



# GLOCESTER



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## **Municipal Resilience Program Community Resilience Building Summary of Findings**

**September 2022**



# **Town of Gloucester, Rhode Island**

## **Community Resilience Building**

### ***Summary of Findings***

#### **Overview**

The need for municipalities, regional planning organizations, corporations, states, and federal agencies to increase resilience to extreme weather events and a changing climate is strikingly evident amongst the communities across the state of Rhode Island. Recent events such as Tropical Storm Irene, Super Storm Sandy, severe winter storms (2013 & 2015), and even the recent flooding of I-95 during the summer of 2022 have reinforced this urgency and compelled leading communities like the Town of Gloucester to proactively collaborate on planning and mitigating risks. Ultimately, this type of leadership is to be commended because it will reduce the vulnerability and reinforce the strengths of people, infrastructure, and ecosystems and serve as a model for other communities in Rhode Island, New England, and the nation.

In the summer of 2022, the Town of Gloucester embarked on certification within the state of Rhode Island's Municipal Resilience Program (MRP). As part of that certification, the Rhode Island Infrastructure Bank (RIIB) and The Nature Conservancy (TNC) provided the Town with a community-driven process to assess current hazard and climate change impacts and to surface projects, plans, and policies for improved resilience. In September 2022, Gloucester's Core Team helped organize a Community Resilience Building Workshop facilitated by TNC in partnership with RIIB. The core directive of this effort was the engagement with and between community members to define strengths and vulnerabilities and the development of priority resilience actions for the Town of Gloucester.

The Gloucester Community Resilience Building Workshop's central objectives were to:

- Define top local, natural, and climate-related hazards of concern,
- Identify existing and future strengths and vulnerabilities.
- Identify and prioritize actions for the Town.
- Identify opportunities to collaboratively advance actions to increase resilience alongside residents and organizations from across the Town, and beyond.

The Town of Gloucester employed a unique “anywhere at any scale”, community-driven process called Community Resilience Building (CRB) ([www.CommunityResilienceBuilding.org](http://www.CommunityResilienceBuilding.org)). The CRB’s tools, reports, other relevant planning documents, and local maps were integrated into the workshop process to provide both decision-support and visualization around shared issues and existing priorities across Gloucester. The Gloucester Local Hazard Mitigation Plan (2018) and Comprehensive Plan (“Gloucester 2040”) (2021) were particularly instructive as references. Using the CRB process - rich with information, experience, and dialogue - the participants produced the findings presented in this summary report. This includes an overview of the top hazards, current concerns and challenges, existing strengths, and proposed actions to improve Gloucester’s resilience to hazards and climate change today, and in the future.

The summary of findings transcribed in this report, like any that concern the evolving nature of risk assessment and associated action, are proffered for comments, corrections and updates from workshop attendees and other stakeholders alike. The leadership displayed by the Town of Gloucester on community resilience building will benefit from the continuous participation of all those concerned.

## **Summary of Findings**

### **Top Hazards and Vulnerable Areas for the Community**

Prior to the CRB Workshop, the Gloucester Core Team identified the top hazards for the Town. The hazards of greatest concern included large winter storms with both snow and ice, high wind events, and heavy rain events leading to riverine flooding issues. Additional hazards highlighted by participants during the workshop included extended periods of high temperatures which included periods of droughts, as well as longer extreme cold periods in the winter. These hazards have direct and increasing impacts on the infrastructure, environment, and residents of Gloucester. These effects are seen in residential areas, natural areas (wetlands, rivers/streams, forests, preserves), roads, bridges, businesses, transportation, municipal facilities, churches, social support services and other critical infrastructure and community assets within Gloucester including Chepachet Village.

## **Current Concerns and Challenges Presented by Hazards**

The Town of Glocester has several concerns and faces multiple challenges related to the impacts of natural hazards and climate change. In recent years, Glocester has experienced a series of highly disruptive and damaging weather events including severe flooding (March 2010, FEMA DR-1894), Tropical Storm Irene (August 2011, FEMA DR-4027), Superstorm Sandy (October 2012, FEMA DR-4089), Nor'easter Nemo (February 2013, FEMA DR-4107), and Blizzard Juno (January 2015, FEMA DR-4212). Impacts from Irene and Sandy included widespread tree damage and power outages, as well as localized flooding. The winter storms Nemo and Juno dropped 2-3 feet of snow with 2-3 inches per hour of accumulation at their peak. The magnitude and intensity of these events and others across Rhode Island have increased awareness of natural hazards and climate change, while motivating communities such as Glocester to proactively improve their resilience.

This recent series of extreme weather events highlights that the impacts from hazards are diverse, ranging in Glocester to include inland flooding of critical infrastructure, roads, and low-lying areas; localized flooding from stormwater runoff during intense storms and heavy precipitation events; and property damage and utility outages (lasting several days or more) from wind, snow, and ice. Longer periods of elevated heat, particularly in July and August, have raised concerns about vulnerable segments of the population including elderly and disabled residents. The combination of these issues presents a challenge to preparedness and mitigation priorities and requires comprehensive, yet locally specific actions in Town.

The workshop participants were generally in agreement that Glocester is experiencing more intense and frequent storm events and heat waves. Additionally, there was a general concern about the increasing challenges of being prepared for the worst-case scenarios (e.g. major thunderstorms and hurricanes (Cat-3 or above)) particularly in the late summer and in the fall/winter months when more intense storms coincide with colder weather (i.e. Nor'easters). The impact of the current Covid-19 pandemic was raised by workshop participants as well.



Credit: chepachetunionchurch.org



Credit: providencejournal.com



Credit: roverpass.com

## ***Specific Categories of Concerns and Challenges***

As in any community, Gloucester is not uniformly vulnerable to hazards and climate change, and certain locations, assets, and populations have been and will be affected to a greater degree than others. Workshop participants identified the following items as their community's key areas of concern and challenges across several broad categories.

### **Roads, Bridges, Road Networks, & Dams:**

- Limited stormwater management infrastructure built into neighborhood developments during the 1970s. Now there is a need to rebuild roads and add in drainage systems or conveyance mechanisms due to heavier, more intense, rain events.
- Current stormwater drainage systems increasingly unable to handle the rain events which can make roads unsafe and inaccessible due to flooding. Many calls to Police and Fire Departments are currently focused on flooding of roads and driveways and are physically logged in notebooks with no 311/automated system, currently.
- Chepachet Village is walkable but most of Gloucester is a rural community lacking sidewalks and curbing.
- Limited ownership identification for many privately-owned dams across Gloucester. Limited communication across dams, partly driven by unclear ownership. This can lead to upriver dams impacting dams, bodies of water, and flood areas further down the river, including the Hawkins Pond Dam.
- Unknown status of Emergency Action Plans for several significantly vulnerable dams in Gloucester which could result in fines being levied on the Town.
- Dam repairs are costly and require maintenance records to obtain a FEMA grant to pay for needed repairs and maintenance. Many of the dams in Gloucester do not have maintenance records. No resources currently available to bring these out of compliance dams into compliance.
- Gloucester Land Trust has problematic dam on their property (i.e., Hawkins Pond Dam).
- Several roads have been impacted by flooding and are in need of upgrades to reduce risks to roadway integrity and maintain motorist safety. These include Durfee Hill Road, Cooper Road, Long Entry Road, Absalona Hill Road, Joe Sarle Road, Willie Woodhead Road, Indian Trail, Sunrise Terrace, and Old Snake Hill Road.

## ***Specific Categories of Concerns and Challenges (cont'd)***

### **Stormwater, Waste Systems, Drinking Water Supply:**

- No public water or sewer systems resulting in full reliance on private water wells and on-site septic systems. This has become problematic during short to longer-term power outages that can leave residents at home for days without a drinking water source. This has also been problematic in more densely populated areas where wastewater and well water are sited close together, making increased development difficult to site.
- Limited number of programs or support for business owners looking to upgrade or replace current cesspool and septic systems. Many residents still reliant on cesspools, and costs to upgrade or replace at time of sale cause challenges in the local real estate market and residential/business turnover.

### **Emergency Management and Preparedness:**

- Lack of proper Emergency Operations Center (EOC) hampers responses to major weather events and highlights the critical need for a central command center with the right technology to help keep people and properties safe.
- Communications tower at the Police Department has been deemed unsafe which may present challenges to communications during emergencies.
- Town in the process of increasing sheltering capacity although residents universally refuse to leave homes during major events.
- Rural communities like Glocester aren't prioritized for power restoration after outages due to lower population densities versus cities and larger towns (i.e., Providence, Pawtucket) and therefore residents routinely wait four to five days for power restoration even though private wells and wastewater systems require electricity to properly operate.

### **Chepachet Village:**

- Historic development patterns in Chepachet Village are conducive for walkability but each small lot has well water and septic/cesspools which becomes a health and water quality issue during heavy rains and flooding.
- The long-term viability of Chepachet Village (i.e., tax base, tourist draw) is crucial for the future of the Town, although the Village isn't fully recognized as such by many residents.
- Attracting new business and accommodating business expansion is very challenging due to inadequate drinking water and sewer infrastructure in Chepachet Village which effectively reduces the ability of the municipality to increase the cumulative tax base.

## ***Specific Categories of Concerns and Challenges (cont'd)***

- Current state regulations and provisions for septic systems make it hard for people to sell property without installing cost prohibitive upgrades prior to sale.
- High bacteria levels in rivers and streams adjoining relatively densely developed areas (i.e., Chepachet Village) linked to inadequate and/or leaky residential and commercial septic systems.

### **Municipal Functions & Operations:**

- Municipal staff are highly effective, but Gloucester requires additional staff in key areas such as the Department of Public Works which currently oversees paving, maintenance, building safety, among other roles and responsibilities.
- Turnover or departure of key staff amongst such a small municipal team result in significant loss of institutional knowledge and experience because many staff are filling multiple positions in Town.
- Recognition amongst leadership and staff of the need to expand the current tax base to keep pace with needed improvements and to help run the municipality effectively.
- Police Department building is undersized and technologically outdated resulting in ongoing challenges to effectively respond to community needs coupled with limited office space for routine functions and officers. Space needs expand quickly when emergency response center activated, adding additional space burdens.
- Subdivisions and development standards are not currently accounting for increasingly more intense hazards such as extreme precipitation events that ultimately increase exposure for residents.

### **Watersheds, Waterways, Open Space, Trees:**

- Cesspools and septic systems at risk during heavy rain events resulting in disbursement/release of bacteria pollutants into the environment including adjoining properties and waterbodies.
- Trees need to be cut back near power lines, as storms cause poles and trees to fall, causing outages and making streets inaccessible.

