



Model POCD Chapter: Climate Resilience

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Climate Resilience

Planning for natural climate hazards has historically relied on the assumption that future conditions will resemble historical conditions. However, variables such as flood frequencies, storm intensities, and temperature extremes observed over the last century can no longer reliably guide infrastructure design, land-use regulation, and emergency preparedness due to climate change. Climate change has altered assumptions as hazards become more frequent, intense, and less predictable. Risks are now increasing and require long-term planning for the WestCOG region. [MUNICIPALITY] is planning for more substantial impacts from these hazards by incorporating regionally downscaled, locally specific climate data and trends into its planning process to increase [MUNICIPALITY]'s climate resilience and preparedness for the future.

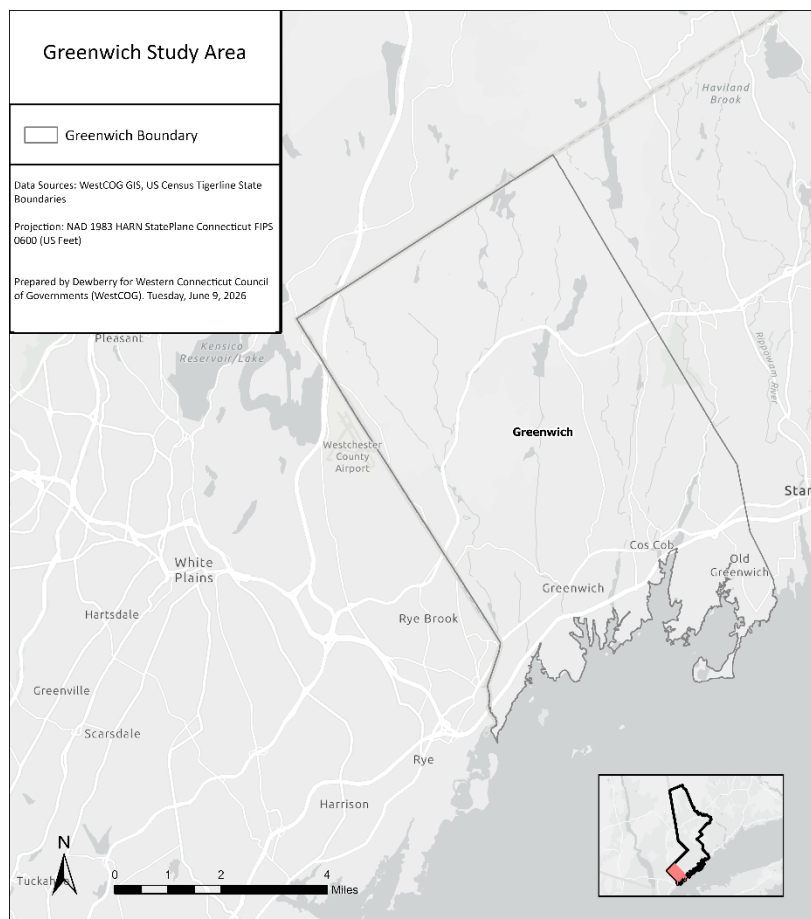


Figure 1. [MUNICIPALITY] boundary. [Current map displays Greenwich as an example.]

Climate Hazards

[Describe the natural hazards to which the community is exposed.]

[MUNICIPALITY] faces a wide range of climate and natural hazards, including flooding, sea level rise [coastal municipalities], higher and more frequent high tides [coastal municipalities], rising temperatures, wildfires, and extreme storms, among others. The intensity of Atlantic tropical cyclones and thunderstorms is predicted to increase, leading to more severe flooding from heavier rainfall in the Northeast United States. Prolonged drought and extreme heat events are also projected to become more frequent and intense, with cascading effects on water supply, public health, forest health, and wildfire risk.

[Select localized climate change description, review statement to confirm accuracy, and delete the non-essential information for the specific municipality.]

