LINCOLN






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Municipal Resilience Program

Community Resilience Building

Summary of Findings

December 2022

Town of Lincoln, 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 severe flooding during the summer of 2022 (i.e., I-95 closure) have reinforced this urgency and compelled leading communities like the Town of Lincoln 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 Lincoln 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 called Community Resilience Building to assess current hazards and climate change impacts and to surface projects, plans, and policies for improved resilience. In December 2022, Lincoln'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 Lincoln.

The Lincoln 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 Lincoln employed an "anywhere at any scale", community-driven process called Community Resilience Building (CRB) (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 Lincoln. The Lincoln Local Hazard Mitigation Plan (2016, updated 2022) was particularly instructive as a reference. 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 Lincoln'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, is proffered for comments, corrections and updates from workshop attendees and other stakeholders. The leadership displayed by the Town of Lincoln 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 Lincoln Core Team identified the top hazards for the Town. The hazards of greatest concern included hurricanes and windstorms, blizzards and Nor'easters, and heavy precipitation events. Additional hazards highlighted by participants during the workshop included drought as well as extended late summer heat waves. These hazards have direct and increasing impacts on the infrastructure, environment, and residents of and visitors to Lincoln. These effects are seen in residential areas, natural areas (wetlands, rivers, lakes, forests, preserves), roads, bridges, businesses, transportation, municipal facilities, churches, schools, social support services, and other critical infrastructure and community assets within Lincoln.

Current Concerns and Challenges Presented by Hazards

The Town of Lincoln has several concerns and faces multiple challenges related to the impacts of natural hazards and climate change. In recent years, Lincoln 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 inland flooding along with tree damage and associated power outages. 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 Lincoln to proactively improve their resilience.

This recent series of extreme weather events highlight that the impacts from hazards are diverse. In Lincoln, these impacts include inland flooding from rivers and streams 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 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, as well as ill-prepared visitors. The combination of these issues presents a challenge to preparedness and mitigation priorities and requires comprehensive, yet locally specific actions in Lincoln.

The workshop participants were generally in agreement that Lincoln 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 along with the potential for other forms of infectious disease outbreaks.

Specific Categories of Concerns and Challenges

As in any community, Lincoln 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, & Railroad:

- Ongoing need for and cost of maintaining municipal roads, bridges, and dams as specified in the Lincoln Hazard Mitigation Plan (see Appendix A herein).
- Railroad tracks and trains that deliver ethanol fuel daily travel through a flood-prone section of the Albion area.
- Lack of funding, prioritization, and implementation of much needed sidewalk repair along many of the municipal and state roads to help increase safety amongst pedestrians as well as encourage alternate forms of mobility.
- Lack of timeliness of high hazard dam routine inspections and maintenance by municipality.
- Accumulation of debris, including large trees, clog the overflow of the Pratt Dam which is jointly owned by the towns of Cumberland and Lincoln. Additional related concerns regarding potential damage to the adjoining Kelly House.
- Embankment erosion and leakage at the Handy Pond Dam off Old River Road.
- Ongoing maintenance needed on designated High Hazard Dams to minimize the potential impacts from catastrophic failure.
- Corrugated aluminum culverts are collapsing and in need of repair along Angell Road, Riata Drive, Lennon Road, and Whipple Road. All problematic locations are situated near North Providence, Smithfield, and Bally's.
- Localized flooding due to in adequate stormwater drainage systems on the state road connecting Route 122 and Route 126. There may be ways to fix the issue as part of the planning repaving of segments of Route 126 (Smithfield Avenue).
- Limited nature-based landscaping including native tree and shrub planting along state-owned and maintain transportation corridors through Lincoln.
- Municipality is not responsible for nor able to control water volumes in the Scotts Pond.
- Local street flooding in various areas of Lincoln.

Specific Categories of Concerns and Challenges (cont'd)

- Lack of clarity regarding management and maintenance responsibility of the Blackstone Canal between the two controlling entities – state's Department of Environmental Management via the Blackstone River State Park and the United States National Park Service via the Blackstone River National Historic Park. Lack of clarity has resulted in difficulty in moving forward to fix the water control structural and operational issues in the Canal. Blackstone Canal has spillways apparently owned and operated by the state Department of Environmental Management which are failing. These failures have resulted in growing concerns amongst residents who then relay these concerns to local emergency management and Fire and Police Departments. There is a need to automate the system to elevate catastrophic failure concerns from residents and local business owners and ensure it is being addressed by the agency (DEM) who controls the spillways.

Stormwater, Wastewater Systems, Drinking Water Supply & Distribution:

- Potable water-related infrastructure built prior to the installation of the sewer system - and subsequent development growth - results in a system that is outdated and unable to provide needed capacity. This has increasing impacts to water quality.
- Aging sewer mains in mill villages.
- Lack of back-up power generators for many of the 32 sewer pump stations which would help to further fortify the overall system.
- Concerns regarding the ability of the current roads and drainage basin system to manage existing and future stormwater runoff scenarios.
- Lack of adequate and comprehensive mapping of town-wide impervious surfaces.
- Stormwater drain inspections are long overdue which leads to a lack of comprehensive and localized understanding of infrastructure inadequacies.
- Sewer pump station on Great Road in routinely flooded.
- Sewer system pumping stations on Lori Ellen Drive and Rollingwood Drive need onsite generators to help maintain continuity of service in the event of power outages.
- Over-reliance on the internet and lack of a backup communication system between the Town's sewer operations company (Veolia Water North America) and the pump station. If internet goes down in a storm, communications with the pump station are lost.
- Stormwater management challenges on a private parcel along Oakwood Avenue that is increasing the amount of runoff into an in adequate municipal stormwater drainage system.

Specific Categories of Concerns and Challenges (cont'd)

- Large amounts of impervious surface along with antiquated stormwater drainage systems that are undersized for current and future precipitation events in many locations such as the old mill villages (Lonsdale and Sayleville). Antiquated stormwater drainage systems are also an issue in several locations across private property where replacement or retrofits are prohibitively expensive for the current landowner.
- Along Walker Street near Scott Pond and Bleachery Pond there is stormwater runoff collecting in a low spot resulting in the transport of garbage and sediment into Scott Pond.

Emergency Management and Preparedness:

- Human health and wellbeing concerns at various condo developments, assisted living, and Alzheimer's units when power outages occur due to the lack of generators to run life support systems.
- A large mill residential conversion project resulting in approximately 200 condos within two separate buildings in the Albion area is flood prone due to the proximity of the adjoining river.
- Municipality works with the Rhode Island Special Needs Registry which automates regular updates. However, the registry is self-reported, resulting in an incomplete list for first responders and other support networks.
- Growing demand for service related to emergency management, with the potential for over reliance on mutual aid agreements with and resources from partners to meet local needs.
- Multiple and dispersed fire and rescue districts can result in delayed responses from northern and southern parts of Lincoln versus a single centralized emergency management station. Delayed response times for ambulance service because ambulances are in two different facilities often resulting in ambulances responding to calls on the other side of Lincoln.
- Ongoing need to acquire additional emergency management equipment and provide training on preparedness, response, and recovery to volunteers and public safety partners that include transferring lessons learned during the Covid-19 pandemic and other major events.
- The current need for repairs in the Blackstone Canal results in lack of functionality that effects the availability of water for use by the Fire Department to suppress fires in Lincoln.

Specific Categories of Concerns and Challenges (cont'd)

- Concerns about alternative means of emergency management communications in the event cell phone coverage is rendered inoperable.
- Antiquated budgeting system for fire districts in Lincoln resulting in an unequal distribution of some fire suppression equipment quality.
- Growing concerns about the severity of the recent drought in Lincoln.
- Growing concerns about the increased intensity of rain events.

Municipal Functions, Operations, & Growth:

- Issues with aging and cost of repairs for the Department of Public Works truck fleet used for garbage and snow removal across Lincoln.
- Large number of trees situated along transportation corridors in proximity to power lines has and does increase likelihood of power outages during high wind and rain events.
- Food vulnerability and scarcity issues amongst some residents with general lack of local sources for food, which places greater reliance on external supply chain.
- Public health and mental health concerns increasing amongst residents.
- Aging population that requires better planning for emergency services, housing, and social services.
- School facilities are stretched at current capacity due to rising population of K-12 students, despite the recent reconstruction of the High School. Growing trend of retirement aged residents moving out of Lincoln and younger, new families with school aged children moving in.
- Growing need to re-evaluate the education system and look to design one that will meet the needs of the growing population of students in Lincoln.
- State and federal program requirements are stressing the current municipal governance structure and system, creating conflicts in the current bureaucracy.
- Regional, multi-municipality collaboration opportunities can be a challenge to initiate despite the potential for better services and cost savings.
- Concerns about the impacts to historic and cultural assets during heavy rain events.

Specific Categories of Concerns and Challenges (cont'd)

Watersheds, Wetlands, Rivers, Open Space, Forests, Trees:

- Lack of adequate tree canopy cover creates an urban heat island along Front Street, Higgingson Avenue and other highly impervious areas in Lincoln.

Credit: Wikipedia – Blackstone Canal

Current Strengths and Assets

Just as certain locations, facilities, and populations in Lincoln stand out as particularly vulnerable to the effects of hazards and climate change, other features are notable assets for Lincoln'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 leadership, staff, and residents is a very appreciated strength within and across Lincoln. 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.
- Town Administrator and staff place a great deal of emphasis on collaborative and creative problem solving.
- Many staff in various municipal departments are longtime residents of Lincoln, resulting in a deep understanding and knowledge of the community over many decades.
- Rich diversity of residents that look to give back to their community by volunteering on various boards and commissions in Lincoln.
- Senior Center brings together elderly residents for educational and social services and doubles as an emergency shelter and meeting place during major disasters.
- Strong and productive working relationships between various municipal departments and the school system. The Lincoln Public School system is viewed as an appreciated asset within the community.
- Community places a great deal of support and energy into youth sports and support programs.
- The regularly occurring Lincoln Financial Town Meeting provides residents with an opportunity to provide comments and have direct input into the municipal governance process.
- Road network is in good shape with a 10-year paving plan currently being developed.
- Strong understanding of Incident Command System (ICS) during large-scale events.