## **Current Strengths and Assets**

Just as certain locations, facilities, and populations in Gloucester stand out as particularly vulnerable to the effects of hazards and climate change, other features are notable assets for Gloucester's resilience building. Workshop participants identified the following items as their community's key strengths and expressed interest in centering them as the core of future resilience building actions.

- Clearly, the responsive and committed engagement exhibited by leaderships, staff, and residents is a very appreciated strength within and across Gloucester. Ongoing collaboration between municipal staff, committee/commission volunteers, business community, faith-based organizations, NGOs, adjoining municipalities, and various state-level organizations, among others, on priorities identified herein will help advance comprehensive, cost-effective, community resilience building actions.
- Deep experience and knowledge of the community challenges and opportunities amongst staff with ongoing coordination across various departments including leadership, Public Works, Police, and Fire was cited as a highly valued community strength.
- Long history of mercantilism including the Brown and Hopkins Store which is the oldest continuously operated general store in the nation and is on the historic register. Other notable examples of Gloucester's long history include The Dorr Rebellion, Betty the Elephant, and the Ancient and Horribles parade in Chepachet.
- Relatively large amount of open space resulting in vast expanses of preserved lands as compared to other municipalities in the state of Rhode Island. This includes over 2,000 acres of protected lands owned and managed by the Gloucester Land Trust.
- Gloucester is one of 25 cities and towns in Rhode Island and Massachusetts within the John H. Chafee Blackstone River Valley National Heritage Corridor.
- Great deal of appreciation and use by residents and visitors of existing preserves with accessible trail systems across the network of preserves in Gloucester.
- Residents care about the Town and volunteer to serve and improve the community. Town has not experienced a decline in the number and interest of volunteers over the years.
- Residents of Gloucester were noted by the workshop participants as being the real strength of the community with many serving in dual roles with many responsibilities on behalf of the municipality.

## **Current Strengths and Assets (cont'd)**

- People tend to grow up and remain in Gloucester resulting in a limited amount of transience or movement away from the Town.
- Department of Public Works ensures that municipal infrastructure is well maintained and that improvements are prioritized and completed with limited funding and staffing.
- Town is looking for ways to fix dams in need of repair that are municipally owned and managed.
- Police Department maintains a list of vulnerable people that require check-ins both before and after emergency events.
- Residents are knowledgeable about how to prepare for storms and power outages for periods up to 72 hours.
- Gloucester has a great school department and residents noted that it is a good place to live and raise a family.
- Large group of volunteers involved with the Community Emergency Response Team (CERT) who come together to train and assist during disasters as well as during planned events like the Independence Day fireworks and the Covid-19 vaccine clinics.
- New generator was recently installed at the Police Department to ensure continuity of critical services during response and recovery operations.
- Generator is currently being installed at the Gloucester High School which also serves as the principal emergency shelter for residents once activated during major events.
- The historic village of Chepachet provides a unique draw for visitors to experience the rural village charm and contribute to the local economy.
- Municipal staff and volunteers routinely and consistently work on mitigation activities identified in the Town's Natural Hazard Mitigation Plan.
- Systematic maintenance and improvement process in place to manage all municipal roadways (78.4 linear miles) through the Department of Public Works.

## **Recommendations to Improve Resilience**

A common theme among workshop participants was the need to continue community-based planning efforts focused on developing adaptive measures to reduce Gloucester's vulnerability to extreme weather, climate change and other common concerns raised. To that end, the workshop participants helped to identify several priority topics requiring more immediate and/or ongoing attention including:

- **Long-term vision and growth** (i.e. responsible/sustainable growth, volunteerism, conservation & recreation, village revitalization, increased tax base, affordable housing);
- **Infrastructure improvements** (i.e. road/bridge network, stormwater management systems, green stormwater infrastructure, dams, septic/cesspool systems, drinking water quality);
- **Quality of life improvements** (i.e. parks and recreation, open space & accessibility, sustainability, health & safety, economic prosperity, surface water quality);
- **Emergency management** (i.e. communications, outreach, education, continuation of services, business recovery, sheltering, evacuation, vulnerable populations).

In direct response, the workshop participants developed the following priority and additional action list. Mitigation/adaptation actions from the Gloucester Natural Hazard Mitigation Plan (2018) are provided in Appendix A for cross reference.

### **Priority Actions**

- Conduct an economic feasibility study of the cost and benefits of installing public water delivery system infrastructure for Chepachet Village.
- Work to obtain funding to implement the recommended solutions for providing safe, dependable drinking water in Chepachet Village.
- Advance priority roadway drainage and conveyance system upgrades including replacement of undersized culverts associated with waterway crossings and low-lying areas that flood.

## Priority Actions (cont'd)

- Establish a designated emergency operations center (EOC) at the Police Station with communication and networking interoperability among municipal buildings and Fire Departments.
- Work to further clarify specific ownership of all dams across Gloucester by hiring a consultant well versed in land deeds and associated records to conduct the investigation.
- Engage directly with individual dam owners to help advance necessary maintenance activities in hopes of minimizing the potential for breaches and catastrophic failures. This will help to establish a record of maintenance for respective dams and potentially increase funding for additional maintenance or removal from entities such as FEMA in the future.
- Look for opportunities to upgrade/replace septic systems and cesspools in Chepachet Village and research funding opportunities to phase out individual systems and replace with community-based collection systems. Cost to replace old with new septic systems currently acting as a deterrent to houses sales and property values in the Village.
- Create messaging to help the Gloucester community understand that infrastructure improvements are required in the historic village to maintain its rural character yet reduce the impacts of inadequate waste and drinking water services and systems.
- Review current and future infrastructure needs and prioritize projects across the following roadways highlighted by workshop participants including Durfee Hill Road, Cooper Road, Long Entry Road, Absalona Hill Road, Joe Sarle Road, Willie Woodhead Road, Indian Trail, Sunrise Terrace, and Old Snake Hill Road.

## **Additional Actions**

- Create a shelter management plan to provide heating and cooling shelters with charging stations for residents.
- Identify a back-up or secondary Emergency Operations Center in the event the primary EOC (once established) is impacted to ensure redundancy in response and recovery activities.
- Continue to take steps to ensure municipal-based functions remain operational before, during, and after major weather events.
- Reevaluate current emergency communication plans and look to ensure some form of communication is possible regardless of the type and extent of major disaster (e.g., school facility staff with radios even if no cell service).
- Explore technological options to capture and report issues related to infrastructure damage or maintenance needs in hopes of streamline and automating reporting versus the current time intense method of maintaining handwritten logs.
- Update the Town's Hazard Mitigation Plan with the incorporation of projects identified during the Community Resilience Building process to access potential funding for actions via FEMA's grant programs, among others.
- Consider rewriting select zoning/subdivision regulations to include incentives for modifications such as green stormwater infrastructure and increased resiliency generally.
- Continue to strive to ensure a dependable and ready volunteer base is available to assist with trail maintenance and repairs after storm events.
- Advance discussions between Gloucester Land Trust and the Town regarding the concerns around Hawkins Dam and the upstream dams that feed into Hawkins Pond. Work to obtain funding for agreed upon solution.

## Additional Actions (cont'd)

- Update the sediment control and erosion standards and requirements on development to help address the impacts of climate change.
- Work towards establishing coordination and collaboration with dam owners upstream from Hawkins Pond to help improve the overall management of the entire system in the face of more intense and longer duration precipitation events.
- Establish a dedicated storage facility for emergency management equipment.
- Proactive tree and limb trimming by the municipality around power lines during storm season due to the lack of prioritization of power lines in Gloucester by the electrical utility.
- Advocate for solutions to the unique issues facing rural communities in addressing climate change including limited staff, relatively smaller budgets, and lack of infrastructure, among others.



Credit: [Chepachetfarms.com](http://Chepachetfarms.com)

## **CRB Workshop Participants: Department/Organization**

Town of Glocester - Planning Department

Town of Glocester - Emergency Management Department

Town of Glocester - Department of Public Works

Town of Glocester - Police Department

Town of Glocester - Finance Department

Town of Glocester - Board of Canvassers – Town Clerk

Town of Glocester - Planning Board

Town of Glocester - Economic Development Commission

Glocester Land Trust

State of Rhode Island - Emergency Management Agency

State of Rhode Island - Statewide Planning

## **Glocester Core Project Team**

Karen Scott - Town Planner - Town of Glocester

Gerry Mosca - Emergency Management Department Director - Town of Glocester

Gary Treml - Public Works Department Director - Town of Glocester

## **Online CRB Workshop Facilitation Team**

Rhode Island Infrastructure Bank - Kim Koriath (MRP Lead)

The Nature Conservancy - Adam Whelchel, Ph.D. (Lead Facilitator)

The Nature Conservancy - Sue AnderBois (Small Group Facilitator)

The Nature Conservancy - Kai Lo Muscio (Workshop IT Manager/Scribe)

The Nature Conservancy - Kate Pelletier (Scribe)

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## **Acknowledgements**

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# **Appendix A**

## **Town of Gloucester Local Hazard Mitigation Plan (2018)**

### **Mitigation Actions**

## **PUBLIC EDUCATION AND AWARENESS**

### **Action #1**

Develop an Emergency Management Agency website for the Town. The website could include the Hazard Mitigation Plan, Emergency Operations Plan, as well as phone numbers and information on what to do in case of emergencies.

- Action Type: Planning, Pre-Disaster/Post-Disaster
- Priority Score: Medium
- Lead: GEMA
- Supporting: Town Planner
- Time Frame: Medium Term
- Financing Options: Town Budget
- Cost Estimate: Staff Time
- Benefit: Protection of property, protection of life/infrastructure, increased public education and awareness of vulnerabilities

### **Action #2**

Develop a public outreach program for public and private campgrounds to notify visitors about natural hazards. A pamphlet can be created to distribute to campgrounds and public parks that illustrates what to do in the event of an emergency, i.e. shelter in place, evacuate.

- Action Type: Planning, Pre-Disaster/Post-Disaster
- Priority Score: High
- Lead: Town Planner
- Supporting: GEMA, RIDEM
- Time Frame: Medium Term
- Financing Options: Town Budget
- Cost Estimate: Staff Time
- Benefit: Protection of property, protection of life/infrastructure, increased public education and awareness of vulnerabilities

### **Action #3**

Emergency Water/Food Supplies. Educate residents in advance where to find updates on potable water distribution or other supplies after a disaster

- Action Type: Planning, Pre-Disaster/Post-Disaster
- Priority Score: High
- Lead: GEMA
- Supporting: Town Planner
- Time Frame: Short Term
- Financing Options: Town Budget

- Cost Estimate: Staff Time
- Benefit: Protection of property, protection of life/infrastructure, increased public education and awareness of vulnerabilities

#### **Action #4**

Educate businesses on how to prepare for a natural disaster. Develop a public education and outreach plan (or a section on the new website for business owners) on how to become more resilient.