- **Coastal-High** [Stamford and Norwalk]: As a coastal community situated directly along the Long Island Sound, [MUNICIPALITY] faces the region's most complex set of climate risks. Direct exposure to storm surge, sea level rise, saltwater intrusion, higher and more frequent high tides, and compound flooding, combined with high impervious surface coverage, aging stormwater infrastructure, and significant concentrations of socially vulnerable populations, creates compounding risks that necessitate climate resilience as a central organizing principle across all planning functions. Extreme heat risk is elevated due to urban heat island conditions, and rainfall-driven and riverine flooding are amplified by the interaction of coastal and inland flood mechanisms.
- **Coastal-Moderate** [Darien, Greenwich, and Westport]: As a coastal community, [MUNICIPALITY] shares direct coastal exposure to storm surge, sea level rise, higher and more frequent high tides, and compound flooding with the region's highest-risk communities, while benefiting from greater natural land cover and coastal wetland systems that provide meaningful natural buffering. High-value coastal property, ecologically sensitive tidal wetlands, and the interaction between riverine and coastal flood systems are the defining risk characteristics for [MUNICIPALITY]. Proactive coastal resilience planning treats sea level rise, storm surge, saltwater intrusion, and tidal wetland health as an integrated system.
- **Inland-High** [Danbury]: As an inland community with high natural hazard risks, [MUNICIPALITY] faces significant flood and heat risk driven by its urban character rather than its coastal proximity. High impervious surface coverage, aging stormwater infrastructure, riverine flooding along its primary river corridors, and elevated concentrations of socially vulnerable populations combine to create a risk profile in which rainfall-driven flooding, riverine flooding, and extreme heat are primary planning priorities. The urban heat island effect amplifies heat risk in the community's densest neighborhoods, and the gap between aging infrastructure capacity and projected intensification of future rainfall will continue to widen without climate adaptation, resilience policies, and mitigation projects.
- **Inland-Moderate** [Bethel, Brookfield, New Canaan, New Fairfield, New Milford, Newtown, Ridgfield, Weston, and Wilton]: As an inland community, [MUNICIPALITY] faces a moderate risk profile defined by riverine flooding, growing wildfire risk in forested landscapes under drought conditions, and increasing extreme heat in developed town centers. While the absence of coastal exposure removes a hazard category, intensifying precipitation, prolonged drought, and the compounding relationships among drought, heat, and wildfire pose increasing planning challenges for climate adaptation and resilience policies.
- **Inland-Low** [Bridgewater, Redding, and Sherman]: As an inland community with overall lower flooding and extreme heat risks, [MUNICIPALITY] faces the region's highest wildfire risk, driven

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by extensive forested land cover, low road network density, and limited local suppression capacity, and increasing drought frequency. Riverine flooding and drought-driven vulnerability of private wells are additional primary concerns. With the region's most intact natural landscapes, **[MUNICIPALITY]** stewards forested watersheds, wetlands, and riparian corridors whose flood attenuation, water quality, and ecological benefits extend well beyond its municipal boundaries, making climate resilience and environmental protection important strategies to consider in climate adaptation and resilience policies alongside traditional hazard mitigation planning.

[Complete the hazard applicability matrix below. Community-level results are available on the WestCOG website in the Locally Variable Hazard Differentiation memo.]

Table 1. Community Hazards and Risk Levels

HAZARDS						
Extreme Storm Events	Rainfall Flood	Riverine Flood	Coastal Flood	Extreme Heat	Drought	Wildfire
[Risk Level]	[Risk Level]	[Risk Level]	[Risk Level]	[Risk Level]	[Risk Level]	[Risk Level]

[Provide relevant hazard mapping for your community. At a minimum, provide a map of the floodplain. Coastal communities can consider adding hurricane inundation or other relevant coastal zone maps. Municipality hazard maps are available on the WestCOG website and hazard web map viewers include, but are not limited to: the [WestCOG Regional Map Viewer](#), [CIRCA Sea Level Rise and Storm Surge Viewer](#), [CIRCA CCVI Heat and Flood Viewers](#), [FEMA National Flood Hazard Layer \(NFHL\) Viewer](#), [Wildland-Urban Interface \(WUI\) Map Viewer](#), and [NOAA National Hurricane Center \(NHC\) SLOSH Storm Surge Risk Maps](#).]