Current Strengths and Assets (cont'd)

- Robust and routine communications between emergency management professionals regarding key concerns such as extreme weather events, fire suppression, and medical emergencies, among others, leading to a team approach during response and recovery efforts. Leadership and staff involved with these efforts debrief after every major event to discuss opportunities for improved operations and additional resource needs.
- Strong partnership between large employers (i.e., Amica Mutual Insurance) and the Lincoln Fire, Police, and Public Works Departments.
- Proactive approach to managing High Hazard Dams on list from the state's Department of Environmental Management including maintenance and operations of the Manton Dam (2008 – earthen dam, completely rebuilt with new low flow outlet), Butterfly Pond Dam (2015 – low flow outlet replaced), and Barney Pond Dam (2012 – rebuilt spillway and low flow outlet). This work includes upgrades to gates that allows for drawdowns of water levels to accommodate increased precipitation associated with major weather events. These actions have help to eliminate the potential for downstream impacts on the Moshassuck River and the residential and commercial properties in Saylesville.
- Prior investment 10 years ago to upgrade all sewer pump stations in partnership with Rhode Island Infrastructure Bank to increase functionality and reliability during extreme weather events.
- The sewer systems 32 pump stations have all been upgraded to allow remote control and operation as well as on-site generators for 9 pump stations to ensure continuity of services even during power outages. The sewer system including pump stations has been privatized which is generally viewed as a strength.
- Relatively large amount of protected open space and recreational areas with an ongoing goal of at least 30% open space in the Lincoln Comprehensive Plan. These areas are recognized as natural assets that improve mental health and fitness for residents as well as providing community resilience-related services such as heat reduction, stormwater mitigation, and drinking water filtration.
- Current zoning results in a mixture of residential, commercial, and industrial development in proximity to transportation corridors.

Current Strengths and Assets (cont'd)

- Lincoln Hazard Mitigation Plan was recently updated and reflects current vulnerabilities and mitigation actions from both 2016, as well as the 2022 update (see Appendix A herein).
- Locally generated casino and gambling proceeds are able to go directly into the municipal budget.
- Snow removal is very effective during blizzards.
- Rich assortment of historical and cultural assets in Lincoln.
- Blackstone River Watershed Council helps train residents on how to inspect culverts and conduct simple clean-up activities such as debris removal around storm drains in advance of major rain events.
- Strength of non-profit organizations such as the Blackstone River Watershed Council that serves as a long-time advocate for the Blackstone River's health and the benefits it provides for residents of Lincoln. The Council also provides guidance for the municipality on issues of smart growth versus the impacts of sprawl.
- Strength of municipal commission and boards such as the Conservation Commission that are populated by members of the community that care deeply about the wellbeing of Lincoln's residents and its environment and strive to be "part of the solutions".
- Police and Water Department located adjacent to each other at an elevation above known flood levels.
- Many residents participated in the "Zap50" which is a watershed cleanup effort along the Blackstone River.
- The drainage culvert inlet on Ballou Avenue was upgraded and stormwater runoff storage and infiltration areas were added to help keep the streets and adjoining homes from flooding.
- Strong conservation ethic amongst leadership, staff, and residents as evident by a robust and diverse assortment of open space, parks, and recreational areas.

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 improve Lincoln's strengths and reduce 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., sustainable growth, volunteerism, conservation & recreation, water management and provisioning);
- **Infrastructure improvements** (i.e., road/bridge network, stormwater management systems, green stormwater infrastructure, dams, pump stations, culverts, rivers);
- **Quality of life improvements** (i.e., parks and recreation, open space, sustainability, health & safety, economic prosperity, transportation, school system);
- **Emergency management** (i.e., communication system, Rescue Headquarters, outreach, education, continuation of services, vulnerable populations).

In direct response, the Community Resilience Building workshop participants developed the following actions and identified (but did not rank) them as priorities or additional actions. Mitigation/adaptation actions from the Lincoln Local Natural Hazard Mitigation Plan (2016, updated 2022) are provided in Appendix A for cross reference with the following actions generated during the Lincoln Community Resilience Building process.

Priority Actions

- Reestablish the Capital Improvement and Development Committee with inclusion of the Water Commission. Work as a single Committee to bring on a consultant to formalize a process, develop a timeline, and plan for implementation.

- Secure funding, develop a design with input from community, and implement a tree canopy enhancement project along Front Street.

Priority Actions (cont'd)

- Advance land acquisition projects that favor conservation and protection of natural resources and watersheds in accordance with the 30% conserved land goal in the Lincoln Comprehensive Plan.

- Advance maintenance of municipally owned roads and bridges, as well as the above-referenced High Hazard dams in Lincoln.

- Conduct an evaluation of equipment condition and readiness within Department of Public Works including garbage and snowplow trucks and look to upgrade or make improvements in phases over time to ensure the municipality can respond effectively to current and future hazards.

- Schedule workshops with the Blackstone River Watershed Council to help educate and train Lincoln residents on how to conduct culvert inspections and share results with Department of Public Works. This will help to develop a municipal-wide inventory of culvert condition.

- Clarify and address stormwater runoff issues across Lincoln through replacement of outdated drains to help increase stormwater management capacity.

- Continue to evaluate via engineering analysis the maintenance needs of High Hazard dams to remain in compliance with state of Rhode Island.

- Advance tree planting activities in older neighborhoods such as Lonsdale (including Front Street Plaza) and Saylesville to help reduce stormwater runoff, heat island effects, and enhance overall livability and aesthetics. Preference will be given to specific tree species that require limited maintenance and won't impact sidewalks (i.e., deep rooted tree species).

- Advance projects that will reduce the overall amount of impervious surface in Lincoln, including reducing the width of pavement on Chapel Street between Scott Pond and Bleachery Pond.

Priority Actions (cont'd)

- Conduct stormwater drainage system improvement and upgrades to increase capacity for larger, more intense precipitation events.

- Prioritize wetlands protection as a green infrastructure/stormwater management strategy, where appropriate.

- Investigate what needs to be done and costs associated with the remediation of Lonsdale Narrows (i.e., Lincoln Almond Ball Field) which is on U.S. Environmental Protection Agency's Comprehensive Environmental Response, Compensation, and Liability Act (CERCLIS) list due the former use as the municipal refuge disposal site. Site is under state jurisdiction but is a legal responsibility of the municipality.

- Explore the potential for dam removal projects that will ultimately reduce ongoing and escalating costs of dam maintenance. This will require outreach to residents with deep attachments to impoundments and ponds associated with dams proposed for removal.

- Conduct an engineering study to determine stormwater runoff volumes from current development with large impervious surfaces, such as the buildings and parking lots associated with Lincoln Mall.

- Determine the overall potential for reducing localized flooding issues through the strategic installation of green stormwater infrastructure projects (i.e., bioswales, filtration strips, native habitat installation, etc.) to help reduce water quality impacts to downstream waterbodies.

- Secure and install permanent generators at pump stations to increase resiliency during power outages. In addition, add to or replace existing communications system at pump stations to further increase reliability.

Additional Actions

- Review and compare mitigation actions (see Appendix A) from the Lincoln's Hazard Mitigation Plan against priority and additional actions generated during the Community Resilience Building workshop, herein.

- Initiate a comprehensive long range planning process for the Lincoln Public School District that looks at current facilities and projected growth of population, among other topics.

- Secure a 100MHz radio to be installed at the High School to help ensure communications with families and community members can occur during emergencies when cell phone coverage and signals have been compromised.

- Seek out approaches to managing the aquatic invasive water chestnut that is becoming established at Bleachery Pond and is widespread across Valley Falls Marsh. This invasive plant is having an impact on the local ecology of wetlands and ponds as well as on local recreational opportunities.

- Look to secure a centralized Rescue Headquarters as identified in the original Capital Improvement Committee's plan.

- Conduct town-wide assessment of drinking water supply and distribution infrastructure to help better inform a proactive plan to increase water supply with project schedule and costs.

- Work to clarify funding timetable deadlines for American Recovery Plan Act spending for agreed upon projects in Lincoln.

- Identify useful and usable spatial data to be included in Lincoln's Geographic Information System (GIS) platform and improve the user interface to help increase access by residents.

Additional Actions (cont'd)

- Update Lincoln's Comprehensive Plan and ensure that the strategies and approaches in the updated Comprehensive Plan are reflected in the capital improvements plan.

- Ensure that representatives from the Fire Department are included during various planning efforts including the Capital Improvement Plan and Comprehensive Plan updates. This will help with coordination and connections between the Fire Department and the Water Commission.

- Examine the geographic extent of the current Fire Districts and services provided against the current and future needs (i.e., 10-years out). Look to use this information and discussions to potentially shift to a more centralized system.

- Create more opportunities like the Lincoln Community Resilience Building workshop where municipal staff can collaborate on identifying concerns and strengths and associated actions to improve the resilience and sustainability of Lincoln.

- Look at economic development potential of Lonsdale Bleachery complex off Carrington Street. Exploration should include consideration of flooding potential of complex as well as privately owned service roads alongside the potential for public investment/incentives to make area more attractive to small businesses.

- Work on improving communication and partnership with Rhode Island Department of Transportation, especially on projects with overlapping municipal and state interests.

- Engage with neighboring municipalities regarding priority actions generated during Community Resilience Building workshops to help foster more regional approaches and projects over time.

CRB Workshop Participants: Department/Organization

Town of Lincoln – Town Council Representation
Town of Lincoln – Town Administrators Office
Town of Lincoln – Planning Department
Town of Lincoln – Emergency Management Agency
Town of Lincoln – Engineering Department
Town of Lincoln – Department of Public Works
Town of Lincoln – Finance Department
Town of Lincoln – Fire Department
Town of Lincoln – Police Department
Town of Lincoln – Building Department
Town of Lincoln – School Department
Town if Lincoln – Senior Center
Town of Lincoln – Planning Board
Town of Lincoln – Conservation Commission
Town of Lincoln – Water Commission
Quinnville Fire Department
Lime Rock Fire Department
Town of Cumberland – Planning Department
Blackstone River Watershed Council
Northern Rhode Island Chamber of Commerce
Amica Mutual Insurance
Bally's Casino

Lincoln Core Project Team

Phil Gould – Town Administrator – Town of Lincoln
Josh Berry – Town Planner – Town of Lincoln
Leslie Quish – Town Engineer – Town of Lincoln
Mike Gamage – Engineering Department Staff – Town of Lincoln
Michael Gagnon – Department of Public Works Director – Town of Lincoln
Peggy Weigner – Assistant to Town Planner – Town of Lincoln

Online CRB Workshop Facilitation Team

Rhode Island Infrastructure Bank - Kim Korioth (MRP Lead)
The Nature Conservancy - Adam Whelchel, Ph.D. (Lead Facilitator)
The Nature Conservancy - Sue AnderBois (Small Group Facilitator)
RI Dept. of Environmental Management – Jennifer West (Small Group Facilitator)
City Greener Strategies – Kevin Essington (Small Group Facilitator)
The Nature Conservancy - Kai Lo Muscio (Workshop IT Manager/Scribe)
The Nature Conservancy – Tim Mooney (Scribe)
Brown University – Zane Ruzicka (Scribe)
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Appendix A

Town of Lincoln
Local Hazard Mitigation Plan
(2016, updated 2022)