- Action Type: Planning, Pre-Disaster/Post-Disaster
- Priority Score: Low
- Lead: GEMA
- Supporting: Town Planner, Gloucester Business Association, Northern RI Chamber of Commerce
- Time Frame: Medium Term
- Financing Options: Town Budget
- Cost Estimate: Staff Time
- Benefit: Protection of property, protection of life/infrastructure, increased public education and awareness of business vulnerabilities

### **PROPERTY PROTECTION**

#### **Action #5**

Evaluate local roads subject to flooding. Identify projects designed to lessen the frequency or severity of flooding through the installation or modification of culverts and stormwater activities (i.e., creating retention or detention basins).

- Action Type: Structural
- Priority Score: Medium
- Lead: Department of Public Works
- Supporting: Finance, Town Planner
- Time Frame: Long Term
- Financing Options: FEMA HMGP, FEMA PDM and FEMA, FMA, EPA Clean Water Nonpoint Source Grant (Section 319 Grants) and EPA Clean Water State Revolving Fund (CWSRF)
- Cost Estimate: Significant
- Benefit: Protection of life and property. Reduce areas subject to flooding. Improve water quality.

#### **Action #6**

Develop a Debris Management Plan. Follow guidance for municipalities from MassDEP on what to include and how to develop a successful plan, including building official to waive permit fees for building permits to repair storm-damaged properties.

- Action Type: Planning, Pre-Disaster/Post Disaster

- Priority Score: Low
- Lead: DPW
- Supporting: GEMA, Building Official
- Time Frame: Long Term
- Financing Options: Town Budget
- Cost Estimate: Moderate; Staff Time (or Consultant time to develop Plan and language for regulatory amendments)
- Benefit: Improved resilience, accelerated recovery

### **Action #7**

Install lightning protection devices and methods such as lightning rods and grounding on critical facilities.

- Action Type: Structural Projects
- Priority Score: High
- Lead: Department of Public Works
- Supporting: Finance Department
- Time Frame: Medium Term
- Financing Options: FEMA PDM
- Cost Estimate: Minimal
- Benefit: Protection of life and property and uninterrupted services.

## **PLANNING AND PREVENTION**

### **Action #8**

Develop Emergency Action Plans (EAP's) for both High and Significant hazard dams (publicly-owned) within the Town of Gloucester.

An EAP is a plan of action to reduce potential property damage and loss of life in an area affected by a dam failure. An EAP identifies the areas, structures, facilities and roads that could be affected by dam failure. It also establishes a monitoring system which can activate the plan. Lastly, it identifies the corresponding official(s), organizations, and agencies along with their responsibilities in regards to implementing the plan.

All high and significant hazard dams must have an EAP - it's the law (RIGL § 46-19-9 <http://webserver.rilin.state.ri.us/Statutes/TITLE46/46-19/46-19-9.HTM>.) An EAP is not considered complete until it is approved by both Rhode Island Emergency Management Agency (RIEMA) and Rhode Island Department of Environmental Management (RIDEM).

- Action Type: Planning, Pre-Disaster
- Priority Score: High
- Lead: GEMA
- Supporting: Town Planner, USFWS, RIEMA, NRCS, RIDEM, Save the Bay

- Financing Options: RIEMA SHSP (Homeland Security)
- Cost Estimate: Minimal/Moderate; \$4,000 - \$5,500 (dependent upon size of Structure) Staff Time or Consultant time to develop EAP Plans
- Time Frame: Long Term
- Benefit: Prevents fatalities and structural damage to residents and businesses

### **Action #9**

Implement Public Outreach Campaign for residents/businesses located within a dam inundation zone.

Once EAPs have been developed for both High and Significant hazard dams (both public and private), it is important to conduct a public information session for residents and businesses within the various inundation areas regarding what they should do in the event of a dam breach. This could be completed in one general session, or individual sessions for each structure and affected neighborhood.

- Action Type: Planning, Pre-Disaster
- Priority Score: Medium
- Lead: Town Planner and GIS, GEMA, Private and public dam owners
- Supporting: GEMA/CERT
- Time Frame: Medium Term
- Financing Options: Private Owner responsibility with assistance from Town
- Cost Estimate: Minimal
- Benefit: Protection of property, protection of life/infrastructure

### **Action #10**

Initiate study to determine the current storage of vital documents in Town Hall, Police and Libraries.

- Action Type: Planning and Prevention
- Priority Score: High
- Lead: Town Clerk
- Supporting: Town Planner
- Time Frame: Long Term
- Financing Options: Town Budget
- Cost Estimate: Moderate
- Benefit: Protect public health, safety and welfare through permanent protection of sensitive documents.

### **Action #11**

Identify Alternative Storage Location and/or Strategy for Critical Town Records/Documents. To determine if an alternate on or off-site location, or conversion to electronic records filing is the best course for the Town to undertake.

- Action Type: Planning, Pre-Disaster/Post-Disaster

- Priority Score: High
- Lead: Town Clerk
- Supporting: Town Planner
- Time Frame: Medium Term
- Financing Options: Town Budget
- Cost Estimate: Staff Time
- Benefit: Protection of critical Town records/documents

### **Action #12**

Install computer surge protection on critical electronic equipment.

- Action Type: Property Protection
- Priority Score: High
- Lead: Department of Public Works, Town IT officer
- Supporting: Finance
- Time Frame: Short Term
- Financing Options: Town Budget
- Cost Estimate: Minimal
- Benefit: Protection of critical Town records/documents

### **Action #13**

Install transfer switches on all critical facilities to allow for trailer mounted generators in the event a storm cause power failure.

- Action Type: Structural Projects
- Priority Score: High
- Lead: Department of Public Works
- Supporting: Finance, GEMA, School Department
- Time Frame: Short Term
- Financing Options: RIEMA PDM, HMGP
- Cost Estimate: Moderate
- Benefit: Protection of critical infrastructure

### **Action #14**

Encourage major pharmacies to install external generator hookup capabilities to allow the distribution of medication in extended power outages.

- Action Type: Planning and Prevention
- Priority Score: Medium
- Lead: Town Planner
- Supporting: Northern RI Chamber of Commerce
- Time Frame: Short Term
- Financing Options: Private
- Cost Estimate: Significant
- Benefit: Offer residents a method to receive vital medication after a major disaster.

## EMERGENCY SERVICES

### Action #15

Purchase and install generators at animal shelter.

- Action Type: Emergency Services
- Priority Score: High
- Lead: Gloucester Emergency Management Agency (EMA)
- Time Frame: Short term
- Supporting: Gloucester Police Department
- Financing Options: RIEMA, FEMA State Homeland Security Program
- Cost Estimate: Significant
- Benefit: Building resiliency into existing critical infrastructure. Minimize disruption to emergency services. Maintain municipal services.

## STRUCTURAL PROJECTS

### Action #16

Initiate a municipal tree trimming program. Form a partnership with DPW, RIDOT and coordinate with National Grid to implement the program which will help to reduce loose limbs and remove diseased trees in the Right of Way. Recommend tree trimming and maintenance efforts to prevent limb breakage and safeguard nearby utility lines. Where cost effective, recommend undergrounding and protect power lines. The end goal is to create and maintain a disaster-resistant landscape in public rights of- way.

- Action Type: Structural Projects
- Priority Score: High
- Lead: DPW
- Supporting: Planning and GIS, GEMA, RIDOT, National Grid
- Time Frame: Long Term
- Financing Options: Town Budget
- Cost Estimate: Significant
- Benefit: Protect public health, safety and welfare through the regular maintenance of public trees.

### Action #17

Local and Interstate Highway Bridges. Inspect, repair, replace and retrofit deteriorated bridge components. Identify from the RIDOT list of bridge sufficiency ratings for Gloucester. Funding of these projects will be contingent upon available funding.

- Action Type: Natural Resource Protection
- Priority Score: Low
- Lead: Public Works (local), RIDOT (state)
- Supporting: Planning
- Time Frame: Long Term
- Financing Options: RIDOT State Transportation Improvement Program (TIP),

- Cost Estimate: Significant
- Benefit: Public health and safety.

### **Action #18**

Buildings with Archaic Structural Systems. Structural retrofitting of existing historical buildings and create hazard mitigation planning documents for eligible historic properties. Structure Elevation/Mitigation Reconstruction/Dry floodproofing historical residential and nonresidential structures, eligible historic properties in the AE Zone.

- Action Type: Planning and Prevention
- Priority Score: Low
- Lead: Town Gloucester Heritage Society
- Supporting: GEMA
- Time Frame: Long Term
- Financing Options: RIEMA PDM, HMPG, FMA
- Cost Estimate: Staff Time
- Benefit: Ensures the permanent protection of historic structures and tourist economy.

### **Action #19**

Promote the Insurance Institute for Business & Home Safety FORTIFIED Program for all structures including historic sites on the National Historic Registry through a weblink on the Town's website.

- Action Type: Public Education and Awareness
- Priority Score: High
- Lead: Building Department
- Time Frame: Long Term
- Financing Options: Staff Time
- Cost Estimate: Significant
- Benefit: To reduce or eliminate residential and commercial properties losses due to natural and man-made forces for the benefit of property owners, the insurance industry and for the public good.

## **NATURAL RESOURCE PROTECTION**

### **Action #20**

Climate Change. Acquire more open space properties subject to natural hazards and land subject to flood or prone to flooding. This acquisition will principally be done by acquiring the land and then deeding it as open space. Open space acquisitions could be pursued by purchasing substantially damaged structures and demolishing them. The town may decide to acquire the property outright as open space, and therefore prioritize areas obtained by easement.

- Action Type: Property Protection

- Priority Score: Medium
- Lead: Town Council, Planning Board, Conservation Commission
- Supporting: Town Planner, Land Trust
- Time Frame: Long Term
- Financing Options: RIDEM, RIEMA HMA, FEMA
- Cost Estimate: Significant
- Benefit: Protects natural resources. Reduces property losses and improves resiliency.