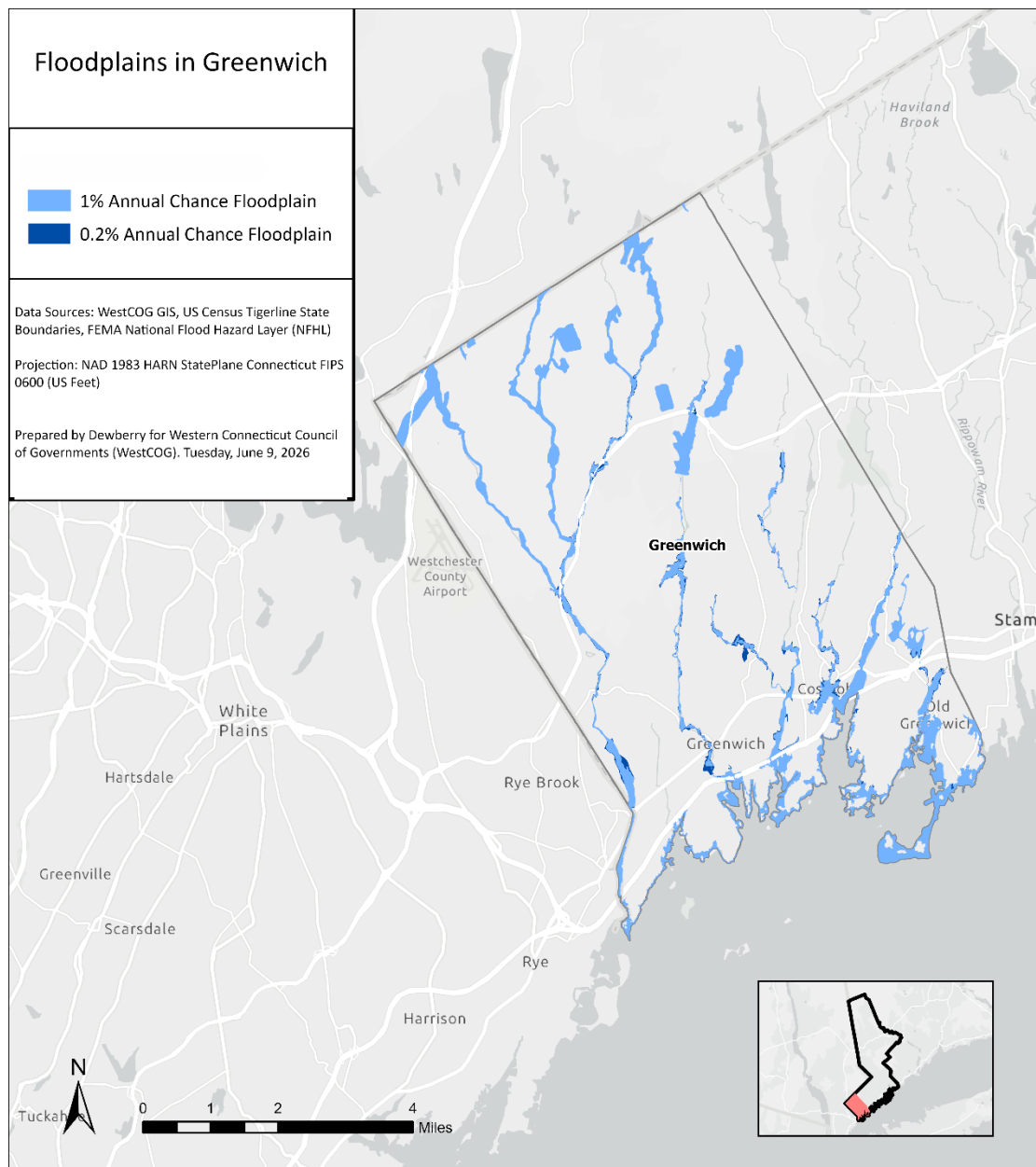


Figure 2. Floodplains in [MUNICIPALITY]. [Current map displays Greenwich as an example.]

