These plans highlight the importance of stringent floodplain regulations, infrastructure improvements, and public awareness campaigns. These documents lay a foundation for proactive measures, emphasizing information dissemination, building code enforcement, and the protection of critical natural areas. The 2017 Long-Term Recovery & Resiliency Plan, however, directly responds to events that occurred in January 2017, indicating a recovery-based approach informed by those specific events. The 2017 plan prioritizes repair and rehabilitation of critical infrastructures damaged by the 2017 weather events, such as the fire station, along with burying power lines to prevent future disruptions. In addition to these recovery measures, the Emergency Operation/Response Plan established also in 2017 provides an emergency management planning and response framework, with protocols developed for agencies and organizations with functional support responsibilities during disaster and recovery phases. Furthermore, the DARTS 2045 Metropolitan Transportation Plan (MTP) Update, adopted in 2019 post-dates both the 2017 wind events and Hurricane Michael in 2018 and incorporates elements of Resiliency planning, addressing vulnerabilities in transportation corridors and stormwater issues, indicating a proactive stance toward mitigating future disruptions.

However, the emergence of the global COVID-19 pandemic in 2019-2020 reshaped conventional notions of disaster events and resiliency, potentially necessitating further adjustments to existing plans. The 2023 Albany Strategic Plan exhibits a gap in directly addressing disaster preparedness and mitigation, focusing more on redevelopment and revitalization efforts, potentially indicating areas for future integration of disaster resiliency strategies. These plans and policies serve as the foundation for the Albany Resiliency Plan development, offering valuable insights into the city's demographics, economy, critical

infrastructure, vulnerabilities, priorities, strategies, programs, and projects aimed at enhancing resiliency. While these plans demonstrate a mixture of proactive and reactive approaches to disaster preparedness, there is room for improvement in ensuring that each plan fully integrates lessons learned from past events and anticipates future challenges, particularly regarding critical infrastructure resiliency and community engagement.

## Implications Moving Forward

Albany's Resiliency Plan development is anchored by a set of key plans and policies, each offering unique insights into the city's vulnerabilities and strategies for building resiliency. The Albany Comprehensive Plan charts long-term growth and development goals, while the Pre-Disaster Mitigation Plan identifies natural hazards and mitigation strategies. The Long-Term Recovery & Resiliency Plan provides a summary of response and funding opportunities related to the January 2017 disasters, and the Albany Environmental Sustainability Plan addresses climate change adaptation. The Emergency Response Plan outlines procedures for disaster response, and the Long-Range Transportation Plan provides information related to mobility resiliency. The 2024 Resiliency Plan uses the findings in Table 4 as the starting point for needs, tactics, priorities, and investments which will be significantly elaborated in subsequent tasks and reports.

# Section 4: Current Resiliency Data and Documentation

## Data Sources for Resiliency planning

The development of Albany's Resiliency Plan requires comprehensive and diverse datasets to assess and address potential hazards, risks, vulnerabilities, and exposures. Albany's 2023 parcel survey provides a unique opportunity to consider the current condition of existing land use in relation to the trauma events described in Section 2. However, the overall Resiliency Plan will integrate data from multiple sources – including the 'city's transportation, environmental, physical, and economic composition to arrive at and evaluate holistic strategies.

Integrating Data for Resiliency Plan

*Albany's 2023 Parcel Survey offers unique data the physical conditions of Albany's land and buildings.*

*Together with other available sources it forms the basis for diagnosing key focus areas for the 2024 plan.*

Table 5 below summarizes key data sources identified at the outset and their relevance for diagnosing needs and evaluating resiliency solutions for Albany.

*Table 5: Relevant Data Sources*

| Data Type and Sources | Applicability | Application to Resiliency planning |
|---|---|---|
| 2023 Parcel Survey *(Source: City of Albany)* | - Evaluating the current state of buildings and structures, identifying key locations focusing on areas previously affected by disruptions<br>- This information highlights effective prioritization of future strategic improvements for assets and properties. | The survey includes crucial details such as property occupancy status, age and structural integrity, and potential maintenance issues. This comprehensive dataset facilitates informed decision-making in urban planning and resource allocation. |
| Transportation Network Data *(Source: DARTS MPO, Georgia Department of Transportation)* | - Assessing traffic patterns: Understanding traffic flow and congestion patterns during emergencies is critical for evacuation planning and traffic management.<br>- Analyze the origin destination patterns of the intraregional trips and understand the connectivity and<br>- accessibility to and from the critical assets. | Traffic data can inform evacuation routes and congestion mitigation strategies, enhancing mobility. |

| Data Type and Sources | Applicability | Application to Resiliency planning |
|---|---|---|
| Infrastructure Layers *(Source: Municipal sources and utility companies)* | - Evaluating the state of water, sewage, and power networks: Ensuring the resiliency of critical infrastructure for continued service during emergencies is paramount.<br>- Assessing infrastructure vulnerabilities: Identifying areas prone to infrastructure failures helps in targeted<br>- reinforcement and restoration planning. | Infrastructure data aids in infrastructure hardening, recovery, and minimizing disruptions in essential services. |
| Environmental Data *(Source: Environmental agencies and research institutions)* | - Analyzing climate: Understanding local climate trends and potential climate-related risks, such as extreme weather events.<br>- Pollution levels: Identifying pollution hotspots and their health impacts on vulnerable populations.<br>- Biodiversity indices: Assessing biodiversity helps in<br>- preserving ecosystems and mitigating environmental risks. | Environmental data informs climate adaptation strategies and supports efforts to reduce pollution and conserve resources. |
| Critical Locations and Facilities *(Source: City records)* | - - Identifying the locations and capacities of emergency services: Ensuring that emergency services are strategically located and adequately resourced to respond effectively to disasters. | Data on critical facilities and services guides resource allocation and ensures efficient response and recovery. |
| Disruptions and Storm Data *(Source: Disaster management agencies, City records)* | - Studying historical data on natural disasters: Analyzing past disasters to assess their impacts and identify areas prone to recurring risks.<br>- Understanding disaster frequency: Identifying the likelihood of specific disaster types helps in preparedness planning.<br>- Assessing the severity of past disasters: Gauging the<br>- scale of disasters provides insights into their potential consequences. | Historical data aids in risk assessment, preparedness, and response planning for various types of disasters. |
| Capacity of Key Services *(Source: Various sources)* | - Understanding the capacity of hospitals: Ensuring healthcare facilities can handle surges in patient volume.<br>- Evaluating police force capacity: Assessing law enforcement's ability to maintain public safety.<br>- Assessing power grid capacity: Ensuring the stability | Data on service capacity supports resource allocation and response planning to maintain essential services during disruptions. |

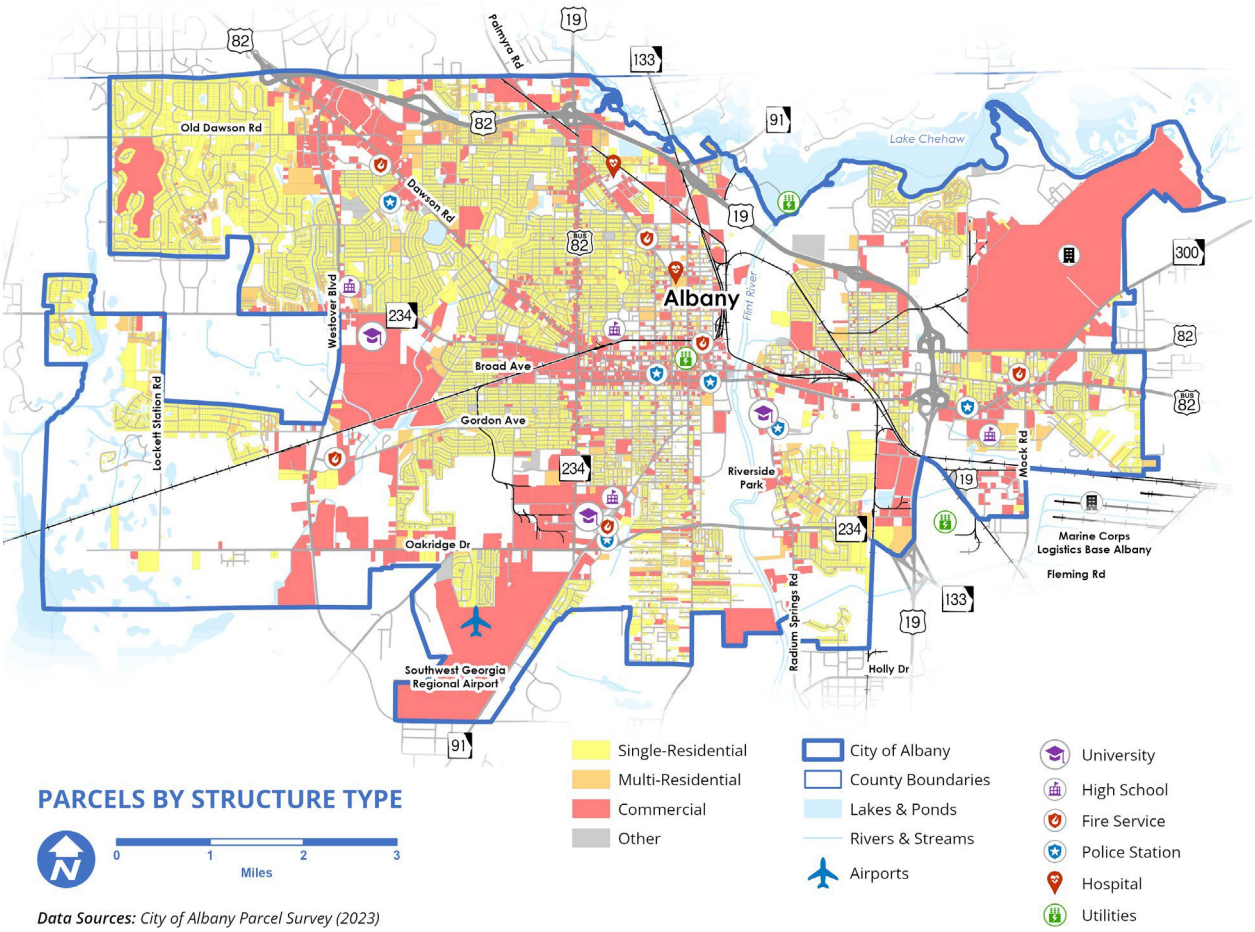
| Data Type and Sources | Applicability | Application to Resiliency planning |
|---|---|---|
| | and reliability of the electrical grid.<br>- Gauging firefighting service capacity: Assessing the<br>- readiness of firefighting services. | |

## Key Observations: Status and Condition of Albany's Parcels

The data sources documented in Table 5 provides important context for the focus of the 2024 Resiliency Plan. Unlike other data sources, the parcel survey reveals the present 2024 conditions of Albany's housing and commercial structures and shows both the ongoing impacts of trauma as described in Section 2 as well as focus areas of ongoing vulnerability. This section highlights key observations about the composition of Albany's current land use, and how the age and condition of land and infrastructure in the area inform the diagnosis of needs and opportunities in the 2024 Plan.

Existing 2024 Land Use Baseline: The existing 2024 land use baseline (shown in Figure 8) shows where important concentrations of housing and commercial activity stand in proximity to important resiliency assets such as police, fire, transportation, health care and other facilities.

*Figure 8: Structure Type in Parcel Survey*




**Data Sources:** *City of Albany Parcel Survey (2023)*

Location of key Housing, Business and Educational Assets:

In the city of Albany, land use is characterized by a diverse mix of residential, commercial, and industrial developments. Single residential structures dot the landscape, with a housing concentration west of the Slappey Boulevard, offering a mix of suburban tranquility and urban accessibility. Multi-residential properties are scattered throughout, notably clustered near the bustling

hubs of Albany Mall, Downtown Albany, and the Albany State University West Campus, catering to lifestyle preferences of its residents. Commercial ventures thrive in strategic locations, particularly around Downtown Albany and along key arteries like Oglethorpe Boulevard and Slappey Boulevard, with

<u>Land Use and Resiliency</u>

*The location of Albany's business and residential properties plays a key role in assessing their vulnerability and how they can be protected or leveraged in future disruptions.*

additional clusters emerging around the Albany Mall on the northwest fringe. Industrial zones form a vital part of Albany's economic landscape, notably situated towards the southwest, bridging the gap between downtown and the Southwest Georgia Regional Airport along State Route 91. Noteworthy establishments such as Molson Coors Albany Brewery, Mars, Proctor and Gamble, and the Marine Corps Logistics Base anchor the city's industrial sector, serving as prominent employers and driving forces behind Albany's economic vitality.

Known Resiliency Issues Facing Current Land Use:
Albany features a network of commercial parcels situated along major thoroughfares like Dawson Road, Slappey Boulevard, Broad Avenue, and Oglethorpe Boulevard, flanking both sides of the Flint River. Beyond Downtown Albany, the landscape transitions to single-family residences interspersed with pockets of industrial development on the city's outskirts.

Known Resiliency Issues

*Many of Albany's existing land uses already have documented experiences of disruptive events, highlighting issues for the 2024 plan.*

Single residential parcels dominate the land use, constituting 80% of occupied parcels, while the remaining 20% are divided between multi-residential and commercial/industrial structures. Most of these structures are located on the flood plain making them more vulnerable to flooding events, as experienced in the historic floods.

Downtown Albany, situated along the Flint River, features a mix of commercial and multi-residential parcels. This area has historically faced challenges from extreme weather events, such as the 1994 flood, which submerged downtown for several days, disrupting normal activities, and damaging

critical infrastructure including Phoebe Putney Hospital, utility offices, fire departments, and police stations. Similarly, the northwest quadrant of the city, characterized by numerous single-family residences and commercial structures, experienced windstorm, and tornado damage in 2017, resulting in roof damage, fallen trees, and power outages, affecting utilities like drinking water supply. Following the extensive damage inflicted by the 1994 flood on several buildings of the Albany State University East Campus, the University relocated many of its facilities outside the floodplain.

*Figure 9: Composition of Parcel Structures by Type*

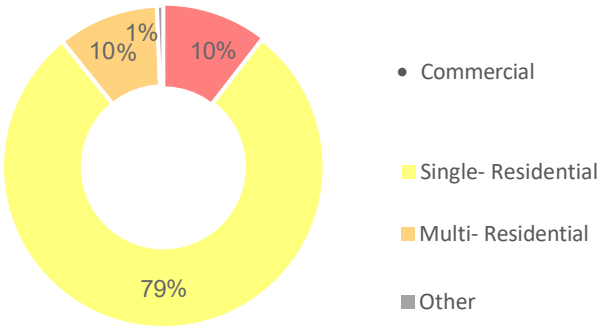
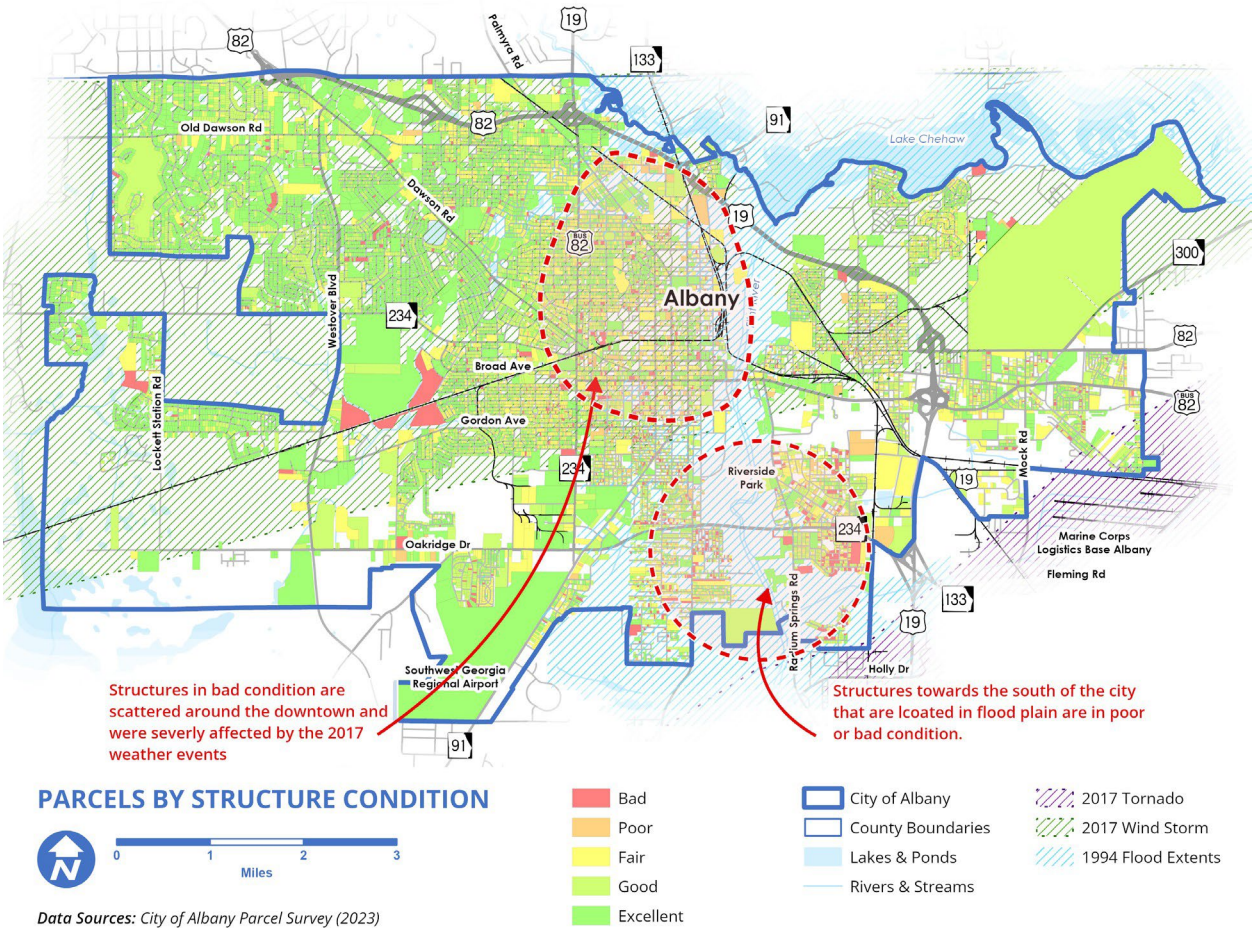


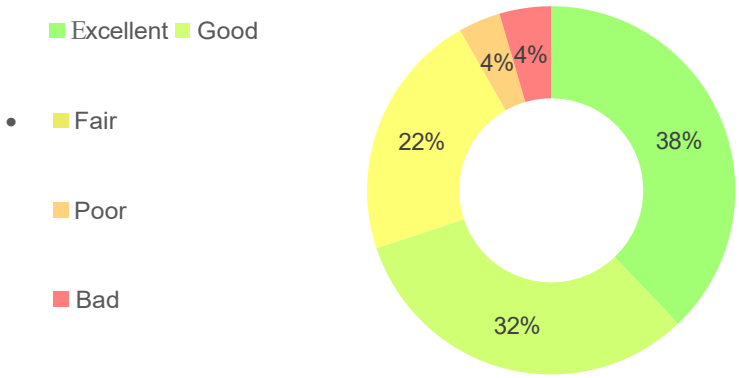
*Figure 10: Main Structure Condition Specified in Parcel Survey.*




***Data Sources:*** *City of Albany Parcel Survey (2023)*

Concentrations of Poor and Bad Structure Condition: The parcel survey reveals the maintenance and structural conditions of buildings across Albany as shown in Figure 10 and Figure 11. Particularly concerning is the area in the southern part of the city, near State Route 234 and Radium Springs Road, which hosts a mix of single-family homes and commercial structures in poor to bad condition. These areas have previously suffered from flood events and are situated in floodplains, rendering them susceptible to future disasters. Additionally, parts of downtown Albany, specifically along Slappey Boulevard and Oglethorpe Avenue, feature several single residential and commercial parcels in poor condition.

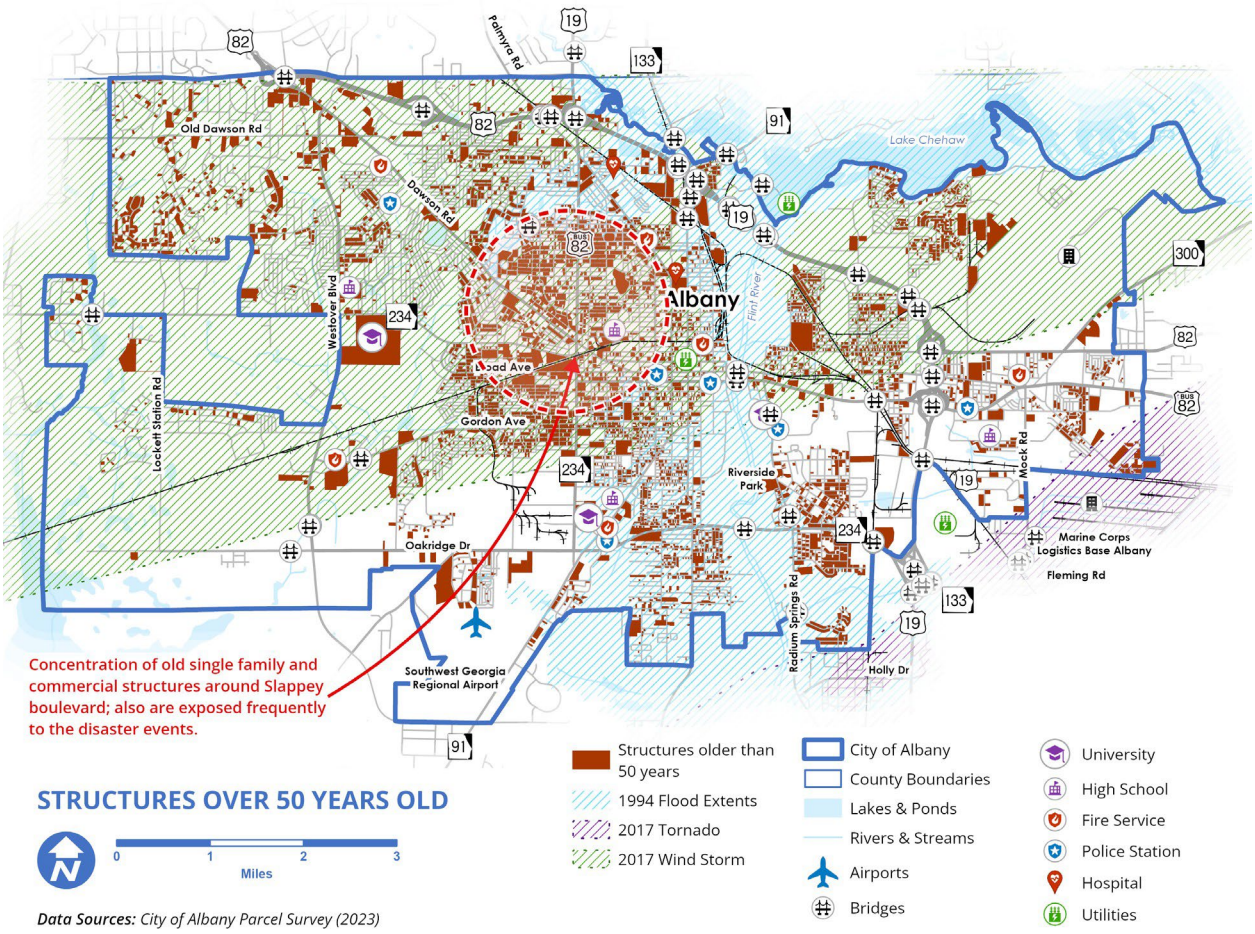
*Figure 11: Composition of Parcel Structures by Condition*



These buildings bore the brunt of the 2017 storms, experiencing prolonged disruptions to utilities such as electricity and water supply. The recovery and reconstruction efforts for these affected structures have been supported by the presence of critical assets like fire services, police stations, and hospitals located nearby.

Conditions of Aging Parcels and Focus Areas: Furthermore, an analysis of structure age from the parcel survey (Figure 12) reveals a concerning trend within Albany's city limits, with over 8,017 structures surpassing the 50-year mark.

*Figure 12: Structures Over 50 Years Old – Vulnerable to Disaster*

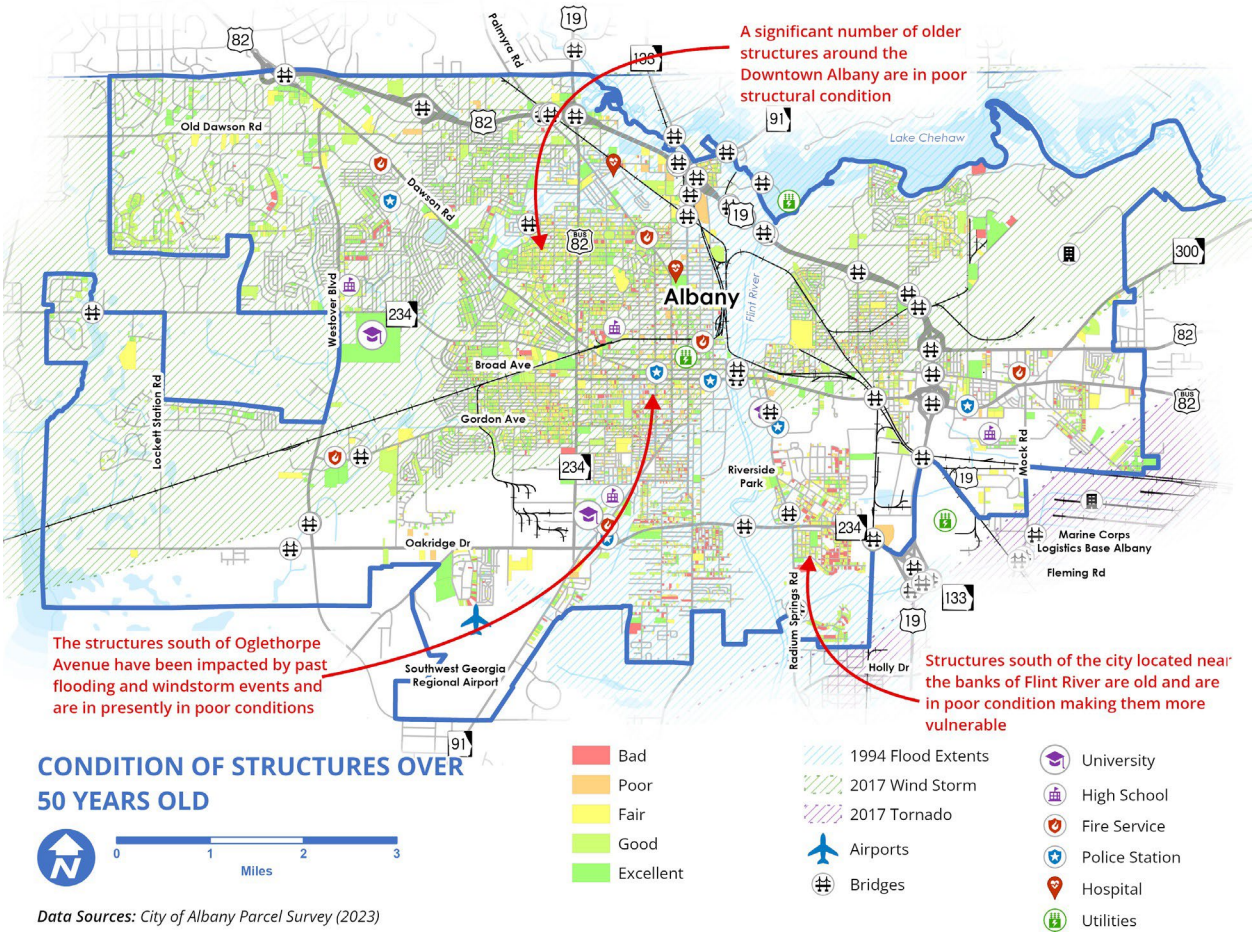



**Data Sources:** *City of Albany Parcel Survey (2023)*

Notably, a considerable cluster of Albany's aging buildings reside in the historic downtown area, stretching along Slappey Boulevard, Broad Avenue, and Dawson Road to the west. These structures, having weathered the passage of time, were particularly vulnerable to the onslaught of the 2017 windstorms as described in Section 2. Additionally, toward the city's northern reaches, evidence of past flooding events is apparent, as depicted in Figure 12. While many of the older structures in this vicinity

remain in good condition, a significant proportion are in a state of disrepair, as illustrated in Figure 13. Another notable concentration of aged buildings is found along State Route 234 on both sides of the Flint River, an area historically prone to flooding, including the devastating 1994 flood. Currently, most structures in this zone languish in poor and dilapidated states. Compounding this issue is the heavy reliance on the Flint River bridge for accessing critical assets such as fire services, police stations, and healthcare facilities. As witnessed during the 1994 flood, any disruption to this vital artery severely compromises the region's disaster response, recovery, and mitigation capabilities.