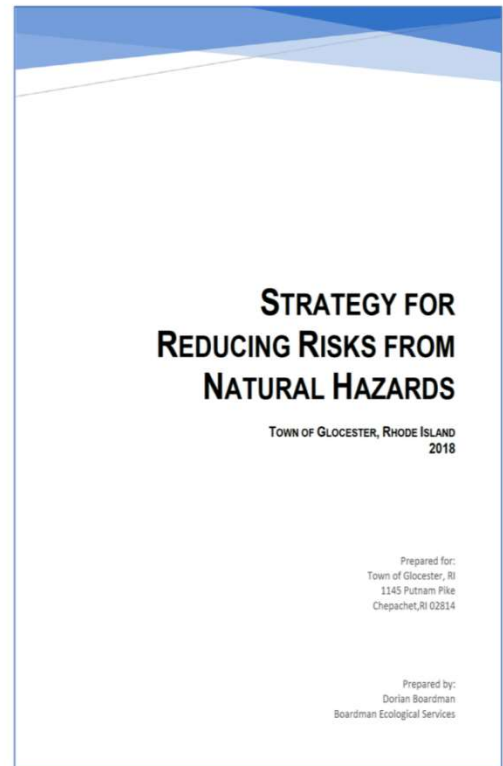
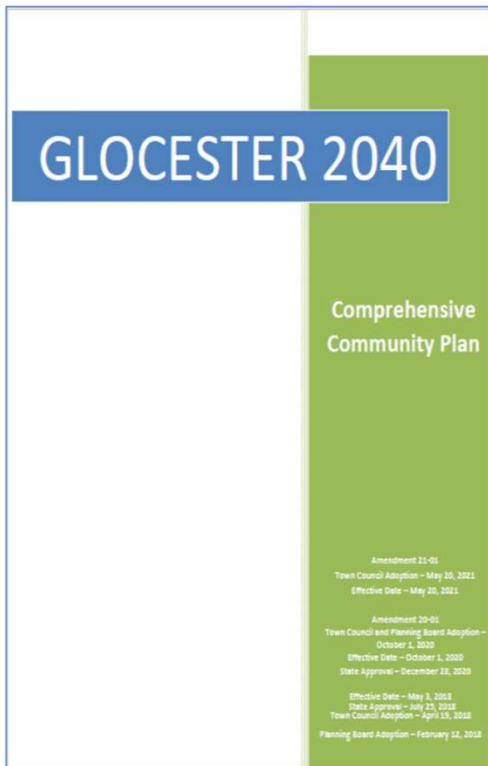
### **Action #21**

Encourage Town Council to budget for climate adaptation as part of capital improvement projects.

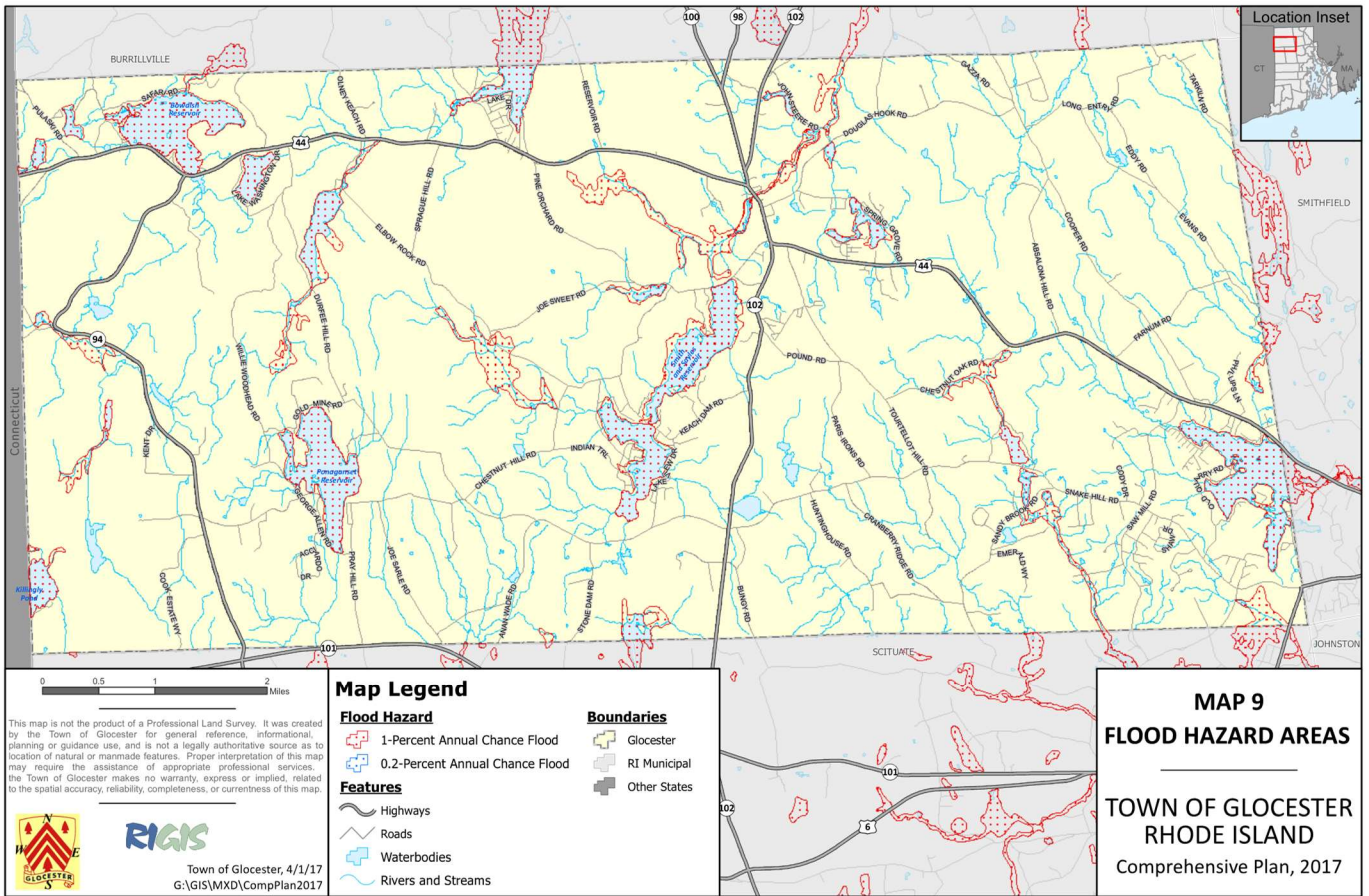
- Action Type: Planning and Prevention
- Priority Score: High
- Lead: Town Planner
- Supporting: GIS
- Time Frame: Medium Term
- Financing Options: n/a
- Cost Estimate: Staff Time
- Benefit: Addressing climate change across all-natural hazards