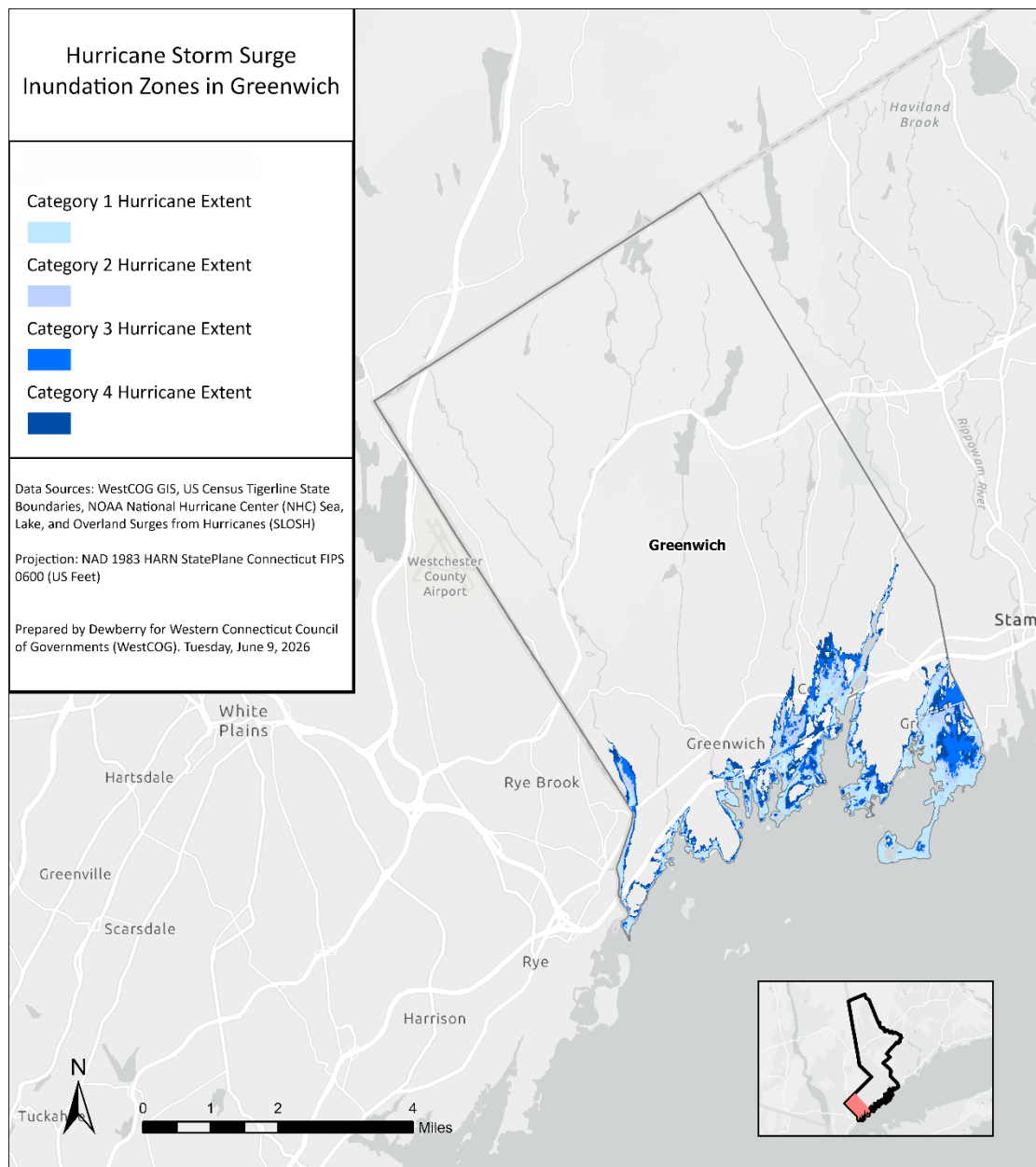


Figure 3. Hurricane Storm Surge Inundation Zones in [MUNICIPALITY]. [Current map displays Greenwich as an example.]

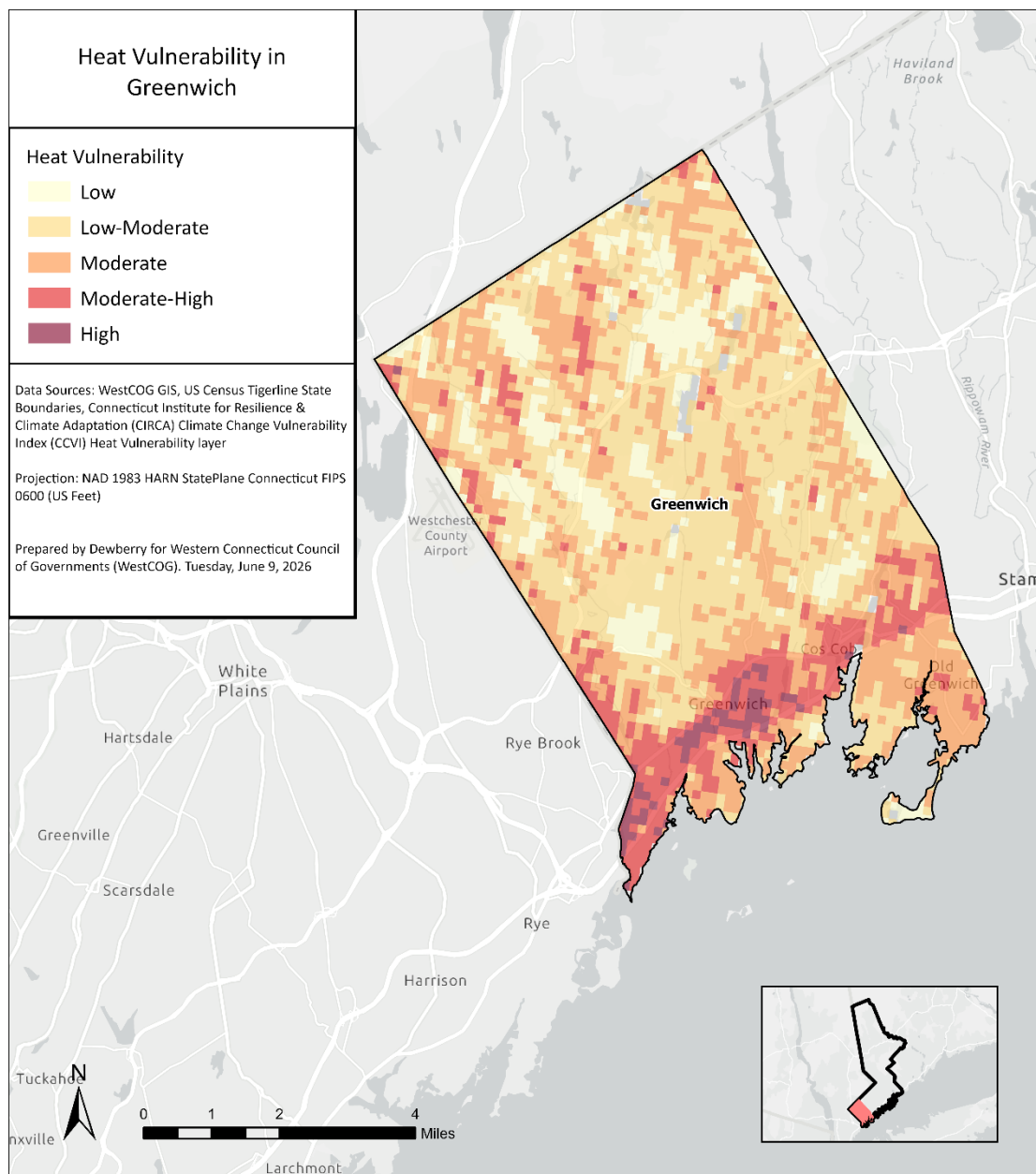


Figure 4. Heat Vulnerability in [MUNICIPALITY]. Heat vulnerability scores are scaled from 0 to 1, where Low indicates least vulnerable to heat and High indicates most vulnerable to heat. Heat vulnerability scores are calculated by averaging exposure, sensitivity, and adaptive capacity (CIRCA CCVI). Heat vulnerability was grouped as following: Low (0-0.08), Low-Moderate (0.09-0.16), Moderate (0.17-0.27), Moderate-High (0.28-0.44), and High (0.45-1). [Current map displays Greenwich as an example.]