*Figure 13: Structural Condition of Structures over 50 years old in Parcel Survey*




***Data Sources:*** *City of Albany Parcel Survey (2023)*

In response to the devastating flooding of 1994, the Federal Emergency Management Agency (FEMA) collaborated with the City of Albany to acquire private properties along the Flint River floodplain, transforming them into public spaces to establish a protective buffer between development and the river. This initiative aimed to mitigate the impact of future flood events on the community. Furthermore, the city and county officials took proactive measures to enhance flood resiliency by updating building codes.

Now, structures are mandated to be elevated three feet above the base flood elevation in Dougherty County and one foot above base flood elevation in the city of Albany, ensuring greater protection against inundation. Additionally, both the city and county stipulated that utilities must be elevated above the base flood level, and enclosed areas below the base flood elevation must be equipped with flood vents to prevent water damage.

## Key Observations about Land Use Conditions and Infrastructure

A review of Albany's housing and commercial structures points to some key areas of focus for the Resiliency Plan. While any property or business in Albany can be considered in the 2024 Resiliency Plan strategies, some critical observations from the parcel survey include:

1. Southeast Albany: The area near GA 234 and Radium Springs has significant issues of poor and bad structural condition, aged infrastructure, and a history of flooding. Likewise, the concentration of parcels off GA-234 both to the east and west of the Flint River Crossing represents areas of specific concern due to their present age and condition. Furthermore, GA-234 as a singular crossing of the Flint River in south Albany highlights the importance of both protecting this asset and addressing the risks that may be associated with its compromise.
2. Downtown Albany: Specific areas of concern downtown include the exceptionally poor and bad structural conditions surrounding Slappey Boulevard and Oglethorpe Boulevard which have already borne significant compromise in condition from the 2017 wind events. Consideration of resources to improve housing and commercial structures downtown, protect from future flooding and respond to future threats are of particular importance in the 2024 Plan.
3. North Central Albany: The area of north Central Albany adjacent to Lake Chehaw served by GA-133 and GA-91 has a concentration of older structures, that while in good condition, may be vulnerable due to their proximity to the lake. (This north-central area has older structures than other areas on Lake Chehaw).

As resiliency clusters are further developed in Section 5 – and specific needs are identified, these areas will be revisited in subsequent reports to consider how specific strategies and investments can support these concentrations of aged and poor or bad condition parcels.

# Section 5: Hard and Soft Assets and Resiliency Clusters

In addition to the condition and location of Albany's commercial and residential structures, another vital consideration is where key economic activities occur and where specific buildings, services and other infrastructure elements are located.

Land Use and Resiliency

*The location of Albany's business and residential properties plays a key role in assessing their vulnerability and how they can be protected or leveraged in future disruptions.*

## Hard and Soft Assets in Albany

In Resiliency planning *"hard assets"*" represent areas in Albany where economic activities occur that cannot readily be moved to other locations, and to which continuing access in a disruption is especially critical. By contrast "soft assets" represent activities that could be more flexible in disruptions and may not be tied to ongoing access to a particular facility or area. Some economic sectors such as utilities, agriculture/forestry, and some aspects of healthcare and transportation must occur at locations that cannot be readily displaced or staged to a different area during a disruption. For example, if Albany faces a tornado or hurricane – arrangements can be made for retail and service activities to occur at alternative locations. (Food can be distributed to and from a place other than the usual grocery store and professionals rendering business services may be able to work from home or an alternative location). By contrast electricity cannot be generated for the community at an alternative location, nor can drinking water be purified, medical operations performed outside of a hospital, or airplanes landed where there is not a runway.

For Albany, hard assets include buildings like Albany's City Hall, transportation systems like the major highways, bridges, airport, hospitals, key buildings, manufacturing centers, and utility infrastructure such as power plants, communication networks, water treatment facilities. Soft assets encompass financial services, the workforce capabilities within the municipal government, the organizational structure of local businesses, executive expertise, relationships with trade or public-sector partners and relevant charitable institutions. The basis for differentiating these assets lies in their physical tangibility and the role they play in the functioning of critical public and private systems as well as the supply chain and business operations. By considering both hard and soft assets in Resiliency planning, Albany, Georgia can better prepare for and respond to disruptions, ultimately strengthening its ability to recover and thrive in the face of adversity.

## "" Resiliency Clusters"" in Albany

In the context of Albany, Resiliency Clusters are defined as delineated areas within the city where (1) employment statistics show there is a high concentration of ""hard assets"" performing essential services, (2) there is a concentration of key disruption or emergency response locations as shown in Figure 14 (police, fire, schools, universities, utilities or airport), (3) there may be a significant reliance on a singular

infrastructure element or service which if compromised could compromise the entire city, and (4) there is a history of past disruptions as shown in Figure 15.

*Figure 14: Critical Infrastructure of Albany*

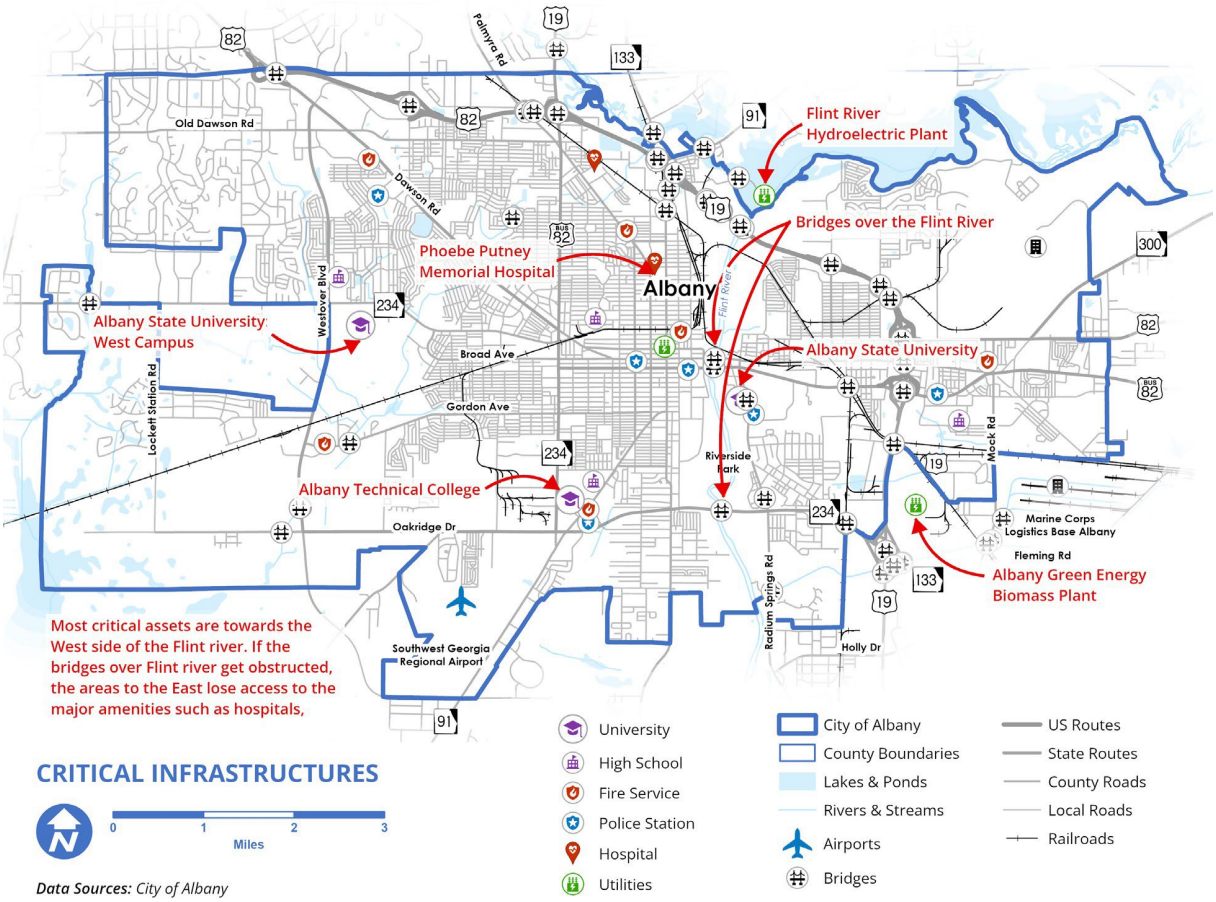
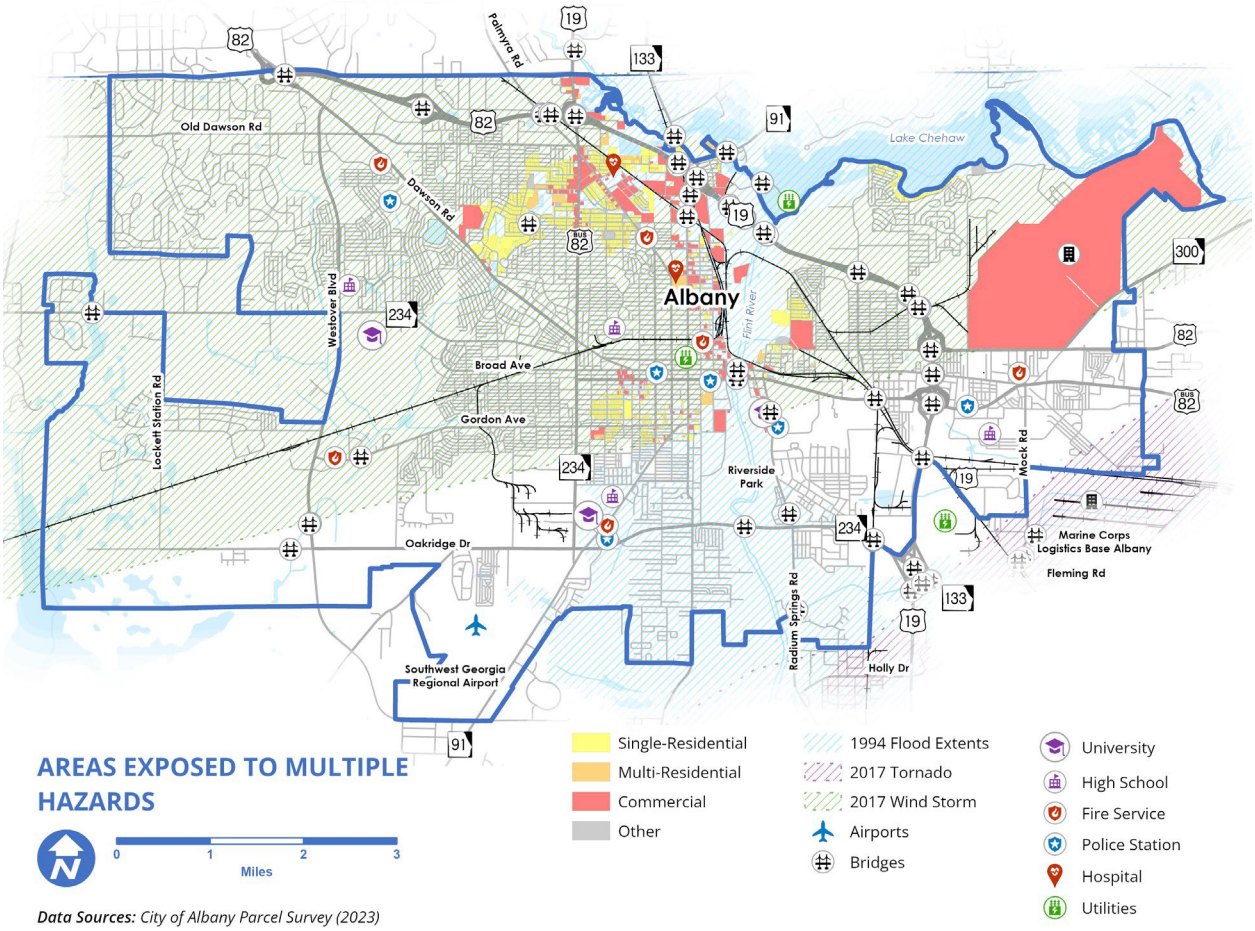
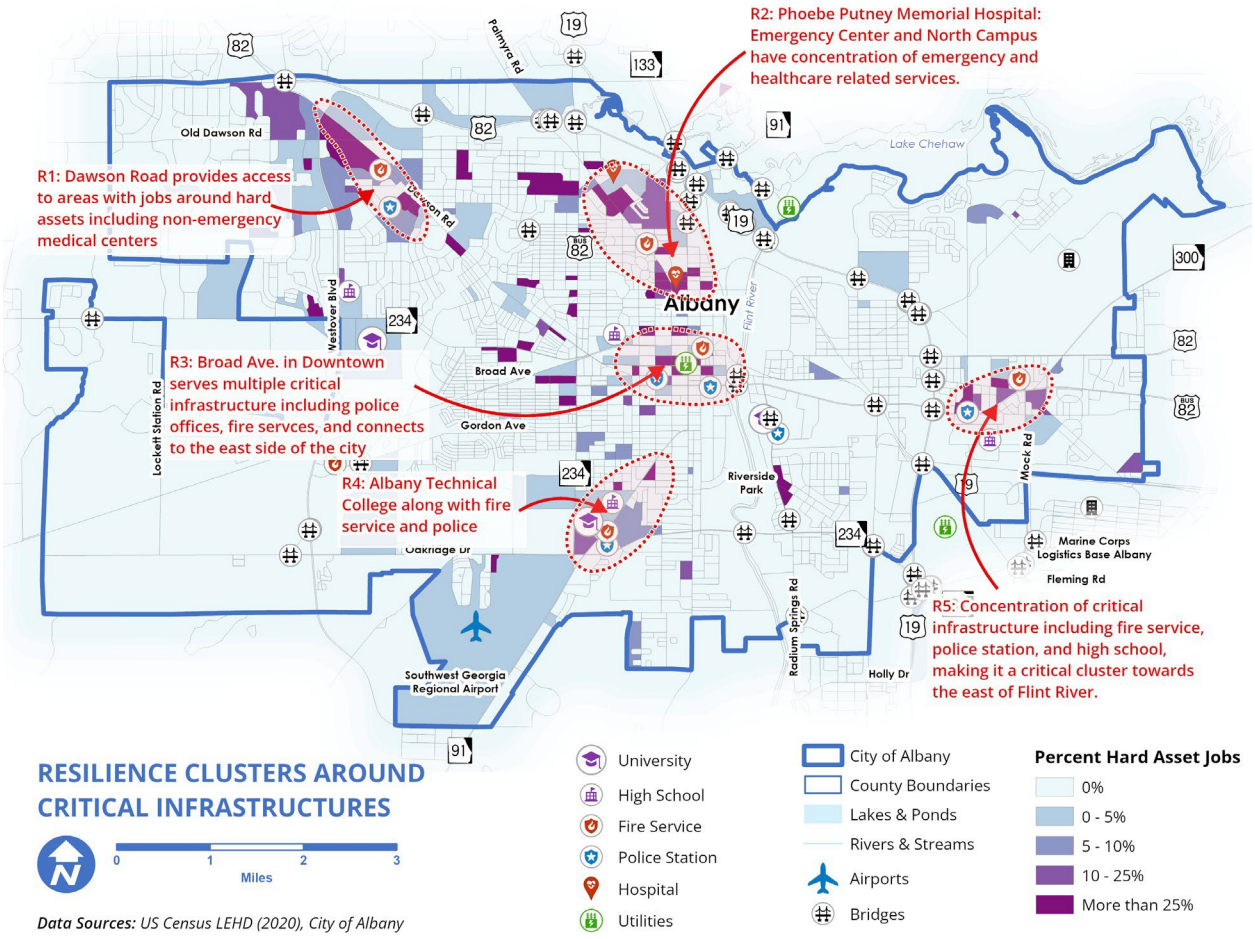


*Figure 15: Areas Exposed to Multiple Hazards*




When a review of the review of the findings of the current report is taken together, 5 Resiliency "clusters" are identified as focus areas for Albany's Resiliency Plan. These are areas where specific infrastructure, service and coordination solutions are to be targeted based on the available data and planning present at the outset of the plan. These clusters are to be specifically addressed through the process of stakeholder interviews, solutions development, and prioritization, and may be further augmented if the qualitative/needs research reveals additional needs and opportunities not evident from the starting data. Figure 16 demonstrates the location and description of Albany's Resiliency clusters as supported by the land use, economic and past disruption data, and its analysis.

*Figure 16: Resiliency Clusters based on Assessment from Albany's Existing Data*




Resiliency Cluster R1 – Dawson Road: The Dawson Road Resiliency Cluster, situated in the northwest of the city around Dawson Road and US 82, serves as a vital commercial hub housing critical assets like the Albany Fire Station and Phoebe Urgent Care. Despite its significance, the region faces vulnerabilities, notably evidenced by the substantial impact of high-intensity winds in 2017. Many structures are aging, with some over 50 years old and rated as poor or bad according to surveys. Such conditions heighten risks during emergencies. Ensuring alternative access routes via Westover Blvd or US 82 is essential to mitigate delays in emergency response and recovery efforts, particularly for accessing critical assets in times of crisis.

Resiliency Cluster R2 – Phoebe Putney Memorial Hospital: Located north of Downtown Albany, the Phoebe Putney Memorial Hospital Emergency Center and North Campus cluster plays a pivotal role in emergency response due to its vital facilities. However, historical events such as the 1994 floods and the 2017 windstorms have revealed vulnerabilities, including power outages and infrastructure damage. To enhance resiliency, plans have been proposed to bury electrical lines underground, reducing susceptibility

to future events. Additionally, ensuring robust accessibility options to the cluster is crucial, given the hospital's role as a primary medical provider during and after disasters.

Resiliency Cluster R3 – Downtown: Downtown encompasses critical infrastructures like the Albany Fire Department and Albany Civic Center, vital to the city's core located around Broad Avenue and Oglethorpe Boulevard. Historically, the area has endured significant flood damage, notably during the 1994 floods, and utility disruptions from 2017 windstorms. Resiliency efforts have emphasized downtown revitalization and safeguarding floodplains, yet more proactive measures are warranted. Strengthening bridges over the Flint River and repurposing facilities like the Albany Civic Center as emergency shelters could enhance disaster preparedness and response capabilities.

Resiliency Cluster R4 – South Albany: Located along Newton Road, South Albany hosts numerous critical assets like educational institutions and emergency services. The cluster has been vulnerable to flooding, as seen in the 1994 Flint River floods, leading to significant structural damage and delayed recovery. The impact extends beyond the region, affecting education attainment in Dougherty County due to disruptions in the school district's operations. Addressing infrastructure vulnerabilities and expediting recovery efforts are essential for bolstering resiliency in this cluster.

Resiliency Cluster R5 – East Albany: The East Albany East cluster is centered around Sylvester Rd and Cordele Rd intersection and encompasses critical assets pivotal to the city's eastern side, including the Thornton Community Center and Albany Fire Station 7. The region has grappled with severe weather events, notably the 2017 windstorm and tornadoes. As the largest cluster on the eastern side of the Flint River, Albany East plays a crucial role in emergency response, particularly during events like the 1994 floods when bridge disruptions severed the connections between east and west sides of the city. Prioritizing resiliency measures in this area is essential to ensuring seamless response and recovery operations in the city's eastern reaches.

Focusing on the resiliency of these clusters is expected to support overall strategies to address the citywide resiliency of Albany. Figure 16 further emphasizes the importance of these clusters as each was exposed to one or more major hazard events in the past.

## Key Observations

The identification of resiliency clusters is pivotal for strategic planning in Albany. These clusters act as anchors for emergency response, with each cluster having tailored plans based on its unique assets and risk profile. For instance, the cluster with a concentration of healthcare assets may require strategies for medical supply chain continuity, while the transportation infrastructure within a cluster may need plans for rerouting traffic during emergencies. Examination of these clusters would help identify the types of infrastructure present, potential threats, existing emergency plans, and necessary improvements. This focused approach should ensure that Albany's resiliency efforts are both efficient and effective, safeguarding the city's most critical areas against a wide array of potential threats. Table 6 provides a summary of findings regarding resiliency clusters.

*Table 6: Summary of Findings Regarding Resiliency Clusters*

| Clusters | Characteristics | Vulnerabilities and Risks | Resiliency Comments/ Connections |
|---|---|---|---|
| R1: Dawson Road | Major commercial center: critical assets include Albany Fire Station, Phoebe Urgent Care (Northwest), Albany Vascular Specialist Center | Severely impacted by 2017 high intensity winds: some structures over 50 years old in poor condition | Prepare alternate access routes (e.g., Westover Blvd, US 82) to ensure emergency response and recovery in case of transportation infrastructure damage |
| R2: Phoebe Putney Memorial Hospital | Essential emergency response hub; includes Phoebe Putney Memorial Hospital: Emergency Center and North Campus | Hospital's electric connections vulnerable to damage (e.g., 1994 flooding, 2017 winds); plans to bury electrical lines underground; accessibility crucial during disasters due to hospital's significance | Underground electrical lines planned for resilience; ensure accessibility given hospital's critical role during and after disasters |
| R3: Downtown | Houses critical assets like Albany Fire Department Station 1, Albany Civic Center, and Albany Police Department | Inundated during 1994 floods; disruption of Broad Avenue Bridge; 2017 windstorm caused further damage; efforts on revitalization and floodplain protection; reinforce bridges over Flint River | Revitalization efforts ongoing; reinforce bridges to maintain connectivity and prevent disruption during disasters |
| R4: Albany South | Home to Albany Technical College, Monroe High School, Albany area Vocational High School, several major employers, and other critical institutions | Significant damage from 1994 Flint River floods; delays in recovery impact citywide education attainment | Educational recovery critical for citywide education; prioritize recovery efforts for long-term impact on education attainment |
| R4: Albany East | Key assets include Thornton Community Center, Urgent Care Center (Phoebe East), Dougherty High School, Marine Corps Logistics Base Albany | Affected by 2017 windstorm and tornadoes: crucial for east side emergency response, especially during bridge obstructions like 1994 floods | Key for east side emergency response; ensure preparedness for severe weather events and bridge disruptions to maintain connectivity and response capabilities |

# Section 6: Learning from Peer Communities

With an understanding of Albany's present conditions, history of disruptions and potential focus areas, it is helpful to identify peer-cities that have faced similar issues. Peer-city comparisons inform the Resiliency Plan by (1) providing context for how resiliency problems have been framed, measured and benchmarked by others, (2) suggesting potential strategies and solutions not yet applied in Albany that may provide remedies when the 'plans' recommendations are made, and (3) provide a comparative basis for Albany to set reasonable expectations about how different solutions may work over time and ways to avoid pitfalls and maximize the effectiveness of solutions.

## Criteria and Selection of Albany Peer Cities in Resiliency

Criteria for a good peer comparison can be based on the factors listed below:

- Similarity in Size and Population: Cities with comparable population sizes offer more relevant insights due to the similar scale of urban challenges and resources.
- Geographical and Climatic Similarities: Comparing cities in similar climatic zones or geographical settings ensures relevance in terms of environmental challenges and natural risks.
- Economic Context: Cities with similar economic structures provide relevant comparisons for economic resiliency strategies.
- Similar Disruption Experiences: Shared history, especially regarding natural disasters or urban challenges, offers a basis for pertinent learning.

Urban Planning and Development Stage: Cities at similar stages of urban development offer more applicable insights for future planning. Based on these criteria, Space Coast, FL, Montgomery, AL, Jackson, MS, and Lafayette, LA, are offered as relevant comparisons to inform indicators and strategies for Albany's Resiliency planning.