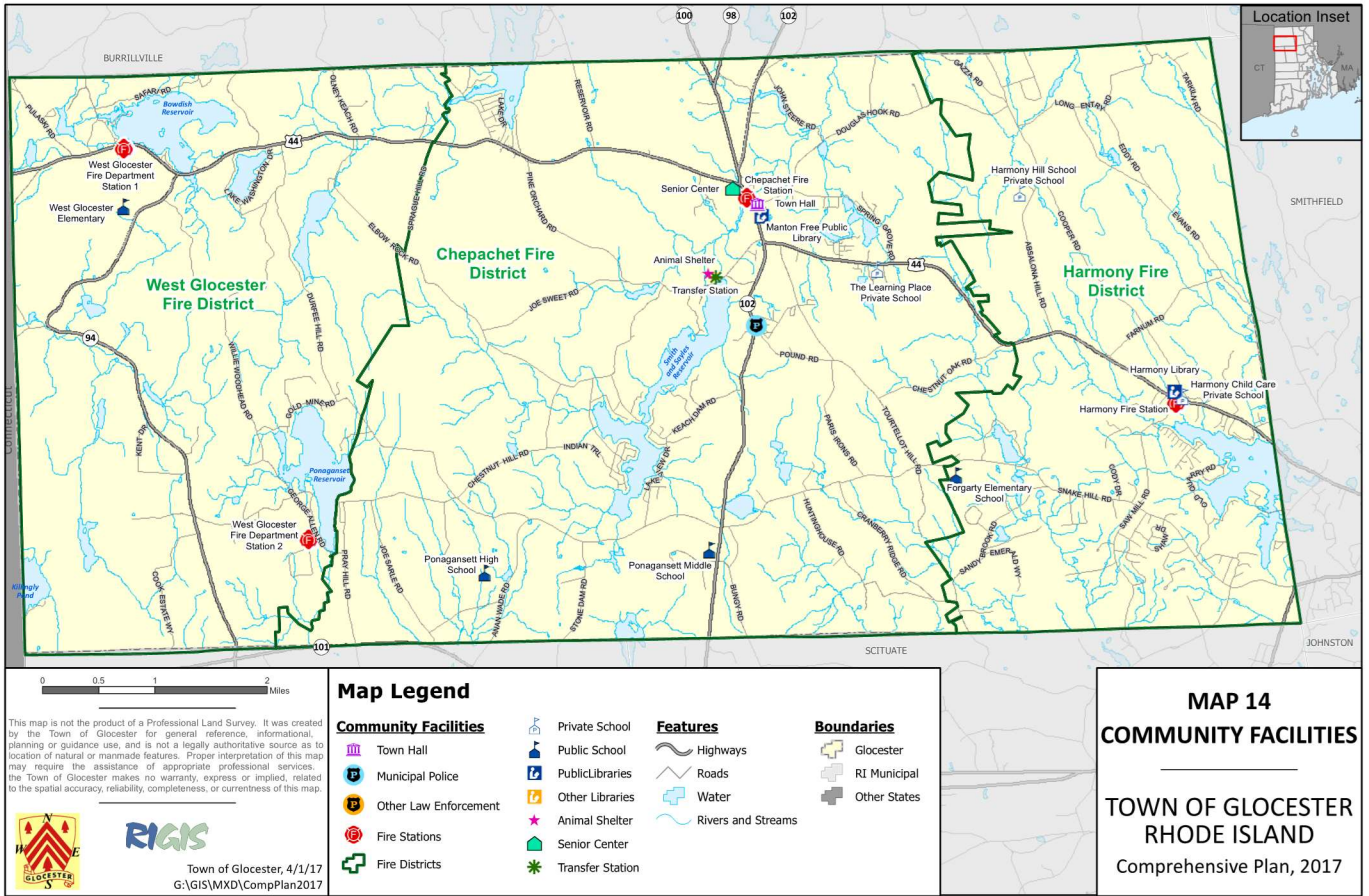
# Appendix B

## Glocester Map Resource Packet\* Used During Workshop

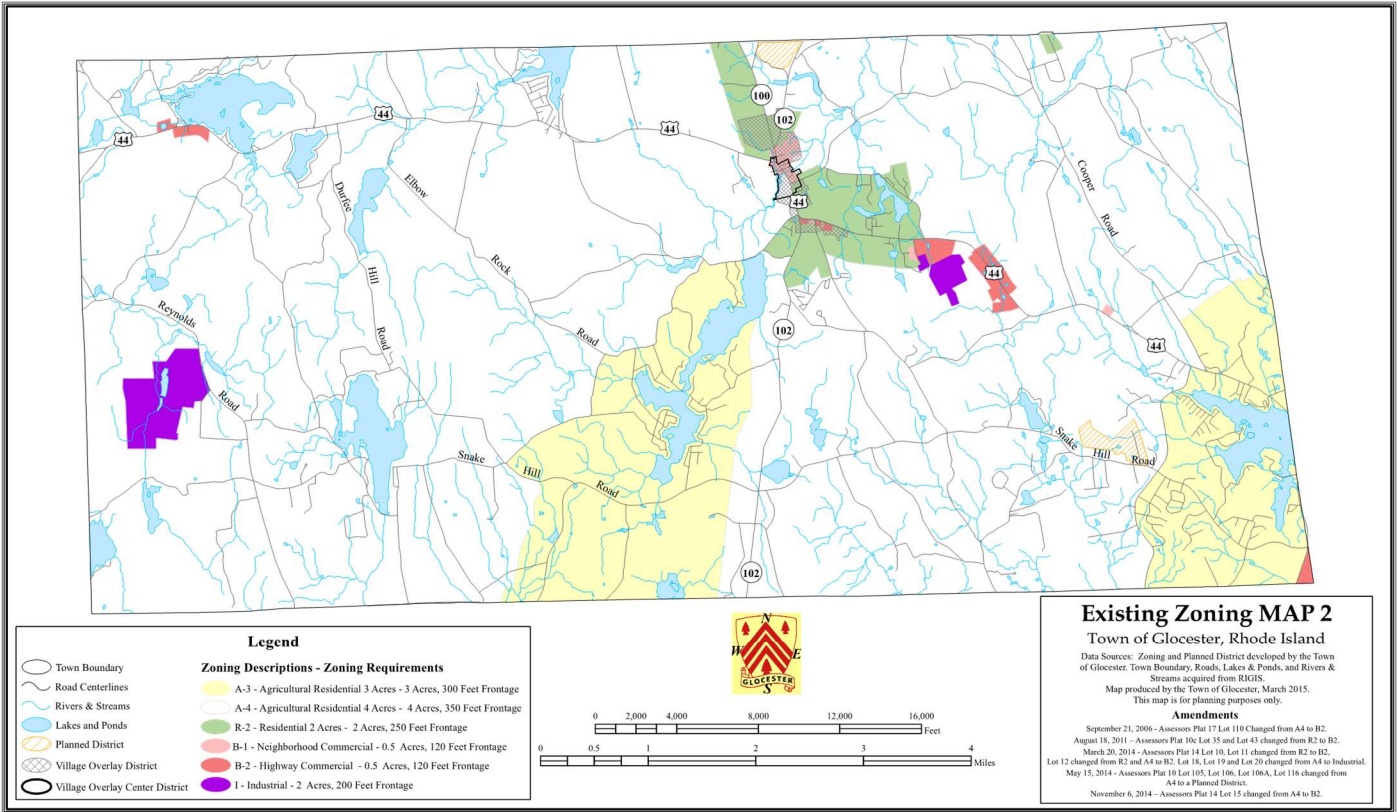


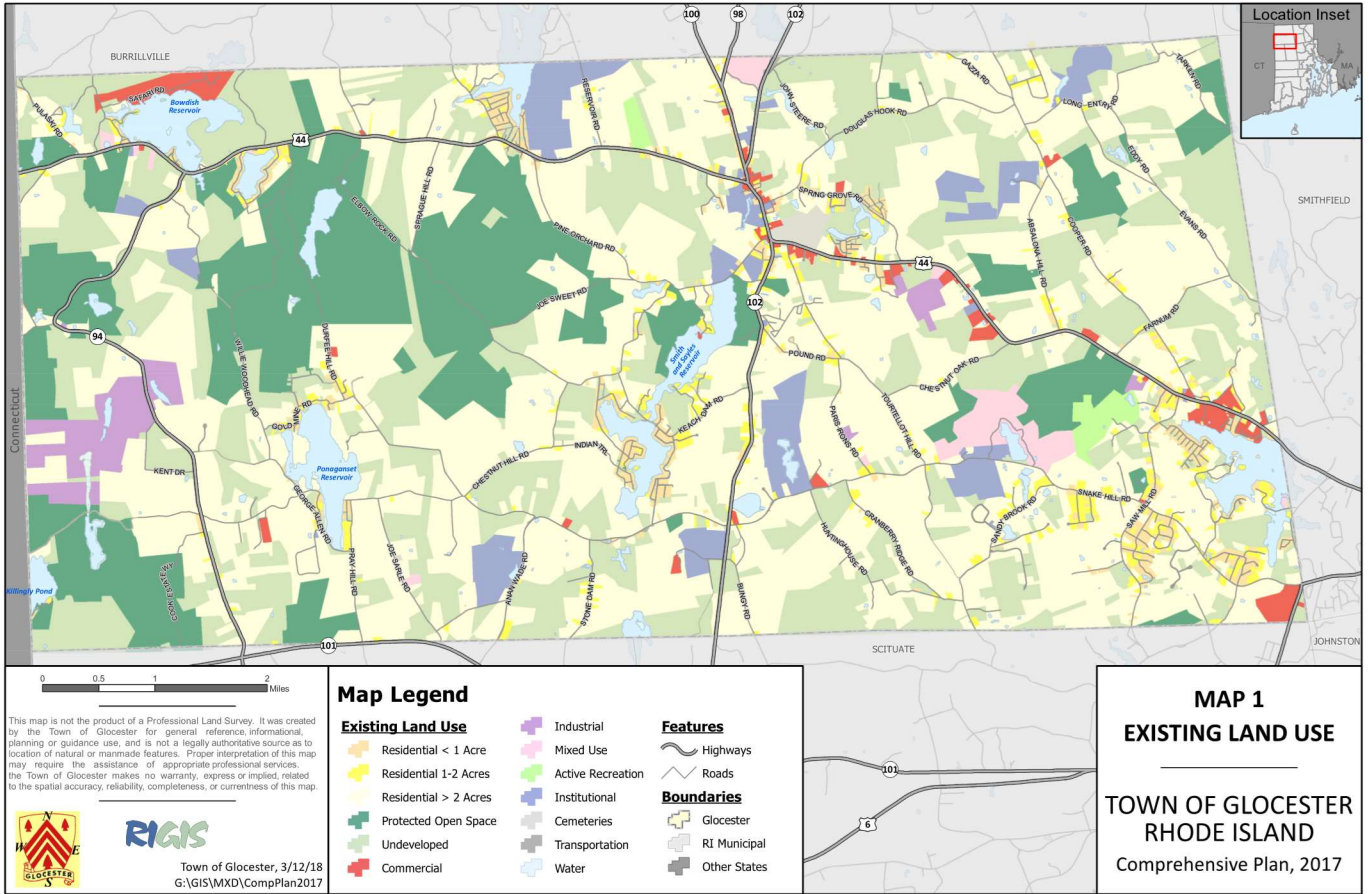
**\*Gathered from Glocester's Local HMP (2018) & Comprehensive Plan (2021)**