Mitigation Actions

Status of Proposed 2016 Actions

Table 26 Status of Proposed 2016 Actions

Action	Status?	Reason why it is not complete (shift in focus, funding, etc.)	Other comments
Evaluation of Structural Integrity of Dams	**Ongoing**		Completed by DEM.
Research Use of Computer Based Models to Simulate Dam Failure	**Done**		Completed by DEM for high hazard dams.
Establish a Priority List of Dam Repair	**Done**		
Public Education and Outreach for Downstream Residents	**No**	Not needed at this time.	Contacts are in EAP for emergencies.
Improve Existing Conditions of Dams	**Ongoing**		Regular maintenance
Evaluation of Functionality of Local Utilities	**Ongoing**	Wastewater ongoing.	Ongoing: Mill complexes being renovated and require to upgrade/repair as necessary.
Establish a Priority List for Utilities	**Ongoing**		
Improve Existing Conditions of Local Public Utilities Structures	**Ongoing**	Wastewater ongoing.	
Evaluate Structural Integrity of Bridges			
Establish a Priority List for Repairs (bridges)	**Done**		
Public Education and Outreach for Bridge Users	**No**	Not needed at this time.	Weight restrictions have been posted.
Improve Existing Conditions of Bridges	**No**	Not needed at this time for locally owned bridges.	RIDOT identified a guardrail deficiency which has been fixed. Major repairs would coincide with dredging of canal. State is actively repairing bridges.
Priority List of Street Repair Subject to Flooding	**Ongoing**		
Create a Standard to Review Drainage on New Developments/Projects	**Done**		Comply w DEM Stormwater manual (for projects over an acre). Have hired larger engineering firms as necessary.
Public Education and Outreach for Property Owners along Blackstone River	**No**		Done by various organizations for the Blackstone.
Evaluate Which Properties are Subject to Basement Flooding and Educate Owners	**Done**		They have talked to commercial businesses ahead of a storm. Provided options for elevating equip/goods.
Explore Possibility of Acquiring Repetitive Loss Property		Only 6 repetitive loss properties- 5 of which are commercial space. Not needed at this time.	Very few residential properties in SFHA.
Improve Existing Conditions of Properties and Streets Subject to Flooding from Poor Drainage	**Ongoing**		

Table 26 Status of Proposed 2016 Actions

Action	Status?	Reason why it is not complete (shift in focus, funding, etc.)	Other comments
Join Community Rating System	**No**	Not necessary at this time.	Very few residential properties in SFHA.
Continue Working Relationship with Tree Companies	**Ongoing**		
Public Education and Outreach for Town Residents to Identify Readiness	**Ongoing**		Improve on this effort. Move to 2022 Actions.
Develop and Distribute Educational Pamphlet	**No**		
Establish Area on Town Website to Post Fire Rating	**No**	Collected by Fire Districts	Improve on this effort. Move to 2022 Actions.
Develop Working Relationship with School Departments	**Done**		
Continue Working with Police and All Fire Districts on Natural Hazard Planning	**Ongoing**		
Develop Working Relationship with Privately Owed Medical Facilities	**Ongoing**		
Increase Pump Station Functionality	**Done**		
Improve Electrical Safety of Public Buildings	**Done**		
Maintain Safety and Care of Facility Residents	**Ongoing**		

Additional Actions Since Last Plan Update

Since the 2016 Hazard Mitigation Plan, the Town of Lincoln has the following notable successes in making their town more resilient and accessible.

- Upgraded restroom facilities at Lincoln Woods State Park built to also improve water quality.
- All parks have been upgraded to have similar facilities.
- Improvements to the Blackstone Regional Animal Shelter which now meet current RIDEM standards.
- Increased parking at the Senior Center which also serves as an Emergency Shelter.
- Renovations to Lincoln High School.
- The Town has received a portable bypass pump to use at the major pump stations.
- First responders have switched to an 800MHz radio system.
- The response to the 2020/2021 COVID-19 pandemic has enhanced remote learning capabilities.

VULNERABLE AREA: Flood Prone Drainage Systems, Streets, or Infrastructure

Mitigation Action	Mitigation Type	Alignment with Plan Goals	Action Priority
1. Reduce street flooding by improving the following locations: a. Spruce Street b. Ballou Avenue c. Allen Drive and Front Street d. Old River Road and Route 116	☒ Local Plans and Regulations ☒ Structure and Infrastructure ☐ Natural Systems Protection ☐ Education and Awareness This is a true mitigation action.	☒ 1 ☐ 4 ☒ 2 ☐ 5 ☒ 3	☐ High ☒ Medium ☐ Low **Action Status** New

Rationale – Why Is This Important?

- Spruce Street is a dead-end street with a low point and a dry well that can't keep up with sheet flow during heavy rains. (short-term action)
- Ballou Avenue is a low area in a residential neighborhood that experiences chronic flooding. The current headwall to direct water flow is failing. (short-term action)
- Allen Drive and Front Street intersection has undersized drainage infrastructure. (long-term action)
- Old River Road and Route 116 (owned by RIDOT) has undersized/underperforming drainage infrastructure. (long-term action)

Benefits	Obstacles	
Improved infrastructure function can reduce standing water on the streets after a heavy rainfall. Reducing the time standing water is on the road deduces damage to the road and keeps traffic moving.	Funding and coordination for RIDOT projects	
Lead/Champion	**Support**	
Lincoln Public Works and RIDOT		
Potential Funding Sources	**Estimated Cost (by location above)**	**Timeline**
› FEMA mitigation grants › Capital Improvement	a) $50,000 b) $250,000 c) $250,000 d) unknown	☒ Short Term (0-3 years) ☐ Medium Term (3-5 years) ☒ Long Term (more than 5 years)

Other Notes

VULNERABLE AREA: Flood Prone Drainage Systems, Streets, or Infrastructure

Mitigation Action	Mitigation Type	Alignment with Plan Goals	Action Priority
2. Reduce flooding of the Blackstone River a. Army Corps of Engineers (ACOE) to perform a study of the entire Blackstone River system b. Dredge the canal c. Upgrade flood control from manual systems to automated systems in the canal.	☒ Local Plans and Regulations ☒ Structure and Infrastructure ☐ Natural Systems Protection ☐ Education and Awareness This is a true mitigation action.	☒ 1 ☐ 4 ☒ 2 ☐ 5 ☒ 3	☐ High ☒ Medium ☐ Low **Action Status** New

Rationale – Why Is This Important?

The Blackstone River drains a watershed of approximately 540 square miles in Rhode Island and Massachusetts. Residential and industrial development along the river are susceptible to riverine flooding during high rainfall events. Rather than piecemeal downstream mitigation efforts, local municipalities would benefit from a regional system-wide study that would dictate what types of mitigation actions (such as dredging the canal and upgrading flood control systems) would be most beneficial.

Benefits	Obstacles	
A holistic approach to reducing river flooding within the entire system.	Funding and coordination for RIDOT projects	
Lead/Champion	**Support**	
Lincoln Public Works and RIDEM	Army Corps of Engineers	
Potential Funding Sources	**Estimated Cost**	**Timeline**
› Army Corps of Engineers	a) unknown b) unknown, based on previous study c) depends on location	☐ Short Term (0-3 years) ☐ Medium Term (3-5 years) ☒ Long Term (more than 5 years)

Other Notes

The Blackstone River Valley National Historic Park was established in 2014; the 402nd unit of the National Park Service.

This will be led by the Army Corps of Engineers.

VULNERABLE AREA: Bridges

Mitigation Action	Mitigation Type	Alignment with Plan Goals	Action Priority
3. Upgrade to Moshassuck River Bridge if more residential development occurs.	☐ Local Plans and Regulations ☒ Structure and Infrastructure ☐ Natural Systems Protection ☐ Education and Awareness	☒ 1 ☐ 4 ☒ 2 ☐ 5 ☒ 3	☐ High ☐ Medium ☒ Low **Action Status** New

Rationale – Why Is This Important?

Mill complex at 40 Walker Street is being redeveloped. That will bring increased traffic and use to the area over the Moshassuck River. It is approximately 10 feet wide by 15 feet long, unpassable by two-traffic. As the area of Town gets developed, this will cause a traffic stress point.

Benefits	Obstacles	
User safety for river crossing.	Permitting for work above the river	
Lead/Champion	**Support**	
Town Engineer	Public Works	
Potential Funding Sources	**Estimated Cost**	**Timeline**
› Offsite improvement funds › Public State/Local Capital Expense	$500,000	☐ Short Term (0-3 years) ☐ Medium Term (3-5 years) ☒ Long Term (more than 5 years)

Other Notes

Preparedness activity to aid in user safety and disaster response.

VULNERABLE AREA: Bridges

Mitigation Action	Mitigation Type	Alignment with Plan Goals	Action Priority
4. Preservation activities to old stone bridge on Reservoir Avenue over Crookfall Brook.	☐ Local Plans and Regulations ☒ Structure and Infrastructure ☐ Natural Systems Protection ☐ Education and Awareness	☐ 1 ☐ 4 ☒ 2 ☐ 5 ☐ 3	☐ High ☐ Medium ☒ Low **Action Status** New

Rationale – Why Is This Important?		
Unsafe conditions.		
Benefits	**Obstacles**	
User safety for river crossing.	Permitting for work above the river	
Lead/Champion	**Support**	
RIDOT and Federal Highway Administration (FHWA)		
Potential Funding Sources	**Estimated Cost**	**Timeline**
State and Federal highway improvement funds	Part of a larger state effort estimating $147,500[38]	☐ Short Term (0-3 years) ☐ Medium Term (3-5 years) ☒ Long Term (more than 5 years)

Other Notes

Reservoir Bridge No. 188, which carries Route 146 over Crookfall Brook, which serves as the boundary line between North Smithfield and Lincoln.

In design phase at the State level.

Preparedness and recovery activity.

VULNERABLE AREA: Bridges

Mitigation Action	Mitigation Type	Alignment with Plan Goals	Action Priority
5. Work with RIDOT on repairing the sidewalk on the Walker Street bridge, especially if there is more development.	☐ Local Plans and Regulations ☒ Structure and Infrastructure ☐ Natural Systems Protection ☐ Education and Awareness	☒ 1 ☐ 4 ☒ 2 ☐ 5 ☐ 3	☐ High ☐ Medium ☒ Low **Action Status** New

Rationale – Why Is This Important?

The sidewalk on the south side of Walker Street over Bleachery Pond has collapsed. Pedestrians are forced to walk on a narrow strip of sidewalk closer to traffic. This area is in a regulatory floodway.

Benefits	Obstacles	
Public access around mill complex which is being redeveloped. Structural improvements to a bridge that may be compromised with additional flooding.	Difference in priorities between the RIDOT and the Town of Lincoln.	
Lead/Champion	**Support**	
RIDOT	Public Works	
Potential Funding Sources	**Estimated Cost**	**Timeline**
RIDOT	$35,000 (design only)	☐ Short Term (0-3 years) ☒ Medium Term (3-5 years) ☐ Long Term (more than 5 years)

Other Notes

Part of RIDOT 10-year plan. It has been unsafe for 20 years!

May have to tie the sidewalk repair into a more comprehensive bridge repair project.

This is a recovery activity.

Google image of collapsed sidewalk on Walker Street bridge.

VULNERABLE AREA: Wastewater

Mitigation Action	Mitigation Type	Alignment with Plan Goals	Action Priority
6. Purchase a 3rd portable generator for the pump stations.	☐ Local Plans and Regulations ☒ Structure and Infrastructure ☐ Natural Systems Protection ☐ Education and Awareness	☐ 1 ☐ 4 ☒ 2 ☐ 5 ☐ 3	☐ High ☐ Medium ☒ Low **Action Status** New

Rationale – Why Is This Important?