*Figure 17: Location of Peer Cities*

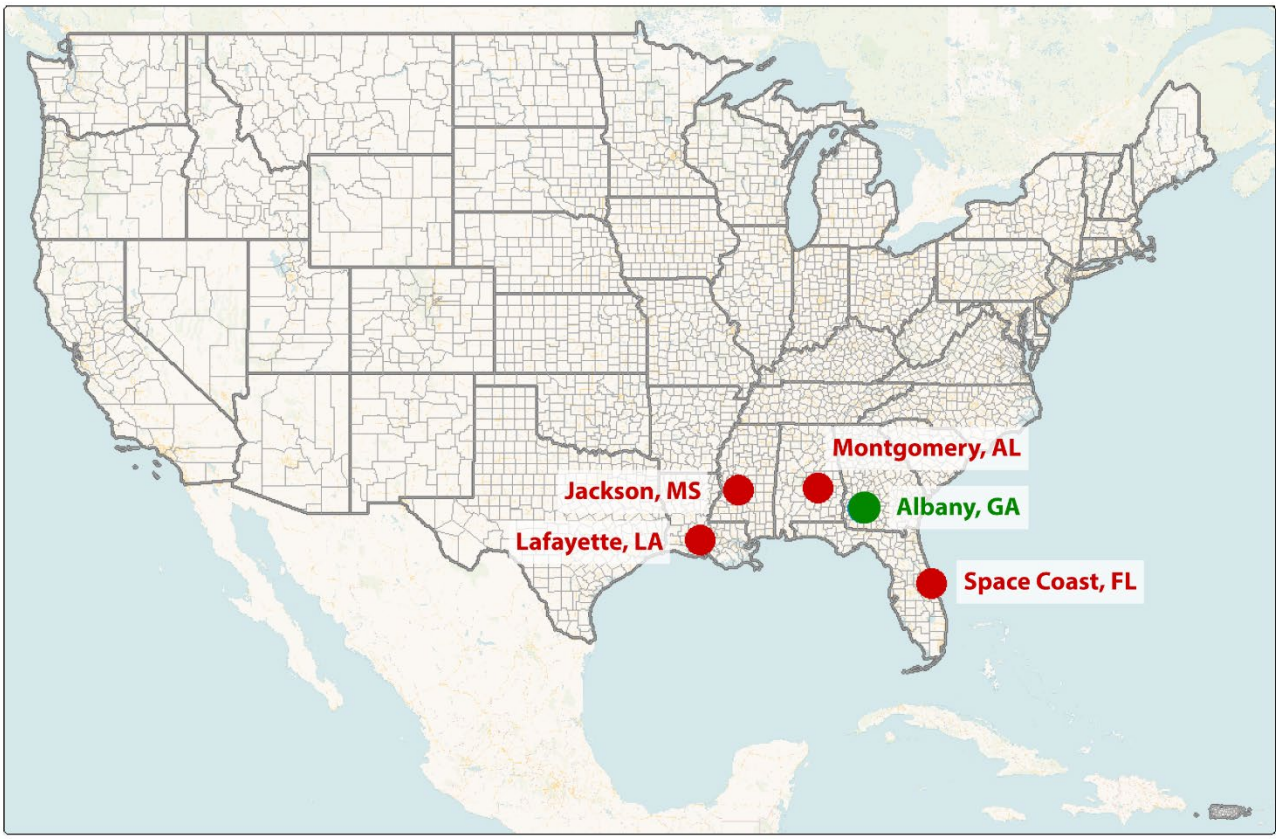



Table 7 provides further rationale for the selection of these peer comparisons, key observations from each that may inform Albany's 2024 resiliency discussions and planning, specific aspects of their plans that may be applied in Albany's resiliency solutions and other observations about how Albany's plan can benefit from the experiences of its peers.

*Table 7: Peer Comparison of Cities*

| Characteristics | Space Coast, FL | Montgomery, AL | Jackson, MS | Lafayette, LA |
|---|---|---|---|---|
| Why Chosen | Transportation resiliency master plan as a planning methodology | Comparable urban scale, similar regional influence, and climatic conditions. | Similar socio-economic challenges and infrastructure issues. | Cultural heritage and exposure to flooding and hurricanes. |

| Characteristics | Space Coast, FL | Montgomery, AL | Jackson, MS | Lafayette, LA |
|---|---|---|---|---|
| Key Takeaways | Comprehensive transportation Resiliency Plan, precise definition of potential shocks and stressors, identification of vulnerable corridors, strategies, community engagement. | Urban renewal and historic preservation strategies, management of heatwaves and heavy rainfall. | Infrastructure modernization, particularly in water and sewer systems, flood mitigation strategies. | Proactive flood resiliency measures, drainage improvement, balance of cultural preservation with urban development. |
| Applicability to Albany, GA | Planning methodologies adaptable to Albany's context. | Urban renewal insights, climate change adaptation strategies. | Insights into addressing aging infrastructure and flood management. | Strategies for flood resiliency applicable to Albany's similar risks. |
| Relevance to Albany's Challenges | Addresses potential shocks and stressors like Albany. | Addresses urban revitalization and climate-related events. | Addresses infrastructure challenges and flood management, relevant to Albany. | Relevance in managing flood risks and preserving cultural heritage. |
| Participatory Approach | Actively engages the community and stakeholders through symposiums. | Engagement in urban renewal projects, community involvement in climate adaptation. | Community engagement in infrastructure planning and flood mitigation. | Community involvement in drainage projects and cultural activities. |
| Resiliency planning Focus | Transportation network resiliency | Urban revitalization, climate resiliency. | Infrastructure resiliency, flood mitigation. | Flood resiliency, cultural preservation. |
| Additional Comments | Space Coast's executive summaries distill complex information into accessible knowledge. | Montgomery's approach can provide models for urban revitalization and climate adaptation in Albany. | Jackson's focus on infrastructure and flood mitigation offers practical insights for similar challenges in Albany. | Lafayette's effective flood resiliency measures and cultural preservation can guide Albany's similar efforts. |

## Summary of Peer City Resiliency Approaches

**Peer City 1 Space Coast, FL:** Located along Florida's eastern coast, Space Coast is known for its proximity to NASA's Kennedy Space Center and Cape Canaveral Air Force Station. Key resiliency challenges include managing the impacts of climate change, particularly sea-level rise, and hurricanes.

*Why Chosen:* The Space Coast Transportation Planning Organization (SCTPO) has developed a comprehensive Transportation Resiliency Master Plan addressing various shocks and stressors that could also impact Albany, such as wind and flooding. Even if the specific risks differ, the planning methodologies could be adapted to Albany's context.

*Figure 18: Space Coast, FL*

*Key Takeaways:* The SCTPO in Florida has developed an innovative approach to enhance transportation resiliency within its network. SCTPO has meticulously identified corridors of vulnerability within their network, which are critical junctures that, if impacted, could disrupt transit flow and access. The SCTPO has put forth strategic recommendations aimed at bolstering the system's adaptability and its ability to recover swiftly from such disruptions. Furthermore, SCTPO has produced concise executive summaries detailing the impacts of various shocks and stressors, thereby distilling complex information into accessible knowledge. The SCTPO has also actively engaged with the community and stakeholders by organizing symposiums, which serve as platforms for discussing ongoing resiliency efforts, emergency management responses, and innovative solutions. This participatory approach not only informs the public but also cultivates a collaborative environment for developing and refining resiliency strategies.

**Peer City 2 - Montgomery, AL:** Situated in the central region of Alabama, Montgomery is the state's capital. It faces resiliency challenges related to economic diversification, social equity, and the impacts of climate change, including increased frequency of extreme weather events.

*Figure 19: Montgomery, AL*

*Why Chosen:* Montgomery is chosen for its similarity to Albany in urban scale and climatic conditions, both crucial in addressing regional climate-related challenges. Both cities have a significant regional influence and share similar climatic conditions, which makes Montgomery's approach to urban and climate issues particularly relevant to Albany.

*Key Takeaways:* Montgomery's urban renewal and historic preservation strategies offer insights into revitalizing historical districts while preserving cultural heritage. Their management of heatwaves and heavy rainfall through infrastructure and policy adaptation provides a model for Albany in terms of climate change resiliency and urban planning.

**Peer City 3 - Jackson, MS:** Located in the central part of Mississippi, Jackson is the state's largest city and capital. The city's resiliency challenges include addressing aging infrastructure, improving water management systems, and dealing with the socioeconomic factors that affect health and well-being.

*Figure 20: Jackson, MS*

*Why Chosen:* Jackson faces similar socio-economic challenges and infrastructure issues as Albany, especially in terms of aging infrastructure and the need for modernization to enhance urban resiliency.

*Key Takeaways:* 'Jackson's initiatives in upgrading water and sewer systems and implementing flood mitigation strategies can inform Albany's approach to modernizing its infrastructure. This is particularly relevant in the context of Albany's need to address its aging infrastructure and improve its flood management systems.

**Peer City 4 - Lafayette, LA:** Positioned in the southwestern part of Louisiana, Lafayette is known for its rich Cajun and Creole culture. The city's key resiliency challenges include combating coastal erosion, managing flood risks, and preserving its cultural heritage in the face of climate change.

*Figure 21: Lafayette, LA*

*Why Chosen:* Lafayette's experience with flooding and hurricanes, coupled with its cultural heritage, mirrors some of Albany's challenges. Both cities must balance cultural preservation with the need for resilient urban development.

*Key Takeaways:* 'Lafayette's proactive flood resiliency measures, including drainage improvements and balancing cultural preservation with urban development, provide a model for Albany. These measures are particularly relevant for Albany in managing flood risks and preserving its cultural heritage.

## Relevant Observations from Peer Areas for Albany

The aspects of the peer-city plan that are most relevant to Albany, GA, involve addressing climate change impacts, managing socio-economic and infrastructure challenges, and preserving cultural heritage while fostering resilient urban development. These elements are crucial for Albany due to its vulnerability to climate-related shocks, aging infrastructure, socio-economic disparities, and the importance of its cultural identity.

From Space Coast, FL: The comprehensive Transportation Resiliency Master Plan developed by the Space Coast Transportation Planning Organization (SCTPO) is particularly relevant to Albany, GA. Albany can adapt SCTPO's methodologies to define potential shocks and stressors specific

to its geographical and socio-economic context. The identification of corridors of vulnerability and strategic recommendations for enhancing transportation resiliency can inform Albany's approach to making its transportation network more adaptable and robust against disruptions.

II. From Montgomery, AL: Montgomery's urban renewal and historic preservation strategies, alongside its climate resiliency efforts, offer valuable lessons for Albany. Given the similar urban scale and climatic conditions, Albany can learn from Montgomery's experience in revitalizing historical districts while integrating modern climate resiliency measures. This is particularly relevant for Albany as it seeks to revitalize its urban core, enhance social equity, and prepare for an increased frequency of extreme weather events.

III. From Jackson, MS: The initiatives in Jackson regarding the upgrading of water and sewer systems and the implementation of flood mitigation strategies are directly applicable to Albany. Given the shared challenges of aging infrastructure and the need for effective water management, Albany can adopt Jackson's best practices in infrastructure modernization and flood risk reduction. This approach can help Albany address its critical infrastructure needs and improve its resiliency to flooding.

IV. From Lafayette, LA: Lafayette's experience with flooding, hurricanes, and the emphasis on cultural preservation within resilient urban development offers a model for Albany. Albany can adopt Lafayette's proactive measures such as drainage improvements and the integration of cultural preservation in urban planning. This approach is crucial for Albany, which faces similar risks from flooding and the need to preserve its unique cultural heritage amid development and climate adaptation efforts.

Implementation in Albany, GA:

- Albany might see the incorporation of these concepts in its transportation planning, especially in identifying and fortifying critical infrastructural corridors against climate-induced disruptions.
- Urban renewal initiatives could integrate climate resiliency and historic preservation, drawing from Montgomery's strategies to enhance Albany's urban and cultural landscape.
- Infrastructure modernization efforts in Albany could mirror Jackson's focus on water system upgrades and flood mitigation, addressing long-standing challenges and improving quality of life.
- Flood resiliency measures, balanced with cultural preservation efforts, could form a key component of Albany's urban development strategy, taking cues from Lafayette's successful management of similar challenges.

By incorporating these learnings, Albany can develop a multifaceted strategy that addresses its unique challenges while leveraging insights from cities with similar experiences, thereby enhancing its overall resiliency and sustainability.

# Section 7: Recommended Resiliency Indicators

City Resiliency Plans aim to help cities prepare for and adapt to various challenges and disruptions, including natural disasters, economic downturns, public health crises, and more. Resiliency indicators are metrics or factors that can help assess a city's level of resiliency and track progress in implementing resiliency strategies. Based on Albany's current needs, challenges, and a review of peer communities the following is a menu of indicators recommended for assessing 'Abany's resiliency needs in the 2024 plan. A subset of the broad areas of resiliency measures are recommended for utilization in the formation of plans and strategies.

- Infrastructure Resiliency
  - Percentage of critical infrastructure (e.g., hospitals, power plants, water treatment facilities) with updated resiliency measures.
  - Number of infrastructure projects completed to enhance resiliency (e.g., flood barriers, seismic retrofitting).
- Emergency Preparedness
  - Percentage of the population covered by an updated emergency response and evacuation plan.
  - Response time of emergency services during a crisis.
  - Number of emergency drills and exercises conducted annually.
- Climate Adaptation
  - Progress in reducing greenhouse gas emissions (e.g., reduction in CO2 emissions over time).
  - Percentage of vulnerable areas (e.g., flood zones) with adaptation measures in place (e.g., wetland restoration).
  - Number of heat action plans or cooling centers in place.
- Public Health Resiliency
  - Healthcare system capacity during a crisis (e.g., hospital beds, ventilators, medical supplies).
  - Availability and accessibility of vaccines and medical facilities.
  - Disease outbreak response time and containment effectiveness is essential for resiliency. The city had an abnormally high number of COVID cases and deaths.
- Economic Resiliency
  - Percentage change in local employment rates during economic downturns.
  - The city has a high level of poverty and has physical and economic challenges to job access.
  - Diversity of industries and businesses in the city's economy.
  - Access to economic relief programs for businesses and residents during crises.
- Community Engagement
  - Participation rates in community preparedness and resiliency programs.
  - Number of neighborhood-level resiliency initiatives.

    - Public satisfaction with the city's resiliency efforts.
- Environmental Sustainability
    - Progress in achieving sustainability goals (e.g., renewable energy adoption, waste reduction).
    - Air and water quality indicators during and after disasters.
- Social Equity
    - Assessment of social vulnerability and equity in disaster planning and recovery efforts.
    - Access to affordable housing, healthcare, and education during crises.
    - Efforts to address systemic inequalities and ensure resiliency benefits all community members.
- Technological Resiliency
    - Availability and reliability of critical digital infrastructure (e.g., telecommunications, internet, cybersecurity).
    - Measures to protect against cyber threats and data breaches.
- Governance and Policy Resiliency
    - Effectiveness of emergency management and disaster response policies.
    - Existence and regular updates of a comprehensive city Resiliency Plan.
    - Collaboration and coordination among different government agencies, Non-Government Organizations, and stakeholders.

# Section 8: Informing Next Steps in Resiliency Strategies

The review of existing data, performance indicators and approaches to resiliency from peer-communities is only a starting point for Albany's 2024 Resiliency Plan. Subsequent tasks entail drawing additional details about needs, focus areas and measures of resiliency based on the lived experience of Albany's households and businesses through stakeholder engagement, in-depth interviews and solutions development. However, some key takeaways from the initial assessment for defining problems and suggesting solutions in subsequent tasks are given in Table 8.

From an overview of existing economic, land use and infrastructure data and plans in Albany together with an assessment of peer communities and available resiliency indicators the following takeaways form this initial assessment are recommended to carry forward into the subsequent stages of the planning process:

*Table 8: Takeaways from Task 1 Report*

| Takeaway | Problem Identification | Solutions Development |
|---|---|---|
| Target solutions north central, downtown, and south, and east aging and bad/poor condition areas. | Aged infrastructure already damaged from past events remains in bad or poor condition and areas are susceptible to further damage. | Pinpoint revitalization initiatives, specific ongoing infrastructure deficiencies, improvements and investments specifically aimed at flooding, housing, and commercial structure condition. |
| Clusters: Focus on facilities, services, businesses, and available resources for the 5 identified resiliency clusters. | Critical economic activities in utility, health care, and essential government services are concentrated in specific areas of the city reliant on specific infrastructure and service components. | Identify specific actions to enhance dispersion, diversification, and independence of operations for utility, health care, transportation, and essential government services in and serving cluster areas. |
| Economic and Cultural Needs & Resources: Consider economic and cultural needs of Resiliency planning. | Albany currently has deficiencies or missing pieces in its economy from critical business, occupational groups and population leaving the city when unable to recover from past events. | Draw from Lafayette, Louisiana model to ensure that different cultural, neighborhood and equity factors are included in the definition and response to vulnerabilities and risks. |

# Appendix 2
# Needs and Solutions

## Contents

# Section 1: Diagnosing Albany's Current State of Resilience

## Introduction

Albany's level of emergency preparedness benefits from the coordination between various agencies. However, there is much to be desired in terms of formal communication, planning, and disaster response protocols. There is no centralized disaster mitigation plan for the city, and a lack of structured interagency protocol betrays a fragmented, inefficient approach to emergency response efforts. Across all agencies, the city's reliance on verbal agreements, coupled with a lack of standardized emergency operation protocol, underscores the need for a unified and documented emergency response framework. This will streamline coordination and enhance Albany's overall disaster response capabilities.

The Facilities Management Department's challenges during and post-disaster scenarios, such as the extensive manual labor required for debris removal and the limitations in generator capacity, reveal significant gaps in operational efficiency and resource allocation. The department's struggles with maintaining sufficient generator readiness and the logistical issues faced in debris management during Hurricane Michael (2018) highlight a critical need for more robust technological solutions. Investing in additional generators, exploring more efficient debris removal technologies, and establishing clear protocols for equipment deployment during disasters could significantly bolster Albany's resilience.

The challenges faced by Feeding the Valley Food Bank during disasters, particularly in ensuring food security and coordinating with other agencies, underscore the necessity for a robust and formalized disaster response network. Furthermore, coordination efforts are complicated by the lack of codified emergency protocol documentation. Meanwhile, resource constraints limit the organization's ability to expand food storage and distribution infrastructure. Establishing formal agreements with local authorities, first responders, and other nonprofits, as well as securing funding for emergency food supplies and logistics, are critical measures needed to strengthen Albany's community support framework in times of crisis. Communication, at all stages of disaster response, is key.

Beyond complications in inter-agency coordination, however, there are salient issues in Albany's built environment. Though purportedly focused on educational resources and stronger building codes, the city's approach to planning and development falls short in terms of holistic disaster resilience integration. This, in tandem with the reactive nature of disaster response, the lack of emphasis on disaster-resilient development policies, and the absence of a comprehensive land use strategy accounts for disaster mitigation contribute to the city's structural vulnerabilities. Crucially, these limitations must be addressed by fleshing out the interstices of social, institutional, and infrastructural elements in Albany's resilience ecosystem.

# Section 2: Resilience Ecosystem

Albany's infrastructure, particularly concerning flood management and stormwater systems, needs long-term, sustainable solutions rather than temporary fixes. The reliance on diesel pumps and borrowed equipment during flooding events points to an underlying issue of inadequate permanent infrastructure to manage such crises effectively. Furthermore, the city's sewer systems, while under improvement through the Combined Sewer Separation project, still face challenges in meeting environmental mandates and coping with heavy rainfall. The slow pace of these projects, coupled with funding constraints, exacerbates flood risks. More resilient and adaptive infrastructure planning is essential.

## Roads

**Table 1** – Roads are crucial for the rapid deployment of emergency services, especially during accidents that involve hazardous materials. Quick access routes are maintained to ensure that response times are minimized.

Table 1: Roads in Albany's Resilience Ecosystem.

| **Ownership and Management** | **Key Assets** |
|---|---|
| • **The City of Albany Public Works**<br>• **The Georgia Department of Transportation (GDOT)**<br>• **Dougherty County** | Vital thoroughfares, such as:<br>• Dawson Rd.<br>• Slappey Blvd.<br>• Oglethorpe Blvd.<br>• Gillonville Rd. |
| **Hazards and Vulnerabilities** | **Resilience Strategies** |
| • **Riverine flooding (particularly on Front St and Broad Ave.)**<br>• **Storm debris hindering emergency response/recovery** | • Comprehensive flood mitigation strategies such as:<br>➢ Drainage system enhancements<br>➢ Installing water barriers<br>➢ Regular clearing of drainage paths<br>• Emergency protocols for rapid debris removal |

## Bridges

**Table 2** – Bridges are crucial for maintaining continuity of travel and logistics during emergencies. Regular assessments help identify damage early and facilitate swift repair to ensure they remain operational.

Table 2: Bridges in Albany's Resilience Ecosystem.

| | |
|---|---|
| **Ownership and Management**<br>• **Government departments and military installations, each responsible for specific bridges**<br>• **Decentralized ownership – needs collaboration** | **Key Assets**<br>• 55 bridges, maintained by the city |
| **Hazards and Vulnerabilities**<br>• **Riverine flooding (particularly on Front St and Broad Ave.)**<br>• **Storm debris hindering emergency response/recovery** | **Resilience Strategies**<br>• Asset management system<br>• Regular structural health monitoring<br>• Anti-icing technologies |

## Rail

**Table 3** – Rail lines form the backbone of transportation, facilitating the movement of goods and people with efficiency and reliability. They serve as lifelines for various economic activities and mobility needs.

Table 3: Rail in Albany's Resilience Ecosystem.

| | |
|---|---|
| **Ownership and Management**<br>• **Companies like CSX**<br>• **Regional operators; Georgia & Florida Railway** | **Key Assets**<br>• The Southern Railway System |
| **Hazards and Vulnerabilities**<br>• **Potential flooding**<br>• **Extreme temperature fluctuations**<br>• **Other weather-related hazards which would necessitate costly repairs** | **Resilience Strategies**<br>• Elevating tracks in flood-prone areas<br>• Reinforcing infrastructure to withstand extreme weather conditions<br>• Rigorous inspections and maintenance protocols<br>• Preemptively address potential risks and ensure operational continuity |

## Public Buildings

**Table 4** – In times of crises and disasters, these buildings transform into vital command centers, orchestrating local emergency responses, coordinating resources, and spearheading swift recovery efforts.

Table 4: Public Buildings in Albany's Resilience Ecosystem.

| | |
|---|---|
| **Ownership and Management**<br>• **Local authorities and state commissions** | **Key Assets**<br>• City Hall<br>• Various municipal and county buildings |
| **Hazards and Vulnerabilities**<br>• **High-impact weather events such as tornadoes and floods**<br>• **Other natural hazards which may impede response and recovery efforts** | **Resilience Strategies**<br>Structural integrity enhancements:<br>• Retrofitting older buildings for improved safety standards<br>• Elevating structures located in flood-prone areas to mitigate water-related risks<br>• Installing emergency power and communication systems |

## Housing

**Table 5** – The Albany Housing Authority plays a crucial role in emergency situations by providing immediate housing assistance and aiding in the recovery process for families who have been displaced due to unforeseen circumstances. Their proactive approach helps in swiftly addressing housing needs during times of crisis.

Table 5: Housing in Albany's Resilience Ecosystem.

| | |
|---|---|
| **Ownership and Management**<br>• **The Albany Housing Authority** | **Key Assets**<br>• Safe and sustainable living environments for residents |
| **Hazards and Vulnerabilities**<br>• **Flooding, strong winds, and other natural hazards**<br>• **Structural damage putting residents at risk of displacement** | **Resilience Strategies**<br>Structural integrity enhancements:<br>• Retrofitting existing structures to comply with stringent safety standards, especially in areas prone to flooding<br>• Integration of disaster preparedness measures into routine maintenance practices |

# Section 3: Historical Basis for Resilience Need

## Narrative

For over a century, Albany has faced significant challenges that underscore the urgent need for enhanced resiliency measures. However, Albany's recent struggles are best illustrated through three major disruptive events: the Great Floods of 1994, the Windstorm and Tornadoes of 2017, and the COVID-19 pandemic.


Flint River Flood of 1925. 1925. Photograph. Digital Library of Georgia. https://dlg.usg.edu/record/nge_ngen_m-4050.

In the summer of 1994, Tropical Storm Alberto unleashed its wrath over Southwest Georgia. The storm's relentless rains swelled the waters of the Flint River, leading to catastrophic flooding that submerged Albany under 12 feet of water. This disaster was not just a natural calamity – it was a profound civic crisis. 31 lives were claimed by Alberto, and over 18,000 residents were compelled to evacuate. About 5,000 structures were damaged, particularly in the city's southernmost regions, which lie in the floodplain of the Flint River, and in east Albany, a mid-twentieth century African American suburb.

Some buildings, including the Washington Homes public housing complex in downtown Albany, were washed away. A staggering 20 percent of the city's commercial base was affected, as local businesses were significantly damaged, destroyed, or rendered inaccessible. The floodwaters disrupted lives and livelihoods, leaving deep economic scars, and turned bustling neighborhoods into ghost towns. Thousands were left without a home, and many of these residents were unable to recuperate due to the prohibitive costs of rebuilding, elevating their homes, and paying for flood insurance. This is due in part to legacies of segregation and racism, rendering South and East Albany's low-income residents disproportionately vulnerable to this catastrophic event.

Albany Herald. A Flood of Memories: A Photographic Chronicle of the Great Flood of 1994, Page 79. Albany, Ga: Broad Street Productions, 1994.

This forced evacuation has left many of Albany's water-damaged homes abandoned today. The city's infrastructure, including essential services like electricity and water, was dramatically overwhelmed, laying bare the profound need for robust, flood-resistant urban planning. Residents of the city had difficulty obtaining reliable information on how to respond to the flooding and where to find aid, owing to the complex structure of Albany-Dougherty County's bureaucracy. This was exacerbated by legacies of racism and segregation which fomented a deep-seated mistrust that African American residents have of the local government, and the city-county being overwhelmed by the sheer chaos of the flooding.

Damage from the windstorms and tornado of 2017.

> *"You can ride through South Albany now and just see that it never really came back..."*
> *- Shirley Sherrod*

In January 2017, Albany was again stricken with disaster. A severe thunderstorm, with winds exceeding 80 MPH, ravaged the northern half of the city. Trees and power lines came tumbling down, ripped roofs off buildings, and left debris scattered across the community. Only weeks later, the situation worsened as a tornado outbreak, part of the same storm system, swept through the area. The tornado carved a path of destruction 1.2 miles wide through Albany, impacting 83% of its commercial properties and nearly half of all homes. This dismantled much of the work done to rebuild after the Floods of 1994, which was especially damaging to lower-income residents of the city. For example, a mobile home community near Radium Springs was demolished, and has taken several years to recover. This event inflicted immediate damage and highlighted persistent vulnerabilities in the city's disaster preparedness and response frameworks. Due to the number of homes destroyed by the disaster, there are many who still have not been able to receive the grant money they would need to rebuild their homes. Meanwhile, a lack of transparency, communication, and bureaucratic inefficacy stoked unrest in the community, further complicating relations between the public and city government.

> *"The communication was not good.*
> *The...communication created more problems than it solved...*
> *It also left a lot of people out...*
> *They didn't get what they needed...*
> *That creates...mistrust, and their view about government...*
> *It's more like bureaucratic terrorism."*
> *- Frank Wilson*

An abandoned home in Radium Springs, 2024.

With a majority-African American population in the Deep South, the chronic effects of systemic racism were particularly pronounced at the height of the COVID-19 pandemic. Local medical facilities were overwhelmed, and many residents lacked food security and reliable transportation. The pandemic accentuated inequities which were endemic in Albany for a century. These legacies of racism, socioeconomic disenfranchisement, environmental injustice, and their resultant manifestations in the 21st century must be considered in a holistic plan for disaster resilience. This plan must also address the compounding issue of reduced emergency staffing, ensuring that disaster response capabilities are restored and adapted to meet the current and future needs of Albany's communities.