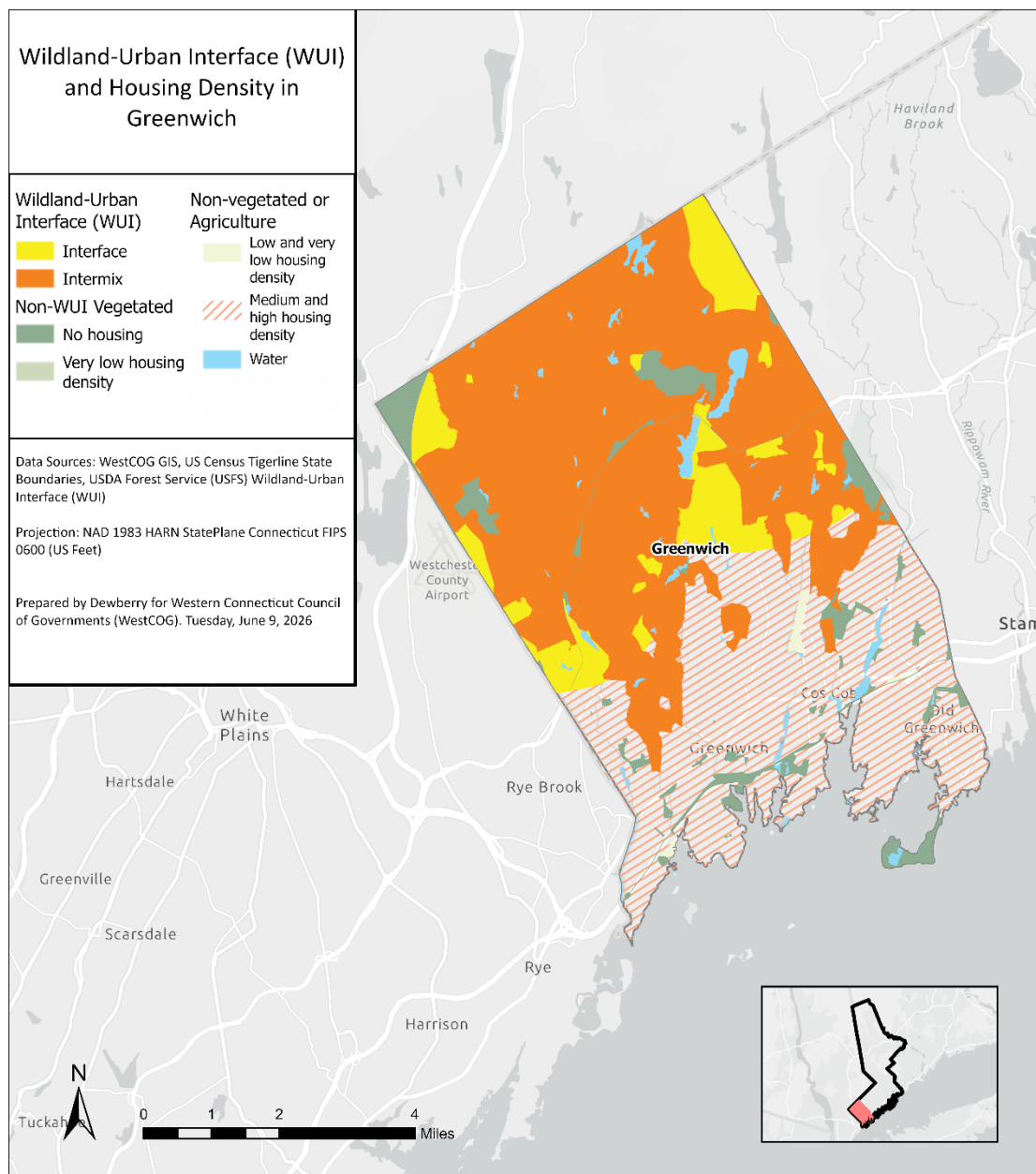


Figure 5. Wildland Urban Interface and Housing Density in [MUNICIPALITY].
 [Current map displays Greenwich as an example.]

Hazard Vulnerability and Planning Considerations

[Review the climate hazard impact description below; adjust or expand to describe your community's vulnerabilities and expected impacts. Focus on issues related to community safety and planning.]

[MUNICIPALITY] is likely to experience acute, short-term, and slower-onset, long-term impacts because of climate hazards. [MUNICIPALITY]'s Hazard Mitigation Plan documents major events the community has experienced, including *[List several significant natural hazard events that have impacted the community]*.