The 23 pump stations could use another portable generator for backup power. During a power outage, it is important for public health and the environment to be able to keep the wastewater moving through the system. A portable generator could be temporary located to where it's needed.

Benefits	Obstacles	
Public health	Funding	
Lead/Champion	**Support**	
Lincoln Public Works		
Potential Funding Sources	**Estimated Cost**	**Timeline**
› FEMA Pre-Disaster Mitigation Grant › FEMA Hazard Mitigation Grant Program funding	$45,000	☒ Short Term (0-3 years) ☐ Medium Term (3-5 years) ☐ Long Term (more than 5 years)

Other Notes

This is a Preparedness activity.

VULNERABLE AREA: Wastewater

Mitigation Action	Mitigation Type	Alignment with Plan Goals	Action Priority
7. Permanent generators for the Rollingwood, Lori Ellen, and Eagles Nest wastewater pump stations.	☐ Local Plans and Regulations ☒ Structure and Infrastructure ☐ Natural Systems Protection ☐ Education and Awareness	☐ 1 ☒ 4 ☒ 2 ☒ 5 ☐ 3	☐ High ☒ Medium ☐ Low **Action Status**

Rationale – Why Is This Important?

During a power outage, it is important for public health and the environment to be able to keep the wastewater moving through the system. These 3 pump stations experience higher flows than others and would benefit from a permanent generator to supply backup power.

Benefits	Obstacles	
Public health	Funding	
Lead/Champion	**Support**	
Lincoln Public Works		
Potential Funding Sources	**Estimated Cost**	**Timeline**
› FEMA Pre-Disaster Mitigation Grant › FEMA Hazard Mitigation Grant Program funding	Estimate $100,000	☐ Short Term (0-3 years) ☒ Medium Term (3-5 years) ☐ Long Term (more than 5 years)

Other Notes

The public infrastructure located within the mill complexes will need to be replaced/upgraded in the future as/if development continues in the area.

This is a preparedness activity.

VULNERABLE AREA: Water Supply Systems

Mitigation Action	Mitigation Type	Alignment with Plan Goals	Action Priority
8. Replace or re-line sections of the Town's waterlines.	☐ Local Plans and Regulations ☒ Structure and Infrastructure ☐ Natural Systems Protection ☐ Education and Awareness	☐ 1 ☒ 4 ☒ 2 ☒ 5 ☐ 3	☐ High ☒ Medium ☐ Low **Action Status**

Rationale – Why Is This Important?

Aging water infrastructure system. Increasing water demand.

Benefits	Obstacles	
Public health	Funding	
Lead/Champion	**Support**	
Lincoln Water Commission	Lincoln Public Works	
Potential Funding Sources	**Estimated Cost**	**Timeline**
› Lincoln Water Commission Capital Improvement Program › Lincoln Water Commission Infrastructure Rehabilitation Plan	Unknown at this time	☐ Short Term (0-3 years) ☐ Medium Term (3-5 years) ☒ Long Term (more than 5 years)

Other Notes

Lincoln Water Commission is currently conducting a system-wide analysis. Results from this study (expected by 2025) will determine priority areas for replacement or re-lining of water pipes.

The public infrastructure located within the mill complexes will need to be replaced/upgraded in the future as/if development continues in the area.

This is a preparedness activity.

VULNERABLE AREA: Public Communication Equipment

Mitigation Action	Mitigation Type	Alignment with Plan Goals	Action Priority
9. Maintain local emergency communication equipment compatibility.	☐ Local Plans and Regulations ☒ Structure and Infrastructure ☐ Natural Systems Protection ☐ Education and Awareness	☐ 1 ☒ 4 ☒ 2 ☐ 5 ☐ 3	☐ High ☒ Medium ☐ Low **Action Status** New

Rationale – Why Is This Important?

The emergency communication equipment currently used by the Town is compatible with State systems. However, as technology improves, the equipment (such as routers) may need to be replaced.

Benefits	Obstacles	
Public safety	Funding	
Lead/Champion	**Support**	
Lincoln Police Department	RI State Police	
Potential Funding Sources	**Estimated Cost**	**Timeline**
› Public State/Local Capital Expense	Unknown at this time	☐ Short Term (0-3 years) ☐ Medium Term (3-5 years) ☒ Long Term (more than 5 years)

Other Notes

This is a preparedness activity.

VULNERABLE AREA: Dams

Mitigation Action	Mitigation Type	Alignment with Plan Goals	Action Priority
10. Identify a viable solution to address the seepage at Barney Pond Dam.	☐ Local Plans and Regulations ☒ Structure and Infrastructure ☐ Natural Systems Protection ☐ Education and Awareness This is a mitigation activity.	☒ 1 ☐ 4 ☐ 2 ☐ 5 ☒ 3	☒ High ☐ Medium ☐ Low **Action Status** New

Rationale – Why Is This Important?

Currently the seepage is being controlled with a low-flow outlet that is exercised annually. However, this issue needs a long-term solution. This is classified as a high hazard dam. Failure may result in widespread damage.

Benefits	Obstacles	
Improved dam integrity	Funding	
Lead/Champion	**Support**	
Public Works/Engineering		
Potential Funding Sources	**Estimated Cost**	**Timeline**
Lincoln Capital Improvement Funds	At least $100,000	☒ Short Term (0-3 years) ☐ Medium Term (3-5 years) ☐ Long Term (more than 5 years)

Other Notes

Short term solution: injection of grout $100,000

Long term solution: continued maintenance. Maybe install sheet pile and advanced grouting program.

Barney Pond Dam

VULNERABLE AREA: Dams

Mitigation Action	Mitigation Type	Alignment with Plan Goals	Action Priority
11. Improvements to Handy Pond Dam.	☐ Local Plans and Regulations ☒ Structure and Infrastructure ☐ Natural Systems Protection ☐ Education and Awareness This is a mitigation activity.	☒ 1 ☐ 4 ☐ 2 ☐ 5 ☒ 3	☐ High ☒ Medium ☐ Low **Action Status** New

Rationale – Why Is This Important?

RIDEM has noted deficiencies in the dam- seepage, old stumps, and excessive foot traffic along the top of the dam. The Town of Lincoln is currently contesting ownership of the dam. This is classified as a high hazard dam. Failure may result in widespread damage.

Benefits	Obstacles	
Public Safety	Identifying ownership	
Lead/Champion	**Support**	
Public Works		
Potential Funding Sources	**Estimated Cost**	**Timeline**
Capital Improvement Funds if it is determined that the Town owns it. FEMA BRIC funds	Unknown	☐ Short Term (0-3 years) ☒ Medium Term (3-5 years) ☐ Long Term (more than 5 years)

Other Notes

Maybe sheetpile to stabilize embankment.

Short term: Determine ownership.

VULNERABLE AREA: Critical Municipal Hazard Response Facilities

Mitigation Action	Mitigation Type	Alignment with Plan Goals	Action Priority
12. Safety upgrades to all town-owned buildings. a) Assessment b) Prioritize	☐ Local Plans and Regulations ☒ Structure and Infrastructure ☐ Natural Systems Protection ☐ Education and Awareness	☐ 1 ☐ 4 ☒ 2 ☐ 5 ☐ 3	☒ High ☐ Medium ☐ Low Action Status New

Rationale – Why Is This Important?		
Safety upgrades need for cameras, lighting, and communications.		
Benefits	**Obstacles**	
Public Safety	Funding	
Lead/Champion	**Support**	
Lincoln Planning and Rescue	Public Works	
Potential Funding Sources	**Estimated Cost**	**Timeline**
Lincoln Capital Improvements Operating Budget Federal Infrastructure Bill (ARPA) Federal funding for improved air quality	• Town Hall and Highway Garage Assessment: $50,000 each • Rescue stations safety upgrades: $50,000	☒ Short Term (0-3 years) ☐ Medium Term (3-5 years) ☐ Long Term (more than 5 years)

Other Notes

Town Hall and Highway Garage need building assessments: High Priority

Safety upgrades to existing rescue stations is a High Priority

Preparedness activities.

VULNERABLE AREA: Critical Municipal Hazard Response Facilities

Mitigation Action	Mitigation Type	Alignment with Plan Goals	Action Priority
13. Build a new Rescue station to accommodate consolidation and meet demands of growth.	☐ Local Plans and Regulations ☒ Structure and Infrastructure ☐ Natural Systems Protection ☐ Education and Awareness	☐ 1 ☐ 4 ☒ 2 ☐ 5 ☐ 3	☒ High ☐ Medium ☐ Low Action Status New

Rationale – Why Is This Important?

Lincoln experiences a 1-2% population growth annually. The Town would like a centrally located Rescue station that would replace the stations at the north and south ends of town. This would improve response times.

Benefits	Obstacles	
Public Safety	Funding	
Lead/Champion	**Support**	
Lincoln Rescue		
Potential Funding Sources	**Estimated Cost**	**Timeline**
Lincoln Capital Improvements Operating Budget Federal Infrastructure Bill (ARPA) Federal funding for improved air quality	$7-$8 million	☒ Short Term (0-3 years) ☐ Medium Term (3-5 years) ☐ Long Term (more than 5 years)

Other Notes

A location has been sited between Town Hall and DPW Garage for a comprehensive EMA complex.

This is a Preparedness activity

VULNERABLE AREA: Populations

Mitigation Action	Mitigation Type	Alignment with Plan Goals	Action Priority
14. Improve promotion of the RI Special Needs Registry.	☐ Local Plans and Regulations ☐ Structure and Infrastructure ☐ Natural Systems Protection ☒ Education and Awareness	☒ 1 ☒ 4 ☐ 2 ☐ 5 ☐ 3	☒ High ☐ Medium ☐ Low **Action Status** New

Rationale – Why Is This Important?

The Department of Health and Rhode Island Emergency Management Agency have worked with E-911 to notify first responders when they are responding to a household that may have someone enrolled in the Registry.

Benefits	Obstacles	
Public Safety	Priorities in the Town	
Lead/Champion	**Support**	
Public Safety	Police and Rescue	
Potential Funding Sources	**Estimated Cost**	**Timeline**
Public Safety Budget	Staff time	☒ Short Term (0-3 years) ☐ Medium Term (3-5 years) ☐ Long Term (more than 5 years)

Other Notes

https://health.ri.gov/emergency/about/specialneedsregistry/

This is a Preparedness activity.

VULNERABLE AREA: Populations

Mitigation Action	Mitigation Type	Alignment with Plan Goals	Action Priority
15. Improve public outreach efforts and available information on the Town's website. a) Post current fire rating on Town website b) Create a space on the site for storm preparedness and other readiness information.	☐ Local Plans and Regulations ☐ Structure and Infrastructure ☐ Natural Systems Protection ☒ Education and Awareness	☒ 1 ☒ 4 ☐ 2 ☐ 5 ☐ 3	☒ High ☐ Medium ☐ Low **Action Status** From 2016

Rationale – Why Is This Important?