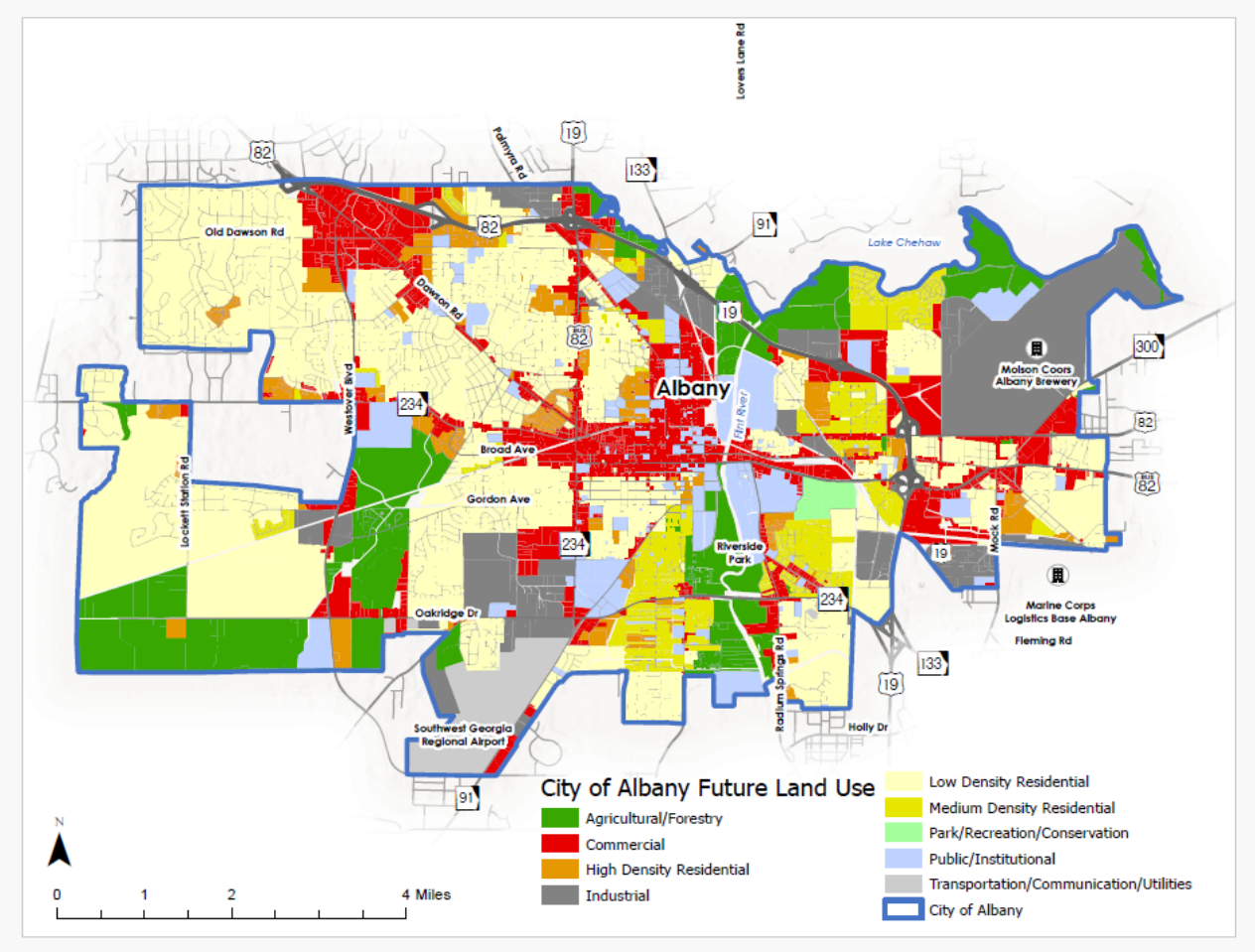
Commissioner Jon Howard explaining the economic decline in East Albany.

While these disasters and disruptions have compounded difficult circumstances for the people of Albany, neither the flood, the tornado, nor the pandemic were first-time events. For example, in 1925, a flood inundated many of the same areas as in 1994, blocking important transportation infrastructure. A tornado in 1940 destroyed a section of downtown and disproportionately affected African American residents, who lost 200 homes. Finally, the 1918 influenza epidemic stressed the capacity of Phoebe Putney Memorial Hospital, which was just seven years in operation. The lack of long-term solutions has left Albany continually vulnerable to these disasters. Ultimately, the severity and disproportionate impacts of these disasters and disruptions were not inevitable, nor were they completely unprecedented. For many, the scars and remnants of these events linger on; present in the community's consciousness and displayed in the debris of Albany's empty homes.

# Section 4: Land Use and Zoning

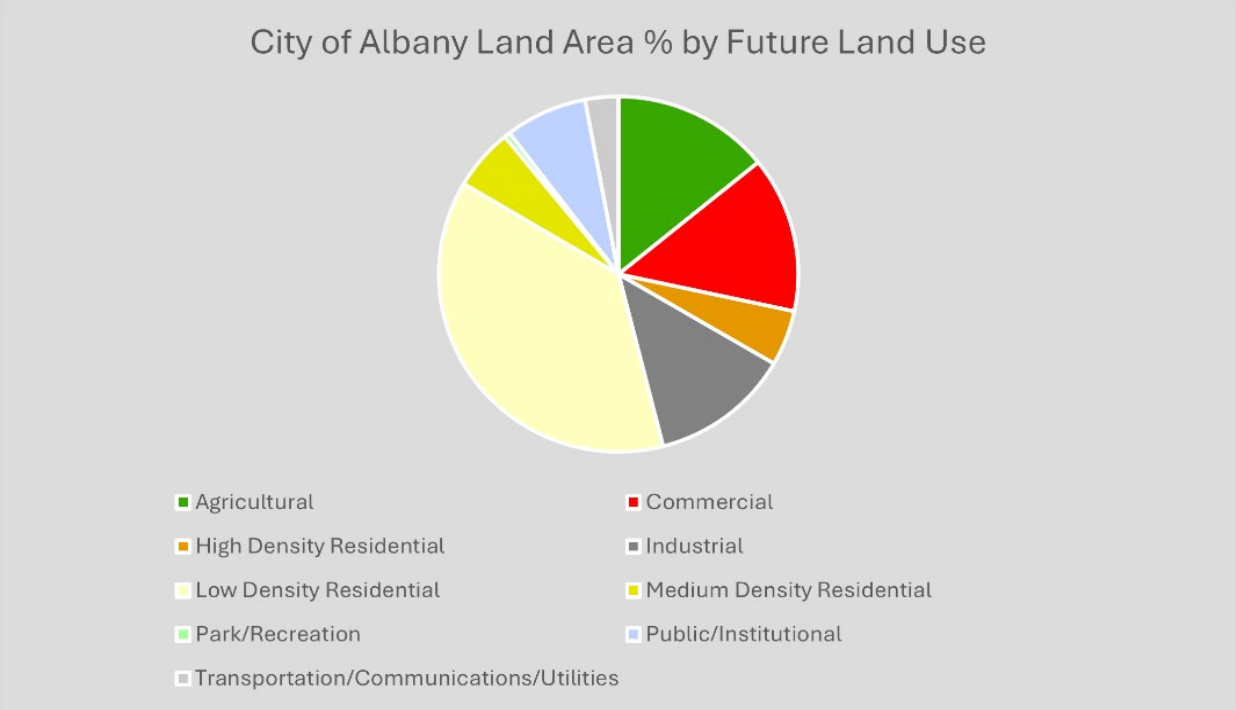
## Land Use and Zoning Types in Albany

Figure 1: City of Albany Future Land Use.




Land use planning is the systematic and regulated allocation of land for various purposes (such as residential, commercial, industrial, and agricultural). Albany's land use (future) comprises significant low-density residential areas, predominantly situated on the outskirts and near the downtown area, as shown in the figure below. Additionally, substantial portions of land are earmarked for agricultural and industrial purposes along the city's periphery. Throughout the center of the city, commercial land use dominates, with pockets of public/institutional scattered in between. Commercial land use is designated across the major network corridors.

Figure 2: City of Albany Land Area % by Future Land Use.




Per Albany's recent zoning, residential districts, R-1, R-2, and R-3, make up almost half of the land area in Albanys zoning map. R-1 makes up most of west Albany, while south and east Albany are predominantly R-3. Many of the other zoning districts are about even, with C-R and C-3 making up slightly larger areas of the city. These percentages will serve as a control against the other detailed zoning maps, highlighting certain areas of interest in recommending resilience strategies for zoning.

Figure 3: City of Albany Land Area % by Zoning District.

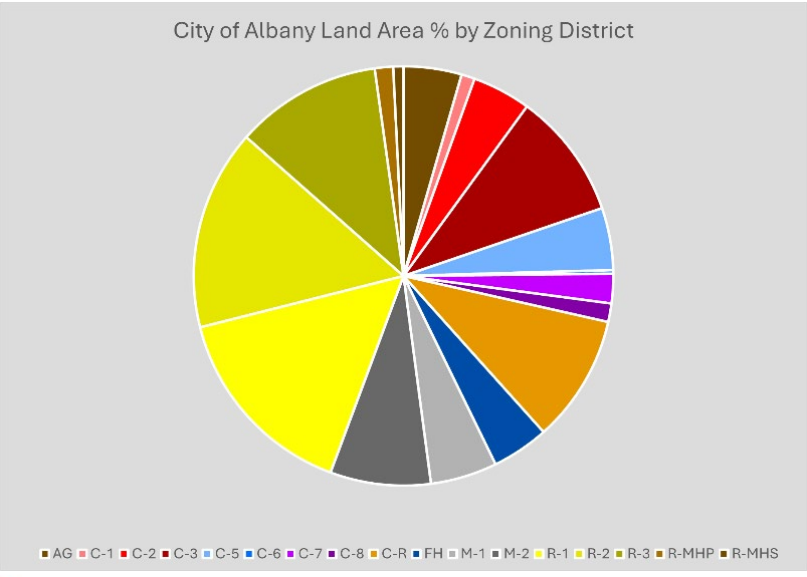
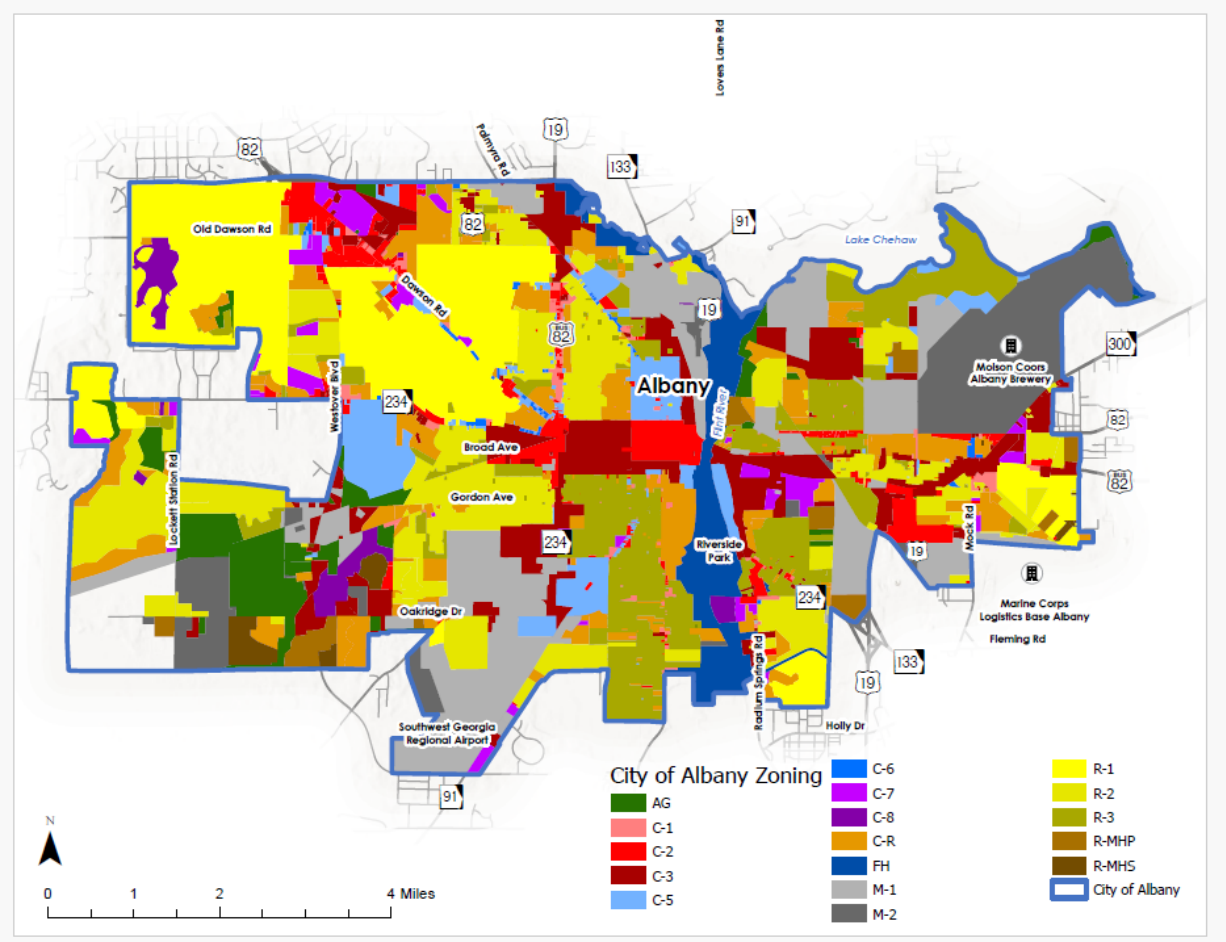


Figure 3: City of Albany Zoning.

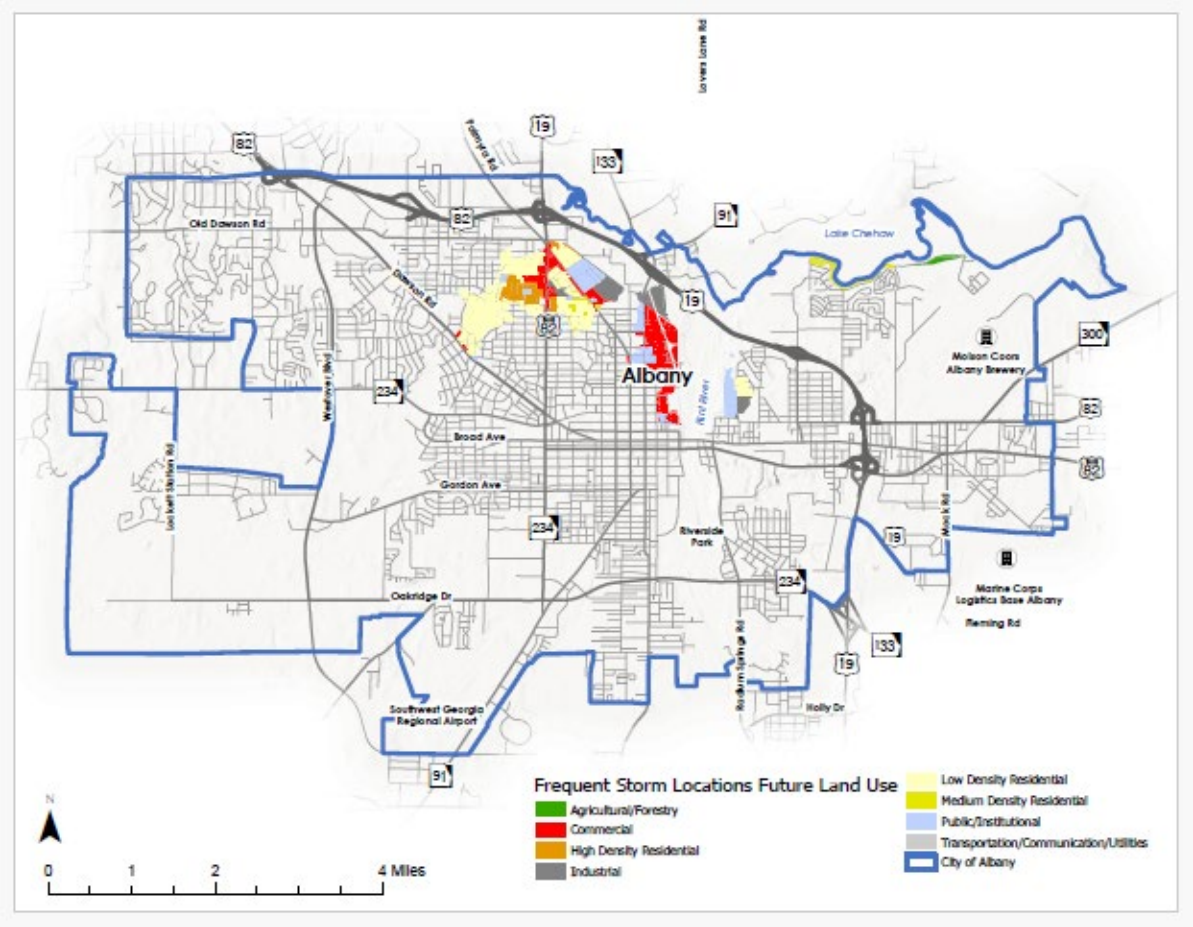



## Land Use and Zoning Vulnerability to Hazards

### *Frequent Storm Events*

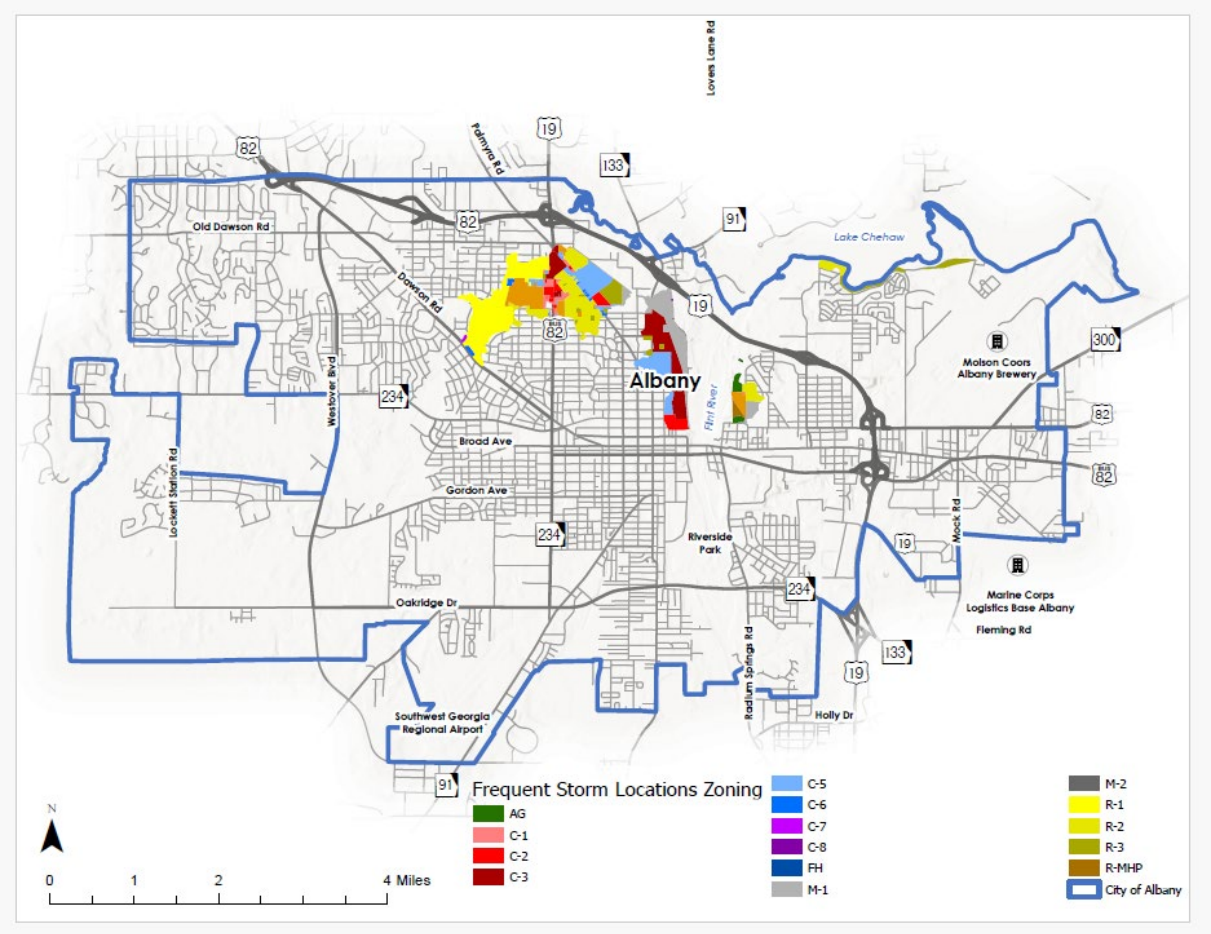
Land use planning is a critical component of resilience planning, as the planning controls, relevant standards, building codes, and zoning should consider hazard risk in the current context, learn from past hazard events, and prepare for the future. The vulnerability of Albany's land use in the current context can be analyzed by visualizing the areas that can be duly affected by natural hazards such as storms and heat waves. In areas of Albany frequently hit by severe storms, the dominant land use is low-density residential. Significant areas of public/institutional and commercial land are also in the frequent storm area. Noticeably missing from the citywide future land use are industrial or agricultural areas. This absence of agricultural and industrial areas might indicate that these types of land uses may not require special planning for resilience against similar storms in the future.

Figure 4: Frequent Storm Locations and Future Land Use.




In areas of Albany prone to frequent storm events, residential districts R-1 and R-2 continue to occupy most of the land. As such, they are comparatively more vulnerable. Additionally, there's a notable expansion in the C-R, C-5, and C-3 districts. Special attention should be given to these districts to see what strategies can be implemented to better equip the uses that are permitted in these zoning districts against future weather events.

Figure 5: Frequent Storm Locations and Zoning.

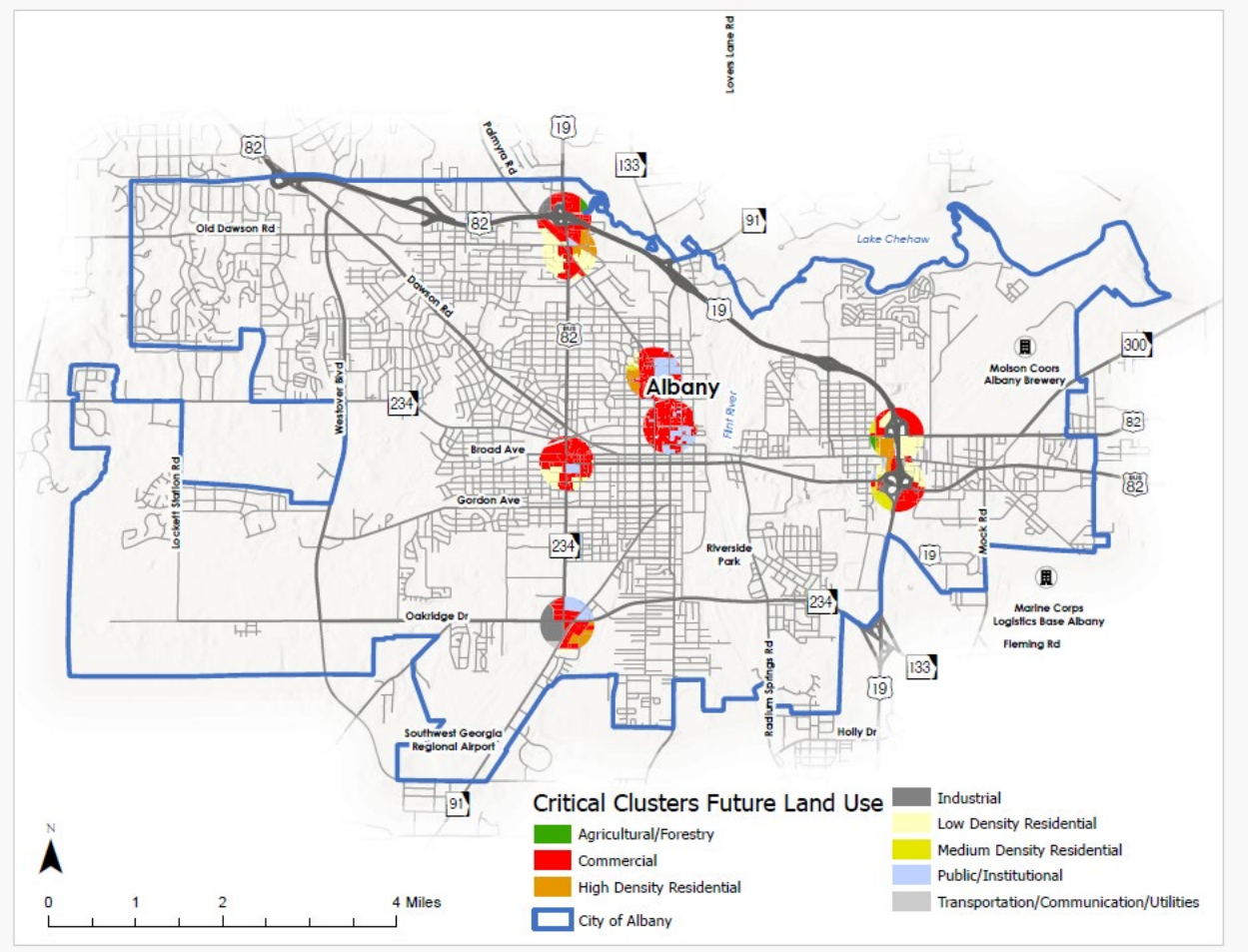



## Land Use and Zoning in Critical Resiliency Clusters

Clusters developed around critical infrastructures require heightened focus during hazard events, maintaining awareness of land use and zoning in proximity aids in readiness for such events. Redundancy is crucial in these areas, as this will ensure daily operations can continue – even in the face of disaster.