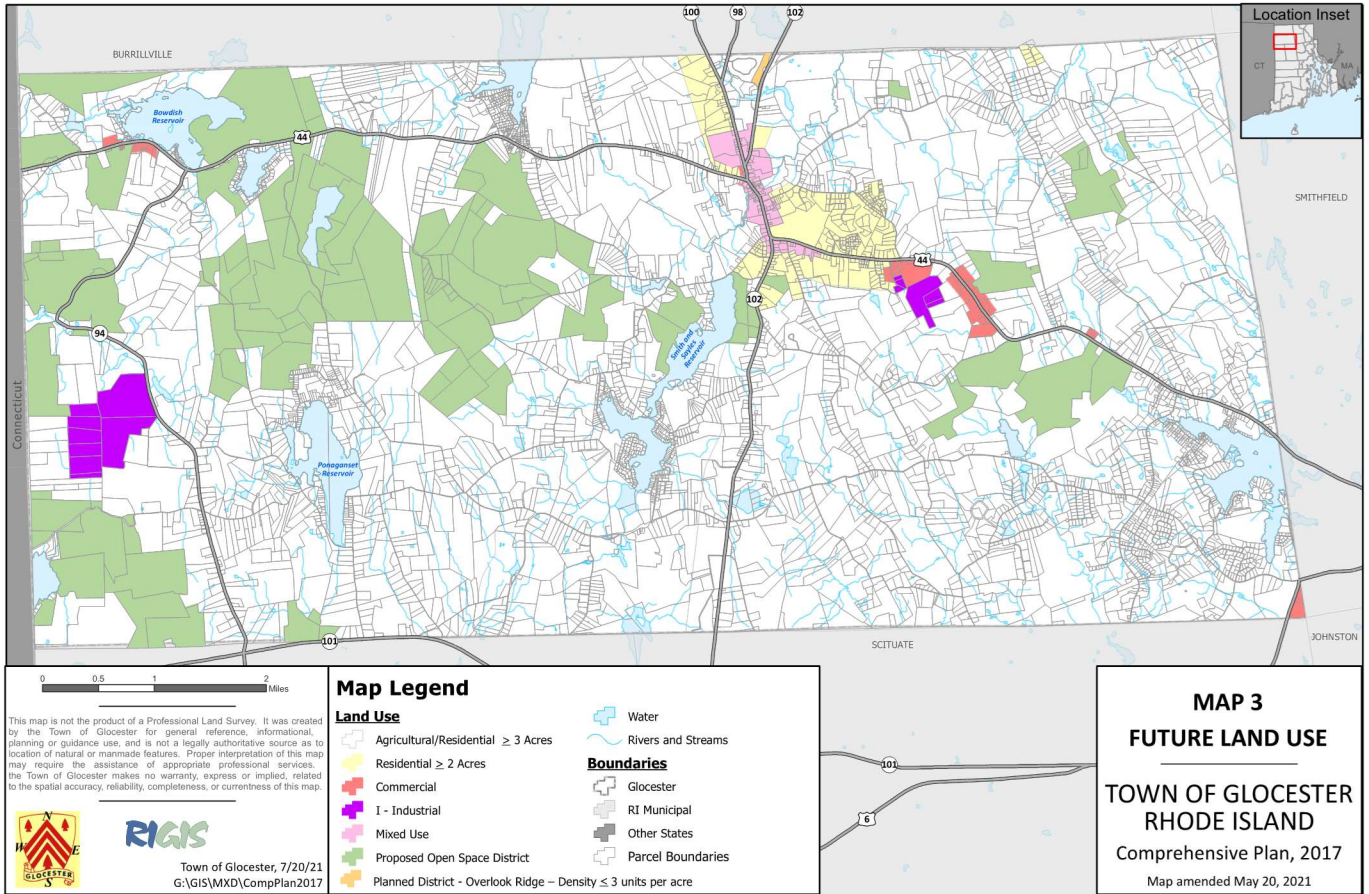


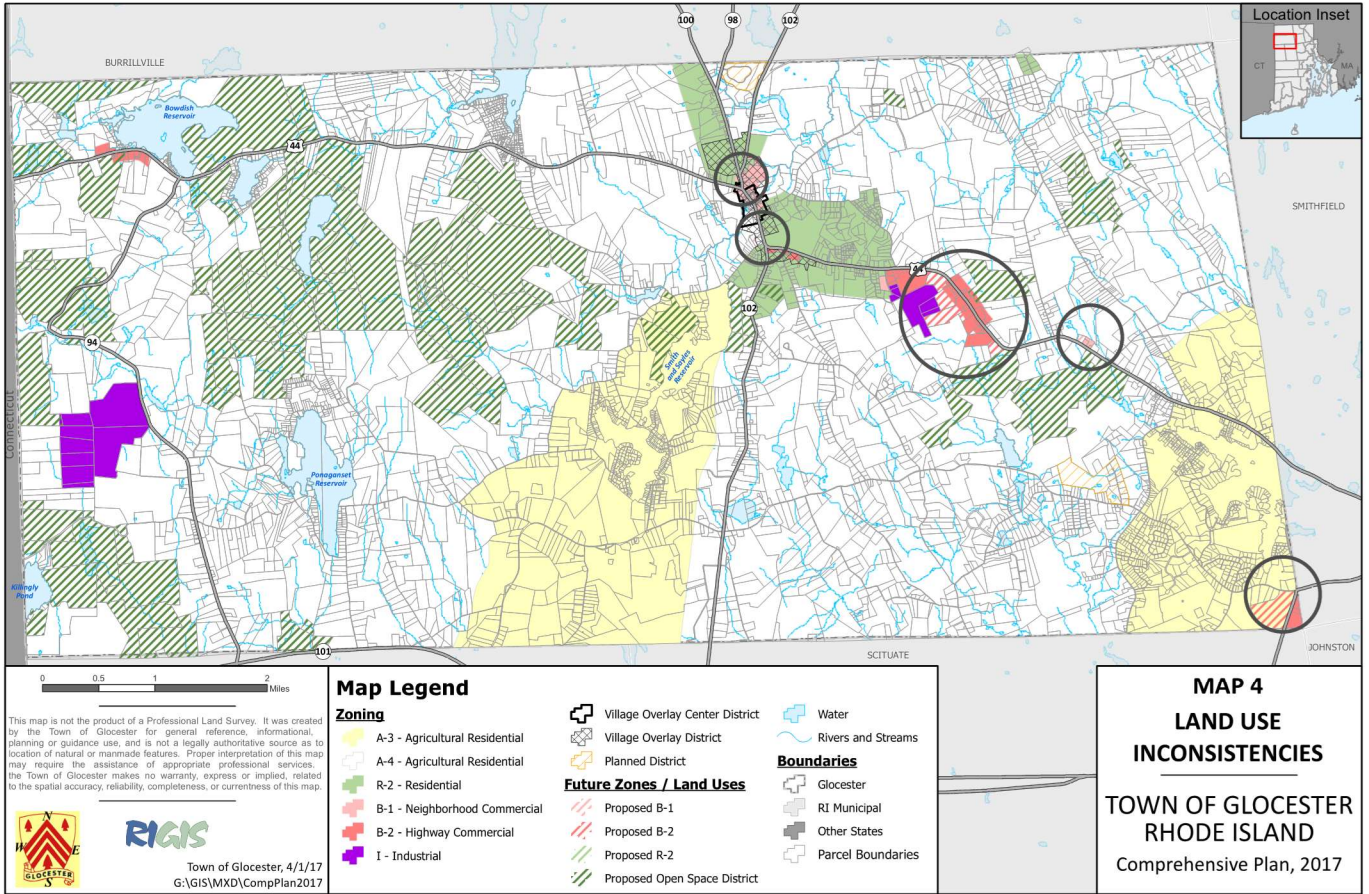


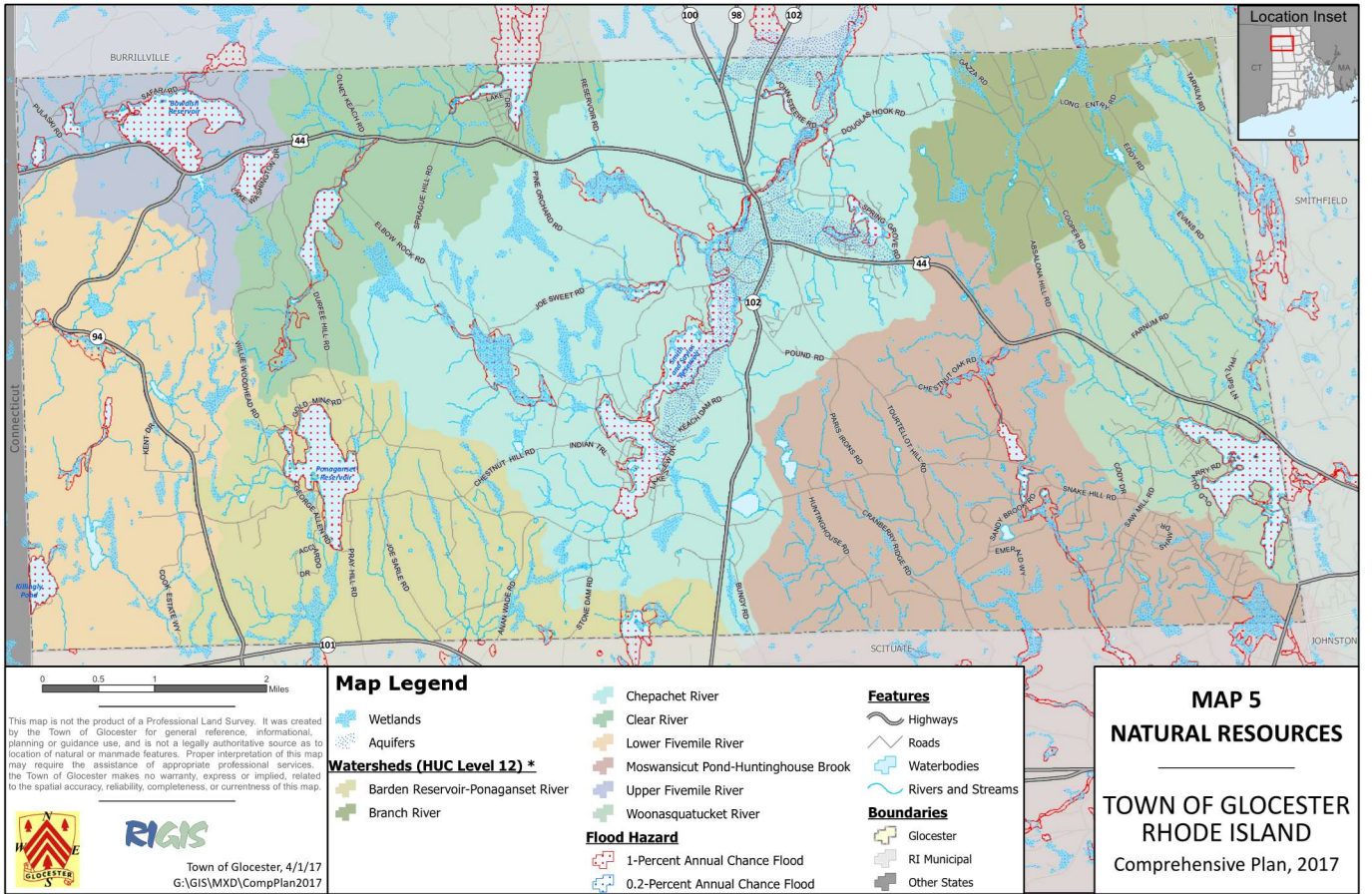


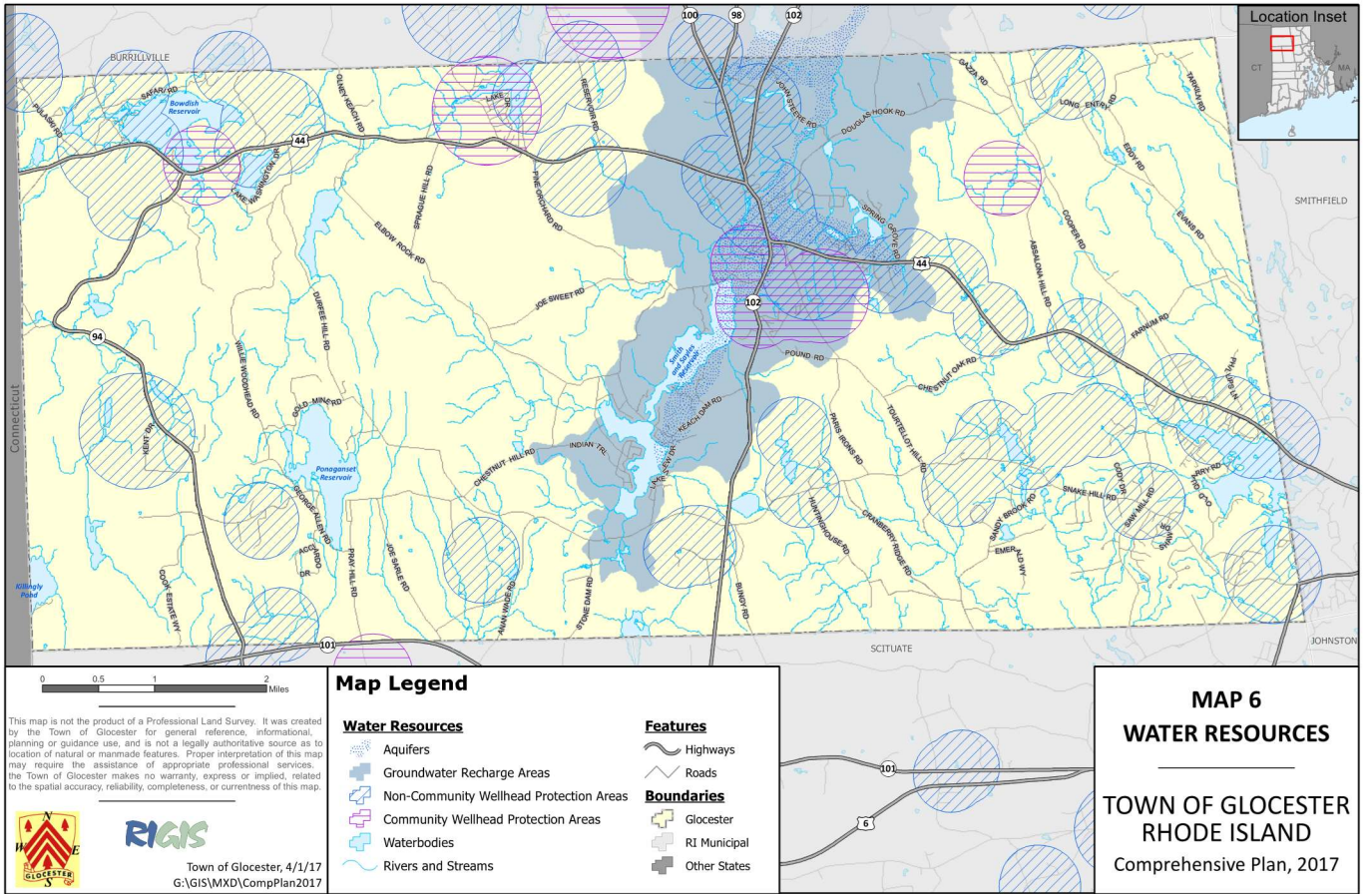