The recent survey in conjunction with this plan update showed that Lincoln residents are looking to social media and email for pre-storm educational information.

Carryover mitigation actions from 2016 include posting the current fire rating on the Town's website and having a Public Education and Outreach component for Town Residents to Identify Readiness.

Benefits	Obstacles	
Preparedness		
Lead/Champion	**Support**	
Public Safety	Planning	
Potential Funding Sources	**Estimated Cost**	**Timeline**
Public Safety Budget	Staff time	☒ Short Term (0-3 years) ☐ Medium Term (3-5 years) ☐ Long Term (more than 5 years)

Other Notes

The Town is currently developing a more informative website.

This is a Preparedness activity.

VULNERABLE AREA: Natural Resources

Mitigation Action	Mitigation Type	Alignment with Plan Goals	Action Priority
16. When request is formalized by RIDEM, act on the identified Total Maximum Daily Loads (TMDLs) to improve water quality.	☒ Local Plans and Regulations ☐ Structure and Infrastructure ☒ Natural Systems Protection ☐ Education and Awareness	☐ 1 ☐ 4 ☐ 2 ☐ 5 ☒ 3	☒ High ☒ Medium ☐ Low **Action Status** New

Rationale – Why Is This Important?		
Water Quality		
Benefits	**Obstacles**	
Improved water quality	Funding	
Lead/Champion	**Support**	
Public Works		
Potential Funding Sources	**Estimated Cost**	**Timeline**
EPA Clean Water grants	Unknown at this time	☐ Short Term (0-3 years) ☒ Medium Term (3-5 years) ☐ Long Term (more than 5 years)

Other Notes

RIDEM has mentioned to the Town that multiple water bodies do not meet state water quality criteria. RIDEM works with municipal officials, watershed groups and other partners and interested parties in developing the water quality restoration plans. Once a TMDL is completed including public review and comment on the draft plan, the document is submitted to US EPA for its final review and approval.

This is a Response activity.

VULNERABLE AREA: Historic Resources

Mitigation Action	Mitigation Type	Alignment with Plan Goals	Action Priority
17. Create an Inspection Plan or Pre-Disaster Resiliency for Moffett Mill and Hearthside.	☒ Local Plans and Regulations ☒ Structure and Infrastructure ☐ Natural Systems Protection ☐ Education and Awareness	☐ 1 ☐ 4 ☐ 2 ☐ 5 ☒ 3	☐ High ☒ Medium ☐ Low **Action Status** New

Rationale – Why Is This Important?

These historic properties are part of the Town's identity. In Lincoln. historic properties and cultural resources are also valuable economic assets that can increase property values and attract businesses and tourists.

Benefits	Obstacles	
Planning for potential natural disasters can reduce future damages and ensure the future growth of safe and sustainable historic communities.		
Lead/Champion	**Support**	
Public Works	Planning, Friends of Hearthside	
Potential Funding Sources	**Estimated Cost**	**Timeline**
Historic Preservation Grants Town Capital (reserved for a capital project) or Operating Budget (annual budgeted item) Funding. The operation of Hearthside is from Operating budget and fundraising.	$50,000 Mill $50,000 Hearthside	☐ Short Term (0-3 years) ☒ Medium Term (3-5 years) ☐ Long Term (more than 5 years)

Other Notes

Along the Moshassuck River, the small mill is believed to be the first machine shop constructed in Rhode Island and is a rare example of a wooden mill built during the first wave of industrialization in the Blackstone Valley. This is a Preparedness activity.

Moffett Mill

Hearthside House

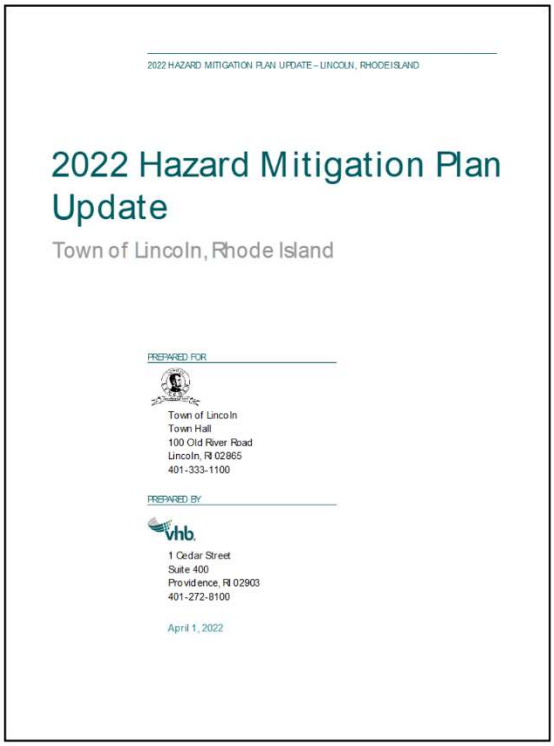
Appendix B

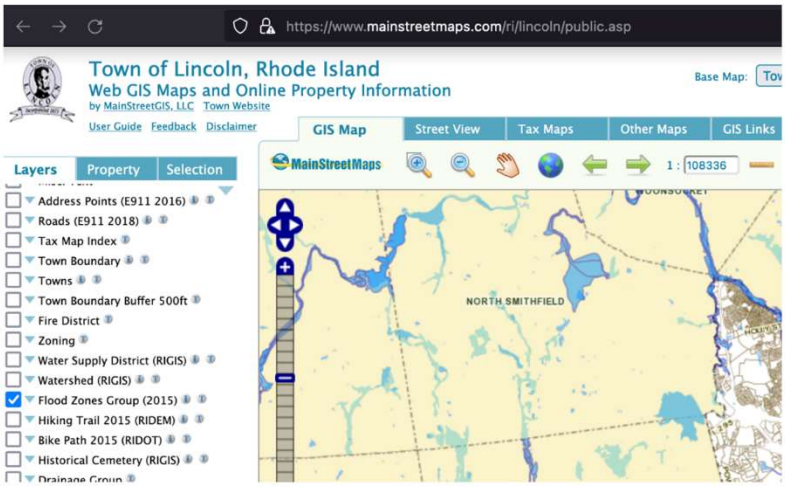
Lincoln

Map Resource Packet*

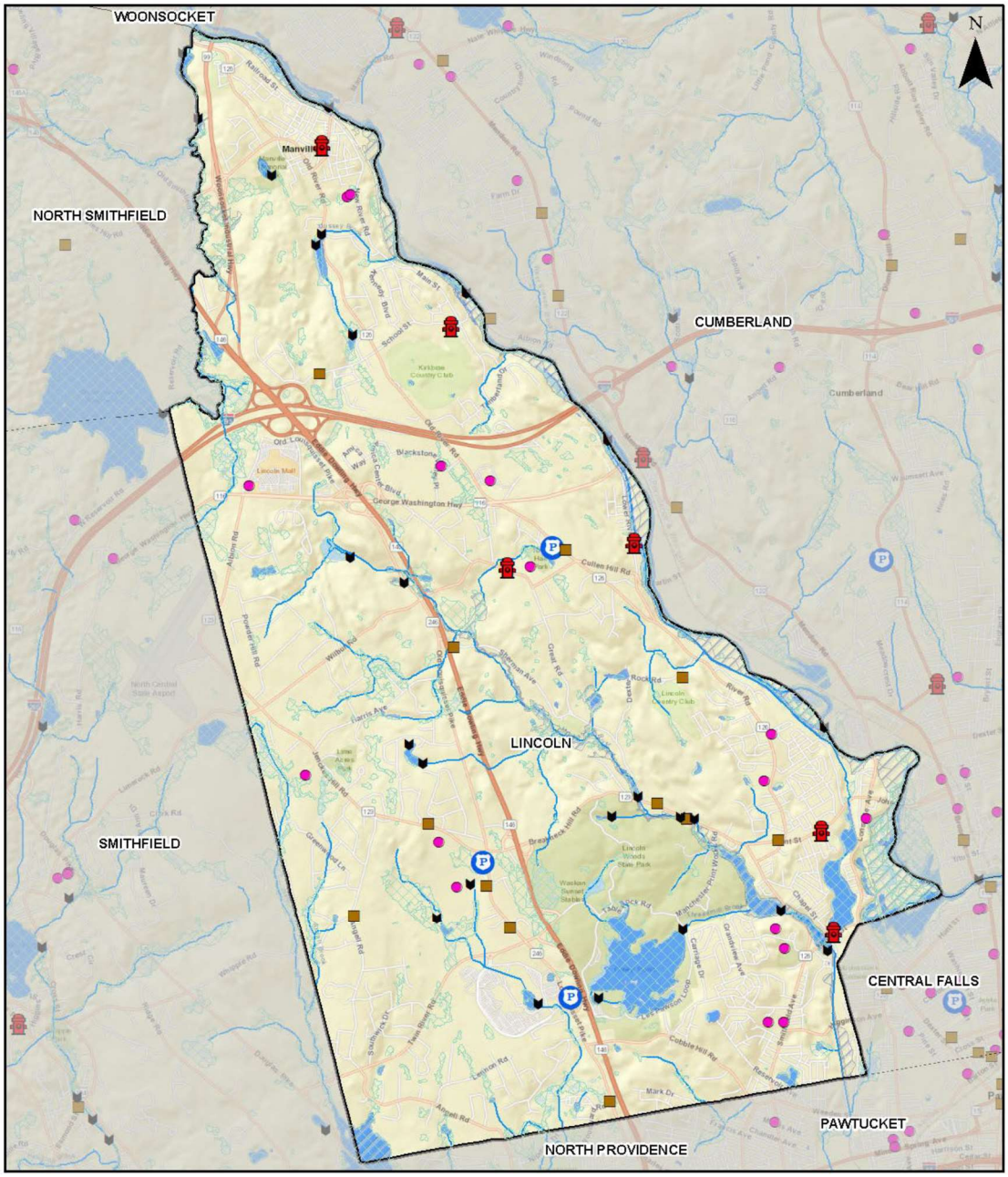
Used During

Workshop





***Gathered from Lincoln's Hazard Mitigation Plan (2016, updated 2022) and Lincoln's WebGIS Site**



Legend

- Historic Sites
- Police Stations
- Fire Stations
- Schools
- Dams
- Wetlands
- Town Line
- Special Flood Hazard Area
- Lakes, Rivers, Streams