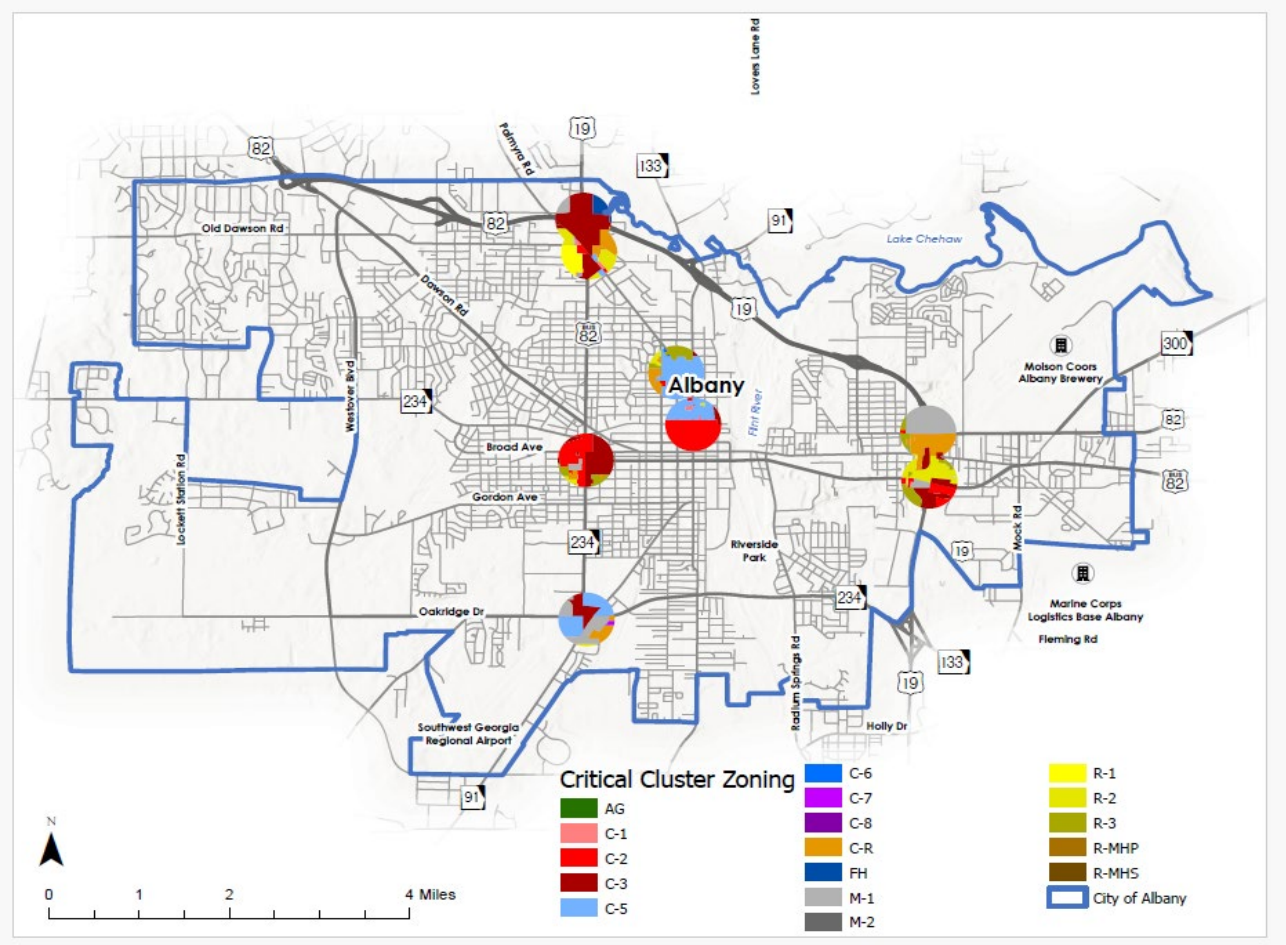
More than half of the area in critical clusters consists of commercial land use, followed by low-density residential and public/institutional areas. Given their proximity to major intersections, the prevalence of commercial land use is logical. It's crucial to explore how resilience strategies can support these commercial enterprises situated within critical clusters throughout Albany.

Figure 6: Critical Clusters and Future Land Use.




The primary zoning districts in critical clusters are predominantly commercial. Specifically, C-R, C-5, and C-3 remain major zones, with a notable expansion in the land area designated as C-2. It is crucial to discern the specific permitted land uses within C-2 that contribute to its significant presence in the critical clusters area. Understanding this aspect is essential for devising strategies to enhance resilience through zoning in these regions.

Figure 7: Critical Clusters and Zoning




### *Vulnerable Populations*

The community resilience estimates (CRE), taken from the NOAA toolkit, provide a metric to represent socially vulnerable populations in every neighborhood in the United States to the impact of disasters. Using the American Community Survey (ACS-2022) microdata, CRE provides estimates of the total number of people living in a community by the number of risk factors.

- 0 risk factors (Low risk)
- 1-2 risk factors (Medium risk)
- 3 + risk factors (High risk)

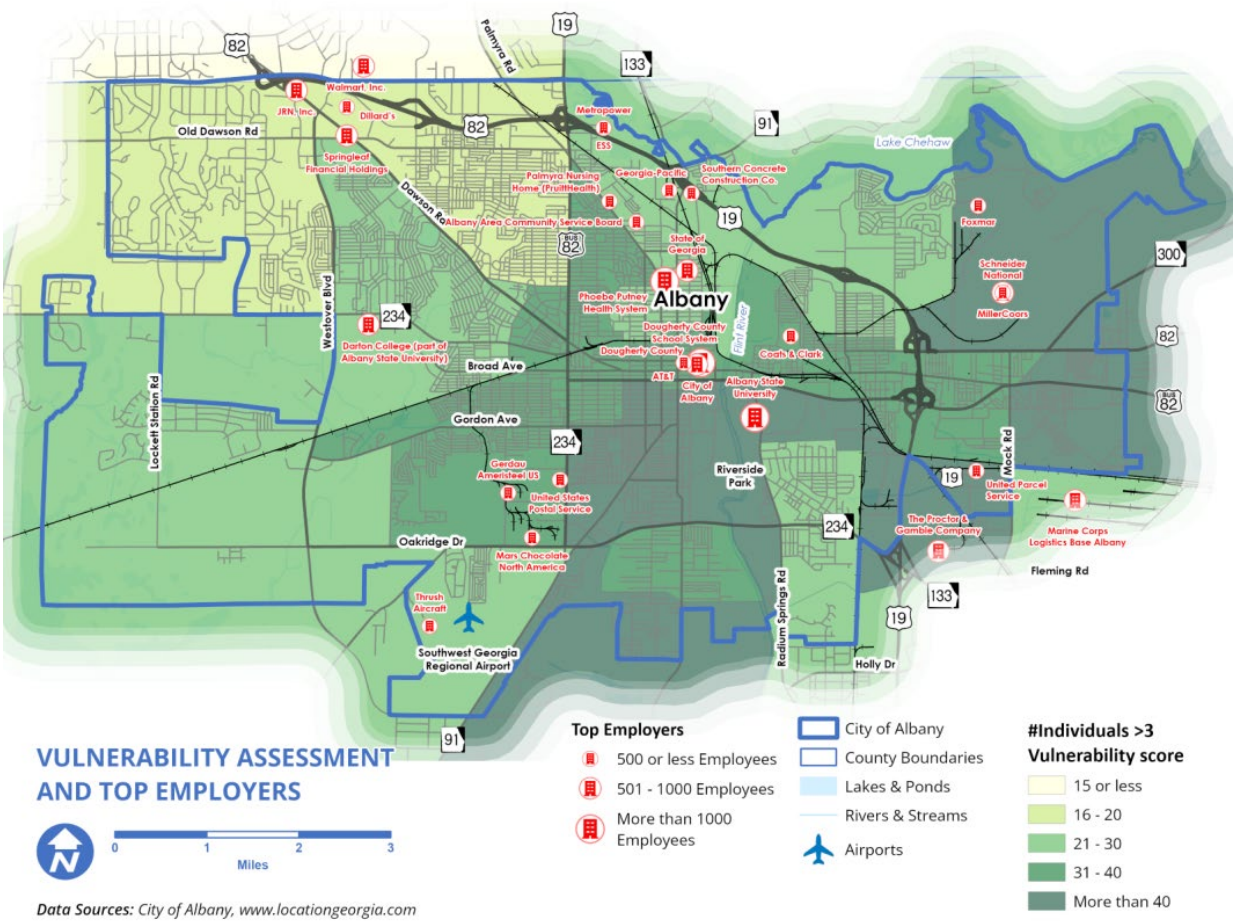
The number of risk factors is determined for each household if it meets the following criteria using demographic, socio-economic, and housing characteristics.

1. Income-to-Poverty Ratio (IPR) < 130 percent (Household)

2. Single or zero caregiver household - only one or no individuals living in the household who are 18-64 (Household)
3. Unit-level crowding with ≥0.75 persons per room (Household)
4. Communication Barrier defined as:
    a. No one in the household has received a high school diploma
    b. No one in the household speaks English "very well"
5. Aged 65 years or older
6. No one in the household is employed full-time, year-round. The flag is not applied if all residents of the household are aged 65 years or older (Household)
7. Disability, at least one serious constraint to significant life activity
8. No health insurance coverage
9. No vehicle access (Household)
10. Households without broadband internet access (Household)

The following map describes the areas with greater vulnerability and are defined by the number of people in a census tract that are classified as having 3+ risk factors.

Figure 8: Vulnerability Assessment and Top Employers.



In general, larger concentrations of vulnerable populations are situated in the eastern and southern regions of Albany. These vulnerable groups are also present in areas containing critical clusters, particularly within zones R-2 to R-5, underscoring the rationale behind establishing these clusters and highlighting the necessity for targeted attention in resilience planning for this area. In addition, the vulnerable populations are located near major employers and universities such as *Procter & Gamble*, Molson Coors, and Albany State University. Specifically, these vulnerable populations may lack sufficient resources to withstand the impacts of events.

# Section 5: Cascading Effects

## Overview

The cascading effects analysis identifies critical links in Albany's roadway network, identifying where and how disruptions of these links could have the greatest impact on travel times and accessibility between key trip origins and destinations, as well as the impact that failures might have on workforce access and residents' access to basic goods and services. The flooding of a vital thoroughfare, for example, could lead to delays in delivery times. Such logistical implications must be considered in the development of a comprehensive emergency management plan, as such delays can foment prolonged distress and discomfort among communities affected by disasters.

## Identification of Critical Links

Based on the methodology developed in **NCHRP 20-125: Incorporating Resiliency into Transportation Networks**, the critical links are identified by developing an index that considers three attributes:

1. Link is in the top 25% of links with the greatest trucking volume
2. The ratio of volume on the link to the maximum volume in each functional class
3. The ratio of volume-capacity ratio of the link to the maximum volume-capacity ratio of each functional class subset

Based on these attributes, an index is created (by assigning equal weights to 3 attributes) and a score is assigned to each link. The top 10 links with the highest scores are then visualized with other considerations such as the location of critical clusters, the presence of bridges along the network, as well as vulnerable populations. Finally, six links along the US-19 were identified and selected for further analysis.

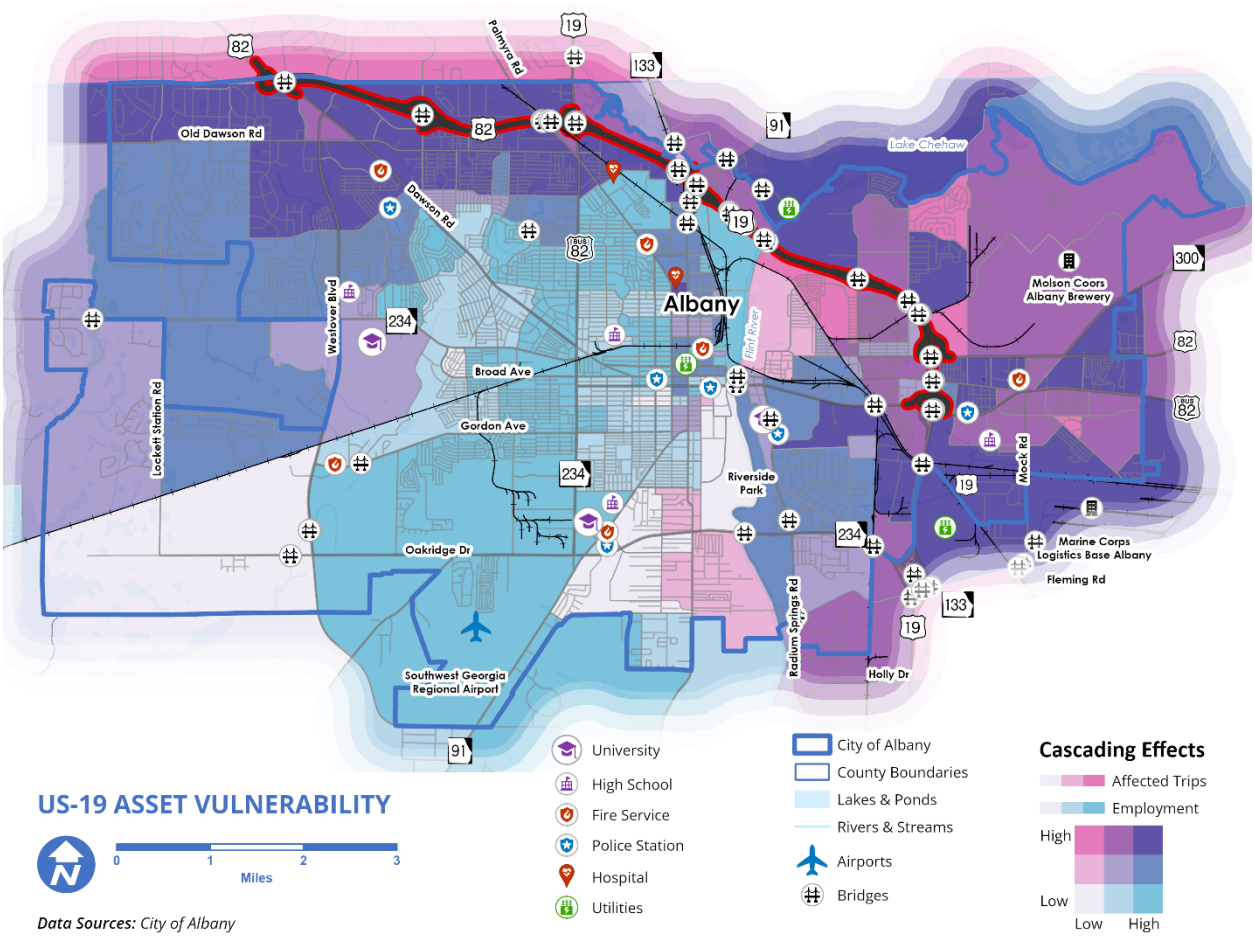
## Select Link Analysis and Cascading Effects

Following the identification of links, a select link analysis is conducted, which computes the number of trips and origin-destination of the trips that pass through the critical links. The results of this analysis are visualized in the following figure, which shows (i) affected zones, shaded by the volume of trips on the critical links (ii) specific vulnerable workforce in those zones.

The vulnerable workforce is identified as the number of residents within a zone who are employed in the following North American Industry Classification System (NAICS) work categories:

- Utilities
- Retail Trade
- Transportation and Warehousing
- Administrative and Support and Waste Management and Remediation Services
- Health care and social assistance
- Public Administration

Figure 9: US-19 Asset Vulnerability.



## Results

Natural disasters in Albany, Georgia, can trigger a series of cascading effects that significantly magnify the impact of the initial event, particularly when critical infrastructure such as US-19 highway is compromised. These interconnected disruptions highlight the vulnerability of essential services, and the broader socio-economic stability of the region.US-19 serves as a vital artery for movement in and around Albany, facilitating not only everyday commutes but also emergency responses and evacuations during crises. When this highway becomes impassable, whether due to flooding, severe storms, or other disaster-related damage, the effects ripple outward dramatically. First, evacuation becomes more challenging and dangerous. Without clear and accessible routes, residents may find themselves trapped or forced to use less safe secondary roads, increasing the risk of accidents and delays during critical periods.

The inaccessibility of US-19 also impedes emergency services, including fire, police, and medical aid, from reaching affected areas swiftly. This delay can exacerbate the initial impact of a disaster by slowing rescue and relief efforts, thereby increasing the potential for casualties and property damage. Moreover, healthcare access is crucially hindered. With the main route blocked, transporting patients to hospitals or medical centers becomes a logistic challenge, potentially increasing mortality rates associated with the disaster. Another critical aspect involves the maintenance of essential services such as electricity. The disruption of US-19 complicates the movement of technical teams and supplies necessary for the swift restoration of power, particularly to critical facilities like hospitals, such was the case with Phoebe Health which experienced power outages during Hurricane Michael.

The network disruption has a particularly detrimental effect on the areas near the edges of the city, as well as the areas in the eastern part. As shown on the map shows there is not a substantial impact on the downtown and the central area, which could primarily be linked to the availability of other alternative modes of transportation such as public transit. From the perspective of land use and zoning, the network disruption would have most dire effect on the residential areas, with some of the commercial areas near the US-19 corridor. The disruption in the network could significantly impact freight activities from prominent employers in eastern Albany, including The Proctor & Gamble Company, United Parcel Service, Marine Corps Logistics Base Albany, and Schneider National Miller Coors.

# Section 6: Goals, Objectives, and Policies

Addressing the cascading effects of natural disasters involves a multifaceted approach that includes revising land use strategies, enhancing infrastructure resilience, engaging with the community, and establishing public-private partnerships. Each of these components plays a critical role in fortifying the city against the compound challenges posed by natural catastrophes.

Land Use (Transportation, Utilities, Healthcare, Commerce): Current zoning regulations and land use patterns have inadvertently heightened Albany's vulnerability to natural disasters. The outskirts of the city, characterized by low-density residential areas, are particularly susceptible to flooding and

infrastructure failure due to inadequate drainage systems and a lack of flood protection measures. Meanwhile, the commercial and industrial sectors, concentrated near downtown and major transport corridors, face disruption risks that can have far-reaching impacts on the city's economy and the efficiency of its transportation networks. To address these vulnerabilities, there is an urgent need to reassess and update zoning regulations to promote a more diversified and resilient use of land. This could involve introducing mixed-use developments and flexible zoning practices to reduce dependence on specific transportation routes and enhance overall community resilience.

Infrastructure: Improving the resilience of Albany's infrastructure is crucial. This includes upgrading drainage systems, reinforcing buildings against extreme weather, and implementing green infrastructure solutions to better manage stormwater and reduce flooding risks. Strengthening the resilience of energy and telecommunications networks is also vital, ensuring that these critical services remain operational during and after disasters.

Community Engagement: Building resilience is a community-wide endeavor. Engaging local residents through workshops, outreach programs, and digital platforms is essential for raising awareness and empowering individuals with the knowledge and tools needed to protect their homes and neighborhoods. Promoting community-based initiatives, such as neighborhood watch groups and mutual aid networks, can enhance social cohesion and resilience at the local level.

Public-Private Partnerships: Collaboration between the public and private sectors can provide the necessary resources and expertise to advance resilience projects. By forging partnerships with local businesses, academic institutions, and non-profit organizations, Albany can draw on a diverse pool of ideas and innovations to tackle complex challenges. Financial incentives, such as revolving loan funds and grants, can further encourage private investment in resilient infrastructure and community projects.

## Goal: Enhance Resilience to Frequent Weather Events and Storms

**Objective 1: Diversify Land Use and Zoning**

1.1 Objective: Provide development incentives and parking and other supportive infrastructure for mixed-use developments and flexible zoning (with co-located residential and commercial uses) to reduce vulnerability and increase adaptive capacity.

1.1.1. Policy: Amend existing traditional zoning code to reflect the principles of US Green Building Council ***Model Resilient Zoning Code with Equity***, ensuring alignment with contemporary resiliency and equity considerations.

1.1.2. Policy: Incentivize homeowners and developers to incorporate resilience features into new projects, such as green roofs and flood-resistant design.

1.1.3. Policy: Conduct a comprehensive review of land use regulations and transportation networks to identify opportunities for diversification.

**Objective 2: Improve Infrastructure Resilience**

2.1. Objective: Enhance the resilience of infrastructure systems to mitigate the impacts of extreme weather events.

2.1.1. Policy: Conduct a comprehensive study that assess the current stormwater system, identify deficiencies, and propose suitable upgrades.

2.1.2. Policy: Upgrade stormwater and drainage systems and implement infrastructure solutions to improve stormwater management.

2.1.3. Policy: Reinforce critical infrastructure, including buildings, roads, bridges, and utilities, to withstand severe weather conditions.

2.1.4. Policy: Collaborate with utility providers to strengthen energy and telecommunications infrastructure to ensure continuity of services during disasters.

**Objective 3: Engage Communities and Stakeholders**

3.1. Objective: Empower residents and stakeholders to actively participate in resilience planning and implementation efforts.

3.1.1. Policy: Conduct outreach activities, workshops, and educational campaigns to raise awareness about resilience strategies and encourage community participation; implement a community-based framework for disaster preparedness and resilience.

3.1.2. Policy: Continue to grow community-based initiatives, such as neighborhood watch programs and mutual aid networks, to foster social cohesion and strengthen community resilience.

3.1.3. Policy: Leverage digital platforms and communication channels to facilitate ongoing engagement and feedback from residents and stakeholders.

**Objective 4: Foster Public-Private Partnerships**

4.1. Objective: Mobilize resources and expertise from public and private sectors to implement effective resilience projects.

4.1.1. Policy: Forge partnerships with businesses, academic institutions, and non-profit organizations to develop and implement resilience initiatives.

4.1.2. Policy: Establish revolving loan funds and grant programs to incentivize private sector investment in resilient infrastructure projects.

4.1.3. Policy: Create collaborative platforms and working groups to facilitate knowledge sharing, innovation, and coordination among stakeholders.

**Objective 5: Enhance state building codes with local codes for disaster resilient building**

5.1. Objective: Review and update building codes and regulations to ensure new construction and redevelopment projects incorporate resilience standards.

5.1.1. Policy: Review and supplement state building codes and regulations with local codes to ensure new construction and redevelopment projects incorporate and consider the adoption of Disaster Resilient Building Codes.

5.1.2. Policy: Provide training and technical assistance to building professionals, including architects, engineers, and contractors, to familiarize them with resilience requirements and best practices.

Table 2: Issues and Specific Needs Identified Through Initial Stakeholder Interviews

| Issues | Specific Needs |
|---|---|
| Benchmark Progress Towards Resiliency Goals<br><br>• Physical/Infrastructure<br>• Policies<br>• Business/Private Sector | - Identity the frequency and duration of Ice formation on bridges, and implement measures to prevent freezing in areas most identified as vulnerable<br>- Reinforce wastewater treatment plants to prevent discharges into the river during heavy rainfall events<br>- Map out the locations of light towers to have the largest reach<br>- Create a long-term plan for maintaining vacant lots & FEMA lots<br>- Ensure staff outside of the city and county are informed about the specific wiring and electrical techniques needed to service local utilities and fueling requirements for local services.<br>- Have regular information about vehicle readiness percentage<br>- Collect data on the number of damaged facilities and the amount of time that has passed since the damage<br>- Calculate the average recovery time for power and other utilities<br>- Test the reliability of diesel generators and pump stations<br>- Collect data on the number of medical appointments missed since a disruption event<br>- Identify the number and percentage of businesses that recover and the amount of time since a disruption<br>- Have up to date information about the capacity of shelters and the percentage of the community with access to shelters |

| | |
|---|---|
| Implement durable coalition (a coalition of permanent stakeholders not tied to a specific administration or election cycle) to implement solutions over time | - Regular meetings for Resiliency alliance (DARA) with specific goals and tasks<br>- Representation of the city, county, state, and private sector<br>- Bi-annual regional meetings to ensure resiliency practices and needs are being met<br>- Incorporating resident experts and institutions into planning procedure<br>- Improved redundancy and streamlined access to records among agencies, businesses, and other stakeholders involved in responding to disruptions<br>- Formal agreements, training, and standard rental agreements<br>- Alignment of goal timing and realization with political cycles<br>- A regularly updated and maintained web-based resiliency portal<br>- The implementation of a shared protocol for reporting and repairing property and infrastructure damage<br>- Consistent channels of communication and sharing of information<br>- Offer guidance on how to acquire National Incident Management Systems (NIMS) training and other responsibilities within various organizations |
| Identify and address staffing shortages in health care and other professions needed to respond to disruptions | - Case-based training of new staff in lessons learned from prior disruptions<br>- Active recruitment of additional health care, EMS, firefighters, and police<br>- Recruiting businesses into the city or region<br>Creation of reserve staffing arrangements with WebEOC and locally-based workers |

| | |
|---|---|
| Create more dispersed health care locations, especially in East Albany | - Ensuring level 2 trauma availability<br>- Improving access to telemedicine<br>- An identified plan for health care locations and access during power or transportation disruptions<br>- Protecting critical infrastructure, including power, transpiration, and utility access to key healthcare locations |
| Need to create awareness of resiliency roles and resources | - Creation of an online “one-stop-shop"<br>- Post card directories for those without internet<br>- Food, fuel, and medicine maps<br>- Resiliency awareness challenge video<br>- Pre-event training on resources, complementary roles and points of contact for agency and company staff |
| Identify gaps in local business offerings left by prior disruptions and strategies to recruit/replace | - Distribution of fuel and storage in case of disruptions<br>- Identification and elimination of food deserts<br>- Ensuring ample access to pharmacies<br>- Identifying the need for specialized health care<br>- Repurpose the former Coke bottling plant as a distribution center for disaster relief efforts |
| Ensure housing, shelter and homelessness prevention | - Ensuring mobile home communities and older housing have access to disaster relief<br>- Communicating plans to communities defined as being at-risk prior to disruptions<br>- Create transportation arrangements for at-risk housing locations<br>- Creation of re-housing timelines and strategies to prevent homelessness and out-migration |

| | |
|---|---|
| Integrate the Marine Corps base in addressing resiliency needs. | - Involvement of the Marine Corps Logistics Base; coordination with emergency response team<br>- Use of the base as an area for disaster relief coordination |
| Address transparency of the sources and uses of aid to the community after disruptions | - Build a strong relationship with local news media and community influencers<br>- Educate the public about the Resiliency Plan<br>- Infographics showing where aid resources come from, and how they are accessible<br>- Create a community portal with WebEOC |
| Address changes to building and zoning codes (and administration) to protect vulnerable/hazardous areas. | - Pinpoint specific areas for zoning or building code changes to support rebuilding<br>- Streamlining building and permitting costs during recovery periods<br>- Channel resources toward zoning needs during recovery periods<br>- Offer low-cost incentives for resilient features in building and zoning |
| Address fuel distribution and access during disruptions. | - Move from propane/ diesel to natural gas<br>- Allow for more than one fuel source<br>- Distribute trailers with fuel cells across the city |

## Narrative: Issues, Specific Needs, and Potential Solutions

Albany faces a range of natural hazards, such as severe weather events including tornadoes and hurricanes, which pose significant threats if not properly mitigated through coordinated efforts across various sectors. Effective communication is pivotal in these strategies, emphasizing the need for clear information sharing within agencies and with the public, enhancing transparency and trust. This can be supported by strengthening connections with media outlets. The establishment of robust record-keeping redundancies is another critical theme that emerged, ensuring that vital data is preserved and accessible during crises. It is essential that Albany's institutions and key agencies work together to develop and

promote public education and preparedness programs, which are crucial for fostering situational awareness before, during, and after disaster recovery phases.