Potential future and/or ongoing natural hazard impacts may include:

[Select potential impacts and planning considerations appropriate for your municipality, considering the impacts listed for your region and others. Municipalities are likely to experience overlaps among certain hazards and impacts; the draft lists below are not comprehensive and should be customized for your community. Edit/add to the list any other local public safety, health, and welfare impacts to ensure accuracy and completeness.]

- **Coastal-High** *[Stamford and Norwalk]:*
 - **Public safety, health, and welfare:** Reduced access or damage to emergency and evacuation routes in high-risk coastal zones, increased stress from experiencing repeated significant storm events
 - **Economic development and businesses:** Decreased access to commercial spaces during “sunny day flooding,” increased amounts of storm debris, decreased revenue if recreation areas (e.g., beaches) experience damage or degradation, agricultural losses from damaged fisheries/aquaculture (e.g., fisheries, shellfishing areas), additional costs of emergency response and recovery, lack of flood insurance
 - **Public and community infrastructure:** Impacts to water treatment facilities in high-hazard zones, land loss, road washouts and closures, additional protection of and repairs to historic sites
- **Coastal-Moderate** *[Darien, Greenwich, and Westport]:*
 - **Public safety, health, and welfare:** Reduced access or damage to emergency and evacuation routes in high-risk coastal zones, increased stress from experiencing repeated significant storm events, lack of flood insurance
 - **Economic development and businesses:** Commercial disruption in low-lying areas, beach/marina degradation, recreation challenges
 - **Public and community infrastructure:** Flooding impacts to major highways, rail lines, and local airports, increased amounts of storm debris, land and coastal marsh loss, additional protection for and repairs to historic sites
- **Inland-High** *[Danbury]:*
 - **Public safety, health, and welfare:** Healthcare facilities and senior centers are located along high-flood-risk transit corridors, resulting in increased emergency room visits or ambulance demand for heat-related illness
 - **Economic development and businesses:** Decreased access to commercial corridors that are in the 1% annual chance floodplain, increased cooling costs
 - **Public and community infrastructure:** Road inundation, potential flood damage to healthcare and community centers

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- **Inland-Moderate** [Bethel, Brookfield, New Canaan, New Fairfield, New Milford, Newtown, Ridgefield, Weston, and Wilton]:
 - **Public safety, health, and welfare:** Increased emergency room visits or ambulance demand for heat-related illness, increased need for cooling and/or “clean air” centers
 - **Economic development and businesses:** Increased cooling costs, lack of flood insurance/unanticipated home repair costs outside of mapped FEMA flood zones
 - **Public and community infrastructure:** Road washouts or damages, increased maintenance costs for parks and open lands, protection for/repairs to historic sites
- **Inland-Low** [Bridgewater, Redding, and Sherman]:
 - **Public safety, health, and welfare:** Increased need for public education about wildfire smoke safety and clean air shelters, compromised water supply (especially in private wells), and longer emergency response time if local transit ways are impacted
 - **Economic development and businesses:** Increased cooling costs, lack of flood insurance/unanticipated home repair costs outside of mapped FEMA flood zones,
 - **Public and community infrastructure:** Damaged private wells and septic systems, potential isolation/lack of access if roads are washed out

Resilience Vision

[MUNICIPALITY]'s resilience goals, strategies, policies, and actions are based on its comprehensive [\[vision statement and/or guiding principles\]](#).

[Add your municipalities' comprehensive vision statement and/or relevant guiding principle(s). Where possible, climate adaptation and resilience should be incorporated into the vision statement. Review, and correct if needed, the list of local plans below.]

This vision is consistent across [MUNICIPALITY]'s land use and development, emergency management, and financial planning. This POCD recognizes and supports partner plans as described below.

Table 2. Planning Alignment

Municipal Plan	POCD Resilience Connection
Capital Improvement Plan (CIP)	Identified priority resilience projects are included in the CIP.
Comprehensive Emergency Operations Plan (CEOP)/ Emergency Response Plan	An identified resilience strategy is pursuing additional resources to protect vital facilities for essential repair/restoration, as identified in the CEOP.
Floodplain Management Plan	Floodplain mapping is based on the same best available state and federal data sources to determine flood exposure. [MUNICIPALITY] is reducing flood impacts in the floodplain through voluntary Community Rating System participation.
Hazard Mitigation Plan	Based on the same best available state and federal data sources to determine hazard exposure.

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Municipal Plan	POCD Resilience Connection
	Contains the list of critical assets referenced in the POCD planning process and resilience strategies.
Post-Disaster Recovery Plan	Rebuilding processes and policies support our future planned land use and resilience vision.
Resilience Plan	Resilience vision and goals are reflected in current and planned future land use.

This POCD aligns with the hazard assessments and resilience priorities identified in our Capital Improvement Plan, Comprehensive Emergency Operations Plan, Floodplain Management Plan, Hazard Mitigation Plan, Post-Disaster Recovery Plan, and Resilience Plan.