Community Assets
Lincoln, RI

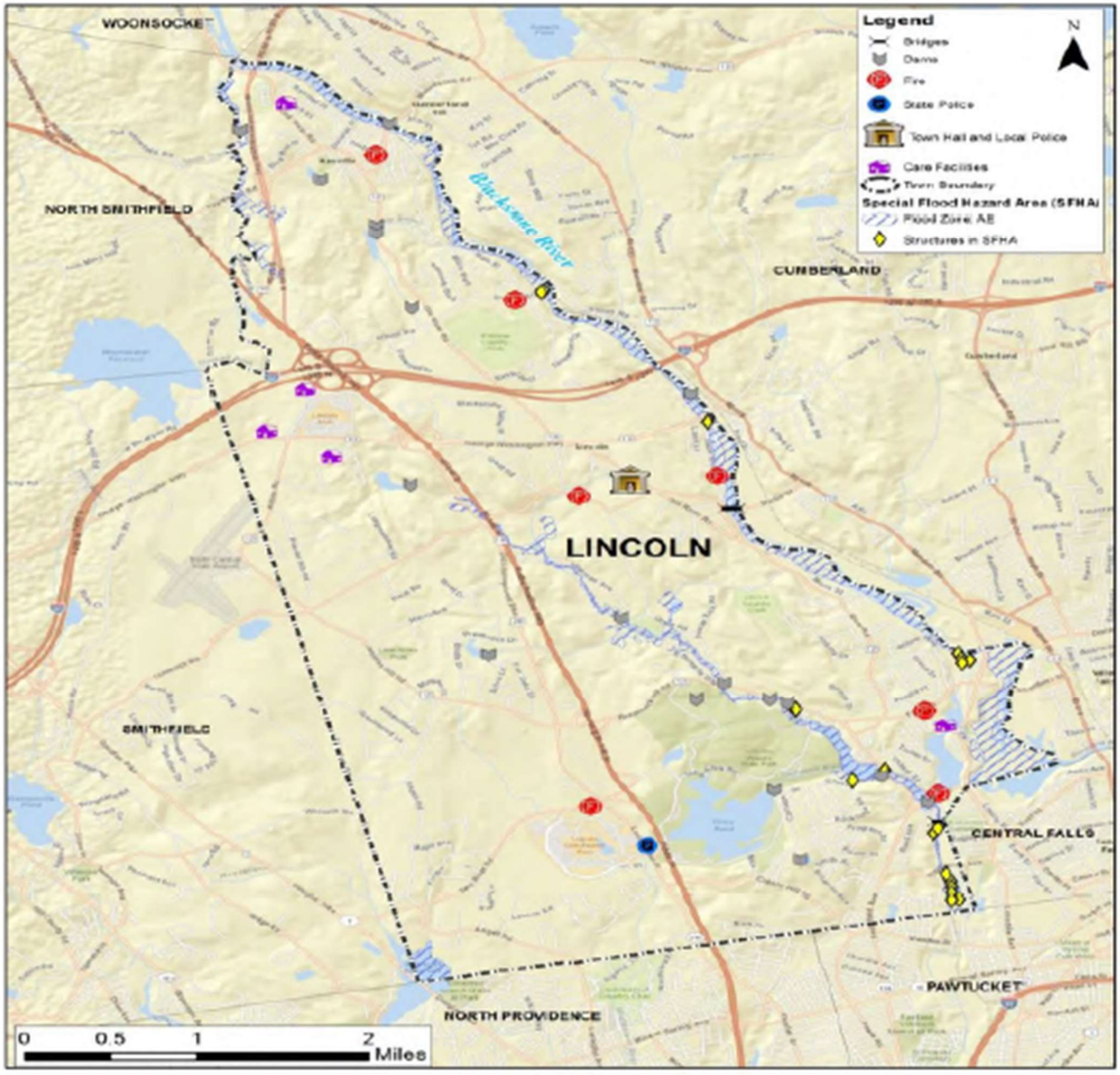
0 0.5 1 2 Miles

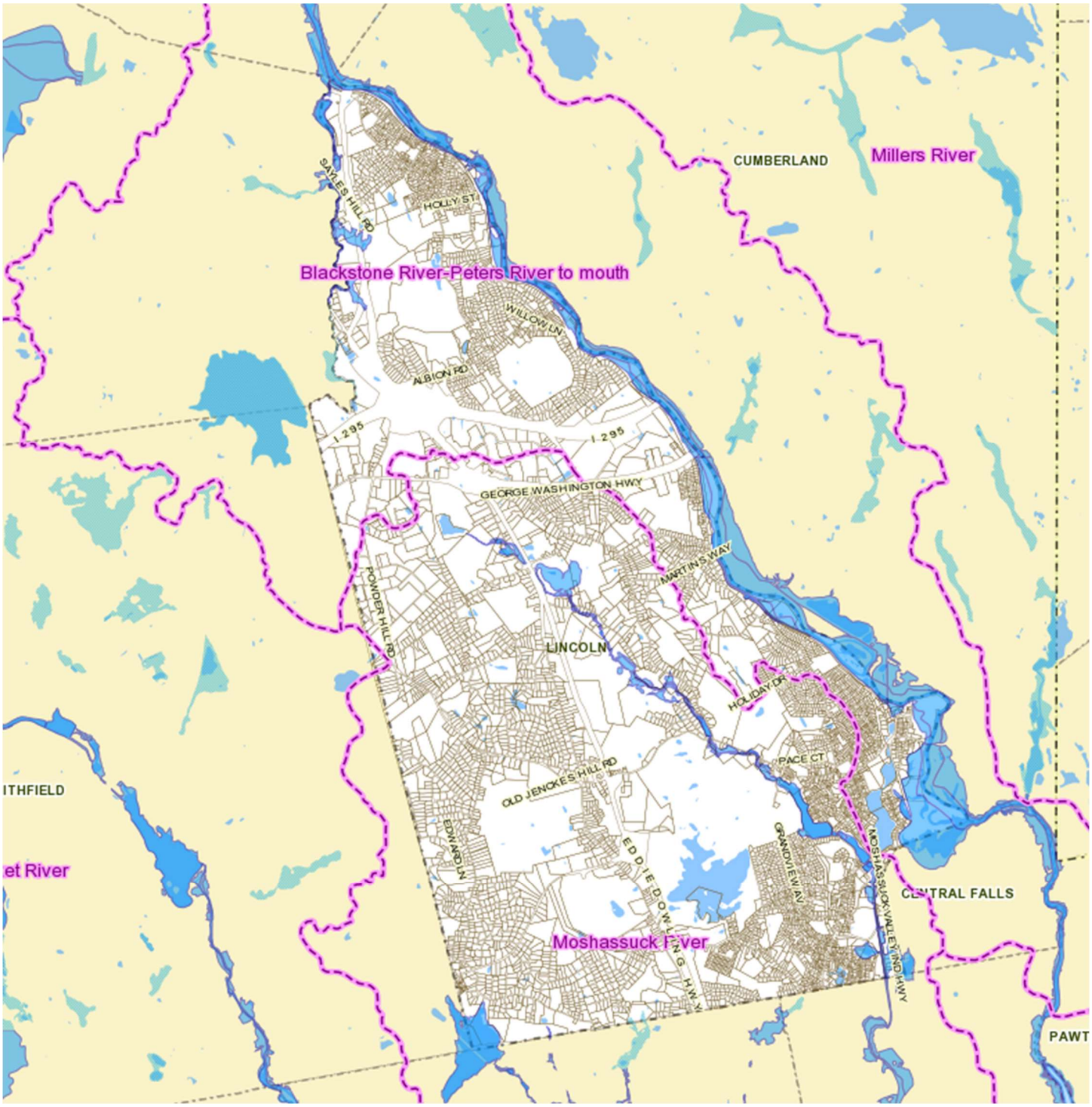
Source: RI Geographic Information System, 2021

h. Risk Map

Map 2: Risks in Lincoln. At-risk facilities including structures in the floodplain, emergency response facilities, dams, bridges, and senior living.

Map 2: Risk Areas in Lincoln, RI





Lincoln Flood Zones Group (2015) with Watershed (RIGIS)