In terms of physical infrastructure, specific needs have been identified, such as addressing the issue of ice formation on bridges. The implementation of anti-icing measures on particularly vulnerable bridges is proposed to prevent disruptions. Additionally, reinforcing wastewater treatment plants is crucial to prevent hazardous discharges during heavy rainfall, which could impact riverine systems and local water quality. There is also a highlighted need for more comprehensive flood mitigation strategies, including debris removal, which plays a significant role in maintaining clear and functional travel routes. Concerning power infrastructure, there is a push towards utilizing natural gas for generators to enhance energy resilience. The city is encouraged to explore various generator options and ensure proper training for their use.

Staffing challenges, particularly highlighted during the peak of the COVID-19 pandemic, showed the need for a more resilient approach to public health and transportation systems. Additional medical facilities, such as Phoebe East and a level 2 trauma center on the East Side, are under consideration. This period of crisis also saw significant inter-agency collaboration that supported essential services like food distribution.

Furthermore, potential collaborations, such as with the nearby Marine Corps base, should be explored to enhance Albany's disaster response capabilities. This includes integrating the base in disaster relief efforts; establishing a formal role in the city's resilience planning, providing another source of aid when local and state resources have been depleted.

Ultimately, tackling Albany's susceptibility to disaster-related events requires a comprehensive approach that includes infrastructure improvements, community involvement, and strategic collaborations. These efforts aim to enhance Albany's resilience, safeguard vulnerable communities, and promote sustainable development, ensuring the city is better prepared for future challenges.

# Appendix 3 Resiliency Supportive Policies and Actions

## Strategy 1: Address Staffing Shortages

### *The Need to Address Staffing Shortages*

Albany faces significant challenges in maintaining adequate staffing capacity for its essential emergency services, as well as its utilities and educational sectors. The scarcity of affordable housing poses a critical barrier to attracting and retaining qualified professionals in these fields. Medical staff, including doctors and nurses, are particularly impacted as the high cost of living makes it difficult to relocate or remain in the area. The lack of available land for development further exacerbates this issue, limiting opportunities for new housing projects that could alleviate the burden. The declining population following the COVID-19 pandemic compounds these issues, as it reduces the tax base and, subsequently, the funding available for public services and infrastructure improvements, including housing.

The fire department has managed to avoid major staffing shortages through recruitment drives and campaigns; however, there is still a shortage of 911 dispatchers due partly to the long training process, which is handled by the state and not the city. During previous disaster events, the fire department has worked with the marine base to relieve some pressure on the staff. There is little cooperation with private individuals, and the fire department does not have a dedicated volunteer corp. However, organizations and citizens are allowed to attend the regular tabletop meetings.

The utilities department, particularly the water department, has cited numerous vacant positions, some of which have been unfilled for several years. This is due to the utility department being outpriced by private corporations and the marine base. The department's salary is much lower, and the benefits offered have been enough to attract more applicants.

Further, numerous certifications are required to be hired, which are expensive and take many months to acquire. While the department helps people acquire these certifications, employees often leave for higher-paying jobs.

The transit department faces a shortage of drivers, technicians, and operators. These issues have persisted for some time but have worsened since the Covid-19 pandemic. The transit department has attempted to address this through recruitment drives, billboard advertisements, social media posts, quarterly job fairs, and incentives such as a $1,000 signing bonus. However, this has done little to address the staffing shortages. It is speculated that lingering fears about COVID-19 and job loss to corporations are the main roadblocks in hiring new workers.

### *Key Indicators of Staffing Capacity*

To measure current and future staffing shortages in emergency services in Albany, key indicators must encompass both quantitative and qualitative metrics. For medical services, indicators include the nurse-

to-patient ratio, the number of EMTs available per shift, and response times to medical emergencies. Additionally, monitoring vacancy rates, turnover rates, and the duration of job postings for medical personnel can provide insight into staffing challenges and recruitment difficulties.

In the realm of fire and police services, key indicators involve the number of active-duty firefighters and police officers relative to the population size, average response times to emergencies, and the frequency of overtime hours worked, which can signal understaffing. Metrics such as the rate of call volumes per service member and the proportion of emergency calls that receive a timely response are essential for understanding the operational strain on these services. Additionally, evaluating the attrition rates, the length of training periods, and the backlog of unfilled positions can provide a clearer picture of potential future shortages.

### *Suggested Actions and Roles*

| Action | Agent | Resources | Timing |
|---|---|---|---|
| **Case-based training of new staff in lessons learned from prior disruptions** | Albany Fire Department, Albany Police Department, Phoebe Putney Health System, Albany Utilities Administration | Data collected from prior disasters within digital formats<br><br>Physical assessments done after disasters<br><br>AWIA document with all water-related planning documentation<br><br>EPA correspondence information<br><br>Tabletop meeting planning documents<br><br>Previous versions of | Utility procedures are updated bi-yearly<br><br>It generally takes a couple of months to prepare training books and other materials<br><br>Tabletop drills are done bi-yearly<br><br>It takes a few weeks to complete post-disaster physical assessments |

| Action | Agent | Resources | Timing |
|---|---|---|---|
| | | procedural updates | |
| **Active recruitment of additional health care, EMS, firefighters, and police** | Albany Fire Department, Albany Police Department, Phoebe Putney Health System | WALB TV ad campaigns<br><br>Social media campaigns<br><br>Recruitment booths in public places such as malls<br><br>Certification and training programs | Ad campaigns can begin with a few weeks of preparation<br><br>Recruitment booths can be done on weekends and allows potential hires to apply on the spot<br><br>6-months to train firefighters, longer for 911 dispatchers<br><br>Train more emergency utility workers to cover shifts during vacancies |
| **Recruiting businesses into the city or region** | Albany Chamber of Commerce, Albany Planning and Development Services | Lack of engineers and surveyors<br><br>Lack of accountants<br><br>Lack of nurses<br><br>Lack of teachers | Year over year expansion of around 5-10%<br><br>Beautification litter clean-up projects need to be taken underway<br><br>New houses must be built to attract middle-income workers<br><br>Land must be cleared responsibly to |

| Action | Agent | Resources | Timing |
|---|---|---|---|
| | | Shortage of housing and land<br><br>Large student population (16,000 students)<br><br>Georgia Pacific Lumber Facility<br><br>Procter and Gamble<br><br>Press industries<br><br>Small manufacturing plants<br><br>Marine base | make way for new houses |
| **Creation of reserve staffing arrangements with WebEOC and locally based workers** | Albany Fire Department, Albany Police Department, Phoebe Putney Health System, Albany Utilities Administration | AWIA planning document<br><br>All fire department correspondence<br><br>Physical assessment data that is collected | All data and documents must be digitized in a standard format<br><br>A WebEOC program must be created<br><br>A timetable must be established for a regular uploading of data and training documents |

| Action | Agent | Resources | Timing |
|---|---|---|---|
| | | Transit department training documents<br><br>Medical staff training documents<br><br>Fire department training material | Regular analysis of the uploaded documents must be done so that a city-wide planning document can be created<br><br>Regular inter-department tabletop planning sessions must be planned |

## Strategy 2: Disbursed Health Care Locations

### *Need to Address Disbursed Health Care Locations*

According to information from stakeholders and community members, there is significant concern for the disbursement and accessibility of healthcare resources throughout the city – especially for the municipality's eastern and southern regions. Major providers of emergency health care are operated by The Phoebe Putney Health System, which owns and operates Phoebe Putney Memorial Hospital and Phoebe North Campus.

Among members of the community who were engaged on the topic of the Phoebe Putney Health System, perceptions of the quality of care and promptness of service were mixed. Some are critical of the skill and turnover rates of staff members. Others, recognizing the novelty and severity of the COVID-19 pandemic, praised the hospital's response to this event. Further, community members expressed dissatisfaction with the length of emergency room wait times. Those who are unable to leave their residences must be provided with medical care, with home visits and/or telehealth appointments. To maximize accessibility to telehealth services, broadband internet access should be made available for socioeconomically disadvantaged populations, or those who are otherwise not able to access reliable internet connections where they live. The people of Albany should be made aware of options and procedures for telehealth and home care services. The Albany Resiliency Plan should account for individuals who may not be able to afford (or may even be skeptical of) hospital care. Phoebe Putney Memorial Hospital also operates

mobile health clinics. In the event of an emergency or major disaster, these clinics could be repurposed to provide essential medical services to disproportionately impacted areas of the city.


However, none of this will be feasible without manageable staff-to-patient ratios, a persistent issue for the health system since the COVID 19 pandemic.

### *Options for Achieving Disbursed Health Care*

The city should invest time and money to establish closer, sustained connections with the Phoebe Putney Health System. This will allow municipal emergency management personnel to tailor protocol, transparency, and rapport with integral health services in disaster scenarios. These partnerships will facilitate recovery, relief, and rehabilitation efforts appropriate to the implications of specific types of hazards. The critical infrastructure sustaining and surrounding these services, such as vital thoroughfares, must also be managed to ensure accessibility. Lastly, this plan should be public facing; emergency management personnel and medical staff must be aware of the needs, sentiments, and conditions of various communities in Albany, understanding which residential areas are the most at risk, and how social determinants of health (race, class, sex, gender, income, etc.) may necessitate more responsive and sensitive approaches, especially in the event of a major disaster.

In disaster response scenarios, voluntary organizations like the American Red Cross play a pivotal role in providing medical care in the field. Depending on the nature of the community response, these organizations can provide community volunteers with first aid equipment, medical personal protective equipment (PPE), and even tetanus shots (for volunteers working with tools and debris). These organizations should collaborate with the Phoebe Putney Hospital System and other medical providers to facilitate exchanges of relevant medical information, develop triage strategies, and direct the flow of fresh medical supplies and personnel to areas with the most needs. Recently, Phoebe Putney Memorial Hospital has undertaken a project to expand their ER. When construction is completed, this will ameliorate concerns over capacity and efficacy of emergency care on blue sky days. This expansion should also be primed to handle patient surges in disaster scenarios.

### *Suggested Actions and Roles*

| Action | Agent | Resources | Timing |
|---|---|---|---|
| **Improve access to telemedicine for low-income and elderly populations** | Phoebe Putney Health System (PPHS); Phoebe Putney Memorial Hospital (PPMH)<br><br>Southwest Georgia Public Health District | TeleHealth services from PPMH<br><br>Public internet access; hotspots from the Dougherty County Public Library | To be established and implemented before disaster strikes |
| **An identified plan for health care locations and access during power or transportation disruptions** | Phoebe Putney Health System<br><br>Southwest Georgia Public Health District<br><br>Local voluntary organizations (i.e., the Red Cross)<br><br>Local EMS services | Phoebe Mobile Wellness Clinics<br><br>Public transportation services<br><br>Volunteers<br><br>EMS employees | As soon as public health, EMS services, and PPHS convene with the City of Albany on this issue |
| **Develop capacity for mobile health care (i.e., house visits)** | Phoebe Putney Health System<br><br>Local EMS services<br><br>Southwest Georgia Public Health | Phoebe Home Health<br><br>Nurses | Must be implemented as soon as these locations are accessible to medical personnel |

| Action | Agent | Resources | Timing |
|---|---|---|---|
| | District | | |
| **Protecting critical infrastructure, including power, transpiration, and utility access to key healthcare locations** | Phoebe Putney Health System<br><br>Public Works Department<br><br>Albany Transit System<br><br>Albany Traffic Division | Phoebe Mobile Wellness Clinics<br><br>Public transportation services | Critical lifelines must be reestablished as soon as possible; without access to power, roads, or other vital utilities, subsequent disaster recovery endeavors cannot feasibly proceed |

## Strategy 3: Increased Awareness & Visibility of Roles and Resources

### *Need to Address Disbursed Increased Awareness of Roles and Resources*

In disaster/emergency scenarios, the public must be made aware of the roles, responsibilities, and activities of the agencies/organizations involved in response, recovery, and rehabilitation efforts. Interfacing with the community must be facilitated through trusted multimedia outlets. Key information resources should be established, updated, and disseminated regularly. This includes – but is not necessarily limited to – the creation of an online web portal, sharing information with local news media (televised, online, via radio broadcasts, and in newspapers), and holding public meetings in accessible locations. Information reported via press conferences should be made accessible to the public. Sources of aid should be readily identified as soon as they are available, and the City of Albany must facilitate this process wherever possible, keeping records of aid sources and publishing reports for posterity and precedence for future disruptions. These records should be made available upon request via the City of Albany website, preferably through the Albany Community Resilience Portal. Hard copies should also be printed and made available in local archives, libraries, and government buildings.

### *Specification for Community Resilience Portal*

The Albany Community Resilience Portal should be accessible to the public at all times. This portal should provide up-to-date information on disaster/emergency management response, recovery, and rehabilitation efforts as they develop. Information should be as clear, succinct, and accurate as possible.

Links to external resources should also be provided, including a brief description of the aid source(s), eligibility requirements, and deadlines.

The public should be made aware of local voluntary organizations active in disaster (VOADs), nonprofit organizations, and government programs (local, state, or federal), which incentivize hazard mitigation strategies. The portal should provide clear, relevant information about power outages, public health statistics, food/water accessibility, healthcare, transportation, shelters, internet access, a severe weather monitoring system, contact information for key personnel, and an incident reporting system. This portal may take data directly from the WebEOC internal portal, which circulates data and communications among various agencies and organizations. These entities must opt-in to share their data, with the understanding that any information they share can be made available to the public via the Albany Community Resilience Portal. Lastly, to cultivate cultures of preparedness and accessibility in Albany, the portal should provide tips and opportunities to engage in preparedness activities within the community, complete with engaging video tutorials, infographics, photographs, and maps.

For examples of resilience network portals elsewhere in Georgia, the Savannah, GA Resilience Network is ideal. It can be found at https://www.savannahga.gov/2938/Resilience-Network.

Another example comes by way of Chatham County, GA and the RESILIENT CHATHAM COUNTY page at https://www.chathamcountyga.gov/OurCounty/Resiliency.

This portal should provide information consistent with information provided by Ready.gov (https://www.ready.gov) and organizations specializing in the fields of disaster/emergency management, such as the Red Cross (https://www.redcross.org/get-help/how-to-prepare-for-emergencies/make-a-plan.html). Plans specific to Albany and Dougherty County must be tailored accordingly, considering economic, historical, cultural, environmental, and geographic implications particular to the region.

### *Suggested Actions and Roles*

| *Action* | *Agent* | *Resources* | *Timing* |
|---|---|---|---|
| **Creation of a portal via WebEOC** | Dougherty County Emergency Management Services | Funds, technology (computers, cameras, scanners, etc.), the Albany and Dougherty County websites, and trained personnel | Depends on when emergency planners can convene to discuss internal entities and digital resource allocation |
| **Post card directories for those without internet** | Dougherty County Emergency Management Services | Personnel, printing services, addresses, census data, geographic and demographic data | As soon as disaster mitigation and Resiliency planning has been developed |

## Strategy 4: Address Economic & Business Gaps Left by Former Disruptions

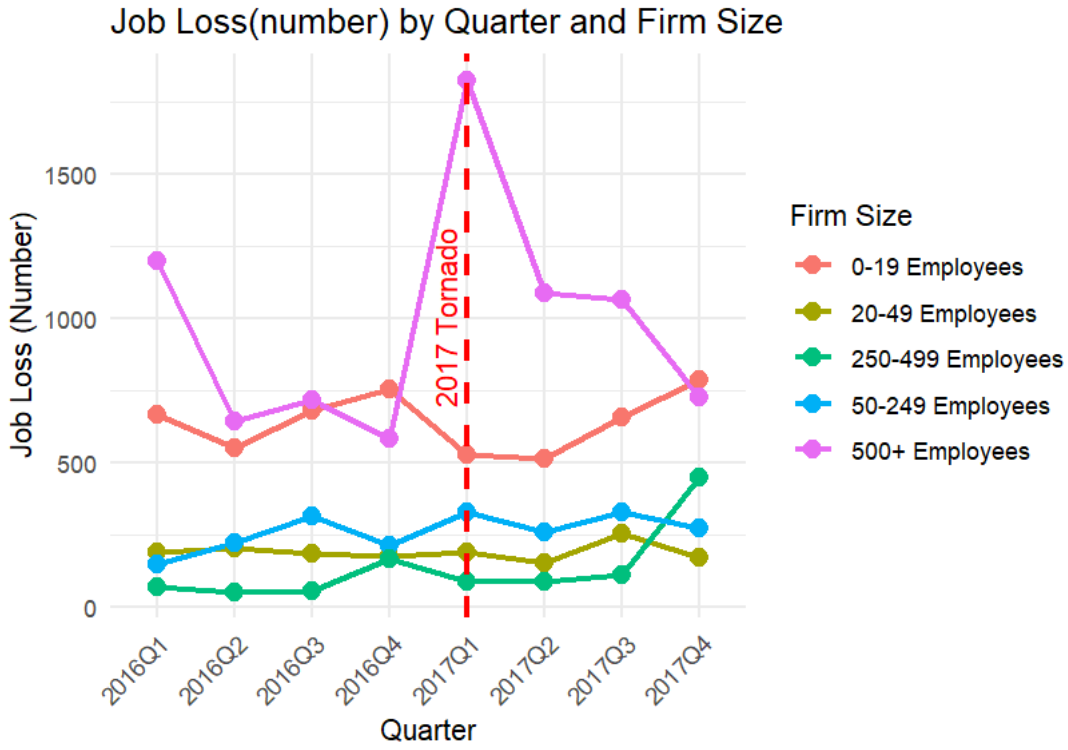
Disruptions from natural disasters and pandemics have been known to destabilize Albany's economy exacerbating existing inequalities, reducing productivity, and hindering sustainable development. Addressing these gaps is crucial for restoring economic stability, fostering inclusive growth, and enhancing the resilience of Albany against future shocks.

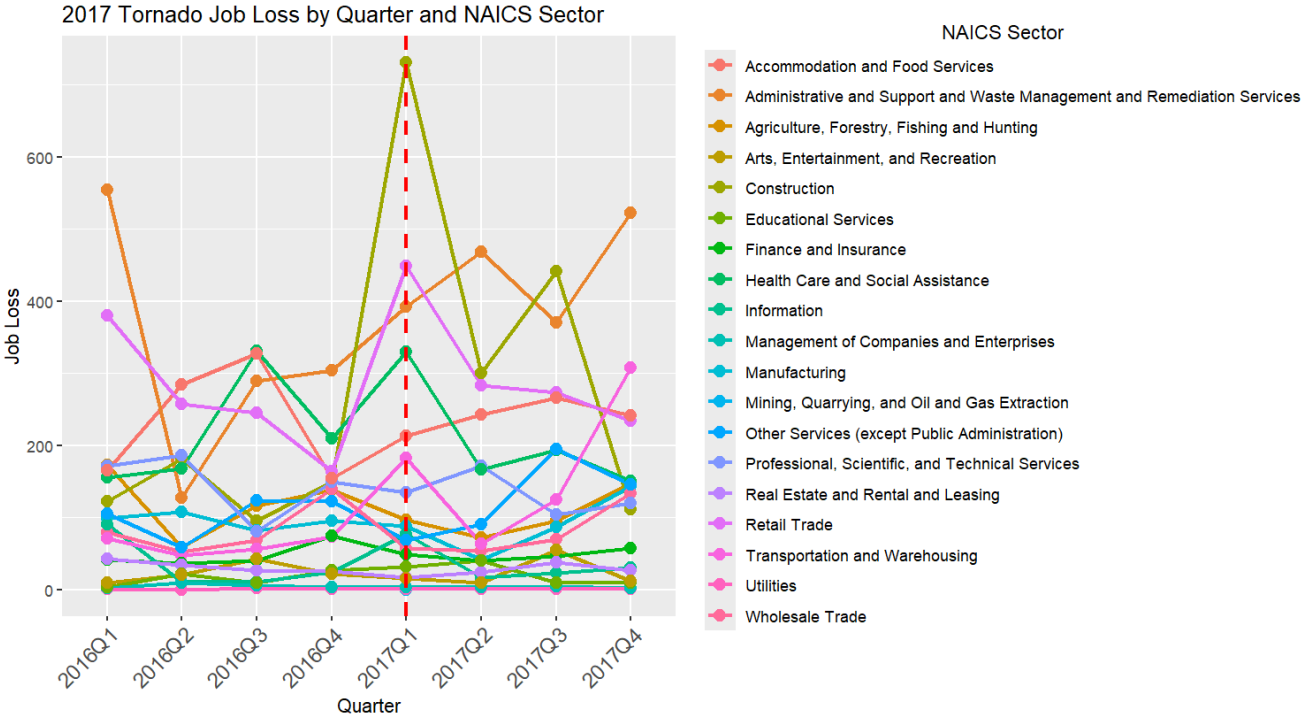
To understand the economic consequences of disruptions in Albany, a before and after analysis of 2017 tornado and COVID-19 (2019/20) is conducted, to answer the following questions:

- What kind of jobs were most impacted?
- What kind of services or businesses were lost due to the disasters?
- How many jobs were lost after the disaster?

### *2017 Tornado*

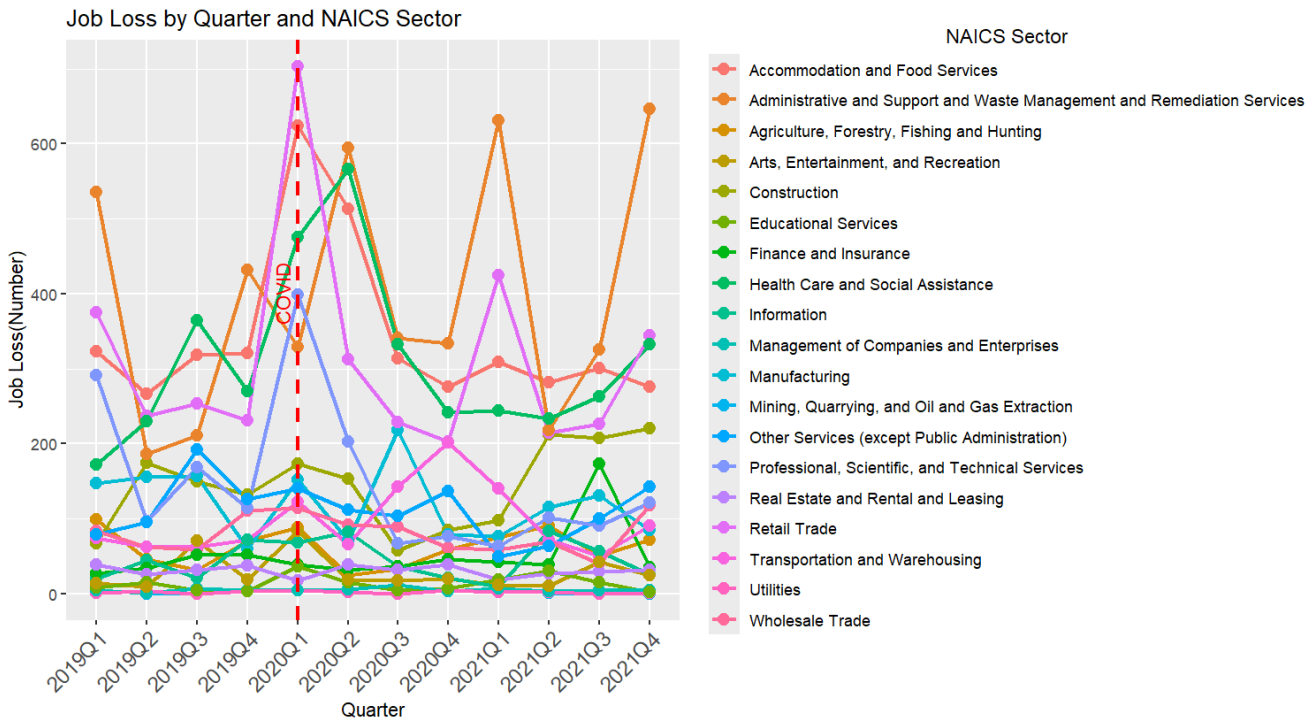
A before and after analysis of the 2017 tornado is conducted to understand the changes in employment across Dougherty County using the Longitudinal Employer-Household Dynamics (LEHD) database. It is observed that there was a critical impact of the 2017 tornado, mostly on the larger firms (establishments of sizes 500+ Employees), which saw over 1500 loss of jobs. These include some of the industries in Albany such as Proctor and Gamble, MillerCoors, and Mars Chocolate North America.




Looking at the industry-specific impacts, most job losses were seen in the industry sectors related to construction, real estate, retail trade, health care, and social assistance.

Comparing the employment loss with COVID-19, it is seen that it was mostly in retail trade, real estate, healthcare, and social assistance.




Overall, job loss tends to be higher during the quarter when disruptive events occur, as employees often transfer to other industries or locations. However, the employment situation typically stabilizes when examining jobs six months to a year after the disruption.

The table below illustrates the change in the number of establishments by size in Dougherty County between 2016 and 2017. According to LEHD employment data, the county experienced a decline in establishments within the construction, retail trade, real estate, and professional industry sectors due to the 2017 tornado. Although these sectors vary in size, the most significant impact was observed in small to medium-sized establishments.

| 2012 NAICS code | Meaning of NAICS code (NAICS2012_LABEL) | Employment Size | 2016 | 2017 | Difference |
|---|---|---|---|---|---|
| 00 | Total for all sectors | All Establishments | 2,276 | 2,250 | -26 |
| 00 | Total for all sectors | 1 to 4 employees | 1,030 | 1019 | -11 |
| 00 | Total for all sectors | 5 to 9 employees | 497 | 492 | -5 |

| | | | | | |
|---|---|---|---|---|---|
| **00** | Total for all sectors | 10 to 19 employees | 359 | 353 | -6 |
| **00** | Total for all sectors | 10 to 19 employees | 237 | 236 | -1 |
| **00** | Total for all sectors | 50 to 99 employees | 105 | 95 | -10 |
| **00** | Total for all sectors | 100 to 249 employees | 36 | 39 | 3 |
| **00** | Total for all sectors | 250 to 499 employees | 7 | 12 | 5 |
| **00** | Total for all sectors | 500 to 999 employees | 4 | 3 | -1 |
| **00** | Total for all sectors | 1,000 employees or more | 1 | 0 | -1 |
| **23** | Construction | All Establishments | 112 | 107 | -5 |
| **44-45** | Retail trade | All Establishments | 457 | 441 | -16 |
| **53** | Real estate and rental and leasing | All Establishments | 119 | 114 | -5 |
| **54** | Professional, scientific, and technical services | All Establishments | 228 | 214 | -14 |

### *Potential Strategies to Attract, Create, Expand or Retain At-Risk Business*

Below are some potential strategies that can help businesses to recover faster and help reduce the financial loss and loss of employees.