Resilience Goals

[MUNICIPALITY] aims to reduce the loss of life and property from natural hazard impacts while proactively implementing strategies that improve the quality of life, support economic growth, and provide opportunities for community members and businesses now and in the future. The goals below reflect the community's commitment to building resilience across its land use, infrastructure, natural resources, housing, emergency management systems, and economic systems.

[Review the model goals below. Select, modify, and supplement as appropriate based on the community's specific risk profile and priorities. Consider how to incorporate these goals into other POCD objectives and strategies.]

Goal 1

Protect Life Safety and Community Welfare: Reduce risks to public health, safety, and welfare from natural hazard events through proactive planning, early warning systems, emergency management, and targeted outreach to the most vulnerable residents.

Goal 2

Reduce Flood Risk to People, Property, and Infrastructure: Minimize flood damage to buildings, infrastructure, and critical facilities by implementing land-use regulations, investing in stormwater infrastructure, adopting floodplain management practices, and implementing nature-based flood mitigation strategies aligned with current and projected future flood conditions.

Goal 3

Protect and Restore Natural Systems: Conserve and enhance wetlands, riparian corridors, forests, and coastal resources that provide natural flood attenuation, water quality, carbon sequestration, and community resilience benefits. *[For coastal communities, include: protection and restoration of tidal wetland systems as natural coastal buffers.]*

Goal 4

Foster a Climate-Adapted Built Environment: Ensure that new development and redevelopment are sited, designed, and constructed to withstand current and projected climate conditions, including intensifying precipitation, extreme heat, and wildfire risk. *[For coastal communities, include: sea level rise, higher and more frequent high tides, and storm surge.]*

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Goal 5

Strengthen Emergency Preparedness and Response: Maintain accredited, well-resourced, and coordinated emergency management systems able to recognize, prepare for, respond to, and assist with recovery from increasingly frequent and severe natural hazard events.

Goal 6

Improve Access to Resilience Solutions: Prioritize resilience investments and resources for the neighborhoods and populations most vulnerable to climate hazard impacts and least able to prepare, respond, and recover.

Goal 7

Support Fiscal Resilience: Integrate the Climate Vulnerability Assessment results into municipal financial planning decisions to minimize disruption and unexpected costs, promote economic growth, and support the long-term tax base.

[MUNICIPALITY] has identified the following [areas/assets] as priorities for resilience intervention and funding:

[Review the model priority types below. Select those applicable to the community, add locally specific examples, and delete those that do not apply.]

- **Flood-prone neighborhoods and properties:** Areas within or adjacent to FEMA-mapped 1% and 0.2% annual chance floodplains, particularly those with concentrations of residential development, critical facilities, or socially vulnerable populations.
- **Critical facilities:** Evacuation routes, hospitals, emergency services, wastewater treatment plants, schools, and emergency shelters with identified flood, heat, wildfire, or storm exposure. See the identified critical assets provided in [MUNICIPALITY]'s Hazard Mitigation Plan Annex and Emergency Evacuation Plan.
- **Stormwater Infrastructure:** Aging or undersized drainage systems, culverts, and outfalls identified as vulnerable to failure under projected future rainfall conditions.
- **[Coastal Only] Coastal protective infrastructure:** Beaches, dunes, seawalls, revetments, tide gates, and other coastal barriers requiring condition assessment and reinvestment against current and projected sea level and surge conditions.
- **[Coastal Only] Tidal wetland systems:** Ecologically sensitive coastal wetlands providing natural surge attenuation and flood buffering that are vulnerable to sea level rise, marsh edge erosion, changing hydraulics, and development encroachment.
- **[Inland-Low/Inland-Moderate Communities] Urban-wildland interface areas:** Residential neighborhoods adjacent to forested land cover where wildfire ignition and spread risk is elevated during drought and high-wind conditions.
- **[Inland-Low Communities] Private well water supply areas:** Residential areas dependent on private wells that are vulnerable to drought-driven groundwater depletion, representing a critical water supply resilience gap.

Resilience Strategies and Actions

[Describe your community's approach to managing natural hazard risks. Review the framework below, select applicable strategies, add specific actions, and delete strategies that do not apply. Consider if any of these strategies and actions should also be included as POCD objectives.]

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[MUNICIPALITY] is taking a proactive, multi-layered approach to climate resilience that integrates hazard risk considerations into land use planning, infrastructure investment, natural resource protection, and emergency management. A land-use map, based on the Vulnerability Assessment results, can be found [\[below or in POCD Section X\]](#).

[Add or link to your community's land use and vulnerability Assessment map].

[MUNICIPALITY] is also supportive of the WestCOG's regional recommended resilience strategies to expand the protection of riparian corridors, increase tree canopy coverage along major rivers and streams within urbanized areas, adopt impervious cover standards that directly and positively influence the rate of stormwater runoff, increase redundancy of critical infrastructure, including by developing new water sources, and mitigate/protect existing building systems. [MUNICIPALITY] is aligning with these recommendations by [\[add any local policies or actions related to the recommended regional resilience actions\]](#).