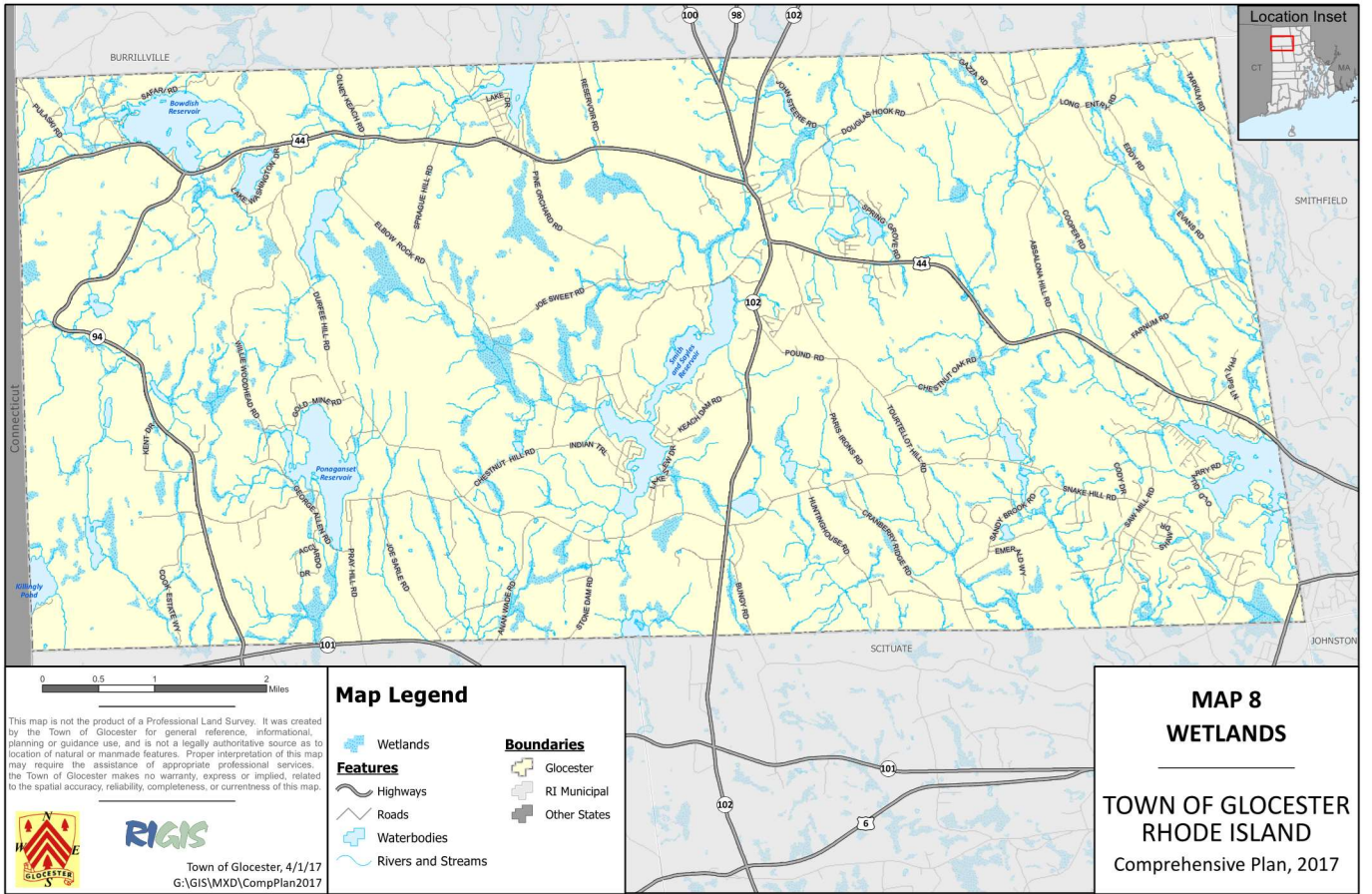


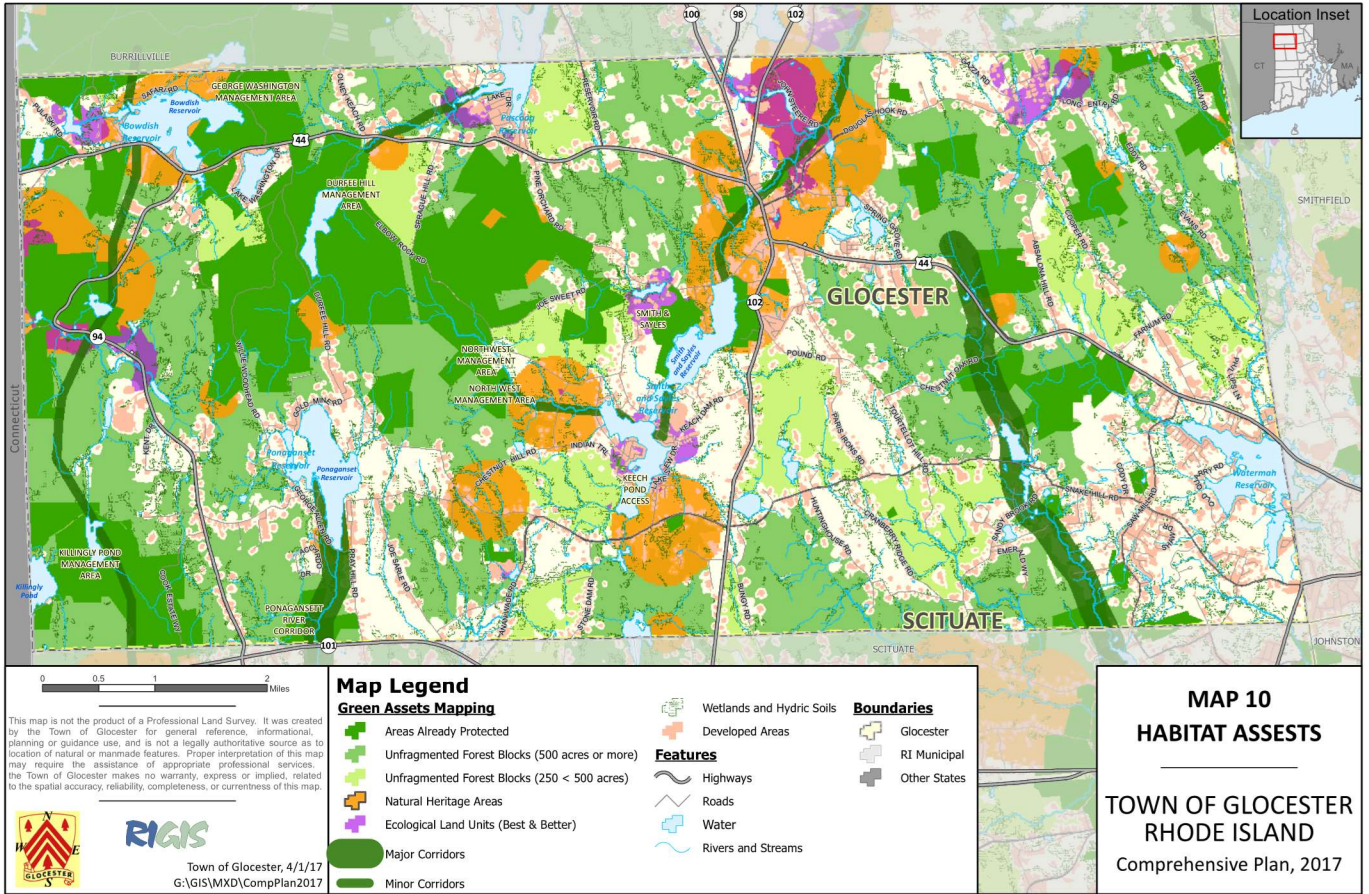


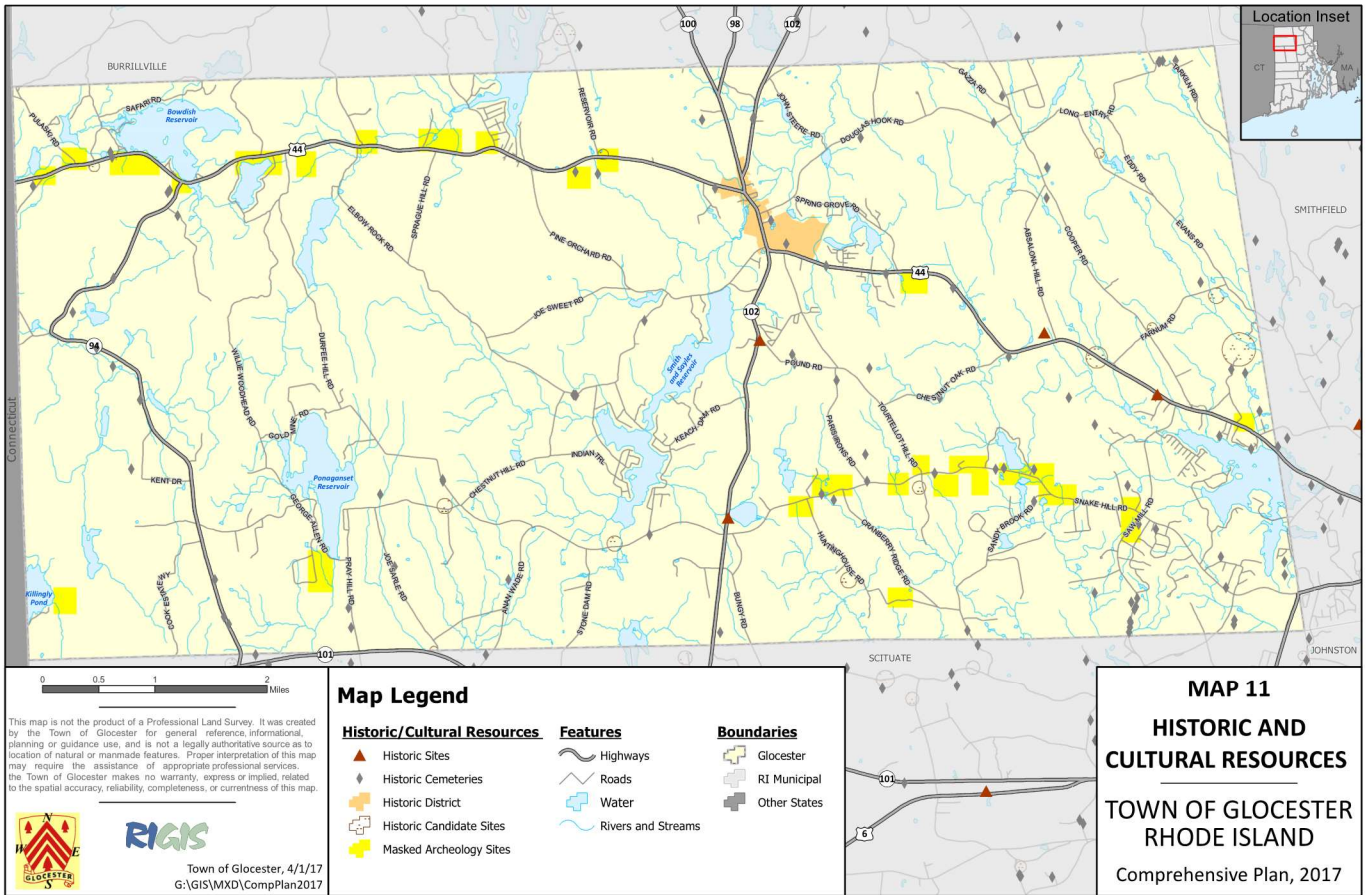