### *Suggested Actions and Roles*

| *Action* | *Agent* | *Resources* | *Timing* |
|---|---|---|---|
| **Build resources guide for businesses during and after disruption events/Provide knowledge about federal grants that are** | Albany Chamber of Commerce, Albany City, Televised and online news stations (i.e., WALB [NBC], WABW [PBS], WFXL [FOX31], WSWG [CBS]), radio stations, and other | Proper information about the disaster recovery efforts, information about insurance scams, engaging individually with small to medium-sized businesses | Established protocol of information dissemination should be developed beforehand. It is critical to ensure that businesses get real-time, accurate and the same information from all different resources. This process should start immediately before/during |

| Action | Agent | Resources | Timing |
|---|---|---|---|
| **available** | news outlets like the Albany Harold newspaper | more frequently, and knowledge of grant services, availability of loans etc.<br><br>All this information can be provided through local news, Facebook/other media. Press conferences in coordination with the agents are particularly helpful. | the events and continue until things become stable. |
| **Coordinated efforts from all major players** | Albany City,<br><br>Albany Chamber of Commerce,<br><br>Dougherty County Emergency Management Services | Building a recovery task force including all major players. Personnel from fire departments, utility departments, county and city, and chamber of commerce, plus local community stakeholders | A well-defined protocol of how the recovery task force is structured, and the roles/responsibilities of members should be already established, even though the recovery task force initiates after the disaster event. |
| **Towards sustainable energy resources, and power backup** | Albany Utilities Administration, Municipal Gas Authority of Georgia, Municipal Electric Authority of Georgia, | Marine Corps Logistics Base Albany has off-grid power.<br><br>Generators and | Coordinated efforts to secure alternative energy sources are required pre-disaster.<br><br>Coordination during disaster events is critical. |

| Action | Agent | Resources | Timing |
|---|---|---|---|
| **plan** | private distributors, and government contractors | power-backup plans were initiated at every major department.<br><br>Identify and develop alternative energy sources to enhance redundancy during power cuts. | |
| **Ensure adequate communication** | Albany City,<br><br>Albany Chamber of Commerce,<br><br>Local and private internet service providers | Develop hotspots around the communities, and free internet in government buildings.<br><br>Provision of internet by coordination between city, and local internet service providers | Ensuring communications is vital during a disaster event and post-recovery efforts. |
| **Information sharing and insurance plans/claim support for employees** | Local businesses,<br><br>Albany Chamber of Commerce,<br>Albany City | Human resources | Especially after the disaster, employees that have financial losses can be helped to claim insurance. Businesses can provide incentives to employees to sustain their overall employment. Proper communication about the recovery efforts to employees is essential. |

## Strategy 5: Create Transparency in Sources and Uses of Aid

### *Need to Address Economic Gaps Left by Disruptions*


In stakeholder meetings, ethnographic fieldwork, and the economic impact research conducted by Metro Analytics, disruptive events, have proven detrimental to the economy of Albany. These difficulties were evident in the wake of the 2017 tornado, which many are still recovering from. These struggles are exacerbated by an overall lack of transparency with the public about available resources, insurance policies, hazard mitigation strategies, and generally frustrating communication experiences common to bureaucratic systems. The resilience strategy should thoroughly address the need for clarity at all stages of emergency management, establishing networks and protocols pertaining to media relations and communications technology. This also extends to communications with various nonprofit organizations active in disaster response and recovery, such as Samaritan's Purse. The public must be aware of efforts to respond to, recover from, rehabilitate, and mitigate hazards, emergencies, and disasters as they develop. Efficacy is contingent on technological and social networks to convey information promptly. Emergency management personnel should also be sensitive to communication and literacy barriers and varying levels of trust for certain media outlets. An effective strategy will include– but is not necessarily limited to – creating a public-facing web portal, regular correspondence with news media, ad campaigns, and public education on preparedness strategies and aid procurement.

### *Potential Strategies to Increase Aid Transparency*

Partnerships with local media outlets are essential in maintaining clear, cordial, and comprehensive public relations. Likewise, regular communications must be developed internally among agencies and relevant emergency management personnel. This can be facilitated through regularly scheduled meetings to discuss strategies for civic engagement with hazard mitigation and preparedness. Public meetings must also be held to address the community's needs in their own words. These meetings should inform emergency management policy and planning and not be conducted after decisions on these fronts have been effectively established. In an emergency, press conferences should also be held to provide transparency with the news media and, in turn, the public. Lastly, social media outlets are increasingly vital in disseminating disaster information as they develop in real time. However, this requires access to an internet connection, which many in Albany may not have. Optimal communications now largely depend on some form of high-speed internet access and, as such, must be factored into plans for resilience.

### *Suggested Actions and Roles*

| *Action* | *Agent* | *Resources* | *Timing* |
|---|---|---|---|
| **Build a strong relationship with local news media and community influencers** | Televised and online news stations (i.e., WALB [NBC], WABW [PBS], WFXL [FOX31], WSWG [CBS]), radio stations, and other news outlets like the Albany Southwest Georgian and Albany Harold newspapers<br><br>Albany Technology and Communications<br><br>Dougherty County Emergency Management Services | Time and personnel who are able and willing to establish protocol for regular communications with news media | Relationships with news media should already be established; in the event of an emergency or major disaster, protocol should be outlined for when, where, and how the media will be expected to cover these situations as they develop |
| **Educate the public about the Resiliency Plan** | Albany Technology and Communications<br><br>Dougherty County Emergency Management Services | News media, telecommunications, informative websites, civic centers, schools, trained emergency personnel, and incentives for the community to engage | Educational materials should be drafted as soon as qualified community education personnel can assemble to organize it; these materials and workshops should be disseminated and conducted throughout the year, and periodically advertised on websites, social |

| *Action* | *Agent* | *Resources* | *Timing* |
|---|---|---|---|
| | Local Voluntary Organizations Active in Disaster (VOADs) | in preparedness activities | media, newspapers, and local television |
| **Create infographics showing where aid resources come from, and how accessible they are** | Dougherty County Emergency Management Services | Personnel who have experience creating infographics and an understanding of systems thinking; synthesizing information into clear, appropriate, and actionable recommendations | As soon as a community web portal is established, relevant data is compiled, and data analysts can visualize it |
| **Create a community-facing portal with data from WebEOC** | Dougherty County Emergency Management Services<br><br>Albany Technology and Communications<br><br>All agencies who wish to provide data for the proliferation of this portal | The Dougherty County website<br><br>The City of Albany Georgia website<br><br>IT specialists | To be established within 1-2 months of adoption |

## Strategy 6: Address Infrastructure, Building and Zoning Codes

### *The Need to Address Infrastructure Building and Zoning*

The need to promote land use and infrastructure resiliency in Albany is rooted in a thorough analysis encompassing current land use patterns, zoning regulations, and vulnerability assessments. This examination revealed vulnerabilities, particularly in low-density residential areas at the city's edges, which lack adequate infrastructure and access to essential services during weather events. Moreover, the analysis highlighted shortcomings in existing zoning codes, indicating a deficiency in prioritizing accessibility in land use planning. Comprehensive vulnerability assessments underscored the imperative to enhance infrastructure resilience and improve building standards to mitigate risks posed by frequent weather events, storms, sinkholes, and droughts.

Thus, the strategy is designed to achieve several key objectives: enhancing infrastructure resilience by prioritizing accessibility in zoning codes and development projects, improving building standards to ensure equitable access and withstand weather events, revising zoning codes to align with resilience goals, and fostering sustainable development. Specifically, it aims to address the risks posed by frequent weather events, storms, sinkholes, and droughts. By addressing these challenges, Strategy 6 aims to mitigate risks, protect vulnerable areas, and promote inclusive and sustainable development across Albany.

### *Recommended Changes in Zoning*

1. **Promote Land Use Accessibility**: Amend zoning codes and maps to encourage land use accessibility, enhance community resilience and reducing dependency on transportation networks during disasters.

2. **Flexibility in Zoning**: Update zoning regulations to allow for greater flexibility in land use, enabling adaptation to changing environmental conditions.

3. **Incentivize Resilience Features**: Incentivize developers and homeowners to incorporate resilience features into projects, such as green infrastructure, flood-resistant design, and drought-resistant landscaping.

4. **Waivers and Variances:** In times of emergency or disaster, the City acknowledges its responsibility to adapt swiftly to evolving circumstances while ensuring the safety and welfare of its residents. Therefore, the City should explore its ability to grant variances or waivers of specific building and zoning regulations when it is demonstrated that such regulations are not applicable, or when there is a need to explore new and innovative approaches in service delivery.

### *Recommended Changes in Building and Development Policy (Fee Waivers Etc)*

1. **Disaster Resilient Building Codes**: Review and consider adoption of new building codes to ensure compliance with Disaster Resilient Building Codes, incorporating resilience standards into new construction and redevelopment projects.
2. **Technical Assistance**: Provide training and technical assistance to building professionals to familiarize them with resilience requirements and best practices.
3. **Fee Waivers and Incentives**: Consider offering reduced fees or development incentives to developers who integrate resilience features into their projects.

### *Recommended Infrastructure Improvements*

1. **Stormwater Management Upgrades**: Conduct a comprehensive study to assess stormwater systems, identify deficiencies, and propose suitable upgrades.
2. **Infrastructure Reinforcement**: Reinforce critical infrastructure, including buildings, roads, bridges, and utilities, to withstand severe weather conditions.
3. **Collaboration with Utility Providers**: Collaborate with utility providers to strengthen energy and telecommunications infrastructure, ensuring continuity of services during disasters.
4. **Alternative Transportation Route Study:** Conduct a study to identify and evaluate alternative transportation routes to ensure continuous accessibility and connectivity for residents, emergency services, and essential goods and services during disruptions caused by weather events and disasters. This includes assessing the vulnerabilities of key transportation routes, proposing upgrades, and integrating these routes into broader land use and infrastructure resiliency strategies.

**Water Supply Facilities Work Plan:** Ensure future land use plans are based on sufficient water supplies, public facilities, and services. Specifically, proposed amendments to the Future Land Use Map, which would increase allowable density and intensity, must include data and analysis demonstrating that adequate water supplies and associated public facilities are available to meet projected growth demands. The Apalachicola-Chattahoochee-Flint (ACF) River Basin Drought & Water exercise and reports available to the city of Albany can serve as a starting point for evaluating water sufficiency under historical and projected drought trends.

| *Action* | *Agent* | *Resources* | *Timing* |
|---|---|---|---|
| **Amend zoning regulations to promote land use accessibility** | Planning and Development Services | Technical expertise, stakeholders, consultants | Within one year of adoption |

| Action | Agent | Resources | Timing |
|---|---|---|---|
| **Review and update building codes to incorporate resilience standards** | Development Services (Permitting & Inspection) | DCA Permissive Codes (IBC & IRC), expert input, training programs | Within six months of adoption. |
| **Conduct a comprehensive study of stormwater systems** | Engineering Department | Engineering expertise, funding | Within six months of adoption |
| **Conduct alternative transportation route study** | Engineering Department. | Transportation planners, GIS and traffic data, funding. | Within six months of adoption |
| **Work with Georgia EPD and Lower Flint-Ochlocknee Water Planning Region to identify and plan for water supply sources and facilities needed to serve existing and new development within Dougherty County and City of Albany's jurisdictions sufficient for long-term drought trends and projections.** | Development Services and Utilities. | Engineers, planners, environmental scientists | Within one year of adoption. |

## Strategy 7: Address Fuel Disruption and Access

### *Need to Address Fuel Disruption and Access*

Albany faces challenges regarding fuel accessibility and generator usage during major disruptive events like Hurricane Michael in 2018. During Hurricane Michael, the city's inability to access its fuel storage sites and generators became a critical issue. The storm's severe impact on infrastructure made it difficult for city workers and technicians to reach these crucial sites. Roads were blocked by debris, and communication was hampered, which further strained efforts to coordinate fuel distribution and generator activation. Further, the lack of accessibility to fuel storage sites meant that essential services were at risk of being interrupted, potentially endangering lives and exacerbating the overall crisis.

Compounding these access issues is the city's lack of a cohesive emergency plan for fuel and generator management. During the hurricane, technicians and personnel struggled to understand how to access

and operate the generators. The absence of clear guidelines and protocols led to inefficiencies and delays.

Persistent staffing shortages exacerbate these problems, as there are not enough personnel to manage and respond to the issues that arise during a disaster. With a limited workforce, the city's ability to implement emergency protocols is significantly hindered. Staffing shortages have resulted in fewer hands to clear debris, fewer technicians to repair damaged infrastructure, and fewer officials to coordinate the response.

### *Recommended Solutions*

One step to address fuel disruptions is transitioning from diesel to natural gas for fuel storage and generators. Natural gas is a more reliable and cleaner fuel source that can be supplied through underground pipelines, reducing dependency on road-based delivery methods that are often compromised during disasters. This transition would ensure a steadier and more secure fuel supply, even when roads are blocked or damaged. Additionally, the city could invest in distributing trailers equipped with fuel cells across various strategic locations. These trailers can serve as mobile power sources, providing critical backup power where needed and ensuring that essential services remain operational during and after a disaster, especially to populations that are particularly vulnerable.

To further strengthen Albany's emergency preparedness, the city could switch to alternate energy sources, such as incorporating propane and solar power, which will allow Albany to reduce its reliance on a single fuel type, thereby enhancing its resilience against supply chain disruptions. Further, implementing a robust system for distributing mobile plug-in generators to gas stations will guarantee that fuel remains accessible to emergency response teams and the general public. These generators can be deployed quickly to restore power at critical points, ensuring continuous fuel availability. Moreover, developing clear guidelines and protocols for generator use and maintenance, coupled with comprehensive training programs for city workers and technicians, will address the inefficiencies observed during Hurricane Michael. By bolstering staffing levels and ensuring that all personnel are well-trained and equipped to handle emergency scenarios, Albany can significantly improve its disaster response capabilities and protect its residents more effectively.

### *Suggested Actions and Roles*

| *Action* | *Agent* | *Resources* | *Timing* |
|---|---|---|---|
| **Switch from diesel to natural gas** | Albany Utilities Administration, Municipal Gas Authority of Georgia, Municipal Electric | The city makes use of blue star generators which generate 250KW | Supplemental power will need to be used as generators are phased out<br><br>New natural gas infrastructure will need to be installed |

| Action | Agent | Resources | Timing |
|---|---|---|---|
| | Authority of Georgia, private distributors, and government contractors | Generators are running once a week to ensure they remain ready | Natural gas backup generators will also need to be installed |
| | | Water department has 28 permanent generators and 10 quick disconnect | Infrastructure needs to be updated |
| | | | DOE grants are needed to update generators |
| | | Fire department have their own back-up system | |
| **Distribute trailers with fuel cells across the city** | Albany Utilities Administration, Municipal Gas Authority of Georgia, Municipal Electric Authority of Georgia, private distributors, and government contractors | There are areas with populations that lack access to reliable fuel during disasters | Areas with vulnerable populations need to be located |
| | | | Planning documents and training sessions for these fuel cells need to be created |
| | | Road disruptions during disasters blocks access to fuel distribution | Regular maintenance on the fuel cell must be done |
| | | | Storage for the fuel cell must be created that is environmentally resilient |
| | | Private individuals and non-profits attend quarterly tabletop disaster planning hosted by Albany's EMS services | |

| Action | Agent | Resources | Timing |
|---|---|---|---|
| **More than one fuel source** | Albany Utilities Administration, Municipal Gas Authority of Georgia, Municipal Electric Authority of Georgia, private distributors, and government contractors | The majority of the city uses gas and diesel<br><br>The fire department has begun implementing hybrid vehicles<br><br>There is a rise in green energy use by private individuals | Green energy infrastructure must be built<br><br>Research must be done into the most suitable form of green energy<br><br>Battery cells must be built<br><br>Hybrid vehicle charging stations must be built<br><br>Fuel tank renovations need to be done<br><br>Higher level negotiations to switch to green energy |
| **Make sure gas stations have access to generators** | Albany Utilities Administration, Municipal Gas Authority of Georgia, Municipal Electric Authority of Georgia, private distributors, and government contractors | Plug-in generators are used by other departments (i.e. water and fire)<br><br>Private individuals and corporations have pooled some resources before to acquire generators<br><br>Some smaller generators are available | Storage for new generators will need to be built<br><br>A contract with the city and private corporations will need to be made to supply gas stations with generators<br><br>The size and fuel type of generators will need to be found for each gas station<br><br>A 24/7 Monitoring center is needed |

| Action | Agent | Resources | Timing |
|---|---|---|---|
| | | | Workers and staff need to be trained to be ready for any disaster |

# Appendix 4
# Historic Equity Assessment in Albany Georgia

## A History of Resilience and Equity in Albany Georgia

Albany, Georgia, has had a fraught relationship with its natural environment almost since its founding in 1836 by Nelson Tift on the banks of the Flint River. Just five years after Tift incorporated the town, the Flint overflowed its banks and swallowed Albany, which was then just a handful of buildings.[8] Perhaps a location farther from the river would have been a better place for a town, but the Flint also promised opportunity. These were boom years for cotton cultivation in the US South. Middlemen like Tift hoped to make a fortune charging cotton growers to ship bundles of the fibrous crop to market.[9] The Flint was a key component of the business venture that transformed Albany into a commercial hub: its current brought barges and steamboats to Apalachicola, Florida, on the Gulf of Mexico, where ocean ships waited to transport cotton to northeastern or British textile manufacturers. The only other viable route from southwestern Georgia was overland to Savannah, Georgia, on the Atlantic Ocean—a lengthy and costly journey only made convenient in 1857 with the construction of a rail line.[10] During its first decades, Albany benefited from successful cotton cultivation in southwest Georgia because of the Flint River, despite its potential to inundate the town. Unfortunately, Albany's present-day residents are still living with the consequences of Tift's decision, even if they have replaced the cotton economy with peanuts, pecans, and modern manufacturing.

Albany's early relationship with cotton cultivation in southwest Georgia also transformed its racial demography. Cotton cultivation and slavery expanded together in the United States on land appropriated from Native Americans (the US Army had forcibly removed the Creek Indians from southwest Georgia just months before Albany's founding).[11] Since all enslaved people were African American, the expansion of cotton and slavery in Albany's surroundings meant the explosion of the region's African American population. By 1840, the area became one of many in the US South with a African American majority.[12] The success of African American politicians during the brief but optimistic post–Civil War period of Reconstruction (1865–1876) is testimony to Albany and Dougherty County's African American majority: African American voters elected three African American men to positions in the state legislature during the period.[13] Albany also grew after the Civil War, as new railroad construction during the late nineteenth century brought new economic prospects. Formerly enslaved people who left the countryside for the booming town brought population growth to Albany.

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[8] Susan E. O'Donovan, ed., "The Journal of Nelson Tift Part III: January–October 1841," *The Journal of Southwest Georgia History* 5 (Fall 1987): 66–67.

[9] John D. Fair, "Nelson Tift: A Connecticut Yankee in King Cotton's Court," *The Georgia Historical Quarterly* 88 (Fall 2004): 344–45.

[10] Lee Formwalt, "Albany," *New Georgia Encyclopedia*, https://www.georgiaencyclopedia.org/articles/counties-cities-neighborhoods/albany/.

[11] Fair, "Nelson Tift," 344; Adam Rothman, *Slave Country: American Expansion and the Origins of the Deep South* (Cambridge: Harvard University Press, 2005). On southwest Georgia specifically see: Susan Eva O'Donovan, *Becoming Free in the Cotton South* (Cambridge: Harvard University Press, 2007).

[12] O'Donovan, *Becoming Free in the Cotton South*, 17–18.

[13] Lee Formwalt, "Albany," *New Georgia Encyclopedia*, https://www.georgiaencyclopedia.org/articles/counties-cities-neighborhoods/albany/.

Like elsewhere in the US South, residential segregation characterized Albany's late-nineteenth and early-twentieth century growth. For decades, Oglethorpe Blvd. (or State Street) was the dividing line between white and African American Albany.[14] Such segregation sowed the seeds for how Albanians experienced future natural disasters. Specifically, South Albany became the nexus of Albany's African American residents, and the expansion of the neighborhood south during the twentieth century brought African American residents into the Flint's floodplain. Just after the Civil War, South Albany appears to have formed around African American churches. Mount Zion Baptist Church, for instance, dates its founding to 1865, when its members met at a African American blacksmith shop on the corner of Highland Avenue and Jackson Street.[15] Unfortunately, the earliest fire insurance map of Albany, from 1885, neglected to report on structures south of Highland Avenue (then South Street), a reflection more of the reluctance of the marketplace of African American-owned and occupied structures than of their physical presence.[16] A panoramic map of the town from the same year shows a South Albany sparsely populated by houses and African American churches—institutions identified by the map's key.[17] By the early twentieth century, the African American churches and businesses of South Albany are evident on fire insurance maps.[18] During the 1920s, the Harlem Business District formed in South Albany, a concentration of African American-owned businesses made necessary by segregation.[19] While white businesses barred entry to African American customers or enforced separate accommodations for their African American patrons, African American entrepreneurs provided similar services without racial stigma and closer to where African American residents lived. As a result of segregation, a majority of African American residences and businesses were located within the floodplain, setting the stage for the community to be disproportionately affected by natural disasters.

Historic land use patterns suggest that at least some Albanians understood the town's topography and the likely location of the Flint's floodwaters. Generally, the town's plotting suggests an understanding of the dangers of the river, as historic Albany was set back from the riverfront. The low and flat land northeast of downtown adjacent to the river was likewise given over to a railyard and depots, rather than to residential or commercial uses.[20] Historic land use also indicates historic land value, which may also track knowledge of the land's riskiness for flooding or its suitability for long-term occupation and

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[14] Mary Sterner Lawson, *June Bug's Grocery and the Cornfield Jook: A South Albany Oral History* (Charleston and other cities: Arcadia, 2003), 21–24.

[15] "Our Story," Mt. Zion Baptist Church, https://mtzionofalbany.org/our-story.

[16] Sanborn Fire Insurance Map from Albany, Dougherty County, Georgia, March 1885, Library of Congress Geography and Map Division, Washington, D.C., http://hdl.loc.gov/loc.gmd/g3924am.g3924am_g013721885.

[17] View of the City of Albany, Ga. (The Artesian City), County Seat of Dougherty County, (Milwaukee: Norris, Wellge, and Co., 1885), Library of Congress Geography and Map Division, Washington, D. C., https://www.loc.gov/resource/g3924a.pm001200/?r=0.094,0.336,0.639,0.333,0.

[18] Sanborn Fire Insurance Map from Albany, Dougherty County, Georgia, December 1911, Library of Congress Geography and map Division, Washington, D.C., http://hdl.loc.gov/loc.gmd/g3924am.g3924am_g013721911.

[19] Historic American Buildings Survey: South Albany Historic District, n.d., HABS No. GA-50, Historic American Buildings Survey–Southeast Regional Office, National Park Service, US Department of the Interior, https://tile.loc.gov/storage-services/master/pnp/habshaer/ga/ga0900/ga0976/data/ga0976data.pdf. Sanborn Fire Insurance Map from Albany, Dougherty County, Georgia, April 1920, University of Georgia Libraries Map Collection, Athens, Ga., https://dlg.usg.edu/record/dlg_sanb_albany-1920.

[20] View of the City of Albany, Ga. (The Artesian City), County Seat of Dougherty County, (Milwaukee: Norris, Wellge, and Co., 1885), Library of Congress Geography and Map Division, Washington, D. C., https://www.loc.gov/resource/g3924a.pm001200/?r=0.094,0.336,0.639,0.333,0.

development. That African Americans occupied the land South of Oglethorpe Blvd. after the Civil War is a good indication that white Albanians considered the land of little value.[21] Albanian Carolynn Segers, who historical analysts as part of HEAL interviewed in preparation for this report in the hopes of helping eke out some of the untold stories of Albany so more long-term solutions can be found. They contend that the 1841 flood taught Tift and other white Albanians where the river's floodplain was. Once African American people were able to own land in Albany and establish institutions, like Albany State University, African American residents "had a choice. You can have this crappy land way out of town, [...], or you can have this really crappy, low-lying land right here."[22] Racial geography is not the only evidence. The town's cemetery, Oakview Cemetery, appeared on the 1885 panoramic map of the city on the edge of the neighborhood that became South Albany. Cemeteries were often located on lower-valued land on the outskirts of towns and cities.[23] Through these explicit and implicit distinctions, South Albany became a African American neighborhood, which had significant implications for how natural disasters were felt and borne by the town's African American residents.

Albany experienced two devastating natural disasters during the era of Jim Crow: a flood in 1925 and a tornado in 1940. Albany's African American residents likely bore a disproportionate cost of both, but time and the Jim Crow archive have obscured their impacts.[24] In late January 1925, the Flint River flood gauging station at Albany measured the river's peak at almost 38 feet.[25] It was enough to inundate parts of the town. Surviving photographs show buildings penetrated by water on their ground floors, though there is no indication of their location in town. Flooding knocked out the gas plant, which was adjacent to the river.[26] If the Flint's floodwaters followed similar paths as indicated on present-day flood zone maps, the historic white business district centered on Broad Ave. was likely spared as the African American neighborhood south of Oglethorpe Blvd. was affected. Portions of Albany's white residential neighborhood north and west of downtown may have also been affected, but much of the land in the floodplain of the Flint north of town was left vacant or given to industrial use—such as the railyard, gas plant, and city landfill.[27] Protections constructed after the flood were minimal. Albany's leaders built flood protections for the gas plant, and the Army Corps of Engineers constructed a small levee on the

[21] Similar land-use pattern prevailed in Hattiesburg, Mississippi, see: William Sturkey, *Hattiesburg: An American City in African American and White* (Cambridge, Mass.: Belknap, 2019), 80.

[22] Carolynn Segers to Ben Blanchard and Philip Strickland, June 2024, HEAL in Albany Interviews: Key Findings.

[23] In Richmond, Virginia, for instance, the city selected the site for its New Burying Ground because it was out of the way; they also decided to construct the poor house adjacent to the cemetery, see: Ryan K Smith, *Death and Rebirth in a Southern City: Richmond's Historic Cemeteries* (Baltimore: Johns Hopkins University Press, 2020), 72–74.

[24] Racial segregation influenced what archivists and historians thought was important to record. See Alex H. Poole, "The Strange Career of Jim Crow Archives: Race, Space, and History in the Mid-Twentieth-Century American South," *The American Archivist* 77 (Spring–Summer 2014): 23–63.

[25] R. W. Carter, *Floods in Georgia: Frequency and Magnitude* (State Highway Department of Georgia and Georgia Department of Mines, Mining, and Geology, 1951), 103.

[26] M. J. Chapman, B. M. Gallaher, and D. A. Early, *A Preliminary Investigation of the Hydrogeology and Contamination in the Area of an Abandoned Manufactured Gas Plant in Albany, Georgia* (US Geological Survey, 1990), 6–8.