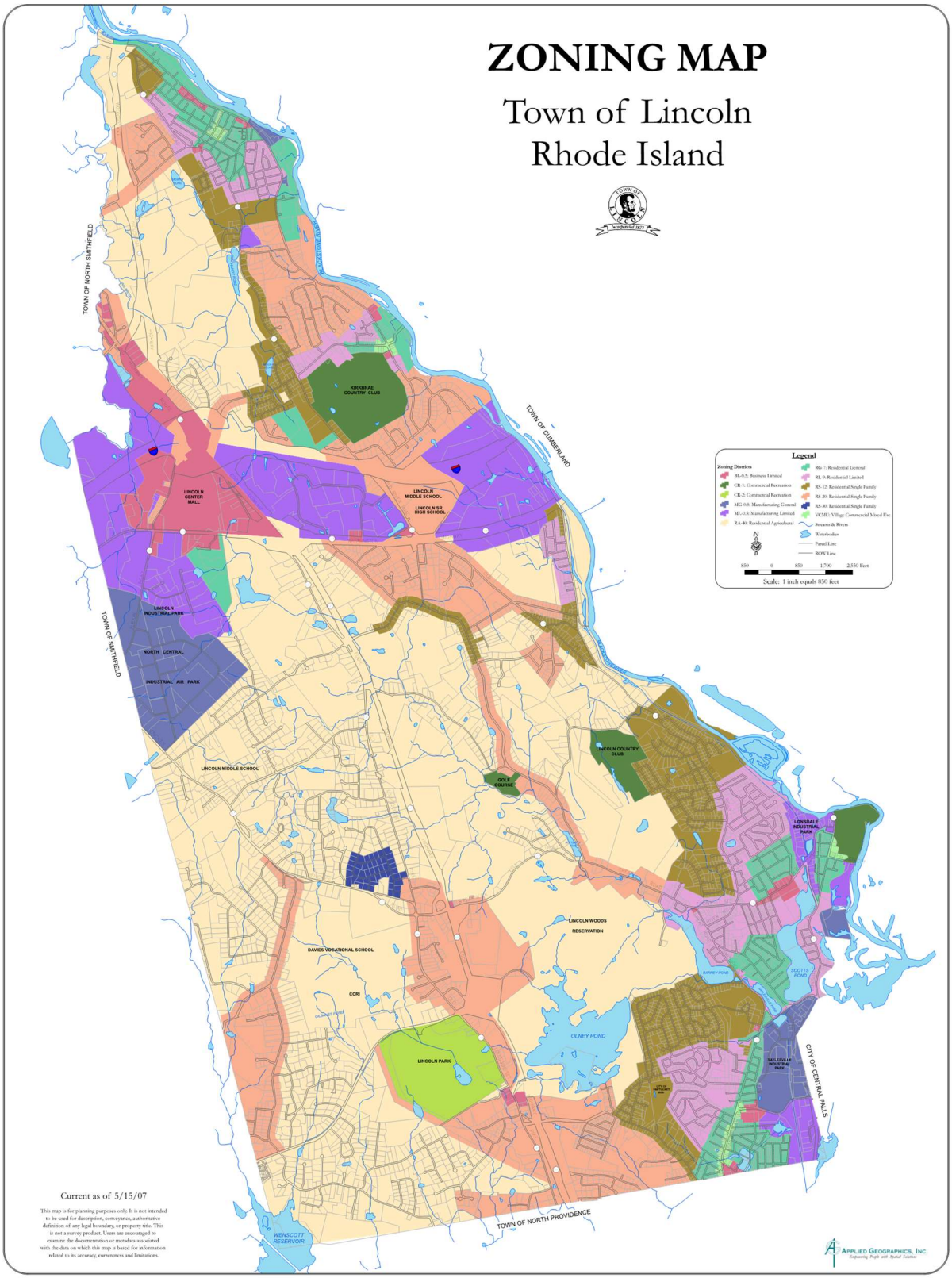

ZONING MAP
Town of Lincoln
Rhode Island
TOWN OF NORTH SMITHFIELD
TOWN OF CUMBERLAND
TOWN OF SMITHFIELD
TOWN OF NORTH PROVIDENCE
CITY OF CENTRAL FALLS
KIRKBRAE COUNTRY CLUB
LINCOLN CENTER MALL
LINCOLN MIDDLE SCHOOL
LINCOLN SR. HIGH SCHOOL
LINCOLN INDUSTRIAL PARK
NORTH CENTRAL
INDUSTRIAL AIR PARK
LINCOLN MIDDLE SCHOOL
GOLF COURSE
LINCOLN COUNTRY CLUB
LONSDALE INDUSTRIAL PARK
LINCOLN WOODS RESERVATION
DAVIES VOCATIONAL SCHOOL
CCRI
OLNEY POND
LINCOLN PARK
SCOTTS POND
SALISBURY INDUSTRIAL PARK
WENSCOTT RESERVOIR
Legend
Zoning Districts
BL-0.5: Business Limited
CR-1: Commercial Recreation
CR-2: Commercial Recreation
MG-0.5: Manufacturing General
ML-0.5: Manufacturing Limited
RA-40: Residential Agricultural
RG-7: Residential General
RL-9: Residential Limited
RS-12: Residential Single Family
RS-20: Residential Single Family
RS-30: Residential Single Family
VCMU: Village Commercial Mixed Use
Streams & Rivers
Waterbodies
Parcel Line
ROW Line
850 0 850 1,700 2,550 Feet
Scale: 1 inch equals 850 feet
Current as of 5/15/07
This map is for planning purposes only. It is not intended to be used for description, conveyance, authoritative definition of any legal boundary, or property title. This is not a survey product. Users are encouraged to examine the documentation or metadata associated with the data on which this map is based for information related to its accuracy, currentness and limitations.
Applied Geographics, Inc.

Figure 8 Population Density of Lincoln

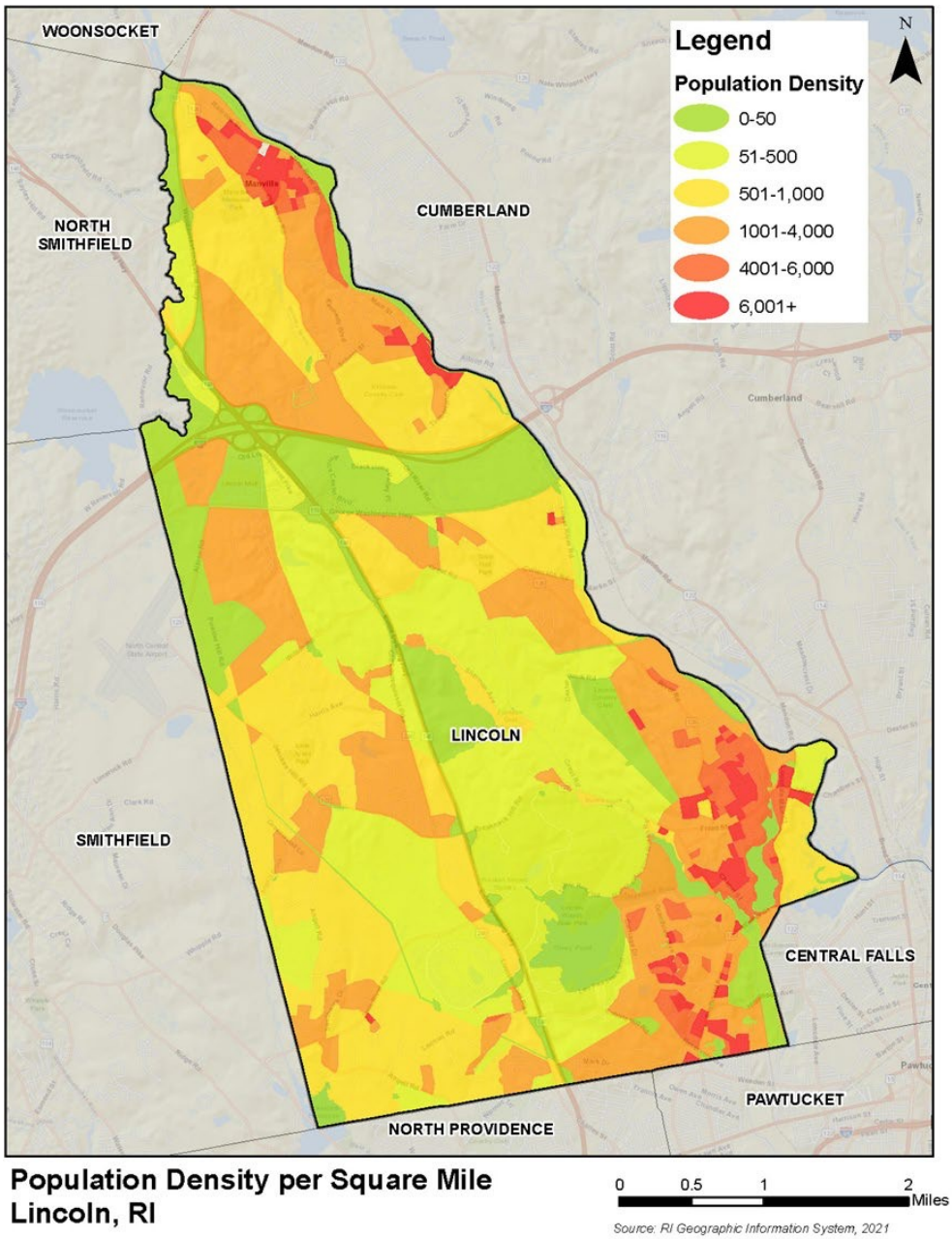
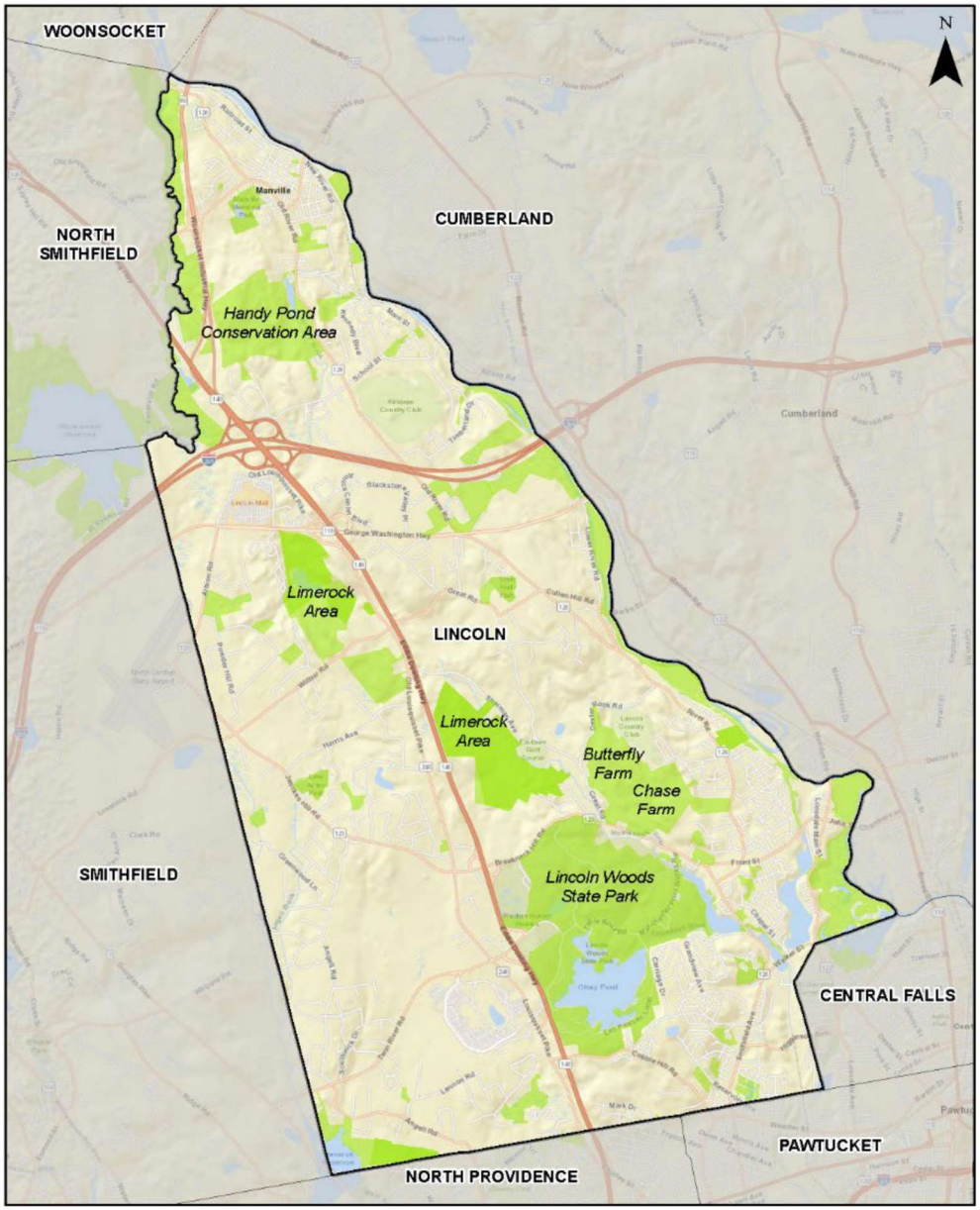
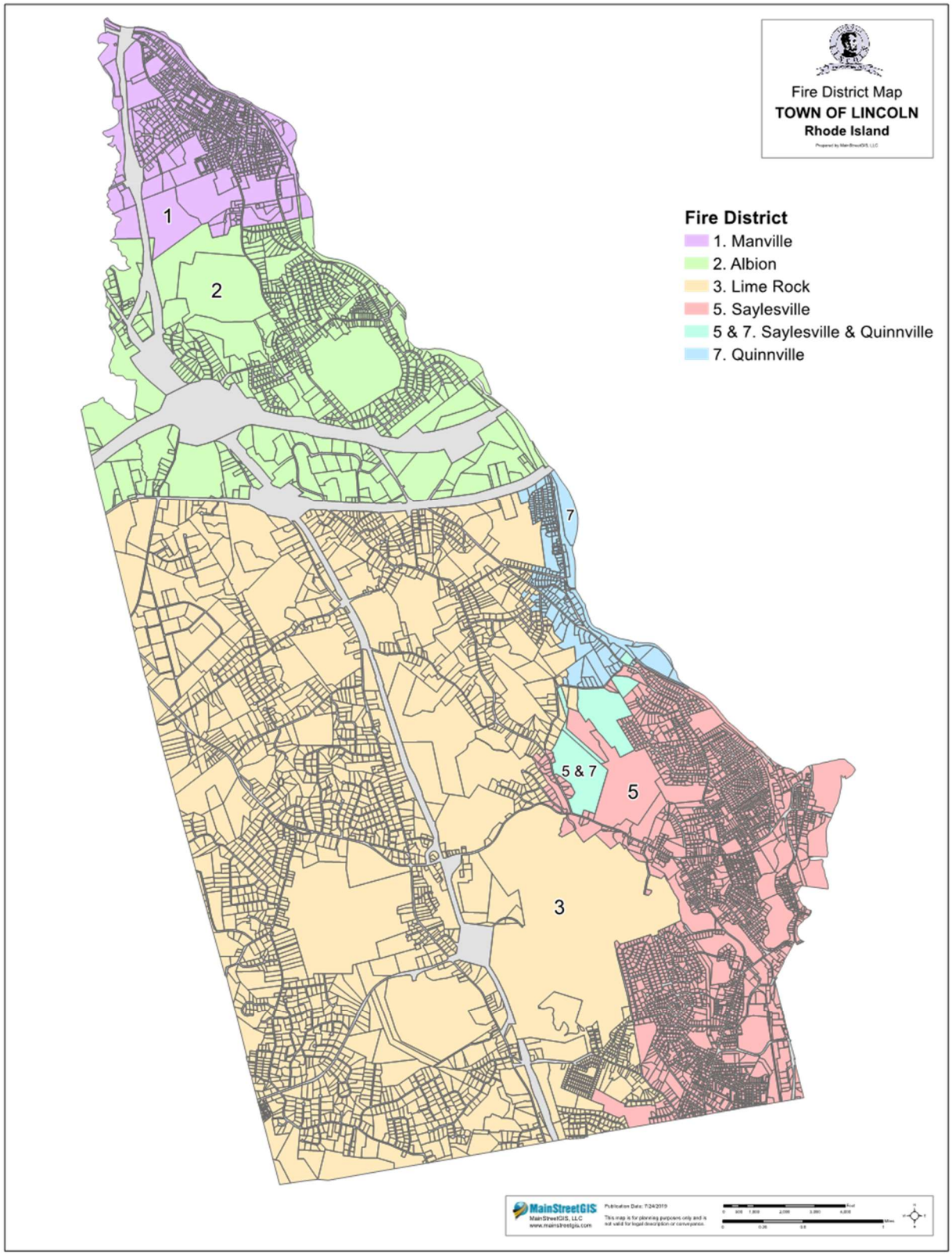
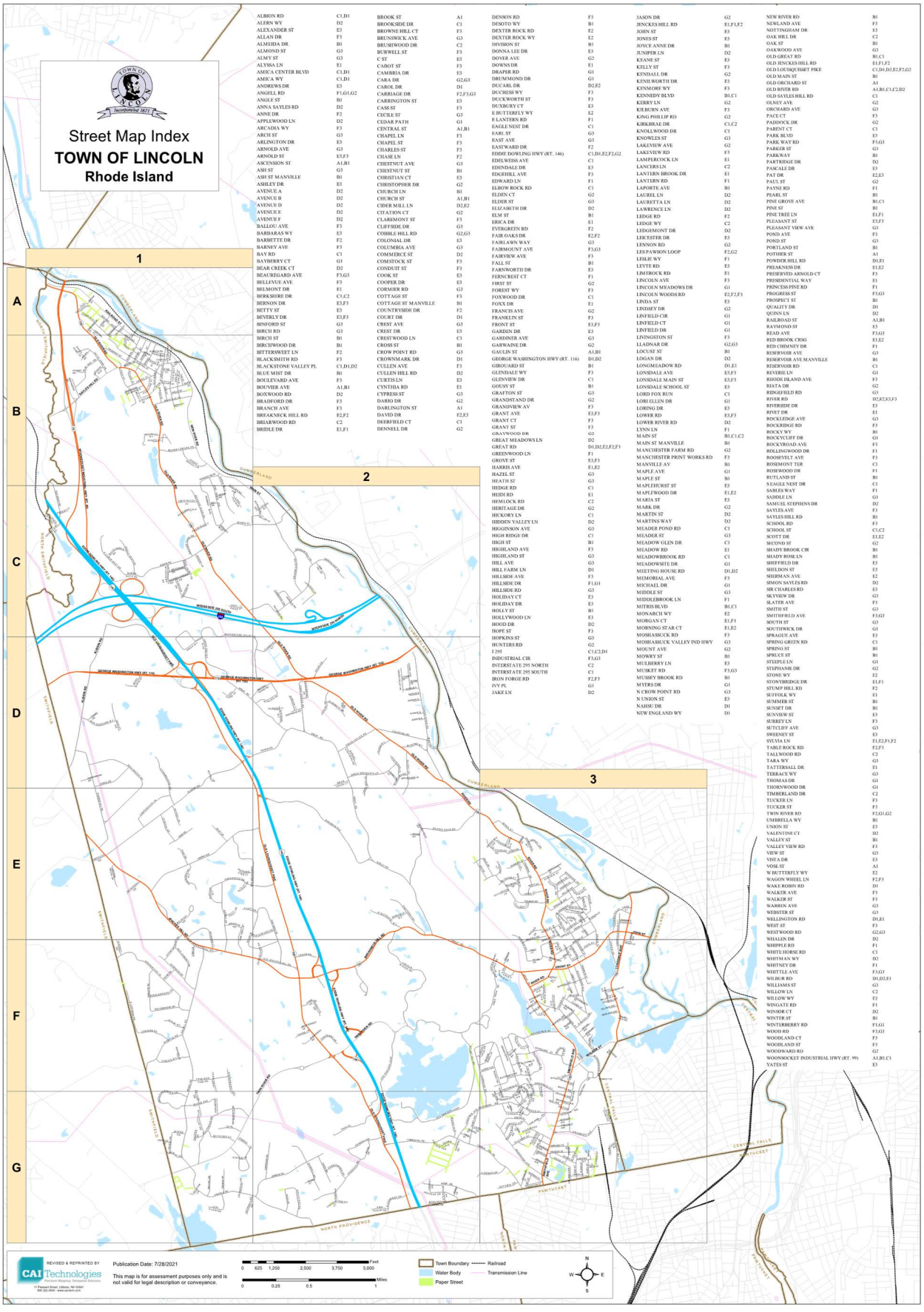