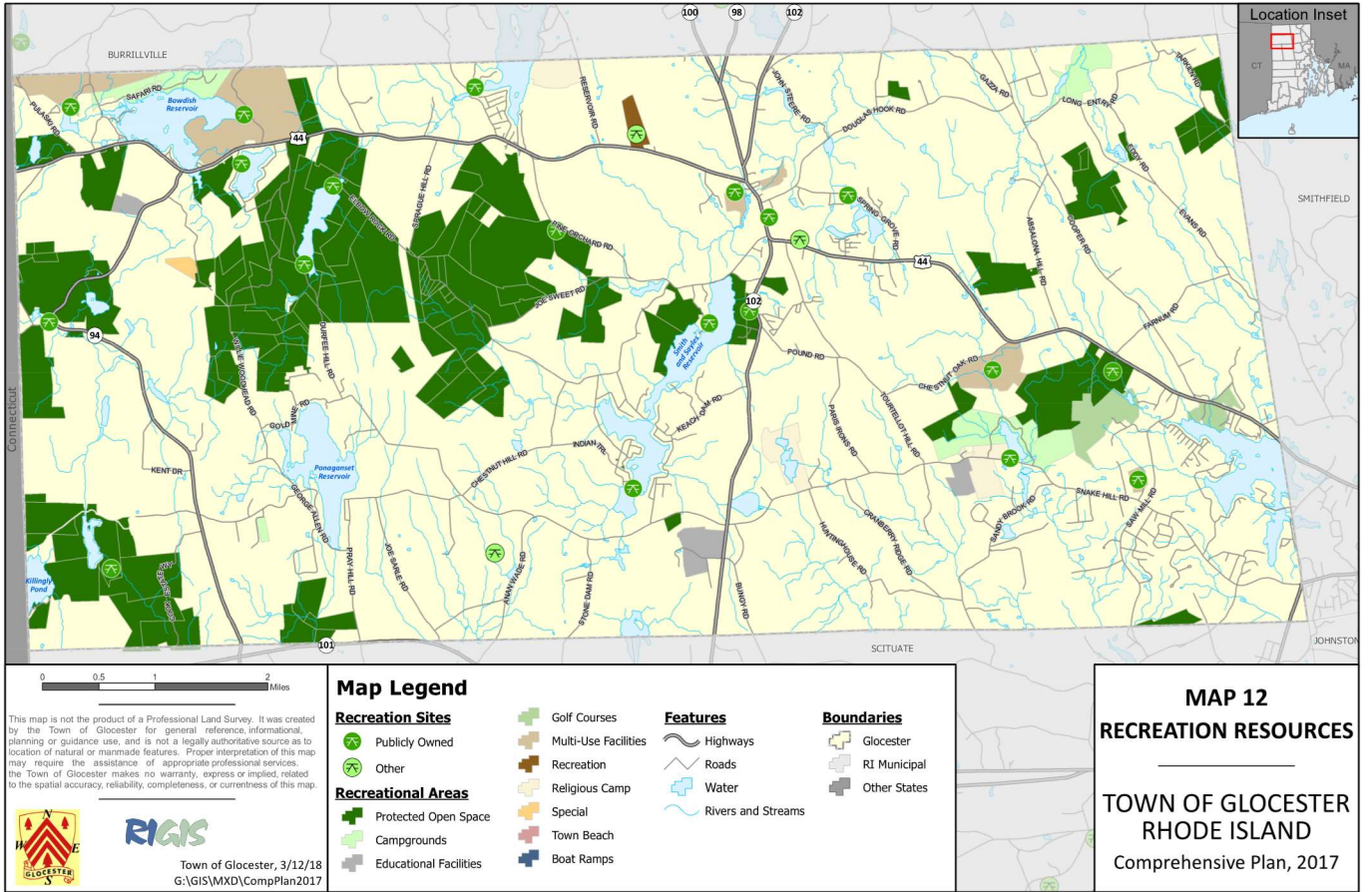


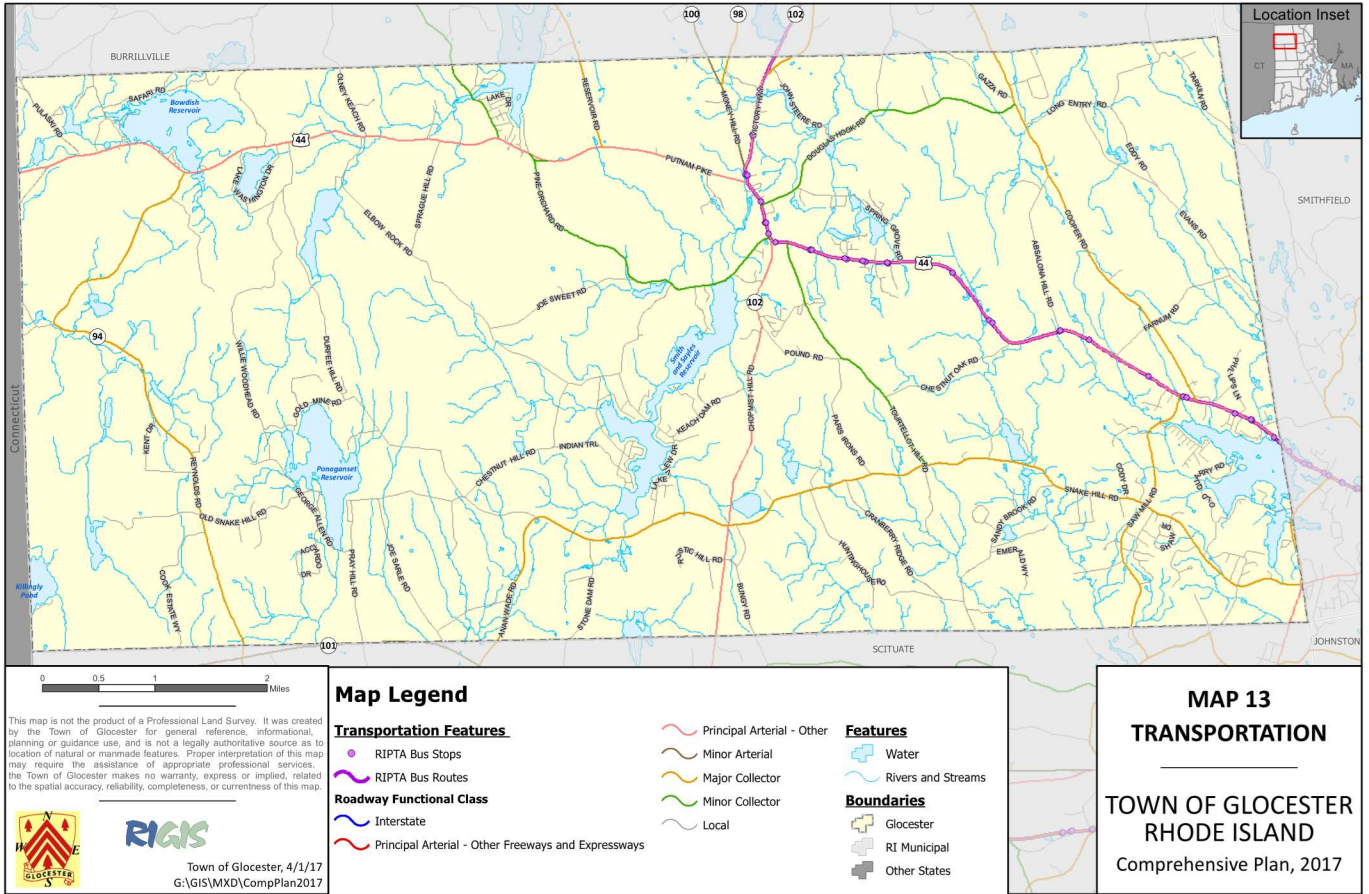














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