- **Community Rating System Participation:** [MUNICIPALITY] **is/is not** a participant in FEMA's Community Rating System (CRS), which incentivizes the voluntary actions of communities that go above and beyond the minimum National Flood Insurance Program (NFIP) standards.
 - *[If participating:]* [MUNICIPALITY] has a Class **X** CRS rating, providing residents with a **X%** discount on flood insurance premiums and reducing flood damage through hazard mapping, floodplain management, and public education. [MUNICIPALITY] is maintaining that rating by adequately documenting and enforcing floodplain management activities. Additionally, [MUNICIPALITY] can work toward a Class **X** rating by exploring [\[list the near-term actions the community is taking or can take to improve its CRS standing\]](#).
 - *[If not participating:]* [MUNICIPALITY] will evaluate CRS participation as part of its broader floodplain management strategy.
- **Desirable Land Use Strategies:** [MUNICIPALITY] has considered natural hazard risks in its land use strategies through the following approaches: [\[Review and select applicable strategies; add locally specific regulatory references where applicable.\]](#)
 - Restricting new development and limiting intensification in FEMA-mapped floodplains, using current FIRMs as a regulatory baseline, as well as protected and sensitive areas such as steep slopes and wetlands.
 - Requiring impervious surface limits and green infrastructure (e.g., permeable pavement, bioswales, green roofs) in new development and major redevelopment to reduce stormwater runoff and urban heat island impacts. [MUNICIPALITY]'s requirements align with the minimum guidelines and design criteria in the Connecticut Stormwater Quality Manual.
 - Update zoning regulations to require undergrounding of utilities for all new buildings.
 - [\[Coastal Only\]](#) Implementing or expanding existing coastal buffer and setback zones that protect tidal wetlands from encroachment and reduce direct coastal flood exposure for new development.
 - [\[Inland-Low/Inland-Moderate\]](#) Prioritizing conservation zoning and natural land cover protection to maintain forested watershed function, riparian buffer integrity, and wildfire risk reduction.
 - [\[Inland-Low/Inland-Moderate\]](#) Establishing defensible space and vegetation management standards in zoning regulations for development in urban-wildland interface areas.

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- **Community Design Standards:** [MUNICIPALITY] is addressing natural hazard risks through community design standards in the following ways: *[Review and select applicable strategies, add locally specific regulatory references where applicable.]*
 - Prioritizing stormwater infrastructure upgrades in the highest-risk and most socially vulnerable neighborhoods, focusing on increasing pipe capacity, modernizing inlets, and addressing outfall vulnerability. [MUNICIPALITY]'s requirements **align with/go above and beyond** the minimum guidelines and design criteria in the Connecticut Stormwater Quality Manual.
 - Encouraging critical facilities to have current flood vulnerability assessments and continuity of operations plans that account for projected future hazard conditions.
 - Encourage the use of wind-mitigation structural techniques in new structures to protect new buildings to a greater level than the required standard.
 - *[Coastal Only]* Conducting condition and design-basis evaluations of coastal protective structures against current and projected sea level and surge conditions.
 - *[Inland-Low]* Evaluating water supply vulnerability for communities dependent on private wells under projected drought scenarios and identifying emergency supply alternatives.
- **Natural Resource and Nature-Based Strategies:** [MUNICIPALITY] recognizes the value of natural systems as resilience infrastructure and is pursuing the following nature-based strategies: *[Review and select applicable strategies, add locally specific regulatory references where applicable.]*
 - Protecting and restoring riparian buffers and wetland systems through conservation acquisition, zoning overlays, and land use regulations that limit encroachment.
 - Pursue acquisition of additional municipal open space in the SFHA and set it aside for non-critical use.
 - Expanding urban, town center, and village center tree canopy with a focus on drought-tolerant and heat-resilient species, particularly in neighborhoods with the lowest existing canopy coverage and highest heat exposure.
 - Evaluate developing a defensible space ordinance to require wildfire mitigation practices that enhance safety in higher wildfire-risk areas.
 - Perform vegetation removal through mechanical methods and/or prescribed burning on municipal land adjacent to residential areas to reduce wildfire fuels.
 - *[Coastal Only]* Identifying and prioritizing tidal wetland restoration and living shoreline opportunities as nature-based complements to engineered coastal protection.
 - *[Inland-Low/Inland-Moderate]* Pursuing land conservation in forested watersheds that provide regional flood attenuation, water quality, and wildfire risk reduction benefits.
- **Implementation Resources:** New funding is required to implement the proposed resilience actions. [MUNICIPALITY] is pursuing the following resourcing strategies:
 - Evaluating adopting a Resilience Improvement District (RID) to fund resilience projects and infrastructure.
 - Pursuing grants to mitigate risk to repetitive loss properties and facilities vital for emergency response and community quality of life, acquire portable generators, and underground utilities in existing developments.

[Note any inconsistencies in policy or action where the community has made a decision that may increase natural hazard risks or impacts and describe why the current approach – rather than increased mitigation or adaptation – is preferred.]

The community also faces the challenge of [X], which needs to be balanced against the impacts of [natural hazard(s)]. [MUNICIPALITY]'s current strategy has the benefit of *[reasons why the current approach is preferred]*.