[27] Justin Kendall, Albany Flood Areas Web Map, March 27, 2020, updated May 31, 2023, https://geohub.albanyga.gov/maps/albgis::albany-flood-areas-web-map/explore?location=31.587324%2C-84.145745%2C14.00. Sanborn Fire Insurance Map from Albany, Dougherty County, Georgia, April 1920, University of Georgia Libraries Map Collection, Athens, Ga., https://dlg.usg.edu/record/dlg_sanb_albany-1920.

Flint River for Albany State University.[28] Aside from these rudimentary measures, Albany's leaders and residents appear to have treated the 1925 flood as an isolated event; indeed, it took seventy years for the Flint to approach and surpass its 1925 height.

There was precedent for the 1925 flooding, but it is less clear if the tornado that struck Albany in 1940 had been preceded by others. Evidence is clearer that the tornado heavily affected South Albany, even as the press and memory of the event highlighted destruction in the central business district. A sketch of the tornado's path of destruction shows that it destroyed a significant section of South Albany, especially residences, as it made its way toward the central part of town. Based on the map, the area south of Oglethorpe Blvd. comprised close to two-thirds of the tornado's impact in 1940. Local media paid some attention to this destruction of African American-owned housing. A booklet created by the Albany *Herald* to commemorate the disaster devoted a page and four photographs to the 200 African American-owned homes destroyed during the tornado and the 235 "considerably damaged." By comparison, 127 buildings in white neighborhoods fell prey to the wind.[29]

The 1940 tornado briefly put Albany in national headlines, but the city found a more sustained presence there in 1961. In the fall of that year, African American students and grassroots activists started the Albany Movement, the first attempt to protest community-wide segregation in a town in the United States. South Albany was home to the Albany Movement. Martin Luther King Jr. traveled to Albany and protested with the Movement. King and other leaders spoke in the neighborhood's churches—Shiloh Baptist Church and Mt. Zion Baptist Church especially—and led marches from them.[30] King, the Student Nonviolent Coordinating Committee, and the Southern Christian Leadership Conference initially thought the protests were a failure. During the ten months of protests, Albany police arrested King and hundreds of other protesters. When King left Albany in August 1962, the Movement had failed to force the city to remove segregation ordinances. However, after King's departure, Albany began to change. The Movement included voter registration drives, which began to transform the town's racial politics and made it possible for Thomas Chatmon, the leader of Albany's NAACP Youth Council, to force a run-off election for the city commission; the commission repealed segregation ordinances soon after.[31]

The long civil rights movement and its aftermath set the stage for the challenges African American Albanians faced during and after the city's worst recorded natural disaster in 1994. In Albany, as elsewhere in the US South, dismantling segregation led to unintended consequences for the town's African American neighborhoods. African American commercial districts, such as the Harlem Business District, began to decline in the face of racial integration and the expansion of big-box commercialism. White flight from towns and cities took a toll on tax revenues. By the 1980s, South Albany and its mid-twentieth century counterpart, East Albany, were considered blighted and in need of "renewal." Block

[28] M. J. Chapman, B. M. Gallaher, and D. A. Early, *A Preliminary Investigation of the Hydrogeology and Contamination in the Area of an Abandoned Manufactured Gas Plant in Albany, Georgia* (US Geological Survey, 1990), 8;

[29] *The Noise of a Thousand Freight Trains*, n.d., Thronateeska Heritage Foundation, Albany, Georgia.

[30] Jeanne Cyriaque, "Remembering the Albany Movement," *Reflections* 8 (November 2008): 1–3, https://georgiawildlife.com/sites/default/files/hpd/pdf/AfricanAmericanHistoricPlaces/November%202008.pdf.

[31] Lee Formwalt, "Albany Movement," *New Georgia Encyclopedia*, December 2, 2003, https://www.georgiaencyclopedia.org/articles/history-archaeology/albany-movement/.

grant applications and development plans followed, though progress was elusive.[32] For instance, a 1992 city resolution targeted both South and East Albany as "enterprise zones" to decrease unemployment and increase household incomes.[33] However, this resolution passed over ten years after other city resolutions identified similar problems and promised similar solutions.[34] There was a limit to the effectiveness of local resolutions that tried to solve problems with broader structural causes. African American neighborhoods in the post–civil rights movement Albany were vulnerable to disaster not just because of their location, but also because of their economic fortunes. Surviving and recovering from disasters, after all, is expensive.

Disaster came in July 1994, when the Flint River reached a maximum height of around 43 feet and spilled its water into its adjacent towns and communities, including Albany. The flood displaced at least 23,000 people and caused property damage calculated in the hundreds of millions.[35] Five Albanians died. Rain from Tropical Storm Alberto was the cause, though historical scholarship on disasters cautions that these events are also man-made by infrastructure failure, land-use and settlement patterns, investment choices, preparedness decisions, and much more.[36] Certainly this characterization describes how African American Albanians who lived in South and East Albany experienced the flood and its aftermath. Though the flood was large enough to affect much of the town, including the historic central business district and the white neighborhoods to its northwest, the low-lying African American neighborhoods were inundated. Most of the campus of Albany State University was submerged and many of its buildings destroyed. As flood survivor and former member of the Georgia state legislature, Mary Young-Cummings, told a reporter for the *Los Angeles Times*, white neighborhoods "got flooding, but we got devastated. And we got miles and miles and miles of devastation."[37] Paul Keenan, then mayor of the town, acknowledged that South and East Albany "received the greater residential damage."[38] According to the *Lost Angeles Times* reporter, Keenan blamed the inequitable distribution of flood damage on "geography and nature," but a history of discrimination and residential segregation (see above) shaped where African American Albanians continued to live. African American survivors of the 1994 flood were, in part, the most recent victims of residential segregation.

If residential segregation patterned the flood's devastation, the city's recent history of racial discrimination checkered how African American Albanians comprehended the disaster and relief efforts.

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[32] Community Development Committee Minutes, January 30, 1979, Minutes of Meetings, City Commission, City of Albany, Thronateeska Herirage Center, Albany Georgia; 1981-R156 Resolution, June 25, 1981, Resolutions, City Commission, City of Albany, Thronateeska Heritage Center; 1991-R143 Resolution, Resolutions, City Commission, City of Albany, Thronateeska Heritage Center; 1992-R159 Resolution, Resolutions, City Commission, City of Albany, Thronateeska Heritage Center.

[33] 1992-R159 Resolution, Resolutions, City Commission, City of Albany, Thronateeska Heritage Center.

[34] Community Development Committee Minutes, January 30, 1979, Minutes of Meetings, City Commission, City of Albany, Thronateeska Herirage Center, Albany Georgia; 1981-R156 Resolution, June 25, 1981, Resolutions, City Commission, City of Albany, Thronateeska Heritage Center

[35] Lee Formwalt, "Albany," *New Georgia Encyclopedia*, https://www.georgiaencyclopedia.org/articles/counties-cities-neighborhoods/albany/; *A Flood of Memories: A Photographic Chronicle of the Great Flood of 1994 from the Staff of* The Albany Herald (Albany, Ga.: The Albany Herald Publish Company Inc., n.d.); Michael Brooks, *Flood of the Century: Southwest Georgia* (Albany, Ga.: Brooks Publishing, 1994).

[36] See for instance: Andy Horowitz, *Katrina: A History, 1915–2015* (Cambridge: Harvard University Press, 2020).

[37] Eric Harrison, "Flood Fills Georgia City with Discontent," *Los Angeles Times*, August 25, 1994, A15.

[38] Eric Harrison, "Flood Fills Georgia City with Discontent," *Los Angeles Times*, August 25, 1994, A15.

Rumors swirled that white officials at the local and state levels targeted African American neighborhoods to spare white ones. Young-Cummings asked a question that she heard others asking as they stood in lines for food, shelter, and medical care: "Was the water manipulated in such a way that the more affluent neighborhoods were spared devastation to the detriment of the African American community?" As Carolynn Segers remembered, "There was a thought that the city had a floodgate . . . that they could manipulate and direct the flood waters to the poor areas of town and save the others. . . . they were not in a trust situation with the government."[39] These concerns sparked a visit from civil rights activist Jesse Jackson and an investigation by the Justice Department. Even without resorting to speculation, African American Albanians sensed that they were on the low end of the government's priorities. A belief was reported in stakeholder interviews that some believed the city was focusing on downtown commercial buildings and the new civic center as opposed to African American residents in low-lying lands and the historically African American Albany State University.

Seven days after the Flint submerged Albany, its waters receded, and the city began the long and slow process of recovery. New housing had to be built, others rehabilitated and elevated, still more purchased and raised; economic development programs were initiated (or in the case of South and East Albany, restarted). Shrinking the city's exposure to flooding was a major initial priority, and since the majority of the flooded properties were in African American neighborhoods, that meant shrinking those neighborhoods as well. City Manager Roy Lane explained to the City Commission in the Fall of 1994 that "most of the housing units in the floodway are south of Oglethorpe," the historic dividing line between white and African American Albany, "There are very few north of Oglethorpe."[40] By 1999, the city's recovery budget was just over $139 million, with the Federal Emergency Management Agency (FEMA) providing almost $83 million.[41] Purchasing flood-prone properties was a key strategy, made possible by a 1993 amendment to the Robert T. Stafford Disaster Relief and Emergency Assistance Act (1988). It was aided later in the 1990s and in the early 2000s by Rivercare 2000 and the Georgia Greenspace Program (2000), which made funds available to protect river corridors for environmental reasons. As a result of these programs, 1355 acres of land in the Flint River corridor are publicly owned, barred from private development, and thus open to hazard-free flooding; Albany's Riverwalk and Greenways Trail are the result of these developments.[42]

The 1994 flood brought mitigation to the fore of local policy and began a slow, incomplete, and contested process over what to do to prepare for the next event. Another more localized flood in 1998 interrupted the process but added urgency to Albany's plans. The projects planned after the 1994 flood included sluice gates and portable pumps for local canals. After 1998, the city hoped to raise a road in Riverside Cemetery to provide a barrier to flood water; provide grants to elevate structures in flood prone areas;

[39] Carolynn Segers to Ben Blanchard and Philip Strickland, June 2024, HEAL in Albany Interviews: Key Findings.

[40] Meeting Minutes, Special Called Committee of the Whole Meeting, October 24, 1999, Minutes of Meetings, City Commission, City of Albany, Thronateeska Heritage Center.

[41] Rudolph Goddard to Janice A. Jackson, City Manager, March 16, 1999, in Committee of the Whole Meeting Minutes, March 16, 1999, Minutes of Meetings, City Commission, City of Albany, Georgia, Thronateeska Heritage Center.

[42] Albany Dougherty Flood Hazard Mitigation Plan, Draft, pp. 29,35, March 2009, in An Ordinance Approving and Adopting the Albany Dougherty Flood Hazard Mitigation Plan, April 25, 2009, Ordinances, City Commission, City of Albany, Georgia, Thronateeska Heritage Center.

install an early warning system; and construct a berm along Mercer Avenue and Washington Street, along Oakview Cemetery. However, as Robert E. Merton, the Flood Recovery Plan Implementation Coordinator noted, these projects would not have prevented the 1994 flood. Instead, they were meant to slow down flood waters to allow Albanians more time to evacuate. Most of these projects were approved.

The city also worked with the Army Corps of Engineers to determine if a levee along the Flint River was feasible.[43]The levee would help protect the town's historic African American neighborhoods the most, and delays in its planning and implementation frustrated city commissioner Arthur Williams. To him, the only viable future option without a levee involved the continued acquisition of properties south of Oglethorpe and the continued shrinking of South Albany. "[I]n one part of town, every barrier there is to keep water out of the infrastructure has been put in so as to not allow flooding to occur . . . . flood protection in the other part of town is being played with," Williams stated at a meeting of the city commission in 1998. He continued "that he would bet that buy-out is going to be what FEMA and GEMA recommend."[44] In 1998, Williams' fellow commissioners were skeptical that buy-outs were the only path forward, but by 2005 the Army Corps of Engineers finally told the city that the levee did not pass a cost-benefit analysis and could only be constructed after specific authorization from Congress. By then, 607 structures in the floodplain had been removed, with 82 more to go.[45] Ironically, by 2005 the relocations that Williams had hoped to avoid in 1998 had dramatically shifted the cost-benefit analysis against the levee—there were fewer people in South Albany to protect because FEMA and GEMA had purchased their properties.[46] The plan faced other headwinds: residents south and east of the proposed levee feared it would push water toward their homes and local environmentalists were concerned about how the structure would impact the mussel population; the Dougherty County Commission also opposed the plan.[47]

With the levee plan dead, Albany continued to mitigate flood damage rather than flood risk. In 2009, the city revised a floodplain ordinance that included permitting authority, listed provisions for construction in flood-prone areas, and named restrictions for development and alterations.[48] At the same time, the city adopted a flood mitigation plan. This plan included risk assessments, described past mitigation projects, outlined mitigation goals, and proposed further mitigation actions. The proposed mitigation efforts included continuation of the buy-out program (which was a top priority), maintaining minimum elevation standards, continuing to enforce the floodplain management regulations, increasing public education on flooding, and maintaining warning systems, among other actions. Both the ordinance and the mitigation

[43] Robert E. Merton to Janice Allen Jackson, City Manager, March 12, 1999, in Committee of the Whole Meeting Minutes, March 16, 1999, Minutes of Meetings, City Commission, City of Albany, Georgia, Thronateeska Heritage Center.

[44] Meeting Minutes, April 7, 1998, p. 6, Minutes of Meetings, City Commission, City of Albany, Georgia, Thronateeska Heritage Center.

[45] Meeting Minutes, November 17, 2005, Minutes of Meetings, City Commission, City of Albany, Georgia, Thronateeska Heritage Center.

[46] US Army Corps of Engineers and City of Albany, Georgia, Status Report Feasibility Flood Control Study, November 15, 2005, in Meeting Minutes, November 17, 2005, Minutes of Meetings, City Commission, City of Albany, Georgia, Thronateeska Heritage Center.

[47] Albany Dougherty Flood Hazard Mitigation Plan, Draft, pp. 38–39, March 2009, in An Ordinance Approving and Adopting the Albany Dougherty Flood Hazard Mitigation Plan, April 25, 2009, Ordinances, City Commission, City of Albany, Georgia, Thronateeska Heritage Center.

[48] An Ordinance Adopting and Establishing a Floodplain Management Ordinance for the City of Albany, 2009, Ordinances, City Commission, City of Albany, Georgia, Thronateeska Heritage Center.

plan ensured Albany remained a member of the National Flood Insurance Program and remained compliant with FEMA regulations.

The 1994 flood had an enormous impact on Albany and attempts to mitigate or prevent future flood damage dominated much of the city's disaster preparedness. Yet, there were other challenges on the horizon. In January of 2017, a severe thunderstorm, with winds exceeding 80 miles-per-hour, ravaged the northern half of the city. Trees and power lines came tumbling down, roofs were ripped off buildings, and debris was scattered across the community. Only weeks later, the situation worsened as a tornado outbreak--part of the same storm system--swept through the area. The tornado carved a path of destruction 1.2 miles wide through Albany, impacting 83 percent of its commercial properties and nearly half of all homes. Even critical elements of the emergency response infrastructure were impacted, like the Marine Corps Logistics Base–Albany, which suffered over $100 million in damage, and the emergency response centers.[49]

Immediately, the public works department began clearing roads, prioritizing Jefferson Street for emergency traffic and one lane on the bypass. Albany's Fire Chief assumed his role as the county's Emergency Management Director. [50] The city also established a curfew [51][OBJ] Recovery and cleanup strained public services, and the town relied on private contractors and a "root-ball roundup initiative" of volunteers [52][OBJ] According to survivors, communication problems plagued the city's disaster response. "We had no central location to find out information," remembered an Albany resident interviewed by HEAL ethnographers, "a lot of it was what you heard through Facebook or by word of mouth and through churches. People didn't[53] see coordination between Churches and other nonprofits, like the American Red Cross and Samaritan's Purse filled [54][OBJ] Meeting just after the storms on January 2, city leaders acknowledged communication problems due to a lack or reliable power and as such they emphasized word-of-mouth, in addition to traditional news outlets, for communicating response and recovery activities[55] After the initial recovery, the Dougherty County Board of Commissioners adopted a Long-Term Recovery and Resiliency Plan catered to meeting the immediate needs of those affected by the storms, such as housing, as well as disaster preparation and recovery. Items recommended included money for a tornado siren, debris removal, generators, and safe rooms.[56]

Based on prior experiences through hurricane Michael in 2018, disaster response and infrastructure improvements in Albany were oriented toward responding to flood and wind damage. However, new challenges were posed when the town's next major crisis came in the form of the global coronavirus pandemic that broke out in the winter of 2019–2020. The coronavirus came early to Albany. On March 12,

[49] Jennifer Parks, "HUD Officials Hear from Albany, Dougherty Officials on January Storm Impact," *Albany Herald*, August 31, 2017.
[50] Meeting Minutes, January 24, 2017, Minutes Minutes of Meetings, City Commission, City of Albany, Thronateeska Heritage Center.
[51] Meeting Minutes, January 3, 2017, Minutes of Meetings, City Commission, City of Albany, Thronateeska Heritage Center.
[52] Meeting Minutes, July 25, 2017, p. 2, Minutes of Meetings, City Commission, City of Albany, Thronateeska Heritage Center.
[53] Denise Clark-Dumas to Ben Blanchard and Philip Strickland, June 2024, HEAL in Albany Interviews: Key Findings.
[54] Ibid.
[55] Meeting Minutes, January 3, 2017, Minutes of Meetings, City Commission, City of Albany, Thronateeska Heritage Center.
[56] Gloria Gaines, "Dougherty Maps Plan for Recovery," *Albany Herald*, November 14, 2017.

2020, a African American African American elderly man who attended a funeral in Albany became Georgia's first Covid-19 death. Epidemiologists characterized the funeral he attended as a "super-spreader" event that transformed Albany and the surrounding area into a national hotspot for Covid-19 infection. Phoebe Putney Health System—the only system in southwest Georgia then capable of treating Covid-19 patients—admitted 620 Covid-19 patients by April 2020, of whom 90 percent were African American.[57] The health system blazed through six months of personal protective equipment in five days.[58] By mid-June, after the implementation of public health interventions, such as social distancing and stay-at-home orders, the initial wave of infections had subsided.[59] To be sure, violations of stay-at-home orders and disregard for public health measurements remained a problem—enough of one for city and county officials to consider more stringent efforts at stopping the spread of the virus.[60] By late December 2020, Phoebe Putney Memorial Hospital was administering vaccines, following national rules regarding phased distribution.[61] Still, waves of infection and hospitalization continued for the next two years. According to Phoebe Putney Health System data, hospitalizations peaked during a wave of infections that began after July 4, 2021, and only subsided by early December. Between July 15, 2021, and mid-November 2022, African American hospitalization rates had declined dramatically from the initial wave to just 52 percent of patients in the Phoebe Putney Health System; the percentage of patients in the system who identified as Caucasian during this period increased to 44 percent.[62] The hospital system's Covid-19 online published data ends on November 13, 2022.

Albany has made significant progress preparing for disasters over the past century, and most of that progress occurred after the 1994 flood. Albany has had a fraught relationship with the Flint River since the town's founding in the mid-nineteenth century, but the town's growth and geographic expansion in the late nineteenth and early twentieth centuries made it more vulnerable to inundation. African American residents, who moved into low-lying South Albany, have been particularly vulnerable. Prior to the 1990s, little was done to address South Albany's vulnerabilities. When the 1994 flood devastated the community, the primary resiliency response was shrinking South Albany's footprint by purchasing homes in the Flint's floodway and floodplain. Since the 1990s and early 2000s, Albany has passed ordinances and codes, constructed better flood control, and reduced the number of properties vulnerable to the Flint River. Unfortunately, planning for flooding had little bearing on the town's vulnerabilities to its other main scourge: tornados and windstorms. A tornado in 1940 devastated a section of Albany's historic downtown, but it affected South Albany residents the most. The storms early 2017 affected more than South Albany, but they also demonstrated that the town needed to prepare for disaster from wind as well

[57] Monica L. Ponder, et. al., "Sharing African American Trauma as COVID-19 Crisis Communication Tactic: Assessing Communications from a Regional Hospital System in Albany, Georgia," *Journal of Communication in Healthcare* 15, no. 1 (2022): 36.

[58] Andy Miller, "Albany as COVID Hot Spot Top State Health Care Story of Year," *Albany Herald*, December 30, 2020.

[59] Covid-19 Inpatient Health System Trends, Phoebe Covid-19 Statistics, Updated June 2, 2023, https://www.phoebehealth.com/patients-and-visitors/coronavirus/covid-statistics.

[60] Alan Mauldin, "County Leaders Place Additional Restrictions on Travel as Coronavirus Cases Increase," *Albany Herald*, March 23, 2020.

[61] Alan Mauldin, "Interest in Covid-19 Rising in Albany," *Albany Herald*, December 29, 2020.

[62] Inpatient Ethnicity, Phoebe Covid-19 Statistics, Updated June 2, 2023, https://www.phoebehealth.com/patients-and-visitors/coronavirus/covid-statistics.

as disaster from water. Albany's history of disasters not only demonstrates the immediate needs and infrastructure developments required to make the town resilient, but also that resiliency involves considerations of land-use, economic development, political involvement, planning, and equity.

# Key Findings - HEAL in Albany Interviews

**Table 3** provides an overview of key findings from community interviews, oral history and community/neighborhood visits undertaken in the planning process. **Table 4** organizes the findings by topics addressed in the playbook and **Table 5** recaps the strategic topics addressed by the analysis for inclusion in the playbook.

### Table 3: Thematic Findings

| Thematic Findings |
|---|
| **Historic Context & Systemic Racism** |
| History of racism<br><br>Community members discussed Albany's history of slavery and racial violence as the basis of certain modern-day implications for distribution of impacts to African American people in the region.<br><br>Financial divestment<br><br>Some community members report that Black people in Dougherty and Lee County have been denied financial opportunities (business loans, etc.) and divested of land by white residents and landowners.<br><br>Discriminatory housing practices<br><br>Interviewees claim that African American residents of Albany were delegated to the low-lying land beside the Flint River, which in turn made those residents more vulnerable to flood events.<br><br>Discriminatory voting practices<br><br>Community members explained that Albany had an at-large voting system for much of its history, which allegedly made it much more difficult for African American residents to become elected representatives. |
| **Acute Implications of Specific Disasters & Events** |
| Outdated infrastructure<br><br>Informants explained that the flooding was caused in part due to the antiquated sewage and water drainage system being overwhelmed by floodwater.<br><br>Flooding distribution<br><br>Community members highlighted the impacts of the Floods on the South Albany/Radium Springs area as being particularly severe owing to the lower elevation of that area. |

Lack of preparation

One informant explained that the city opted out of preemptively draining the Kinchafoonee lake system (north of Albany) due to considerations over 4th of July festivities, which had disastrous results.

Aftermath of flooding

Informants claim that many residents of Albany could not afford to rebuild their homes in the aftermath of the Floods, which has left those homes in need of repair today.

Ineffectual disaster response

Community members explained that there was not effective communication between people and agencies during the natural disasters and that there was not a centralized location for obtaining aid and information.

**Ongoing Struggles & Current Needs**

Lasting damage

Community members explained that the property damage and economic ramifications caused by natural disasters has forced people out of the area, and that those homes/neighborhoods left behind are in disrepair.

Resource distribution

Interviewees described the 'white flight' happening from Albany to Lee County, which they claim is resulting in resources being allocated disproportionately to Lee County (which may also result in healthcare resources being pulled from Albany).

Systemic issues

Community members claim that Albany's community is facing several issues including unemployment, high poverty, low literacy, homelessness, high HIV rates, and a perceived deterioration of family values.

Apathy and disillusionment

Interviewees believe that the various systemic issues Albany's African American community is facing have resulted in people feeling frustrated and hopeless.

Distrust of bureaucracy

Community members expressed that local governmental structures have felt inaccessible and unreliable (especially to African American people) in the past, resulting in distrust of these structures

today.

Cultural divide

Informants expressed their views that a racial divide still exists in the region (especially between Albany and Lee County), and that there is a lack of shared vision between people for the future of Albany.

Table 4: Topical Findings

| Topical Findings |
| --- |
| **The African American populations of Dougherty and Lee County have historically been disenfranchised and denied business opportunities, which has led to a distrust of local government and white authorities. This distrust was acutely felt during the Floods of 1994; the opaque, decentralized bureaucratic structure of Albany-Dougherty County's government (and other agencies involved in disaster relief, such as FEMA) made it difficult for people to obtain reliable information on where to receive aid and how to respond to the emergency. This led to the communities coordinating amongst themselves and administering aid via local churches and other community-based organizations. Overall, these experiences have created apathy and disillusionment among Albany's residents.** |
| **Floods** |
| The Floods of 1994 rendered many homes and public buildings in Albany blighted and abandoned. This impact was most prevalent in South Albany, which is in the low-lying floodplain of Albany and is the area which has had the hardest time revitalizing.<br><br>Many residents were forced out of the region due to the high cost of rebuilding, paying flood insurance, and making necessary modifications to their homes for flood resilience (i.e., elevation). Additionally, not everyone who lost their home qualified for flood insurance, and some who took out loans to rebuild their homes went into debt as a result.<br><br>The flooding can partially be attributed to Albany's antiquated sewage system, which was overtaxed by the volume of stormwater. |
| Tornado/Windstorm |
| Community networks (especially local churches), the Dougherty County school system, and humanitarian aid organizations were critical for assisting Albany residents in the wake of the 2017 tornado and windstorm.<br><br>The tornado and windstorm caused severe structural damage, including in places that had already been damaged in the Floods of 1994.<br><br>Similar to the Floods of 1994, there was not a centralized, transparent location for information on where to find aid or assistance, meaning that the community had to lean on one another as it was difficult to get help from the city or county. |
| COVID-19 |
| The African American communities in Albany were disproportionately affected, and a high number of |

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| elderly people<br><br>There is a perception that the data on COVID impacts in Dougherty County is incomplete. |

Table 5: Strategies

| Strategic Issues Related to Equity, Historical and Cultural Experiences |
|---|
| **Benchmark Progress Towards Resiliency Goals**<br>• **Physical/Infrastructure**<br>• **Policies**<br>• **Business/Private Sector** |
| **Implement durable, equitable, and community-oriented coalition to implement solutions over time.** |
| **Identify and address staffing shortages in health care and other professions needed to respond to disruptions.** |
| **Create more dispersed health care locations.** |
| **Need to create awareness of resiliency roles and resources.** |
| **Identify gaps in local business offerings left by prior disruptions and strategies to recruit/replace.** |
| **Facilitate access to housing and shelter.** |
| **Address transparency of the sources and uses of aid to the community after disruptions.** |