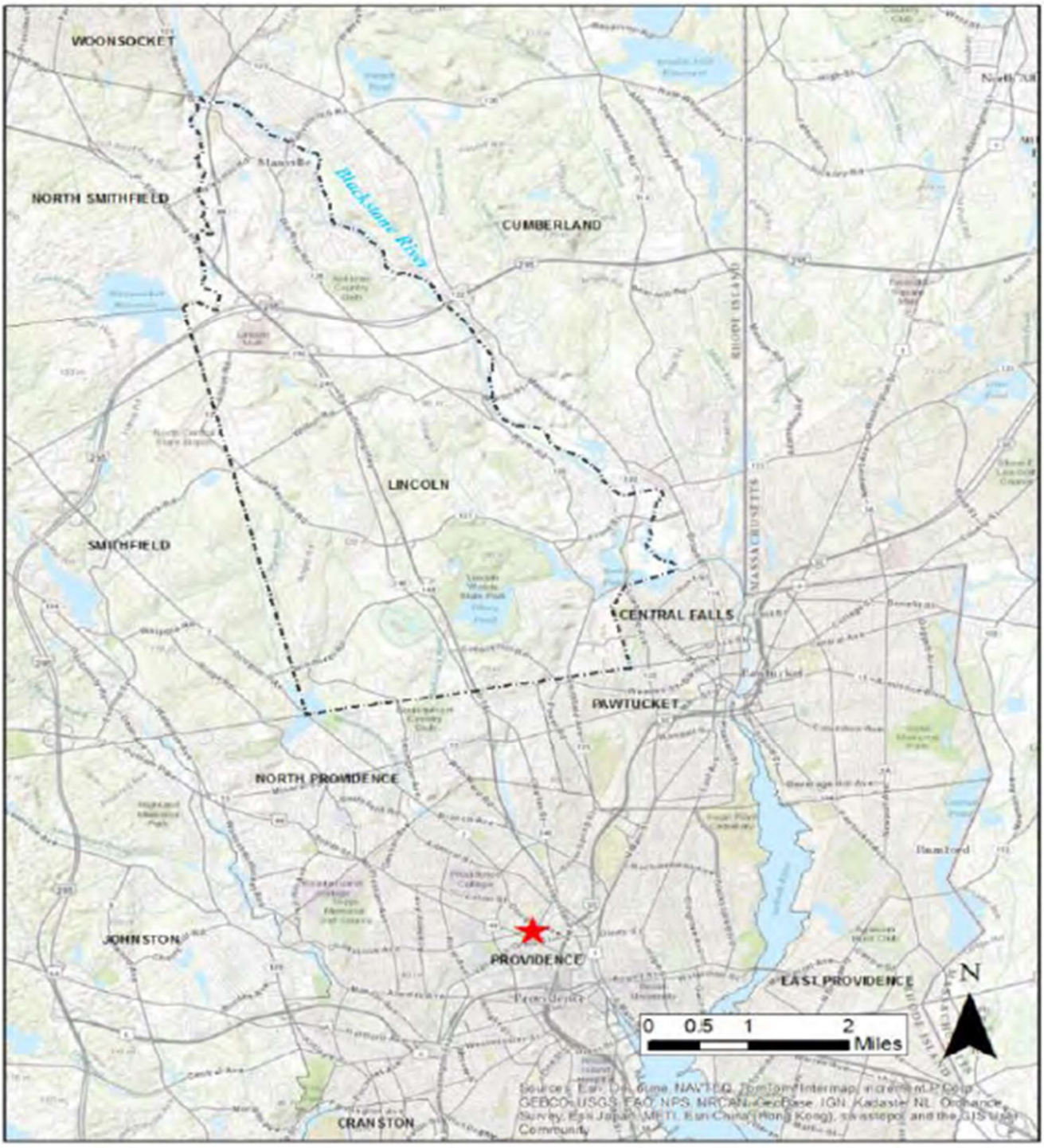
Figure 4: Conservation Land




Fire District Map
TOWN OF LINCOLN
Rhode Island
Fire District
1. Manville
2. Albion
3. Lime Rock
5. Saylesville
5 & 7. Saylesville & Quinnville
7. Quinnville
1
2
3
5
5 & 7
7
MainStreetGIS


Street Map Index
TOWN OF LINCOLN
Rhode Island
Incorporated 1871
1
2
3
A
B
C
D
E
F
G
REVISED & REPRINTED BY
CAI Technologies
Publication Date: 7/28/2021
This map is for assessment purposes only and is not valid for legal description or conveyance.
Feet
0 625 1,250 2,500 3,750 5,000
Miles
0 0.25 0.5 1
Town Boundary
Water Body
Paper Street
Railroad
Transmission Line
N
W
E
S

Map 1: Lincoln, Rhode Island



www.CommunityResilienceBuilding.org